



**SYNTHESIS AND ASSESSMENT REPORT ON THE GREENHOUSE GAS  
INVENTORIES SUBMITTED IN 2006**

**Note by the secretariat**

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## **I. MANDATE**

1. The Conference of the Parties (COP), by its decision 19/CP.8, adopted the revised guidelines for the technical review of greenhouse gas (GHG) inventories from Parties included in Annex I to the Convention<sup>1</sup> (Annex I Parties) to be applied from the year 2003. It also determined that the revised reporting guidelines on annual inventories adopted by decision 18/CP.8 should be used for the inventory beginning in 2004.
2. The COP, by its decision 13/CP.9, completed the tables of the common reporting format for reporting on the Land Use, Land-use Change and Forestry (LULUCF) sector and decided to use these tables for a trial period covering inventory submissions due in 2005. For the inventory submissions due in 2006, Parties continued to use the UNFCCC reporting guidelines adopted by decision 18/CP.8 and complemented by decision 13/CP.9 (FCCC/SBSTA/2004/8).
3. As part of the inventory review process, the COP, by its decision 19/CP.8, requested the secretariat to conduct an annual synthesis and assessment of GHG inventories for all Annex I Parties. The purposes of the synthesis and assessment are to facilitate the consideration of inventory data and other information across Parties, and to identify issues for further consideration during the reviews of individual inventories. The synthesis and assessment is to be prepared in two parts. Part I is to provide information to allow comparisons across Annex I Parties, as well as descriptions of common methodological issues. Part II is to provide a preliminary analysis of individual Annex I Party inventories, in particular to identify outstanding issues requiring clarification during the individual review stage of the process.
4. In accordance with decision 19/CP.8, Part I of this synthesis and assessment report has been sent to Parties for comment prior to publication on the UNFCCC web site. Part II will be sent to the respective Party for comments and, together with the comments from the respective Party, will be provided to the corresponding expert review team as input for the individual review; Part II will not be published on the UNFCCC web site.

## **II. COMPARISON OF GHG INVENTORY INFORMATION**

### **A. Approach**

5. This document contains Part I of the synthesis and assessment report, covering the 2006 submissions of the national GHG inventories of Annex I Parties, in accordance with the UNFCCC reporting guidelines adopted by decisions 18/CP.8 and 13/CP.9.
6. This document covers only the inventory information submitted in the CRF in the 2006 submission. It does not cover information contained in the national inventory reports, or information contained in inventory submissions from previous years. Information in this document is not intended as a judgment of whether inventory problems exist, but as an indication of potential issues that need to be considered further during the third stage of the review process (individual review) by the expert review teams.
7. In the 2006 submission, all 41 Annex I Parties submitted their national GHG inventory. For the LULUCF sector, this report covers all Annex I Parties except Luxembourg and Poland, which submitted information on LULUCF using the reporting tables as contained in decision 14/CP.11, and Turkey, which submitted information on LULUCF in accordance with decision 13/CP.9, however due to technical reasons is not included. In this report, the inventory information for Denmark corresponds to the Kingdom of Denmark (Denmark, Greenland and Faroe Islands).
8. This synthesis and assessment report contains greenhouse gas inventory information from those Parties, compiled in tabular format. The tables provide comparisons of implied emission factors and activity data as reported in the CRF, data from international sources, emissions, information on methods used and emission factors as reported by Parties in Summary table 3 of the CRF, and other information

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<sup>1</sup> The full text of the guidelines is contained in document FCCC/CP/2002/8.

relating to GHG inventory estimates. Where possible, this information is provided for all 41 Parties for both the base year and for the year 2004. For some sectors and categories, however, trend comparisons across all Parties were not possible due to the lack of data for some or all of these years.

9. The inventory data were analyzed according to the sectors, subsectors and categories specified in the CRF, which correspond to those of the *Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories* (hereinafter referred to as the IPCC Guidelines) and the *IPCC Good Practice Guidance for Land Use, Land-use Change and Forestry* (hereinafter referred to as the IPCC good practice guidance for LULUCF).

10. To facilitate the analysis of the inventory data, the secretariat considers, for each individual Party, those categories that are *key* in terms of their absolute level of emissions and impact on the trend, applying the tier 1 level and trend assessment as described in chapter 5.4 “Methodological choice – Identification of key categories” of the IPCC good practice guidance for LULUCF and chapter 7 “Methodological choice and recalculations” of the *IPCC Good Practice Guidance and Uncertainty Management*.<sup>2</sup> This identification has been performed at the level of detail recommended in that guidance and includes the LULUCF sector.

## **B. Explanatory notes to the tables**

11. Blank cells in a main table indicate that a Party did not report information for a given category and gas in the appropriate table of the CRF. Where a Party’s value is very small compared to that of other Parties, it has been rounded to zero (0.0 or 0.00) for this report. Where a Party reports a zero numerical value in the corresponding CRF tables, a zero value (0) is shown in this report. In some cases, when a Party’s value is exceptionally small compared to that of other Parties and the numerical format used for these values is not including decimal places, the Party’s value has been rounded to zero (0).

12. Blank cells in a trend table indicate that a Party did not provide information for two consecutive years. Very small positive or negative inter-annual changes are shown as zero (0.0) for this report. When no change of numerical values between two consecutive years (or between base year and the latest reported year) is occurring, the inter-annual change between these years is shown as zero value (0). When there has been a change from notation key to a numerical value or vice versa between two consecutive years or two consecutive years both contain notation keys, the symbol “\*” is shown in this report.

13. The differences in activity data between the CRF and international data sources were calculated as percentage deviations from the activity data provided in the CRF. A positive number indicates that the data from the international data source are higher than the data reported in the CRF. Similarly, a negative number indicates that data from the international data source are lower than the data reported in the CRF.

14. References to the base year refer to 1990, except for the following Parties with economies in transition which, in accordance with decisions 9/CP.2 and 11/CP.4, use base years other than 1990: Bulgaria (1988), Hungary (average 1985–1987), Poland (1988), Romania (1989) and Slovenia (1986).

15. Key categories identified by the secretariat’s analysis are indicated by “L” for level and “T” for trend assessments in the “key category” columns.

16. The column “Share of national total” in main tables indicates the contribution of that category to the Party’s national total of GHG emissions in terms of CO<sub>2</sub> equivalent, excluding emissions and removals from LULUCF.

17. In tables, where shares or contributions of categories, gases, activity data or other parameters to a total are shown (e.g., contribution of specific fuel type to the total emissions of a combustion category), blank cells indicate that a Party did not report information for a given category, gas, activity data or parameter in the appropriate table of the CRF. Where the value of share or contribution is very small, it

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<sup>2</sup> For some Parties, identification of key categories at that level of detail was not possible due to insufficient reporting of disaggregated data. For these Parties, key categories have been identified at the level of category disaggregation provided in Summary table 1.A of the CRF (corresponding to summary Table 7A of the IPCC Guidelines).

has been rounded to zero (0.0) for this report. Where a Party reports a zero numerical value for a given category, gas, activity data or parameter in the corresponding CRF tables, its share or contribution is shown as a zero value (0). Where a Party reports a notation key for a given category, gas, activity data or parameter in the corresponding CRF tables, its share or contribution to the total is shown using the symbol “-”.

18. Where Parties used notation keys (NO, NE, NA, IE, C) these have been reproduced verbatim from the CRF tables provided by Parties. The notation keys, as described in the UNFCCC reporting guidelines (FCCC/CP/2004/8), are as follows:

NO	Not occurring	IE	Included elsewhere
NE	Not estimated	C	Confidential
NA	Not applicable		

19. Tables on energy indicate whether implied emission factors given in the CRF are based on gross calorific value (GCV) or net calorific value (NCV). The difference between the NCV and the GCV for each fuel is the latent heat of vaporization of the water produced during combustion of the fuel. For coal and oil, NCV is 5 per cent less than GCV, and for most forms of natural and manufactured gas the difference is 9 to 10 per cent. Australia, Canada, Japan, New Zealand and the United States reported energy data on a GCV basis. The IEFs included in this table for these Parties have been converted into NCV-based values and are not reflecting the reported IEFs.

20. The following chemical formulae or abbreviations for greenhouse gases are used in the synthesis and assessment report:

C	carbon
CF <sub>4</sub>	perfluoromethane
C <sub>2</sub> F <sub>6</sub>	perfluoroethane
C <sub>3</sub> F <sub>8</sub>	perfluoropropane
C <sub>4</sub> F <sub>10</sub>	perfluorobutane
c-C <sub>4</sub> F <sub>8</sub>	perfluorocyclobutane
C <sub>5</sub> F <sub>12</sub>	perfluoropentane
C <sub>6</sub> F <sub>14</sub>	perfluorohexane
CH <sub>4</sub>	methane
CO <sub>2</sub>	carbon dioxide
HFCs	hydrofluorocarbons
N <sub>2</sub> O	nitrous oxide
PFCs	perfluorocarbons
SF <sub>6</sub>	sulphur hexafluoride

21. To indicate the methods and emission factors used by Parties the following abbreviations have been used (see also footnotes to Summary table 3 of the CRF) in the synthesis and assessment report:

<u>Methods:</u>		<u>Emission factors:</u>	
D	IPCC default	D	IPCC default
RA	Reference approach	C or CR	CORINAIR
T1	IPCC tier 1	CS	Country specific
T1a, T1b, T1c	IPCC tier 1a, tier 1b, and tier 1c, respectively	PS	Plant specific
T2	IPCC tier 2	M	Model
T3	IPCC tier 3	OTH	Other
C or CR	CORINAIR		
CS	Country specific		
M	Model		
OTH	Other		

22. The following units have been used in the synthesis and assessment report:

kg	kilogram ( $10^3$ grams)
Mg	megagram ( $10^6$ grams) – same as tonne
Gg	gigagram ( $10^9$ grams)
Gg CO <sub>2</sub> equ	Gg of CO <sub>2</sub> equivalent
t	tonne ( $10^6$ grams)
kt	kilotonne ( $10^9$ grams)
Mt	megatonne ( $10^{12}$ grams)
TJ	terajoule ( $10^{12}$ joules)
PJ	petajoule ( $10^{15}$ joules)
ha	hectare
kha	thousand hectares
Mha	million hectares
m <sup>3</sup>	cubic meter
Bbl (oil US)	barrels of oil (United States)
bill ft <sup>3</sup> year	billion of cubic feet per year
TBtu	trillion British thermal units

23. The following other abbreviations have been used in the synthesis and assessment report:

A	actual emissions
AD	activity data
CRF	common reporting format
dm	dry matter
EF	emission factor
FAO	Food and Agriculture Organization of the United Nations
Frac <sub>BURN</sub>	fraction of crop residue burned
Frac <sub>FUEL</sub>	fraction of livestock nitrogen excretion in excrements burned for fuel
Frac <sub>GASF</sub>	fraction of synthetic fertilizer nitrogen applied to soils that volatilises as NH <sub>3</sub> and NO <sub>x</sub>
Frac <sub>GASM</sub>	fraction of livestock nitrogen excretion that volatilises as NH <sub>3</sub> and NO <sub>x</sub>
Frac <sub>GRAZ</sub>	fraction of livestock nitrogen excreted and deposited onto soil during grazing
Frac <sub>LEACH</sub>	fraction of nitrogen input to soils that is lost through leaching and run-off
Frac <sub>NCRBF</sub>	fraction of nitrogen in N-fixing crop
Frac <sub>NCREO</sub>	fraction of nitrogen in non-N-fixing crop
Frac <sub>R</sub>	fraction of total above-ground crop biomass that is removed from the field as a crop product
GCV	gross calorific value
GHG	greenhouse gas

GWP	global warming potential
IEA	International Energy Agency
IEF	implied emission factor
L	level (key source applying the IPCC good practice guidance tier 1 level assessment)
LPG	liquefied petroleum gas
LTO	landing and take off cycle
N	nitrogen
NCV	net calorific value
NGL	natural gas liquids
NH <sub>3</sub>	ammonia
NIR	national inventory report
NMVOC	non-methane volatile organic compounds
NO <sub>x</sub>	nitrogen oxides
P	potential emissions
T	trend (key source applying the IPCC good practice guidance tier 1 trend assessment)
yr	year

### **C. List of tables in Part I**

#### **General**

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G.3	Key categories: 2004
Figure G.1	Total GHG emissions (including LULUCF): base year and 2004 (Gg CO <sub>2</sub> equivalent)
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Figure G.3	GHG emissions by gas (including LULUCF): base year and 2004 (%)
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G.4	Reported recalculations by year for total GHG emissions excluding LULUCF (%)
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#### **Energy**

Figure 1.1	Contribution of subsectors to total GHG emissions in the Energy sector
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1.6	Stationary combustion: solid fuels, CO <sub>2</sub> (2004)
1.7	Stationary combustion: gaseous fuels, CO <sub>2</sub> (base year)
1.8	Stationary combustion: gaseous fuels, CO <sub>2</sub> (2004)
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1.10	Stationary combustion: other fuels, CO <sub>2</sub> (2004)
1.11	Stationary combustion: all fuels – trend information Fuel consumption (TJ) Relative change (%)
1.12	Fuel consumption in stationary combustion: liquid fuels – trend information Fuel consumption (TJ) Relative change (%)
1.13	Fuel consumption in stationary combustion: solid fuels – trend information Fuel consumption (TJ) Relative change (%)
1.14	Fuel consumption in stationary combustion: gaseous fuels – trend information Fuel consumption (TJ) Relative change (%)
1.15	Fuel consumption in stationary combustion: biomass – trend information Fuel consumption (TJ) Relative change (%)
1.16	Fuel consumption in stationary combustion: other fuels – trend information Fuel consumption (TJ) Relative change (%)
1.17	Contribution of fuels to total energy consumption in stationary combustion (%)
1.18	CO <sub>2</sub> emissions from energy industries: all fuels - trend information CO <sub>2</sub> emissions (Gg) Relative change (%)

**Energy (continued)**

<u>Table number</u>	<u>Table name</u>
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1.20	CO <sub>2</sub> emissions from energy industries: solid fuels - trend information CO <sub>2</sub> emissions (Gg) Relative change (%)
1.21	CO <sub>2</sub> emissions from energy industries: gaseous fuels - trend information CO <sub>2</sub> emissions (Gg) Relative change (%)
1.22	Contribution of fuels to CO <sub>2</sub> emissions from energy industries (%)
1.23	CO <sub>2</sub> emissions from manufacturing industries and construction: all fuels - trend information CO <sub>2</sub> emissions (Gg) Relative change (%)
1.24	CO <sub>2</sub> emissions from manufacturing industries and construction: liquid fuels - trend information CO <sub>2</sub> emissions (Gg) Relative change (%)
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1.28	CO <sub>2</sub> emissions from other sectors (commercial/institutional, residential, agriculture/forestry/fisheries): all fuels - trend information CO <sub>2</sub> emissions (Gg) Relative change (%)
1.29	CO <sub>2</sub> emissions from other sectors (commercial/institutional, residential, agriculture/forestry/fisheries): liquid fuels - trend information CO <sub>2</sub> emissions (Gg) Relative change (%)
1.30	CO <sub>2</sub> emissions from other sectors (commercial/institutional, residential, agriculture/forestry/fisheries): solid fuels - trend information CO <sub>2</sub> emissions (Gg) Relative change (%)
1.31	CO <sub>2</sub> emissions from other sectors (commercial/institutional, residential, agriculture/forestry/fisheries): gaseous fuels - trend information CO <sub>2</sub> emissions (Gg) Relative change (%)
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**Energy (continued)**Table number   Table name

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1.38	Civil aviation, navigation and international bunkers, CO <sub>2</sub> (2004)
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1.48	Fugitive emissions from fuels: coal mining and handling, CH <sub>4</sub> (2004)
1.49	Fugitive emissions from fuels: CH <sub>4</sub> emissions from coal mining and handling - trend information CH <sub>4</sub> emissions (Gg) Relative change (%)
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1.50c	Fugitive emissions from fuels: oil and natural gas - natural gas, CH <sub>4</sub> , CO <sub>2</sub> (base year)
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**Energy (continued)**

<u>Table number</u>	<u>Table name</u>
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**Industrial Processes**

Figure 2.1	Contribution of subsectors to total GHG emissions in Industrial Processes
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2.7a	N <sub>2</sub> O emissions from nitric acid production – trend information N <sub>2</sub> O emissions (Gg) Relative change (%)
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**Industrial Processes (continued)**Table number   Table name

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2.15	CF <sub>4</sub> emissions from aluminium production - trend information CF <sub>4</sub> emissions (t) Relative change (%)
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2.21a–b	Consumption of halocarbons and SF <sub>6</sub> - PFCs (base year)
2.22a–b	Consumption of halocarbons and SF <sub>6</sub> - PFCs (2004)
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2.24	Consumption of halocarbons and SF <sub>6</sub> - SF <sub>6</sub> (2004)

**Solvent and other product use**

3.1	Solvent and other product use, CO <sub>2</sub> and N <sub>2</sub> O (base year)
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**Agriculture**

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4.4b	CH <sub>4</sub> implied emission factors for enteric fermentation: dairy cattle - trend information CH <sub>4</sub> IEF (kg/head/yr) Relative change (%)
4.5a	CH <sub>4</sub> emissions from enteric fermentation: non-dairy cattle - trend information CH <sub>4</sub> emissions (Gg) Relative change (%)
4.5b	CH <sub>4</sub> implied emission factors for enteric fermentation: non-dairy cattle - trend information CH <sub>4</sub> IEF (kg/head/yr) Relative change (%)

**Agriculture (continued)**Table number   Table name

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4.9	Manure management, N <sub>2</sub> O (2004)
4.10a	CH <sub>4</sub> emissions from manure management - trend information CH <sub>4</sub> emissions (Gg) Relative change (%)
4.10b	N <sub>2</sub> O emissions from manure management - trend information N <sub>2</sub> O emissions (Gg) Relative change (%)
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**Land Use, Land-use Change and Forestry**

Figure 5.1	Net CO <sub>2</sub> emissions/removals from LULUCF
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5.2b	Methods and emission factors used (base year)
5.3a	Methods and emission factors used (2004)
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5.4	Forest land remaining forest land - AD, IEF and carbon stock change in pools (base year)
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5.6	Net CO <sub>2</sub> emissions/removals from forest land remaining forest land - trend information CO <sub>2</sub> emissions/removals (Gg) Relative change (%)
5.7	Area of forest land remaining forest land - trend information Area (kha) Relative change (%)
5.8	Land converted to forest land - AD, IEF and carbon stock change in pools (base year)
5.9	Land converted to forest land - AD, IEF and carbon stock change in pools (2004)
5.10	Net emissions/removals from land converted to forest land - trend information CO <sub>2</sub> emissions/removals (Gg) Relative change (%)
5.11	Net emissions/removals from land converted to forest land - trend information Area (kha) Relative change (%)
5.12	Cropland remaining cropland - AD, IEF and carbon stock change in pools (base year)
5.13	Cropland remaining cropland - AD, IEF and carbon stock change in pools (2004)
5.14	Net CO <sub>2</sub> emissions/removals from cropland remaining cropland - trend information Net CO <sub>2</sub> emissions/removals (Gg) Relative change (%)

**Land Use, Land-use Change and Forestry (continued)**

Table number   Table name

5.15	Area of cropland remaining cropland - trend information Area (kha) Relative change (%)
5.16	Land converted to cropland - AD, IEF and carbon stock change in pools (base year)
5.17	Land converted to cropland - AD, IEF and carbon stock change in pools (2004)
5.18	Net CO <sub>2</sub> emissions/removals from land converted to cropland - trend information CO <sub>2</sub> emissions/removals (Gg) Relative change (%)
5.19	Area of land converted to cropland - trend information Area (kha) Relative change (%)
5.20	Forest land converted to cropland - AD, IEF and carbon stock change in pools (base year)
5.21	Forest land converted to cropland - AD, IEF and carbon stock change in pools (2004)
5.22	Net CO <sub>2</sub> emissions/removals from forest land converted to cropland - trend information CO <sub>2</sub> emissions/removals (Gg) Relative change (%)
5.23	Area of forest land converted to cropland - trend information Area (kha) Relative change (%)
5.24	Grassland remaining grassland - AD, IEF and carbon stock change in pools (base year)
5.25	Grassland remaining grassland - AD, IEF and carbon stock change in pools (2004)
5.26	Net CO <sub>2</sub> emissions/removals from grassland remaining grassland - trend information Net CO <sub>2</sub> emissions/removals (Gg) Relative change (%)
5.27	Area of grassland remaining grassland - trend information Area (kha) Relative change (%)
5.28	Land converted to grassland - AD, IEF and carbon stock change in pools (base year)
5.29	Land converted to grassland - AD, IEF and carbon stock change in pools (base 2004)
5.30	Net CO <sub>2</sub> emissions/removals from land converted to grassland - trend information Net CO <sub>2</sub> emissions/removals (Gg) Relative change (%)
5.31	Area of land converted to grassland - trend information Area (kha) Relative change (%)
5.32	Forest land converted to grassland - AD, IEF and carbon stock change in pools (base year)
5.33	Forest land converted to grassland - AD, IEF and carbon stock change in pools (2004)
5.34	Net CO <sub>2</sub> emissions/removals from forest land converted to grassland - trend information CO <sub>2</sub> emissions/removals (Gg) Relative change (%)
5.35	Area of forest land converted to grassland (trend information) Area (kha) Relative change (%)
5.36	Direct N <sub>2</sub> O emissions from N-fertilization (base year and 2004) - AD, IEF and N <sub>2</sub> O emissions
5.37	Direct N <sub>2</sub> O emissions from N-fertilization (Gg) - trend information N <sub>2</sub> O emissions (Gg) Relative change (%)

**Land Use, Land-use Change and Forestry (continued)**

<u>Table number</u>	<u>Table name</u>
5.38	N <sub>2</sub> O emissions from disturbance associated with land-use conversion to cropland - AD, IEF and N <sub>2</sub> O emissions (base year and 2004)
5.39	N <sub>2</sub> O emissions from disturbance associated with land-use conversion to cropland - trend information
5.40	Carbon emissions from agricultural lime application in cropland and grassland (base year and 2004)
5.41	Carbon emissions from agricultural lime application - trend information (all land-use categories)
	Carbon emissions (Gg)
	Relative change (%)
5.42	Biomass burning (base year and 2004) - CO <sub>2</sub> emissions for all land-use Categories
5.43	CH <sub>4</sub> emissions from biomass burning in forest land - trend information
	CH <sub>4</sub> emissions (Gg)
	Relative change (%)
5.44	N <sub>2</sub> O emissions from biomass burning in forest land - trend information
5.45	CH <sub>4</sub> emissions from biomass burning in land converted to cropland - trend information
	CH <sub>4</sub> emissions (Gg)
	Relative change (%)
5.46	N <sub>2</sub> O emissions from biomass burning in land converted to cropland - trend information
	N <sub>2</sub> O emissions (Gg)
	Relative change (%)
5.47	CH <sub>4</sub> emissions from biomass burning in grasslands - trend information
	CH <sub>4</sub> emissions (Gg)
	Relative change (%)
5.48	N <sub>2</sub> O emissions from biomass burning in grasslands - trend information
	N <sub>2</sub> O emissions (Gg)
	Relative change (%)

**Waste**

Figure 6.1	Contribution of subsectors to total GHG emissions in Waste
6.1	Solid waste disposal on land, waste-water handling and waste incineration (base year)
6.1	Solid waste disposal on land, waste-water handling and waste incineration (2004)
6.3	CH <sub>4</sub> emissions from solid waste disposal on land - trend information
6.4	Solid waste disposal on land: kg CH <sub>4</sub> /capita - trend information
6.5	CH <sub>4</sub> recovered from managed solid waste disposal sites - trend information
6.6	Waste generation rate
6.7a	CH <sub>4</sub> emissions from waste-water handling - trend information
6.7b	N <sub>2</sub> O emissions from waste-water handling - trend information
6.8	CO <sub>2</sub> emissions from waste incineration - trend information

## General

**Table G.1**

### Submissions used in the S&A report: Part I

Party	Initial submission date	CRF for years	LULUCF Excel Application	NIR	CRF Excel sheets submission date and version	LULUCF Excel Application submission date and version	Sources of data for the trend tables <sup>a</sup>
Australia	24 May 2006	1990-2004		√	21 December 2006 (v.2)		1990-2004: S2006
Austria	13 April 2006	1990-2004		√	20 November 2006 (v.3)		1990-2004: S2006
Belarus	14 April 2006	1990-2004		√	23 May 2006 (v.2)		1990-2004: S2006
Belgium	14 April 2006	1990-2004		√	14 March 2007 (v. 5)		1990-2004: S2006
Bulgaria	18 April 2006	1988, 1990-2004		√	25 August 2006 (v.3)		1988, 1990-2004: S2006
Canada	11 May 2006	1990-2004		√	11 May 2006 (v.1)		1990-2004: S2006
Croatia	31 August 2006	1990-2004		√	31 August 2006 (v.1)		1990-2004: S2006
Czech Republic	13 April 2006	1990-2004		√	13 April 2006 (v.1)		1990-2004: S2006
Denmark	12 April 2006	1990-2004		√	26 January 2007 (v.3)		1990-2004: S2006
Estonia	12 April 2006	1990-2004		√	22 June 2006 (v.2, years 1991-2003) and 31 January 2007 (v.3, years 1990 and 2004)		1990-2004: S2006
European Community	15 April 2006	1990-2004		√	18 December 2006 (v.3)		1990-2004: S2006
Finland	06 April 2006	1990-2004		√	28 December 2006 (v.3)		1990-2004: S2006
France	15 February 2006	1990-2004		√	20 November 2006 (v.5)		1990-2004: S2006
Germany	03 March 2006	1990-2004		√	31 January 2007 (v.6)		1990-2004: S2006
Greece	16 April 2006	1990-2004		√	16 April 2006 (v.1)		1990-2004: S2006
Hungary	19 April 2006	1985-1987, 1985-2004		√	4 September 2006 (v.3)		1985-1987, 1985-2004: S2006
Iceland	26 July 2006	1990-2004		√	26 January 2007 (v.3)		1990-2004: S2006
Ireland	13 April 2006	1990-2004		√	13 April 2006 (v.1)		1990-2004: S2006
Italy	18 April 2006	1990-2004		√	26 January 2007 (v.3)		1990-2004: S2006
Japan	25 May 2006	1990-2004		√	16 January 2007 (v.3)		1990-2004: S2006
Latvia	13 April 2006	1990-2004		√	24 May 2006 (v.2)		1990-2004: S2006
Liechtenstein	30 May 2006	1990-2004		√	22 December 2006 (v.2)		1990-2004: S2006
Lithuania	15 April 2006	1990-2004		√	22 December 2006 (v.2)		1990-2004: S2006
Luxembourg	06 February 2006	1990-2004		√	27 March 2007 (v.3)		1990-2004: S2006
Monaco	16 June 2006	1990-2004	1990-2004	√	4 October 2006 (v.2)	4 October 2006 (v.2)	1990-2004: S2006
Netherlands	14 April 2006	1990-2004		√	19 September 2006 (v.2)		1990-2004: S2006
New Zealand	13 April 2006	1990-2004		√	31 August 2006 (v.3)		1990-2004: S2006
Norway	27 May 2006	1990-2004		√	27 May 2006 (v.1)		1990-2004: S2006
Poland	15 April 2006	1990-2004		√	29 March 2007(v.3)		1990-2004: S2006
Portugal	13 April 2006	1990-2004		√	28 December 2006 (v. 3)		1990, 2004: S2006
Romania	5 May 2006	1989-2004		√	5 May 2006 (v.1)		1990-2004: S2006
Russian Federation	08 January 2007	1990-2004		√	16 February 2007 (v.2)		1990, 2004: S2006
Slovakia	13 April 2006	1990-2004		√	16 January 2007 (v.2)		1990-2004: S2006
Slovenia	26 April 2006	1986, 1990-2004		√	19 January 2007 (v.2)		1986, 1990-2004: S2006
Spain	12 April 2006	1990-2004		√	12 April 2006 (v.1)		1990-2004: S2006
Sweden	13 April 2006	1990-2004		√	19 December 2006 (v.2)		1990-2004: S2006
Switzerland	13 April 2006	1990-2004		√	23 November 2006 (v.4)		1990-2004: S2006
Turkey	14 April 2006	1990-2004		√	18 August 2006 (v.2)		1990-2004: S2006
Ukraine	26 May 2006	1990-2004		√	26 May 2006 (v.1)		1990-2004: S2006
United Kingdom	13 April 2006	1990-2004		√	28 September 2006 (v.3)		1990-2004: S2006
United States	5 April 2006	1990-2004		√	5 April 2006 (v.1)		1990-2004: S2006

<sup>a</sup> Legend: v.1/2/3/4 - version of the CRF used in the S&A report; S200x - submission in year 200x.

**Table G.2**  
Key categories<sup>a</sup>: base year<sup>b</sup>

Source categories	Australia	Austria	Belarus	Belgium	Bulgaria	Canada	Croatia	Czech Republic	Denmark	Estonia	European Community	Finland	France	Germany	Greece	Hungary	Iceland	Ireland	Italy	Japan	Latvia	Liechtenstein	Lithuania	Luxembourg	Monaco	Netherlands	New Zealand	Norway	Poland	Portugal	Romania	Russian Federation	Slovakia	Slovenia	Spain	Sweden	Switzerland	Turkey	Ukraine	United Kingdom	United States		
<b>Energy</b>																																											
1. Stationary Combustion - Solid Fuels - CO <sub>2</sub>	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
1. Stationary Combustion - Liquid Fuels - CO <sub>2</sub>	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
1. Stationary Combustion - Gaseous Fuels - CO <sub>2</sub>	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
1. Stationary Combustion - Other Fuels - CO <sub>2</sub>		L		L						L	L	L	L	L											L								L				L						
1. Stationary Combustion - Solid Fuels - CH <sub>4</sub>								L			L	L	L	L												L												L					
1. Stationary Combustion - Liquid Fuels - CH <sub>4</sub>																																											
1. Stationary Combustion - Gaseous Fuels - CH <sub>4</sub>																																											
1. Stationary Combustion - Biomass - CH <sub>4</sub>													L																														
1. Stationary Combustion - Other Fuels - CH <sub>4</sub>																																											
1. Stationary Combustion - Solid Fuels - N <sub>2</sub> O								L						L	L	L																					L						
1. Stationary Combustion - Liquid Fuels - N <sub>2</sub> O				L												L	L			L																	L						
1. Stationary Combustion - Gaseous Fuels - N <sub>2</sub> O																	L																										
1. Stationary Combustion - Biomass - N <sub>2</sub> O																																											
1. Stationary Combustion - Other Fuels - N <sub>2</sub> O												L																															
1.A.3.a Civil Aviation - CO <sub>2</sub>	L					L	L				L		L		L												L	L								L	L	L					L
1.A.3.a Civil Aviation - CH <sub>4</sub>																																											
1.A.3.a Civil Aviation - N <sub>2</sub> O																																											
1.A.3.b Road Transportation - CO <sub>2</sub>	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
1.A.3.b Road Transportation - CH <sub>4</sub>																																											
1.A.3.b Road Transportation - N <sub>2</sub> O																																											
1.A.3.c Railways - CO <sub>2</sub>						L																L																					
1.A.3.c Railways - CH <sub>4</sub>						L																																					
1.A.3.c Railways - N <sub>2</sub> O																																											
1.A.3.d Navigation - CO <sub>2</sub>	L					L				L	L	L			L		L		L	L								L								L	L						L
1.A.3.d Navigation - CH <sub>4</sub>																																											
1.A.3.d Navigation - N <sub>2</sub> O																																											
1.A.3.e Other Transportation - CO <sub>2</sub>						L	L					L																	L												L		L
1.A.3.e Other Transportation - CH <sub>4</sub>																																											
1.A.3.e Other Transportation - N <sub>2</sub> O																																											
1.A.5.b Mobile - CH <sub>4</sub>																																											
1.A.5.b Mobile - CO <sub>2</sub>								L						L								L						L	L								L	L				L	L
1.A.5.b Mobile - N <sub>2</sub> O																																											
1.B.1.a Coal Mining and Handling - CO <sub>2</sub>																																											
1.B.1.a Coal Mining and Handling - CH <sub>4</sub>	L				L			L			L		L	L	L	L													L		L	L	L	L	L			L	L	L	L	L	
1.B.1.a Coal Mining and Handling - N <sub>2</sub> O																																											
1.B.1.b Solid Fuel Transformation - CO <sub>2</sub>																																											
1.B.1.b Solid Fuel Transformation - CH <sub>4</sub>																																											
1.B.1.b Solid Fuel Transformation - N <sub>2</sub> O																																											
1.B.1.c Other - CO <sub>2</sub>																																											
1.B.1.c Other - CH <sub>4</sub>																																											
1.B.1.c Other - N <sub>2</sub> O																																											
1.B.2 Oil and Natural Gas - CO <sub>2</sub>	L					L	L					L		L						L							L	L								L						L	
1.B.2 Oil and Natural Gas - CH <sub>4</sub>	L	L			L	L	L			L	L			L		L										L		L	L		L	L	L	L	L			L		L	L	L	
1.B.2 Oil and Natural Gas - N <sub>2</sub> O																																											
<b>Industrial Processes</b>																																											
2.A.1 Cement Production - CO <sub>2</sub>	L	L			L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	
2.A.1 Cement Production - CH <sub>4</sub>																																											
2.A.1 Cement Production - NO <sub>2</sub>																																											
2.A.2 Lime Production - CO <sub>2</sub>				L		L					L		L	L						L	L										L		L	L		L							
2.A.2 Lime Production - CH <sub>4</sub>																																											
2.A.2 Lime Production - N <sub>2</sub> O																																											
2.A.3 Limestone and Dolomite Use - CO <sub>2</sub>																																											
2.A.3 Limestone and Dolomite Use - CH <sub>4</sub>																																											
2.A.3 Limestone and Dolomite Use - N <sub>2</sub> O																																											
2.A.4 Soda Ash Production and Use - CO <sub>2</sub>																																											
2.A.4 Soda Ash Production and Use - CH <sub>4</sub>																																											
2.A.4 Soda Ash Production and Use - N <sub>2</sub> O																																											

Table G.2 (continued)  
Key categories<sup>a</sup>: base year<sup>b</sup>

Source categories	Australia	Austria	Belarus	Belgium	Bulgaria	Canada	Croatia	Czech Republic	Denmark	Estonia	European Community	Finland	France	Germany	Greece	Hungary	Iceland	Ireland	Italy	Japan	Latvia	Liechtenstein	Lithuania	Luxembourg	Monaco	Netherlands	New Zealand	Norway	Poland	Portugal	Romania	Russian Federation	Slovakia	Slovenia	Spain	Sweden	Switzerland	Turkey	Ukraine	United Kingdom	United States	
<b>Industrial Processes</b>																																										
2.A.5 Asphalt Roofing - CO <sub>2</sub>																																										
2.A.5 Asphalt Roofing - CH <sub>4</sub>																																										
2.A.5 Asphalt Roofing - N <sub>2</sub> O																																										
2.A.6 Road Paving with Asphalt - CO <sub>2</sub>																																										
2.A.6 Road Paving with Asphalt - CH <sub>4</sub>																																										
2.A.6 Road Paving with Asphalt - N <sub>2</sub> O																																										
2.A.7 Other - CO <sub>2</sub>		L																																								
2.A.7 Other - CH <sub>4</sub>		L																																								
2.A.7 Other - N <sub>2</sub> O																																										
2.B.1 Ammonia Production - CO <sub>2</sub>		L			L	L	L				L		L				L					L			L		L	L	L	L										L		
2.B.1 Ammonia Production - CH <sub>4</sub>																																										
2.B.1 Ammonia Production - N <sub>2</sub> O																																										
2.B.3 Adipic Acid Production - CO <sub>2</sub>																																										
2.B.3 Adipic Acid Production - CH <sub>4</sub>																																										
2.B.3 Adipic Acid Production - N <sub>2</sub> O						L					L		L	L					L	L																					L	
2.B.2 Nitric Acid Production - CO <sub>2</sub>																															L											
2.B.2 Nitric Acid Production - CH <sub>4</sub>																																										
2.B.2 Nitric Acid Production - N <sub>2</sub> O		L		L	L		L	L	L		L	L	L				L		L				L			L		L	L		L		L		L		L		L			
2.B.4 Carbide Production - CO <sub>2</sub>																																										
2.B.4 Carbide Production - CH <sub>4</sub>																																										
2.B.4 Carbide Production - N <sub>2</sub> O																																										
2.B.5 Other - CO <sub>2</sub>														L																												
2.B.5 Other - CH <sub>4</sub>																																										
2.B.5 Other - N <sub>2</sub> O												L					L									L																
2.B.5 Other - HFCs																																										
2.B.5 Other - PFCs																																										
2.B.5 Other - SF <sub>6</sub>																																										
2.C.1 Iron and Steel Production - CO <sub>2</sub>	L	L		L	L	L		L			L	L	L	L					L				L		L	L	L	L		L		L				L	L		L		L	
2.C.1 Iron and Steel Production - CH <sub>4</sub>																																										
2.C.1 Iron and Steel Production - N <sub>2</sub> O																																										
2.C.2 Ferroalloys Production - CO <sub>2</sub>																	L												L													
2.C.2 Ferroalloys Production - CH <sub>4</sub>																																										
2.C.2 Ferroalloys Production - N <sub>2</sub> O																																										
2.C.3 Aluminium Production - CO <sub>2</sub>																	L												L													
2.C.3 Aluminium Production - CH <sub>4</sub>																																										
2.C.3 Aluminium Production - N <sub>2</sub> O																																										
2.C.3 Aluminium Production - PFCs	L	L				L	L						L				L									L	L	L			L			L		L		L				
2.C.4.a SF <sub>6</sub> used in Aluminium Foundries - SF <sub>6</sub>																																										
2.C.4.b SF <sub>6</sub> used in Magnesium Foundries - SF <sub>6</sub>																																										
2.C.5 Other - CO <sub>2</sub>																																										
2.C.5 Other - CH <sub>4</sub>																																										
2.C.5 Other - N <sub>2</sub> O																																										
2.C.5 Other - HFCs																																										
2.C.5 Other - PFCs																																										
2.C.5 Other - SF <sub>6</sub>																																										
2.D Other Production - CO <sub>2</sub>																																										
2.D Other Production - CH <sub>4</sub>																																										
2.D Other Production - N <sub>2</sub> O																																										
2.E.1.a Production of HCFC-22 - HCFC-23																L											L									L						L
2.E.1.b Other - F-Gases																																										
2.E.2 Fugitive Emissions - F-Gases																																										
2.E.3 Other - F-Gases																																										
2.F(a),(1-6) ODS Substitutes - HFCs																																										
2.F(a),(1-6) ODS Substitutes - PFCs																																										
2.F(a),(1-6) ODS Substitutes - SF <sub>6</sub>																																										

Table G.2 (continued)  
Key categories<sup>a</sup>: base year<sup>b</sup>

Source categories	Australia	Austria	Belarus	Belgium	Bulgaria	Canada	Croatia	Czech Republic	Denmark	Estonia	European Community	Finland	France	Germany	Greece	Hungary	Iceland	Ireland	Italy	Japan	Latvia	Liechtenstein	Lithuania	Luxembourg	Monaco	Netherlands	New Zealand	Norway	Poland	Portugal	Romania	Russian Federation	Slovakia	Slovenia	Spain	Sweden	Switzerland	Turkey	Ukraine	United Kingdom	United States	
<b>Industrial Processes</b>																																										
2.F(a).7 Semiconductors - HFCs																																										
2.F(a).7 Semiconductors - PFCs																																										
2.F(a).7 Semiconductors - SF <sub>6</sub>																																										
2.F(a).8 Electrical Equipment - HFCs																																										
2.F(a).8 Electrical Equipment - PFCs																																										
2.F(a).8 Electrical Equipment - SF <sub>6</sub>																																										
2.F(a).9 Other - HFCs																																										
2.F(a).9 Other - PFCs																																										
2.F(a).9 Other - SF <sub>6</sub>																																										
2.F(p) Potential Emissions - HFCs																																										
2.F(p) Potential Emissions - PFCs																																										
2.F(p) Potential Emissions - SF <sub>6</sub>																																										
2.G Other - CO <sub>2</sub>																																										
2.G Other - CH <sub>4</sub>																																										
2.G Other - N <sub>2</sub> O																																										
2.G Other - HFCs																																										
2.G Other - PFCs																																										
2.G Other - SF <sub>6</sub>																																										
<b>Solvent and other product use</b>																																										
3 Solvent and Other Product Use - CO <sub>2</sub>																																										
3 Solvent and Other Product Use - CH <sub>4</sub>																																										
3 Solvent and Other Product Use - N <sub>2</sub> O																																										
<b>Agriculture</b>																																										
4.A Enteric Fermentation - CO <sub>2</sub>																																										
4.A Enteric Fermentation - CH <sub>4</sub>	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	
4.A Enteric Fermentation - N <sub>2</sub> O																																										
4.B Manure Management - CO <sub>2</sub>																																										
4.B Manure Management - CH <sub>4</sub>	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	
4.B Manure Management - N <sub>2</sub> O	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	
4.C Rice Cultivation - CO <sub>2</sub>																																										
4.C Rice Cultivation - CH <sub>4</sub>																																										
4.C Rice Cultivation - N <sub>2</sub> O																																										
4.D.1 Direct Soil Emissions - CO <sub>2</sub>																																										
4.D.1 Direct Soil Emissions - CH <sub>4</sub>																																										
4.D.1 Direct Soil Emissions - N <sub>2</sub> O	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	
4.D.2 Pasture, Range and Paddock Manure - CO <sub>2</sub>																																										
4.D.2 Pasture, Range and Paddock Manure - CH <sub>4</sub>																																										
4.D.2 Pasture, Range and Paddock Manure - N <sub>2</sub> O	L			L	L	L	L				L		L		L		L				L					L	L		L	L					L			L	L	L		
4.D.3 Indirect Emissions - CO <sub>2</sub>																																										
4.D.3 Indirect Emissions - CH <sub>4</sub>																																										
4.D.3 Indirect Emissions - N <sub>2</sub> O	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	
4.D.4 Other - CO <sub>2</sub>																																										
4.D.4 Other - CH <sub>4</sub>																																										
4.D.4 Other - N <sub>2</sub> O																																										
4.E Prescribed Burning of Savannas - CO <sub>2</sub>																																										
4.E Prescribed Burning of Savannas - CH <sub>4</sub>	L																																									
4.E Prescribed Burning of Savannas - N <sub>2</sub> O																																										
4.F Field Burning of Agricultural Residues - CO <sub>2</sub>																																										
4.F Field Burning of Agricultural Residues - CH <sub>4</sub>																																										
4.F Field Burning of Agricultural Residues - N <sub>2</sub> O																																										
4.G Other - CO <sub>2</sub>																																										
4.G Other - CH <sub>4</sub>																																										
4.G Other - N <sub>2</sub> O																																										

Table G.2 (continued)

Key categories<sup>a</sup>: base year<sup>b</sup>

Source categories	Australia	Austria	Belarus	Belgium	Bulgaria	Canada	Croatia	Czech Republic	Denmark	Estonia	European Community	Finland	France	Germany	Greece	Hungary	Iceland	Ireland	Italy	Japan	Latvia	Liechtenstein	Lithuania	Luxembourg	Monaco	Netherlands	New Zealand	Norway	Poland	Portugal	Romania	Russian Federation	Slovakia	Slovenia	Spain	Sweden	Switzerland	Turkey	Ukraine	United Kingdom	United States		
LULUCF																																											
5.A.1 Forest Land remaining Forest Land - CO <sub>2</sub>	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	
5.A.1 Forest Land remaining Forest Land - CH <sub>4</sub>																																											
5.A.1 Forest Land remaining Forest Land - N <sub>2</sub> O																																											
5.A.2 Land converted to Forest Land - CO <sub>2</sub>																																											
5.A.2 Land converted to Forest Land - CH <sub>4</sub>																																											
5.A.2 Land converted to Forest Land - N <sub>2</sub> O																																											
5.B.1 Cropland remaining Cropland - CO <sub>2</sub>		L	L		L			L	L		L	L		L	L				L			L					L	L	L		L			L		L		L		L		L	
5.B.1 Cropland remaining Cropland - CH <sub>4</sub>																																											
5.B.1 Cropland remaining Cropland - N <sub>2</sub> O																																											
5.B.2 Land converted to Cropland - CO <sub>2</sub>	L		L			L					L		L																													L	
5.B.2 Land converted to Cropland - CH <sub>4</sub>																																											
5.B.2 Land converted to Cropland - N <sub>2</sub> O																																											
5.C.1 Grassland remaining grassland - CO <sub>2</sub>				L							L	L		L			L	L				L				L		L	L				L			L							
5.C.1 Grassland remaining grassland - CH <sub>4</sub>																																											
5.C.1 Grassland remaining grassland - N <sub>2</sub> O																																											
5.C.2 Land converted to Grassland - CO <sub>2</sub>	L	L									L		L														L												L			L	
5.C.2 Land converted to Grassland - CH <sub>4</sub>	L																																										
5.C.2 Land converted to Grassland - N <sub>2</sub> O																																											
5.D.1 Wetlands remaining Wetlands - CO <sub>2</sub>																	L																										
5.D.1 Wetlands remaining Wetlands - CH <sub>4</sub>																																											
5.D.1 Wetlands remaining Wetlands - N <sub>2</sub> O																																											
5.D.2 Land converted to Wetlands - CO <sub>2</sub>						L																																					
5.D.2 Land converted to Wetlands - CH <sub>4</sub>																																											
5.D.2 Land converted to Wetlands - N <sub>2</sub> O																																											
5.E Settlements - CO <sub>2</sub>							L						L									L								L								L			L	L	
5.E Settlements - CH <sub>4</sub>																																											
5.E Settlements - N <sub>2</sub> O																																											
5.F Other Land - CO <sub>2</sub>								L																																			
5.F Other Land - CH <sub>4</sub>																																											
5.F Other Land - N <sub>2</sub> O																																											
5.G Other - CO <sub>2</sub>	L																							L																		L	
5.G Other - CH <sub>4</sub>																																											
5.G Other - N <sub>2</sub> O																																											
Waste																																											
6.A Solid Waste Disposal on Land - CO <sub>2</sub>																																											
6.A Solid Waste Disposal on Land - CH <sub>4</sub>	L	L	L	L	L	L		L	L	L	L	L	L	L	L	L	L	L	L	L		L				L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
6.A Solid Waste Disposal on Land - N <sub>2</sub> O																																											
6.B Waste-Water Handling - CO <sub>2</sub>																																											
6.B Waste-Water Handling - CH <sub>4</sub>	L				L										L	L			L		L		L							L		L	L	L	L								
6.B Waste-Water Handling - N <sub>2</sub> O																																											
6.C Waste Incineration - CO <sub>2</sub>																				L											L												
6.C Waste Incineration - CH <sub>4</sub>																																											
6.C Waste Incineration - N <sub>2</sub> O																																											
6.D Other - CO <sub>2</sub>																																											
6.D Other - CH <sub>4</sub>																																											
6.D Other - N <sub>2</sub> O																																											
Other																																											
7 Other - CH <sub>4</sub>																																											
7 Other - CO <sub>2</sub>									L								L																										
7 Other - N <sub>2</sub> O																																											
7(a) Other - F-Gases																																											
7(p) Other - F-Gases																																											

<sup>a</sup> Source: UNFCCC secretariat key category analysis<sup>b</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table G.3**  
**Key categories<sup>a</sup>: 2004**

[illegible]

**Table G.3 (continued)**  
**Key categories<sup>a</sup>: 2004**

Source categories	Emissions of greenhouse gases from land use, land-use change, and forestry (LULUCF)																																										
	Australia	Austria	Belarus	Belgium	Bulgaria	Canada	Croatia	Czech Republic	Denmark	Estonia	European Community	Finland	France	Germany	Greece	Hungary	Iceland	Ireland	Italy	Japan	Latvia	Liechtenstein	Lithuania	Luxembourg	Monaco	Netherlands	New Zealand	Norway	Poland	Portugal	Romania	Russian Federation	Slovakia	Slovenia	Spain	Sweden	Switzerland	Turkey	Ukraine	United Kingdom	United States		
Industrial Processes																																											
2.A.5 Asphalt Roofing - CO <sub>2</sub>																																											
2.A.5 Asphalt Roofing - CH <sub>4</sub>																																											
2.A.5 Asphalt Roofing - N <sub>2</sub> O																																											
2.A.6 Road Paving with Asphalt - CO <sub>2</sub>																																											
2.A.6 Road Paving with Asphalt - CH <sub>4</sub>																																											
2.A.6 Road Paving with Asphalt - N <sub>2</sub> O																																											
2.A.7 Other - CO <sub>2</sub>		L, T																																		L, T							
2.A.7 Other - CH <sub>4</sub>																																											
2.A.7 Other - N <sub>2</sub> O																																											
2.B.1 Ammonia Production - CO <sub>2</sub>		L		L, T		L, T	L	L			L		T	T			L, T		T	T				L, T			L		L		L, T	L, T	L, T	L			T				L, T		T
2.B.1 Ammonia Production - CH <sub>4</sub>																																											
2.B.1 Ammonia Production - N <sub>2</sub> O																																											
2.B.3 Adipic Acid Production - CO <sub>2</sub>																																											
2.B.3 Adipic Acid Production - CH <sub>4</sub>																																											
2.B.3 Adipic Acid Production - N <sub>2</sub> O							T				T		T	T																												T	T
2.B.2 Nitric Acid Production - CO <sub>2</sub>																																											
2.B.2 Nitric Acid Production - CH <sub>4</sub>																																											
2.B.2 Nitric Acid Production - N <sub>2</sub> O		T		L, T	L, T		L, T	L	L, T		L, T	L, T	L, T	L, T	T		L, T		T					L, T			L, T		L, T	L, T	L, T</												

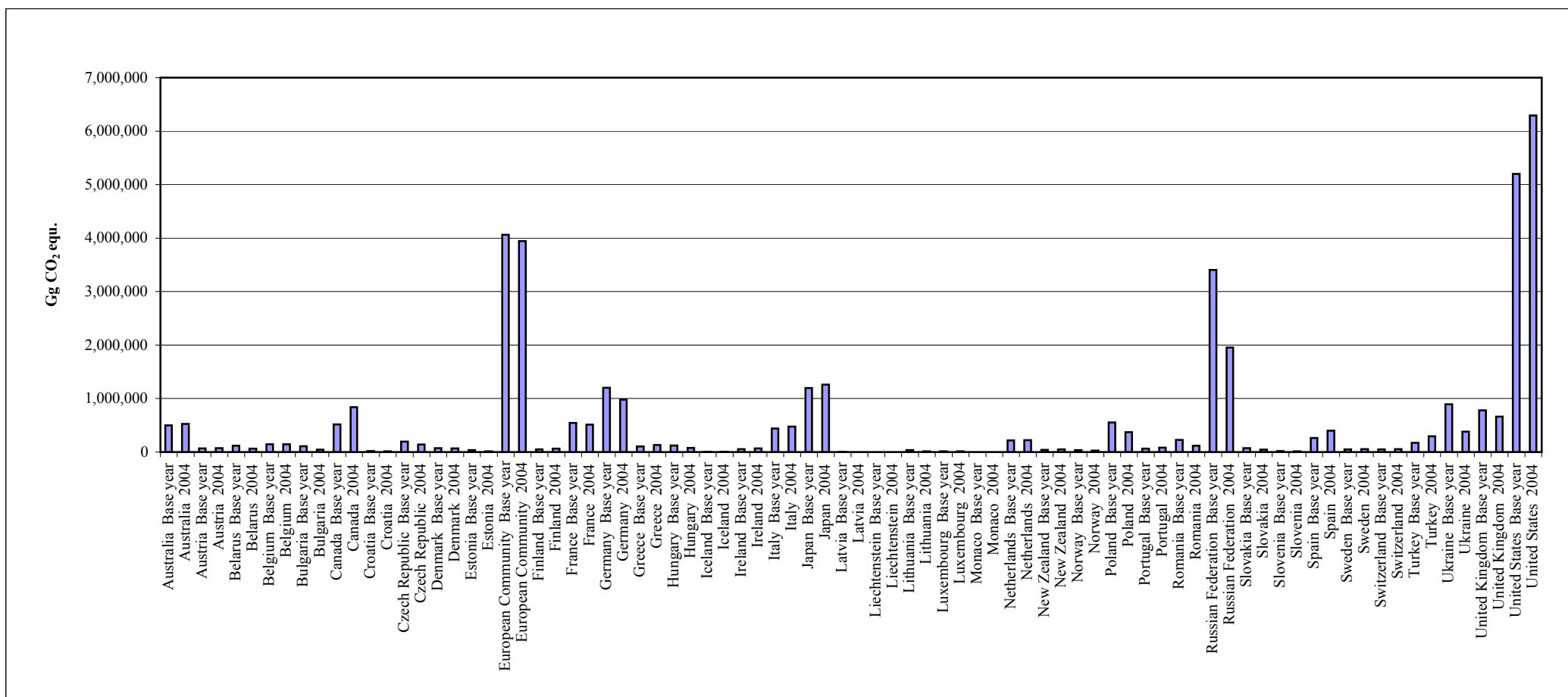
**Key categories<sup>a</sup>: 2004**[illegible]

**Key categories<sup>a</sup>: 2004**

<sup>a</sup> Source: UNFCCC secretariat key category analysis

**Figure G.1**

**Total GHG emissions (including LULUCF): base year<sup>a</sup> and 2004 (Gg CO<sub>2</sub> equivalent)**

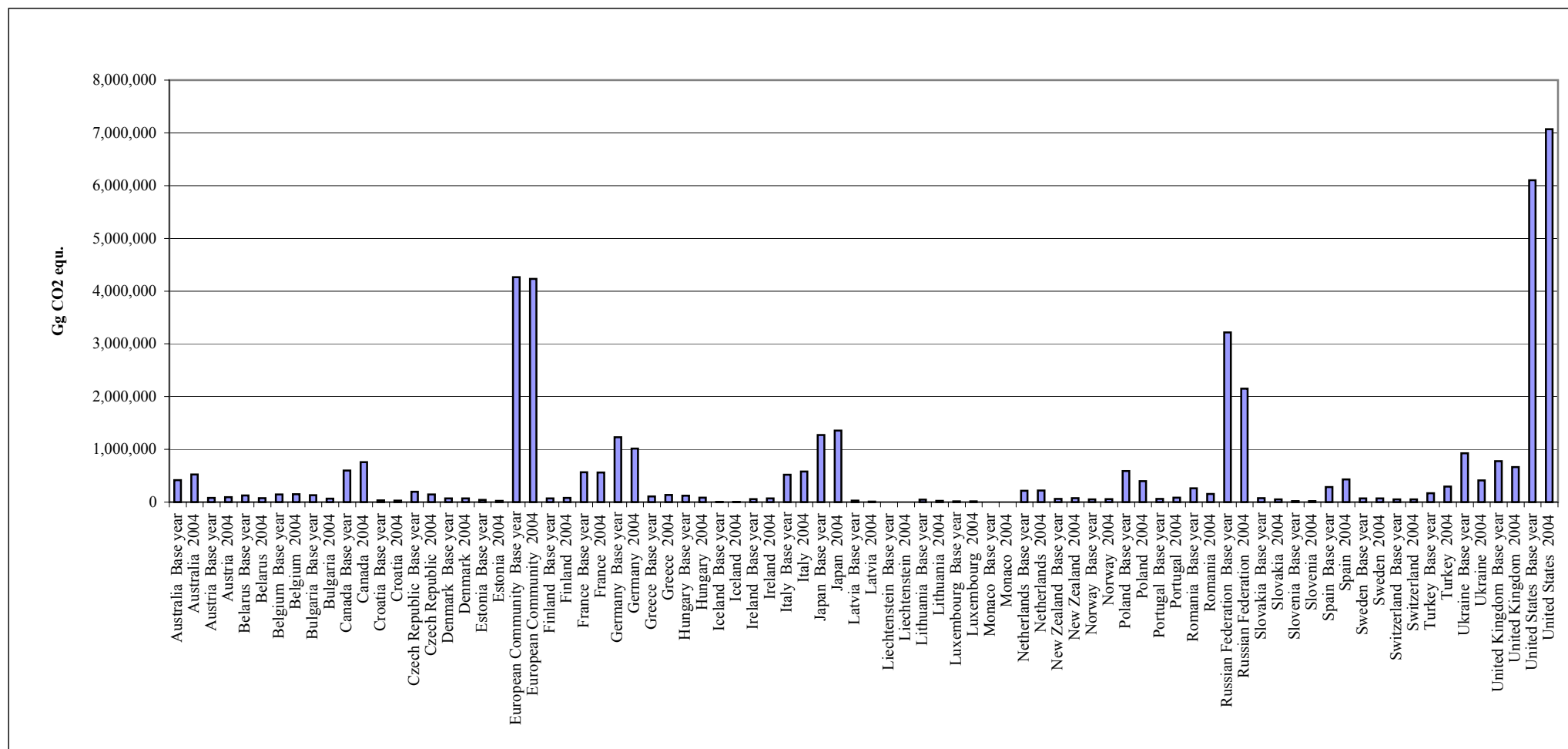


Note: This table includes only those Annex I Parties which reported LULUCF emissions/removals in accordance with decision 13/CP.9. Thus data for Estonia (base year), and for Turkey (base year and 2004) are not included in this graph.

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual inventories of Annex I Parties the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Figure G.2**

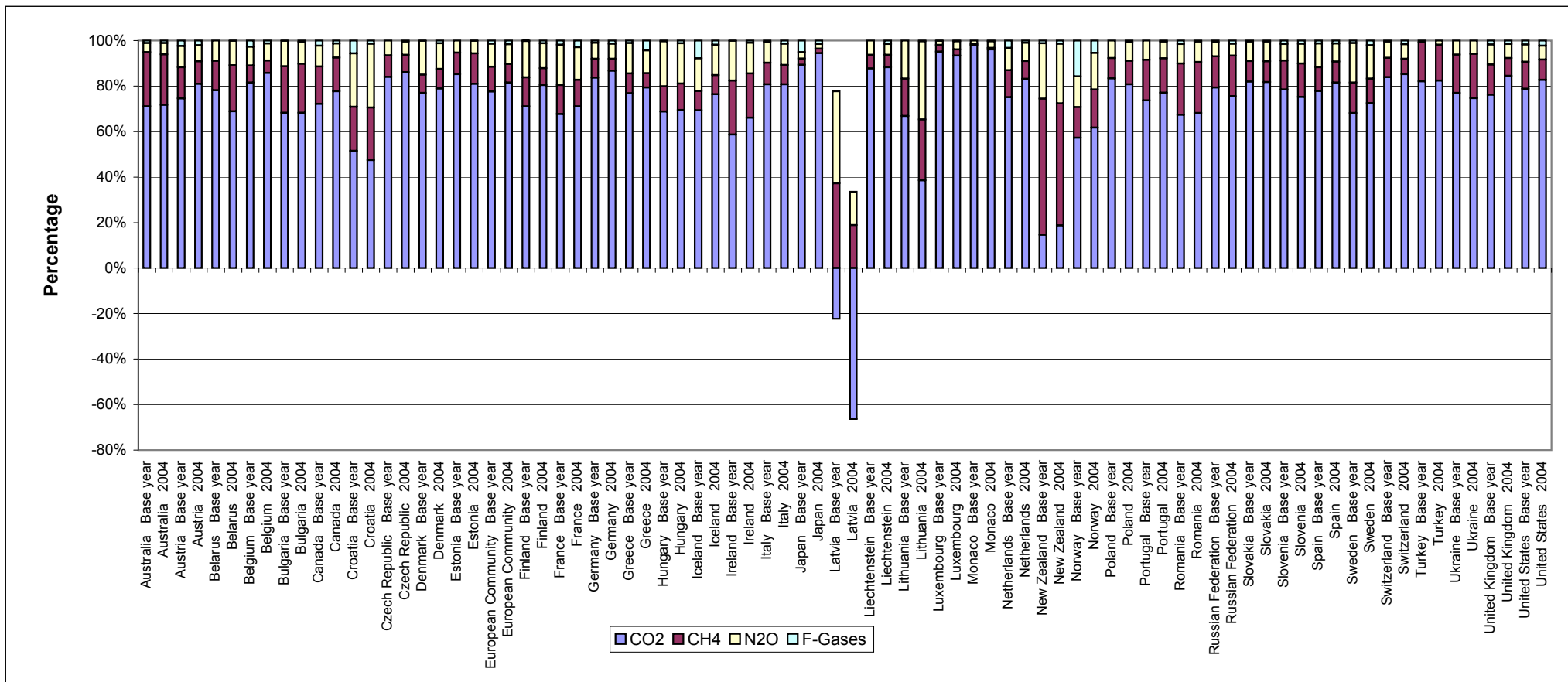
**Total GHG emissions (excluding LULUCF): base year<sup>a</sup> and 2004 (Gg CO<sub>2</sub> equivalent)**



<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual inventories of Annex I Parties the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Figure G.3**

**GHG emissions by gas (including LULUCF): base year<sup>a</sup> and 2004 (%)**

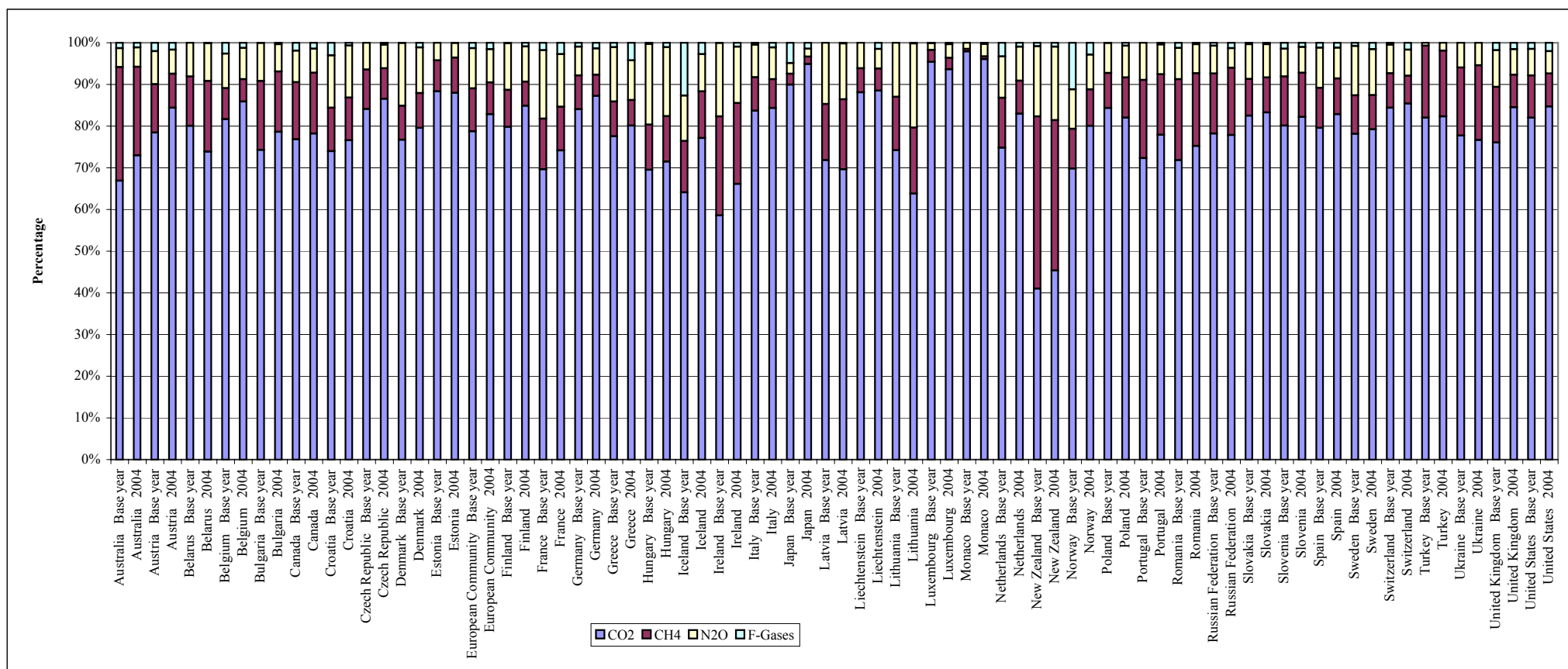


Note: This table includes only those Annex I Parties which reported LULUCF emissions/removals in accordance with decision 13/CP.9. Thus data for Estonia (base year), and for Turkey (base year and 2004) are not included in this graph.

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual inventories of Annex I Parties the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Figure G.4**

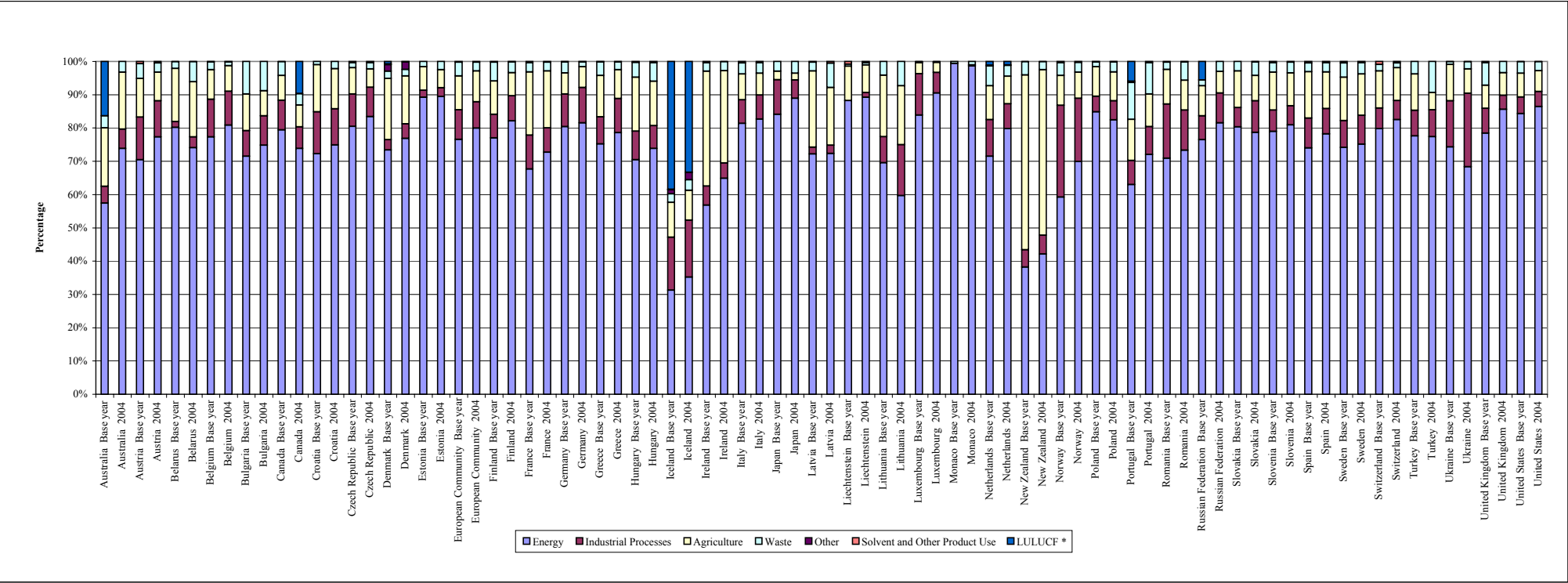
**GHG emissions by gas (excluding LULUCF): base year<sup>a</sup> and 2004 (%)**



<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual inventories of Annex I Parties the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

Figure G.5

GHG emissions by sector: base year<sup>a</sup> and 2004 (%)



\*) For the LULUCF sector, the graph contains data only for those Parties where the LULUCF sector is a net source of GHG emissions.

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual inventories of Annex I Parties the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table G.4****Reported recalculations by year for total GHG emissions excluding LULUCF (%)**

	Base year <sup>a</sup>	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
<b>Australia</b>	-1.13	-1.13	-1.18	-1.26	-1.30	-1.33	-1.24	-1.39	-1.21	-1.29	-1.29	-1.27	-1.51	-1.36	-0.72
<b>Austria</b>	0.45	0.45	0.42	0.31	0.12	0.09	0.09	0.40	0.12	0.11	0.49	0.24	0.32	0.48	1.05
<b>Belarus</b>	-2.55	-2.55	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	106.24	103.61	-4.64
<b>Belgium</b>	0.07	0.07	0.08	2.15	0.03	-0.20	-0.03	-0.08	-0.10	0.09	0.40	-0.19	0.19	-0.18	0.12
<b>Bulgaria</b>	-4.38	-4.51	-4.87	-5.24	-5.01	-4.99	-4.84	-4.19	-36.99	-40.65	-2.90	-3.23	2.38	-3.77	4.61
<b>Canada</b>	0.51	0.51	0.58	0.58	0.39	0.22	0.36	0.47	0.72	0.61	0.39	0.68	0.96	0.92	1.83
<b>Croatia</b>	19.09	19.09	16.15	12.97	12.09	13.49	11.42	11.84	11.06	11.84	9.80	10.94	-2.81	-3.03	-2.44
<b>Czech Republic</b>	2.48	2.48	100.00	1.58	100.00	1.17	1.08	100.00	100.00	1.34	1.33	1.28	1.25	1.12	0.54
<b>Denmark</b>	-1.05	-1.05	-1.07	-1.21	-0.90	-1.69	-1.31	-1.10	-1.17	-1.06	-1.14	-1.20	-1.04	-1.14	-0.88
<b>Estonia</b>															
<b>European Community</b>	6.92	6.92	6.34	6.04	5.88	5.72	5.13	4.80	4.70	4.36	4.41	4.26	3.91	3.83	3.84
<b>Finland</b>	1.02	1.02	-0.32	1.08	2.32	0.70	-0.06	0.53	0.03	-0.80	-0.98	-0.17	-0.52	0.49	-0.04
<b>France</b>	-0.19	-0.19	-0.52	-0.29	-0.16	-0.31	-0.15	0.12	-0.13	0.13	0.51	0.28	-0.30	0.47	1.05
<b>Germany</b>	18.23	18.23	16.87	16.01	15.23	14.98	14.23	15.02	14.79	15.62	16.16	15.73	15.90	15.87	
<b>Greece</b>	-0.62	-0.62	-0.79	-0.49	-0.99	-1.13	-1.13	-1.02	-0.94	-0.98	-0.54	-0.43	-0.22	-0.40	-0.26
<b>Hungary</b>	0.75	0.72	0.62	0.76	0.87	1.04	0.99	0.98	0.98	0.49	0.49	1.06	0.92	0.96	1.34
<b>Iceland</b>	2.24	2.24	2.24	2.10	1.87	1.50	0.99	0.77	0.50	4.48	5.12	11.61	16.22	18.28	17.99
<b>Ireland</b>	3.38	3.38	1.41	1.01	1.34	1.46	1.28	1.55	1.41	1.62	0.71	-0.35	-0.27	-0.58	1.19
<b>Italy</b>	1.61	1.61	1.59	1.80	1.67	1.82	0.96	1.22	1.23	1.37	0.91	0.44	0.72	1.04	1.06
<b>Japan</b>	-10.93	-10.93	-10.85	-10.57	-10.50	-9.50	-8.96	-10.19	-7.76	-2.48	-4.75	-1.91	-1.31	-1.04	-1.39
<b>Latvia</b>	2.14	2.14	-0.92	1.78	1.73	-7.09	-1.25	-0.33	-1.32	0.13	1.06	-0.17	-0.73	-0.44	1.64
<b>Liechtenstein</b>	108.66	108.66									260.67				37.11
<b>Lithuania</b>	30.93	30.93	100.00	205.58	208.03	186.56	123.68	129.76	121.50	18.73	100.00	100.00	11.71	23.12	24.94
<b>Luxembourg</b>															
<b>Monaco</b>															
<b>Netherlands</b>	0.46	0.46	0.52	0.43	0.53	0.45	0.27	-0.02	0.55	0.49	0.25	0.11	0.24	0.62	0.35
<b>New Zealand</b>	0.60	0.60	0.27	0.77	0.29	0.53	0.41	0.89	0.79	1.11	0.87	0.89	0.61	0.53	0.35
<b>Norway</b>	1.45	1.45	0.23	1.22	1.32	1.75	1.95	1.32	0.94	1.26	1.67	1.18	0.82	2.16	0.71
<b>Poland</b>		100.00	100.00	100.00	100.00	100.00	162,178.86	148,796.92	124,026.96	115,913.55	115,052.84	5.16	5.22	4.58	4.95
<b>Portugal</b>	0.55	0.55	1.00	1.04	1.04	1.61	1.86	2.02	2.21	2.08	1.85	2.39	2.48	2.61	2.09
<b>Romania</b>	-1.07	-1.23	-0.03	-0.06	0.27	0.92	1.10	1.13	0.47	2.01	2.91	3.47	4.28	4.95	4.00
<b>Russian Federation</b>															
<b>Slovakia</b>	0.47	0.47	0.70	0.73	0.75	0.68	0.55	0.71	0.38	0.09	0.14	2.27	1.92	2.02	2.42
<b>Slovenia</b>	-0.11	-0.85	-0.30	-0.79	-0.49	-0.17	-0.63	-0.84	-1.47	-1.42	-1.80	-1.50	-1.41	-1.20	-1.28
<b>Spain</b>	1.13	1.13	1.00	0.68	0.79	0.93	0.96	1.23	1.08	1.20	1.23	0.93	1.32	0.83	1.43
<b>Sweden</b>	-0.03	-0.03	0.21	0.24	0.04	0.08	0.43	0.28	0.06	-0.17	-0.17	1.44	0.92	0.87	0.57
<b>Switzerland</b>	0.97	0.97	8.32	8.02	7.92	8.35	7.82	7.65	7.85	8.06	8.23	8.49	1.19	8.40	8.25
<b>Turkey</b>															
<b>Ukraine</b>	-6.75	-6.75	-16.60	-18.26	-18.62	-10.12	-14.28	-18.10	-16.85	-15.16	-14.67	-15.52	-18.33	-18.40	-21.10
<b>United Kingdom</b>	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
<b>United States</b>	17.49	17.49	17.61	18.14	18.61	17.55	18.28	18.15	17.59	16.75	16.34	15.57	16.39	15.75	15.31

Note: The values included in this table are the values reported by Parties in CRF table 8(a). Due to technical reasons the values shown in the table might not correctly reflect the actual recalculations made by Parties

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual inventories of Annex I Parties the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table G.5a****Reported recalculations by gas: base year and 2003 (%)**

	Energy						Industrial Processes						Solvent and Other Product Use			
	CO <sub>2</sub>		CH <sub>4</sub>		N <sub>2</sub> O		CO <sub>2</sub>		CH <sub>4</sub>		N <sub>2</sub> O		CO <sub>2</sub>		N <sub>2</sub> O	
	Base year <sup>a</sup>	2003	Base year <sup>a</sup>	2003	Base year <sup>a</sup>	2003	Base year <sup>a</sup>	2003	Base year <sup>a</sup>	2003	Base year <sup>a</sup>	2003	Base year <sup>a</sup>	2003	Base year <sup>a</sup>	2003
Australia	0.13	0.29	-3.30	-0.22	-0.29	4.42	0.14	1.12	0.00	0.00	0.00	0.00				
Austria	0.97	1.91	13.27	38.75	13.78	3.28	1.58	0.65	8.96	100.66	0	0	0	-1.29	0	0
Belarus	-0.33	-2.46	-33.16	-38.52	-0.17	-5.34	-1.94	-1.25	-0.34	-1.94	0.72	-0.17			0	-1.62
Belgium	-0.08	0.41	4.18	14.87	-16.64	-16.17	1.93	3.91	-100.00	-100.00	0.00	2.08			-2.82	-52.55
Bulgaria	0.00	10.23	0.37	0.16	-87.83	-85.40	-3.44	7.98	0	-5.03	0	0				
Canada	0.45	1.95	14.32	25.43	0.40	0.47	-4.40	-8.76			0	0.01			0	0.10
Croatia	36.80	-0.72	-1.06	-0.02	29.43	-0.43	-0.02	-0.76	-50.00	-50.00	0	0				
Czech Republic	-8.01	-0.16	2.36	1.88	0.44	-0.07	423.66	13.99	17.66	16.42	0	0	3.83	16.96	5.33	0
Denmark	-0.05	0.24	-25.38	-11.50	-27.92	-18.50	3.18	5.63			0	0	-56.80	-47.84		
Estonia																
European Community	5.70	3.72	-4.93	8.09	-1.22	-4.55	62.98	58.18	-24.50	-36.00	0.29	1.95	-3.94	-3.16	3.96	-22.19
Finland	-1.84	-2.54	-31.50	-32.49	20.55	1.43	146.41	158.62	0.00	-26.22	3.78	1.81	100.00	100.00	0.00	0.78
France	-0.57	0.78	0.86	0.66	-0.21	0.60	-0.06	0.54	0.00	0	0.00	0.00	-0.30	2.54	0.00	0.44
Germany	19.65	14.16	-14.30	22.06	-9.88	-21.55	222.89	233.44	-99.27	-99.69	1.25	3.46			8.67	-38.92
Greece	0.18	0.20	-0.52	-5.70	-2.42	0.36	2.54	-0.41	100.00	100.00	0	-7.70	-0.36	-0.23		
Hungary	0.53	1.54	0.01	-0.12	0.88	-4.34	7.65	12.60	0	0	0	0	0.00	0	0	0
Iceland	0	0	0.00	0.02	0.00	-0.02	0	120.70	0	0	0				0	0
Ireland	2.04	0.28	1.51	314.00	2.65	0.16	8.51	-0.59			0		-11.62	-31.66		
Italy	0.82	-0.02	7.73	10.10	-0.03	-0.01	3.82	-2.85	0	-0.32	-1.07	7.02	-8.53	-0.13	0	0
Japan	-13.05	-1.90	3.58	8.38	3.34	-17.80	9.31	8.89	5.86	14.70	11.48	4.28			0	0
Latvia	-0.16	1.98	-4.02	-1.40	-10.04	-0.63	4.19	-2.06	100.00	100.00			-47.31	-55.80		0
Liechtenstein	129.61	37.84	66.82	33.00	-73.09	-66.30							100.00	100.00	100.00	100.00
Lithuania	44.16	12.89	-23.91	-32.12	79.93	0.93	35.88	36.53	-13.14	0.21	77.72	218.40				
Luxembourg																
Monaco																
Netherlands	1.01	0.89	-14.30	-16.22	-5.96	-7.19	-5.20	-3.00	0.00	1.55	0	0	0	-12.45	0	0
New Zealand	0.24	-0.07	0.01	-0.16	4.63	3.78	0.16	0.13	-6.61	-5.29					0	0
Norway	4.55	1.69	4.33	10.34	-2.57	-55.60	1.70	9.24	-35.71	-28.17	3.54	4.17	0.00	0	0.00	0
Poland		2.07		-0.65		0.04		0.75		0.00		-0.03		0.01		0.03
Portugal	-0.63	0.49	3.18	58.58	1.47	4.66	0.93	0.79								
Romania	3.16	0.24	0.01	0.05	-0.01	4.47	-1.64	11.13			-57.23	60.21				
Russian Federation																
Slovakia	100.00	4.16	100.00	0.40	100.00	2.63	100.00	1.82			100.00					100.00
Slovenia	1.56	-0.58	5.62	5.69	0.53	-0.46	-2.10	-3.24	-0.29	0.00		2.74	-100.00	-100.00		
Spain	-0.10	0.43	2.11	-4.30	1.18	1.15	1.15	2.52					6.49	-5.80		
Sweden	0.14	0.82	-24.34	-20.20	-10.65	-23.31	3.50	-1.15	18.81	2.90	3.12	-0.02	-24.37	-18.61	0	0.00
Switzerland	2.98	12.04	19.14	-15.96	18.94	47.02	-0.34	5.10	0.23	-24.12	76.15	68.78	100.00	100.00	1.71	-57.73
Turkey																
Ukraine	-13.19	-12.63	-34.40	-67.17	-0.84	13.66	89.73	91.94	1,208.15	207.48	915.90	765.51			100.00	100.00
United Kingdom	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00				
United States	22.14	18.47	6.09	5.02	7.22	13.14	0.96	0.32	0	0	0	4.78			0	0

Note: The values included in this table are the values reported by Parties in CRF table 8(a). Due to technical reasons the values shown in the table might not correctly reflect the actual recalculations made by Parties.

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual inventories of Annex I Parties the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table G.5b****Reported recalculations by gas: base year and 2003 (%)**

	Agriculture				LULUCF <sup>b</sup>						Waste					
	CH <sub>4</sub>		N <sub>2</sub> O		CO <sub>2</sub>		CH <sub>4</sub>		N <sub>2</sub> O		CO <sub>2</sub>		CH <sub>4</sub>		N <sub>2</sub> O	
	Base year <sup>a</sup>	2003	Base year <sup>a</sup>	2003	Base year <sup>a</sup>	2003	Base year <sup>a</sup>	2003	Base year <sup>a</sup>	2003	Base year <sup>a</sup>	2003	Base year <sup>a</sup>	2003	Base year <sup>a</sup>	2003
Australia	-4.88	-5.34	1.49	0.39							73.90	63.31	-4.96	-10.17	0	0
Austria	4.96	4.86	11.36	13.80							29.88	8.81	-21.47	-28.40	0.08	2.63
Belarus	-1.41	0.00	-16.96	-23.96									0	21.09	0.41	0
Belgium	1.16	-2.13	3.22	1.39							-0.54	32.01	-1.71	-23.58	-2.81	-11.48
Bulgaria	0.08	0.07	11.68	10.11									-19.49	0	0	0.60
Canada	-3.66	-1.26	-21.66	-25.74							5.19	-33.79	25.16	13.66	7.67	-1.07
Croatia	-0.28	4.92	-0.02	-0.34									-72.11	-61.41	-44.78	-1.07
Czech Republic	37.10	35.33	16.54	-8.04								0	0	0	-19.52	0
Denmark	-6.76	-13.11	0.50	0.28								100.00	-4.84	4.72	-0.01	-17.93
Estonia																
European Community	-13.99	-12.07	1.65	2.94							-15.99	-7.69	36.65	35.81	2.73	5.54
Finland	3.16	6.04	1.02	4.48									-0.12	-0.22	56.10	89.32
France	-0.03	-0.08	0.13	0.71							0.01	22.87	0.08	0.19	6.61	16.03
Germany	-50.88	-50.05	0.27	2.92									13.31	16.57	1.09	10.18
Greece	0.15	0.01	0	0							-99.28	-99.66	-17.75	-34.37	-0.68	-2.42
Hungary	0.00	0.01	0	0							0	0	1.36	0	0.00	0
Iceland	0	0	0	0							0	0	0.28	-25.52	603.87	2485.83
Ireland	10.76	6.87	-3.09	-4.22									9.14	-16.03	-0.48	0.00
Italy	-3.93	-3.35	2.92	-1.60							0.61	28.66	30.20	57.86	0.00	0.40
Japan	14.94	16.12	-38.39	-39.09							-24.86	-6.20	118.53	67.90	12.83	12.43
Latvia	0	0.01	27.54	29.39								-98.75	-18.26	-17.57	0	0
Liechtenstein	-18.09	-15.58	158.13	109.16									100.00	100.00	100.00	100.00
Lithuania	-1.10	-0.10	52.12	207.59							100.00	100.00	-44.70	-2.81	100.00	100.00
Luxembourg																
Monaco																
Netherlands	1.97	3.38	-0.54	0.73									0.00	1.03	0	10.15
New Zealand	1.32	0.84	0.13	-3.36									0.07	10.97	0	0
Norway	11.48	13.40	-14.99	-16.13							-59.20	-11.26	-25.64	-28.29	0.00	0.00
Poland		0.86		1.43								0.11		-0.04		0.08
Portugal	-8.02	5.41	-15.30	-15.31									38.20	25.28	-35.92	-35.69
Romania												100.00	-0.82	58.58	102.72	103.36
Russian Federation																
Slovakia	100.00	0	100.00	0								0.00	100.00	0.15	100.00	0.00
Slovenia	25.31	39.20	-23.65	-18.80									-23.96	-25.22	0	0.00
Spain	-4.03	-5.12	18.72	23.14							0.00	8.10	6.25	3.94	8.41	2.61
Sweden	-0.37	-0.79	-3.20	-1.88							0.00	0	12.54	19.98	0.00	0
Switzerland	-5.67	-3.24	0.14	0.16							-95.09	-98.68	1.71	22.23	290.73	169.23
Turkey																
Ukraine	26.32	-5.85	31.28	6.96							-100.00	-100.00	-69.71	-63.85	46.96	-1.86
United Kingdom	100.00	100.00	100.00	100.00							100.00	100.00	100.00	100.00	100.00	100.00
United States	-0.02	0.08	4.87	2.09									0.00	6.59	-0.89	-0.33

Note: The values included in this table are the values reported by Parties in CRF table 8(a). Due to technical reasons the values shown in the table might not correctly reflect the actual recalculations made by Parties.

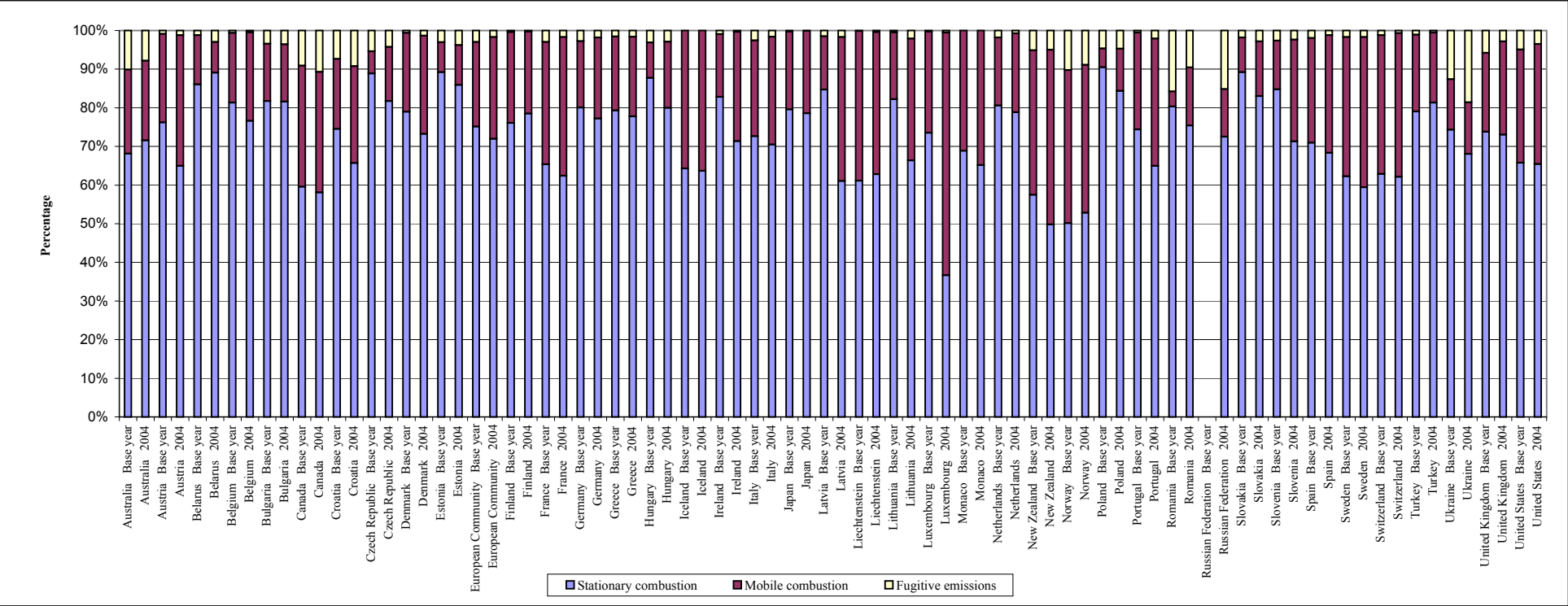
<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual inventories of Annex I Parties the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

<sup>b</sup> Due to technical reasons information on recalculations for the LULUCF sector is not included in this year's synthesis and assessment report

Energy

Figure 1.1

Contribution of subsectors to total GHG emissions in the Energy sector<sup>a</sup>



<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

Table 1.1

CO<sub>2</sub> emissions from fuel combustion: reference approach and sectoral approach

	Reference approach (Gg CO <sub>2</sub> )	Sectoral approach	Difference (%)	Explanation of the differences as reported in table 1.A(c) of the CRF
Australia Base year	250,678	254,154	-1.37	1.AA Fuel Combustion - Sectoral Approach: Estimates are based on Gross Calorific Values (GCV) 1.AC Difference - Reference and Sectoral Approach: Three main reasons there is a difference between the Reference Approach and the National Approach as displayed in the above table and Table 1A(b): 1) Partly an artefact caused by deficiencies in the design of Tables 1.A(b) and 1.A(d). The CRF does not allow for the subtraction of the energy content of the fuels whose carbon is sequestered. It only allows for the subtraction of the sequestered carbon and carbon emitted elsewhere, i.e. in other sectors. Therefore, the energy consumption reported using this method for the Reference Approach includes energy which is netted out of the national approach. The energy consumption for the Reference Approach and the National Approach will therefore never balance using the CRF tables in their current format. This explains why the extent of non-reconciliation is different for energy and for CO <sub>2</sub> 2) The large discrepancy for liquid fuels is caused by the unreliability of the Reference Approach figure, which in turn derives from the crude oil density values used to convert reported indigenous production and imports in volumetric units into energy units, as required by the CRF. 3) The defect described under point (1) also leads to slight discrepancies in both emission factors and oxidation factors between the two approaches for a number of individual fuel types.
Australia 2004	351,540	353,534	-0.56	
Austria Base year	56,722	53,942	5.15	
Austria 2004	71,832	68,605	4.70	1.AA Fuel Combustion - Sectoral Approach/2004: Usage of "NO" notation keys in table 1.A(a)s 1 to s4 : Energy statistics does not inquire all consumers but is limited to statistical samples. In the case that a statistical inquiry results in zero consumption of a specific sector and fuel group it is not always possible to decide if there occurs a consumption of a specific fuel category in a specific sector and year. However, as the energy statistics is based on a top down/bottom up approach it is assured that total national fuel consumption is equivalent to category 1A fuel consumption. Thus "NO" may be sometimes interpreted as "included elsewhere".
Belarus Base year	99,939	100,071	-0.13	
Belarus 2004	53,528	53,032	0.94	
Belgium Base year	109,150	110,044	-0.81	
Belgium 2004	113,222	116,502	-2.82	
Bulgaria Base year <sup>a</sup>	91,159	90,726	0.48	
Bulgaria 2004	48,526	48,276	0.52	
Canada Base year	463,848	419,210	10.65	1.AC Difference - Reference and Sectoral Approach: Refer to section 3.5.1 and Annex 4 of the NIR for Reference and Sectoral Approach discussion and comparison. Note that there are discrepancies with the information as calculated and/or as displayed in the CRF Reporter and the CRF Excel tables for the total and percentage difference for energy consumption values between the SA & RA. Therefore the energy consumption total and percent difference information are not comparable. Refer to Annex 4 of the NIR for a discussion of SA & RA comparison.
Canada 2004	553,073	536,894	3.01	
Croatia Base year	20,994	20,569	2.07	1.AA Fuel Combustion - Sectoral Approach: CO <sub>2</sub> emissions from Biomass are excluded from Total Fuel Combustion 1.AC Difference - Reference and Sectoral Approach: The National approach is based on Sectoral approach recommended by IPCC methodology. The differences between Reference and National approach, in energy consumption and CO <sub>2</sub> emission from liquid and solid fuels, are relatively small and therefore acceptable.
Croatia 2004	20,723	19,657	5.42	The largest difference appears in Natural Gas. The reasons are large amount of Natural Gas in non-energy consumption in Petrochemical industry and NGL plant and losses of Natural Gas in pipelines.
Czech Republic Base year	162,922	146,808	10.98	1.AC Difference - Reference and Sectoral Approach: Detailed comparison of the results from Sectoral and Reference Approach (SA and RA), respectively, is given in NIR
Czech Republic 2004	125,671	115,617	8.70	
Denmark Base year	50,813	51,211	-0.78	1.AC Difference - Reference and Sectoral Approach: Non-energy use of fuels is not included in the Danish National Approach. Fuel consumption for non-energy is subtracted in Reference Approach to make results comparable. CO <sub>2</sub> emission from plastic part of municipal wastes is included in the Danish National Approach. CO <sub>2</sub> emission from the plastic part of municipal wastes is added in Reference Approach to make results comparable. (Other fuels of sources 1A1, 1A2 and 1A4)
Denmark 2004	50,735	51,485	-1.46	
Estonia Base year	37,080	38,078	-2.62	1.AA Fuel Combustion - Sectoral Approach: to the "T Other" in the Table 1.A(a)s 2 are included "Machinery", "Mining", "Production of transport equipment", "Production of non-ferrous mineral products", "Wood industry", "Construction", "Textile, leather and clothing industry" and Other industry.
Estonia 2004	17,313	18,656	-7.20	For Reference approach data on primary energy supply was used ("Energy Balance 2004" an annual proceeding of the Estonian Statistical Office) but for National (sectoral) approach data on final consumption in main sectors of economy was used. The difference between two approaches are caused by different data collection sources used in the Energy Balance.
European Community Base year	3,112,314	3,111,986	0.01	
European Community 2004	3,252,047	3,261,849	-0.30	
Finland Base year	55,062	53,087	3.72	
Finland 2004	66,202	64,967	1.90	1.AC Difference - Reference and Sectoral Approach: 1.AC Liquid Fuels: The relatively high difference in liquid fuels CO <sub>2</sub> emissions is due to statistical differences in national oil balance. 1.AC Solid Fuels: Allocation of Peat is different in SA ("Other fuels") compared to RA ("Solid fuels"). 1.AC Other Fuels: Allocation of Peat is different in SA ("Other fuels") compared to RA ("Solid fuels").
France Base year	358,502	362,763	-1.17	
France 2004	315,047	390,478	-100.00	
Germany Base year	825,986	948,297	-12.90	
Germany 2004	313,814,339	805,154	38,875.67	
Greece Base year	76,792	77,137	-0.45	
Greece 2004	100,842	102,000	-1.14	
Hungary Base year <sup>a</sup>	79,562	79,716	-0.19	
Hungary 2004	56,512	56,713	-0.35	
Iceland Base year	1,678	1,673	0.32	1.AA Fuel Combustion - Sectoral Approach: 1A2f Other manufacturing industries & construction includes: mineral industry, construction and other industries not included above.
Iceland 2004	1,889	1,886	0.16	1.AA Fuel Combustion - Sectoral Approach: 1A2f Other manufacturing industries & construction includes: mineral industry, construction and other industries not included above.
Ireland Base year	31,243	30,245	3.30	
Ireland 2004	43,219	42,617	1.41	
Italy Base year	396,177	402,078	-1.47	
Italy 2004	455,200	459,462	-0.93	
Japan Base year	1,047,599	1,059,076	-1.08	
Japan 2004	1,213,097	1,196,376	1.40	

**Table 1.1 (continued)**

**CO<sub>2</sub> emissions from fuel combustion: reference approach and sectoral approach**

	Reference approach (Gg CO <sub>2</sub> )	Sectoral approach	Difference (%)	Explanation of the differences as reported in table 1.A(c) of the CRF
<b>Latvia Base year</b>	18,547	18,017	2.94	1.AA Fuel Combustion - Sectoral Approach:Activity data are taken from Energy balance 2004 Central Statistical Bureau of Latvia and Annual Questionnaires prepared by Central Statistical Bureau for EUROSTAT.
<b>Latvia 2004</b>	6,921	7,191	-3.76	CO2 emission factors are taken from local expert research, other emission factors are taken from IPCC Guidelines 1.AB Fuel Combustion - Reference Approach:Activity data are taken from Energy balance 2004 Central Statistical Bureau of Latvia and Annual Questionnaires prepared by Central Statistical Bureau for EUROSTAT. 1.AC Difference - Reference and Sectoral Approach:Difference of the Reference approach over the National approach is due to statistical differences.
<b>Liechtenstein Base year</b>	NA, NO	202	-100.00	
<b>Liechtenstein 2004</b>	NA, NO	239	-100.00	
<b>Lithuania Base year</b>	32,870	32,672	0.61	
<b>Lithuania 2004</b>	12,347	11,947	3.35	
<b>Luxembourg Base year</b>	10,504	10,529	-0.24	1.AA Other Fuels:Though the use of this type of fuel is not estimated yet with precision, it is expected to be very low for this activity in Luxembourg. Hence, the emissions are estimated being equal or very close to zero.
<b>Luxembourg 2004</b>	10,907	11,211	-2.72	1.AB Fuel Combustion - Reference Approach:(1) Data for the Reference Approach are coming from Eurostat databases on energy. The data have been extracted from Eurostat's web site on 13 and 14 February 2007. (2) The unit for the Conversion factor is Eurostat's default since we use Eurostat's default factors. (3) The unit for the fraction of carbon oxidized is the default one too.
<b>Monaco Base year</b>	105.01	105.27	-0.25	Some little differences in the net calorific values and in the carbon emission factors between both methods.
<b>Monaco 2004</b>	101.22	100.16	1.06	
<b>Netherlands Base year</b>	155,641	149,980	3.77	1.AB Fuel Combustion - Reference Approach: NE; NOT INCLUDED IN ENERGY STATISTICS IE: Ethane INCLUDED IN LPG Petroleum Coke INCLUDED IN Other oil Refinery Feedstocks INCLUDED IN the other primary and secondary fuels Anthracite INCLUDED IN Other Bit. Coal Coking Coal INCLUDED IN Other Bit. Coal Lignite INCLUDED IN Other Bit. Coal 1.AC Difference - Reference and Sectoral Approach:In 1A but not in RA: 1A1a-other fuels: CO2 from fossil waste incineration (AVIs)
<b>Netherlands 2004</b>	173,679	173,219	0.27	Not in NA-1A: CO2 fossil fuel sources in sector 1B: 1.B.1.b. Solid Fuel Transformation 1.B.2.c Flaring CO2 fossil fuel sources in sector 2: 2A4 Soda Ash Production 2B1. Ammonia production 2B5. Other chemicals, excl. activated carbon 2C1. Coke and coal inputs in blast furnace (net) 2D1. Pulp and Paper 2G. Process emissions in other economic sectors After these corrections, the differences are between -1.2% and +0.7%
<b>New Zealand Base year</b>	21,087	22,086	-4.52	1.AA Fuel Combustion - Sectoral Approach:NMVOC: slight increase of whole series due to updated data 1.AB Liquid Fuels "IE" notation used because other oil source is included under bitumen as this is the most important component of other oils.
<b>New Zealand 2004</b>	30,141	29,706	1.46	1.AB Gaseous Fuels:The gas emission factor is based on a weighted average of the emission factors for all gas streams where the weightings are the amount of gas produced at each field (info from the Energy Data file). The emission factors for Maui and Kapuni treated gas are based on gas composition data provided yearly by NGC. Most of the other gas emission factors are from NZEIH.
<b>Norway Base year</b>	29,372	25,975	13.08	
<b>Norway 2004</b>	38,159	34,279	11.32	
<b>Poland Base year<sup>a</sup></b>	476,964	471,636		
<b>Poland 2004</b>	0	308,873		
<b>Portugal Base year</b>	40,892	38,963	4.95	1.AC Difference - Reference and Sectoral Approach:Differences between Sectoral and Reference approach (CO2 from fuel combustion): the sectoral approach CO2 estimates depends partially on combustion information from point sources, and the reference approach results from national energy balances. Furthermore, feedstock emissions were estimated differently in the two approaches: in the sectoral approach, emissions were estimated from production activity data; in the reference approach, a global percentage of carbon stored (e.g. lubricants, naphtha) was used. In the sectoral approach, emissions from lubricants may not have been totally estimated, because it is uncertain if road traffic emission factors take into account these materials.
<b>Portugal 2004</b>	58,818	58,112	1.21	1.AC Difference - Reference and Sectoral Approach:Differences between Sectoral and Reference approach (CO2 from fuel combustion): the sectoral approach CO2 estimates depends partially on combustion information from point sources, and the reference approach results from national energy balances. Furthermore, feedstock emissions were estimated differently in the two approaches: in the sectoral approach, emissions were estimated from production activity data; in the reference approach, a global percentage of carbon stored (e.g. lubricants, naphtha) was used. In the sectoral approach, emissions from lubricants may not have been totally estimated, because it is uncertain if road traffic emission factors take into account these materials.
<b>Romania Base year<sup>a</sup></b>	192,424	155,815	23.50	1.AC Difference - Reference and Sectoral Approach:The difference between RA and SA is caused by the fact that the Reference Approach treats the non-energy use of fuels as if it were combustion. A correction is done by the carbon stored from non energy fuel use, but the information related to this area are limited in the national energy balance.
<b>Romania 2004</b>	99,173	101,221	-2.02	1.AC Difference - Reference and Sectoral Approach:The difference between RA and SA is caused by the fact that the Reference Approach treats the non-energy use of fuels as if it were combustion. A correction is done by the carbon stored from non energy fuel use, but the information related to this area are limited in the national energy balance.
<b>Russian Federation Base year</b>	2,282,206	2,282,206	0.00	1.AA Fuel Combustion - Sectoral Approach:Explanation of lacking data and notation keys to be added in the following inventory submission. 1.AB Fuel Combustion - Reference Approach:Explanation of lacking data and notation keys to be added in the following inventory submission
<b>Russian Federation 2004</b>	1,457,284	1,492,073	-2.33	1.AA Fuel Combustion - Sectoral Approach:Explanation of lacking data and notation keys to be added in the following inventory submission. 1.AB Fuel Combustion - Reference Approach:Explanation of lacking data and notation keys to be added in the following inventory submission

Table 1.1 (continued)

CO<sub>2</sub> emissions from fuel combustion: reference approach and sectoral approach

	Reference approach	Sectoral approach	Difference	Explanation of the differences as reported in table 1.A(c) of the CRF
	(Gg CO <sub>2</sub> )		(%)	
Slovakia Base year	55,342	57,053	-3.00	1.AA Fuel Combustion - Sectoral Approach/1990:The emissions of CO <sub>2</sub> , CH <sub>4</sub> and N <sub>2</sub> O - sectoral approach (categories 1.A.1, 1.A.2, 1.A.4, 1.A.5) between 1990-1999 were not estimated. The methodology used for estimation these emissions after year 2000 is not compatible with the methodology before 2000. The values of emissions 1990-1999 input in the Table 1.AA.1.A Electricity and Heat Production/Liquid Fuels come from reference approach using statistical information.
Slovakia 2004	37,850	38,593	-1.92	
Slovenia Base year*	15,038	15,162	-0.82	
Slovenia 2004	15,314	15,400	-0.56	
Spain Base year	207,806	205,415	1.16	1.AB Other non-specified:No information on other fuels, not specified in the CRF Reporter, is available
Spain 2004	321,966	325,235	-1.00	1.AB Other non-specified:No information on other fuels, not specified in the CRF Reporter, is available.
Sweden Base year	51,458	50,852	1.19	1.AC Difference - Reference and Sectoral Approach/1990:The Reference approach includes all fuel consumption in Sweden since it is not possible to separate fuels consumed in CRF 1B and 2 on this level. The large differences between approaches are mainly due to the fact that a lot of fuel in Sweden is consumed and thus reported in CRF 1B and 2. Since this table does not take CRF 1B and 2 into account, it is not fully applicable for swedish conditions. For more information, see chapter 3.3.6 .
Sweden 2004	55,284	49,622	11.41	1.AC Difference - Reference and Sectoral Approach/2004:The Reference approach includes all fuel consumption in Sweden since it is not possible to separate fuels consumed in CRF 1B and 2 on this level. The large differences between approaches are mainly due to the fact that a lot of fuel in Sweden is consumed and thus reported in CRF 1B and 2. Since this table does not take CRF 1B and 2 into account, it is not fully applicable for swedish conditions. For more information, see chapter 3.3.6 of the Swedish National Inventory Report.
Switzerland Base year	41,466	41,122	0.84	1.AB Fuel Combustion - Reference Approach:Documentation Box to table 1.A(b): The fraction for carbon oxidized is consequently set to 1.0 due to the following reason: combustion installations in Switzerland have very good combustion properties; combined emissions of CO and unburnt VOC lie in the range of only 0.1 to 0.3 percent of CO emissions for oil and gas combustion. Since most of the coal used in Switzerland goes to the cement industry, also for coal a fraction factor of 1.0 was chosen. The conversion factors are country specific (see Swiss Energy Statistics 2004, on the back cover). The carbon emission factor for crude oil stems from the 1996 IPCC reference manual; the other carbon emission factors are country specific. Internet adress for the Swiss Energy Statistics: <a href="http://www.energie-schweiz.ch/internet/00008/index.html?lang=en">http://www.energie-schweiz.ch/internet/00008/index.html?lang=en</a> 1.AC Difference - Reference and Sectoral Approach: Differences in energy consumption: allocation problems: Only bitumen production from national refineries is shown in table 1.A(d). It is a refinery product and included in the crude oil amount. In the Swiss inventories bitumen emissions (NMVOC) appear under industrial processes and not under energy use. Gaseous fuels: gas distribution emissions (including emissions from compressor stations) are shown in table 1.B.1 and do not appear in the column "National approach" above. Liquid fuels/Solid fuels: in the national approach, petroleum coke is subsumed under solid fuels (cement industry use; there petroleum coke is treated as coal). Other: Waste fuels from waste incineration (energy use) and waste fuels from cement production (energy use). In the reference approach subsumed in "Solid fuels" (Other oil):
Switzerland 2004	43,548	43,015	1.24	
Turkey Base year	140,054	126,701	10.54	The reference approach uses data on crude oil as the average "kalorific valuss" and "carbon content". However sectorial approach uses the individual "calorific values" and "Carbon content" in each sectors. The reference approach uses data on crude oil as the average "kalorific valuss" and "carbon content". However sectorial approach uses the individual "calorific values" and "Carbon content" in each sectors.
Turkey 2004	226,659	222,284	1.97	
Ukraine Base year	589,206	595,318	-1.03	1.AA Fuel Combustion - Sectoral Approach:In 1991-1997 emissions for each fuel type were estimated according to category 1.A «Fuel Combustions». Disaggregating to IPCC categories is impossible, since there is insufficient disaggregated data on activity. 1.AC Difference - Reference and Sectoral Approach:See NIR Chapter 3.5.1 1.AC Liquid Fuels:See NIR Chapter 3.5.1 1.AC Solid Fuels:See NIR Chapter 3.5.1 1.AC Gaseous Fuels:See NIR Chapter 3.5.1
Ukraine 2004	253,743	228,642	10.98	
United Kingdom Base year	564,095	567,552	-0.61	1.AA Liquid Fuels:The liquid fuel allocation is as follows: gasoline, diesel oil, residual fuel oil, orimulsion, kerosene, LPG, refinery gas, waste oils, petroleum coke, lubricants, naphtha, other oil products. Liquid fuel emission factors for methane in 1A1, 1A2, 1A4 are mainly from CORINAIR. 1.AA Solid Fuels:The solid fuel allocation is as follows: coal, coke, anthracite, patent fuel, blast furnace gas, coke oven gas. Solid fuel emission factors for methane are mainly based on Brain et al (1994). Emission of VOC from Coal Fired Appliances, DTI, Coal R&D, Report No COAL R033. Solid fuel emission factors for N <sub>2</sub> O are from Fynes et al (1994) Emissions of Greenhouse gases from coal fired Plant, British coal, CRE. Contract JOUF 0047-C(SMA). 1.AA Gaseous Fuels:The gaseous fuel allocation is as follows: Natural gas, colliery methane Natural gas emission factors for methane are IPCC defaults. 1.AA Other Fuels:Other fuel allocation is as follows: municipal solid waste, scrap tyres 1.AC Difference - Reference and Sectoral Approach:The discrepancy in fuel consumption arises from 3 sources:(1) The statistical difference between 'apparent consumption' used in the reference inventory and actual consumption used in the sectoral inventory. This difference results from losses and errors in the estimates.  (2) The sectoral inventory includes emissions from the non-energy use of fuel where they can be specifically identified e.g. catalytic crackers, iron&steel, lubricants combustion, ammonia production. The reference approach implicitly treats the non-energy use of fuel as combustion. A correction is then applied by deducting an estimate of carbon stored from non-energy fuel use. The carbon stored is estimated from an approximate procedure which does not identify specific processes.The result is that the reference approach is based on a higher estimate of non-energy use emissions than the sectoral inventory. (3) The reference approach uses data on primary fuels which are then corrected for imports, exports and stock changes of secondary fuels. Thus the estimates obtained are highly dependent on the default carbon contents used for the primary fuels. The sectoral approach is based wholly on the consumption of secondary fuels where carbon contents are known with greater certainty. In particular the carbon contents and calorific values of the primary liquid fuels are likely to vary more than those of secondary fuels 1.AC Difference - Reference and Sectoral Approach/1990:A significant proportion of fuel consumption emissions occur in 1B1b Solid Fuel Transformation, 2C Metal Production, 2B1 Ammonia Production. Including these sources with 1A in the comparison red 1.AC Solid Fuels:So

Table I.1 (continued)

CO<sub>2</sub> emissions from fuel combustion: reference approach and sectoral approach

	Reference approach (Gg CO <sub>2</sub> )	Sectoral approach	Difference (%)	Explanation of the differences as reported in table I.A(c) of the CRF
United Kingdom 2004	586,163	543,179	7.91	<p>1.AA Liquid Fuels: The liquid fuel allocation is as follows: gasoline, diesel oil, residual fuel oil, orimulsion, kerosene, LPG, refinery gas, waste oils, petroleum coke, lubricants, naphtha, other oil products. Liquid fuel emission factors for methane in 1A1, 1A2, 1A4 are mainly from CORINAIR.</p> <p>1.AA Solid Fuels: The solid fuel allocation is as follows: coal, coke, anthracite, patent fuel, blast furnace gas, coke oven gas. Solid fuel emission factors for methane are mainly based on Brain et al (1994). Emission of VOC from Coal Fired Appliances, DTI, Coal R&amp;D, Report No COAL R033. Solid fuel emission factors for NO are from Fynes et al (1994) Emissions of Greenhouse gases from coal fired Plant, British coal, CRE. Contract JOUF 0047-C(SMA).</p> <p>1.AA Gaseous Fuels: The gaseous fuel allocation is as follows: Natural gas, colliery methane Natural gas emission factors for methane are IPCC defaults.</p> <p>1.AA Other Fuels: Other fuel allocation is as follows: municipal solid waste, scrap tyres</p> <p>1.AC Difference - Reference and Sectoral Approach: The discrepancy in fuel consumption arises from 3 sources: (1) The statistical difference between 'apparent consumption' used in the reference inventory and actual consumption used in the sectoral inventory. This difference results from losses and errors in the estimates. (2) The sectoral inventory includes emissions from the non-energy use of fuel where they can be specifically identified e.g. catalytic crackers, iron&amp;steel, lubricants combustion, ammonia production. The reference approach implicitly treats the non-energy use of fuel as combustion. A correction is then applied by deducting an estimate of carbon stored from non-energy fuel use. The carbon stored is estimated from an approximate procedure which does not identify specific processes. The result is that the reference approach is based on a higher estimate of non-energy use emissions than the sectoral inventory. (3) The reference approach uses data on primary fuels which are then corrected for imports, exports and stock changes of secondary fuels. Thus the estimates obtained are highly dependent on the default carbon contents used for the primary fuels. The sectoral approach is based wholly on the consumption of secondary fuels where carbon contents are known with greater certainty.</p> <p>1.AC Solid Fuels: So</p>
United States Base year	4,771,567	4,824,659	-1.10	<p>1.AA Fuel Combustion - Sectoral Approach: Estimates of biomass consumption for fuel combustion exclude wood wastes, liquors, municipal solid waste, tires, etc.</p> <p>1.AB Fuel Combustion - Reference Approach: In order to accommodate the differences and limitations between the Reference Approach table of the CRF and that of the U.S. Inventory, the following adaptations were made to section 1.AB:</p> <p>1) Orimulsion values refer to U.S. Inventory's "Other Liquids" which has production. The carbon stored subtracted refers to "Pentanes Plus."</p> <p>2) Field production of motor gasoline is included with "Gasoline" Imports. An adjustment for ethanol in motor gasoline is included with Stock Changes.</p> <p>3) Naphtha values refer to "Naphtha for Petrofeed" and "Special Naphtha."</p> <p>4) Refinery Feedstocks values refer to U.S. Inventory's "Other Oil for Petrofeed" and "Still Gas."</p> <p>5) Other Oil values refer to U.S. Inventory's "Waxes," "Asphalt/Road Oil," "Misc. Products," and "U.S. Terr. Misc. Products."</p> <p>6) Other Bit. Coal includes U.S. Inventory's "Bituminous Coal" and "Unspecified Coal." An adjustment for coal gasification is included with Stock Changes. This adjustment accounts for: 1) coal converted and combusted as natural gas, which is included in Natural Gas (Dry), and 2) CO<sub>2</sub> exports to Canada, which is a byproduct of gasification.</p> <p>7) U.S. Territories consumption is included in the Imports column (applies to Natural Gas Liquids, Gasoline, Other Kerosene, Gas/Diesel Oil, Residual Fuel Oil, Lubricants, Other Oil, Other Bit. Coal, and Natural Gas).</p> <p>8) Adjustments for fuels accounted for in the Ind</p> <p>1.AB Liquid Fuels: In order to accommodate the differences and limitations between the Reference Approach table of the CRF and that of the U.S. Inventory, the following adaptations were made to section 1.AB:</p> <p>1) Orimulsion values refer to U.S. Inventory's "Other Liquids" which has production. The carbon stored subtracted refers to "Pentanes Plus."</p> <p>2) Field production of motor gasoline is included with "Gasoline" Imports. An adjustment for ethanol in motor gasoline is included with Stock Changes.</p> <p>3) Naphtha values refer to "Naphtha for Petrofeed" and "Special Naphtha."</p> <p>4) Refinery Feedstocks values refer to U.S. Inventory's "Other Oil for Petrofeed" and "Still Gas."</p> <p>5) Other Oil values refer to U.S. Inventory's "Waxes," "Asphalt/Road Oil," "Misc. Products," and "U.S. Terr. Misc. Products."</p> <p>6) Other Bit. Coal includes U.S. Inventory's "Bituminous Coal" and "Unspecified Coal." An adjustment for coal gasification is included with Stock Changes. This adjustment accounts for: 1) coal converted and combusted as natural gas, which is included in Natural Gas (Dry), and 2) CO<sub>2</sub> exports to Canada, which is a byproduct of gasification.</p> <p>7) U.S. Territories consumption is included in the Imports column (applies to Natural Gas Liquids, Gasoline, Other Kerosene, Gas/Diesel Oil, Residual Fuel Oil, Lubricants, Other Oil, Other Bit. Coal, and Natural Gas).</p> <p>8) Adjustments for fuels accounted for in the Ind</p> <p>1.AB Solid Fuels: In order to accommodate the differences and limitations between the Reference Approach table of the CRF and that of the U.S. Inventory, the following adaptations were made to section 1.AB:</p> <p>1) Orimulsion values refer to U.S. Inventory's "Other Liquids" which has production. The carbon stored subtracted refers to "Pentanes Plus."</p> <p>2) Field production of motor gasoline is included with "Gasoline" Imports. An adjustment for ethanol in motor gasoline is included with Stock Changes.</p> <p>3) Naphtha values refer to "Naphtha for Petrofeed" and "Special Naphtha."</p> <p>4) Refinery Feedstocks values refer to U.S. Inventory's "Other Oil for Petrofeed" and "Still Gas."</p> <p>5) Other Oil values refer to U.S. Inventory's "Waxes," "Asphalt/Road Oil," "Misc. Products," and "U.S. Terr. Misc. Products."</p> <p>6) Other Bit. Coal includes U.S. Inventory's "Bituminous Coal" and "Unspecified Coal." An adjustment for coal gasification is included with Stock Changes. This adjustment accounts for: 1) coal converted and combusted as natural gas, which is included in Natural Gas (Dry), and 2) CO<sub>2</sub> exports to Canada, which is a byproduct of gasification.</p> <p>7) U.S. Territories consumption is included in the Imports column (applies to Natural Gas Liquids, Gasoline, Other Kerosene, Gas/Diesel Oil, Residual Fuel Oil, Lubricants, Other Oil, Other Bit. Coal, and Natural Gas).</p> <p>8) Adjustments for fuels accounted for in the Ind</p>
United States 2004	5,846,880	5,829,301	0.30	<p>1.AB Gaseous Fuels: In order to accommodate the differences and limitations between the Reference Approach table of the CRF and that of the U.S. Inventory, the following adaptations were made to section 1.AB:</p> <p>1) Orimulsion values refer to U.S. Inventory's "Other Liquids" which has production. The carbon stored subtracted refers to "Pentanes Plus."</p> <p>2) Field production of motor gasoline is included with "Gasoline" Imports. An adjustment for ethanol in motor gasoline is included with Stock Changes.</p> <p>3) Naphtha values refer to "Naphtha for Petrofeed" and "Special Naphtha."</p> <p>4) Refinery Feedstocks values refer to U.S. Inventory's "Other Oil for Petrofeed" and "Still Gas."</p> <p>5) Other Oil values refer to U.S. Inventory's "Waxes," "Asphalt/Road Oil," "Misc. Products," and "U.S. Terr. Misc. Products."</p> <p>6) Other Bit. Coal includes U.S. Inventory's "Bituminous Coal" and "Unspecified Coal." An adjustment for coal gasification is included with Stock Changes. This adjustment accounts for: 1) coal converted and combusted as natural gas, which is included in Natural Gas (Dry), and 2) CO<sub>2</sub> exports to Canada, which is a byproduct of gasification.</p> <p>7) U.S. Territories consumption is included in the Imports column (applies to Natural Gas Liquids, Gasoline, Other Kerosene, Gas/Diesel Oil, Residual Fuel Oil, Lubricants, Other Oil, Other Bit. Coal, and Natural Gas).</p> <p>8) Adjustments for fuels accounted for in the Ind</p> <p>1.AB Other Fuels: In order to accommodate the differences and limitations between the Reference Approach table of the CRF and that of the U.S. Inventory, the following adaptations were made to section 1.AB:</p> <p>1) Orimulsion values refer to U.S. Inventory's "Other Liquids" which has production. The carbon stored subtracted refers to "Pentanes Plus."</p> <p>2) Field production of motor gasoline is included with "Gasoline" Imports. An adjustment for ethanol in motor gasoline is included with Stock Changes.</p> <p>3) Naphtha values refer to "Naphtha for Petrofeed" and "Special Naphtha."</p> <p>4) Refinery Feedstocks values refer to U.S. Inventory's "Other Oil for Petrofeed" and "Still Gas."</p> <p>5) Other Oil values refer to U.S. Inventory's "Waxes," "Asphalt/Road Oil," "Misc. Products," and "U.S. Terr. Misc. Products."</p> <p>6) Other Bit. Coal includes U.S. Inventory's "Bituminous Coal" and "Unspecified Coal." An adjustment for coal gasification is included with Stock Changes. This adjustment accounts for: 1) coal converted and combusted as natural gas, which is included in Natural Gas (Dry), and 2) CO<sub>2</sub> exports to Canada, which is a byproduct of gasification.</p> <p>7) U.S. Territories consumption is included in the Imports column (applies to Natural Gas Liquids, Gasoline, Other Kerosene, Gas/Diesel Oil, Residual Fuel Oil, Lubricants, Other Oil, Other Bit. Coal, and Natural Gas).</p> <p>8) Adjustments for fuels accounted for in the Ind</p>

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 1.2****CO<sub>2</sub> emissions from stationary combustion - trend information**

CO <sub>2</sub> emissions (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	192,969	275,595	1.5	3.8	2.4	3.2	5.7	3.5	2.0	2.9	1.6	3.7	2.0	42.8
Austria	41,507	45,044	5.2	5.9	5.9	0.5	-4.9	-1.6	-2.5	6.6	-1.5	8.8	-2.0	8.5
Belarus	87,162	48,651	-7.4	-11.1	1.6	3.5	-3.5	-3.8	-3.7	-1.8	-2.2	0.6	6.1	-44.2
Belgium	89,931	89,956	3.5	0.3	4.8	-6.3	5.4	-6.0	0.6	0.1	-2.0	3.7	-1.4	0.0
Bulgaria	76,912	40,873	-16.1	4.7	-1.7	-0.3	-13.7	-8.5	-1.4	3.7	-6.6	8.6	-2.8	-46.9
Canada	277,278	352,214	-1.7	2.5	2.6	1.8	1.2	3.9	6.9	-1.3	1.6	5.7	-2.3	27.0
Croatia	16,527	14,327	-28.4	5.2	3.2	5.1	7.1	1.6	-4.8	6.3	6.7	6.7	-4.6	-13.3
Czech Republic	137,865	99,124	-3.5	-0.9	1.3	2.2	-6.9	-6.4	6.9	-0.1	-5.1	2.1	-1.9	-28.1
Denmark	40,756	38,388	23.6	-6.2	28.3	-16.7	-8.0	-7.2	-9.4	4.1	-1.2	12.3	-13.8	-5.8
Estonia	35,059	16,656	-8.1	-8.4	5.7	-1.2	-11.7	-8.3	1.6	-4.3	-0.1	12.8	-0.2	-52.5
European Community	2,408,931	2,395,628	0.9	0.7	3.1	-2.9	1.0	-1.6	0.7	2.7	-0.7	2.6	0.1	-0.6
Finland	40,487	51,389	-1.9	-6.9	13.4	-4.6	-7.4	-1.5	-4.1	13.3	5.1	15.6	-7.9	26.9
France	243,663	248,578	9.1	2.0	5.8	-3.3	7.5	-4.7	-2.1	0.3	-2.1	3.5	1.4	2.0
Germany	780,314	633,087	-4.3	-1.2	4.3	-5.1	-1.6	-4.3	0.6	3.5	-1.6	1.8	-1.4	-18.9
Greece	61,782	80,354	-1.9	-0.7	2.8	6.0	4.6	-1.5	8.6	1.8	-0.5	3.8	-0.2	30.1
Hungary	72,147	46,572	-1.8	-1.6	2.7	-4.0	-3.3	-0.8	-4.1	2.5	-3.6	6.0	-4.7	-35.4
Iceland	1,072	1,208	-5.3	2.4	8.5	2.8	-3.1	0.6	-7.8	-3.2	6.0	-6.6	6.9	12.6
Ireland	25,209	30,524	-0.6	1.0	1.8	5.6	3.0	3.1	4.2	4.0	-2.7	-2.6	-0.4	21.1
Italy	299,577	330,363	-1.0	7.7	-1.6	0.7	2.5	1.4	1.1	1.0	0.0	3.9	0.2	10.3
Japan	848,022	941,898	-0.5	0.5	0.7	-0.7	-3.3	3.8	2.2	-1.8	5.0	0.8	0.0	11.1
Latvia	15,526	4,398	-8.4	-15.6	1.4	-8.2	-5.8	-10.5	-15.2	2.1	-1.9	0.4	-2.1	-71.7
Liechtenstein	124	151	-4.7	1.2	0.7	6.7	8.3	-4.6	-7.5	1.6	7.0	6.5	1.2	22.2
Lithuania	27,020	8,060	5.6	-12.8	1.7	-8.1	5.2	-20.3	-11.1	5.6	-1.0	0.2	3.8	-70.2
Luxembourg	7,804	4,224	-3.4	-28.6	0.6	-17.7	-21.0	5.9	-4.6	2.6	18.3	-2.1	13.5	-45.9
Monaco	73	66	-5.2	-2.1	6.2	2.8	-1.1	0.3	-0.2	1.1	-2.4	-6.5	-7.9	-9.2
Netherlands	123,406	137,958	3.9	2.7	5.3	-5.4	1.3	-4.9	1.4	4.5	-0.7	2.2	1.3	11.8
New Zealand	13,453	15,596	2.2	-6.1	7.5	14.1	-10.5	7.8	-0.1	10.0	-3.3	5.2	-7.0	15.9
Norway	14,478	19,913	-1.8	-3.6	13.2	-0.5	-2.1	-1.8	0.4	9.7	0.7	7.0	-2.7	37.5
Poland	443,132	275,010	-1.8	-0.4	5.6	-4.0	-7.9	-3.9	-4.4	0.5	-4.3	4.1	-2.8	-37.9
Portugal	29,136	38,706	3.9	8.2	-9.4	5.6	7.8	18.1	-7.7	1.2	8.6	-10.7	2.8	32.8
Romania	148,521	84,276	-21.0	4.0	2.8	-12.7	-13.4	-12.8	1.9	4.3	5.9	6.9	-2.5	-43.3
Russian Federation	2,282,206	1,278,942	-2.8	-3.0	-1.3	-4.6	-2.6	0.9	-1.7	3.6	-0.9	3.3	-12.8	-44.0
Slovakia	51,982	33,153	-13.0	2.8	1.4	0.0	-5.5	-2.7	-2.5	7.0	-6.0	1.6	-2.6	-36.2
Slovenia	13,191	11,307	-6.0	4.5	1.7	2.2	3.1	-4.2	-0.8	7.3	0.6	-3.6	2.5	-14.3
Spain	148,903	226,012	3.2	6.3	-10.1	11.8	-0.1	11.9	4.0	-0.3	8.2	-0.6	7.6	51.8
Sweden	31,833	29,527	2.1	-3.1	12.4	-11.8	1.3	-8.6	-4.2	1.9	2.6	2.6	-4.7	-7.2
Switzerland	26,205	26,903	5.8	4.1	3.3	-3.7	3.8	-1.5	-4.9	4.1	-2.7	3.8	0.8	2.7
Turkey	100,746	181,826	7.0	7.6	13.0	10.0	0.8	-1.1	13.3	-9.4	4.5	7.5	3.8	80.5
Ukraine	505,988	191,168	1.1	-8.9	-10.5	-7.5	-27.2	-1.2	-7.3	0.7	0.1	7.1	-3.2	-62.2
United Kingdom	444,734	411,518	2.5	-2.5	3.9	-5.1	1.0	-2.3	2.0	4.3	-4.3	2.5	0.4	-7.5
United States	3,363,298	3,973,828	-0.1	0.6	4.3	1.3	0.3	0.4	3.3	-1.1	-0.6	1.7	1.3	18.2

Note: This table includes data from categories 1.A.1 Energy industries, 1.A.2 Manufacturing industries and construction, 1.A.4 Other sectors and 1.A.5.a Other (stationary combustion).

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

Table 1.3

Stationary combustion: liquid fuels, CO<sub>2</sub> (base year<sup>a</sup>)

Key category	Share in national total	IEF in CRF based on	Energy industries				Manufacturing industries and construction			Other sectors						Other (Not elsewhere specified)					
			Methods and EF used <sup>b</sup>		CO <sub>2</sub> IEF				Methods and EF used <sup>c</sup>		CO <sub>2</sub> IEF	Methods and EF used <sup>d</sup>		CO <sub>2</sub> IEF				Methods and EF used <sup>e</sup>		CO <sub>2</sub> IEF	
			Methods	EF	Total	Public electricity and heat production	Petroleum refining	Manufacture of solid fuels and other energy industries	Methods	EF	Total	Methods	EF	Total	Commercial / Institutional	Residential	Agriculture / Forestry / Fisheries	Methods	EF	Stationary	
(%)			(t/TJ)						(t/TJ)			(t/TJ)						(t/TJ)			
Australia <sup>f</sup>	L	6.5	GCV	T2	CS, PS	72.87	75.50	71.49	72.90	T2	CS	71.50	T1, T2	CS	70.95	69.33	68.19	72.72	T1, T2	CS	22.17
Austria	L	20.2	NCV	T2	CS	68.74	78.59	63.74	64.00	T2	CS	76.54	T2	CS	75.32	75.75	75.31	75.04	CS, M	CS	NA
Belarus	L	38.4	NCV	D	D	76.49	76.49	IE	IE			75.70	D	D	71.44	74.37	62.63	73.02	D	D	72.50
Belgium	L	20.5	NCV			71.46	76.39	70.76	73.35			77.27			73.29	73.28	72.94	75.17			
Bulgaria	L	15.1	NCV	T2	CS	70.60	70.60	NO	NO	T2	CS	74.06	T2	CS	73.24	72.61	72.34	75.41	NA	NA	NO
Canada <sup>f</sup>	L	10.3	GCV	T2	CS	54.64	77.71	43.71	NA	T2	CS	76.04	T2	CS	74.63	74.00	75.08	72.56	NA	NA	
Croatia	L	30.8	NCV	T1	D	73.89	76.59	71.78	73.33	T1	D	75.70	T1	D	72.17	74.31	70.56	73.19	T1	D	25.01
Czech Republic	L	6.9	NCV	T1	D	75.26	76.47	74.33	72.85	T1	D	62.86	T1	D	71.82	73.70	67.42	69.06	T1	D	NO
Denmark	L	16.8	NCV	CR	CS	66.96	77.26	58.71	NO	CR	CS	76.72	CR	CS	74.19	74.26	73.96	74.56			NA
Estonia	L	14.2	NCV	CS, T1	CS, D	76.43	76.43	NO	NO	T1	D	74.08	CS, T1	CS, D	73.35	73.32	73.25	74.60	NA	NA	NO
European Community	L	17.0	NCV	CR, CS, D, T1, T2, T3	CR, CS, D, PS	72.43	76.70	67.74	70.05			74.37	CR, D, T1, T2, T3	CR, CS, D	73.17	74.02	72.62	73.74			73.37
Finland	L	21.4	NCV	T3	CS, D, PS	73.91	78.01	71.00	NO	CS, M, T3	CS, PS	76.33	CS, M, T1, T2	CS, D	74.61	75.96	73.83	74.51	CS, T1	CS	72.19
France	L	19.5	NCV			69.59	78.17	64.98	78.00			77.71			73.81	74.77	73.10	74.27	NA	NA	NO
Germany	L	11.7	NCV	CS	CS	71.37	76.58	68.70	72.30	CS, T2	CS	68.69	CS	CS	73.73	73.65	73.74	73.99	CS	CS	74.41
Greece	L	19.8	NCV	CR	CS, D	75.18	75.96	73.54	NO	CR	D	65.43	CR	D	72.73	72.93	72.47	73.10	NA	NA	NO
Hungary	L	13.5	NCV	T3	D	76.43	76.43	IE	IE	T1, T2	D	52.41	T1	D	71.58	72.54	69.74	73.02	NA	NA	NO
Iceland	L	30.4	NCV			74.74	74.74	NO	NO			75.09			73.84	86.83	72.61	73.81			76.59
Ireland	L	13.2	NCV	T1, T3	CS, PS	74.77	76.10	67.69	NO	T1	CR	76.04	T1	CS	73.32	73.79	72.55	73.30	NA	NA	NO
Italy	L	29.5	NCV	T3	CS	74.18	76.51	66.21	76.57	T2	CS	79.86	T2	CS	71.82	72.68	71.35	72.75	T2	CS	
Japan <sup>f</sup>	L	34.2	GCV	T1	CS	71.36	73.53	57.12	62.95	T1	CS	71.89	T1	CS	70.30	71.04	67.83	73.09	T1	CS	72.47
Latvia	L	28.5	NCV	T1	CS	76.17	76.17	NO	IE	T1	CS	75.05	T1	CS	72.14	74.12	67.22	72.83	NA	NA	NA
Liechtenstein	L	41.6	NCV	T2	CS	NO	NO	NO	NO	T2	CS	73.79	CS, T1, T2	CS	73.59	73.56	73.70	73.60	T1	CS	
Lithuania	L	28.3	NCV	T2	CR, CS	78.08	77.61	81.59	74.00	T2	CS	77.56	T2	CS	74.08	76.75	67.08	74.11	NA	NA	NO
Luxembourg	L	9.5	NCV	CR	CR, CS	75.04	75.04	NO	NO	CR	CR, CS, PS	70.07	CR	CR	70.37	70.00	70.01	73.82	NA	NA	IE
Monaco	L	34.7	NCV			78.41	78.41	NO	NO	NA	NA	NA, NO			73.33	IE	73.33	NO			0.00
Netherlands	L	10.9	NCV	T2	CS	63.63	76.70	63.40	74.32	T2	CS	59.11	T2	CS, D	73.71	72.51	72.49	74.44	T2	D	NA
New Zealand <sup>f</sup>	L	4.1	GCV	D	CS, D	78.26	71.06	78.81	NO	D	CS	72.13	D	CS	71.81	72.21	64.56	71.90	NA	NA	
Norway	L	16.2	NCV	T2	CS	45.04	72.63	40.68	73.55	T2	CS	70.05	T2	CS	73.57	73.70	73.33	73.68	T2	CS	73.55
Poland	L	4.6	NCV	T2	CS, D	72.32	76.54	65.90	68.79	T2	CS, D	75.28	T2	CS, D	74.03	76.26	63.10	73.89	T2	CS, D	76.47
Portugal	L	31.3	NCV	T2	CR, D, PS	74.17	76.56	67.18	76.59	T2	CR, D, PS	71.36	T2	CR, D	68.46	71.94	62.88	73.21	T1	CR, D	NO
Romania	L	12.5	NCV	T1	D	75.83	75.83	IE	IE	T1	D	70.29	T1	D	71.55	71.85	62.44	73.27	NA	NA	
Russian Federation	L	24.9	NCV	NA	NA	NE	NE	NE	NE	NA	NA	NE	NA	NA	NE	NE	NE	NE	OTH	D	IE, NE
Slovakia	L	8.3	NCV	RA, T1	CS, D	75.23	75.99	73.72	NO	T1	CS	75.26	T1	CS	75.94	75.94	NO	76.29	T1	CS	76.05
Slovenia	L	13.8	NCV	T1	CS, D	75.58	75.73	76.60	66.05	T1	CS, D	74.85	T1	CS, D	71.74	71.46	70.32	72.80	NA	NA	
Spain	L	22.0	NCV	T2	CR, CS, PS	71.71	75.30	69.88	69.12	T2, T3	CR, CS, PS	78.69	T2, T3	CR, CS	70.42	72.41	68.04	72.64			NA
Sweden	L	30.5	NCV	T1, T2, T3	CS	67.79	74.83	63.93	73.92	T1, T2, T3	CS	72.66	T1, T2, T3	CS	74.39	74.60	74.30	74.38	T1	CS	NO
Switzerland	L	36.8	NCV	CR, RA	CS	68.57	76.19	63.18	NO	CR	CS	74.99	CR	CS	73.54	73.54	73.54	73.65	CR	CS	NO
Turkey	L	20.3	NCV	T1	D	68.57	66.29	70.80	IE	T1	D	68.41	T1	D	72.25	IE	72.82	71.36			0.00
Ukraine	L	10.9	NCV	T1, T2	CS, D	75.43	75.43	IE	IE	T1	CS, D	73.93	T1	D	71.87	76.25	65.35	75.74	NA	NA	NO
United Kingdom	L	11.1	NCV	OTH, T1, T2	CS	74.20	77.39	71.66	62.51	T1, T2	CS	74.55	OTH, T1, T2	CS	73.24	75.43	70.90	74.07	T2	CS	
United States <sup>f</sup>	L	11.4	GCV	T1	CS	77.93	77.93	IE	IE	T1	CS	71.97	T1	CS	70.91	72.72	69.68	IE	CS, T1	CS	32.19

Note: This table includes data from categories 1.A.1 Energy industries, 1.A.2 Manufacturing industries and construction, 1.A.4 Other sectors and 1.A.5.a Other (stationary combustion).

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

<sup>b</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.1 Energy industries.

<sup>c</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.2 Manufacturing industries and construction.

<sup>d</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.4 Other sectors.

<sup>e</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.5 Other (stationary).

<sup>f</sup> Australia, Canada, Japan, New Zealand and United States reported energy data on a gross calorific value (GCV) basis. This means that reported IEFs are about 5 per cent lower for liquid and solid fuels and biomass, and about 10 per cent lower for gaseous fuels than would have been the case if the data were given on a net calorific value (NCV) basis. The IEFs included in this table have been converted into NCV-based values and are not reflecting the reported IEFs.

**Table 1.4**  
**Stationary combustion: liquid fuels, CO<sub>2</sub> (2004)**

Key category	Share in national total	IEF in CRF based on	Energy industries							Manufacturing industries and construction			Other sectors							Other (Not elsewhere specified)			
			Methods and EF used <sup>a</sup>		CO <sub>2</sub> IEF				Total	Methods and EF used <sup>a</sup>		CO <sub>2</sub> IEF	Methods and EF used <sup>a</sup>		CO <sub>2</sub> IEF				Methods and EF used <sup>a</sup>		CO <sub>2</sub> IEF		
			Methods	EF	Total	Public electricity and heat production	Petroleum refining	Manufacture of solid fuels and other energy industries		Methods	EF		Methods	EF	Total	Commercial / Institutional	Residential	Agriculture / Forestry / Fisheries	Methods	EF	Stationary		
	(%)				(t/TJ)							(t/TJ)			(t/TJ)						(t/TJ)		
Australia <sup>c</sup>	L, T	6.3	GCV	T2	CS, PS	71.88	71.96	71.49	72.89	T2	CS	71.92	T1, T2	CS	71.39	71.24	66.06	72.56	T1, T2	CS	22.17		
Austria	L, T	16.4	NCV	T2	CS	70.10	79.83	66.15	NO	T2	CS	77.18	T2	CS	74.34	74.23	74.71	73.18	CS, M	CS			
Belarus	L, T	13.7	NCV	D	D	76.44	76.44	IE	IE			73.84	D	D	70.28	70.14	62.64	72.36	D	D	70.40		
Belgium	L, T	19.6	NCV			71.53	76.60	70.54	73.30			79.41			73.33	73.34	73.19	74.33			0.00		
Bulgaria	L, T	6.3	NCV	T2	CS	72.07	76.16	NO	70.32	T2	CS	80.12	T2	CS	71.35	74.38	63.51	73.71	NA	NA	NO		
Canada <sup>a</sup>	L, T	8.1	GCV	T2	CS	53.74	74.66	43.08	NA	T2	CS	73.64	T2	CS	74.04	73.66	75.03	70.75	NA	NA			
Croatia	L, T	23.7	NCV	T1, T2	D, PS	74.31	76.55	72.92	73.33	T1	D	77.42	T1	D	72.21	72.84	71.42	73.07	T1	D	21.54		
Czech Republic	L, T	5.1	NCV	T1	D	72.79	75.57	71.45	73.33	T1	D	71.48	T1	D	67.45	72.07	62.44	73.33	T1	D	NO		
Denmark	L, T	13.1	NCV	CR	CS	67.49	77.60	58.24	74.00	CR	CS	79.11	CR	CS	73.99	73.66	73.97	74.08			NA		
Estonia	L, T	3.8	NCV	CS, T1	CS, D	75.77	75.77	NO	NE	T1	D	73.70	CS, T1	CS, D	72.51	72.95	69.31	73.43	NA	NA	NO		
European Community	L, T	15.0	NCV	CR, CS, D, T1, T2, T3	CR, CS, D, PS	72.10	75.96	69.73	69.14			75.07	CR, D, T1, T2, T3	CR, CS, D	72.91	73.42	72.59	73.31			72.55		
Finland	L, T	16.5	NCV	T3	CS, D, PS	75.44	78.00	74.14	NO	M, T3	CS, PS	73.80	M, T1, T3	CS, D	74.17	74.82	73.76	74.30	CS, T1	CS	72.26		
France	L, T	17.6	NCV			73.39	77.70	70.87	NO			77.92			73.52	74.55	72.96	73.40	NA	NA	NO		
Germany	L, T	11.5	NCV	CS	CS	70.55	76.60	69.13	75.73	CS, T2	CS	63.04	CS	CS	73.63	73.70	73.59	73.79	CS	CS	73.99		
Greece	L, T	20.7	NCV	CR	CS, D	74.66	75.76	72.92	NO	CR	D	60.47	CR	D	73.01	71.84	73.11	73.13	NA	NA	NO		
Hungary	L, T	5.7	NCV	T3	D	76.37	76.37	IE	IE	T1, T2	D	42.73	T1	D	68.17	65.62	62.44	73.18	NA	NA	NO		
Iceland	L, T	31.1	NCV			73.48	73.48	NO	NO			74.17			73.28	62.44	70.66	73.35			75.97		
Ireland	L, T	18.2	NCV	T1, T3	CS, PS	75.81	77.29	66.95	NO	T1	CR	80.09	T1	CS	72.76	73.64	72.09	73.30	NA	NA	NO		
Italy	L, T	18.9	NCV	T3	CS	75.85	76.63	74.94	76.71	T2	CS	83.78	T2	CS	71.38	70.56	70.77	72.91	T2	CS			
Japan <sup>c</sup>	L, T	25.4	GCV	T1	CS	68.96	73.77	56.96	62.96	T1	CS	70.91	T1	CS	70.54	71.41	68.29	72.90	T1	CS	72.47		
Latvia	L, T	9.5	NCV	T1	CS	76.24	76.41	NO	73.63	T1	CS	73.41	T1	CS	71.73	73.32	68.05	74.13	NA	NA	NA		
Liechtenstein	L, T	28.6	NCV	T2	CS	NO	NO	NO	NO	T2	CS	73.70	CS, T1, T2	CS	73.66	73.65	73.70	73.60	T1	CS			
Lithuania	L, T	10.0	NCV	T2	CR, CS	82.90	78.36	87.12	73.21	T2	CR, CS	75.68	T2	CS	68.82	74.11	65.04	73.95	NA	NA	NO		
Luxembourg	L	8.9	NCV	CR	CR, CS	73.00	73.00	NO	NO	CR	CR, CS, PS	75.01	CR	CR	70.36	70.00	70.01	73.82	NA	NA	IE		
Monaco	L, T	24.9	NCV			NO	0.00	NO	NO	NA	NA	NA, NO			73.33	IE	73.33	NO			0.00		
Netherlands	L, T	10.2	NCV	T2	CS	59.69	58.65	59.94	74.15	T2	CS	60.63	T2	CS, D	73.66	70.83	71.93	74.26	T2	D	NA		
New Zealand <sup>c</sup>	L, T	3.7	GCV	D	CS	74.86	72.24	74.88	NO	D	CS	70.32	D	CS	71.08	70.52	62.95	72.44	NA	NA			
Norway	L, T	13.5	NCV	T2	CS	44.49	73.34	35.59	70.41	T2	CS	67.33	T2	CS	73.37	73.38	72.96	73.55	T2	CS	73.68		
Poland	L, T	8.2	NCV	T2	CS, D	66.91	74.47	63.82	73.16	T2	CS, D	73.84	T2	CS, D	72.21	72.86	68.50	73.71	T2	CS, D	64.35		
Portugal	L, T	21.9	NCV	T2	CR, D, PS	72.64	75.05	69.89	NO	T2	CR, D, PS	75.48	T2	CR, D	69.12	72.03	63.02	72.97	NA	NA	NO		
Romania	L, T	10.8	NCV	T1	D	72.65	72.65	IE	IE	T1	D	71.80	T1	D	70.85	70.60	70.46	73.05	NA	NA			
Russian Federation	L, T	6.1	NCV	T1	D	75.34	75.34	IE	IE	T1	D	53.68	T1	D	69.30	62.44	66.77	73.37	T1	D	74.10		
Slovakia	L, T	7.0	NCV	T1	CS	75.99	75.95	76.02	NO	T1	CS	73.80	T1	CS	73.08	70.55	NO	74.72	T1	CS	76.50		
Slovenia	L, T	15.0	NCV	T1	CS, D	75.36	76.00	73.30	71.06	T1	CS, D	76.90	T1	CS, D	72.27	73.30	71.68	72.88	NA	NA			
Spain	L, T	19.2	NCV	T2	CR, CS, PS	70.65	76.00	65.81	79.40	T2, T3	CR, CS, PS	82.38	T2, T3	CR, CS	71.33	72.28	69.88	72.56	NA	NA	NA		
Sweden	L, T	26.4	NCV	T1, T2, T3	CS	67.70	75.15	63.70	74.26	T1, T2, T3	CS	71.82	T1, T2, T3	CS	73.44	73.08	73.99	72.72	T1	CS	NO		
Switzerland	L, T	33.8	NCV	CR, RA	CS	61.59	73.50	61.09	NO	CR	CS	74.03	CR	CS	73.51	73.50	73.50	73.63	CR	CS	NO		
Turkey	L, T	16.7	NCV	T1	D	69.38	67.92	71.50	IE	T1	D	4.89	T1	D	74.88	IE	77.63	72.42			0		
Ukraine	L, T	1.1	NCV	T1	CS, D	69.00	76.48	67.58	71.95	T1	CS, D	75.09	T1	CS, D	66.11	73.48	63.29	73.36	T1	CS, D	74.69		
United Kingdom	L, T	8.7	NCV	OTH, T1, T2	CS	73.05	77.32	72.81	62.23	T1, T2	CS	73.32	OTH, T1, T2	CS	71.97	75.20	70.89	73.63	T2	CS			
United States <sup>c</sup>	L, T	10.6	GCV	T1	CS	80.91	80.91	IE	IE	T1	CS	72.37	T1	CS	69.80	71.89	68.73	IE	CS, T1	CS	32.46		

Note: This table includes data from categories 1.A.1 Energy industries, 1.A.2 Manufacturing industries and construction, 1.A.4 Other sectors and 1.A.5.a Other (stationary combustion).

<sup>a</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.1 Energy industries.

<sup>b</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.2 Manufacturing industries and construction.

<sup>c</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.4 Other sectors.

<sup>d</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.5 Other (stationary).

<sup>e</sup> Australia, Canada, Japan, New Zealand and United States reported energy data on a gross calorific value (GCV) basis. This means that reported IEFs are about 5 per cent lower for liquid and solid fuels and biomass, and about 10 per cent lower for gaseous fuels than would have been the case if the data were given on a net calorific value (NCV) basis. The IEFs included in this table have been converted into NCV-based values and are not reflecting the reported IEFs.

Table 1.5

Stationary combustion: solid fuels, CO<sub>2</sub> (base year<sup>a</sup>)

Key category	Share in national total	IEF in CRF based on	Energy industries							Manufacturing industries and construction			Other sectors							Other (Not elsewhere specified)		
			Methods and EF used <sup>b</sup>		CO <sub>2</sub> IEF				Manufacture of solid fuels and other energy industries	Methods and EF used <sup>c</sup>		CO <sub>2</sub> IEF	Methods and EF used <sup>d</sup>		CO <sub>2</sub> IEF				Methods and EF used <sup>e</sup>		CO <sub>2</sub> IEF	
			Methods	EF	Total	Public electricity and heat production	Petroleum refining			Methods	EF	Total	Methods	EF	Total	Commercial / Institutional	Residential	Agriculture / Forestry / Fisheries	Methods	EF	Stationary	
	(%)		(t/TJ)							(t/TJ)			(t/TJ)							(t/TJ)		
Australia <sup>f</sup>	L	31.6	GCV	T2	CS, PS	97.20	97.46	NA	85.51	T2	CS	84.06	T1, T2	CS	94.64	94.56	95.42	NA	T1, T2	CS	NA	
Austria	L	17.6	NCV	T2	CS	101.75	101.75	NO	NO	T2	CS	100.14	T2	CS	94.32	94.84	94.32	93.55	CS, M	CS		
Belarus	L	7.8	NCV	D	D	95.81	95.81	IE	IE			102.78	D	D	92.91	93.22	92.71	94.15	D	D	92.85	
Belgium	L	26.9	NCV			106.16	109.32	NO	84.15			78.98			92.79	92.70	92.80	92.71			0.00	
Bulgaria	L	34.5	NCV	T2	CS	107.04	107.04	NO	NO	T2	CS	116.03	T2	CS	99.62	101.21	99.51	98.94	NA	NA	NO	
Canada <sup>f</sup>	L	15.3	GCV	T2	CS	95.10	94.39	107.28	59.05	T2	CS	92.42	T2	CS	91.62	84.95	92.29	NA	NA	NA		
Croatia	L	10.1	NCV	T1	D	80.28	89.75	NO	46.71	T1	D	109.33	T1	D	92.66	92.62	92.67	NO	T1	D	NO	
Czech Republic	L	57.0	NCV	T1	D	98.10	97.93	NO	100.80	T1	D	102.51	T1	D	95.29	91.95	96.51	95.74	T1	D	NO	
Denmark	L	34.4	NCV	CR	CS	95.00	95.00	NO	NO	CR	CS	96.01	CR	CS	95.40	95.00	96.83	94.99			NO	
Estonia	L	58.5	NCV	CS, T1	CS, D	104.40	104.41	104.57	102.79	T1	D	102.99	CS, T1	CS, D	99.44	98.00	99.53	96.30	NA	NA	NO	
European Community	L	27.5	NCV	CR, CS, D, T1, T2, T3	CR, CS, D, PS	101.21	101.37	98.85	99.62			85.26	CR, D, T1, T2, T3	CR, CS, D	95.20	96.55	94.57	97.93			99.58	
Finland	L	20.5	NCV	T3	CS, D, PS	95.10	93.66	93.65	163.21	CS, M, T3	CS, PS	113.15	CS, M, T1, T2, T3	CS, D	90.91	NO	89.87	93.65	CS, T1	CS	93.65	
France	L	12.6	NCV			104.73	103.92	268.00	103.32			124.32			95.00	95.00	95.00	95.00	NA	NA	NO	
Germany	L	41.9	NCV	CS	CS	102.82	104.82	89.46	93.59	CS, T2	CS	63.16	CS	CS	95.93	97.53	94.83	99.60	CS	CS	99.59	
Greece	L	36.8	NCV	CR	CS, D	122.17	122.17	NO	NO	CR	D	94.24	CR	D	95.78	92.71	95.73	99.18	NA	NA	NO	
Hungary	L	28.2	NCV	T3	D	101.48	101.48	NO	IE	T1, T2	D	101.74	T1	D	95.76	95.79	95.68	98.05	NA	NA	NO	
Iceland	L	1.5	NCV			NO	NO	NO	NO			93.19			NO	NO	NO	NO			NO	
Ireland	L	26.3	NCV	T1, T3	CS, PS	103.15	103.06	NO	123.65	T1	CR	96.26	T1	CS	99.20	103.45	99.14	NO	NA	NA	NO	
Italy	L	11.4	NCV	T3	CS	106.76	94.75	NO	176.14	T2	CS	79.08	T2	CS	71.12	67.97	72.16	NO	T2	CS		
Japan <sup>f</sup>	L	24.3	GCV	T1	CS	93.04	94.16	42.46	85.28	T1	CS	98.74	T1	CS	88.94	97.80	58.75	112.96	T1	CS	110.41	
Latvia	L	10.4	NCV	T1	CS	96.49	96.49	NO	IE	T1	CS	92.42	T1	CS	92.70	92.97	92.55	92.36	NA	NA	NA	
Liechtenstein		0.0	NCV	T2	CS	NO	NO	NO	NO	T2	CS	NO	CS, T1, T2	CS	94.00	NO	94.00	NO	T1	CS		
Lithuania	L	6.7	NCV	T2	CR, CS	96.37	95.38	NO	102.00	T2	CS	95.60	T2	CS	95.07	95.07	95.07	95.00	NA	NA	NO	
Luxembourg	L	43.9	NCV	CR	CR, CS	258.00	258.00	NO	NO	CR	CR, CS, PS	172.62	CR	CR	100.29	100.29	100.29	NE	NA	NA	NO	
Monaco		-	NCV			NO	NO	NO	NO	NA	NA	NA, NO			NO	NO	NO	NO			0.00	
Netherlands	L	14.6	NCV	T2	CS	103.22	103.22	NO	IE	T2	CS	103.15	T2	CS, D	95.61	96.05	94.70	NO	T2	D	NA	
New Zealand <sup>f</sup>	L	5.2	GCV	D	CS, D	95.93	95.93	NO	NO	D	CS	96.01	D	CS	94.97	95.33	94.62	94.50	NA	NA		
Norway	L	2.3	NCV	T2	CS	21.54	89.95	10.95	NO	T2	CS	126.90	T2	CS	92.82	NO	94.51	89.68	T2	CS	NO	
Poland	L	68.3	NCV	T2	CS, D	101.10	102.02	95.31	69.41	T2	CS, D	112.98	T2	CS, D	95.19	97.11	94.18	97.58	T2	CS, D	105.62	
Portugal	L	17.2	NCV	T2	CR, D, PS	90.23	90.60	NO	40.79	T2	CR, D, PS	110.97	T2	CR, D	NO	NO	NO	NO	T1	CR, D	96.96	
Romania	L	20.5	NCV	T1	D	99.22	99.22	IE	IE	T1	D	106.69	T1	D	97.18	96.57	97.32	97.37	NA	NA		
Russian Federation	L	18.4	NCV	NA	NA	NE	NE	NE	NE	NA	NA	NE	NA	NA	NE	NE	NE	NE	OTH	D	IE, NE	
Slovakia	L	37.4	NCV	RA, T1	CS, D	93.37	93.36	NO	94.96	T1	CS	94.50	T1	CS	95.35	95.93	95.19	94.15	T1	CS	94.15	
Slovenia	L	44.3	NCV	T1	CS, D	105.73	105.78	NO	99.20	T1	CS, D	103.24	T1	CS, D	103.65	103.65	103.65	NO	NA	NA		
Spain	L	26.2	NCV	T2	CR, CS, PS	99.89	99.42	NO	117.10	T2, T3	CR, CS, PS	118.55	T2, T3	CR, CS	80.50	72.56	80.88	99.42			NA	
Sweden	L	10.7	NCV	T1, T2, T3	CS	110.24	112.56	0.00	84.33	T1, T2, T3	CS	40.70	T1, T2, T3	CS	91.30	NO	NO	91.30	T1	CS	NO	
Switzerland	L	2.8	NCV	CR, RA	CS	94.16	94.16	NO	NO	CR	CS	94.16	CR	CS	94.16	NO	94.16	NO	CR	CS	NO	
Turkey	L	34.6	NCV	T1	D	76.52	76.52	0	IE	T1	D	106.95	T1	D	124.99	IE	124.99	0			0	
Ukraine	L	19.7	NCV	T1, T2	CS, D	93.30	93.30	IE	IE	T1	CS, D	72.45	T1	D	96.27	96.45	96.22	96.31	NA	NA	NO	
United Kingdom	L	32.1	NCV	OTH, T1, T2	CS	94.05	94.16	NO	86.14	T1, T2	CS	123.91	OTH, T1, T2	CS	95.58	94.45	95.84	88.09	T2	CS		
United States <sup>b</sup>	L	27.6	GCV	T1	CS	93.01	93.01	IE	IE	T1	CS	92.65	T1	CS	93.86	93.86	93.86	IE	CS, T1	CS	9.75	

Note: This table includes data from categories 1.A.1 Energy industries, 1.A.2 Manufacturing industries and construction, 1.A.4 Other sectors and 1.A.5.a Other (stationary combustion).

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

<sup>b</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.1 Energy industries.

<sup>c</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.2 Manufacturing industries and construction.

<sup>d</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.4 Other sectors.

<sup>e</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.5 Other (stationary).

<sup>f</sup> Australia, Canada, Japan, New Zealand and United States reported energy data on a gross calorific value (GCV) basis. This means that reported IEFs are about 5 per cent lower for liquid and solid fuels and biomass, and about 10 per cent lower for gaseous fuels than would have been the case if the data were given on a net calorific value (NCV) basis. The IEFs included in this table have been converted into NCV-based values and are not reflecting the reported IEFs.

Table 1.6

Stationary combustion: solid fuels, CO<sub>2</sub> (2004)

Key category	Share in national total	IEF in CRF based on	Energy industries							Manufacturing industries and construction			Other sectors							Other (Not elsewhere specified)			
			Methods and EF used <sup>a</sup>		CO <sub>2</sub> IEF				Total	Methods and EF used <sup>a</sup>		CO <sub>2</sub> IEF	Methods and EF used <sup>a</sup>		CO <sub>2</sub> IEF				Methods and EF used <sup>a</sup>		CO <sub>2</sub> IEF		
			Methods	EF	Total	Public electricity and heat production	Petroleum refining	Manufacture of solid fuels and other energy industries		Methods	EF		Methods	EF	Total	Commercial / Institutional	Residential	Agriculture / Forestry / Fisheries	Methods	EF	Stationary		
	(%)		(t/TJ)							(t/TJ)			(t/TJ)								(t/TJ)		
Australia <sup>e</sup>	L, T	36.5	GCV	T2	CS, PS	95.76	95.86	NA	85.15	T2	CS	86.07	T1, T2	CS	96.28	96.32	95.42	NA	T1, T2	CS	NA		
Austria	L, T	13.5	NCV	T2	CS	96.66	96.66	NO	NO	T2	CS	102.26	T2	CS	93.62	93.40	93.63	94.10	CS, M	CS			
Belarus	L, T	3.5	NCV	D	D	95.42	95.42	IE	IE			103.71	D	D	92.77	92.78	92.73	95.19	D	D	103.33		
Belgium	L, T	16.2	NCV			114.17	120.64	NO	44.21			70.23			92.70	92.70	92.70	92.71					
Bulgaria	L, T	46.3	NCV	T2	CS	106.87	107.87	NO	48.73	T2	CS	129.91	T2	CS	100.50	99.30	100.53	100.23	NA	NA	NO		
Canada <sup>d</sup>	L, T	15.6	GCV	T2	CS	93.59	92.48	104.82	83.84	T2	CS	91.14	T2	CS	99.92	NA	99.92	NA	NA	NA			
Croatia	L, T	9.0	NCV	T1, T2	D, PS	92.71	92.71	NO	NO	T1	D	93.50	T1	D	72.58	72.38	72.65	NO	T1	D	NO		
Czech Republic	L, T	49.9	NCV	T1	D	97.00	97.84	NO	69.47	T1	D	95.41	T1	D	98.03	98.95	97.76	99.54	T1	D	NO		
Denmark	L, T	25.1	NCV	CR	CS	95.00	95.00	NO	NO	CR	CS	96.44	CR	CS	95.32	95.00	107.86	95.00			NO		
Estonia	L, T	63.8	NCV	CS, T1	CS, D	99.83	99.73	100.07	102.79	T1	CS, D	103.29	CS, T1	CS, D	97.54	99.38	97.46	98	NA	NA	NO		
European Community	L, T	20.4	NCV	CR, CS, D, T1, T2, T3	CR, CS, D, PS	101.07	101.01	153.02	101.48			79.00	CR, D, T1, T2, T3	CR, CS, D	97.90	98.49	97.98	94.53			97.87		
Finland	L, T	23.8	NCV	T3	CS, D, PS	94.24	93.65	93.65	121.68	M, T3	CS, PS	139.10	M, T1, T3	CS, D	92.27	NO	89.87	93.65	CS, T1	CS	NO		
France	L, T	8.8	NCV			101.29	100.07	268.00	106.47			143.94			95.00	NO	NO	95.00	NA	NA	NO		
Germany	L, T	33.3	NCV	CS	CS	102.10	103.43	99.79	84.74	CS, T2	CS	44.67	CS	CS	99.27	102.47	97.67	96.22	CS	CS	97.87		
Greece	L, T	34.0	NCV	CR	CS, D	122.15	122.15	NO	NO	CR	D	93.28	CR	D	93.23	NO	93.23	NO	NA	NA	NO		
Hungary	L, T	18.0	NCV	T3	D	105.04	105.04	NO	IE	T1, T2	D	105.58	T1	D	93.12	100.88	92.86	95.79	NA	NA	NO		
Iceland	L	1.3	NCV			NO	NO	NO	NO			92.71			NO	NO	NO	NO			NO		
Ireland	L, T	14.0	NCV	T1, T3	CS, PS	101.27	101.07	NO	115.00	T1	CR	101.06	T1	CS	99.11	94.83	99.34	NO	NA	NA	NO		
Italy	L, T	11.3	NCV	T3	CS	104.19	93.37	NO	199.01	T2	CS	70.71	T2	CS	93.37	93.37	93.37	NO	T2	CS			
Japan <sup>f</sup>	L, T	31.8	GCV	T1	CS	94.30	94.70	42.90	87.69	T1	CS	97.93	T1	CS	93.04	94.68	43.28	113.27	T1	CS	111.46		
Latvia	L, T	2.3	NCV	T1	CS	95.14	94.92	NO	103.87	T1	CS	92.81	T1	CS	92.20	92.20	92.20	92.20	NA	NA	NA		
Liechtenstein		0.0	NCV	T2	CS	NO	NO	NO	NO	T2	CS	NO	CS, T1, T2	CS	93.99	NO	93.99	NO	T1	CS	NA		
Lithuania	L, T	3.5	NCV	T2	CR, CS	99.01	97.25	NO	102.00	T2	CR, CS	95.03	T2	CS	95.83	95.16	96.78	95.00	NA	NA	NO		
Luxembourg	L, T	2.7	NCV	CR	CR, CS	NO	NO	NO	NO	CR	CR, CS, PS	98.85	CR	CR	102.59	102.59	102.59	NE	NA	NA	NO		
Monaco		-	NCV			NO	NO	NO	NO	NA	NA	NA, NO			NO	NO	NO	NO			0.00		
Netherlands	L	14.5	NCV	T2	CS	108.47	108.47	NO	NO	T2	CS	133.21	T2	CS, D	96.68	97.04	94.69	NO	T2	D	NA		
New Zealand <sup>d</sup>	L, T	7.7	GCV	D	CS, D	95.88	95.88	NO	NO	D	CS	96.29	D	CS	96.14	95.95	97.89	95.65	NA	NA			
Norway	L, T	1.8	NCV	T2	CS	21.15	90.20	14.17	NO	T2	CS	116.32	T2	CS	96.10	NO	96.10	NO	T2	CS	NO		
Poland	L, T	56.0	NCV	T2	CS, D	100.01	100.70	94.14	84.33	T2	CS, D	108.76	T2	CS, D	95.86	96.29	95.62	96.78	T2	CS, D	100.45		
Portugal	L, T	14.9	NCV	T2	CR, D, PS	90.16	90.16	NO	NO	T2	CR, D, PS	98.86	T2	CR, D	NO	NO	NO	NO	NA	NA	NO		
Romania	L, T	23.6	NCV	T1	D	98.78	98.78	IE	IE	T1	D	105.10	T1	D	99.06	96.39	99.18	96.34	NA	NA			
Russian Federation	L, T	21.7	NCV	T1	D	83.14	83.14	IE	IE	T1	D	148.44	T1	D	93.43	93.51	93.42	93.70	T1	D	93.11		
Slovakia	L, T	19.7	NCV	T1	CS	93.22	93.22	NO	NO	T1	CS	94.96	T1	CS	95.29	97.46	94.89	94.93	T1	CS	94.81		
Slovenia	L, T	32.1	NCV	T1	CS, D	102.52	102.52	NO	NO	T1	CS, D	99.22	T1	CS, D	99.22	99.30	99.21	NO	NA	NA			
Spain	L, T	19.2	NCV	T2	CR, CS, PS	97.86	98.07	NO	85.42	T2, T3	CR, CS, PS	123.97	T2, T3	CR, CS	88.07	81.50	90.20	NO			NA		
Sweden	L, T	11.5	NCV	T1, T2, T3	CS	135.76	142.57		74.60	T1, T2, T3	CS	27.04	T1, T2, T3	CS	NO	NO	NO	NO	T1	CS	NO		
Switzerland	L, T	1.3	NCV	CR, RA	CS	94.11	NO	94.11	NO	CR	CS	94.11	CR	CS	94.11	NO	94.11	NO	CR	CS	NO		
Turkey	L, T	28.9	NCV	T1	D	83.31	83.31	0	IE	T1	D	99.18	T1	D	131.32	IE	131.32	0			0		
Ukraine	L, T	18.0	NCV	T1	CS, D	88.15	95.46	NO	58.02	T1	CS, D	75.65	T1	CS, D	96.52	96.27	96.67	96.22	T1	CS, D	96.14		
United Kingdom	L, T	21.8	NCV	OTH, T1, T2	CS	92.00	92.40	NO	61.30	T1, T2	CS	131.39	OTH, T1, T2	CS	98.98	92.58	99.25	88.09	T2	CS			
United States <sup>d</sup>	L, T	29.0	GCV	T1	CS	93.28	93.28	IE	IE	T1	CS	92.83	T1	CS	94.18	94.18	94.18	IE	CS, T1	CS	56.90		

Note: This table includes data from categories 1.A.1 Energy industries, 1.A.2 Manufacturing industries and construction, 1.A.4 Other sectors and 1.A.5.a Other (stationary combustion).

<sup>a</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.1 Energy industries.

<sup>b</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.2 Manufacturing industries and construction.

<sup>c</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.4 Other sectors.

<sup>d</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.5 Other (stationary).

<sup>e</sup> Australia, Canada, Japan, New Zealand and United States reported energy data on a gross calorific value (GCV) basis. This means that reported IEFs are about 5 per cent lower for liquid and solid fuels and biomass, and about 10 per cent lower for gaseous fuels than would have been the case if the data were given on a net calorific value (NCV) basis. The IEFs included in this table have been converted into NCV-based values and are not reflecting the reported IEFs.

Table 1.7

Stationary combustion: gaseous fuels, CO<sub>2</sub> (base year<sup>a</sup>)

Key category	Share in national total	IEF in CRF based on	Energy industries							Manufacturing industries and construction			Other sectors							Other (Not elsewhere specified)				
			Methods and EF used <sup>b</sup>		CO <sub>2</sub> IEF				Total	Methods and EF used <sup>c</sup>		CO <sub>2</sub> IEF	Methods and EF used <sup>d</sup>		CO <sub>2</sub> IEF				Methods and EF used <sup>e</sup>		Stationary			
			Methods	EF	Total	Public electricity and heat production	Petroleum refining	Manufacture of solid fuels and other energy industries		Methods	EF		Methods	EF	Total	Commercial / Institutional	Residential	Agriculture / Forestry / Fisheries	Methods	EF				
	(%)		(t/TJ)							(t/TJ)			(t/TJ)						(t/TJ)					
Australia <sup>f</sup>	L	7.9	GCV	T2	CS, PS	56.77	56.78	56.72	56.76	T2	CS	56.91	T1, T2	CS	56.96	56.99	56.94	NA	T1, T2	CS	NA			
Austria	L	13.9	NCV	T2	CS	55.40	55.40	55.40	55.40	T2	CS	55.40	T2	CS	55.40	55.40	55.40	55.40	CS, M	CS				
Belarus	L	22.2	NCV	D	D	57.38	57.38	IE	IE			56.02	D	D	55.82	55.82	55.82	55.82	D	D	55.82			
Belgium	L	12.4	NCV			55.99	55.99	55.82	55.82			55.81			55.81	55.81	55.81	55.82			0.00			
Bulgaria	L	8.5	NCV	T2	CS	55.82	55.82	NO	NO	T2	CS	55.82	T2	CS	55.82	55.82	NO	55.82	NA	NA	NO			
Canada <sup>f</sup>	L	20.7	GCV	T2	CS	66.80	55.75	55.61	70.26	T2	CS	57.15	T2	CS	55.61	55.61	55.61	55.61	NA	NA				
Croatia	L	12.2	NCV	T1	D	55.82	55.82	55.82	55.82	T1	D	55.82	T1	D	55.82	55.82	55.82	55.82	T1	D	55.82			
Czech Republic	L	6.3	NCV	T1	D	55.82	55.82	55.82	NO	T1	D	55.82	T1	D	55.82	55.82	55.82	55.82	T1	D	NO			
Denmark	L	6.1	NCV	CR	CS	56.90	56.90	NO	56.90	CR	CS	56.46	CR	CS	56.90	56.90	56.90	56.90			NO			
Estonia	L	5.7	NCV	CS, T1	CS, D	55.82	55.82	NO	NO	T1	D	55.82	CS, T1	CS, D	55.82	55.82	55.82	55.82	NA	NA	NO			
European Community	L	11.4	NCV	CR, CS, D, T1, T2, T3	CR, CS, D, PS	57.95	55.89	52.32	68.91			55.95	CR, D, T1, T2, T3	CR, CS, D	56.10	56.08	56.08	56.72			55.63			
Finland	L	7.0	NCV	T3	CS, D, PS	54.76	54.76	54.76	NO	CS, M, T3	CS, PS	54.76	CS, M, T1, T2	CS, D	54.76	54.76	54.76	54.76	CS, T1	CS	54.76			
France	L	9.8	NCV			57.00	57.00	57.00	57.00			57.00			57.00	57.00	57.00	57.00	NA	NA	NO			
Germany	L	9.3	NCV	CS	CS	55.26	55.86	46.34	55.96	CS, T2	CS	55.87	CS	CS	55.98	55.96	55.99	55.97	CS	CS	55.81			
Greece		0.3	NCV	CR	CS, D	58.74	NO	NO	58.74	CR	D	40.55	CR	D	55.82	55.82	55.82	NO	NA	NA	NO			
Hungary	L	16.9	NCV	T3	D	55.82	55.82	IE	IE	T1, T2	D	52.42	T1	D	55.82	55.82	55.82	55.82	NA	NA	NO			
Iceland		-	NCV			NO	NO	NO	NO			0.00			NO	NO	NO	NO			NO			
Ireland	L	5.8	NCV	T1, T3	CS, PS	54.85	54.85	NO	NO	T1	CR	54.94	T1	CS	54.94	54.94	54.94	NO	NA	NA	NO			
Italy	L	16.4	NCV	T3	CS	55.33	55.33	55.33	55.33	T2	CS	55.33	T2	CS	55.33	55.33	55.33	55.33	T2	CS				
Japan <sup>f</sup>	L	8.2	GCV	T1	CS	54.91	54.90	54.88	55.06	T1	CS	55.15	T1	CS	55.40	55.19	55.51	55.06	T1	CS	55.69			
Latvia	L	21.0	NCV	T1	CS	55.82	55.82	NO	IE	T1	CS	55.82	T1	CS	55.82	55.82	55.82	55.82	NA	NA	NA			
Liechtenstein	L	12.1	NCV	T2	CS	55.00	55.00	NO	NO	T2	CS	55.00	CS, T1, T2	CS	55.00	55.00	55.01	NO	T1	CS				
Lithuania	L	21.3	NCV	T2	CR, CS	57.67	56.90	65.00	NO	T2	CS	56.90	T2	CS	56.90	56.90	56.90	56.90	NA	NA	NO			
Luxembourg	L	8.1	NCV	CR	CR, CS	55.00	55.00	NO	NO	CR	CR, CS, PS	55.26	CR	CR	55.00	55.00	55.00	55.00	NA	NA	NO			
Monaco	L	8.4	NCV			NO	0.00	NO	NO	NA	NA	NA, NO			51.08	IE	51.08	NO			0.00			
Netherlands	L	32.2	NCV	T2	CS	56.80	56.80	56.80	56.80	T2	CS	56.80	T2	CS, D	56.80	56.80	56.80	56.80	T2	D	NA			
New Zealand <sup>f</sup>	L	12.4	GCV	D	CS, D	45.40	58.83	65.51	30.61	D	CS	72.28	D	CS	58.36	58.36	58.36	NE	NA	NA				
Norway	L	10.4	NCV	T2	CS	55.82	NO	NO	55.82	T2	CS	NO	T2	CS	NO	NO	NO	NO	T2	CS	NO			
Poland	L	2.7	NCV	T2	CS, D	56.04	56.30	54.51	55.01	T2	CS, D	55.25	T2	CS, D	54.04	53.29	54.12	54.39	T2	CS, D	54.05			
Portugal		-	NCV	T2	CR, D, PS	NO	NO	NO	NO	T2	CR, D, PS	NO	T2	CR, D	NO	NO	NO	NO	T1	CR, D	NO			
Romania	L	23.6	NCV	T1	D	55.82	55.82	IE	IE	T1	D	55.82	T1	D	55.82	55.82	55.82	55.82	NA	NA				
Russian Federation	L	27.7	NCV	NA	NA	NE	NE	NE	NE	NA	NA	NE	NA	NA	NE	NE	NE	NE	OTH	D	IE, NE			
Slovakia	L	15.8	NCV	RA, T1	CS, D	56.10	56.10	56.10	NO	T1	CS	56.10	T1	CS	56.10	56.10	56.10	56.10	T1	CS	56.10			
Slovenia	L	7.3	NCV	T1	CS, D	55.00	55.00	55.00	55.00	T1	CS, D	55.00	T1	CS, D	55.00	55.00	55.00	55.00	NO	NA				
Spain	L	3.6	NCV	T2	CR, CS, PS	56.99	58.22	55.00	55.00	T2, T3	CR, CS, PS	55.15	T2, T3	CR, CS	55.00	55.00	55.00	55.00			NA			
Sweden	L	1.9	NCV	T1, T2, T3	CS	56.50	56.50			T1, T2, T3	CS	56.50	T1, T2, T3	CS	56.50	56.50	56.50	56.50	T1	CS	NO			
Switzerland	L	6.9	NCV	CR, RA	CS	55.00	55.00	NO	NO	CR	CS	55.00	CR	CS	55.00	55.00	55.00	55.00	CR	CS	NO			
Turkey	L	4.3	NCV	T1	D	55.82	55.82	0	IE	T1	D	55.82	T1	D	55.82	IE	55.82	0			0			
Ukraine	L	23.6	NCV	T1, T2	CS, D	55.82	55.82	IE	IE	T1	CS, D	55.82	T1	D	55.82	55.82	55.82	55.82	NA	NA	NO			
United Kingdom	L	14.0	NCV	OTH, T1, T2	CS	80.07	55.97	55.97	80.29	T1, T2	CS	55.97	OTH, T1, T2	CS	55.97	55.97	55.97	55.97	T2	CS				
United States <sup>f</sup>	L	15.9	GCV	T1	CS	55.60	55.60	IE	IE	T1	CS	55.60	T1	CS	55.60	55.60	55.60	IE	CS, T1	CS	NA			

Note: This table includes data from categories 1.A.1 Energy industries, 1.A.2 Manufacturing industries and construction, 1.A.4 Other sectors and 1.A.5.a Other (stationary combustion).

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).<sup>b</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.1 Energy industries.<sup>c</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.2 Manufacturing industries and construction.<sup>d</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.4 Other sectors.<sup>e</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.5 Other (stationary).<sup>f</sup> Australia, Canada, Japan, New Zealand and United States reported energy data on a gross calorific value (GCV) basis. This means that reported IEFs are about 5 per cent lower for liquid and solid fuels and biomass, and about 10 per cent lower for gaseous fuels than would have been the case if the data were given on a net calorific value (NCV) basis. The IEFs included in this table have been converted into NCV-based values and are not reflecting the reported IEFs.

Table 1.8

Stationary combustion: gaseous fuels, CO<sub>2</sub> (2004)

Key category	Share in national total	IEF in CRF based on	Energy industries							Manufacturing industries and construction			Other sectors							Other (Not elsewhere specified)						
			Methods and EF used <sup>a</sup>		CO <sub>2</sub> IEF				Total	Methods and EF used <sup>a</sup>		CO <sub>2</sub> IEF	Methods and EF used <sup>a</sup>		CO <sub>2</sub> IEF				Total	Methods and EF used <sup>a</sup>		CO <sub>2</sub> IEF				
			Methods	EF	Total	Public electricity and heat production	Petroleum refining	Manufacture of solid fuels and other energy industries		Methods	EF		Methods	EF	Total	Commercial / Institutional	Residential	Agriculture / Forestry / Fisheries		Methods	EF					
		(%)	(t/TJ)										(t/TJ)													
Australia <sup>a</sup>	L, T	9.6	GCV	T2	CS, PS	58.91	60.51	56.84	56.84	T2	CS	56.95	T1, T2	CS	56.90	56.90	56.90	56.84	T1, T2	CS	NA					
Austria	L, T	17.9	NCV	T2	CS	55.40	55.40	55.40	55.40	T2	CS	55.40	T2	CS	55.40	55.40	55.40	55.40	CS, M	CS						
Belarus	L, T	48.2	NCV	D	D	55.87	55.87	IE	IE			59.64	D	D	55.82	55.82	55.82	55.82	D	D	56.33					
Belgium	L, T	21.3	NCV			55.93	55.93	55.82	0.00			55.82			55.81	55.81	55.81	55.82			0.00					
Bulgaria	L, T	7.9	NCV	T2	CS	55.82	55.82	55.82	55.82	T2	CS	55.82	T2	CS	55.82	55.82	55.82	55.82	NA	NA	NO					
Canada <sup>a</sup>	L, T	22.8	GCV	T2	CS	64.49	55.29	54.99	69.47	T2	CS	56.06	T2	CS	54.99	54.99	54.99	54.99	NA	NA						
Croatia	L, T	15.9	NCV	T1, T2	D, PS	55.82	55.82	55.78	55.82	T1	D	55.82	T1	D	55.82	55.82	55.82	55.82	T1	D	NO					
Czech Republic	L, T	12.4	NCV	T1	D	55.82	55.82	55.82	NO	T1	D	55.82	T1	D	55.82	55.82	55.82	55.82	T1	D	NO					
Denmark	L, T	16.0	NCV	CR	CS	57.12	57.12	NO	57.12	CR	CS	57.12	CR	CS	57.12	57.12	57.12	57.12			NO					
Estonia	L, T	7.8	NCV	CS, T1	CS, D	55.82	55.82	NO	NO	T1	D	55.82	CS, T1	CS, D	55.82	55.82	55.82	55.78	NA	NA	NO					
European Community	L, T	20.1	NCV	CR, CS, D, T1, T2, T3	CR, CS, D, PS	56.75	56.37	55.86	60.88			56.12	CR, D, T1, T2, T3	CR, CS, D	56.41	56.35	56.42	56.67			55.48					
Finland	L, T	11.0	NCV	T3	CS, D, PS	54.76	54.76	54.76	NO	M, T3	CS, PS	54.85	M, T1, T3	CS, D	54.76	54.76	54.76	54.76	CS, T1	CS	54.76					
France	L, T	15.7	NCV			55.93	57.00	41.45	NO			56.60			57.00	57.00	57.00	57.00	NA	NA	NO					
Germany	L, T	16.5	NCV	CS	CS	55.99	56.00	56.00	55.92	CS, T2	CS	56.00	CS	CS	56.00	56.00	56.00	56.00	CS	CS	56.00					
Greece	L, T	3.7	NCV	CR	CS, D	55.90	55.82	NO	58.74	CR	D	51.10	CR	D	55.82	55.82	55.82	NO	NA	NA	NO					
Hungary	L, T	31.8	NCV	T3	D	55.82	55.82	IE	IE	T1, T2	D	52.90	T1	D	55.82	55.82	55.82	55.82	NA	NA	NO					
Iceland	-	NCV				NO	NO	NO	NO			0.00			NO	NO	NO	NO			NO					
Ireland	L, T	12.4	NCV	T1, T3	CS, PS	56.68	56.68	NO	NO	T1	CR	56.77	T1	CS	56.77	56.77	56.77	NO	NA	NA	NO					
Italy	L, T	26.0	NCV	T3	CS	55.56	55.56	55.56	55.56	T2	CS	55.56	T2	CS	55.56	55.56	55.56	55.56	T2	CS						
Japan <sup>a</sup>	L, T	12.3	GCV	T1	CS	54.92	54.92	56.63	55.62	T1	CS	55.55	T1	CS	55.55	55.66	56.11	55.62	T1	CS	56.62					
Latvia	L, T	28.8	NCV	T1	CS	55.82	55.82	NO	55.82	T1	CS	55.82	T1	CS	55.82	55.82	55.82	55.82	NA	NA	NA					
Liechtenstein	L, T	27.1	NCV	T2	CS	55.00	55.00	NO	NO	T2	CS	55.00	CS, T1, T2	CS	55.00	55.00	55.00	NO	T1	CS						
Lithuania	L, T	24.8	NCV	T2	CR, CS	58.65	56.90	64.99	56.90	T2	CR, CS	56.90	T2	CS	56.90	56.90	56.90	56.90	NA	NA	NO					
Luxembourg	L, T	21.4	NCV	CR	CR, CS	56.00	56.00	NO	NO	CR	CR, CS, PS	55.64	CR	CR	55.00	55.00	55.00	NE	NA	NA	NO					
Monaco	L, T	10.7	NCV			51.08	51.08	NO	NO	NA	NA				51.08		51.08									
Netherlands	L, T	37.6	NCV	T2	CS	56.82	56.80	56.80	57.07	T2	CS	56.80	T2	CS, D	56.80	56.80	56.80	56.80	T2	D	NA					
New Zealand <sup>a</sup>	L, T	9.4	GCV	D	CS, D	59.10	57.90	65.08	56.89	D	CS	81.73	D	CS	58.34	58.34	58.34	NE	NA	NA						
Norway	L, T	20.6	NCV	T2	CS	61.71	58.35	NO	61.72	T2	CS	57.38	T2	CS	58.35	58.35	58.35	58.35	T2	CS	NO					
Poland	L, T	5.1	NCV	T2	CS, D	54.34	54.26	55.34	55.07	T2	CS, D	53.55	T2	CS, D	53.64	53.68	53.62	53.91	T2	CS, D	55.49					
Portugal	L, T	9.0	NCV	T2	CR, D, PS	55.98	55.82	NO	NO	T2	CR, D, PS	55.82	T2	CR, D	55.82	55.82	55.82	55.82	NA	NA	NO					
Romania	L, T	20.1	NCV	T1	D	55.82	55.82	IE	IE	T1	D	55.82	T1	D	55.82	55.82	55.82	55.82	NA	NA						
Russian Federation	L, T	31.1	NCV	T1	D	55.82	55.82	IE	IE	T1	D	45.21	T1	D	55.82	55.82	55.82	55.82	T1	D	55.82					
Slovakia	L, T	22.5	NCV	T1	CS	55.13	55.13	55.13	55.13	T1	CS	54.98	T1	CS	55.13	55.13	55.13	55.13	T1	CS	55.13					
Slovenia	L, T	9.5	NCV	T1	CS, D	55.00	55.00	NO	NO	T1	CS, D	55.00	T1	CS, D	55.00	55.00	55.00	NO	NA	NA						
Spain	L, T	14.1	NCV	T2	CR, CS, PS	57.71	57.68	58.24	56.00	T2, T3	CR, CS, PS	55.77	T2, T3	CR, CS	56.00	56.00	56.00	56.00			NO					
Sweden	L, T	2.6	NCV	T1, T2, T3	CS	56.50	56.50	56.50		T1, T2, T3	CS	56.50	T1, T2, T3	CS	56.50	56.50	56.50	56.50	T1	CS	NO					
Switzerland	L, T	11.5	NCV	CR, RA	CS	55.00	55.00	NO	NO	CR	CS	55.00	CR	CS	55.00	55.00	55.00	55.00	CR	CS	NO					
Turkey	L, T	16.2	NCV	T1	D	54.07	54.07	0	IE	T1	D	58.29	T1	D	58.48	IE	58.48	0			0					
Ukraine	L, T	26.8	NCV	T1	CS, D	55.82	55.82	55.82	55.82	T1	CS, D	55.82	T1	CS, D	55.82	55.82	55.82	55.82	T1	CS, D	55.82					
United Kingdom	L, T	31.0	NCV	OTH, T1, T2	CS	58.26	57.09	56.98	62.48	T1, T2	CS	56.98	OTH, T1, T2	CS	56.98	56.98	56.98	56.98	T2	CS						
United States <sup>a</sup>	L, T	16.3	GCV	T1	CS	55.60	55.60	IE	IE	T1	CS	55.60	T1	CS	55.60	55.60	55.60	IE	CS, T1	CS	2.94					

Note: This table includes data from categories 1.A.1 Energy industries, 1.A.2 Manufacturing industries and construction, 1.A.4 Other sectors and 1.A.5.a Other (stationary)

<sup>a</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.1 Energy industries.

<sup>b</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.2 Manufacturing industries and construction.

<sup>c</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.4 Other sectors.

<sup>d</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.5 Other (stationary).

<sup>e</sup> Australia, Canada, Japan, New Zealand and United States reported energy data on a gross calorific value (GCV) basis. This means that reported IEFs are about 5 per cent lower for liquid and solid fuels and biomass, and about 10 per cent lower for gaseous fuels than would have been the case if the data were given on a net calorific value (NCV) basis. The IEFs included in this table have been converted into NCV-based values and are not reflecting the reported IEFs.

Table 1.9

Stationary combustion: other fuels, CO<sub>2</sub> (base year<sup>a</sup>)

	Key category	Share in national total	IEF in CRF based on	Energy industries						Manufacturing industries and construction			Other sectors						Other (Not elsewhere specified)		
				Methods and EF used <sup>b</sup>		CO <sub>2</sub> IEF				Methods and EF used <sup>c</sup>		CO <sub>2</sub> IEF	Methods and EF used <sup>d</sup>		CO <sub>2</sub> IEF				Methods and EF used <sup>e</sup>		CO <sub>2</sub> IEF
				Methods	EF	Total	Public electricity and heat production	Petroleum refining	Manufacture of solid fuels and other energy industries	Methods	EF	Total	Methods	EF	Total	Commercial / Institutional	Residential	Agriculture / Forestry / Fisheries	Methods	EF	Stationary
Australia <sup>f</sup>		-	GCV	T2	CS, PS	NA	NA	NA	NA	T2	CS	NA	T1, T2	CS	NA	NA	NA	NA	T1, T2	CS	NA
Austria	L	0.9	NCV	T2	CS	48.88	48.88	NO	NO	T2	CS	87.52	T2	CS	104.17	104.17	NO	NO	CS, M	CS	
Belarus		0.1	NCV	D	D	NO	NO	NO	NO			71.87	D	D	71.87	71.87	71.87	71.87	D	D	NO
Belgium	L	1.9	NCV			91.96	91.96	NO	NO			83.92			68.39	70.10	66.00	NO			0.00
Bulgaria		-	NCV	T2	CS	NO	NO	NO	NO	T2	CS	NO	T2	CS	NO	NO	NO	NO	NA	NA	NO
Canada <sup>f</sup>		-	GCV	T2	CS	NA	NA	NA	NA	T2	CS	IE, NA	T2	CS	NA	NA	NA	NA	NA	NA	NA
Croatia		-	NCV	T1	D	NO	NO	NO	NO	T1	D	NA, NO	T1	D	NO	NO	NO	NO	T1	D	NO
Czech Republic		-	NCV	T1	D	NO	NO	NO	NO	T1	D	NO	T1	D	NO	NO	NO	NO	T1	D	NO
Denmark		0.5	NCV	CR	CS	IE, NO	IE	NO	NO	CR	CS	IE, NO	CR	CS	IE, NO	IE	NO	NO			NO
Estonia	L	1	NCV	CS, T1	CS, D	NO	NO	NO	NO	T1	D	NO	CS, T1	CS, D	72	NO	NO	72	NA	NA	NO
European Community	L	0.6	NCV	CR, CS, D, T1, T2, T3	CR, CS, D, PS	96.88	95.06	74.88	106.84			90.99	CR, D, T1, T2, T3	CR, CS, D	102.63	93.36	148.80	100.98			101.34
Finland	L	8.1	NCV	T3	CS, D, PS	104.73	104.73	NO	NO	CS, M, T3	CS, PS	102.69	CS, M, T1, T3	CS, D	81.83	47.11	100.98	100.98	CS, T1	CS	101.34
France	L	1.0	NCV			105.11	95.89	NO	114.43			65.83			57.00	57.00	57.00	NO	NA	NA	NO
Germany	L	0.6	NCV	CS	CS	102.63	108.79	74.88	74.88	CS, T2	CS	76.02	CS	CS	NE	NE	NE	NE	CS	CS	NE, NO
Greece		-	NCV	CR	CS, D	NO	NO	NO	NO	CR	D	NO	CR	D	NO	NO	NO	NO	NA	NA	NO
Hungary		0.0	NCV	T3	D	NO	NO	NO	NO	T1, T2	D	2.34	T1	D	NO	NO	NO	NO	NA	NA	NO
Iceland		-	NCV			NO	NO	NO	NO			0.00			NO	NO	NO	NO			NO
Ireland		-	NCV	T1, T3	CS, PS	NO	NO	NO	NO	T1	CR	NO	T1	CS	NO	NO	NO	NO	NA	NA	NO
Italy		0.4	NCV	T3	CS	94.00	94.00	NO	NO	T2	CS	260.40	T2	CS	115.51	115.51	NO	NO	T2	CS	
Japan <sup>f</sup>		-	GCV	T1	CS	NO	NO	NO	NO	T1	CS	NO	T1	CS	NO	NO	NO	NO	T1	CS	NO
Latvia		-	NCV	T1	CS	NO	NO	NO	NO	T1	CS	NO	T1	CS	NO	NO	NO	NO	NA	NA	NA
Liechtenstein		-	NCV	T2	CS	NO	NO	NO	NO	T2	CS	NO	CS, T1, T2	CS	NO	NO	NO	NO	T1	CS	
Lithuania		-	NCV	T2	CR, CS	NO	NO	NO	NO	T2	CS	NO	T2	CS	NO	NO	NO	NO	NA	NA	NO
Luxembourg		-	NCV	CR	CR, CS	IE, NO	IE	NO	NO	CR	CR, CS, PS	NE	CR	CR	NE	NE	NE	NE	NA	NA	NO
Monaco	L	24.4	NCV			55.57	55.57	NO	NO	NA	NA	NA, NO			NO	NO	NO	NO			0.00
Netherlands		0.3	NCV	T2	CS	61.49	61.49	NO	NO	T2	CS	NA, NO	T2	CS, D	NO	NO	NO	NO	T2	D	NA
New Zealand <sup>f</sup>		-	GCV	D	CS, D	IE, NO	NO	IE	NO	D	CS	NO	D	CS	NO	NO	NO	NO	NA	NA	
Norway		0.2	NCV	T2	CS	23.90	23.90	NO	NO	T2	CS	NO	T2	CS	28.57	28.57	NO	NO	T2	CS	NO
Poland		-	NCV	T2	CS, D	NE	NE	NE	NE	T2	CS, D	NE	T2	CS, D	NE	NE	NE	NE	T2	CS, D	NE
Portugal		0.1	NCV	T2	CR, D, PS	NO	NO	NO	NO	T2	CR, D, PS	69.01	T2	CR, D	NO	NO	NO	NO	T1	CR, D	NO
Romania		-	NCV	T1	D	0.00	0.00	0.00	0.00	T1	D	0.00	T1	D	0.00	0.00	0.00	0.00	NA	NA	
Russian Federation		-	NCV	NA	NA	NE	NE	NE	NE	NA	NA	NE	NA	NA	NE	NE	NE	NE	OTH	D	NA, NE
Slovakia	L	9.3	NCV	RA, T1	CS, D	66.40	NO	66.40	NO	T1	CS	160.64	T1	CS	NO	NO	NO	NO	T1	CS	49.51
Slovenia		0.1	NCV	T1	CS, D	NO	NO	NO	NO	T1	CS, D	92.31	T1	CS, D	NA, NO	NO	NA	NO	NA	NA	
Spain		0.0	NCV	T2	CR, CS, PS	38.71	38.71	NO	NO	T2, T3	CR, CS, PS	NA	T2, T3	CR, CS	NO	NO	NO	NO			NA
Sweden	L	1.0	NCV	T1, T2, T3	CS	35.37	35.37	0.00	0.00	T1, T2, T3	CS	57.13	T1, T2, T3	CS	NO	NE	NE	NE	T1	CS	NO
Switzerland	L	3.2	NCV	CR, RA	CS	49.39	49.39	NO	NO	CR	CS	76.64	CR	CS	NO	NO	NO	NO	CR	CS	NO
Turkey		-	NCV	T1	D	NO	NO	NO	NO	T1	D	NO	T1	D	NO	NO	NO	NO			0
Ukraine		0.5	NCV	T1, T2	CS, D	124.43	124.43	IE	IE	T1	CS, D	75.75	T1	D	72.60	NO	72.60	72.60	NA	NA	NO
United Kingdom		0.1	NCV	OTH, T1, T2	CS	170.46	170.46	NO	NO	T1, T2	CS	94.25	OTH, T1, T2	CS	114.75	30.47	NA	NO	T2	CS	
United States <sup>f</sup>		0.2	GCV	T1	CS	7.50	7.50	NA	NA	T1	CS	IE, NA	T1	CS	IE, NE	NE	NE	IE	CS, T1	CS	32.26

Note: This table includes data from categories 1.A.1 Energy industries, 1.A.2 Manufacturing industries and construction, 1.A.4 Other sectors and 1.A.5.a Other (stationary).

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

<sup>b</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.1 Energy industries.

<sup>c</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.2 Manufacturing industries and construction.

<sup>d</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.4 Other sectors.

<sup>e</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.5 Other (stationary).

<sup>f</sup> Australia, Canada, Japan, New Zealand and United States reported energy data on a gross calorific value (GCV) basis. This means that reported IEFs are about 5 per cent lower for liquid and solid fuels and biomass, and about 10 per cent lower for gaseous fuels than would have been the case if the data were given on a net calorific value (NCV) basis. The IEFs included in this table have been converted into NCV-based values and are not reflecting the reported IEFs.

Table 1.10

Stationary combustion: other fuels, CO<sub>2</sub> (2004)

	Key category	Share in national total	IEF in CRF based on	Energy industries						Manufacturing industries and construction			Other sectors							Other (Not elsewhere specified)		
				Methods and EF used <sup>a</sup>		CO <sub>2</sub> IEF				Methods and EF used <sup>a</sup>		CO <sub>2</sub> IEF	Methods and EF used <sup>a</sup>		CO <sub>2</sub> IEF					Methods and EF used <sup>a</sup>		CO <sub>2</sub> IEF
				Methods	EF	Total	Public electricity and heat production	Petroleum refining	Manufacture of solid fuels and other energy industries	Methods	EF	Total	Methods	EF	Total	Commercial / Institutional	Residential	Agriculture / Forestry / Fisheries	Methods	EF	Stationary	
																						(t/TJ)
Australia <sup>e</sup>		-	GCV	T2	CS, PS	NA	NA	NA	NA	T2	CS	NA	T1, T2	CS	NA	NA	NA	NA	T1, T2	CS	NA	
Austria	L, T	1.6	NCV	T2	CS	59.21	59.21	NO	NO	T2	CS	79.63	T2	CS	104.17	104.17	NO	NO	CS, M	CS		
Belarus		-	NCV	D	D	NO	NO	NO	NO			IE, NE	D	D	NO	NO	NO	NO	D	D	NO	
Belgium	L, T	3.8	NCV			104.77	104.77	NO	NO			63.35			65.62	65.50	66.00	NO				
Bulgaria		-	NCV	T2	CS	NO	NO	NO	NO	T2	CS	NO	T2	CS	NO	NO	NO	NO	NA	NA	NO	
Canada <sup>e</sup>		-	GCV	T2	CS	NA	NA	NA	NA	T2	CS	IE, NA	T2	CS	NA	NA	NA	NA	NA	NA	NA	
Croatia		-	NCV	T1, T2	D, PS	NO	NO	NO	NO	T1	D	NO	T1	D	NO	NO	NO	NO	T1	D	NO	
Czech Republic		-	NCV	T1	D	NO	NO	NO	NO	T1	D	NO	T1	D	NO	NO	NO	NO	T1	D	NO	
Denmark	L, T	1.0	NCV	CR	CS	IE, NO	IE	NO	NO	CR	CS	IE, NO	CR	CS	IE, NO	IE	NO	NO			NO	
Estonia	T	0.7	NCV	CS, T1	CS, D	NO	NO	NO	NO	T1	D	NO	CS, T1	CS, D	73.03	NO	NO	73.03	NA	NA	NO	
European Community	L, T	1.2	NCV	CR, CS, D, T1, T2, T3	CR, CS, D, PS	86.14	82.15	0.00	138.27			75.30	CR, D, T1, T2, T3	CR, CS, D	110.07	105.30	167.25	100.98				
Finland	L, T	11.8	NCV	T3	CS, D, PS	101.76	101.76	NO	NO	M, T3	CS, PS	99.35	M, T1, T3	CS, D	80.79	46.21	100.98	100.98	CS, T1	CS	NO	
France	L, T	2.1	NCV			105.19	89.99	NO	138.27			67.41			57.00	57.00	57.00	NO	NA	NA	NO	
Germany	L, T	1.1	NCV	CS	CS	91.51	91.51	NE	NE	CS, T2	CS	71.30	CS	CS	NE	NE	NE	NE	CS	CS	NE, NO	
Greece		-	NCV	CR	CS, D	NO	NO	NO	NO	CR	D	NO	CR	D	NO	NO	NO	NO	NA	NA	NO	
Hungary		0.1	NCV	T3	D	NO	NO	NO	NO	T1, T2	D	6.24	T1	D	NO	NO	NO	NO	NA	NA	NO	
Iceland		0.2	NCV			52.09	52.09	NO	NO			0.00			NO	NO	NO	NO			NO	
Ireland		-	NCV	T1, T3	CS, PS	NO	NO	NO	NO	T1	CR	NO	T1	CS	NO	NO	NO	NO	NA	NA	NO	
Italy	L, T	0.7	NCV	T3	CS	94.00	94.00	NO	NO	T2	CS	260.40	T2	CS	112.50	112.50	NO	NO	T2	CS		
Japan <sup>e</sup>		-	GCV	T1	CS	NO	NO	NO	NO	T1	CS	NO	T1	CS	NO	NO	NO	NO	T1	CS	NO	
Latvia	T	0.4	NCV	T1	CS	55.82	55.82	NO	NO	T1	CS	82.76	T1	CS	55.82	55.82	NO	NO	NA	NA	NA	
Liechtenstein		-	NCV	T2	CS	NO	NO	NO	NO	T2	CS	NO	CS, T1, T2	CS	NO	NO	NO	NO	T1	CS		
Lithuania		-	NCV	T2	CR, CS	NO	NO	NO	NO	T2	CR, CS	NO	T2	CS	NO	NO	NO	NO	NA	NA	NO	
Luxembourg		-	NCV	CR	CR, CS	IE, NO	IE	NO	NO	CR	CR, CS, PS	NE	CR	CR	NE	NE	NE	NE	NA	NA	NO	
Monaco	L, T	27.6	NCV			55.57	55.57	NO	NO	NA	NA	NA, NO			NO	NO	NO	NO			0.00	
Netherlands	L, T	1.0	NCV	T2	CS	71.82	71.82	NO	NO	T2	CS	NA, NO	T2	CS, D	NO	NO	NO	NO	T2	D	NA	
New Zealand <sup>e</sup>		-	GCV	D	CS, D	IE, NO	NO	IE	NO	D	CS	NO	D	CS	NO	NO	NO	NO	NA	NA		
Norway		0.3	NCV	T2	CS	23.90	23.90	NO	NO	T2	CS	21.55	T2	CS	NO	NO	NO	NO	T2	CS	NO	
Poland	T	-	NCV	T2	CS, D	NE	NE	NE	NE	T2	CS, D	NE	T2	CS, D	NE	NE	NE	NE	T2	CS, D	NE	
Portugal		0.1	NCV	T2	CR, D, PS	NO	NO	NO	NO	T2	CR, D, PS	69.27	T2	CR, D	NO	NO	NO	NO	NA	NA	NO	
Romania		-	NCV	T1	D	0.00	0.00	0.00	0.00	T1	D	0.00	T1	D	0.00	0.00	0.00	0.00	NA	NA		
Russian Federation	L, T	0.6	NCV	T1	D	IE, NE	NE	IE	IE	T1	D	IE, NE	T1	D	39.06	NE	NO	52.19	T1	D	72.60	
Slovakia	L, T	15.8	NCV	T1	CS	91.41	NO	64.07	205.00	T1	CS	167.94	T1	CS	NO	NO	NO	NO	T1	CS	49.51	
Slovenia		0.2	NCV	T1	CS, D	NO	NO	NO	NO	T1	CS, D	70.96	T1	CS, D	NA, NO	NO	NA	NO	NA	NA		
Spain	T	0.2	NCV	T2	CR, CS, PS	36.60	36.60	NO	NO	T2, T3	CR, CS, PS	80.09	T2, T3	CR, CS	NO	NO	NO	NO			NA	
Sweden	L, T	1.8	NCV	T1, T2, T3	CS	29.41	29.41	0.00	0.00	T1, T2, T3	CS	57.37	T1, T2, T3	CS	0.00	0.00	0.00	0.00	T1	CS	NO	
Switzerland	L, T	4.2	NCV	CR, RA	CS	45.06	45.06	NO	NO	CR	CS	49.49	CR	CS	NO	NO	NO	NO	CR	CS	NO	
Turkey		-	NCV			NO	NO	NO	NO			0.00			NO	NO	NO	NO				
Ukraine		0.3	NCV	T1	CS, D	117.58	572.94	71.87	94.47	T1	CS, D	83.26	T1	CS, D	93.72	87.15	96.30	93.42	T1	CS, D	89.17	
United Kingdom		0.3	NCV	OTH, T1, T2	CS	60.89	60.89	NO	NO	T1, T2	CS	104.08	OTH, T1, T2	CS	202.75	30.47	NA	NO	T2	CS		
United States <sup>e</sup>	T	0.3	GCV	T1	CS	7.50	7.50	NA	NA	T1	CS	IE, NA	T1	CS	IE, NE	NE	NE	IE	CS, T1	CS	52.08	

Note: This table includes data from categories 1.A.1 Energy industries, 1.A.2 Manufacturing industries and construction, 1.A.4 Other sectors and 1.A.5.a Other (stationary).

<sup>a</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.1 Energy industries.

<sup>b</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.2 Manufacturing industries and construction.

<sup>c</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.4 Other sectors.

<sup>d</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.5 Other (stationary).

<sup>e</sup> Australia, Canada, Japan, New Zealand and United States reported energy data on a gross calorific value (GCV) basis. This means that reported IEFs are about 5 per cent lower for liquid and solid fuels and biomass, and about 10 per cent lower for gaseous fuels than would have been the case if the data were given on a net calorific value (NCV) basis. The IEFs included in this table have been converted into NCV-based values and are not reflecting the reported IEFs.

**Table 1.11****Fuel consumption in stationary combustion: all fuels - trend information**

Fuel consumption (TJ)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	2,702,346	3,807,582	0.5	4.1	2.7	2.8	5.2	3.0	1.9	2.6	1.3	3.7	1.7	40.9
Austria	655,089	778,959	5.8	5.7	6.7	-0.2	-3.4	-0.1	-3.7	7.5	-2.0	9.2	-1.1	18.9
Belarus	1,267,202	843,033	-8.6	-10.5	2.4	7.1	-2.7	-2.2	-2.4	-0.7	-1.1	1.4	6.5	-33.5
Belgium	1,202,714	1,344,839	6.3	2.5	6.3	-5.7	6.2	-3.9	-0.9	1.8	-1.8	4.3	-1.8	11.8
Bulgaria	908,130	465,048	-17.2	7.1	-2.4	-3.7	-12.2	-8.6	0.0	2.0	-5.5	7.2	-2.0	-48.8
Canada	4,852,493	6,301,605	-1.9	1.8	2.6	0.9	1.7	4.3	6.0	-2.2	3.1	5.2	-2.0	29.9
Croatia	262,048	226,271	-27.6	2.7	5.8	4.6	4.6	1.3	-4.0	3.8	5.6	6.9	-3.3	-13.7
Czech Republic	1,583,886	1,234,920	-1.9	3.3	*	*	*	-4.7	4.7	4.0	-5.4	1.0	-0.5	-22.0
Denmark	540,027	600,572	20.3	-2.9	24.6	-13.1	-5.6	-4.4	-7.0	4.4	-0.3	9.8	-9.3	11.2
Estonia	389,981	208,856	-5.9	-4.0	7.2	-0.5	-11.6	-7.8	3.8	-8.4	0.6	12.5	1.5	-46.4
European Community	32,414,253	35,439,504	2.5	2.0	4.1	-2.2	1.6	-0.8	0.8	3.0	-0.7	3.1	0.5	9.3
Finland	672,951	936,855	-1.6	-3.8	8.1	0.6	-2.7	2.2	-2.5	7.3	5.8	9.6	-3.8	39.2
France	3,613,714	3,881,041	11.0	2.2	6.5	-4.0	6.8	-4.1	-1.5	1.9	-3.4	4.4	1.8	7.4
Germany	9,871,706	8,833,873	-2.1	-0.4	4.8	-3.3	-1.2	1.2	-4.4	3.6	-1.8	2.1	-1.2	-10.5
Greece	683,230	924,498	-0.9	1.0	4.5	4.7	5.2	-0.4	9.6	1.5	0.2	4.6	-0.7	35.3
Hungary	1,022,142	757,461	-1.9	1.9	2.0	-2.7	-1.7	-2.7	-2.8	3.2	-3.2	5.9	-2.2	-25.9
Iceland	14,307	16,313	-5.3	2.5	8.8	2.6	-3.1	0.8	-7.8	-3.5	6.4	-6.3	6.9	14.0
Ireland	306,976	419,168	2.3	1.4	1.2	5.8	5.5	3.7	4.3	3.6	-1.8	-1.6	0.3	36.5
Italy	4,285,979	5,023,227	0.2	8.1	-0.9	0.8	2.8	2.5	1.0	1.0	-0.2	4.9	0.6	17.2
Japan	12,090,988	13,415,906	0.0	0.7	0.7	-0.7	-2.8	3.7	1.8	-2.0	4.6	0.8	-0.5	11.0
Latvia	252,371	129,958	-5.2	-4.4	2.1	-2.9	-2.0	-5.8	-10.0	6.5	0.6	1.5	2.8	-48.5
Liechtenstein	1,869	2,498	-3.5	1.2	2.1	5.7	8.6	-2.9	-4.8	0.8	6.0	7.2	2.1	33.6
Lithuania	400,058	154,285	4.9	-9.3	2.9	-6.5	3.7	-15.0	-5.3	5.2	0.5	2.1	3.5	-61.4
Luxembourg	66,783	69,101	1.3	-15.0	4.7	-8.6	-5.1	3.7	-3.8	2.7	23.1	-1.5	13.0	3.5
Monaco	1,156	1,089	-3.4	-1.5	5.9	3.8	-1.6	0.6	0.8	1.7	-3.3	-7.6	-7.8	-5.8
Netherlands	1,916,668	2,183,592	5.2	2.2	7.1	-5.3	0.8	-4.4	1.4	4.4	-0.1	1.7	1.4	13.9
New Zealand	265,725	258,976	-0.8	-11.3	2.2	8.9	-9.2	10.8	-0.9	8.4	-5.0	8.1	-7.6	-2.5
Norway	271,983	368,866	-2.3	-2.9	10.9	1.0	-2.9	-0.7	0.4	6.8	1.5	6.4	-1.6	35.6
Poland	4,662,371	3,225,961	-1.4	-0.1	6.2	-3.1	-6.4	-3.4	-4.4	1.6	-3.6	4.3	-2.0	-30.8
Portugal	475,700	647,824	3.3	6.9	-7.2	5.4	7.8	17.4	-7.2	1.9	8.0	-9.2	5.2	36.2
Romania	2,119,111	1,283,429	-20.2	11.2	5.0	-15.5	-12.1	-11.5	0.8	0.5	5.9	8.0	-1.7	-39.4
Russian Federation	IE,NA,NE	19,846,730	*	*	*	*	*	*	*	*	*	*	*	*
Slovakia	630,236	433,918	0.8	4.3	1.4	-0.2	-4.2	-3.0	-12.2	7.0	-6.7	0.0	-1.5	-31.1
Slovenia	170,411	156,743	-3.1	2.3	3.2	1.2	3.2	-4.2	-1.6	4.0	0.2	-1.2	1.9	-8.0
Spain	1,935,809	3,185,104	3.9	7.2	-7.7	11.2	0.7	10.0	5.0	1.0	7.9	2.3	8.1	64.5
Sweden	564,785	624,727	3.0	-0.4	11.0	-9.5	0.9	-5.4	-4.8	7.0	0.4	2.2	-2.9	10.6
Switzerland	408,972	444,076	6.5	4.6	4.4	-4.0	3.8	-1.0	-4.5	4.4	-2.4	4.0	1.1	8.6
Turkey	1,244,185	5,825,340	6.7	9.1	11.9	-2.5	14.2	0.1	13.9	-7.2	4.6	8.9	148.5	368.2
Ukraine	7,369,589	2,941,569	0.8	-8.4	-8.2	-7.9	-26.2	-1.5	-6.1	-0.6	-0.6	7.9	-2.0	-60.1
United Kingdom	5,621,241	5,986,125	3.2	0.0	5.5	-4.2	2.4	-0.5	2.6	3.9	-3.8	2.1	0.8	6.5
United States	54,324,802	63,420,021	-0.1	1.1	3.8	0.9	-0.2	0.9	3.0	-1.9	-0.2	0.9	1.6	16.7

Note: This table includes data from categories 1.A.1 Energy industries, 1.A.2 Manufacturing industries and construction, 1.A.4 Other sectors and 1.A.5.a Other (stationary).

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 1.12****Fuel consumption in stationary combustion: liquid fuels – trend information**

Fuel consumption (TJ)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	420,832	507,058	-0.4	3.3	2.0	-5.9	1.7	2.3	1.0	2.4	6.7	7.8	-1.5	20.5
Austria	214,559	202,407	5.2	-1.2	6.9	1.3	0.1	-6.7	-9.7	7.6	-5.7	7.2	-5.6	-5.7
Belarus	644,377	139,064	-3.4	-10.3	-5.0	-9.0	-2.3	-11.5	-17.6	-6.2	-10.6	-7.7	2.5	-78.4
Belgium	403,815	392,396	15.6	-1.6	10.1	-6.2	0.7	-10.2	-8.2	11.4	-6.0	6.5	-3.3	-2.8
Bulgaria	276,792	55,016	-26.3	-2.3	-12.8	-8.2	-10.2	0.1	-19.6	-4.2	-0.9	1.8	-7.2	-80.1
Canada	995,367	1,022,852	-8.8	-1.0	-0.2	2.2	1.0	-3.7	1.1	6.4	3.4	8.9	-3.0	2.8
Croatia	139,148	97,681	-30.5	16.3	-1.5	1.1	9.9	5.8	-18.0	4.1	2.5	10.6	-13.8	-29.8
Czech Republic	205,165	104,554	-10.9	4.6	*	*	*	0.4	-2.6	-1.5	-15.5	-2.7	-8.9	-49.0
Denmark	161,376	123,724	2.8	7.5	16.0	-9.7	-5.9	-2.4	-7.2	1.3	-4.5	-11.5	-7.1	-23.3
Estonia	82,534	11,262	-15.6	-25.2	11.0	1.3	-7.5	-10.5	-9.6	-54.3	5.9	-0.5	-15.1	-86.4
European Community	9,877,626	8,655,660	5.1	1.4	2.0	-3.8	-0.1	-5.2	-3.6	3.9	-4.0	-0.9	-3.3	-12.4
Finland	203,138	181,634	-1.8	-3.5	2.9	-3.6	2.5	0.1	-6.1	5.0	1.6	0.3	-3.4	-10.6
France	1,498,467	1,330,052	7.6	3.1	3.4	-3.2	4.2	-5.3	-5.3	3.8	-9.1	2.1	-0.1	-11.2
Germany	1,982,471	1,635,207	15.3	-2.1	6.7	-5.5	-3.7	-11.9	-3.8	7.8	-7.6	-1.6	-6.0	-17.5
Greece	300,526	404,168	2.4	7.2	12.4	1.0	0.1	-2.8	8.4	1.6	2.8	8.1	-6.4	34.5
Hungary	254,351	90,556	-2.4	-12.3	-12.4	7.9	-7.4	-13.7	0.6	-11.1	-15.4	-13.0	-3.3	-64.4
Iceland	13,761	15,671	-5.2	3.3	9.2	2.0	-3.7	0.8	-8.2	-4.3	7.6	-6.3	5.5	13.9
Ireland	98,557	165,584	5.7	-2.9	0.7	11.7	6.9	14.6	0.3	4.0	-7.1	-6.2	5.0	68.0
Italy	2,050,491	1,432,825	-2.7	6.5	-3.3	-2.0	-2.2	-4.5	-3.1	-1.6	-1.1	-4.6	-10.7	-30.1
Japan	6,432,615	5,144,597	-2.0	-2.0	-2.2	-4.9	-4.2	1.9	-2.5	-6.3	4.1	-2.7	-3.1	-20.0
Latvia	98,489	14,009	-12.5	-26.8	13.5	-22.8	-2.3	-12.4	-42.3	-18.6	-7.3	-3.5	-0.4	-85.8
Liechtenstein	1,302	1,055	-12.3	-2.9	-6.9	13.4	7.2	-12.0	-12.1	-4.8	12.8	6.0	-2.8	-19.0
Lithuania	176,251	26,428	5.9	-20.5	0.1	-9.3	20.5	-30.9	-33.0	8.1	-14.2	-24.5	0.5	-85.0
Luxembourg	17,205	15,920	9.9	-6.7	9.6	-7.1	16.2	-6.5	-9.8	11.6	-18.5	-8.0	18.2	-7.5
Monaco	507	353	-15.4	-6.2	7.7	-7.6	4.7	-2.3	-8.8	-5.5	9.4	7.0	-7.9	-30.3
Netherlands	367,079	360,596	-3.6	-3.4	0.3	-2.3	3.4	-3.8	-1.6	4.7	-2.0	5.6	-1.5	-1.8
New Zealand	37,010	40,818	-6.2	1.6	-1.3	-2.7	-0.5	1.7	2.2	-1.8	2.3	9.9	-0.5	10.3
Norway	120,404	114,294	-8.1	-8.1	19.1	-6.4	0.8	2.3	-11.4	4.9	-0.1	7.0	-11.0	-5.1
Poland	363,998	461,200	-6.0	-2.9	14.5	4.4	10.9	-1.3	8.6	-2.9	-0.5	8.4	1.4	26.7
Portugal	260,657	254,643	2.6	7.2	-10.2	7.2	11.7	0.3	-10.2	4.6	6.1	-16.1	-1.4	-2.3
Romania	446,052	231,568	-27.9	3.0	13.5	-1.3	-19.0	-21.0	-4.1	10.6	1.9	-12.1	7.0	-48.1
Russian Federation	IE,NE	1,906,797	*	*	*	*	*	*	*	*	*	*	*	*
Slovakia	81,347	48,497	681.3	4.3	1.4	-0.2	-4.2	-3.0	-93.8	-6.6	4.3	7.8	47.4	-40.4
Slovenia	37,559	40,739	-0.9	5.3	15.0	-2.0	-0.2	3.6	-8.0	0.7	-6.2	-5.2	-1.3	8.5
Spain	855,492	1,100,567	4.3	6.0	-7.4	2.3	2.6	6.2	-1.5	3.2	1.6	-1.1	4.8	28.6
Sweden	302,738	258,291	-0.7	-3.0	12.2	-12.9	0.3	-8.5	-4.2	-1.4	1.2	0.9	-7.9	-14.7
Switzerland	263,419	245,612	7.7	2.7	3.7	-4.1	4.2	-3.3	-8.5	4.5	-3.5	3.6	-0.5	-6.8
Turkey	493,755	4,067,652	-1.4	6.9	5.6	1.0	-2.3	-2.4	10.7	-6.5	3.1	-1.2	502.0	723.8
Ukraine	1,351,836	66,207	59.8	-22.6	-20.5	-14.0	-73.2	-33.2	-38.7	9.9	0.5	-13.0	-4.7	-95.1
United Kingdom	1,161,055	797,646	2.2	-4.5	0.6	-12.0	-3.7	-7.5	-3.2	6.8	-8.2	-0.4	2.9	-31.3
United States	12,722,070	14,032,275	-2.7	-5.2	6.8	1.4	0.4	2.0	-0.4	3.6	-5.6	4.6	3.2	10.3

Note: This table includes data from categories 1.A.1 Energy industries, 1.A.2 Manufacturing industries and construction, 1.A.4 Other sectors and 1.A.5.a Other (stationary).

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 1.13****Fuel consumption in stationary combustion: solid fuels – trend information**

Fuel consumption (TJ)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	1,453,268	2,125,862	3.3	2.9	4.2	4.8	6.6	3.0	1.1	3.2	0.7	2.7	2.9	46.3
Austria	139,614	124,494	4.6	14.2	0.7	5.3	-19.7	-0.5	18.0	5.2	0.7	11.7	-2.8	-10.8
Belarus	105,401	26,953	-9.0	-15.4	5.7	-18.9	-8.5	-14.4	8.3	-11.4	-13.6	-5.5	-7.6	-74.4
Belgium	423,131	267,256	-2.9	-3.5	-4.4	-8.7	5.4	-14.5	6.8	-9.3	0.0	-2.5	-2.2	-36.8
Bulgaria	422,902	285,406	-12.2	2.1	0.7	4.8	-13.9	-8.8	0.8	8.8	-6.6	9.7	-2.3	-32.5
Canada	1,018,295	1,333,513	3.4	2.5	1.6	6.0	8.6	0.1	8.3	-0.4	-1.9	7.9	-7.3	31.0
Croatia	31,938	28,798	-34.4	-9.1	-13.9	60.0	-2.5	-11.9	110.0	5.4	24.1	10.7	4.5	-9.8
Czech Republic	1,134,431	759,405	-1.8	-0.5	*	*	*	-8.5	10.5	3.0	-4.2	1.5	-1.6	-33.1
Denmark	254,835	183,640	35.7	-16.3	37.4	-25.6	-15.1	-16.0	-16.2	5.7	0.2	36.6	-23.5	-27.9
Estonia	248,190	139,707	-5.8	-6.5	4.7	-1.4	-13.5	-8.8	1.8	5.5	-0.8	14.7	-0.7	-43.7
European Community	12,069,290	8,885,928	-4.5	-2.7	-2.0	-5.2	-0.6	-4.9	3.5	0.9	0.1	3.4	-0.2	-26.4
Finland	145,480	192,251	-7.5	-20.1	29.8	-10.3	-26.3	1.5	-1.4	14.6	12.8	36.5	-11.4	32.1
France	645,651	425,791	11.2	0.0	6.3	-11.0	20.1	-10.2	-2.1	-13.8	0.7	5.4	-4.2	-34.1
Germany	5,537,624	3,676,765	-11.8	-3.1	-0.4	-4.1	-2.1	8.7	-8.3	-0.1	-0.1	1.8	0.2	-33.6
Greece	338,915	388,946	-3.9	-4.1	-2.7	7.8	4.6	-3.8	7.2	2.2	-3.7	0.1	3.1	14.8
Hungary	348,762	144,452	-3.6	-2.9	2.3	-5.2	-6.8	1.7	-2.5	-5.3	-2.0	5.4	-6.9	-58.6
Iceland	546	502	-8.4	-32.3	-23.4	59.7	28.1	0.6	5.5	22.1	-28.4	-9.3	51.4	-8.0
Ireland	144,738	94,903	-0.9	-0.5	-3.5	-1.8	3.1	-13.0	-1.1	4.4	-3.6	-7.1	-7.3	-34.4
Italy	630,359	695,814	-6.0	6.7	-8.0	-1.2	3.7	0.1	1.6	11.4	3.2	8.4	11.7	10.4
Japan	3,353,666	4,720,695	-0.6	3.6	2.6	2.6	-4.0	4.8	6.8	2.5	6.3	2.7	2.5	40.8
Latvia	29,037	2,623	-12.7	-30.9	-5.2	-12.2	-27.2	-24.8	6.9	-5.6	-19.6	-14.7	-21.7	-91.0
Liechtenstein	1	0	-5.4	-3.7	-26.9	5.3	5.0	-47.6	118.2	-45.8	-7.7	8.3	-23.1	-73.0
Lithuania	33,624	7,782	11.6	-20.3	-8.2	-17.7	-13.1	-15.1	-27.3	-10.1	63.2	28.1	-2.0	-76.9
Luxembourg	30,305	3,471	-2.6	-43.0	-2.9	-32.4	-59.7	60.8	-14.1	-16.4	-20.4	-7.2	10.8	-88.5
Monaco	NA,NO	NA,NO	*	*	*	*	*	*	*	*	*	*	*	*
Netherlands	300,497	283,447	-8.9	4.4	-4.5	-4.4	3.9	-14.8	7.4	6.7	0.2	2.5	-2.1	-5.7
New Zealand	35,483	63,692	-9.0	-2.5	-0.4	17.1	-14.9	2.3	-9.8	32.7	-3.4	60.7	3.4	79.5
Norway	23,157	20,826	-5.9	-6.9	7.9	4.1	-6.4	0.2	-11.7	-6.4	-2.1	3.6	-4.5	-10.1
Poland	3,979,275	2,213,327	-0.5	-0.6	5.3	-5.0	-9.9	-4.2	-7.1	0.9	-5.2	3.4	-4.2	-44.4
Portugal	108,813	138,748	6.3	10.2	-7.1	1.2	-10.3	22.4	0.3	-11.1	7.7	-5.8	2.6	27.5
Romania	537,493	364,282	-21.1	4.9	0.8	-15.2	-16.2	-11.7	9.6	8.0	9.0	12.3	-3.5	-32.2
Russian Federation	IE,NE	5,283,891	*	*	*	*	*	*	*	*	*	*	*	*
Slovakia	291,272	107,073	*						*	14.6	-11.5	-3.1	-8.0	-63.2
Slovenia	85,059	62,495	-6.7	2.2	-7.1	6.7	6.7	-11.0	1.8	9.7	6.0	-5.7	2.3	-26.5
Spain	737,620	830,004	2.2	2.6	-17.9	13.3	-2.4	13.7	5.7	-8.5	12.8	-6.9	4.4	12.5
Sweden	99,589	102,181	1.6	-0.2	13.4	-9.3	1.1	-8.2	0.5	8.2	1.3	2.2	5.9	2.6
Switzerland	15,880	7,247	-22.6	2.5	-33.5	-9.6	-13.5	0.1	43.9	1.8	-7.5	1.2	17.0	-54.4
Turkey	620,205	902,965	9.8	4.7	15.9	-1.2	15.8	-7.3	14.0	-17.1	4.2	7.2	4.6	45.6
Ukraine	2,008,966	848,892	-13.3	-5.4	-21.8	-2.5	-15.8	2.6	-6.2	9.0	4.4	2.7	-5.7	-57.7
United Kingdom	2,532,121	1,478,219	0.5	-5.2	-6.9	-11.9	0.8	-12.1	5.1	9.8	-7.5	6.5	-2.3	-41.6
United States	19,157,982	23,318,942	-0.5	0.9	4.8	1.9	1.6	0.6	3.9	-2.3	-0.3	2.0	1.6	21.7

Note: This table includes data from categories 1.A.1 Energy industries, 1.A.2 Manufacturing industries and construction, 1.A.4 Other sectors and 1.A.5.a Other (stationary).

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 1.14****Fuel consumption in stationary combustion: gaseous fuels – trend information**

Fuel consumption (TJ)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	649,046	971,035	-4.9	7.4	-0.7	3.2	5.3	4.4	3.7	3.3	2.6	3.0	1.7	49.6
Austria	197,550	295,103	5.5	8.5	8.3	-3.6	1.4	0.5	-4.6	7.1	-0.5	8.1	1.2	49.4
Belarus	493,858	636,905	-12.9	-10.6	6.8	18.6	-3.2	2.6	2.4	1.1	2.2	4.0	8.3	29.0
Belgium	323,961	564,468	6.1	11.6	11.7	-6.3	12.6	6.6	0.2	0.1	1.1	6.4	-0.7	74.2
Bulgaria	201,521	94,943	-16.3	23.0	-1.8	-17.0	-15.6	-14.4	6.5	-9.5	-10.4	3.9	0.1	-52.9
Canada	2,335,862	3,276,649	-1.4	3.1	4.7	-1.3	-1.3	7.9	7.8	-4.7	4.4	3.8	0.0	40.3
Croatia	68,282	83,930	-17.4	-14.3	18.8	4.5	1.9	-2.6	1.6	8.9	5.5	-2.6	8.8	22.9
Czech Republic	222,830	326,043	5.1	15.9	*	*	*	1.5	-2.9	7.1	-3.5	0.9	-0.5	46.3
Denmark	76,092	195,076	13.2	15.8	17.8	5.3	8.6	5.1	-0.9	4.1	-0.1	1.5	-0.7	156.4
Estonia	45,015	30,686	19.9	6.1	19.0	-2.6	-6.6	-4.6	34.1	-27.7	6.7	10.2	11.5	-31.8
European Community	8,640,647	15,049,814	8.4	6.9	11.3	0.0	4.6	4.5	2.3	3.4	0.7	4.8	2.9	74.2
Finland	90,755	163,763	4.7	3.8	4.6	-1.6	14.6	0.1	3.0	9.0	-1.6	10.7	-3.6	80.4
France	975,101	1,552,049	12.7	2.2	11.3	-1.3	6.1	-2.1	3.0	6.0	1.7	3.7	6.0	59.2
Germany	2,043,698	2,992,320	7.4	6.3	11.8	-4.2	1.5	0.2	-1.3	5.6	-0.5	4.0	-0.6	46.4
Greece	6,404	93,003	-1.2	-4.4	9.3	178.7	308.2	68.2	38.8	-1.9	7.8	12.5	10.4	1,352.2
Hungary	383,623	482,173	-0.8	8.7	11.6	-5.2	0.7	1.3	-2.5	10.9	0.3	9.8	-2.3	25.7
Iceland	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Ireland	59,159	149,831	4.5	8.3	12.0	8.6	5.7	8.7	16.5	2.1	7.3	8.4	-0.5	153.3
Italy	1,537,487	2,712,798	6.1	10.1	3.6	3.7	7.9	9.2	3.7	0.4	-0.6	10.4	3.9	76.4
Japan	2,106,359	3,357,727	7.2	3.3	5.1	4.2	2.4	6.0	3.5	0.0	3.2	4.1	-0.4	59.4
Latvia	97,344	55,372	-0.5	22.9	-13.6	22.5	-2.1	-4.2	9.9	16.0	2.8	4.0	-0.5	-43.1
Liechtenstein	506	1,337	21.4	9.3	14.4	-3.0	10.2	7.6	-1.6	9.4	1.1	7.1	5.8	164.3
Lithuania	178,267	89,496	3.1	5.0	5.7	-4.8	-12.8	-1.0	18.9	4.4	3.4	11.6	5.4	-49.8
Luxembourg	18,564	49,272	-0.1	9.8	6.0	3.0	0.6	3.3	2.4	1.1	58.5	1.1	11.6	165.4
Monaco	177	218	16.8	4.7	-1.5	-3.9	4.1	5.3	9.5	-2.0	5.0	-0.6	0.9	22.8
Netherlands	1,207,669	1,444,014	11.6	3.1	11.2	-6.9	-0.6	-2.8	0.9	3.9	-0.1	0.7	2.2	19.6
New Zealand	168,205	118,000	0.9	-18.6	4.9	13.5	-12.5	12.7	-0.4	11.6	-9.0	-4.3	-17.8	-29.8
Norway	92,650	184,357	6.9	1.7	6.5	6.6	-4.5	-6.0	15.7	9.9	2.3	7.1	5.0	99.0
Poland	283,772	378,462	-9.7	8.4	10.4	3.5	-0.6	-0.2	-2.4	10.0	1.1	6.5	5.1	33.4
Portugal	NO	135,651	*	*	*	*	755.2	263.0	-18.1	23.2	23.4	1.0	15.1	*
Romania	1,109,201	557,081	-16.5	3.8	-1.7	-17.8	-5.9	-7.8	-0.8	-2.8	5.1	12.3	-5.9	-49.8
Russian Federation	IE,NE	12,199,794	*	*	*	*	*	*	*	*	*	*	*	*
Slovakia	206,091	207,932	*	*	*	*	*	*	*	5.9	-8.2	-2.0	-4.0	0.9
Slovenia	26,669	34,387	2.1	0.4	7.1	-4.0	3.6	2.4	2.0	2.4	-2.3	9.7	5.2	28.9
Spain	188,874	1,075,580	12.1	29.8	12.7	32.8	2.8	15.4	17.5	10.0	13.3	16.0	16.1	469.5
Sweden	24,368	32,164	9.4	1.6	7.6	1.0	-1.2	1.0	-10.1	17.3	1.7	-5.2	-9.8	32.0
Switzerland	66,272	110,787	12.9	10.4	8.3	-3.5	2.9	3.5	-0.6	4.0	-1.9	6.1	3.1	67.2
Turkey	130,225	854,723	23.0	28.9	16.9	-13.3	51.3	20.3	17.8	8.2	6.6	21.3	6.2	556.3
Ukraine	3,915,259	1,987,173	-11.1	-3.4	2.8	-8.0	-18.6	-0.3	-4.2	-4.9	-3.0	11.3	0.0	-49.2
United Kingdom	1,890,083	3,594,722	7.6	5.9	16.4	2.6	4.6	6.7	3.0	0.8	-1.3	0.6	1.6	90.2
United States	19,721,757	23,526,987	2.4	4.7	1.7	0.4	-1.3	0.4	4.1	-3.7	3.1	-2.3	0.5	19.3

Note: This table includes data from categories 1.A.1 Energy industries, 1.A.2 Manufacturing industries and construction, 1.A.4 Other sectors and 1.A.5.a Other (stationary).

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 1.15****Fuel consumption in stationary combustion: biomass – trend information**

Fuel consumption (TJ)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	179,200	203,627	-0.4	4.1	5.2	4.2	1.0	-1.7	3.7	-4.2	-10.3	7.5	-2.5	13.6
Austria	94,376	136,906	9.0	6.4	6.6	0.2	-4.8	11.0	-6.6	10.8	-3.4	12.2	0.4	45.1
Belarus	21,720	40,110	-52.5	13.9	7.0	45.5	15.9	6.6	4.8	12.0	2.4	2.7	3.6	84.7
Belgium	19,346	38,793	-19.9	12.7	6.0	-5.8	1.7	9.1	-24.4	59.0	2.5	26.1	11.6	100.5
Bulgaria	6,914	29,684	-17.6	50.9	3.6	1.9	91.0	0.3	36.4	-2.8	18.9	6.2	4.0	329.3
Canada	502,969	668,591	-1.1	-1.3	-0.7	0.3	3.4	9.0	-0.1	-6.0	6.9	0.9	1.7	32.9
Croatia	22,680	15,863	-31.0	3.6	18.9	3.5	-12.2	-5.0	12.3	-21.7	1.3	28.8	-0.6	-30.1
Czech Republic	21,460	44,919	2.0	5.9	*	*	*	5.0	-14.9	32.2	-9.9	3.0	66.3	109.3
Denmark	47,723	98,132	8.4	6.0	6.9	4.1	-0.7	5.7	3.5	8.5	6.6	10.9	5.8	105.6
Estonia	8,358	25,131	-1.9	67.5	16.2	5.1	-12.4	-1.1	-0.7	3.2	-0.1	10.6	4.4	200.7
European Community	1,543,168	2,238,780	6.9	2.5	3.1	5.1	1.2	4.5	-0.3	4.7	0.5	5.6	3.3	45.1
Finland	178,222	304,364	-1.5	1.5	-0.7	14.8	2.3	9.7	-0.3	-2.6	9.0	-0.1	4.0	70.8
France	441,686	444,187	19.1	1.5	5.8	-6.9	3.9	-1.1	-2.7	1.3	-7.8	8.2	-0.8	0.6
Germany	223,473	396,995	-1.8	-3.5	-0.5	35.1	3.3	6.6	6.4	4.8	1.3	8.7	0.0	77.6
Greece	37,384	38,381	0.4	0.4	1.2	0.3	-0.4	0.4	3.7	-0.7	1.1	-4.0	0.8	2.7
Hungary	13,095	26,151	42.8	13.4	-8.8	1.5	-7.7	0.3	9.7	-9.3	7.8	33.9	33.9	99.7
Iceland	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Ireland	4,522	8,849	1.9	72.8	-21.3	-0.7	17.1	2.6	-2.4	10.4	-2.3	-3.3	24.3	95.7
Italy	56,679	152,259	13.6	9.5	-0.4	10.7	-12.8	17.3	4.7	9.2	8.6	13.0	19.3	168.6
Japan	198,347	192,886	0.7	3.9	0.4	3.1	-8.1	4.0	3.3	-8.7	4.2	2.2	-0.6	-2.8
Latvia	27,501	57,422	13.0	18.5	7.1	1.4	3.1	0.3	-6.4	9.1	2.5	1.6	8.7	108.8
Liechtenstein	60	106	-21.6	-21.7	-2.9	14.8	10.8	9.1	53.7	-32.1	2.2	25.0	8.3	76.5
Lithuania	11,916	30,579	0.0	4.9	9.6	2.3	10.2	3.7	4.8	5.5	5.8	3.4	2.1	156.6
Luxembourg	709	438	0	-0.1	0.8	0	0	0	0	0	-38.6	0	0	-38.2
Monaco	NA,NO	NA,NO	*	*	*	*	*	*	*	*	*	*	*	*
Netherlands	31,790	66,103	1.5	7.0	12.0	6.7	3.1	4.7	7.7	6.2	9.6	-5.5	13.2	107.9
New Zealand	25,028	36,466	7.4	1.0	-1.8	-5.9	4.4	23.1	2.1	-13.8	4.9	1.5	6.3	45.7
Norway	31,598	41,434	-5.0	1.6	3.8	5.6	-8.8	5.9	-2.1	8.6	5.8	1.7	0.3	31.1
Poland	35,326	172,972	30.5	0.4	-0.4	6.7	6.5	-3.7	2.3	6.9	1.7	0.9	4.0	389.6
Portugal	104,991	117,086	2.0	1.4	0.6	3.5	-0.5	1.7	0.2	-0.9	0.4	-5.3	13.6	11.5
Romania	26,366	130,499	-6.3	216.5	30.2	-32.7	-10.5	-5.5	-2.0	-22.8	10.1	21.0	9.8	395.0
Russian Federation	IE,NE	143,062	*	*	*	*	*	*	*	*	*	*	*	*
Slovakia	3,124	5,767	*	*	*	*	*	*	*	1.4	22.1	9.1	4.9	84.6
Slovenia	20,985	18,595	-2.8	-1.3	2.1	1.5	0.9	-12.0	0.8	-2.3	1.9	6.2	0.3	-11.4
Spain	150,720	157,935	-0.1	0.1	-2.0	5.5	-2.5	0.5	1.0	1.0	1.2	2.5	1.9	4.8
Sweden	119,953	193,663	7.1	5.4	8.9	-6.4	0.7	1.5	-8.3	19.5	-2.6	1.6	-1.4	61.4
Switzerland	30,585	31,799	9.3	7.1	9.7	-12.0	1.2	-1.2	-6.3	5.0	-2.0	6.5	-0.2	4.0
Turkey	IE,NA	IE,NA	*	*	*	*	*	*	*	*	*	*	*	*
Ukraine	36,374	25,390	*	*	*	*	*	-6.0	10.5	11.2	16.7	8.6	-8.7	-30.2
United Kingdom	31,596	84,689	4.5	8.2	3.3	4.8	14.1	9.5	1.2	4.8	3.1	9.6	7.2	168.0
United States	2,311,179	2,098,857	0.0	4.5	2.0	-4.8	-7.4	2.2	1.5	-12.3	-4.1	1.6	3.1	-9.2

Note: This table includes data from categories 1.A.1 Energy industries, 1.A.2 Manufacturing industries and construction, 1.A.4 Other sectors and 1.A.5.a Other (stationary).

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

Table 1.16

## Fuel consumption in stationary combustion: other fuels – trend information

Fuel consumption (TJ)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	NA	NA	*	*	*	*	*	*	*	*	*	*	*	*
Austria	8,990	20,050	12.1	3.7	28.4	-6.4	-6.4	14.9	-8.1	4.2	16.5	12.0	13.7	123.0
Belarus	1,847	IE,NE,NO	*	*	*	*	*	*	*	*	*	*	*	*
Belgium	32,461	81,927	26.5	10.4	6.5	17.9	4.6	6.4	6.6	0.0	-6.8	-3.5	-6.1	152.4
Bulgaria	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Canada	IE,NA	IE,NA	*	*	*	*	*	*	*	*	*	*	*	*
Croatia	NA,NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Czech Republic	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Denmark	IE,NO	IE,NO	*	*	*	*	*	*	*	*	*	*	*	*
Estonia	5,884	2,070	-77.4	814.2	-88.5	1.0	6.8	-9.9	-2.1	7.2	-48.6	21.7	1,018.9	-64.8
European Community	283,522	609,321	4.0	3.6	6.4	10.7	4.1	2.5	4.1	6.6	4.0	10.9	1.6	114.9
Finland	55,357	94,843	4.2	7.6	10.0	0.7	-6.8	-10.6	-13.5	37.8	6.4	11.4	-11.2	71.3
France	52,809	128,962	6.7	4.1	-0.2	-1.4	2.9	11.1	6.1	0.8	15.3	26.6	6.0	144.2
Germany	84,441	132,586	-12.1	-11.3	-2.9	24.9	3.1	16.1	15.1	2.2	0.4	4.3	4.8	57.0
Greece	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Hungary	22,311	14,129	-16.6	97.9	-27.5	-17.9	56.2	-24.4	-43.7	44.9	-22.3	1.5	10.6	-36.7
Iceland	NO	140	*	24.4	27.5	0	0	2.0	0	0	0	4.1	89.8	*
Ireland	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Italy	10,964	29,531	-9.5	23.8	16.9	19.2	25.7	-28.0	12.8	10.8	-4.7	9.5	17.6	169.4
Japan	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Latvia	NA,NO	532	*	-1.6	-1.4	-0.9	-0.9	40.3	76.5	41.6	45.4	14.7	2.2	*
Liechtenstein	NA,NO	NA,NO	*	*	*	*	*	*	*	*	*	*	*	*
Lithuania	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Luxembourg	IE,NE,NO	IE,NE,NO	*	*	*	*	*	*	*	*	*	*	*	*
Monaco	471	518	1.8	-0.3	7.1	12.8	-6.0	1.0	3.5	6.1	-10.7	-17.2	-10.9	9.9
Netherlands	9,634	29,432	-0.1	17.0	33.6	19.5	8.1	6.1	0.3	0.9	6.5	8.4	4.1	205.5
New Zealand	IE,NA,NO	IE,NA,NO	*	*	*	*	*	*	*	*	*	*	*	*
Norway	4,174	7,956	3.3	4.0	-1.4	3.6	11.0	12.9	2.4	10.3	-1.1	17.9	0.3	90.6
Poland	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Portugal	1,239	1,696	-5.0	45.2	9.2	16.8	26.9	14.8	1.6	-38.8	-34.2	29.0	38.1	36.9
Romania											*	*		
Russian Federation	NA,NE	313,185	*	*	*	*	*	*	*	*	*	*	*	*
Slovakia	48,402	64,651	*						*	3.8	1.9	8.1	-6.7	33.6
Slovenia	139	526	-37.4	31.3	4.3	-7.1	29.7	59.8	-5.9	-26.9	1.4	36.3	153.0	278.5
Spain	3,103	21,019	0.8	42.7	37.7	46.0	-0.9	11.9	1.0	1.4	12.0	28.1	12.5	577.3
Sweden	18,138	38,428	38.1	-7.1	5.8	2.3	12.2	-12.8	5.0	-0.6	9.0	30.3	12.2	111.9
Switzerland	32,815	48,631	-4.2	3.2	3.6	5.0	7.6	3.5	7.5	5.0	3.0	-0.1	3.9	48.2
Turkey	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ukraine	57,155	13,907	-19.5	-9.3	-10.5	-7.5	-16.6	-0.7	-11.6	-3.4	-7.3	7.1	-18.7	-75.7
United Kingdom	6,386	30,848	4.8	10.4	-1.0	17.4	30.2	-3.7	2.1	6.7	9.1	5.6	-5.1	383.1
United States	411,814	442,961	-14.1	-0.9	1.1	-5.2	-7.1	-3.9	5.0	11.9	12.3	-0.1	-0.1	7.6

Note: This table includes data from categories 1.A.1 Energy industries, 1.A.2 Manufacturing industries and construction, 1.A.4 Other sectors and 1.A.5.a Other (stationary).

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 1.17****Contribution of fuels to total energy consumption in stationary combustion (%)**

	Liquid Fuels		Solid Fuels		Gaseous Fuels		Other Fuels		Biomass	
	Base year <sup>a</sup>	2004	Base year <sup>a</sup>	2004	Base year <sup>a</sup>	2004	Base year <sup>a</sup>	2004	Base year <sup>a</sup>	2004
Australia	15.6	13.3	53.8	55.8	24.0	25.5	-	-	6.6	5.3
Austria	32.8	26.0	21.3	16.0	30.2	37.9	1.4	2.6	14.4	17.6
Belarus	50.9	16.5	8.3	3.2	39.0	75.5	0.1	-	1.7	4.8
Belgium	33.6	29.2	35.2	19.9	26.9	42.0	2.7	6.1	1.6	2.9
Bulgaria	30.5	11.8	46.6	61.4	22.2	20.4	-	-	0.8	6.4
Canada	20.5	16.2	21.0	21.2	48.1	52.0	-	-	10.4	10.6
Croatia	53.1	43.2	12.2	12.7	26.1	37.1	-	-	8.7	7.0
Czech Republic	13.0	8.5	71.6	61.5	14.1	26.4	-	-	1.4	3.6
Denmark	29.9	20.6	47.2	30.6	14.1	32.5	-	-	8.8	16.3
Estonia	21.2	5.4	63.6	66.9	11.5	14.7	2	1.0	2.1	12.0
European Community	30.5	24.4	37.2	25.1	26.7	42.5	0.9	1.7	4.8	6.3
Finland	30.2	19.4	21.6	20.5	13.5	17.5	8.2	10.1	26.5	32.5
France	41.5	34.3	17.9	11.0	27.0	40.0	1.5	3.3	12.2	11.4
Germany	20.1	18.5	56.1	41.6	20.7	33.9	0.9	1.5	2.3	4.5
Greece	44.0	43.7	49.6	42.1	0.9	10.1	-	-	5.5	4.2
Hungary	24.9	12.0	34.1	19.1	37.5	63.7	2.2	1.9	1.3	3.5
Iceland	96.2	96.1	3.8	3.1	-	-	-	0.9	-	-
Ireland	32.1	39.5	47.1	22.6	19.3	35.7	-	-	1.5	2.1
Italy	47.8	28.5	14.7	13.9	35.9	54.0	0.3	0.6	1.3	3.0
Japan	53.2	38.3	27.7	35.2	17.4	25.0	-	-	1.6	1.4
Latvia	39.0	10.8	11.5	2.0	38.6	42.6	-	0.4	10.9	44.2
Liechtenstein	69.7	42.2	0.1	0.0	27.1	53.5	-	-	3.2	4.3
Lithuania	44.1	17.1	8.4	5.0	44.6	58.0	-	-	3.0	19.8
Luxembourg	25.8	23.0	45.4	5.0	27.8	71.3	-	-	1.1	0.6
Monaco	43.9	32.4	-	-	15.4	20.0	40.8	47.6	-	-
Netherlands	19.2	16.5	15.7	13.0	63.0	66.1	0.5	1.3	1.7	3.0
New Zealand	13.9	15.8	13.4	24.6	63.3	45.6	-	-	9.4	14.1
Norway	44.3	31.0	8.5	5.6	34.1	50.0	1.5	2.2	11.6	11.2
Poland	7.8	14.3	85.3	68.6	6.1	11.7	-	-	0.8	5.4
Portugal	54.8	39.3	22.9	21.4	-	20.9	0.3	0.3	22.1	18.1
Romania	21.0	18.0	25.4	28.4	52.3	43.4			1.2	10.2
Russian Federation	-	9.6	-	26.6	-	61.5	-	1.6	-	0.7
Slovakia	12.9	11.2	46.2	24.7	32.7	47.9	7.7	14.9	0.5	1.3
Slovenia	22.0	26.0	49.9	39.9	15.6	21.9	0.1	0.3	12.3	11.9
Spain	44.2	34.6	38.1	26.1	9.8	33.8	0.2	0.7	7.8	5.0
Sweden	53.6	41.3	17.6	16.4	4.3	5.1	3.2	6.2	21.2	31.0
Switzerland	64.4	55.3	3.9	1.6	16.2	24.9	8.0	11.0	7.5	7.2
Turkey	39.7	69.8	49.8	15.5	10.5	14.7	0	0	-	-
Ukraine	18.3	2.3	27.3	28.9	53.1	67.6	0.8	0.5	0.5	0.9
United Kingdom	20.7	13.3	45.0	24.7	33.6	60.1	0.1	0.5	0.6	1.4
United States	23.4	22.1	35.3	36.8	36.3	37.1	0.8	0.7	4.3	3.3

Note: This table includes data from categories 1.A.1 Energy industries, 1.A.2 Manufacturing industries and construction, 1.A.4 Other sectors and 1.A.5.a Other (stationary).

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual inventories of Annex I Parties the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Romania (1989) and Slovenia (1986).

Table 1.18

CO<sub>2</sub> emissions from energy industries: all fuels - trend information

CO <sub>2</sub> emissions (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	142,606	213,878	2.3	3.9	3.0	4.1	7.5	3.9	1.8	3.7	1.2	3.5	2.4	50.0
Austria	13,663	15,535	5.8	8.8	8.7	0.7	-7.1	-2.9	-0.6	10.1	-1.6	20.3	-3.9	13.7
Belarus	65,141	32,567	-10.2	-14.7	0.2	5.8	-5.9	-4.0	-4.3	1.5	-1.0	-0.5	6.6	-50.0
Belgium	29,863	29,358	-0.9	-1.7	-1.0	-3.9	8.4	-10.8	4.3	-6.2	5.6	5.1	0.7	-1.7
Bulgaria	43,217	28,298	-6.3	2.0	-2.9	0.9	-12.5	-4.9	1.8	10.8	-8.9	7.0	-0.1	-34.5
Canada	145,495	204,787	-0.3	3.9	-0.4	5.2	9.5	4.8	6.8	1.7	-0.1	5.4	-3.5	40.8
Croatia	6,823	6,772	-32.6	12.8	-1.3	9.4	11.8	3.5	-9.1	7.0	14.6	9.2	-14.0	-0.8
Czech Republic	58,354	57,877	-0.5	4.4	-0.2	1.6	-0.8	-8.0	12.0	0.3	-3.0	2.1	-1.8	-0.8
Denmark	26,173	25,388	34.2	-9.7	38.8	-20.8	-10.6	-10.0	-11.0	5.1	0.6	18.3	-19.2	-3.0
Estonia	31,372	15,632	-8.7	-7.9	4.7	-1.6	-12.2	-8.9	3.5	-0.2	0.0	14.0	-1.4	-50.2
European Community	1,154,155	1,191,453	0.2	0.7	1.3	-2.8	2.9	-2.1	2.9	1.7	3.3	2.1	0.1	3.2
Finland	19,248	32,820	-1.2	-8.7	23.8	-8.3	-12.0	-2.4	-6.8	24.5	9.1	23.2	-10.0	70.5
France	66,343	63,305	18.5	5.0	7.8	-5.4	21.3	-8.3	-1.9	-12.0	8.8	2.6	-0.5	-4.6
Germany	416,935	363,824	-3.6	-2.7	1.5	-4.9	0.8	-3.7	4.1	1.7	2.1	1.8	-0.9	-12.7
Greece	43,199	57,458	-2.7	-2.7	-1.9	8.0	5.5	0.6	8.9	1.0	-1.0	2.2	2.4	33.0
Hungary	25,225	19,226	3.4	-0.8	3.4	-0.5	5.0	-0.7	-7.6	0.3	-8.3	5.6	-10.1	-23.8
Iceland	21	19	7.6	10.8	-18.8	-23.6	146.5	-45.2	-30.2	0.9	4.0	-7.0	37.1	-6.8
Ireland	11,099	15,219	4.3	5.3	5.4	4.8	2.5	4.4	1.9	7.6	-5.4	-4.1	-2.4	37.1
Italy	134,092	160,903	-4.2	9.9	-3.3	1.3	7.7	-2.7	4.3	2.1	4.5	0.5	1.5	20.0
Japan	317,760	381,822	0.8	-3.4	0.0	-1.0	-3.0	5.3	2.1	-2.4	9.2	3.7	-0.9	20.2
Latvia	8,591	2,088	-10.9	-9.5	4.6	-6.1	2.4	-12.2	-15.8	-1.9	-3.5	-2.4	-7.9	-75.7
Liechtenstein	0	3	550.0	13.8	25.3	-2.4	15.7	0.0	-5.7	6.1	-14.3	12.5	4.4	2,250.0
Lithuania	13,849	5,664	7.7	-11.8	11.9	-7.2	10.2	-20.5	-12.1	9.5	-3.0	-1.2	3.6	-59.1
Luxembourg	1,268	383	-4.5	-21.2	-13.1	-41.1	-82.9	50.4	147.0	4.4	0	0	44.0	-69.8
Monaco	27	29	-1.8	-0.3	7.4	12.1	-5.9	1.1	3.2	5.9	-10.5	-16.9	-11.1	5.8
Netherlands	52,492	70,618	1.2	6.0	1.6	1.6	3.6	-6.0	2.7	6.6	-0.7	1.7	3.3	34.5
New Zealand	6,033	7,159	1.2	-13.6	12.3	30.7	-24.4	23.7	-5.8	20.1	-11.6	17.1	-4.8	18.7
Norway	6,648	12,406	5.0	-1.8	10.1	3.9	-4.2	-0.4	9.7	12.6	1.7	6.2	1.0	86.6
Poland	271,844	183,794	-1.6	-7.1	1.4	-2.6	-3.5	-2.8	0.1	1.5	-3.2	5.3	-0.7	-32.4
Portugal	15,944	21,256	4.2	15.1	-20.0	4.7	15.4	31.8	-15.6	2.8	15.6	-17.7	4.6	33.3
Romania	103,345	48,405	-18.1	1.9	3.9	-15.0	-10.9	-12.2	0.2	6.8	1.5	3.8	-6.7	-53.2
Russian Federation	NE	966,109	*	*	*	*	*	*	*	*	*	*	*	*
Slovakia	15,679	12,217	188.3	2.8	1.4	0.0	-5.5	-2.7	-64.2	6.3	-3.2	4.6	-7.3	-22.1
Slovenia	6,701	6,287	-14.7	6.4	-5.0	7.5	4.2	-11.9	5.3	13.6	2.7	-3.8	2.1	-6.2
Spain	77,357	115,155	1.0	7.8	-14.7	16.4	-1.2	19.2	4.2	-5.5	13.7	-6.3	8.9	48.9
Sweden	10,050	12,291	11.8	-7.2	34.9	-26.0	9.0	-11.4	-13.3	13.9	11.4	8.9	-5.7	22.3
Switzerland	2,493	3,260	11.2	1.0	8.0	-1.5	11.6	-5.2	-3.2	4.2	2.3	-0.8	10.9	30.8
Turkey	34,015	76,185	7.7	0.3	9.9	12.0	10.1	8.2	10.7	3.8	-7.1	0.2	2.7	124.0
Ukraine	271,267	100,150	*	*	*	*	*	3.1	-7.0	3.6	-0.2	6.5	-7.0	-63.1
United Kingdom	236,429	207,940	-0.2	-1.5	0.7	-6.4	1.9	-5.4	5.9	5.2	-0.8	4.1	-0.2	-12.0
United States	1,795,514	2,290,620	-0.2	0.8	3.7	3.5	4.3	0.5	4.8	-1.4	-0.2	1.3	1.3	27.6

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

Table 1.19

CO<sub>2</sub> emissions from energy industries: liquid fuels - trend information

CO <sub>2</sub> emissions (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	8,979	11,198	4.4	5.8	-1.8	-8.6	3.6	5.9	-9.6	2.9	15.4	9.6	0.4	24.7
Austria	3,193	3,226	6.9	-11.8	0.2	9.3	7.4	-7.5	-20.9	5.3	-11.6	6.2	1.6	1.0
Belarus	39,471	3,520	-7.5	-15.9	-12.4	-17.7	-9.1	-17.9	-27.9	1.6	-12.0	-18.2	-8.5	-91.1
Belgium	4,949	5,989	4.0	-12.2	16.5	3.5	14.9	-24.4	-3.4	10.9	-3.5	9.6	7.1	21.0
Bulgaria	8,520	744	-39.9	-8.2	-11.3	-26.8	-69.5	27.5	-27.2	2.6	5.9	-6.1	0.9	-91.3
Canada	25,240	28,436	-9.4	1.3	-7.1	11.8	7.5	-2.3	-2.8	12.2	5.6	8.9	0.1	12.7
Croatia	4,674	3,180	-33.5	34.4	-8.7	1.1	18.4	7.2	-35.0	6.0	4.6	23.4	-26.2	-32.0
Czech Republic	1,790	1,632	29.5	1.4	-4.1	-33.0	27.1	-0.8	-8.1	1.4	4.0	23.4	-20.3	-8.8
Denmark	1,844	2,193	12.2	28.8	44.4	-11.7	-8.9	-4.1	-6.1	0.0	-7.0	-31.0	-19.6	18.9
Estonia	4,825	489	-23.2	-24.2	-0.1	-11.9	0.9	-9.1	-15.6	-35.7	-9.4	-6.7	-19.3	-89.9
European Community	226,696	193,309	4.6	5.1	-1.2	-5.2	2.6	-5.6	-2.9	0.3	1.3	-6.8	-5.2	-14.7
Finland	2,847	2,830	2.9	-7.2	13.4	-15.1	2.4	2.1	-15.8	10.7	7.5	-1.4	-11.9	-0.6
France	20,968	21,867	22.3	6.3	0.4	2.8	9.4	-6.7	-1.5	-4.9	-1.5	4.2	1.7	4.3
Germany	24,932	23,124	15.8	-1.8	-0.3	-8.3	0.8	-7.2	1.2	-1.2	5.1	0.0	0.2	-7.2
Greece	7,840	9,157	6.0	6.0	1.8	-1.5	-1.1	-0.9	11.1	-4.0	0.1	4.5	-5.4	16.8
Hungary	4,430	703	77.8	-7.2	-16.6	15.1	0.8	-12.5	-20.4	3.0	-49.2	-17.0	-51.6	-84.1
Iceland	21	12	7.6	9.2	-24.8	-28.9	192.0	-50.2	-36.8	1.2	5.4	-10.6	17.3	-42.0
Ireland	1,268	2,906	46.3	-4.4	0.3	31.0	25.5	28.4	-17.8	13.0	-23.3	-27.8	22.9	129.2
Italy	80,168	54,979	-0.3	7.1	-3.6	-2.0	-1.9	-10.7	-1.4	-3.2	1.5	-11.2	-16.8	-31.4
Japan	151,894	66,927	-5.2	-15.2	-6.4	-14.0	-11.2	-1.4	-10.8	-23.9	21.8	2.7	-9.5	-55.9
Latvia	4,354	241	-19.1	-34.1	34.3	-36.1	18.2	-15.5	-55.0	-32.7	-6.8	-26.5	-12.6	-94.5
Liechtenstein	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Lithuania	6,931	1,532	17.8	-22.3	11.9	-8.3	29.0	-32.9	-41.1	18.0	-10.8	-26.3	1.5	-77.9
Luxembourg	9	12	142.7	-2.2	-27.5	12.1	-62.1	50.7	146.9	4.5	0	0	43.9	37.0
Monaco	1	NO	-85.7	4.3	68.3	-72.8	60.0	31.8	-65.5	*	*	*	*	*
Netherlands	10,207	11,754	0.5	14.7	-3.8	1.3	4.3	-6.1	2.8	5.3	-13.9	3.9	3.1	15.2
New Zealand	226	179	1.5	60.9	-25.0	-24.4	24.0	14.9	-22.9	7.2	-5.3	22.0	-14.0	-20.7
Norway	1,013	1,111	2.6	-12.0	28.6	-4.8	-0.5	7.9	-17.1	4.1	-10.6	6.9	-13.9	9.7
Poland	10,916	7,417	2.6	-10.8	-0.8	-39.2	7.9	-2.3	54.0	8.3	0.1	0.1	-0.2	-32.1
Portugal	8,260	5,508	2.4	15.7	-36.1	6.6	45.3	2.1	-20.1	17.2	18.4	-35.1	-8.3	-33.3
Romania	17,864	7,910	-25.9	4.4	10.8	0.0	-22.0	-18.0	-20.2	24.7	-9.6	-13.7	-6.0	-55.7
Russian Federation	NE	72,698	*	*	*	*	*	*	*	*	*	*	*	*
Slovakia	1,540	95	2834.7	2.8	1.4	0.0	-5.5	-2.7	-99.7	-21.2	-25.3	90.6	-4.5	-93.8
Slovenia	309	32	-6.9	-13.4	6.3	-0.2	-14.8	-57.3	59.0	74.3	-39.0	-17.5	-40.0	-89.6
Spain	16,924	24,386	3.8	14.3	-8.2	-4.3	10.3	21.0	-2.2	5.7	5.1	-12.9	4.6	44.1
Sweden	3,276	4,061	18.5	-9.6	62.2	-38.8	11.5	-17.5	-21.9	16.2	14.0	10.9	-18.2	24.0
Switzerland	691	850	52.3	-1.6	13.3	-11.4	28.0	-22.5	-18.2	7.7	3.0	-5.1	20.4	22.9
Turkey	7,065	13,516	-17.6	-7.4	15.1	7.6	7.2	-1.7	31.6	1.3	-1.0	-7.0	-6.7	91.3
Ukraine	52,890	2,033	*	*	*	*	*	-40.3	-50.2	35.9	10.4	-22.9	-12.4	-96.2
United Kingdom	40,013	21,316	-2.8	0.5	-1.5	-18.2	-6.3	-9.9	-4.0	-1.7	4.9	-2.7	2.4	-46.7
United States	100,937	97,348	-6.6	-28.1	8.2	14.0	40.4	-7.3	-5.8	11.6	-23.3	24.6	0.3	-3.6

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

Table 1.20

CO<sub>2</sub> emissions from energy industries: solid fuels - trend information

CO <sub>2</sub> emissions (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	120,219	179,012	4.0	3.0	3.8	5.1	7.6	3.2	2.1	3.2	0.3	3.3	2.1	48.9
Austria	6,247	6,676	9.1	38.1	3.7	6.5	-30.1	8.0	32.4	19.0	-7.5	25.5	-3.5	6.9
Belarus	2,283	742	2.6	-13.3	21.5	-32.0	-2.7	-25.0	13.4	2.8	-15.1	-7.1	-7.3	-67.5
Belgium	21,482	12,952	-4.0	-3.7	-7.3	-7.7	-3.1	-20.8	11.5	-11.8	6.6	-3.8	0.8	-39.7
Bulgaria	31,318	25,083	15.4	0.3	-1.3	5.4	-5.1	-6.7	3.8	12.8	-9.7	8.4	0.1	-19.9
Canada	85,556	111,195	4.9	3.1	1.5	6.4	6.4	-0.1	7.9	0.2	-1.3	6.0	-7.1	30.0
Croatia	702	1,878	-27.1	62.9	-38.3	292.7	1.3	-9.1	175.9	7.8	27.8	7.4	-8.2	167.6
Czech Republic	54,699	54,122	-1.4	3.7	-0.9	3.3	-1.4	-8.9	13.5	0.5	-3.3	1.8	-1.0	-1.1
Denmark	22,462	16,384	37.6	-16.9	40.2	-26.8	-15.7	-16.2	-17.2	7.1	1.4	38.3	-25.0	-27.1
Estonia	24,307	13,635	-7.8	-7.5	4.5	-0.3	-13.9	-9.7	2.1	7.9	0.0	15.7	-2.4	-43.9
European Community	829,393	719,699	-1.3	-2.0	-0.8	-5.4	1.4	-4.9	5.3	1.7	2.9	4.0	-1.1	-13.2
Finland	9,785	15,480	-8.0	-21.9	40.8	-12.5	-31.4	2.1	-3.5	23.1	17.1	44.0	-13.0	58.2
France	38,372	27,503	18.0	6.1	12.4	-11.9	36.2	-13.5	-3.2	-21.0	14.0	4.3	-9.6	-28.3
Germany	365,085	304,900	-5.1	-2.8	0.6	-4.9	0.4	-4.3	4.9	1.4	2.1	2.0	-1.2	-16.5
Greece	35,257	44,486	-4.7	-4.7	-2.8	10.1	5.3	-1.8	6.3	2.3	-1.8	1.1	3.7	26.2
Hungary	14,582	11,341	-5.9	3.1	3.7	3.0	-0.8	1.7	-2.8	-5.3	-3.6	9.1	-7.1	-22.2
Iceland	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Ireland	7,951	7,194	-1.6	5.4	2.5	-2.9	-5.2	-8.5	8.3	7.8	-3.2	-7.3	-8.4	-9.5
Italy	37,209	51,400	-8.6	15.9	-8.7	-0.1	12.0	-0.6	9.9	15.5	10.9	8.0	14.8	38.1
Japan	89,106	208,390	6.0	7.7	2.9	7.2	-1.3	9.0	9.3	6.7	9.6	4.4	4.0	133.9
Latvia	355	27	-5.2	13.4	-22.1	0.6	-27.5	-37.2	81.5	-39.8	-18.4	-31.9	-69.9	-92.5
Liechtenstein	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Lithuania	220	67	-13.1	-20.8	-13.7	-5.3	-3.4	11.8	-28.6	6.1	-7.9	21.6	-3.7	-69.7
Luxembourg	1,234	NO	-5.2	-24.0	-16.4	-47.2	*	*	*	*	*	*	*	*
Monaco	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Netherlands	25,776	26,919	-8.1	4.8	-4.7	-3.5	5.0	-13.7	6.8	7.2	0.7	2.7	-2.4	4.4
New Zealand	474	3,746	-53.4	44.3	11.3	94.9	-36.0	45.4	-22.4	54.0	-0.9	112.0	36.4	689.6
Norway	366	323	0.6	-6.6	5.5	-8.6	0.0	-27.4	17.7	-1.9	-0.8	3.2	-1.5	-11.8
Poland	259,267	173,157	-1.7	-7.0	1.4	-1.3	-3.9	-2.9	-1.5	1.0	-3.7	5.3	-1.0	-33.2
Portugal	7,685	11,961	6.1	14.6	-7.9	3.1	-8.1	27.5	-3.1	-7.5	10.7	-4.5	2.7	55.6
Romania	43,363	27,674	-19.7	3.0	0.9	-17.5	-16.2	-6.4	13.7	11.4	3.1	8.9	-5.6	-36.2
Russian Federation	NE	386,592	*	*	*	*	*	*	*	*	*	*	*	*
Slovakia	11,269	5,853	*	*	*	*	*	*	*	11.3	-1.6	7.2	-6.6	-48.1
Slovenia	6,195	6,019	-13.2	5.9	-5.9	9.5	4.6	-11.5	5.1	13.0	3.7	-5.6	3.3	-2.8
Spain	59,635	76,350	-0.5	5.5	-18.3	17.6	-1.4	19.0	5.4	-9.3	13.3	-7.6	5.0	28.0
Sweden	5,737	6,533	5.2	-5.8	20.4	-14.9	6.9	-7.6	-7.7	11.6	10.4	8.5	1.7	13.9
Switzerland	47	105	-78.9	-33.4	*	*	*	*	*	*	*	*	*	124.3
Turkey	21,514	35,218	14.9	-1.8	9.5	11.2	8.4	2.6	-0.4	0.8	-16.0	-4.0	5.0	63.7
Ukraine	96,018	57,651	*	*	*	*	*	0.9	-5.6	13.0	3.3	3.6	-8.8	-40.0
United Kingdom	185,476	110,960	0.3	-5.9	-5.7	-14.5	3.1	-16.2	12.3	10.9	-5.9	9.7	-3.8	-40.2
United States	1,517,325	1,897,056	0.0	1.3	5.5	2.7	1.7	0.4	4.9	-2.7	0.2	2.0	0.5	25.0

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 1.21****CO<sub>2</sub> emissions from energy industries: gaseous fuels - trend information**

CO <sub>2</sub> emissions (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	13,409	23,668	-14.3	10.9	-1.3	2.3	9.4	9.3	5.3	8.5	2.1	2.3	6.1	76.5
Austria	4,105	5,096	-0.5	6.9	21.1	-11.1	5.0	-7.0	-10.2	0.8	13.1	23.9	-8.8	24.1
Belarus	23,386	28,306	-16.2	-14.0	7.9	23.1	-4.8	2.4	2.2	1.4	2.0	3.0	9.3	21.0
Belgium	2,767	9,503	19.9	24.8	6.4	0.6	41.4	22.4	-2.5	-7.3	9.5	17.7	-2.4	243.4
Bulgaria	3,379	2,471	-23.6	30.5	-4.0	-1.1	-22.1	1.0	-3.8	-3.8	-4.9	-0.8	-2.8	-26.9
Canada	34,698	65,156	-6.4	7.2	-1.3	-0.7	18.1	18.9	8.6	0.9	-0.1	2.7	1.7	87.8
Croatia	1,448	1,714	-32.4	-40.6	46.0	3.0	-4.0	-4.8	20.0	8.6	23.9	-16.3	12.6	18.4
Czech Republic	1,866	2,122	-4.0	29.3	20.7	-4.9	-2.6	7.4	-4.2	-4.8	-0.7	-5.8	-4.2	13.8
Denmark	1,540	6,213	16.2	21.9	25.8	12.2	14.1	7.5	2.8	4.0	3.5	-0.3	-0.3	303.5
Estonia	2,241	1,508	13.7	21.4	13.1	-2.6	-8.6	-0.3	37.3	-31.6	5.7	7.7	17.9	-32.7
European Community	80,664	246,203	2.7	9.1	17.7	12.7	9.7	13.3	2.1	2.1	6.8	4.5	8.5	205.2
Finland	2,665	6,222	3.8	6.8	8.9	-1.3	24.8	-0.1	3.6	10.3	-0.7	13.6	-4.4	133.5
France	1,583	5,041	19.4	-6.0	43.4	-4.5	-5.0	-4.9	4.0	1.7	59.9	-22.4	57.6	218.4
Germany	22,167	28,351	0.4	-0.2	15.9	-4.6	4.7	1.2	-2.7	6.7	-0.6	0.9	0.1	27.9
Greece	102	3,816	6.3	-4.4	5.4	109.1	305.2	127.4	51.2	-1.5	6.7	10.4	8.8	3,639.8
Hungary	6,213	7,182	0.5	-2.6	20.7	-16.5	21.7	3.4	-8.4	9.8	4.0	5.6	-7.1	15.6
Iceland	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Ireland	1,881	5,119	0.6	15.5	20.7	8.8	2.8	10.0	13.9	2.1	8.2	18.9	-4.9	172.2
Italy	16,561	54,361	-13.5	16.2	7.2	20.3	41.9	22.1	12.0	1.5	4.7	14.0	14.4	228.2
Japan	76,761	106,505	6.5	1.5	4.6	3.7	2.9	6.2	2.4	-0.6	1.4	3.2	-4.0	38.7
Latvia	3,882	1,818	-2.2	43.6	-21.7	51.2	-4.9	-5.0	10.7	15.9	-1.5	4.7	-4.5	-53.2
Liechtenstein	0	3	550.0	13.8	25.3	-2.4	15.7	0.0	-5.7	6.1	-14.3	12.5	4.4	2250.0
Lithuania	6,699	4,066	-2.1	8.6	12.9	-5.7	-14.3	3.2	25.9	4.4	2.4	13.4	4.5	-39.3
Luxembourg	25	371	-20.5	8.5	13.6	-9.4	-28.7	50.4	147.0	4.4	0	0	44.0	1,406.1
Monaco	NO	0	*	*	*	*	*	*	*	*	722.8	113.2	-38.0	*
Netherlands	15,917	29,830	16.7	2.5	12.1	6.9	1.7	1.7	-1.0	6.9	3.8	-0.6	8.0	87.4
New Zealand	5,333	3,234	6.1	-20.6	15.0	24.5	-23.3	20.2	-1.5	14.8	-14.2	-7.9	-29.2	-39.4
Norway	5,172	10,792	5.8	0.5	7.3	6.5	-5.3	-0.8	15.1	14.7	3.5	6.0	2.9	108.7
Poland	1,661	3,221	-9.9	36.5	25.7	-0.5	19.8	29.7	29.7	21.3	31.8	15.0	15.8	93.9
Portugal	NO	3,787	*	*	*	*	1270.8	360.5	-45.1	15.3	28.8	-17.4	41.6	*
Romania	42,118	12,822	-12.1	-1.5	3.4	-23.6	9.9	-15.2	-3.6	-12.1	7.7	6.4	-9.4	-69.6
Russian Federation	NE	506,819	*	*	*	*	*	*	*	*	*	*	*	*
Slovakia	2,214	2,921	*	*	*	*	*	*	*	0.6	-9.8	-2.1	-5.0	32.0
Slovenia	196	237	-53.5	37.4	12.1	-31.2	3.9	-1.3	-3.2	10.7	-5.0	67.7	-15.7	20.5
Spain	678	13,776	58.7	69.6	167.1	286.3	-43.4	14.1	29.1	-0.9	78.2	33.5	50.9	1,933.0
Sweden	485	733	21.2	9.7	-1.1	1.1	-2.8	1.4	-13.1	28.1	1.7	-4.5	-11.6	51.1
Switzerland	235	374	10.2	12.5	23.8	5.5	-2.2	-1.3	-13.5	8.5	-4.0	12.4	0.3	59.4
Turkey	5,436	27,451	12.2	23.1	5.3	20.5	20.0	38.1	24.0	12.1	5.1	11.2	4.9	405.0
Ukraine	121,652	40,009	*	*	*	*	*	14.1	-4.4	-9.7	-5.4	13.7	-3.3	-67.1
United Kingdom	10,189	73,984	-0.1	14.7	24.6	22.0	3.3	16.0	0.7	-1.2	5.6	-2.0	5.1	626.1
United States	176,856	295,847	1.8	8.4	-10.2	6.8	13.2	4.8	7.8	2.9	5.6	-9.2	6.6	67.3

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 1.22****Contribution of fuels to CO<sub>2</sub> emissions from energy industries (%)**

	Liquid Fuels		Solid Fuels		Gaseous Fuels		Other Fuels	
	Base year <sup>a</sup>	2004	Base year <sup>a</sup>	2004	Base year <sup>a</sup>	2004	Base year <sup>a</sup>	2004
Australia	6.3	5.2	84.3	83.7	9.4	11.1	-	-
Austria	23.4	20.8	45.7	43.0	30.0	32.8	0.9	3.5
Belarus	60.6	10.8	3.5	2.3	35.9	86.9	-	-
Belgium	16.6	20.4	71.9	44.1	9.3	32.4	2.2	3.1
Bulgaria	19.7	2.6	72.5	88.6	7.8	8.7	-	-
Canada	17.3	13.9	58.8	54.3	23.8	31.8	-	-
Croatia	68.5	47.0	10.3	27.7	21.2	25.3	-	-
Czech Republic	3.1	2.8	93.7	93.5	3.2	3.7	-	-
Denmark	7.0	8.6	85.8	64.5	5.9	24.5	1.3	2.4
Estonia	15.4	3.1	77.5	87.2	7.1	9.6	-	-
European Community	19.6	16.2	71.9	60.4	7.0	20.7	1.5	2.7
Finland	14.8	8.6	50.8	47.2	13.8	19.0	20.5	25.3
France	31.6	34.5	57.8	43.4	2.4	8.0	8.2	14.0
Germany	6.0	6.4	87.6	83.8	5.3	7.8	1.1	2.0
Greece	18.1	15.9	81.6	77.4	0.2	6.6	-	-
Hungary	17.6	3.7	57.8	59.0	24.6	37.4	-	-
Iceland	100.0	62.2	-	-	-	-	-	37.8
Ireland	11.4	19.1	71.6	47.3	16.9	33.6	-	-
Italy	59.8	34.2	27.7	31.9	12.4	33.8	0.1	0.1
Japan	47.8	17.5	28.0	54.6	24.2	27.9	-	-
Latvia	50.7	11.5	4.1	1.3	45.2	87.1	-	0.1
Liechtenstein	-	-	-	-	100.0	100.0	-	-
Lithuania	50.0	27.0	1.6	1.2	48.4	71.8	-	-
Luxembourg	0.7	3.1	97.4	-	1.9	96.9	-	-
Monaco	4.1	-	-	-	-	0.4	95.9	99.6
Netherlands	19.4	16.6	49.1	38.1	30.3	42.2	1.1	3.0
New Zealand	3.7	2.5	7.9	52.3	88.4	45.2	-	-
Norway	15.2	9.0	5.5	2.6	77.8	87.0	1.5	1.4
Poland	4.0	4.0	95.4	94.2	0.6	1.8	-	-
Portugal	51.8	25.9	48.2	56.3	-	17.8	-	-
Romania	17.3	16.3	42.0	57.2	40.8	26.5	-	-
Russian Federation	-	7.5	-	40.0	-	52.5	-	-
Slovakia	9.8	0.8	71.9	47.9	14.1	23.9	4.2	27.4
Slovenia	4.6	0.5	92.5	95.7	2.9	3.8	-	-
Spain	21.9	21.2	77.1	66.3	0.9	12.0	0.2	0.6
Sweden	32.6	33.0	57.1	53.2	4.8	6.0	5.5	7.8
Switzerland	27.7	26.1	1.9	3.2	9.4	11.5	61.0	59.2
Turkey	20.8	17.7	63.2	46.2	16.0	36.0	-	-
Ukraine	19.5	2.0	35.4	57.6	44.8	39.9	0.3	0.5
United Kingdom	16.9	10.3	78.4	53.4	4.3	35.6	0.3	0.8
United States	5.6	4.2	84.5	82.8	9.8	12.9	0.0	0.0

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual inventories of Annex I Parties the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Romania (1989) and Slovenia (1986).

Table 1.23

CO<sub>2</sub> emissions from manufacturing industries and construction: all fuels - trend information

CO <sub>2</sub> emissions (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	36,862	42,633	-1.3	3.3	0.0	-0.1	-0.4	2.2	2.1	-2.0	3.8	1.8	3.1	15.7
Austria	13,453	15,328	2.0	1.3	0.4	12.6	-6.6	-6.5	4.0	-3.0	4.7	-1.3	5.3	13.9
Belarus	7,215	7,911	7.3	-0.1	4.7	1.1	4.1	-1.4	-2.9	-6.7	2.8	8.6	11.4	9.7
Belgium	32,852	29,354	1.9	0.6	-1.8	-2.2	7.4	-4.4	2.5	-1.4	-4.5	-1.1	-3.0	-10.6
Bulgaria	24,755	10,818	-32.4	19.9	-2.9	1.1	-19.6	-13.6	-3.4	-9.1	-5.5	13.1	-6.2	-56.3
Canada	62,368	66,978	-6.2	1.3	4.4	0.2	-5.0	-0.3	5.0	-6.8	3.2	7.0	1.8	7.4
Croatia	5,645	3,644	-29.5	-7.9	2.3	1.1	9.8	-10.1	4.0	4.7	-3.5	1.7	15.2	-35.5
Czech Republic	46,935	27,047	5.4	-8.5	8.3	-1.6	-19.9	0.6	2.7	3.6	-13.3	5.3	-1.8	-42.4
Denmark	5,423	5,841	7.8	2.9	2.7	-0.1	-0.3	0.9	-3.6	1.2	-5.3	0.0	2.5	7.7
Estonia	1,741	478	9.3	-30.2	15.2	-10.2	1.7	-1.0	-26.8	21.8	-28.3	-0.4	13.9	-72.5
European Community	608,236	551,829	-3.3	-0.2	-1.0	1.7	-1.9	0.0	0.1	-0.1	-3.4	2.1	1.8	-9.3
Finland	13,037	11,191	-3.8	-4.1	-1.6	2.2	-2.5	0.2	0.5	-4.1	-1.2	4.5	-4.0	-14.2
France	83,482	79,033	0.2	-0.4	1.8	1.4	1.8	-5.3	0.8	-1.2	-2.0	-0.1	1.2	-5.3
Germany	152,737	99,480	-12.1	-0.6	-1.6	-2.2	-4.3	1.4	-3.8	-1.8	-3.7	1.2	3.5	-34.9
Greece	10,457	9,406	-2.8	8.4	7.0	1.0	1.7	-11.0	10.1	0.2	-3.6	-1.5	-6.9	-10.1
Hungary	22,588	9,850	-14.2	1.1	0.7	-10.2	-5.6	-9.0	1.8	-0.5	-2.5	4.3	-6.8	-56.4
Iceland	361	447	-20.9	4.0	11.4	17.3	-5.6	5.7	-10.1	7.7	0.3	-6.2	5.3	23.9
Ireland	4,112	4,710	-6.6	-4.9	-0.5	13.5	-1.8	8.2	11.9	-0.4	3.5	-2.2	-1.6	14.5
Italy	88,937	85,351	-3.3	2.7	-2.5	3.6	-6.6	4.5	1.6	-3.1	-4.7	6.0	-0.8	-4.0
Japan	367,577	372,595	-1.6	1.3	2.2	0.5	-6.1	2.0	3.1	-2.6	1.9	0.1	1.4	1.4
Latvia	3,711	1,066	-22.6	-6.0	-2.0	-7.2	-16.7	-9.9	-16.0	-6.5	1.0	-0.9	-4.0	-71.3
Liechtenstein	35	37	-3.1	0.4	-0.1	4.5	6.5	-1.5	-8.7	0.6	3.2	7.4	-2.4	5.8
Lithuania	6,197	1,247	0.9	-14.4	-14.9	-3.5	6.5	-27.1	-1.0	-2.5	3.3	3.7	8.0	-79.9
Luxembourg	5,291	2,528	-10.0	-39.3	-0.4	-20.3	-27.8	13.8	-3.8	-5.1	40.0	-2.5	18.6	-52.2
Monaco	NA, NO	NA, NO	*	*	*	*	*	*	*	*	*	*	*	*
Netherlands	33,045	27,166	-1.7	-8.3	2.4	-5.3	0.9	-0.8	-1.9	-2.6	2.8	2.2	-0.9	-17.8
New Zealand	4,568	5,026	8.8	-2.1	10.0	6.9	1.3	-5.4	3.6	1.8	5.2	-7.0	-14.5	10.0
Norway	3,639	3,886	-4.4	-10.0	12.8	-0.5	2.0	-8.0	-5.2	2.3	-6.1	9.5	-6.1	6.8
Poland	58,488	38,950	-17.9	30.8	12.4	-8.9	-14.1	-14.9	-4.1	-9.9	-8.5	-2.8	-8.1	-33.4
Portugal	9,158	10,618	2.6	1.9	2.9	9.7	-1.3	-0.3	4.3	-3.9	-2.0	-3.0	-1.1	15.9
Romania	34,982	24,663	-32.5	5.3	2.1	-16.2	-23.8	-11.3	5.5	2.7	17.5	5.4	3.4	-29.5
Russian Federation	NE	137,706	*	*	*	*	*	*	*	*	*	*	*	*
Slovakia	24,053	14,576	*	*	*	*	*	*	*	8.6	-5.1	1.3	1.3	-39.4
Slovenia	4,352	2,335	-1.5	-1.9	-6.5	-9.9	2.9	0.9	-1.4	-2.7	1.6	-3.9	9.7	-46.3
Spain	46,266	72,498	3.9	7.7	-10.1	11.7	0.0	4.4	3.9	7.4	2.3	5.8	7.9	56.7
Sweden	11,062	11,435	-2.2	2.5	0.5	2.6	-4.3	-8.0	3.0	0.3	0.4	0.3	0.2	3.4
Switzerland	6,005	5,768	-1.7	-1.5	-1.4	1.6	3.1	1.2	1.2	1.8	-2.9	0.6	-0.1	-3.9
Turkey	37,531	68,302	7.8	13.2	23.8	9.6	-2.8	-10.1	20.3	-21.7	23.9	16.0	1.4	82.0
Ukraine	143,311	47,056	*	*	*	*	*	-4.8	-1.2	-3.1	-1.4	11.5	3.2	-67.2
United Kingdom	99,064	87,890	0.1	-3.4	1.3	0.9	-1.6	1.4	-2.5	3.4	-11.1	1.7	2.0	-11.3
United States	851,115	863,461	-2.5	0.6	4.8	-0.7	-4.4	-2.6	1.6	-0.2	-2.2	0.3	2.2	1.5

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 1.24****CO<sub>2</sub> emissions from manufacturing industries and construction: liquid fuels - trend information**

CO <sub>2</sub> emissions (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	11,900	12,190	-3.6	3.0	6.2	-8.7	0.1	-0.8	8.5	-4.0	4.6	0.3	0.9	2.4
Austria	3,775	2,992	11.4	-5.8	-5.8	28.0	-5.2	-15.9	-7.5	0.8	-10.7	1.6	0.4	-20.7
Belarus	3,938	3,017	13.9	-1.0	4.7	-1.2	5.1	-5.9	-10.4	-10.2	-4.1	2.6	15.8	-23.4
Belgium	7,533	4,660	17.5	-2.5	-10.8	-0.7	0.1	-26.2	-3.8	23.5	-7.2	-5.6	-3.9	-38.1
Bulgaria	7,740	3,219	73.3	41.5	-9.4	13.6	32.6	-9.5	-16.8	-11.9	7.7	7.9	-7.9	-58.4
Canada	14,120	11,076	-13.6	-7.7	2.9	-1.0	-5.6	-5.7	5.6	9.3	-15.7	17.2	-0.7	-21.6
Croatia	2,136	1,429	-29.3	-1.7	3.8	-29.3	21.0	-6.6	3.0	8.2	-3.4	-3.3	-0.7	-33.1
Czech Republic	9,110	5,118	-9.8	13.4	-1.1	6.5	-7.6	2.9	0.9	-5.1	-21.8	5.5	-6.0	-43.8
Denmark	2,684	2,547	7.8	-0.4	4.0	-6.3	-2.4	0.7	-2.2	3.2	-0.2	-0.8	2.0	-5.1
Estonia	775	181	5.6	-61.7	67.5	1.0	-46.9	-43.3	6.9	9.7	27.0	53.5	-10.7	-76.7
European Community	193,942	166,141	0.7	-1.5	-3.3	1.5	-1.7	-4.1	-4.0	2.3	-4.3	1.7	2.6	-14.3
Finland	4,565	3,992	-6.4	3.0	-4.7	2.3	2.7	2.4	-3.8	-1.3	-0.2	-0.1	3.4	-12.6
France	30,582	22,265	-0.2	1.0	1.9	-1.7	5.6	-10.1	-6.4	-0.6	-10.6	-0.2	-1.3	-27.2
Germany	25,897	15,637	7.7	-4.3	-3.2	-6.2	-4.6	-6.7	-11.2	-6.4	11.6	-9.5	0.1	-39.6
Greece	5,638	6,022	-3.9	15.2	13.3	3.6	-4.5	-8.1	6.3	-0.6	3.8	1.1	-10.7	6.8
Hungary	5,084	2,512	-6.2	-10.9	-2.0	-10.3	-17.8	-8.7	3.8	-22.6	11.1	4.9	1.7	-50.6
Iceland	310	401	-23.0	8.0	13.8	15.3	-7.8	6.1	-11.5	6.3	3.7	-5.9	1.7	29.2
Ireland	2,232	3,256	-11.6	-5.7	-3.6	20.7	-13.7	6.7	23.3	1.8	-5.4	4.0	3.8	45.9
Italy	34,529	28,786	-9.7	0.2	-3.6	4.6	-5.1	6.6	-1.5	-0.7	-4.5	10.8	-1.0	-16.6
Japan	145,399	136,576	0.7	1.2	1.1	0.9	-5.5	1.7	0.3	-4.8	-1.4	-1.7	0.1	-6.1
Latvia	1,418	290	-37.3	-2.8	-5.8	-2.7	-23.4	-13.2	-38.9	-38.8	-8.6	-1.7	7.4	-79.6
Liechtenstein	19	15	-12.3	-2.8	-7.2	13.8	7.4	-12.3	-12.2	-4.8	13.0	6.0	-2.9	-19.0
Lithuania	3,897	248	-3.9	-15.7	-20.9	-8.8	5.0	-28.5	-8.2	-10.1	-37.1	-33.5	16.3	-93.6
Luxembourg	461	369	-12.1	-17.1	25.7	-24.8	36.0	-15.1	-3.9	18.7	-49.7	-0.3	74.4	-19.8
Monaco	NA, NO	NA, NO	*	*	*	*	*	*	*	*	*	*	*	*
Netherlands	8,993	7,282	-2.5	-23.7	4.1	-11.5	4.1	7.7	-10.4	-1.5	17.7	12.9	-5.4	-19.0
New Zealand	728	917	-3.7	2.0	6.4	-5.6	-14.7	-8.7	37.2	-2.4	3.3	-2.5	24.2	26.0
Norway	2,905	2,733	-6.0	-15.5	16.1	-8.8	5.9	-7.2	-6.0	5.4	-6.1	9.9	-12.1	-5.9
Poland	7,897	7,568	-20.7	18.7	43.9	10.5	11.4	-17.1	-32.2	12.6	7.7	2.8	5.7	-4.2
Portugal	6,458	6,826	2.4	6.8	4.7	13.0	-1.1	-4.9	-8.7	-2.5	-1.0	-8.4	-0.4	5.7
Romania	10,108	5,388	-33.6	-11.0	34.0	-21.4	-19.8	-13.8	28.3	3.4	16.9	-18.6	13.7	-46.7
Russian Federation	NE	26,732	*	*	*	*	*	*	*	*	*	*	*	*
Slovakia	4,163	3,427	*	*	*	*	*	*	*	-6.6	5.7	6.2	49.3	-17.7
Slovenia	1,656	639	-13.6	-1.5	-15.1	-16.0	-3.2	4.3	-5.8	-10.0	-10.5	-10.0	13.6	-61.4
Spain	24,520	30,065	1.8	6.8	-15.7	13.4	-0.6	-1.2	-5.1	4.3	-0.2	2.5	9.3	22.6
Sweden	8,366	8,737	-6.6	2.8	-0.5	2.3	-4.8	-6.2	1.1	-0.8	1.9	0.8	-2.3	4.4
Switzerland	3,392	2,911	2.6	-6.9	3.7	2.8	4.7	0.1	-8.1	2.4	-3.6	-0.7	-2.1	-14.2
Turkey	12,574	17,783	3.6	10.1	11.7	3.5	-13.5	0.5	-0.6	-9.0	14.2	5.0	-0.9	41.4
Ukraine	39,844	1,699	*	*	*	*	*	-29.3	-33.8	-12.0	-15.1	-0.7	4.9	-95.7
United Kingdom	27,710	22,705	6.4	-10.6	-2.7	-7.8	-4.2	-4.9	-1.0	15.4	-21.7	3.6	16.7	-18.1
United States	286,689	317,984	-7.8	-5.3	10.9	-1.1	-8.2	0.6	2.0	13.3	-5.1	5.5	2.3	10.9

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 1.25****CO<sub>2</sub> emissions from manufacturing industries and construction: solid fuels - trend information**

CO <sub>2</sub> emissions (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	11,579	12,579	-1.9	3.3	-1.6	1.2	-3.7	3.9	-0.7	-5.2	2.9	4.8	5.9	8.6
Austria	5,015	4,992	-5.1	5.2	-1.3	14.1	-10.6	-3.2	9.7	-7.1	16.3	-3.4	0.5	-0.4
Belarus	942	388	-3.6	-20.7	6.5	-4.4	-5.1	-6.1	2.7	10.7	-4.9	-2.4	6.2	-58.8
Belgium	15,755	10,364	0.4	-5.1	-5.9	-8.4	11.8	-3.2	3.9	-4.7	-5.7	0.8	-9.0	-34.2
Bulgaria	9,353	4,905	-57.4	14.4	-1.8	16.1	-41.8	-8.4	-4.0	-3.4	-7.4	19.9	-9.1	-47.6
Canada	6,068	7,079	-17.3	-2.7	2.6	0.2	-0.9	1.3	5.3	-1.6	0.3	6.8	4.7	16.7
Croatia	1,904	738	-41.7	-17.0	-4.8	-7.5	-16.0	-19.3	24.4	2.1	5.4	24.6	73.3	-61.2
Czech Republic	31,840	14,812	8.9	-18.1	7.5	-1.0	-30.6	-0.7	8.8	3.3	-10.4	6.3	-2.7	-53.5
Denmark	1,444	975	9.0	-1.5	-1.1	1.6	-3.7	-13.0	-4.7	-12.3	-15.9	2.1	15.7	-32.5
Estonia	835	206	-5.1	-9.1	-3.9	-22.6	61.3	29.7	-37.5	24.0	-42.9	-20.6	13.2	-75.3
European Community	231,197	128,201	-9.5	-6.5	-3.4	-1.1	-6.8	-0.9	-5.0	-0.9	-10.7	1.3	3.0	-44.5
Finland	4,759	3,855	-4.1	-12.4	-1.2	4.6	-1.1	1.2	6.6	-12.3	-2.1	3.6	-0.8	-19.0
France	28,957	21,768	-3.2	-9.5	-1.9	3.3	-4.4	-1.4	0.2	-3.3	-9.4	0.8	2.6	-24.8
Germany	78,400	29,292	-26.0	-2.6	0.9	-5.2	-10.8	4.0	-8.1	-0.5	-16.5	1.7	12.5	-62.6
Greece	4,642	2,287	-1.4	-0.5	-2.6	-6.9	0.5	-20.5	17.1	1.5	-20.5	-12.2	-3.4	-50.7
Hungary	7,815	2,765	-15.6	-7.3	-2.6	-22.6	14.1	0.5	9.0	-15.0	-0.1	-6.1	8.2	-64.6
Iceland	51	47	-8.3	-32.2	-23.2	59.3	28.2	1.4	5.7	21.2	-28.7	-9.3	51.4	-8.5
Ireland	999	198	0.3	-12.0	17.3	-27.9	69.6	22.2	-58.2	-2.5	-6.2	81.3	-62.5	-80.2
Italy	21,265	14,290	-1.5	-5.2	-7.8	2.1	-6.9	0.1	-6.2	-4.2	-15.5	13.2	-0.2	-32.8
Japan	214,629	220,152	-3.6	1.1	2.6	0.2	-6.2	2.0	5.1	-1.2	3.9	0.8	1.7	2.6
Latvia	1,263	18	-27.0	-39.0	25.4	-40.0	-42.6	-19.4	-13.8	-21.9	-20.1	11.6	-48.4	-98.6
Liechtenstein	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Lithuania	189	345	46.1	-44.9	-8.1	-17.4	7.3	-13.0	-21.0	-14.5	391.9	56.9	0.5	82.2
Luxembourg	4,242	336	-9.8	-51.9	-3.3	-33.4	-68.7	73.3	-12.6	-17.5	-17.1	-7.4	10.3	-92.1
Monaco	NA, NO	NA, NO	*	*	*	*	*	*	*	*	*	*	*	*
Netherlands	5,033	4,515	-12.8	2.9	-1.8	-3.2	0.3	-6.4	-1.5	6.7	-0.9	4.6	7.9	-10.3
New Zealand	1,935	1,336	2.2	-17.4	2.9	2.8	0.0	-14.8	-0.5	20.6	-4.4	33.0	-38.7	-31.0
Norway	734	638	1.8	6.6	1.6	2.8	-16.0	-26.4	3.9	-13.5	-7.2	13.7	7.8	-13.1
Poland	42,923	24,887	-16.2	34.5	7.7	-12.0	-19.3	-17.1	3.1	-15.2	-10.4	-5.3	-15.3	-42.0
Portugal	2,615	601	3.5	-11.6	-3.2	-6.2	-22.7	-11.2	34.1	-34.6	-38.6	-26.8	0.8	-77.0
Romania	8,283	8,679	-27.9	13.2	-2.0	-6.1	-11.9	-31.1	-7.2	-7.0	45.0	27.6	3.9	4.8
Russian Federation	NE	58,581	*	*	*	*	*	*	*	*	*	*	*	*
Slovakia	8,887	3,624	*	*	*	*	*	*	*	27.7	-14.2	-14.1	-7.6	-59.2
Slovenia	1,446	356	-10.0	17.9	-13.9	-14.0	27.4	3.0	-11.8	17.6	33.1	-14.3	1.2	-75.4
Spain	13,307	5,410	9.8	-13.6	-15.6	-2.3	-23.3	-4.3	-7.6	13.4	-1.2	-10.8	-7.2	-59.3
Sweden	1,865	1,462	6.2	7.8	0.8	1.0	-2.9	-15.8	20.8	-0.1	-5.4	-12.4	10.2	-21.6
Switzerland	1,391	541	-22.2	3.1	-32.5	-9.5	-12.5	0.1	45.3	1.7	-7.6	1.2	-5.3	-61.1
Turkey	23,228	40,026	7.6	10.3	38.4	10.8	6.7	-16.0	37.5	-32.6	30.7	14.6	2.1	72.3
Ukraine	25,149	7,965	*	*	*	*	*	34.0	-5.5	-0.7	9.9	14.2	2.4	-68.3
United Kingdom	43,056	27,857	-1.2	-6.0	-3.7	1.8	-6.3	-0.7	-14.7	6.1	-11.5	1.0	4.2	-35.3
United States	151,261	117,084	-3.1	-3.4	-1.6	-2.3	-3.6	-3.3	0.3	-0.8	-7.7	1.2	-0.6	-22.6

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

Table 1.26

CO<sub>2</sub> emissions from manufacturing industries and construction: gaseous fuels - trend information

CO <sub>2</sub> emissions (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	13,383	17,864	1.3	3.4	-3.3	6.0	1.7	3.1	-0.2	1.8	3.7	1.0	2.6	33.5
Austria	4,288	6,583	0.0	3.2	5.3	4.2	-3.5	-5.9	8.0	-1.3	2.8	-1.7	11.1	53.5
Belarus	2,216	4,507	5.8	4.7	4.5	4.3	4.1	4.0	3.8	-5.5	9.3	13.9	9.1	103.4
Belgium	7,510	9,790	-10.4	9.8	7.1	-2.6	8.1	3.4	2.1	-5.1	2.0	-4.3	2.0	30.4
Bulgaria	7,661	2,693	-7.2	18.1	-0.9	-26.3	-10.7	-25.9	16.6	-14.7	-15.8	7.6	2.0	-64.8
Canada	42,180	48,823	-2.1	4.4	5.0	0.5	-5.4	0.7	4.8	-11.0	8.7	4.8	2.0	15.7
Croatia	1,605	1,477	-15.4	-10.1	3.1	8.8	7.0	-11.7	1.1	1.6	-5.8	1.5	13.8	-8.0
Czech Republic	5,984	7,117	10.0	6.4	20.2	-9.8	-1.7	1.2	-7.6	13.3	-12.0	3.1	3.3	18.9
Denmark	1,294	2,267	6.5	11.4	3.8	7.1	4.3	9.3	-4.9	5.0	-7.0	0.0	-2.0	75.2
Estonia	131	92	123.0	*	*	-3.8	-2.9	-52.0	21.1	28.6	-26.7	-41.1	157.6	-30.1
European Community	174,862	242,010	0.6	6.8	3.1	3.4	1.6	3.6	6.3	-1.1	1.1	1.9	0.5	38.4
Finland	2,097	2,181	3.5	-2.1	-4.7	-3.4	-2.8	0.8	2.3	4.2	-5.4	1.2	3.6	4.0
France	23,941	32,104	5.0	7.9	5.3	3.1	3.6	-3.4	7.7	-0.1	7.7	-3.7	0.5	34.1
Germany	45,540	50,901	0.5	3.3	-2.2	0.5	0.6	2.4	0.6	-1.2	-0.5	4.0	-0.2	11.8
Greece	177	1,097	-5.0	-8.5	37.1	430.4	314.3	11.8	14.7	1.1	8.7	12.1	10.1	520.2
Hungary	9,637	4,485	-17.9	18.0	5.2	-3.4	-9.8	-14.2	-1.2	22.0	-8.0	9.0	-17.8	-53.5
Iceland	0	0	*	*	*	*	*	*	*	*	*	*	*	*
Ireland	881	1,256	-1.6	3.0	-1.0	20.3	6.2	2.5	38.4	-5.2	29.3	-29.3	12.2	42.6
Italy	32,086	40,778	3.6	8.0	0.8	2.9	-8.0	4.3	7.1	-4.4	-1.6	1.6	-0.8	27.1
Japan	7,549	15,867	13.0	7.8	8.5	1.8	-11.6	6.0	5.4	-1.8	6.4	8.4	10.6	110.2
Latvia	1,030	732	3.0	2.3	-1.0	-4.9	3.8	-4.0	15.8	18.0	5.0	-0.7	-6.3	-28.9
Liechtenstein	16	22	7.4	3.2	6.0	-2.4	5.8	7.9	-6.3	4.3	-2.8	8.4	-2.1	34.0
Lithuania	2,111	655	5.7	-1.4	-3.1	8.1	8.6	-26.8	12.5	7.5	9.7	4.3	9.4	-69.0
Luxembourg	588	1,823	-9.7	11.0	-6.2	12.6	0.0	5.4	2.5	-8.1	121.3	-1.9	12.9	209.9
Monaco	NA, NO	NA, NO	*	*	*	*	*	*	*	*	*	*	*	*
Netherlands	19,020	15,369	1.6	-3.8	2.8	-3.5	-0.1	-2.5	1.2	-5.0	-1.6	-2.9	-1.0	-19.2
New Zealand	1,906	2,773	20.4	8.3	15.0	11.9	5.0	-0.6	0.3	-4.5	10.2	-24.6	-6.3	45.5
Norway	NO	506	*	580.8	38.2	374.6	17.5	25.3	-10.6	4.4	-4.8	1.0	19.5	*
Poland	7,668	6,496	-25.4	7.5	33.4	-1.8	-3.5	4.4	-10.7	4.0	-14.4	4.0	11.2	-15.3
Portugal	NO	3,073	*	*	*	*	415.2	108.7	63.8	27.3	16.9	18.4	-3.9	*
Romania	16,591	10,596	-33.3	7.3	-5.6	-19.9	-34.0	8.5	3.3	7.5	5.1	4.8	-1.5	-36.1
Russian Federation	NE	52,393	*	*	*	*	*	*	*	*	*	*	*	*
Slovakia	4,817	2,819	*	*	*	*	*	*	*	5.0	-10.7	-1.3	-11.9	-41.5
Slovenia	1,237	1,303	12.7	-6.7	4.2	-4.1	2.2	-2.6	4.7	-2.0	0.5	2.6	8.6	5.3
Spain	8,439	36,747	0.3	35.5	5.8	17.3	12.8	15.1	18.1	9.2	5.3	11.9	9.5	335.4
Sweden	687	914	-2.6	-9.2	15.2	3.2	-2.0	0.4	-9.2	13.4	1.1	-3.8	7.0	33.0
Switzerland	1,064	2,029	10.5	5.5	2.9	3.7	2.6	4.7	6.7	1.2	-2.5	2.7	4.0	90.7
Turkey	1,729	10,494	41.5	42.3	3.9	24.9	-17.8	-5.8	-7.8	24.6	17.9	50.5	2.8	506.9
Ukraine	74,454	36,609	*	*	*	*	*	-7.1	2.8	-3.2	-2.9	11.3	3.3	-50.8
United Kingdom	28,296	37,127	-4.2	7.2	10.5	6.4	4.9	6.9	6.5	-4.1	-4.7	1.1	-6.7	31.2
United States	413,165	428,394	1.5	5.7	3.3	0.1	-2.4	-4.3	1.7	-8.0	1.5	-3.5	2.9	3.7

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 1.27****Contribution of fuels to CO<sub>2</sub> emissions from manufacturing industries and construction (%)**

	Liquid Fuels		Solid Fuels		Gaseous Fuels		Other Fuels	
	Base year <sup>a</sup>	2004	Base year <sup>a</sup>	2004	Base year <sup>a</sup>	2004	Base year <sup>a</sup>	2004
Australia	32.3	28.6	31.4	29.5	36.3	41.9	-	-
Austria	28.1	19.5	37.3	32.6	31.9	42.9	2.8	5.0
Belarus	54.6	38.1	13.1	4.9	30.7	57.0	1.6	-
Belgium	22.9	15.9	48.0	35.3	22.9	33.4	6.3	15.5
Bulgaria	31.3	29.8	37.8	45.3	30.9	24.9	-	-
Canada	22.6	16.5	9.7	10.6	67.6	72.9	-	-
Croatia	37.8	39.2	33.7	20.3	28.4	40.5	-	-
Czech Republic	19.4	18.9	67.8	54.8	12.7	26.3	-	-
Denmark	49.5	43.6	26.6	16.7	23.9	38.8	0.0	0.9
Estonia	44.5	37.7	47.9	43.1	7.5	19.2	-	-
European Community	31.9	30.1	38.0	23.2	28.7	43.9	1.4	2.8
Finland	35.0	35.7	36.5	34.4	16.1	19.5	12.4	10.4
France	36.6	28.2	34.7	27.5	28.7	40.6	0.0	3.7
Germany	17.0	15.7	51.3	29.4	29.8	51.2	1.9	3.7
Greece	53.9	64.0	44.4	24.3	1.7	11.7	-	-
Hungary	22.5	25.5	34.6	28.1	42.7	45.5	0.2	0.9
Iceland	85.9	89.6	14.1	10.4	0.0	0.0	0.0	0.0
Ireland	54.3	69.1	24.3	4.2	21.4	26.7	-	-
Italy	38.8	33.7	23.9	16.7	36.1	47.8	1.2	1.8
Japan	39.6	36.7	58.4	59.1	2.1	4.3	-	-
Latvia	38.2	27.2	34.0	1.7	27.7	68.7	-	2.4
Liechtenstein	53.2	40.7	-	-	46.8	59.3	-	-
Lithuania	62.9	19.9	3.1	27.6	34.1	52.5	-	-
Luxembourg	8.7	14.6	80.2	13.3	11.1	72.1	-	-
Monaco	-	-	-	-	-	-	-	-
Netherlands	27.2	26.8	15.2	16.6	57.6	56.6	-	-
New Zealand	15.9	18.2	42.4	26.6	41.7	55.2	-	-
Norway	79.8	70.3	20.2	16.4	-	13.0	-	0.2
Poland	13.5	19.4	73.4	63.9	13.1	16.7	-	-
Portugal	70.5	64.3	28.6	5.7	-	28.9	0.9	1.1
Romania	28.9	21.8	23.7	35.2	47.4	43.0	-	-
Russian Federation	-	19.4	-	42.5	-	38.0	-	-
Slovakia	17.3	23.5	36.9	24.9	20.0	19.3	25.7	32.3
Slovenia	38.1	27.4	33.2	15.3	28.4	55.8	0.3	1.6
Spain	53.0	41.5	28.8	7.5	18.2	50.7	-	0.4
Sweden	75.6	76.4	16.9	12.8	6.2	8.0	1.3	2.8
Switzerland	56.5	50.5	23.2	9.4	17.7	35.2	2.6	5.0
Turkey	33.5	26.0	61.9	58.6	4.6	15.4	-	-
Ukraine	27.8	3.6	17.5	16.9	52.0	77.8	2.7	1.7
United Kingdom	28.0	25.8	43.5	31.7	28.6	42.2	0.0	0.2
United States	33.7	36.8	17.8	13.6	48.5	49.6	-	-

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual inventories of Annex I Parties the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Romania (1989) and Slovenia (1986).

Table 1.28

CO<sub>2</sub> emissions from other sectors (commercial/institutional, residential, agriculture/forestry/fisheries): all fuels - trend information

CO <sub>2</sub> emissions (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	12,909	18,414	0.7	5.1	2.9	2.0	1.7	1.5	3.4	5.2	2.3	10.5	-4.5	42.7
Austria	14,391	14,181	7.6	8.1	8.8	-10.4	-0.9	4.7	-10.1	13.7	-7.2	8.3	-7.1	-1.5
Belarus	14,227	7,573	-1.6	-5.1	2.6	-1.0	-0.6	-5.3	-3.9	-9.1	-7.7	-2.0	-0.6	-46.8
Belgium	27,215	31,243	10.1	2.0	17.2	-11.9	0.9	-3.2	-4.7	7.7	-5.8	7.3	-1.6	14.8
Bulgaria	8,940	1,758	-24.1	-21.2	23.5	-17.3	11.6	-16.6	-23.9	-13.6	26.6	6.3	-20.3	-80.3
Canada	69,415	80,449	-0.9	0.6	7.5	-3.6	-11.1	5.5	8.7	-4.4	4.9	5.7	-2.7	15.9
Croatia	3,620	3,801	-16.9	8.3	12.4	1.5	-2.3	13.1	-4.4	6.5	2.2	6.2	-2.0	5.0
Czech Republic	32,577	14,200	-21.8	-1.9	-6.7	12.5	-1.7	-12.3	-2.1	-8.1	3.6	-3.9	-2.2	-56.4
Denmark	9,159	7,159	2.7	2.0	7.2	-7.7	-2.9	-2.6	-8.0	2.8	-3.9	0.2	-3.6	-21.8
Estonia	1,945	546	-14.4	2.5	16.0	11.1	-11.0	-5.0	-4.3	-70.4	51.3	-11.8	33.4	-72.0
European Community	639,067	650,123	6.1	1.6	10.0	-6.5	0.2	-2.3	-2.6	6.9	-5.1	4.0	-1.4	1.7
Finland	7,066	5,931	-0.2	-7.3	1.9	0.5	1.4	-1.3	-6.2	6.6	1.5	-0.4	-1.0	-16.1
France	93,838	106,240	10.4	2.2	7.8	-5.7	3.8	-1.6	-4.4	9.9	-8.1	6.9	2.7	13.2
Germany	204,313	169,009	0.6	1.4	13.1	-6.7	-4.2	-8.3	-3.4	10.4	-7.5	2.1	-5.1	-17.3
Greece	8,126	13,490	3.6	0.9	23.6	2.7	3.4	-1.6	5.8	7.7	4.6	15.3	-5.6	66.0
Hungary	24,334	17,496	3.0	-4.8	3.3	-4.0	-13.6	5.7	-2.5	8.1	2.3	7.7	3.3	-28.1
Iceland	691	725	2.5	1.2	8.2	-3.3	-5.0	0.0	-6.0	-11.4	9.8	-6.2	7.3	5.0
Ireland	9,998	10,595	-3.6	-2.4	-2.4	3.6	5.9	-0.7	4.7	0.5	-1.1	-0.3	3.2	6.0
Italy	76,548	84,109	7.3	9.8	2.4	-3.4	3.9	5.8	-5.0	3.5	-3.4	8.4	-1.1	9.9
Japan	161,675	186,507	-0.8	7.1	-1.0	-2.4	2.3	4.6	0.7	1.1	3.6	-3.5	-1.0	15.4
Latvia	3,224	1,243	14.7	-36.5	-1.0	-14.9	-10.8	-5.5	-12.1	26.3	-1.3	8.2	11.4	-61.4
Liechtenstein	88	111	-6.1	1.3	0.5	7.8	8.8	-5.8	-7.1	1.8	9.1	6.0	2.4	25.7
Lithuania	6,974	1,148	5.7	-14.0	-14.0	-14.6	-15.5	-12.3	-15.1	-4.8	5.8	3.3	0.7	-83.5
Luxembourg	1,246	1,313	25.7	0.4	10.3	-2.2	6.0	-3.9	-16.2	12.4	-2.6	-1.9	-0.8	5.4
Monaco	45	37	-7.3	-3.7	5.0	-6.2	4.4	-0.6	-3.7	-4.4	7.8	4.5	-5.3	-18.3
Netherlands	37,868	40,175	12.4	6.2	12.7	-14.6	-2.2	-5.7	1.8	6.1	-2.9	3.0	-0.7	6.1
New Zealand	2,851	3,411	-6.5	0.6	-4.3	-2.7	-1.0	6.5	5.1	5.6	-0.4	5.4	0.9	19.6
Norway	4,130	3,576	-10.2	-0.2	20.9	-10.5	-0.7	2.3	-15.8	9.4	5.8	6.9	-10.2	-13.4
Poland	112,181	46,784	9.4	-5.1	10.2	-1.9	-13.7	4.5	-18.2	6.1	-5.5	3.3	-7.4	-58.3
Portugal	4,025	6,832	5.5	-2.9	7.7	-0.1	3.6	8.9	2.9	5.5	3.4	3.1	4.0	69.7
Romania	10,194	11,208	-14.0	17.7	-3.4	19.3	-0.8	-18.7	3.2	-5.6	5.7	29.4	4.7	9.9
Russian Federation	NE	152,968	*	*	*	*	*	*	*	*	*	*	*	*
Slovakia	10,553	4,853	*	*	*	*	*	*	*	8.6	-12.2	-2.6	-10.0	-54.0
Slovenia	2,139	2,685	19.1	8.0	27.5	2.5	1.0	7.2	-10.1	3.0	-4.8	-3.0	-2.2	25.5
Spain	25,280	38,358	8.9	-0.1	3.9	0.7	2.6	4.8	3.7	3.0	2.8	5.9	3.4	51.7
Sweden	10,721	5,801	-2.6	-4.7	0.4	-7.7	-0.4	-5.5	-1.8	-9.7	-6.7	-4.7	-11.4	-45.9
Switzerland	17,708	17,876	7.6	6.4	4.1	-5.6	2.9	-1.7	-7.1	4.9	-3.5	5.6	-0.5	0.9
Turkey	29,201	37,339	5.1	12.3	3.9	7.6	-8.1	-3.9	8.0	-17.5	5.2	9.3	11.0	27.9
Ukraine	91,409	42,447	*	*	*	*	*	-7.6	-12.9	-1.8	6.1	4.3	-0.2	-53.6
United Kingdom	109,241	115,687	10.4	-3.6	11.9	-7.4	1.6	-0.2	-0.5	3.6	-4.7	0.2	0.1	5.9
United States	560,575	595,585	1.9	0.1	7.1	-3.5	-8.0	3.6	4.9	-2.1	-0.4	5.2	-3.1	6.2

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

Table 1.29

CO<sub>2</sub> emissions from other sectors (commercial/institutional, residential, agriculture/forestry/fisheries): liquid fuels - trend information

CO <sub>2</sub> emissions (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	5,919	9,012	0.8	1.9	0.4	3.0	1.6	2.9	3.6	12.8	2.5	16.7	-7.7	52.3
Austria	8,947	8,744	2.6	7.0	14.5	-10.6	-0.4	-1.1	-7.1	11.6	-2.0	9.9	-10.4	-2.3
Belarus	5,209	3,625	13.4	1.5	8.4	5.3	5.2	-5.4	-8.8	-11.9	-13.0	-1.8	4.5	-30.4
Belgium	17,376	18,332	6.8	-0.7	17.0	-11.5	0.2	-4.2	-8.0	6.8	-6.3	7.6	-1.6	5.5
Bulgaria	3,778	322	-55.7	-40.8	-26.2	7.4	72.8	42.3	-14.8	40.4	-27.9	-21.0	-20.3	-91.5
Canada	22,239	21,631	-6.8	-2.6	4.8	-2.5	-13.5	3.0	6.4	-1.0	1.9	13.9	-3.1	-2.7
Croatia	2,406	2,260	-21.8	1.9	10.7	1.9	-6.3	15.6	1.6	1.7	4.8	2.0	-2.6	-6.1
Czech Republic	2,618	711	-23.0	-30.8	34.4	-15.1	-20.4	-10.6	-19.3	-13.1	-3.4	10.3	-0.9	-72.9
Denmark	7,333	4,369	-1.0	0.1	4.2	-8.1	-4.7	-2.2	-10.6	1.6	-4.5	-3.8	-4.7	-40.4
Estonia	656	171	5.0	-4.5	21.9	28.2	-8.1	-7.0	-2.6	-88.0	111.4	-18.9	4.8	-74.0
European Community	300,795	272,926	7.7	0.3	7.6	-5.2	-1.1	-4.9	-4.0	7.5	-7.5	1.9	-4.5	-9.3
Finland	6,785	5,557	-0.1	-7.2	1.7	0.2	1.5	-1.6	-6.4	6.6	1.3	-0.4	-0.9	-18.1
France	59,310	54,874	7.1	3.2	4.6	-5.4	1.4	-1.5	-7.4	9.5	-9.4	2.8	0.3	-7.5
Germany	91,461	77,778	17.4	-2.2	11.2	-4.9	-4.6	-13.6	-3.1	12.4	-13.5	-0.6	-8.7	-15.0
Greece	8,006	13,284	3.2	1.0	23.9	2.6	3.5	-1.3	5.8	7.8	5.0	15.1	-6.2	65.9
Hungary	7,114	1,537	-18.3	-27.3	-18.0	-7.5	-14.2	-5.0	-3.8	-3.1	-2.9	-22.1	9.8	-78.4
Iceland	691	725	2.5	1.2	8.2	-3.3	-5.0	0.0	-6.0	-11.4	9.8	-6.2	7.3	5.0
Ireland	3,831	6,301	0.5	-1.5	2.5	3.5	4.7	11.5	7.0	0.4	-1.4	4.3	-2.4	64.5
Italy	38,602	26,011	-2.1	9.2	-1.1	-5.1	0.5	6.5	-6.9	2.7	-4.4	-0.6	-5.1	-32.6
Japan	137,129	139,690	-1.8	7.4	-2.3	-4.2	1.4	4.6	-0.6	0.9	2.7	-5.8	-3.1	1.9
Latvia	1,618	495	26.4	-43.6	1.8	-19.6	-8.7	1.5	-8.6	31.5	-7.3	14.1	1.3	-69.4
Liechtenstein	77	63	-12.3	-2.9	-6.9	13.4	7.1	-11.9	-12.0	-4.8	12.7	6.0	-2.8	-19.0
Lithuania	2,759	322	-9.4	-18.8	-18.8	-13.6	-8.9	-19.5	-5.3	-8.5	-4.8	-5.2	-7.2	-88.3
Luxembourg	740	762	22.5	-1.5	2.6	1.6	8.4	-2.7	-12.8	10.4	-2.1	-10.0	3.2	3.0
Monaco	36	26	-13.3	-6.3	7.3	-7.0	4.5	-2.5	-8.5	-5.3	9.4	7.0	-7.9	-28.3
Netherlands	4,020	3,210	-5.6	1.0	-4.4	-4.4	0.0	-2.9	-2.2	6.6	-8.6	-1.5	-2.0	-20.1
New Zealand	1,593	1,659	-8.5	-3.7	-1.3	1.0	3.7	3.6	-6.0	-3.1	2.7	15.2	-10.4	4.2
Norway	4,090	3,529	-10.3	-0.1	21.1	-10.5	-0.7	2.3	-15.8	9.1	5.7	7.1	-10.7	-13.7
Poland	7,846	12,907	-12.4	-9.4	5.5	28.0	10.9	7.6	21.6	-18.7	-8.9	6.9	-4.5	64.5
Portugal	4,025	6,108	5.5	-2.9	7.7	-0.2	2.7	6.9	0.5	2.8	1.6	1.1	4.2	51.8
Romania	4,769	3,377	-24.4	25.9	-3.5	36.8	-7.6	-39.6	13.1	-22.6	17.9	10.8	37.1	-29.2
Russian Federation	NE	26,396	*	*	*	*	*	*	*	*	*	*	*	*
Slovakia	387	30	*	*	*	*	*	*	*	1.4	-7.1	-19.3	12.1	-92.3
Slovenia	814	2,313	14.4	10.8	32.3	3.4	1.0	5.3	-9.7	2.1	-3.9	-4.0	-3.4	184.2
Spain	21,679	27,848	5.4	1.6	2.3	-0.9	0.5	3.6	3.5	0.5	0.0	4.3	1.7	28.5
Sweden	10,359	5,630	-2.6	-5.1	0.3	-7.8	-0.7	-5.9	-1.6	-10.3	-7.3	-4.4	-9.3	-45.7
Switzerland	15,304	14,150	6.5	5.2	3.1	-5.1	2.8	-2.8	-7.9	4.8	-4.0	5.2	-1.5	-7.5
Turkey	14,949	17,787	2.2	11.4	-0.3	0.3	-3.0	-1.2	6.5	-12.9	-0.8	-1.9	6.4	19.0
Ukraine	8,028	750	*	*	*	*	*	-21.3	-18.8	0.5	3.3	-6.7	-4.3	-90.7
United Kingdom	18,321	14,117	6.6	-4.6	7.7	-8.4	0.4	-8.8	-5.9	6.9	-4.5	-2.3	-11.7	-22.9
United States	165,022	158,091	-1.6	-4.5	8.9	-7.5	-7.1	6.0	7.8	2.6	-9.5	10.8	3.1	-4.2

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

Table 1.30

CO<sub>2</sub> emissions from other sectors (commercial/institutional, residential, agriculture/forestry/fisheries): solid fuels - trend information

CO <sub>2</sub> emissions (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	566	384	-7.9	-4.4	-7.5	-8.2	-24.5	-12.1	41.5	36.1	-4.7	2.4	2.5	-32.2
Austria	2,654	618	10.6	-5.9	-5.1	-21.9	-12.9	-7.6	-8.3	-6.9	-16.4	6.7	-22.0	-76.7
Belarus	6,652	1,303	-13.9	-16.0	-3.7	-11.8	-12.0	-10.6	2.9	-21.8	-10.4	-5.7	-12.1	-80.4
Belgium	1,976	578	14.5	-3.6	13.7	-14.6	-16.4	-9.4	-14.7	5.8	-16.2	-6.0	-4.2	-70.8
Bulgaria	4,953	1,301	-5.5	-18.7	29.0	-18.0	4.7	-26.8	-27.9	-36.1	74.0	14.1	-23.0	-73.7
Canada	191	102	-0.7	34.7	-0.3	-7.0	-11.8	-4.2	-2.0	-2.5	-36.3	-0.5	11.6	-46.8
Croatia	536	47	-41.2	-9.8	5.3	-10.7	42.6	-8.5	-11.7	-36.9	33.5	34.4	-36.9	-91.2
Czech Republic	25,370	4,530	-26.0	-9.0	-20.4	14.3	-2.2	-23.4	-4.1	-24.6	5.3	-13.9	-2.0	-82.1
Denmark	320	102	26.5	-25.1	-29.5	-13.0	-24.0	-24.1	34.2	14.0	-30.3	38.3	-13.3	-68.2
Estonia	722	111	-0.4	66.5	19.3	-27.1	-36.5	7.1	-17.1	-25.2	16.0	-27.3	40.3	-84.7
European Community	106,195	13,902	-20.0	-14.7	-3.0	-15.4	-18.6	-9.4	-17.1	-0.3	-14.1	-14.6	-5.1	-86.9
Finland	46	25	3.6	-64.8	-8.2	-10.4	13.1	-5.1	-3.0	-15.1	28.0	0.0	0.0	-45.5
France	4,401	287	0.3	43.1	-2.5	-40.4	-24.1	-28.2	-8.9	-9.9	-41.1	-25.5	0	-93.5
Germany	67,047	3,424	-34.5	-13.2	-7.1	-21.1	-35.9	-6.0	-23.8	-9.6	-8.1	-0.9	-18.7	-94.9
Greece	102	23	33.8	-4.9	8.2	4.0	-13.2	-25.5	11.0	-6.3	-74.5	-39.6	65.5	-77.1
Hungary	12,281	959	6.0	-16.5	3.1	-17.6	-56.6	7.0	-25.6	41.5	7.6	1.1	-28.7	-92.2
Iceland	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Ireland	5,682	2,171	-8.9	-5.3	-14.4	5.9	4.6	-24.2	-6.7	-5.1	-1.6	-17.6	16.0	-61.8
Italy	920	35	6.3	3.2	-3.6	-41.2	-44.5	-2.9	-3.1	10.8	-78.0	0.0	-52.2	-96.2
Japan	4,744	2,426	-8.3	-11.9	5.6	-1.9	-1.3	-3.8	4.2	-2.9	-1.3	-3.4	-5.2	-48.9
Latvia	1,083	198	1.9	-46.1	-1.3	-7.1	-22.2	-18.6	-25.6	40.0	-20.2	-9.0	2.5	-81.7
Liechtenstein	0	0	-5.4	-3.7	-26.9	5.3	5.0	-47.6	118.2	-45.8	-7.7	8.3	-23.1	-73.0
Lithuania	2,792	334	11.2	-15.7	-7.6	-18.8	-16.6	-18.9	-28.2	-12.5	22.8	9.5	-4.1	-88.0
Luxembourg	95	8	97.8	-28.8	16.5	-21.6	-35.6	-17.9	-5.9	6.4	-69.1	-1.5	2.1	-91.7
Monaco	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Netherlands	189	134	-21.2	-15.3	-1.0	-3.6	5.8	2.4	0.0	12.3	-8.4	2.2	9.9	-29.0
New Zealand	818	727	-8.3	11.9	-13.7	-15.3	-15.6	-4.5	-8.8	28.7	-4.5	-9.2	43.0	-11.1
Norway	36	8	-6.2	-16.2	-22.1	9.8	-3.7	-16.6	-7.0	-22.2	47.7	-29.3	-13.4	-78.8
Poland	98,110	23,972	12.4	-6.7	14.2	-9.1	-23.4	7.0	-37.2	22.7	-7.5	1.3	-10.6	-75.6
Portugal	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Romania	2,219	153	-30.8	-6.8	89.4	-12.5	-84.3	147.5	-9.3	-69.2	239.3	-51.5	76.6	-93.1
Russian Federation	NE	19,232	*	*	*	*	*	*	*	*	*	*	*	*
Slovakia	7,292	572	*	*	*	*	*	*	*	-10.0	-42.6	-11.0	-21.9	-92.2
Slovenia	1,291	20	27.3	-20.3	-16.9	-41.6	-18.3	4.7	-40.3	-23.0	-16.3	-1.3	-40.1	-98.5
Spain	2,282	544	20.4	-28.3	-4.8	-1.5	-6.8	-28.0	-39.8	-29.7	14.8	21.7	1.6	-76.1
Sweden	157	NO	-33.3	-50.0	-59.0	214.2	-50.0	-36.3	0	*	*	*	*	*
Switzerland	57	35	15.5	-4.2	-43.4	-15.5	-36.4	0.0	-7.2	-0.1	0.0	0.0	207.6	-38.5
Turkey	14,148	9,786	6.2	12.1	-4.7	12.0	-22.8	-16.0	0.7	-33.4	28.1	19.5	16.7	-30.8
Ukraine	60,906	8,017	*	*	*	*	*	-0.9	-22.3	-7.6	14.8	-7.4	-2.8	-86.8
United Kingdom	20,323	5,952	5.9	-25.2	4.4	-8.9	-9.3	-2.9	-16.4	8.7	-15.9	-26.0	-0.5	-70.7
United States	14,562	9,251	-8.8	-2.8	1.7	6.4	-21.9	2.2	-16.5	6.0	-0.2	-7.8	4.3	-36.5

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 1.31****CO<sub>2</sub> emissions from other sectors (commercial/institutional, residential, agriculture/forestry/fisheries): gaseous fuels - trend information**

CO <sub>2</sub> emissions (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	6,423	9,018	1.4	8.5	5.4	1.5	2.7	0.7	2.4	-2.1	2.4	4.9	-1.3	40.4
Austria	2,551	4,670	24.3	18.2	-0.6	-5.3	4.8	18.4	-14.0	25.1	-14.9	5.2	0.7	83.0
Belarus	2,351	2,645	0.3	0.3	0.3	0.3	0.3	0.3	0.3	7.9	2.2	-0.1	-0.9	12.5
Belgium	7,812	12,232	17.0	7.4	18.1	-12.3	4.1	-0.8	1.8	9.4	-4.3	7.8	-1.7	56.6
Bulgaria	209	135	-86.2	350.7	91.6	-63.3	81.8	4.0	16.0	30.0	6.5	36.2	20.9	-35.3
Canada	46,985	58,716	2.0	1.8	8.5	-4.0	-10.2	6.4	9.5	-5.6	6.0	2.9	-2.6	25.0
Croatia	678	1,494	19.5	22.7	15.9	1.4	2.0	10.7	-13.4	17.8	-2.9	12.3	0.6	120.2
Czech Republic	4,589	8,960	2.5	23.3	8.0	16.8	2.1	0.1	1.7	5.7	3.2	1.1	-2.5	95.3
Denmark	1,486	2,663	15.8	11.8	18.9	-6.5	2.6	-3.2	-3.8	4.9	-1.7	6.4	-1.0	79.2
Estonia	141	113	23.6	-30.0	-22.9	-0.1	18.7	-4.6	1.4	0.1	45.6	7.4	-27.3	-19.7
European Community	230,728	360,048	16.2	5.9	14.3	-6.9	3.5	0.7	-0.2	6.7	-2.6	6.7	1.1	56.0
Finland	101	212	19.3	0.2	7.8	6.2	-2.2	6.5	-3.9	8.4	5.8	-1.3	-5.0	110.2
France	30,057	50,996	18.4	-1.3	14.0	-4.1	8.7	-1.0	-0.2	10.9	-6.1	12.3	5.3	69.7
Germany	45,804	87,806	18.4	11.5	20.1	-6.7	1.0	-1.5	-2.0	9.5	-0.4	5.0	-1.0	91.7
Greece	17	183	8.9	7.4	0.0	4.5	56.9	-14.9	19.0	29.4	53.5	73.5	68.6	975.7
Hungary	4,939	15,000	21.5	11.0	10.2	0.7	-3.6	7.7	0.1	7.4	2.5	12.6	5.7	203.7
Iceland	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Ireland	485	2,123	26.5	4.4	18.3	-2.2	14.6	12.0	15.6	8.7	0.3	5.5	9.6	337.4
Italy	36,417	55,582	17.3	10.4	4.9	-1.7	6.6	5.5	-4.5	3.5	-2.4	12.9	-0.1	52.6
Japan	19,802	44,391	7.6	7.9	5.3	6.8	6.8	5.4	6.2	2.4	7.7	5.3	6.4	124.2
Latvia	522	541	5.0	1.9	-4.5	-18.0	2.0	-0.6	-5.1	11.4	22.9	9.8	28.5	3.5
Liechtenstein	11	49	36.3	14.0	19.8	-3.5	12.8	8.0	1.7	12.5	4.2	6.1	10.0	333.8
Lithuania	1,423	493	24.3	-5.0	-15.4	-10.3	-21.6	5.4	-12.7	5.3	5.0	6.1	10.5	-65.4
Luxembourg	411	543	14.9	8.4	22.0	-5.5	6.2	-5.0	-21.8	16.0	-0.1	10.8	-5.9	32.1
Monaco	9	11	16.8	4.7	-1.5	-3.9	4.1	5.3	9.5	-2.1	4.3	-1.5	1.5	21.5
Netherlands	33,659	36,830	14.8	6.9	14.5	-15.5	-2.4	-6.0	2.2	6.1	-2.3	3.4	-0.6	9.4
New Zealand	441	1,024	3.9	-1.9	1.6	4.2	1.9	26.2	43.3	9.3	-2.7	-2.0	0.4	132.4
Norway	NO	39	*	406.3	32.1	37.4	323.1	106.4	6.2	439.8	9.2	-3.1	116.4	*
Poland	6,225	9,904	7.0	9.8	-4.9	8.5	2.3	-8.9	-1.4	10.3	5.6	3.9	-2.7	59.1
Portugal	NO	723	*	*	*	*	1,784.3	221.3	86.4	56.7	26.4	22.9	2.0	*
Romania	3,206	7,678	16.8	15.3	-8.3	12.8	11.1	-8.8	-0.1	3.6	-0.3	38.9	-5.8	139.5
Russian Federation	NE	107,307	*	*	*	*	*	*	*	*	*	*	*	*
Slovakia	2,874	4,251	*	*	*	*	*	*	*	15.7	-3.2	-1.1	-8.2	47.9
Slovenia	34	352	26.6	34.3	25.7	37.5	10.4	29.3	-5.1	15.7	-10.3	4.8	10.7	938.8
Spain	1,319	9,966	47.6	5.5	20.5	12.5	17.9	19.9	11.6	15.9	12.4	10.2	8.9	655.8
Sweden	205	171	20.4	11.6	5.6	-5.9	9.0	5.0	-7.7	5.6	4.5	-10.0	-48.7	-16.5
Switzerland	2,346	3,690	14.3	12.9	9.5	-8.0	3.6	3.5	-3.1	5.3	-1.2	7.4	2.9	57.3
Turkey	104	9,765	281.6	22.9	89.9	30.4	8.3	8.0	22.4	-12.1	1.9	27.2	14.4	9,270.9
Ukraine	22,442	33,637	*	*	*	*	*	-9.2	-9.8	0.0	3.6	8.4	0.5	49.9
United Kingdom	70,372	95,347	12.8	1.2	14.0	-7.0	3.4	1.9	2.4	2.5	-3.6	2.9	2.2	35.5
United States	380,990	428,244	3.8	1.8	6.7	-2.4	-7.9	2.8	4.6	-3.9	2.9	3.7	-5.3	12.4

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 1.32****Contribution of fuels to CO<sub>2</sub> emissions from other sectors (%)**

	Liquid Fuels		Solid Fuels		Gaseous Fuels		Other Fuels	
	Base year <sup>a</sup>	2004	Base year <sup>a</sup>	2004	Base year <sup>a</sup>	2004	Base year <sup>a</sup>	2004
Australia	45.9	48.9	4.4	2.1	49.8	49.0	-	-
Austria	62.2	61.7	18.4	4.4	17.7	32.9	1.7	1.0
Belarus	36.6	47.9	46.8	17.2	16.5	34.9	0.1	-
Belgium	63.8	58.7	7.3	1.8	28.7	39.2	0.2	0.3
Bulgaria	42.3	18.3	55.4	74.0	2.3	7.7	-	-
Canada	32.0	26.9	0.3	0.1	67.7	73.0	-	-
Croatia	66.5	59.5	14.8	1.2	18.7	39.3	-	-
Czech Republic	8.0	5.0	77.9	31.9	14.1	63.1	-	-
Denmark	80.1	61.0	3.5	1.4	16.2	37.2	0.2	0.4
Estonia	33.7	31.3	37.1	20.3	7.2	20.7	22	27.7
European Community	47.1	42.0	16.6	2.1	36.1	55.4	0.2	0.5
Finland	96.0	93.7	0.7	0.4	1.4	3.6	1.9	2.3
France	63.2	51.7	4.7	0.3	32.0	48.0	0.1	0.1
Germany	44.8	46.0	32.8	2.0	22.4	52.0	-	-
Greece	98.5	98.5	1.3	0.2	0.2	1.4	-	-
Hungary	29.2	8.8	50.5	5.5	20.3	85.7	-	-
Iceland	100.0	100.0	-	-	-	-	-	-
Ireland	38.3	59.5	56.8	20.5	4.9	20.0	-	-
Italy	50.4	30.9	1.2	0.0	47.6	66.1	0.8	3.0
Japan	84.8	74.9	2.9	1.3	12.2	23.8	-	-
Latvia	50.2	39.8	33.6	15.9	16.2	43.5	-	0.7
Liechtenstein	87.2	56.2	0.1	0.0	12.7	43.7	-	-
Lithuania	39.6	28.0	40.0	29.1	20.4	42.9	-	-
Luxembourg	59.4	58.0	7.6	0.6	33.0	41.4	-	-
Monaco	80.0	70.2	-	-	20.0	29.8	-	-
Netherlands	10.6	8.0	0.5	0.3	88.9	91.7	-	-
New Zealand	55.9	48.6	28.7	21.3	15.5	30.0	-	-
Norway	99.0	98.7	0.9	0.2	-	1.1	0.1	-
Poland	7.0	27.6	87.5	51.2	5.5	21.2	-	-
Portugal	100.0	89.4	-	-	-	10.6	-	-
Romania	46.8	30.1	21.8	1.4	31.5	68.5	-	-
Russian Federation	-	17.3	-	12.6	-	70.1	-	0.0
Slovakia	3.7	0.6	69.1	11.8	27.2	87.6	0.0	0.0
Slovenia	38.0	86.2	60.4	0.7	1.6	13.1	-	-
Spain	85.8	72.6	9.0	1.4	5.2	26.0	-	-
Sweden	96.6	97.1	1.5	-	1.9	2.9	-	-
Switzerland	86.4	79.2	0.3	0.2	13.2	20.6	-	-
Turkey	51.2	47.6	48.5	26.2	0.4	26.2	-	-
Ukraine	8.8	1.8	66.6	18.9	24.6	79.2	0.0	0.1
United Kingdom	16.8	12.2	18.6	5.1	64.4	82.4	0.2	0.2
United States	29.4	26.5	2.6	1.6	68.0	71.9	-	-

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual inventories of Annex I Parties the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Romania (1989) and Slovenia (1986).

Table 1.33a

CO<sub>2</sub> emissions from transport: all fuels - trend information

CO <sub>2</sub> emissions (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	60,737	77,290	-0.5	4.1	3.4	1.9	0.0	1.1	2.7	-1.9	2.2	0.7	5.2	27.3
Austria	12,400	23,455	12.8	2.7	10.9	-6.6	14.7	-3.3	6.9	7.3	10.2	8.9	2.6	89.1
Belarus	12,909	4,381	-1.5	-9.9	-0.6	-8.9	-7.0	-17.7	-6.8	-0.1	34.3	-7.6	14.3	-66.1
Belgium	19,947	26,452	3.2	0.4	2.0	0.9	3.0	1.5	2.0	2.6	1.3	2.2	4.0	32.6
Bulgaria	13,814	7,403	-39.9	4.5	-4.1	-19.5	22.5	-4.1	-5.3	2.2	5.0	12.4	4.3	-46.4
Canada	141,931	184,680	-3.4	2.6	2.4	3.9	2.1	2.6	0.8	-0.9	1.3	2.7	3.1	30.1
Croatia	4,041	5,330	-27.5	6.2	9.3	9.5	3.5	7.3	-0.2	2.3	6.6	7.8	2.8	31.9
Czech Republic	7,342	15,229	-9.1	24.3	4.1	15.1	-4.8	11.4	-8.0	8.5	3.0	8.1	13.4	107.4
Denmark	10,336	12,859	4.6	3.4	2.3	1.1	0.2	0.6	-1.1	-0.1	1.5	3.6	2.0	24.4
Estonia	3,019	2,000	-3.0	-27.5	-5.5	15.2	13.9	-12.8	-57.0	281.5	13.5	-1.3	-4.4	-33.8
European Community	689,443	860,068	2.2	1.3	2.2	1.2	3.1	2.4	0.2	1.2	1.2	0.7	1.6	24.7
Finland	12,541	13,456	-2.8	-1.7	-0.1	5.0	1.1	1.5	-0.8	0.9	1.6	1.5	2.7	7.3
France	119,100	141,900	2.1	1.5	1.1	1.7	1.7	2.3	-0.4	2.3	0.6	-0.2	0.3	19.1
Germany	162,486	171,186	2.2	2.2	0.1	0.3	1.8	3.1	-2.0	-2.2	-1.2	-3.4	0.5	5.4
Greece	15,355	21,646	5.0	0.6	2.7	3.4	9.0	0.9	-2.6	3.7	1.3	4.8	1.9	41.0
Hungary	7,569	10,141	-12.5	1.9	0.0	6.1	13.7	4.4	-0.4	3.8	4.8	3.4	5.8	34.0
Iceland	600	679	1.9	-3.9	-1.6	2.0	0.5	3.6	0.4	1.7	0.6	3.6	1.8	13.1
Ireland	5,036	12,093	4.6	8.3	11.9	8.8	14.1	11.0	4.0	8.3	1.5	1.4	6.1	140.1
Italy	101,461	128,008	2.8	1.6	1.0	1.5	3.3	1.1	0.4	1.9	1.7	0.9	1.6	26.2
Japan	211,054	254,478	5.4	3.1	2.2	0.8	-0.4	0.9	-0.3	1.0	-2.0	-0.8	-0.1	20.6
Latvia	2,491	2,793	-30.2	5.4	8.7	-0.7	-1.2	-1.6	10.5	17.7	-0.2	4.6	3.3	12.1
Liechtenstein	75	85	17.5	2.5	1.6	4.4	-0.3	6.7	4.3	-3.8	-4.9	-0.3	-1.4	12.8
Lithuania	5,652	3,887	10.4	22.9	9.2	12.4	5.4	-11.1	-10.9	8.7	3.2	1.9	9.5	-31.2
Luxembourg	2,724	6,987	21.8	-5.8	2.3	7.6	4.8	9.0	14.6	4.9	3.8	11.1	16.1	156.4
Monaco	33	34	14.3	-3.4	-0.3	-4.7	-3.5	1.4	-4.9	0.5	-0.4	-1.1	-2.4	4.8
Netherlands	26,009	34,824	1.1	1.8	2.6	1.3	2.4	3.1	1.1	1.6	2.1	2.0	1.6	33.9
New Zealand	8,633	14,110	0.1	7.0	0.8	2.9	1.7	2.2	5.0	3.1	4.5	4.2	2.3	63.5
Norway	11,103	14,081	-0.8	3.4	5.3	1.9	2.7	4.5	-6.3	2.4	-1.2	3.6	3.1	26.8
Portugal	9,828	19,407	6.8	5.1	5.0	5.6	12.1	5.1	10.0	1.6	2.6	-0.5	-0.3	97.5
Portugal	9,828	19,407	6.8	5.1	5.0	5.6	12.1	5.1	10.0	1.6	2.6	-0.5	-0.3	97.5
Romania	7,294	16,945	-11.1	-2.8	34.7	1.0	-0.6	-23.7	8.7	16.2	8.1	0.7	38.9	132.3
Russian Federation	NA, NE	213,130	*	*	*	*	*	*	*	*	*	*	*	*
Slovakia	5,071	5,440	-15.6	6.3	1.5	3.7	7.5	-2.7	-10.3	13.3	3.0	2.2	5.7	7.3
Slovenia	1,971	4,092	-5.5	9.9	15.9	1.6	-13.6	-4.9	4.2	3.6	0.4	3.7	3.8	107.6
Spain	56,512	99,223	4.0	1.5	6.9	0.9	9.6	6.0	3.2	4.8	2.3	4.9	4.0	75.6
Sweden	18,174	19,817	-1.4	0.7	-1.2	0.7	1.0	1.6	-1.0	0.8	2.4	1.3	1.2	9.0
Switzerland	14,404	15,442	3.2	-2.3	0.3	4.0	1.4	4.0	1.6	-1.9	-0.7	1.2	0.7	7.2
Turkey	25,955	40,458	-4.9	11.7	6.3	-4.6	-5.5	5.9	5.0	0.2	2.9	4.8	7.1	55.9
Ukraine	89,331	37,474	*	*	*	*	*	-0.7	-8.8	0.6	4.2	3.3	3.2	-58.1
United Kingdom	117,533	128,758	-0.6	-0.8	4.1	1.2	-0.6	0.7	-0.5	-0.5	1.9	1.1	1.2	9.5
United States	1,413,240	1,825,631	-2.0	1.9	2.3	1.1	1.8	3.9	2.7	-0.8	2.7	0.0	3.0	29.2

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 1.33b****N<sub>2</sub>O emissions from transport: all fuels - trend information**

N <sub>2</sub> O emissions (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	2.01	4.98	6.4	7.6	14.0	-2.5	5.1	5.4	10.6	4.2	8.0	5.7	9.8	147.5
Austria	0.85	0.94	22.2	-3.3	-4.9	-7.6	5.5	-9.4	-2.9	0.4	4.6	0.7	-5.1	10.0
Belarus	0.11	0.02	-3.4	-13.3	-5.0	-14.0	-13.4	-25.0	-21.7	-5.5	24.2	-18.3	30.3	-83.4
Belgium	1.14	2.67	6.1	9.4	7.2	4.9	4.9	13.1	4.8	3.1	2.8	1.0	2.6	135.5
Bulgaria	0.33	0.14	-40.2	3.4	-2.2	-16.5	9.1	-2.7	-9.9	-0.1	3.2	15.8	6.0	-56.8
Canada	20.31	26.22	2.2	3.1	-0.1	2.1	-0.4	1.5	-0.9	-4.6	-3.3	-0.9	0.7	29.1
Croatia	0.04	0.55	13.5	25.3	25.7	26.1	16.2	18.2	10.1	10.9	16.9	14.6	6.1	1,250.1
Czech Republic	0.26	2.08	59.4	46.8	56.5	17.8	-7.6	12.4	4.9	5.3	9.9	4.4	3.6	697.1
Denmark	0.45	1.40	16.2	13.3	10.5	11.3	7.5	6.0	3.2	1.5	4.8	4.2	4.2	208.6
Estonia	0.03	0.02	-15.3	-26.9	-5.8	15.6	13.7	-12.8	-82.3	836.1	13.9	-1.6	-5.7	-41.6
European Community	25.83	72.31	8.4	10.9	9.7	8.1	9.5	8.1	4.2	5.3	5.2	3.1	3.7	180.0
Finland	0.56	1.85	13.2	9.4	9.0	11.4	9.6	9.6	6.8	6.6	7.5	7.0	8.2	229.6
France	5.37	14.32	7.2	11.4	10.3	7.9	7.1	7.6	4.2	8.2	4.2	3.7	1.9	166.4
Germany	2.17	4.38	35.1	10.0	4.5	2.3	1.2	0.7	-3.0	-3.1	-3.4	-6.5	-2.3	102.3
Greece	0.57	1.60	3.6	9.7	11.4	10.3	15.6	8.6	4.7	12.0	10.3	10.8	7.1	182.7
Hungary	1.15	1.39	-11.2	-0.5	-2.9	3.4	9.9	1.4	-2.2	2.7	2.1	4.2	4.1	21.0
Iceland	0.02	0.10	2.5	118.5	-0.5	59.5	2.1	48.9	-0.9	0.9	0.9	3.2	0.3	477.9
Ireland	0.28	1.42	10.2	4.1	27.2	20.5	20.2	22.0	-4.1	10.7	-4.4	3.4	7.3	405.8
Italy	5.54	12.80	1.2	8.9	8.1	6.9	13.0	8.6	3.6	4.5	9.8	2.9	5.1	131.0
Japan	13.56	11.36	3.9	3.0	1.9	1.0	-2.2	-0.3	-2.1	-4.0	-6.0	-7.1	-7.9	-16.2
Latvia	0.26	0.29	-7.6	9.7	12.0	9.4	0.7	-3.4	8.1	21.9	0.0	7.4	5.7	11.3
Liechtenstein	0.00	0.00	36.5	18.2	-2.0	5.5	-5.2	3.2	4.8	-8.3	-13.4	-9.1	-8.6	46.8
Lithuania	0.22	0.16	9.7	16.1	8.5	18.2	8.7	-8.8	-10.1	11.6	3.7	1.3	11.7	-24.6
Luxembourg	0.15	0.84	20.0	-3.2	10.0	15.2	10.5	14.3	12.5	7.4	6.9	11.3	21.7	460.0
Monaco	0.00	0.00	15.0	17.4	18.6	8.6	7.5	12.3	1.4	4.2	4.1	-2.2	-1.7	343.4
Netherlands	0.88	1.57	16.3	7.9	1.8	1.4	0.6	0.6	-3.7	-0.3	0.6	-2.3	3.4	79.3
New Zealand	0.24	0.48	1.0	10.9	2.8	4.5	2.6	3.5	7.0	3.2	5.5	4.3	2.3	100.5
Norway	0.39	0.85	2.9	12.6	10.3	6.8	4.6	6.7	-0.7	5.4	1.0	3.1	3.4	118.8
Poland	1.67	3.43	-12.3	21.2	24.8	-5.9	51.5	8.6	9.5	-3.5	-4.6	0.3	1.9	105.6
Portugal	0.49	1.85	5.4	14.3	11.1	10.1	15.4	9.5	11.6	2.3	4.5	0.3	0.3	277.7
Romania	0.06	0.14	-13.7	-6.0	34.7	2.4	-1.9	-22.1	7.0	16.8	8.3	0.0	38.5	118.5
Russian Federation	NA, NE	NA, NE	*	*	*	*	*	*	*	*	*	*	*	*
Slovakia	0.52	0.70	-15.8	10.9	10.4	5.0	12.0	0.5	-7.1	14.2	0.2	7.6	6.3	33.0
Slovenia	0.08	0.50	-3.1	39.9	37.8	2.1	3.2	22.4	6.6	12.5	8.5	1.5	0.3	495.6
Spain	2.53	8.37	5.2	9.1	12.1	8.9	15.3	10.6	6.5	8.4	6.3	7.1	6.4	231.4
Sweden	0.52	0.64	-8.9	10.8	-1.9	6.8	-2.1	5.0	2.0	-6.6	-2.9	-1.6	-2.1	24.1
Switzerland	0.33	0.46	23.3	3.7	6.4	4.4	-0.2	1.2	-3.0	-7.0	-7.4	-6.5	-6.6	39.0
Turkey	0.84	2.08	-5.2	10.6	9.8	-7.0	-5.8	16.7	9.3	4.8	8.3	12.4	23.0	146.8
Ukraine	0.82	0.34	*	*	*	*	*	0.0	-8.6	-1.8	4.4	3.8	3.4	-58.3
United Kingdom	4.44	17.66	2.6	17.6	15.5	13.4	11.9	10.3	7.3	6.7	6.4	4.2	3.9	297.7
United States	136.21	133.42	4.9	2.1	1.5	1.2	0.0	-1.4	-1.8	-6.3	-5.0	-6.0	-4.7	-2.1

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 1.34****Road transportation, CO<sub>2</sub>, N<sub>2</sub>O (base year<sup>a</sup>)**

	CO <sub>2</sub> emissions							N <sub>2</sub> O emissions						
	Key category	Share of national total	Methods and EF used <sup>b</sup>		CO <sub>2</sub> IEF			Key category	Share of national total	Method and EF used <sup>a</sup>		N <sub>2</sub> O IEF		
			Methods	EF	IEF in CRF based on	Gasoline	Diesel oil			Methods	EF	IEF in CRF based on	Gasoline	Diesel oil
		(%)				(t/TJ)			(kg/TJ)					
IPCC default EF <sup>c</sup>					NCV	72.1 (US) 73.0 (Europe)	72.1 (US) 74.0 (Europe)					NCV	3-43 (US) 1-20 (Europe)	1-14 (US) 3-4 (Europe)
Australia <sup>d</sup>	L	12.7	T1	CS, D	GCV	70.24	72.84		0.13	T1, T2, T3	CS, D	GCV	2.77	1.46
Austria	L	15.1	CS, M	CS	NCV	75.22	74.01		0.32	CS, M	CS	NCV	6.73	1.98
Belarus	L	10.1	D	D	NCV	68.61	73.16		0.03	D	D	NCV	0.60	0.59
Belgium	L	13.2			NCV	68.61	73.33		0.21			NCV	1.62	5.15
Bulgaria	L	5.9	T1, T2	CS, D	NCV	72.16	76.14		0.04	T1, T2	CS, D	NCV	1.20	1.91
Canada <sup>d</sup>	L	17.2	CS, T1, T3	CS, D	GCV	71.67	74.29	L	0.61	CS, T1, T3	CS, D	GCV	10.41	2.34
Croatia	L	11.2	T1	D	NCV	68.61	73.33		0.03	T1	D	NCV	0.60	0.60
Czech Republic	L	3.1	T1	D	NCV	68.61	73.33		0.04	T2	CS, D	NCV	2.44	3.00
Denmark	L	13.1	OTH	CS	NCV	73.00	74.00		0.18	OTH	OTH	NCV	1.96	4.56
Estonia	L	4.9	T1	D	NCV	68.61	73.33		0.01	T1	D	NCV	0.61	0.65
European Community	L	14.9	CR, CS, D, M, T1, T2, T3	CR, CS, D, M	NCV	71.48	73.82		0.17	CR, CS, D, M, T2, T3	CR, CS, D, M	NCV	1.73	3.71
Finland	L	15.3	CS, M, T2, T3	CS	NCV	72.86	73.55		0.22	CS, M, T2, T3	CS, D	NCV	3.63	3.26
France	L	19.6			NCV	72.35	74.70		0.28			NCV	1.77	5.25
Germany	L	12.2	CS, T1, T3	CS	NCV	72.00	74.00		0.05	T1, T3	CS	NCV	1.02	0.83
Greece	L	10.9	M, T1, T2	D, M	NCV	68.61	73.31		0.11	CR, M, T1, T2	CR, D, M	NCV	1.47	3.93
Hungary	L	5.5	T1c	D	NCV	68.61	73.33		0.27	T1c	CS	NCV	15.00	6.00
Iceland	L	15.2			NCV	68.61	73.33		0.13			NCV	1.71	2.74
Ireland	L	8.4	T1, T2	CS	NCV	69.96	73.30		0.10	T1, T3	CR, M	NCV	1.92	4.02
Italy	L	18.0	D, M, T1, T2	CS	NCV	71.02	73.65		0.31	D, M, T1, T2	CR, CS	NCV	1.82	5.71
Japan <sup>d</sup>	L	14.9	T1	CS	GCV	70.59	72.29		0.31	D, T2	CS, D	GCV	6.82	1.94
Latvia	L	7.5	CR, T1	D	NCV	72.12	73.81		0.05	CR, T1	D	NCV	1.52	3.41
Liechtenstein	L	32.7	T1	CS	NCV	73.90	73.60		0.22	T1	CS, D	NCV	1.86	0.75
Lithuania	L	11.0	T2	CS	NCV	73.00	74.00		0.13	T2	CS	NCV	2.00	4.00
Luxembourg	L	21.2	CR	CR	NCV	71.51	75.45		0.34	CR	CR	NCV	NE	NE
Monaco	L	30.0			NCV	74.53	72.16		0.28			NCV	1.73	3.66
Netherlands	L	12.0	CS, T2	CS	NCV	72.00	74.29		0.13	CS, T2	CS, D	NCV	3.33	1.45
New Zealand <sup>d</sup>	L	12.2	D	CS	GCV	68.99	72.43		0.10	D	D	GCV	1.50	3.90
Norway	L	15.8	CS/T2, T1	CS	NCV	71.30	73.55		0.10	CS, CS/T2, T2	C, CS, D	NCV	1.03	2.41
Poland	L	2.7	T1, T2	CS, D	NCV	72.83	73.93		0.03	T1, T2	D	NCV	1.55	3.10
Portugal	L	15.4	CR, T1, T2	CR, D, OTH	NCV	71.10	72.45		0.23	CR, T1, T2, T3	CR, D	NCV	1.72	4.97
Romania	L	1.7	T1	D	NCV	68.61	73.33		0.00	T1	D	NCV	0.60	0.60
Russian Federation		-	NA	NA	NCV	NE	NE		-	NA	NA	NCV	NE	NE
Slovakia	L	6.1	M, T1, T2	D	NCV	73.01	73.83		0.10	M, T1, T2	D	NCV	1.78	4.68
Slovenia	L	9.4	M, T1	D	NCV	72.95	73.66		0.09	M, T1	CS, D	NCV	1.90	2.64
Spain	L	17.6	CR, T2	CR, D	NCV	71.74	72.63		0.24	CR, T1, T2	CR, D	NCV	1.76	4.61
Sweden	L	23.0	CS, T1	CS	NCV	72.60	74.26		0.14	CS, T1, T2	CR, CS, D	NCV	1.50	1.11
Switzerland	L	26.1	CS	CS	NCV	73.90	73.60		0.18	CS	CS, D	NCV	1.85	0.75
Turkey	L	14.1			NCV	IE	IE		0.15			NCV	6.59	IE
Ukraine	L	5.0	T1	D	NCV	68.66	73.33		0.01	T1	D	NCV	0.60	0.60
United Kingdom	L	14.2	CS, OTH, T1, T2, T3	CR, CS	NCV	70.21	73.45		0.13	OTH, T1, T2, T3	CR, CS, D	NCV	1.72	3.16
United States <sup>d</sup>	L	19.1	T1, T2	CS	GCV	71.01	72.25	L	0.66	M, T1, T2	CS, D, M	GCV	9.65	0.22

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

<sup>b</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.3 Transport.

<sup>c</sup> Source of default emission factors: IPCC Guidelines, volume 3, pages 1.70–1.83. For updates on the default emission factors for N<sub>2</sub>O for US gasoline vehicles, see table 2.7, page 2.47 in the IPCC good practice guidance.

<sup>d</sup> Australia, Canada, Japan, New Zealand and United States reported energy data on a gross calorific value (GCV) basis. This means that reported IEFs are about 5 per cent lower for liquid and solid fuels and biomass, and about 10 per cent lower for gaseous fuels than would have been the case if the data were given on a net calorific value (NCV) basis. The IEFs included in this table have been converted into NCV-based values and are not reflecting the reported IEFs.

Table 1.35

Road transportation, CO<sub>2</sub>, N<sub>2</sub>O (2004)

	CO <sub>2</sub> emissions							N <sub>2</sub> O emissions						
	Key category	Share of national total	Methods and EF used <sup>a</sup>		CO <sub>2</sub> IEF			Key category	Share of national total	Method and EF used <sup>a</sup>		N <sub>2</sub> O IEF		
			Methods	EF	IEF in CRF based on	Gasoline	Diesel oil			Methods	EF	IEF in CRF based on	Gasoline	Diesel oil
		(%)				(t/TJ)			(kg/TJ)					
IPCC default EF <sup>b</sup>					NCV	72.1 (US) 73.0 (Europe)	72.1 (US) 74.0 (Europe)					NCV	3-43 (US) 1-20 (Europe)	1-14 (US) 3-4 (Europe)
Australia <sup>c</sup>	L, T	13.0	T1	CS, D	GCV	70.24	72.84		0.28	T1, T2, T3	CS, D	GCV	6.67	1.31
Austria	L, T	24.5	CS, M	CS	NCV	74.06	72.81		0.30	CS, M	CS	NCV	6.07	1.61
Belarus	L, T	4.2	D	D	NCV	68.61	73.28		0.00	D	D	NCV	0.11	0.37
Belgium	L, T	17.5			NCV	68.61	73.33	T	0.53			NCV	8.85	6.47
Bulgaria	L, T	9.7	T1, T2	CS, D	NCV	72.16	76.14		0.06	T1, T2	CS, D	NCV	1.07	1.91
Canada <sup>c</sup>	L, T	18.5	CS, T1, T3	CS, D	GCV	70.98	75.03	L	0.67	CS, T1, T3	CS, D	GCV	11.33	2.31
Croatia	L, T	16.9	T1	D	NCV	68.61	73.33	T	0.57	T1, T3	CR, D	NCV	8.27	7.28
Czech Republic	L, T	9.9	T1	D	NCV	68.61	73.33	T	0.44	T2	CS, D	NCV	18.71	3.40
Denmark	L, T	17.3	OTH	CS	NCV	73.00	74.00		0.60	OTH	OTH	NCV	11.32	5.45
Estonia	L, T	8.5	T1	D	NCV	68.61	73.33		0.02	T1	D	NCV	0.58	0.60
European Community	L, T	18.9	CR, CS, D, M, T1, T2, T3	CR, CS, D, M	NCV	71.32	73.61	L, T	0.50	CR, CS, D, M, T2, T3	CR, CS, D, M	NCV	8.09	4.96
Finland	L, T	14.5	CS, M, T1, T3	CS	NCV	72.87	73.55	L, T	0.69	CS, M, T1, T3	CS, D	NCV	20.14	3.24
France	L, T	23.6			NCV	72.35	75.01	L, T	0.77			NCV	10.23	6.79
Germany	L, T	15.8	CS, T1, T3	CS	NCV	72.00	74.00		0.12	T1, T3	CS	NCV	2.26	1.43
Greece	L, T	13.2	CR, M, T1, T2	D, M	NCV	68.61	73.31	T	0.33	CR, M, T1, T2	CR, D, M	NCV	6.56	4.00
Hungary	L, T	11.8	T1c	D	NCV	68.61	73.33	L	0.51	T1c	CS	NCV	15.00	6.00
Iceland	L, T	17.1			NCV	68.61	73.33	T	0.79			NCV	13.24	2.74
Ireland	L, T	17.1	T1, T2	CS	NCV	69.96	73.30	T	0.60	T1, T3	CR, M	NCV	11.28	5.74
Italy	L, T	20.4	D, M, T1, T2	CS	NCV	71.15	73.16	L, T	0.67	D, M, T1, T2	CR, CS	NCV	9.04	6.78
Japan <sup>c</sup>	L, T	17.0	T1	CS	GCV	70.59	72.29		0.24	D, T2	CS, D	GCV	3.91	2.00
Latvia	L, T	23.2	CR, T1	D	NCV	62.21	89.93	T	0.49	CR, T1	D	NCV	4.81	5.69
Liechtenstein	L, T	31.3	T1	CS	NCV	73.90	73.60		0.28	T1	CS, D	NCV	2.46	1.30
Lithuania	L, T	17.3	T2	CS	NCV	73.00	74.00		0.23	T2	CS	NCV	2.00	4.00
Luxembourg	L, T	54.4	CR	CR	NCV	71.42	73.69	L	2.01	CR	CR	NCV	NE	NE
Monaco	L, T	31.4			NCV	74.61	72.28	T	1.28			NCV	12.65	3.81
Netherlands	L, T	15.5	CS, T2	CS	NCV	72.00	74.30	T	0.22	CS, T2	CS, D	NCV	4.81	2.24
New Zealand <sup>c</sup>	L, T	16.5	D	CS	GCV	69.18	72.43		0.18	D	D	GCV	1.50	3.90
Norway	L, T	18.2	CS/T2, T1	CS	NCV	71.30	73.55	T	0.32	CS, CS/T2, T2	C, CS, D	NCV	5.97	2.16
Poland	L, T	8.2	T1, T2	CS, D	NCV	70.43	73.16	T	0.24	T1, T2	CS, D	NCV	13.08	3.21
Portugal	L, T	22.2	CR, T1, T2	CR, D, OTH	NCV	71.10	72.45	L, T	0.67	CR, T1, T2, T3	CR, D	NCV	9.26	5.95
Romania	L, T	10.5	T1	D	NCV	68.61	73.33		0.03	T1	D	NCV	0.60	0.60
Russian Federation	L, T	5.3	T1	D	NCV	68.61	73.33		-	NA	NA	NCV	NE	NE
Slovakia	L, T	10.1	D, M, T1, T2	D	NCV	73.01	73.83		0.29	D, M, T1, T2	D	NCV	9.45	4.94
Slovenia	L, T	20.3	M, T1	D	NCV	73.00	73.67	L, T	0.75	M, T1	CS, D	NCV	10.58	6.76
Spain	L, T	21.1	CR, T2	CR, D	NCV	71.09	72.63	L, T	0.58	CR, T1, T2	CR, D	NCV	7.58	5.93
Sweden	L, T	26.2	CS, T1	CS	NCV	72.60	72.02		0.20	CS, T1, T2	CR, CS, D	NCV	2.21	1.10
Switzerland	L, T	28.2	CS	CS	NCV	73.90	73.60		0.26	CS	CS, D	NCV	2.46	1.30
Turkey	L, T	11.6	T2	D	NCV	IE	IE		0.20	T2	D	NCV	14.36	IE
Ukraine	L	5.0	T1	D	NCV	68.61	73.33		0.01	T1	D	NCV	0.60	0.60
United Kingdom	L, T	18.0	CS, OTH, T1, T2, T3	CR, CS	NCV	70.02	73.05	L, T	0.76	OTH, T1, T2, T3	CR, CS, D	NCV	14.03	5.14
United States <sup>c</sup>	L, T	21.8	T1, T2	CS	GCV	70.71	72.25	L, T	0.55	M, T1, T2	CS, D, M	GCV	7.57	0.20

<sup>a</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.3 Transport.

<sup>b</sup> Source of default emission factors: IPCC Guidelines, volume 3, pages 1.70–1.83. For updates on the default emission factors for N<sub>2</sub>O for US gasoline vehicles, see table 2.7, page 2.47 in the IPCC good practice guidance.

<sup>c</sup> Australia, Canada, Japan, New Zealand and United States reported energy data on a gross calorific value (GCV) basis. This means that reported IEFs are about 5 per cent lower for liquid and solid fuels and biomass, and about 10 per cent lower for gaseous fuels than would have been the case if the data were given on a net calorific value (NCV) basis. The IEFs included in this table have been converted into NCV-based values and are not reflecting the reported IEFs.

Table 1.36a

CO<sub>2</sub> emissions from road transportation: all fuels - trend information

CO <sub>2</sub> emissions (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	53,153	68,464	-1.9	2.8	3.1	1.9	1.6	2.0	2.5	-2.4	3.4	1.0	5.0	28.8
Austria	11,924	22,393	13.3	2.8	11.3	-6.9	14.3	-4.2	6.5	7.3	11.2	8.6	2.3	87.8
Belarus	12,851	3,114	-2.2	-11.6	-2.9	-11.7	-10.3	-21.4	-21.7	-1.0	46.3	-13.5	19.4	-75.8
Belgium	19,270	25,799	1.0	0.3	2.0	1.2	3.1	1.5	1.7	2.8	1.3	2.2	4.0	33.9
Bulgaria	7,747	6,550	-41.8	8.3	-1.6	-24.3	28.3	3.4	-5.9	3.6	5.7	14.3	4.5	-15.5
Canada	102,878	139,943	-2.8	2.3	1.6	4.6	0.8	3.5	0.8	1.5	2.8	2.9	3.8	36.0
Croatia	3,475	4,988	-25.8	5.7	9.1	11.4	4.3	6.1	0.7	1.3	6.8	8.8	3.0	43.5
Czech Republic	5,995	14,539	-9.8	26.9	6.7	17.0	-4.6	10.0	-8.8	9.1	3.5	8.9	14.2	142.5
Denmark	9,241	12,024	4.5	3.4	2.3	2.0	1.7	1.3	-1.0	0.0	1.0	3.9	2.6	30.1
Estonia	2,148	1,848	-23.0	2.1	-10.4	19.9	14.9	-11.1	-68.6	493.9	8.3	-2.9	3.7	-14.0
European Community	637,639	801,271	2.4	1.3	2.1	1.3	3.0	2.3	0.2	1.4	1.4	0.5	1.5	25.7
Finland	10,872	11,811	-2.8	-1.4	-0.7	5.0	0.9	1.5	-0.8	1.7	2.1	1.6	3.2	8.6
France	111,403	132,684	2.4	1.0	0.9	1.8	1.6	2.2	-0.3	2.7	0.5	-0.1	0.1	19.1
Germany	150,358	160,409	2.5	2.5	0.0	0.6	2.1	3.2	-2.1	-2.0	-1.1	-3.7	0.4	6.7
Greece	11,873	18,135	6.8	3.0	4.6	2.4	4.8	1.8	1.2	2.3	3.5	6.1	0.7	52.7
Hungary	6,807	9,944	-12.2	2.1	0.1	6.4	14.3	4.7	-0.1	4.2	5.1	3.3	6.2	46.1
Iceland	509	636	3.5	-1.9	-3.7	6.0	1.4	4.5	2.1	1.1	1.4	4.0	1.2	24.9
Ireland	4,696	11,675	4.1	7.6	11.7	9.0	14.7	10.4	4.6	7.9	5.2	1.5	6.2	148.6
Italy	93,616	118,387	2.5	1.6	0.4	1.5	3.1	0.8	0.0	2.5	1.9	1.1	1.7	26.5
Japan	189,228	230,273	5.4	2.7	2.2	0.2	0.4	1.1	-0.5	1.3	-2.3	-0.8	0.6	21.7
Latvia	1,948	2,492	-38.2	5.6	10.1	-1.4	-0.2	-0.2	11.5	19.7	-0.5	3.8	3.5	27.9
Liechtenstein	75	85	17.5	2.5	1.6	4.4	-0.3	6.7	4.3	-3.8	-4.9	-0.3	-1.4	12.9
Lithuania	5,281	3,639	10.4	24.7	5.9	13.5	6.2	-10.8	-12.0	10.2	2.9	1.3	10.1	-31.1
Luxembourg	2,693	6,960	22.0	-5.7	2.3	7.7	4.8	9.1	14.7	4.9	3.8	11.1	16.1	158.5
Monaco	32	33	14.1	-3.3	-0.1	-5.4	-3.2	0.8	-5.9	-0.5	0.2	-1.7	-2.9	1.7
Netherlands	25,472	33,841	1.1	1.9	2.7	1.2	2.4	2.8	1.1	1.6	2.1	1.8	1.2	32.9
New Zealand	7,535	12,417	1.2	8.1	1.7	4.2	2.3	2.3	2.6	1.9	5.8	3.5	2.7	64.8
Norway	7,854	10,003	-1.0	2.7	5.3	-0.2	2.5	2.4	-5.8	6.2	0.4	2.8	4.3	27.4
Poland	16,068	32,444	-2.3	9.1	11.1	-5.3	3.5	5.7	1.4	-2.5	-0.8	2.6	6.5	101.9
Portugal	9,249	18,708	6.7	5.3	5.2	5.8	12.4	5.4	10.5	1.7	2.6	-0.4	-0.4	102.3
Romania	4,574	16,172	-16.1	-2.5	39.8	-5.3	0.5	-23.3	11.2	28.4	6.7	1.7	40.8	253.5
Russian Federation	NA, NE	113,130	*	*	*	*	*	*	*	*	*	*	*	*
Slovakia	4,501	5,155	-15.0	6.1	1.4	4.5	7.0	-2.0	-10.5	14.3	3.2	2.8	5.8	14.5
Slovenia	1,902	4,053	-5.9	10.0	16.1	1.7	-13.7	-4.9	4.2	3.7	0.3	3.8	3.9	113.1
Spain	50,442	90,369	5.7	1.4	6.5	1.0	9.6	5.2	2.9	4.9	2.7	4.9	3.8	79.2
Sweden	16,629	18,244	-0.2	0.5	-1.1	0.0	0.3	1.2	-0.8	1.1	2.8	1.0	1.2	9.7
Switzerland	13,744	14,970	3.6	-2.3	0.4	4.2	1.5	4.3	1.7	-1.8	-0.7	1.3	0.8	8.9
Turkey	24,036	34,078	-6.0	8.5	6.2	-5.8	-6.8	8.6	5.6	-0.9	1.9	4.0	5.3	41.8
Ukraine	46,346	20,733	*	*	*	*	*	5.8	-9.7	9.8	11.8	5.4	5.6	-55.3
United Kingdom	109,901	119,833	-0.7	-0.9	3.9	1.2	-0.6	0.8	-0.7	0.0	2.1	-0.2	1.0	9.0
United States	1,163,464	1,539,036	-0.9	2.2	2.2	2.4	2.9	3.2	1.5	0.4	2.8	0.8	2.7	32.3

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

Table 1.36b

N<sub>2</sub>O emissions from road transportation: all fuels - trend information

N <sub>2</sub> O emissions (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	1.81	4.74	5.9	7.0	14.7	-2.7	6.6	6.1	11.0	4.3	9.0	6.1	10.0	162.0
Austria	0.82	0.89	23.2	-3.2	-4.9	-8.0	5.7	-10.1	-3.0	-0.4	5.3	0.2	-5.5	9.2
Belarus	0.11	0.01	-4.1	-15.7	-8.6	-18.2	-19.6	-32.9	-39.0	-10.6	44.8	-34.8	64.4	-90.1
Belgium	0.97	2.51	8.6	8.0	7.9	5.5	5.0	14.2	4.4	3.6	3.0	1.2	2.4	159.3
Bulgaria	0.16	0.12	-40.2	6.3	3.4	-22.6	16.0	5.6	-11.7	1.6	3.7	19.4	7.6	-21.7
Canada	11.77	16.39	10.0	4.2	-1.3	1.3	-1.8	0.8	-4.2	-3.0	-1.9	-3.3	-1.7	39.2
Croatia	0.03	0.54	37.7	25.8	26.4	26.8	16.5	17.7	10.6	10.7	17.2	14.9	6.1	1,715.4
Czech Republic	0.23	2.07	69.3	48.4	58.5	18.0	-7.7	12.5	4.9	5.3	10.1	4.5	3.7	805.7
Denmark	0.40	1.36	16.9	14.0	11.0	12.6	8.8	6.6	3.4	1.6	4.5	4.3	4.5	237.3
Estonia	0.02	0.02	-26.2	2.2	-10.9	20.5	14.7	-11.0	*	*	8.8	-3.0	1.4	-19.6
European Community	22.73	68.87	9.8	11.5	10.0	8.6	9.9	8.4	4.2	5.7	5.7	3.3	3.8	203.0
Finland	0.51	1.80	14.8	10.1	9.2	11.6	9.9	9.9	7.1	6.9	7.8	7.2	8.4	250.5
France	5.14	14.03	7.6	11.5	10.4	8.2	7.2	7.8	4.4	8.5	4.2	3.8	1.9	173.2
Germany	1.97	4.07	38.9	10.2	4.7	2.7	1.4	0.7	-5.4	-3.0	-3.5	-7.1	-2.7	107.1
Greece	0.40	1.46	9.3	17.2	14.7	12.1	14.6	11.8	7.2	13.0	12.5	12.2	7.2	267.9
Hungary	1.08	1.38	-11.0	-0.4	-2.9	3.5	10.2	1.5	-2.1	2.9	2.2	4.2	4.3	26.9
Iceland	0.01	0.10	4.2	138.1	-1.3	64.4	2.3	50.2	-0.6	0.8	1.1	3.3	0.1	571.3
Ireland	0.18	1.33	12.8	4.2	26.0	24.3	24.6	23.6	-5.0	10.8	8.0	3.7	7.9	636.5
Italy	5.18	12.50	0.9	9.2	8.4	7.4	13.4	8.8	3.6	4.7	10.2	3.6	5.5	141.5
Japan	12.59	10.40	4.0	3.1	1.9	0.7	-2.1	-0.1	-2.3	-4.1	-6.5	-7.6	-8.3	-17.3
Latvia	0.04	0.17	-36.5	24.2	37.3	19.0	12.2	5.0	12.9	39.3	-2.0	4.5	8.9	280.0
Liechtenstein	0.00	0.00	36.5	18.2	-2.0	5.5	-5.2	3.2	4.8	-8.3	-13.4	-9.1	-8.6	46.9
Lithuania	0.20	0.15	9.6	17.4	4.7	20.2	9.8	-8.3	-11.1	13.4	3.4	0.7	12.5	-23.9
Luxembourg	0.14	0.83	21.4	0	10.0	15.2	10.5	14.3	12.5	7.4	5.2	11.5	22.1	492.9
Monaco	0.00	0.00	14.8	17.5	18.8	8.4	7.7	12.2	1.2	4.0	4.3	-2.3	-1.8	345.3
Netherlands	0.87	1.57	16.4	8.0	1.8	1.4	0.6	0.5	-3.7	-0.3	0.6	-2.4	3.3	79.3
New Zealand	0.21	0.43	2.0	12.5	3.9	5.7	3.3	3.6	4.9	2.6	6.9	3.7	2.5	107.1
Norway	0.16	0.56	11.4	17.9	19.7	9.4	8.4	8.0	1.7	9.1	3.1	3.2	3.3	253.8
Poland	0.49	3.09	-8.3	27.8	39.0	-6.2	77.2	13.4	11.7	-3.4	-4.4	-0.1	2.0	524.8
Portugal	0.44	1.82	5.3	15.0	12.0	10.7	16.0	9.8	12.0	2.5	4.6	0.5	0.4	310.1
Romania	0.04	0.13	-17.0	-7.0	44.0	-4.5	-0.1	-22.4	9.4	30.1	7.2	1.2	40.3	249.3
Russian Federation	NA, NE	NA, NE	*	*	*	*	*	*	*	*	*	*	*	*
Slovakia	0.23	0.47	-14.7	16.2	12.7	15.4	15.9	5.3	-7.7	22.5	0.3	8.9	1.3	103.6
Slovenia	0.06	0.48	-7.9	44.5	41.8	2.5	3.5	23.7	6.8	13.1	8.6	1.8	0.3	767.5
Spain	2.19	7.99	7.0	9.6	12.6	9.5	15.9	10.8	6.7	8.7	6.7	7.3	6.5	264.7
Sweden	0.32	0.46	-7.5	16.3	-1.9	7.6	-5.2	6.3	4.1	-7.9	-3.0	-3.1	-3.0	42.5
Switzerland	0.31	0.44	25.3	3.9	6.7	4.5	-0.1	1.3	-3.0	-7.1	-7.5	-6.5	-6.7	43.6
Turkey	0.80	1.91	-6.1	7.5	10.0	-8.3	-6.9	19.7	10.7	4.7	8.0	12.7	23.7	139.2
Ukraine	0.39	0.17	*	*	*	*	*	8.2	-10.2	10.1	11.9	5.3	5.6	-55.0
United Kingdom	3.31	16.25	3.6	20.1	16.9	14.8	13.0	11.2	7.9	7.4	7.1	3.8	3.9	391.4
United States	129.93	126.09	5.5	2.2	1.4	1.5	0.0	-1.7	-2.3	-6.2	-5.3	-6.1	-5.2	-3.0

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

Table 1.36c

N<sub>2</sub>O implied emission factors for road transportation: gasoline - trend information

N <sub>2</sub> O IEF (kg/TJ)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia <sup>b</sup>	2.77	6.67	9.4	5.3	15.1	-3.7	6.6	5.1	10.2	7.9	6.2	4.7	5.3	141.1
Austria	6.73	6.07	13.3	-1.5	-2.8	-3.3	-2.1	-6.0	-4.4	-4.7	-4.8	-6.6	-8.3	-9.8
Belarus	0.60	0.11	-2.9	-6.8	-8.7	-11.2	-14.9	-20.7	-30.4	-14.0	-5.0	-42.5	35.6	-80.9
Belgium	1.62	8.85	24.2	13.3	13.4	10.4	5.9	3.5	11.7	4.9	6.2	-1.5	4.8	444.8
Bulgaria	1.20	1.07	-2.6	-0.3	1.0	1.3	-12.2	6.5	2.7	-3.0	1.4	2.8	-4.7	-10.4
Canada <sup>b</sup>	10.41	11.33	14.4	3.8	-2.0	-1.9	-4.4	-2.5	-4.6	-5.4	-5.4	-5.2	-4.8	8.9
Croatia	0.60	8.27	79.7	19.0	16.0	13.8	12.1	10.8	9.8	8.9	17.5	13.8	5.5	1,278.1
Czech Republic	2.44	18.71	186.8	34.2	*	*	*	1.0	16.3	-2.7	2.8	0.0	-3.7	667.7
Denmark	1.96	11.32	38.9	16.8	13.4	15.5	9.8	7.5	5.0	2.9	3.8	2.4	3.0	477.0
Estonia	0.61	0.58	-2	-99.7	0	0	0	0	*	*	0.0	0.0	-4.0	-5.5
European Community	1.73	8.09	14.9	17.2	12.7	12.0	11.2	8.6	6.9	6.5	6.2	4.3	4.1	368.2
Finland	3.63	20.14	28.7	14.8	15.6	11.0	13.7	12.6	12.6	6.5	6.7	7.3	7.4	454.4
France	1.77	10.23	1.9	25.1	25.2	17.9	13.4	12.3	12.0	10.0	9.0	8.1	5.6	478.7
Germany	1.02	2.26	53.4	8.5	4.3	1.3	-1.8	-3.5	-4.9	-3.7	-4.9	-6.2	-6.1	121.6
Greece	1.47	6.56	-0.6	32.3	21.2	19.6	14.9	16.3	10.1	15.0	11.7	8.2	9.0	347.4
Hungary	15.00	15.00	0	0	0	0	0	0	0	0	0	0	0	0
Iceland	1.71	13.24	1.2	204.0	0	67.3	0	50.1	0	0	0	0	0	672.9
Ireland	1.92	11.28	10.7	-0.4	20.6	22.3	15.4	18.5	-23.6	4.7	5.9	3.7	3.1	485.8
Italy	1.82	9.04	2.6	20.0	15.4	13.5	19.8	11.7	7.8	6.8	9.2	3.8	5.2	395.6
Japan <sup>b</sup>	6.82	3.91	-0.1	0.4	-0.7	-0.9	-4.4	-2.8	-5.1	-6.6	-7.8	-9.3	-10.0	-42.6
Latvia	1.52	4.81	-7.9	0.0	13.2	17.1	16.5	13.8	11.2	17.3	13.3	0.1	4.9	216.8
Liechtenstein	1.86	2.46	21.7	15.8	-3.1	0.3	-1.2	-2.9	-4.4	-5.7	-7.5	-8.3	-8.1	32.3
Lithuania	2.00	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.1	0.0
Luxembourg	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Monaco	1.73	12.65	0.4	28.2	24.1	18.0	13.7	12.4	9.1	6.9	4.5	2.8	2.6	630.7
Netherlands	3.33	4.81	19.0	7.9	-1.6	0.4	-2.5	-2.8	-6.0	-4.4	-0.9	-4.9	5.3	44.3
New Zealand <sup>b</sup>	1.50	1.50	0	0	0	0	0	0	0	0	0	0	0	0
Norway	1.03	5.97	24.2	23.1	22.6	16.8	10.9	10.2	9.6	5.1	4.1	2.4	1.3	478.2
Poland	1.55	13.08	-4.5	40.0	41.4	0.0	112.4	3.0	28.0	2.1	0.7	3.0	1.8	742.6
Portugal	1.72	9.26	-0.6	18.4	13.4	9.4	8.8	7.4	5.6	3.2	2.5	1.5	1.1	438.1
Romania	0.60	0.60	0	0	0	0	0	0	0	0	0	0	0	0
Russian Federation	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Slovakia	1.78	9.45	5.4	31.5	27.8	25.9	16.8	11.1	7.0	10.5	4.9	8.0	-0.3	430.2
Slovenia	1.90	10.58	-2.1	42.5	28.1	-3.1	19.3	32.5	0.0	9.5	8.7	0	0	457.8
Spain	1.76	7.58	2.0	16.2	12.6	12.6	11.0	10.5	8.7	8.5	6.9	5.0	5.3	331.1
Sweden	1.50	2.21	-10.6	16.1	-1.5	10.7	-4.7	5.0	5.0	-10.5	-6.3	-3.8	-2.5	47.4
Switzerland	1.85	2.46	22.4	7.5	4.6	0.3	-1.5	-2.8	-4.4	-5.6	-7.4	-8.3	-7.9	33.3
Turkey	6.59	14.36	-3.2	-3.2	1.9	-11.0	-10.1	26.4	30.4	20.6	9.0	19.8	23.6	118.0
Ukraine	0.60	0.60	*	*	*	*	*	0	0	0	0	0	0	0
United Kingdom	1.72	14.03	3.0	29.6	18.1	18.7	18.0	12.6	11.4	10.3	7.6	7.3	4.9	717.3
United States <sup>b</sup>	9.65	7.57	6.0	0.0	-0.6	0.6	-3.0	-4.3	-2.8	-6.8	-7.6	-6.6	-7.1	-21.5

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

<sup>b</sup> Australia, Canada, Japan, New Zealand and United States reported energy data on a gross calorific value (GCV) basis. This means that reported IEFs are about 5 per cent lower for liquid and solid fuels and biomass, and about 10 per cent lower for gaseous fuels than would have been the case if the data were given on a net calorific value (NCV) basis. The IEFs included in this table have been converted into NCV-based values and are not reflecting the reported IEFs.

**Table 1.36d****N<sub>2</sub>O implied emission factors for road transportation: diesel oil - trend information**

N <sub>2</sub> O IEF (kg/TJ)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia <sup>b</sup>	1.46	1.31	0.1	0	0	0	0	-2.8	-0.1	-4.8	-0.3	0.0	-3.7	-10.5
Austria	1.98	1.61	-2.5	-2.4	-4.6	2.2	-1.8	1.1	-1.4	-1.7	-0.8	-1.5	-1.5	-18.5
Belarus	0.59	0.37	-1.1	-2.5	-3.0	-4.3	-6.1	-9.3	-15.7	-10.3	3.4	-14.3	27.7	-38.1
Belgium	5.15	6.47	3.0	4.5	1.2	1.1	0.2	18.3	-1.5	-0.4	0.0	-0.8	-2.9	25.4
Bulgaria	1.91	1.91	0	0	0	3.5	0	0	0	0	0	0	0	0
Canada <sup>b</sup>	2.34	2.31	-0.4	-0.5	-0.2	0.0	0.8	0.0	0.4	0.3	0.3	-0.1	0.1	-0.9
Croatia	0.60	7.28	98.9	20.0	16.6	14.3	12.5	11.1	10.0	9.1	1.9	-1.7	1.9	1,112.7
Czech Republic	3.00	3.40	-0.2	0.0	*	*	*	0.0	0.0	0.1	-0.1	0	13.2	13.4
Denmark	4.56	5.45	0.1	0.5	0.4	0.5	0.3	2.2	3.4	1.2	3.9	0.8	4.3	19.6
Estonia	0.65	0.60	-8	30.7	0	0	0	0	*	*	5.2	-4.6	-0.3	-7.9
European Community	3.71	4.96	1.5	2.5	2.3	2.1	2.3	3.7	1.9	2.8	3.4	2.7	2.3	33.7
Finland	3.26	3.24	2.6	2.8	-0.9	-3.4	-0.8	-0.2	0.2	0.8	1.4	1.1	-1.5	-0.6
France	5.25	6.79	2.8	2.6	1.5	0.0	1.3	1.5	0.5	3.6	1.2	2.5	0.5	29.2
Germany	0.83	1.43	-0.6	5.2	6.3	8.0	9.1	8.0	6.1	6.9	4.1	2.4	4.0	72.4
Greece	3.93	4.00	-0.3	1.1	0.1	-0.5	1.3	0.8	-1.3	1.6	1.2	1.2	-1.8	1.8
Hungary	6.00	6.00	0	0	0	0	0	0	0	0	0	0	0	0
Iceland	2.74	2.74	0	0	0	0	0	0	0	0	0	0	0	0
Ireland	4.02	5.74	5.5	-7.3	2.9	0.2	-1.7	-0.9	33.7	2.7	-1.4	1.4	1.6	42.7
Italy	5.71	6.78	-0.3	0.0	3.1	-1.0	1.8	4.2	-0.5	-1.7	9.3	2.7	4.5	18.7
Japan <sup>b</sup>	1.94	2.00	-1.2	1.4	0.6	0.8	-0.3	1.8	6.0	-2.0	4.5	-1.0	-5.8	2.7
Latvia	3.41	5.69	1.9	14.4	14.2	13.1	3.3	-3.3	-2.4	3.3	-2.4	-2.3	6.3	66.9
Liechtenstein	0.75	1.30	-0.3	-0.9	1.7	11.9	7.9	8.5	10.7	7.6	5.3	5.8	3.9	73.7
Lithuania	4.00	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Luxembourg	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Monaco	3.66	3.81	1.2	0.3	0.8	-0.1	0.1	-0.1	-0.1	0.5	-0.2	0.0	-0.2	4.1
Netherlands	1.45	2.24	0.8	0.3	4.9	7.5	6.8	5.9	6.7	5.5	1.6	0.7	0.3	54.2
New Zealand <sup>b</sup>	3.90	3.90	0	0	0	0	0	0	0	0	0	0	0	0
Norway	2.41	2.16	-0.6	2.6	0.3	-3.2	-4.7	-1.8	-1.6	-0.5	0.4	1.8	1.6	-10.3
Poland	3.10	3.21	-1.0	-0.5	-0.7	0.0	0.0	-1.4	-17.6	0.3	0.6	0.2	0.8	3.6
Portugal	4.97	5.95	0.2	1.5	0.2	1.0	0.1	2.6	0.1	1.1	1.0	1.4	1.5	19.8
Romania	0.60	0.60	0	0	0	0	0	0	0	0	0	0	0	0
Russian Federation	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Slovakia	4.68	4.94	3.7	-0.1	2.2	0.0	0.3	2.3	-1.1	1.2	-6.4	2.7	-2.6	5.6
Slovenia	2.64	6.76	-1.6	-1.2	4.6	25.7	20.5	17.0	14.5	12.7	12.9	-1.5	0.0	156.5
Spain	4.61	5.93	0.3	1.1	1.7	5.3	1.7	2.0	0.9	1.1	2.8	1.5	2.1	28.8
Sweden	1.11	1.10	4.6	6.6	4.0	-2.6	0.6	8.2	7.6	1.2	0.2	-1.5	-4.5	-0.3
Switzerland	0.75	1.30	-1.7	-1.6	2.8	7.3	8.1	9.8	9.3	6.4	7.2	5.2	4.3	72.0
Turkey	IE	IE	*	*	*	*	*	*	*	*	*	*	*	*
Ukraine	0.60	0.60	*	*	*	*	*	0	0	0	0	0	0	0
United Kingdom	3.16	5.14	5.6	7.1	2.1	3.1	4.0	4.8	3.2	2.5	2.2	2.6	3.3	62.3
United States <sup>b</sup>	0.22	0.20	5.9	1.0	-0.6	-2.8	0.0	-2.2	-2.3	4.3	-1.9	-0.7	-0.9	-5.3

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

<sup>b</sup> Australia, Canada, Japan, New Zealand and United States reported energy data on a gross calorific value (GCV) basis. This means that reported IEFs are about 5 per cent lower for liquid and solid fuels and biomass, and about 10 per cent lower for gaseous fuels than would have been the case if the data were given on a net calorific value (NCV) basis. The IEFs included in this table have been converted into NCV-based values and are not reflecting the reported IEFs.

**Table 1.37****Civil aviation, navigation and international bunkers, CO<sub>2</sub> (base year<sup>a</sup>)**

	Methods and EF used <sup>b</sup>		IEF in CRF based on	Civil aviation				Aviation bunkers		Navigation				Marine bunkers	
	Methods	EF		Key category	Share of national total	CO <sub>2</sub> IEF		CO <sub>2</sub> IEF		Key category	Share of national total	CO <sub>2</sub> IEF		CO <sub>2</sub> IEF	
						Jet kerosene	Aviation gasoline	Jet kerosene	Aviation gasoline			Residual oil	Gas/diesel oil	Residual oil	Gas/diesel oil
					(%)	(t/TJ)		(t/TJ)			(%)	(t/TJ)		(t/TJ)	
IPCC default EF <sup>c</sup>			NCV			72.80	72.10	72.80	72.10			77.60	73.00	77.60	75.0 - 77.6
Australia <sup>d</sup>	T1	CS, D	GCV	L	0.69	72.53	69.82	72.53	NA	L	0.70	76.70	126.58	76.70	72.84
Austria	CS, M	CS	NCV		0.04	72.25	72.26	72.25	NO		0.07	NO	74.23	NO	NO
Belarus	D	D	NCV		-	C	C	71.15	NE		-	NE	NE	NE	NE
Belgium			NCV		0.01	70.80	68.60	70.79	NO		0.18		73.32	76.59	73.33
Bulgaria	T1, T2	CS, D	NCV		0.46	70.60	70.80	70.69	NO		0.82	80.10	76.14	80.70	76.14
Canada <sup>d</sup>	CS, T1, T3	CS, D	GCV	L	1.04	73.80	73.17	73.80	NA	L	0.79	77.94	74.29	77.94	74.29
Croatia	T1	D	NCV	L	0.95	70.79	NO	70.79	NO		0.43	76.59	73.33	76.59	73.33
Czech Republic	T1	D	NCV		0.08	70.79	68.44	70.79	NO		0.03	NO	73.33	NO	NO
Denmark	OTH	CS	NCV		0.34	72.00	73.00	72.00	73.00		0.79	78.00	74.00	78.00	74.00
Estonia	T1	D	NCV		0.25	70.78	NO	NA	NO	L	1.31	76.59	73.33	NA	NE
European Community	CR, CS, D, M, T1, T2, T3	CR, CS, D, M	NCV	L	0.41	72.18	70.28	71.98	70.77	L	0.45	76.84	73.86	77.38	73.74
Finland	CS, M, T2, T3	CS	NCV		0.54	73.20	71.30	71.50	NO	L	0.62	78.80	74.10	78.80	74.10
France			NCV	L	0.80	71.59	IE	71.59	IE		0.33	78.00	75.00	78.00	75.00
Germany	CS, T1, T3	CS	NCV		0.24	74.00	IE	74.00	NE		0.17	NO	73.97	78.00	73.79
Greece	M, T1, T2	D, M	NCV	L	1.34	70.64	68.61	70.64	NO	L	1.68	76.59	73.33	76.59	73.33
Hungary	T1c	D	NCV		0.00	NO	70.43	70.79	NA		0.09	73.33	68.61	NA	NA
Iceland			NCV		0.94	70.79	68.61	70.79	68.61	L	1.77	76.59	73.33	76.59	73.33
Ireland	T1, T2	CS	NCV		0.11	71.40	IE	71.40	NO		0.15	76.00	73.29	76.01	73.30
Italy	D, M, T1, T2	CS	NCV		0.31	70.74	70.74	70.74	NO	L	1.04	76.54	73.27	76.54	73.27
Japan <sup>d</sup>	T1	CS	GCV		0.56	70.67	70.59	74.39	NO	L	1.08	IE	72.29	IE	72.29
Latvia	CR, T1	D	NCV		0.00	72.10	70.21	72.10	NO		0.07	NA	73.98	76.59	74.00
Liechtenstein	T1	CS	NCV		0.03	73.18	NO	73.14	NO		-	NO	NO	NO	NO
Lithuania	T2	CS	NCV		0.00	NO	72.00	74.00	NO		0.03	NO	74.00	78.00	NO
Luxembourg	CR	CR	NCV		-	NO	NE	72.60	NE		0.04	NO	70.00	NE	NE
Monaco			NCV		-	0.00	NO	NE	NE		0.47	NO	74.00	NE	74.00
Netherlands	CS, T2	CS	NCV		0.02	71.50	72.00	71.50	NO		0.19	NO	74.30	77.73	74.30
New Zealand <sup>d</sup>	D	CS	GCV	L	1.25	70.97	67.74	70.97	NO		0.40	75.94	72.43	76.44	72.43
Norway	CS/T2, T1	CS	NCV	L	1.36	73.09	71.30	73.09	NO	L	3.88	78.82	73.55	78.82	73.55
Poland	T1, T2	CS, D	NCV		0.01	70.33	NE	70.33	NE		0.40	77.60	73.00	77.60	74.10
Portugal	CR, T1, T2	CR, D, OTH	NCV		0.27	69.09	69.17	69.21	69.24		0.40	77.37	74.07	77.37	74.07
Romania	T1	D	NCV		0.07	70.79	68.61	IE	IE		0.61	76.59	72.60	IE	IE
Russian Federation	NA	NA	NCV		-	NE	NE	NE	NE		-	NE	NE	NE	NE
Slovakia	M, T1, T2	D	NCV		0.07	74.21	74.81	NE	NE		0.19	NO	75.01	NO	NO
Slovenia	M, T1	D	NCV		0.00	NO	71.50	71.50	NO		-	NO	IE	NA	NA
Spain	CR, T2	CR, D	NCV	L	1.44	72.75	NA	72.54	NO	L	0.52	76.78	72.64	76.78	72.64
Sweden	CS, T1	CS	NCV	L	0.93	73.10	72.30	73.09	NO	L	0.74	77.61	74.45	77.61	74.45
Switzerland	CS	CS	NCV	L	0.48	73.20	IE	73.20	IE		0.24	NO	73.69	NO	NO
Turkey	T2	D	NCV		0.53	69.10	NA	NE	NE		0.29	IE	IE	NE	NE
Ukraine	T1	D	NCV		0.32	70.79	68.61	NE	NE		0.28	76.59	73.30	77.37	74.07
United Kingdom	CS, OTH, T1, T2, T3	CR, CS	NCV		0.17	71.76	69.60	71.76	NO		0.53	77.46	73.88	77.46	73.88
United States <sup>d</sup>	T1, T2	CS	GCV	L	2.33	70.26	68.34	70.26	NE	L	0.60	77.83	71.35	77.83	72.25

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

<sup>b</sup> Information on methods and emission factors in this table is reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.3 Transport.

<sup>c</sup> Source of default emission factors: IPCC Guidelines, volume 3, pages 1.89, 1.91 (for gas/diesel oil: single value for internal waterways and range for sea-going ships, boats).

<sup>d</sup> Australia, Canada, Japan, New Zealand and United States reported energy data on a gross calorific value (GCV) basis. This means that reported IEFs are about 5 per cent lower for liquid and solid fuels and biomass, and about 10 per cent lower for gaseous fuels than would have been the case if the data were given on a net calorific value (NCV) basis. The IEFs included in this table have been converted into NCV-based values and are not reflecting the reported IEFs.

**Table 1.38****Civil aviation, navigation and international bunkers, CO<sub>2</sub> (2004)**

	Methods and EF used <sup>d</sup>		IEF in CRF based on	Civil aviation			Aviation bunkers		Navigation				Marine bunkers		
				Key category	Share of national total	CO <sub>2</sub> IEF		CO <sub>2</sub> IEF		Key category	Share of national total	CO <sub>2</sub> IEF		CO <sub>2</sub> IEF	
	Jet kerosene	Aviation gasoline				Jet kerosene	Aviation gasoline	Residual oil	Gas/diesel oil			Residual oil	Gas/diesel oil		
	Methods	EF			(%)	(t/TJ)	(t/TJ)	(%)	(t/TJ)		(t/TJ)				
IPCC default EF <sup>d</sup>			NCV			72.80	72.10	72.80	72.10			77.60	73.00	77.60	75.0 - 77.6
Australia <sup>c</sup>	T1	CS, D	GCV	L, T	0.91	72.53	69.82	72.53	NA	T	0.41	76.70	72.84	76.70	72.84
Austria	CS, M	CS	NCV	T	0.21	72.75	72.75	72.75	NO		0.09	NO	72.87	NO	NO
Belarus	D	D	NCV		0.01	71.15	68.61	71.15	NE		-	NE	NE	NE	NE
Belgium			NCV		0.01		69.70	70.79	70.80		0.25		73.32	76.59	73.33
Bulgaria	T1, T2	CS, D	NCV		0.15	70.60	70.80	70.60	NO	T	-	NO	NO	NO	76.14
Canada <sup>c</sup>	CS, T1, T3	CS, D	GCV	L	1.00	71.77	73.17	71.77	NA	L	0.83	76.53	75.03	76.53	75.03
Croatia	T1	D	NCV	T	0.54	70.79	68.61	70.79	NO		0.31	NO	73.32	76.59	73.33
Czech Republic	T1	D	NCV		0.06	70.79	68.61	70.78	NE		0.01	NO	73.33	NO	NO
Denmark	OTH	CS	NCV		0.18	72.00	73.00	72.00	73.00	L	0.70	78.00	74.00	78.00	74.00
Estonia	T1	D	NCV	T	0.01	70.42	NO	73	NO	T	0.12	NO	73	76.59	73.33
European Community	CR, CS, D, M, T1, T2, T3	CR, CS, D, M	NCV	L, T	0.55	72.31	63.75	71.87	70.79	L	0.50	76.92	73.78	77.19	73.75
Finland	CS, M, T1, T3	CS	NCV	T	0.41	73.20	71.30	71.50	NO		0.64	78.80	74.10	78.80	74.10
France			NCV	L	0.88	71.59	IE	71.59	IE	L, T	0.48	78.00	75.00	78.00	75.00
Germany	CS, T1, T3	CS	NCV	T	0.43	73.27	IE	73.27	NE		0.09	NO	74.00	78.00	74.00
Greece	CR, M, T1, T2	D, M	NCV	T	0.89	70.64	68.61	70.64	NO	L, T	1.56	76.59	73.33	76.59	73.33
Hungary	T1c	D	NCV		-	NO	IE	70.79	NO		0.00	NO	68.61	NA	NA
Iceland			NCV	T	0.65	70.79	68.61	70.79	0	T	0.50	76.59	73.33	76.59	73.33
Ireland	T1, T2	CS	NCV		0.15	71.40	IE	71.40	69.96		0.08	76.00	73.30	76.00	73.30
Italy	D, M, T1, T2	CS	NCV	L, T	0.46	70.74	70.74	70.74	NO	L	1.06	76.54	73.27	76.54	73.27
Japan <sup>c</sup>	T1	CS	GCV	L, T	0.79	70.67	70.59	74.39	NO	L, T	0.95	IE	72.29	IE	72.29
Latvia	CR, T1	D	NCV		0.02	72.10	70.20	72.11	NO		0.41	NA	74.00	76.59	73.99
Liechtenstein	T1	CS	NCV		0.02	73.32	NO	73.26	NO		-	NO	NO	NO	NO
Lithuania	T2	CS	NCV		0.01	NO	72.00	74.00	72.00		0.08	78.00	74.00	78.00	74.00
Luxembourg	CR	CR	NCV		-	NO	NE	71.99	NE		0.04	NO	70.00	NE	NE
Monaco			NCV		-	0.00	NO	NE	NE	L, T	1.48	NO	74.00	NE	74.00
Netherlands	CS, T2	CS	NCV		0.02	71.50	72.00	71.50	NO	L, T	0.38	NO	74.30	77.40	74.30
New Zealand <sup>c</sup>	D	CS	GCV	L, T	1.59	70.97	67.74	70.97	NO		0.44	75.87	NE	76.54	72.43
Norway	CS/T2, T1	CS	NCV	L, T	1.72	73.09	71.30	73.09	NO	L, T	4.37	78.82	73.55	78.82	73.55
Poland	T1, T2	CS, D	NCV		0.01	70.66	NE	70.66	NE	T	0.05	77.60	74.04	77.60	74.10
Portugal	CR, T1, T2	CR, D, OTH	NCV		0.48	69.15	69.21	69.21	69.24		0.25	77.37	74.07	77.37	74.07
Romania	T1	D	NCV		0.04	70.79	68.61	NE	NE	T	0.04	76.59	72.60	IE	IE
Russian Federation	T1	D	NCV		0.01	NE	68.61	NE	NE		0.15	76.59	73.33	NE	NE
Slovakia	D, M, T1, T2	D	NCV		0.08	IE	5773.77	73.05	73.60		0.27	NO	75.01	NO	NO
Slovenia	M, T1	D	NCV		0.01	NO	71.50	71.50	NO		-	NO	IE	NO	NO
Spain	CR, T2	CR, D	NCV	L	1.38	73.58	IE	72.74	NO	L	0.57	76.78	72.64	76.78	72.64
Sweden	CS, T1	CS	NCV	L	0.96	73.10	72.30	73.10	NO	L, T	0.81	77.61	74.45	77.61	74.45
Switzerland	CS	CS	NCV	T	0.27	73.20	IE	73.20	IE		0.23	NO	73.69	NO	NO
Turkey	T2	D	NCV	L, T	1.63	70.15	NA	NE			0.41	IE	IE	NE	NE
Ukraine	T1	D	NCV	T	0.07	70.85	68.61	NE	NE	T	0.06	75.01	72.86	77.37	74.07
United Kingdom	CS, OTH, T1, T2, T3	CR, CS	NCV		0.35	71.76	69.31	71.76	NO	L	0.55	77.99	73.64	77.99	73.64
United States <sup>c</sup>	T1, T2	CS	GCV	L, T	2.23	70.01	68.34	70.01	NE	L	0.67	77.83	71.40	77.83	72.25

<sup>a</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.3 Transport.<sup>b</sup> Source of default emission factors: IPCC Guidelines, volume 3, pages 1.89, 1.91 (for gas/diesel oil: single value for internal waterways and range for sea-going ships, boats).<sup>c</sup> Australia, Canada, Japan, New Zealand and United States reported energy data on a gross calorific value (GCV) basis. This means that reported IEFs are about 5 per cent lower for liquid and solid fuels and biomass, and about 10 per cent lower for gaseous fuels than would have been the case if the data were given on a net calorific value (NCV) basis. The IEFs included in this table have been converted into NCV-based values and are not reflecting the reported IEFs.

**Table 1.39****Domestic and international aviation - activity data (base year<sup>a</sup>)**

	Activity data in CRF based on	Civil aviation						Aviation bunkers			Total jet kerosene and aviation gasoline		
		Jet kerosene			Aviation gasoline			Jet kerosene					
		CRF	IEA <sup>b</sup>	Difference	CRF	IEA <sup>b</sup>	Difference	CRF	IEA <sup>b</sup>	Difference	CRF	IEA <sup>b</sup>	Difference
		(TJ)		(%)	(TJ)		(%)	(TJ)		(%)	(TJ)		(%)
Australia	GCV	38,060	39,774	4.5	4,092	4,077	-0.4	62,970	60,775	-3.5	105,122	104,626	-0.5
Austria	NCV	334	1,338	299.9	108	0	-100.0	12,263	11,995	-2.2	12,706	13,332	4.9
Belarus	NCV	C	0		C	0		78,113	0	-100.0	78,113	0	-100.0
Belgium	NCV	68	134	97.0	106	90	-15.9	43,733	41,201	-5.8	43,907	41,469	-5.6
Bulgaria	NCV	7,871	0	-100.0	790	0	-100.0	10,602	18,549	75.0	19,262	18,549	-3.7
Canada	GCV	83,206	115,531	38.8	5,494	5,197	-5.4	97,953	38,213	-61.0	186,653	158,941	-14.8
Croatia	NCV	4,176	0	-100.0	NO	0		2,857	0	-100.0	7,034	0	-100.0
Czech Republic	NCV	1,160	0	-100.0	979	0	-100.0	8,714	7,536	-13.5	10,853	9,552	-12.0
Denmark <sup>c</sup>	NCV	3,256	3,032	-6.9	114	134	18.3	24,076	24,970	3.7	27,481	28,137	2.4
Estonia	NCV	1,568	0	-100.0	NO	0		NA	1,561		1,568	1,561	-0.5
European Community	NCV	239,865	232,757	-3.0	2,880	6,182	114.7	851,393	948,105	11.4	1,094,227	1,187,133	8.5
Finland	NCV	5,154	5,663	9.9	110	179	62.3	13,767	14,269	3.6	19,031	20,111	5.7
France	NCV	63,426	29,964	-52.8	IE	1,434		120,375	136,577	13.5	183,801	167,975	-8.6
Germany	NCV	39,154	29,563	-24.5	IE	1,299		156,613	200,742	28.2	195,767	231,604	18.3
Greece	NCV	20,244	20,244	0.0	358	358	0.0	34,646	34,289	-1.0	55,249	54,891	-0.6
Hungary	NCV	NO	0		12	0	-100.0	6,094	6,451	5.8	6,106	6,451	5.6
Iceland	NCV	375	401	7.0	75	90	19.0	3,094	3,166	2.3	3,554	3,657	2.9
Ireland	NCV	827	713	-13.8	IE	0		14,831	15,116	1.9	15,659	15,829	1.1
Italy	NCV	22,090	6,421	-70.9	483	493	2.0	58,193	92,389	58.8	80,765	99,303	23.0
Japan	GCV	106,500	102,154	-4.1	185	179	-3.0	186,537	188,435	1.0	293,221	290,768	-0.8
Latvia	NCV	1	0	-100.0	0	0	-100.0	3,067	3,166	3.2	3,068	3,166	3.2
Liechtenstein	NCV	1			NO			6			7		
Lithuania	NCV	NO	0		10	0	-100.0	5,642	5,841	3.5	5,652	5,841	3.3
Luxembourg	NCV	NO	0		NE	45		5,497	5,707	3.8	5,497	5,752	4.6
Monaco <sup>d</sup>	NCV	0			NO			NE			0		
Netherlands	NCV	230	6,733	2,824.8	342	224	-34.5	63,503	62,871	-1.0	64,075	69,873	9.0
New Zealand	GCV	10,931	10,746	-1.7	558	717	28.5	19,890	19,218	-3.4	31,379	30,681	-2.2
Norway	NCV	9,150	3,567	-61.0	149	134	-9.7	8,476	18,237	115.2	17,775	21,939	23.4
Poland	NCV	496	0	-100.0	NE	0		15,728	15,562	-1.1	16,224	16,458	1.4
Portugal	NCV	2,370	3,121	31.7	15	90	498.7	20,041	21,804	8.8	22,478	25,015	11.3
Romania	NCV	2,692	0	-100.0	43	0	-100.0	IE	10,924		2,734	10,924	299.5
Russian Federation	NCV	NE	0		NE	15,500		NE	772,423		NE	787,923	
Slovakia	NCV	632	0	-100.0	52	0	-100.0	NE	0		684	0	-100.0
Slovenia	NCV	NO	0		9	0	-100.0	1,364	1,427	4.6	1,372	1,427	4.0
Spain	NCV	56,845	45,838	-19.4	NO	493		47,306	48,647	2.8	104,151	94,978	-8.8
Sweden	NCV	9,140	7,937	-13.2	74	179	141.3	18,266	15,740	-13.8	27,480	23,856	-13.2
Switzerland	NCV	3,450	5,752	66.7	IE	224		41,891	43,965	5.0	45,341	49,941	10.1
Turkey	NCV	13,092	13,020	-0.5	NA	0		NE	7,803		13,092	20,823	59.1
Ukraine	NCV	40,536	0	-100.0	1,524	0	-100.0	NE	0		42,060	0	-100.0
United Kingdom	NCV	16,727	72,057	330.8	1,168	1,165	-0.3	218,284	221,788	1.6	236,179	295,009	24.9
United States	GCV	2,088,005	2,261,888	8.3	47,450	45,112	-4.9	692,600	547,915	-20.9	2,828,055	2,854,915	0.9

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

<sup>b</sup> Source: IEA [unpublished].

<sup>c</sup> IEA data for Denmark does not include Faroe Islands and Greenland.

<sup>d</sup> IEA data for Monaco are included in the data of France.

**Table 1.40****Domestic and international aviation - activity data (2004)**

	Activity data in CRF based on	Civil aviation						Aviation bunkers			Total jet kerosene and aviation gasoline		
		Jet kerosene			Aviation gasoline			Jet kerosene					
		CRF	IEA <sup>a</sup>	Difference	CRF	IEA <sup>a</sup>	Difference	CRF	IEA <sup>a</sup>	Difference	CRF	IEA <sup>a</sup>	Difference
		(TJ)		(%)	(TJ)		(%)	(TJ)		(%)	(TJ)		(%)
Australia	GCV	66,902	81,911	22.4	3,030	2,957	-2.4	86,750	97,918	12.9	156,683	182,786	16.7
Austria	NCV	2,538	4,102	61.6	104	0	-100.0	21,055	21,715	3.1	23,697	25,817	8.9
Belarus	NCV	61	0	-100.0	30	0	-100.0	3,705	0	-100.0	3,796	0	-100.0
Belgium	NCV	0	3,077	100.0	163	90	-44.9	46,169	58,769	27.3	54,043	61,935	14.6
Bulgaria	NCV	1,435	803	-44.1	37	45	19.5	5,741	6,644	15.7	7,214	7,491	3.8
Canada	GCV	108,305	196,238	81.2	2,944	2,778	-5.7	137,123	38,258	-72.1	248,372	237,273	-4.5
Croatia	NCV	2,198	2,229	1.4	49	45	-8.7	1,231	1,249	1.4	3,478	3,523	1.3
Czech Republic	NCV	1,033	1,784	72.7	130	134	3.4	11,399	12,574	10.3	12,562	14,492	15.4
Denmark <sup>b</sup>	NCV	1,681	1,204	-28.4	97	90	-7.2	33,983	35,359	4.0	35,769	36,653	2.5
Estonia	NCV	31	0	-100.0	NO	0		1,231	1,204	-2.2	1,262	1,204	(4.6)
European Community	NCV	318,392	270,167	-15.1	5,017	5,734	14.3	1,582,900	1,742,421	10.1	1,914,129	2,018,367	5.4
Finland	NCV	4,491	5,752	28.1	45	224	395.6	17,517	18,059	3.1	22,053	24,035	9.0
France	NCV	69,399	60,017	-13.5	IE	1,030		219,958	234,540	6.6	289,357	295,588	2.2
Germany	NCV	60,166	6,688	-88.9	IE	672		240,662	328,267	36.4	300,828	335,628	11.6
Greece	NCV	16,498	16,498	0.0	896	0	-100.0	43,972	34,958	-20.5	61,367	51,456	-16.1
Hungary	NCV	NO	0		IE	0		8,610	9,453	9.8	8,610	9,498	10.3
Iceland	NCV	303	268	-11.8	40	45	11.2	5,231	5,128	-2.0	5,574	5,440	-2.4
Ireland	NCV	1,471	1,561	6.1	IE	45		29,619	29,875	0.9	31,135	31,480	1.1
Italy	NCV	37,104	6,109	-83.5	615	627	2.0	114,062	154,190	35.2	151,781	160,926	6.0
Japan	GCV	158,473	150,846	-4.8	359	358	-0.2	299,846	300,399	0.2	458,678	451,603	-1.5
Latvia	NCV	27	0	-100.0	6	0	-100.0	2,030	2,096	3.2	2,063	2,096	1.6
Liechtenstein	NCV	1			NO			5			6		
Lithuania	NCV	NO	178		22	45	103.6	641	490	-23.5	1,651	714	-56.8
Luxembourg	NCV	NO	0		NE	0		17,926	18,460	3.0	17,926	18,460	3.0
Monaco <sup>c</sup>	NCV	0			NO			NE			0		
Netherlands	NCV	230	2,497	984.7	342	134	-60.7	146,897	152,050	3.5	147,469	154,681	4.9
New Zealand	GCV	17,105	17,167	0.4	606	672	10.9	38,041	36,563	-3.9	55,752	54,402	-2.4
Norway	NCV	12,760	15,695	23.0	179	179	0.3	11,588	10,479	-9.6	24,526	26,353	7.4
Poland	NCV	296	0	-100.0	NE	0		11,693	12,218	4.5	11,989	12,352	3.0
Portugal	NCV	5,752	6,421	11.6	47	90	91.5	34,249	30,053	-12.3	40,104	36,564	-8.8
Romania	NCV	731	0	-100.0	232	134	-42.1	NE	5,930		963	6,065	529.9
Russian Federation	NCV	NE	0		1,615	1,658	2.7	NE	427,702		1,615	429,359	26493.4
Slovakia	NCV	1,181	0	-100.0	7	45	568.8	886	1,159	30.9	2,074	1,204	-42.0
Slovenia	NCV	NO	0		26	45	69.4	842	847	0.6	869	892	2.7
Spain	NCV	80,043	82,803	3.4	434	448	3.3	131,034	134,080	2.3	211,510	217,331	2.8
Sweden	NCV	9,089	9,453	4.0	41	179	333.6	24,236	27,155	12.0	33,366	36,787	10.3
Switzerland	NCV	1,963	2,096	6.7	IE	224		46,900	49,896	6.4	48,863	52,215	6.9
Turkey	NCV	68,403	38,704	-43.4	NA	0		NE	42,092		68,403	80,796	18.1
Ukraine	NCV	3,884	0	-100.0	17	269	1,511.7	NE	16,097		3,901	16,366	319.5
United Kingdom	NCV	29,930	63,986	113.8	2,234	2,106	-5.7	461,561	464,889	0.7	493,724	531,025	7.6
United States	GCV	2,335,243	2,677,372	14.7	32,956	42,111	27.8	900,786	711,692	-21.0	3,268,984	3,431,174	5.0

<sup>a</sup> Source: IEA [unpublished].<sup>b</sup> IEA data for Denmark does not include Faroe Islands and Greenland.<sup>c</sup> IEA data for Monaco are included in the data of France.

**Table 1.41**

**Domestic and international navigation - activity data (base year <sup>a</sup>)**

	Activity data in CRF based on	Navigation						Marine bunkers						Total					
		Residual oil			Gas / diesel oil			Residual oil			Gas / diesel oil			Residual oil			Gas / diesel oil		
		CRF	IEA <sup>b</sup>	Difference	CRF	IEA <sup>b</sup>	Difference	CRF	IEA <sup>b</sup>	Difference	CRF	IEA <sup>b</sup>	Difference	CRF	IEA <sup>b</sup>	Difference	CRF	IEA <sup>b</sup>	Difference
		(TJ)	(TJ)	(%)	(TJ)	(TJ)	(%)	(TJ)	(TJ)	(%)	(TJ)	(TJ)	(%)	(TJ)	(TJ)	(%)	(TJ)	(TJ)	(%)
Australia	GCV	18,781	17,685	-5.8	2,508	4,767	90.1	22,930	21,584	-5.9	5,580	5,330	-4.5	41,711	39,269	-5.9	8,088	10,097	24.8
Austria	NCV	NO	0		578	303	-47.5	NO	0		NO	0		NO	0		578	303	-47.5
Belarus	NCV	NE	0		NE	1,343	0	NE	0		NE	0		NE	0		NE	1,343	0
Belgium	NCV	0	0	0	3,638	5,547	52.4	146,280	143,289	-2.0	26,855	27,517	2.5	146,280	143,289	-2.0	30,493	33,063	8.4
Bulgaria	NCV	9,750	0	-100.0	4,038	0	-100.0	4,780	4,823	0.9	7,659	7,930	3.5	14,530	4,823	-66.8	11,698	7,930	-32.2
Canada	GCV	29,224	26,809	-8.3	36,394	35,057	-3.7	30,918	28,376	-8.2	9,995	9,620	-3.8	60,141	55,185	-8.2	46,389	44,677	-3.7
Croatia	NCV	84	0	-100.0	1,721	0	-100.0	804	0	-100.0	641	0	-100.0	888	0	-100.0	2,362	0	-100.0
Czech Republic	NCV	NO	0		764	0	-100.0	NO	0		NO	0		NO	0		764	0	-100.0
Denmark <sup>c</sup>	NCV	3,560	3,537	-0.6	3,321	2,817	-15.2	28,543	28,417	-0.4	11,633	11,787	1.3	32,103	31,954	-0.5	14,954	14,603	-2.3
Estonia	NCV	6,172	0	-100.0	1,442	303	-79.0	NA	6,069		NE	1,473		6,172	6,069	-1.7	1,442	1,777	23.2
European Community	NCV	74,239	37,299	-49.8	168,261	182,217	8.3	1,065,636	1,085,942	1.9	275,328	336,440	22.2	1,139,876	1,123,241	-1.5	443,588	518,657	16.9
Finland	NCV	1,565	1,728	10.4	2,516	1,300	-48.3	18,550	18,409	-0.8	5,130	5,243	2.2	20,115	20,137	0.1	7,647	6,543	-14.4
France	NCV	1,342	80	-94.0	19,614	1,993	-89.8	89,314	90,917	1.8	15,604	13,477	-13.6	90,656	90,998	0.4	35,218	15,470	-56.1
Germany	NCV	NO	0		27,710	28,123	1.5	80,230	78,779	-1.8	23,336	23,747	1.8	80,230	78,779	-1.8	51,046	51,870	1.6
Greece	NCV	9,525	9,526	0.0	14,559	14,560	0.0	82,912	82,919	0.0	22,098	22,100	0.0	92,437	92,445	0.0	36,657	36,660	0.0
Hungary	NCV	158	201	27.2	1,292	1,329	2.9	NA	0		NA	0		158	201	27.2	1,292	1,329	2.9
Iceland	NCV	288	281	-2.4	509	520	2.1	10	0	-100.0	1,340	1,343	0.3	298	281	-5.7	1,849	1,863	0.8
Ireland	NCV	837	804	-4.0	293	303	3.5	377	362	-4.0	377	390	3.5	1,214	1,166	-4.0	670	693	3.5
Italy	NCV	33,357	0	-100.0	31,379	8,493	-72.9	54,190	85,571	57.9	1,387	24,657	1,677.8	87,547	85,571	-2.3	32,766	33,150	1.2
Japan	GCV	IE	106,392		5,087	63,397	1,146.1	IE	202,172		1,606	16,423	922.8	IE	308,564		6,693	79,820	1,092.6
Latvia	NCV	NA	0		213	0	-100.0	16,727	16,560	-1.0	5,014	5,113	2.0	16,727	16,560	-1.0	5,226	5,113	-2.2
Liechtenstein	NCV	NO	0		NO	0		NO	0		NO	0		NO	0		NO	0	
Lithuania	NCV	NO	0		212	217	2.2	3,894	3,899	0.1	NO	0		3,894	3,899	0.1	212	217	2.2
Luxembourg	NCV	NO	0		80	0	-100.0	NE	0		NE	0		NE,NO	0		80	0	-100.0
Monaco <sup>d</sup>	NCV	NO	0		4			NE			51			NE,NO			55		
Netherlands	NCV	NO	0		5,449	7,410	36.0	368,018	362,503	-1.5	73,320	90,263	23.1	368,018	362,503	-1.5	78,769	97,673	24.0
New Zealand	GCV	3,256	0	-100.0	188	4,550	2,316.9	8,590	7,797	-9.2	5,950	5,633	-5.3	11,846	7,797	-34.2	6,138	10,183	65.9
Norway	NCV	3,457	4,622	33.7	22,529	34,883	54.8	9,439	9,325	-1.2	9,981	9,447	-5.4	12,896	13,947	8.2	32,510	44,330	36.4
Poland	NCV	29,167	2,452	-91.6	969	1,820	87.9	8,240	9,043	9.8	13,607	14,473	6.4	37,406	11,495	-69.3	14,576	16,293	11.8
Portugal	NCV	2,236	0	-100.0	911	1,863	104.6	16,553	16,359	-1.2	6,741	9,187	36.3	18,789	16,359	-12.9	7,652	11,050	44.4
Romania	NCV	18,309	18,851	3.0	2,824	0	-100.0	IE	0		IE	0		18,309	18,851	3.0	2,824	0	-100.0
Russian Federation	NCV	NE	57,476		NE	138,883		NE	0		NE	81,380		NE	57,476		NE	220,264	
Slovakia	NCV	NO	0		1,901	0	-100.0	NO	0		NO	0		NO	0		1,901	0	-100.0
Slovenia	NCV	NO	0		IE	0		NA	0		IE	0		NA,NO	0		IE	0	
Spain	NCV	16,072	16,077	0.0	3,659	54,600	1,392.2	100,852	100,885	0.0	52,099	52,260	0.3	116,924	116,962	0.0	55,758	106,860	91.6
Sweden	NCV	2,503	2,371	-5.3	3,617	3,727	3.0	22,402	21,302	-4.9	6,571	6,500	-1.1	24,905	23,674	-4.9	10,188	10,227	0.4
Switzerland	NCV	NO	0		1,682	347	-79.4	NO	0		NO	780		NO	0		1,682	1,127	-33.0
Turkey	NCV	NA	3,617		3,021	3,900	29.1	NE	1,929		NE	3,120		NA,NE	5,547		3,021	7,020	132.4
Ukraine	NCV	7,228	0	-100.0	27,422	0	-100.0	15,003	0	-100.0	32,445	0	-100.0	22,231	0	-100.0	59,867	0	-100.0
United Kingdom	NCV	3,242	3,175	-2.1	50,937	51,177	0.5	57,415	56,230	-2.1	30,177	49,313	63.4	60,657	59,406	-2.1	81,113	100,490	23.9
United States	GCV	316,837	13,746	-95.7	195,350	0	-100.0	755,104	897,797	18.9	166,691	303,854	82.3	1,071,941	911,543	-15.0	362,041	303,854	-16.1

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

<sup>b</sup> Source: IEA [unpublished].

<sup>c</sup> IEA data for Denmark does not include Faroe Islands and Greenland.

<sup>d</sup> IEA data for Monaco are included in the data of France.

Table 1.42

## Domestic and international navigation - activity data (2004)

	Activity data in CRF based on	Navigation						Marine bunkers						Total					
		Residual oil			Gas / diesel oil			Residual oil			Gas / diesel oil			Residual oil			Gas / diesel oil		
		CRF	IEA <sup>a</sup>	Difference	CRF	IEA <sup>a</sup>	Difference	CRF	IEA <sup>a</sup>	Difference	CRF	IEA <sup>a</sup>	Difference	CRF	IEA <sup>a</sup>	Difference	CRF	IEA <sup>a</sup>	Difference
		(TJ)		(%)	(TJ)		(%)	(TJ)		(%)	(TJ)		(%)	(TJ)		(%)	(TJ)		(%)
Australia	GCV	7,796	7,154	-8.2	2,358	3,120	32.3	33,290	30,627	-8.0	5,280	3,683	-30.2	41,086	37,782	-8.0	7,638	6,803	-10.9
Austria	NCV	NO	0		1,066	390	-63.4	NO	0		NO	0		NO	0		1,066	390	-63.4
Belarus	NCV	NE	0		NE	0		NE	0		NE	0		NE	0		NE	0	
Belgium	NCV	0	80	100.0	4,993	4,897	-1.9	293,029	303,098	3.4	21,157	21,493	1.6	293,029	303,178	3.5	26,150	26,390	0.9
Bulgaria	NCV	NO	0		NO	0		NO	0		4,813	4,983	3.5	NO	0		4,813	4,983	3.5
Canada	GCV	45,762	42,002	-8.2	41,155	39,650	-3.7	23,299	21,383	-8.2	3,972	3,813	-4.0	69,061	63,385	-8.2	45,127	43,463	-3.7
Croatia	NCV	NO	281		1,243	1,257	1.1	635	643	1.3	333	347	4.1	635	924	45.6	1,576	1,603	1.7
Czech Republic	NCV	NO	0		116	260	124.1	NO	0		NO	0		NO	0		116	260	124.1
Denmark <sup>b</sup>	NCV	1,669	1,648	-1.3	4,467	3,510	-21.4	17,298	17,122	-1.0	16,152	16,380	1.4	18,968	18,770	-1.0	20,619	19,890	-3.5
Estonia	NCV	NO	0		355	347	-2.3	4,139	4,140	0.0	2,110	2,167	2.7	4,139	4,140	0.0	2,465	2,513	2.0
European Community	NCV	94,604	39,148	-58.6	165,384	165,404	0.0	1,662,031	1,693,263	1.9	251,291	311,134	23.8	1,756,635	1,732,411	-1.4	416,676	476,537	14.4
Finland	NCV	2,004	1,969	-1.7	2,793	4,550	62.9	19,346	19,212	-0.7	2,086	2,123	1.8	21,350	21,182	-0.8	4,879	6,673	36.8
France	NCV	1,625	0	-100.0	27,146	2,600	-90.4	111,688	111,737	0.0	14,343	19,457	35.6	113,312	111,737	-1.4	41,489	22,057	-46.8
Germany	NCV	NO	0		11,728	10,053	-14.3	92,008	91,440	-0.6	18,988	19,153	0.9	92,008	91,440	-0.6	30,716	29,207	-4.9
Greece	NCV	15,071	15,072	0.0	13,346	13,347	0.0	112,894	112,903	0.0	20,452	20,453	0.0	127,965	127,975	0.0	33,797	33,800	0.0
Hungary	NCV	NO	0		55	43	-21.2	NA	0		NA	0		NA,NO	0		55	43	-21.2
Iceland	NCV	1	0	-100.0	253	260	2.6	69	40	-42.0	3,024	2,990	-1.1	70	40	-42.9	3,277	3,250	-0.8
Ireland	NCV	701	723	3.2	43	43	0.5	2,021	1,969	-2.5	4,374	4,377	0.1	2,721	2,693	-1.0	4,417	4,420	0.1
Italy	NCV	35,532	0	-100.0	37,656	10,617	-71.8	75,963	108,964	43.4	1,983	29,640	1,394.7	111,494	108,964	-2.3	39,639	40,257	1.6
Japan	GCV	IE	104,302		7,791	64,610	729.3	IE	211,417		367	6,240	1,599.3	IE	315,718		8,158	70,850	768.5
Latvia	NCV	NA	0		561	0	-100.0	5,278	5,225	-1.0	3,187	3,250	2.0	5,278	5,225	-1.0	3,748	3,250	-13.3
Liechtenstein	NCV	NO	0		NO	0		NO	0		NO	0		NO	0		NO	0	
Lithuania	NCV	3	0	-100.0	230	217	-5.8	3,692	3,738	1.2	859	867	0.9	3,695	3,738	1.2	1,089	1,083	-0.5
Luxembourg	NCV	NO	0		80	0	-100.0	NE	0		NE	0		NE,NO	0		80	0	-100.0
Monaco <sup>c</sup>	NCV	NO	0		17	0		NE	0		199	0		NE,NO	0		216	0	
Netherlands	NCV	NO	0		11,203	12,133	8.3	540,623	531,717	-1.6	63,062	79,083	25.4	540,623	531,717	-1.6	74,265	91,217	22.8
New Zealand	GCV	4,608	0	-100.0	NE	4,723		8,708	7,838	-10.0	1,536	1,603	4.4	13,316	7,838	-41.1	1,536	6,327	311.8
Norway	NCV	3,573	3,537	-1.0	28,522	28,990	1.6	10,690	10,289	-3.7	14,031	11,353	-19.1	14,262	13,826	-3.1	42,554	40,343	-5.2
Poland	NCV	1,635	0	-100.0	914	43	-95.3	8,842	8,843	0.0	1,693	1,690	-0.2	10,477	8,843	-15.6	2,608	1,733	-33.5
Portugal	NCV	1,966	0	-100.0	801	1,083	35.3	17,107	21,182	23.8	6,966	6,283	-9.8	19,073	21,182	11.1	7,767	7,367	-5.2
Romania	NCV	29	884	2,945.4	864	867	0.3	IE	0		IE	0		29	884	2,945.4	864	867	0.3
Russian Federation	NCV	16,899	16,921	0.1	27,717	29,987	8.2	NE	0		NE	0		16,899	16,921	0.1	27,717	29,987	8.2
Slovakia	NCV	NO	0		1,831	0	-100.0	NO	0		NO	0		NO	0		1,831	0	-100.0
Slovenia	NCV	NO	0		IE	0		NO	0		IE	0		NO	0		IE	0	
Spain	NCV	22,048	6,190	-71.9	9,992	62,140	521.9	260,488	260,573	0.0	39,980	39,997	0.0	282,536	266,763	-5.6	49,972	102,137	104.4
Sweden	NCV	2,982	2,773	-7.0	3,523	3,467	-1.6	77,739	72,669	-6.5	6,306	6,197	-1.7	80,721	75,443	-6.5	9,829	9,663	-1.7
Switzerland	NCV	NO	0		1,689	347	-79.5	NO	0		NO	390		NO	0		1,689	737	-56.4
Turkey	NCV	NA	4,381		11,930	11,873	-0.5	NE	17,645		NE	24,440		NA,NE	22,026		11,930	36,313	204.4
Ukraine	NCV	218	0	-100.0	3,231	0	-100.0	446	0	-100.0	2,054	0	-100.0	664	0	-100.0	5,285	0	-100.0
United Kingdom	NCV	11,007	10,691	-2.9	36,548	36,573	0.1	41,828	40,676	-2.8	35,441	46,497	31.2	52,835	51,367	-2.8	71,990	83,070	15.4
United States	GCV	364,842	6,511	-98.2	299,367	0	-100.0	373,157	700,408	87.7	101,935	320,754	214.7	737,999	706,919	-4	401,303	320,754	-20.1

<sup>a</sup> Source: IEA [unpublished].<sup>b</sup> IEA data for Denmark does not include Faroe Islands and Greenland.<sup>c</sup> IEA data for Monaco are included in the data of France.

Table 1.43

CO<sub>2</sub> emissions from civil aviation - trend information

CO <sub>2</sub> emissions (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	2,894	4,811	23.6	15.5	8.7	4.1	-10.8	-4.9	5.4	9.2	-11.5	-2.5	2.9	66.2
Austria	32	192	17.2	6.5	10.2	11.0	9.6	5.0	1.2	166.9	-65.2	112.6	18.5	500.6
Belarus	C	6	*	*	*	*	*	*	*	3.6	-13.5	27.4	27.2	*
Belgium	12	11	-0.7	10.8	-15.0	-10.6	11.1	30.5	0.9	1.4	22.0	-7.8	-17.3	-6.4
Bulgaria	612	104	-14.7	-13.0	-22.5	-14.3	-34.5	-70.4	-10.1	45.4	3.1	17.6	84.9	-83.0
Canada	6,216	7,589	-11.3	8.7	3.7	3.3	2.2	1.7	-0.1	-6.2	9.7	7.0	7.8	22.1
Croatia	296	159	-66.3	7.7	-14.3	5.0	7.5	85.2	-20.1	29.7	-3.7	-9.8	13.0	-46.2
Czech Republic	149	82	-8.8	7.6	-35.3	-2.4	4.9	-1.2	23.7	26.0	-11.9	-19.2	-12.1	-45.0
Denmark	243	128	-17.9	1.2	3.1	3.5	-8.6	-10.2	-11.5	4.8	-13.4	-2.3	-6.2	-47.2
Estonia	111	2	*	*	*	*	*	*	*	*	*	*	*	-98.0
European Community	17,517	23,342	-5.0	8.0	8.6	3.9	6.7	5.7	6.1	-3.2	-3.5	-0.1	3.9	33.3
Finland	385	332	-11.8	1.5	16.4	11.0	14.2	-0.9	-1.0	-2.0	-13.2	1.1	1.6	-13.8
France	4,541	4,968	-0.5	16.1	7.9	0.9	5.2	-0.4	2.0	-8.1	-3.0	-8.5	-1.3	9.4
Germany	2,897	4,408	-1.9	3.6	4.7	3.9	2.8	7.3	5.0	-2.6	-0.9	1.5	2.8	52.1
Greece	1,455	1,227	-1.4	-13.3	5.2	-4.0	-6.4	-4.9	43.6	-14.9	-8.5	-4.4	5.4	-15.7
Hungary	1	IE, NO	*	*	*	*	*	*	*	-13.3	*	*	*	*
Iceland	32	24	-3.7	29.2	13.1	-6.3	5.0	-3.8	-12.1	-12.1	-12.3	0.0	13.1	-23.6
Ireland	59	105	0.1	7.0	2.9	7.4	15.1	6.2	13.7	13.5	-3.8	-2.3	2.5	77.8
Italy	1,597	2,668	-1.3	6.4	12.0	8.1	8.8	15.3	5.7	-5.0	3.8	3.5	-3.7	67.1
Japan	7,162	10,663	8.4	12.3	-1.9	6.5	-0.3	-1.7	1.4	0.4	2.0	1.2	-3.6	48.9
Latvia	0	2	3.1	100.0	50.1	33.3	25.0	20.0	16.7	14.3	11.0	7.0	5.3	3442.7
Liechtenstein	0	0	0.0	0.0	1.0	1.0	1.0	1.0	0.9	0.9	4.4	4.4	-28.4	-17.3
Lithuania	1	2	0.0	0.0	0.0	44.4	23.1	-12.5	0.0	57.1	0.0	0.0	0.0	120.0
Luxembourg	NE, NO	NE, NO	*	*	*	*	*	*	*	*	*	*	*	*
Monaco	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Netherlands	41	41	0	0	0	0	0	0	0	0	0	0	0	0
New Zealand	773	1,192	-15.2	2.6	-3.7	-2.3	3.7	-10.0	11.0	32.7	-6.3	12.2	2.9	54.3
Norway	679	945	2.6	7.5	11.1	2.8	2.4	14.9	-8.6	0.6	-14.1	4.5	-0.9	39.1
Poland	35	21	-17.3	4.9	27.0	-17.3	-12.4	-17.9	24.0	0.5	-2.2	6.0	-7.4	-40.1
Portugal	165	401	23.3	10.6	0.9	3.7	17.9	6.2	5.4	5.5	5.9	-4.7	3.5	143.3
Romania	193	68	-28.4	10.3	-53.5	71.8	-8.7	16.1	-3.3	-21.2	-13.3	-13.1	8.3	-65.0
Russian Federation	NE	111	*	*	*	*	*	*	*	*	*	*	*	*
Slovakia	51	39	0.0	21.0	-2.2	-2.0	23.1	-12.3	14.3	-14.7	17.6	17.1	3.4	-23.8
Slovenia	1	2	-77.8	-2.6	11.8	6.8	23.8	-3.1	0.1	-18.2	-0.5	2.7	-21.3	203.9
Spain	4,135	5,890	-15.1	14.7	15.8	7.7	14.4	9.9	6.0	-0.5	-6.9	4.9	10.3	42.4
Sweden	673	667	-8.9	1.4	-3.0	8.3	2.0	4.7	-7.9	-2.9	-4.0	-3.0	14.6	-0.9
Switzerland	253	144	-7.4	-0.1	-3.3	-4.1	-3.8	-2.1	-5.4	-9.6	-11.7	-3.8	0.6	-43.1
Turkey	905	4,799	14.4	67.4	9.8	5.3	2.7	-12.0	7.9	8.6	12.7	10.2	16.2	430.5
Ukraine	2,974	276	*	*	*	*	*	-15.9	-3.6	-56.8	-5.1	28.8	11.5	-90.7
United Kingdom	1,282	2,303	-2.2	6.1	8.6	3.7	8.8	10.7	9.1	4.8	0.4	1.9	8.9	79.7
United States	142,452	157,457	-5.3	-2.3	6.4	0.5	1.1	3.9	3.6	-6.8	-4.2	-2.2	5.0	10.5

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

Table 1.44

CO<sub>2</sub> emissions from aviation bunkers - trend information

CO <sub>2</sub> emissions (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	4,339	5,977	4.0	9.5	7.8	3.6	10.6	0.5	0.9	6.3	-14.1	-11.5	1.1	37.8
Austria	886	1,532	12.2	12.0	10.5	4.0	3.5	-2.3	8.6	-15.9	8.3	-14.5	17.4	72.9
Belarus	5,558	264	*	-35.5	-10.1	-6.5	-43.1	15.2	63.2	8.1	22.4	8.5	-3.4	-95.3
Belgium	3,096	3,814	-16.0	14.5	15.8	7.8	12.9	11.4	2.8	-9.5	2.4	-11.5	0.0	23.2
Bulgaria	749	405	-64.1	-13.1	-14.1	-9.4	14.7	-34.9	-15.5	45.8	1.5	21.5	-16.4	-45.9
Canada	6,868	9,349	-9.6	6.3	17.4	2.5	3.2	6.9	1.4	-10.3	0.7	-7.5	12.6	36.1
Croatia	202	87	*	-10.9	-5.3	5.6	7.0	-41.0	-11.1	-37.5	-5.0	21.1	21.7	-56.9
Czech Republic	617	807	-10.1	30.9	23.6	-11.3	-44.8	139.7	-36.3	28.0	13.2	20.2	35.2	30.8
Denmark	1,736	2,447	-6.0	2.7	5.6	2.0	7.4	6.1	2.6	1.5	-13.7	4.0	14.3	41.0
Estonia	NA, NO	90	*	*	*	*	*	*	*	*	*	*	*	*
European Community	61,294	114,311	0.3	5.4	6.2	5.1	7.6	8.0	5.4	-2.2	-0.6	2.5	7.4	86.5
Finland	984	1,252	-6.8	8.2	7.0	4.0	2.5	7.0	-2.8	2.5	-1.1	3.3	16.3	27.2
France	8,618	15,747	-2.0	-0.9	6.9	3.5	5.3	12.3	4.4	1.6	0.3	0.9	6.7	82.7
Germany	11,589	17,632	-1.9	3.6	4.7	3.9	2.8	7.3	5.0	-2.6	-0.9	1.5	2.8	52.1
Greece	2,448	3,106	-13.8	-6.2	-4.2	-3.3	5.0	12.3	-12.3	-7.1	0.0	30.2	2.8	26.9
Hungary	431	609	-20.9	-1.6	6.8	-5.1	4.6	7.3	6.3	-15.1	7.2	2.6	3.0	41.3
Iceland	220	370	1.1	10.5	15.0	7.6	15.8	7.5	12.2	-14.4	-11.3	6.5	12.2	68.6
Ireland	1,059	2,118	8.7	-1.7	11.1	4.3	3.0	19.0	1.6	26.9	13.1	0.2	-5.8	100.0
Italy	4,116	8,068	20.0	6.0	7.2	2.0	8.7	9.7	7.1	-10.0	-1.4	15.8	0.2	96.0
Japan	13,183	21,190	5.5	7.7	14.2	3.8	4.5	-8.1	6.3	-4.6	13.4	-3.6	3.9	60.7
Latvia	221	146	35.2	0.0	28.0	0.0	-9.4	0.0	-10.3	0.0	3.8	44.4	20.5	-33.8
Liechtenstein	0	0	0.0	0.0	2.8	2.7	2.7	2.6	2.5	2.5	-10.3	10.1	-28.4	-17.3
Lithuania	418	119	19.9	2.6	-16.7	0.3	-16.3	-9.5	-1.2	30.4	-11.6	8.2	19.1	-71.6
Luxembourg	399	1,290	3.3	13.6	8.6	19.6	21.2	12.8	-4.7	8.1	8.3	4.2	8.7	223.3
Monaco	0	0	*	*	*	*	*	*	*	*	*	*	*	*
Netherlands	4,540	10,503	6.7	16.1	6.5	8.2	9.4	2.8	-0.8	-2.2	4.6	-1.6	7.0	131.3
New Zealand	1,341	2,565	-4.4	9.6	4.2	4.5	-0.5	14.2	-9.5	7.0	2.1	16.2	15.0	91.3
Norway	619	847	-9.7	-5.0	18.1	11.5	6.6	14.6	-3.1	-8.5	-11.5	1.0	13.3	36.7
Poland	1,106	826	-17.7	5.0	27.2	-14.7	-6.6	-13.5	22.1	-1.6	-2.6	8.2	-2.3	-25.3
Portugal	1,391	2,374	4.2	9.4	9.8	1.9	8.8	1.1	15.4	-6.7	0.7	4.6	13.4	70.7
Romania	IE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Russian Federation	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Slovakia	NE	65	*	0.6	18.0	-11.4	-7.8	0.9	1.7	-5.9	4.9	30.8	35.1	*
Slovenia	97	60	-65.3	6.8	-7.4	5.5	-8.0	19.4	15.0	12.9	2.9	-4.4	-23.8	-38.2
Spain	3,432	9,532	19.2	5.8	5.5	7.9	5.7	3.5	7.5	1.9	-3.8	4.9	11.5	177.8
Sweden	1,335	1,772	-18.5	6.4	2.7	5.7	7.2	12.3	2.5	-2.9	-13.9	-2.8	13.1	32.7
Switzerland	3,066	3,433	-2.4	6.6	4.1	3.9	4.8	7.4	4.7	-5.6	-7.7	-10.3	-5.8	12.0
Turkey														
Ukraine	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
United Kingdom	15,665	33,123	-1.4	6.3	6.0	6.3	11.3	8.7	10.2	-2.5	-1.9	2.5	11.7	111.4
United States	46,230	59,912	0.6	5.7	2.8	7.1	1.4	3.8	2.9	-1.9	4.1	-3.8	0.8	29.6

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

Table 1.45

CO<sub>2</sub> emissions from navigation - trend information

CO <sub>2</sub> emissions (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	2,919	2,171	2.3	19.8	3.5	-0.3	-12.6	-11.6	4.8	-10.5	-0.3	-0.3	9.3	-25.6
Austria	52	87	-9.2	-3.0	0.1	14.4	1.0	1.0	0.9	14.3	9.4	5.9	2.7	65.8
Belarus	NA, NE	NA, NE	*	*	*	*	*	*	*	*	*	*	*	*
Belgium	267	366	125.0	7.2	-0.2	3.0	2.8	8.1	16.9	2.1	3.9	4.1	3.7	37.2
Bulgaria	1,088	NA, NO	-93.8	2.1	193.9	-86.0	85.6	-13.8	*	*	*	*	*	*
Canada	4,733	6,261	4.3	-6.6	2.3	1.4	14.5	-3.7	2.8	8.4	-0.4	13.3	7.3	32.3
Croatia	133	91	-18.9	12.7	51.4	-20.7	-23.5	-3.1	-2.1	7.2	20.6	0.3	-18.0	-31.5
Czech Republic	56	9	-0.8	3.2	-4.8	-26.9	-15.8	0.8	-9.1	5.7	-14.7	-26.9	-56.1	-84.8
Denmark	555	490	18.2	5.2	3.5	-11.5	-16.6	-8.5	1.1	-1.5	18.6	-2.5	-7.0	-11.7
Estonia	578	26	16.6	-97.0	77.4	-5.0	-2.1	-6.6	24.2	-34.1	112.1	-21.7	1.1	-95.5
European Community	19,360	21,088	3.7	-4.9	2.6	-1.0	5.2	0.4	-6.8	1.0	0.2	11.5	2.1	8.9
Finland	441	523	0.6	-6.4	6.5	6.4	-2.1	4.5	0.4	-8.5	5.4	2.0	-2.2	18.6
France	1,873	2,703	-10.6	2.6	-7.4	-0.8	1.6	9.4	-9.9	16.8	13.8	6.6	4.8	44.3
Germany	2,050	868	1.0	-21.0	-8.1	-20.9	-8.4	-18.5	-7.2	-3.6	-12.8	4.3	12.8	-57.7
Greece	1,825	2,153	1.4	-4.8	-14.3	21.4	54.1	-1.2	-42.8	35.8	-9.7	-0.7	12.0	18.0
Hungary	107	4	-6.2	-58.1	17.9	71.7	-26.6	-48.3	6.7	-6.3	180.0	361.9	-85.8	-96.5
Iceland	59	19	-8.6	-35.7	17.6	-38.9	-23.4	-11.2	-30.6	62.2	-9.5	-5.6	7.3	-68.6
Ireland	85	56	-0.1	-3.1	-0.2	6.0	5.6	13.3	-7.2	2.4	-52.6	2.6	-7.2	-33.7
Italy	5,401	6,132	7.3	-1.6	12.4	3.7	4.8	-2.4	2.1	-0.1	-2.1	1.6	-0.5	13.5
Japan	13,731	12,894	4.2	3.4	5.9	6.3	-11.1	-0.4	1.6	-3.1	1.2	-3.0	-8.8	-6.1
Latvia	17	44	16.6	4.5	3.0	-5.2	-0.3	4.5	4.4	0.2	-3.3	-1.2	-4.6	152.9
Liechtenstein	NA, NO	NA, NO	*	*	*	*	*	*	*	*	*	*	*	*
Lithuania	16	17	75.0	-2.0	46.9	62.3	-16.7	-54.8	-6.1	17.2	13.9	11.2	28.7	10.0
Luxembourg	6	6	0	0	0	0	0	0	0	0	0	0	0	0
Monaco	1	2	28.7	-4.9	-14.7	61.9	-19.7	36.4	40.3	32.3	-15.3	14.0	10.0	204.8
Netherlands	405	832	0.1	-4.7	-3.6	9.0	5.4	26.5	-2.6	1.7	3.3	17.2	22.0	105.6
New Zealand	248	332	4.6	-9.4	-14.4	-26.2	-31.3	50.5	73.6	-13.0	10.9	2.8	-10.5	34.0
Norway	1,929	2,398	-0.2	4.2	5.5	10.4	4.8	9.2	-8.8	-10.1	-1.5	7.3	-0.1	24.3
Poland	2,334	195	14.4	10.1	-7.7	1.4	-7.9	-20.1	-21.9	0.4	-5.9	-26.2	-66.4	-91.7
Portugal	240	211	-0.4	-6.1	5.6	4.4	3.0	-9.5	-10.3	-3.4	4.7	0.7	2.3	-12.1
Romania	1,607	68	25.9	-20.9	43.6	132.9	-4.0	-33.8	-48.9	-88.5	169.5	-61.3	63.0	-95.8
Russian Federation	NA, NE	3,327	*	*	*	*	*	*	*	*	*	*	*	*
Slovakia	143	137	-14.2	8.7	10.4	-4.5	51.8	-14.5	-19.8	4.8	2.9	-0.1	12.0	-3.7
Slovenia	IE, NA, NO	IE, NA, NO	*	*	*	*	*	*	*	*	*	*	*	*
Spain	1,500	2,419	-0.9	-14.6	3.1	-20.2	0.4	34.0	4.5	13.3	11.5	3.8	1.9	61.3
Sweden	538	568	-24.5	19.3	-2.7	21.9	22.6	14.4	3.0	-1.2	-2.3	15.6	-12.2	5.6
Switzerland	124	124	-1.0	-1.1	0.6	0.5	0.6	0.5	0.5	0.8	0.7	0.7	0.7	0.4
Turkey	497	1,207	6.7	16.5	-3.7	-0.2	4.0	-9.2	-5.3	28.5	2.7	8.4	38.1	142.6
Ukraine	2,564	252	*	*	*	*	*	0.8	1.1	3.9	0.8	1.1	8.2	-90.2
United Kingdom	4,122	3,674	4.3	-3.2	8.1	-3.6	-6.6	-9.2	-3.3	-26.8	-5.3	71.8	-1.9	-10.9
United States	36,668	47,283	-13.0	5.2	-6.2	-38.0	-25.6	53.1	60.8	-13.2	19.4	-16.7	8.4	28.9

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 1.46****CO<sub>2</sub> emissions from marine bunkers - trend information**

CO <sub>2</sub> emissions (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	2,057	2,791	-9.6	33.0	1.6	-7.3	-12.0	10.5	13.0	-6.1	9.1	-2.5	0.8	35.7
Austria	NA, NO	NA, NO	*	*	*	*	*	*	*	*	*	*	*	*
Belarus	NA, NE	NA, NE	*	*	*	*	*	*	*	*	*	*	*	*
Belgium	13,303	23,996	1.2	-8.8	22.7	10.8	4.5	-19.3	8.1	0.9	37.9	2.8	4.5	80.4
Bulgaria	969	366	0.5	3.8	-17.1	49.3	-6.4	-97.5	704.1	49.0	9.9	29.6	-15.9	-62.2
Canada	2,995	1,977	3.5	3.9	-6.9	-1.3	24.0	-10.1	1.5	7.7	-24.2	-42.3	21.8	-34.0
Croatia	109	73	-34.3	-26.3	12.6	-35.9	10.0	-18.9	-13.2	56.7	-18.0	-6.2	6.4	-32.7
Czech Republic	NA, NO	NA, NO	*	*	*	*	*	*	*	*	*	*	*	*
Denmark	3,087	2,545	-10.5	4.8	-5.1	-8.3	0.2	-5.9	3.0	-15.8	-17.7	5.5	-18.7	-17.6
Estonia	NA, NE, NO	472	*	*	4.5	10.7	6.2	6.7	-9.3	-4.8	17.7	-3.7	33.0	*
European Community	103,395	147,348	-0.7	1.4	6.6	8.8	4.5	-4.9	5.3	4.0	2.8	1.3	5.6	42.5
Finland	1,842	1,679	-6.9	-20.7	13.2	8.6	28.1	7.0	15.2	-10.5	12.6	-0.6	-17.3	-8.8
France	8,137	9,787	3.7	3.1	4.9	10.0	10.1	1.6	3.4	-14.8	-3.0	8.4	13.4	20.3
Germany	7,980	8,582	-15.6	0.9	-0.9	6.9	-5.1	1.8	5.0	1.1	7.0	10.3	2.5	7.5
Greece	8,028	10,221	-8.2	7.5	-12.0	0.3	11.4	-11.0	15.5	-2.9	-10.3	2.4	0.9	27.3
Hungary	NA	NA	*	*	*	*	*	*	*	*	*	*	*	*
Iceland	99	227	-62.0	54.0	-13.9	20.0	18.7	-7.2	33.4	-31.8	39.1	-13.4	26.4	129.3
Ireland	56	474	89.9	197.4	35.2	-2.7	3.8	8.0	-12.2	-18.2	-16.1	60.7	-9.8	742.8
Italy	4,389	6,097	-18.2	10.1	-29.2	7.1	0.6	-0.1	24.8	13.6	14.6	12.2	8.8	38.9
Japan	17,630	17,923	5.5	-8.4	-36.0	30.2	6.5	-7.7	7.3	-13.6	4.9	9.9	4.7	1.7
Latvia	1,652	640	-72.9	-46.2	-35.3	-27.2	-79.0	-33.2	-20.0	2,348.5	5.5	-8.7	7.9	-61.3
Liechtenstein	NA, NO	NA, NO	*	*	*	*	*	*	*	*	*	*	*	*
Lithuania	304	352	64.9	-7.1	-6.9	-54.1	-17.1	44.9	27.3	7.6	10.8	-0.3	0.3	15.7
Luxembourg	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Monaco	4	16	29.3	-3.4	-8.1	39.5	-6.2	41.4	40.4	38.2	-15.9	17.5	13.3	265.6
Netherlands	34,357	46,846	2.8	1.2	2.1	6.2	1.1	3.5	6.3	10.1	-1.2	-6.5	7.8	36.3
New Zealand	1,033	739	-11.6	-15.1	-5.6	4.6	-3.5	-14.7	-18.5	6.0	33.6	-24.9	-6.8	-28.5
Norway	1,478	1,875	-15.3	23.3	8.9	21.0	-3.4	-5.7	-0.8	-3.2	-16.4	-12.3	-2.6	26.8
Poland	1,648	812	-60.9	5.1	17.6	28.7	24.4	14.0	-4.9	-8.7	3.3	5.4	-10.9	-50.7
Portugal	1,780	1,839	3.1	0.2	2.0	-3.0	-3.0	0.7	0.6	-4.2	2.3	-2.1	2.1	3.3
Romania	IE, NA	IE, NA, NE	*	*	*	*	*	*	*	*	*	*	*	*
Russian Federation	NA, NE	NA, NE	*	*	*	*	*	*	*	*	*	*	*	*
Slovakia	NA, NO	NA, NO	*	*	*	*	*	*	*	*	*	*	*	*
Slovenia	NA	NA, NO	*	*	*	*	*	*	*	*	*	*	*	*
Spain	11,528	22,904	6.0	2.8	46.0	23.3	5.3	-2.4	2.2	11.9	2.4	1.9	3.1	98.7
Sweden	2,228	6,503	18.5	-1.7	5.9	17.3	15.4	-2.2	-2.8	-2.4	-11.8	34.5	17.8	191.9
Switzerland	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Turkey														
Ukraine	3,564	187	*	*	*	*	*	-19.2	-9.2	7.2	-40.5	-29.3	20.8	-94.8
United Kingdom	6,680	5,874	-3.3	7.3	9.3	12.1	9.1	-27.5	-12.1	12.3	-16.7	-4.0	14.4	-12.1
United States	67,272	34,587	9.0	0.5	0.4	7.7	7.3	-19.8	-12.0	-5.8	-28.0	-11.1	40.4	-48.6

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 1.47****Fugitive emissions from fuels: coal mining and handling, CH<sub>4</sub> (base year<sup>a</sup>)**

	Key category	Share of national total	Methods and EF used <sup>b</sup>		Activity data					CH <sub>4</sub> IEF			
					CRF			IEA <sup>c</sup>		Underground mines		Surface mines	
			Methods	EF	Underground mines	Surface mines	Total	Total	Difference	Mining activities	Post-mining activities	Mining activities	Post-mining activities
					(Mt)					(%)	(kg/t)		
IPCC default EF <sup>d</sup>										4.50-16.75	0.60-2.68	0.20-1.34	0-0.13
Australia	L	3.77	T2, T3	CS, D, PS	56.7	131.3	188.0	204.6	8.8	10.08	0.38	1.19	NE
Austria		0.01	T1	CR	NO	2.4	2.4	2.4	0.1	NE	NE	0.21	IE
Belarus		-	NA	NA	NE	NE	NE	3.5		NE	NE	NE	NE
Belgium		-			NE	NE	NE	2.4		NE	NE	NE	NE
Bulgaria	L	1.51	T1	D	5.2	29.2	34.4	34.1	-0.7	11.73	1.68	0.80	0.07
Canada		0.32	CS	CS	5.0	84.5	89.5	68.3	-23.6	11.61	1E	0.40	1E
Croatia		0.16	T1	D	0.3	NO	0.3	0.2	-50.2	5.86	0.82	NO	NO
Czech Republic	L	3.87	T1, T2	CS, D	22.4	79.0	101.4	101.4	0.0	11.69	1.53	0.77	0.07
Denmark <sup>e</sup>		-	NA	NA	NO	NO	NO	0.0		NO	NO	NO	NO
Estonia		0.92	CS, T1	CS	11.1	11.4	22.5	24.2	7.7	1.34	0.13	0.20	0.07
European Community	L	1.03			407.6	503.0	910.7	649.0	-28.7	4.75	0.41	0.14	0.00
Finland		-	NA	NA	NE	NE	NO	7.2		NO	NO	NO	NO
France	L	0.75			10.8	2.0	12.8	13.5	5.6	15.55	3.07	0.72	0.29
Germany	L	1.50	CS, T2	CS	70.2	356.5	426.7	434.4	1.8	11.87	0.58	0.01	1E
Greece	L	1.01	T1	D	NO	51.9	51.9	51.9	0.0	NO	NO	1.01	1E
Hungary	L	1.24	D	CS	16.3	7.2	23.5	23.5	0.1	3.79	0.58	0.21	0.01
Iceland		-	NA	NA	NO	NO	NO	0.0		NO	NO	NO	NO
Ireland		-	NA	NA	NE	NE	NE	6.5		NE	NE	NO	NO
Italy		0.01	T1	CR, CS, D	0.1	1.5	1.6	1.0	-35.0	10.05	0.30	1.34	NA
Japan		0.22	T1, T3	D, OTH	6.8	1.2	8.0	8.0	0.0	17.94	1.64	0.77	0.07
Latvia		-	NA	NA	NO	NO	NO	0.3		NO	NO	NO	NO
Liechtenstein		-	NA	NA	NO	NO	NO			NO	NO	NO	NO
Lithuania		-	NA	NA	NO	NO	NO	0.1		NO	NO	NO	NO
Luxembourg		-	NA	NA	NO	NO	NO	0.0		NO	NO	NO	NO
Monaco <sup>f</sup>		0.00	NA	NA	NO	NO	NO			NO	NO	NO	NO
Netherlands		-	T1b	D	NA	NA	NA	0.0		NA	NA	NA	NA
New Zealand		0.44	T1	D	0.8	1.8	2.6	2.6	0.1	12.63	1.60	0.77	0.07
Norway		0.11	T2	CS	0.3	0.6	0.9	0.3	-65.9	7.16	1E	0.54	1E
Poland	L	3.14	CS	CS	191.6	74.0	265.6	266.5	0.4	4.28	0.31	0.01	NE
Portugal		0.11	T1	D	232.1	49.0	281.1	0.3	-99.9	0.01	1E	0.00	1E
Romania	L	2.43	T1	D	19.8	46.6	66.5	61.3	-7.7	11.72	1.64	0.77	0.07
Russian Federation	L	1.26	T1, T2, T3	CS, D	176.0	219.0	395.0	376.7	-4.6	8.40	1.64	0.77	0.07
Slovakia	L	0.78	T1	D	3.5	0.0	3.5	4.8	37.9	7.27	0.60	NO	NO
Slovenia	L	1.78	T1	CS	6.8	NO	6.8	6.8	-0.5	0.61	1.90	NO	NO
Spain	L	0.63	CR, CS, T2	CR, CS	21.6	21.6	43.1	35.7	-17.3	3.24	0.57	0.14	0.02
Sweden		-	T2, T3	CS	NE	NE	NO	0.8		NO	NO	NO	NO
Switzerland		-	NA	NA	NO	NO	NO	0.0		NO	NO	NO	NO
Turkey	L	0.84	T1	D	2.7	44.7	47.4	47.4	0.0	11.73	0	0.80	0
Ukraine	L	5.99	T1, T3	CS, D, M	155.5	9.3	164.8	155.5	-5.7	16.19	1.34	0.94	0.13
United Kingdom	L	2.35	T3	OTH	72.9	18.1	91.0	92.8	1.9	11.83	1.14	0.34	1E
United States	L	1.34	T2, T3	CS	384.3	546.8	931.1	933.6	0.3	8.38	0.95	0.91	0.15

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

<sup>b</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.B.1 Solid fuels.

<sup>c</sup> Source: IEA [unpublished].

<sup>d</sup> Source of default emission factors: IPCC Guidelines, volume 3, pages 1.105–1.110 (Tier 1).

<sup>e</sup> IEA data for Denmark does not include Faroe Islands and Greenland.

<sup>f</sup> IEA data for Monaco are included in the data of France.

**Table 1.48****Fugitive emissions from fuels: coal mining and handling, CH<sub>4</sub> (2004)**

	Key category	Share of national total	Methods and EF used <sup>a</sup>		Activity data					CH <sub>4</sub> IEF			
					CRF			IEA <sup>b</sup>		Underground mines		Surface mines	
			Methods	EF	Underground mines	Surface mines	Total	Total	Difference	Mining activities	Post-mining activities	Mining activities	Post-mining activities
					(Mt)					(%)	(kg/t)		
IPCC default EF <sup>c</sup>		(%)								4.50-16.75	0.60-2.68	0.20-1.34	0-0.13
Australia	L, T	3.47	T2, T3	CS, D, PS	80.6	269.7	350.3	354.5	1.2	6.37	0.28	1.24	NE
Austria		0.00	T1	CR	NO	0.2	0.2	0.2	0.4	NO	NO	0.21	IE
Belarus		-	NA	NA	NE	NE	NE	2.0		NE	NE	NE	NE
Belgium		-			NO	NO	NO	0.2		NE	NE	NE	NE
Bulgaria	L, T	1.83	T1	D	2.8	23.6	26.5	26.5	0.0	11.73	1.68	0.80	0.07
Canada	T	0.13	CS	CS	1.4	84.5	85.9	66.0	-23.1	10.52	IE	0.38	IE
Croatia		-	NA	NA	NO	NO	NO	0.0		NO	NO	NO	NO
Czech Republic	L, T	3.17	T1, T2	CS, D	13.3	44.5	57.8	64.1	10.9	12.25	1.64	0.77	0.07
Denmark <sup>d</sup>		-	NA	NA	NO	NO	NO	0.0		NO	NO	NO	NO
Estonia	L	1.08	CS, T1	CS	6.4	6.9	13.3	14.3	7.3	1.34	0.13	0.20	0.07
European Community	T	0.34			48.9	278.0	326.9	337.1	3.1	12.66	0.85	0.28	0.00
Finland		-	NA	NA	NO	NO	NO	3.2		NO	NO	NO	NO
France	T	0.10			0.2	0.0	0.2	0.9	429.0	169.58	3.07	7.36	IE
Germany	L, T	0.64	CS, T2	CS	25.9	181.9	207.8	211.2	1.6	11.23	0.58	0.01	IE
Greece		1.07	T1	D	NO	70.0	70.0	70.0	0.0	NO	NO	1.01	IE
Hungary	T	0.34	D	CS	2.8	8.5	11.2	11.2	0.0	3.64	0.54	0.21	0.01
Iceland		-	NA	NA	NO	NO	NO	0.0		NO	NO	NO	NO
Ireland		-	NA	NA	NE	NE	NE	4.4		NO	NO	NO	NO
Italy		0.00	T1	CR, CS, D	0.1	NO	0.1	0.1	0.0	10.05	0.30	NO	NA
Japan	T	0.00	T1, T3	D, OTH	0.7	0.5	1.3	0.0	-100.0	2.03	1.64	0.77	0.07
Latvia		-	NA	NA	NO	NO	NO	0.0		NO	NO	NO	NO
Liechtenstein		-	NA	NA	NO	NO	NO	NO		NO	NO	NO	NO
Lithuania		-	NA	NA	NO	NO	NO	0.1		NO	NO	NO	NO
Luxembourg		-	NA	NA	NO	NO	NO	0.0		NO	NO	NO	NO
Monaco <sup>e</sup>		0.00	NA	NA	NO	NO	NO	NO		NO	NO	NO	NO
Netherlands		-	T1b	D	NA	NA	NA	0.0		NA	NA	NA	NA
New Zealand		0.42	T1	D	0.7	4.4	5.2	5.2	0.0	13.73	1.60	0.77	0.07
Norway		0.11	T2	CS	0.2	3.0	3.2	2.9	-8.2	7.16	IE	0.54	IE
Poland	L, T	2.49	CS, T1	CS	95.6	61.2	156.8	162.4	3.6	4.58	0.34	0.01	NE
Portugal		-	NA	NA	NO	NO	NO	0.0		NO	IE	NO	IE
Romania	L, T	1.67	T1	D	7.6	25.5	33.1	31.8	-3.8	11.73	1.64	0.77	0.07
Russian Federation	L	1.24	T1, T2, T3	CS, D	100.0	182.0	282.0	260.4	-7.6	10.06	1.64	0.77	0.07
Slovakia		0.81	T1	D	3.0	0.0	3.0	3.0	0.0	6.10	0.60	NO	NO
Slovenia	L, T	1.36	T1	CS	4.8	NO	4.8	4.8	0.0	1.84	0.84	NO	NO
Spain	T	0.23	CR, CS, T2	CR, CS	10.2	13.8	24.1	20.5	-14.9	3.16	1.14	0.19	0.04
Sweden		-	T2, T3	CS	NO	NO	NO	1.3		NO	NO	NO	NO
Switzerland		-	NA	NA	NO	NO	NO	0.0		NO	NO	NO	NO
Turkey	T	0.42	T1	D	1.9	44.4	46.4	46.4	0.0	11.73	0	0.80	0
Ukraine	L, T	7.07	T1, T3	CS, D	80.7	0.6	81.3	60.4	-25.7	17.41	1.34	0.94	0.13
United Kingdom	L, T	0.74	T3	OTH	12.5	12.0	24.5	25.1	2.3	21.39	1.16	0.34	NO
United States	L, T	0.80	T2, T3	CS	333.4	687.5	1020.9	1,008.9	-1.2	7.54	0.95	0.65	0.10

<sup>a</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.B.1 Solid fuels.<sup>b</sup> Source: IEA [unpublished].<sup>c</sup> Source of default emission factors: IPCC Guidelines, volume 3, pages 1.105–1.110 (Tier 1).<sup>d</sup> IEA data for Denmark does not include Faroe Islands and Greenland.<sup>e</sup> IEA data for Monaco are included in the data of France.

**Table 1.49****Fugitive emissions from fuels: CH<sub>4</sub> emissions from coal mining and handling - trend information**

CH <sub>4</sub> emissions (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	750	870	0.2	1.9	-4.3	16.4	0.4	-5.7	-1.9	4.6	-1.4	0.2	-0.6	16.0
Austria	1	0	-15.0	-5.2	-14.6	2.0	0.9	-0.2	10.3	-4.8	18.2	-18.4	-79.6	-90.4
Belarus	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Belgium	NE	NO	*	*	*	*	*	*	*	*	*	*	*	*
Bulgaria	95	59	-14.1	3.7	-2.7	-9.9	5.0	-12.1	1.9	1.1	1.4	-1.6	2.0	-38.1
Canada	91	47	9.0	-3.0	3.1	-7.2	-16.8	-20.7	-12.2	4.3	0	0	0	-48.3
Croatia	2	NO	-10.9	-20.3	-19.3	-26.8	4.7	-69.9	*	*	*	*	*	*
Czech Republic	362	222	-11.3	-1.9	-2.9	-1.9	-4.0	-9.5	4.4	2.4	-3.0	-3.9	-2.7	-38.7
Denmark	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Estonia	19	11	-9.6	-7.9	11.0	-3.3	-17.4	-9.5	15.5	-2.0	-3.5	2.7	3.1	-42.0
European Community	2,095	688	-2.1	2.6	-8.2	-3.9	-14.0	-2.2	-8.7	-12.8	-0.6	-10.6	-14.5	-67.1
Finland	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
France	204	28	-7.2	-0.9	-24.0	-14.9	-3.0	-5.0	-3.5	-35.6	-11.4	-28.9	-43.3	-86.4
Germany	877	308	-5.2	-1.7	-5.9	-1.2	-18.3	12.8	-10.0	-11.7	0.1	-7.7	-18.2	-64.9
Greece	52	70	1.5	1.7	3.7	-1.6	3.5	1.9	3.0	3.8	6.2	-3.1	2.6	35.0
Hungary	73	13	-3.8	1.0	3.0	-1.5	-6.2	-5.6	-10.3	6.9	-15.3	-11.0	-38.3	-81.6
Iceland	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Ireland	NE, NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Italy	3	1	-11.9	-35.6	-17.6	-39.5	-86.6	-20.8	4,730.7	17.0	17.3	53.4	-60.8	-61.2
Japan	134	3	-9.6	-21.5	-3.5	-22.4	-13.3	-0.8	-11.2	-25.9	-79.2	-20.7	-29.1	-97.6
Latvia	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Liechtenstein	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Lithuania	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Luxembourg	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Monaco	0	0	*	*	*	*	*	*	*	*	*	*	*	*
Netherlands	NA	NA	*	*	*	*	*	*	*	*	*	*	*	*
New Zealand	13	15	-32.6	32.3	3.5	-0.5	17.2	3.6	-3.9	4.8	-0.7	-6.2	-6.1	14.6
Norway	3	3	6.4	-1.6	2.2	-12.5	3.9	28.4	9.2	-9.3	-7.7	53.6	-36.0	3.3
Poland	879	471	-5.8	0.3	-0.3	-1.4	-7.6	-0.2	-4.7	-9.5	-5.7	3.0	-1.1	-46.4
Portugal	3	IE, NO	-3.2	*	*	*	*	*	*	*	*	*	*	*
Romania	304	123	-12.1	1.4	4.6	-19.0	-22.8	-13.0	19.3	8.2	-6.0	-0.4	-4.6	-59.6
Russian Federation	1,925	1,270	-7.6	-6.5	-7.0	-6.5	-12.7	8.4	0.7	4.0	-7.4	7.5	6.3	-34.0
Slovakia	27	20	6.0	-0.7	1.3	1.8	1.8	-5.4	-2.3	-8.6	-2.4	-17.8	-6.4	-27.3
Slovenia	17	13	-6.7	1.5	-4.5	7.2	-1.2	-6.7	-1.8	-7.7	13.4	3.1	-0.4	-24.6
Spain	86	47	-11.4	0.4	1.4	-1.0	-10.3	-7.1	0.9	-12.1	-3.3	-2.0	-3.4	-45.0
Sweden	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Switzerland	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Turkey	68	59	-1.3	-7.9	4.6	5.1	2.8	-2.7	1.8	0.2	-10.9	-10.5	-4.9	-14.1
Ukraine	2,638	1,392	-8.7	-18.8	-4.1	-1.7	0.7	-1.2	11.1	-2.0	-2.3	-3.3	0.7	-47.2
United Kingdom	870	234	2.8	9.5	-7.2	-4.2	-14.7	-16.2	-12.5	-9.5	0.0	-14.0	-9.6	-73.1
United States	3,900	2,682	-3.5	1.0	-4.0	-0.8	0.2	-6.1	-4.6	-1.3	-5.4	4.4	2.7	-31.2

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 1.50a****Fugitive emissions from fuels: oil and natural gas, CH<sub>4</sub>, CO<sub>2</sub> (base year<sup>a</sup>)**

	CH <sub>4</sub>				CO <sub>2</sub>			
	Key category	Share of national total (%)	Methods and EF used <sup>b</sup>		Key category	Share of national total (%)	Methods and EF used <sup>b</sup>	
			Methods	EF			Methods	EF
Australia	L	1.66	T1, T2, T3	CS, PS	L	1.43	T1, T2, T3	CS, PS
Austria	L	0.47	CS, T1	CS, D		0.13	CS, T1	CS, PS
Belarus		0.97	CS	CS		-	NA	NA
Belgium		0.36				0.06		
Bulgaria	L	0.97	T1	D		-	NA	NA
Canada	L	5.15	CS	CS	L	1.76	CS	CS
Croatia	L	3.81	T1	D	L	1.34	CS	CS
Czech Republic		0.46	T1, T2	CS, D		-	NA	NA
Denmark		0.06	CR	CR		0.37	CR	CR
Estonia	L	1.80	T1	CS, D		-	NA	NA
European Community	L	0.72			L	0.40		
Finland		0.02	CS, M, T1	CS, D, M		0.32	CS	CS, D
France		0.45			L	0.80		
Germany	L	0.57	CS	CS		0.00	CS, T1	CS
Greece		0.08	T1	D		0.06	T1	D
Hungary	L	0.96	CS, D	CS, OTH		-	NA	NA
Iceland		-	NA	NA		-	NA	NA
Ireland		0.27	CS	CS		0.25	CS	CS
Italy	L	1.40	T1, T2	CS, D	L	0.64	T1, T2	CS, D
Japan		0.02	CS, T1	CS, D, OTH		0.00	T1	D
Latvia		1.06	CS	PS		-	NA	NA
Liechtenstein		0.14	T3	CS		-	NA	NA
Lithuania		0.32	T1	D		0.00	T1	D
Luxembourg		0.22	CR	PS		-	NA	NA
Monaco		-	NA	NA		-	NA	NA
Netherlands	L	0.77	T1b, T2, T3	CS, D, PS		0.36	T2, T3	CS, PS
New Zealand		0.51	D	D		1.00	D	CS
Norway	L	0.64	T2	CS	L	5.27	T2	CS
Poland	L	0.70	T1	CS, D		0.01	T1	CS, D
Portugal		0.06	CR, OTH	CR, OTH		0.19	D	D
Romania	L	8.74	T1	D		-	NA	NA
Russian Federation	L	8.23	D, T1	CS, D		0.59	T1	OTH
Slovakia	L	0.70	T1	D		-	NA	NA
Slovenia		0.28	T1	CS, D		-	NA	NA
Spain		0.22	CR, CS, T1	CR, CS	L	0.61	CS, T1, T2	CS, PS
Sweden		0.01	CS, T1, T2	CS, PS		0.13	T1, T2	CS, D
Switzerland	L	0.72	CR	CS		0.26	CR	CS
Turkey		-				-		
Ukraine	L	3.38	T1	CS, D		0.01	T1	D
United Kingdom	L	1.33	T2, T3	CS, PS	L	0.74	T2, T3	CS, PS
United States	L	2.64	M	M		0.10	T2	CS

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

<sup>b</sup> Information on methods and emission factors in this table is as reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.B.2 Oil and natural gas.

Table 1.50b

Fugitive emissions from fuels: oil and natural gas - oil, CH<sub>4</sub>, CO<sub>2</sub> (base year<sup>a</sup>)

	Oil															
	Exploration				Production				Transport				Refining (R) / Storage (S)			
	CH <sub>4</sub> IEF <sup>b</sup>	CO <sub>2</sub> IEF	Activity data		CH <sub>4</sub> IEF <sup>b</sup>	CO <sub>2</sub> IEF	Activity data		CH <sub>4</sub> IEF <sup>b</sup>	CO <sub>2</sub> IEF	Activity data		CH <sub>4</sub> IEF <sup>b</sup>	CO <sub>2</sub> IEF	Activity data	
	Value		Unit	Description	Value		Unit	Description	Value		Unit	Description	Value		Unit	Description
IPCC default EF <sup>c</sup>				300 - 5,000		PJ	Oil produced	745		PJ	Oil tankered	20 - 250 (S) 90 - 1,400 (R)		PJ	Oil refined	
Australia	NA	NA	NA	386	NA	PJ	Crude oil and ORF produced	745	NA	PJ	Quantity shipped	1,605	283,261	PJ	Oil refined	
Austria	IE	IE	number	3,968,668	37,423,847	Mt	Oil throughput	IE	IE	number	oil loaded in tankers	32	NA	Mt	Oil refined (SNAP 0401)	
Belarus	NO	NO		2,650	NA	PJ	PJ of oil produced	NO	NO		PJ oil loaded in tankers	745	NA	PJ	(e.g. PJ oil refined)	
Belgium	NO	NO			IE	IE		NA	NA				NA	PJ	(e.g. PJ oil refined)	
Bulgaria	NE	NE		(e.g. number of wells drilled)	2,650	NE	PJ (e.g. PJ of oil produced)	745	NE	PJ	(e.g. PJ oil loaded in tankers)	745	NE	PJ	(e.g. PJ oil refined)	
Canada	IE	IE		NA	2,892	17,712	10 <sup>-3</sup> m <sup>3</sup> Conventional Oil, Heavy Oil and Crude Oil Production	13	1	m <sup>3</sup>	Convention, Heavy, and Crude Oil Production	NE	2,836	TJ	Energy Consumption of Refineries	
Croatia	NE	NO		(specify)	2,650	NO	PJ (e.g. PJ of oil produced)	745	NO	PJ	(e.g. PJ oil loaded in tankers)	135	NO	PJ	(e.g. PJ oil refined)	
Czech Republic	NE	NE		(e.g. number of wells drilled)	5,978	NE	PJ (e.g. PJ of oil produced)	NO	NO		(e.g. PJ oil loaded in tankers)	2,800	IE	PJ	(e.g. PJ oil refined)	
Denmark	IE	NA		(e.g. number of wells drilled)	214	NA	10 <sup>-3</sup> m <sup>3</sup> Oil produced	IE	NA	10 <sup>-3</sup> m <sup>3</sup>	Oil transported by pipelines	IE	NA		(e.g. PJ oil refined)	
Estonia			PJ	(specify)	4,000	NO	PJ (e.g. PJ of oil produced)	745	NO	PJ	(e.g. PJ oil loaded in tankers)	200	NO	PJ	(e.g. PJ oil refined)	
European Community				(specify)			(specify)				(specify)				(specify)	
Finland	NO	NO		(e.g. number of wells drilled)	NO	NO	(e.g. PJ of oil produced)	NO	NO		kt oil loaded in tankers	36	100	kt	kt oil refined	
France	NO	NO		(specify)	35,000	1,675,000	PJ PJ Produced	NA	NA	PJ	PJ Loaded	97	1,009,786	PJ	PJ Refined	
Germany	1	NE	t	(crude oil)	NE	NE	t (e.g. PJ of oil produced)	NE	NE		(e.g. PJ oil loaded in tankers)	0	NE	t	(crude oil & products)	
Greece	NE	NE		(e.g. number of wells drilled)	1,450	270	10 <sup>-3</sup> m <sup>3</sup> Crude oil and NGL production	NA	NA	PJ	Crude oil imports	880	NE	PJ	Refinery input (crude oil and NGL)	
Hungary	IE	IE		(e.g. number of wells drilled)	56,327	NO	PJ oil produced	5	IE	10 <sup>-3</sup> m <sup>3</sup>	pipeline and tankers	1,400	NO	PJ	oil refined	
Iceland	NO	NO		(specify)	NO	NO	(specify)	NO	NO		(specify)	NO	NO		(specify)	
Ireland	NO	NO		(e.g. number of wells drilled)	NO	NO	(e.g. PJ of oil produced)	NO	NO		(e.g. PJ oil loaded in tankers)	NO	NE		(e.g. PJ oil refined)	
Italy	IE	IE			1,791	56,082	Gg (Gg of oil produced)	NA	NA			24	25,260	Gg	(Gg oil refined)	
Japan	152	3,206	number	number of wells drilled	1	0	10 <sup>-3</sup> l oil produced	0	0	10 <sup>-3</sup> l	Oil & Condensate produced	91	NE	PJ	oil refined	
Latvia	NO	NO	1000 number	(e.g. number of wells drilled)	NO	NO	TJ (e.g. PJ of oil produced)	NO	NO	TJ	(e.g. PJ oil loaded in tankers)	NO	NO	TJ	(e.g. PJ oil refined)	
Liechtenstein	NO	NO		number of wells drilled	NO	NO	oil produced	NO	NO		oil loaded in tankers	NO	NO		oil refined	
Lithuania	270	5,700	number	( wells drilled)	1,450	270	10 <sup>-3</sup> m <sup>3</sup> (conventional oil production)	5	0	10 <sup>-3</sup> m <sup>3</sup>	oil transported by pipelines	745	NO	PJ	(e.g. PJ oil refined)	
Luxembourg	NO	NO			NO	NO		NO	NO			NO	NO			
Monaco	0	0		(e.g. number of wells drilled)	0	0	(e.g. PJ of oil produced)	0	0		(e.g. PJ oil loaded in tankers)	0	0		(e.g. PJ oil refined)	
Netherlands	IE	IE		number of wells drilled/tested	IE	IE	10 <sup>-6</sup> m <sup>3</sup> oil produced	NE	NE		(e.g. PJ oil loaded in tankers)	278	NA	PJ	Refery input: crude oil, NGL	
New Zealand	NE	NE		(e.g. number of wells drilled)	NE	NE	(e.g. PJ of oil produced)	1	NE	TJ	(e.g. PJ oil loaded in tankers)	1	NE	TJ	(e.g. PJ oil refined)	
Norway	IE	IE		number of wells drilled	IE	IE	oil produced	2,318	138,006	PJ	Oil loaded	3,095	1,345,104	PJ	Oil refined	
Poland	NE	NE			61,800	6,315,000	PJ	0.57	6.27	Gg		NE	NE			
Portugal	NO	NO			NO	NO		60,000	1,100,000	Mt	Consumption of crude	84,059	2,913,957	Mt	Production (crude and other)	
Romania				(specify)	300	NE	PJ (e.g. PJ of oil produced)	745	NE	PJ	(e.g. PJ oil loaded in tankers)	110	NE	PJ	(e.g. PJ oil refined)	
Russian Federation	NE	NE		number of wells drilled	110,955	NE	Mt oil produced	31,193	NE	Mt	(oil transported in pipelines)	36,845	NE	Mt	oil refined	
Slovakia	NO	NO		(e.g. number of wells drilled)	36,016	NO	PJ production	130	NO	PJ	transport of crude oil (transfer)	130	NO	PJ	refinin/storage	
Slovenia	NO	NE		(e.g. number of wells drilled)	3	NE	TJ (e.g. PJ of oil produced)	NO	NE		(e.g. PJ oil loaded in tankers)	1	NE	TJ	(e.g. PJ oil refined)	
Spain	NE	NE			0	NE	Mg Crude oil produced	27	NE	Gg	Transport of crude oil	1	29,206	Gg	Oil refined	
Sweden	NO	NO			NO	NO		NE	NE		(e.g. PJ oil loaded in tankers)	14,295	NA	Mt	(e.g. PJ oil refined)	
Switzerland	NO	NO		(specify)	NO	NO	(specify)	NO	NO		(specify)	1,042	31,387	PJ	Crude oil used	
Turkey	NE	NE		(e.g. number of wells drilled)	NE	NE	(e.g. PJ of oil produced)	NE	NE		(e.g. PJ oil loaded in tankers)	NE	NE		(e.g. PJ oil refined)	
Ukraine	NE	NE	number	number of wells drilled	4,500	NE	PJ Oil and natural gas liquids	5	0	10 <sup>-3</sup> m <sup>3</sup>	Crude oil transported by pipeline	1,200	NE	PJ	Oil refined	
United Kingdom	45,290	8,506,045	number	Wells drilled	5,642	85,704	PJ Oil and gas produced.	47	NO	Gg	Offshore loading of oil only	547	NO	PJ	Oil refinery throughput	
United States	IE	NE		(e.g. number of wells drilled)	599,224	NE	10 <sup>-6</sup> Bbl(oil US) (e.g. PJ of oil produced)	1,336	NE	10 <sup>-6</sup> Bbl(oil US)	(e.g. PJ oil loaded in tankers)	5,063	NE	10 <sup>-6</sup> Bbl(oil US)	(e.g. PJ oil refined)	

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

<sup>b</sup> The units of the implied emission factors (IEF) vary from Party to Party depending on the unit of the activity data used. The unit of the IEF is kg/unit of activity data.

<sup>c</sup> Source of emissions factors: IPCC Guidelines, vol. 3, pages 1.119–1.121. For updated detailed emission factors on CH<sub>4</sub> and implied emissions factors on CO<sub>2</sub> and N<sub>2</sub>O also look at the IPCC good practice guidance, table 2.16, pages 2.86–2.87.

Table 1.50c

Fugitive emissions from fuels: oil and natural gas - natural gas, CH<sub>4</sub>, CO<sub>2</sub> (base year<sup>a</sup>)

	Natural Gas															
	Production (P) / Processing (Pr)				Transmission				Distribution				Other leakage			
	CH <sub>4</sub> IEF <sup>b</sup>	CO <sub>2</sub> IEF	Activity data		CH <sub>4</sub> IEF <sup>b</sup>	CO <sub>2</sub> IEF	Activity data		CH <sub>4</sub> IEF <sup>b</sup>	CO <sub>2</sub> IEF	Activity data		CH <sub>4</sub> IEF <sup>b</sup>	CO <sub>2</sub> IEF	Activity data	
	Value		Unit	Description	Value		Unit	Description	Value		Unit	Description	Value		Unit	Description
IPCC default EF <sup>c</sup>	15,000-314,000 (P) 288,000-628,000 (Pr)		PJ	Gas produced	57,000 - 628,000		PJ	Gas consumed/produced	57,000 - 628,000		PJ	Gas consumed/produced	0 - 384,000		PJ	Gas consumed
Australia	1,705	IE	PJ	Gas produced	7,076	434	PJ	Gas transmitted	477,039	23,661	PJ	Utility sales	NE	NE		NE
Austria	IE	45,807	10 <sup>6</sup> m <sup>3</sup>	Gas throughput (a)	2,900	25	km	Pipelines length (km)	657	NA	km	Distribution network length	NO	NO	PJ	(e.g. PJ gas consumed)
Belarus	288,000	NA	PJ	PJ gas produced	18,611	NA	PJ	PJ gas consumed	IE	NA		PJ gas consumed	84,669	NA	PJ	PJ gas consumed
Belgium	NE	NE			5,079	1,774	PJ	(e.g. PJ gas consumed)	56,471	1,510	PJ	PJ gas consumed				
Bulgaria	83,682	NE	PJ	(e.g. PJ gas produced)	12,509	NE	PJ	(e.g. PJ gas consumed)	NE	NE	PJ	(e.g. PJ gas consumed)	277,111	NE	PJ	(e.g. PJ gas consumed)
Canada	1,654	30,127	10 <sup>6</sup> m <sup>3</sup>	Gross New Production of Natural Gas (also includes oil and Gas Well Drilling and Servicing)	3,187	24	km	Pipeline Distance	776	NE	km	Pipeline Distance - leakage	663	130		(specify)
Croatia	457,988	NO	PJ	(e.g. PJ gas produced)	IE	NO	PJ	(e.g. PJ gas consumed)	IE	NO		(e.g. PJ gas consumed)	259,734	NO		(e.g. PJ gas consumed)
Czech Republic	39,365	NO	PJ	(e.g. PJ gas produced)	8,866	NO	PJ	(e.g. PJ gas consumed)	517,563	NO	PJ	(e.g. PJ gas consumed)	NE	NO	PJ	(e.g. PJ gas consumed)
Denmark	IE	NA	10 <sup>6</sup> m <sup>3</sup>	Gas produced	89	NA	10 <sup>6</sup> m <sup>3</sup>	Gas transmission	15	NA	10 <sup>6</sup> m <sup>3</sup>	Gas distributed	NO	NO		Incl. in transmission
Estonia	NO	NO	PJ	(e.g. PJ gas produced)	458,000	NO	PJ	(e.g. PJ gas consumed)	NO	NO	PJ	(specify)	273,680	NO	PJ	(specify)
European Community				(specify)				(specify)				(specify)		NA		(specify)
Finland	NO	NO		(e.g. PJ gas produced)	1,855	5,103	PJ	PJ gas consumed	NO	NO	PJ	PJ gas distributed via local networks	NO	NO		t of natural gas released from pipelines
France	110,392	NA	PJ	PJ Production	NA	NA	PJ	PJ Consumed	NO	NO			NO	NO		
Germany	64	0	TJ	(natural gas from crude oil extraction)	10	NO	TJ	(total amount of gas consumed)	789	NO	km	(distribution net)	42	NE, NO	TJ	(gas consumed)
Greece	3,708	103	10 <sup>6</sup> m <sup>3</sup>	Natural gas production	NO	NO	km	Length of transmission pipeline	NO	NO	km	Length of distribution mains	NE	NE		(e.g. PJ gas consumed)
Hungary	113,411	NO	PJ	gas produced	49,032	NO	PJ	gas consumed	IE	NO		(e.g. PJ gas consumed)	NO	NO		(e.g. PJ gas consumed)
Iceland	NO	NO		(specify)	NO	NO		(specify)	NO	NO		(specify)	NO	NO		(specify)
Ireland	14,328	1,767,465	PJ	PJ of Gas produced	IE	IE		(e.g. PJ gas consumed)	250,871	NO	PJ	PJ of gas consumed	NO	NO	PJ	(e.g. PJ gas consumed)
Italy	2,911	1,895	10 <sup>6</sup> m <sup>3</sup>	(Mm3 gas produced)	828	NA	10 <sup>6</sup> m <sup>3</sup>	(Mm3 gas transported)	11,980	NA	10 <sup>6</sup> m <sup>3</sup>	(Mm3 gas transported)	IE	IE		
Japan	4	0	10 <sup>3</sup> m <sup>3</sup>	gas produced	363	NA	km	Pipelines length	1,294	NA	PJ	LNG & NG Consumption with Town Gas Production	NE	NE		not estimated
Latvia	NO	NO	TJ	(e.g. PJ gas produced)	IE	NO	TJ	(e.g. PJ gas consumed)	IE	NO	TJ	(e.g. PJ gas consumed)	C	NO		(specify)
Liechtenstein	NO	NO		gas produced	NO	NO		gas consumed	392	NO	TJ	gas consumed	IE	NO		(specify)
Lithuania	NO	NO	PJ	(e.g. PJ gas produced)	2,500	16	km	( transmission pipeline)	615	NO	km	(distribution mains)	NE	NE	PJ	(e.g. PJ gas consumed)
Luxembourg	NO	NO			71,041	NO	PJ		IE	IE	TJ		IE	IE		
Monaco	0	0		(e.g. PJ gas produced)	0	0		(e.g. PJ gas consumed)	0	0		(e.g. PJ gas consumed)	0	0		(e.g. PJ gas consumed)
Netherlands	IE	NO	PJ	gas produced	2,469	NO	PJ	gas transported	122,878	3,823	10 <sup>3</sup> km	natural gas distribution network	IE	NE		
New Zealand	NE	NE		(e.g. PJ gas produced)	IE	IE	TJ	(e.g. PJ gas consumed)	251	33	TJ	(e.g. PJ gas consumed)	NE	NE		(e.g. PJ gas consumed)
Norway	IE	IE		gas produced	IE	IE		gas consumed	IE	IE		gas consumed	NE	NE		(specify)
Poland	97,795	49,141	PJ		136,264	511	PJ		313,324	1,157	PJ		NE	NE		
Portugal	NO	NO			NO	NO	Gg	gas consumed	NO	NO	Gg	gas consumed	NO	NO		
Romania	288,000	NE	PJ	(e.g. PJ gas produced)	364,300	NE	PJ	(e.g. PJ gas consumed)				(specify)	186,705	NE	PJ	(e.g. PJ gas consumed)
Russian Federation	3,150	NE	10 <sup>6</sup> m <sup>3</sup>	gas produced	NE	NE		(specif)	NE	NE		(specif)	NE	NE		
Slovakia	354,845	NO	PJ	production	2,900	NO	km	transfer	710	NO	km	distribution	IE	NO	PJ	consumed
Slovenia	40	NE	TJ	(e.g. PJ gas produced)	1,147	NE	km	(e.g. PJ gas consumed)	3,655	NE	km	(e.g. PJ gas consumed)	293	NE		(e.g. PJ gas consumed)
Spain	70,889	NE	PJ	PJ gas produced (NCV)	803	9	PJ	PJ gas (NCV)	86,027	968	PJ	PJ gas consumed (NCV)	NE	NE		(e.g. PJ gas consumed)
Sweden	NO	NO			NO	NO	TJ	Pressure levelling losses	NO	NO		(e.g. PJ gas consumed)	NO	NO		
Switzerland	NO	NO		(specify)	1,150	3,532	km	See documentation box	IE	IE		(specify)	IE	IE		(specify)
Turkey	NA	NA		(e.g. PJ gas produced)	NE	NE		(e.g. PJ gas consumed)	NE	NE		(e.g. PJ gas consumed)				(e.g. PJ gas consumed)
Ukraine	2,900	95	10 <sup>6</sup> m <sup>3</sup>	Natural Gas Produced	5,976,959	NE	10 <sup>3</sup> km	Length of natural gas transmission pipeline	820,000	NE	10 <sup>3</sup> km	Length of natural gas distribution network	264,306	NE		(specify)
United Kingdom	IE	NE		(e.g. PJ gas produced)	IE	NE		(e.g. PJ gas consumed)	240,742	NE	PJ	Gas consumed	NE	NE		(e.g. PJ gas consumed)
United States	130,668	NE	10 <sup>9</sup> ft <sup>3</sup>	(e.g. PJ gas produced)	119,143	IE	10 <sup>9</sup> ft <sup>3</sup>	(e.g. PJ gas consumed)	78,933	NE	10 <sup>9</sup> ft <sup>3</sup>	(e.g. PJ gas consumed)	IE	IE		(e.g. PJ gas consumed)

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

<sup>b</sup> The units of the implied emission factors (IEF) vary from Party to Party depending on the unit of the activity data used. The unit of the IEF is kg/unit of activity data.

<sup>c</sup> Source of emissions factors: IPCC Guidelines, vol. 3, pages 1.119–1.121. For updated detailed emission factors on CH<sub>4</sub> and implied emissions factors on CO<sub>2</sub> and N<sub>2</sub>O also look at the IPCC good practice guidance, table 2.16, pages 2.86–2.87.

Table 1.50d

Fugitive emissions from fuels: oil and natural gas - venting and flaring, CH<sub>4</sub>, CO<sub>2</sub> (base year<sup>a</sup>)

	Venting and flaring																				
	Oil								Gas								Combined				
	Venting				Flaring				Venting				Flaring				Venting		Flaring		
	CH <sub>4</sub> IEF <sup>b</sup>		Activity data		CH <sub>4</sub> IEF <sup>b</sup>		CO <sub>2</sub> IEF		CH <sub>4</sub> IEF <sup>b</sup>		Activity data		CH <sub>4</sub> IEF <sup>b</sup>		CO <sub>2</sub> IEF		CH <sub>4</sub> IEF <sup>b</sup>		Activity data		
	value	unit	Description	value	unit	Description	value	unit	Description	value	unit	Description	value	unit	Description	value	unit	Description	value	unit	Description
IPCC default EF <sup>c</sup>	1,000 -3,000	PJ	Oil produced	1,000 -3,000		PJ	Oil produced	6,000 -209,000	PJ	Gas produced	6,000 -209,000		PJ	Gas produced	3,000 -14,000	PJ	Oil produced	3,000 -14,000		PJ	Oil and gas produced
Australia	NA		NA	IE	IE		IE	104,751	PJ	PJ gas produced	IE	IE		IE	NA		NA	21,693	1,737,257	PJ	PJ gas and oil produced (specify)
Austria	IE		(specify)	IE	IE		(specify)	IE		(specify)	IE	IE		(specify)	IE		(specify)	IE	IE		
Belarus	NE		PJ oil produced	NE	NE		PJ gas consumption	6,000		PJ gas produced	IE	NA		PJ gas consumption	NE			NE	NE		
Belgium	NA			NE	IE			NA			NE	IE			NA			NE			
Bulgaria	2,000	PJ	(e.g. PJ oil produced)	9	NE	PJ	(e.g. PJ gas consumption)	18,000	PJ	(e.g. PJ gas produced)	329	NE	PJ	(e.g. PJ gas consumption)	NE			NE	NE		
Canada	6,074	m³	Conventional oil, Heavy Oil and Crude Oil Production	512	876,402	10⁶ m³	Flared Gas and Flare	912	10⁶ m³	gross new production of natural Gas	133	203,563	10⁶ m³	Flared Gas and Flare	241,741,317	m³	Number of Wells Drilled (Number)	29,899,879	46,199,310,737	m³	Number of Wells Drilled (Number)
Croatia	NO	PJ	(e.g. PJ oil produced)	IE	NO		(e.g. PJ gas consumption)	18,000	PJ	(e.g. PJ gas produced)	IE	NO		(e.g. PJ gas consumption)	NO			NO	NO		
Czech Republic	NE		(e.g. PJ oil produced)	NE	NE		(e.g. PJ gas consumption)	NE		(e.g. PJ gas produced)	NE	NE		(e.g. PJ gas consumption)	NE			NE	NE		
Denmark	NO		(e.g. PJ oil produced)	0	57	GJ	Refinery gas consumption	IE		Incl. in transmission	0	57	GJ	Gas consumption	NO			NO	NO		
Estonia	4,000	PJ	(e.g. PJ oil produced)	NA	NA	PJ	(specify)	NO	PJ	(e.g. PJ gas produced)	NA	NA	PJ	(specify)	NO	PJ	(specify)	NO	NO	PJ	(specify)
European Community			(specify)				(specify)			(specify)				(specify)			(specify)				
Finland	NO	kt	kt oil refined	0	12,444	kt	kt oil refined	NO		(e.g. PJ gas produced)	NO	NO		(e.g. PJ gas consumption)	NO			NO	NO		
France	NO		(specify)	NE	85,714	PJ	PJ Consumed	NO		(specify)	IE	IE		(specify)	NO		(specify)	699,942	44,843,049	PJ	PJ Consumed
Germany	IE		(e.g. PJ oil produced)	IE	IE		(e.g. PJ gas consumption)	IE		(e.g. PJ gas produced)	IE	IE		(natural gas)	IE	IE		IE	IE		
Greece	1,776	10³ m³	Crude oil and NGL production	135	67,000	10³ m³	Crude oil and NGL production	NO	10⁶ m³	Sour Natural gas production	19	3,146	10⁶ m³	Natural gas production	NO			NO	NO		
Hungary	2,000	PJ	(e.g. PJ oil produced)	NE	NE		(e.g. PJ gas consumption)	24,000	PJ	(e.g. PJ gas produced)	NE	NE		(e.g. PJ gas consumption)	NA		(specify)	NA	NA		(specify)
Iceland	NO		(specify)	NO	NO		(specify)	NO		(specify)	NO	NO		(specify)	NO		(specify)	NO	NO		(specify)
Ireland	NO		(e.g. PJ oil produced)	NO	NO		(e.g. PJ gas consumption)	IE		(e.g. PJ gas consumed)	IE	IE	PJ	quantity of gas flared	NO			NO	NO		
Italy	IE			6,175	9,077,078	10⁶ m³	(Mm3 gas consumption)	IE			IE	IE			NO			NO	NO		
Japan	1	10³ l	oil produced	0	67	10³ l	oil produced	IE	km	pipeline length	0	4	10³ m³	gas produced	IE		included elsewhere	IE	IE		included elsewhere
Latvia	NO	PJ	(e.g. PJ oil produced)	NO	NO	PJ	(e.g. PJ gas consumption)	NO	PJ	(e.g. PJ gas produced)	NO	NO	PJ	(e.g. PJ gas consumption)	NO	PJ		NO	NO	PJ	
Liechtenstein	NO		oil produced	NO	NO		gas consumed	NO		gas produced	NO	NO		gas consumed	NO		gas produced	NO	NO		Gas/Oil Produced
Lithuania	1,381	10³ m³	(conventional oil production and oil transported by tanker truck )	138	67,000	10³ m³	(conventional oil production)	1,000	km	( transmission pipeline)	NO	NO	PJ	(e.g. PJ gas consumption)	NO	PJ		NO	NO	PJ	
Luxembourg	NO			NO	NO			NO			NO	NO			NO			NO	NO		
Monaco	0	0.00	(e.g. PJ oil produced)	0	0		(e.g. PJ gas consumption)	0.00	0.00	(e.g. PJ gas produced)	0.00	0.00		(e.g. PJ gas consumption)	0.00	0.00		0.00	0.00		
Netherlands	IE	10⁶ m³	oil produced	IE	IE	10⁶ m³	oil produced	IE	PJ	gas produced	IE	IE	PJ	gas produced	24,445			IE	IE		
New Zealand	IE		(e.g. PJ oil produced)	IE	IE		(e.g. PJ gas consumption)	IE		(e.g. PJ gas produced)	1,121	113,775	TJ	(e.g. PJ gas consumption)	IE			IE	IE	TJ	venting & flaring from oil & gas
Norway	IE		(e.g. PJ oil produced)	NE	75,650,118	PJ	Oil flared	IE		(e.g. PJ gas produced)	18,711	56,421,260	PJ	Gas flared	1,502	PJ	Oil and gas produced	IE	IE		
Poland	NE			NE	NE			NE			NE	NE			NE			NE	NE		
Portugal	8	Mt	Oil refined	IE	IE			NO			IE	IE			NO			IE	IE		
Romania	0	PJ	(e.g. PJ oil produced)	NE	NE		(e.g. PJ gas consumption)	18,000	PJ	(e.g. PJ gas produced)	NE	NE		(e.g. PJ gas consumption)	0.00			NE	NE		(specify)
Russian Federation	NE		oil produced	NE	NE		gas consumed	IE		gas produced	NE	NE		gas consumed	NE		(oil produced)	118.67	1,925,000	10⁶ m³	(Associated gas flaring)
Slovakia	6,483	PJ	production	6,483	NO	PJ	production	1,200	km	transfer	7,750	NO	PJ	production	NO			NO	NO		
Slovenia	NE		(e.g. PJ oil produced)	NE	NE		(e.g. PJ gas consumption)	NE		(e.g. PJ gas produced)	NE	NE		(e.g. PJ gas consumption)	NE			NE	NE		
Spain	NE		(e.g. PJ oil produced)	1	3,150	Gg	(e.g. PJ gas consumption)	16,180,396	PJ	(e.g. PJ gas produced)	5,337	56,000,025	PJ	(e.g. PJ gas consumption)	NE			NE	NE		
Sweden	NE		(e.g. PJ oil produced)	1	59,415	TJ	Refinery gas other liquid fuels	NE		(e.g. PJ gas produced)	NE	NE		(e.g. PJ gas consumption)	NE			NA	NA		
Switzerland	IE		(specify)	81	192,130	PJ	Crude oil used	IE		(specify)	NO	NO		(specify)	NO		(specify)	NO	NO		(specify)
Turkey	0		(e.g. PJ oil produced)	0	0		(e.g. PJ gas consumption)	0		(e.g. PJ gas produced)	0	0		(e.g. PJ gas consumption)	0.00			0.00	0.00		
Ukraine	NE		(e.g. PJ oil produced)	IE	IE		(e.g. PJ gas consumption)	NE		(e.g. PJ gas produced)	11	1,800	10⁶ m³	Natural Gas Produced	NE		—	NE	NE		—
United Kingdom	IE		(e.g. PJ oil produced)	IE	IE		(e.g. PJ gas consumption)	IE		(e.g. PJ gas produced)	IE	IE		(e.g. PJ gas consumption)	NA			259,693	40,619,026	PJ	Gas consumption
United States of America	IE		(e.g. PJ oil produced)	IE	IE		(e.g. PJ gas consumption)	IE		(e.g. PJ gas produced)	IE	IE		(e.g. PJ gas consumption)	IE			IE	54,706,667	10¹² Btu	

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

<sup>b</sup> The units of the implied emission factors (IEF) vary from Party to Party depending on the unit of the activity data used. The unit of the IEF is kg/unit of activity data.

<sup>c</sup> Source of emissions factors: IPCC Guidelines, vol. 3, pages 1.119–1.121. For updated detailed emission factors on CH<sub>4</sub> and implied emissions factors on CO<sub>2</sub> and N<sub>2</sub>O also look at the IPCC good practice guidance, table 2.16, pages 2.86–2.87.

**Table 1.51a****Fugitive emissions from fuels: oil and natural gas, CH<sub>4</sub>, CO<sub>2</sub> (2004)**

	CH <sub>4</sub>				CO <sub>2</sub>			
	Key category	Share of national total (%)	Methods and EF used <sup>a</sup>		Key category	Share of national total (%)	Methods and EF used <sup>a</sup>	
			Methods	EF			Methods	EF
Australia	L, T	0.80	T1, T2, T3	CS, PS	L, T	1.09	T1, T2, T3	CS, PS
Austria	L, T	0.71	T1	CS, D		0.23	CS, T1	CS, PS
Belarus	L, T	2.20	CS	CS		-	NA	NA
Belgium		0.28				0.10		
Bulgaria	L	0.83	T1	D		-	NA	NA
Canada	L, T	6.48	CS	CS	L, T	2.16	CS	CS
Croatia	L, T	4.52	T1	D	L, T	2.41	CS	CS
Czech Republic		0.38	T1, T2	CS, D		-	NA	NA
Denmark		0.15	CR	CR	L, T	0.87	CR	CR
Estonia	L, T	2.29	T1	CS, D		-	NA	NA
European Community	L, T	0.57				0.38		
Finland		0.07	CS, M, T1	CS, D, M	T	0.14	CS	CS, D
France		0.34			L	0.79		
Germany	L	0.70	CS	CS		0.00	CS, T1	CS
Greece		0.11	T1	D		0.01	T1	D
Hungary	L, T	1.82	CS, D	CS, OTH		-	NA	NA
Iceland		-	NA	NA		-	NA	NA
Ireland		0.11	CS	CS		0.10	CS	CS
Italy	L, T	0.97	T1, T2	CS, D	T	0.37	T1, T2	CS, D
Japan		0.02	CS, T1	CS, D, OTH		0.00	T1	D
Latvia	L	1.21	CS	PS		-	NA	NA
Liechtenstein		0.34	T3	CS		-	NA	NA
Lithuania	L, T	1.12	T1	D		0.12	T1	D
Luxembourg		0.48	CR	PS		-	NA	NA
Monaco		-	NA	NA		-	NA	NA
Netherlands	T	0.32	T1b, T2, T3	CS, D, PS	T	0.06	T2, T3	CS, PS
New Zealand		0.52	D	D	L, T	1.18	D	CS
Norway	L, T	1.31	T2	CS	L, T	4.81	T2	CS
Poland	L, T	1.28	T1	CS, D		0.06	T1	CS, D
Portugal	T	0.49	CR, OTH	CR, OTH	L, T	0.99	D	D
Romania	L, T	5.37	T1	D		-	NA	NA
Russian Federation	L, T	9.88	D, T1	CS, D	L, T	1.12	T1	OTH
Slovakia	L, T	1.41	T1	D		-	NA	NA
Slovenia		0.17	T1	CS, D		-	NA	NA
Spain		0.19	CR, CS, T1	CR, CS	L, T	0.51	CS, T1, T2	CS, PS
Sweden		0.01	CS, T1, T2	CS, PS		0.07	T1, T2	CS, D
Switzerland	T	0.34	CR	CS		0.20	CR	CS
Turkey		-				-		
Ukraine	L, T	5.63	T1	CS, D		0.01	T1	D
United Kingdom	L, T	0.90	T2, T3	CS, PS	L	0.77	T2, T3	CS, PS
United States	L, T	2.04	M	M		0.09	T2	CS

<sup>a</sup> Information on methods and emission factors in this table is as reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.B.2 Oil and natural gas.

Table 1.51b

Fugitive emissions from fuels: oil and natural gas - oil, CH<sub>4</sub>, CO<sub>2</sub> (2004)

	Oil															
	Exploration				Production				Transport				Refining (R) / Storage (S)			
	CH <sub>4</sub> IEF <sup>a</sup>	CO <sub>2</sub> IEF	Activity data		CH <sub>4</sub> IEF <sup>a</sup>	CO <sub>2</sub> IEF	Activity data		CH <sub>4</sub> IEF <sup>a</sup>	CO <sub>2</sub> IEF	Activity data		CH <sub>4</sub> IEF <sup>a</sup>	CO <sub>2</sub> IEF	Activity data	
	Value		Unit	Description	Value		Unit	Description	Value		Unit	Description	Value		Unit	Description
IPCC default EF <sup>b</sup>					300 - 5,000		PJ	Oil produced	745		PJ	Oil tankered	20 - 250 (S) 90 - 1,400 (R)		PJ	Oil refined
Australia	NA	NA		NA	1,063	NA	PJ	Crude oil and ORF produced	745	NA	PJ	Quantity shipped	1,612	285,837	PJ	Oil refined
Austria	IE	IE	number	number of wells drilled	5,732,884	136,924,804	Mt	Oil throughput	IE	IE	number	oil loaded in tankers	32	NA	Mt	Oil refined (SNAP 0401)
Belarus	NO	NO		number of wells drilled	2,650	NA	PJ	PJ of oil produced	NO	NO		PJ oil loaded in tankers	745	NA	PJ	(e.g. PJ oil refined)
Belgium	NO	NO			NO	NO			NO	NO			199	NO	PJ	(e.g. PJ oil refined)
Bulgaria	NE	NE		(e.g. number of wells drilled	2,650	NE	PJ	(e.g. PJ of oil produced)	745	NE	PJ	(e.g. PJ oil loaded in tankers)	745	NE	PJ	(e.g. PJ oil refined)
Canada	IE	IE		NA	2,650	23,015	10 <sup>-3</sup> m <sup>3</sup>	Conventional Oil, Heavy Oil and Crude Oil Production	11	0	m <sup>3</sup>	Convention, Heavy, and Crude Oil Production	NE	4,371	TJ	Energy Consumption of Refineries
Croatia	NE	NO		(specify)	2,650	NO	PJ	(e.g. PJ of oil produced)	745	NO	PJ	(e.g. PJ oil loaded in tankers)	135	NO	PJ	(e.g. PJ oil refined)
Czech Republic	NE	NE		(e.g. number of wells drilled	5,287	NE	PJ	(e.g. PJ of oil produced)	NO	NO		(e.g. PJ oil loaded in tankers)	1,150	IE	PJ	(e.g. PJ oil refined)
Denmark	IE	NA		(e.g. number of wells drilled	168	NA	10 <sup>-3</sup> m <sup>3</sup>	Oil produced	IE	NA	10 <sup>-3</sup> m <sup>3</sup>	Oil transported by pipelines	IE	NA		(e.g. PJ oil refined)
Estonia	0	NE	PJ	(specify)	4,000	NE	PJ	(e.g. PJ of oil produced)	745	NO	PJ	(e.g. PJ oil loaded in tankers)	NO	NE	PJ	(e.g. PJ oil refined)
European Community				(specify)				(specify)				(specify)				(specify)
Finland	NO	NO		(e.g. number of wells drilled	NO	NO		(e.g. PJ of oil produced)	NO	NO		kt oil loaded in tankers	37	102	kt	kt oil refined
France	NO	NO		(specify)	35,000	1,675,000	PJ	PJ Produced	NA	NA	PJ	PJ Loaded	43	872,139	PJ	PJ Refined
Germany	1	0	t	(crude oil)	NE	NE	t	(e.g. PJ of oil produced)	NE	NE		(e.g. PJ oil loaded in tankers)	0	NE	t	(crude oil & products)
Greece	NE	NE		(e.g. number of wells drilled)	1,450	270	10 <sup>-3</sup> m <sup>3</sup>	Crude oil and NGL production	NA	NA	PJ	Crude oil imports	880	NE	PJ	Refinery input (crude oil and NGL)
Hungary	IE	IE		(e.g. number of wells drilled	36,670	NO	PJ	oil produced	6	IE	10 <sup>-3</sup> m <sup>3</sup>	pipeline and tankers	1,400	NO	PJ	oil refined
Iceland	NO	NO		(specify)	NO	NO		(specify)	NO	NO		(specify)	NO	NO		(specify)
Ireland	NO	NO		(e.g. number of wells drilled	NO	NO		(e.g. PJ of oil produced)	NO	NO		(e.g. PJ oil loaded in tankers)	NO	NE		(e.g. PJ oil refined)
Italy	IE	IE			1,686	56,082	Gg	(Gg of oil produced)	NA	NA			24	15,573	Gg	(Gg oil refined)
Japan	203	4,275	number	number of wells drilled	1	0	10 <sup>-3</sup> l	oil produced	0	0	10 <sup>-3</sup> l	Oil & Condensate produced	91	NE	PJ	oil refined
Latvia	NO	NO	1000 number	(e.g. number of wells drilled	NO	NO	TJ	(e.g. PJ of oil produced)	NO	NO	TJ	(e.g. PJ oil loaded in tankers)	NO	NO	TJ	(e.g. PJ oil refined)
Liechtenstein	NO	NO		number of wells drilled	NO	NO		oil produced	NO	NO		oil loaded in tankers	NO	NO		oil refined
Lithuania	270	5,700	number	( wells drilled)	1,450	270	10 <sup>-3</sup> m <sup>3</sup>	(conventional oil production)	5	0	10 <sup>-3</sup> m <sup>3</sup>	oil transported by pipelines	745	NO	PJ	(e.g. PJ oil refined)
Luxembourg	NO	NO			NO	NO			NO	NO			NO	NO		
Monaco	0	0		(e.g. number of wells drilled	0	0		(e.g. PJ of oil produced)	-	-		(e.g. PJ oil loaded in tankers)	0	0		(e.g. PJ oil refined)
Netherlands	IE	IE		number of wells drilled/tested	IE	IE	10 <sup>-6</sup> m <sup>3</sup>	oil produced	NE	NE		(e.g. PJ oil loaded in tankers)	133	NA	PJ	Refery input: crude oil, NGL
New Zealand	NE	NE		(e.g. number of wells drilled	NE	NE		(e.g. PJ of oil produced)	1	NE	TJ	(e.g. PJ oil loaded in tankers)	1	NE	TJ	(e.g. PJ oil refined)
Norway	IE	IE		number of wells drilled	IE	IE		oil produced	NA	NA	PJ	Oil loaded	4,354	1,630,171	PJ	Oil refined
Poland	NE	NE			61,800	6,315,000	PJ		1	6	Gg		NE	NE		
Portugal	NO	NO			NO	NO			60,000	1,100,000	Mt	Consumption of crude	77,855	28,142,771	Mt	Production (crude and other materials)
Romania				(specify)	300	NE	PJ	(e.g. PJ of oil produced)	745	NE	PJ	(e.g. PJ oil loaded in tankers)	110	NE	PJ	(e.g. PJ oil refined)
Russian Federation	NE	NE		number of wells drilled	110,955	NE	Mt	oil produced	31,235	NE	Mt	(oil transported in pipelines)	36,845	NE	Mt	oil refined
Slovakia	NO	NO		(e.g. number of wells drilled)	36,053	NO	PJ	production	130	NO	PJ	transport of crude oil (transfer)	130	NO	PJ	refinin/storage
Slovenia	NO	NO		(e.g. number of wells drilled	NO	NO	TJ	(e.g. PJ of oil produced)	NO	NO		(e.g. PJ oil loaded in tankers)	NO	NO	TJ	(e.g. PJ oil refined)
Spain	NE	NE			0	NE	Mg	Crude oil produced	27	NE	Gg	Transport of crude oil	1	31,910	Gg	Oil refined
Sweden	NO	NO			NO	NO			NE	NE		(e.g. PJ oil loaded in tankers)	13,242	NA	Mt	(e.g. PJ oil refined)
Switzerland	NO	NO		(specify)	NO	NO		(specify)	NO	NO		(specify)	1,042	31,387	PJ	Crude oil used
Turkey	NE	NE		(e.g. number of wells drilled	NE	NE		(e.g. PJ of oil produced)	NE	NE		(e.g. PJ oil loaded in tankers)	NE	NE		(e.g. PJ oil refined)
Ukraine	NE	NE	number	number of wells drilled	4,500	NE	PJ	Oil and natural gas liquids produced	5	0	10 <sup>-3</sup> m <sup>3</sup>	Crude oil transported by pipeline	1,200	NE	PJ	Oil refined
United Kingdom	56,734	4,385,567	number	Wells drilled	476	108,972	PJ	Oil and gas produced	84	NO	Gg	Offshore loading of oil only	421	NO	PJ	Oil refinery throughput
United States	IE	NE		(e.g. number of wells drilled)	599,605	NE	10 <sup>-6</sup> Bbl(oil US)	(e.g. PJ of oil produced)	926	NE	10 <sup>-6</sup> Bbl(oil US)	(e.g. PJ oil loaded in tankers)	4,923	NE	10 <sup>-6</sup> Bbl(oil US)	(e.g. PJ oil refined)

<sup>a</sup> The units of the implied emission factors (IEF) vary from Party to Party depending on the unit of the activity data used. The unit of the IEF is kg/unit of activity data.<sup>b</sup> Source of emissions factors: IPCC Guidelines, vol. 3, pages 1.119–1.121. For updated detailed emission factors on CH<sub>4</sub> and implied emissions factors on CO<sub>2</sub> and N<sub>2</sub>O also look at the IPCC good practice guidance, table 2.16, pages 2.86–2.87.

Table 1.51c

Fugitive emissions from fuels: oil and natural gas - natural gas, CH<sub>4</sub>, CO<sub>2</sub> (2004)

	Natural Gas														
	Production (P) / Processing (Pr)				Transmission				Distribution				Other leakage		
	CH <sub>4</sub> IEF <sup>a</sup>	CO <sub>2</sub> IEF	Activity data		CH <sub>4</sub> IEF <sup>a</sup>	CO <sub>2</sub> IEF	Activity data		CH <sub>4</sub> IEF <sup>a</sup>	CO <sub>2</sub> IEF	Activity data		CH <sub>4</sub> IEF <sup>a</sup>	CO <sub>2</sub> IEF	Activity data
	Value		Unit	Description	Value		Unit	Description	Value		Unit	Description	Value		Description
IPCC default EF <sup>b</sup>	15,000-314,000 (P) 288,000-628,000 (Pr)		PJ	Gas produced	57,000 - 628,000		PJ	Gas consumed/produced	57,000 - 628,000		PJ	Gas consumed/produced	0 - 384,000		PJ Gas consumed
Australia	533	IE	PJ	Gas produced	9,617	551	PJ	Gas transmitted	158,010	9,157	PJ	Utility sales	NE	NE	NE
Austria	IE	44,829	10 <sup>6</sup> m <sup>3</sup>	Gas throughput (a)	2,900	25	km	Pipelines length (km)	637	NA	km	Distribution network length	NO	NO	PJ (e.g. PJ gas consumed)
Belarus	288,000	NA	PJ	PJ gas produced	9,435	NA	PJ	PJ gas consumed	IE	NA		PJ gas consumed	84,480	NA	PJ PJ gas consumed
Belgium	NE	NE			3,756	2,057	PJ	(e.g. PJ gas consumed)	27,300	784	PJ	PJ gas consumed			
Bulgaria	83,682	NE	PJ	(e.g. PJ gas produced)	11,974	NE	PJ	(e.g. PJ gas consumed)	6,313	NE	PJ	(e.g. PJ gas consumed)	274,121	NE	PJ (e.g. PJ gas consumed)
Canada	1,553	32,778	10 <sup>6</sup> m <sup>3</sup>	Gross New Production of Natural Gas (also includes oil and Gas Well Drilling and Servicing)	3,230	24	km	Pipeline Distance	744	NE	km	Pipeline Distance - leakage	995	195	(specify)
Croatia	458,000	NO	PJ	(e.g. PJ gas produced)	IE	NO	PJ	(e.g. PJ gas consumed)	IE	NO		(e.g. PJ gas consumed)	250,874	NO	(e.g. PJ gas consumed)
Czech Republic	39,365	NO	PJ	(e.g. PJ gas produced)	5,850	NO	PJ	(e.g. PJ gas consumed)	120,177	NO	PJ	(e.g. PJ gas consumed)	NE	NO	PJ (e.g. PJ gas consumed)
Denmark	IE	NA	10 <sup>6</sup> m <sup>3</sup>	Gas produced	23	NA	10 <sup>6</sup> m <sup>3</sup>	Gas transmission	43	NA	10 <sup>6</sup> m <sup>3</sup>	Gas distributed	NO	NO	Incl. in transmission
Estonia	NO	NE	PJ	(e.g. PJ gas produced)	458,000	NO	PJ	(e.g. PJ gas consumed)	NO	NO	PJ	(specify)	272,525	NE, NO	PJ (specify)
European Community				(specify)				(specify)				(specify)		NA	(specify)
Finland	NO	NO		(e.g. PJ gas produced)	2,085	5,735	PJ	PJ gas consumed	240,385	661,058	PJ	PJ gas distributed via local	NO	NO	t of natural gas released
France	52,852	NA	PJ	PJ Production	NA	NA	PJ	PJ Consumed	NO	NO		(specify)	NO	NO	(specify)
Germany	62	0	TJ	(natural gas from crude oil	9	NO	TJ	(total amount of gas	439	NO	km	(distribution net)	42	NE, NO	TJ (gas consumed)
Greece	317	101	10 <sup>6</sup> m <sup>3</sup>	Natural gas production	2,569	16	km	Length of transmission pipeline	615	NA	km	Length of distribution mains	NE	NE	(e.g. PJ gas consumed)
Hungary	91,977	NO	PJ	gas produced	121,460	NO	PJ	gas consumed	IE	NO		(e.g. PJ gas consumed)	NO	NO	(e.g. PJ gas consumed)
Iceland	NO	NO		(specify)	NO	NO		(specify)	NO	NO		(specify)	NO	NO	(specify)
Ireland	18,344	2,467,811	PJ	PJ of Gas produced	IE	IE		(e.g. PJ gas consumed)	57,552	NO	PJ	PJ of gas consumed	NO	NO	PJ (e.g. PJ gas consumed)
Italy	2,719	1,895	10 <sup>6</sup> m <sup>3</sup>	(Mm3 gas produced)	377	NA	10 <sup>6</sup> m <sup>3</sup>	(Mm3 gas transported)	6,559	NA	10 <sup>6</sup> m <sup>3</sup>	(Mm3 gas transported)	IE	IE	
Japan	4	0	10 <sup>3</sup> m <sup>3</sup>	gas produced	363	NA	km	Pipelines length	1,150	NA	PJ	LNG & NG Consumption with Town Gas Production	NE	NE	not estimated
Latvia	NO	NO	TJ	(e.g. PJ gas produced)	C	NA	TJ	(e.g. PJ gas consumed)	C	NA	TJ	(e.g. PJ gas consumed)	C	NO	(specify)
Liechtenstein	NO	NO		gas produced	NO	NO		gas consumed	418	NO	TJ	gas consumed	IE	NO	(specify)
Lithuania	NO	NO	PJ	(e.g. PJ gas produced)	2,500	16	km	( transmission pipeline)	615	NO	km	(distribution mains)	NE	NE	PJ (e.g. PJ gas consumed)
Luxembourg	NO	NO			56,231.88	NO	PJ		IE	IE	TJ		IE	IE	
Monaco	0	0		(e.g. PJ gas produced)	0	0		(e.g. PJ gas consumed)	0	0		(e.g. PJ gas consumed)	0	0	(e.g. PJ gas consumed)
Netherlands	IE	NO	PJ	gas produced	2,335	NO	PJ	gas transported	108,492	3,375	10 <sup>3</sup> km	natural gas distribution network	IE	NE	
New Zealand	NE	NE		(e.g. PJ gas produced)	IE	IE	TJ	(e.g. PJ gas consumed)	246	30	TJ	(e.g. PJ gas consumed)	NE	NE	(e.g. PJ gas consumed)
Norway	IE	IE		gas produced	IE	IE		gas consumed	IE	IE		gas consumed	NE	NE	(specify)
Poland	96,416	54,882	PJ		137,034	520	PJ		313,199	1,174	PJ		NE	NE	
Portugal	NO	NO			3,895	10,617	Gg	gas consumed	IE	IE	Gg	gas consumed	IE	IE	
Romania	288,000	NE	PJ	(e.g. PJ gas produced)	364,300	NE	PJ	(e.g. PJ gas consumed)				(specify)	156,733	NE	PJ (e.g. PJ gas consumed)
Russian Federation	3,133	NE	10 <sup>6</sup> m <sup>3</sup>	gas produced	NE	NE		(specif)	NE	NE		(specif)	NE	NE	
Slovakia	227,216	NO	PJ	production	2,900	NO	km	transfer	710	NO	km	distribution	IE	NO	PJ consumed
Slovenia	39	NA	TJ	(e.g. PJ gas produced)	287	NA	km	(e.g. PJ gas consumed)	287	NA	km	(e.g. PJ gas consumed)	49	NA, NE	(e.g. PJ gas consumed)
Spain	70,889	NE	PJ	PJ gas produced (NCV)	797	11	PJ	PJ gas (NCV)	19,367	262	PJ	PJ gas consumed (NCV)	NE	NE	(e.g. PJ gas consumed)
Sweden	NO	NO			NO	NO	TJ	Pressure levelling losses	NO	NO		(e.g. PJ gas consumed)	NO	NO	
Switzerland	NO	NO		(specify)	402	2,321	km	See documentation box	IE	IE		(specify)	IE	IE	(specify)
Turkey	NA	NA		(e.g. PJ gas produced)	NE	NE		(e.g. PJ gas consumed)	NE	NE		(e.g. PJ gas consumed)			(e.g. PJ gas consumed)
Ukraine	2,900	95	10 <sup>6</sup> m <sup>3</sup>	Natural Gas Produced	5,859,855	NE	10 <sup>3</sup> km	Length of natural gas transmission pipeline	820,000	NE	10 <sup>3</sup> km	Length of natural gas distribution network	245,080	NE	(specify)
United Kingdom	IE	NE		(e.g. PJ gas produced)	IE	NE		(e.g. PJ gas consumed)	774,234	NE	PJ	Gas consumed	NE	NE	(e.g. PJ gas consumed)
United States of America	134,853	NE	10 <sup>9</sup> ft <sup>3</sup>	(e.g. PJ gas produced)	81,459	IE	10 <sup>9</sup> ft <sup>3</sup>	(e.g. PJ gas consumed)	57,578	NE	10 <sup>9</sup> ft <sup>3</sup>	(e.g. PJ gas consumed)	IE	IE	(e.g. PJ gas consumed)

<sup>a</sup> The units of the implied emission factors (IEF) vary from Party to Party depending on the unit of the activity data used. The unit of the IEF is kg/unit of activity data.<sup>b</sup> Source of emissions factors: IPCC Guidelines, vol. 3, pages 1.119–1.121. For updated detailed emission factors on CH<sub>4</sub> and implied emissions factors on CO<sub>2</sub> and N<sub>2</sub>O also look at the IPCC good practice guidance, table 2.16, pages 2.86–2.87.

Table 1.51d

Fugitive emissions from fuels: oil and natural gas - venting and flaring, CH<sub>4</sub>, CO<sub>2</sub> (2004)

	Venting and flaring																				
	Oil						Gas						Combined								
	Venting			Flaring			Venting			Flaring			Venting			Flaring					
	CH <sub>4</sub> IEF <sup>a</sup> value	Activity data		CH <sub>4</sub> IEF <sup>a</sup> value	CO <sub>2</sub> IEF	Activity data		CH <sub>4</sub> IEF <sup>a</sup> value	Activity data		CH <sub>4</sub> IEF <sup>a</sup> value	CO <sub>2</sub> IEF	Activity data		CH <sub>4</sub> IEF <sup>a</sup> value	Activity data		CH <sub>4</sub> IEF <sup>a</sup> value	CO <sub>2</sub> IEF	Activity data	
	unit	Description			unit	Description		unit	Description			unit	Description		unit	Description			unit	Description	
IPCC default EF <sup>b</sup>	1,000 -3,000	PJ	Oil produced	1,000 -3,000		PJ	Oil produced	6,000 -209,000	PJ	Gas produced	6,000 -209,000		PJ	Gas produced	3,000 -14,000	PJ	Oil produced	3,000 -14,000		PJ	Oil and gas produced
Australia	NA		NA	IE	IE		IE	41,462	PJ	PJ gas produced	IE	IE		IE	NA		NA	10,259	810,835	PJ	PJ gas and oil produced
Austria	IE		(specify)	IE	IE		(specify)	IE		(specify)	IE	IE		(specify)	IE		(specify)	IE	IE		(specify)
Belarus	NE		PJ oil produced	NE	NE		PJ gas consumption	6,000		PJ gas produced	IE	NA		PJ gas consumption	NE		NE	NE	NE		
Belgium	NA			NE	IE			NA			NE	IE			NA		NE				
Bulgaria	2,000	PJ	(e.g. PJ oil produced)	9	NE	PJ	(e.g. PJ gas consumption)	18,000	PJ	(e.g. PJ gas produced)	329	NE	PJ	(e.g. PJ gas consumption)	NE		NE	NE	NE		
Canada	7,483	m <sup>3</sup>	Conventional oil, Heavy Oil, and Crude Oil Production	1,389	1,801,216	10 <sup>6</sup> m <sup>3</sup>	Flared Gas and Flare	851	10 <sup>6</sup> m <sup>3</sup>	gross new production of natural Gas	171	261,269	10 <sup>6</sup> m <sup>3</sup>	Flared Gas and Flare	267,435,105	m <sup>3</sup>	Number of Wells Drilled (Number)	32,107,229	49,571,307,533	m <sup>3</sup>	Number of Wells Drilled (Number)
Croatia	NO	PJ	(e.g. PJ oil produced)	IE	NO		(e.g. PJ gas consumption)	18,000	PJ	(e.g. PJ gas produced)	IE	NO		(e.g. PJ gas consumption)	NO		NO	NO			
Czech Republic	NE		(e.g. PJ oil produced)	NE	NE		(e.g. PJ gas consumption)	NE		(e.g. PJ gas produced)	NE	NE		(e.g. PJ gas consumption)	NE		NE	NE	NE		
Denmark	NO		(e.g. PJ oil produced)	0	57	GJ	Refinery gas consumption	IE		Incl. in transmission	0	57	GJ	Gas consumption	NO		NO	NO			
Estonia	4,000	PJ	(e.g. PJ oil produced)	NE	NE	PJ	(specify)	NO	PJ	(e.g. PJ gas produced)	NE	NE	PJ	(specify)	NO	PJ	(specify)	NE	NE	PJ	(specify)
European Community			(specify)				(specify)			(specify)				(specify)							(specify)
Finland	NO	kt	kt oil refined	0	4,794	kt	kt oil refined	NO		(e.g. PJ gas produced)	NO	NA		(e.g. PJ gas consumption)	NO		NO				
France	NO		(specify)	NE	89,557	PJ	PJ Consumed	NO		(specify)	IE	IE		(specify)	NO		(specify)	524,058	39,420,290	PJ	PJ Consumed
Germany	IE		(e.g. PJ oil produced)	IE	IE		(e.g. PJ gas consumption)	IE		(e.g. PJ gas produced)	IE	IE		(natural gas)	IE		IE	IE			
Greece	5,002	10 <sup>3</sup> m <sup>3</sup>	Crude oil and NGL production	135	67,000	10 <sup>3</sup> m <sup>3</sup>	Crude oil and NGL production	192,000	10 <sup>6</sup> m <sup>3</sup>	Sour Natural gas production	17	2,720	10 <sup>6</sup> m <sup>3</sup>	Natural gas production	NO		NO	NO			
Hungary	2,011	PJ	(e.g. PJ oil produced)	NE	NE		(e.g. PJ gas consumption)	24,911	PJ	(e.g. PJ gas produced)	NE	NE		(e.g. PJ gas consumption)	NA		(specify)	NA	NA		(specify)
Iceland	NO		(specify)	NO	NO		(specify)	NO		(specify)	NO	NO		(specify)	NO		(specify)	NO	NO		(specify)
Ireland	NO		(e.g. PJ oil produced)	NO	NO		(e.g. PJ gas consumption)	IE		(e.g. PJ gas consumed)	NO	NO	PJ	quantity of gas flared	NO			NO	NO		
Italy	IE			6,175	2,541,500	10 <sup>6</sup> m <sup>3</sup>	(Mm3 gas consumption)	IE			IE	IE			NO		NO	NO			
Japan	1	10 <sup>3</sup> l	oil produced	0	67	10 <sup>3</sup> l	oil produced	IE	km	pipeline length	0	4	10 <sup>3</sup> m <sup>3</sup>	gas produced	IE		included elsewhere	IE	IE		included elsewhere
Latvia	NO	PJ	(e.g. PJ oil produced)	NO	NO	PJ	(e.g. PJ gas consumption)	NO	PJ	(e.g. PJ gas produced)	NO	NO	PJ	(e.g. PJ gas consumption)	NO	PJ		NO	NO	PJ	
Liechtenstein	NO		oil produced	NO	NO		gas consumed	NO		gas produced	NO	NO		gas consumed	NO		gas produced	NO	NO		Gas/Oil Produced
Lithuania	1,381	10 <sup>3</sup> m <sup>3</sup>	(conventional oil production and oil transported by tanker truck )	138	67000.00	10 <sup>3</sup> m <sup>3</sup>	(conventional oil production	1,000	km	( transmission pipeline)	NO	NO	PJ	(e.g. PJ gas consumption)	NO	PJ		NO	NO	PJ	
Luxembourg	NO			NO	NO			NO			NO	NO			NO		NO	NO			
Monaco	0		(e.g. PJ oil produced)	0	0		(e.g. PJ gas consumption)	0		(e.g. PJ gas produced)	0	0		(e.g. PJ gas consumption)	0		0	0			
Netherlands	IE	10 <sup>6</sup> m <sup>3</sup>	oil produced	IE	IE	10 <sup>6</sup> m <sup>3</sup>	oil produced	IE	PJ	gas produced	IE	IE	PJ	gas produced	6,389		IE	IE			
New Zealand	IE		(e.g. PJ oil produced)	IE	IE		(e.g. PJ gas consumption)	IE		(e.g. PJ gas produced)	391	538,333	TJ	(e.g. PJ gas consumption)	IE		IE	IE	TJ		venting & flaring from oil & gas
Norway	IE		(e.g. PJ oil produced)	NE	75,650,118	PJ	Oil flared	IE		(e.g. PJ gas produced)	31,816	57,100,731	PJ	Gas flared	1,651	PJ	Oil and gas produced	IE	IE		
Poland	NE			NE	NE			NE			NE	NE			NE		NE	NE			
Portugal	8	Mt	Oil refined	IE	IE			NO			IE	IE			NO		IE	IE			
Romania		PJ	(e.g. PJ oil produced)				(e.g. PJ gas consumption)	18,000	PJ	(e.g. PJ gas produced)	IE	NE		(e.g. PJ gas consumption)							(specify)
Russian Federation	NE		oil produced	NE	NE		gas consumed	IE		gas produced	NE	NE		gas consumed	NE		(oil produced)	119	1,925,000	10 <sup>6</sup> m <sup>3</sup>	(Associated gas flaring)
Slovakia	6,490	PJ	production	6,490	NO	PJ	production	1,200	km	transfer	4,424	NO	PJ	production	NO		NO	NO			
Slovenia	NE		(e.g. PJ oil produced)	NE	NE		(e.g. PJ gas consumption)	NE		(e.g. PJ gas produced)	NE	NE		(e.g. PJ gas consumption)	NE		NE	NE			
Spain	NE		(e.g. PJ oil produced)	1	3,212	Gg	(e.g. PJ gas consumption)	16,952,041	PJ	(e.g. PJ gas produced)	5,415	55,999,953	PJ	(e.g. PJ gas consumption)	NE		NE	NE			
Sweden	NE		(e.g. PJ oil produced)	1	59,520	TJ	Refinery gas other liquid fuels	NE		(e.g. PJ gas produced)	NE	NE		(e.g. PJ gas consumption)	NE		NA	NA			
Switzerland	IE		(specify)	81	192,130	PJ	Crude oil used	IE		(specify)	NO	NO		(specify)	NO		(specify)	NO	NO		(specify)
Turkey	0		(e.g. PJ oil produced)				(e.g. PJ gas consumption)			(e.g. PJ gas produced)	0.00	0.00		(e.g. PJ gas consumption)	0.00		0.00	0.00			
Ukraine	NE		(e.g. PJ oil produced)	IE	IE		(e.g. PJ gas consumption)	NE		(e.g. PJ gas produced)	11	1,800	10 <sup>6</sup> m <sup>3</sup>	Natural Gas Produced	NE		NE	NE			
United Kingdom	IE		(e.g. PJ oil produced)	IE	IE		(e.g. PJ gas consumption)	IE		(e.g. PJ gas produced)	IE	IE		(e.g. PJ gas consumption)	NA		250,980	66,883,586	PJ	Gas consumption	
United States of Amer	IE		(e.g. PJ oil produced)	IE	IE		(e.g. PJ gas consumption)	IE		(e.g. PJ gas produced)	IE	IE		(e.g. PJ gas consumption)	IE		IE	54,706,667	10 <sup>12</sup> Btu		

<sup>a</sup> The units of the implied emission factors (IEF) vary from Party to Party depending on the unit of the activity data used. The unit of the IEF is kg/unit of activity data.<sup>b</sup> Source of emissions factors: IPCC Guidelines, vol. 3, pages 1.119–1.121. For updated detailed emission factors on CH<sub>4</sub> and implied emissions factors on CO<sub>2</sub> and N<sub>2</sub>O also look at the IPCC good practice guidance, table 2.16, pages 2.86–2.87.

**Table 1.52a**

**Fugitive emissions from fuels: CO<sub>2</sub> emissions from oil and natural gas - trend information**

CO <sub>2</sub> emissions (Gg)			Relative change (%)												
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004	
Australia	5,982	5,731	-3.9	3.2	-6.9	-3.3	4.3	8.3	12.6	6.6	-6.5	-10.5	-4.4	-4.2	
Austria	102	210	8.8	-0.4	-44.1	69.7	17.7	20.2	-3.5	11.1	-8.6	39.5	-9.9	105.9	
Belarus	NA, NE, NO	NA, NE, NO	*	*	*	*	*	*	*	*	*	*	*	*	
Belgium	85	147	-2.4	0.0	10.7	1.1	6.4	10.0	48.9	-11.5	-0.1	0.9	0.0	72.0	
Bulgaria	NA, NE	NA, NE, NO	*	*	*	*	*	*	*	*	*	*	*	*	
Canada	10,551	16,355	1.1	8.6	6.4	-0.3	11.3	-10.7	3.7	2.4	2.1	-0.5	-0.2	55.0	
Croatia	416	710	9.6	15.2	-7.6	-6.9	-1.8	-10.8	20.5	8.6	-3.2	2.8	3.8	70.7	
Czech Republic	IE, NE, NO	IE, NE, NO	*	*	*	*	*	*	*	*	*	*	*	*	
Denmark	263	608	96.6	-21.9	9.6	41.1	-25.3	112.6	-33.8	6.6	-15.5	2.7	10.7	130.9	
Estonia	NA, NO	NE, NO	*	*	*	*	*	*	*	*	*	*	*	*	
European Community	17,222	16,023	0.0	2.9	0.9	-7.4	-3.5	-4.7	-1.7	-0.4	-3.4	0.9	1.5	-7.0	
Finland	226	116	-4.9	4.0	-10.1	28.1	-27.8	-10.1	-1.3	-6.3	3.4	-3.7	-4.5	-48.4	
France	4,508	4,425	6.3	-12.9	1.4	5.1	-2.2	-3.7	1.7	3.1	-7.0	-1.5	12.2	-1.8	
Germany	0	0	10.5	2.4	6.3	-1.3	-1.8	5.2	-4.2	0.7	3.6	-9.9	3.9	19.8	
Greece	70	11	1.0	-14.4	12.6	-10.2	-30.6	-94.7	1,573.0	-29.4	4.7	-34.9	-1.3	-83.7	
Hungary	IE, NA, NE, NO	IE, NA, NE, NO	*	*	*	*	*	*	*	*	*	*	*	*	
Iceland	NA, NE, NO	NA, NE, NO	*	*	*	*	*	*	*	*	*	*	*	*	
Ireland	139	71	2.5	2.5	-3.6	-12.3	-23.5	8.5	-39.5	89.2	-51.2	-10.0	21.1	-48.7	
Italy	3,341	2,150	-2.3	-1.6	-4.4	6.9	-3.9	-22.9	7.5	-5.6	-7.4	25.4	-24.1	-35.7	
Japan	37	35	46.5	-0.4	-3.1	-2.8	-10.9	-10.9	-5.3	-10.0	-4.6	11.4	1.6	-4.4	
Latvia	NE, NO	NA, NE, NO	*	*	*	*	*	*	*	*	*	*	*	*	
Liechtenstein	NA, NO	NA, NO	*	*	*	*	*	*	*	*	*	*	*	*	
Lithuania	1	25	159.8	37.1	23.7	36.5	28.0	-14.5	36.2	48.9	-7.9	-11.9	-21.0	2,268.5	
Luxembourg	IE, NE, NO	IE, NE, NO	*	*	*	*	*	*	*	*	*	*	*	*	
Monaco	NA	NA	*	*	*	*	*	*	*	*	*	*	*	*	
Netherlands	775	125	-8.6	-13.2	-13.0	28.8	-37.3	-29.3	22.0	-36.3	4.5	-17.9	-14.0	-83.8	
New Zealand	621	883	13.9	-6.1	2.0	8.1	-3.9	-6.6	-6.7	7.0	-4.0	6.8	37.1	42.1	
Norway	2,626	2,641	-20.9	-1.2	13.1	-6.0	3.7	21.7	5.6	-8.4	-14.3	-2.6	-5.7	0.6	
Poland	50	245	-1.0	3.8	10.1	-8.2	22.3	18.5	47.9	17.4	-5.2	3.8	15.8	390.9	
Portugal	115	833	1.6	36.0	-9.8	23.4	-2.4	-4.7	-2.2	29.4	5.6	13.4	-0.5	623.4	
Romania	NE	NA, NE	*	*	*	*	*	*	*	*	*	*	*	*	
Russian Federation	19,063	24,020	3.6	9.7	1.4	10.0	0.1	9.7	-0.3	1.6	49.8	-2.4	15.8	26.0	
Slovakia	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*	
Slovenia	NE, NO	NA, NE, NO	*	*	*	*	*	*	*	*	*	*	*	*	
Spain	1,744	2,177	-2.2	-11.2	-1.8	2.8	4.8	-3.0	12.5	-5.9	4.0	-10.9	13.7	24.9	
Sweden	93	47	-30.0	18.0	-45.1	37.9	1.9	-16.6	50.9	-12.8	20.2	-3.6	-34.6	-49.0	
Switzerland	139	107	-2.4	-1.7	7.5	-2.6	-2.4	-4.5	-3.0	3.5	-3.6	-10.7	5.2	-23.4	
Turkey	0	0	*	*	*	*	*	*	*	*	*	*	*	*	
Ukraine	53	37	-13.3	-0.9	1.4	-1.5	-0.9	0.7	-1.1	2.7	1.7	2.7	2.3	-30.1	
United Kingdom	5,760	5,100	-1.1	21.2	5.7	-26.6	-1.5	-4.3	-9.4	-1.7	0.7	-4.9	-2.9	-11.5	
United States of America	5,805	6,034	1.2	31.0	-5.1	-7.7	-16.6	5.7	-16.9	5.6	1.8	-1.8	-0.9	3.9	

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

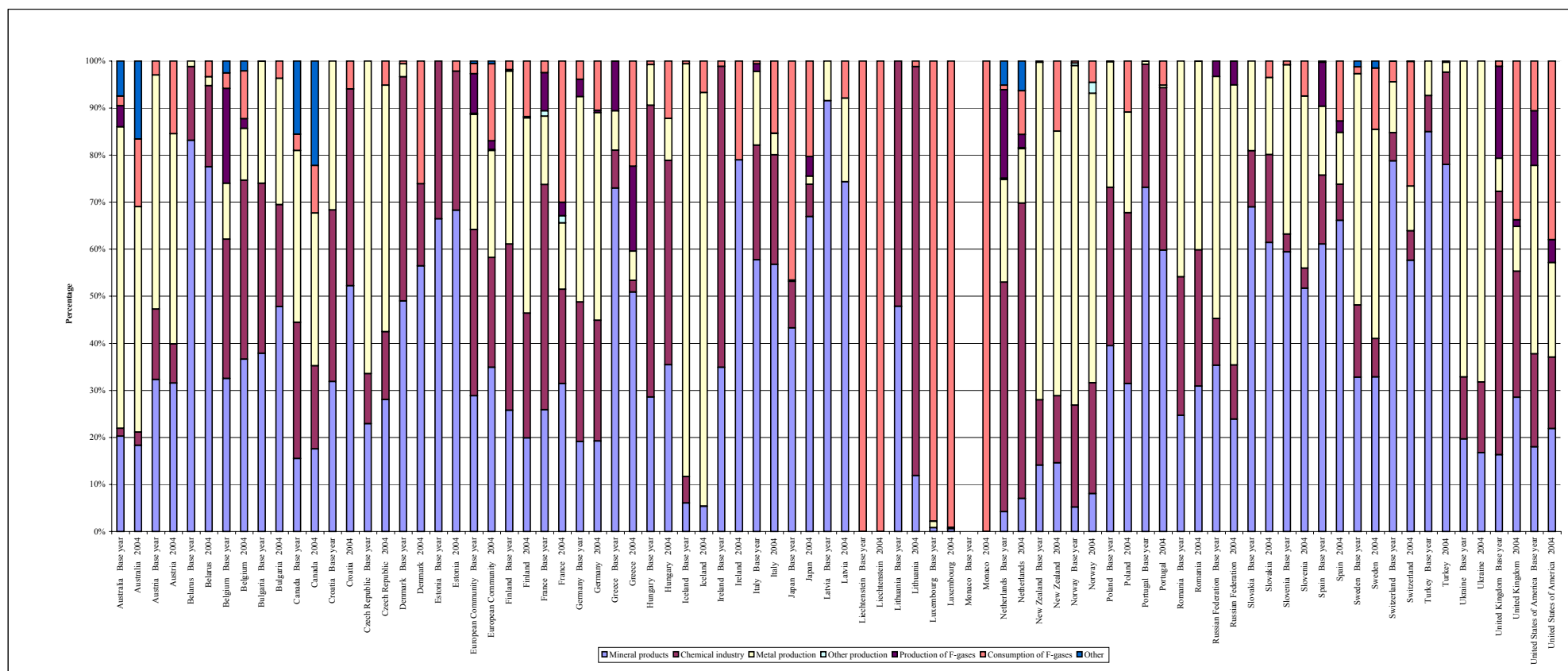
**Table 1.52b****Fugitive emissions from fuels: CH<sub>4</sub> emissions from oil and natural gas - trend information**

CH <sub>4</sub> emissions (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	331	201	-10.1	19.8	-8.5	4.1	-2.9	-16.9	8.2	2.2	-5.9	-23.4	-2.2	-39.5
Austria	18	31	4.2	5.3	5.9	3.7	2.2	4.1	2.8	1.5	3.9	2.2	8.0	74.5
Belarus	59	78	-10.1	-4.1	8.4	8.8	-3.9	-2.2	6.9	0.5	0.9	3.9	6.1	32.4
Belgium	25	20	-0.9	1.0	-2.8	-5.4	-3.5	0.3	-3.0	-1.7	-4.7	-4.6	3.6	-21.0
Bulgaria	61	27	-6.2	14.8	1.3	-11.9	-9.3	-16.0	34.1	-8.1	-9.1	2.2	10.2	-56.3
Canada	1,469	2,338	3.9	6.5	7.2	3.6	2.1	-1.5	5.6	1.9	-1.7	1.0	0.7	59.2
Croatia	56	63	-8.6	1.0	4.5	6.0	-13.0	0.3	4.7	11.7	4.1	0.8	2.1	12.2
Czech Republic	43	27	-14.8	0.0	8.3	-1.8	5.2	-2.3	-5.0	-6.2	2.8	-9.0	-7.1	-37.0
Denmark	2	5	21.0	15.4	-3.9	10.3	0.1	14.2	6.9	0.2	3.3	1.9	20.5	156.6
Estonia	38	24	-0.3	15.3	10.6	-2.6	-5.5	-2.6	14.8	7.5	-16.1	10.3	17.7	-36.8
European Community	1,461	1,149	0.5	-4.0	-0.9	-3.9	-0.2	-3.5	-2.3	0.9	-1.5	-6.5	-3.3	-21.3
Finland	1	3	272.6	-0.5	3.4	-13.2	1.8	-19.0	-6.8	23.1	-15.8	7.9	-10.6	393.1
France	122	91	-3.6	-4.5	-4.9	-0.5	-0.2	-0.7	-0.1	-0.7	-0.6	-0.7	-0.6	-25.5
Germany	334	339	5.4	-12.2	4.1	-3.0	-0.8	-1.2	-1.5	1.9	-1.8	0.0	-3.0	1.7
Greece	4	7	-3.1	-6.2	94.9	5.7	12.7	-16.6	27.8	0.8	-0.5	4.6	0.5	58.2
Hungary	56	73	4.8	7.2	2.7	1.4	1.2	0.0	-3.3	0.3	0.8	-4.7	-0.2	29.4
Iceland	NA, NE, NO	NA, NE, NO	*	*	*	*	*	*	*	*	*	*	*	*
Ireland	7	4	-3.2	-2.6	-2.9	-3.4	-11.1	-2.4	-3.6	1.3	-20.3	673.9	-87.7	-48.0
Italy	346	268	-0.6	-3.6	-1.5	-0.4	1.2	-2.9	-2.3	-5.3	-2.9	-1.5	-2.6	-22.7
Japan	11	15	11.1	-0.5	-0.7	2.7	-1.8	-0.6	4.8	-1.7	8.2	3.2	4.4	37.5
Latvia	13	6	-3.7	-2.6	-3.6	-6.7	-4.1	-4.7	-7.5	-3.0	4.3	-21.8	-1.1	-52.4
Liechtenstein	0	0	18.1	8.7	9.9	3.9	9.0	7.0	4.2	7.2	5.3	5.9	5.3	188.5
Lithuania	7	11	1.6	9.5	3.0	3.5	9.1	-0.9	4.6	7.4	-1.0	-0.3	-1.3	53.4
Luxembourg	1	3	6.9	17.4	6.9	2.1	1.0	6.7	2.4	3.3	27.1	0.7	4.3	122.1
Monaco	NA	NA	*	*	*	*	*	*	*	*	*	*	*	*
Netherlands	78	34	0.1	-0.2	-7.4	-33.9	1.0	-14.2	-7.1	-1.5	-4.6	-0.5	-6.2	-57.0
New Zealand	15	18	-4.5	-3.2	-0.1	16.3	6.5	12.1	-3.0	6.3	-1.2	2.0	-6.5	22.9
Norway	15	34	11.4	-1.7	4.1	11.9	-6.1	-6.0	18.1	14.9	-9.8	-6.8	8.8	125.0
Poland	196	241	-9.0	10.7	4.6	-0.8	1.6	-4.5	10.3	4.9	-3.5	10.1	6.0	22.8
Portugal	2	20	-8.5	-4.6	-8.6	113.3	82.4	29.8	-5.8	165.9	18.2	16.5	-39.6	1,080.8
Romania	1,091	395	-16.2	1.2	0.1	-18.9	-2.1	-6.6	-1.3	-3.5	-0.5	4.5	-0.8	-63.8
Russian Federation	12,608	10,124	-9.3	-2.0	1.0	-5.0	-7.5	2.6	1.0	-1.5	1.8	3.6	0.3	-19.7
Slovakia	24	34	-0.6	9.6	2.1	0.8	6.8	-0.1	6.5	2.3	-3.2	6.5	-4.5	40.3
Slovenia	3	2	2.4	-5.2	-3.3	-4.5	-7.5	-3.2	-4.1	-5.4	-7.0	-3.6	-8.4	-40.7
Spain	30	40	13.9	2.8	-4.6	16.3	5.0	-26.1	11.4	10.4	9.0	-26.9	20.6	31.8
Sweden	0	0	-0.6	4.9	0.5	-0.1	0.0	-10.1	0.0	-2.4	9.0	-13.2	13.6	14.3
Switzerland	18	8	-5.1	-7.6	-8.1	-5.9	-2.0	3.1	-7.4	2.0	-10.9	-9.7	-1.3	-53.2
Turkey	0	0	*	*	*	*	*	*	*	*	*	*	*	*
Ukraine	1,489	1,107	-7.0	-4.6	1.9	-3.1	-7.0	2.6	-0.3	-0.8	0.5	7.1	0.8	-25.6
United Kingdom	491	286	-2.0	0.9	-2.8	-5.7	-2.1	-4.0	-4.9	0.6	-2.5	-26.0	4.0	-41.7
United States of America	7,674	6,879	0.5	-0.9	0.3	-0.9	-2.0	-3.1	2.8	-1.0	-0.5	-1.0	-4.1	-10.4

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

## Industrial Processes

**Figure 2.1**  
Contribution of subsectors to total GHG emissions in Industrial Processes<sup>a</sup>



<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 2.1**  
**Mineral products, CO<sub>2</sub> (base year)<sup>a</sup>**

	Methods and EF used <sup>b</sup>		Cement production				Lime production			
	Methods	EF	Key category	Share of national total (%)	Activity data (production)			Key category	Share of national total (%)	CO <sub>2</sub> IEF (t/t)
					Description <sup>c</sup>	Value (kt)	CO <sub>2</sub> IEF (t/t)			
IPCC default EF <sup>d</sup>							0.499 (cement)			
IPCC default EF <sup>e</sup>							0.51 (clinker)			0.59-0.86
Australia	T2	CS	L	0.8	Clinker production	6,205	0.56		0.2	0.68
Austria	CS, T1	CS, D	L	2.6	Clinker Production [kt]	3,694	0.55	L	0.5	0.77
Belarus	T1	D		0.8	Used clincer production data	1,905	0.51		0.7	0.79
Belgium			L	1.9	(e.g. cement or clinker production)	5,292	0.53	L	1.4	0.79
Bulgaria	CS, D, T1, T2	CR, D	L	1.5	Klinker - kt	3,855	0.52		0.8	0.79
Canada	D, T1, T2	CS, D, OTH	L	0.9	Clinker Production Data	10,510	0.52		0.3	0.77
Croatia	T2	D	L	3.3	(e.g. cement or clinker production)	2,018	0.51		0.5	0.79
Czech Republic	CS, D, T1, T2	CR, CS	L	1.3	(clinker production)	4,726	0.53		0.4	0.48
Denmark	CS	CS	L	1.3	Production of Cement	1,620	0.54		0.2	0.20
Estonia	CS, T1	CS	L	1.1	(e.g. cement or clinker production)	910	0.53		0.3	0.79
European Community	CR, CS, D, T1, T2	CR, CS, D, PS	L	1.9	(e.g. cement or clinker production)	NA	NA	L	0.4	NA
Finland	T1, T2	CS, D	L	1.1	clinker production	1,470	0.53		0.5	0.74
France			L	1.9	kt of Clinker	20,854	0.53	L	0.5	0.78
Germany	CS, D	CS, D	L	1.2	(clinker production)	28,577	0.53	L	0.5	0.80
Greece	CR, T1, T2	CR, CS, D	L	5.3	clinker production	10,645	0.54		0.3	0.75
Hungary	CS, D, T1, T2	CS, D, PS	L	1.4	clinker production	3,173	0.54		0.5	0.79
Iceland			L	1.5	clinker production	97	0.53		-	NO
Ireland	T1, T2	CS, PS	L	1.6	Clinker production	1,610	0.55		0.4	0.84
Italy	D, T2	CS, D, PS	L	3.1	( clinker production)	29,786	0.54	L	0.4	0.79
Japan	CS, D, T2	CS, D	L	3.0	Clinker produced	76,253	0.50	L	0.6	0.76
Latvia	CR, T2	CR, PS	L	1.3	(e.g. cement or clinker production)	659	0.53		0.5	0.31
Liechtenstein	NA	NA		-	Production	NO	NO		-	NO
Lithuania	T1, T2	D, PS	L	3.3	( clinker production)	3,058	0.51		0.5	0.80
Luxembourg	CR	PS	L	4.3	Clinker production	1,048	0.53		-	NO
Monaco				0.0		NO	NO		0.0	NO
Netherlands	CS	CS, D, PS		0.2	Clinker production	770	0.54		-	NE
New Zealand	D, T2	D, PS		0.6	Cement production	719	0.51		0.1	0.72
Norway	D	CS	L	1.3	Production quantity	1,244	0.52		0.1	
Poland	T1	CS, D	L	1.2	Cement production	13,387	0.53		0.6	0.8
Portugal	CR, D, OTH, T2	CR, CS, D, OTH	L	5.2	Total clinker production	6,128	0.51		0.3	0.66
Romania	CR, CS, D, OTH, T2	CR, D, PS	L	2.1	(e.g. cement production)	10,571	0.53	L	1.5	0.81
Russian Federation	D, T2	D	L	1.1	(clinker production)	65,830	0.52		0.4	0.73
Slovakia	T1	CS	L	2.0	Clinker Production	2,836	0.51	L	1.1	0.72
Slovenia	D, T2	CS, D	L	2.6	Clinker produced	951	0.54	L	1.1	0.75
Spain	CS, D, T2	CS, D, PS	L	4.4	Clinker production	23,212	0.54		0.4	0.76
Sweden	CS, D, T2	CS, D, PS	L	1.8	Produced amount of clinker	2,348	0.54	L	0.7	0.83
Switzerland	CR	CS	L	4.8	clinker production	4,808	0.53		0.1	0.56
Turkey	T1	D	L	6.1	clinker	20,252	0.51		0.4	0.91
Ukraine	T1, T2	CS, D	L	1.0	(e.g. cement or clinker production)	17,456	0.53		0.6	0.65
United Kingdom	T2	CS, D	L	0.9	clinker production kt	13,199	0.50		0.2	0.44
United States	CS, D	CS, D	L	0.5	clinker production	64,355	0.52		0.2	0.74

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

<sup>b</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 2.A Mineral products.

<sup>c</sup> The CRF requests Parties to specify the activity data used (e.g. cement or clinker) for estimating the emissions from cement production. The descriptions included in this column are as reported in the CRF by Parties.

<sup>d</sup> Source of default emission factors: IPCC Guidelines, volume 3, page 2.6.

<sup>e</sup> Source of default emission factors: IPCC good practice guidance, pages 3.13 and 3.22.

**Table 2.2**  
**Mineral products, CO<sub>2</sub> (2004)**

	Methods and EF used <sup>a</sup>		Cement production					Lime production		
	Methods	EF	Key category	Share of national total (%)	Activity data (production)			Key category	Share of national total (%)	CO <sub>2</sub> IEF (t/t)
					Description <sup>b</sup>	Value (kt)	CO <sub>2</sub> IEF (t/t)			
IPCC default EF <sup>c</sup>							0.499 (cement)			
IPCC default EF <sup>d</sup>							0.51 (clinker)			0.59-0.86
Australia	T2	CS	L, T	0.7	Clinker production	6,492	0.55		0.2	0.68
Austria	CS, T1	CS, D	L, T	1.9	Clinker Production [kt]	3,120	0.56	L	0.7	0.76
Belarus	T1	D	L, T	1.7	Used clincer production data	2,487	0.51		0.8	0.79
Belgium			L	1.9	(e.g. cement or clinker production)	5,201	0.55	L	1.5	0.80
Bulgaria	CS, D, T1, T2	CR, D	L, T	2.0	Klinker - kt	2,644	0.52	L, T	1.4	0.79
Canada	D, T1, T2	CS, D, OTH	L	0.9	Clinker Production Data	13,727	0.52		0.2	0.76
Croatia	T2	D	L, T	5.0	(e.g. cement or clinker production)	2,910	0.50		0.6	0.82
Czech Republic	CS, D, T1, T2	CR, CS	L	1.1	(clinker production)	3,017	0.55		0.4	0.48
Denmark	CS	CS	L, T	2.2	Production of Cement	2,861	0.54		0.2	0.15
Estonia	CS, T1	CS	L, T	1.7	(e.g. cement or clinker production)	698	0.53		0.1	0.79
European Community	CR, CS, D, T1, T2	CR, CS, D, PS	L	2.0	(e.g. cement or clinker production)	NA	NA	L	0.4	NA
Finland	T1, T2	CS, D	L, T	0.7	clinker production	1,064	0.53	L	0.6	0.74
France			L, T	1.6	kt of Clinker	17,157	0.53		0.5	0.78
Germany	CS, D	CS, D	L	1.4	(clinker production)	26,281	0.53	L, T	0.5	0.79
Greece	CR, T1, T2	CR, CS, D	L, T	4.6	clinker production	11,755	0.54		0.4	0.75
Hungary	CS, D, T2, T3	CS, D, PS	L	1.5	clinker production	2,495	0.52		0.4	0.79
Iceland			L	1.3	clinker production	94	0.53		-	NO
Ireland	T1, T2	CS, PS	L, T	3.3	Clinker production	4,283	0.53		0.3	0.82
Italy	D, T2	CS, D, PS	L	3.1	( clinker production)	33,049	0.54	L	0.5	0.80
Japan	CS, D, T2	CS, D	L, T	2.3	Clinker produced	62,653	0.50	L	0.5	0.76
Latvia	CR, T2	CR, PS	L	1.3	(e.g. cement or clinker production)	C	C	T	0.0	C
Liechtenstein	NA	NA		-	Production	NO	NO		-	NO
Lithuania	T1, T2	D, PS	L, T	1.6	( clinker production)	633	0.52		0.2	0.80
Luxembourg	CR	PS	L	3.5	Clinker production	847	0.53		-	NO
Monaco				0.0		NO	NO		0.0	NO
Netherlands	CS	CS, D, PS		0.2	Clinker production	804	0.55		-	NE
New Zealand	T1, T2	D, PS		0.6	Cement production	1,216	0.40		0.2	0.73
Norway	D	CS	L	1.3	Production quantity	1,324	0.55		0.2	
Poland	T1	CS, D	L	1.3	Cement production	9,621	0.53		0.4	0.8
Portugal	CR, D, OTH, T2	CR, CS, D, OTH	L, T	4.2	Total clinker production	6,980	0.51	T	0.5	0.74
Romania	CR, CS, D, OTH, T2	CR, D, PS	L	1.9	(e.g. cement production)	5,661	0.52	L	1.5	0.82
Russian Federation	D, T2	D	L	1.0	(clinker production)	39,783	0.52		0.3	0.73
Slovakia	T1	CS	L, T	2.3	Clinker Production	2,271	0.53	L	1.3	0.72
Slovenia	CS, D, T2	CS, D	L	2.4	Clinker produced	898	0.54	T	0.4	0.75
Spain	CS, D, T2	CS, D, PS	L, T	3.9	Clinker production	30,798	0.54		0.4	0.77
Sweden	CS, D, T2	CS, D, PS	L, T	1.8	Produced amount of clinker	2,385	0.54	L, T	0.8	0.83
Switzerland	CR	CS	L, T	3.2	clinker production	3,265	0.53		0.1	0.56
Turkey	T1	D	L, T	5.7	clinker	32,779	0.51		0.5	0.91
Ukraine	T1, T2	CS, D	L	0.9	(e.g. cement or clinker production)	7,195	0.52	L, T	0.8	0.65
United Kingdom	T2	CS, D	L	0.8	clinker production kt	10,813	0.50		0.1	0.44
United States	CS, D	CS, D	L, T	0.6	clinker production	88,104	0.52		0.2	0.74

<sup>a</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 2.A Mineral products.

<sup>b</sup> The CRF requests Parties to specify the activity data used (e.g. cement or clinker) for estimating the emissions from cement production. The descriptions included in this column are as reported in the CRF by Parties

<sup>c</sup> Source of default emission factors: IPCC Guidelines, volume 3, page 2.6.

<sup>d</sup> Source of default emission factors: IPCC good practice guidance, pages 3.13 and 3.22.

**Table 2.3a**  
**CO<sub>2</sub> emissions from cement production - trend information**

CO <sub>2</sub> emissions (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	3,463	3,555	-8.1	-3.6	-3.4	-1.8	9.1	1.3	2.9	-2.2	-1.5	2.8	-0.8	2.7
Austria	2,033	1,754	-1.4	-22.4	0.2	7.8	-9.2	0.5	6.5	0.5	0.9	1.1	0.0	-13.7
Belarus	966	1,261	-3.9	-10.6	14.1	47.5	-3.3	-3.3	-2.7	-5.1	19.4	18.6	11.0	30.6
Belgium	2,824	2,837	2.0	2.4	-7.6	5.1	0.4	-1.9	5.0	-11.1	1.1	-2.1	-1.4	0.5
Bulgaria	2,006	1,376	-49.6	8.4	3.9	-16.4	20.9	33.4	7.0	3.7	-0.8	4.7	13.6	-31.4
Canada	5,435	7,099	-18.2	13.2	-5.3	7.6	2.6	4.2	1.5	-2.8	3.0	1.1	4.2	30.6
Croatia	1,023	1,459	-36.7	-26.3	8.4	18.8	7.7	32.2	18.1	14.5	-4.7	-0.4	6.0	42.6
Czech Republic	2,489	1,661	-7.2	-9.2	5.6	-1.6	-0.8	-5.1	-1.3	-15.9	-13.8	6.9	10.7	-33.3
Denmark	882	1,539	23.3	1.0	6.5	12.4	0.8	-6.0	3.0	1.8	1.4	-5.6	12.4	74.5
Estonia	483	369	-6.6	3.8	-7.2	9.0	62.5	-6.1	5.3	0.4	-6.3	-20.7	46.3	-23.5
European Community	79,905	83,946	-5.1	3.7	-3.5	2.9	2.8	1.8	1.9	-1.9	-0.1	1.8	2.9	5.1
Finland	786	560	-21.9	2.3	2.0	17.9	1.1	7.5	5.2	-0.4	-4.3	-3.4	12.1	-28.8
France	10,948	9,007	-5.0	-1.6	-2.3	-3.8	7.1	-3.5	2.1	1.1	-0.1	-1.0	5.2	-17.7
Germany	15,146	13,929	-10.2	1.4	-4.8	3.1	1.8	1.5	-3.3	-11.5	-5.0	5.3	4.2	-8.0
Greece	5,778	6,382	-0.8	7.4	0.3	0.5	-0.4	-0.3	2.7	0.4	-3.8	0.9	-0.1	10.5
Hungary	1,719	1,291	-41.5	3.7	-4.7	5.7	2.7	1.6	9.7	0.9	6.0	-0.8	-9.5	-24.9
Iceland	52	50	-6.9	0.8	10.8	11.4	17.0	13.6	6.7	-10.5	-31.7	-18.5	55.1	-3.4
Ireland	884	2,290	-11.5	2.3	11.8	16.5	-7.5	10.1	45.9	8.8	0.5	14.4	7.6	159.0
Italy	16,084	17,846	-1.0	11.0	-8.6	1.8	2.1	5.1	3.8	3.6	-0.4	4.2	3.0	11.0
Japan	37,966	31,416	4.3	-0.4	1.0	-6.2	-11.4	-1.0	0.3	-2.1	-5.7	-1.5	0.3	-17.3
Latvia	346	144	-27.5	-22.5	16.8	2.7	-4.4	36.8	-36.4	21.9	6.2	7.5	8.6	-58.3
Liechtenstein	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Lithuania	1,571	330	-7.1	-19.4	3.1	15.4	12.5	-16.0	-14.8	-3.6	1.9	0.7	20.4	-79.0
Luxembourg	551	445	0	-10.8	-1.3	3.4	0.5	5.0	5.7	-12.6	3.7	-12.0	10.0	-19.2
Monaco	0	0	*	*	*	*	*	*	*	*	*	*	*	*
Netherlands	416	446	19.7	-7.6	-26.2	19.0	14.9	19.7	-9.3	1.9	2.3	-11.2	2.8	7.2
New Zealand	367	485	-6.4	3.4	-0.1	0.1	-4.9	8.8	-0.2	0.8	3.4	-2.6	-8.1	32.2
Norway	649	726	-27.9	3.6	-1.4	6.9	-5.8	-0.4	0.8	-4.2	-3.4	7.0	-16.0	11.9
Poland	7,028	5,070	-0.7	0.4	-6.7	8.4	-6.0	-2.5	-1.0	-18.3	-5.8	-2.2	11.0	-27.9
Portugal	3,107	3,538	3.0	5.1	-2.1	5.1	-0.7	8.2	-0.5	-4.8	7.9	-7.5	0.0	13.9
Romania	5,572	2,972	-28.0	13.5	1.7	-6.1	-3.0	-9.3	0.4	4.2	-4.6	0.3	12.9	-46.7
Russian Federation	34,262	20,705	-5.1	1.0	-23.6	-3.5	-2.9	10.5	14.7	5.0	7.9	9.1	12.0	-39.6
Slovakia	1,438	1,195	-29.1	3.5	-4.7	10.4	50.0	0.3	-34.9	1.6	-3.6	-20.9	32.0	-16.9
Slovenia	515	486	-11.4	6.1	7.4	1.2	4.2	0.9	5.6	3.1	-12.1	1.5	5.1	-5.6
Spain	12,534	16,631	-4.7	7.5	-2.0	5.3	8.3	4.5	2.1	1.9	3.4	3.3	1.6	32.7
Sweden	1,272	1,284	-10.6	16.8	-5.5	-9.8	2.5	0.5	13.0	3.4	-3.8	-5.8	6.5	1.0
Switzerland	2,525	1,714	-12.9	-5.7	-10.0	-10.3	0.0	-0.1	7.4	1.9	-3.8	-2.2	6.0	-32.1
Turkey	10,333	16,725	12.1	4.7	2.8	3.1	1.5	-4.1	3.5	-0.7	2.6	3.1	7.8	61.9
Ukraine	9,287	3,777	-5.1	-31.7	-36.6	11.8	15.5	-9.2	-10.7	9.5	13.9	28.2	6.1	-59.3
United Kingdom	6,659	5,456	-17.8	-1.3	2.1	4.6	1.9	-4.5	-3.0	-7.7	2.5	-2.0	1.9	-18.1
United States	33,278	45,559	-2.2	2.1	0.6	3.4	2.3	2.0	3.0	0.4	3.7	0.4	5.7	36.9

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 2.3b**  
**CO<sub>2</sub> implied emission factors for cement production - trend information**

CO <sub>2</sub> IEF (t/t)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	0.56	0.55	-0.1	0.4	0.0	0.1	-0.5	-0.9	-0.1	-0.2	-0.4	-0.6	0.3	-1.9
Austria	0.55	0.56	0.2	0.4	0.7	1.2	-1.8	-0.2	0.9	0.2	-0.9	1.0	0.0	2.1
Belarus	0.51	0.51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Belgium	0.53	0.55	0.2	0.0	-0.2	0.1	0.0	-0.1	0.1	-2.3	0.3	3.8	-0.1	2.2
Bulgaria	0.52	0.52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Canada	0.52	0.52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Croatia	0.51	0.50	0.0	0.0	0.0	0.0	0.0	0.0	-1.1	-0.1	0.3	-0.2	0.0	-1.1
Czech Republic	0.53	0.55	0.4	0.4	0.4	1.1	1.1	0.6	-1.0	0.7	-0.1	0.0	0.0	4.5
Denmark	0.54	0.54	-0.1	-0.4	0.1	0.0	-0.5	1.1	0.9	0.0	0.0	0.0	0.0	-1.2
Estonia	0.53	0.53	-6.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	-0.5	6.2	-0.3
European Community	NA	NA	*	*	*	*	*	*	*	*	*	*	*	*
Finland	0.53	0.53	0.2	-1.6	1.1	-0.2	1.5	0.6	-0.2	-0.2	-0.5	0.4	-1.0	-1.6
France	0.53	0.53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Germany	0.53	0.53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Greece	0.54	0.54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	-0.1	0.0
Hungary	0.54	0.52	-5.5	0.0	2.4	0.1	-0.4	1.2	-1.6	1.3	-0.5	-1.1	-2.2	-4.5
Iceland	0.53	0.53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ireland	0.55	0.53	0.0	0.0	-0.1	0.0	0.0	0.0	-0.3	-0.1	-0.3	-1.6	-0.3	-2.6
Italy	0.54	0.54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Japan	0.50	0.50	0.0	0.0	0.0	0.0	0.0	0.0	-0.5	0.5	0.2	0.2	0.3	0.7
Latvia	0.53	C	0.0	-4.4	4.6	1.0	-1.7	*	*	*	*	*	*	*
Liechtenstein	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Lithuania	0.51	0.52	-0.5	-1.9	-0.1	1.1	-0.2	0.0	-0.3	0.8	0.5	0.2	0.2	1.6
Luxembourg	0.53	0.53	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Monaco	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Netherlands	0.54	0.55	0.0	0.1	-0.2	0.2	0.0	0.0	-0.1	0.0	0.0	0.0	2.8	2.7
New Zealand	0.51	0.40	0.0	0.0	0.0	-3.0	-1.2	0.2	-0.2	-1.4	-4.4	-7.6	-6.3	-21.8
Norway	0.52	0.55	-21.8	-0.2	0.3	-0.4	-0.1	0.3	2.6	-1.7	-5.9	-5.8	17.7	5.1
Poland	0.53	0.53	0	0	0	0	0	0	0	1.1	-0.2	-0.4	-0.2	0.4
Portugal	0.51	0.51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Romania	0.53	0.52	-0.1	0.0	0.0	0.0	0.1	0.3	-0.3	0.0	-0.1	0.1	-0.4	-0.4
Russian Federation	0.52	0.52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Slovakia	0.51	0.53	0.0	0.0	0.0	0.0	0.0	0.0	-0.4	-0.7	0.9	1.9	2.0	3.7
Slovenia	0.54	0.54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Spain	0.54	0.54	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0
Sweden	0.54	0.54	0.0	-0.8	0.8	-0.6	-0.3	0.0	0.4	-0.3	0.0	0.1	-0.2	-0.6
Switzerland	0.53	0.53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turkey	0.51	0.51	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ukraine	0.53	0.52	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0.0	0.0	0.0	-1.3
United Kingdom	0.50	0.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
United States	0.52	0.52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 2.4****Chemical industry, CO<sub>2</sub> and N<sub>2</sub>O (base year)<sup>a</sup>**

	CO <sub>2</sub>						N <sub>2</sub> O								
	Methods and EF used <sup>b</sup>		Ammonia production				Methods and EF used <sup>a</sup>		Nitric acid production				Adipic acid production		
	Methods	EF	Key category	Share of national total (%)	Activity data (production) (kt)	CO <sub>2</sub> IEF (t/t)	Methods	EF	Key category	Share of national total (%)	Activity data (production) (kt)	N <sub>2</sub> O IEF (t/t)	Key category	Share of national total (%)	N <sub>2</sub> O IEF (t/t)
IPCC default EF <sup>c</sup>						1.5-1.6						0.002-0.019			0.59-0.86
Australia	T2	CS		-	C	IE	NA	NA		-	C	IE		-	NO
Austria	CS	CS, PS	L	0.7	461	1.1	CS	PS	L	1.2	530	0.006		-	NO
Belarus	NA	NA		-	1,284	NA	T1	D		0.3	226	0.005		-	NO
Belgium				0.5	C	C			L	2.4	1,436	0.008		-	NE
Bulgaria	CS, D	CR, D	L	0.9	1,342	0.9	CS	CR	L	1.8	C	C		-	NO
Canada	CS	CS	L	0.7	3,210	1.6	D, T2	CS, D		0.1	965	0.003	L	1.8	0.30
Croatia	CS	D	L	1.6	345	1.4	T1	D	L	3.0	332	0.009		-	NO
Czech Republic	T1	CS		0.4	336	2.4	CS, T1	CS, PS	L	0.6	530	0.007		-	NO
Denmark				-	NO	NO			L	1.5	450	0.007		-	NO
Estonia	CS	CS		0.7	294	1.1	NA	NA		-	0	NO		-	NO
European Community	CR, CS, D, T1, T2, T3	CR, CS, D, PS	L	0.4	NA	NA	CR, CS, D, T2, T3	CS, D, PS	L	0.9	NA	NA	L	1.5	NA
Finland	T1, T2	CS, D		0.1	28	1.5	T1	PS	L	2.3	549	0.010		-	NO
France			L	0.6	1,928	1.7			L	1.2	3,200	0.007	L	2.6	C
Germany	CS, D	CS, PS		0.4	2,532	1.8	CS	CS, D, PS		0.4	2,741	0.005	L	1.5	NE
Greece	NA	NA		-	313	IE	D	D		0.7	511	0.005		-	NO
Hungary	T2	D, PS	L	1.6	948	2.1	T2	D, PS	L	3.7	1,015	0.014		-	NO
Iceland				-	NO	NO				-	NO	NO		-	NO
Ireland			L	1.8	430	2.3			L	1.9	339	0.010		-	NO
Italy	D	CR, PS		0.3	1,455	1.2	D	D, PS	L	0.4	1,037	0.006	L	0.9	0.30
Japan	T1	CS		0.3	1,831	1.8	D, T1	CS, PS		0.1	706	0.004	L	0.6	C
Latvia	NA	NA		-	NO	NO	NA	NA		-	NO	NO		-	NO
Liechtenstein	NA	NA		-	NO	NO	NA	NA		-	NO	NO		-	NO
Lithuania	T2	PS	L	2.5	C	C	T1	D	L	1.6	C	C		-	NO
Luxembourg	NA	NA		-	NO	NO	NA	NA		-	NO	NO		-	NO
Monaco				0.0	NO	NO				0.0	NO	NO		0.0	NO
Netherlands	CS, T1b	CS, PS	L	1.5	C	C	T2	PS	L	3.0	C	C		-	NO
New Zealand	D, T2	CS, PS		0.4	171	1.6	NA	NA		-	NO	NO		-	NO
Norway	D	CS, D	L	1.0	NA	NA	CS/T2	PS	L	4.1	1,327	0.005		-	NO
Poland	T1	CR, D	L	0.6	2,344	1.5	T1	CS, D	L	0.7	2,187	0.006		0.1	0.30
Portugal	D, T2	CS, PS	L	0.9	C	C	D	CR, OTH		0.9	C	C		-	NO
Romania	D, T1b	D	L	1.9	3,337	1.5	D	D	L	2.6	2,328	0.009		0.3	0.30
Russian Federation	D, T1b	D		0.6	12,592	1.5	D	D		0.1	6,411	0.002		-	NO
Slovakia	NA	NA		-	360	IE	T2	PS	L	0.7	302	0.005		-	NO
Slovenia	D	CS, D		-	NO	NO	NA	NA		-	NO	NO		-	NO
Spain	D	CS, D, PS		0.2	573	1.2	D	CS	L	1.0	1,329	0.007		-	NA
Sweden	D	PS		-	NO	NO	CS, T2	CS, OTH, PS	L	1.1	374	0.007		-	NO
Switzerland	CR	CS		0.0	40	0.0	CR	CS		0.3	112	0.005		-	NO
Turkey	T1	D		0.4	446	1.6	T1	D		0.1	22	0.019		0.0	0.00
Ukraine	T1, T2	CS, D	L	1.5	4,941	2.9	T1	D		0.1	2,700	0.001		0.2	0.08
United Kingdom	CS, T1	CS, OTH		0.2	45	29.5	CS	CS	L	0.5	2,408	0.006	L	3.2	C
United States	CS, D	CS, D		0.3	15,425	1.3	D	D		0.3	7,196	0.008		0.2	0.07

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

<sup>b</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 2.B Chemical industry.

<sup>c</sup> Source of default emission factors: ammonia; IPCC Guidelines, volume 3, page 2.16 nitric acid and adipic acid; IPCC good practice guidance, pages 3.34 and 3.44.

**Table 2.5**  
**Chemical industry, CO<sub>2</sub> and N<sub>2</sub>O (2004)**

	CO <sub>2</sub>						N <sub>2</sub> O								
	Methods and EF used <sup>a</sup>		Ammonia production			CO <sub>2</sub> IEF	Methods and EF used <sup>a</sup>		Nitric acid production				Adipic acid production		
	Methods	EF	Key category	Share of national total	Activity data (production)		Methods	EF	Key category	Share of national total	Activity data (production)	N <sub>2</sub> O IEF	Key category	Share of national total	N <sub>2</sub> O IEF
				(%)	(kt)	(t/t)				(%)	(kt)	(t/t)		(%)	(t/t)
IPCC default EF <sup>b</sup>						1.5-1.6						0.002-0.019			0.59-0.86
Australia	T2	CS		-	C	IE	NA	NA		-	C	IE		-	NO
Austria	CS	CS, PS	L	0.5	510	0.9	CS	PS	T	0.3	573	0.002		-	NO
Belarus	NA	NA		-	933	NA	T1	D		0.6	267	0.005		-	NO
Belgium			L, T	0.9	C	C			L, T	2.1	696	0.014		-	NO
Bulgaria	CS, D	CR, D		0.6	C	C	CS	CR	L, T	1.3	C	C		-	NO
Canada	CS	CS	L, T	0.7	4,496	1.6	T2, T3	CS, OTH		0.1	1,219	0.002	T	0.4	C
Croatia	CS	D	L	1.8	404	1.3	T1	D	L, T	2.7	288	0.009		-	NO
Czech Republic	T1	CS	L	0.5	291	2.4	CS, T1	CS, PS	L	0.7	534	0.006		-	NO
Denmark				-	NO	NO			L, T	0.8	229	0.007		-	NO
Estonia	CS	CS		0.8	202	0.8	NA	NA		-	0	NO		-	NO
European Community	CR, CS, D, T1, T2, T3	CR, CS, D, PS	L	0.4	NA	NA	CR, CS, D, T2, T3	CS, D, PS	L, T	0.7	NA	NA	T	0.3	NA
Finland	T1, T2	CS, D		-	NO	NO	T1	PS	L, T	1.8	503	0.009		-	NO
France			T	0.3	1,370	1.4			L, T	0.8	2,753	0.005	T	0.2	C
Germany	CS, D	CS, PS	T	0.5	2,848	1.8	CS	CS, D, PS	L, T	0.7	4,410	0.006	T	0.5	NE
Greece	NA	NA		-	160	IE	D	D	T	0.3	252	0.005		-	NO
Hungary	T3	D, PS	L, T	0.9	369	2.0	T3	D, PS	L, T	2.1	417	0.014		-	NO
Iceland				-	NO	NO	NA	NA		-	NO	NO		-	NO
Ireland	NA	NA	T	-	NO	NO	NA	NA	T	-	NO	NO		-	NO
Italy	D	CR, PS	T	0.1	648	1.2	D	D, PS		0.3	616	0.009	L, T	1.1	0.28
Japan	T1	CS		0.2	1,352	1.7	D, T1	CS, PS		0.1	609	0.004	T	0.1	C
Latvia	NA	NA		-	NO	NO	NA	NA		-	NO	NO		-	NO
Liechtenstein	NA	NA		-	NO	NO	NA	NA		-	NO	NO		-	NO
Lithuania	T2	PS	L, T	5.1	C	C	T1	D	L, T	8.2	C	C		-	NO
Luxembourg	NA	NA		-	NO	NO	NA	NA		-	NO	NO		-	NO
Monaco				0.0	NO	NO				0.0	NO	NO		0.0	NO
Netherlands	CS, T1b	CS, PS	L	1.4	C	C	T2	PS	L, T	2.6	C	C		-	NO
New Zealand	D, T2	CS, PS		0.5	262	1.4	NA	NA		-	NO	NO		-	NO
Norway	D	CS, D	L	0.9	510	1.0	CS/T2	PS	L, T	3.4	1,599	0.004		-	NO
Poland			L, T	0.9	2,409	1.5			L, T	1.1	2,085	0.006		-	NO
Portugal	D, T2	CS, D, PS	L, T	2.0	C	C	D	CR, OTH	L, T	0.7	C	C		-	NO
Romania	D, T1b	D	L, T	1.4	1,422	1.5	D	D	L, T	2.0	1,095	0.009		-	NO
Russian Federation	D, T1b	D	L	0.8	11,979	1.5	D	D		0.2	5,511	0.002		-	NO
Slovakia	NA	NA		-	408	IE	T2	PS	L, T	1.8	525	0.006		-	NO
Slovenia	D	D		-	NO	NO	D	D		0.0	0	0.006		-	NO
Spain	D	CS, D, PS	T	0.1	491	1.2	D	CS	T	0.4	824	0.007		-	NA
Sweden	D	PS		-	NO	NO	CS, T2	PS	L, T	0.6	257	0.005		-	NO
Switzerland	CR	CS		0.0	40	0.0	CR	CS		0.3	110	0.005		-	NO
Turkey				0.2	401	1.6			L, T	1.3	656	0.019		0.0	0
Ukraine	T1, T2	CS, D	L, T	2.8	4,779	2.4	T1	D		0.1	1,482	0.001		0.4	0.08
United Kingdom	CS, T1	CS, OTH		0.2	33	39.7	CS	CS	L	0.4	1,706	0.006	T	0.2	C
United States	CS, D	CS, D	T	0.2	10,939	1.5	D	D		0.2	6,703	0.008	T	0.1	0.02

<sup>a</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 2.B Chemical industry

<sup>b</sup> Source of default emission factors: ammonia; IPCC Guidelines, volume 3, page 2.16 nitric acid and adipic acid; IPCC good practice guidance, pages 3.34 and 3.44.

**Table 2.6a**  
**CO<sub>2</sub> emissions from ammonia production - trend information**

CO <sub>2</sub> emissions (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	IE	IE	*	*	*	*	*	*	*	*	*	*	*	*
Austria	517	468	5.6	6.0	0.3	-1.2	-1.3	0.9	-2.3	-8.8	2.9	8.2	-11.1	-9.5
Belarus	NA	NA	*	*	*	*	*	*	*	*	*	*	*	*
Belgium	694	1,265	-8.9	11.7	-3.7	0.3	-4.6	19.7	-4.5	-3.2	-17.1	1.7	-0.7	82.4
Bulgaria	1,157	408	-16.5	20.9	-0.7	-17.7	-46.4	-28.2	71.1	-10.4	-36.4	6.0	21.0	-64.8
Canada	3,942	5,660	-1.2	17.7	3.2	-2.4	0.5	1.9	-1.3	-10.1	-1.0	6.5	11.3	43.6
Croatia	492	523	-4.1	-2.5	8.6	8.7	-25.0	26.7	1.2	-18.9	-9.9	12.5	21.0	6.3
Czech Republic	807	699	-3.1	-11.7	7.6	-8.4	3.1	-14.8	14.4	-15.8	-12.8	30.2	-0.7	-13.4
Denmark	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Estonia	317	171	*	*	*	*	*	*	*	*	*	*	*	-46.0
European Community	17,603	16,326	-2.6	7.0	-3.3	2.0	2.7	-6.4	3.4	-1.6	-4.8	-2.0	1.5	-7.3
Finland	44	NO	1.1	*	*	*	*	*	*	*	*	*	*	*
France	3,357	1,953	-2.0	-3.2	6.4	-1.3	-0.3	-3.0	2.9	-10.9	-12.2	-7.0	-4.5	-41.8
Germany	4,596	5,169	-16.2	19.5	-1.1	-0.7	0.4	-3.4	6.6	-1.2	1.9	9.1	-1.6	12.5
Greece	IE	IE	*	*	*	*	*	*	*	*	*	*	*	*
Hungary	1,996	728	-40.8	-1.1	11.6	-4.1	-11.4	-10.8	23.8	-5.8	-28.7	-0.5	28.7	-63.5
Iceland	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Ireland	989	NO	4.2	-7.8	-5.2	16.5	-1.5	-10.9	-6.3	17.4	-22.0	*	*	*
Italy	1,710	748	-4.3	-3.3	-32.9	12.2	-8.3	-10.3	12.7	4.0	10.3	21.9	10.0	-56.3
Japan	3,385	2,307	-1.5	1.1	0.7	-2.5	-11.2	10.0	-3.2	-7.0	-8.1	-10.2	-5.7	-31.8
Latvia	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Liechtenstein	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Lithuania	1,190	1,073	9.0	59.5	26.8	-16.6	6.1	-1.7	4.6	5.9	5.3	-3.4	-6.7	-9.8
Luxembourg	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Monaco	0	0	*	*	*	*	*	*	*	*	*	*	*	*
Netherlands	3,096	3,086	12.7	-0.9	-5.3	5.2	1.6	-0.7	0.6	-16.0	-4.2	-1.1	7.4	-0.3
New Zealand	273	378	0.2	3.9	-13.4	13.4	9.8	15.2	-5.5	11.7	-7.6	13.5	-2.0	38.6
Norway	500	497	-11.7	7.9	-6.5	8.2	-48.6	-35.4	124.1	-7.2	-5.7	35.5	6.8	-0.6
Poland	3,517	3,614	2.4	15.6	-2.8	3.0	-9.0	-12.8	25.7	-6.2	-24.2	40.9	7.2	2.8
Portugal	569	1,715	-21.5	54.8	-18.7	46.9	24.9	-52.9	10.9	53.4	6.5	6.1	5.8	201.4
Romania	5,006	2,133	-36.9	25.4	1.8	-48.3	-50.8	78.2	50.5	-8.0	-1.6	27.1	-1.6	-57.4
Russian Federation	18,888	17,968	-5.2	9.3	-0.1	-9.5	-8.8	16.5	14.6	-0.6	-0.8	5.7	8.0	-4.9
Slovakia	IE	IE	*	*	*	*	*	*	*	*	*	*	*	*
Slovenia	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Spain	709	592	20.8	1.6	4.3	5.7	-5.9	-7.3	-1.7	0.5	-2.5	2.8	-7.3	-16.4
Sweden	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Switzerland	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turkey	713	641	-5.0	16.4	3.3	3.2	-42.8	-71.9	-35.2	25.6	347.9	-3.7	13.9	-10.1
Ukraine	14,108	11,541	-7.7	1.5	4.2	1.1	-5.8	11.9	-2.5	1.3	-1.3	8.5	-0.2	-18.2
United Kingdom	1,322	1,329	0.2	0.2	0.2	-34.4	25.0	0.2	16.9	5.6	-10.2	-5.6	14.1	0.6
United States of America	19,306	16,894	-0.7	-3.1	-0.8	1.8	6.2	-6.0	-4.8	-14.8	10.7	-17.5	10.6	-12.5

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 2.6b****CO<sub>2</sub> implied emission factors for ammonia production - trend information**

CO <sub>2</sub> IEF (t/t)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	IE	IE	*	*	*	*	*	*	*	*	*	*	*	*
Austria	1.12	0.92	2.5	-0.5	-2.2	-0.2	-2.3	-0.3	-0.7	-1.8	-0.6	-1.7	-11.0	-18.2
Belarus	NA	NA	*	*	*	*	*	*	*	*	*	*	*	*
Belgium	C	C	*	*	*	*	*	*	*	*	*	*	*	*
Bulgaria	0.86	C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	*	*
Canada	1.56	1.56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Croatia	1.43	1.29	-4.8	-9.6	9.7	0.9	0.0	-1.2	-0.8	1.5	-0.6	0.1	-3.7	-9.3
Czech Republic	2.40	2.40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denmark	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Estonia	I	0.85	*	*	*	*	*	*	*	*	*	*	*	-21.2
European Community	NA	NA	*	*	*	*	*	*	*	*	*	*	*	*
Finland	1.55	NO	0.1	*	*	*	*	*	*	*	*	*	*	*
France	1.74	1.43	-2.9	-3.3	1.3	1.3	1.3	1.3	-3.6	-1.3	3.2	-5.4	-1.9	-18.1
Germany	1.82	1.82	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Greece	IE	IE	*	*	*	*	*	*	*	*	*	*	*	*
Hungary	2.11	1.97	5.5	-3.7	-0.6	-1.7	4.2	-1.5	-8.2	2.2	-2.8	2.2	-1.8	-6.4
Iceland	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Ireland	2.30	NO	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	*	*	*
Italy	1.18	1.15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-1.8	-1.8
Japan	1.85	1.71	-2.7	-5.4	1.8	-1.7	-4.6	7.5	-2.3	1.7	0.7	-1.7	-9.9	-7.7
Latvia	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Liechtenstein	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Lithuania	C	C	*	*	*	*	*	*	*	*	*	*	*	*
Luxembourg	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Monaco	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Netherlands	C	C	*	*	*	*	*	*	*	*	*	*	*	*
New Zealand	1.60	1.44	0.2	4.8	1.7	-1.7	-8.4	0.4	-4.1	1.3	-1.2	-1.3	0.7	-9.6
Norway	NA	0.97	*	0.9	-2.3	20.8	-21.0	5.5	-18.2	-4.1	-8.9	28.4	-10.0	*
Poland	1.50	1.50	0	0	0	0	0	0	0	0	0	0	0	0
Portugal	C	C	*	*	*	*	*	*	*	*	*	*	*	*
Romania	1.50	1.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Russian Federation	1.50	1.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Slovakia	IE	IE	*	*	*	*	*	*	*	*	*	*	*	*
Slovenia	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Spain	1.24	1.21	1.4	1.5	1.6	0.3	0.4	-2.6	-2.2	1.5	0.4	0.7	-0.9	-2.4
Sweden	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Switzerland	0.01	0.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turkey	1.60	1.60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ukraine	2.86	2.42	-1.8	-1.9	-1.9	-2.0	-2.0	-1.2	1.2	-2.0	-1.1	1.8	-0.1	-15.4
United Kingdom	29.53	39.70	-1.3	0.3	0.2	-19.7	14.5	-6.9	9.4	33.4	-5.1	1.5	11.0	34.4
United States	1.25	1.54	-1.7	-0.5	-3.7	2.0	2.9	0.2	4.4	10.2	-2.4	1.0	3.9	23.4

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 2.7a****N<sub>2</sub>O emissions from nitric acid production - trend information**

N <sub>2</sub> O emissions (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	IE	IE	*	*	*	*	*	*	*	*	*	*	*	*
Austria	3	1	1.7	3.9	2.0	-1.3	4.0	3.0	3.0	-17.4	2.6	9.4	-68.2	-69.2
Belarus	1	1	-18.2	-11.1	-12.5	28.6	11.1	0.0	-10.0	11.1	20.0	-8.3	18.2	18.2
Belgium	11	10	-2.9	9.2	10.6	-4.7	2.1	-2.7	-5.6	-4.3	-8.6	-18.9	4.4	-12.5
Bulgaria	8	3	-27.9	43.6	2.1	-17.7	-40.0	-24.4	79.5	-1.5	-15.9	6.5	-26.0	-64.6
Canada	3	3	-1.4	2.2	1.3	-0.8	-1.9	1.9	1.8	-0.5	2.3	-1.0	2.9	6.7
Croatia	3	3	-12.2	-3.8	-6.9	5.1	-24.7	18.0	17.7	-15.9	-2.9	-5.7	22.0	-13.5
Czech Republic	4	3	-34.8	14.9	-9.4	9.0	7.7	-17.8	13.8	-1.1	-13.5	-0.3	20.7	-4.9
Denmark	3	2	-8.4	12.1	-7.7	1.7	-4.9	17.8	5.6	-11.8	-12.6	15.6	-40.7	-49.1
Estonia	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
European Community	119	100	-5.0	0.7	1.1	-1.2	-0.6	4.5	-0.5	-12.3	-9.3	8.9	5.2	-16.0
Finland	5	5	-13.1	1.9	0.0	-1.4	-4.7	-2.1	1.3	-5.8	4.1	6.2	2.8	-11.8
France	21	15	1.4	-9.2	0.0	2.7	-0.5	-3.5	3.0	-16.1	-11.4	4.5	1.2	-29.2
Germany	15	24	-20.7	14.0	-4.8	0.3	-0.6	4.1	6.9	-12.2	9.9	64.4	14.1	60.9
Greece	2	1	-17.6	-0.5	14.2	-12.2	-17.7	3.8	2.4	-16.0	-3.7	-7.7	-4.9	-50.6
Hungary	15	6	-49.5	-33.7	42.9	-3.7	-16.0	-12.4	31.7	8.6	-35.7	5.6	33.5	-61.1
Iceland	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Ireland	3	NO	-21.5	0.0	0.0	0.0	0.0	0.0	0.0	-28.1	-50.0	*	*	*
Italy	7	6	-4.2	10.5	-4.2	1.5	-14.8	-14.1	36.0	-3.6	-17.1	12.5	58.5	-13.5
Japan	2	3	-0.4	-1.6	-2.4	-3.3	9.9	-3.1	4.1	-8.2	2.9	6.8	1.9	6.9
Latvia	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Liechtenstein	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Lithuania	2	6	4.9	11.4	37.3	10.4	29.3	5.3	17.4	10.3	8.1	3.1	7.1	123.5
Luxembourg	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Monaco	0	0	*	*	*	*	*	*	*	*	*	*	*	*
Netherlands	20	18	1.4	-5.8	-0.3	0.0	-0.5	-4.3	-1.1	-9.4	-5.8	0.6	11.0	-11.3
New Zealand	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Norway	7	6	0.3	-1.5	-1.1	-8.6	14.0	11.2	-7.7	-2.3	12.9	-10.5	7.8	-10.5
Poland	14	13	-8.8	13.5	-0.1	-6.3	-7.6	-2.1	22.7	2.6	-18.0	20.2	2.7	-4.7
Portugal	2	2	-5.7	22.6	5.4	1.4	-30.0	66.6	-41.8	33.8	1.3	1.3	1.2	6.7
Romania	22	10	-49.2	14.6	6.6	-31.6	-28.2	13.8	43.8	-12.3	1.3	19.6	16.6	-53.2
Russian Federation	13	11	-2.6	17.9	9.1	-8.5	-12.0	20.2	14.2	5.9	0.7	-0.1	6.9	-14.0
Slovakia	2	3	-6.1	9.7	18.8	3.6	-6.4	4.9	-7.5	13.7	-22.8	26.8	15.5	78.1
Slovenia	NO	0	*	*	*	*	26.4	-11.8	69.6	-10.5	-9.4	12.0	-19.7	*
Spain	9	6	-10.4	10.0	2.4	-3.3	-7.8	9.4	-2.1	-10.5	-7.1	1.5	-9.0	-38.0
Sweden	3	1	5.3	-8.5	-4.0	-1.2	12.7	-12.3	-3.7	-25.0	-8.0	-2.2	-0.9	-47.5
Switzerland	1	1	-0.8	-1.7	-3.3	-11.7	6.6	1.6	9.6	5.2	3.5	-10.4	4.8	-1.6
Turkey	0	12	758.7	414.3	-7.1	-28.5	24.4	4.1	-1.9	-19.1	15.1	-5.8	2.6	2,915.5
Ukraine	4	2	-11.6	-21.6	18.5	9.4	-18.6	8.1	12.1	-3.1	21.9	0.6	-14.1	-45.1
United Kingdom	13	9	1.1	-5.1	2.8	-5.4	15.2	43.5	-7.0	-21.9	-33.1	8.0	12.1	-29.3
United States	58	54	-0.1	1.4	4.1	2.5	-1.6	-3.7	-2.7	-18.8	8.2	-2.8	-0.7	-6.8

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 2.7b****N<sub>2</sub>O implied emission factors for nitric acid production – trend information**

N <sub>2</sub> O IEF (t/t)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	IE	IE	*	*	*	*	*	*	*	*	*	*	*	*
Austria	0.006	0.002	0.7	7.7	-0.4	0.0	0.7	1.4	-1.0	-13.6	0.4	2.4	-69.0	-71.5
Belarus	0.005	0.005	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Belgium	0.008	0.014	376.2	-5.5	4.9	-2.1	*	*	8.1	-81.2	-5.9	82.0	11.7	80.6
Bulgaria	C	C	0.0	0.0	0.0	0.0	0.0	0.0	*	*	0.0	*	*	*
Canada	0.003	0.002	4.3	-6.2	-3.5	2.3	5.7	-5.3	-4.6	1.4	-5.7	2.5	-6.7	-15.5
Croatia	0.009	0.009	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Czech Republic	0.007	0.006	-1.2	1.4	-6.8	9.4	-2.3	-3.8	2.5	-1.2	0.0	-12.9	13.2	-5.6
Denmark	0.007	0.007	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Estonia	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
European Community	NA	NA	*	*	*	*	*	*	*	*	*	*	*	*
Finland	0.010	0.009	-0.8	-1.4	0.0	-2.0	1.2	-2.4	1.6	-1.1	0.0	-0.3	-2.5	-3.8
France	0.007	0.005	4.3	-9.8	-9.3	8.8	2.0	-2.6	-2.4	-3.7	-2.8	-5.8	-0.7	-17.7
Germany	0.005	0.006	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Greece	0.005	0.005	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Hungary	0.014	0.014	-2.2	-1.9	-2.1	0.8	2.6	0.2	-1.8	-0.5	-1.2	1.7	-1.4	-5.3
Iceland	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Ireland	0.010	NO	2.2	0.0	0.0	0.0	0.0	0.0	0.0	-28.1	0.0	*	*	*
Italy	0.006	0.009	0.6	-0.1	3.4	-1.1	-0.6	-4.5	5.5	1.8	-19.4	13.1	38.7	45.7
Japan	0.004	0.004	-0.7	-1.1	1.9	-4.2	18.1	-4.9	1.9	-0.3	-2.6	10.2	3.3	24.0
Latvia	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Liechtenstein	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Lithuania	C	C	*	*	*	*	*	*	*	*	*	*	*	*
Luxembourg	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Monaco	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Netherlands	C	C	*	*	*	*	*	*	*	*	*	*	*	*
New Zealand	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Norway	0.005	0.004	-0.1	-6.2	-0.1	-6.7	9.9	12.2	-8.6	-3.4	11.3	-13.1	7.4	-25.7
Poland	0.006	0.006	0	0	0	0	0	0	0	0	0	0	0	0
Portugal	C	C	*	*	*	*	*	*	*	*	*	*	*	*
Romania	0.009	0.009	-1.0	-0.5	-0.5	0.4	0.3	1.3	0.3	0.9	-2.4	-0.5	3.1	-0.4
Russian Federation	0.002	0.002	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Slovakia	0.005	0.006	0.0	0.0	2.7	0.0	0.0	-0.1	0.1	-0.2	-0.1	0.0	0.0	2.5
Slovenia	NO	0.006	*	*	*	*	0.0	0.0	2.8	-2.7	0.0	0.0	0.0	*
Spain	0.007	0.007	0	0	0	0.0	0.0	0.0	0.0	0	0	0	0	0
Sweden	0.007	0.005	-0.3	-17.2	0.0	1.4	9.9	-8.5	-14.1	14.3	-1.3	-0.4	-0.3	-23.5
Switzerland	0.005	0.005	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turkey	0.019	0.019	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ukraine	0.001	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
United Kingdom	0.006	0.006	0.2	-1.5	1.2	-1.7	3.8	53.6	11.8	-4.0	-32.4	3.2	12.6	-0.2
United States	0.008	0.008	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 2.8a**  
**N<sub>2</sub>O emissions from adipic acid production - trend information**

N <sub>2</sub> O emissions (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year to 2004
Australia	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Austria	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Belarus	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Belgium	NE	NO	*	*	*	*	*	*	*	*	*	*	*	*
Bulgaria	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Canada	34.6	10.0	-6.7	-2.2	6.9	-13.8	-48.8	-65.5	-48.5	-10.6	55.6	-13.3	185.2	-71.1
Croatia	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Czech Republic	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Denmark	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Estonia	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
European Community	204.3	44.2	-1.0	-4.1	4.8	-3.4	-38.8	-63.7	-4.6	34.5	-11.2	-2.9	-8.2	-78.4
Finland	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
France	47.8	3.8	-2.1	4.6	2.8	-0.9	-44.2	-53.2	-29.6	51.0	-17.8	4.0	-71.6	-92.1
Germany	60.7	15.4	5.6	-9.9	6.3	-11.8	-67.7	-70.0	-27.5	165.6	4.3	-1.8	26.5	-74.6
Greece	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Hungary	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Iceland	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Ireland	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Italy	14.8	21.4	10.5	15.7	-2.7	0.3	4.8	5.1	4.4	5.4	-1.7	-6.8	3.4	45.0
Japan	24.2	2.7	-9.7	-1.0	13.8	6.5	-13.7	-84.1	215.2	-82.4	-28.9	-6.2	84.0	-88.8
Latvia	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Liechtenstein	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Lithuania	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Luxembourg	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Monaco	0.0	0.0	*	*	*	*	*	*	*	*	*	*	*	*
Netherlands	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
New Zealand	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Norway	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Poland	1.5	NO	-35.2	*	*	*	*	*	*	*	*	*	*	*
Portugal	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Romania	2.2	NO	-14.9	10.3	0.8	39.7	3.7	-19.7	24.1	-42.6	*	*	*	*
Russian Federation	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Slovakia	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Slovenia	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Spain	NA	NA	*	*	*	*	*	*	*	*	*	*	*	*
Sweden	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Switzerland	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Turkey	0	0	*	*	*	*	*	*	*	*	*	*	*	*
Ukraine	5.0	5.0	-2.3	-7.3	57.3	14.6	1.4	-23.1	132.3	-3.8	-12.0	15.2	19.8	0.7
United Kingdom	81.1	3.6	-7.5	-10.3	7.6	3.8	-15.8	-95.6	148.0	8.8	-63.2	-11.3	89.7	-95.6
United States	49.0	18.5	-2.3	14.5	-1.0	-39.5	-41.9	-8.5	10.2	-18.5	19.9	4.4	-6.9	-62.2

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 2.8b****N<sub>2</sub>O implied emission factors for adipic acid production – trend information**

N <sub>2</sub> O IEF (t/t)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Austria	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Belarus	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Belgium	NE	NO	*	*	*	*	*	*	*	*	*	*	*	*
Bulgaria	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Canada	0.30	C	0.0	0.0	0.0	*	*	*	*	*	*	*	*	*
Croatia	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Czech Republic	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Denmark	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Estonia	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
European Community	NA	NA	*	*	*	*	*	*	*	*	*	*	*	*
Finland	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
France	C	C	*	*	*	*	*	*	*	*	*	*	*	*
Germany	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Greece	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Hungary	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Iceland	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Ireland	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Italy	0.30	0.28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-8.3	-8.3
Japan	C	C	*	*	*	*	*	*	*	*	*	*	*	*
Latvia	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Liechtenstein	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Lithuania	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Luxembourg	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Monaco	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Netherlands	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
New Zealand	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Norway	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Poland	0.30	NO	0	*	*	*	*	*	*	*	*	*	*	*
Portugal	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Romania	0.30	NO	0.0	0.0	0.0	0.0	-0.1	0.2	0.0	-0.1	*	*	*	*
Russian Federation	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Slovakia	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Slovenia	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Spain	NA	NA	*	*	*	*	*	*	*	*	*	*	*	*
Sweden	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Switzerland	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Turkey	0	0	*	*	*	*	*	*	*	*	*	*	*	*
Ukraine	0.08	0.08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
United Kingdom	C	C	*	*	*	*	*	*	*	*	*	*	*	*
United States	0.07	0.02	1.4	13.2	-2.0	-41.7	-41.3	-13.0	8.1	-9.7	8.7	0.0	-10.6	-72.3

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 2.9**  
**Metal production, CO<sub>2</sub> (base year)<sup>a</sup>**

	Methods and EF used <sup>b</sup>		Iron and steel <sup>c</sup>							Aluminium production			
	Methods	EF	Key category	Share of national total (%)	CO <sub>2</sub> IEF t/t	Activity Data (production) (kt)	CO <sub>2</sub> IEF t/t	Activity Data <sup>1</sup> (production) (kt)	CO <sub>2</sub> IEF t/t	Key category	Share of national total (%)	Activity Data (production) (kt)	CO <sub>2</sub> IEF t/t
IPCC default EF <sup>d</sup>					1.5-1.6								1.5-1.8
Australia	T1b	CS	L	2.4	1.6	6,223	NA	NO	NO		0.5	1,235	1.6
Austria	CS, T2	D, PS	L	4.5	0.3	4,291	0.1	3,444	0.9		0.2	88	1.8
Belarus				0.0	IE, NO	IE	IE	IE	IE		-	NO	NO
Belgium			L	1.3	0.1	7,621	0.1	9,415	0.1		-	0	NO
Bulgaria	D	CR, D	L	1.8	0.8	C	C	C	NO		0.0	7	1.7
Canada	CS, T2	OTH	L	1.2	0.3	12,184	0.0	7,346	0.9		0.5	1,562	1.7
Croatia	T1	D		0.0	0.0	189	0.0	IE	IE		0.4	74	1.5
Czech Republic	T1	D	L	6.4	0.4	10,098	1.2	6,106	IE		-	NO	NO
Denmark				0.0	0.0	614	0.0	NO	NO		-	NO	NO
Estonia	NA	NA		-	NA	0	NA	0	NA		-	0	NO
European Community			L	1.7	NA	NA	NA	NA	NA		0.1	NA	NA
Finland	CS, T2, T3	CS, D	L	2.6	0.6	2,861	0.6	IE	IE		-	NO	NO
France			L	0.7	0.1	19,073	0.1	14,088	0.1		0.1	326	1.6
Germany	T2, T3	CS	L	3.9	0.5	43,914	1.1	32,263	NA		0.1	740	1.4
Greece	CR, T1, T2	CR, CS		0.2	0.2	999	0.2	NO	NO		0.2	C	C
Hungary	CS, D, T2	D		0.4	0.1	3,660	0.1	2,085	IE		0.1	74	1.8
Iceland				-	NA, NO	NO	NO	NO	NO	L	4.1	88	1.6
Ireland	NA	NA		-	NO	NO	NO	NO	NO		-	NO	NO
Italy	D	CR, CS, PS	L	0.6	0.1	25,467	0.1	11,852	0.2		0.1	232	1.6
Japan	CS	OTH		0.0	NE	NE	IE	NE	IE		-	NE	IE
Latvia	T2	PS		0.2	0.1	550	NE	NE	NE		-	NO	NO
Liechtenstein	NA	NA		-	NO	NO	NO	NO	NO		-	NO	NO
Lithuania	NA	NA		-	NO	NO	NO	NO	NO		-	NO	NO
Luxembourg	CR	PS	L	7.6	0.1	3,560	0.2	2,645	0.1		-	NE	NE
Monaco				-	NO	NO	NO	NO	NO		0.0	NO	NO
Netherlands	T1a, T2	CS	L	1.2	0.5	5,162	0.0	NO	NO		0.2	272	1.5
New Zealand	T2	CS, D	L	2.1	C, IE, NO	C	C	IE	IE		0.7	264	1.7
Norway	T2	CS, PS		0.4	2.9		NO	68	2.9	L	2.8	870	1.6
Poland	CS, T1	CS, D	L	1.1	0.2	IE	IE	10,262	0.3		0.0	48	1.8
Portugal	D, T2	D, PS		0.0	0.0	316	0.1	IE	IE		-	NO	NO
Romania	T1b, T2	CS, D	L	6.0	0.6	13,276	0.1	8,493	1.8		0.2	266	1.5
Russian Federation	T1b, T2	CS, D	L	3.2	0.5	89,622	0.1	59,387	1.6		0.2	C	C
Slovakia	T1, T2	D, PS		0.6	0.0	3,562	0.1	3,561	IE		0.2	67	1.8
Slovenia	D, T2	PS		0.2	0.0	831	0.0	173	0.2		0.4	44	2.0
Spain	D, T2	CS, PS	L	0.6	0.1	13,163	0.1	5,588	0.0		0.2	355	1.7
Sweden	CS, D, T1	CS, PS	L	2.5	0.4	1,743	0.1	2,845	0.6		0.2	96	1.9
Switzerland				0.2	0.1	1,198	0.1	IE	IE		0.3	87	1.6
Turkey				0.5	0.2	33	1.6	449	1.6		0.1	61	1.8
Ukraine	T1, T2	CS, D	L	8.7	0.6	52,635	0.1	44,927	1.7		-	IE	IE
United Kingdom	T2, T3	CS		0.2	0.1	4,546	0.0	12,463	NA		0.1	1	409.0
United States	CS, D, T2	CS, D	L	1.4	0.7	33,510	0.0	49,062	NE		0.1	4,048	1.7

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

<sup>b</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 2.C Metal production.

<sup>c</sup> CO<sub>2</sub> emission estimates from sinter (2.C.1.3) were reported by only European Community and Spain; CQ emission estimates from coke (2.C.1.4) were reported by only Australia, European Community, Latvia and the United States.

<sup>d</sup> Source of default emission factors: IPCC Guidelines, volume 3, pages 2.28 and 2.33.

**Table 2.10**  
**Metal production, CO<sub>2</sub> (2004)**

	Methods and EF used <sup>a</sup>		Iron and steel <sup>b</sup>						Aluminium production				
	Methods	EF	Key category	Share of national total (%)	CO <sub>2</sub> IEF t/t	Activity Data (production) (kt)	CO <sub>2</sub> IEF t/t	Activity Data (production) (kt)	CO <sub>2</sub> IEF t/t	Key category	Share of national total (%)	Activity Data (production) (kt)	CO <sub>2</sub> IEF t/t
IPCC default EF <sup>c</sup>					1.5-1.6								1.5-1.8
Australia	T1b	CS	L, T	1.9	1.3	6,312	NA	1,592	1.0		0.6	1,877	1.6
Austria	CS, T2	D, PS	L, T	4.8	0.3	6,515	0.1	4,861	0.8	T	-	NO	NO
Belarus				0.0	IE, NO	IE	IE	IE	IE		-	NO	NO
Belgium			L, T	1.1	0.1	7,043	0.1	8,208	0.1		-	0	NO
Bulgaria	D	CR, D	L, T	2.2	0.8	1,833	0.8	C	NO		0.0	3	1.7
Canada	CS, T2	OTH	L, T	1.1	0.3	16,202	0.0	8,828	0.8	T	0.6	2,592	1.6
Croatia	T1	D		0.0	0.0	86	0.0	NO	NO	T	-	NO	NO
Czech Republic	T1	D	L, T	4.6	0.3	7,033	1.0	5,386	IE		-	NO	NO
Denmark	NA	NA		-	NA, NO	NO	NO	NO	NO		-	NO	NO
Estonia	NA	NA		-	NO	0	NE	0	NE		-	0	NO
European Community			L, T	1.5	NA	NA	NA	NA	NA		0.1	NA	NA
Finland	CS, T2, T3	CS, D	L, T	3.1	0.5	4,830	0.5	IE	IE		-	NO	NO
France			L	0.6	0.1	20,937	0.1	13,200	0.1		0.1	447	1.6
Germany	T2, T3	CS	L, T	4.4	0.6	46,364	1.0	30,018	NA		0.1	669	1.4
Greece	CR, T1, T2	CR, CS	T	0.3	0.2	1,966	0.2	NO	NO		0.2	C	C
Hungary	CS, D, T3	D		0.3	0.1	1,952	0.1	1,351	IE		0.1	34	1.8
Iceland				-	NA, NO	NO	NO	NO	NO	L, T	11.0	271	1.5
Ireland	NA	NA		-	NO	NO	NO	NO	NO		-	NO	NO
Italy	D	CR, CS, PS	T	0.2	0.0	28,385	0.0	10,566	0.1		0.1	195	1.6
Japan	CS	OTH		0.0	NE	NE	IE	NE	IE		-	6	IE
Latvia	T2	PS		0.4	C, NE	C	NE	NE	NE		-	NO	NO
Liechtenstein	NA	NA		-	NO	NO	NO	NO	NO		-	NO	NO
Lithuania	NA	NA		-	NO	NO	NO	NO	NO		-	NO	NO
Luxembourg	CR	PS	L, T	1.9	0.1	2,684	0.1	NO	NA		-	NE	NE
Monaco				-	NO	NO	NO	NO			0.0	NO	NO
Netherlands	T1a, T2	CS	L, T	0.6	0.2	6,870	0.0	NO	NO		0.2	330	1.5
New Zealand	T2	CS, D	L	2.3	C, IE, NO	C	C	IE	IE	L	0.7	350	1.6
Norway	T2	CS, PS	L, T	0.6	3.0		NO	114	3.0	L, T	3.8	1,321	1.6
Poland	CS, T1	CS, D	L	1.0	0.2	IE	IE	6,427	0.3		0.0	59	1.8
Portugal	D, T2	D, PS		0.0	24.8	1	24.8	IE	IE		-	NO	NO
Romania	T1b, T2	CS, D	L, T	4.1	0.6	6,162	0.1	4,237	1.4		0.2	215	1.5
Russian Federation	T1b, T2	CS, D	L, T	4.0	0.6	65,646	0.1	50,427	1.6		0.3	C	C
Slovakia	T1, T2	D, PS	L, T	1.1	0.1	4,421	0.1	3,765	IE		0.5	157	1.5
Slovenia	D, T2	PS		0.1	0.1	571	0.1	NO	NO	L, T	1.1	121	1.7
Spain	D, T2	CS, PS	L, T	0.4	0.1	17,979	0.1	4,095	0.1		0.2	395	1.6
Sweden	CS, D, T1	CS, PS	L, T	2.6	0.3	1,872	0.1	3,992	0.4		0.2	101	1.9
Switzerland				0.3	0.1	1,134	0.1	IE	IE	T	0.1	45	1.6
Turkey	T1	D		0.1	0.1	20	1.6	197	1.6		0.0	64	1.8
Ukraine	T1, T2	CS, D	L, T	14.1	0.6	38,719	0.1	30,978	1.8		-	IE	IE
United Kingdom	T2, T3	CS		0.2	0.1	3,099	0.0	10,169	NA		0.1	1	426.4
United States	CS, D, T2	CS, D	L, T	0.7	0.4	51,969	0.0	42,292	NE		0.1	2,517	1.7

<sup>a</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 2.C Metal production.

<sup>b</sup> CO<sub>2</sub> emission estimates from sinter (2.C.1.3) were reported by only European Community and Spain; CO<sub>2</sub> emission estimates from coke (2.C.1.4) were reported by only Australia, European Community, Latvia and the United States.

<sup>c</sup> Source of default emission factors: IPCC Guidelines, volume 3, pages 2.28 and 2.33.

**Table 2.11a****CO<sub>2</sub> emissions from iron and steel production - trend information**

CO <sub>2</sub> emissions (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	10,174	10,067	-2.6	2.9	-0.5	-0.3	-3.8	4.9	-5.9	-8.4	-3.2	-2.6	5.9	-1.1
Austria	3,546	4,415	-1.1	14.9	-5.6	10.7	-4.9	-3.6	11.8	-1.0	10.8	-1.8	-2.4	24.5
Belarus	6	10	1.0	-15.5	19.1	37.7	15.7	2.7	12.0	-0.7	-0.3	5.4	13.3	72.6
Belgium	1,946	1,652	-13.5	8.2	-17.2	2.9	8.0	5.6	-10.7	-8.0	27.2	-15.9	-2.8	-15.1
Bulgaria	2,360	1,505	-26.1	9.4	-9.8	7.0	-14.8	-9.2	-12.6	-4.6	-6.2	25.7	-8.3	-36.3
Canada	7,058	8,161	17.8	4.5	-1.7	-2.5	1.8	2.7	0.0	-7.8	-2.3	-1.0	15.9	15.6
Croatia	1	0	-9.6	-47.9	172.7	52.2	48.4	-26.4	-8.0	-18.4	-41.6	24.8	103.5	-54.6
Czech Republic	12,533	6,726	-29.9	5.2	-7.5	6.7	-11.7	-20.6	18.2	-6.7	4.1	10.1	-11.2	-46.3
Denmark	28	NA, NO	0.0	15.1	-8.8	-0.5	20.5	2.0	-5.4	14.6	*	*	*	*
Estonia	NA	NO	*	*	*	*	*	*	*	*	*	*	*	*
European Community	71,912	64,690	-6.0	0.9	-8.4	10.2	-4.0	-6.0	6.5	-4.0	2.0	0.5	2.7	-10.0
Finland	1,858	2,551	0.6	-1.1	4.5	13.0	-0.7	-0.2	1.2	-1.9	-4.1	12.0	3.8	37.3
France	3,952	3,326	-24.1	22.3	-30.6	18.2	-4.2	-13.4	-13.0	-4.8	17.8	8.5	17.0	-15.9
Germany	48,271	44,291	-4.0	0.1	-7.5	12.2	-3.4	-6.8	10.6	-4.2	0.3	-1.2	2.5	-8.2
Greece	203	476	-1.3	13.6	-18.0	26.4	14.8	-13.5	16.0	27.6	37.1	-9.7	19.3	134.9
Hungary	470	252	-34.9	-4.0	0.6	-9.1	7.4	-0.3	3.5	4.2	5.3	-3.1	-2.0	-46.4
Iceland	NA, NO	NA, NO	*	*	*	*	*	*	*	*	*	*	*	*
Ireland	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Italy	3,124	1,179	-5.1	-2.5	-19.8	-7.6	-9.2	-24.1	-17.2	1.1	-4.2	-5.2	4.7	-62.3
Japan	356	258	-9.3	3.3	6.4	1.2	-23.8	-13.2	-2.4	-15.2	4.9	9.3	6.7	-27.6
Latvia	44	47	-75.1	-17.0	-5.4	73.1	6.6	-3.3	-0.6	-2.2	0.0	-0.8	6.8	6.8
Liechtenstein	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Lithuania	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Luxembourg	962	240	-5.0	-39.5	-9.0	-21.6	-57.6	6.7	-10.6	6.0	94.3	-2.7	-8.5	-75.0
Monaco	0	0	*	*	*	*	*	*	*	*	*	*	*	*
Netherlands	2,514	1,313	-13.9	0.0	-3.5	16.8	-18.1	-8.5	-15.9	-1.2	7.4	10.6	-15.8	-47.8
New Zealand	1,329	1,732	9.3	5.4	-2.3	-10.0	7.3	4.1	-0.8	4.5	-3.5	13.6	0.9	30.2
Norway	200	343	-12.7	2.5	8.5	-23.9	13.8	5.4	7.1	14.0	-2.7	10.8	4.4	71.0
Poland	6,556	4,139	-12.2	-8.4	-14.3	42.2	-17.7	-13.0	22.3	-31.2	18.1	13.7	1.6	-36.9
Portugal	27	35	5.6	-2.6	-1.0	17.9	0.3	6.3	6.8	-27.9	-42.0	13.5	51.0	32.4
Romania	15,803	6,275	-36.1	10.9	-6.2	7.0	-0.2	-39.1	0.9	-7.4	34.1	-11.0	4.3	-60.3
Russian Federation	102,100	86,870	-17.6	8.8	-6.5	0.5	-7.2	17.9	9.1	1.0	3.7	4.5	3.4	-14.9
Slovakia	420	540	-11.2	-3.7	-9.0	5.2	0.9	10.3	2.9	6.6	9.4	10.5	0.9	28.5
Slovenia	40	30	-42.0	-3.9	-19.1	15.9	2.0	1.9	15.0	-0.5	5.6	9.4	18.6	-25.8
Spain	1,825	1,879	2.2	-33.7	-8.4	14.6	6.3	10.2	19.9	-4.6	7.0	-10.7	13.5	3.0
Sweden	1,796	1,798	2.2	-6.7	-0.3	-0.2	-3.2	-9.6	-2.7	16.3	-7.1	13.0	-5.9	0.1
Switzerland	111	153	4.3	-41.8	3.1	6.9	11.6	46.0	11.3	2.5	7.4	-1.4	-1.4	38.2
Turkey	770	347	-17.2	-16.3	34.1	30.5	-20.8	-31.2	3.5	-23.2	-34.6	13.2	17.1	-55.0
Ukraine	80,459	58,476	-15.3	-7.5	2.8	19.6	4.4	5.6	7.9	1.6	0.5	1.4	0.8	-27.3
United Kingdom	1,860	1,535	-34.0	22.5	18.1	-14.9	-12.1	20.7	-9.6	-36.6	-33.1	105.7	16.3	-17.4
United States	85,023	51,334	-10.4	0.2	-8.1	6.3	-5.8	-5.7	2.3	-11.5	-5.7	-2.2	-3.8	-39.6

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 2.11b****CO<sub>2</sub> implied emission factors for iron and steel production (steel) - trend information**

CO <sub>2</sub> IEF (t/t)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	NA	NA	*	*	*	*	*	*	*	*	*	*	*	*
Austria	0.11	0.10	2.5	3.3	-0.5	-1.2	-0.8	-1.3	0.5	-1.6	1.6	-1.3	0.1	-7.3
Belarus	IE	IE	*	*	*	*	*	*	*	*	*	*	*	*
Belgium	0.13	0.10	-0.9	1.7	462.3	-84.2	3.5	-1.4	-4.3	-0.1	1,179.5	-92.4	-3.8	-22.2
Bulgaria	C	0.82	*	*	*	*	*	*	*	*	*	*	*	*
Canada	0.05	0.04	7.1	3.2	4.0	-5.7	-6.2	-2.5	-2.3	-8.7	3.0	-3.3	6.9	-10.5
Croatia	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Czech Republic	1.24	0.96	-11.2	18.3	-16.9	14.3	-17.3	2.7	3.7	-8.1	0.6	6.0	-14.4	-22.9
Denmark	0.05	NO	0.0	16.1	-1.4	-19.1	31.4	-4.3	19.6	0.2	*	*	*	*
Estonia	NA	NE	*	*	*	*	*	*	*	*	*	*	*	*
European Community	NA	NA	*	*	*	*	*	*	*	*	*	*	*	*
Finland	0.65	0.53	-0.4	6.5	0.5	-0.1	-6.2	-0.3	-2.4	2.1	-5.6	-5.9	2.4	-18.7
France	0.08	0.06	7.8	0.2	-12.6	-2.8	0.0	-2.0	-26.2	20.8	1.5	51.8	-18.5	-18.0
Germany	1.10	0.96	-0.1	-2.8	-2.3	-0.8	-1.3	-2.4	0.3	-0.8	-0.2	-0.7	-1.0	-13.1
Greece	0.20	0.24	0.6	2.6	-4.9	0.8	5.3	0.7	0.0	10.0	-4.5	-2.4	3.2	19.4
Hungary	0.13	0.13	0.0	0.0	0.0	0.7	-0.1	-0.2	0.3	-0.3	0.3	-0.1	-0.2	0.5
Iceland	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Ireland	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Italy	0.05	0.02	0.8	-8.1	-8.4	-9.2	-10.3	-22.7	-26.5	5.6	2.0	-3.2	-0.7	-58.8
Japan	IE	IE	*	*	*	*	*	*	*	*	*	*	*	*
Latvia	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Liechtenstein	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Lithuania	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Luxembourg	0.16	0.09	0.0	-22.8	-5.2	-11.9	-41.3	1.6	-9.6	0.0	93.5	-0.5	-8.8	-44.7
Monaco	NA	NA	*	*	*	*	*	*	*	*	*	*	*	*
Netherlands	0.01	0.01	0.0	0.0	0.0	0.0	0.0	0.0	-27.7	33.5	36.1	-23.8	0.0	0.0
New Zealand	C	C	*	*	*	*	*	*	*	*	*	*	*	*
Norway	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Poland	IE	IE	*	*	*	*	*	*	*	*	*	*	*	*
Portugal	0.08	24.76	29.8	-5.9	-4.8	14.8	9.0	-3.2	-2.3	215.7	10,422.4	-3.3	-7.7	31,145.3
Romania	0.06	0.07	-2.8	9.3	4.0	1.8	5.7	-3.9	-3.0	0.6	11.7	-1.9	-6.5	12.9
Russian Federation	0.06	0.08	-2.7	2.7	-1.3	1.8	2.3	0.3	-4.7	0.9	2.1	-0.3	-0.4	20.1
Slovakia	0.12	0.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	0.0	3.5
Slovenia	0.02	0.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	-2.8	12.5	222.0
Spain	0.08	0.07	0.0	-12.1	1.0	1.9	-1.6	13.4	7.8	-1.2	0.9	-16.6	2.0	-10.5
Sweden	0.07	0.08	-8.1	7.0	4.8	-6.4	3.3	-0.9	-0.3	-2.4	5.6	-2.1	1.5	3.6
Switzerland	0.09	0.14	1.8	-3.6	1.3	0.3	0.2	40.4	0.7	0.7	1.3	0.2	-0.6	46.0
Turkey	1.60	1.60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ukraine	0.07	0.09	4.7	2.5	-0.2	-3.9	0.4	2.8	1.1	2.0	-1.1	3.5	0.9	21.0
United Kingdom	0.01	0.01	-0.9	-0.9	-1.0	-1.0	-1.0	-1.0	-1.0	0.0	0.0	0.0	0.0	-9.1
United States	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 2.12a****CO<sub>2</sub> emissions from aluminium production - trend information**

CO <sub>2</sub> emissions (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	2,017	3,022	0.1	-2.3	11.8	-1.2	14.1	3.6	1.8	3.5	4.0	1.1	0.5	49.8
Austria	158	NO	0.0	*	*	*	*	*	*	*	*	*	*	*
Belarus	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Belgium	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Bulgaria	12	5	-54.9	2.4	-2.3	-18.8	86.4	-37.3	-23.9	-50.8	31.5	-3.4	60.3	-56.1
Canada	2,715	4,224	15.9	-3.4	6.1	1.7	1.2	-0.7	-1.3	7.8	5.2	3.7	-7.8	55.6
Croatia	111	NO	-31.4	*	*	*	*	*	*	*	*	*	*	*
Czech Republic	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Denmark	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Estonia	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
European Community	3,884	4,016	-4.0	4.1	1.7	1.8	4.9	4.7	2.8	2.3	1.4	-0.7	2.2	3.4
Finland	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
France	534	714	-11.2	-2.9	3.0	6.4	4.6	9.1	-0.5	4.6	4.5	-4.9	-4.5	33.8
Germany	1,012	914	-6.7	14.2	0.3	-0.8	7.0	3.3	1.9	1.4	0.3	1.0	1.2	-9.6
Greece	232	258	1.8	-5.2	0.0	1.3	10.1	9.5	1.7	-0.3	1.2	1.5	0.2	11.3
Hungary	133	62	-16.3	7.6	4.9	0.6	0.1	-0.2	0.6	2.2	2.0	-0.7	-2.0	-53.4
Iceland	136	407	2.0	1.9	4.1	20.4	40.5	30.8	-0.5	8.2	5.0	2.3	1.4	198.4
Ireland	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Italy	359	303	-6.0	1.3	3.7	1.8	-0.4	0.1	1.4	-1.2	1.5	0.5	2.1	-15.7
Japan	IE	IE	*	*	*	*	*	*	*	*	*	*	*	*
Latvia	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Liechtenstein	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Lithuania	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Luxembourg	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Monaco	0	0	*	*	*	*	*	*	*	*	*	*	*	*
Netherlands	395	479	-3.1	-1.7	5.2	2.0	14.3	8.5	5.0	-2.8	-3.0	-0.5	16.7	21.3
New Zealand	458	552	-0.6	0.5	4.9	2.2	7.4	-1.2	-2.8	-3.0	7.1	0.3	1.9	20.6
Norway	1,419	2,084	-1.2	1.1	0.7	8.4	7.2	1.4	1.6	0.8	3.1	9.2	10.3	46.9
Poland	86	106	-0.4	12.6	-6.8	3.3	1.0	-5.9	2.7	4.3	7.7	-2.7	3.0	23.5
Portugal	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Romania	398	323	-8.2	19.0	-0.3	16.7	6.7	-0.4	-0.5	3.8	3.8	6.1	8.7	-18.9
Russian Federation	5,129	6,255	-6.2	9.0	-1.4	0.4	3.3	5.2	2.9	1.6	1.3	3.7	3.3	22.0
Slovakia	121	235	-1.6	-0.6	184.8	-1.1	-2.0	1.1	0.6	0.2	-0.2	1.6	40.6	94.0
Slovenia	89	211	-16.6	4.2	-7.1	-0.3	-0.3	-0.3	1.1	-0.2	47.5	9.3	2.9	135.5
Spain	610	649	-0.4	7.0	-0.2	0.6	-1.1	0.9	0.8	1.7	1.9	0.4	1.2	6.3
Sweden	133	145	0.2	7.9	6.1	-0.5	2.1	0.6	3.5	-4.2	5.1	0.0	-0.5	9.1
Switzerland	139	72	-5.9	-14.2	28.3	2.7	18.3	6.6	3.2	2.1	10.7	9.2	2.3	-48.4
Turkey	110	115	-8.3	2.9	1.0	-0.1	-0.3	-0.2	-0.3	0.4	1.2	1.0	1.4	5.1
Ukraine	IE	IE	*	*	*	*	*	*	*	*	*	*	*	*
United Kingdom	450	554	1.3	2.8	0.9	3.2	4.3	4.2	12.5	11.7	1.0	-0.5	4.9	23.0
United States	7,045	4,346	1.6	2.1	5.8	0.5	2.8	1.6	-3.3	-27.8	2.0	0.3	-5.7	-38.3

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 2.12b**  
**CO<sub>2</sub> implied emission factors for aluminium production - trend information**

CO <sub>2</sub> IEF (t/t)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	1.63	1.61	0.0	5.0	8.0	-5.7	0.2	-2.3	-1.5	0.8	2.8	-1.5	-0.7	-1.4
Austria	1.80	NO	0.0	*	*	*	*	*	*	*	*	*	*	*
Belarus	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Belgium	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Bulgaria	1.65	1.65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Canada	1.74	1.63	-0.7	0.2	1.1	-0.3	-0.8	-1.8	-0.1	-1.1	0.3	0.5	-0.6	-6.2
Croatia	1.50	NO	0.0	*	*	*	*	*	*	*	*	*	*	*
Czech Republic	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Denmark	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Estonia	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
European Community	NA	NA	*	*	*	*	*	*	*	*	*	*	*	*
Finland	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
France	1.64	1.60	1.1	2.4	-1.2	1.3	-0.7	1.6	2.8	0.1	3.3	-1.0	-4.9	-2.4
Germany	1.37	1.37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Greece	C	C	*	*	*	*	*	*	*	*	*	*	*	*
Hungary	1.80	1.80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Iceland	1.55	1.50	0.5	0.2	0.9	0.7	-0.1	2.4	-2.4	0.3	-2.9	1.3	-0.4	-3.4
Ireland	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Italy	1.55	1.55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Japan	IE	IE	*	*	*	*	*	*	*	*	*	*	*	*
Latvia	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Liechtenstein	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Lithuania	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Luxembourg	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Monaco	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Netherlands	1.45	1.45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
New Zealand	1.73	1.58	0.0	0.0	0.1	-6.3	5.1	-4.3	-3.1	-1.5	4.1	0.3	-3.0	-9.1
Norway	1.63	1.58	-2.6	2.6	-0.1	0.7	-1.1	-0.2	-0.6	0.0	2.3	-3.6	-0.9	-3.3
Poland	1.80	1.80	0	0	0	0	0	0	0	0	0	0	0	0
Portugal	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Romania	1.50	1.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Russian Federation	C	C	*	*	*	*	*	*	*	*	*	*	*	*
Slovakia	1.80	1.50	0.0	0.0	-16.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-16.7
Slovenia	2.01	1.74	-4.2	4.4	-3.9	-3.9	0.5	-1.8	0.0	-0.1	4.6	-1.5	0.9	-13.3
Spain	1.72	1.64	-0.2	0.0	-0.2	1.1	-1.3	-0.1	0.4	-1.3	0.9	-1.9	-0.1	-4.4
Sweden	1.86	1.95	-0.4	-4.8	2.3	-0.6	4.8	-2.5	1.5	-4.6	5.1	1.3	-0.5	4.5
Switzerland	1.60	1.60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turkey	1.80	1.80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ukraine	IE	IE	*	*	*	*	*	*	*	*	*	*	*	*
United Kingdom	408.97	426.41	0.8	0.5	-0.1	1.0	0.4	0.3	-0.1	0.5	0.5	3.1	0.0	4.3
United States	1.74	1.73	-0.2	-0.2	-0.1	-0.2	-0.2	-0.2	-0.4	0.4	-0.6	0.3	1.3	-0.8

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 2.13**  
**Metal production, PFCs and SF<sub>6</sub> (base year)<sup>a</sup>**

	PFCs								SF <sub>6</sub>						
	Methods and EF used <sup>b</sup>		Aluminium production - PFCs						Methods and EF used <sup>b</sup>		SF <sub>6</sub> used in magnesium foundries				
			Key category	Share of national total	Activity data (aluminium production)	IEF		Ratio IEF CF <sub>4</sub> / IEF C <sub>2</sub> F <sub>6</sub>				Activity data (production)		SF <sub>6</sub> IEF	Actual SF <sub>6</sub> emissions <sup>f</sup>
	Methods	EF				CF <sub>4</sub>	C <sub>2</sub> F <sub>6</sub>	Methods	EF						
				(%)	(kt)	(kg/t)								(kg/t)	(t)
IPCC default EF <sup>d</sup>						0.31-1.7	0.04-0.17							1 <sup>e</sup>	
Australia	T1c	CS	L	0.9	1,235	0.41	0.05	7.7	NA	NA		-	(SF <sub>6</sub> consumption)	NO	NO
Austria	T3	PS	L	1.3	88	1.56	0.19	8.0	T1	D		0.3	cast Magnesium [t]	3,080	10.0
Belarus	NA	NA		-	NO	NO	NO		NA	NA		-	NO	NO	NO
Belgium	NA	NA		-	0	NO	NO					-		0	NO
Bulgaria	D	D		0.1	7	1.40	0.14	10.0	NA	NA		-		NO	NO
Canada	CS	OTH	L	1.1	1,562	0.58	0.05	12.7	D, T3	D		0.0	SF <sub>6</sub> use	10	9.9
Croatia	T1	D	L	3.0	74	1.70	0.17	10.0	NA	NA		-		NO	NO
Czech Republic	NA	NA		-	NO	NO	NO		NA	NA		-	NO	NO	NO
Denmark	NA	NA		-	NO	NE	NE					0.0		1	1,000
Estonia	NA	NA		-	0	NO	NO		NA	NA		-		0	NO
European Community	CR, CS, T1, T2, T3	CS, PS		0.3	NA	NA	NA					0.0		NA	56.5
Finland	NA	NA		-	NO	NO	NO		NA	NA		-	(SF <sub>6</sub> consumption)	NO	NO
France			L	0.5	326	1.13	0.21	5.3				0.2	SF <sub>6</sub> consumption	37	36.8
Germany	T3	CS		0.2	740	0.45	0.05	10.0	D	CS		0.0	Consumption Mg-Production	7	7.4
Greece	T3	PS		0.2	C	C	C		NA	NA		-		NO	NO
Hungary	D, T2	D, PS		0.2	74	0.49	0.05	10.0	NA	NA		-		NO	NO
Iceland			L	12.5	88	0.62	0.08	7.8				-		0	NO
Ireland	NA	NA		-	NO	NO	NO		NA	NA		-	NO	NO	NO
Italy	T1	D, PS		0.3	232	0.86	0.18	4.8	NA	NA		-	consumption of SF <sub>6</sub>	NO	NO
Japan	NA	NA		-	NE	NE	NE		NA	NA		-	SF <sub>6</sub> consumption	NE	NE
Latvia	NA	NA		-	NO	NO	NO		NA	NA		-		NO	NO
Liechtenstein	NA	NA		-	NO	NO	NO		NA	NA		-	NO	NO	NO
Lithuania	NA	NA		-	NO	NO	NO		NA	NA		-		NO	NO
Luxembourg	NA	NA		-	NE	NO	NO		NA	NA		-		NO	NO
Monaco				-	NO	NO	NO					0.0		NO	0.0
Netherlands	T2	PS	L	1.1	272	1.02	0.18	5.8	NA	NA		-		NO	NO
New Zealand	T2	D	L	0.8	264	0.26	0.03	8.5	T2	PS		0.0	SF <sub>6</sub> consumption	0	0.1
Norway	T2	CS	L	6.8	870	0.54	0.04	12.9	T1	D	L	4.3		90	89.7
Poland	T1c	D		0.0	48	0.71	0.07	10.0	NA	NA		-		0	NE
Portugal	NA	NA		-	NO	NE	NE		NA	NA		-	(SF <sub>6</sub> consumption)	NO	NE
Romania			L	1.3	266	1.70	0.17	10.0	NA	NA		-		NE	NE
Russian Federation	T1b	D		0.4	C	C	C		D	D		0.0	(SF <sub>6</sub> consumption)	4	3.9
Slovakia	T1	D		0.4	67	0.54	0.05	10.1	NA	NA		-		NO	NO
Slovenia	T2	PS	L	1.4	44	0.84	0.08	10.0	NA	NA		-		NO	NO
Spain	T2	PS		0.3	355	0.34	0.03	12.7	NA	NA		-	NO	NO	NE
Sweden	T2	CS	L	0.6	96	0.61	0.07	9.0	D	D		0.0	SF <sub>6</sub> consumption	1	1.0
Switzerland	T3	PS		0.2	87	0.15	0.02	9.0	NA	NA		-		C	NO
Turkey				0.0	61							-			
Ukraine				-	IE	IE	IE		NA	NA		-	Magnesium Foundries	NO	NE
United Kingdom	CS	CS, PS		0.2	1	IE	NE		NA	NA		-	SF <sub>6</sub> consumption	IE	IE
United States	T2	CS		0.3	4,048	0.61	0.06	10.2	D	CS		0.1	Magnesium Production and Processing	C	226.4

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

<sup>b</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for PFCs for all subcategories within the category 2.C Metal production.

<sup>c</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for SF<sub>6</sub> for all subcategories within the category 2.C Metal production.

<sup>d</sup> Source of default emission factors: IPCC good practice guidance, page 3.44.

<sup>e</sup> The default emission factor is 1 kg/t magnesium produced or smelted.

<sup>f</sup> IPCC good practice guidance state that emissions equal consumption (IPCC good practice, page 3.48).

**Table 2.14**  
**Metal production, PFCs and SF<sub>6</sub> (2004)**

	PFCs								SF <sub>6</sub>								
	Methods and EF used <sup>a</sup>		Aluminium production - PFCs						Methods and EF used <sup>b</sup>		SF <sub>6</sub> used in magnesium foundries						
			Key category	Share of national total	Activity data (aluminium production)	IEF		Ratio IEF CF <sub>4</sub> / IEF C <sub>2</sub> F <sub>6</sub>				Key category	Share of national total	Activity data (production)		SF <sub>6</sub> IEF	Actual SF <sub>6</sub> emissions <sup>c</sup>
	Methods	EF				CF <sub>4</sub>	C <sub>2</sub> F <sub>6</sub>	Methods	EF	Description	Value						
				(%)	(kt)	(kg/t)							(%)		(t)	(kg/t)	(t)
IPCC default EF <sup>c</sup>						0.31-1.7	0.04-0.17									1 <sup>d</sup>	
Australia	T1c	CS	T	0.3	1,877	0.10	0.01	7.7	NA	NA			-	(SF6 consumption)	NO	NO	NO
Austria	NA	NA	T	-	NO	NO	NO		NA	NA	T		-	cast Magnesium [t]	3,600	NO	NO
Belarus	NA	NA		-	NO	NO	NO		NA	NA			-	NO	NO	NO	NO
Belgium	NA	NA		-	0	NO	NO						-		0	NO	NO
Bulgaria	D	D		0.0	3	1.40	0.14	10.0	NA	NA			-		NO	NO	NO
Canada	CS	OTH	T	0.4	2,592	0.16	0.01	12.7	D, T3	D			0.0	SF6 use	8	1,000	8.1
Croatia	NA	NA	T	-	NO	NO	NO		NA	NA			-		NO	NO	NO
Czech Republic	NA	NA		-	NO	NO	NO		NA	NA			-	NO	NO	NO	NO
Denmark	NA	NA		-	NO	NO	NO		NA	NA			-		NO	NO	NO
Estonia	NA	NA		-	0	NO	NO		NA	NA			-		0	NO	NO
European Community		CS, PS	T	0.1	NA	NA	NA						0.0		NA	NA	51.9
Finland	NA	NA		-	NO	NO	NO		NA	NA			-	(SF6 consumption)	NO	NO	NO
France			T	0.2	447	0.31	0.08	3.9					0.1	SF6 consumption	22	1,000	21.5
Germany	T3	CS	T	0.0	669	0.09	0.01	10.0	D	CS			0.1	Consumption Mg-Production	25	1,000	24.8
Greece	T3	PS	T	0.1	C	C	C		NA	NA			-		NO	NO	NO
Hungary	D, T2	D, PS		0.2	34	0.78	0.08	10.0	NA	NA			-		NO	NO	NO
Iceland			L, T	1.0	271	0.02	0.00	7.8					-		0	NO	NO
Ireland	NA	NA		-	NO	NO	NO		NA	NA			-	NO	NO	NO	NO
Italy	T2	D, PS	T	0.0	195	0.10	0.01	7.8	D	PS			0.0	consumption of SF6	3.94	1,000	3.9
Japan	T1b	CS		0.0	6	0.31	0.03	10.0	CS	CS			0.1	SF6 consumption	40	1,000	40.5
Latvia	NA	NA		-	NO	NO	NO		NA	NA			-		NO	NO	NO
Liechtenstein	NA	NA		-	NO	NO	NO		NA	NA			-	NO	NO	NO	NO
Lithuania	NA	NA		-	NO	NO	NO		NA	NA			-		NO	NO	NO
Luxembourg	NA	NA		-	NE	NO	NO		NA	NA			-		NO	NO	NO
Monaco				-	NO	NO	NO						0.0		NO	NO	0.0
Netherlands	T2	PS	T	0.0	330	0.04	0.01	7.0	NA	NA			-		NO	NO	NO
New Zealand	T2	D	T	0.1	350	0.03	0.00	11.0	NA	NA			-	SF6 consumption	NO	NA	NA
Norway	T2	CS	L, T	1.6	1,321	0.09	0.01	13.0	T1	D	T		0.4		9	1,000	8.6
Poland	T1c	D		0.1	59	0.61	0.06	10.0	NA	NA			-		0	NE	NE
Portugal	NA	NA		-	NO	NO	NO		NA	NA			-	(SF6 consumption)	NO	NO	NO
Romania			T	0.3	215	0.31	0.04	7.7	NA	NA			-		NO	NE	NE
Russian Federation	T1b	D	L, T	0.9	C	C	C		D	D			0.0	(SF6 consumption)	5	1,000	4.9
Slovakia	T1	D	T	0.0	157	0.02	0.00	10.0	NA	NA			-		NO	NO	NO
Slovenia	T3	PS	T	0.6	121	0.13	0.01	9.2	NA	NA			-		NO	NO	NO
Spain	T2	PS	T	0.0	395	0.06	0.00	13.2	NA	NA			-	NO	NO	NE	NE
Sweden	T2	CS	T	0.4	101	0.35	0.04	9.0	D	D			0.1	SF6 consumption	2	1,000	1.7
Switzerland	T3	PS	T	0.0	45	0.03	0.00	9.0					0.1		C	C	2.1
Turkey				-	64								0.0				
Ukraine				-	IE	IE	IE		NA	NA			-	Magnesium Foundries	NO	NE	NE
United Kingdom	CS	CS, PS		0.0	1	IE	IE						-	SF6 consumption	IE	IE	IE
United States	T2	CS	T	0.0	2,517	0.15	0.02	7.9	D	CS			0.0	Magnesium Production and Processing	C	C	113.2

<sup>a</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for PFCs for all subcategories within the category 2.C Metal production.

<sup>b</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for SF<sub>6</sub> for all subcategories within the category 2.C Metal production.

<sup>c</sup> Source of default emission factors: IPCC good practice guidance, page 3.44.

<sup>d</sup> The default emission factor is 1 kg/t magnesium produced or smelted.

<sup>e</sup> IPCC good practice guidance state that emissions equal consumption (IPCC good practice, page 3.48).

**Table 2.15****CF<sub>4</sub> emissions from aluminium production - trend information**

CF <sub>4</sub> emissions (t)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	511.8	193.1	0.1	-29.2	-7.8	-12.1	44.8	-35.7	12.3	40.0	-3.0	-2.6	1.2	-62.3
Austria	137.3	NO	0.0	*	*	*	*	*	*	*	*	*	*	*
Belarus	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Belgium	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Bulgaria	10.2	4.5	-54.9	2.4	-2.3	-18.8	86.4	-37.3	-23.9	-50.8	31.5	-3.4	60.3	-56.1
Canada	905.4	419.1	6.3	-8.4	1.0	-1.4	2.5	-17.2	-7.4	-19.1	-14.5	1.4	0.7	-53.7
Croatia	126.2	NO	-31.4	*	*	*	*	*	*	*	*	*	*	*
Czech Republic	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Denmark	NE	NO	*	*	*	*	*	*	*	*	*	*	*	*
Estonia	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
European Community	1,532.5	304.3	-10.1	-4.1	-5.1	-2.3	-2.2	-4.6	-28.9	-14.6	51.5	-31.2	-35.3	-80.1
Finland	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
France	368.6	140.1	-13.9	-16.5	-14.2	2.9	27.2	32.8	-37.9	-23.3	99.1	-14.7	-42.6	-62.0
Germany	335.5	60.1	-14.5	5.4	-5.3	-26.8	8.4	-26.2	-58.6	4.3	16.0	9.7	-5.7	-82.1
Greece	34.7	9.7	0.0	-11.4	-13.5	130.5	23.2	-35.4	12.6	-38.4	-2.8	-12.4	-7.8	-72.2
Hungary	36.2	27.0	-13.7	5.0	-4.5	-0.3	7.6	2.4	20.3	-5.8	1.6	-6.7	6.2	-25.5
Iceland	54.6	5.0	-17.0	32.0	-57.3	227.5	118.7	-3.8	-26.6	-27.9	-20.9	-17.6	-35.5	-90.8
Ireland	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Italy	198.3	20.5	-21.9	-12.6	-49.2	1.8	0.6	-0.7	37.8	17.8	-15.2	34.7	-41.2	-89.7
Japan	NE	2.0	*	*	-5.4	-9.8	-16.9	-41.1	-39.0	-11.7	-5.6	2.0	-2.1	*
Latvia	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Liechtenstein	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Lithuania	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Luxembourg	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Monaco	0.0	0.0	*	*	*	*	*	*	*	*	*	*	*	*
Netherlands	277.3	13.5	-0.8	-3.0	11.5	6.8	-26.4	-25.8	4.7	-4.5	53.6	-77.7	-74.4	-95.1
New Zealand	68.0	11.0	24.1	-20.8	57.9	-30.0	-52.4	0.0	-23.0	0.0	42.9	0.0	0.0	-83.8
Norway	467.4	122.1	-10.9	-1.2	-8.8	-11.1	-8.8	-6.5	-5.0	0.6	7.4	-37.6	-2.8	-73.9
Poland	33.7	36.0	*	*	-6.1	3.3	1.0	-5.9	-7.9	16.3	7.6	-2.6	3.0	6.6
Portugal	NE	NO	*	*	*	*	*	*	*	*	*	*	*	*
Romania	451.4	66.7	-8.2	19.0	-0.3	-78.7	6.7	-0.4	-0.5	3.8	3.8	6.1	8.7	-85.2
Russian Federation	1,930.0	2,480.6	-6.2	9.0	-0.8	1.0	3.9	5.8	3.5	2.2	1.9	4.3	3.9	28.5
Slovakia	36.6	2.6	-1.6	-13.4	-69.7	-3.4	-33.1	-49.4	0.6	0.2	-0.2	83.0	-7.4	-92.9
Slovenia	37.2	16.0	17.5	1.4	-16.2	-18.8	-23.2	-30.2	0.0	0.0	10.3	2.7	0.6	-57.0
Spain	122.2	25.4	-6.4	1.6	-4.9	2.2	-7.5	-9.9	-44.8	-48.6	5.0	-4.4	-3.6	-79.2
Sweden	58.5	35.0	-1.9	10.3	-13.2	-8.6	-3.1	10.0	-17.9	-1.8	9.1	0.1	-7.0	-40.2
Switzerland	13.3	1.5	-15.6	-20.7	17.9	-6.3	6.8	-8.7	-31.2	2.1	10.7	9.2	-4.1	-88.6
Turkey														
Ukraine	IE	IE	*	*	*	*	*	*	*	*	*	*	*	*
United Kingdom	IE	IE	*	*	*	*	*	*	*	*	*	*	*	*
United States	2,489.5	371.9	-15.3	-1.5	5.6	-11.5	-17.8	-1.1	0.3	-56.9	31.6	-28.3	-26.3	-85.1

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 2.16**  
**Production of halocarbons and SF<sub>6</sub> (base year)<sup>a</sup>**

	HFCs						PFCs		SF <sub>6</sub>	
	Methods and EF used <sup>b</sup>		Production of HCFC-22				Methods and EF used <sup>b</sup>		Methods and EF used <sup>b</sup>	
	Methods	EF	Key category	Share of national total	Activity data (HCFC-22 production)		Methods	EF	Methods	EF
					CRF	International <sup>c</sup>				
				(%)	(t)	(kg/t)				
IPCC default EF <sup>d</sup>						40.0				
Australia	T1	D		0.3	NA	NA			NA	NA
Austria	NA	NA		-	NO	0	NA	NA	NA	NA
Belarus				-	NO	0	NO		NA	NA
Belgium				-	0	NO				
Bulgaria	NA	NA		-	NO	NO	NA	NA	NA	NA
Canada	NA	NA		-	NA	90	NO	NA	NA	NA
Croatia				-	NO	0	NO		NA	NA
Czech Republic				-	NO	NO			NA	NA
Denmark	NA	NA		-	NO	0	NO	NA	NA	NA
Estonia				-	NO	NO			NA	NA
European Community				0.2	NA	1,559	NA			
Finland				-	NO	0	NO		NA	NA
France				0.3	1,000,000	0.1				
Germany				-	31,400		C	CS	CS	NA
Greece	T1	D	L	0.9	C	110	C			NA
Hungary	NA	NA		-	NO	NO	NA	NA	NA	NA
Iceland	NA	NA		-	0	0	NO	NA	NA	NA
Ireland				-	NA	NA			NA	NA
Italy	CS	PS		0.1	C	427	C	CS	PS	CS
Japan				-	NE	NE			NA	NA
Latvia	NA	NA		-	NA	NA	NA	NA	NA	NA
Liechtenstein				-	NO	0	NO		NA	NA
Lithuania				-	NO	0	NO		NA	NA
Luxembourg				-	NO	0	NO		NA	NA
Monaco				0.0	NO	0				
Netherlands	T2	PS	L	2.1	C	600	C	T1	PS	NA
New Zealand	NA	NA		-	NO	NO	NA	NA	NA	NA
Norway	NA	NA		-	NO	0	NO	NA	NA	NA
Poland	NA	NA		-	NE	NE	NA	NA	NA	NA
Portugal				-	NO	0	NO		NA	NA
Romania				-	NO	0	NO		NA	NA
Russian Federation	D	D		0.2	17,000	437	40.0	NA	NA	NA
Slovakia	NA	NA		-	NO	NO	NA	NA	NA	NA
Slovenia	NA	NA		-	NO	NO	NA	NA	NA	NA
Spain	T1, T2	D, PS	L	0.8	C	422	C			
Sweden				-	NO	0	NO		NA	NA
Switzerland				-	NO	NO			NA	NA
Turkey				-						
Ukraine	NA	NA		-	NE	0	NE	NA	NA	NA
United Kingdom <sup>e</sup>				-	IE	IE			NA	NA
United States	T2	CS	L	0.6	138,900	21.5	NA	NA	NA	NA

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex 1 Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

<sup>b</sup> Information on methods and emission factors in this table is reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for HFCs, PFCs and SF<sub>6</sub> for all subcategories within the category 2.E Production of halocarbons and SF<sub>6</sub>.

<sup>c</sup> Source of data for HCFC production: Ozone secretariat, downloaded from web site 13 July 2006 [http://ozone.unep.org/Data\\_Access](http://ozone.unep.org/Data_Access). Data are for total HCFC production.

<sup>d</sup> Source of default emission factors: IPCC Guidelines, volume 3, page 2.35.

<sup>e</sup> The United Kingdom reported aggregated HFC emissions from 2.E.1 Production and 2.E.2 Fugitive.

**Table 2.17****Production of halocarbons and SF<sub>6</sub> (2004)**

	HFCs							PFCs		SF <sub>6</sub>	
	Methods and EF used <sup>a</sup>		Production of HCFC-22					Methods and EF used <sup>a</sup>		Methods and EF used <sup>a</sup>	
	Methods	EF	Key category	Share of national total	Activity data (HCFC-22 production)		IEF	Methods	EF	Methods	EF
					CRF	International <sup>b</sup>					
				(%)	(t)		(kg/t)				
IPCC default EF <sup>c</sup>							40.0				
Australia	T1	D	T	-	NO	0	NO			NA	NA
Austria	NA	NA		-	NO	0	NA	NA	NA	NA	NA
Belarus				-	NO	0	NO			NA	NA
Belgium				-	0	0	NO				
Bulgaria	NA	NA		-	NO	0	NO	NA	NA	NA	NA
Canada	NA	NA		-	NA	91	NO	NA	NA	NA	NA
Croatia				-	NO	0	NO			NA	NA
Czech Republic				-	NO	0	NO			NA	NA
Denmark	NA	NA		-	NO	0	NO	NA	NA	NA	NA
Estonia				-	NO	0	NE			NA	NA
European Community			T	0.1	NA	5,757	NA				
Finland				-	NO	0	NO			NA	NA
France			T	0.1	1,000,000	3,418	0.0				
Germany				-	30,000	255	C	CS	CS	NA	NA
Greece	T1	D	L, T	1.9	C	300	C			NA	NA
Hungary	NA	NA		-	NO	0	NO	NA	NA	NA	NA
Iceland	NA	NA		-	0	0	NO	NA	NA	NA	NA
Ireland				-	NA	0	NA			NA	NA
Italy	CS	PS		-	C	91	NA	NA	NA	NA	NA
Japan	CS	CS		0.1	61,900	1,925	1.5	CS	CS	CS	CS
Latvia	NA	NA		-	NO	0	NO	NA	NA	NA	NA
Liechtenstein				-	NO	0	NO			NA	NA
Lithuania				-	NO	0	NO			NA	NA
Luxembourg				-	NO	0	NO			NA	NA
Monaco				0.0	NO	0	0.0				
Netherlands	T2	PS	T	0.2	C	900	C	T1	PS	NA	NA
New Zealand	NA	NA		-	NO	0	NO	NA	NA	NA	NA
Norway	NA	NA		-	NO	-1	NO	NA	NA	NA	NA
Poland	NA	NA		-	NE	0	NE	NA	NA	NA	NA
Portugal				-	NO	0	NO			NA	NA
Romania	NA	NA		-	NO	0	NO				
Russian Federation	D	D		0.4	20,615	257	40.0	NA	NA	NA	NA
Slovakia	NA	NA		-	NO	0	NO	NA	NA	NA	NA
Slovenia	NA	NA		-	NO	0	NO	NA	NA	NA	NA
Spain	T2	PS	T	0.1	C	47	C				
Sweden				-	NO	0	NO			NA	NA
Switzerland				-	NO	-1	NO			NA	NA
Turkey				-							
Ukraine	NA	NA		-	NE	0	NE	NA	NA	NA	NA
United Kingdom <sup>d</sup>				-	IE	746	IE			NA	NA
United States	M, T2	CS, M	T	0.2	155,064	6,151	8.6	NA	NA	NA	NA

<sup>a</sup> Information on methods and emission factors in this table is as reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for HFCs, PFCs and SF<sub>6</sub> for all subcategories within the category 2.E Production of halocarbons and SF<sub>6</sub>.

<sup>b</sup> Source of data for HCFC production: Ozone secretariat, downloaded from web site 13 July 2006 [http://ozone.unep.org/Data\\_Reporting/Data\\_Access](http://ozone.unep.org/Data_Reporting/Data_Access). Data are for total HCFC production.

<sup>c</sup> Source of default emission factors: IPCC Guidelines, volume 3, page 2.35.

<sup>d</sup> The United Kingdom reported aggregated HFC emissions from 2.E.1 Production and 2.E.2 Fugitive.

**Table 2.18****HFC-23 emissions from production of halocarbons and SF<sub>6</sub> - trend information**

HFC-23 emissions (t)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	96	NO	0.0	-11.4	*	*	*	*	*	*	*	*	*	*
Austria	NA	NA	*	*	*	*	*	*	*	*	*	*	*	*
Belarus	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Belgium	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Bulgaria	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Canada	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Croatia	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Czech Republic	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Denmark	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Estonia	NO	NE	*	*	*	*	*	*	*	*	*	*	*	*
European Community	834	314	-5.5	8.3	13.0	4.6	3.8	-15.3	-13.3	-46.2	-23.4	-7.3	-24.9	-62.3
Finland	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
France	140	27	30.3	-76.2	73.8	-6.7	-37.9	98.7	-19.5	4.4	3.3	-34.4	30.2	-80.7
Germany	C	C	*	*	*	*	*	*	*	*	*	*	*	*
Greece	80	218	18.4	51.7	15.2	5.7	10.1	15.2	-25.6	-14.8	0.4	-16.7	-4.2	172.8
Hungary	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Iceland	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Ireland	NA	NA	*	*	*	*	*	*	*	*	*	*	*	*
Italy	30	NA	0.0	0.0	*	*	*	*	*	*	*	*	*	*
Japan	NE	90	*	*	-8.0	-5.9	-6.1	2.3	-11.9	-24.7	-34.9	-17.4	-79.2	*
Latvia	NA	NO	*	*	*	*	*	*	*	*	*	*	*	*
Liechtenstein	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Lithuania	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Luxembourg	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Monaco	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Netherlands	379	30	-22.1	-8.3	19.6	-2.6	16.1	-55.8	-29.6	-81.4	52.2	-39.4	-14.6	-92.0
New Zealand	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Norway	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Poland	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Portugal	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Romania	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Russian Federation	680	825	76.5	8.9	-22.1	59.6	0.0	14.1	12.3	11.0	-26.0	-1.0	-1.0	21.3
Slovakia	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Slovenia	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Spain	205	39	-9.3	34.1	9.0	14.4	-12.2	16.0	7.3	-54.1	-64.6	52.9	-71.1	-81.1
Sweden	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Switzerland	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Turkey														
Ukraine	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
United Kingdom	IE	IE	*	*	*	*	*	*	*	*	*	*	*	*
United States	2,990	1,333	-12.0	-14.4	15.2	-3.8	34.0	-24.2	-2.1	-33.5	-0.1	-37.7	26.5	-55.4

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 2.19a**

**Consumption of halocarbons and SF<sub>6</sub> - HFCs (base year)<sup>a</sup>**

	Methods and EF used <sup>b</sup>		HFC-23			HFC-32			HFC-41			HFC-431-0mee			HFC-125		
	Methods	EF	P <sup>c</sup>	A <sup>d</sup>	Ratio P / A	P <sup>c</sup>	A <sup>d</sup>	Ratio P / A	P <sup>c</sup>	A <sup>d</sup>	Ratio P / A	P <sup>c</sup>	A <sup>d</sup>	Ratio P / A	P <sup>c</sup>	A <sup>d</sup>	Ratio P / A
			2.F(p)	2.F(a)		2.F(p)	2.F(a)		2.F(p)	2.F(a)		2.F(p)	2.F(a)		2.F(p)	2.F(a)	
			Gg CO <sub>2</sub> equivalent			Gg CO <sub>2</sub> equivalent			Gg CO <sub>2</sub> equivalent			Gg CO <sub>2</sub> equivalent			Gg CO <sub>2</sub> equivalent		
Australia	M	D	NE, NO	NA, NO	NA, NE, NO	NE, NO	NA, NO	NA, NE, NO	NE, NO	NA, NO	NA, NE, NO	NE, NO	NA, NO	NA, NE, NO	NE, NO	NA, NO	NA, NE, NO
Austria	CS	CS	2.14	1.93	1.11	IE, NE, NO	IE, NA, NO	NO	NE, NO	NO	NE, NO	0.93	0.46	2.00	IE, NE, NO	NA, NO	IE, NA, NE, NO
Belarus			NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO
Belgium			NE, NO	NO	NE, NO	NE, NO	NO	NE, NO	NE, NO	NO	NE, NO	NE, NO	NO	NE, NO	NE, NO	2.49	NE, NO
Bulgaria	OTH	OTH	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO
Canada			NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO
Croatia			NO	NO	NO	NE, NO	NE, NO	NE, NO	NO	NO	NO	NO	NO	NO	NE, NO	NE, NO	NE, NO
Czech Republic			NA, NE, NO	NO	NA, NE, NO	NA, NE, NO	NO	NA, NE, NO	NA, NE, NO	NO	NA, NE, NO	NA, NE, NO	NO	NA, NE, NO	NA, NE, NO	NO	NA, NE, NO
Denmark			NO	NA, NO	NA, NO	NE, NO	NA, NE, NO	NA, NE, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NE, NO	NA, NE, NO	NA, NE, NO
Estonia			NO	0.00	NO	NO	0.00	NO	NO	0.00	NO	NO	0.00	NO	NO	0.00	NO
European Community			IE	64.76	IE	IE	NA, NE, NO	NO	IE	NA, NE, NO	NO	IE	0.46	IE	IE	2.49	IE
Finland	D, T1, T2	D	C, NO	C, NA, NO	C, NA, NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
France			NE	22.56	NE	NE	NO	NE, NO	NE	NO	NE, NO	NE	NO	NE, NO	NE	NO	NE, NO
Germany	CS, T2	CS	NE, NO	39.78	NE, NO	NE, NO	0.00	NE, NO	NO	0.00	NO	C, NE, NO	C	C, NE, NO	NE, NO	0.00	NE, NO
Greece			NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO
Hungary			NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO
Iceland	NA	NA	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO
Ireland	T1, T2, T3	CS	NE, NO	0.49	NE, NO	NE, NO	NO	NE, NO	NO	NO	NO	NO	NO	NO	NE, NO	NO	NE, NO
Italy	CS, T2	CS, D, PS	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO
Japan			17,550.00	NA, NE	NA, NE	IE, NE	NA, NE	IE, NA, NE	NO	NA, NE	NA, NE, NO	NO	NA, NE	NA, NE, NO	IE, NE	NA, NE	IE, NA, NE
Latvia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liechtenstein	CS	CS	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Lithuania			NA, NO	NA	NA, NO	NA, NO	NA	NA, NO	NA, NO	NA	NA, NO	NA, NO	NA	NA, NO	NA, NO	NA	NA, NO
Luxembourg	CS	CS	NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO
Monaco																	
Netherlands			NE, NO	NO	NE, NO	NE, NO	NO	NE, NO	NE, NO	NO	NE, NO	NE, NO	NO	NE, NO	NE, NO	NO	NE, NO
New Zealand	D	D	NA, NO	NA, NO	NA, NO	IE, NO	NA, NO	IE, NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	IE, NO	NA, NO	IE, NA, NO
Norway	OTH, T2	CS, OTH	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Poland			NE, NO	NA, NE	NA, NE, NO	NE, NO	NA, NE	NA, NE, NO	NE, NO	NA, NE	NA, NE, NO	NE, NO	NA, NE	NA, NE, NO	NE, NO	NA, NE	NA, NE, NO
Portugal			NE, NO	NE	NE, NO	NE, NO	NE	NE, NO	NE, NO	NE	NE, NO	NE, NO	NE	NE, NO	NE, NO	NE	NE, NO
Romania			NE, NO	NE	NE, NO	NE, NO	NE	NE, NO	NE, NO	NE	NE, NO	NE, NO	NE	NE, NO	NE, NO	NE, NO	NE, NO
Russian Federation	D	D	NE	NA, NE	NA, NE	NE	NA, NE	NA, NE	NE	NA, NE	NA, NE	NE	NA, NE	NA, NE	NE	NA, NE	NA, NE
Slovakia			NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO
Slovenia	NA	NA	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO
Spain	NA	NA	NE	NA, NO	NA, NE, NO	NE	NA, NO	NA, NE, NO	NE	NA, NO	NA, NE, NO	NE	NA, NO	NA, NE, NO	NE	NA, NO	NA, NE, NO
Sweden	CS, T2	CS, D	NA, NE, NO	NA, NO	NA, NE, NO	NA, NE, NO	NA, NO	NA, NE, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO
Switzerland	T2	M	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Turkey																	
Ukraine			NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO
United Kingdom	OTH	OTH	IE, NE, NO	IE, NA, NO	NO	IE, NA	IE, NA, NO	IE, NA, NO	IE, NA	IE, NA, NO	IE, NA, NO	IE, NA	IE, NA, NO	IE, NA, NO	IE, NA	IE, NA, NO	IE, NA, NO
United States	M, OTH, T2	CS, M	715.72	176.04	4.07	NO	C, NA, NO	C, NA, NO	NO	NA, NO	NA, NO	C, IE	C, IE, NA, NO	C, IE, NA, NO	NO	NA, NO	NA, NO

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

<sup>b</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all HFCs for all subcategories within the category 2.F Consumption of halocarbons and SF<sub>6</sub>.

<sup>c</sup> P = Potential emissions

<sup>d</sup> A = Actual emissions

Table 2.19b

Consumption of halocarbons and SF<sub>6</sub> - HFCs (base year)<sup>a</sup>

	Methods and EF used <sup>b</sup>		HFC-134			HFC-134a			HFC-152a			HFC-143			HFC-143a		
	Methods	EF	P <sup>c</sup>	A <sup>d</sup>	Ratio P / A	P <sup>c</sup>	A <sup>d</sup>	Ratio P / A	P <sup>c</sup>	A <sup>d</sup>	Ratio P / A	P <sup>c</sup>	A <sup>d</sup>	Ratio P / A	P <sup>c</sup>	A <sup>d</sup>	Ratio P / A
			2.F(p)	2.F(a)		2.F(p)	2.F(a)		2.F(p)	2.F(a)		2.F(p)	2.F(a)		2.F(p)	2.F(a)	
			Gg CO <sub>2</sub> equivalent			Gg CO <sub>2</sub> equivalent			Gg CO <sub>2</sub> equivalent			Gg CO <sub>2</sub> equivalent			Gg CO <sub>2</sub> equivalent		
Australia	M	D	NE, NO	NA, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NO	NA, NE, NO	NE, NO	NA, NO	NA, NE, NO	NE, NO	NA, NO	NA, NE, NO
Austria	CS	CS	NE, NO	NO	NE, NO	6.59	1.76	3.75	IE, NE, NO	NA, NO	IE, NA, NE, NO	NE, NO	NO	NE, NO	IE, NE, NO	NA, NO	IE, NA, NE, NO
Belarus			NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO
Belgium			NE, NO	NO	NE, NO	NE, NO	426.95	NE, NO	NE, NO	0.07	NE, NO	NE, NO	NO	NE, NO	NE, NO	3.95	NE, NO
Bulgaria	OTH	OTH	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO
Canada			NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO
Croatia			NO	NO	NO	NE, NO	NE, NO	NE, NO	NO	NE, NO	NE, NO	NO	NO	NO	NE, NO	NE, NO	NE, NO
Czech Republic			NA, NE, NO	NO	NA, NE, NO	NA, NE, NO	NA, NO	NA, NE, NO	NA, NE, NO	NO	NA, NE, NO	NA, NE, NO	NO	NA, NE, NO	NA, NE, NO	NO	NA, NE, NO
Denmark			NO	NA, NO	NA, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NO	NA, NO	NA, NO	NE, NO	NA, NE, NO	NA, NE, NO
Estonia			NO	0.00	NO	NO	0.00	NO	NO	0.00	NO	NO	0.00	NO	NO	0.00	NO
European Community			IE	NA, NE, NO	IE, NA, NE, NO	IE	434.06	IE	IE	0.08	IE	IE	NA, NE, NO	IE, NA, NE, NO	IE	3.95	IE
Finland	D, T1, T2	D	NO	NO	NO	NO	NA, NO	NA, NO	0.08	0.01	6.67	NO	NO	NO	NO	NO	NO
France			NE	NO	NE, NO	NE	1.51	NE	NE	NO	NE, NO	NE	NO	NE, NO	NE	NO	NE, NO
Germany	CS, T2	CS	NO	0.00	NO	NE, NO	0.00	NE, NO	NE, NO	0.00	NE, NO	NO	0.00	NO	NE, NO	0.00	NE, NO
Greece			NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO
Hungary			NO	NA, NO	NA, NO	NE, NO	NA, NE, NO	NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO
Iceland	NA	NA	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO
Ireland	T1, T2, T3	CS	NO	NO	NO	NE, NO	0.01	NE, NO	NO	0.00	NO	NO	NO	NO	NE, NO	NO	NE, NO
Italy	CS, T2	CS, D, PS	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO
Japan			NO	NA, NE	NA, NE, NO	NE, NO	NA, NE	NA, NE, NO	IE, NE	NA, NE	IE, NA, NE	NO	NA, NE	NA, NE, NO	IE, NE	NA, NE	IE, NA, NE
Latvia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liechtenstein	CS	CS	NO	NO	NO	NO	0.00	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Lithuania			NA, NO	NA	NA, NO	NA, NO	NA	NA, NO	NA, NO	NA	NA, NO	NA, NO	NA	NA, NO	NA, NO	NA	NA, NO
Luxembourg	CS	CS	NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO
Monaco																	
Netherlands			NE, NO	NO	NE, NO	NE, NO	NO	NE, NO	NE, NO	NO	NE, NO	NE, NO	NO	NE, NO	NE, NO	NO	NE, NO
New Zealand	D	D	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	IE, NO	NA, NO	IE, NA, NO	IE, NO	NA, NO	IE, NA, NO	IE, NO	NA, NO	IE, NA, NO
Norway	OTH, T2	CS, OTH	NO	NO	NO	NO	NO	NO	0.00	0.03	0.00	NO	NO	NO	NO	NO	NO
Poland			NE, NO	NA, NE	NA, NE, NO	NE, NO	26.44	NE, NO	NE, NO	NA, NE	NA, NE, NO	NE, NO	NA, NE	NA, NE, NO	NE, NO	NA, NE	NA, NE, NO
Portugal			NE, NO	NE	NE, NO	NE, NO	NE	NE, NO	NE, NO	NE	NE, NO	NE, NO	NE	NE, NO	NE, NO	NE	NE, NO
Romania			NE, NO	NE	NE, NO	NE, NO	NE	NE, NO	NE, NO	NE	NE, NO	NE, NO	NE	NE, NO	NE, NO	NE	NE, NO
Russian Federation	D	D	NE	NA, NE	NA, NE	NE	NA, NE	NA, NE	NE	NA, NE	NA, NE	NE	NA, NE	NA, NE	NE	NA, NE	NA, NE
Slovakia			NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO
Slovenia	NA	NA	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO
Spain	NA	NA	NE	NA, NO	NA, NE, NO	NE	NA, NO	NA, NE, NO	NE	NA, NO	NA, NE, NO	NE	NA, NO	NA, NE, NO	NE	NA, NO	NA, NE, NO
Sweden	CS, T2	CS, D	NO	NA, NO	NA, NO	37.21	3.85	9.68	NA, NE, NO	NA, NO	NA, NE, NO	NO	NA, NO	NA, NO	NA, NE, NO	NA, NO	NA, NE, NO
Switzerland	T2	M	NO	NO	NO	0.61	0.02	27.09	NO	NO	NO	NO	NO	NO	NO	NO	NO
Turkey																	
Ukraine			NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO
United Kingdom	OTH	OTH	IE, NA	IE, NA, NO	IE, NA, NO	IE, NA	IE, NA, NO	IE, NA, NO	IE, NA	IE, NA, NO	IE, NA, NO	IE, NA	IE, NA, NO	IE, NA, NO	IE, NA	IE, NA, NO	IE, NA, NO
United States	M, OTH, T2	CS, M	NO	C, NA, NO	C, NA, NO	NO	IE, NA, NO	IE, NA, NO	C, IE	C, IE, NA, NO	C, IE, NA, NO	NO	C, NA, NO	C, NA, NO	NO	NA, NO	NA, NO

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

<sup>b</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all HFCs for all subcategories within the category 2.F Consumption of halocarbons and SF<sub>6</sub>.

<sup>c</sup> P = Potential emissions

<sup>d</sup> A = Actual emissions

**Table 2.19c**

**Consumption of halocarbons and SF<sub>6</sub> - HFCs (base year)<sup>a</sup>**

	Methods and EF used <sup>b</sup>		HFC-227ea			HFC-236fa			HFC-245ca			Unspecified HFCs			Total							
	Methods	EF	p <sup>c</sup>		Ratio P / A	p <sup>c</sup>		Ratio P / A	p <sup>c</sup>		Ratio P / A	p <sup>c</sup>		Ratio P / A	p <sup>c</sup>		Ratio P / A					
			A <sup>d</sup>			A <sup>d</sup>			A <sup>d</sup>			A <sup>d</sup>			A <sup>d</sup>							
			2.F(p)	2.F(a)		2.F(p)	2.F(a)		2.F(p)	2.F(a)		2.F(p)	2.F(a)		2.F(p)	2.F(a)						
			Gg CO <sub>2</sub> equivalent			Gg CO <sub>2</sub> equivalent			Gg CO <sub>2</sub> equivalent			Gg CO <sub>2</sub> equivalent			Gg CO <sub>2</sub> equivalent							
Australia	M	D	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NO	NA, NE, NO	NE, NO	NA, NO	NA, NE, NO	NE, NO	IE, NA, NE, NO	IE, NA, NE, NO	NE, NO	IE, NA, NE, NO	IE, NA, NE, NO					
Austria	CS	CS	IE, NE, NO	NO	IE, NE, NO	NE, NO	NO	NE, NO	NE, NO	NO	NE, NO	37.76	18.88	2.00	47.42	23.03	2.06					
Belarus			NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO					
Belgium			NE, NO	0.52	NE, NO	NE, NO	NO	NE, NO	NE, NO	NO	NE, NO	0.00	0.00	0.00	NE, NO	433.98	2.50					
Bulgaria	OTH	OTH	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO					
Canada			NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO					
Croatia			NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NE, NO	NE, NO	NE, NO					
Czech Republic			NA, NE, NO	NO	NA, NE, NO	NA, NE, NO	NO	NA, NE, NO	NA, NE, NO	NO	NA, NE, NO	NA, NE, NO	NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO					
Denmark			NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NE, NO	NA, NE, NO	NA, NE, NO					
Estonia			NO	0.00	NO	NO	0.00	NO	NO	0.00	NO	NO	0.00	NO	NO	0.00	NO					
European Community			IE	0.72	IE	IE	NA, NE, NO	NO	IE	NA, NE, NO	NO	1,009.96	34.18	29.55	1,009.96	540.71	1.87					
Finland	D, T1, T2	D	NO	NO	NO	NO	NO	NO	NO	NO	NO	0.02	0.01	3.73	0.10	0.02	5.82					
France			NE	NE, NO	NE, NO	NE	NO	NE, NO	NE	NO	NE, NO	NE	NO	NE, NO	NE	24.07	NE					
Germany	CS, T2	CS	IE, NE, NO	0.00	IE, NE, NO	C, NO	0.00	C, NO	NO	0.00	NO	IE, NO	0.00	IE, NO	C, IE, NE, NO	39.78	C, IE, NE, NO					
Greece			NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO					
Hungary			NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NE, NO	NA, NO	NA, NE, NO					
Iceland	NA	NA	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	0.00	NA	NA	NE, NO	NA, NE, NO	NA, NE, NO					
Ireland	T1, T2, T3	CS	NE, NO	0.20	NE, NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NE, NO	0.69	65.70					
Italy	CS, T2	CS, D, PS	NA, NO	NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO					
Japan			NO	NA, NE	NA, NE, NO	NO	NA, NE	NA, NE, NO	NO	NA, NE	NA, NE, NO	380.00	NA, NE	NA, NE	17,930.00	NA, NE	NA, NE					
Latvia			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA					
Liechtenstein	CS	CS	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0.00	256.41						
Lithuania			NA, NO	NA	NA, NO	NA, NO	NA	NA, NO	NA, NO	NA	NA, NO	NA, NO	NA	NA, NO	NA	NA	NA, NO					
Luxembourg	CS	CS	NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO	NE	13.62	NE	NE	13.62	NE					
Monaco																						
Netherlands			NE, NO	NO	NE, NO	NE, NO	NO	NE, NO	NE, NO	NO	NE, NO	NE, NO	NO	NE, NO	NE, NO	NO	NE, NO					
New Zealand	D	D	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	IE, NA, NO	NA, NO	IE, NA, NO					
Norway	OTH, T2	CS, OTH	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NA, NO	NA, NO	0.00	0.03	0.00					
Poland			NE, NO	NA, NE	NA, NE, NO	NE, NO	NA, NE	NA, NE, NO	NE, NO	NA, NE	NA, NE, NO	NE, NO	NA	NA, NE, NO	NE, NO	26.44	NE, NO					
Portugal			NE, NO	NE	NE, NO	NE, NO	NE	NE, NO	NE, NO	NE	NE, NO	NE, NO	NE	NE, NO	NE, NO	NE	NE, NO					
Romania			NE, NO	NE	NE, NO	NE, NO	NE	NE, NO	NE, NO	NE	NE, NO	NE, NO	NE	NE, NO	NE, NO	NE, NO	NE, NO					
Russian Federation	D	D	NE	NA, NE	NA, NE	NE	NA, NE	NA, NE	NE	NA, NE	NA, NE	NE	14.34	NE	NE	14.34	NE					
Slovakia			NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO					
Slovenia	NA	NA	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO					
Spain	NA	NA	NE	NA, NO	NA, NE, NO	NE	NA, NO	NA, NE, NO	NE	NA, NO	NA, NE, NO	NE	NA, NO	NA, NE, NO	NE	NA, NO	NA, NE, NO					
Sweden	CS, T2	CS, D	NA, NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	37.21	3.85	9.68					
Switzerland	T2	M	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0.61	0.02	27.09					
Turkey			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
Ukraine			NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO					
United Kingdom	OTH	OTH	IE, NA	IE, NA, NO	IE, NA, NO	IE, NA	IE, NA, NO	IE, NA, NO	IE, NA	IE, NA, NO	IE, NA, NO	12.28	1.66	7.37	12.28	1.66	7.37					
United States	M, OTH, T2	CS, M	C, IE	C, IE, NA, NO	C, IE, NA, NO	NO	NA, NO	NA, NO	C, NO	C, NA, NO	C, NA, NO	1,894.65	392.46	4.83	2,610.37	568.51	4.59					

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

<sup>b</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all HFCs for all subcategories within the category 2.F Consumption of halocarbons and SF<sub>6</sub>.

<sup>c</sup> P = Potential emissions

<sup>d</sup> A = Actual emissions

**Table 2.20a**  
**Consumption of halocarbons and SF<sub>6</sub> - HFCs (2004)**

	Methods and EF used <sup>a</sup>		HFC-23			HFC-32			HFC-41			HFC-431-0mcc			HFC-125		
	Methods	EF	P <sup>b</sup>	A <sup>c</sup>	Ratio P / A	P <sup>b</sup>	A <sup>c</sup>	Ratio P / A	P <sup>b</sup>	A <sup>c</sup>	Ratio P / A	P <sup>b</sup>	A <sup>c</sup>	Ratio P / A	P <sup>b</sup>	A <sup>c</sup>	Ratio P / A
			2.F(p)	2.F(a)		2.F(p)	2.F(a)		2.F(p)	2.F(a)		2.F(p)	2.F(a)		2.F(p)	2.F(a)	
			Gg CO <sub>2</sub> equivalent			Gg CO <sub>2</sub> equivalent			Gg CO <sub>2</sub> equivalent			Gg CO <sub>2</sub> equivalent			Gg CO <sub>2</sub> equivalent		
Australia	M	D	IE, NE, NO	IE, NA, NO	IE, NA, NE, NO	IE, NE, NO	IE, NA, NO	IE, NA, NE, NO	IE, NE, NO	IE, NA, NO	IE, NA, NE, NO	IE, NE, NO	IE, NA, NO	IE, NA, NE, NO	IE, NE, NO	552.82	IE, NE, NO
Austria	CS	CS	38.75	26.50	1.46	11.31	3.15	3.60	NE, NO	NO	NE, NO	1.88	1.85	1.01	362.18	133.78	2.71
Belarus			NE, NO	0.26	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO
Belgium			NE, NO	NO	NE, NO	NE, NO	5.58	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NO	NE, NO	NE, NO	263.65	NE, NO
Bulgaria	OTH	OTH	NA, NE, NO	NE, NO	NA, NE, NO	2.77	NE, NO	NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	69.76	NE, NO	NE, NO
Canada	T2	D	9.28	8.54	1.09	6.28	2.94	2.14	IE, NO	IE, NA, NE, NO	IE, NA, NE, NO	4.56	4.41	1.03	1,267.24	849.28	1.49
Croatia			NO	NO	NO	1.58	NE, NO	NE, NO	NO	NO	NO	NO	NO	NO	52.12	NE, NO	NE, NO
Czech Republic	D, T2	D	4.10	4.10	1.00	6.32	2.69	2.35	NA, NE, NO	NO	NA, NE, NO	NA, NE, NO	NO	NA, NE, NO	199.89	132.67	1.51
Denmark			NO	NA, NO	NA, NO	19.75	7.79	2.54	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	416.78	167.67	2.49
Estonia			NE, NO	0.00	NE, NO	NE, NO	0.00	NE, NO	NE, NO	0.00	NE, NO	NE, NO	0.00	NE, NO	NE, NO	0.00	NE, NO
European Community			IE	1,494.50	IE	IE	448.18	IE	IE	NA, NE, NO	IE, NA, NE, NO	IE	243.98	IE	IE	6,633.34	IE
Finland	D, T1, T2	D	C, NO	C, NA, NO	C, NA, NO	17.43	10.06	1.73	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	339.22	194.10	1.75
France			NE	28.01	NE	NE	37.26	NE	NE	NO	NE, NO	NE	242.13	NE	NE	1,682.72	NE
Germany	CS, T2	CS	2,349.79	227.78	10.32	416.70	18.46	22.58	IE, NO	0.00	IE, NO	C, IE, NO	C	C, IE, NO	13,604.50	1,294.40	10.51
Greece	T2	D	NE	NA, NE, NO	NA, NE, NO	NE	23.99	NE	NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO	NE	105.49	NE
Hungary	CS, D, T1	CS	2.22	1.72	1.29	9.00	5.55	1.62	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	214.59	142.03	1.51
Iceland	NA	NA	NE, NO	NA, NE, NO	NA, NE, NO	0.10	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	22.36	NA, NE, NO	NA, NE, NO
Ireland	T1, T2, T3	CS	19.97	2.65	7.53	5.07	1.27	4.00	NO	NO	NO	NO	NO	NO	203.44	49.60	4.10
Italy	CS, T2	CS, D, PS	NA, NO	18.22	NA, NO	70.20	337.24	0.21	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	2,200.80	2,143.65	1.03
Japan	CS, T1	CS, D	14,036.49	129.78	108.16	IE, NE	59.82	IE, NE	NO	IE, NA, NE, NO	IE, NA, NE, NO	NO	IE, NA, NE, NO	IE, NA, NE, NO	IE, NE	257.70	IE, NE
Latvia	OTH, T2	D, OTH	NO	NO	NO	1.40	0.03	53.63	NO	NO	NO	NO	NO	NO	32.86	0.15	214.62
Liechtenstein	CS	CS	NO	NO	NO	NO	0.03	NO	NO	NO	NO	NO	NO	NO	NO	0.90	NO
Lithuania			NE, NO	NE, NO	NE, NO	0.54	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	14.39	NE, NO	NE, NO
Luxembourg	CS	CS	NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO
Monaco							0.02									0.09	NE, NO
Netherlands	T2	CS	NE, NO	NO	NE, NO	NE, NO	NO	NE, NO	NE, NO	NO	NE, NO	NE, NO	NO	NE, NO	840.00	212.24	3.96
New Zealand	T2	CS, D	NA, NO	NA, NO	NA, NO	IE, NO	4.03	IE, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	IE, NO	138.60	IE, NO
Norway	OTH, T2	CS, OTH	8.19	2.34	3.50	7.47	1.30	5.74	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	206.69	108.64	1.90
Poland	T1a, T1b, T2	D	2.81	2.46	1.14	9.45	4.28	2.21	NE, NO	NA, NE	NA, NE, NO	NE, NO	NA, NE	NA, NE, NO	324.83	236.01	1.38
Portugal	RA, T2	CS, D	0.51	16.20	0.03	483.06	0.98	494.76	NO	NO	NO	NO	NO	NO	2,950.38	41.96	70.32
Romania	T2	D	1.49	2.42	0.61	1.43	0.47	3.04	NE, NO	0.00	NE, NO	NE, NO	0.02	NE, NO	32.81	0.28	116.91
Russian Federation	D	D	NE	NA, NE	NA, NE	NE	NA, NE	NA, NE	NE	NA, NE	NA, NE	NE	NA, NE	NA, NE	NE	NA, NE	NA, NE
Slovakia	D	CS	NO	0.91	NO	5.23	3.11	1.68	NO	NO	NO	NO	NO	NO	90.43	27.58	3.28
Slovenia	T2	D	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO
Spain	D, T1, T2	D	NE	1,174.26	NE	C, NE	NA, NO	C, NA, NE, NO	NE	NA, NO	NA, NE, NO	NE	NA, NO	NA, NE, NO	NE	281.50	NE
Sweden	CS, T1, T2	CS, D, PS	0.21	0.88	0.24	14.07	2.42	5.81	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	216.14	62.59	3.45
Switzerland	T2	M	8.53	3.27	2.61	23.90	4.63	5.16	NO	NO	NO	NO	NO	NO	452.16	118.75	3.81
Turkey																	
Ukraine			NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO
United Kingdom	OTH, T2, T3	CS, OTH	IE, NE, NO	IE, NA, NO	IE, NA, NE, NO	NA, NE, NO	IE, NA, NO	IE, NA, NE, NO	NA, NE, NO	IE, NA, NO	IE, NA, NE, NO	NA, NE, NO	IE, NA, NO	IE, NA, NE, NO	NA, NE, NO	IE, NA, NO	IE, NA, NE, NO
United States	M, OTH, T2	CS, M	1,149.29	309.08	3.72	1,056.91	410.40	2.58	NO	NA, NO	NA, NO	C, IE	C, NA, NO	C, IE, NA, NO	29,888.33	16,299.46	1.83

<sup>a</sup> Information on methods and emission factors in this table is reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all HFCs for all subcategories within the category 2.F Consumption of halocarbons and SF<sub>6</sub>.

<sup>b</sup> P = Potential emissions

<sup>c</sup> A = Actual emissions

**Table 2.20b****Consumption of halocarbons and SF<sub>6</sub> - HFCs (2004)**

	Methods and EF used <sup>a</sup>		HFC-134			HFC-134a			HFC-152a			HFC-143			HFC-143a		
	Methods	EF	p <sup>b</sup>	A <sup>c</sup>	Ratio P / A	p <sup>b</sup>	A <sup>c</sup>	Ratio P / A	p <sup>b</sup>	A <sup>c</sup>	Ratio P / A	p <sup>b</sup>	A <sup>c</sup>	Ratio P / A	p <sup>b</sup>	A <sup>c</sup>	Ratio P / A
			2.F(p)	2.F(a)		2.F(p)	2.F(a)		2.F(p)	2.F(a)		2.F(p)	2.F(a)		2.F(p)	2.F(a)	
			Gg CO <sub>2</sub> equivalent			Gg CO <sub>2</sub> equivalent			Gg CO <sub>2</sub> equivalent			Gg CO <sub>2</sub> equivalent			Gg CO <sub>2</sub> equivalent		
Australia	M	D	IE, NE, NO	IE, NA, NO	IE, NA, NE, NO	IE, NE, NO	2,343.79	IE, NE, NO	IE, NE, NO	IE, NA, NO	IE, NA, NE, NO	IE, NE, NO	IE, NA, NO	IE, NA, NE, NO	IE, NE, NO	769.23	IE, NE, NO
Austria	CS	CS	NE, NO	NO	NE, NO	884.50	456.82	1.94	80.48	73.78	1.09	NE, NO	NO	NE, NO	428.58	148.61	2.88
Belarus			NE, NO	1.63	NE, NO	NE, NO	5.63	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO
Belgium			NE, NO	NO	NE, NO	NE, NO	783.06	NE, NO	NE, NO	40.29	NE, NO	NE, NO	NO	NE, NO	NE, NO	366.17	NE, NO
Bulgaria	OTH	OTH	NA, NE, NO	NE, NO	NA, NE, NO	67.74	NE, NO	NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	77.03	NE, NO	NE, NO
Canada	T2	D	NO	IE, NA, NE, NO	IE, NA, NE, NO	3,371.91	2,679.75	1.26	2.84	2.24	1.27	IE, NO	IE, NA, NE, NO	IE, NA, NE, NO	1,656.30	1,040.22	1.59
Croatia			NO	NO	NO	47.81	NE, NO	NE, NO	NO	NE, NO	NE, NO	NO	NO	NO	87.36	NE, NO	NE, NO
Czech Republic	D, T2	D	NA, NE, NO	NO	NA, NE, NO	733.17	274.96	2.67	0.13	0.08	1.68	NA, NE, NO	NO	NA, NE, NO	243.85	172.37	1.41
Denmark			NO	NA, NO	NA, NO	480.32	371.94	1.29	1.55	0.86	1.80	NO	NA, NO	NA, NO	519.26	200.70	2.59
Estonia			NE, NO	7.21	NE, NO	NE, NO	0.00	NE, NO	NE, NO	0.00	NE, NO	NE, NO	0.00	NE, NO	NE, NO	0.00	NE, NO
European Community			IE	NA, NE, NO	IE, NA, NE, NO	IE	21,460.39	IE	IE	413.97	IE	IE	NA, NE, NO	IE, NA, NE, NO	IE	6,832.13	IE
Finland	D, T1, T2	D	NO	NA, NO	NA, NO	489.08	202.02	2.42	8.50	0.19	45.28	NO	NA, NO	NA, NO	379.53	225.23	1.69
France			NE	NO	NE, NO	NE	6,338.56	NE	NE	41.59	NE	NE	NO	NE, NO	NE	2,499.86	NE
Germany	CS, T2	CS	IE, NO	0.00	IE, NO	39,362.72	4,883.68	8.06	36.14	186.61	0.19	IE, NO	0.00	IE, NO	17,004.33	1,557.85	10.92
Greece	T2	D	NE	NA, NE, NO	NA, NE, NO	NE	3,029.35	NE	NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO
Hungary	CS, D, T1	CS	NO	NA, NE, NO	NA, NE, NO	476.42	190.80	2.50	0.10	0.10	1.00	NO	NA, NO	NA, NO	274.26	185.15	1.48
Iceland	NA	NA	NE, NO	NA, NE, NO	NA, NE, NO	11.55	NA, NE, NO	NA, NE, NO	0.04	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	24.35	NA, NE, NO	NA, NE, NO
Ireland	T1, T2, T3	CS	NO	NO	NO	887.02	270.10	3.28	0.64	1.13	0.56	NO	NO	NO	259.74	62.95	4.13
Italy	CS, T2	CS, D, PS	NA, NO	NO	NA, NO	4,308.20	2,132.69	2.02	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	972.80	985.04	0.99
Japan	CS, T1	CS, D	NO	IE, NA, NE, NO	IE, NA, NE, NO	19,963.06	5,608.78	3.56	IE, NE	117.33	IE, NE	NO	NA, NE, NO	NA, NE, NO	IE, NE	NA, NE, NO	IE, NA, NE, NO
Latvia	OTH, T2	D, OTH	NO	NO	NO	40.64	15.81	2.57	0.01	NO	NO	NO	NO	NO	41.97	0.03	1,523.40
Liechtenstein	CS	CS	NO	NO	NO	NO	2.09	NO	NO	NO	NO	NO	NO	NO	NO	0.93	NO
Lithuania			NE, NO	NE, NO	NE, NO	2.94	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	18.95	NE, NO	NE, NO
Luxembourg	CS	CS	NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO
Monaco							0.18									0.01	
Netherlands	T2	CS	NE, NO	NO	NE, NO	689.00	375.15	1.84	NE, NO	NO	NE, NO	NE, NO	NO	NE, NO	828.40	254.60	3.25
New Zealand	T2	CS, D	NO	NA, NO	NA, NO	57.07	268.51	0.21	IE, NO	NA, NO	IE, NA, NO	IE, NO	NA, NO	IE, NA, NO	IE, NO	185.06	IE, NO
Norway	OTH, T2	CS, OTH	NO	NA, NO	NA, NO	653.76	160.42	4.08	28.14	4.10	6.86	NO	NA, NO	NA, NO	393.99	122.74	3.21
Poland	T1a, T1b, T2	D	NE, NO	NA, NE	NA, NE, NO	603.01	1,857.40	0.32	0.34	3.36	0.10	NE, NO	NA, NE	NA, NE, NO	418.82	313.92	1.33
Portugal	RA, T2	CS, D	NO	NO	NO	1,013.90	194.91	5.20	NO	41.16	NO	NO	NO	NO	1,133.56	60.02	18.89
Romania	T2	D	NE, NO	0.27	NE, NO	102.13	3.10	32.95	NE, NO	0.00	NE, NO	NE, NO	0.00	NE, NO	41.46	0.45	93.01
Russian Federation	D	D	NE	NA, NE	NA, NE	NE	NA, NE	NA, NE	NE	NA, NE	NA, NE	NE	NA, NE	NA, NE	NE	NA, NE	NA, NE
Slovakia	D	CS	NO	NO	NO	137.49	86.44	1.59	NO	0.17	NO	NO	NO	NO	102.68	33.05	3.11
Slovenia	T2	D	NO	NA, NO	NA, NO	NE, NO	66.32	NE, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO
Spain	D, T1, T2	D	NE	NA, NO	NA, NE, NO	NE	1,843.64	NE	NE	NA, NO	NA, NE, NO	NE	NA, NO	NA, NE, NO	C, NE	402.70	C, NE
Sweden	CS, T1, T2	CS, D, PS	NO	NA, NO	NA, NO	733.56	580.18	1.26	27.25	28.37	0.96	NO	NA, NO	NA, NO	198.91	68.42	2.91
Switzerland	T2	M	NO	NO	NO	1,128.42	362.28	3.11	0.80	1.61	0.50	NO	NO	NO	489.72	123.95	3.95
Turkey																	
Ukraine			NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO
United Kingdom	OTH, T2, T3	CS, OTH	NA, NE, NO	IE, NA, NO	IE, NA, NE, NO	NA, NE, NO	IE, NA, NO	IE, NA, NE, NO	NA, NE, NO	IE, NA, NO	IE, NA, NE, NO	NA, NE, NO	IE, NA, NO	IE, NA, NE, NO	NA, NE, NO	IE, NA, NO	IE, NA, NE, NO
United States	M, OTH, T2	CS, M	NO	C, NA, NO	C, NA, NO	99,176.16	61,608.29	1.61	C, IE	C, NA, NE, NO	C, IE, NA, NE, NO	NO	C, NA, NO	C, NA, NO	36,261.40	17,261.96	2.10

<sup>a</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all HFCs for all subcategories within the category 2.F Consumption of halocarbons and SF<sub>6</sub>.

<sup>b</sup> P = Potential emissions

<sup>c</sup> A = Actual emissions

Table 2.20c

Consumption of halocarbons and SF<sub>6</sub> - HFCs (2004)

	Methods and EF used <sup>a</sup>		HFC-227ea			HFC-236fa			HFC-245ca			Unspecified HFCs			Total		
	Methods	EF	P <sup>b</sup>	A <sup>c</sup>	Ratio P / A	P <sup>b</sup>	A <sup>c</sup>	Ratio P / A	P <sup>b</sup>	A <sup>c</sup>	Ratio P / A	P <sup>b</sup>	A <sup>c</sup>	Ratio P / A	P <sup>b</sup>	A <sup>c</sup>	Ratio P / A
			2.F(p)	2.F(a)		2.F(p)	2.F(a)		2.F(p)	2.F(a)		2.F(p)	2.F(a)		2.F(p)	2.F(a)	
			Gg CO <sub>2</sub> equivalent	Gg CO <sub>2</sub> equivalent		Gg CO <sub>2</sub> equivalent	Gg CO <sub>2</sub> equivalent		Gg CO <sub>2</sub> equivalent	Gg CO <sub>2</sub> equivalent		Gg CO <sub>2</sub> equivalent	Gg CO <sub>2</sub> equivalent		Gg CO <sub>2</sub> equivalent	Gg CO <sub>2</sub> equivalent	
Australia	M	D	IE, NE, NO	IE, NA, NE, NO	IE, NA, NE, NO	IE, NE, NO	IE, NA, NO	IE, NA, NE, NO	IE, NE, NO	IE, NA, NO	IE, NA, NE, NO	6,872.67	218.58	31.44	6,872.67	3,884.42	1.77
Austria	CS	CS	23.20	5.10	4.55	NE, NO	NO	NE, NO	NE, NO	NO	NE, NO	96.14	54.80	1.75	1,927.01	904.39	2.13
Belarus			NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	7.52	NE, NO
Belgium			NE, NO	8.85	NE, NO	NE, NO	NO	NE, NO	NE, NO	NO	NE, NO	0.00	0.00	0.00	NE, NO	1,467.59	1.87
Bulgaria	OTH	OTH	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	217.30	NE, NO	NE, NO
Canada	T2	D	185.27	90.17	2.05	1.52	0.41	3.71	IE, NE, NO	IE, NA, NE, NO	IE, NA, NE, NO	NO	NA, NE, NO	NA, NE, NO	6,505.19	4,677.95	1.39
Croatia			NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	188.87	NE, NO	NE, NO
Czech Republic	D, T2	D	0.58	0.22	2.67	26.90	13.18	2.04	0.06	0.03	2.00	NA, NE, NO	NO	NA, NE, NO	1,215.00	600.30	2.02
Denmark			NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	1,437.66	748.96	1.92
Estonia			NO	0.00	NO	NO	0.00	NO	NO	0.00	NO	NO	0.00	NO	NE, NO	7.21	NE, NO
European Community			IE	405.12	IE	IE	9.03	IE	65.01	IE	116,711.48	8,951.21	13.04	116,711.48	46,956.86	2.49	
Finland	D, T1, T2	D	C, NO	NA, NO	C, NA, NO	NO	NA, NO	NA, NO	C, NO	NA, NO	C, NA, NO	5.17	63.48	0.08	1,238.94	695.07	1.78
France			NE	92.65	NE	NE	NO	NE, NO	NE	NO	NE, NO	NE	NO	NE, NO	NE	11,027.77	NE
Germany	CS, T2	CS	886.88	105.06	8.44	C, IE, NO	2.99	C, IE, NO	IE, NO	0.00	IE, NO	IE, NO	16.85	IE, NO	73,661.04	8,293.67	8.88
Greece	T2	D	NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO	NE	3,158.83	NE
Hungary	CS, D, T1	CS	3.82	0.19	20.00	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	988.25	525.94	1.88
Iceland	NA	NA	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	0.00	NA	NA	58.40	NA, NE, NO	NA, NE, NO
Ireland	T1, T2, T3	CS	142.81	11.56	12.36	NO	NO	NO	NO	NO	NO	NO	NO	NO	1,518.68	399.25	3.80
Italy	CS, T2	CS, D, PS	NA, NO	64.15	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	7,552.00	5,680.99	1.33
Japan	CS, T1	CS, D	NO	122.53	NO	NO	NA, NE, NO	NA, NE, NO	NO	NA, NE, NO	NA, NE, NO	31,053.15	587.21	52.88	65,052.70	6,883.15	9.45
Latvia	OTH, T2	D, OTH	8.41	0.18	47.08	NO	NO	NO	NO	NO	NO	NO	NO	NO	125.30	16.19	7.74
Liechtenstein	CS	CS	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	3.95	2,487.17
Lithuania			NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	36.83	NE, NO	NE, NO
Luxembourg	CS	CS	NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO	NE	43.06	NE	NE	43.06	NE
Monaco												0.00				0.30	
Netherlands	T2	CS	NE, NO	NO	NE, NO	NE, NO	NO	NE, NO	NE, NO	NO	NE, NO	33.00	180.87	0.18	2,390.40	1,022.86	2.34
New Zealand	T2	CS, D	61.48	0.93	66.25	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	228.20	NA, NO	NA, NO	346.75	597.36	0.58
Norway	OTH, T2	CS, OTH	7.51	0.87	8.63	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	1,305.75	400.41	3.26
Poland	T1a, T1b, T2	D	NE, NO	7.69	NE, NO	NE, NO	NA, NE	NA, NE, NO	NE, NO	NA, NE	NA, NE, NO	NE, NO	NA, NE	NA, NE, NO	1,359.26	2,436.34	0.56
Portugal	RA, T2	CS, D	NO	2.51	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	5,581.41	357.73	15.60
Romania	T2	D	NE, NO	0.12	NE, NO	NE, NO	NE	NE, NO	NE, NO	NE	NE, NO	NE, NO	NE	NE, NO	179.32	7.13	25.14
Russian Federation	D	D	NE	NA, NE	NA, NE	NE	NA, NE	NA, NE	NE	NA, NE	NA, NE	NE	128.00	NE	NE	128.00	NE
Slovakia	D	CS	3.74	0.03	142.86	15.75	3.15	5.00	NO	NO	NO	NO	NO	NO	355.30	154.43	2.30
Slovenia	T2	D	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NE, NO	66.32	NE, NO
Spain	D, T1, T2	D	C, NE	114.83	C, NE	NE	9.03	NE	NA, NO	NA, NE, NO	NA, NE, NO	NE	NA, NO	NA, NE, NO	C, NE	3,825.96	C, NE
Sweden	CS, T1, T2	CS, D, PS	10.34	0.42	24.42	NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	1,200.49	743.28	1.62
Switzerland	T2	M	2.64	2.89	0.91	NO	NO	NO	NO	NO	NO	NO	NO	NO	2,106.16	617.38	3.41
Turkey																	
Ukraine			NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO
United Kingdom	OTH, T2, T3	CS, OTH	NA, NE, NO	IE, NA, NO	IE, NA, NE, NO	NA, NE, NO	IE, NA, NO	IE, NA, NE, NO	NA, NE, NO	IE, NA, NO	IE, NA, NE, NO	17,458.56	8,588.55	2.03	17,458.56	8,588.55	2.03
United States	M, OTH, T2	CS, M	C, IE	C, NA, NO	C, IE, NA, NO	3,499.82	2,314.20	1.51	C, NO	C, NA, NO	C, NA, NO	21,612.06	5,287.85	4.09	192,643.96	103,491.24	1.86

<sup>a</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all HFCs for all subcategories within the category 2.F Consumption of halocarbons and SF<sub>6</sub>.

<sup>b</sup> P = Potential emissions

<sup>c</sup> A = Actual emissions

**Table 2.21a**  
Consumption of halocarbons and SF<sub>6</sub> - PFCs (base year)<sup>a</sup>

	Methods and EF used <sup>b</sup>		CF <sub>4</sub>			C <sub>2</sub> F <sub>6</sub>			C <sub>3</sub> F <sub>8</sub>			C <sub>4</sub> F <sub>10</sub>			c-C <sub>4</sub> F <sub>8</sub>		
	Methods	EF	P <sup>c</sup>	A <sup>d</sup>	Ratio P / A	P <sup>c</sup>	A <sup>d</sup>	Ratio P / A	P <sup>c</sup>	A <sup>d</sup>	Ratio P / A	P <sup>c</sup>	A <sup>d</sup>	Ratio P / A	P <sup>c</sup>	A <sup>d</sup>	Ratio P / A
			2.F(p)	2.F(a)		2.F(p)	2.F(a)		2.F(p)	2.F(a)		2.F(p)	2.F(a)		2.F(p)	2.F(a)	
			Gg CO <sub>2</sub> equivalent			Gg CO <sub>2</sub> equivalent			Gg CO <sub>2</sub> equivalent			Gg CO <sub>2</sub> equivalent			Gg CO <sub>2</sub> equivalent		
Australia			NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO
Austria	CS	CS	26.41	23.77	1.11	5.87	5.28	1.11	IE, NE, NO	NA, NO	IE, NA, NE, NO	IE, NE, NO	NA, NO	IE, NA, NE, NO	NO	NO	NO
Belarus			NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO
Belgium			NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Bulgaria	OTH	OTH	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO
Canada			NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO
Croatia			NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Czech Republic			NA, NE, NO	NO	NA, NE, NO	NA, NE, NO	NO	NA, NE, NO	NA, NE, NO	NO	NA, NE, NO	NA, NE, NO	NO	NA, NE, NO	NA, NE, NO	NO	NA, NE, NO
Denmark			NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NA, NO	NA, NE, NO	NA, NE, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO
Estonia			NO	0.00	NO	NO	0.00	NO	NO	0.00	NO	NO	0.00	NO	NO	0.00	NO
European Community			IE	138.01	IE	IE	188.75	IE	IE	0.02	IE	IE	NA, NE, NO	IE, NA, NE, NO	IE	NA, NE, NO	IE, NA, NE, NO
Finland	T1, T2	D	C, NO	C, NA, NO	C, NA, NO	C, NO	C, NA, NO	C, NA, NO	C, NO	C, NA, NO	C, NA, NO	NO	NO	NO	NO	NO	NO
France			NE	53.44	NE	NE	106.11	NE	NE	0.02	NE	NE	NO	NE, NO	NE	NO	NE, NO
Germany	CS, T2	CS	C, NE, NO	60.78	C, NE, NO	NE, NO	77.28	NE, NO	NE, NO	0.00	NE, NO	NO	0.00	NO	NE, NO	0.00	NE, NO
Greece			NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO
Hungary			NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO
Iceland	NA	NA	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO
Ireland	T2	CS	NE, NO	0.02	NE, NO	NE, NO	0.07	NE, NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Italy	CS	PS	NE, NO	NO	NE, NO	NE, NO	NO	NE, NO	NE, NO	NO	NE, NO	NE, NO	NO	NE, NO	NE, NO	NO	NE, NO
Japan			1,950.00	NA, NE	NA, NE	IE, NE	NA, NE	IE, NA, NE	IE, NE	NA, NE	IE, NA, NE	NO	NA, NE	NA, NE, NO	IE, NE	NA, NE	IE, NA, NE
Latvia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liechtenstein			NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Lithuania			NA, NO	NA	NA, NO	NA, NO	NA	NA, NO	NA, NO	NA	NA, NO	NA, NO	NA	NA, NO	NA, NO	NA	NA, NO
Luxembourg			NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Monaco																	
Netherlands	CS, T2	PS	C, NE	NO	C, NE, NO	C, NE	NO	C, NE, NO	NE, NO	NO	NE, NO	NE, NO	NO	NE, NO	NE, NO	NA, NO	NA, NE, NO
New Zealand	D	D	IE, NA, NO	NA, NO	IE, NA, NO	IE, NA, NO	NA, NO	IE, NA, NO	IE, NO	NA, NO	IE, NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
Norway			NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Poland			NE, NO	NA, NE	NA, NE, NO	NE, NO	NA, NE	NA, NE, NO	NE, NO	NA, NE	NA, NE, NO	NE, NO	NA, NE	NA, NE, NO	NE, NO	NA, NE	NA, NE, NO
Portugal			NE, NO	NE	NE, NO	NE, NO	NE	NE, NO	NE, NO	NE	NE, NO	NE, NO	NE	NE, NO	NE, NO	NE	NE, NO
Romania			NE, NO	NE	NE, NO	NE, NO	NE	NE, NO	NE, NO	NE	NE, NO	NE, NO	NE	NE, NO	NE, NO	NE	NE, NO
Russian Federation	NA	NA	NE	NA, NE	NA, NE	NE	NA, NE	NA, NE	NE	NA, NE	NA, NE	NE	NA, NE	NA, NE	NE	NA, NE	NA, NE
Slovakia			NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO
Slovenia	NA	NA	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO
Spain	NA	NA	NE	NA, NO	NA, NE, NO	NE	NA, NO	NA, NE, NO	NE	NA, NO	NA, NE, NO	NE	NA, NO	NA, NE, NO	NE	NA, NO	NA, NE, NO
Sweden			NA, NE, NO	NA, NO	NA, NE, NO	NA, NE, NO	NA, NO	NA, NE, NO	NA, NE, NO	NA, NO	NA, NE, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO
Switzerland	T2	M	NO	NO	NO	NO	NO	NO	0.33	0.04	7.67	NO	NO	NO	NO	NO	NO
Turkey																	
Ukraine			NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO
United Kingdom	OTH, T2, T3	CS, OTH	IE, NE, NO	IE, NA, NO	IE, NA, NE, NO	IE, NA	IE, NA, NO	IE, NA, NO	IE, NA	IE, NA, NO	IE, NA, NO	IE, NA	IE, NA, NO	IE, NA, NO	IE, NA	IE, NA, NO	IE, NA, NO
United States	M, T2	CS, M	745.71	746.45	1.00	2,102.69	1,471.88	1.43	7.09	2.83	2.50	C, IE	C, IE, NA, NO	C, IE, NA, NO	IE, NO	C, IE, NA, NO	C, IE, NA, NO

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

<sup>b</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all PFCs for all subcategories within the category 2.F Consumption of halocarbons and SF<sub>6</sub>.

<sup>c</sup> P = Potential emissions

<sup>d</sup> A = Actual emissions

**Table 2.21b****Consumption of halocarbons and SF<sub>6</sub> - PFCs (base year)<sup>a</sup>**

	Methods and EF used <sup>b</sup>		C <sub>5</sub> F <sub>12</sub>			C <sub>6</sub> F <sub>14</sub>			Unspecified PFCs			Total		
	Methods	EF	P <sup>c</sup>	A <sup>d</sup>	Ratio P / A	P <sup>c</sup>	A <sup>d</sup>	Ratio P / A	P <sup>c</sup>	A <sup>d</sup>	Ratio P / A	P <sup>c</sup>	A <sup>d</sup>	Ratio P / A
			2.F(p)	2.F(a)		2.F(p)	2.F(a)		2.F(p)	2.F(a)		2.F(p)	2.F(a)	
			Gg CO <sub>2</sub> equivalent	Gg CO <sub>2</sub> equivalent		Gg CO <sub>2</sub> equivalent	Gg CO <sub>2</sub> equivalent		Gg CO <sub>2</sub> equivalent	Gg CO <sub>2</sub> equivalent		Gg CO <sub>2</sub> equivalent	Gg CO <sub>2</sub> equivalent	
Australia			NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO
Austria	CS	CS	NO	NO	NO	NO	NO	NO	NO	NO	NO	32.28	29.05	1.11
Belarus			NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO
Belgium			NO	NO	NO	NO	NO	NO	0.00	0.00	0.00	NO	NO	NO
Bulgaria	OTH	OTH	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO
Canada			NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO
Croatia			NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Czech Republic			NA, NE, NO	NO	NA, NE, NO	NA, NE, NO	NO	NA, NE, NO	NA, NE, NO	NO	NA, NE, NO	NA, NE, NO	NO	NA, NE, NO
Denmark			NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NA, NO	NA, NE, NO	NA, NE, NO
Estonia			NO	0.00	NO	NO	0.00	NO	NO	0.00	NO	NO	0.00	NO
European Community			IE	NA, NO	IE, NA, NO	IE	182.38	IE	106.00	76.17	1.39	106.00	585.33	0.18
Finland	T1, T2	D	NO	NO	NO	NO	NO	NO	0.11	0.07	1.50	0.11	0.07	1.50
France			NE	NO	NE, NO	NE	182.38	NE	NE	NO	NE, NO	NE	341.96	NE
Germany	CS, T2	CS	NO	0.00	NO	NO	0.00	NO	IE, NO	0.00	IE, NO	C, IE, NE, NO	138.06	C, IE, NE, NO
Greece			NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO
Hungary			NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO
Iceland	NA	NA	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	0.00	NA	NA	NE, NO	NA, NE, NO	NA, NE, NO
Ireland	T2	CS	NO	NO	NO	NO	NO	NO	NO	NO	NO	NE, NO	0.09	1.54
Italy	CS	PS	NE, NO	NO	NE, NO	NE, NO	NO	NE, NO	NA, NE, NO	NO	NA, NE, NO	NA, NE, NO	NO	NA, NE, NO
Japan			IE, NE	NA, NE	IE, NA, NE	NO	NA, NE	NA, NE, NO	3,720.00	NA, NE	NA, NE	5,670.00	NA, NE	NA, NE
Latvia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liechtenstein			NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Lithuania			NA, NO	NA	NA, NO	NA, NO	NA	NA, NO	NA, NO	NA	NA, NO	NA, NO	NA	NA, NO
Luxembourg			NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Monaco									0.00					
Netherlands	CS, T2	PS	NE, NO	NO	NE, NO	NE, NO	NO	NE, NO	C, NE	18.26	C, NE	C, NE, NO	18.26	C, NE, NO
New Zealand	D	D	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	IE, NA, NO	NA, NO	IE, NA, NO
Norway			NO	NO	NO	NO	NO	NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO
Poland			NE, NO	NA, NE	NA, NE, NO	NE, NO	NA, NE	NA, NE, NO	NE, NO	NA	NA, NE, NO	NE, NO	NA, NE	NA, NE, NO
Portugal			NE, NO	NE	NE, NO	NE, NO	NE	NE, NO	NE, NO	NE	NE, NO	NE, NO	NE	NE, NO
Romania			NE, NO	NE	NE, NO	NE, NO	NE	NE, NO	NE, NO	NE	NE, NO	NE, NO	NE	NE, NO
Russian Federation	NA	NA	NE	NA, NE	NA, NE	NE	NA, NE	NA, NE	NE	NA, NE	NA, NE	NE	NA, NE	NA, NE
Slovakia			NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO
Slovenia	NA	NA	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO
Spain	NA	NA	NE	NA, NO	NA, NE, NO	NE	NA, NO	NA, NE, NO	NE	NA, NO	NA, NE, NO	NE	NA, NO	NA, NE, NO
Sweden			NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NA, NE, NO	NA, NO	NA, NE, NO
Switzerland	T2	M	NO	NO	NO	NO	NO	NO	NO	NO	NO	0.33	0.04	7.67
Turkey														
Ukraine			NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO
United Kingdom	OTH, T2, T3	CS, OTH	IE, NA	IE, NA, NO	IE, NA, NO	IE, NA	IE, NA, NO	IE, NA, NO	73.47	57.84	1.27	73.47	57.84	1.27
United States	M, T2	CS, M	C, IE	C, IE, NA, NO	C, IE, NA, NO	C, IE	C, IE, NA, NO	C, IE, NA, NO	IE, NO	NA, NO	IE, NA, NO	2,855.49	2,221.16	1.29

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

category 2.F Consumption of halocarbons and SF<sub>6</sub>.

<sup>c</sup> P = Potential emissions

<sup>d</sup> A = Actual emissions

**Table 2.22a**  
**Consumption of halocarbons and SF<sub>6</sub> - PFCs (2004)**

	Methods and EF used <sup>a</sup>		CF <sub>4</sub>			C <sub>2</sub> F <sub>6</sub>			C <sub>3</sub> F <sub>8</sub>			C <sub>4</sub> F <sub>10</sub>			c-C <sub>4</sub> F <sub>8</sub>		
	Methods	EF	P <sup>b</sup>	A <sup>c</sup>	Ratio P / A	P <sup>b</sup>	A <sup>c</sup>	Ratio P / A	P <sup>b</sup>	A <sup>c</sup>	Ratio P / A	P <sup>b</sup>	A <sup>c</sup>	Ratio P / A	P <sup>b</sup>	A <sup>c</sup>	Ratio P / A
			2.F(p)	2.F(a)		2.F(p)	2.F(a)		2.F(p)	2.F(a)		2.F(p)	2.F(a)		2.F(p)	2.F(a)	
			Gg CO <sub>2</sub> equivalent			Gg CO <sub>2</sub> equivalent			Gg CO <sub>2</sub> equivalent			Gg CO <sub>2</sub> equivalent			Gg CO <sub>2</sub> equivalent		
Australia			NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO
Austria	CS	CS	102.54	40.20	2.55	206.45	64.08	3.22	11.20	10.08	1.11	0.07	0.36	0.20	NO	NO	NO
Belarus			NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO
Belgium			NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Bulgaria	OTH	OTH	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO
Canada	T2	D	16.19	12.50	1.30	25.14	14.80	1.70	0.10	0.78	0.13	NO	NA, NE, NO	NA, NE, NO	NO	NA, NE, NO	NA, NE, NO
Croatia			NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Czech Republic	D	D	NA, NE, NO	NO	NA, NE, NO	5.86	4.33	1.35	15.12	12.99	1.16	NA, NE, NO	NO	NA, NE, NO	NA, NE, NO	NO	NA, NE, NO
Denmark			NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	2.11	15.90	0.13	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO
Estonia			NO	0.00	NO	NO	0.00	NO	NO	0.00	NO	NO	0.00	NO	NO	0.00	NO
European Community			IE	432.87	IE	IE	733.01	IE	IE	265.86	IE	IE	3.80	IE	IE	8.26	IE
Finland	T1, T2	D	C, NO	C, NA, NO	C, NA, NO	C, NO	C, NA, NO	C, NA, NO	11.75	11.26	1.04	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO
France			NE	116.35	NE	NE	251.43	NE	NE	6.58	NE	NE	NO	NE, NO	NE	2.77	NE
Germany	CS, T2	CS	C, IE, NO	100.30	C, IE, NO	288.33	148.90	1.94	527.94	134.29	3.93	IE, NO	0.00	IE, NO	IE, NO	1.34	IE, NO
Greece			NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO
Hungary	CS	CS	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	2.25	1.06	2.11	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO
Iceland	NA	NA	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO
Ireland	T2	CS	50.49	40.74	1.24	247.71	153.83	1.61	NO	NO	NO	NO	NO	NO	6.00	1.80	3.33
Italy	CS	PS	NE, NO	134.68	NE, NO	NE, NO	112.33	NE, NO	NE, NO	IE, NE, NO	IE, NE, NO	NE, NO	NO	NE, NO	NE, NO	2.34	NE, NO
Japan	CS, T1	CS, D	3,399.50	IE, NA, NE, NO	IE, NA, NE, NO	IE, NE	IE, NA, NE, NO	IE, NA, NE, NO	IE, NE	IE, NA, NE, NO	IE, NA, NE, NO	NO	IE, NA, NE, NO	IE, NA, NE, NO	IE, NE	IE, NA, NE, NO	IE, NA, NE, NO
Latvia	NA	NA	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Liechtenstein			NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Lithuania			NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Luxembourg			NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Monaco										0.04							
Netherlands	CS, T2	PS	C, NE	NO	C, NE, NO	C, NE	NO	C, NE, NO	NE, NO	NO	NE, NO	NE, NO	NO	NE, NO	NE, NO	NO	NE, NO
New Zealand	T2	D	IE, NA, NO	NA, NO	IE, NA, NO	IE, NA, NO	NA, NO	IE, NA, NO	IE, NO	7.00	IE, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO
Norway			NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	0.70	1.00	1.00	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO
Poland	T1a, T2	D	NE, NO	NA, NE	NA, NE, NO	NE, NO	NA, NE	NA, NE, NO	NE, NO	NA, NE	NA, NE, NO	NE, NO	18.35	NE, NO	NE, NO	NA, NE	NA, NE, NO
Portugal			NO	NO	NO	0.07	NO	NO	1.68	NO	NO	NO	NO	NO	NO	NO	NO
Romania			NE, NO	NE, NO	NE, NO	NE, NO	NE	NE, NO	NE, NO	NE	NE, NO	NE, NO	0.06	NE, NO	NE, NO	NE	NE, NO
Russian Federation	NA	NA	NE	NA, NE	NA, NE	NE	NA, NE	NA, NE	NE	NA, NE	NA, NE	NE	NA, NE	NA, NE	NE	NA, NE	NA, NE
Slovakia			0.59	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Slovenia	NA	NA	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO
Spain	T1, T2	D	NE	NA, NO	NA, NE, NO	NE	NA, NO	NA, NE, NO	NE	85.75	NE	NE	3.44	NE	NE	NA, NO	NA, NE, NO
Sweden	CS, T1	CS, D	0.50	0.61	0.83	3.86	2.43	1.59	18.36	2.01	9.16	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO
Switzerland	T2	M	9.62	19.05	0.51	1.66	2.21	0.75	16.89	3.43	4.93	NO	21.84	NO	0.09	6.87	0.01
Turkey																	
Ukraine			NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO
United Kingdom	T2, T3	CS	IE, NE, NO	IE, NA, NO	NO	NA, NE, NO	IE, NA, NO	NO	NA, NE, NO	IE, NA, NO	NO	NA, NE, NO	IE, NA, NO	NO	NA, NE, NO	IE, NA, NO	NO
United States	M, T2	CS, M	1,322.80	1,216.22	1.09	3,213.74	2,249.62	1.43	97.00	38.80	2.50	C, IE, NO	C, NA, NO	C, IE, NA, NO	247.29	74.19	3.33

<sup>a</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all PFCs for all subcategories within the category 2.F Consumption of halocarbons and SF<sub>6</sub>.

<sup>b</sup> P = Potential emissions

<sup>c</sup> A = Actual emissions

**Table 2.22b**  
**Consumption of halocarbons and SF<sub>6</sub> - PFCs (2004)**

	Methods and EF used <sup>a</sup>		C <sub>5</sub> F <sub>12</sub>			C <sub>6</sub> F <sub>14</sub>			Unspecified PFCs			Total		
	Methods	EF	P <sup>b</sup>		Ratio P / A	P <sup>b</sup>		Ratio P / A	P <sup>b</sup>		Ratio P / A	P <sup>b</sup>		Ratio P / A
			2.F(p)	A <sup>c</sup>		2.F(p)	A <sup>c</sup>		2.F(p)	A <sup>c</sup>		2.F(p)	A <sup>c</sup>	
			Gg CO <sub>2</sub> equivalent			Gg CO <sub>2</sub> equivalent			Gg CO <sub>2</sub> equivalent			Gg CO <sub>2</sub> equivalent		
Australia			NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO
Austria	CS	CS	NO	NO	NO	NO	NO	NO	NO	NO	NO	320.26	114.72	2.79
Belarus			NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO
Belgium			NO	NO	NO	NO	NO	NO	0.00	0.00	0.00	NO	NO	NO
Bulgaria	OTH	OTH	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO
Canada	T2	D	NO	0.01	NO	1.66	1.67	1.00	NO	NA, NE, NO	NA, NE, NO	43.10	29.75	1.45
Croatia			NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Czech Republic	D	D	NA, NE, NO	NO	NA, NE, NO	NA, NE, NO	NO	NA, NE, NO	NA, NE, NO	NO	NA, NE, NO	20.98	17.33	1.21
Denmark			NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	2.11	15.90	0.13
Estonia			NO	0.00	NO	NO	0.00	NO	NO	0.00	NO	NO	0.00	NO
European Community			IE	0.47	IE	IE	174.26	IE	1,637.44	273.56	5.99	1,637.44	1,892.08	0.87
Finland	T1, T2	D	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	0.61	0.97	0.64	12.36	12.23	1.01
France			NE	0.47	NE	NE	174.26	NE	NE	NO	NE, NO	NE	551.86	NE
Germany	CS, T2	CS	IE, NO	0.00	IE, NO	IE, NO	0.00	IE, NO	IE, NO	0.00	IE, NO	816.28	384.83	2.12
Greece			NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO	NE	NA, NE, NO	NA, NE, NO
Hungary	CS	CS	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	2.25	1.06	2.11
Iceland	NA	NA	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO	0.00	NA	NA	NE, NO	NA, NE, NO	NA, NE, NO
Ireland	T2	CS	NO	NO	NO	NO	NO	NO	NO	NO	NO	304.21	196.37	1.55
Italy	CS	PS	NE, NO	NO	NE, NO	NE, NO	NO	NE, NO	NA, NE, NO	NO	NA, NE, NO	NA, NE, NO	249.35	NA, NE, NO
Japan	CS, T1	CS, D	IE, NE	IE, NA, NE, NO	IE, NA, NE, NO	IE, NE, NO	IE, NA, NE, NO	IE, NA, NE, NO	17,454.00	5,440.55	3.21	20,853.50	5,440.55	3.83
Latvia	NA	NA	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Liechtenstein			NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Lithuania			NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Luxembourg			NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Monaco									0.00				0.04	
Netherlands	CS, T2	PS	NE, NO	NO	NE, NO	NE, NO	NO	NE, NO	C, NE	179.04	C, NE	C, NE, NO	179.04	C, NE, NO
New Zealand	T2	D	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	IE, NA, NO	7.00	IE, NA, NO
Norway			NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	0.70	0.70	1.00
Poland	T1a, T2	D	NE, NO	NA, NE	NA, NE, NO	NE, NO	NA, NE	NA, NE, NO	NE, NO	NA	NA, NE, NO	NE, NO	18.35	NE, NO
Portugal			NO	NO	NO	NO	NO	NO	NO	NO	NO	1.75	NO	NO
Romania			NE, NO	0.39	NE, NO	NE, NO	0.00	NE, NO	NE, NO	NE	NE, NO	NE, NO	0.45	NE, NO
Russian Federation	NA	NA	NE	NA, NE	NA, NE	NE	NA, NE	NA, NE	NE	NA, NE	NA, NE	NE	NA, NE	NA, NE
Slovakia			NO	NO	NO	NO	NO	NO	NO	NO	NO	0.59	NO	NO
Slovenia	NA	NA	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO
Spain	T1, T2	D	NE	NA, NO	NA, NE, NO	NE	NA, NO	NA, NE, NO	NE	NA, NO	NA, NE, NO	NE	89.20	NE
Sweden	CS, T1	CS, D	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO	22.73	5.05	4.50
Switzerland	T2	M	NO	NO	NO	12.58	11.94	1.05	NO	NO	NO	40.83	65.34	0.62
Turkey														
Ukraine			NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO
United Kingdom	T2, T3	CS	NA, NE, NO	IE, NA, NO	IE, NA, NE, NO	NA, NE, NO	IE, NA, NO	IE, NA, NE, NO	157.74	93.53	1.69	157.74	93.53	1.69
United States	M, T2	CS, M	C, IE, NO	C, NA, NO	C, IE, NA, NO	C, IE, NO	C, NA, NO	C, IE, NA, NO	IE, NO	NA, NO	IE, NA, NO	4,880.83	3,578.82	1.36

<sup>a</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all PFCs for all subcategories within the category 2.F Consumption of halocarbons and SF<sub>6</sub>.

<sup>b</sup> P = Potential emissions

<sup>c</sup> A = Actual emissions

**Table 2.23****Consumption of halocarbons and SF<sub>6</sub> - SF<sub>6</sub> (base year)<sup>a</sup>**

	Methods and EF used		SF <sub>6</sub>		
	Methods	EF	P <sup>a</sup>	A <sup>b</sup>	Ratio P / A
			2.F(p)	2.F(a)	
			(Gg CO <sub>2</sub> equivalent)		
Australia	T2	D	NE, NO	521.02	NE, NO
Austria	CS	CS	839.91	249.24	3.37
Belarus	NA	NA	NE, NO	NE, NO	NE, NO
Belgium			NE, NO	103.25	2.12
Bulgaria	NA	NA	NA, NE, NO	NE, NO	NA, NE, NO
Canada	T1	OTH	NE, NO	1,831.06	1.00
Croatia	NA	NA	NE, NO	NE, NO	NE, NO
Czech Republic	NA	NA	NA, NE, NO	NA, NO	NA, NE, NO
Denmark			NA, NO	13.38	NA, NO
Estonia			NO	0.00	NO
European Community			36,765.50	6,993.12	5.26
Finland	T1, T2	D	356.64	94.38	3.78
France			NE	1,059.61	NE
Germany			29,005.52	4,476.72	6.48
Greece	CS	CS	NE	3.07	NE
Hungary	CS, D	CS	81.01	81.02	1.00
Iceland	NA	NA	NE, NO	NA, NE, NO	NA, NE, NO
Ireland	T1, T2	CR, CS	NE, NO	35.40	1.21
Italy	T2	CS	3,752.30	213.42	17.58
Japan	NA	NA	38,240.00	NE	NE
Latvia	NA	NA	NA	NA	NA
Liechtenstein	NA	NA	NO	NO	NO
Lithuania	NA	NA	NA, NO	NA	NA, NO
Luxembourg	CS	CS	NE	2.91	NE
Monaco					
Netherlands	CS, T2	D, PS	C, NE	217.32	C, NE
New Zealand	T3	CS	48.52	9.46	5.13
Norway	T2	CS	NE, NO	55.95	9.21
Poland			NE, NO	13.15	NE, NO
Portugal	T3	CS	NE, NO	1.82	NE, NO
Romania	NA	NA	NE, NO	NE	NE, NO
Russian Federation	OTH	OTH	NE	5.72	NE
Slovakia	D	CS	NO	0.03	NO
Slovenia	T2	D	14.34	10.24	1.40
Spain	T2	D	NE	66.92	NE
Sweden	CS, D	CS, D, PS	138.62	83.57	1.66
Switzerland	T2	M	480.01	143.62	3.34
Turkey					
Ukraine	NA	NA	NE, NO	NE, NO	NE, NO
United Kingdom	T1, T2	CS	2,409.77	603.92	3.99
United States	M, T2	CS, M	32,943.49	29,153.43	1.13

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

<sup>b</sup> P = Potential emissions

<sup>c</sup> A = Actual emissions

**Table 2.24**  
**Consumption of halocarbons and SF<sub>6</sub> - SF<sub>6</sub> (2004)**

	Methods and EF used		SF <sub>6</sub>		
	Methods	EF	P <sup>a</sup>	A <sup>b</sup>	Ratio P / A
			2.F(p)	2.F(a)	
			(Gg CO <sub>2</sub> equivalent)		
Australia	T2	D	NE, NO	521.02	NE, NO
Austria	CS	CS	655.98	512.51	1.28
Belarus	D	D	NE, NO	74.09	NE, NO
Belgium			NE, NO	65.96	1.73
Bulgaria	D	D	NA, NE, NO	3.68	NA, NE, NO
Canada	T1	OTH	NE, NO	804.62	1.00
Croatia	NA	NA	NE, NO	NE, NO	NE, NO
Czech Republic	D, T3	D	208.00	49.56	4.20
Denmark			42.30	33.15	1.28
Estonia	T1a	D	0.02	5.28	0.00
European Community			45,143.42	5,670.80	7.96
Finland	T1, T2, T3	D	123.32	23.18	5.32
France			NE	745.71	NE
Germany			39,406.20	2,559.10	15.40
Greece	CS	CS	NE	4.47	NE
Hungary	CS, D, T1	CS	321.89	178.17	1.81
Iceland	NA	NA	NE, NO	NA, NE, NO	NA, NE, NO
Ireland	T1, T2	CR, CS	121.45	70.01	1.73
Italy	CS, T3	CS, PS	2,891.90	508.12	5.69
Japan	CS, T1	CS, D	30,111.61	2,742.77	10.98
Latvia	T2	D	NE, NO	4.82	NE, NO
Liechtenstein	CS	CS	4.92	0.06	87.20
Lithuania	T1	CS	NE, NO	0.86	NE, NO
Luxembourg	CS	CS	NE	3.52	NE
Monaco					
Netherlands	CS, T2	D, PS	C, NE	328.36	C, NE
New Zealand	T2	CS	45.43	21.49	2.11
Norway	T2	CS	NE, NO	70.14	3.87
Poland			NE, NO	22.56	NE, NO
Portugal	T3	CS	19.68	3.44	5.72
Romania	T2	D	NE, NO	0.08	NE, NO
Russian Federation	OTH	OTH	NE	21.73	NE
Slovakia	D	CS	86.26	15.89	5.43
Slovenia	T2	D	NE, NO	18.31	NE, NO
Spain	T2	D	NE	255.11	NE
Sweden	CS, D, T1	CS, D, PS	547.07	42.27	12.94
Switzerland	T2	M	718.34	124.88	5.75
Turkey			732.82	61.48	11.92
Ukraine	NA	NA	NE, NO	NE, NO	NE, NO
United Kingdom	T1, T2	CS	1,221.74	739.54	1.65
United States	M, T2	CS, M	25,099.76	14,749.50	1.70

<sup>a</sup> P = Potential emissions

<sup>b</sup> A = Actual emissions

## Solvent and other product use

**Table 3.1**

Solvent and other product use, CO<sub>2</sub> and N<sub>2</sub>O (base year)<sup>a</sup>

	Methods and EF used <sup>b</sup>		Key category (CO <sub>2</sub> )	Methods and EF used <sup>b</sup>		Key category (N <sub>2</sub> O)	Paint application		Degreasing and dry cleaning			
	CO <sub>2</sub>			N <sub>2</sub> O			CO <sub>2</sub>		CO <sub>2</sub>		N <sub>2</sub> O	
	Methods	EF		Methods	EF		Share of national total (%)	CO <sub>2</sub> IEF (t/t)	Share of national total (%)	CO <sub>2</sub> IEF (t/t)	Share of national total (%)	N <sub>2</sub> O IEF (t/t)
Australia	NA	NA		NA	NA		-	NA	-	NA	-	NA
Austria	CR, CS	CS		CS	D		0.2	2.16	0.0	2.19	-	NA
Belarus	NA	NA		T1	D		-	NA	-	NA	-	NA
Belgium	NA	NA					-	NE	-	NE	0.0	
Bulgaria	NA	NA		NA	NA		-	NE	-	NE	-	NA
Canada	NA	NA		T1	CS		-	NA	-	NA	-	NA
Croatia	NA	NA		NA	NA		-	NE	-	NE	-	NE
Czech Republic	CR	CS		D	D		0.2	3.14	0.1	3.14	-	NA
Denmark	OTH	OTH		NA	NA		0.0	0.10	0.1	0.43	-	NA
Estonia	NA	NA		NA	NA		0.0	0.00	0.0	0.00	0.0	0.00
European Community							0.1	NA	0.0	NA	0.0	
Finland	T2	D		CS	CS		0.1	NO	0.0	NO	-	NO
France							0.2	3.05	0.0	2.57	-	NA
Germany	NA	NA		CS	CS		-	NE	-	NE	-	NE
Greece	CR	CR		NA	NA		0.0	0.00	0.0	0.00	-	NE
Hungary	D	CS		CS, T2	PS		0.1	0.97	0.0	0.44	-	NO
Iceland	NA	NA					-	NE	-	NE	-	NA
Ireland	CR, CS	CR		NA	NA		0.0	3.12	0.0	3.12	-	NA
Italy	CR, CS	CR, CS		CS	CS		0.2	0.96	0.0	2.65	-	NA
Japan	NA	NA		CS	OTH		-	NA	-	NE	-	NA
Latvia	CR	CR		NA	NA		0.1	1.32	0.0	0.00	-	NO
Liechtenstein	CS	CS		CS	CS		0.2	0.61	0.1	NA	-	NO
Lithuania	NA	NA		NA	NA		-	NE	-	NE	-	NE
Luxembourg	CR	CR		NA	NA		0.0	0.97	0.0	2.90	-	NE
Monaco							-	NE	-	NE	-	NE
Netherlands	CS	CS		CS	CS		0.1	2.62	0.0	0.57	-	NO
New Zealand	NA	NA		D	D		-	NA	-	NA	-	NA
Norway	M	CS		CS	CS		0.1	3.00	0.0	3.00	-	NA
Poland	CS	CS		CS	CS		0.1	3.12	0.0	3.12	-	NE
Portugal	D	CR, CS, OTH		NA	NA		0.1	0.35	0.0	3.12	-	NO
Romania	CR	CR		NA	NA		0.1	0	0.0	0	-	NE
Russian Federation	NA	NA		CS	CS		-	NE	-	NE	-	NE
Slovakia	NA	NA		NA	NA		-	NE	-	NE	-	NE
Slovenia	NA	NA		D	D		-	NO	-	NE	-	NE
Spain	D	CR		CS	CS		0.2	0.92	0.0	2.84	-	NA
Sweden	CS	CS		CS	CS		0.1	NE	0.0	0.38	-	NA
Switzerland	CS	CS	L	CS	CS		0.2	0.61	0.1	NA	-	NO
Turkey							-				-	
Ukraine	NA	NA		OTH	OTH		-	NE	-	NE	-	NE
United Kingdom	NA	NA		NA	NA		-	NE	-	NE	-	NE
United States	NA	NA		D	D		-	NE	-	NE	-	NE

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

<sup>b</sup> Information on methods and emission factors in this table is as reported by Parties in the table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the Solvent and other product use sector.

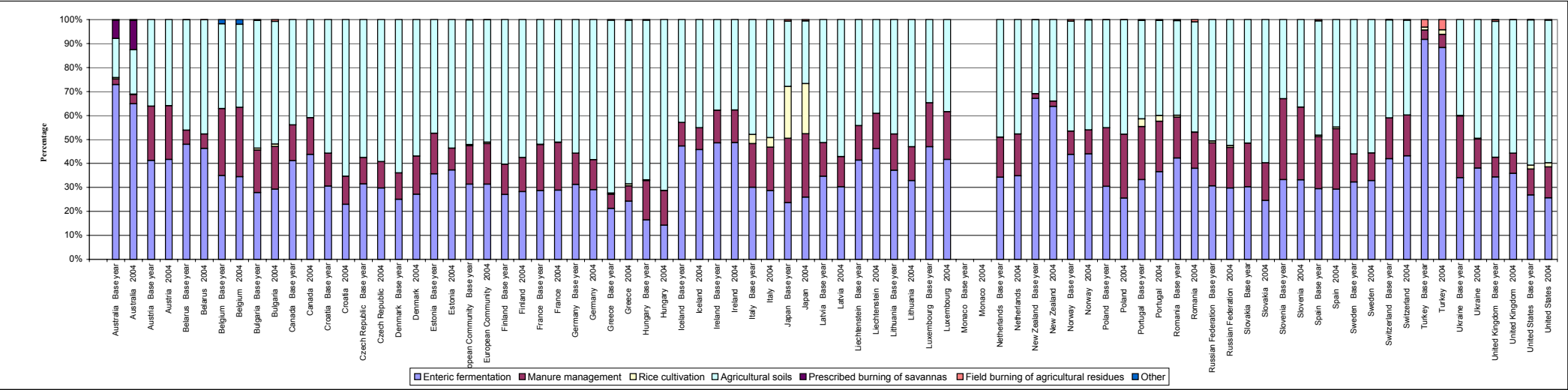
**Table 3.2**  
**Solvent and other product use, CO<sub>2</sub> and N<sub>2</sub>O (2004)**

	Methods and EF used <sup>a</sup>		Key category (CO <sub>2</sub> )	Methods and EF used <sup>a</sup>		Key category (N <sub>2</sub> O)	Paint application		Degreasing and dry cleaning			
	CO <sub>2</sub>			N <sub>2</sub> O			CO <sub>2</sub>		CO <sub>2</sub>		N <sub>2</sub> O	
	Methods	EF		Methods	EF		Share of national total (%)	CO <sub>2</sub> IEF (t/t)	Share of national total (%)	CO <sub>2</sub> IEF (t/t)	Share of national total (%)	N <sub>2</sub> O IEF (t/t)
Australia	NA	NA		NA	NA		-	NA	-	NA	-	NA
Austria	CR, CS	CS		CS	D		0.1	1.22	0.0	1.38	-	NA
Belarus	NA	NA		T1	D		-	NA	-	NA	-	NA
Belgium	NA	NA					-	NE	-	NE	0.0	0.00
Bulgaria	NA	NA		NA	NA		-	NE	-	NE	-	NA
Canada	NA	NA		T1	CS		-	NA	-	NA	-	NA
Croatia	NA	NA		NA	NA		-	NE	-	NE	-	NE
Czech Republic	CR	CS		D	D		0.1	3.14	0.0	3.14	-	NA
Denmark	OTH	OTH		NA	NA		0.0	0.12	0.0	0.32	-	NA
Estonia	NA	NA		NA	NA		-	NO	-	NO	-	NO
European Community							0.1	NA	0.0	NA	0.0	NA
Finland	T2	D		CS	CS		0.0	NO	0.0	NO	-	NO
France							0.1	2.68	0.0	0.94	-	NA
Germany	NA	NA		CS	CS		-	NE	-	NE	-	NE
Greece	CR	CR		NA	NA		0.0	0.00	0.0	0.00	-	NE
Hungary	CS	CS		CS, T2	PS		0.1	0.50	0.0	0.44	-	NO
Iceland	NA	NA					-	NE	-	NE	-	NA
Ireland	CR, CS	CR		NA	NA		0.0	3.12	0.0	3.12	-	NA
Italy	CR, CS	CR, CS		CS	CS		0.1	0.74	0.0	2.41	-	NA
Japan	NA	NA		CS	OTH		-	NA	-	NE	-	NA
Latvia	CR	CR		CS	CS		0.2	1.17	0.1	0.00	-	NO
Liechtenstein	CS	CS	T	CS	CS		0.1	0.40	0.0	NA	-	NO
Lithuania	NA	NA		NA	NA		-	NE	-	NE	-	NE
Luxembourg	CR	CR		NA	NA		0.0	0.92	0.0	2.90	-	NE
Monaco							-	NE	-	NE	-	NE
Netherlands	CS	CS	T	CS	CS		0.0	2.96	0.0	0.51	-	NO
New Zealand	NA	NA		D	D		-	NA	-	NA	-	NA
Norway	M	CS		CS	CS		0.0	3.00	0.0	3.00	-	NA
Poland	CS	CS		CS	CS		0.1	3.12	0.0	3.12	-	NE
Portugal	D	CR, CS, OTH		NA	NA		0.1	0.47	0.0	3.12	-	NO
Romania	CR	CR		NA	NA		0.1	0	0.0	0	-	NE
Russian Federation	NA	NA		CS	CS		-	NE	-	NE	-	NE
Slovakia	NA	NA		D	CS		-	NE	-	NE	-	NE
Slovenia	NA	NA		D	D	T	-	NO	-	NE	-	NE
Spain	D	CR		CS	CS		0.1	0.64	0.0	2.82	-	NA
Sweden	CS	CS	T	CS	CS	T	0.1	1.45	0.0	0.65	-	NA
Switzerland	CS	CS	T	CS	CS	T	0.1	0.40	0.0	NA	-	NO
Turkey							-		-			
Ukraine	NA	NA		OTH	OTH		-	NE	-	NE	-	NE
United Kingdom	NA	NA		NA	NA		-	NE	-	NE	-	NE
United States	NA	NA		D	D		-	NE	-	NE	-	NE

<sup>a</sup> Information on methods and emission factors in this table is as reported by Parties in the table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the Solvent and other product use sector.

Agriculture

Figure 4.1  
Contribution of subsectors to total GHG emissions in the Agriculture sector<sup>a</sup>



<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

Table 4.1

Enteric fermentation, CH<sub>4</sub> (base year<sup>a</sup>)

Key category	Share of national total	Methods and EF used <sup>b</sup>		Cattle						Sheep				Swine			
				Activity data (population size)			Dairy cattle		Non-dairy cattle	Activity data (population size)			CH <sub>4</sub> IEF	Activity data (population size)			CH <sub>4</sub> IEF
		Methods	EF	CRF	FAO <sup>c</sup>	Difference	CH <sub>4</sub> IEF			CRF	FAO <sup>c</sup>	Difference		CRF	FAO <sup>c</sup>	Difference	
	(%)			(thousands of head)		(%)	(kg/head/yr)			(thousands of head)		(%)	(kg/head/yr)	(thousands of head)		(%)	(kg/head/yr)
IPCC default EF <sup>d</sup>							56-118 <sup>c</sup>	44-56 <sup>c</sup>					8.0				1.5
Australia	L	15.3	CS, T1, T2	CS, D	24,534	23,162	-5.6	107	71	168,379	170,297	1.1	6.9	2,659	2,648	-0.4	1.2
Austria	L	4.8	T1, T2	CS, D	2,584	2,562	-0.8	98	48	310	287	-7.4	8.0	3,688	3,773	2.3	1.5
Belarus	L	7.7	T1	D	6,975			81	56	403			8.0	5,051			1.5
Belgium	L	3.1			3,248	3,257	0.3	100	48	192	174	-9.4	8.3	6,700	6,511	-2.8	1.5
Bulgaria	L	3.1	T1, T2	D	1,631	1,649	1.1	81	56	8,747	8,886	1.6	8.0	4,076	4,034	-1.0	1.5
Canada	L	3.1	T1, T2	CS, D	11,890	11,220	-5.6	117	65	431	595	38.1	8.0	10,211	10,392	1.8	1.5
Croatia	L	4.3	T1	D	803			81	56	749			5.0	1,573			1.0
Czech Republic	L	2.5	T1, T2	CS, D	3,552			96	44	430			8.0	4,790			1.5
Denmark	L	4.6	T1	CS	2,239	2,241	0.1	117	35	100	248	146.7	15.7	9,497	9,282	-2.3	1.1
Estonia	L	2.5	T1, T2	CS, D	758			99	48	140			8.0	860			1.4
European Community	L	3.2	CR, D, M, T1, T2	CR, CS, D	91,165	91,718	0.6	96	45	114,990	115,551	0.5	6.7	112,627	121,869	8.2	1.4
Finland	L	2.7	CS, D, T1, T2	CS, D	1,360	1,363	0.2	97	1E	103	61	-41.2	6.8	1,394	1,348	-3.3	1.5
France	L	5.4			21,677	21,394	-1.3	99	50	11,446	11,209	-2.1	8.0	9,669	12,276	27.0	1.5
Germany	L	2.0	CR, CS, D, T1	CR, CS, D	19,488	20,288	4.1	95	37	3,784	4,135	9.3	7.9	28,326	34,178	20.7	1.2
Greece	L	2.6	T1, T2	CS, D	626	654	4.4	81	56	8,692	8,723	0.4	7.4	994	1,001	0.7	1.5
Hungary	L	2.7	D, T1a	CS, D	1,813	1,797	-0.9	104	48	2,498	2,545	1.9	8.0	8,920	8,735	-2.1	1.5
Iceland	L	8.0			76	75	-1.3	100	48	767	549	-28.5	8.0	30	37	24.8	1.5
Ireland	L	16.8	T1, T2	CS, D	6,798	5,969	-12.2	103	47	8,021	5,714	-28.8	6.1	1,221	1,110	-9.1	0.5
Italy	L	2.3	T1, T2	CS, D	7,752	8,746	12.8	93	46	8,739	10,848	24.1	8.0	8,407	9,254	10.1	1.5
Japan	L	0.6	CS, T1	CS, D	4,710	4,760	1.1	98	58	30	31	1.4	4.1	11,373	11,817	3.9	1.1
Latvia	L	7.9	T1	D	1,439			81	56	165			8.0	1,401			1.5
Liechtenstein	L	4.3	T2	CS	5	6	38.2			3	3	0.0	9.6	3	3	0.0	1.4
Lithuania	L	6.8	T1	D	2,322			81	56	57			8.0	2,436			1.5
Luxembourg	L	1.6	T1, T2	CS	217	0	-100.0			7	0	-100.0	7.9	75	0	-100.0	1.5
Monaco	L	4	NA	NA	NO			NO	NO	NO			NO	NO			NO
Netherlands	L	3.5	T1, T2	CS, D	4,926	4,926	0.0			1,702	1,702	0.0	8.0	13,915	13,915	0.0	1.5
New Zealand	L	35.2	T1, T2	CS, D	7,987	8,034	0.6	70	51	57,861	57,852	0.0	9.2	404	395	-2.4	1.5
Norway	L	3.9	T1, T2	CS, D	978	953	-2.6			1,548	2,211	42.8	13.3	534	710	33.0	1.5
Poland	L	2.7	T1, T2	CS, D	10,322	10,322	0.0	95	40	4,377	4,377	0.0	7.9	19,605	19,605	0.0	1.5
Portugal	L	4.4	T2	CS	1,373	1,335	-2.7	95	50	3,197	5,567	74.1	8.3	2,536	2,598	2.4	1.4
Romania	L	4.4	T1	D	6,127	6,416	4.7	81	56	16,210	16,210	0	5.0	14,351	14,351	0	1.0
Russian Federation	L	2.9	CS, T1, T2	CS, D	58,800			101	48	55,200			8.0	40,000			1.5
Slovakia	L	3.3	T1	D	1,563			92	56	600			8.0	2,521			1.5
Slovenia	L	3.8	T1, T2	CS, D	556			86	45	25			8.0	596			1.8
Spain	L	4.1	CS, T1, T2	CS, D	5,079	5,187	2.1	72	55	23,822	22,739	-4.5	8.5	16,393	16,911	3.2	1.5
Sweden	L	4.2	CS, T1, T2	CS, D	1,718	1,718	0.0	120	53	406	406	-0.1	8.0	2,264	2,264	0.0	1.5
Switzerland	L	4.7	CS	CS	795	1,855	133.3	102	1E	395	395	0	9.6	1,787	1,787	0	1.4
Turkey	L	10.0			11,377	12,173	7.0	56	44	40,553	43,647	7.6	5.0	12	8	-33.3	1.0
Ukraine	L	3.7	T1, T2	CS, D	24,623					7,896			8.0	19,427			1.5
United Kingdom	L	2.4	T1	CS, D	12,079	12,079	0.0	88	42	44,469	43,828	-1.4	4.7	7,548	7,450	-1.3	1.5
United States	L	1.9	M, T1, T2	CS, D, M	100,230	95,816	-4.4	97	46	11,358	11,358	0.0	8.0	53,941	53,788	-0.3	1.5

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

<sup>b</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for the various livestock types within the category CH<sub>4</sub> from 4.A Enteric fermentation.

<sup>c</sup> Source of international statistics: FAOSTAT data, (last updated 4 September 2004), <http://faostat.fao.org/faostat/form?collection=Production.Livestock.Stocks&Domain=Production&servlet=1&hasbulk=0&version=ext&language=EN>. Data for Luxembourg are included in the data of Belgium: <http://faostat.fao.org/site/524/DesktopDefault.aspx?PageID=5> FAO Statistics Division 2006, 08 December 2006.

<sup>d</sup> Source of default emission factors: IPCC Guidelines, volume 3, tables 4-3 and 4-4 (pages 4.10–4.11).

<sup>e</sup> For dairy and non-dairy cattle, IPCC default emission factors (in kg CH<sub>4</sub>/head/year) are provided by regions as shown below (see footnote d for source reference).

	North America	Western Europe	Eastern Europe	Oceania	Asia
Dairy cattle	118	100.0	81	68	56
Non-dairy cattle	47	48.0	56	53	44

Table 4.2

Enteric fermentation, CH<sub>4</sub> (2004)

	Key category	Share of national total	Methods and EF used <sup>a</sup>		Cattle				Sheep				Swine				
					Activity data (population size)			Dairy cattle	Non-dairy cattle	Activity data (population size)			Activity data (population size)			CH <sub>4</sub> IEF	
			Methods	EF	CRF	FAO <sup>b</sup>	Difference	CH <sub>4</sub> IEF		CRF	FAO <sup>b</sup>	Difference	CH <sub>4</sub> IEF	CRF	FAO <sup>b</sup>	Difference	CH <sub>4</sub> IEF
					(thousands of head)	(%)	(%)	(kg/head/yr)		(thousands of head)	(%)	(%)	(kg/head/yr)	(thousands of head)	(%)	(%)	(kg/head/yr)
IPCC default EF <sup>c</sup>								56-118 <sup>d</sup>	44-56 <sup>d</sup>				8.0				1.5
Australia	L, T	11.1	CS, T1, T2	CS, D	26,019	27,500	5.7	113	72	100,609	104,000	3.4	6.8	2,581	2,548	-1.3	1.5
Austria	L, T	3.6	T1, T2	CS, D	2,051	2,052	0.0	115	56	327	325	-0.7	8.0	3,125	3,245	3.8	1.5
Belarus	L	7.7	T1	D	3,963	3,924	-1.0	81	56	59	63	6.8	8.0	3,407	3,287	-3.5	1.5
Belgium	L, T	2.6			2,738	2,739	0.0	103	49	151	151	0.2	8.2	6,355	6,355	0.0	1.5
Bulgaria	L, T	2.2	T1, T2	D	700	728	4.1	81	56	1,646	1,599	-2.9	8.0	1,032	1,032	0	1.5
Canada	L, T	3.2	T1, T2	CS, D	15,706	14,653	-6.7	135	65	640	1,005	57.0	8.0	14,671	14,623	-0.3	1.5
Croatia	L, T	2.8	T1	D	466	466	0.0	81	56	721	722	0.1	5.0	1,489	1,489	0.0	1.0
Czech Republic	L, T	1.6	T1, T2	CS, D	1,428	1,428	0.0	110	52	116	116	-0.1	8.0	3,127	3,127	0.0	1.5
Denmark	L, T	3.9	T1	CS	1,646	1,648	0.1	126	36	91	228	150.2	14.9	13,233	13,233	0.0	1.1
Estonia	L, T	2.0	T1, T2	CS, D	250	257	3.0	119	49	39	31	-20.6	8.0	340	345	1.3	0.8
European Community	L, T	2.9	CR, D, M, T1, T2	CR, CS, D	78,140	78,281	0.2	109	47	100,423	99,771	-0.6	6.9	114,925	122,730	6.8	1.4
Finland	L, T	2.0	CS, D, T1, T2	CS, D	969	969	0.0	118	1E	109	109	0.1	7.3	1,365	1,394	2.2	1.5
France	L, T	4.9			19,574	19,320	-1.3	104	52	9,215	9,151	-0.7	8.0	10,044	15,004	49.4	1.5
Germany	L, T	1.8	CR, CS, D, T1	CR, CS, D	13,196	13,386	1.4	112	38	2,714	2,125	-21.7	8.1	23,406	26,495	13.2	1.3
Greece	L, T	2.1	T1, T2	CS, D	591	624	5.6	81	56	9,117	9,042	-0.8	7.4	962	948	-1.4	1.5
Hungary	L, T	1.9	D, T1a	CS, D	733	739	0.8	115	48	1,380	1,296	-6.1	8.0	4,385	4,913	12.0	1.5
Iceland	L, T	6.2			66	65	-1.5	100	48	637	455	-28.5	8.0	30	36	20.2	1.5
Ireland	L, T	13.5	T1, T2	CS, D	6,995	7,016	0.3	110	46	6,903	4,850	-29.7	5.9	1,702	1,732	1.8	0.4
Italy	L, T	1.9	T1, T2	CS, D	6,305	6,305	0.0	111	46	8,106	8,106	0	8.0	8,972	8,972	0	1.5
Japan	L	0.5	CS, T1	CS, D	4,288	4,478	4.4	106	60	11	11	0	4.1	9,689	9,724	0.4	1.1
Latvia	L, T	5.2	T1	D	371	379	2.0	81	56	39	39	1.6	8.0	436	444	2.0	1.5
Liechtenstein	L, T	3.8	T2	CS	5	6	17.6			3	3	-7.9	10.5	1	3	203.0	1.4
Lithuania	L, T	5.8	T1	D	792	812	2.5	81	56	22	17	-23.5	8.0	1,073	1,057	-1.5	1.5
Luxembourg	L	1.2	T1, T2	CS	187	185	-0.9			10	7	-28.2	7.9	85	76	-10.2	1.5
Monaco		-	NA	NA	NO			NO	NO	NO			NO	NO			NO
Netherlands	L, T	2.9	T1, T2	CS, D	3,767	3,767	0.0			1,236	1,236	0.0	8.0	11,153	11,153	0.0	1.5
New Zealand	L, T	31.7	T1, T2	CS, D	9,651	9,617	-0.4	79	57	39,572	39,255	-0.8	10.9	369	389	5.4	1.5
Norway	L, T	3.5	T1, T2	CS, D	916	931	1.6			1,561	2,416	54.8	14.3	668	505	-24.4	1.5
Poland	L, T	2.2	T1, T2	CS, D	5,353	5,353	0.0	93	48	318	318	-0.1	8.2	16,988	16,988	0.0	1.5
Portugal	L, T	3.6	T2	CS	1,409	1,389	-1.4	113	58	3,340	5,500	64.7	9.9	2,314	2,249	-2.8	1.4
Romania	L, T	3.4	T1	D	2,681	2,808	4.7	81	56	7,425	7,425	0.0	5.0	6,495	6,495	0.0	1.0
Russian Federation	L, T	1.9	CS, T1, T2	CS, D	24,935	24,935	0.0	98	50	14,669	14,669	0.0	8.0	15,980	15,980	0.0	1.5
Slovakia	L, T	1.9	T1	D	540	540	0.0	100	56	321	321	0.0	8.0	1,149	1,149	0.0	1.5
Slovenia	L, T	3.3	T1, T2	CS, D	451	450	-0.2	94	51	119	106	-11.4	8.0	534	621	16.2	1.6
Spain	L, T	3.2	CS, T1, T2	CS, D	6,601	6,653	0.8	93	54	22,757	22,672	-0.4	8.6	25,232	24,895	-1.3	1.5
Sweden	L, T	4.1	CS, T1, T2	CS, D	1,629	1,628	0.0	129	57	466	466	-0.1	8.0	1,818	1,818	0.0	1.5
Switzerland	L, T	4.3	CS	CS	691	1,570	127.2	110	81	441	441	0	10.6	1,538	1,538	0	1.4
Turkey	L, T	4.6	T1	D	10,069	9,789	-2.8	56	44	25,201	25,431	0.9	5.0	4	7	61.2	1.0
Ukraine	L, T	2.8	T1, T2	CS, D	6,953	7,712	10.9			875	893	2.1	8.0	6,466	7,322	13.2	1.5
United Kingdom	L	2.5	T1	CS, D	10,598	10,603	0.0	102	43	35,881	35,890	0.0	4.8	5,160	5,161	0.0	1.5
United States	L, T	1.6	M, T1, T2	CS, D, M	99,254	94,888	-4.4	100	44	6,105	6,105	0	8.0	60,621	60,444	-0.3	1.5

<sup>a</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for the various livestock types within the category CH<sub>4</sub> from 4.A Enteric fermentation.

<sup>b</sup> Source of international statistics: FAOSTAT data, (last updated 4 September 2004), [http://faostat.fao.org/faostat/form?collection=Production. Livestock.Stocks&Domain=Production&servlet=1&hasbulk=0&version=ext&language=EN]. Data for Luxembourg are included in the data of Belgium: http://faostat.fao.org/site/524/DesktopDefault.aspx?PageID=524. FAO Statistics Division 2006, 08 December 2006.

<sup>c</sup> Source of default emission factors: IPCC Guidelines, volume 3, tables 4-3 and 4-4 (pages 4.10–4.11).

<sup>d</sup> For dairy and non-dairy cattle, IPCC default emission factors (in kg CH<sub>4</sub>/head/year) are provided by regions as shown below (see footnote c for source reference).

	North America	Western Europe	Eastern Europe	Oceania	Asia
Dairy cattle	118	100.0	81	68	56
Non-dairy cattle	47	48.0	56	53	44

**Table 4.3****CH<sub>4</sub> emissions from enteric fermentation - trend information**

CH <sub>4</sub> emissions (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	3,042	2,774	0.2	-0.8	-0.4	0.7	-0.1	1.1	0.5	0.6	-2.3	-1.1	-0.8	-8.8
Austria	179	156	-1.4	0.8	-1.4	-1.8	-0.8	-1.0	-0.6	-1.5	-1.8	-0.7	0.2	-12.9
Belarus	465	271	-5.2	-5.6	-4.1	-1.3	-2.4	-6.9	-2.4	-3.2	-2.3	-2.3	0.4	-41.6
Belgium	217	186	-0.3	0.9	-1.8	-2.0	-0.8	0.0	-1.5	0.3	-4.3	-3.4	-1.4	-14.2
Bulgaria	193	71	-7.9	-5.4	-3.4	-3.5	2.9	1.5	-4.4	-21.5	10.9	3.7	-0.7	-63.2
Canada	877	1,143	1.2	5.4	3.0	-0.1	-0.6	-0.4	1.2	2.8	0.7	0.4	6.1	30.3
Croatia	64	39	-4.7	-4.4	-6.4	-1.8	-2.2	0.3	-2.4	1.5	-2.8	15.0	-3.8	-39.3
Czech Republic	232	114	-5.8	-2.6	-0.9	-6.7	-6.2	2.1	-4.0	0.7	-2.3	-2.6	-3.2	-50.9
Denmark	155	129	-0.7	0.7	-1.5	-3.5	-0.1	-4.2	-0.8	2.0	-2.6	-1.5	-3.2	-16.8
Estonia	53	21	-7.9	-21.4	-9.3	-4.5	-4.7	-12.9	-5.8	2.5	-3.8	9.0	8.8	-60.3
European Community	6,518	5,866	-2.4	0.2	0.7	-1.2	-0.3	-0.1	-1.3	-0.5	-2.1	-0.7	-1.1	-10.0
Finland	91	76	-3.8	-5.4	0.5	1.2	-2.2	-1.5	-0.2	-1.3	0.6	-1.7	-1.3	-17.1
France	1,470	1,325	-1.8	0.4	-0.2	-1.2	-0.7	-0.3	1.0	0.3	-1.4	-2.2	-1.5	-9.8
Germany	1,163	883	-11.6	-0.3	-0.1	-3.4	-1.0	0.3	-1.8	1.6	-3.6	-1.2	-2.8	-24.1
Greece	136	137	-1.2	0.5	0.2	0.1	0.4	0.6	0.9	0.1	-0.1	-0.4	0.1	0.7
Hungary	157	76	-6.5	-1.0	-0.7	-2.9	0.8	0.4	0.0	-3.9	-2.1	-1.3	-3.3	-51.6
Iceland	13	11	-2.2	-3.3	1.0	1.3	1.2	-0.9	-4.4	-0.3	-2.3	-1.7	-1.5	-15.1
Ireland	445	440	1.4	0.2	2.8	2.3	1.3	-3.2	-4.6	-0.3	-1.2	-0.6	0.3	-1.1
Italy	580	516	2.2	1.8	0.5	0.4	-0.7	1.1	-2.1	-4.1	-5.5	0.2	-2.0	-11.1
Japan	364	340	1.4	-1.1	-0.8	-0.6	-0.5	-0.8	-0.5	-0.5	-0.5	-1.3	-0.6	-6.6
Latvia	98	27	-3.4	-3.2	-5.8	-6.2	-8.8	-13.1	-2.4	4.5	0.4	-3.5	-1.6	-72.7
Liechtenstein	0	0	-1.2	1.7	0.3	-1.5	0.3	-2.0	-3.9	8.9	3.8	2.7	3.9	6.1
Lithuania	157	58	-4.8	-6.8	-0.9	-2.9	-8.7	-4.1	-15.3	0.8	2.8	3.6	-2.4	-62.8
Luxembourg	9	8	-2.0	1.4	0.1	-2.7	-0.8	-0.4	-2.4	0.0	-2.2	-3.4	-1.6	-19.7
Monaco	NA	NA	*	*	*	*	*	*	*	*	*	*	*	*
Netherlands	358	302	1.6	0.3	-4.2	-1.5	-2.8	-0.3	-4.1	2.5	-5.9	2.7	0.0	-15.6
New Zealand	1,038	1,134	-1.2	1.4	1.2	0.3	0.6	0.9	1.7	0.9	0.3	0.3	0.9	9.2
Norway	93	90	1.4	1.0	0.3	-0.8	0.9	-0.4	-1.5	-1.8	-2.2	2.5	-2.5	-2.6
Portugal	125	143	1.4	4.7	2.1	-3.4	3.6	3.2	1.6	-0.6	-0.2	-2.1	3.4	14.9
Portugal	125	143	1.4	4.7	2.1	-3.4	3.6	3.2	1.6	-0.6	-0.2	-2.1	3.4	14.9
Romania	547	252	-12.8	-3.6	-0.4	-2.4	-6.0	-3.0	-3.1	-5.8	-2.8	2.9	-1.3	-54.0
Russian Federation	4,512	1,980	-2.9	-9.9	-10.3	-9.6	-10.5	-12.2	0.5	2.1	-0.8	-2.9	-3.2	-56.1
Slovakia	116	45	-13.8	6.7	-8.1	-7.6	-12.1	-3.1	-1.8	0.1	-5.7	-3.3	-5.6	-61.2
Slovenia	36	31	-7.1	3.9	-3.7	-5.8	2.0	3.6	5.5	-2.4	1.0	-4.6	-0.9	-14.6
Spain	561	653	1.4	0.8	7.6	-1.0	2.4	1.2	0.5	2.6	0.6	1.4	-2.1	16.4
Sweden	144	135	-1.8	-2.9	-0.9	0.3	-2.8	-1.0	-2.4	-1.1	-0.5	-1.8	1.5	-6.1
Switzerland	118	108	0.3	0.7	-0.5	-2.0	-0.9	-0.7	-0.2	1.3	-0.7	-1.5	-1.1	-8.2
Turkey	812	642	3.2	-2.3	-1.1	-5.8	-1.9	0.4	-3.7	-2.6	-6.6	0.1	1.8	-21.0
Ukraine	1,642	551	-4.5	-9.8	-12.5	-15.7	-5.9	-7.3	-9.6	2.0	-1.7	-12.9	-7.0	-66.4
United Kingdom	877	777	-1.5	-1.1	0.9	-1.3	-0.3	-0.1	-3.3	-6.1	-1.0	0.4	0.3	-11.5
United States	5,612	5,362	-0.6	2.1	-2.0	-1.8	-1.4	0.1	-1.0	-0.9	0.1	0.3	-2.2	-4.5

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 4.4a****CH<sub>4</sub> emissions from enteric fermentation: dairy cattle - trend information**

CH <sub>4</sub> emissions (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	275	345	-0.8	4.0	3.5	4.3	4.8	2.9	1.9	-0.2	-1.4	-1.8	-1.1	25.4
Austria	88	62	-2.9	-11.2	-0.4	4.2	2.1	-3.4	-9.7	-2.3	-0.1	-3.3	-1.6	-29.9
Belarus	191	131	-2.0	-1.9	-4.4	-2.1	-2.7	-3.1	-2.1	-3.3	-3.8	-3.4	-2.7	-31.7
Belgium	95	79	-2.5	0.2	-4.6	-1.3	2.5	-0.5	-1.3	2.2	-3.6	-2.3	-1.8	-17.3
Bulgaria	51	30	-2.7	-6.4	1.0	2.4	8.7	5.4	-0.6	-19.7	6.6	-0.8	1.5	-41.9
Canada	160	143	-2.9	1.5	1.3	-0.6	-2.3	-0.8	-2.6	-0.7	1.4	-1.6	-0.2	-10.6
Croatia	40	22	-3.3	-3.5	-7.2	-2.3	-1.3	-1.3	-3.0	-2.4	-0.7	0.7	-2.9	-44.4
Czech Republic	119	63	-7.2	-3.8	-0.7	-8.7	-3.9	2.9	-2.7	0.0	-0.8	-1.9	-2.9	-46.7
Denmark	88	71	-2.1	1.7	-2.7	-4.6	0.1	-5.0	-1.1	-0.1	-0.5	-0.1	-3.9	-19.0
Estonia	28	14	-22.7	-12.3	-7.4	-2.3	-5.4	-12.7	-5.3	-1.8	-10.1	24.7	18.6	-50.0
European Community	2,539	2,092	-5.2	-0.6	-0.8	-1.6	-0.6	-0.3	-2.5	0.7	-1.6	-0.7	-1.6	-17.6
Finland	48	38	-8.2	-3.1	-1.2	1.7	-1.5	-1.2	1.0	-0.9	-0.2	-3.0	-1.3	-19.5
France	530	420	-4.7	-1.3	-1.8	-2.0	-1.1	-0.7	-0.1	-0.1	0.0	-2.3	-1.7	-20.7
Germany	603	478	-10.6	0.2	0.4	-3.4	-2.3	0.2	-2.8	1.4	-2.8	0.2	-2.0	-20.7
Greece	20	17	-2.0	-1.0	-0.7	-0.7	-0.5	-0.1	-0.4	-1.0	-1.1	-1.4	-1.0	-12.8
Hungary	61	35	-9.3	-0.9	0.5	-1.1	1.0	0.6	1.5	-2.2	-5.9	-4.9	-5.8	-42.0
Iceland	3	2	-1.9	-0.3	-1.9	-1.2	-1.0	-3.2	-4.3	-3.1	-2.8	-2.4	-2.0	-24.4
Ireland	138	125	-1.6	0.2	1.4	-0.6	-0.9	-2.2	-1.4	1.0	-1.0	-0.2	-0.2	-9.0
Italy	245	205	-6.7	4.3	1.5	0.8	1.5	0.3	-3.7	1.8	-5.8	0.1	-1.8	-16.4
Japan	193	167	0.5	-1.1	-0.6	-1.2	-1.5	-1.9	-1.4	-0.9	-0.6	-1.4	-0.5	-13.4
Latvia	43	15	-0.7	-6.4	-5.8	-4.4	-8.0	-14.9	-0.7	2.2	-1.9	-9.3	0.1	-65.2
Liechtenstein	0	0	-0.1	-0.6	0.5	0.2	0.6	-0.5	-4.3	10.8	3.1	1.5	1.7	6.1
Lithuania	68	35	-1.2	-4.7	0.7	-1.2	-7.7	-8.1	-11.3	0.8	0.3	1.1	-3.2	-48.5
Luxembourg	7	5	-5.5	-0.8	-1.3	-3.4	-0.8	-1.8	-3.9	-1.1	-1.8	-3.5	-1.8	-32.2
Monaco	0	0	*	*	*	*	*	*	*	*	*	*	*	*
Netherlands	203	185	-1.4	1.5	-4.3	-1.9	2.1	0.3	-4.5	4.9	-5.1	4.5	0.3	-8.6
New Zealand	238	407	2.9	5.6	4.8	2.7	2.0	3.8	6.1	6.5	4.7	2.3	0.9	71.2
Norway	46	38	-1.5	-0.1	1.0	-2.4	-1.8	0.7	-6.5	-2.3	-1.0	-1.2	-2.1	-18.6
Poland	457	261	-8.4	-7.5	-2.5	1.6	1.7	-4.2	-8.6	-1.3	-4.3	1.4	-3.1	-42.9
Portugal	37	38	-1.9	3.4	1.5	0.6	0.9	7.2	-1.0	-1.2	0.4	-4.9	0.1	1.5
Romania	242	106	-14.5	-3.2	0.4	-1.7	-5.8	-2.9	-2.9	-6.0	-2.4	2.8	-2.5	-56.3
Russian Federation	2,094	1,089	-2.9	-6.8	-7.2	-6.2	-8.6	-9.7	0.8	1.6	-3.5	-4.5	-3.9	-48.0
Slovakia	51	23	-17.2	1.2	-5.6	-4.5	-13.5	-0.3	-1.4	0.9	-5.9	-6.8	8.1	-54.1
Slovenia	20	13	-6.9	0.5	-19.3	-4.0	-0.3	2.4	-4.5	-2.5	4.7	-7.1	1.7	-38.6
Spain	116	99	4.0	-2.1	1.2	-2.0	0.8	-1.5	-3.2	1.7	1.7	-2.3	-2.0	-15.0
Sweden	69	52	-8.0	-3.8	-5.1	1.7	-4.5	0.5	-4.8	-0.7	-0.1	-3.1	1.0	-24.8
Switzerland	81	68	0.8	0.4	-0.1	-1.3	0.1	-6.9	-1.3	0.7	-1.4	-2.8	-1.9	-15.9
Turkey	57	118	23.8	12.6	-31.7	47.6	1.0	2.8	1.3	2.7	0.3	4.3	8.7	108.2
Ukraine	908	399	-3.8	-6.1	-10.0	-12.7	-4.4	-6.3	-8.0	1.9	-2.0	-9.9	-5.3	-56.1
United Kingdom	251	217	-2.9	-3.0	0.3	-1.5	-2.2	1.1	-3.3	-2.5	2.6	-0.6	-2.5	-13.4
United States	1,375	1,285	0.2	0.4	-5.0	0.1	-0.3	1.1	1.5	-0.3	0.6	0.8	-1.1	-6.6

Note: Netherlands, Norway and Ukraine are using Option B to report livestock types and emissions within the category 4.A Enteric fermentation. For these Parties, emissions for mature dairy cattle are included in this table.

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 4.4b****CH<sub>4</sub> implied emission factors for enteric fermentation: dairy cattle - trend information**

CH <sub>4</sub> IEF (kg/head/yr)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	107	113	0.7	0.5	0.1	0.3	0.2	0.9	0.4	0.7	-0.5	-0.1	-0.3	5.4
Austria	98	115	0.2	1.9	0.9	0.9	0.9	0.9	1.5	1.5	1.4	2.1	2.0	17.8
Belarus	81	81	0	0	0	0	0	0	0	0	0	0	0	0
Belgium	100	103	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.0	0.4	0.2	3.3
Bulgaria	81	81	0	0	0	0	0	0	0	0	0	0	0	0
Canada	117	135	0.7	0.7	1.5	0.4	1.5	1.6	1.5	0.6	1.7	0.1	-0.4	15.3
Croatia	81	81	0	0	0	0	0	0	0	0	0	0	0	0
Czech Republic	96	110	-4.0	4.0	1.5	-2.3	4.3	3.7	1.6	0.7	1.7	-0.9	0.0	15.0
Denmark	117	126	-0.6	1.2	-2.5	-0.2	0.3	-0.7	-0.4	1.8	1.8	2.2	1.7	8.2
Estonia	99	119	-18	0	0	0	0	0	0	0	0	23.5	19	20.5
European Community	96	109	1.1	-3.6	5.3	0.8	0.6	0.9	0.7	0.9	1.0	1.3	0.6	13.5
Finland	97	118	0.9	1.3	0.4	2.0	0.5	1.6	3.3	1.6	1.8	1.1	1.6	21.6
France	99	104	0.5	0.6	0.2	0.4	0.2	0.3	0.2	-0.1	0.5	0	0.3	4.9
Germany	95	112	0.8	1.0	1.0	-0.1	1.6	1.6	1.4	1.9	-0.1	1.5	-0.1	17.6
Greece	81	81	0	0	0	0	0	0	0	0	0	0	0	0
Hungary	104	115	-2.0	1.8	-0.3	1.0	2.6	-0.3	0.2	1.2	2.9	0.0	-0.1	9.7
Iceland	100	100	0	0	0	0	0	0	0	0	0	0	0	0
Ireland	103	110	-0.1	1.4	2.4	-0.2	0.3	-2.0	0.7	2.8	-0.6	1.5	-0.8	7.5
Italy	93	111	5.3	0.9	1.5	0.9	-0.3	-0.1	-0.9	-2.4	6.2	0.0	2.2	20.1
Japan	98	106	0.3	0.9	0.9	0.7	0.8	0.6	0.3	0.0	0.1	0.0	1.3	7.8
Latvia	81	81	0	0	0	0	0	0	0	0	0	0	0	0
Liechtenstein	111	123	0.3	0.9	0.1	1.3	1.0	0.3	1.5	2.4	0.5	0.3	1.7	10.3
Lithuania	81	81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Luxembourg	122	122	0	0	0	0	0	0	0	0	0	0	0	0
Monaco	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Netherlands	108	126	0.0	0.9	-1.8	2.7	0.9	1.7	0.9	2.1	-1.2	5.0	0.8	16.7
New Zealand	70	79	1.3	0.2	1.3	0.7	0.8	1.1	1.9	0.4	1.2	0.4	1.3	13.4
Norway	135	119	-2.2	-0.7	-0.4	-2.4	-2.8	1.3	-5.0	1.7	2.8	-2.4	-1.0	-11.9
Poland	95	93	-1.6	-0.1	0.8	0.7	0.2	-0.8	0.9	1.8	0.1	0.5	0.5	-1.9
Portugal	95	113	-0.3	3.1	2.4	0.8	2.0	9.0	1.0	2.0	2.0	-2.4	0.1	19.2
Romania	81	81	0	0	0	0	0	0	0	0	0	0	0	0
Russian Federation	101	98	-1.8	0.4	-2.1	3.1	-0.2	-2.6	3.3	5.5	0.0	-0.8	1.9	-2.4
Slovakia	92	100	-9.2	2.3	0.0	3.4	1.1	5.4	2.0	0.0	0.0	0.0	0.0	8.7
Slovenia	86	94	2.0	0.7	2.8	0.6	0.5	0.7	1.5	0.7	1.5	-0.5	-0.8	8.7
Spain	72	93	6.8	4.1	-2.4	0.4	0.6	4.4	3.0	1.8	-0.3	2.8	2.2	28.0
Sweden	120	129	0.3	1.6	-1.9	1.2	-0.5	0.5	-0.2	1.7	0.1	0.3	0.7	7.2
Switzerland	102	110	0.8	0.4	-0.3	1.4	0.9	0.4	0.8	0.7	0.3	0.2	0.9	7.7
Turkey	56	56	0	0	0	0	0	0	0	0	0	0	0	0
Ukraine	92	95	-2.6	-0.6	-1.2	-1.3	2.8	1.8	1.5	3.1	2.4	0.2	3.2	3.1
United Kingdom	88	102	-0.1	1.2	0.9	2.9	0.0	0.4	1.0	1.1	3.7	0.9	0.2	15.6
United States	97	100	1.4	0.9	-3.6	1.3	0.8	0.9	1.1	0.5	0.3	1.0	0.3	3.2

Note: Netherlands, Norway and Ukraine are using Option B to report livestock types and emissions within the category 4.A Enteric fermentation. For these Parties, implied emission factors for mature dairy cattle are included in this table.

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 4.5a****CH<sub>4</sub> emissions from enteric fermentation: non-dairy cattle - trend information**

CH <sub>4</sub> emissions (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	1,565	1,646	2.0	0.6	0.8	0.8	-0.5	0.7	0.8	2.2	-1.1	-0.1	-0.8	5.2
Austria	81	84	-0.2	12.9	-2.5	-7.2	-3.5	2.0	8.2	-1.0	-3.0	1.1	1.9	3.9
Belarus	258	132	-7.6	-9.5	-3.6	-0.3	-2.2	-10.9	-2.7	-3.1	-0.5	-1.0	3.7	-49.1
Belgium	110	96	2.0	1.5	0.0	-2.9	-3.7	0.2	-1.4	-0.3	-5.1	-4.5	-1.0	-12.7
Bulgaria	56	19	-12.7	-11.2	-11.5	-7.7	5.5	5.5	-5.3	-1.1	28.1	16.5	-4.3	-66.6
Canada	687	951	2.1	6.2	3.4	-0.1	-0.6	-0.7	1.6	3.2	0.5	0.8	7.4	38.6
Croatia	18	11	-9.6	-7.6	-5.7	-2.0	-2.7	-0.7	-1.4	12.9	-12.0	64.0	-14.9	-38.2
Czech Republic	102	44	-4.4	-0.5	-1.3	-5.0	-9.4	1.5	-5.3	1.9	-4.1	-3.8	-3.5	-56.3
Denmark	53	39	-0.3	-0.7	-0.6	-3.5	-2.2	-4.0	-0.9	4.7	-7.3	-5.2	-4.1	-26.6
Estonia	23	6	9.1	-11.1	-7.4	-7.9	-5.7	-13.4	-5.5	8.3	4.9	-13.0	-4.0	-71.6
European Community	2,883	2,743	-0.4	1.7	0.9	-1.4	-0.6	0.0	-0.5	0.2	-2.8	-0.8	-1.0	-4.9
Finland	IE	IE	*	*	*	*	*	*	*	*	*	*	*	*
France	821	801	0.2	1.5	0.6	-0.9	-0.5	0.3	1.8	0.7	-2.2	-2.4	-1.5	-2.4
Germany	488	339	-12.4	-0.7	-1.3	-4.0	0.0	0.2	-0.4	1.8	-5.6	-3.5	-4.3	-30.6
Greece	21	21	-4.5	0.8	0.5	0.7	2.3	3.2	3.6	0.0	-1.1	-1.8	0.0	-1.1
Hungary	59	20	-4.4	0.8	-3.3	-4.3	-3.4	-1.9	-8.5	-6.2	3.8	-0.3	-1.4	-65.5
Iceland	2	2	7.9	3.3	3.0	2.8	2.2	-0.1	-2.6	-2.5	-3.9	-2.6	-2.2	-5.7
Ireland	256	271	2.3	0.6	4.3	4.2	1.8	-3.8	-5.9	-0.3	-0.5	-0.4	0.6	5.9
Italy	233	207	13.8	-2.0	-1.8	0.8	-3.4	1.3	-1.6	-1.9	-7.0	0.1	-3.5	-11.3
Japan	158	162	3.0	-1.0	-0.9	0.0	0.7	0.4	0.5	-0.2	-0.3	-1.3	-0.7	2.3
Latvia	51	10	-5.8	2.5	-4.5	-8.5	-10.3	-10.4	-5.7	8.5	4.0	5.5	-4.2	-79.5
Liechtenstein	0	0	27.3	12.8	11.6	10.2	9.4	8.6	7.8	50.8	33.7	33.5	40.2	1,298.8
Lithuania	83	20	-7.8	-10.9	-3.1	-6.6	-11.2	4.8	-23.2	0.0	8.4	8.4	-1.6	-75.8
Luxembourg	2	2	12.6	7.6	3.9	-1.8	-1.2	2.7	1.0	2.7	-3.3	-4.5	-1.7	26.6
Monaco	0	0	*	*	*	*	*	*	*	*	*	*	*	*
Netherlands	8	11	16.6	0.7	-2.4	0.5	0	8.0	6.8	-1.2	-6.0	2.3	1.5	35.1
New Zealand	235	257	0	1.2	-1.2	-3.9	-1.7	-0.8	1.8	0.2	0.1	-0.4	0.5	9.0
Norway	21	25	5.4	2.5	1.8	5.2	6.2	-5.4	2.3	-4.8	-7.1	5.4	1.8	17.5
Poland	219	122	-18.6	-1.2	-1.9	8.4	4.4	-8.4	-4.3	-9.6	0.2	-4.6	-1.1	-44.6
Portugal	49	63	3.9	8.7	3.6	-4.1	3.1	2.2	2.7	2.4	-1.8	-0.2	4.0	27.7
Romania	176	77	-14.5	-3.2	0.4	-1.8	-5.8	-2.8	-2.9	-6.0	-2.4	2.8	-2.4	-56.2
Russian Federation	1,831	697	-3.7	-11.3	-13.0	-12.5	-12.4	-15.9	1.3	4.2	3.0	-1.9	-3.6	-61.9
Slovakia	57	17	-11.6	12.7	-11.3	-11.4	-10.9	-5.8	-2.5	-0.8	-5.7	0.3	-18.6	-69.6
Slovenia	14	16	-8.1	8.0	14.9	-8.6	2.7	5.3	12.7	-2.4	-2.7	-2.9	-2.8	13.5
Spain	192	300	3.7	13.1	5.7	-1.5	4.3	3.8	-0.1	6.0	1.8	3.9	-1.1	56.7
Sweden	61	70	4.8	-2.1	2.5	-0.4	-1.5	-2.1	-0.4	-1.7	-0.7	-1.5	2.0	14.5
Switzerland	IE	6							8.8	12.8	14.8	12.1	7.4	
Turkey	456	350	3.4	-2.9	6.3	-11.7	-1.8	-0.3	-3.4	-2.9	-8.6	-1.2	1.4	-23.2
Ukraine	409	83	-6.8	-16.1	-16.6	-22.7	-9.0	-9.6	-9.0	4.8	-1.1	-18.8	-11.5	-79.8
United Kingdom	391	363	-1.3	0.2	2.4	-2.9	-0.9	-0.8	-2.3	-4.9	-2.6	2.2	1.9	-7.2
United States	3,961	3,830	-1.0	3.0	-1.0	-2.5	-1.9	0.0	-1.8	-1.1	-0.1	0.3	-2.6	-3.3

Note: Netherlands, Norway and Ukraine are using Option B to report livestock types and emissions within the category 4.A Enteric fermentation. For these Parties, emissions for mature non-dairy cattle are included in this table.

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 4.5b****CH<sub>4</sub> implied emission factors for enteric fermentation: non-dairy cattle - trend information**

CH <sub>4</sub> IEF (kg/head/yr)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year to 2004
Australia	71	72	0.1	-0.4	-0.3	0.0	0.0	0.4	0.1	0.3	0.1	0.5	0.1	0.6
Austria	48	56	1.1	5.9	0.3	-1.1	-1.2	1.2	2.6	-0.1	-0.2	0.0	0.6	15.3
Belarus	56	56	0	0	0	0	0	0	0	0	0	0	0	0
Belgium	48	49	0.2	0.0	0.1	0.2	-0.1	0.1	0.0	0.6	0.2	-0.1	0.1	1.5
Bulgaria	56	56	0	0	0	0	0	0	0	0	0	0	0	0
Canada	65	65	0.0	-0.1	-0.7	-0.3	-0.3	0.4	0.4	-0.2	-0.1	0.5	-0.6	-0.4
Croatia	56	56	0	0	0	0	0	0	0	0	0	0	0	0
Czech Republic	44	52	1.4	4.9	0.6	1.0	0.0	5.4	0.3	0.7	0.8	0.5	-0.2	17.2
Denmark	35	36	0.1	0.6	-1.0	0.7	-0.3	0.8	0.3	0.5	0.3	-0.4	0.0	0.8
Estonia	48	49	17	0	0	0	0	0	0	0	0	-14.3	1	1.7
European Community	45	47	0.9	0.5	0.0	0.1	0.0	0.2	0.4	0.4	-0.2	0.2	0.1	4.4
Finland	IE	IE	*	*	*	*	*	*	*	*	*	*	*	*
France	50	52	0.4	0.2	0.3	0.3	0.0	0.1	0	-0.3	-0.2	0.2	0	2.6
Germany	37	38	0.1	-0.4	-0.4	-0.6	0.9	-0.1	1.2	1.0	-0.7	-0.5	-0.4	2.3
Greece	56	56	0	0	0	0	0	0	0	0	0	0	0	0
Hungary	48	48	0	0	0	0	0	0	0	0	0	0	0	0
Iceland	48	48	0	0	0	0	0	0	0	0	0	0	0	0
Ireland	47	46	0.0	-0.1	-0.3	0.3	-0.2	-0.4	-0.6	-0.4	0.1	-0.1	-0.2	-1.4
Italy	46	46	4.2	-2.6	0.0	0.8	-1.9	0.8	-0.7	0.9	-1.9	0.3	-0.8	1.5
Japan	58	60	-0.1	0.3	0.5	0.7	1.0	0.8	0.6	0.0	-0.1	-0.2	-0.1	3.7
Latvia	56	56	0	0	0	0	0	0	0	0	0	0	0	0
Liechtenstein	81	80	-15.1	-9.8	11.6	-8.2	9.4	-6.9	7.8	-4.1	-2.0	0.1	0.2	-0.1
Lithuania	56	56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Luxembourg	60	60	0.1	0.0	0.0	-0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.3
Monaco	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Netherlands	67	74	0	0.9	-2.6	1.8	-0.6	2.9	-0.3	0.4	0.1	7.3	0.6	11.1
New Zealand	51	57	-1.1	0.6	0.4	1.2	-0.2	0.7	0.9	1.4	-0.2	0.3	0.3	10.5
Norway	75	88	1.9	-0.3	-0.3	3.3	4.4	-4.1	6.9	-2.3	-3.0	4.7	2.1	16.0
Poland	40	48	-2.1	1.6	-0.5	4.3	16.7	-0.4	0.5	-1.1	2.8	-2.1	0.2	19.6
Portugal	50	58	1.9	7.0	1.8	-4.9	1.9	0.5	1.1	1.5	-1.4	-0.3	2.8	16.4
Romania	56	56	0	0	0	0	0	0	0	0	0	0	0	0
Russian Federation	48	50	0.3	3.6	-2.6	1.3	-0.8	-4.9	2.1	6.0	1.2	-1.1	2.8	4.5
Slovakia	56	56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Slovenia	45	51	1.6	1.3	3.5	1.6	-0.1	0.2	2.8	1.0	-0.3	1.2	-2.0	14.1
Spain	55	54	-0.9	0.7	-0.7	-1.4	0.1	-0.1	1.0	0.4	-0.6	0.4	-1.0	-1.8
Sweden	53	57	1.6	-0.3	0.2	0.4	0.3	-0.1	0.2	0.1	0.3	-0.1	0.3	6.7
Switzerland	IE	81							0	0	0	0	0	*
Turkey	44	44	0	0	0	0	0	0	0	0	0	0	0	0
Ukraine	46	46	0.2	0.4	0.5	0.3	-0.6	0.2	-1.2	-0.3	-0.1	0.0	0.4	0.2
United Kingdom	42	43	0.0	0.0	0.3	0.3	0.1	0.1	-0.2	0.2	0.2	-0.4	0.2	1.2
United States	46	44	-2.4	1.0	-0.9	-0.4	-0.2	0.7	-0.9	-0.5	0.7	1.3	-2.0	-3.7

Note: Netherlands, Norway and Ukraine are using Option B to report livestock types and emissions within the category 4.A Enteric fermentation. For these Parties, implied emission factors for mature non-dairy cattle are included in this table.

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

Table 4.6

Manure management, CH<sub>4</sub> (base year<sup>a</sup>)

	Key category	Share of national total	Methods and EF used <sup>b</sup>		Cattle		Sheep	Swine
			Methods	EF	Dairy cattle <sup>c</sup>	Non-dairy cattle <sup>c</sup>		
		CH <sub>4</sub> IEF						
		(%)			(kg/head/yr)			
IPCC default EF <sup>d</sup>					6 to 81	1 to 38	0.19 to 0.37	3 to 20
Australia		0.37	CS, M, T2	CS, D	7.88	0.04	0.00	18.81
Austria	L	1.34	T1, T2	CS, D	19.45	6.17	0.19	5.78
Belarus		0.94	T1	D	6.00	4.00	0.19	4.00
Belgium	L	1.84			20.40	15.01	1.44	10.18
Bulgaria	L	1.15	T1, T2	D	18.30	12.21	0.28	9.95
Canada		0.43	T2	CS	25.70	3.05	0.30	5.03
Croatia	L	0.73	T1	D	6.00	4.00	0.10	4.00
Czech Republic		0.51	T1	D	14.00	6.00	0.19	3.00
Denmark	L	1.07	T2	CS	13.48	2.21	0.29	2.25
Estonia		0.55	T1, T2	CS, D	13.35	5.39	0.19	5.50
European Community	L	1.04	CR, CS, M, T1, T2	CR, CS, D	17.15	10.06	0.19	7.75
Finland		0.32	T2	CS	6.38	IE	0.19	2.78
France	L	2.43			18.40	19.56	0.28	21.02
Germany	L	0.49	T1	CR, D	14.29	8.38	0.19	2.72
Greece		0.46	T1	D	19.00	13.00	0.28	7.00
Hungary	L	0.72	D	CS, D	6.00	4.00	0.19	3.00
Iceland		0.70			14.00	6.00	0.19	3.00
Ireland	L	4.00	T1, T2	CS, D	21.86	10.77	0.17	12.78
Italy	L	0.67	T1, T2	CS, D	15.04	7.47	0.22	8.11
Japan		0.25	CS, T1	CS, D	63.39	1.62	0.28	1.40
Latvia	L	1.08	T1	D	6.00	4.00	0.19	4.00
Liechtenstein		0.82	T2	CS	24.24	8.00	0.36	3.08
Lithuania		0.97	T1	D	6.00	4.00	0.19	4.00
Luxembourg		0.6	T2	CS	21.15	8.03	0.16	26.92
Monaco		-	NA	NA	NO	NO	NO	NO
Netherlands	L	1.39	T2	CS	27.74	3.26	0.17	3.91
New Zealand	L	0.95	T1, T2	CS, D	3.06	0.62	0.09	20.00
Norway		0.60	T2	CS	14.41	11.90	0.75	2.02
Poland		0.6	T1, T2	CS, D	6.02	2.00	0.17	5.21
Portugal	L	1.96	T2	CS	2.31	1.33	0.27	20.41
Romania	L	1.66	T1	D	19.00	13.00	0.16	7.00
Russian Federation		0.23	CS, T1, T2	CS, D	4.75	2.61	0.19	3.04
Slovakia		0.50	T2	D	4.00	3.80	0.19	4.00
Slovenia	L	2.53	T1, T2	CS, D	33.50	13.97	0.19	18.54
Spain	L	2.17	CS, T1, T2	CS, D	11.39	1.20	0.23	15.48
Sweden		0.49	T1, T2	CS, D	10.20	3.96	0.19	2.09
Switzerland	L	1.06	CS	CS	22.26	IE	0.36	3.08
Turkey		0.43			10.78	1.00	0.12	3.13
Ukraine	L	1.97	T1, T2	CS, D	46.38	20.63	0.19	8.59
United Kingdom		0.38	T1, T2	CS, D	21.63	4.23	0.11	3.00
United States		0.51	M, T1, T2	CS, D, M	38.45	1.78	0.78	11.53

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

<sup>b</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for the various livestock types within the category CH<sub>4</sub> from 4.B Manure management.

<sup>c</sup> Information on implied emission factors reported by Netherlands, Norway and Ukraine refers to mature dairy cattle and mature non-dairy cattle respectively, as these Parties are using Option B to report livestock types within the category 4.B Manure management

<sup>d</sup> Source of default emission factors: IPCC Guidelines, volume 3, tables 4-5 and 4-6 (pages 4.12–4.13). Default emission factors are provided according to climate regions (cool, temperate, warm), as shown below.

Default IPCC emission factors according to climate regions<sup>d</sup>

	Dairy cattle			Non-dairy cattle			Swine		
	cool	temperate	warm	cool	temperate	warm	cool	temperate	warm
North America	36	54	76	1	2	3	10	14	18
Western Europe	14	44	81	6	20	38	3	10	19
Eastern Europe	6	19	33	4	13	23	4	7	11
Oceania	31	32	33	5	6	7	20	20	20
Asia	7	16	27	1	1	2	1	4	7
Developed countries	Sheep								
	cool	temperate	warm						
	0.19	0.28	0.37						

Table 4.7

Manure management, CH<sub>4</sub> (2004)

	Key category	Share of national total	Methods and EF used <sup>d</sup>		Cattle		Sheep	Swine
					Dairy cattle <sup>b</sup>	Non-dairy cattle <sup>b</sup>		
		(%)	Methods	EF	CH <sub>4</sub> IEF (kg/head/yr)			
IPCC default EF <sup>c</sup>					6 to 81	1 to 38	0.19 to 0.37	3 to 20
Australia		0.37	CS, M, T2	CS, D	8.78	0.04	0.00	23.17
Austria	L, T	0.96	T1, T2	CS, D	20.36	7.52	0.19	5.87
Belarus		0.99	T1	D	6.00	4.00	0.19	4.00
Belgium	L	1.64			22.54	13.77	1.43	10.16
Bulgaria	T	0.76	T1, T2	D	18.30	12.21	0.28	9.95
Canada		0.42	T2	CS	29.60	2.72	0.30	5.01
Croatia		0.61	T1	D	6.00	4.00	0.10	4.00
Czech Republic	T	0.35	T1	D	14.00	6.00	0.19	3.00
Denmark	L, T	1.48	T2	CS	19.70	1.71	0.27	2.59
Estonia	T	0.25	T1, T2	CS, D	9.80	3.42	0.19	2.28
European Community	L	1.05	CR, CS, M, T1, T2	CR, CS, D	20.32	9.83	0.20	8.67
Finland		0.31	T2	CS	9.37	IE	0.19	3.52
France	L	2.32			18.42	19.43	0.28	20.94
Germany	L	0.51	T1	CR, D	19.80	8.62	0.19	3.13
Greece		0.35	T1	D	19.00	13.00	0.28	7.00
Hungary	L	0.53	D	CS, D	6.00	4.00	0.19	3.00
Iceland		0.54			14.00	6.00	0.19	3.00
Ireland	L, T	3.16	T1, T2	CS, D	20.90	9.49	0.17	12.44
Italy	L, T	0.54	T1, T2	CS, D	14.54	7.47	0.22	7.60
Japan		0.19	CS, T1	CS, D	63.27	1.62	0.28	1.40
Latvia	L	0.77	T1	D	6.00	4.00	0.19	4.00
Liechtenstein		0.64	T2	CS	24.23	8.04	0.36	3.08
Lithuania		0.91	T1	D	6.00	4.00	0.19	4.00
Luxembourg		0.6	T2	CS	21.15	8.39	0.16	26.92
Monaco		-	NA	NA	NO	NO	NO	NO
Netherlands	L, T	1.13	T2	CS	37.50	3.51	0.18	3.92
New Zealand	L	0.98	T1, T2	CS, D	3.31	0.69	0.11	20.00
Norway	L	0.56	T2	CS	14.41	11.91	0.76	1.99
Poland	T	0.9	T1, T2	CS, D	9.26	5.93	0.17	6.54
Portugal	L, T	1.37	T2	CS	4.33	1.64	0.32	21.30
Romania	L, T	1.27	T1	D	19.00	13.00	0.16	7.00
Russian Federation		0.16	CS, T1, T2	CS, D	4.67	2.64	0.19	3.88
Slovakia		0.32	T2	D	4.00	3.80	0.19	4.00
Slovenia	L, T	2.18	T1, T2	CS, D	45.92	20.52	0.19	14.51
Spain	L	2.08	CS, T1, T2	CS, D	14.45	1.19	0.23	14.98
Sweden	L, T	0.66	T1, T2	CS, D	17.33	5.95	0.19	3.07
Switzerland	L, T	0.93	CS	CS	23.98	8.05	0.36	3.08
Turkey		0.29			10.78	1.00	0.12	2.27
Ukraine	T	0.14	T1, T2	CS, D	3.11	1.22	0.19	0.80
United Kingdom		0.39	T1, T2	CS, D	24.94	4.22	0.11	3.00
United States	L	0.56	M, T1, T2	CS, D, M	58.53	1.68	0.78	13.52

<sup>a</sup> Information on methods and emission factors in this table is reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for the various livestock types within the category 4.B Manure management.

<sup>b</sup> Information on implied emission factors reported by Netherlands, Norway and Ukraine refers to mature dairy cattle and mature non-dairy cattle respectively, as these Parties are using Option B to report livestock types within the category 4.B Manure management.

<sup>c</sup> Source of default emission factors: IPCC Guidelines, volume 3, tables 4-5 and 4-6 (pages 4.12–4.13). Default emission factors are provided according to climate regions (cool, temperate, warm), as shown below.

Default IPCC emission factors according to climate regions<sup>c</sup>

	Dairy cattle			Non-dairy cattle			Swine		
	cool	temperate	warm	cool	temperate	warm	cool	temperate	warm
North America	36	54	76	1	2	3	10	14	18
Western Europe	14	44	81	6	20	38	3	10	19
Eastern Europe	6	19	33	4	13	23	4	7	11
Oceania	31	32	33	5	6	7	20	20	20
Asia	7	16	27	1	1	2	1	4	7
Developed countries	Sheep								
	cool	temperate	warm						
	0.19	0.28	0.37						

Table 4.8

Manure management, N<sub>2</sub>O (base year<sup>a</sup>)

	Key category	Share of national total	Methods and EF used <sup>b</sup>		Animal waste management systems (AWMS)				N excretion rates				
			Methods	EF	Anaerobic lagoons	Liquid systems	Solid storage and dry lot	Other	Dairy cattle	Non-dairy cattle	Sheep	Swine	Poultry
		(%)			N <sub>2</sub> O IEF (kg N <sub>2</sub> O-N/kg N)				(kg N / head / year)				
IPCC default EF					0.001 <sup>c</sup>	0.001 <sup>c</sup>	0.02 <sup>c</sup>	0.005 <sup>d</sup>	60 to 100 <sup>e</sup>	40 to 70 <sup>e</sup>	16 to 20 <sup>e</sup>	12 to 20 <sup>e</sup>	0.6 <sup>e</sup>
Australia		0.1	CS, M, T1, T2	D	0.001	0.001	0.020	0.017	130	40	7	12	0.7
Austria	L	1.3	T1	CS	NO	0.001	0.020	0.005	77	40	13	15	0.5
Belarus		0.0	T1	D	NO	0.001	0.020	NO	70	50	16	20	0.6
Belgium	T	0.7			NO	0.001	0.020	0.005	114	51	11	13	0.6
Bulgaria		0.8	T1	D	0.001	0.001	0.020	0.005	70	50	16	20	0.6
Canada	L	0.7	T1	D	NE	0.001	0.020	0.005	108	58	4	12	0.5
Croatia	L	1.2	T1	D	0.001	0.001	0.020	0.005	70	50	16	20	0.6
Czech Republic		0.4	T1	D	NO	0.001	0.020	0.005	100	70	20	20	1.0
Denmark	L	1.0	CS	D	NO	0.001	0.019	NO	129	37	21	12	0.6
Estonia		0.6	T1	D	0.001	0.001	0.020	0.005	70	50	16	20	0.6
European Community	L	0.6	CR, CS, D, T1, T2	CR, CS, D	0.001	0.001	0.019	0.006	106	49	10	12	0.6
Finland	L	0.9	D	D	NE	0.001	0.020	NE	85	37	7	17	0.5
France	L	1.2			NA	0.001	0.020	NA	100	58	18	16	0.6
Germany		0.3	CS, D, T1	CS, D	NO	IE	IE	NO	91	40	8	14	0.3
Greece		0.3	D	D	NA	0.001	0.020	0.005	70	50	12	16	0.6
Hungary	L	1.9	D	CS, D	NO	0.001	0.020	0.005	100	70	20	20	0.6
Iceland		1.0			NO	0.001	0.020	NO	60	34	6	13	0.4
Ireland		0.7	T1	D	NO	0.001	0.020	NO	85	65	7	9	0.4
Italy	L	0.8	T2	CS, D	NO	0.001	0.020	NA	116	50	16	12	0.5
Japan		0.4	CS, D	CS, D	NO	0.001	0.020	0.017	80	47	12	16	0.9
Latvia	L	2.1	T1, T2	CS, D	NA	0.001	0.020	0.005	71	50	6	10	0.6
Liechtenstein		0.7	CS	D	NO	0.001	0.020	NO			8	13	0.7
Lithuania	L	1.8	T1	D	0.001	0.001	0.020	0.005	70	50	16	20	0.6
Luxembourg		-	NA	NA	NE	NE	NE	NO			NE	NE	NE
Monaco		0.0			NA	NA	NA	NA	0	0	0	0	0.0
Netherlands		0.3	T2	D	NO	0.001	0.017	NO			NA	NA	NA
New Zealand		0.1	T1	D	0.001	NO	0.020	0.005	105	66	13	16	0.6
Norway		0.3	T1	CS, D	NA	0.001	0.018	NA			10	7	0.3
Poland	L	1.6	T2	CS	NO	0.001	0.020	NE	70	50	16	20	0.6
Portugal	L	0.9	D	D	0.001	0.001	0.020	NO	88	45	6	8	0.8
Romania		0.1	T1	D	0.001	0.001	0.020	0.005	70	50	16	20	0.6
Russian Federation	L	1.5	T1	CS, D	NO	0.001	0.020	NO	92	52	16	20	0.8
Slovakia	L	1.5	T2	D	NO	0.001	0.020	NO	100	60	16	0	0.0
Slovenia	L	1.3	D	CS, D	0.001	0.001	0.020	0.005	81	35	20	13	0.6
Spain	L	0.9	CS, D	D	NO	0.001	0.020	NO	67	53	5	9	0.7
Sweden	L	1.0	T2	D	NO	0.001	0.020	0.020	100,041	39,333	5	7	0.4
Switzerland	L	0.8	CS	CS	NO	0.001	0.020	NO	104	IE	IE	IE	IE
Turkey					NA	NA	NA	NA	100	70	20	20	0.0
Ukraine	L	0.9	T2	D	0.001	NO	0.020	0.008			16	11.08	0.29
United Kingdom		0.2	T1	D	NO	0.001	0.020	0.005	101	46	7	10	0.7
United States		0.3	M, T1, T2	D	0.001	0.001	0.021	0.014	84	44	11	8	0.5

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

<sup>b</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category N<sub>2</sub>O from 4.B Manure management.

<sup>c</sup> Source of default emission factors: IPCC good practice guidance, tables 4.12 (page 4.43).

<sup>d</sup> Source of default emission factors: IPCC Guidelines, volume 3, table 4-22 (pages 4.104).

<sup>e</sup> Source of default N excretion rates: IPCC Guidelines, volume 3, table 4-20 (pages 4.99). Default values are provided by regions as shown below.

## IPCC defaults:

	North America	Western Europe	Europe	Oceania	Asia
Dairy cattle	100		70	80	60
Non-dairy cattle	70		50	60	40
Sheep	16	20	16	20	12
Swine	20			16	
Poultry		0.6			

Table 4.9

Manure management, N<sub>2</sub>O (2004)

	Key category	Share of national total	Methods and EF used <sup>a</sup>		Animal waste management systems (AWMS)				N excretion rates				
					Anaerobic lagoons	Liquid systems	Solid storage and dry lot	Other	Dairy cattle	Non-dairy cattle	Sheep	Swine	Poultry
		(%)	Methods	EF	N <sub>2</sub> O IEF (kg N <sub>2</sub> O-N/kg N)				(kg N / head / year)				
IPCC default EF					0.001 <sup>b</sup>	0.001 <sup>b</sup>	0.02 <sup>b</sup>	0.005 <sup>c</sup>	60 to 100 <sup>d</sup>	40 to 70 <sup>d</sup>	16 to 20 <sup>d</sup>	12 to 20 <sup>d</sup>	0.6 <sup>d</sup>
Australia	T	0.3	CS, M, T1, T2	D	0.001	0.001	0.020	0.018	140	40	7	12	0.7
Austria	L, T	1.0	T1	CS	NO	0.001	0.020	0.005	95	46	13	14	0.5
Belarus		0.0	T1	D	NO	0.001	0.020	NO	70	50	16	20	0.6
Belgium	L	0.6			NO	0.001	0.019	0.005	94	38	6	12	0.6
Bulgaria		0.6	T1	D	0.001	0.001	0.020	0.005	70	50	16	20	0.6
Canada	L	0.7	T1	D	NE	0.001	0.020	0.005	108	58	4	12	0.5
Croatia	L, T	0.8	T1	D	0.001	0.001	0.020	0.005	70	50	16	20	0.6
Czech Republic		0.3	T1	D	NO	0.001	0.020	0.005	100	70	20	20	1.0
Denmark	L	0.8	CS	D	NO	0.001	0.020	NO	131	39	17	9	0.7
Estonia	T	0.2	T1	D	NO	0.001	0.020	0.005	100	70	20	20	0.6
European Community	L	0.5	CR, CS, D, T1, T2	CR, CS, D	0.001	0.001	0.019	0.009	115	50	8	11	0.6
Finland	L, T	0.7	D	D	NE	0.001	0.020	NE	108	46	8	18	0.7
France	L, T	1.1			NA	0.001	0.020	NA	100	58	18	17	0.6
Germany		0.3	CS, D, T1	CS, D	NO	IE	IE	NO	115	43	8	14	0.4
Greece		0.2	D	D	NA	0.001	0.020	0.005	70	50	12	16	0.6
Hungary	L, T	1.4	CS, D	CS, D	NO	0.001	0.020	0.005	100	70	20	20	0.6
Iceland		0.7			NO	0.001	0.020	NO	60	34	6	13	0.4
Ireland		0.6	T1	D	NO	0.001	0.020	NO	85	65	6	8	0.4
Italy	L, T	0.6	T2	CS, D	NO	0.001	0.020	0.020	116	50	16	12	0.5
Japan		0.3	CS, D	CS, D	NO	0.001	0.020	0.017	80	47	12	16	0.9
Latvia	L, T	1.4	T1, T2	CS, D	NA	0.001	0.020	0.005	71	50	6	7	0.6
Liechtenstein		0.6	CS	D	NO	0.001	0.019	NO			6	9	0.7
Lithuania	L	1.6	T1	D	0.001	0.001	0.020	0.005	70	50	16	20	0.6
Luxembourg		-	NA	NA	NE	NE	NE	NO			NE	NE	NE
Monaco		0.0			NA	NA	NA	NA	0	0	0	0	0.0
Netherlands		0.3	T2	D	NO	0.001	0.017	NO			NA	NA	NA
New Zealand		0.1	T1	D	0.001	NO	0.021	0.005	117	73	15	16	0.6
Norway		0.2	T1	CS, D	NA	0.001	0.018	NA			10	6	0.2
Poland	L	1.4	T2	CS	NO	0.001	0.020	NE	70	50	16	20	0.6
Portugal	T	0.7	D	D	0.001	0.001	0.020	NO	88	47	6	8	0.7
Romania		0.1	T1	D	0.001	0.001	0.020	0.005	70	50	16	20	0.6
Russian Federation	L, T	0.9	T1	CS, D	NO	0.001	0.020	NO	90	54	16	22	0.8
Slovakia	L, T	0.9	T2	D	NO	0.001	0.020	NO	100	60	16	0	0.0
Slovenia	L, T	0.8	D	CS, D	0.001	0.001	0.020	0.003	102	35	20	12	0.6
Spain	L, T	0.7	CS, D	D	NO	0.001	0.020	NO	68	52	5	9	0.7
Sweden	L, T	0.8	T2	D	NO	0.001	0.020	0.020	105,056	41,274	6	9	0.4
Switzerland	L	0.7	CS	CS	NO	0.001	0.020	NO	106	IE	IE	IE	IE
Turkey					NA	NA	NA	NA	100	70	20	20	0.0
Ukraine		0.8	T2	D	0.001	NO	0.020	0.008			16	12	0.3
United Kingdom		0.2	T1	D	NO	0.001	0.020	0.003	106	49	7	10	0.7
United States		0.3	M, T1, T2	D	0.001	0.001	0.020	0.014	84	45	11	8	0.4

<sup>a</sup> Information on methods and emission factors in this table is a reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category N<sub>2</sub>O from 4.B Manure management.

<sup>b</sup> Source of default emission factors: IPCC good practice guidance, tables 4.12 (page 4.43).

<sup>c</sup> Source of default emission factors: IPCC Guidelines, volume 3, table 4-22 (pages 4.104).

<sup>d</sup> Source of default N excretion rates: IPCC Guidelines, volume 3, table 4-20 (pages 4.99). Default values are provided by regions as shown below.

## IPCC defaults:

	North America	Western Europe	Eastern	Oceania	Asia
Dairy cattle		100	70	80	60
Non-dairy cattle		70	50	60	40
Sheep	16	20	16	20	12
Swine		20		16	
Poultry		0.6			

**Table 4.10a****CH<sub>4</sub> emissions from manure management - trend information**

CH <sub>4</sub> emissions (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	73	93	0.1	2.0	1.0	4.3	4.2	2.7	1.6	2.6	0.9	-1.8	-2.8	26.7
Austria	50	42	-1.4	-0.8	-1.9	-0.1	1.0	-5.2	-2.7	0.5	-3.2	0.3	-3.0	-17.0
Belarus	57	35	-5.3	-5.4	-3.8	-1.0	-1.2	-5.4	-2.8	-2.7	-2.0	-1.9	1.7	-38.9
Belgium	128	115	-3.2	2.0	0.1	-0.1	0.2	0.7	-3.3	-2.6	-2.5	-3.7	-1.5	-9.9
Bulgaria	73	25	-12.1	-0.6	-8.5	-11.6	6.1	2.2	-10.6	-28.7	16.2	8.7	0.7	-66.2
Canada	123	151	-0.3	5.2	1.2	0.3	1.4	0.3	2.5	3.5	2.8	-0.1	1.2	22.2
Croatia	11	9	-0.3	-9.8	-1.4	-1.7	-1.5	10.7	-7.2	0.6	1.6	8.1	4.8	-20.6
Czech Republic	48	25	-4.0	-5.2	0.5	-3.0	-4.9	-0.8	-5.5	-0.6	-4.0	-3.0	-4.7	-48.9
Denmark	36	49	4.8	-0.2	1.6	1.5	4.2	-1.4	3.8	4.8	1.7	0.2	0.9	37.0
Estonia	12	3	42.4	-8.8	-66.0	-0.8	-0.3	-12.3	-0.8	7.5	-3.0	0.7	-8.8	-77.9
European Community	2,117	2,108	-1.9	1.1	0.2	0.7	0.9	-1.6	0.0	0.6	-1.1	-1.4	0.2	-0.4
Finland	11	12	-5.0	7.8	1.0	5.4	-1.1	-1.3	1.2	-5.2	3.2	0.5	-2.1	8.3
France	657	622	-0.9	0.5	0.8	-0.4	0.3	-4.2	1.0	0.7	-0.4	-1.5	-0.6	-5.4
Germany	289	248	-11.6	-0.8	0.7	-1.7	0.7	0.5	-1.9	1.3	-2.6	-0.6	-2.8	-14.2
Greece	24	23	-1.5	-0.3	-0.1	0.2	0.5	0.6	0.6	-1.0	-0.3	0.3	-0.1	-2.0
Hungary	42	21	-12.6	1.5	3.5	-5.5	4.8	1.1	-3.3	-3.3	2.6	-0.1	-11.1	-50.4
Iceland	1	1	-0.8	-0.2	0.1	0.1	1.8	-1.7	-2.7	-0.3	-4.1	-2.1	-2.1	-14.6
Ireland	106	103	1.4	0.4	3.3	2.7	1.2	-4.4	-5.0	0.1	-0.6	-2.0	-0.3	-2.7
Italy	165	150	0.0	2.0	0.3	-0.4	1.1	1.0	-2.1	1.6	-2.8	0.4	-3.1	-9.0
Japan	149	121	-0.1	-2.1	-1.5	-1.7	-2.1	-2.1	-1.5	-0.8	-0.7	-1.1	-1.4	-18.6
Latvia	13	4	-6.3	2.4	-10.0	-6.2	-6.3	-8.7	-2.7	7.1	3.0	-2.5	-1.5	-70.4
Liechtenstein	0	0	0.2	-1.7	0.3	-2.3	-0.6	-1.1	-5.1	8.1	2.6	1.4	-2.2	-8.9
Lithuania	22	9	-6.9	-3.4	-5.8	0.9	-6.4	-11.0	-11.8	8.5	3.9	2.6	-0.2	-59.0
Luxembourg	4	4	-7.8	3.2	0.2	2.6	3.0	2.8	-4.5	-0.7	-0.2	2.2	-0.5	-2.2
Monaco	NA	NA	*	*	*	*	*	*	*	*	*	*	*	*
Netherlands	141	117	0.7	8.5	-1.4	-0.3	-7.3	-1.8	-1.7	-1.4	-4.0	-4.2	1.9	-16.9
New Zealand	28	35	0.4	3.2	2.2	0.9	0.2	1.0	1.8	2.3	2.3	2.0	1.1	24.3
Norway	14	15	2.7	1.7	1.8	0.2	1.3	-0.9	-0.9	-2.6	-1.9	1.1	0.7	4.0
Poland	164	163	9.1	4.5	-6.3	-0.1	4.1	2.9	-6.5	-0.6	14.2	-2.7	-7.4	-0.5
Portugal	56	55	4.2	-1.2	-3.6	-0.5	0.1	0.6	0.0	0.3	0.0	-1.3	0.2	-1.6
Romania	207	94	-6.4	-10.0	1.6	0.7	-9.9	-0.7	-10.5	-11.1	-4.3	7.2	10.8	-54.8
Russian Federation	353	165	-2.6	-9.9	-10.3	-10.2	-7.6	-7.5	-0.3	-0.8	-0.3	1.8	-5.5	-53.3
Slovakia	18	8	-7.0	2.7	-4.9	-8.2	-11.7	-3.4	-3.6	0.1	2.2	-4.9	-15.3	-55.3
Slovenia	24	21	-7.8	-8.1	-5.0	1.4	3.9	-9.0	10.4	-1.6	6.6	-4.9	-6.8	-14.7
Spain	297	424	-0.4	2.1	-1.4	5.9	6.0	0.6	6.0	1.5	0.1	-1.4	5.9	42.8
Sweden	17	22	-2.2	2.5	1.3	-2.4	-1.1	-0.6	-4.1	12.3	-0.6	3.9	0.2	29.0
Switzerland	27	24	-0.5	-1.2	-0.7	-1.0	0.8	-3.4	0.0	1.4	-0.5	-2.0	-0.8	-11.3
Turkey	35	40	9.4	3.3	-16.2	11.5	-3.7	1.9	-2.0	0.3	-3.2	2.4	5.3	13.7
Ukraine	868	27	-14.7	-21.5	-44.4	-58.7	-40.4	-5.3	-23.4	1.7	2.8	-19.4	-7.8	-96.9
United Kingdom	139	122	-1.3	-2.0	0.6	-0.3	0.1	-1.5	-3.7	-3.7	-1.0	-0.5	-0.7	-12.2
United States	1,484	1,875	6.4	2.9	-3.9	4.8	6.7	-1.8	-0.3	2.2	1.1	-0.4	0.6	26.4

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 4.10b****N<sub>2</sub>O emissions from manure management - trend information**

N <sub>2</sub> O emissions (Gg)			Relative change (%)												
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year to 2004	
Australia	1.7	4.6	10.8	11.1	0.2	7.6	8.5	14.2	5.9	0.3	-0.2	1.3	7.0	172.9	
Austria	3.2	2.9	-1.2	2.2	-1.8	-1.2	-0.2	-1.3	-1.3	-0.9	-2.1	-0.8	-0.4	-11.8	
Belarus	0.0	0.0	-5.1	-5.9	-3.8	-1.1	-1.8	-6.3	-2.4	-3.1	-2.2	-2.1	1.2	-41.6	
Belgium	3.1	2.8	-0.3	1.7	-0.2	-0.3	-0.7	0.5	-2.3	-1.1	-3.7	-6.7	1.6	-9.5	
Bulgaria	3.4	1.3	-10.6	-2.7	-6.9	-8.5	7.0	3.3	-8.0	-25.3	14.9	7.1	0.3	-62.5	
Canada	13.2	16.9	0.8	4.9	3.0	0.5	0.0	0.1	1.2	2.7	0.4	0.3	5.5	28.8	
Croatia	1.2	0.8	-4.1	-4.7	-6.7	-1.9	-2.0	2.0	-3.1	1.0	-2.0	5.1	3.3	-37.6	
Czech Republic	2.2	1.2	-3.7	-5.2	0.8	-2.5	-4.2	-0.5	-5.5	-0.8	-4.0	-2.8	-5.0	-46.3	
Denmark	2.2	1.8	-0.5	-3.3	0.5	-0.5	1.4	-3.3	-4.4	0.5	-3.1	-4.8	0.6	-18.1	
Estonia	0.9	0.2	-92.1	-10.9	8.7	-3.8	-4.6	-12.8	-4.7	2.5	-4.4	1.0	429.7	-81.1	
European Community	80.5	71.8	0.0	0.5	0.7	0.6	0.5	-0.2	-2.1	1.3	-2.5	-2.2	-3.1	-10.7	
Finland	2.1	1.8	-8.4	-0.3	2.5	4.5	-1.6	-3.3	-3.1	-2.5	1.1	0.2	0.3	-16.8	
France	22.2	19.7	-1.7	0.3	0.2	-1.0	-0.6	-1.2	0.6	0.7	-1.8	-2.6	-2.5	-11.3	
Germany	13.3	9.2	-10.7	-1.0	1.6	0.0	0.0	1.8	-4.0	4.1	-4.1	0.4	-2.1	-31.2	
Greece	1.0	0.9	-2.8	-0.3	-0.2	0.0	0.7	1.2	1.2	-0.7	-0.9	-1.1	-0.4	-6.6	
Hungary	7.7	3.8	-8.4	-1.1	-1.2	-1.9	1.3	-0.9	2.1	-3.3	-1.1	0.6	-5.8	-51.3	
Iceland	0.1	0.1	-3.9	-7.8	1.2	1.0	2.1	-0.8	-7.3	-0.2	-2.6	-1.0	-1.2	-21.9	
Ireland	1.3	1.3	3.8	1.7	1.0	1.8	2.5	1.4	-5.1	-3.6	-2.8	-0.7	-0.4	1.7	
Italy	12.6	11.9	-0.2	2.2	1.1	0.9	2.1	1.5	-3.3	5.2	-5.3	-0.8	-3.0	-5.6	
Japan	17.9	15.2	-0.8	-2.1	-1.3	-1.1	-1.0	-1.1	-0.9	-0.8	-0.6	-0.6	-0.6	-14.7	
Latvia	1.8	0.5	-4.0	-3.4	-4.8	-6.3	-8.1	-11.2	-2.4	5.8	1.5	-3.1	-5.8	-72.4	
Liechtenstein	0.0	0.0	0.0	1.1	1.7	-0.2	0.4	-1.3	-5.2	5.2	1.9	3.2	4.5	4.1	
Lithuania	2.8	1.1	-4.8	-6.2	-1.4	-2.3	-8.4	-5.5	-14.5	2.0	2.8	3.3	-2.2	-61.4	
Luxembourg	NE, NO	NE, NO	*	*	*	*	*	*	*	*	*	*	*	*	
Monaco	0.0	0.0	*	*	*	*	*	*	*	*	*	*	*	*	
Netherlands	2.2	2.3	5.8	4.2	-1.6	-0.8	7.8	1.5	-5.6	-2.0	2.0	-17.9	10.7	1.8	
New Zealand	0.1	0.2	0.6	5.7	3.9	2.5	3.0	3.6	3.8	4.4	3.0	2.8	4.0	67.4	
Norway	0.4	0.4	6.5	0.9	0.7	-2.9	-0.2	-0.3	2.0	-0.6	-2.7	-10.9	-2.3	-8.5	
Poland	30.1	18.3	-3.2	-1.3	-5.5	1.8	0.4	-5.0	-6.5	-1.5	-1.2	-3.8	-6.0	-39.1	
Portugal	1.8	1.9	1.2	1.5	0.7	0.3	2.1	1.2	1.0	-2.0	-1.9	-3.7	-1.0	2.5	
Romania	1.0	0.4	-11.4	-5.3	1.0	-1.5	-7.4	-2.2	-4.7	-6.8	-2.8	4.0	-0.9	-55.8	
Russian Federation	154.9	65.2	-2.7	-11.8	-12.3	-10.7	-9.4	-10.3	-0.7	1.5	0.8	-1.1	-3.1	-57.9	
Slovakia	3.5	1.4	-9.3	5.1	-7.5	-8.3	-12.1	-5.3	-2.5	0.2	-4.5	-3.1	-5.2	-59.6	
Slovenia	0.9	0.5	-5.4	1.9	-2.6	-1.1	-2.2	-1.3	-0.9	-1.3	1.5	-5.6	-6.0	-39.3	
Spain	8.0	9.6	1.4	2.4	2.5	4.3	0.7	-0.3	-1.7	3.8	0.4	-0.9	1.5	20.2	
Sweden	2.4	1.8	-2.8	-5.0	-0.2	2.3	0.1	-6.7	-2.1	-6.1	-0.1	-5.3	1.2	-26.8	
Switzerland	1.4	1.3	-0.3	-1.6	0.8	-2.1	-0.8	-2.1	0.2	-2.2	0.3	-0.9	0.0	-11.5	
Turkey															
Ukraine	25.5	10.0	-3.0	-7.5	-10.8	-12.8	-3.6	-5.8	-13.8	5.8	0.5	-12.9	-9.4	-60.7	
United Kingdom	4.9	4.0	-0.5	-1.4	1.1	-0.1	0.7	-0.3	-5.8	-4.0	-2.9	-1.4	-3.8	-17.1	
United States	52.4	57.0	3.1	1.0	-0.6	1.8	0.3	0.2	2.4	1.2	-0.4	-2.5	0.9	8.8	

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 4.11**  
**Agricultural soils, N<sub>2</sub>O (base year<sup>a</sup>)**

IPCC default EF <sup>e</sup>	Methods and EF used <sup>b</sup>		Key category	Share of national total	Direct soil emissions						Pasture, range and paddock manure			Key category	Share of national total	Indirect soil emissions			
					Synthetic fertilizers		Animal manure applied to soils	N-fixing crops	Crop residue	Cultivation of histosols	Key category	Share of national total	N <sub>2</sub> O IEF			Atmospheric deposition		Nitrogen leaching and run-off	
	Activity data	N <sub>2</sub> O IEF			Activity data	N <sub>2</sub> O IEF										Activity data	N <sub>2</sub> O IEF		
	Methods	EF			Use of synthetic fertilizers	N <sub>2</sub> O IEF				Key category						(%)	(kg N <sub>2</sub> O-N / kg N)	(kg N <sub>2</sub> O-N / kg N) <sup>c</sup>	(kg N <sub>2</sub> O-N / ha)
		(%)	(kg N / year)	(kg N <sub>2</sub> O-N / kg N)		(kg N <sub>2</sub> O-N / kg N) <sup>c</sup>		(kg N <sub>2</sub> O-N / ha)						(%)	(kg N / year)	(kg N <sub>2</sub> O-N / kg N)	(kg N / year)	(kg N <sub>2</sub> O-N / kg N)	
					0.0125 (0.0025-0.0225) <sup>e</sup>				5, 10 (2-15) <sup>d</sup>			0.02 (0.005-0.03) <sup>e</sup>				0.01 (0.002-0.2) <sup>d</sup>		0.025 (0.002-0.12) <sup>d</sup>	
Australia	CS, T1, T2	CS, D	L	0.7	423,999,553	0.0075	0.0100	0.0125	0.0125	8.00	L	1.2	0.004	L	1.4	675,633,248	0.010	423,024,482	0.012
Austria	T1	D	L	2.2	133,325,921	0.0125	0.0125	0.0125	0.0125	NO		0.3	0.020	L	1.7	42,786,589	0.010	90,437,220	0.025
Belarus	T1a, T1b	D	L	5.2	615,330,000	0.0125	0.0125	0.0125	0.0125	5.00		0.0	0.020	L	2.2	68,478,060	0.010	205,272,090	0.025
Belgium		D	L	1.7	203,108,374	0.0125	0.0125	0.0008	0.0002	8.00	L	0.6	0.020	L	0.8	76,571,288	0.010	66,593,322	0.025
Bulgaria	D	D	L	2.5	487,026,900	0.0100	0.0100	0.0003	0.0001	8.00	L	1.2	0.020	L	2.1	127,016,359	0.010	181,130,459	0.025
Canada	T1, T2	CS, D	L	1.8	1,196,292,000	0.0078	0.0106	NO	0.0077	8.00	L	0.5	0.020	L	0.9	401,948,628	0.010	587,401,843	0.012
Croatia	T1	D	L	4.3	96,309,990	0.0125	0.0125	0.0125	0.0125	5.00	L	0.7	0.020	L	2.9	26,388,485	0.010	63,372,180	0.025
Czech Republic	T1	D	L	2.3	376,329,600	0.0125	0.0125	0.0125	0.0125	8.00		0.4	0.020	L	1.8	123,414,680	0.010	247,843,620	0.025
Denmark	CS	CS	L	6.0	391,738,000	0.0125	0.0125	0.0125	0.0125	3.07		0.4	0.020	L	5.4	109,371,430	0.010	267,222,222	0.025
Estonia <sup>f</sup>	T1	D	L	1.8	64,530,000	0.0125	0.0125	0.012	0	NE		0.2	0.020	L	1.3	19,864,858	0.010	39,476,787	0.025
European Community	CR, CS, D, T1, T2	CR, CS, D	L	2.7	10,530,742,150	0.0120	0.0121	NA	NA	7.51	L	0.7	0.019	L	1.9	3,029,498,311	0.010	6,824,380,138	0.020
Finland	D	CS, D	L	4.7	227,099,180	0.0125	0.0125	0.0125	0.0125	7.85		0.2	0.020	L	1.1	39,899,546	0.010	46,296,892	0.025
France			L	4.7	2,393,971,110	0.0125	0.0125	0.0125	0.0125	NO	L	1.5	0.020	L	3.6	670,784,519	0.010	1,411,673,254	0.025
Germany	CR, CS	CS, D	L	2.3	2,163,592,000	0.0125	0.0125	NA	NA	8.00		0.1	0.020	L	1.2	625,060,300	0.010	1,021,109,000	0.023
Greece	D, T1a, T1b	D	L	2.5	384,750,000	0.0125	0.0125	0.0125	0.0125	8.00	L	3.1	0.020	L	3.3	122,077,927	0.010	247,241,891	0.025
Hungary	D	D	L	6.9	529,730,400	0.0125	0.0125	0.0125	0.0125	NO		0.3	0.020	L	3.6	144,791,574	0.010	305,467,110	0.025
Iceland <sup>f</sup>			L	2.9	11,226,600	0.0125	0.0125	NO	0.0000	NE	L	1.4	0.020	L	3.0	3,387,473	0.010	6,952,309	0.025
Ireland	T1a, T1b	CS, D	L	5.5	374,026,675	0.0125	0.0125	0.0125	0.0125	NO	L	5.1	0.020	L	2.5	90,606,014	0.010	77,663,950	0.025
Italy <sup>f</sup>	D	CS, D	L	1.8	691,722,728	0.0125	0.0125	0	0	8.00		0.3	0.020	L	1.6	378,532,469	0.010	514,576,362	0.025
Japan	CS, T1b	CS, D		0.4	629,825,730	0.0063	0.0063	1E	0.0125	8.00		-	1E		0.3	315,477,454	0.010	354,103,291	0.012
Latvia	T1, T1a, T2	CS, D	L	6.4	118,260,000	0.0125	0.0125	0.0125	0.0125	8.00	L	1.4	0.020	L	4.0	34,306,720	0.010	71,170,080	0.025
Liechtenstein	CS, T1b	CS	L	3.0	218,751	0.0125	0.0125	0.0125	0.0125	8.00		0.4	0.020	L	1.2	185,200	0.010	150,326	0.025
Lithuania	T1, T1a	D	L	6.5	190,620,000	0.0125	0.0125	0.0125	0.0125	8.00		0.5	0.020	L	1.8	21,184,707	0.010	63,547,060	0.025
Luxembourg	CR	CR		1.1	NE	NE	NE	NE	NE	NE		-	NE		-	NE	NE	NE	NE
Monaco	NA	NA		-	NO	NO	NO	NO	NO	NO		0.0	NO		0.0	NO	NO	NO	NO
Netherlands	T1, T1b, T2, T3	CS, D	L	2.2	412,000,000	0.0107	0.0086	0.0098	0.0100	4.71	L	0.6	0.016	L	2.3	195,800,000	0.010	1,113,700,000	0.007
New Zealand	D, T1a	CS, D	L	0.8	51,786,600	0.0100	0.0100	0.0100	0.0100	8.00	L	11.1	0.010	L	4.4	293,119,820	0.010	104,605,860	0.025
Norway	T1a	CS, D	L	2.8	109,179,114	0.0125	0.0125	0.0125	0.0125	8.00		0.4	0.020	L	0.8	14,553,430	0.010	28,438,307	0.025
Poland	T1	CS, D	L	2.7	1,201,500,000	0.0089	0.0100	0.0100	0.0100	8.00	L	0.3	0.020	L	1.1	165,849,638	0.010	449,024,457	0.025
Portugal	T1a	D	L	2.3	139,544,783	0.0125	0.0125	0.0125	0.0125	NO	L	1.0	0.020	L	2.0	41,686,082	0.010	83,603,459	0.025
Romania	D	D	L	2.7	599,400,000	0.0125	0.0125	0.0125	0.0125	NE		0.1	0.020		1.2	87,572,714	0.010	231,259,071	0.025
Russian Federation	CS, T1, T1a, T1b	CS, D	L	3.1	3,718,170,000	0.0142	0.0125	1E	0.0125	8.00		0.3	0.020	L	1.4	1,661,173,666	0.010	3,111,455,499	0.025
Slovakia	T2	CS, D	L	4.1	200,029,500	0.0125	0.0125	0.0125	0.0125	NO		0.3	0.020	L	1.3	56,500,449	0.010	55,108,165	0.025
Slovenia	D, T1a, T1b	CS, D	L	2.0	26,769,600	0.0125	0.0125	0.0125	0.0125	NE		0.1	0.020	L	1.7	12,058,913	0.010	22,549,970	0.025
Spain	CS, T1a, T1b	D	L	3.5	1,074,174,000	0.0117	0.0102	0.0125	0.0125	NO	L	0.5	0.010	L	2.6	187,151,341	0.010	1,807,457,845	0.007
Sweden	CS, T1, T1a, T1b, T2	CS, D	L	4.4	224,500,000	0.0079	0.0235	0.0125	0.0001	8.00		0.4	0.016	L	1.6	43,423,000	0.010	76,804,000	0.025
Switzerland	CS	CS	L	2.6	70,688,000	0.0125	0.0125	0.0125	0.0125	8.00		0.4	NO	L	1.6	55,928,404	0.010	44,869,266	0.025
Turkey	NA	NA		-	NE	NE	NE	NE	NE			-	NE		0.0				0
Ukraine	CS, T1, T1a, T1b, T2	D	L	2.3	1,605,924,000	0.0125	0.0125	0.0125	0.0125	8.00	L	0.6	0.020	L	1.4	338,387,042	0.010	946,561,805	0.025
United Kingdom	T1, T1a, T2	CS, D	L	1.8	1,470,600,000	0.0125	0.0125	0.0125	0.0125	8.00	L	0.7	0.020	L	1.4	405,747,804	0.010	721	25,000,000
United States	CS, M, T1a, T1b	CS, D, M	L	1.8	1E	1E	1E	1E	1E	1E	L	0.7	0.030		-	1E	1E	1E	1E

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

<sup>b</sup> Information on methods and emission factors is included in this table as reported by Parties in table Summary 3 of the CRF. It may therefore not reflect the actual method or type of emission factor used for all subcategories within the category N<sub>2</sub>O from 4.D Agricultural soils.

<sup>c</sup> Source of default emission factors: IPCC Guidelines, volume 3; table 4-18, page 4.89. (See also IPCC good practice guidance, table 4-17, page 4.60.)

<sup>d</sup> For cultivation of histosols the two default values refer to temperate and tropical, respectively. The values in parenthesis indicate the range. It should be noted that default emission factors for histosols have been updated from 5 to 8 and from 10 to 16 for temperate and tropical, respectively (table 4.17, page 4.60 of IPCC good practice guidance).

<sup>e</sup> Source of default emission factor: IPCC Guidelines, volume 3, table 4-22, page 4.104 (Pasture range and paddock). See also IPCC good practice guidance, table 4.12, page 4.43.

<sup>f</sup> Source of default emission factor: IPCC Guidelines, volume 3, table 4-23, page 4.105 (default emission factors for indirect emissions). See also IPCC good practice guidance, table 4.18, page 4.73.

**Table 4.12**  
**Agricultural soils, N<sub>2</sub>O (2004)**

IPCC default EF <sup>d</sup>	Methods and EF used <sup>a</sup>		Key category	Share of national total	Direct soil emissions						Pasture, range and paddock manure			Indirect soil emissions					
					Synthetic fertilizers		Animal manure applied to soils	N-fixing crops	Crop residue	Cultivation of histosols	Key category	Share of national total	N <sub>2</sub> O IEF	Key category	Share of national total	Atmospheric deposition		Nitrogen leaching and run-off	
	Activity data	N <sub>2</sub> O IEF			Key category	Share of national total										Activity data	N <sub>2</sub> O IEF	Activity data	N <sub>2</sub> O IEF
	Methods	EF					Use of synthetic fertilizers	N <sub>2</sub> O IEF	N <sub>2</sub> O IEF	N <sub>2</sub> O IEF	Activity data	N <sub>2</sub> O IEF	Activity data	N <sub>2</sub> O IEF					
			(%)	(kg N / year)	(kg N <sub>2</sub> O-N / kg N)	(kg N <sub>2</sub> O-N / kg dry biomass) <sup>b</sup>	(kg N <sub>2</sub> O-N / ha)		(%)	(kg N <sub>2</sub> O-N / kg N)		(%)	(kg N / year)	(kg N <sub>2</sub> O-N / kg N)	(kg N / year)	(kg N <sub>2</sub> O-N / kg N)			
					0.0125 (0.0025-0.0225) <sup>b</sup>		5, 10 (2-15) <sup>c</sup>			0.02 (0.005-0.03) <sup>d</sup>				0.01 (0.002-0.2) <sup>e</sup>		0.025 (0.002-0.12) <sup>f</sup>			
Australia	CS, T1, T2	CS, D	L, T	1.0	999,487,855	0.0065	0.0100	0.0125	0.0125	8.00	L, T	0.8	0.004	L	1.3	764,455,400	0.010	486,008,342	0.013
Austria	T1	D	L, T	1.6	94,460,287	0.0125	0.0125	0.0125	0.0125	NO		0.2	0.020	L, T	1.2	35,640,400	0.010	74,884,364	0.025
Belarus	T1a, T1b	D	L	6.0	311,670,000	0.0125	0.0125	0.0125	0.0125	5.00		0.0	0.020	L	1.9	34,694,131	0.010	103,986,197	0.025
Belgium			L, T	1.5	142,718,627	0.0125	0.0125	0.0125	0.0002	8.00		0.6	0.020	L	0.6	48,854,403	0.010	57,755,804	0.025
Bulgaria	D	D	L, T	1.7	148,462,200	0.0100	0.0100	0.0003	0.0001	8.00	L, T	0.8	0.020	L, T	1.4	41,882,592	0.010	58,378,392	0.025
Canada	T1, T2	CS, D	L, T	1.5	1,649,912,000	0.0064	0.0096	NO	0.0069	8.00	L	0.6	0.020	L	0.9	530,002,250	0.010	663,838,216	0.012
Croatia	T1	D	L	4.3	102,600,000	0.0125	0.0125	0.0125	0.0125	5.00	L	0.7	0.020	L	2.9	27,474,880	0.010	58,312,320	0.025
Czech Republic	T1	D	L, T	1.8	194,751,000	0.0125	0.0125	0.0125	0.0125	8.00	T	0.2	0.020	L, T	1.2	61,140,580	0.010	124,169,370	0.025
Denmark	CS	CS	L, T	4.2	202,113,470	0.0125	0.0125	0.0125	0.0125	2.85		0.4	0.020	L, T	3.4	77,890,656	0.010	165,108,745	0.025
Estonia <sup>f</sup>	T1	D	L, T	1.6	24,833,000	0.0125	0.0125	0	0	NE		0.2	0.020	L	1.1	8,478,398	0.010	16,442,547	0.025
European Community	CR, CS, D, T1, T2	CR, CS, D	L, T	2.4	8,618,956,859	0.0122	0.0128	NA	NA	7.49	L	0.6	0.019	L, T	1.6	2,581,145,712	0.010	6,146,504,170	0.019
Finland	D	CS, D	L, T	3.1	153,779,752	0.0125	0.0125	0.0125	0.0125	7.85		0.2	0.020	L, T	0.7	37,428,020	0.010	34,206,163	0.025
France			L, T	4.2	2,097,765,000	0.0125	0.0125	0.0125	0.0125	NO	L, T	1.3	0.020	L, T	3.2	597,149,813	0.010	1,253,866,258	0.025
Germany	CR, CS	CS, D	L	2.4	1,827,767,000	0.0125	0.0125	NA	NA	8.00		0.1	0.020	L	1.2	516,921,100	0.010	850,359,000	0.022
Greece	D, T1a, T1b	D	L, T	1.2	210,651,429	0.0125	0.0125	0.0125	0.0125	8.00	L, T	2.6	0.020	L, T	2.1	105,980,673	0.010	194,079,581	0.025
Hungary	D	D	L, T	6.6	269,100,000	0.0125	0.0125	0.0125	0.0125	NO		0.2	0.020	L, T	2.6	72,224,873	0.010	153,187,310	0.025
Iceland <sup>f</sup>			L, T	2.4	10,857,600	0.0125	0.0125	NO	0.0000	NE		1.1	0.020	L, T	2.5	3,072,275	0.010	6,418,012	0.025
Ireland	T1a, T1b	CS, D	L, T	4.4	356,795,791	0.0125	0.0125	0.0125	0.0125	NO	L, T	4.1	0.020	L, T	2.0	91,185,618	0.010	76,090,230	0.025
Italy <sup>f</sup>	D	CS, D	L, T	1.6	762,304,833	0.0125	0.0125	0	0	8.00		0.3	0.020	L, T	1.3	334,348,638	0.010	506,121,328	0.025
Japan	CS, T1b	CS, D		0.3	463,930,970	0.0066	0.0063	NE	0.0125	8.00		-	IE		0.2	260,313,972	0.010	277,546,664	0.012
Latvia	T1, T1a, T2	CS, D	L	6.3	31,680,000	0.0125	0.0125	0.0125	0.0125	8.00	L, T	0.9	0.020	L, T	2.6	9,374,102	0.010	19,341,152	0.025
Liechtenstein	CS, T1b	CS	L, T	2.1	165,718	0.0125	0.0125	0.0125	0.0125	8.02		0.2	0.020		0.9	173,894	0.010	132,977	0.025
Lithuania	T1, T1a	D	L, T	7.7	53,815,845	0.0125	0.0125	0.0125	0.0125	8.00		0.6	0.020	L, T	1.2	5,981,965	0.010	17,942,255	0.025
Luxembourg	CR	CR		1.1	NE	NE	NE	NE	NE	NE		-	NE		-	NE	NE	NE	NE
Monaco	NA	NA		-	NO	NO	NO	NO	NO	NO		0.0	NO		0.0	NO	NO	NO	NO
Netherlands	T1, T1b, T2, T3	CS, D	L	2.2	300,500,000	0.0099	0.0179	0.0106	0.0101	4.71	T	0.3	0.015	L, T	1.5	99,500,000	0.010	783,700,000	0.007
New Zealand	D, T1a	CS, D	L, T	2.4	310,716,000	0.0100	0.0100	0.0100	0.0100	8.00	L, T	10.0	0.010	L	4.5	348,867,383	0.010	135,833,384	0.025
Norway	T1a	CS, D	L, T	2.4	104,056,886	0.0125	0.0125	0.0125	0.0125	8.00		0.4	0.020	L	0.7	15,821,835	0.010	27,302,104	0.025
Poland	T1	CS, D	L, T	3.1	805,500,000	0.0089	0.0100	0.0100	0.0100	8.00	T	0.1	0.020	L	1.0	96,863,680	0.010	279,545,519	0.025
Portugal	T1a	D	L, T	1.6	136,101,870	0.0125	0.0125	0.0125	0.0125	NO	L, T	0.8	0.020	L, T	1.5	44,198,503	0.010	85,113,250	0.025
Romania	D	D	L, T	3.2	243,000,000	0.0125	0.0125	0.0126	0.0125	NE		0.1	0.020	T	0.9	36,979,378	0.010	95,969,067	0.025
Russian Federation	CS, T1, T1a, T1b	CS, D	L, T	2.4	754,443,000	0.0142	0.0125	IE	0.0125	8.00		0.2	0.020	T	0.7	625,395,357	0.010	1,063,833,536	0.025
Slovakia	T2	CS, D	L	3.6	68,779,800	0.0125	0.0125	0.0125	0.0125	NO		0.2	0.020	T	0.7	22,923,546	0.010	21,396,022	0.025
Slovenia	D, T1a, T1b	CS, D	L	1.8	27,237,600	0.0125	0.0125	0.0125	0.0125	NE		0.3	0.020	L	1.5	10,703,242	0.010	20,594,463	0.025
Spain	CS, T1a, T1b	D	L, T	2.5	1,052,294,000	0.0117	0.0102	0.0125	0.0125	NO	T	0.4	0.010	L, T	2.0	219,833,956	0.010	2,004,023,871	0.008
Sweden	CS, T1, T1a, T1b	CS, D	L, T	4.3	176,800,000	0.0079	0.0250	0.0125	0.0001	8.00	L	0.5	0.016	L, T	1.3	38,129,000	0.010	61,195,000	0.025
Switzerland	CS	CS	L, T	2.3	50,384,000	0.0125	0.0125	0.0125	0.0125	8.00		0.3	NO	L, T	1.3	47,490,873	0.010	36,778,028	0.025
Turkey	NA	NA		-	NE	NE	NE					-	NE						
Ukraine	CS, T1, T1a, T1b	D	L	2.1	328,734,000	0.0125	0.0125	0.0125	0.0125	8.00		0.6	0.020	L, T	0.9	97,001,093	0.010	256,238,300	0.025
United Kingdom	T1, T1a, T2	CS, D	L	1.8	1,104,904,800	0.0125	0.0125	0.0125	0.0125	8.00	L	0.7	0.020	L	1.3	334,084,930	0.010	574	25,000,000
United States	CS, M, T1a, T1b	CS, D, M	L, T	1.9	IE	IE	IE	IE	IE	IE	L, T	0.5	0.026		-	IE	IE	IE	IE

<sup>a</sup> Information on methods and emission factors is included in this table as reported by Parties in table Summary 3 of the CRF. It may therefore not reflect the actual method or type of emission factor used for all subcategories within the category N<sub>2</sub>O from 4.D Agricultural soils.

<sup>b</sup> Source of default emission factors: IPCC Guidelines, volume 3; table 4-18, page 4.89. (See also IPCC good practice guidance, table 4-17, page 4.60.)

<sup>c</sup> For cultivation of histosols the two default values refer to temperate and tropical, respectively. The values in parenthesis indicate the range. It should be noted that default emission factors for histosols have been updated from 5 to 8 and from 10 to 16 for temperate and tropical, respectively (table 4.17, page 4.60 of IPCC good practice guidance).

<sup>d</sup> Source of default emission factor: IPCC Guidelines, volume 3, table 4-22, page 4.104 (Pasture range and paddock). See also IPCC good practice guidance, table 4.12, page 4.43.

<sup>e</sup> Source of default emission factor: IPCC Guidelines, volume 3, table 4-23, page 4.105 (default emission factors for indirect emissions). See also IPCC good practice guidance, table 4.18, page 4.73.

<sup>f</sup> These Parties reported using the CRF Excel Application, where the IEF for 'N-fixing crops' and 'Crop residue' are reported as 'kg N<sub>2</sub>O-N/kg dry biomass' instead of 'kg N<sub>2</sub>O-N/kg N'. Thus these IEFs are not included in this table.

**Table 4.13****N<sub>2</sub>O emissions from agricultural soils - trend information**

N <sub>2</sub> O emissions (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	46	53	-1.5	3.5	2.2	3.1	4.1	2.9	5.3	1.5	-0.9	-3.9	-1.6	15.3
Austria	11	9	7.7	1.2	-9.3	1.4	0.7	-2.7	-3.5	-0.3	-0.1	-4.1	-4.2	-14.5
Belarus	30	19	-3.3	-14.3	19.0	11.5	1.9	-6.8	3.7	-9.8	-5.1	11.8	8.0	-37.4
Belgium	15	13	-1.2	1.9	-3.4	0.8	-0.1	0.1	-4.5	-1.8	-0.9	-4.4	-1.2	-14.5
Bulgaria	25	8	-28.1	-15.9	-2.6	1.7	-13.8	13.1	-3.7	-8.6	1.9	-5.5	11.0	-66.3
Canada	63	72	-3.4	2.0	3.7	-0.5	1.1	1.3	-0.7	-4.0	-2.1	6.4	3.0	14.1
Croatia	8	8	2.3	-3.0	-3.0	16.1	-11.3	3.1	2.7	4.4	3.1	-4.3	14.6	-5.3
Czech Republic	29	15	-15.8	1.6	-7.1	1.3	-3.6	-0.8	-1.0	3.9	-2.7	-10.0	8.9	-46.5
Denmark	27	18	-1.8	-2.5	-4.7	-1.2	-0.6	-6.2	-3.5	-2.3	-4.0	-2.7	0.8	-31.8
Estonia	5	2	-37.0	-16.3	-9.9	10.2	5.0	-18.2	19.0	-13.5	-16.1	-1.4	147.1	-57.0
European Community	730	646	-2.6	0.6	1.4	0.6	-0.1	-0.3	-0.3	-3.9	-0.9	-1.3	-0.5	-11.5
Finland	14	10	-7.0	5.3	-3.3	-2.0	-2.5	-2.4	1.2	-1.7	-1.3	-1.5	-2.5	-24.5
France	181	159	-3.7	1.0	1.3	2.9	-0.1	-1.5	0.9	-4.9	1.0	-4.4	1.1	-12.0
Germany	143	123	-8.2	4.7	-0.2	-0.7	1.0	3.0	1.9	-2.9	-2.2	0.0	0.2	-14.3
Greece	31	26	-1.7	-3.0	3.1	-3.3	-1.7	0.1	-0.3	-2.5	-0.8	-0.8	-0.8	-16.4
Hungary	43	26	-17.2	-2.8	4.6	0.0	5.3	0.4	-10.6	8.5	-0.5	-7.4	18.3	-40.2
Iceland	1	1	-2.2	-3.9	4.5	-1.6	1.1	3.5	-1.9	-1.0	-6.7	-4.0	7.2	-7.9
Ireland	23	23	0.2	2.6	0.3	-2.1	6.0	0.1	-5.9	-4.9	-1.3	2.5	-2.4	-1.4
Italy	63	60	3.1	-3.2	-1.7	5.2	-3.3	1.0	-1.6	-1.4	-1.6	-2.3	2.0	-4.3
Japan	28	23	-1.0	-2.1	-2.1	-1.7	-1.4	-1.2	-1.1	-1.3	-0.9	-0.8	-0.7	-18.1
Latvia	10	3	-7.9	-28.5	3.4	2.1	-3.8	-8.1	2.3	10.9	-1.1	6.9	-2.5	-65.2
Liechtenstein	0	0	-0.1	-0.5	-2.7	-1.1	-3.1	-1.3	-3.1	1.5	-0.3	0.3	0.2	-16.0
Lithuania	14	6	-5.0	-4.6	7.2	3.9	-3.9	-9.3	-0.7	0.6	2.7	0.1	15.6	-53.2
Luxembourg	0.47	0.47	0	0	0	0	0	0	0	0	0	0	0	0
Monaco	NA	NA	*	*	*	*	*	*	*	*	*	*	*	*
Netherlands	35	28	2.3	4.5	-1.6	-1.3	-2.4	-3.9	-8.3	-4.2	-5.8	-1.9	-0.9	-19.3
New Zealand	32	41	-0.2	2.3	1.6	0.5	0.9	1.7	3.1	3.2	2.7	1.9	1.4	26.7
Norway	7	6	0.3	1.7	0.9	0.3	0.1	-2.7	0.8	-3.7	-0.9	1.6	0.1	-3.0
Poland	76	53	-20.6	2.7	-1.3	1.9	-0.1	-2.4	-2.0	0.9	-2.9	-2.1	1.7	-30.7
Portugal	10	11	0.8	-0.9	7.1	-0.7	-3.5	0.4	6.3	-4.1	2.1	-14.6	9.3	1.3
Romania	35	21	-37.7	2.5	-21.3	20.4	-13.8	20.2	-29.9	30.6	-17.3	-3.8	38.8	-40.3
Russian Federation	506	237	-6.3	-9.5	-6.0	-3.7	-12.2	-4.7	4.8	0.1	0.3	-3.7	-1.2	-53.1
Slovakia	13	7	-16.9	1.0	-0.6	2.0	-6.5	-6.5	3.4	3.4	-0.1	-2.5	-2.0	-44.5
Slovenia	2	2	-7.2	-0.6	-1.8	3.8	2.6	0.0	2.3	-1.1	2.0	-3.1	-5.9	-5.4
Spain	61	68	-1.4	-4.9	18.4	-5.4	7.1	3.3	5.9	-5.7	-3.9	7.8	-5.4	10.4
Sweden	17	16	-2.8	-1.6	-0.3	1.2	-1.4	-4.6	-0.1	0.8	-0.9	-1.5	0.0	-8.4
Switzerland	8	7	0.0	-3.1	1.6	-4.4	-0.5	-0.9	0.4	-0.8	-0.3	-2.9	0.2	-13.6
Turkey	NA, NE	NA, NE	*	*	*	*	*	*	*	*	*	*	*	*
Ukraine	131	49	-8.0	-10.3	-20.0	-2.5	-6.3	-9.4	-11.0	12.4	-1.5	-13.4	11.5	-62.9
United Kingdom	98	82	-0.6	0.5	0.5	3.1	-3.2	-2.2	-3.7	-6.3	2.2	-2.5	-1.1	-16.9
United States	858	844	4.6	17.8	2.0	-12.0	8.9	-6.6	-1.1	1.7	-1.8	-6.7	0.9	-1.7

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 4.14****Agricultural soils: parameters (fractions) used to estimate N<sub>2</sub>O emissions in the agricultural soils category (base year<sup>a</sup>)**

	Frac <sub>BURN</sub>	Frac <sub>FUEL</sub>	Frac <sub>GRAZ</sub>	Frac <sub>NCRBF</sub>	Frac <sub>NCRO</sub>	Frac <sub>r</sub>	Frac <sub>GASF</sub>	Frac <sub>GASM</sub>	Frac <sub>LEACH</sub>
	(kg N / kg crop-N)	(kg N / kg N excreted)		(kg N / kg of dry biomass)	(kg N / kg of dry biomass)	(kg N / kg crop-N)	(NH <sub>3</sub> -N + NO <sub>x</sub> -N / kg of synth. fert. N applied)	(NH <sub>3</sub> -N + NO <sub>x</sub> -N / kg N excreted)	(kg N / kg of fertilizer or manure N)
<b>IPCC default EF</b>	0.1 <sup>b</sup>	no default <sup>c</sup>	no default <sup>c</sup>	0.03 <sup>b</sup>	0.015 <sup>b</sup>	0.45 <sup>b</sup>	0.1 <sup>b</sup>	0.2 <sup>b</sup>	0.3 (0.1-0.8) <sup>b</sup>
Australia	NA	NA	NA	NA	NA	NA	0.10	NA	0.30
Austria	0.00	NO	0.13	0.02	0.005	0.34	0.03	0.22	0.30
Belarus	0.01	NO	0.02	0.03	0.015	0.45	0.10	0.20	0.30
Belgium	NO	NO	0.34	NE	NE	NE	0.03	0.16	0.13
Bulgaria	0.10	0	0.46	0.03	0.020	0.45	0.10	0.20	0.20
Canada	0	0	0.35	0.01	0.005	0.48	0.10	0.30	0.17
Croatia	0.10	0	0.24	0.02	0.030	0.45	0.10	0.15	0.30
Czech Republic	0	0	0	0	0	0	0	0	0
Denmark	NO	NO	0.12	NE	NE	0.31	0.02	0.26	0.38
Estonia	0.10	0	0.20	0.03	0.015	0.45	0.10	0.20	0.30
European Community	0.09	NA	0.35	0.02	0.016	0.41	0.05	0.25	0.26
Finland	NA	NA	0.21	0.01	0.042	0.43	0.01	0.32	0.15
France	NA	NO	0.43	0.03	NA	NA	0.10	0.20	0.30
Germany	NA	NA	0.11	NA	NA	NA	0.04	0.32	0.30
Greece	0.10	0	0.88	0.01	0.005	0.57	0.10	0.20	0.30
Hungary	0.04	0	0.09	0.03	0.015	0.45	0.10	0.20	0.30
Iceland	NO	NO	0.45	0.01	NO	0	0.10	0.20	0.30
Ireland	NO	NO	0.66	NO	NO	NO	0.01	0.19	0.10
Italy	0.10	0	0.19	0.03	0.015	0.45	0.09	0.32	0.30
Japan	0.10	NA	NA	NA	NA	NA	0.10	0.20	0.30
Latvia	0.10	NO	0.35	0.02	0.030	0.45	0.10	0.20	0.30
Liechtenstein	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	0.00
Lithuania	0.10	NO	0.02	0.03	0.015	0.45	0.10	0.20	0.30
Luxembourg	NE	NE	NE	NE	NE	NE	NE	NE	NE
Monaco	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	0.00
Netherlands	NO	NO	NE	NE	NE	NE	NE	NE	NE
New Zealand	0.50	0	1E	0.03	0.015	0.45	0.10	0.20	0.07
Norway	0.30	NO	0.29	0.01	0.011	0.65	0.01	0.17	0.18
Poland	0	NO	0.13	NE	0.010	0.99	0.10	0.20	0.30
Portugal	0.05	NO	0.42	0.02	0.013	0.68	0.05	0.22	0.30
Romania	0.10	0	0.34	0.03	0.015	0.45	0.10	0.20	0.30
Russian Federation	NO	NO	0.16	NE	NE	NE	0.10	0.20	0.30
Slovakia	NO	NO	0.06	0.07	0.145	NE	0.10	0.24	0.14
Slovenia	NO	NO	0.05	0.03	0.008	0.49	0.10	0.20	0.30
Spain	0.18	NO	0.39	0.02	0.006	NA	0.06	0.33	0.30
Sweden	NO	NO	0.28	0.01	0.020	0.07	0.01	0.33	0.23
Switzerland	NO	NO	0.00	0.00	NA	0.00	0.00	0.00	0.00
Turkey									
Ukraine	NE	NO	NE	0.01	0.008	NE	0.10	0.65	0.30
United Kingdom	0	0	0.52	0.03	0.015	0.45	0.10	0.20	0.30
United States	NA	NA	NA	NA	NA	NA	NA	NA	NA

**Abbreviations of fractions:**

Frac <sub>FUEL</sub>	Fraction of livestock N excretion in excrements burned for fuel	Frac <sub>BURN</sub>	Fraction of crop residue burned
Frac <sub>GRAZ</sub>	Fraction of livestock N excreted and deposited onto soil during grazing	Frac <sub>GASF</sub>	Fraction of synthetic fertilizer N applied to soils that volatilises as NH <sub>3</sub> and NO <sub>x</sub>
Frac <sub>NCRBF</sub>	Fraction of N in N-fixing crop	Frac <sub>GASM</sub>	Fraction of livestock N excretion that volatilises as NH <sub>3</sub> and NO <sub>x</sub>
Frac <sub>NCRO</sub>	Fraction of N in non-N-fixing crop	Frac <sub>LEACH</sub>	Fraction of N input to soils that is lost through leaching and run-off
Frac <sub>r</sub>	Fraction of total above-ground crop biomass that is removed from the field as a crop product		

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

<sup>b</sup> Source of IPCC default fractions: IPCC Guidelines, volume 3, tables 4.19 and 4.24 (pages 4.94 and 4.106). (See also IPCC good practice guidance, table 4.19, page 4.74).

<sup>c</sup> Countries are recommended to obtain country-specific data.

**Table 4.15****Agricultural soils: parameters (fractions) used to estimate N<sub>2</sub>O emissions in the agricultural soils category (2004)**

	Frac <sub>BURN</sub>	Frac <sub>FUEL</sub>	Frac <sub>GRAZ</sub>	Frac <sub>NCRBF</sub>	Frac <sub>NFCRO</sub>	Frac <sub>R</sub>	Frac <sub>GASF</sub>	Frac <sub>GASM</sub>	Frac <sub>LEACH</sub>
	(kg N / kg crop-N)	(kg N / kg N excreted)		(kg N / kg of dry biomass)	(kg N / kg of dry biomass)	(kg N / kg crop-N)	(NH <sub>3</sub> -N + NO <sub>x</sub> -N / kg of synth. fert. N applied)	(NH <sub>3</sub> -N + NO <sub>x</sub> -N / kg N excreted)	(kg N / kg of fertilizer or manure N)
IPCC default EF	0.1 <sup>b</sup>	no default <sup>b</sup>	no default <sup>b</sup>	0.03 <sup>b</sup>	0.015 <sup>b</sup>	0.45 <sup>b</sup>	0.1 <sup>b</sup>	0.2 <sup>b</sup>	0.3 (0.1-0.8) <sup>b</sup>
Australia	NA	NA	NA	NA	NA	NA	0.10	NA	0.30
Austria	0.00	NO	0.14	0.02	0.005	0.34	0.03	0.20	0.30
Belarus	0.01	NO	0.02	0.03	0.015	0.45	0.10	0.20	0.30
Belgium	NO	0.03	0.13	NE	NE	0	0.16	0.34	NE
Bulgaria	0.10	0	0.46	0.03	0.020	0.45	0.10	0.20	0.20
Canada	0	0	0.37	0.01	0.006	0.46	0.10	0.30	0.17
Croatia	0.10	0	0.24	0.02	0.030	0.45	0.10	0.15	0.30
Czech Republic	0	0	0	0	0	0	0	0	0
Denmark	NO	NO	0.12	NE	NE	0.26	0.02	0.22	0.34
Estonia	0.10	0	0.20	0.03	0.015	0.45	0.10	0.20	0.30
European Community	0.08	NA	0.35	0.02	0.017	0.41	0.05	0.25	0.27
Finland	NA	NA	0.20	0.01	0.042	0.43	0.01	0.33	0.15
France	NA	NO	0.42	0.03	NA	NA	0.10	0.20	0.30
Germany	NA	NA	0.11	NA	NA	NA	0.05	0.30	0.30
Greece	0.10	0	0.89	0.01	0.005	0.55	0.10	0.20	0.30
Hungary	0	0	0.10	0.03	0.015	0.45	0.10	0.20	0.30
Iceland	NO	NO	0.46	0.01	NO	0.47	0.10	0.20	0.30
Ireland	NO	NO	0.66	NO	NO	NO	0.02	0.19	0.10
Italy	0.10	0	0.19	0.03	0.015	0.45	0.09	0.29	0.30
Japan	0.10	NA	NA	NA	NA	NA	0.10	0.20	0.30
Latvia	0.10	NO	0.35	0.02	0.030	0.45	0.10	0.20	0.30
Liechtenstein	0	0	0	0	0	0	0	0	0
Lithuania	0.10	NO	0.02	0.03	0.015	0.45	0.10	0.20	0.30
Luxembourg	NE	NE	NE	NE	NE	NE	NE	NE	NE
Monaco	0	0	0	0	0	0	0	0	0
Netherlands	NO	NO	NE	NE	NE	NE	NE	NE	NE
New Zealand	0	0	IE	0	0	0	0	0	0
Norway	0.08	NO	0.29	0.01	0.011	0.65	0.01	0.20	0.18
Poland	0	NO	0.05	NE	0.010	0.99	0.10	0.20	0.30
Portugal	0.05	NO	0.44	0.02	0.013	0.72	0.06	0.22	0.30
Romania	0.10	0	0.34	0.03	0.015	0.45	0.10	0.20	0.30
Russian Federation	NO	NO	0.19	NE	NE	NE	0.10	0.20	0.30
Slovakia	NO	NO	0.06	0.07	0.145	NE	0.10	0.24	0.14
Slovenia	NO	NO	0.13	0.02	0.008	0.47	0.10	0.20	0.30
Spain	0.01	NO	0.39	0.02	0.006	NA	0.06	0.34	0.30
Sweden	NO	NO	0.31	0.01	0.020	0.06	0.01	0.33	0.22
Switzerland	NO	NO	0.00	0.00	NA	0.00	0.00	0.00	0.00
Turkey									
Ukraine	NE	NO	NE	0.01	0.008	NE	0.10	0.65	0.30
United Kingdom	0	0	0.52	0.03	0.020	0.45	0.10	0.20	0.30
United States	NA	NA	NA	NA	NA	NA	NA	NA	NA

**Abbreviations of fractions:**

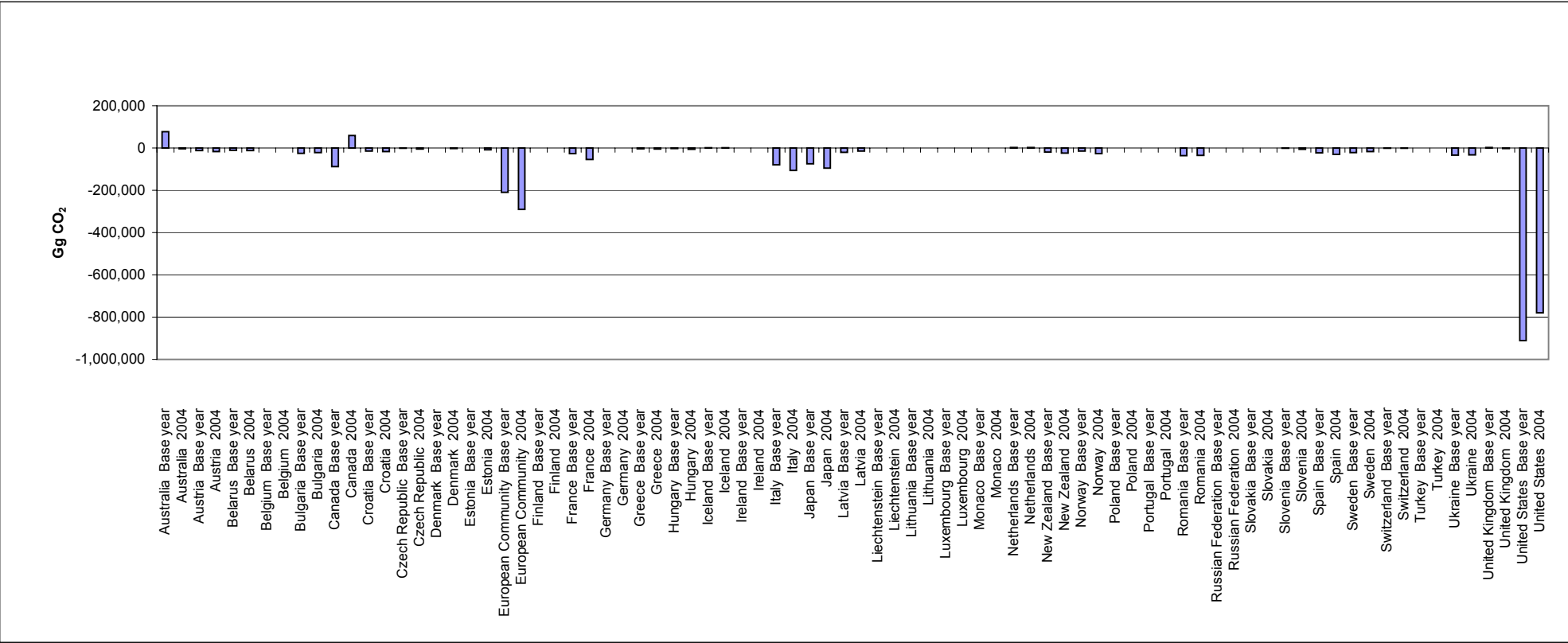
Frac <sub>FUEL</sub>	Fraction of livestock N excretion in excrements burned for fuel	Frac <sub>BURN</sub>	Fraction of crop residue burned
Frac <sub>GRAZ</sub>	Fraction of livestock N excreted and deposited onto soil during grazing	Frac <sub>GASF</sub>	Fraction of synthetic fertilizer N applied to soils that volatilises as NH <sub>3</sub> and NO <sub>x</sub>
Frac <sub>NCRBF</sub>	Fraction of N in N-fixing crop	Frac <sub>GASM</sub>	Fraction of livestock N excretion that volatilises as NH <sub>3</sub> and NO <sub>x</sub>
Frac <sub>NFCRO</sub>	Fraction of N in non-N-fixing crop	Frac <sub>LEACH</sub>	Fraction of N input to soils that is lost through leaching and run-off
Frac <sub>R</sub>	Fraction of total above-ground crop biomass that is removed from the field as a crop product		

<sup>a</sup> Source of IPCC default fractions: IPCC Guidelines, volume 3, tables 4.19 and 4.24 (pages 4.94 and 4.106). (See also IPCC good practice guidance, table 4.19, page 4.74).<sup>b</sup> Countries are recommended to obtain country-specific data.

Land Use, Land-use Change and Forestry

Figure 5.1

Net CO<sub>2</sub> emissions/removals from LULUCF<sup>a</sup>



<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 5.1****Net CO<sub>2</sub> emissions/removals from LULUCF - trend information**

CO <sub>2</sub> emissions/removals (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	75,371	-6,993	-30.7	-52.3	-17.7	-43.5	181.8	-44.7	18.1	-46.4	34.1	-344.5	-56.1	-109.3
Austria	-11,972	-16,641	49.5	-6.6	-32.7	93.6	-10.0	26.5	-25.0	17.1	-19.4	9.7	0.2	39.0
Belarus	-11,317	-11,913	17.7	2.0	-4.2	-13.3	2.4	5.2	2.4	2.0	-7.6	-9.9	-0.8	5.3
Belgium	-1,431	-1,173	-16.7	-11.5	-9.3	12.0	-8.8	-4.8	26.7	80.5	-16.5	-26.5	-31.7	-18.0
Bulgaria	-25,306	-22,108	10.9	4.7	-34.4	38.5	-7.4	7.8	1.3	9.4	4.4	-30.9	48.7	-12.6
Canada	-87,395	58,864	20.8	-2,785.1	-154.8	49.1	-150.2	-185.8	142.5	-6.2	-92.2	150.4	-340.4	-167.4
Croatia	-14,437	-16,321	2.0	27.9	0.3	1.2	-1.9	-0.8	-4.9	-7.8	-5.5	-0.9	-2.0	13.0
Czech Republic	-1,779	-4,871	462.5	-6.3	38.9	-50.7	-32.2	34.3	41.2	2.8	-12.8	-6.7	-15.3	173.8
Denmark	552	-2,280	-405.8	3.2	-27.2	-3.2	66.0	-37.3	-234.5	-146.1	159.6	-1.3	17.5	-513.2
Estonia	-9,371	-7,990	*	*	*	*	*	*	*	*	*	*	*	-14.7
European Community	-209,717	-290,344	22.6	-4.6	5.7	-1.4	1.8	4.3	-4.4	10.8	3.4	-4.2	2.7	38.4
Finland	-21,440	-18,513	68.7	-10.2	48.8	-26.3	-4.1	5.1	-4.1	16.8	-0.8	-5.4	3.5	-13.6
France	-27,102	-54,428	-15.6	-8.1	15.0	6.4	-0.2	4.3	-5.9	16.0	16.9	6.3	2.5	100.8
Germany	-28,616	-36,252	3.0	0.8	1.4	1.3	0.8	1.4	3.8	2.3	0.6	1.5	1.1	26.7
Greece	-3,248	-5,415	10.7	24.0	-9.4	-0.9	-9.3	23.5	-29.2	69.4	2.6	1.4	-2.1	66.7
Hungary	-2,770	-5,547	9.2	21.4	-36.5	-8.2	10.2	-70.1	109.3	37.9	2.3	6.2	14.0	100.3
Iceland	1,631	1,387	-0.7	-0.7	-0.7	-1.1	-1.0	-1.4	-1.4	-1.1	-1.4	-1.6	-2.5	-15.0
Ireland	108	-72	179.4	325.8	42.8	-53.6	-258.1	14.1	-99.2	8,700.5	9.9	100.3	-81.3	-166.2
Italy	-79,914	-105,920	26.7	5.2	2.7	-6.3	-3.2	7.8	-5.8	12.7	3.8	-2.6	-4.9	32.5
Japan	-74,794	-94,925	9.1	-0.5	4.7	0.0	-0.5	0.0	0.2	-0.2	0.6	11.3	-0.1	26.9
Latvia	-20,691	-13,942	2.8	-10.8	6.9	-11.9	-6.9	-5.3	-3.5	0.4	-7.4	3.9	1.9	-32.6
Liechtenstein	-7	-6	21.7	25.0	-15.6	-51.5	26.9	-8.9	26.8	-29.5	38.6	6.2	9.1	-13.2
Lithuania	-10,700	-8,650	-2.1	-19.1	6.6	5.7	4.6	0.4	-6.4	-2.6	-6.5	5.2	3.6	-19.2
Luxembourg														
Monaco	0	0	1.4	1.4	0.3	0.3	0.0	8.6	-7.4	0.2	0.3	-1.2	-0.8	9.5
Netherlands	2,392	2,356	-3.7	1.8	1.4	8.2	-4.0	0.2	4.1	-1.2	-0.3	-0.4	-0.8	-1.5
New Zealand	-19,081	-24,565	-7.5	5.9	2.2	10.8	12.9	3.1	1.3	1.5	3.5	7.0	7.6	28.7
Norway	-14,601	-26,323	-3.7	-5.4	3.2	0.6	40.7	-1.9	27.5	7.3	-3.2	-0.9	1.2	80.3
Poland														
Portugal	3,649	-2,576	-31.9	39.7	75.7	6.5	19.2	-13.5	13.5	-6.0	15.4	-277.7	-133.9	-170.6
Romania	-35,944	-34,668	3.0	-1.8	-2.4	0.7	4.5	-2.8	-1.6	2.3	-6.7	-1.0	-0.4	-3.5
Russian Federation	186,270	-200,073	-88.4	-20.4	-5.1	-73.6	-395.0	-258.8	-319.1	-31.7	-172.8	104.5	-45.6	-207.4
Slovakia	-2,407	-4,251	45.7	-18.7	-10.2	-42.1	38.4	-15.6	46.9	117.4	0.3	-7.8	-12.0	76.6
Slovenia	-1,589	-5,644	23.2	11.6	-2.2	-9.8	9.8	6.9	1.9	1.9	4.2	-3.2	6.1	255.1
Spain	-23,027	-30,543	2.7	-0.4	5.1	5.5	0.9	3.1	5.8	5.1	-1.1	-3.8	1.0	32.6
Sweden	-22,288	-16,651	20.2	-41.7	8.9	-25.0	56.9	-20.5	4.3	-10.7	2.1	-1.0	0.8	-25.3
Switzerland	-1,711	-830	-167.8	-16.9	-24.3	13.6	-59.2	341.6	-125.2	-153.0	-20.9	-453.4	-144.7	-51.5
Turkey														
Ukraine	-33,839	-32,142	6.4	8.0	14.1	-3.1	11.9	-17.0	-12.7	10.4	-11.1	5.0	-18.1	-5.0
United Kingdom	2,915	-1,942	-4.6	16.2	-12.7	-38.8	-100.0	371,234.2	87.9	35.5	87.7	5.3	64.6	-166.6
United States	-910,373	-780,094	-0.2	-17.8	-1.8	6.2	16.0	2.9	-0.8	1.1	0.1	0.8	0.7	-14.3

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 5.2a**  
**Methods and emission factors used (base year<sup>a</sup>)**

	Forestland						Cropland						Grassland					
	CO <sub>2</sub>		CH <sub>4</sub>		N <sub>2</sub> O		CO <sub>2</sub>		CH <sub>4</sub>		N <sub>2</sub> O		CO <sub>2</sub>		CH <sub>4</sub>		N <sub>2</sub> O	
	Method	EF	Method	EF	Method	EF	Method	EF	Method	EF	Method	EF	Method	EF	Method	EF	Method	EF
Australia	CS, T1, T2, T3	CS, M	CS	CS	CS	CS	T3	M	CS	CS	CS	CS	T3	M	CS	CS	CS	CS
Austria	T1, T3	CS	T1	CS, D	T1	CS, D	T1, T3	CS, D	NA	NA	T1	CS, D	T1, T3	CS, D	NA	NA	NA	NA
Belarus	T1, T2	CS, D	T1	D	T1	D	T2	CS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Belgium			NA	NA	NA	NA			NA	NA	NA	NA			NA	NA	NA	NA
Bulgaria			NA	NA	NA	NA			NA	NA	NA	NA			NA	NA	NA	NA
Canada	CS, T2, T3	CS	CS, T2	CS	CS, T2	CS	CS, T2, T3	CS	T2	CS	T2	CS	NA	NA	NA	NA	NA	NA
Croatia			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Czech Republic	T1, T2	CS, D, PS	T1, T2	D	T1, T2	D			NA	NA	NA	NA	T1	D	NA	NA	NA	NA
Denmark			NA	NA	NA	NA	CS, T1	CS, D	NA	NA	NA	NA	CS	CS	NA	NA	NA	NA
Estonia	T1	D	T1	D	T1	D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
European Community																		
Finland	T2, T3	CS, D	T2	D	T1, T2	D	D	CS	NA	NA	NA	NA	D	CS	NA	NA	NA	NA
France																		
Germany	D, T2	CS, D	NA	NA	NA	NA	D, T2	CS	NA	NA			D, T2	CS	NA	NA	NA	NA
Greece	CS, D, T1, T2	CS, D	T1	D	T1	D	T1, T2	CS, D	NA	NA	NA	NA	NA	NA	T1	D	T1	D
Hungary			NA	NA	NA	NA	D	D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iceland					NA	NA	NA	NA										
Ireland	T1, T2	CS, D	NA	NA	NA	NA	T1	D	NA	NA	NA	NA	T1	D	NA	NA	NA	NA
Italy	T1, T2, T3	CS, D	T1	D	T1	D	T1	D	NA	NA	T1	D	NA	NA	NA	NA	NA	NA
Japan	T2, T3	CS, D	T1	D	T1	D	T1, T2	CS, D	T1	D	T1	D	T1, T2	CS, D	T1	D	T1	D
Latvia	T2	CS	T2	CS	T2	CS	T1, T2	CS, D	NA	NA	NA	NA	T1, T2	CS, D	NA	NA	NA	NA
Liechtenstein	T2	CS	NA	NA	NA	NA	T2	CS	NA	NA	NA	NA	T2	CS	NA	NA	NA	NA
Lithuania	T1	CS, D	T1	D	T1	D			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Luxembourg	NA	NA	NA	NA			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Monaco					NA	NA												
Netherlands	CS, T2	CS	NA	NA	NA	NA	CS	CS	NA	NA	NA	NA	T2	CS	NA	NA	NA	NA
New Zealand	CS, T2	CS	T1	D	T1	D	T1	D	NA	NA	NA	NA	T1	D	T1	D	T1	D
Norway	CS, D, T1	D	T1	D	T1	D	T1, T2	CS, D	NA	NA			T1	D	NA	NA	NA	NA
Poland			NA	NA	NA	NA			NA	NA	NA	NA						
Portugal	CS, D, T2	CS, D	D	D	D	D	D, T2	CS, D	NA	NA	NA	NA	D, T2	CS, D	NA	NA	NA	NA
Romania	T2	CS	T1	D	T1	D	NA	NA	NA	NA	NA	NA	NA	NA				
Russian Federation	T2	CS	T1, T2	CS, D	T1, T2	CS, D	CS, T1	CS, D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Slovakia	T2	PS	T2	PS	T2	PS	T2	CS	NA	NA	NA	NA	T2	CS	NA	NA	NA	NA
Slovenia	D, T2	CS, D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Spain	CS, D, T1	CS, D					NA	NA	NA	NA	NA	NA						
Sweden	T1, T3	CS, D	T1	CS, D	D, T1	CS, D	T3	CS	NA	NA	CS	CS	T1, T3	CS, D	T1	D	T1	D
Switzerland			CS	CS	CS	CS			NA	NA					NA	NA	NA	NA
Turkey																		
Ukraine	T1, T2	CS, D	T1	D	T1	D	T1, T1a	D	NA	NA	NA	NA	T1, T1a	D	NA	NA	NA	NA
United Kingdom	CS, T3	CS	NA	NA	NA	NA	CS, T3	CS	NA	NA	NA	NA	CS, T3	CS				
United States	T3	CS	NA	NA	D	D	T2	CS	NA	NA	NA	NA	T3	CS	NA	NA	NA	NA

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 5.2b****Methods and emission factors used (base year<sup>a</sup>)**

	Wetland						Settlements						Other land					
	CO <sub>2</sub>		CH <sub>4</sub>		N <sub>2</sub> O		CO <sub>2</sub>		CH <sub>4</sub>		N <sub>2</sub> O		CO <sub>2</sub>		CH <sub>4</sub>		N <sub>2</sub> O	
	Method	EF	Method	EF	Method	EF	Method	EF	Method	EF	Method	EF	Method	EF	Method	EF	Method	EF
Australia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Austria	T1, T3	CS	NA	NA	NA	NA	T1, T3	CS	NA	NA	NA	NA	T1, T3	CS	NA	NA	NA	NA
Belarus	T2	CS	NA	NA	T1	D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Belgium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bulgaria			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Canada	CS, T2, T3	CS	T2	CS	T2	CS	T2, T3	CS	T2	CS	T2	CS	NA	NA	NA	NA	NA	NA
Croatia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Czech Republic	T1	D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	T1	CS, D	NA	NA	NA	NA
Denmark	CS	D	NA	NA	CS, T1	D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Estonia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
European Community																		
Finland			D	CS	D	CS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
France																		
Germany	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	D, T2	CS	NA	NA	NA	NA
Greece	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hungary	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iceland																		
Ireland	T1	D	NA	NA	NA	NA			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Italy	NA	NA	NA	NA	NA	NA	T1	D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Japan	T1, T2	CS, D	T1	D	T1	D	T1, T1a, T2	CS, D	T1	D	T1	D	T2	CS, D	T1	D	T1	D
Latvia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liechtenstein	T2	CS	NA	NA	NA	NA	T2	CS	NA	NA	NA	NA	T2	CS	NA	NA	NA	NA
Lithuania	T1	D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Luxembourg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Monaco									NA	NA	NA	NA						
Netherlands	NA	NA	NA	NA	NA	NA	CS	CS	NA	NA	NA	NA	CS	CS	NA	NA	NA	NA
New Zealand	T1	D	NA	NA	NA	NA			NA	NA	NA	NA	T1	D	NA	NA	NA	NA
Norway	T1	D	NA	NA	T1	D			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Poland	NA	NA	NA	NA	NA	NA							NA	NA	NA	NA	NA	NA
Portugal	D, T2	CS, D	NA	NA	NA	NA	D, T2	CS, D	NA	NA	NA	NA	D, T2	CS, D	NA	NA	NA	NA
Romania	NA	NA					NA	NA										
Russian Federation	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Slovakia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	T2	CS	NA	NA	NA	NA
Slovenia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Spain																		
Sweden	NA	NA	NA	NA	NA	NA	T3	CS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Switzerland	CS	CS	NA	NA	NA	NA			NA	NA	NA	NA			NA	NA	NA	NA
Turkey																		
Ukraine	T1	D	NA	NA	T1	D	T1a	D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
United Kingdom	NA	NA	NA	NA	NA	NA	CS, D, T3	CS	D	CS	D	CS	NA	NA	NA	NA	NA	NA
United States	NA	NA	NA	NA	NA	NA	T2, T3	CS	NA	NA	D	D	NA	NA	NA	NA	NA	NA

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 5.3a**  
**Methods and emission factors used (2004)**

	Forestland						Cropland						Grassland					
	CO <sub>2</sub>		CH <sub>4</sub>		N <sub>2</sub> O		CO <sub>2</sub>		CH <sub>4</sub>		N <sub>2</sub> O		CO <sub>2</sub>		CH <sub>4</sub>		N <sub>2</sub> O	
	Method	EF	Method	EF	Method	EF	Method	EF	Method	EF	Method	EF	Method	EF	Method	EF	Method	EF
Australia	CS, T1, T2, T3	CS, M	CS	CS	CS	CS	T3	M	CS	CS	CS	CS	T3	M	CS	CS	CS	CS
Austria	T1, T3	CS	T1	CS, D	T1	CS, D	T1, T3	CS, D	NA	NA	T1	CS, D	T1, T3	CS, D	NA	NA	NA	NA
Belarus	T1, T2	CS, D	T1	D	T1	D	T2	CS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Belgium			NA	NA	NA	NA			NA	NA	NA	NA			NA	NA	NA	NA
Bulgaria			NA	NA	NA	NA			NA	NA	NA	NA			NA	NA	NA	NA
Canada	CS, T2, T3	CS	CS, T2	CS	CS, T2	CS	CS, T2, T3	CS	T2	CS	T2	CS	NA	NA	NA	NA	NA	NA
Croatia			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Czech Republic	T1, T2	CS, D, PS	T1, T2	D	T1, T2	D			NA	NA	NA	NA	T1	D	NA	NA	NA	NA
Denmark			NA	NA	NA	NA	CS, T1	CS, D	NA	NA	NA	NA	CS	CS	NA	NA	NA	NA
Estonia	T1	D	T1	D	T1	D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
European Community																		
Finland	T2, T3	CS, D	T2	D	T1, T2	D	D	CS	NA	NA	NA	NA	D	CS	NA	NA	NA	NA
France																		
Germany	D, T2	CS, D	NA	NA	NA	NA	D, T2	CS	NA	NA			D, T2	CS	NA	NA	NA	NA
Greece	CS, D, T1, T2	CS, D	T1	D	T1	D	T1, T2	CS, D	NA	NA	NA	NA	NA	NA	T1	D	T1	D
Hungary	D, T2	CS, D	NA	NA	NA	NA	D	D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iceland					NA	NA												
Ireland	T1, T2	CS, D	NA	NA	NA	NA	T1	D	NA	NA	NA	NA	T1	D	NA	NA	NA	NA
Italy	CS, D, T1, T2, T3	CS, D	T1	D	T1	D	T1	D	NA	NA	T1	D	NA	NA	NA	NA	NA	NA
Japan	T2, T3	CS, D	T1	D	T1	D	T1, T2	CS, D	T1	D	T1	D	T2	CS, D	T1	D	T1	D
Latvia	T2	CS	T2	CS	T2	CS	T1, T2	CS, D	NA	NA	NA	NA	T1, T2	CS, D	T1	D	T1	D
Liechtenstein	T2	CS	NA	NA	NA	NA	T2	CS	NA	NA	NA	NA	T2	CS	NA	NA	NA	NA
Lithuania	T1	CS, D	T1	D	T1	D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Luxembourg	NA	NA	NA	NA			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Monaco					NA	NA												
Netherlands	CS, T2	CS	NA	NA	NA	NA	CS	CS	NA	NA	NA	NA	T2	CS	NA	NA	NA	NA
New Zealand	CS, T2	CS	T1	D	T1	D	T1	D	NA	NA	NA	NA	T1	D	T1	D	T1	D
Norway	CS, D, T1	D	T1	D	D, T1	D	T1, T2	CS, D	NA	NA			T1	D	NA	NA	NA	NA
Poland			NA	NA	NA	NA			NA	NA	NA	NA			NA	NA	NA	NA
Portugal	CS, D, T2	CS, D	D	D	D	D	D, T2	CS, D	NA	NA	NA	NA	D, T2	CS, D	NA	NA	NA	NA
Romania	T2	CS	T1	D	T1	D	NA	NA	NA	NA	NA	NA	NA	NA				
Russian Federation	T2	CS	T1, T2	CS, D	T1, T2	CS, D	CS, T1	CS, D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Slovakia	T2	PS	T2	PS	T2	PS	T2	CS	NA	NA	NA	NA	NA	T2	CS	NA	NA	NA
Slovenia	D, T2	CS, D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Spain	CS, D, T1	CS, D					NA	NA	NA	NA	NA	NA						
Sweden	T1, T3	CS, D	T1	CS, D	D, T1	CS, D	T3	CS	NA	NA	CS	CS	T1, T3	CS, D	T1	D	T1	D
Switzerland			CS	CS	CS	CS			NA	NA					NA	NA	NA	NA
Turkey																		
Ukraine	T1, T2	CS, D	T1	D	T1	D	T1	D	NA	NA	NA	NA	T1	D	NA	NA	NA	NA
United Kingdom	CS, T3	CS	NA	NA	NA	NA	CS, T3	CS	NA	NA	NA	NA	CS, T3	CS				
United States	T3	CS	NA	NA	D	D	T2	CS	NA	NA	NA	NA	T3	CS	NA	NA	NA	NA

**Table 5.3b**  
**Methods and emission factors used (2004)**

	Wetland						Settlements						Other land					
	CO <sub>2</sub>		CH <sub>4</sub>		N <sub>2</sub> O		CO <sub>2</sub>		CH <sub>4</sub>		N <sub>2</sub> O		CO <sub>2</sub>		CH <sub>4</sub>		N <sub>2</sub> O	
	Method	EF	Method	EF	Method	EF	Method	EF	Method	EF	Method	EF	Method	EF	Method	EF	Method	EF
Australia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Austria	T1, T3	CS	NA	NA	NA	NA	T1, T3	CS	NA	NA	NA	NA	T1, T3	CS	NA	NA	NA	NA
Belarus	T2	CS	NA	NA	T1	D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Belgium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bulgaria			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Canada	CS, T2, T3	CS	T2	CS	T2	CS	T2, T3	CS	T2	CS	T2	CS	NA	NA	NA	NA	NA	NA
Croatia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Czech Republic	T1	D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	T1	CS, D	NA	NA	NA	NA
Denmark	CS	D	NA	NA	CS, T1	D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Estonia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
European Community																		
Finland			D	CS	D	CS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
France																		
Germany	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	D, T2	CS	NA	NA	NA	NA
Greece	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hungary	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iceland																		
Ireland	T1	D	NA	NA	NA	NA			NA	NA	NA	NA	T1	D	NA	NA	NA	NA
Italy	NA	NA	NA	NA	NA	NA	T1	D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Japan	T1, T2	CS, D	T1	D	T1	D	T1a, T2	D	T1	D	T1	D	T2	CS, D	T1	D	T1	D
Latvia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liechtenstein	T2	CS	NA	NA	NA	NA	T2	CS	NA	NA	NA	NA	T2	CS	NA	NA	NA	NA
Lithuania	T1	D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Luxembourg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Monaco									NA	NA	NA	NA						
Netherlands	NA	NA	NA	NA	NA	NA	CS	CS	NA	NA	NA	NA	CS	CS	NA	NA	NA	NA
New Zealand			NA	NA	NA	NA			NA	NA	NA	NA	T1	D	NA	NA	NA	NA
Norway	T1	D	NA	NA	T1	D			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Poland	NA	NA	NA	NA	NA	NA							NA	NA	NA	NA	NA	NA
Portugal	D, T2	CS, D	NA	NA	NA	NA	D, T2	CS, D	NA	NA	NA	NA	D, T2	CS, D	NA	NA	NA	NA
Romania	NA	NA					NA	NA										
Russian Federation	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Slovakia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	T2	CS	NA	NA	NA	NA
Slovenia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Spain																		
Sweden	NA	NA	NA	NA	NA	NA	T3	CS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Switzerland	CS	CS	NA	NA	NA	NA			NA	NA	NA	NA			NA	NA	NA	NA
Turkey																		
Ukraine	T1	D	NA	NA	T1	D	T1a	D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
United Kingdom	NA	NA	NA	NA	NA	NA	CS, D, T3	CS	D	CS	D	CS	NA	NA	NA	NA	NA	NA
United States	NA	NA	NA	NA	NA	NA	T2, T3	CS	NA	NA	D	D	NA	NA	NA	NA	NA	NA

**Table 5.4****Forest land remaining forest land - AD, IEF and carbon stock change in pools (base year<sup>a</sup>)**

	Activity data	IEF (Mg C/ha)						Emissions/Removals (Gg C)				
		C stock change in living biomass/area			Net C stock change in DOM <sup>b</sup> /area	Net C stock change in soils/area		C stock change in living biomass			Net C stock change in DOM <sup>b</sup>	Net C stock change in soils
		Increase	Decrease	Net Change				Increase	Decrease	Net Change		
Australia	15,702.90	0.91	NA	0.91	-0.17	NA	14,351.36	NA	14,351.36	-2,689.04	NA	NA
Austria	3,326.11	3.23	-2.24	0.98	0.00	NO	10,728.86	-7,455.26	3,273.60	0.06	NO	NO
Belarus	7,028.00	1.38	-0.40	0.98	NE	NE	9,692.68	-2,838.47	6,854.21	NE	NE	NE
Belgium	641.11	3.40	-2.08	1.32	NA	0.04	2,177.32	-1,330.92	846.40	NA	27.82	27.82
Bulgaria	3,259.00	0.85	-0.42	0.43	NE	NE	2,761.00	-1,361.19	1,399.81	NE	NE	NE
Canada	255,477.47	3.41	-3.16	0.25	0.26	-0.35	870,840.69	-806,381.88	64,458.81	66,384.39	-88,686.72	-88,686.72
Croatia	2,061,509.00	0.00	0.00	0.00	NO	NO	7,271.67	-3,334.36	3,937.31	NO	NO	NO
Czech Republic	2,562.40	2.17	-1.69	0.48			5,560.99	-4,341.96	1,219.03			
Denmark	411.39	3.81	-1.93	1.88	NE	NE	1,566.00	-794.00	772.00	NE	NE	NE
Estonia	1,857.00	1.79	-0.40	1.39	NE	NE	3,325.53	-748.80	2,576.73	NE	NE	NE
European Community	NE	NE	NE	NE	NE	NE	149,823.06	-80,945.69	68,877.37	968.49	-1,799.00	-1,799.00
Finland	21,924.94	1.25	-0.90	0.36	0.09	-0.10	27,465.59	-19,674.91	7,790.68	1,879.48	-2,086.55	-2,086.55
France	13,394.96	2.60	-1.58	1.02	-0.29	NA	34,808.66	-21,179.57	13,629.09	-3,914.56	NA	NA
Germany	10,478.60	1.93	NA	1.93	NE	NE	20,199.14	NA	20,199.14	NE	NE	NE
Greece	6,513.07	0.26	-0.17	0.09	0.00	NO	1,700.35	-1,127.56	572.80	-15.67	NO	NO
Hungary	1,515.12	0.61	NA	0.61	NE	NE	925.37	NA	925.37	NE	NE	NE
Iceland	31.60	0.25	IE	0.25	NA, NE	NA, NE	7.92	IE	7.92	NA, NE	NA, NE	NA, NE
Ireland	194.73	1.39	NO	1.39	0.12	NO	271.15	NO	271.15	23.09	NO	NO
Italy	10,726.94	2.13	-1.59	0.54	0.13	0.49	22,837.53	-17,070.71	5,766.82	1,391.77	5,253.25	5,253.25
Japan	23,583.42	0.79	0.00	0.79	NA	NA	18,561.22	-1.75	18,559.47	NA	NA	NA
Latvia	2,535.70	2.55	-0.54	2.00	0.01	NE	6,461.00	-1,381.30	5,079.70	30.00	NE	NE
Liechtenstein	5.77	3.23	-2.38	0.84	0.00	0.01	18.60	-13.73	4.86	0.01	0.05	0.05
Lithuania	1,612.21	2.12	-0.54	1.57	NE	-0.05	3,412.86	-874.82	2,538.04	NE	-85.10	-85.10
Luxembourg												
Monaco												
Netherlands	432.40	2.70	-1.33	1.37	0.21	NE	1,167.80	-575.50	592.30	91.00	NE	NE
New Zealand	1,184.88	5.57	-2.26	3.31	1.44	NE	6,600.21	-2,678.91	3,921.31	1,703.67	NE	NE
Norway	8,959.84	0.38	IE, NA	0.38	0.02	0.12	3,385.40	IE, NA	3,385.40	221.82	1,079.41	1,079.41
Poland												
Portugal	2,987.31	1.99	-2.18	-0.19	0.00	0.00	5,951.68	-6,515.75	-564.07	-2.15	1.25	1.25
Romania	6,542.00	2.17	-0.68	1.50	NE	NE	14,228.25	-4,424.73	9,803.52	NE	NE	NE
Russian Federation	609,144.14	0.11	-0.04	0.07	NE	NE	67,219.12	-27,327.52	39,891.60	NE	NE	NE
Slovakia	1,921.71	1.40	-1.15	0.25	NE	0.41	2,692.36	-2,214.45	477.92	NE	780.50	780.50
Slovenia	1,053.45	1.60	-1.19	0.41	NE	NE	1,685.76	-1,252.33	433.43	NE	NE	NE
Spain	16,288.94	0.68	-0.31	0.37	NE	NE	11,079.58	-5,099.05	5,980.53	NE	NE	NE
Sweden	26,018.52	0.37	0.00	0.37	0.06	-0.19	9,669.06	0.00	9,669.06	1,515.47	-4,997.33	-4,997.33
Switzerland	1,197.30	3.07	-2.27	0.81	NO	NO	3,679.62	-2,712.81	966.81	NO	NO	NO
Turkey												
Ukraine	9,514.45	1.98	-0.43	1.55	NE	NE	18,815.35	-4,061.74	14,753.61	NE	NE	NE
United Kingdom	822.00	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
United States	NE	NE	NA	NE	NE	NE	110,002.40	NA	110,002.40	34,465.16	9,170.58	9,170.58

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

<sup>b</sup> DOM = dead organic matter

**Table 5.5****Forest land remaining forest land - AD, IEF and carbon stock change in pools (2004)**

	Activity data Total area (kha)	IEF (Mg C/ha)					Emissions/Removals (Gg C)				
		C stock change in living biomass/area			Net C stock change in DOM <sup>a</sup> /area	Net C stock change in soils/area	C stock change in living biomass			Net C stock change in DOM <sup>a</sup>	Net C stock change in soils
		Increase	Decrease	Net Change			Increase	Decrease	Net Change		
Australia	15,702.90	0.74	-0.05	0.69	-0.15	NA	11,639.06	-850.08	10,788.99	-2,284.10	NA
Austria	3,365.06	3.19	-1.82	1.37	0.00	NO	10,729.15	-6,110.53	4,618.62	0.16	NO
Belarus	7,796.20	1.40	-0.52	0.87	NE	NE	10,884.46	-4,090.49	6,793.97	NE	NE
Belgium	620.98	3.54	-2.31	1.23	NA	0.04	2,200.81	-1,436.71	764.10	NA	26.95
Bulgaria	4,063.56	1.01	-0.48	0.53	NE	NE	4,110.40	-1,938.07	2,172.33	NE	NE
Canada	254,944.45	3.41	-3.54	-0.13	0.60	-0.34	870,240.85	-903,275.40	-33,034.56	153,142.10	-87,076.41
Croatia	2,089,606.00	0.00	0.00	0.00	NO	NO	7,271.67	-2,820.55	4,451.12	NO	NO
Czech Republic	2,575.52	2.64	-1.99	0.65			6,805.20	-5,126.46	1,678.74		
Denmark	440.80	3.76	-1.71	2.06	NE	NE	1,659.00	-752.00	907.00	NE	NE
Estonia	2,112.80	2.16	-1.13	1.03	NE	NE	4,572.10	-2,385.90	2,186.20	NE	NE
European Community	NE	NE	NE	NE	NE	NE	162,979.65	-80,576.86	82,402.79	1,312.57	1,805.59
Finland	22,487.65	1.36	-1.10	0.26	0.10	-0.04	30,613.06	-24,823.87	5,789.18	2,181.36	-829.21
France	13,638.88	2.94	-1.47	1.47	-0.33	NA	40,034.83	-19,991.13	20,043.71	-4,546.43	NA
Germany	10,493.06	1.92	NA	1.92	NE	NE	20,199.14	NA	20,199.14	NE	NE
Greece	6,513.07	0.27	-0.10	0.17	-0.01	NO	1,779.90	-641.20	1,138.70	-96.75	NO
Hungary	1,726.31	0.64	NA	0.64	NE	NE	1,106.95	NA	1,106.95	NE	NE
Iceland	50.70	0.61	IE	0.61	NA, NE	NA, NE	30.84	IE	30.84	NA, NE	NA, NE
Ireland	241.89	0.81	NO	0.81	0.00	NO	196.58	NO	196.58	0.94	NO
Italy	12,650.42	2.15	-1.23	0.92	0.17	0.59	27,206.90	-15,568.75	11,638.15	2,143.95	7,454.06
Japan	24,389.38	1.02	IE, NA	1.02	NA	NA	24,774.12	IE, NA	24,774.12	NA	NA
Latvia	2,763.30	2.38	-1.15	1.23	0.01	NE	6,563.50	-3,176.90	3,386.60	25.00	NE
Liechtenstein	5.84	3.22	-2.35	0.86	0.00	0.01	18.80	-13.75	5.05	0.02	0.05
Lithuania	1,781.61	2.15	-1.02	1.13	NE	-0.05	3,822.78	-1,811.89	2,010.89	NE	-85.10
Luxembourg											
Monaco											
Netherlands	438.30	2.59	-1.38	1.22	0.21	NE	1,136.60	-603.80	532.80	91.50	NE
New Zealand	1,865.37	5.30	-2.37	2.92	0.92	NE	9,877.94	-4,425.73	5,452.21	1,708.09	NE
Norway	9,429.93	0.69	IE, NA	0.69	0.02	0.11	6,549.88	IE, NA	6,549.88	232.00	998.69
Poland											
Portugal	3,111.20	2.06	-1.72	0.34	0.00	0.00	6,406.58	-5,344.06	1,062.53	-2.15	1.25
Romania	6,747.30	2.14	-0.74	1.40	NE	NE	14,469.30	-5,011.39	9,457.90	NE	NE
Russian Federation	619,504.10	0.23	IE, NA	0.23	NE	NE	144,334.27	IE, NA	144,334.27	NE	NE
Slovakia	1,882.00	2.20	-1.69	0.51	NE	NE	4,136.00	-3,173.00	963.00	NE	NE
Slovenia	1,163.81	2.40	-1.08	1.32	NE	NE	2,794.69	-1,255.49	1,539.20	NE	NE
Spain	18,685.97	0.71	-0.28	0.43	NE	NE	13,188.88	-5,158.73	8,030.15	NE	NE
Sweden	26,053.59	0.28	0.00	0.28	0.06	-0.19	7,404.43	0.00	7,404.43	1,539.99	-4,850.20
Switzerland	1,220.98	2.65	-2.14	0.51	NO	NO	3,235.86	-2,613.84	622.03	NO	NO
Turkey											
Ukraine	9,045.00	1.97	-0.55	1.42	NE	NE	17,807.99	-4,973.87	12,834.13	NE	NE
United Kingdom	822.00	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
United States	NE	NE	NA	NE	NE	NE	101,062.06	NA	101,062.06	16,304.67	-2,767.94

<sup>a</sup> DOM = dead organic matter

**Table 5.6****Net CO<sub>2</sub> emissions/removals from forest land remaining forest land - trend information**

CO <sub>2</sub> emissions/removals (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	-42,762	-31,185	-0.7	-0.6	0.9	0.1	0.0	-11.3	-2.9	-2.7	5.0	-2.8	-6.3	-27.1
Austria	-12,003	-16,936	49.4	-5.4	-32.3	91.7	-9.7	26.2	-24.6	17.0	-19.5	10.1	0	41.1
Belarus	-25,132	-24,911	7.0	1.7	-0.7	-5.0	2.4	3.0	1.0	0.0	-4.7	-5.9	-1.5	-0.9
Belgium	-3,205	-2,901	-8.9	-5.4	1.7	0.7	-3.8	-1.9	10.8	39.4	-9.6	-15.2	-16.1	-9.5
Bulgaria	-5,133	-7,965	24.0	3.1	-13.4	5.4	-0.2	4.9	24.7	5.5	-12.1	-15.2	12.9	55.2
Canada	-154,574	-121,114	25.1	-11.4	-4.0	1.0	-6.5	-1.2	9.3	1.9	-12.5	-5.7	-10.1	-21.6
Croatia	-14,437	-16,321	2.0	27.9	0.3	1.2	-1.9	-0.8	-4.9	-7.8	-5.5	-0.9	-2.0	13.0
Czech Republic	-4,470	-6,155	71.8	-8.5	0.1	-18.3	-5.7	7.3	19.4	7.8	1.5	-8.7	-6.8	37.7
Denmark	-2,831	-3,326	6.2	-3.7	2.3	2.8	4.7	-0.4	-81.8	483.3	7.5	-8.1	-2.9	17.5
Estonia	-9,448	-8,016	*	*	*	*	*	*	*	*	*	*	*	-15.2
European Community	-249,505	-313,577	9.0	-4.1	4.5	-1.8	-4.3	6.6	-1.3	7.6	2.9	-5.6	5.1	25.7
Finland	-27,807	-26,185	50.2	-1.0	30.2	-19.2	-2.3	4.7	-2.5	11.2	-4.1	-4.5	1.8	-5.8
France	-35,620	-56,823	-12.1	-6.8	10.5	3.8	-1.4	2.9	-5.8	12.5	14.2	5.6	-0.8	59.5
Germany	-74,064	-74,064	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Greece	-2,043	-3,820	14.8	32.0	-2.2	-6.3	-16.7	26.4	-47.6	138.8	5.7	1.6	-2.9	87.0
Hungary	-3,393	-4,059	11.8	0.0	-58.3	1.4	55.2	-61.6	-39.3	151.8	-14.2	81.9	-14.9	19.6
Iceland	-29	-113	16.7	11.6	9.6	8.1	6.9	7.6	8.2	7.0	6.1	7.1	6.2	289.4
Ireland	-1,079	-724	7.8	-25.5	-18.0	-33.5	118.5	11.1	-79.9	-67.6	851.6	251.4	-42.4	-32.9
Italy	-45,510	-77,866	46.8	8.0	3.9	-9.6	-3.3	11.9	-8.5	12.9	8.6	-12.4	11.1	71.1
Japan	-68,051	-90,838	10.7	0.3	5.1	0.3	0.2	0.2	0.3	0.3	0.3	11.6	0.1	33.5
Latvia	-18,736	-12,509	3.3	-14.0	8.3	-11.6	-5.5	-4.8	-3.0	-1.3	-8.4	6.5	-0.1	-33.2
Liechtenstein	-18	-19	2.0	5.9	-2.7	7.7	-1.8	4.3	-1.8	-0.4	-0.4	-6.4	0.9	3.9
Lithuania	2,072	-3,893	-2.1	-22.2	8.8	7.2	5.2	0.6	-7.5	-3.1	-7.7	5.2	3.4	-21.5
Luxembourg														
Monaco	0	0	*	*	*	*	*	*	*	*	*	*	*	*
Netherlands	-2,505	-2,289	1.6	-1.8	-1.1	-7.7	3.5	-1.4	-3.9	0	0	0	0	-8.6
New Zealand	-20,625	-26,254	-4.6	0.6	3.1	7.6	5.6	4.3	1.4	2.2	1.3	6.0	5.3	27.3
Norway	-17,184	-28,529	-3.1	-4.2	2.8	-0.6	35.4	-0.9	21.9	6.6	-2.9	-0.8	0.8	66.0
Poland														
Portugal	2,072	-3,893	-69.1	49.8	26.8	1.1	23.6	-14.0	17.0	-8.1	14.9	-177.0	-189.3	-287.9
Romania	-35,946	-34,679	3.0	-1.9	-2.4	0.7	4.5	-2.8	-1.3	2.1	-6.5	-1.2	-0.4	-3.5
Russian Federation	-146,269	-529,226	0.0	0.0	0.0	0.0	-87.9	773.8	-126.2	-168.2	640.1	33.2	-19.5	261.8
Slovakia	-4,614	-3,531	21.0	-15.0	-9.3	-30.4	14.4	-9.6	52.0	27.6	1.6	-8.1	-33.7	-23.5
Slovenia	-1,589	-5,644	23.2	11.6	-2.2	-9.8	9.8	6.9	1.9	1.9	4.2	-3.2	6.1	255.1
Spain	-21,929	-29,444	2.8	-0.9	5.3	5.9	0.9	3.6	6.5	5.3	-1.1	-4.0	1.2	34.3
Sweden	-22,686	-15,012	-73.6	-47.6	7.3	-24.5	-65.6	61.0	147.6	-15.0	0.6	0.6	0.7	-33.8
Switzerland	-3,545	-2,281	-80.9	-12.1	-16.9	8.6	-38.8	150.4	-97.0	1,003.8	-6.4	-120.6	-661.7	-35.7
Turkey														
Ukraine	-54,097	-47,058	4.4	-5.9	-4.2	0.6	4.3	0.8	-2.3	-1.0	-2.4	-2.6	-2.9	-13.0
United Kingdom	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
United States	-563,340	-420,196	2.0	-28.3	-4.7	10.6	37.2	2.5	-0.7	0.0	0.0	0.0	0.0	-25.4

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 5.7****Area of forest land remaining forest land - trend information**

Area (kha)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	15,702.90	15,702.90	0	0	0	0	0	0	0	0	0	0	0	0
Austria	3,326.11	3,365.06	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	-0.1	0	1.2
Belarus	7,028.00	7,796.20	0.5	1.7	0.4	1.0	1.0	-0.3	1.6	1.6	0.4	0.5	0.7	10.9
Belgium	641.11	620.98	-0.3	-2.9	-0.3	-0.3	-0.3	-0.3	-0.1	-0.5	0.0	0.0	0.0	-3.1
Bulgaria	3,259.00	4,063.56	0.1	0.1	-0.1	-0.1	16.3	-13.6	0.8	2.0	0.7	1.7	14.5	24.7
Canada	255,477.47	254,944.45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.2
Croatia	2,061,509.00	2,089,606.00	0	0	0	0	0	0	0	1.4	0	0	0	1.4
Czech Republic	2,562.40	2,575.52	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.1	0.5
Denmark	411.39	440.80	0	0	0	0	0	0	7.1	0	0	0	0	7.1
Estonia	1,857.00	2,112.80	*	*	*	*	*	*	*	*	*	*	*	13.8
European Community	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Finland	21,924.94	22,487.65	0.0	0.4	0.0	1.3	0.7	0.1	0.0	0.0	0.0	0.0	0.0	2.6
France	13,394.96	13,638.88	0.0	0.1	0.2	-0.1	0.2	-0.1	0.2	0.2	0.3	0.3	-0.3	1.8
Germany	10,478.60	10,493.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.1
Greece	6,513.07	6,513.07	0	0	0	0	0	0	0	0	0	0	0	0
Hungary	1,515.12	1,726.31	0.7	0.7	0.5	0.7	0.8	0.9	-0.5	1.6	0.3	1.4	1.8	13.9
Iceland	31.60	50.70	3.5	3.8	3.4	3.0	2.7	3.1	3.5	3.1	2.8	3.4	3.0	60.4
Ireland	194.73	241.89	-2.8	-3.2	-0.4	5.5	5.9	4.3	1.2	3.2	5.2	6.9	2.4	24.2
Italy	10,726.94	12,650.42	1.3	1.0	1.2	1.2	1.2	1.2	1.2	1.1	1.3	1.1	1.1	17.9
Japan	23,583.42	24,389.38	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.3	0.2	0.3	3.4
Latvia	2,535.70	2,763.30	0.5	0.8	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7	-0.2	9.0
Liechtenstein	5.77	5.84	0.3	0.2	0.2	-0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	1.4
Lithuania	1,612.21	1,781.61	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	10.5
Luxembourg														
Monaco														
Netherlands	432.40	438.30	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.4
New Zealand	1,184.88	1,865.37	2.2	6.0	5.2	4.5	3.6	2.8	2.2	1.9	1.6	1.3	1.0	57.4
Norway	8,959.84	9,429.93	-0.3	-0.3	-0.3	0.8	1.6	0.9	1.4	0.7	0.6	0.6	0.6	5.2
Poland														
Portugal	2,987.31	3,111.20	0.4	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	4.1
Romania	6,542.00	6,747.30	1.9	0.0	-0.1	0.2	-0.2	0.0	-3.2	0.0	2.9	0.1	1.4	3.1
Russian Federation	609,144.14	619,504.10	0.3	-0.1	-0.1	-0.1	-0.1	0.3	0.2	0.0	0.1	0.3	0.4	1.7
Slovakia	1,921.71	1,882.00	0.3	-0.1	0.0	-0.2	0.0	0.1	0.3	0.0	0.1	0.0	-2.4	-2.1
Slovenia	1,053.45	1,163.81	0.9	0.3	0.1	1.0	0.1	0.4	1.7	0.8	0.6	0.7	0.5	10.5
Spain	16,288.94	18,685.97	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.9	0.9	0.9	14.7
Sweden	26,018.52	26,053.59	-0.6	0	0	0	-0.4	-0.3	0	0	0	0	0	0.1
Switzerland	1,197.30	1,220.98	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.0
Turkey														
Ukraine	9,514.45	9,045.00	0.2	-5.0	0.1	0.4	0.3	0.5	0.0	0.3	0.3	0.1	0.1	-4.9
United Kingdom	822.00	822.00	0	0	0	0	0	0	0	0	0	0	0	0
United States	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 5.8****Land converted to forest land - AD, IEF and carbon stock change in pools (base year<sup>a</sup>)**

	Activity data Total area (kha)	IEF (Mg C/ha)					Emissions/Removals (Gg C)				
		C stock change in living biomass/area			Net C stock change in DOM <sup>a</sup> /area	Net C stock change in soils/area	C stock change in living biomass			Net C stock change in DOM <sup>a</sup>	Net C stock change in soils
		Increase	Decrease	Net Change			Increase	Decrease	Net Change		
Australia	81.44	6.66	NA, NO	6.66	NA, NO	NA, NO	542.71	NA, NO	542.71	NA, NO	NA, NO
Austria	14.59	1.18	IE	1.18	NO	1.49	17.16	IE	17.16	NO	21.79
Belarus	50.60	IE, NE, NO	IE, NE, NO	IE, NE, NO	NE, NO	-6.14	IE, NE, NO	IE, NE, NO	IE, NE, NO	NE, NO	-310.50
Belgium											
Bulgaria	2.46	0.88	-0.33	0.55	NE	NE	2.16	-0.80	1.36	NE	NE
Canada	219.52	1.97	-0.64	1.33	0.23	0.05	432.20	-140.44	291.76	50.54	11.41
Croatia	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO
Czech Republic	20.38	1.92	NO	1.92	NO	0.12	39.14	NO	39.14	NO	2.43
Denmark	0.73	NA, NO	NA, NO	NA, NO	NE, NO	NE, NO	NA, NO	NA, NO	NA, NO	NE, NO	NE, NO
Estonia	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
European Community	NE	NE	NE	NE	NE	NE	5,453.37	-421.97	5,031.40	1,248.17	4,389.36
Finland	IE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
France	1,725.81	0.77	0.00	0.77	0.43	0.32	1,333.33	0.00	1,333.33	740.87	544.35
Germany	24.28	3.77	NA, NE	3.77	NE	NE	91.62	NA, NE	91.62	NE	NE
Greece	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	IE, NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	IE, NE, NO
Hungary	32.66	NA	-4.36	-4.36	NE	NE	IE, NA	-142.49	-142.49	NE	NE
Iceland	1.10	1.20	IE	1.20			1.32	IE	1.32		
Ireland	175.43	NO	-0.32	-0.32	-0.01	-0.60	NO	-55.32	-55.32	-2.45	-105.84
Italy	117.56	2.50	-1.87	0.63	0.15	30.39	293.53	-219.41	74.11	17.89	3,572.26
Japan	1,366.84	0.78	IE	0.78	NA	0.47	1,069.09	IE	1,069.09	NA	645.25
Latvia	228.65	2.55	IE, NE, NO	2.55	NE	NE	582.61	IE, NE, NO	582.61	NE	NE
Liechtenstein	0.02	2.06	NO	2.06	NO	NO	0.03	NO	0.03	NO	NO
Lithuania	242.00	0.66	NA	0.66	0.26	1.26	160.40	NA	160.40	64.00	303.99
Luxembourg											
Monaco											
Netherlands	4.97	0.58	NE	0.58	NE	IE	2.89	NE	2.89	NE	IE
New Zealand	17.89	IE, NE	-13.26	-13.26	IE	IE	IE, NE	-237.27	-237.27	IE	IE
Norway	9.77	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Poland											
Portugal	9.81	25.73	-13.17	12.56	-0.91	4.40	252.41	-129.16	123.25	-8.96	43.17
Romania	16.20	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Russian Federation	IE, NE	IE, NE	IE, NE	IE, NE	NE	NE	IE, NE	IE, NE	IE, NE	NE	NE
Slovakia	IE, NO	IE	IE	IE	IE, NE	IE, NE	IE	IE	IE	IE, NE	IE, NE
Slovenia	IE, NE	NE	NE	IE, NE	NE	NE	IE, NE	IE, NE	IE, NE	NE	NE
Spain	171.22	1.75	NO	1.75	NE, NO	NE, NO	299.63	NO	299.63	NE, NO	NE, NO
Sweden	1,106.27	0.61	-0.02	0.60	0.07	-0.10	677.85	-18.08	659.77	77.56	-106.13
Switzerland	3.98	1.85	-1.34	0.50	NO	NO	7.35	-5.34	2.00	NO	NO
Turkey											
Ukraine	577.30	0.25	NA, NE, NO	0.25	0.20	0.21	144.33	NA, NE, NO	144.33	115.46	121.14
United Kingdom	1,394.49	1.78	IE, NO	1.78	0.30	0.30	2,484.96	IE, NO	2,484.96	423.25	419.77
United States	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

<sup>b</sup> DOM = dead organic matter

**Table 5.9****Land converted to forest land - AD, IEF and carbon stock change in pools (2004)**

	Activity data Total area (kha)	IEF (Mg C/ha)					Emissions/Removals (Gg C)				
		C stock change in living biomass/area			Net C stock change in DOM <sup>a</sup> /area	Net C stock change in soils/area	C stock change in living biomass			Net C stock change in DOM <sup>a</sup>	Net C stock change in soils
		Increase	Decrease	Net Change			Increase	Decrease	Net Change		
Australia	1,080.70	4.69	NA, NO	4.69	0.73	NA, NO	5,064.68	NA, NO	5,064.68	788.25	NA, NO
Austria	11.38	1.18	IE	1.18	NO	1.50	13.38	IE	13.38	NO	17.08
Belarus	170.51	IE, NE, NO	IE, NE, NO	IE, NE, NO	NE, NO	-6.14	IE, NE, NO	IE, NE, NO	IE, NE, NO	NE, NO	-1,046.31
Belgium											
Bulgaria	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Canada	186.84	2.16	-0.71	1.45	0.26	0.06	403.10	-132.75	270.36	48.48	10.62
Croatia	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO
Czech Republic	15.53	1.92	NO	1.92	NO	0.12	29.82	NO	29.82	NO	1.85
Denmark	27.60	1.22	NA, NO	1.22	NE, NO	NE, NO	33.75	NA, NO	33.75	NE, NO	NE, NO
Estonia	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
European Community	NE	NE	NE	NE	NE	NE	8,591.78	-298.75	8,293.03	1,174.27	4,980.38
Finland	IE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
France	2,045.73	0.77	0.00	0.77	0.43	0.30	1,566.64	0.00	1,566.64	880.21	619.74
Germany	347.12	3.47	NA	3.47	NE	NE	1,204.94	NA	1,204.94	NE	NE
Greece	43.08	2.85	NE, NO	2.85	NE, NO	IE, NE, NO	122.68	NE, NO	122.68	NE, NO	IE, NE, NO
Hungary	43.98	5.21	NA	5.21	NE	NE	229.17	IE, NA	229.17	NE	NE
Iceland	1.70	1.20		1.20			2.04		2.04		
Ireland	280.54	0.45	NO	0.45	0.01	-0.51	125.37	NO	125.37	3.00	-142.81
Italy	117.56	2.52	-1.44	1.08	0.20	32.91	296.36	-169.59	126.76	23.35	3,868.31
Japan	561.31	1.02	IE	1.02	NA	0.46	571.36	IE	571.36	NA	260.43
Latvia	167.00	2.38	IE, NE, NO	2.38	NE	NE	396.66	IE, NE, NO	396.66	NE	NE
Liechtenstein	0.01	3.00	NO	3.00	NO	NO	0.03	NO	0.03	NO	NO
Lithuania	206.09	0.67	NA	0.67	0.26	1.26	139.10	NA	139.10	54.00	258.88
Luxembourg											
Monaco											
Netherlands	4.97	8.71	NE	8.71	NE	IE	43.35	NE	43.35	NE	IE
New Zealand	11.83	IE, NE	-17.24	-17.24	IE	IE	IE, NE	-203.98	-203.98	IE	IE
Norway	68.52	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Poland											
Portugal	9.81	25.73	-13.17	12.56	-0.91	4.40	252.41	-129.16	123.25	-8.96	43.17
Romania	10.00	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Russian Federation	IE, NE	IE, NE	IE, NE	IE, NE	NE	NE	IE, NE	IE, NE	IE, NE	NE	NE
Slovakia	48.70	IE	IE	IE	IE, NE	2.60	IE	IE	IE	IE, NE	126.65
Slovenia	IE, NE	NE	NE	IE, NE	NE	NE	IE, NE	IE, NE	IE, NE	NE	NE
Spain	171.22	1.75	NO	1.75	NE, NO	NE, NO	299.63	NO	299.63	NE, NO	NE, NO
Sweden	1,374.91	0.78	0.00	0.78	0.07	-0.09	1,067.91	0.00	1,067.91	98.56	-127.65
Switzerland	2.47	1.53	-1.10	0.43	NO	NO	3.78	-2.71	1.07	NO	NO
Turkey											
Ukraine	928.96	1.63	NA, NE, NO	1.63	0.43	0.44	1,517.94	NA, NE, NO	1,517.94	402.93	411.68
United Kingdom	1,641.01	2.17	IE, NO	2.17	0.11	0.43	3,565.36	IE, NO	3,565.36	178.11	702.54
United States	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

<sup>a</sup> DOM = dead organic matter

Table 5.10

Net CO<sub>2</sub> emissions/removals from land converted to forest land - trend information

CO <sub>2</sub> emissions/removals (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	-1,990	-21,461	97.9	12.3	10.9	9.9	18.1	0.8	12.6	13.5	20.2	4.0	-1.8	978.5
Austria	-143	-112	0	0	-12.2	0	0	0	0	0	0	0	0	-21.8
Belarus	1,139	3,836	10.3	7.3	30.0	23.1	18.7	15.8	1.1	0	0	0	0	237.0
Belgium														
Bulgaria	-5	NE	-68.4	*	*	*	*	*	*	*	*	*	*	*
Canada	-1,297	-1,208	0.1	0.1	-0.4	-0.8	-1.2	-0.8	-0.5	-1.2	-0.8	-1.7	-0.5	-6.9
Croatia	NO,NE	NO,NE	*	*	*	*	*	*	*	*	*	*	*	*
Czech Republic	-152	-116	-3.7	-3.5	-3.4	-8.1	-8.8	-6.9	-2.0	14.3	4.1	0.3	4.0	-23.8
Denmark	NO,NA,NE	-124	*	36.1	58.3	44.9	43.6	25.8	37.0	25.0	19.5	22.3	15.1	*
Estonia	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
European Community	-39,119	-52,975	22.0	2.9	1.3	1.6	32.6	-0.6	-18.5	2.9	2.0	0.7	3.1	35.4
Finland	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
France	-9,601	-11,244	0.5	2.5	2.5	2.4	1.6	0.7	0.4	-0.2	-0.2	-0.7	3.0	17.1
Germany	-336	-4,418	33.4	26.7	21.1	17.4	14.8	12.9	11.4	10.3	9.3	8.5	7.8	1,215.1
Greece	NE, NO,IE	-450	*	133.3	53.6	69.8	12.3	24.4	11.7	57.4	6.4	6.6	5.9	*
Hungary	522	-840	100.0	-117.6	954.8	-29.2	-107.7	259.0	-605.4	-28.3	50.2	-95.7	876.5	-260.8
Iceland	-5	-7	27.3	-7.1	-7.7	-8.3	18.2	15.4	-6.7	-7.1	23.1	-6.2	13.3	54.5
Ireland	600	53	28.4	-49.6	-26.5	-180.2	-113.1	-194.9	2,471.7	63.9	-35.1	-151.5	-73.1	-91.2
Italy	-13,436	-14,734	2.1	0.9	0.9	0.1	0.3	1.0	0.1	1.0	1.1	-0.1	1.0	9.7
Japan	-6,286	-3,050	2.1	-6.4	-3.2	-6.8	-6.6	-6.9	-8.0	-8.4	-10.4	4.4	-4.5	-51.5
Latvia	-2,136	-1,454	-0.9	11.5	-3.7	-7.6	-14.5	-7.7	-7.3	-3.7	4.9	-17.0	17.6	-31.9
Liechtenstein	0	0	-3.0	-5.6	2.9	-57.1	33.3	-10.0	5.6	57.9	-13.3	26.9	0.0	0.0
Lithuania	-1,937	-1,657	-3.1	-3.6	-3.7	-2.8	0.7	0.5	-0.4	-0.7	0.8	3.3	4.0	-14.5
Luxembourg														
Monaco														
Netherlands	-11	-159	100.0	20.0	16.7	14.3	12.5	11.1	10.0	9.1	8.3	7.7	7.1	1,400.0
New Zealand	870	748	51.6	-24.8	10.1	-10.3	-49.8	25.3	0.9	11.9	-26.9	-5.2	-32.5	-14.0
Norway	NA	NA	*	*	*	*	*	*	*	*	*	*	*	*
Poland														
Portugal	-577	-577	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Romania	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Russian Federation	NE,IE	NE,IE	*	*	*	*	*	*	*	*	*	*	*	*
Slovakia	NE,IE	-464	*	*	*	*	*	*	*	*	*	*	*	*
Slovenia	NE,IE	NE,IE	*	*	*	*	*	*	*	*	*	*	*	*
Spain	-1,099	-1,099	0	9.5	0.1	-0.9	2.0	-6.7	-9.1	0.5	0.4	3.2	-4.2	0
Sweden	-2,314	-3,809	337.9	23.1	0.0	0.0	595.3	-6.1	-75.9	0.0	0.0	0.0	0.0	64.6
Switzerland	-7	-4	-78.0	-4.7	-24.1	24.7	-30.1	90.9	-65.3	109.8	-22.4	-72.3	191.1	-46.6
Turkey														
Ukraine	-1,397	-8,553	-10.1	117.8	-0.8	-0.6	9.3	-3.4	-2.7	-0.5	0.6	0.8	0.6	512.3
United Kingdom	-12,203	-16,302	4.2	-1.7	-1.6	-1.5	-0.8	0.7	2.2	3.9	4.9	4.0	4.2	33.6
United States	NA	NA	*	*	*	*	*	*	*	*	*	*	*	*

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 5.11****Area of land converted to forest land - trend information**

Area (kha)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	81.44	1,080.70	101.0	12.9	11.4	10.3	12.1	10.8	12.1	10.8	14.9	9.0	7.1	1,227.1
Austria	14.59	11.38	0	0	-12.4	0	0	0	0	0	0	0	0	-22.0
Belarus	50.60	170.51	10.3	7.3	30.0	23.1	18.7	15.8	1.1	0	0	0	0	237.0
Belgium														
Bulgaria	2.46	NE	-43.1	*	*	*	*	*	*	*	*	*	*	*
Canada	219.52	186.84	-0.1	-0.5	-1.6	-1.2	-1.4	-1.7	-1.5	-1.8	-2.1	-1.9	-0.9	-14.9
Croatia	NE, NO	NE, NO	*	*	*	*	*	*	*	*	*	*	*	*
Czech Republic	20.38	15.53	-3.7	-3.5	-3.4	-8.1	-8.8	-6.9	-2.0	14.3	4.1	0.3	4.0	-23.8
Denmark	0.73	27.60	137.0	23.1	19.4	26.9	13.1	36.5	16.7	11.0	10.9	10.7	4.9	3,680.8
Estonia	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
European Community	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Finland	IE	IE	*	*	*	*	*	*	*	*	*	*	*	*
France	1,725.81	2,045.73	0.3	2.9	2.8	2.7	1.7	0.8	0.4	-0.2	-0.2	-0.7	3.2	18.5
Germany	24.28	347.12	33.4	27.9	21.8	17.9	15.2	13.2	11.6	10.4	9.5	8.6	7.9	1,329.7
Greece	NE, NO	43.08	*	133.3	53.6	69.8	12.3	24.4	11.7	57.4	6.4	6.6	5.9	*
Hungary	32.66	43.98	-1.4	12.4	20.4	12.0	-0.6	1.7	1.7	15.9	16.2	4.8	-0.2	34.7
Iceland	1.10	1.70	27.3	-7.1	-7.7	-8.3	18.2	15.4	-6.7	-7.1	23.1	-6.3	13.3	54.5
Ireland	175.43	280.54	5.2	7.0	5.6	1.3	2.0	2.0	3.8	3.5	3.2	1.1	1.2	59.9
Italy	117.56	117.56	0.0	0	0	0	0	0	0	0	0	0	0	0.0
Japan	1,366.84	561.31	-4.4	-6.4	-6.1	-6.8	-6.5	-6.8	-7.9	-8.3	-10.2	-3.0	-4.4	-58.9
Latvia	228.65	167.00	-0.5	13.4	-3.3	-7.6	-14.9	-7.5	-5.8	-3.2	6.0	-17.2	18.4	-27.0
Liechtenstein	0.02	0.01	6.3	-16.7	6.7	-50.0	0.0	12.5	-11.1	25.0	10.0	27.3	-21.4	-31.3
Lithuania														
Luxembourg														
Monaco														
Netherlands	4.97	4.97	0	0	0	0	0	0	0	0	0	0	0	0
New Zealand	17.89	11.83	51.6	9.4	-13.5	-10.3	-22.0	-19.4	-16.9	-17.3	-16.0	-27.0	-32.5	-33.9
Norway	9.77	68.52	164.9	21.7	17.8	21.2	-22.4	4.5	-30.2	-6.2	0	0	0	601.5
Poland														
Portugal	9.81	9.81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Romania	16.20	10.00	-98.7	-51.6	653.3	-57.5	-58.3	3,910.0	-48.3	222.9	-41.9	29.4	-90.1	-38.3
Russian Federation	IE, NE	IE, NE	*	*	*	*	*	*	*	*	*	*	*	*
Slovakia	IE, NO	48.70	*	*	*	*	*	*	*	*	*	*	*	*
Slovenia	IE, NE	IE, NE	*	*	*	*	*	*	*	*	*	*	*	*
Spain	171.22	171.22	0	0	0.0	0	0	0.0	0	0	0	0	0	0
Sweden	1,106.27	1,374.91	28.8	0	0	0	12.6	16.1	0	0	0	0	0	24.3
Switzerland	3.98	2.47	-0.4	0	0	0	0	0	0	0	0	0	0	-38.0
Turkey														
Ukraine	577.30	928.96	-3.0	66.7	-3.3	-5.0	3.8	-11.8	-4.9	-0.5	0.6	0.8	0.6	60.9
United Kingdom	1,394.49	1,641.01	1.5	1.3	1.3	1.1	1.1	1.1	1.1	1.1	1.1	0.9	0.8	17.7
United States	NA	NA	*	*	*	*	*	*	*	*	*	*	*	*

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 5.12****Cropland remaining cropland - AD, IEF and carbon stock change in pools (base year<sup>a</sup>)**

	Activity data	IEF (Mg C/ha)					Emissions/Removals (Gg C)				
		C stock change in living biomass/area			Net C stock change in DOM <sup>b</sup> /area	Net C stock change in soils/area	C stock change in living biomass			Net C stock change in DOM <sup>b</sup>	Net C stock change in soils
		Increase	Decrease	Net Change			Increase	Decrease	Net Change		
Australia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Austria	1,474.80	0.04	-0.02	0.02	NO	0.07	58.51	-30.20	28.31	NO	103.89
Belarus	5,023.70	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Belgium	767.28				NA	-0.17				NA	-128.41
Bulgaria	4,654.60	1.34	-0.13	1.21	NE	NE	6,253.78	-625.37	5,628.41	NE	NE
Canada	48,131.42	0.00	0.00	0.00	0.00	0.02	19.75	-30.10	-10.35	-45.43	737.98
Croatia	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Czech Republic	3,454.99	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Denmark	2,575.44	0.01	-0.01	0.00	NA	-0.29	22.36	-28.56	-6.20	NA	-736.14
Estonia	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
European Community	NE	NE	NE	NE	NE	NE	9,525.23	-3,001.17	6,524.06	-0.77	-9,838.44
Finland	2,271.00	IE	NE	IE, NE	NA	-0.82	IE	NE	IE, NE	NA	-1,854.12
France	17,941.78	0.14	-0.14	0	NA	NA	2,588.10	-2,588.10	0	NA	NA
Germany	12,773.02	0.00	-0.01	-0.01	NE	-0.44	4.13	-144.68	-140.55	NE	-5,624.13
Greece	3,930.00	0.10	-0.02	0.09	NO	0.00	408.81	-74.42	334.38	NO	-5.63
Hungary	4,240.00	NE	NE	NE	NA	0.01	NE	NE	NE	NA	37.00
Iceland	148.00										
Ireland	394.05	NO	NO	NO	NO	-0.01	NO	NO	NO	NO	-2.26
Italy	11,056.08	0.55	0	0.55	NA	NA	6,134.10	0	6,134.10	NA	NA
Japan	4,587.59	NA	NA	NA	NE	NA	NA	NA	NA	NE	NA
Latvia	1,723.00	0.04	NE	0.04	NE	-0.07	73.50	NE	73.50	NE	-118.12
Liechtenstein	1.95	NO	NO	NO	NO	-0.64	NO	NO	NO	NO	-1.26
Lithuania	2,314.00	NE	NE	NE	NA	NA	NE	NE	NE	NA	NA
Luxembourg											
Monaco											
Netherlands	957.11	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
New Zealand	406.65	0.36	NE	0.36	NE	NE	146.91	NE	146.91	NE	NE
Norway	1,079.07	0.01	NA, NE	0.01	NA, NE	-0.05	6.76	NA, NE	6.76	NA, NE	-58.20
Poland											
Portugal	9.23	14.57	-9.23	5.35	-0.08	-0.42	134.57	-85.21	49.36	-0.77	-3.90
Romania	10,039.90	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Russian Federation	132,527.70	0.02	-0.01	0.01	NE	-0.66	2,130.87	-1,115.10	1,015.77	NE	-87,938.34
Slovakia	1,509.00	NE	NE	NE	NE	-0.59	NE	NE	NE	NE	-896.24
Slovenia	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Spain	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sweden	2,810.86	0.00	-0.02	-0.02	0.00	-0.40	0.00	-50.00	-50.00	0.00	-1,137.74
Switzerland	491.05	NO	NO	NO	NO	-0.31	NO	NO	NO	NO	-153.88
Turkey											
Ukraine	34,258.00	0.05	-0.01	0.05	NE	-0.25	1,787.10	-229.75	1,557.35	NE	-8,626.53
United Kingdom	5,971.74	0.03	NA, NO	0.03	IE, NO	-0.08	174.65	NA, NO	174.65	IE, NO	-450.00
United States	145,754.83	NA	NA	NA	NA	0.07	NA	NA	NA	NA	10,299.73

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

<sup>b</sup> DOM = dead organic matter

**Table 5.13****Cropland remaining cropland - AD, IEF and carbon stock change in pools (2004)**

	Activity data  Total area (kha)	IEF (Mg C/ha)					Emissions/Removals (Gg C)				
		C stock change in living biomass/area			Net C stock change in DOM <sup>a</sup> /area	Net C stock change in soils/area	C stock change in living biomass			Net C stock change in DOM <sup>a</sup>	Net C stock change in soils
		Increase	Decrease	Net Change			Increase	Decrease	Net Change		
Australia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Austria	1,420.77	IE	-0.05	-0.05	NO	0.07	IE	-77.68	-77.68	NO	100.07
Belarus	4,647.90	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Belgium	844.51					-0.18					-149.87
Bulgaria	4,549.10	0.98	-0.10	0.88	NE	NE	4,460.64	-445.79	4,014.85	NE	NE
Canada	49,636.77	0.00	0.00	0.00	-0.01	0.06	36.03	-46.90	-10.87	-471.04	3,016.20
Croatia	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Czech Republic	3,292.83	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Denmark	2,483.02	0.02	0.00	0.01	NA	-0.12	44.42	-8.07	36.35	NA	-295.67
Estonia	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
European Community	NE	NE	NE	NE	NE	NE	8,752.86	-2,662.04	6,090.82	-0.77	-8,224.35
Finland	2,218.80	IE, NA	NA	IE, NA	NA	-0.44	IE, NA	NA	IE, NA	NA	-984.38
France	15,109.50	0.16	-0.16	0	NA	NA	2,450.03	-2,450.03	0	NA	NA
Germany	12,548.27	0.00	0.00	0.00	NE	-0.44	1.08	-40.95	-39.87	NE	-5,526.27
Greece	3,808.49	0.08	0.00	0.08	NO	0.00	317.78	-0.09	317.69	NO	-5.63
Hungary	4,480.00	NA	NA	NA	NA	0.02	NA	NA	NA	NA	95.00
Iceland	129.00										
Ireland	354.05	NO	NO	NO	NO	0.02	NO	NO	NO	NO	8.20
Italy	10,979.97	0.51	0	0.51	NA	NA	5,559.84	0	5,559.84	NA	NA
Japan	4,076.42	NA	NA	NA	NE	NA	NA	NA	NA	NE	NA
Latvia	1,850.03	0.03	NE	0.03	NE	-0.04	60.48	NE	60.48	NE	-70.60
Liechtenstein	1.90	NO	NO	NO	NO	-0.66	NO	NO	NO	NO	-1.25
Lithuania	2,916.20	NE	NE	NE	NA	NA	NE	NE	NE	NA	NA
Luxembourg											
Monaco											
Netherlands	953.35	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
New Zealand	419.23	0.43	NE	0.43	NE	NE	180.62	NE	180.62	NE	NE
Norway	1,006.36	0.00	NA, NE	0.00	NA, NE	-0.02	4.95	NA, NE	4.95	NA, NE	-16.65
Poland											
Portugal	9.23	14.57	-9.23	5.35	-0.08	-0.42	134.57	-85.21	49.36	-0.77	-3.90
Romania	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Russian Federation	95,755.40	0.02	-0.01	0.02	NE	-0.95	2,016.84	-510.30	1,506.54	NE	-90,985.46
Slovakia	1,417.80	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Slovenia	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Spain											
Sweden	2,507.57	0.03	0.00	0.03	0.00	-0.42	70.49	0.00	70.49	0.00	-1,040.90
Switzerland	462.29	NO	NO	NO	NO	-0.33	NO	NO	NO	NO	-150.81
Turkey											
Ukraine	31,331.70	0.02	-0.12	-0.10	NE	-0.24	663.60	-3,767.29	-3,103.69	NE	-7,368.23
United Kingdom	5,971.74	0.03	NA, NO	0.03	IE, NO	-0.05	174.65	NA, NO	174.65	IE, NO	-326.00
United States	145,754.83	NA	NA	NA	NA	0.06	NA	NA	NA	NA	8,972.36

<sup>a</sup> DOM = dead organic matter

**Table 5.14****Net CO<sub>2</sub> emissions/removals from cropland remaining cropland - trend information**

CO <sub>2</sub> emissions/removals (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	NA	NA	*	*	*	*	*	*	*	*	*	*	*	*
Austria	-485	-82	0.8	-42.2	-10.1	-6.0	-15.4	-10.4	-5.8	-16.3	33.4	-27.4	-30.9	-83.1
Belarus	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Belgium	471	550	-0.6	-11.3	2.0	2.2	1.6	-0.3	2.0	-0.1	-1.0	0.3	0.2	16.7
Bulgaria	-20,638	-14,721	6.3	5.3	-44.6	64.4	-11.1	9.2	-12.7	12.6	17.6	-39.0	75.5	-28.7
Canada	-2,501	-9,292	-0.7	11.8	10.5	10.9	11.2	9.9	8.4	7.8	7.1	6.3	6.2	271.5
Croatia	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Czech Republic	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Denmark	2,722	951	-71.9	-28.8	86.6	4.7	-27.4	67.5	12.3	27.7	-38.5	-15.9	-26.8	-65.1
Estonia	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
European Community	12,156	7,826	-29.1	21.6	17.1	-5.1	-2.6	-11.9	0.4	-0.9	-15.2	-0.6	-5.2	-35.6
Finland	6,798	3,609	-23.8	36.0	2.5	-6.5	-8.6	-5.8	-7.7	-5.3	-10.5	-7.3	-7.3	-46.9
France	0	0	*	*	*	*	*	*	*	*	*	*	*	*
Germany	21,137	20,409	0.0	0.0	0.0	0.0	0.0	0.0	-2.6	-0.2	0.1	-0.1	-0.1	-3.4
Greece	-1,205	-1,144	3.8	7.0	-28.8	9.5	7.7	17.5	5.6	-6.1	-7.6	-1.3	-2.4	-5.1
Hungary	-136	-348	-66.7	-155.6	-144.0	-200.0	-327.3	-172.0	-222.2	-4.5	661.9	-113.1	-1,004.8	156.8
Iceland														
Ireland	8	-30	59.4	-2.0	-42.6	-18.5	16.2	69.0	-54.1	25.4	-9.3	34.2	-44.9	-462.1
Italy	-22,492	-20,386	-1.1	-1.6	-4.4	3.4	-0.3	1.5	0.0	-0.7	-0.7	-1.2	-0.8	-9.4
Japan	NA,NE	NA,NE	*	*	*	*	*	*	*	*	*	*	*	*
Latvia	164	37	0.3	-91.1	79.7	37.5	-11.2	-26.0	-11.3	-17.9	15.7	-6.0	55.5	-77.3
Liechtenstein	5	5	-0.8	0.0	0.0	0.8	-1.5	0.7	0.8	0.0	0.7	0.0	0.0	-0.8
Lithuania	NA,NE	NA,NE	*	*	*	*	*	*	*	*	*	*	*	*
Luxembourg														
Monaco														
Netherlands	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
New Zealand	-539	-662	1.6	1.5	1.5	1.5	1.5	1.4	1.4	1.4	1.4	1.4	1.4	22.9
Norway	189	43	-8.3	6.3	-3.5	-3.9	-4.8	-5.7	-61.2	-26.3	151.2	-18.0	-24.7	-77.3
Poland														
Portugal	-164	-164	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Romania	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Russian Federation	318,716	328,089	-51.3	21.9	3.8	45.3	-54.0	42.0	27.0	19.0	0.0	-7.8	13.8	2.9
Slovakia	3,286	NE,NO	-2.3	-24.3	0.0	56.4	-44.3	-4.8	156.9	-77.2	17.1	20.6	*	*
Slovenia	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Spain														
Sweden	4,355	3,558	-2.7	2.2	-10.7	17.4	17.7	-26.1	26.1	-13.4	-6.1	7.9	0	-18.3
Switzerland	564	553	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-2.0
Turkey														
Ukraine	25,920	38,397	-6.0	0.2	-2.1	8.1	-8.7	41.5	10.9	-7.4	8.9	-3.2	3.5	48.1
United Kingdom	1,010	555	-3.6	-4.2	-4.4	-4.6	-4.9	-5.1	-5.4	-3.4	-3.5	-3.7	-3.8	-45.0
United States	-37,766	-32,899	1.0	-21.9	-0.3	1.1	-5.5	-0.8	4.8	5.7	0.9	-0.3	1.6	-12.9

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 5.15****Area of cropland remaining cropland - trend information**

Area (kha)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	NA	NA	*	*	*	*	*	*	*	*	*	*	*	*
Austria	1,474.80	1,420.77	1.3	-0.6	0.0	0.6	0.5	-2.5	-0.6	-0.6	0.4	0.3	-0.9	-3.7
Belarus	5,023.70	4,647.90	-0.2	0.2	0.1	-0.9	0.4	0.0	-0.9	-6.6	-2.3	-0.2	0.3	-7.5
Belgium	767.28	844.51	1.8	-1.3	-1.2	1.1	0.6	-0.4	1.1	-2.2	-1.4	0.4	0.4	10.1
Bulgaria	4,654.60	4,549.10	0.0	0.0	-10.8	0.0	20.3	0.6	-1.7	-1.5	-3.2	14.1	-25.2	-2.3
Canada	48,131.42	49,636.77	-0.3	0.1	0.1	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.1
Croatia	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Czech Republic	3,454.99	3,292.83	-1.0	-0.5	-1.3	-0.2	0.0	0.1	-0.4	-0.2	-0.2	-0.2	-0.2	-4.7
Denmark	2,575.44	2,483.02	-0.5	3.5	0.2	0.1	-0.3	-1.2	-0.1	0.9	-0.5	-0.3	-0.3	-3.6
Estonia	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
European Community	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Finland	2,271.00	2,218.80	1.4	-7.0	-0.9	0.1	1.9	0.5	0.5	0.0	0.8	0.4	0.3	-2.3
France	17,941.78	15,109.50	0.1	-1.4	1.0	0.9	1.2	0.3	0.3	0.1	0.7	0.3	-1.1	-15.8
Germany	12,773.02	12,548.27	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-1.8
Greece	3,930.00	3,808.49	0.4	-0.2	-0.2	-0.4	-0.4	-0.3	-0.2	-0.2	-0.2	-0.6	-0.1	-3.1
Hungary	4,240.00	4,480.00	0	0	0	0	-0.7	0	0.7	1.2	0.5	2.7	-0.7	5.7
Iceland	148.00	129.00	0	0	0	0	0	*	*	0	0	0	0	-12.8
Ireland	394.05	354.05	-0.8	-0.4	-0.2	-0.1	-1.7	-2.0	-0.2	-0.2	-0.2	-0.1	-3.5	-10.1
Italy	11,056.08	10,979.97	-0.7	0.3	-0.7	0.1	0.6	0.9	0.8	-1.4	-0.6	-3.3	3.3	-0.7
Japan	4,587.59	4,076.42	-0.8	-0.9	-0.9	-0.9	-0.9	-0.9	-0.8	-0.7	-0.7	-0.6	-0.5	-11.1
Latvia	1,723.00	1,850.03	0	0.3	0.2	-0.1	5.0	2.2	0.5	-0.3	1.4	-2.0	-0.6	7.4
Liechtenstein	1.95	1.90	-0.3	-0.3	-0.2	-0.1	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	-0.1	-3.0
Lithuania	2,314.00	2,916.20	30.6	10.6	0.0	0.4	0.4	-0.3	-0.2	-0.1	0.0	-0.1	0.0	26.0
Luxembourg														
Monaco														
Netherlands	957.11	953.35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.4
New Zealand	406.65	419.23	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	3.1
Norway	1,079.07	1,006.36	-0.4	-0.4	-0.4	-1.2	-0.5	-0.3	-0.3	-1.1	-0.4	-0.4	-0.4	-6.7
Poland														
Portugal	9.23	9.23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Romania	10,039.90	NE	-0.6	-0.1	-0.1	0.0	0.0	0.0	0.2	0.0	-0.4	0.0	*	*
Russian Federation	132,527.70	95,755.40	-1.0	-1.9	-2.1	-2.6	-3.6	-3.9	-2.3	-1.2	-1.3	-4.9	-1.2	-27.7
Slovakia	1,509.00	1,417.80	0.0	0.1	-0.5	0.5	-0.2	-1.3	-0.7	-0.1	-0.6	-0.7	-0.9	-6.0
Slovenia	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Spain														
Sweden	2,810.86	2,507.57	-7.1	0	0	0	-2.9	-1.1	0	0	0	0	0	-10.8
Switzerland	491.05	462.29	-0.3	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.5	-5.9
Turkey														
Ukraine	34,258.00	31,331.70	-2.4	0.8	0.0	-0.9	0.0	-2.2	-0.2	-2.6	-0.3	-0.7	-0.7	-8.5
United Kingdom	5,971.74	5,971.74	0	0	0	0	0	0	0	0	0	0	0	0
United States	145,754.83	145,754.83	0	0	0	0	0	0	0	0	0	0	0	0

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 5.16****Land converted to cropland - AD, IEF and carbon stock change in pools (base year<sup>a</sup>)**

	Activity data Total area (kha)	IEF (Mg C/ha)					Emissions/Removals (Gg C)				
		C stock change in living biomass/area			Net C stock change in DOM <sup>b</sup> /area	Net C stock change in soils/area	C stock change in living biomass			Net C stock change in DOM <sup>b</sup>	Net C stock change in soils
		Increase	Decrease	Net Change			Increase	Decrease	Net Change		
Australia	2,022.40	NA, NO	-1.58	-1.58	-0.43	0.24	NA, NO	-3,201.60	-3,201.60	-867.49	478.78
Austria	33.90	1.93	-0.21	1.73	NO	-0.68	65.50	-6.99	58.51	NO	-22.97
Belarus	1,081.20	NE, NO	NE, NO	NE, NO	NE, NO	-2.42	NE, NO	NE, NO	NE, NO	NE, NO	-2,612.58
Belgium											
Bulgaria	112.50	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Canada	1,655.42	NE, NO	-1.39	-1.39	-1.19	0.41	NE, NO	-2,304.92	-2,304.92	-1,977.87	674.15
Croatia	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO
Czech Republic	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Denmark	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Estonia	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
European Community	NE	NE	NE	NE	NE	NE	217.70	-1,327.78	-1,110.08	-147.27	-9,604.28
Finland	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
France	3,723.90	0.00	-0.31	-0.31	-0.04	-1.28	0.00	-1,152.12	-1,152.12	-140.96	-4,771.58
Germany	31.46	2.58	-0.93	1.65	NE	-28.91	81.08	-29.33	51.75	NE	-909.49
Greece	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Hungary	160.00	NO	NO	IE, NE, NO	NO	-0.39	IE, NE, NO	IE, NE, NO	IE, NE, NO	IE, NE, NO	-62.00
Iceland											
Ireland	0.38	NO	-1.00	-1.00	NO	-0.61	NO	-0.38	-0.38	NO	-0.23
Italy	14.80	1.30	NO	1.30	NO	-5.79	19.24	NO	19.24	NO	-85.62
Japan	475.93	0.02	-0.50	-0.48	NE	-0.25	9.56	-239.39	-229.82	NE	-119.16
Latvia	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Liechtenstein	0.00	5.67	-7.33	-1.67	NO	-8.67	0.02	-0.02	-0.01	NO	-0.03
Lithuania	NA, NE	NA, NE	NA, NE	NA, NE	NA, NE	NA, NE	NA, NE	NA, NE	NA, NE	NA, NE	NA, NE
Luxembourg											
Monaco											
Netherlands	19.40	NE	NE	NE	NE	0.50	NE	NE	NE	NE	9.70
New Zealand	0.91	2.18	-11.80	-9.61	NA, NE	-1.61	1.98	-10.70	-8.72	NA, NE	-1.47
Norway	1.05	NO	-19.04	-19.04	NO	NO	NO	-20.01	-20.01	NO	NO
Poland											
Portugal	3.69	10.84	-19.32	-8.48	-1.71	-16.01	39.97	-71.27	-31.30	-6.31	-59.07
Romania	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Russian Federation	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Slovakia	NE	NE	NE	NE	NE	NO	NE	NE	NE	NE	NO
Slovenia	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Spain											
Sweden	72.64	0.16	-0.02	0.15	0.00	-0.04	11.91	-1.25	10.66	0.00	-3.25
Switzerland	1.79	2.64	-1.29	1.35	-0.02	9.08	4.72	-2.30	2.42	-0.03	16.24
Turkey											
Ukraine	16.74	1.15	-0.81	0.34	NE	0.00	19.26	-13.52	5.73	NE	0.07
United Kingdom	3,899.47	IE, NO	-0.02	-0.02	IE, NO	-0.96	IE, NO	-66.45	-66.45	IE, NO	-3,761.78
United States	6,447.66	IE	IE	IE	IE	-0.06	IE	IE	IE	IE	-400.00

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

<sup>b</sup> DOM = dead organic matter

**Table 5.17****Land converted to cropland - AD, IEF and carbon stock change in pools (2004)**

	Activity data Total area (kha)	IEF (Mg C/ha)					Emissions/Removals (Gg C)				
		C stock change in living biomass/area			Net C stock change in DOM <sup>a</sup> /area	Net C stock change in soils/area	C stock change in living biomass			Net C stock change in DOM <sup>a</sup>	Net C stock change in soils
		Increase	Decrease	Net Change			Increase	Decrease	Net Change		
Australia	2,704.99	0.28	NA, NO	0.28	-0.35	0.59	745.61	NA, NO	745.61	-938.91	1,609.04
Austria	34.68	1.94	-0.16	1.78	NO	-0.68	67.30	-5.72	61.58	NO	-23.41
Belarus	900.00	NE, NO	NE, NO	NE, NO	NE, NO	-2.42	NE, NO	NE, NO	NE, NO	NE, NO	-2,174.73
Belgium											
Bulgaria	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Canada	889.32	NE, NO	-1.54	-1.54	-1.12	0.35	NE, NO	-1,373.75	-1,373.75	-993.42	308.79
Croatia	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO
Czech Republic	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Denmark	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Estonia	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
European Community	NE	NE	NE	NE	NE	NE	666.37	-828.04	-161.67	-63.16	-10,376.84
Finland	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
France	2,727.71	0.00	-0.24	-0.24	-0.02	-1.29	0.00	-642.06	-642.06	-56.85	-3,517.23
Germany	28.57	2.76	-1.03	1.74	NE	-30.78	78.97	-29.33	49.64	NE	-879.50
Greece	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Hungary	180.00	NO	NO	IE, NE, NO	NO	0.47	IE, NE, NO	IE, NE, NO	IE, NE, NO	IE, NA, NO	85.00
Iceland											
Ireland	69.44	NO	-0.19	-0.19	NO	-0.61	NO	-13.01	-13.01	NO	-42.07
Italy	351.82	1.30	NO	1.30	NO	-5.79	457.37	NO	457.37	NO	-2,035.30
Japan	104.06	0.04	-0.15	-0.11	NE	-0.19	4.68	-15.95	-11.27	NE	-19.84
Latvia	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Liechtenstein	0.00	8.50	-11.25	-2.75	NO	-8.50	0.03	-0.05	-0.01	NO	-0.03
Lithuania	NA, NE	NA, NE	NA, NE	NA, NE	NA, NE	NA, NE	NA, NE	NA, NE	NA, NE	NA, NE	NA, NE
Luxembourg											
Monaco											
Netherlands	19.40	NE	NE	NE	NE	0.50	NE	NE	NE	NE	9.70
New Zealand	0.91	2.18	-11.80	-9.61	NA, NE	-24.22	1.98	-10.70	-8.72	NA, NE	-21.98
Norway	2.71	NO	NO	NO	0.00	0.00	NO	NO	NO	0.00	0.00
Poland											
Portugal	3.69	10.84	-19.32	-8.48	-1.71	-16.01	39.97	-71.27	-31.30	-6.31	-59.07
Romania	10.60										
Russian Federation	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Slovakia	7.20	NE	NE	NE	NE	0.58	NE	NE	NE	NE	4.16
Slovenia	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Spain											
Sweden	195.40	0.12	0.00	0.12	0.00	-0.01	22.76	-0.21	22.55	0.00	-2.25
Switzerland	2.65	1.15	-1.10	0.04	0.00	-3.02	3.04	-2.92	0.12	-0.01	-8.01
Turkey											
Ukraine	1.53	4.88	-0.41	4.48	NE	-0.25	7.47	-0.62	6.85	NE	-0.37
United Kingdom	5,255.94	IE, NO	-0.01	-0.01	IE, NO	-0.73	IE, NO	-66.45	-66.45	IE, NO	-3,827.72
United States	6,447.66	IE	IE	IE	IE	0.12	IE	IE	IE	IE	770.00

<sup>a</sup> DOM = dead organic matter

**Table 5.18****Net CO<sub>2</sub> emissions/removals from land converted to cropland - trend information**

CO <sub>2</sub> emissions/removals (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	13,164	-5,191	-26.1	-32.9	38.6	-33.7	161.1	-40.9	-35.1	-40.9	364.2	-101.7	4,209.3	-139.4
Austria	-130	-140	0.9	-1.2	1.9	0.0	-0.5	0.0	-0.8	21.9	-21.5	-14.3	30.0	7.4
Belarus	9,579	7,974	-0.1	-0.1	-0.6	-0.6	-0.6	-0.6	0	-3.5	-3.7	-3.8	-3.9	-16.8
Belgium														
Bulgaria	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Canada	13,232	7,547	-6.5	-6.1	-4.8	0.9	-2.0	-3.8	-2.5	-7.2	0.4	-3.2	-1.6	-43.0
Croatia	NO <sub>2</sub> NE	NO <sub>2</sub> NE	*	*	*	*	*	*	*	*	*	*	*	*
Czech Republic	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Denmark	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Estonia	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
European Community	39,826	38,873	-1.3	-1.6	-2.7	-0.6	-1.1	3.0	-1.2	-6.3	-1.7	-1.3	17.8	-2.4
Finland	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
France	22,237	15,459	-0.2	-2.3	-2.3	-2.4	-2.0	-2.0	-2.2	-4.0	-4.2	-3.1	0.3	-30.5
Germany	3,145	3,043	0.0	0.0	0.0	0.0	0.0	0.0	-3.3	0.0	0.0	0.0	0.0	-3.3
Greece	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Hungary	227	-312	*	*	*	*	*	*	-481.0	-60.0	-656.3	*	*	-237.1
Iceland														
Ireland	2	202	37.7	-53.3	6.2	120.8	23.9	-27.6	1.8	3.0	117.5	-2.1	27.8	9,005.8
Italy	243	5,786	*	-19.8	*	*	691.7	41.9	-2.8	*	*	*	*	2,277.3
Japan	1,280	114	-30.8	-2.4	-16.3	-25.1	5.7	-13.3	-27.3	-6.8	-14.2	0.9	-25.0	-91.1
Latvia	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Liechtenstein	0	0	-32.3	-35.5	55.0	103.2	31.7	-38.6	25.5	-6.2	23.3	-29.7	-13.5	45.2
Lithuania	NE,NA	NE,NA	*	*	*	*	*	*	*	*	*	*	*	*
Luxembourg														
Monaco	0	0	*	*	*	*	*	*	*	*	*	*	*	*
Netherlands	-36	-36	0	0	0	0	0	0	0	0	0	0	0	0
New Zealand	37	113	14.4	9.1	8.4	7.7	7.2	6.7	6.3	5.9	5.6	5.3	5.0	201.3
Norway	73	0	-15.5	-49.4	*	*	*	*	*	*	*	*	*	*
Poland														
Portugal	354	354	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Romania														
Russian Federation	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Slovakia	NE,NO	-15	*	*	*	*	*	*	*	*	*	*	*	*
Slovenia	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Spain														
Sweden	-27	-74	929.0	13.6	66.5	-58.0	5,634.2	-91.3	-61.0	117.8	21.4	-21.4	0.0	173.9
Switzerland	-68	29	-0.6	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	-142.4
Turkey														
Ukraine	-21	-24	*	774.9	-9.1	*	*	-99.3	652.3	-49.7	-35.7	327.3	-69.1	11.5
United Kingdom	14,037	14,279	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.7
United States	1,467	-2,823	0	-292.5	0	0	0	0	0	0	0	0	0	-292.5

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 5.19****Area of land converted to cropland - trend information**

Area (kha)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	2,022.40	2,704.99	3.3	2.1	2.4	2.3	2.1	2.1	2.2	1.7	1.6	1.5	0.1	33.8
Austria	33.90	34.68	0.7	-1.0	-0.2	0.0	-0.4	0.0	-0.6	18.6	-18.8	-12.1	24.3	2.3
Belarus	1,081.20	900.00	-0.1	-0.1	-0.6	-0.6	-0.6	-0.6	0.0	-3.5	-3.7	-3.8	-3.9	-16.8
Belgium														
Bulgaria	112.50	NE	*	*	*	*	*	*	*	*	*	*	*	*
Canada	1,655.42	889.32	-4.5	-4.7	-4.9	-4.2	-4.3	-4.5	-4.7	-4.9	-4.1	-4.3	-4.1	-46.3
Croatia	NE, NO	NE, NO	*	*	*	*	*	*	*	*	*	*	*	*
Czech Republic	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Denmark	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Estonia	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
European Community	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Finland	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
France	3,723.90	2,727.71	-0.3	-2.7	-2.8	-2.8	-3.0	-3.3	-3.2	-3.5	-3.9	-4.3	2.3	-26.8
Germany	31.46	28.57	0.0	0.0	0.0	0.0	0.0	0.0	-9.2	0.0	0.0	0.0	0.0	-9.2
Greece	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Hungary	160.00	180.00	*	*	*	*	*	*	66.7	-60.0	500.0	*	*	12.5
Iceland														
Ireland	0.38	69.44	100.0	3.7	4.7	51.8	35.3	1.4	1.5	2.1	47.1	18.7	23.1	18,334.5
Italy	14.80	351.82	*	-19.8	*	*	691.7	41.9	-2.8	*	*	*	*	2,277.3
Japan	475.93	104.06	-8.1	-11.0	-11.2	-11.2	-11.9	-9.4	-11.3	-10.7	-9.1	-9.8	-8.8	-78.1
Latvia	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Liechtenstein	0.00	0.00	-33.3	33.3	-25.0	166.7	-12.5	0.0	0.0	0.0	0.0	-14.3	-33.3	33.3
Lithuania	NA, NE	NA, NE	*	*	*	*	*	*	*	*	*	*	*	*
Luxembourg														
Monaco														
Netherlands	19.40	19.40	0	0	0	0	0	0	0	0	0	0	0	0
New Zealand	0.91	0.91	0	0	0	0	0	0	0	0	0	0	0	0
Norway	1.05	2.71	-16.7	-50.0	*	*	0	0	0	200.0	0	0	0	157.5
Poland														
Portugal	3.69	3.69	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Romania		10.60	-76.9	33.3	550.0	3.8	251.9	-16.8	200.0	-11.0	-88.2	656.0	-43.9	
Russian Federation	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Slovakia	NE	7.20	*	*	*	*	*	*	*	*	*	*	*	*
Slovenia	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Spain														
Sweden	72.64	195.40	67.3	0	0	0	38.8	15.9	0	0	0	0	0	169.0
Switzerland	1.79	2.65	-0.7	0	0	0	0	0	0	0	0	0	0	48.1
Turkey														
Ukraine	16.74	1.53	*	-61.8	139.4	*	*	-95.2	-39.2	-59.1	337.0	-2.2	-77.9	-90.9
United Kingdom	3,899.47	5,255.94	2.5	2.3	2.2	2.2	2.1	2.1	2.0	2.0	2.0	1.9	1.9	34.8
United States	6,447.66	6,447.66	0	0	0	0	0	0	0	0	0	0	0	0

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 5.20****Forest land converted to cropland - AD, IEF and carbon stock change in pools (base year<sup>a</sup>)**

	Activity data		IEF (Mg C/ha)				Emissions/Removals (Gg C)				
	Total area (kha)	C stock change in living biomass/area			Net C stock change in DOM <sup>b</sup> /area	Net C stock change in soils/area	C stock change in living biomass			Net C stock change in DOM <sup>b</sup>	Net C stock change in soils
		Increase	Decrease	Net Change			Increase	Decrease	Net Change		
Australia	2,022.40	NA	-1.58	-1.58	-0.43	0.24	NA	-3,201.60	-3,201.60	-867.49	478.78
Austria	0.33	IE	-21.17	-21.17	NO	-1.96	IE	-6.99	-6.99	NO	-0.65
Belarus	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Belgium											
Bulgaria	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Canada	1,284.96	NO	-1.79	-1.79	-1.54	0.67	NO	-2,304.92	-2,304.92	-1,977.87	864.27
Croatia	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Czech Republic	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Denmark	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Estonia	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
European Community	NE	NE	NE	NE	NE	NE	27.96	-1,243.46	-1,215.49	-146.36	-565.72
Finland	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
France	321.97		-3.58	-3.58	-0.44	-1.64		-1,152.12	-1,152.12	-140.96	-526.71
Germany	0.49	0.09	-59.91	-59.83	NE	-27.26	0.04	-29.33	-29.28	NE	-13.34
Greece	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Hungary	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE
Iceland											
Ireland	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Italy	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Japan	174.21	0.03	-1.37	-1.34	NE	-0.68	5.35	-239.39	-234.04	NE	-119.06
Latvia	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Liechtenstein	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Lithuania	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Luxembourg											
Monaco											
Netherlands	IE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
New Zealand	0.04	2.14	-221.29	-219.14	NA, NE	-0.56	0.09	-9.54	-9.45	NA, NE	-0.02
Norway	0.60		-33.30	-33.30				-20.01	-20.01		
Poland											
Portugal	1.52	14.53	-36.23	-21.70	-3.56	-13.78	22.07	-55.03	-32.96	-5.41	-20.93
Romania											
Russian Federation	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Slovakia	NE	NE	NE	NE	NE	NO	NE	NE	NE	NE	NO
Slovenia	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Spain											
Sweden	9.73	0.60	0.00	0.60	0.00	-0.04	5.85	0.00	5.85	0.00	-0.43
Switzerland	0.02	NO	-73.88	-73.88	-2.00	-21.89	NO	-1.21	-1.21	-0.03	-0.36
Turkey											
Ukraine	NA	NA	NE	NE	NE	NE	NA	NE	NA, NE	NE	NE
United Kingdom	71.71	IE, NO	IE, NO	IE, NO	IE	-0.05	IE, NO	IE, NO	IE, NO	IE	-3.65
United States	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

<sup>b</sup> DOM = dead organic matter

**Table 5.21****Forest land converted to cropland - AD, IEF and carbon stock change in pools (2004)**

	Activity data		IEF (Mg C/ha)				Emissions/Removals (Gg C)				
	Total area (kha)	C stock change in living biomass/area			Net C stock change in DOM <sup>a</sup> /area	Net C stock change in soils/area	C stock change in living biomass			Net C stock change in DOM <sup>a</sup>	Net C stock change in soils
		Increase	Decrease	Net Change			Increase	Decrease	Net Change		
Australia	2,704.99	0.28	NA	0.28	-0.35	0.59	745.61	NA	745.61	-938.91	1,609.04
Austria	0.27	IE	-21.17	-21.17	NO	-1.96	IE	-5.72	-5.72	NO	-0.53
Belarus	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Belgium											
Bulgaria	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Canada	702.16	NO	-1.96	-1.96	-1.41	0.59	NO	-1,373.75	-1,373.75	-993.42	416.87
Croatia	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Czech Republic	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Denmark	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Estonia	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
European Community	NE	NE	NE	NE	NE	NE	23.01	-732.13	-709.11	-62.26	-486.92
Finland	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
France	270.80		-2.37	-2.37	-0.21	-1.66		-642.06	-642.06	-56.85	-449.95
Germany	0.49	0.09	-59.91	-59.83	NE	-27.26	0.04	-29.33	-29.28	NE	-13.34
Greece	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Hungary	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE
Iceland											
Ireland	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Italy	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Japan	39.92	0.01	-0.40	-0.39	NE	-0.68	0.32	-15.93	-15.61	NE	-27.26
Latvia	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Liechtenstein	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Lithuania	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Luxembourg											
Monaco											
Netherlands	IE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
New Zealand	0.04	2.14	-221.29	-219.14	NA, NE	-8.44	0.09	-9.54	-9.45	NA, NE	-0.36
Norway	NO	NO	NO	NO	NO	NO					
Poland											
Portugal	1.52	14.53	-36.23	-21.70	-3.56	-13.78	22.07	-55.03	-32.96	-5.41	-20.93
Romania											
Russian Federation	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Slovakia	NE	NE	NE	NE	NE	NO	NE	NE	NE	NE	NO
Slovenia	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Spain											
Sweden	37.13	0.02	0.00	0.02	0.00	-0.01	0.90	0.00	0.90	0.00	-0.43
Switzerland	0.01	NO	-74.42	-74.42	-1.56	-24.02	NO	-0.49	-0.49	-0.01	-0.16
Turkey											
Ukraine	NA	NA	NA	NA	NE	NE	NA	NA	NA	NE	NE
United Kingdom	71.71	IE, NO	IE, NO	IE, NO	IE	-0.02	IE, NO	IE, NO	IE, NO	IE	-1.74
United States	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE

<sup>a</sup> DOM = dead organic matter

**Table 5.22****Net CO<sub>2</sub> emissions/removals from forest land converted to cropland - trend information**

CO <sub>2</sub> emissions/removals (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year to 2004
Australia	-13,164	5,191	-26.1	-32.9	38.6	-33.7	161.1	-40.9	-35.1	-40.9	364.2	-101.7	4,209.3	-139.4
Austria	-28	-23	0	0	-10.0	0	0	0	0	0	0	0	0	-18.2
Belarus	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Belgium														
Bulgaria	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Canada	-12,535	-7,151	-6.6	-6.3	-4.9	1.3	-1.9	-3.8	-2.4	-7.4	0.6	-3.3	-1.6	-42.9
Croatia	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Czech Republic	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Denmark	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Estonia	NE	NE	*										*	*
European Community	-7,068	-4,614	4.4	-1.0	-0.8	-0.7	1.4	4.5	-1.3	-4.6	-4.3	0.7	-4.4	-34.7
Finland	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
France	-6,673	-4,212	0.1	-0.8	-0.8	-0.8	1.4	2.1	0.9	-4.8	-4.6	0.7	-4.8	-36.9
Germany	-156	-156	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Greece	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Hungary	IE	IE	*	*	*	*	*	*	*	*	*	*	*	*
Iceland														
Ireland	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Italy	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Japan	-1,295	-157	-30.1	-2.5	-13.0	-16.6	1.6	-6.3	-25.4	-15.6	-12.2	-2.3	-15.5	-87.9
Latvia	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Liechtenstein	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Lithuania	NA	NA	*	*	*	*	*	*	*	*	*	*	*	*
Luxembourg														
Monaco														
Netherlands	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
New Zealand	-35	-36	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	3.6
Norway	-73		-15.5	-49.4	*		*	*						
Poland														
Portugal	-217	-217	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Romania														
Russian Federation	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Slovakia	NE,NO	NE,NO	*	*	*	*	*	*	*	*	*	*	*	*
Slovenia	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Spain														
Sweden	20	2	-1,536.9	-631.5	15.2	-18.8	-17.9	-1,167.8	-95.2	-143.1	128.8	-68.9	0	-91.3
Switzerland	-6	-2	-0.1	0.7	0.5	0.6	0.5	1.0	0.3	0.6	1.1	0.2	0.6	-59.2
Turkey														
Ukraine	NA,NE	NA,NE	*	*	*	*	*	*	*	*	*	*	*	*
United Kingdom	-13	-6	-5.3	-5.2	-5.2	-5.2	-5.2	-5.1	-5.1	-5.1	-5.1	-5.0	-5.0	-52.4
United States	IE	IE	*	*	*	*	*	*	*	*	*	*	*	*

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 5.23****Area of forest land converted to cropland - trend information**

Area (kha)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	2,022.40	2,704.99	3.3	2.1	2.4	2.3	2.1	2.1	2.2	1.7	1.6	1.5	0.1	33.8
Austria	0.33	0.27	0	0	-10.0	0	0	0	0	0	0	0	0	-18.2
Belarus	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Belgium														
Bulgaria	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Canada	1,284.96	702.16	-2.3	-3.9	-4.0	-4.2	-4.4	-4.6	-4.8	-5.1	-5.3	-5.6	-5.5	-45.4
Croatia	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Czech Republic	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Denmark	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Estonia	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
European Community	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Finland	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
France	321.97	270.80	0.5	-2.0	-2.1	-2.1	-2.0	-1.9	-1.8	-2.2	-2.5	-2.4	2.2	-15.9
Germany	0.49	0.49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Greece	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Hungary	IE	IE	*	*	*	*	*	*	*	*	*	*	*	*
Iceland														
Ireland	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Italy	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Japan	174.21	39.92	-3.9	-6.8	-8.5	-11.2	-9.7	-7.2	-10.3	-10.8	-13.8	-10.9	-19.6	-77.1
Latvia	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Liechtenstein	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Lithuania	NA	NA	*	*	*	*	*	*	*	*	*	*	*	*
Luxembourg														
Monaco														
Netherlands	IE	IE	*	*	*	*	*	*	*	*	*	*	*	*
New Zealand	0.04	0.04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Norway	0.60	NO	-16.6	-50.0	*	*	*	*	*	*	*	*	*	*
Poland														
Portugal	1.52	1.52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Romania														
Russian Federation	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Slovakia	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Slovenia	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Spain														
Sweden	9.73	37.13	50.9	0	0	0	89.4	33.5	0	0	0	0	0	281.6
Switzerland	0.02	0.01	0	0	0	0	0	0	0	0	0	0	0	-60.1
Turkey														
Ukraine	NA	NA	*	*	*	*	*	*	*	*	*	*	*	*
United Kingdom	71.71	71.71	0	0	0	0	0	0	0	0	0	0	0	0
United States	IE	IE	*	*	*	*	*	*	*	*	*	*	*	*

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 5.24**  
**Grassland remaining grassland - AD, IEF and carbon stock change in pools (base year<sup>a</sup>)**

	Activity data	IEF (Mg C/ha)					Emissions/Removals (Gg C)				
		C stock change in living biomass/area			Net C stock change in DOM <sup>b</sup> /area	Net C stock change in soils/area	C stock change in living biomass			Net C stock change in DOM <sup>b</sup>	Net C stock change in soils
		Increase	Decrease	Net Change			Increase	Decrease	Net Change		
Australia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Austria	1,962.94	NO	NO	NO	NO	0.00	NO	NO	NO	NO	-1.44
Belarus	3,156.80	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Belgium	578.44				NA	-0.61				NA	-355.50
Bulgaria	2,798.30	0.04	-0.02	0.02	NE	NE	101.11	-53.59	47.52	NE	NE
Canada	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Croatia	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Czech Republic	828.35	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Denmark	217.24	NA	NA	NA	NA	-0.12	NA	NA	NA	NA	-25.34
Estonia	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
European Community	NE	NE	NE	NE	NE	NE	3,450.80	-3,452.72	-1.92	-58.76	-5,814.55
Finland	645.49	NE	NE	NE	NE	0.70	NE	NE	NE	NE	449.44
France	5,962.78	0.58	-0.58	0	0.00	NA	3,450.80	-3,450.80	0	-28.24	NA
Germany	6,616.39	NE	NE	NE	NE	-0.75	NE	NE	NE	NE	-4,986.04
Greece	1,636.17	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Hungary	2,970.00	NE	NE	NE	NE	NO	NE	NE	NE	NE	NO
Iceland	3,846.40	NE	NE	NE	NA	-0.13	NE	NE	NE	NA	-495.00
Ireland	4,021.51	NO	NO	NO	NO	-0.02	NO	NO	NO	NO	-80.72
Italy	7,550.34	0	0	0	0	0	0	0	0	0	0
Japan	232.10	NA	NA	NA	NE	NA	NA	NA	NA	NE	NA
Latvia	844.20	0.07	NO	0.07	NE	0.00	56.00	NO	56.00	NE	-3.37
Liechtenstein	5.58	0.03	-0.03	0.00	NO	-0.10	0.17	-0.14	0.02	NO	-0.58
Lithuania	1,111.00	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Luxembourg											
Monaco											
Netherlands	1,460.21	NE	NE	NE	NE	-0.79	NE	NE	NE	NE	-1,158.00
New Zealand	14,663.19	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Norway	155.88	NO	NO	NO	NO	-3.27	NO	NO	NO	NO	-510.00
Poland											
Portugal	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Romania	4,401.10	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Russian Federation	NE	NO	NO	NO	NA	NE	NO	NO	NO	NA	NE
Slovakia	813.00	NE	NE	NE	NE	-0.18	NE	NE	NE	NE	-146.15
Slovenia	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Spain											
Sweden	356.62	0.00	-0.01	-0.01	-0.09	1.26	0.00	-1.92	-1.92	-30.52	449.28
Switzerland	1,533.05	0.01	-0.01	0.00	NO	-0.01	13.88	-15.81	-1.93	NO	-13.07
Turkey											
Ukraine	6,853.40	NE	NE	NE	NE	0.18	NE	NE	NE	NE	1,235.00
United Kingdom	8.11	NE	NE	NE	IE, NO	-13.09	NE	NE	NE	IE, NO	-106.24
United States	198,919.07	NE	NE	NE	NE	0.01	NE	NE	NE	NE	1,232.20

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

<sup>b</sup> DOM = dead organic matter

**Table 5.25****Grassland remaining grassland - AD, IEF and carbon stock change in pools (2004)**

	Activity data	IEF (Mg C/ha)					Emissions/Removals (Gg C)				
		C stock change in living biomass/area			Net C stock change in DOM <sup>a</sup> /area	Net C stock change in soils/area	C stock change in living biomass			Net C stock change in DOM <sup>a</sup>	Net C stock change in soils
		Increase	Decrease	Net Change			Increase	Decrease	Net Change		
Australia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Austria	1,899.67	NO	NO	NO	NO	0.00	NO	NO	NO	NO	-3.59
Belarus	3,289.70	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Belgium	529.86				NA	-0.61				NA	-321.16
Bulgaria	2,165.60	0.01	-0.01	0.00	NE	NE	24.73	-18.05	6.68	NE	NE
Canada	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Croatia	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Czech Republic	970.64	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Denmark	172.54	NA	NA	NA	NA	-0.12	NA	NA	NA	NA	-20.12
Estonia	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
European Community	NE	NE	NE	NE	NE	NE	3,329.17	-3,266.71	62.46	-39.43	-6,672.68
Finland	454.34	IE	IE	IE	IE	-1.92	IE	IE	IE	IE	-870.11
France	8,567.38	0.38	-0.38	0	0.00	NA	3,266.71	-3,266.71	0	-29.68	NA
Germany	6,223.41	NE	NE	NE	NE	-0.73	NE	NE	NE	NE	-4,546.45
Greece	1,636.17	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Hungary	2,830.00	NA	NA	NA	NA	NO	NA	NA	NA	NA	NO
Iceland	3,845.70	NE	NE	NE	NA	-0.13	NE	NE	NE	NA	-495.00
Ireland	3,825.63	NO	NO	NO	NO	-0.02	NO	NO	NO	NO	-71.64
Italy	5,953.52	0	0	0	0	0	0	0	0	0	0
Japan	509.20	NA	NA	NA	NE	NA	NA	NA	NA	NE	NA
Latvia	620.90	0.18	NO	0.18	NE	0.00	109.40	NO	109.40	NE	-1.63
Liechtenstein	5.28	0.03	-0.03	0.00	NO	-0.10	0.14	-0.14	0.00	NO	-0.52
Lithuania	451.40	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Luxembourg											
Monaco											
Netherlands	1,316.26	NE	NE	NE	NE	-0.88	NE	NE	NE	NE	-1,158.00
New Zealand	14,283.59	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Norway	178.16	NO	NO	NO	NO	-2.86	NO	NO	NO	NO	-510.00
Poland											
Portugal	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Romania	4,836.10	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Russian Federation	NE	NO	NO	NO	NA	NE	NO	NO	NO	NA	NE
Slovakia	792.80	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Slovenia	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Spain											
Sweden	264.38	0.24	0.00	0.24	-0.04	1.57	62.46	0.00	62.46	-9.75	415.16
Switzerland	1,512.36	0.01	-0.01	0.00	NO	-0.01	10.49	-11.64	-1.15	NO	-17.67
Turkey											
Ukraine	7,968.10	NE	NE	NE	NE	0.47	NE	NE	NE	NE	3,763.82
United Kingdom	7.29	NE	NE	NE	IE, NO	-13.28	NE	NE	NE	IE, NO	-96.76
United States	196,136.94	NE	NE	NE	NE	-0.01	NE	NE	NE	NE	-1,980.02

<sup>a</sup> DOM = dead organic matter

**Table 5.26****Net CO<sub>2</sub> emissions/removals from grassland remaining grassland - trend information**

CO <sub>2</sub> emissions/removals (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	NA	NA	*	*	*	*	*	*	*	*	*	*	*	*
Austria	5	13	-1.9	4.7	0.0	-3.6	-0.1	0.0	22.7	5.2	-4.9	1.3	80.5	148.8
Belarus	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Belgium	1,303	1,178	-3.4	6.9	15.3	-10.9	-0.1	0.5	-1.9	2.4	3.0	-0.2	-1.3	-9.7
Bulgaria	-174	-24	24.0	56.3	-22.1	13.7	-3.4	20.5	-28.5	-61.1	24.4	16.6	24.6	-85.9
Canada	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Croatia	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Czech Republic	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Denmark	93	74	-2.4	8.4	-6.9	-13.1	-6.8	2.1	4.2	4.5	2.2	0.0	-2.9	-20.6
Estonia	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
European Community	21,543	24,382	6.9	-0.8	-2.5	0.1	20.7	-15.6	5.4	0.7	-2.9	2.0	-0.1	13.2
Finland	-1,648	3,190	-63.0	-12.8	-45.1	67.1	73.5	37.6	24.1	8.7	-16.3	11.5	6.0	-293.6
France	104	109	2.6	-6.8	-8.5	9.0	2.0	2.8	1.4	5.7	3.5	2.1	-5.6	5.1
Germany	18,282	16,670	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.1	-0.1	-0.1	-8.8
Greece	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Hungary	NE,NO	NA,NO	*	*	*	*	*	*	*	*	*	*	*	*
Iceland	1,815	1,815	0	0	0	0	0	0	0	0	0	0	0	0
Ireland	296	263	-1.0	-2.5	0	-2	0	0	0	0	0	0	0	-11.2
Italy	0	0	*	*	*	*	*	*	*	*	*	*	*	*
Japan	NA,NE	NA,NE	*	*	*	*	*	*	*	*	*	*	*	*
Latvia	-193	-395	0.0	25.7	9.8	4.1	7.2	7.6	4.1	10.5	6.9	0.2	-0.4	104.8
Liechtenstein	2	2	-0.7	2.4	-1.4	10.1	0.7	-5.8	-2.3	4.0	-6.4	-7.2	3.8	-6.6
Lithuania	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Luxembourg														
Monaco														
Netherlands	4,246	4,246	0	0	0	0	0	0	0	0	0	0	0	0
New Zealand	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Norway	1,870	1,870	0	0	0	0	0	0	0	0	0	0	0	0
Poland														
Portugal	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Romania	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Russian Federation	NA,NE,NO	NA,NE,NO	*	*	*	*	*	*	*	*	*	*	*	*
Slovakia	536	NE	-26.1	57.1	-63.6	-153.3	-240.7	-280.9	530.5	10.4	-0.8	56.0	*	*
Slovenia	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Spain														
Sweden	-1,528	-1,716	-40.5	1.1	1.7	1.7	-244.2	-198.0	-34.2	1.6	1.6	1.6	1.6	12.2
Switzerland	55	69	-0.1	1.3	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.1	1.1	25.5
Turkey														
Ukraine	-4,528	-13,801	-31.8	-72.4	459.4	23.2	3.6	6.1	8.5	2.1	1.7	4.3	0.2	204.8
United Kingdom	390	355	1.7	15.3	-14.8	-11.6	-25.1	37.2	-1.0	9.1	-36.0	68.8	-29.5	-8.9
United States	-4,518	7,260	1.7	-265.9	-0.3	-0.2	-0.2	-0.5	-0.6	-0.6	-0.6	-0.6	-0.6	-260.7

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 5.27****Area of grassland remaining grassland - trend information**

Area (kha)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	NA	NA	*	*	*	*	*	*	*	*	*	*	*	*
Austria	1,962.94	1,899.67	0.2	-0.2	0.1	0.2	0.0	0.0	-1.2	-0.3	0.3	-0.1	-1.6	-3.2
Belarus	3,156.80	3,289.70	-0.3	-0.5	-0.1	1.0	0.3	-0.7	0.7	8.3	1.3	0.3	-0.2	4.2
Belgium	578.44	529.86	-3.8	3.2	3.7	-0.5	0.1	0.7	-1.6	2.8	2.9	-0.1	-1.1	-8.4
Bulgaria	2,798.30	2,165.60	-2.3	0	-4.2	-4.4	-3.7	-1.0	4.8	0.0	0	0	0	-22.6
Canada	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Croatia	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Czech Republic	828.35	970.64	0.5	1.6	1.7	4.8	0.2	0.0	0.3	1.1	0.5	0.2	0.2	17.2
Denmark	217.24	172.54	-2.4	8.4	-6.9	-13.1	-6.8	2.1	4.2	4.5	2.2	0.0	-2.9	-20.6
Estonia	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
European Community	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Finland	645.49	454.34	-4.8	24.0	3.4	-5.4	-11.0	-3.5	-2.2	0.0	-3.6	-1.9	-1.5	-29.6
France	5,962.78	8,567.38	0.5	3.4	-1.0	0.1	-1.0	0.9	0.8	1.5	0.9	1.3	-1.2	43.7
Germany	6,616.39	6,223.41	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.5	-0.5	-0.5	-0.5	-5.9
Greece	1,636.17	1,636.17	0	0	0	0	0	0	0	0	0	0	0	0
Hungary	2,970.00	2,830.00	-0.7	2.0	-0.7	0	0.7	0	-1.0	-1.6	-0.7	-4.0	-0.7	-4.7
Iceland	3,846.40	3,845.70	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
Ireland	4,021.51	3,825.63	-0.4	-1.0	0.0	-0.7	0	0	0	0	0	0	0	-4.9
Italy	7,550.34	5,953.52	-1.0	-2.3	-0.8	-2.0	-2.9	-3.4	-3.5	0.5	-0.9	3.9	-5.7	-21.1
Japan	232.10	509.20	24.4	6.3	4.5	4.9	4.6	2.2	2.1	1.4	0.9	1.3	1.6	119.4
Latvia	844.20	620.90	-0.1	-0.4	-0.3	-15.1	0	-8.9	-1.9	0.9	-0.2	0.5	1.3	-26.5
Liechtenstein	5.58	5.28	-0.4	-0.4	-0.5	-0.3	-0.3	-0.4	-0.4	-0.2	-0.4	-0.5	-0.4	-5.2
Lithuania	1,111.00	451.40	-63.9	21.3	1.3	-1.4	1.1	1.4	0.8	0.6	-0.1	0.2	-0.3	-59.4
Luxembourg														
Monaco														
Netherlands	1,460.21	1,316.26	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.8	-0.8	-0.8	-0.8	-0.8	-9.9
New Zealand	14,663.19	14,283.59	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-2.6
Norway	155.88	178.16	-0.7	-0.7	-0.7	1.8	11.2	0	-4.3	3.3	2.1	2.1	2.0	14.3
Poland														
Portugal	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Romania	4,401.10	4,836.10	0.5	0.4	0.4	-0.1	0.2	-1.4	0.1	2.0	0.1	-1.8	-0.2	9.9
Russian Federation	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Slovakia	813.00	792.80	-0.6	0.0	0.8	-0.9	0.0	2.6	1.0	-0.1	-0.1	2.3	-10.3	-2.5
Slovenia	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Spain														
Sweden	356.62	264.38	-12.7	0	0	0	-15.1	0	0	0	0	0	0	-25.9
Switzerland	1,533.05	1,512.36	-0.3	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-1.3
Turkey														
Ukraine	6,853.40	7,968.10	-5.1	-9.6	0.0	12.9	1.9	0.2	0.6	0.9	0.2	0.2	0.4	16.3
United Kingdom	8.11	7.29	2.0	17.0	-16.3	-13.0	-28.4	44.1	-1.2	10.3	-40.2	82.5	-32.7	-10.2
United States	198,919.07	196,136.94	0	0	0	0	0	0	0	0	0	0	0	-1.4

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 5.28****Land converted to grassland - AD, IEF and carbon stock change in pools (base year<sup>a</sup>)**

	Activity data  Total area (kha)	IEF (Mg C/ha)					Emissions/Removals (Gg C)				
		C stock change in living biomass/area			Net C stock change in DOM <sup>b</sup> /area	Net C stock change in soils/area	C stock change in living biomass			Net C stock change in DOM <sup>b</sup>	Net C stock change in soils
		Increase	Decrease	Net Change			Increase	Decrease	Net Change		
Australia	8,813.48	NA, NO	-2.14	-2.14	-0.69	-0.61	NA, NO	-18,893.57	-18,893.57	-6,074.62	-5,407.57
Austria	29.82	IE, NO	-4.58	-4.58	NO	0.52	IE, NO	-136.71	-136.71	NO	15.46
Belarus	IE, NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	IE, NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	IE, NE, NO
Belgium											
Bulgaria	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO
Canada	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO
Croatia	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Czech Republic	4.15	1.80	NO	1.80	NO	27.29	7.46	NO	7.46	NO	113.15
Denmark	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Estonia	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
European Community	NE	NE	NE	NE	NE	NE	109.39	-1,219.38	-1,109.99	-166.19	5,802.37
Finland	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
France	4,333.37	0.00	-0.13	-0.13	-0.04	0.77	0.00	-564.62	-564.62	-152.97	3,349.32
Germany	33.56	0.00	-12.57	-12.57	NE	10.35	0.01	-421.97	-421.95	NE	347.49
Greece	21.30	NO	NO	NO	NO	IE, NO	NO	NO	NO	NO	IE, NO
Hungary	IE, NO	NO	NO	IE, NE, NO	NO	NO	IE, NE, NO	IE, NE, NO	IE, NE, NO	IE, NE, NO	IE, NO
Iceland											
Ireland	27.19	0.77	NO	0.77	NO	0.54	20.85	NO	20.85	NO	14.67
Italy	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Japan	428.23	0.03	-0.09	-0.06	NE	2.73	11.85	-39.66	-27.81	NE	1,170.80
Latvia	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Liechtenstein	0.01	7.60	-4.60	3.00	NO	18.80	0.04	-0.02	0.02	NO	0.09
Lithuania	NA, NE	NA, NE	NA, NE	NA, NE	NA, NE	NA, NE	NA, NE	NA, NE	NA, NE	NA, NE	NA, NE
Luxembourg											
Monaco											
Netherlands	19.17	NE	-4.07	-4.07	NE	4.80	NE	-78.10	-78.10	NE	92.05
New Zealand	1.08	3.97	-183.03	-179.06	NA, NE	0.68	4.27	-197.07	-192.79	NA, NE	0.74
Norway	NA	NA	NA, NO	NA, NO	NA	NA	NA	NA, NO	NA, NO	NA	NA
Poland											
Portugal	0.57	3.12	-7.18	-4.06	-0.31	16.15	1.79	-4.12	-2.33	-0.18	9.27
Romania	312.20										
Russian Federation	NE, NO	NE, NO	NE, NO	NE, NO	NA, NO	NE, NO	NE, NO	NE, NO	NE, NO	NA, NO	NE, NO
Slovakia	NO	NE	NE	NE	NE	NO	NE	NE	NE	NE	NO
Slovenia	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO
Spain											
Sweden	140.90	0.21	-0.07	0.13	-0.09	0.36	28.92	-10.16	18.76	-13.04	50.64
Switzerland	5.68	2.56	-29.79	-27.24	-1.44	-0.87	14.53	-169.27	-154.74	-8.16	-4.94
Turkey											
Ukraine	399.97	1.59	-1.56	0.04	NE	3.05	637.50	-623.38	14.12	NE	1,218.16
United Kingdom	3,233.17	0.02	0.00	0.02	IE, NO	0.59	57.82	-3.70	54.11	IE, NO	1,923.47
United States	32,752.80	IE, NA	IE, NA	IE, NA	IE, NE	0.15	IE, NA	IE, NA	IE, NA	IE, NE	4,810.00

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

<sup>b</sup> DOM = dead organic matter

**Table 5.29****Land converted to grassland - AD, IEF and carbon stock change in pools (2004)**

	Activity data  Total area (kha)	IEF (Mg C/ha)					Emissions/Removals (Gg C)				
		C stock change in living biomass/area			Net C stock change in DOM <sup>a</sup> /area	Net C stock change in soils/area	C stock change in living biomass			Net C stock change in DOM <sup>a</sup>	Net C stock change in soils
		Increase	Decrease	Net Change			Increase	Decrease	Net Change		
Australia	13,177.39	NA, NO	-0.89	-0.89	-0.04	-0.23	NA, NO	-11,728.18	-11,728.18	-555.12	-3,032.07
Austria	19.93	IE, NO	-4.96	-4.96	NO	0.49	IE, NO	-98.82	-98.82	NO	9.79
Belarus	IE, NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	IE, NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	IE, NE, NO
Belgium											
Bulgaria	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO
Canada	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO
Croatia	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Czech Republic	1.11	1.80	NO	1.80	NO	27.28	2.00	NO	2.00	NO	30.29
Denmark	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Estonia	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
European Community	NE	NE	NE	NE	NE	NE	182.83	-759.05	-576.21	-104.43	5,328.41
Finland	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
France	3,569.94		-0.09	-0.09	-0.03	0.72		-321.69	-321.69	-96.32	2,561.23
Germany	24.55	0.00	-10.29	-10.29	NE	11.09	0.01	-252.60	-252.60	NE	272.29
Greece	99.74	NO	NO	NO	NO	IE, NO	NO	NO	NO	NO	IE, NO
Hungary	IE, NA, NO	NA	NA	IE, NA, NE	NA	NA	IE, NA, NE	IE, NA, NE	IE, NA, NE	IE, NA, NE	IE, NA, NO
Iceland											
Ireland	56.36	0.25	NO	0.25	NO	0.10	14.04	NO	14.04	NO	5.86
Italy	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Japan	133.43	0.05	-0.06	-0.01	NE	2.81	6.59	-7.79	-1.20	NE	374.59
Latvia	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Liechtenstein	0.01	8.60	-29.60	-21.00	-0.80	10.50	0.09	-0.30	-0.21	-0.01	0.11
Lithuania	NA, NE	NA, NE	NA, NE	NA, NE	NA, NE	NA, NE	NA, NE	NA, NE	NA, NE	NA, NE	NA, NE
Luxembourg											
Monaco											
Netherlands	19.17	NE	-4.07	-4.07	NE	4.80	NE	-78.10	-78.10	NE	92.05
New Zealand	1.08	3.97	-183.03	-179.06	NA, NE	10.25	4.27	-197.07	-192.79	NA, NE	11.04
Norway	3.61	NA	-0.47	-0.47	NA	NA	NA	-1.69	-1.69	NA	NA
Poland											
Portugal	0.57	3.12	-7.18	-4.06	-0.31	16.15	1.79	-4.12	-2.33	-0.18	9.27
Romania	9.20										
Russian Federation	NE, NO	NE, NO	NE, NO	NE, NO	NA, NO	NE, NO	NE, NO	NE, NO	NE, NO	NA, NO	NE, NO
Slovakia	92.20	NE	NE	NE	NE	1.10	NE	NE	NE	NE	101.80
Slovenia	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO
Spain											
Sweden	203.43	0.54	0.00	0.54	-0.04	0.37	109.18	0.00	109.18	-7.93	75.88
Switzerland	4.61	2.42	-23.55	-21.12	-1.13	2.37	11.18	-108.55	-97.37	-5.19	10.94
Turkey											
Ukraine	NA	NA	NA, NE, NO	NA, NE, NO	NE	NA, NE	NA	NA, NE, NO	NA, NE, NO	NE	NA, NE
United Kingdom	4,383.12	0.01	0.00	0.01	IE, NO	0.53	57.82	-3.70	54.11	IE, NO	2,302.04
United States	32,752.80	IE, NA	IE, NA	IE, NA	IE, NE	0.18	IE, NA	IE, NA	IE, NA	IE, NE	5,760.00

<sup>a</sup> DOM = dead organic matter

**Table 5.30****Net CO<sub>2</sub> emissions/removals from land converted to grassland - trend information**

CO <sub>2</sub> emissions/removals (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	111,378	56,156	-16.9	-13.5	-3.6	-2.4	12.8	-12.3	6.9	-3.5	3.8	-25.5	26.1	-49.6
Austria	445	326	0.3	-0.4	-7.1	0.0	-0.2	0.0	-0.3	10.6	-16.9	5.7	-12.1	-26.6
Belarus	NE, NO, IE	NE, NO, IE	*	*	*	*	*	*	*	*	*	*	*	*
Belgium														
Bulgaria	NO, NE	NO, NE	*	*	*	*	*	*	*	*	*	*	*	*
Canada	NO, NE	NO, NE	*	*	*	*	*	*	*	*	*	*	*	*
Croatia	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Czech Republic	-442	-118	654.4	3.4	206.1	-81.9	*	*	278.7	-55.9	-50.2	-2.5	-51.9	-73.2
Denmark	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Estonia	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
European Community	-16,596	-17,042	-1.4	-0.4	8.0	-9.1	21.4	-8.0	-11.9	20.6	-11.9	38.9	-31.8	2.7
Finland	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
France	-9,650	-7,858	-0.6	-2.9	-3.0	-3.1	-3.5	-3.9	-3.4	-3.8	-3.5	-3.1	9.0	-18.6
Germany	273	-72	0.0	0.0	0.0	0.0	0.0	0.0	-126.4	0.0	0.0	0.0	0.0	-126.4
Greece	NO, IE	NO, IE	*	*	*	*	*	*	*	*	*	*	*	*
Hungary	NE, NO, IE	NA, NE, NO, IE	*	*	*	*	-4.5	*	*	*	*	*	*	*
Iceland														
Ireland	-130	-73	-112.2	-5.3	-16.8	16.6	30.3	-8.4	-30.4	13.1	-51.3	-17.6	-33.2	-44.0
Italy	NO	NO	*	*	*	*	*	*	*	*	-58.7	466.5	*	*
Japan	-4,191	-1,369	-12.0	-8.7	-7.7	-9.7	-11.1	-6.6	-6.5	-5.9	-3.4	-6.0	-7.0	-67.3
Latvia	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Liechtenstein	0	0	50.5	326.7	-93.2	-6,184.6	-41.2	37.4	-6.9	40.7	-42.2	-76.7	0.0	-203.7
Lithuania	NE, NA	NE, NA	*	*	*	*	*	*	*	*	*	*	*	*
Luxembourg														
Monaco														
Netherlands	-51	-51	0	0	0	0	0	0	0	0	0	0	0	0
New Zealand	704	666	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-5.4
Norway	NA, NO	6	*	0	0	0	*	*	22.7	46.8	-83.2	1,053.9	-87.0	*
Poland														
Portugal	-25	-25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Romania	0	0	*	*	*	*	*	*	*	*	*	*	*	*
Russian Federation	NO, NA, NE	NO, NA, NE	*	*	*	*	*	*	*	*	*	*	*	*
Slovakia	NE, NO	-373	*	*	*	*	*	*	*	*	*	*	*	*
Slovenia	NO, NE	NO, NE	*	*	*	*	*	*	*	*	*	*	*	*
Spain														
Sweden	-207	-649	-563.6	32.2	0.5	0.5	725.5	-31.8	-78.4	0.5	0.4	0.4	0.4	214.3
Switzerland	615	336	0.4	4.0	-1.9	1.1	0.7	1.5	0.3	0.9	0.7	0.1	0.6	-45.4
Turkey														
Ukraine	-4,518	NE, NO, NA	*	2,481.1	-4.6	-20.9	5.3	9.0	-47.4	85.9	-6.1	20.2	*	*
United Kingdom	-7,251	-8,639	1.7	1.4	1.4	1.4	1.3	0.8	0.9	1.0	1.0	1.1	1.1	19.1
United States	-17,637	-21,120	0	17.8	0	0	0	0	0	0	0	0	0	19.8

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 5.31****Area of land converted to grassland - trend information**

Area (kha)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	8,813.48	13,177.39	4.4	3.0	2.8	2.5	2.3	2.3	2.8	2.8	2.3	2.0	2.5	49.5
Austria	29.82	19.93	0.6	-0.9	-1.3	0.0	-0.4	0.0	-0.6	13.0	-19.9	6.2	-27.0	-33.2
Belarus	IE, NE, NO	IE, NE, NO	*	*	*	*	*	*	*	*	*	*	*	*
Belgium														
Bulgaria	NE, NO	NE, NO	*	*	*	*	*	*	*	*	*	*	*	*
Canada	NE, NO	NE, NO	*	*	*	*	*	*	*	*	*	*	*	*
Croatia	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Czech Republic	4.15	1.11	654.5	3.4	206.1	-82.0	*	*	279.2	-55.7	-50.3	-1.5	-52.4	-73.2
Denmark	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Estonia	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
European Community	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Finland	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
France	4,333.37	3,569.94	-0.7	-1.7	-1.7	-1.7	-1.9	-1.9	-2.3	-2.2	-2.6	-2.6	3.4	-17.6
Germany	33.56	24.55	0.0	0.0	0.0	0.0	0.0	0.0	-26.8	0.0	0.0	0.0	0.0	-26.8
Greece	21.30	99.74	-66.7	9.1	11.1	20.9	29.1	10.9	5.4	-4.8	5.2	23.8	0.1	368.2
Hungary	IE, NO	IE, NA, NO	*	*	*	*	50.0	*	*	*	*	*	*	*
Iceland														
Ireland	27.19	56.36	69.2	9.0	-24.8	83.4	-4.8	5.3	11.8	-21.2	-27.9	-12.1	-49.7	107.3
Italy	NO	NO	*	*	*	*	*	*	*	*	-58.7	466.5	*	*
Japan	428.23	133.43	-12.7	-8.6	-7.9	-10.2	-11.0	-6.7	-7.2	-6.2	-3.8	-6.4	-7.7	-68.8
Latvia	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Liechtenstein	0.01	0.01	40.0	-33.3	16.7	128.6	0.0	-12.5	-14.3	41.7	-23.5	-23.1	0.0	100.0
Lithuania	NA, NE	NA, NE	*	*	*	*	*	*	*	*	*	*	*	*
Luxembourg														
Monaco														
Netherlands	19.17	19.17	0	0	0	0	0	0	0	0	0	0	0	0
New Zealand	1.08	1.08	0	0	0	0	0	0	0	0	0	0	0	0
Norway	NA	3.61	*	25.0	20.0	42.9	-90.0	0.0	500.0	-33.3	0.0	0.0	0.0	*
Poland														
Portugal	0.57	0.57	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Romania	312.20	9.20	138.6	-16.2	-94.2	1,554.5	-30.2	-30.7	1,254.5	-97.3	112.5	-82.4	666.7	-97.1
Russian Federation	NE, NO	NE, NO	*	*	*	*	*	*	*	*	*	*	*	*
Slovakia	NO	92.20	*	*	*	*	*	*	*	*	*	*	*	*
Slovenia	NE, NO	NE, NO	*	*	*	*	*	*	*	*	*	*	*	*
Spain														
Sweden	140.90	203.43	10.5	0	0	0	30.7	-0.1	0	0	0	0	0	44.4
Switzerland	5.68	4.61	-0.6	0	0	0	0	0	0	0	0	0	0	-18.9
Turkey														
Ukraine	399.97	NA	*	266.7	261.5	-84.2	-87.8	173.3	28.0	-74.7	-0.4	106.4	*	*
United Kingdom	3,233.17	4,383.12	2.7	0.1	2.5	2.4	2.3	2.3	2.2	2.2	2.1	2.1	2.0	35.6
United States	32,752.80	32,752.80	0	0	0	0	0	0	0	0	0	0	0	0

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 5.32**  
**Forest land converted to grassland - AD, IEF and carbon stock change in pools (base year<sup>a</sup>)**

	Activity data Total area (kha)	IEF (Mg C/ha)					Emissions/Removals (Gg C)				
		C stock change in living biomass/area			Net C stock change in DOM <sup>b</sup> /area	Net C stock change in soils/area	C stock change in living biomass			Net C stock change in DOM <sup>b</sup>	Net C stock change in soils
		Increase	Decrease	Net Change			Increase	Decrease	Net Change		
Australia	8,813.48	NA	-2.14	-2.14	-0.69	-0.61	NA	-18,893.57	-18,893.57	-6,074.62	-5,407.57
Austria	3.54	IE	-21.17	-21.17	NO	-0.57	IE	-74.93	-74.93	NO	-2.01
Belarus	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Belgium											
Bulgaria	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Canada	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Croatia	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Czech Republic	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Denmark	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Estonia	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
European Community	NE	NE	NE	NE	NE	NE	25.52	-813.09	-787.58	-108.12	-66.89
Finland	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
France	222.31		-2.54	-2.54	-0.46	-0.25		-564.62	-564.62	-103.11	-55.58
Germany	1.58	0.00	-59.91	-59.91	NE	NE	0.01	-94.91	-94.91	NE	NE
Greece	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Hungary	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE
Iceland											
Ireland	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Italy	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Japan	56.51	0.04	-0.60	-0.56	NE	2.25	2.10	-33.68	-31.57	NE	126.89
Latvia	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Liechtenstein	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Lithuania	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Luxembourg											
Monaco											
Netherlands	1.40	NE	-55.79	-55.79	NE	IE	NE	-78.10	-78.10	NE	IE
New Zealand	1.02	3.82	-192.82	-189.01	NE	0.69	3.90	-197.07	-193.16	NE	0.70
Norway											
Poland											
Portugal	0.01	3.04	-40.07	-37.03	-3.94	10.45	0.04	-0.52	-0.48	-0.05	0.14
Romania											
Russian Federation	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Slovakia	NO	NE	NE	NE	NE	NO	NE	NE	NE	NE	NO
Slovenia	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Spain											
Sweden	53.61	0.48	0.00	0.48	-0.09	0.36	25.47	0.00	25.47	-4.96	19.27
Switzerland	2.61	0.18	-64.54	-64.36	-3.13	-29.86	0.47	-168.44	-167.98	-8.16	-77.93
Turkey											
Ukraine	NA	NA	NE	NE	NE	NE	NA	NE	NA, NE	NE	NE
United Kingdom	341.52	IE, NO	IE, NO	IE, NO	IE	-0.08	IE, NO	IE, NO	IE, NO	IE	-28.70
United States	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

<sup>b</sup> DOM = dead organic matter

**Table 5.33****Forest land converted to grassland - AD, IEF and carbon stock change in pools (2004)**

	Activity data Total area (kha)	IEF (Mg C/ha)					Emissions/Removals (Gg C)				
		C stock change in living biomass/area			Net C stock change in DOM <sup>a</sup> /area	Net C stock change in soils/area	C stock change in living biomass			Net C stock change in DOM <sup>a</sup>	Net C stock change in soils
		Increase	Decrease	Net Change			Increase	Decrease	Net Change		
Australia	13,177.39	NA	-0.89	-0.89	-0.04	-0.23	NA	-11,728.18	-11,728.18	-555.12	-3,032.07
Austria	2.81	IE	-21.17	-21.17	NO	-0.57	IE	-59.48	-59.48	NO	-1.60
Belarus	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Belgium											
Bulgaria	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Canada	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Croatia	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Czech Republic	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Denmark	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Estonia	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
European Community	NE	NE	NE	NE	NE	NE	63.77	-554.71	-490.95	-63.40	-56.12
Finland	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
France	196.05		-1.64	-1.64	-0.30	-0.25		-321.69	-321.69	-58.72	-49.01
Germany	1.58	0.00	-59.91	-59.91	NE	NE	0.01	-94.91	-94.91	NE	NE
Greece	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Hungary	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE
Iceland											
Ireland	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Italy	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Japan	13.92	0.01	-0.18	-0.17	NE	2.25	0.12	-2.48	-2.36	NE	31.26
Latvia	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Liechtenstein	0.00	8.00	-134.00	-126.00	-4.00	-21.00	0.02	-0.27	-0.25	-0.01	-0.04
Lithuania	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Luxembourg											
Monaco											
Netherlands	1.40	NE	-55.79	-55.79	NE	IE	NE	-78.10	-78.10	NE	IE
New Zealand	1.02	3.82	-192.82	-189.01	NE	10.33	3.90	-197.07	-193.16	NE	10.56
Norway	0.90										
Poland											
Portugal	0.01	3.04	-40.07	-37.03	-3.94	10.45	0.04	-0.52	-0.48	-0.05	0.14
Romania											
Russian Federation	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Slovakia	NO	NE	NE	NE	NE	NO	NE	NE	NE	NE	NO
Slovenia	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Spain											
Sweden	118.74	0.54	0.00	0.54	-0.04	0.37	63.72	0.00	63.72	-4.63	44.29
Switzerland	1.59	0.04	-67.95	-67.91	-3.26	-32.47	0.06	-108.29	-108.22	-5.19	-51.74
Turkey											
Ukraine	NA	NA	NA	NA	NE	NE	NA	NA	NA	NE	NE
United Kingdom	342.12	IE, NO	IE, NO	IE, NO	IE	-0.15	IE, NO	IE, NO	IE, NO	IE	-49.93
United States	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE

<sup>a</sup> DOM = dead organic matter

Table 5.34

Net CO<sub>2</sub> emissions/removals from forest land converted to grassland - trend information

CO <sub>2</sub> emissions/removals (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	-111,378	-56,156	-16.9	-13.5	-3.6	-2.4	12.8	-12.3	6.9	-3.5	3.8	-25.5	26.1	-49.6
Austria	-282	-224	0	0	-11.5	0	0	0	0	0	0	0	0	-20.6
Belarus	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Belgium														
Bulgaria	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Canada	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Croatia	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Czech Republic	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Denmark	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Estonia	NE	NE	*											*
European Community	-3,529	-2,238	13.3	-4.7	-1.3	-0.5	-133.4	-293.1	64.0	0.1	-1.8	-3.0	-13.2	-36.6
Finland	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
France	-2,652	-1,575	0.0	-0.2	-0.2	-0.2	1.1	3.0	-2.2	-0.4	-2.6	-4.1	-17.7	-40.6
Germany	-348	-348	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Greece	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Hungary	IE	IE	*	*	*	*	*	*	*	*	*	*	*	*
Iceland														
Ireland	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Italy	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Japan	349	106	1.1	-8.6	-7.7	-12.8	-13.0	-5.7	-2.6	-6.7	-10.2	-11.9	-21.8	-69.7
Latvia	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Liechtenstein	NO	-1	*	*	*	643.2	-27.4	12.2	-11.6	42.6	-30.4	-49.9	-14.0	*
Lithuania	NA	NA	*	*	*	*	*	*	*	*	*	*	*	*
Luxembourg														
Monaco														
Netherlands	-286	-286	0	0	0	0	0	0	0	0	0	0	0	0
New Zealand	-706	-670	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-5.1
Norway														
Poland														
Portugal	-1	-1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Romania														
Russian Federation	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Slovakia	NE,NO	NE,NO	*	*	*	*	*	*	*	*	*	*	*	*
Slovenia	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Spain														
Sweden	146	379	-321.8	42.0	0.3	0.4	804.0	-62.5	-74.3	0.5	0.5	0.4	0.4	159.9
Switzerland	-932	-606	0.0	2.2	-1.0	0.6	0.4	0.8	0.2	0.5	0.4	0.0	0.3	-35.0
Turkey														
Ukraine	NA,NE	NA,NE	*	*	*	*	*	*	*	*	*	*	*	*
United Kingdom	-105	-183	-0.2	0.7	-1.1	-6.7	-0.2	35.7	21.2	8.8	4.7	1.9	0.3	74.0
United States	IE	IE	*	*	*	*	*	*	*	*	*	*	*	*

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 5.35****Area of forest land converted to grassland (trend information)**

Area (kha)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	8,813.48	13,177.39	4.4	3.0	2.8	2.5	2.3	2.3	2.8	2.8	2.3	2.0	2.5	49.5
Austria	3.54	2.81	0	0	-11.5	0	0	0	0	0	0	0	0	-20.6
Belarus	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Belgium														
Bulgaria	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Canada	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Croatia	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Czech Republic	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Denmark	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Estonia	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
European Community	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Finland	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
France	222.31	196.05	-0.1	-1.5	-1.5	-1.6	-1.5	-1.3	-1.5	-1.5	-1.6	-1.9	3.3	-11.8
Germany	1.58	1.58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Greece	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Hungary	IE	IE	*	*	*	*	*	*	*	*	*	*	*	*
Iceland														
Ireland	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Italy	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Japan	56.51	13.92	-9.8	-7.4	-8.8	-13.8	-10.3	-5.6	-7.1	-7.9	-10.1	-10.3	-20.8	-75.4
Latvia	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Liechtenstein	NO	0.00	*	*	*	600.0	-28.6	20.0	-16.7	60.0	-37.5	-60.0	0.0	*
Lithuania	NA	NA	*	*	*	*	*	*	*	*	*	*	*	*
Luxembourg														
Monaco														
Netherlands	1.40	1.40	0	0	0	0	0	0	0	0	0	0	0	0
New Zealand	1.02	1.02	0	0	0	0	0	0	0	0	0	0	0	0
Norway		0.90								-50.0				
Poland														
Portugal	0.01	0.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Romania	0.00	0.00	*	*	*	*	*	*	*	*	*	*	*	*
Russian Federation	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Slovakia	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Slovenia	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Spain														
Sweden	53.61	118.74	57.7	0	0	0	48.7	-5.6	0	0	0	0	0	121.5
Switzerland	2.61	1.59	-0.4	0	0	0	0	0	0	0	0	0	0	-38.9
Turkey														
Ukraine	NA	NA	*	*	*	*	*	*	*	*	*	*	*	*
United Kingdom	341.52	342.12	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.2
United States	IE	IE	*	*	*	*	*	*	*	*	*	*	*	*

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 5.36****Direct N<sub>2</sub>O emissions from N-fertilization (base year and 2004) - AD, IEF and N<sub>2</sub>O emissions**

	Forest Land remaining Forest Land						Land converted to Forest Land					
	Base year <sup>a</sup>			2004			Base year <sup>a</sup>			2004		
	Total amount of fertilizer applied	N <sub>2</sub> O-N emissions per unit of fertilizer	N <sub>2</sub> O emissions	Total amount of fertilizer applied	N <sub>2</sub> O-N emissions per unit of fertilizer	N <sub>2</sub> O emissions	Total amount of fertilizer applied	N <sub>2</sub> O-N emissions per unit of fertilizer	N <sub>2</sub> O emissions	Total amount of fertilizer applied	N <sub>2</sub> O-N emissions per unit of fertilizer	N <sub>2</sub> O emissions
	(Gg N/yr)	(kg N <sub>2</sub> O-N/kg N)	(Gg)	(Gg N/yr)	(kg N <sub>2</sub> O-N/kg N)	(Gg)	(Gg N/yr)	(kg N <sub>2</sub> O-N/kg N)	(Gg)	(Gg N/yr)	(kg N <sub>2</sub> O-N/kg N)	(Gg)
Australia	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE
Austria	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Belarus	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Belgium	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Bulgaria	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Canada	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE
Croatia	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Czech Republic	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Denmark	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE
Estonia	NO	NO	NO	NE	NE	NE	NO	NO	NO	NE	NE	NE
European Community	14.88	0.01	0.27	4.45	0.01	0.08	NE	NE	NE	NE	NE	NE
Finland	4.40	0.01	0.09	1.96	0.01	0.04	IE	IE	IE	IE	IE	IE
France												
Germany	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Greece	NO	NO	NO	NO	NO	NO	IE	IE	IE	IE	IE	IE
Hungary	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Iceland	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE
Ireland	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE
Italy	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Japan	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE
Latvia	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Liechtenstein	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Lithuania	NA	NA	NA	NA	NA	NA	NA	NA	NA	NE	NE	NE
Luxembourg												
Monaco	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Netherlands	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
New Zealand	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Norway	1.12	0.00	0.00	0.33	0.00	0.00	IE	IE	IE	IE	IE	IE
Poland												
Portugal	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE
Romania	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE
Russian Federation	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE
Slovakia	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Slovenia	NO	NO	NO	NO	NO	NO	NE	NE	NE	NE	NE	NE
Spain												
Sweden	10.48	0.01	0.19	2.49	0.01	0.04	NA	NA	NA	NA	NA	NA
Switzerland	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Turkey												
Ukraine	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
United Kingdom	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
United States	10.90	0.01	0.19	71.51	0.01	1.26	NA	IE	IE	NA	IE	IE

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

Table 5.37

Direct N<sub>2</sub>O emissions from N fertilization (Gg) - trend information

N <sub>2</sub> O emissions (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	IE	IE	*	*	*	*	*	*	*	*	*	*	*	*
Austria	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Belarus	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Belgium	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Bulgaria	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Canada	IE	IE	*	*	*	*	*	*	*	*	*	*	*	*
Croatia	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Czech Republic	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Denmark	IE	IE	*	*	*	*	*	*	*	*	*	*	*	*
Estonia	NO	NE	*	*	*	*	*	*	*	*	*	*	*	*
European Community	0.27	0.08	-36.2	-6.6	-3.5	3.2	-12.9	39.3	-1.3	-16.7	-9.0	-1.2	2.6	-69.6
Finland	0.09	0.04	-24.5	-43.8	18.4	63.5	-31.0	56.0	-0.9	-18.2	5.6	-2.6	5.8	-55.6
France														
Germany	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Greece	IE, NO	IE, NO	*	*	*	*	*	*	*	*	*	*	*	*
Hungary	NA, NO	NA, NO	*	*	*	*	*	*	*	*	*	*	*	*
Iceland	IE	IE	*	*	*	*	*	*	*	*	*	*	*	*
Ireland	IE	IE	*	*	*	*	*	*	*	*	*	*	*	*
Italy	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Japan	IE	IE	*	*	*	*	*	*	*	*	*	*	*	*
Latvia	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Liechtenstein	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Lithuania	NA	NA, NE	*	*	*	*	*	*	*	*	*	*	*	*
Luxembourg														
Monaco	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Netherlands	NE, NO	NE, NO	*	*	*	*	*	*	*	*	*	*	*	*
New Zealand	NA, NE	NA, NE	*	*	*	*	*	*	*	*	*	*	*	*
Norway	0.00	0.00	52.8	4.7	-1.5	-1.5	11.7	-7.7	-35.7	-18.1	36.7	-55.7	1.3	-67.7
Poland														
Portugal	IE	IE	*	*	*	*	*	*	*	*	*	*	*	*
Romania	IE	IE	*	*	*	*	*	*	*	*	*	*	*	*
Russian Federation	IE	IE	*	*	*	*	*	*	*	*	*	*	*	*
Slovakia	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Slovenia	NE, NO	NE, NO	*	*	*	*	*	*	*	*	*	*	*	*
Spain														
Sweden	0.19	0.04	-41.6	16.9	-10.1	-21.0	2.0	30.0	-1.5	-15.6	-18.5	0	0	-76.2
Switzerland	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Turkey														
Ukraine	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
United Kingdom	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
United States	0.19	1.26	-3.1	42.9	28.0	25.0	18.8	31.6	-24.0	10.5	0	0	0	556.3

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 5.38****N<sub>2</sub>O emissions from disturbance associated with land-use conversion to cropland - AD, IEF and N<sub>2</sub>O emissions (base year and 2004)**

	Base year <sup>a</sup>			2004		
	Land area converted	N <sub>2</sub> O-N emissions per area converted	N <sub>2</sub> O emissions	Land area converted	N <sub>2</sub> O-N emissions per area converted	N <sub>2</sub> O emissions
	(kha)	(kg N <sub>2</sub> O-N/ha)	(Gg)	(kha)	(kg N <sub>2</sub> O-N/ha)	(Gg)
Australia	IE, NO	IE, NO	IE, NO	IE, NO	IE, NO	IE, NO
Austria	33.57	0.69	0.04	34.41	0.69	0.04
Belarus	1,081.20	IE, NE, NO	IE, NE, NO	900.00	IE, NE, NO	IE, NE, NO
Belgium	NO	NO	NO	NO	NO	NO
Bulgaria	NE	NE	NE	NE	NE	NE
Canada	9,031.63	0.01	0.12	6,005.05	0.01	0.11
Croatia	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO
Czech Republic	NO	NA, NO	NA, NO	NO	NA, NO	NA, NO
Denmark	NO	NO	NO	NO	NO	NO
Estonia	NE	NE	NE	NE	NE	NE
European Community	NE	NE	10.45	NE	NE	10.39
Finland	NE	NE	NE	NE	NE	NE
France	3,723.90	1.49	8.70	2,727.71	1.39	5.96
Germany	31.06	24.77	1.21	35.21	24.58	1.36
Greece	NO	NO	NO	NO	NO	NO
Hungary	NA	NA	NA	NA	NA	NA
Iceland						
Ireland	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO
Italy	14.80	4.82	0.11	351.82	4.52	2.50
Japan	475.93	0.27	0.20	104.06	0.19	0.03
Latvia	IE, NE	NE	NE	IE, NE	NE	NE
Liechtenstein	0.00	NO	NO	0.00	NO	NO
Lithuania	NE	NE	NE	NE	NE	NE
Luxembourg						
Monaco						
Netherlands	NE	NE	NE	NE	NE	NE
New Zealand	NE	NE	NE	NE	NE	NE
Norway	0.90	1.56	0.00	1.80	0.20	0.00
Poland						
Portugal	3.69	NE, NO	NE, NO	3.69	NE, NO	NE, NO
Romania	0.00	0.00	0.00	0.00	0.00	0.00
Russian Federation	NO	NO	NO	NO	NO	NO
Slovakia	NE	NE	NE	NE	NE	NE
Slovenia	NE	NE	NE	NE	NE	NE
Spain						
Sweden	82.65	2.50	0.32	117.62	2.50	0.46
Switzerland	0.55	5.97	0.01	1.84	10.11	0.03
Turkey						
Ukraine	3.71	NA, NE	NA, NE	0.72	NA, NE	NA, NE
United Kingdom	NE, NO	NA, NE, NO	NA, NE, NO	NE, NO	NA, NE, NO	NA, NE, NO
United States	IE	IE	IE	IE	IE	IE

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 5.39****N<sub>2</sub>O emissions from disturbance associated with land-use conversion to cropland - trend information**

N <sub>2</sub> O emissions (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	IE, NO	IE, NO	*	*	*	*	*	*	*	*	*	*	*	*
Austria	0.04	0.04	0.7	-1.0	-0.1	0.0	-0.4	0.0	-0.6	18.8	-18.9	-12.2	24.5	2.5
Belarus	IE, NE, NO	IE, NE, NO	*	*	*	*	*	*	*	*	*	*	*	*
Belgium	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Bulgaria	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Canada	0.12	0.11	-0.6	-1.0	0.4	-1.4	0.4	0.2	0.3	0.4	0.9	1.4	0.6	-3.2
Croatia	NE, NO	NE, NO	*	*	*	*	*	*	*	*	*	*	*	*
Czech Republic	NA, NO	NA, NO	*	*	*	*	*	*	*	*	*	*	*	*
Denmark	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Estonia	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
European Community	10.45	10.39	-1.0	-1.7	-3.8	0.9	3.0	0.0	-0.7	-10.2	-3.1	-3.2	33.7	-0.5
Finland	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
France	8.70	5.96	0.1	-1.3	-1.3	-1.3	-2.9	-3.0	-2.8	-3.5	-3.9	-4.1	1.9	-31.4
Germany	1.21	1.36	0.0	0.0	0.0	0.0	0.0	0.0	12.5	0.0	0.0	0.0	0.0	12.5
Greece	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Hungary	NA	NA	*	*	*	*	*	*	*	*	*	*	*	*
Iceland	0.00	0.00	*	*	*	*	*	*	*	*	*	*	*	*
Ireland	NA, NE, NO	NA, NE, NO	*	*	*	*	*	*	*	*	*	*	*	*
Italy	0.11	2.50	*	-19.8	*	*	691.7	41.9	-2.8	*	*	*	*	2,128.7
Japan	0.20	0.03	-4.1	-12.3	-18.8	-24.5	-8.9	-3.6	-8.2	-10.0	-16.1	-9.6	-26.6	-84.3
Latvia	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Liechtenstein	NO	NO	*	*	-63.6	*	*	2,100.0	*	*	*	-47.1	*	*
Lithuania	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Luxembourg														
Monaco														
Netherlands	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
New Zealand	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Norway	0.00	0.00	-9.7	-11.3	-5.0	-5.5	-6.5	-7.5	-7.7	-21.9	-12.3	3.7	-8.9	-73.6
Poland														
Portugal	NE, NO	NE, NO	*	*	*	*	*	*	*	*	*	*	*	*
Romania														
Russian Federation	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Slovakia	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Slovenia	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Spain														
Sweden	0.32	0.46	0	0	0	33.5	6.6	0	0	0	0	0	0	42.3
Switzerland	0.01	0.03	-1.8	0	0	0	0	0	0	0	0	0	0	468.0
Turkey														
Ukraine	NA, NE	NA, NE	*	*	*	*	*	*	*	*	*	*	*	*
United Kingdom	NA, NE, NO	NA, NE, NO	*	*	*	*	*	*	*	*	*	*	*	*
United States	IE	IE	*	*	*	*	*	*	*	*	*	*	*	*

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 5.40****Carbon emissions from agricultural lime application in cropland and grassland (base year and 2004)**

	Cropland						Grassland					
	Base year <sup>a</sup>			2004			Base year <sup>a</sup>			2004		
	Total amount of lime applied	C emissions per unit of lime	Carbon emissions	Total amount of lime applied	C emissions per unit of lime	Carbon emissions	Total amount of lime applied	C emissions per unit of lime	Carbon emissions	Total amount of lime applied	C emissions per unit of lime	Carbon emissions
	(Mg/yr)	(MgC/Mg)	(Gg)	(Mg/yr)	(MgC/Mg)	(Gg)	(Mg/yr)	(MgC/Mg)	(Gg)	(Mg/yr)	(MgC/Mg)	(Gg)
Australia	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Austria	205,230	0.12	24.63	205,047	0.12	24.61	IE	IE	IE	IE	IE	IE
Belarus	5,221,200	0.12	626.54	2,214,400	0.12	265.73	NO	NO	NO	NO	NO	NO
Belgium	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Bulgaria	112,286	0.12	13.47	NE, NO	NE, NO	NE, NO	NO	NO	NO	NO	NO	NO
Canada	442,755	0.13	55.53	626,114	0.13	78.48	IE	IE	IE	IE	IE	IE
Croatia	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Czech Republic	2,517,500	0.12	302.10	149,772	0.12	17.97	132,500	0.12	15.90	7,883	0.12	0.95
Denmark	1,285,300	0.12	154.24	358,300	0.12	43.00	IE	IE	IE	IE	IE	IE
Estonia	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
European Community	11,333,982	0.12	1,375.17	7,314,364	0.12	883.29	2,203,034	0.12	270.07	1,253,016	0.12	152.76
Finland	1,344,769	0.13	168.51	558,967	0.12	68.66	IE	IE	IE	IE	IE	IE
France	1,248,835	0.12	150.43	1,270,415	0.12	152.84	0	0.00	0.00	0	0.00	0.00
Germany	5,118,222	0.12	614.19	3,536,908	0.12	424.13	IE	IE	IE	IE	IE	IE
Greece	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Hungary	21,000	0.12	2.52	31,000	0.11	3.28	IE	IE	IE	IE	IE	IE
Iceland	NE	NE	NE	6,457	0.11	0.69	NO	NO	0.00	NO	NO	0.00
Ireland	IE, NO	IE, NO	IE, NO	IE, NO	IE, NO	IE, NO	806,900	0.12	96.83	547,263	0.12	65.67
Italy	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Japan	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Latvia	10,500	0.12	1.26	2,200	0.12	0.26	NE	NE	NE	NE	NE	NE
Liechtenstein	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Lithuania	200	206.59	41.32	NA	NA	NA	NA	NA	NA	NA	NA	NA
Luxembourg												
Monaco												
Netherlands	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
New Zealand	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE
Norway	492,407	0.12	59.09	212,546	0.12	25.51	IE, NO	IE, NO	IE, NO	IE, NO	IE, NO	IE, NO
Poland												
Portugal	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Romania												
Russian Federation	31,400,000	0.12	3,770.00	2,400,000	0.12	290.00	IE	IE	IE	IE	IE	IE
Slovakia	1,000	0.12	0.12	2,440	0.12	0.30	NE	NE	NE	NE	NE	NE
Slovenia	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Spain												
Sweden	383,760	0.12	46.30	289,480	0.12	34.90	NA	NA	NA	NA	NA	NA
Switzerland	45,000	0.12	5.40	45,000	0.12	5.40	NO	NO	NO	NO	NO	NO
Turkey												
Ukraine	6,930,700	0.12	831.68	222,800	0.12	26.74	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO
United Kingdom	1,747,866	0.12	216.88	1,095,247	0.12	135.15	1,396,134	0.12	173.24	705,753	0.12	87.09
United States	21,371,258	0.06	1,272.70	18,113,185	0.06	1,080.67	IE	IE	IE	IE	IE	IE

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 5.41**  
**Carbon emissions from agricultural lime application - trend information (all land-use categories)**

Carbon emissions (Gg)			Relative change (%)											
	Base year <sup>a</sup> 2004		1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Austria	24.63	24.61	0.8	1.4	0.0	0.1	-0.5	0.0	-1.4	-0.1	0.0	0.0	-0.1	-0.1
Belarus	626.54	265.73	-11.5	13.1	2.3	20.3	-10.6	-29.2	-10.3	10.2	16.2	10.8	7.1	-57.6
Belgium	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Bulgaria	13.47	NE, NO	-81.5	*	*	*	*	*	*	*	*	*	*	*
Canada	55.53	78.48	25.4	-0.8	10.5	-8.6	11.9	-1.7	-11.3	7.6	9.2	-7.9	0	41.3
Croatia	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Czech Republic	318.00	18.92	-73.6	7.9	2.8	-17.7	-3.3	-3.3	6.2	0.6	-6.8	-12.1	-8.3	-94.1
Denmark	154.24	43.00	-18.2	35.1	-20.8	19.5	-46.3	5.1	-1.7	-23.0	16.3	-3.0	-30.3	-72.1
Estonia	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
European Community	1,645.24	1,036.05	-10.8	21.3	-1.0	0.4	-11.0	-1.1	-2.6	-8.4	2.2	1.0	-7.5	-37.0
Finland	168.51	68.66	-30.2	-14.0	17.5	3.1	-8.5	0.3	-24.0	21.2	6.9	-34.2	-9.3	-59.3
France	150.43	152.84	-8.7	19.2	-8.5	17.9	-8.7	-3.7	-17.0	-8.1	7.6	6.3	3.0	1.6
Germany	658.80	449.53	-24.6	17.4	2.9	4.9	13.8	0.7	10.6	-13.3	6.5	-8.4	-0.9	-31.8
Greece	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Hungary	2.52	3.28	-41.8	-17.6	58.3	-35.1	27.9	39.4	13.9	-44.5	43.8	23.9	22.4	30.0
Iceland	NA, NE	0.69	*	*	*	*	*	*	*	*	*	*	6.6	*
Ireland	96.83	65.67	-11.2	83.4	-2.1	-12.5	-27.8	25.4	-4.4	5.2	-28.9	41.2	-37.7	-32.2
Italy	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Japan	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Latvia	1.26	0.26	0	0	-25.5	-61.5	56.2	4.3	108.2	-93.1	4,589.9	63.5	-95.9	-79.0
Liechtenstein	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Lithuania	41.32	NA	-14.3	-33.3	-50.0	*	*	*	*	*	*	*	*	*
Luxembourg														
Monaco														
Netherlands	49.95	21.54	-19.9	2.5	12.6	-0.5	-5.5	-18.9	15.7	-18.0	5.8	2.1	-8.6	-56.9
New Zealand	94.48	187.73	12.0	2.2	2.5	2.7	9.2	8.5	7.8	7.2	0.3	-1.9	-4.3	98.7
Norway	61.85	29.83	-13.0	11.3	-7.2	0.2	-11.0	-1.0	-13.4	1.9	-2.0	-8.5	-11.1	-51.8
Poland														
Portugal	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Romania														
Russian Federation	3,770.00	290.00	-7.7	-37.3	-28.4	-24.5	-30.0	7.1	13.3	-5.9	-6.3	3.3	-6.5	-92.3
Slovakia	0.12	0.30	0.0	0.0	0.0	0.0	0.0	0.0	143.8	0.0	0.0	0.0	0.0	143.8
Slovenia	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Spain														
Sweden	46.30	34.90	-21.0	8.2	14.1	-9.7	-24.8	19.3	0.0	-12.2	-4.5	-2.2	0	-24.6
Switzerland	5.40	5.40	0	0	0	0	0	0	0	0	0	0	0	0
Turkey														
Ukraine	831.68	26.74	-47.9	0	-77.9	-76.3	9.5	*	*	12.6	-24.8	-8.2	68.8	-96.8
United Kingdom	390.12	222.24	23.9	20.4	-0.9	-11.1	-21.4	-16.2	-10.5	-8.8	2.0	24.2	-11.2	-43.0
United States	1,272.70	1,080.67	7.3	6.1	-0.5	-2.0	10.3	-5.5	-2.9	1.9	12.8	-25.4	6.7	-15.1

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 5.42****Biomass burning (base year and 2004) - CO<sub>2</sub> emissions for all land-use categories**

	Base year <sup>a</sup>					2004				
	Activity Data			CO <sub>2</sub> IEF	CO <sub>2</sub> Emissions	Activity Data			CO <sub>2</sub> IEF	CO <sub>2</sub> Emissions
	Description	Unit	Values	(Mg/activity data unit)	(Gg)	Description	Unit	Values	(Mg/activity data unit)	(Gg)
Australia	Area burned	ha	1,400,910	IE,NA,NE,NO	IE, NA, NE, NO	Area burned	ha	2,790,927	IE,NA,NE,NO	IE, NA, NE, NO
Austria	Area burned	ha	200	IE,NA,NO	IE, NA, NO	Area burned	ha	67	IE,NA,NO	IE, NA, NO
Belarus	Biomass burned	kg dm	27	1,349.01	36.61	Biomass burned	kg dm	23	1,341.04	30.29
Belgium				NO	NO				NO	NO
Bulgaria	Biomass burned	kg dm	IE,NE,NO	IE,NE,NO	IE, NE, NO	Biomass burned	kg dm	IE,NE,NO	IE,NE,NO	IE, NE, NO
Canada	Area burned	ha	383,998	386.36	44,666.83	Area burned	ha	1,237,647	423.85	175,334.12
Croatia	Biomass burned	kg dm	NE,NO	NE,NO	NE, NO	Biomass burned	kg dm	NE,NO	NA,NE,NO	NA, NE, NO
Czech Republic	Biomass burned	kg dm	263,650,113	0.00	483.36	Biomass burned	kg dm	358,242,912	0.00	656.78
Denmark	Area burned	ha	NA,NO	NA,NO	NA, NO	Area burned	ha	NA,NO	NA,NO	NA, NO
Estonia	Area burned	ha	1,010	76.54	77.30	Area burned	ha	232	112.68	26.18
European Community			NA,NO	IE, NE, NO	1,028.68			NA,NO	IE, NE, NO	818.18
Finland	Area burned		4,188	3.13	13.10	Area burned		567	19.89	11.28
France	Area burned	ha	38,144,416	NA	NA	Area burned	ha	38,036,027	NA	NA
Germany	Area burned	ha	NE,NO	IE,NE,NO	IE, NE, NO	Area burned	ha	274	IE,NE,NO	IE, NE, NO
Greece	Area burned	ha	38,593	IE,NA,NO	IE, NA, NO	Area burned	ha	10,803	IE,NA,NO	IE, NA, NO
Hungary			NA, NO	IE,NA,NO	IE, NA, NO			NA, NO	IE,NA,NO	IE, NA, NO
Iceland			NE,NO	NA,NE,NO	NA			NE,NO	NA,NE,NO	NA
Ireland			NA,NE,NO	NE,NO	NE, NO			NA,NE,NO	NE,NO	NE, NO
Italy	area burned	ha	96,157	IE,NO	IE, NO	area burned	ha	18,874	IE,NO	IE, NO
Japan	Biomass burned		631,267,477	IE,NE	IE, NE	Biomass burned		489,216,271	IE,NE	IE, NE
Latvia	Biomass burned	kg dm	112,110	1.83	205.54	Biomass burned	kg dm	13,965,377	0.03	378.99
Liechtenstein	Biomass burned	kg dm	NO	NO	NO	Biomass burned	kg dm	NO	NO	NO
Lithuania	Area burned	ha	134	52.24	7.00	Area burned	ha	253	60.47	15.30
Luxembourg										
Monaco										0.00
Netherlands			NA, NE, NO	NA,NE,NO	NA, NE, NO			NA, NE, NO	NA,NE,NO	NA, NE, NO
New Zealand	Biomass burned	kg dm	622,341,493	IE,NA,NE,NO	IE, NA, NE, NO	Biomass burned	kg dm	500,705,737	IE,NA,NE,NO	IE, NA, NE, NO
Norway	Area burned	ha	936	IE,NO	IE, NO	Area burned	ha	117	IE,NO	IE, NO
Poland										
Portugal	Biomass burned	kg dm	914,243	0.81	736.54	Biomass burned	kg dm	652,022	0.73	476.01
Romania	Area burned	ha	93	24.77	2.31	Area burned	ha	444	24.77	11.00
Russian Federation	Area burned	ha	1,377,364	IE,NA,NE,NO	IE, NA, NE, NO	Area burned	ha	543,289	IE,NA,NE,NO	IE, NA, NE, NO
Slovakia	Biomass burned	kg dm	87,388	1.83	160.21	Biomass burned	kg dm	112,242	IE,NA,NO	IE, NA, NO
Slovenia			NA,NE,NO	NA,NE,NO	NA, NE, NO			NA,NE,NO	NA,NE,NO	NA, NE, NO
Spain										
Sweden	Area burned	ha	8,638	18.50	128.00	Area burned	ha	10,500	18.70	148.00
Switzerland	Area burned	ha	1,100	IE,NO	IE, NO	Area burned	ha	350	IE,NO	IE, NO
Turkey										
Ukraine	Biomass burned	kg dm	32,163	2.64	84.96	Biomass burned	kg dm	782	11.36	8.89
United Kingdom	Biomass burned	kg dm	91,536,622	NA, NE, NO	151.04	Biomass burned	kg dm	110,838,841	NA, NE, NO	182.88
United States			NA	IE,NA,NE	IE, NA, NE			NA	IE,NA,NE	IE, NA, NE

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual inventories of Annex I Parties the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 5.43****CH<sub>4</sub> emissions from biomass burning in forest land - trend information**

CH <sub>4</sub> emissions (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	72.88	166.23	53.7	28.9	-3.1	28.4	-20.9	-16.2	-5.2	87.9	190.9	-4.7	-10.0	128.1
Austria	0.01	0.00	-72.5	-44.8	-9.4	-31.0	365.0	-91.4	425.0	-42.9	700.0	-64.9	0	-64.9
Belarus	0.20	0.16	-40.6	14.3	120.0	-80.0	12.8	-7.0	70.4	-48.7	534.0	-45.6	-60.7	-16.7
Belgium	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Bulgaria	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Canada	152.79	637.07	52.7	87.1	-81.2	-70.0	1,064.1	-60.2	-79.7	80.6	327.8	-17.6	68.7	317.0
Croatia	NE, NO	NE, NO	*	*	*	*	*	*	*	*	*	*	*	*
Czech Republic	2.11	2.87	-17.6	4.8	22.2	-1.7	14.4	1.5	-9.8	10.3	2.1	2.3	8.9	35.9
Denmark	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Estonia	0.34	0.11	*	*	*	*	*	*	*	*	*	*	*	-66.1
European Community	29.19	12.21	-21.1	43.6	-37.3	21.0	51.4	-41.8	105.1	-46.8	8.1	126.1	-68.2	-58.2
Finland	0.77	0.09	-60.5	-20.1	-30.5	63.4	-65.0	153.4	-58.3	229.7	0.2	-23.8	-75.0	-87.9
France	11.45	4.12	-32.1	34.8	-17.7	9.0	5.0	-10.1	31.6	-35.9	20.4	-6.3	-46.8	-64.0
Germany	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Greece	2.29	0.49	-51.1	-40.4	-43.9	104.5	204.8	-92.5	1,705.8	-86.9	-85.8	31.5	165.5	-78.5
Hungary	IE, NA, NO	IE, NA, NO	*	*	*	*	*	*	*	*	*	*	*	*
Iceland														
Ireland	NE, NO	NE, NO	*	*	*	*	*	*	*	*	*	*	*	*
Italy	6.80	1.65	-74.4	-55.0	-19.0	234.1	16.4	-50.8	104.9	-36.6	-44.0	110.1	-46.7	-75.8
Japan	0.40	0.55	-25.2	-51.2	227.7	21.0	-68.9	-51.3	49.0	59.2	66.4	-81.0	196.1	38.8
Latvia	0.90	1.56	18.6	20.2	-1.8	31.9	12.4	7.2	2.3	-38.8	8.4	-4.0	-7.9	74.4
Liechtenstein	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Lithuania	0.03	0.07	-66.7	14.3	0.0	0.0	-87.5	800.0	-11.1	-62.5	533.3	-42.1	-36.4	133.3
Luxembourg														
Monaco														
Netherlands	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
New Zealand	1.72	1.50	8.6	-8.8	25.4	-3.8	-30.8	-15.9	-6.7	1.5	-18.4	-3.0	-19.3	-13.0
Norway	0.84	0.11	68.2	-51.2	354.0	68.7	-68.3	-68.7	99.7	-47.9	146.4	327.4	-87.6	-87.5
Poland														
Portugal	7.31	5.22	57.7	549.2	-65.1	-62.5	400.5	-45.9	121.1	-34.0	43.8	339.0	-80.2	-28.7
Romania	0.01	0.05	-37.6	-33.2	8.9	-70.1	102.2	176.5	853.0	-72.2	255.9	-78.6	-41.7	377.0
Russian Federation	172.98	67.17	-50.5	-34.5	430.1	-57.7	223.5	-66.1	57.1	-42.3	69.7	66.0	-73.8	-61.2
Slovakia	0.70	0.82	-37.2	12.0	11.1	5.9	-1.3	14.4	9.8	1.5	-2.5	10.1	12.6	17.6
Slovenia	NE, NO	NE, NO	*	*	*	*	*	*	*	*	*	*	*	*
Spain														
Sweden	0.55	0.63	0	0	0	55.7	-42.1	13.9	0	-6.2	8.3	9.0	0	13.8
Switzerland	0.07	0.00	-86.6	50.0	-47.0	550.3	-83.5	-96.3	283.3	4.3	1,012.5	37.5	-96.5	-98.2
Turkey														
Ukraine	0.40	0.04	-41.9	-69.8	163.9	-93.0	422.0	32.6	-81.3	311.7	-20.9	-49.8	-84.4	-89.5
United Kingdom	NE, NO	NE, NO	*	*	*	*	*	*	*	*	*	*	*	*
United States	NA, NE	NA, NE	*	*	*	*	*	*	*	*	*	*	*	*

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 5.44****N<sub>2</sub>O emissions from biomass burning in forest land - trend information**

N <sub>2</sub> O emissions (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	1.35	3.07	53.7	28.9	-3.1	28.4	-20.9	-16.2	-5.2	87.9	190.9	-4.7	-10.0	128.1
Austria	0.00	0.00	-73.5	-44.8	-9.4	-31.0	365.0	-91.4	425.0	-42.9	700.0	-64.9	0	-66.3
Belarus	0.00	0.00	-38.3	16.7	114.3	-80.0	7.8	-1.0	66.7	-46.3	516.3	-47.2	-60.7	-18.5
Belgium	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Bulgaria	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Canada	6.43	26.78	52.7	87.2	-81.2	-70.0	1,063.7	-60.2	-79.7	80.6	327.8	-17.6	68.6	316.7
Croatia	NE, NO	NE, NO	*	*	*	*	*	*	*	*	*	*	*	*
Czech Republic	0.01	0.02	-17.6	4.8	22.2	-1.7	14.4	1.5	-9.8	10.3	2.1	2.3	8.9	35.9
Denmark	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Estonia	0.00	0.00	*	*	*	*	*	*	*	*	*	*	*	-66.1
European Community	0.51	0.31	-9.7	12.3	-16.4	10.3	15.3	-19.7	35.5	-22.7	12.3	49.1	-45.8	-39.3
Finland	0.01	0.00	-60.5	-20.1	-30.5	63.4	-65.0	153.4	-58.3	229.7	0.2	-23.8	-75.0	-87.9
France	0.39	0.26	-8.4	5.0	-6.4	6.6	-0.2	-5.2	10.6	-10.4	15.2	11.8	-29.7	-34.6
Germany	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Greece	0.02	0.00	-51.1	-40.4	-43.9	104.5	204.8	-92.5	1,705.8	-86.9	-85.8	31.5	165.5	-78.5
Hungary	IE, NA, NO	IE, NA, NO	*	*	*	*	*	*	*	*	*	*	*	*
Iceland														
Ireland	NE, NO	NE, NO	*	*	*	*	*	*	*	*	*	*	*	*
Italy	0.05	0.01	-74.4	-55.0	-19.0	234.1	16.4	-50.8	104.9	-36.6	-44.0	110.1	-46.7	-75.8
Japan	0.00	0.00	-25.2	-51.2	227.7	21.0	-68.9	-51.3	49.0	59.2	66.4	-81.0	196.1	38.8
Latvia	0.01	0.01	18.6	20.2	-1.8	31.9	12.4	7.2	2.3	-38.8	8.4	-4.0	-7.9	74.4
Liechtenstein	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Lithuania	0.00	0.00	-50.0	0.0	0.0	0.0	-80.0	500.0	0.0	-66.7	550.0	-38.5	-37.5	150.0
Luxembourg														
Monaco														
Netherlands	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
New Zealand	0.01	0.01	8.6	-8.8	25.4	-3.8	-30.8	-15.9	-6.7	1.5	-18.4	-3.0	-19.3	-13.0
Norway	0.01	0.00	68.2	-51.2	354.0	68.7	-68.3	-68.7	99.7	-47.9	146.4	327.4	-87.6	-87.5
Poland														
Portugal	0.05	0.04	57.7	549.2	-65.1	-62.5	400.5	-45.9	121.1	-34.0	43.8	339.0	-80.2	-28.7
Romania	0.00	0.00	-37.6	-33.2	8.9	-70.1	102.2	176.5	853.0	-72.2	255.9	-78.6	-41.7	377.0
Russian Federation	1.19	0.46	-50.4	-34.9	428.6	-57.4	222.2	-66.0	56.5	-42.6	71.0	66.0	-73.9	-61.3
Slovakia	0.01	0.01	-32.7	15.9	0.0	0.0	0.0	37.0	0.0	0.0	0.0	0.0	12.0	1.8
Slovenia	NE, NO	NE, NO	*	*	*	*	*	*	*	*	*	*	*	*
Spain														
Sweden	0.00	0.00	0	0	0	55.8	-42.1	13.8	0	-6.2	8.5	8.9	0	13.8
Switzerland	0.01	0.00	-86.2	48.3	-46.5	552.2	-83.3	-96.0	300.0	0.0	925.0	36.6	-96.4	-98.2
Turkey														
Ukraine	0.01	0.00	-41.9	-69.8	163.9	-93.0	422.0	32.6	-81.3	311.7	-20.9	-49.8	-84.4	-89.5
United Kingdom	NE, NO	NE, NO	*	*	*	*	*	*	*	*	*	*	*	*
United States	NA, NE	NA, NE	*	*	*	*	*	*	*	*	*	*	*	*

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

Table 5.45

CH<sub>4</sub> emissions from biomass burning in land converted to cropland - trend information

CH <sub>4</sub> emissions (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	34.85	23.20	-8.2	-12.3	12.9	-3.0	6.9	-7.3	6.7	-9.3	1.3	-8.4	-6.1	-33.4
Austria	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Belarus	NE, NO	NE, NO	*	*	*	*	*	*	*	*	*	*	*	*
Belgium	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Bulgaria	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Canada	8.91	4.99	-13.4	-18.3	4.8	3.2	7.7	3.7	-13.3	-3.6	11.6	1.3	-7.4	-44.0
Croatia	NE, NO	NE, NO	*	*	*	*	*	*	*	*	*	*	*	*
Czech Republic	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Denmark	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Estonia	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
European Community	7.37	5.87	0	0	0	0	1.1	1.5	0.8	-2.2	-2.0	0.8	-2.8	-20.3
Finland	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
France	7.37	5.87	0	0	0	0	1.1	1.5	0.8	-2.2	-2.0	0.8	-2.8	-20.3
Germany	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Greece	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Hungary	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Iceland														
Ireland														
Italy	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Japan	1.03	0.07	-43.4	4.1	-19.6	-25.5	23.9	-5.1	-47.0	-27.4	-7.5	21.5	-7.1	-93.3
Latvia	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Liechtenstein	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Lithuania	NA, NE	NA, NE	*	*	*	*	*	*	*	*	*	*	*	*
Luxembourg														
Monaco														
Netherlands	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
New Zealand	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Norway	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Poland														
Portugal	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Romania														
Russian Federation	NA, NO	NA, NO	*	*	*	*	*	*	*	*	*	*	*	*
Slovakia	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Slovenia	NE, NO	NE, NO	*	*	*	*	*	*	*	*	*	*	*	*
Spain														
Sweden	NA	NA	*	*	*	*	*	*	*	*	*	*	*	*
Switzerland	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Turkey														
Ukraine	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
United Kingdom	NE, NO	NE, NO	*	*	*	*	*	*	*	*	*	*	*	*
United States	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 5.46****N<sub>2</sub>O emissions from biomass burning in land converted to cropland - trend information**

N <sub>2</sub> O emissions (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	0.65	0.43	-8.2	-12.3	12.9	-3.0	6.9	-7.3	6.7	-9.3	1.3	-8.4	-6.1	-33.4
Austria	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Belarus	NE, NO	NE, NO	*	*	*	*	*	*	*	*	*	*	*	*
Belgium	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Bulgaria	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Canada	0.37	0.20	-13.2	-18.0	4.3	4.7	6.4	4.4	-13.7	-2.1	9.6	0.7	-6.7	-45.0
Croatia	NE, NO	NE, NO	*	*	*	*	*	*	*	*	*	*	*	*
Czech Republic	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Denmark	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Estonia	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
European Community	0.05	0.04	0	0	0	0	1.1	1.5	0.8	-2.2	-2.0	0.8	-2.8	-20.3
Finland	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
France	0.05	0.04	0	0	0	0	1.1	1.5	0.8	-2.2	-2.0	0.8	-2.8	-20.3
Germany	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Greece	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Hungary	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Iceland														
Ireland	NE, NO	NE, NO	*	*	*	*	*	*	*	*	*	*	*	*
Italy	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Japan	0.01	0.00	-43.4	4.1	-19.6	-25.5	23.9	-5.1	-47.0	-27.4	-7.5	21.5	-7.1	-93.3
Latvia	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Liechtenstein	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Lithuania	NA, NE	NA, NE	*	*	*	*	*	*	*	*	*	*	*	*
Luxembourg														
Monaco														
Netherlands	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
New Zealand	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Norway	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Poland														
Portugal	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Romania														
Russian Federation	NA, NO	NA, NO	*	*	*	*	*	*	*	*	*	*	*	*
Slovakia	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Slovenia	NE, NO	NE, NO	*	*	*	*	*	*	*	*	*	*	*	*
Spain														
Sweden	NA	NA	*	*	*	*	*	*	*	*	*	*	*	*
Switzerland	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Turkey														
Ukraine	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
United Kingdom	NE, NO	NE, NO	*	*	*	*	*	*	*	*	*	*	*	*
United States	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1988) and Slovenia (1986).

**Table 5.47****CH<sub>4</sub> emissions from biomass burning in grasslands - trend information**

CH <sub>4</sub> emissions (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	126.32	63.20	-12.1	-16.3	-6.3	0.1	-0.6	2.1	3.7	2.8	-5.3	-23.2	25.4	-50.0
Austria	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Belarus	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Belgium	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Bulgaria	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Canada	NE, NO	NE, NO	*	*	*	*	*	*	*	*	*	*	*	*
Croatia	NE, NO	NE, NO	*	*	*	*	*	*	*	*	*	*	*	*
Czech Republic	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Denmark	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Estonia	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
European Community	7.64	7.09	18.1	-1.3	8.1	-5.8	3.9	-3.1	2.7	2.1	-9.8	7.0	-5.3	-7.2
Finland	NE, NO	NE, NO	*	*	*	*	*	*	*	*	*	*	*	*
France	7.40	6.47	18.4	1.6	6.8	-9.0	4.8	-2.3	-4.2	3.2	-8.4	8.1	-4.9	-12.5
Germany	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Greece	0.09	0.03	9.8	-81.3	165.8	180.6	-8.5	-87.7	685.6	-71.2	-88.5	144.2	25.8	-59.7
Hungary	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Iceland														
Ireland	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Italy	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Japan	0.15	0.01	-42.7	5.1	-19.1	-25.2	24.4	-4.6	-46.8	-27.2	-7.0	21.6	-7.0	-92.6
Latvia	NE, NO	0.03	*	436.2	132.8	-52.9	117.8	114.0	-15.8	112.3	140.6	24.1	-53.1	*
Liechtenstein	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Lithuania	NA, NE	NA, NE	*	*	*	*	*	*	*	*	*	*	*	*
Luxembourg														
Monaco														
Netherlands	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
New Zealand	2.73	2.08	-17.9	4.2	-4.0	28.6	-1.5	-6.2	-28.4	-7.0	9.9	-5.8	-5.9	-23.9
Norway	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Poland														
Portugal	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Romania														
Russian Federation	NA, NE	NA, NE	*	*	*	*	*	*	*	*	*	*	*	*
Slovakia	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Slovenia	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Spain														
Sweden	0.01	0.02	0	0	0	54.5	-88.2	50.0	66.7	20.0	150.0	26.7	0	72.7
Switzerland	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Turkey														
Ukraine	NA, NE	NA, NE	*	*	*	*	*	*	*	*	*	*	*	*
United Kingdom	0.15	0.57	6.8	11.3	17.8	-17.0	4.4	147.5	50.1	31.7	-13.1	-5.8	-10.8	285.9
United States	NA, NE	NA, NE	*	*	*	*	*	*	*	*	*	*	*	*

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

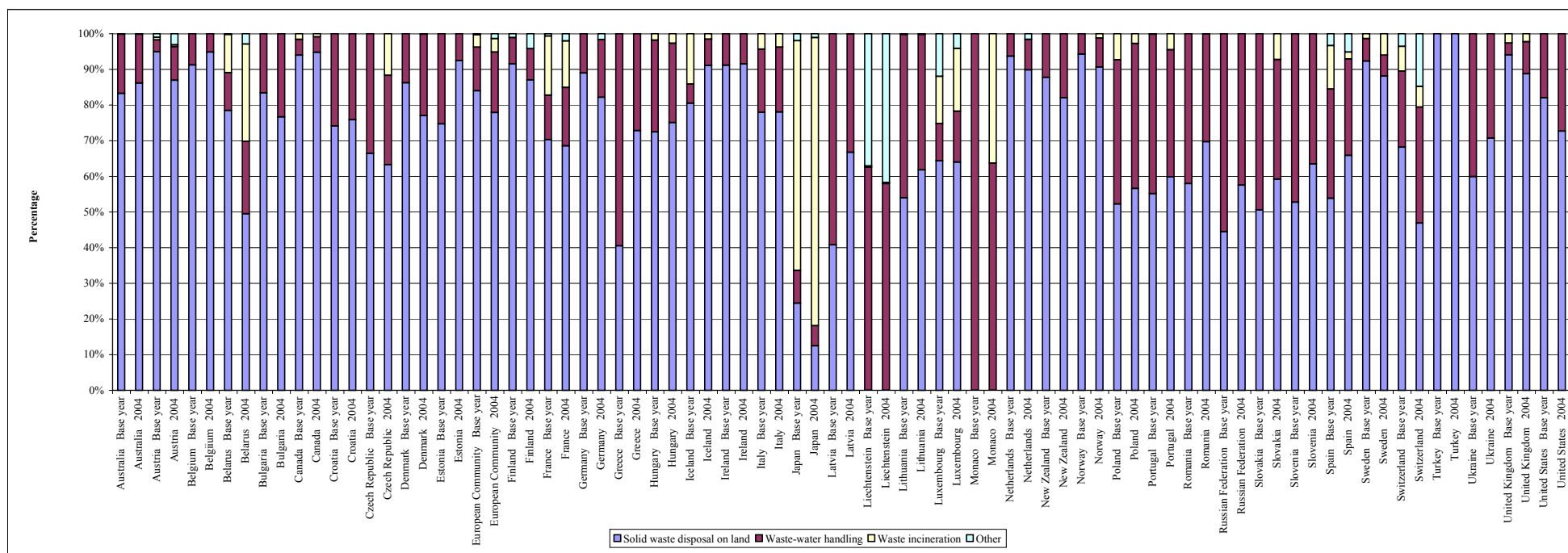
**Table 5.48****N<sub>2</sub>O emissions from biomass burning in grasslands - trend information**

N <sub>2</sub> O emissions (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	2.34	1.17	-12.1	-16.3	-6.3	0.1	-0.6	2.1	3.7	2.8	-5.3	-23.2	25.4	-50.0
Austria	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Belarus	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Belgium	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Bulgaria	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Canada	NE, NO	NE, NO	*	*	*	*	*	*	*	*	*	*	*	*
Croatia	NE, NO	NE, NO	*	*	*	*	*	*	*	*	*	*	*	*
Czech Republic	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Denmark	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Estonia	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
European Community	0.05	0.05	-74.8	-1.3	8.1	-5.8	3.9	-3.1	2.7	2.1	-9.8	7.0	-5.3	-7.2
Finland	NE, NO	NE, NO	*	*	*	*	*	*	*	*	*	*	*	*
France	0.05	0.04	-77.5	1.6	6.8	-9.0	4.8	-2.3	-4.2	3.2	-8.4	8.1	-4.9	-12.5
Germany	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Greece	0.00	0.00	9.8	-81.3	165.8	180.6	-8.5	-87.7	685.6	-71.2	-88.5	144.2	25.8	-59.7
Hungary	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Iceland	0.00	0.00	*	*	*	*	*	*	*	*	*	*	*	*
Ireland	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Italy	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Japan	0.00	0.00	-42.7	5.1	-19.1	-25.2	24.4	-4.6	-46.8	-27.2	-7.0	21.6	-7.0	-92.6
Latvia	NE, NO	0.00	*	436.2	132.8	-52.9	117.8	114.0	-15.8	112.3	140.6	24.1	-53.1	*
Liechtenstein	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Lithuania	NA, NE	NA, NE	*	*	*	*	*	*	*	*	*	*	*	*
Luxembourg														
Monaco	0.00	0.00	*	*	*	*	*	*	*	*	*	*	*	*
Netherlands	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
New Zealand	0.02	0.01	-17.9	4.2	-4.0	28.6	-1.5	-6.2	-28.4	-7.0	9.9	-5.8	-5.9	-23.9
Norway	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Poland														
Portugal	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Romania														
Russian Federation	NA, NE	NA, NE	*	*	*	*	*	*	*	*	*	*	*	*
Slovakia	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Slovenia	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Spain														
Sweden	0.00	0.00	0	0	0	71.4	-83.3	0.0	50.0	33.3	150.0	30.0	0	85.7
Switzerland	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Turkey														
Ukraine	NA, NE	NA, NE	*	*	*	*	*	*	*	*	*	*	*	*
United Kingdom	0.00	0.00	6.8	11.3	17.8	-17.0	4.4	147.5	50.1	31.7	-13.1	-5.8	-10.8	285.9
United States	NA, NE	NA, NE	*	*	*	*	*	*	*	*	*	*	*	*

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

## Waste

**Figure 6.1**  
**Contribution of subsectors to total GHG emissions in Waste<sup>a</sup>**



<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual inventories of Annex I Parties the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 6.1**  
**Solid waste disposal on land, waste-water handling and waste incineration (base year) <sup>a</sup>**

	Activity data		Solid waste disposal on land							Waste-water handling										Waste incineration				
			CH <sub>4</sub>				CH <sub>4</sub> IEF			CH <sub>4</sub>				CH <sub>4</sub> IEF		N <sub>2</sub> O from human sewage		CO <sub>2</sub> from non-biogenic waste						
	Methods and EF used <sup>b</sup>		Key category	Share of national total	Emissions per capita	Methods and EF used <sup>c</sup>				Key category	Share of national total	Emissions per capita	Domestic / commercial		Industrial		Emissions per capita	N <sub>2</sub> O IEF	Methods and EF used <sup>d</sup>		Key category	Share of national total		
	Methods	EF				Methods	EF	Waste-water	Sludge				Waste-water	Sludge	Methods	EF								
																			CRF	World Bank <sup>e</sup>			Methods	EF
						(%)	(kg)	(t/t)	(t/t)				(%)	(kg)	(kg / kg DC)				(kg)	(kg N <sub>2</sub> O -N/kg sewage N)				(%)
IPCC default EF <sup>f</sup>																		0.01						
Australia	17	17	T2	D	L	3.6	43	0.04	NA	T2	CS, D	L	0.6	7.14	0.10	0.03	0.08	0.03	0.09	0.01	T1, T2	CS, D		0.01
Austria	8	8	T2	CS, D	L	4.3	21	0.06	NO	D	CS, D		0.1	0.63	0.01	IE	NA	IE	0.01	0.00	D	CS, D		0.03
Belarus	10	10	T1	D	L	1.8	11	NO	0.06	NA	NA		-	NE	NE	NE	NE	NE	0.07	0.01	NA	NA		-
Belgium	9	10			L	1.8	13	0.03					0.1	0.40			NE	NE	0.09	0.01				0.23
Bulgaria	9	9	T1	D	L	8.2	57	0.07	NE	T1	D	L	1.4	9.78	0.06	0.06	0.04	0.04	0.11	0.01	NA	NA		-
Canada	28	28	CS	CS	L	3.9	40	0.08	NA	CS	CS		0.0	0.38	NA	NE	NO	NE	0.10	0.01	CS	CS		0.04
Croatia	5	5	T1	CS, D		0.7	2	0.03	IE	NA	NA		-	NE, NO	NE	NE	NO	NO	0.05	0.01	NA	NA		-
Czech Republic	10	10	T1	CS, D	L	1.0	9	0.04	NO	CS, T1, T2	CS, D		0.4	3.79	0.10	0.19	0.02	0.06	0.05	0.01				0.00
Denmark	5	5			L	1.9	12	0.02	NO				0.2	1.15	0.15	NE	IE	NE	0.05	0.00	NA	NA		-
Estonia	2	2	T1	D	L	1.2	16	0.07	NO	T1	D		0.3	3.92	0.01	IE	0.06	IE	0.09	0.01	NA	NA		-
European Community	NE	365	CR, CS, D, M, T1, T2, T3	CR, CS, D	L	3.4	19	0.04					0.3	1.65	NE	NE	NE	NE	NA	NA				0.12
Finland	5	5	T2	CS, D	L	5.1	35	0.04	IE, NO	D	CS, D		0.2	1.47	0.12	IE	0.00	IE	0.07	0.01	NA	NA		-
France	59	57			L	2.0	9	0.03	0.03				0.1	0.60	0.07	NE	NO	NE	0.06	NA				0.41
Germany	79	79	CS, T2	CS, D	L	2.9	22	0.04	NO	CS, D	CS, D		0.2	1.33	0.03	NE	NO	NO	0.09	0.01	NA	NA		-
Greece	10	10	T2	CS, D	L	1.7	8	0.03	0.04	D	D	L	2.1	10.87	0.57	IE	0.25	NE	0.10	0.01	D	D		0.00
Hungary	11	11	CS, D	CS, D	L	3.2	18	0.04	NA, NO	CS	CS	L	1.1	6.33	0.25	IE	0.25	IE	NE	NE	CS	OTH		0.08
Iceland	0	0			L	3.4	21	0.03	0.00				0.0	0.24	NE	NE	NE	NE	0.08	0.01				0.56
Ireland	4	4	T2	CS	L	2.4	18	0.10	NE	T1	D		0.0	0.20	NO	0.01	NO	0.02	0.10	0.01	NA	NA		-
Italy	57	57	T2	CS	L	2.6	11	0.03	0.03	D	D	L	0.4	1.65	0.60	0.60	0.25	IE	0.06	0.01	D	CS		0.10
Japan	124	124	CS, D, T1, T3	CS, D	L	0.7	4	0.12	NO	CS, D	CS, D		0.2	0.82	NE	IE	NE	IE	0.00	NE	CS	CS	L	1.73
Latvia	3	3	T2	D		1.1	5	0.03	NE	D	D	L	1.3	6.19	0.24	NE	0.06	NE	0.07	0.01	NA	NA		-
Liechtenstein	0		NA	NA		-		NO	NO	CS	CS		0.0		IE	NE	NO	NO		0.01	NA	NA		-
Lithuania	4	4	T2	D	L	2.3	14	0.03	0.02	T1	D	L	1.7	10.81	0.30	IE	0.13	IE	0.07	0.00	T1	D		0.01
Luxembourg	0.384	0.382	T2	D		0.26	4	0.02	NO	NA	NA		-	NE, NO	NE	NE	NE	NE	NE	NE	CS	CS		0.08
Monaco	0		NA	NA		-		NO	NO	NA	NA		-		0.00	IE	IE	IE		0.01	NA	NA		-
Netherlands	14,893	15	T2	CS	L	5.6	38	0.04	NO	T2	CS		0.1	0.92	0.05	IE	NE	NE	0.06	NA	NA	NA		-
New Zealand	3	3	T2	D	L	3.5	30	0.03	NE	D, OTH	OTH		0.3	2.16	0.00	IE	NE	IE	0.07	NE	NA	NA		-
Norway	4	4	T2	CS	L	3.7	21	0.05	IE	T1	D		0.0	0.22	0.01	IE	IE	IE	IE	IE	D	CS		0.00
Poland	38	38	OTH	OTH	L	0.73	5	IE	IE, NO	CS, D	CS, D		0.37	2.73	0.06	0.38	0.06	0.07	0.10	0.01	D	CS, D		0.10
Portugal	10	10	T2	CS, D	L	6.5	19	0.04	0.03	D	CS, D	L	4.5	12.94	0.23	0.23	0.04	IE	0.09	0.01	D	CS, D		0.02
Romania	23	23	T1	D	L	1.3	7	NA	0.04	D	D		0.6	3.48	0.12		0.12		0.10	0.01	NA	NA		-
Russian Federation	148	148	T2	CS, D		0.8	8	0.04	0.02	D	CS, D	L	0.8	8.52	0.18	IE	0.06	IE	0.12	0.01	NA	NA		-
Slovakia	5	5	T1	D	L	1.4	10	IE	IE	D, T1	CS	L	1.4	9.12	0.27	0.39	0.03	0.18	NA	NA	NA	NA		-
Slovenia	1,981	2	T2	D	L	1.5	7	0.00	NO	T1	D	L	1.0	5.02	0.01	0.49	0.00	0.09	0.10	0.00	NA	NA		-
Spain	39	39	CS, T2	CR, CS, D	L	1.3	5	0.03	0.02	D	CS, D	L	0.4	1.52	0.00	0.05	0.03	0.04	0.09	10.00	CR	CR, CS		0.26
Sweden	1	9	T3	CS, D	L	4.0	16	0.04	NO	NA	NA		-	IE, NO	IE	IE	IE	IE	0.01	0.01	M	PS		0.06
Switzerland	7	7	D	CS	L	1.3	5	0.05	NO	CS	CS		0.1	0.20	0.01	NO	IE	IE	0.09	IE				0.10
Turkey	0	56			L	3.8	5	0.00	0.05	NA	NA		-	NA	NE	NE	NE	NE	0.00	0.00				0.00
Ukraine	52	52	T2	CS, D		0.5	4	NA	0.02	T2	CS, D		0.2	1.47	0.05	0.30	0.02	0.13	0.10	0.01	NA	NA		-
United Kingdom	57	58	T2	CS	L	6.4	41	0.04	NA	CS, OTH	CS		0.1	0.59	IE	0.09	NE	NE	0.06	0.01	T1, T2	CS		0.16
United States	254	250	M	M	L	2.8	33	0.04	NA	D	D		0.4	4.73	0.10	NE	0.06	NE	0.17	0.02	NA	NA		-

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

<sup>b</sup> Information on methods and emission factors in this table is as reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method used or type of emission factor for all subcategories within the category 6.A Solid waste disposal on land.

<sup>c</sup> Information on methods and emission factors in this table is as reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method used or type of emission factor for all subcategories within the category 6.B Waste-water handling.

<sup>d</sup> Information on methods and emission factors in this table is as reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method used or type of emission factor for all subcategories within the category 6.C Waste incineration.

<sup>e</sup> Source of population data: HNPStats - The World Bank Group: World Development Indicators database, <http://devdata.worldbank.org/query/default.htm>.

<sup>f</sup> Source of default emission factors: IPCC Guidelines, volume 3, page 6.28.

Table 6.2

## Solid waste disposal on land, waste-water handling and waste incineration (2004)

	Activity data		Solid waste disposal on land								Waste-water handling										Waste incineration				
			CH <sub>4</sub>								CH <sub>4</sub>								N <sub>2</sub> O from human sewage		CO <sub>2</sub> from non-biogenic waste				
	Population (million)		Methods and EF used <sup>a</sup>		Key category	Share of national total	Emissions per capita	CH <sub>4</sub> IEF		Methods and EF used <sup>b</sup>		Key category	Share of national total	Emissions per capita	CH <sub>4</sub> IEF				Emissions per capita	N <sub>2</sub> O IEF	Methods and EF used <sup>c</sup>		Key category	Share of national total	
								Domestic / commercial	Industrial						Waste-water	Sludge	Sludge								
	CRF	World Bank <sup>d</sup>	Methods	EF			Managed	Unmanaged	Methods	EF															
					(%)	(kg)	(t/t)	(t/t)				(%)	(kg)			(kg / kg DC)			(kg)	(kg N <sub>2</sub> O -N/kg sewage N)					(%)
IPCC default EF <sup>e</sup>																		0.01							
Australia	20	20	T2	D	T	2.8	35	0.04	NA	T2	CS, D	T	0.3	4.21	0.08	0.03	0.07	0.03	0.09	0.01	T1, T2	CS, D			0.01
Austria	8	8	T2	CS, D	L, T	2.4	13	0.05	NO	D	CS, D		0.0	0.24	0.01	IE	NA	IE	0.06	0.01	D	CS, D			0.01
Belarus	10	10	T1	D	L, T	5.7	21	NO	0.06	NA	NA		-	NE	NE	NE	NE	NE	0.08	0.01	NA	NA			-
Belgium	10	10			T	0.6	4	0.10					0.0	0.30			NE	NE	0.08	0.01					0.30
Bulgaria	8	8	T1	D		6.7	28	0.07	NE	T1	D	L, T	1.8	7.57	0.06	0.06	0.04	0.04	0.06	0.01	NA	NA			-
Canada	32	32	CS	CS	L, T	3.6	41	0.09	NA	CS	CS		0.0	0.37	NA	NE	NO	NE	0.10	0.01	CS	CS			0.03
Croatia	4	4	T1	CS, D	L, T	1.7	5	0.03	IE	T1	D	T	0.2	0.68	0.08	NE	NO	NO	0.07	0.01	T1	D			0.00
Czech Republic	10	10	T1	CS, D	L, T	1.2	8	0.03	NO	CS, T1, T2	CS, D		0.3	2.39	0.09	0.26	0.06	0.06	0.06	0.01	T1	CS, D	T		0.22
Denmark	5	6			L, T	1.5	9	0.06	NO				0.4	2.29	0.15	NE	IE	NE	0.02	NE	NA	NA			-
Estonia	1	1	T1	D	L, T	2.3	18	0.07	NO	T1	D	T	0.0	0.17	0.00	IE	0.00	IE	0.09	0.01	NA	NA			-
European Community	NE	384	CR, CS, D, M, T1, T2, T3	CR, CS, D	L, T	2.1	11	0.05	0.13				0.2	1.23	NE	NE	NE	NE	NA	NA					0.08
Finland	5	5	T2	CS, D	L, T	2.8	21	0.07	NO	D	CS, D		0.2	1.14	0.13	IE	0.00	IE	0.05	0.01	NA	NA			-
France	63	60			L, T	1.8	8	0.04	0.69				0.2	0.89	0.10	NE	NO	NE	0.05	NA		L			0.28
Germany	83	83	CS, T2	CS, D	L, T	1.2	7	0.04	NO	D	CS, D	T	0.0	0.05	0.00	NE	NE	NE	0.09	0.01	NA	NA			-
Greece	11	11	T2	CS, D	L	1.7	10	0.03	0.04	D	D	T	0.4	2.23	0.10	IE	0.25	NE	0.11	0.01	D	D			0.00
Hungary	10	10	CS, D	CS, D	L, T	4.2	17	0.04	NA, NO	CS, D	CS, D	L	1.2	4.89	0.28	IE	0.25	IE	NE	NE	CS	OTH			0.15
Iceland	0	0			L, T	4.2	26	0.03	0.00				0.1	0.90	NE	NE	NE	NE	0.08	0.01		T			0.07
Ireland	4	4	T2	CS	L	2.5	20	0.11	NE	T1	D		0.0	0.28	NO	0.01	NO	0.02	0.10	0.01	NA	NA			-
Italy	59	58	T2	CS	L	2.5	12	0.05	NO	D	D		0.4	1.91	0.60	0.60	0.25	IE	0.06	0.01	D	CS			0.04
Japan	128	128	CS, D, T1, T3	CS, D	T	0.4	2	0.19	NO	CS, D	CS, D		0.1	0.56	NE	IE	NE	IE	0.00	NE	CS	CS	L, T		2.63
Latvia	2	2	T2	D	L, T	4.9	11	0.04	NO	D	CS, D	L, T	2.0	4.37	0.24	NE	0.07	NE	0.07	0.01	D	D			0.00
Liechtenstein	0.035	0.034	NA	NA		-	NO	NO	NO	CS	CS		0.0	0.04	IE	NE	NO	NO	0.09	0.01	NA	NA			-
Lithuania	3	3	T2	D	L, T	4.5	13	0.06	0.03	T1	D	L, T	2.4	7.05	0.30	IE	0.13	IE	0.07	0.00	T1	D			0.01
Luxembourg	0.455	0.453	T2	D		0.19	3	0.02	NO	NA	NA		-	NE, NO	NE	NE	NE	NE	NE	NE	CS	CS			0.08
Monaco	0	0	NA	NA		-	NA	NO	NO	NA	NA		-	NA	0.00	IE	IE	IE	0.07	0.01	NA	NA			-
Netherlands	16,306	16	T2	CS	L, T	3.0	19	0.20	NO	T2	CS		0.1	0.66	0.06	IE	NE	NE	0.03	NA	NA	NA			-
New Zealand	4	4	T2	D	L, T	2.0	18	0.04	NE	D, OTH	OTH		0.2	1.96	0.00	IE	NE	IE	0.08	NE	NA	NA			-
Norway	5	5	T2	CS	L, T	2.7	15	0.09	IE, NO	T1	D		0.0	0.22	0.01	IE	IE	IE	IE	IE	D	CS			0.04
Poland	38	38			L, T	1.70	8	IE	NE	D	CS, D	L, T	0.89	4.42	0.03	0.49	0.09	NE	0.11	0.01	D	D			0.07
Portugal	11	11	T2	CS, D	L, T	5.6	22	0.04	2.57	D	CS, D	L, T	2.7	10.20	0.15	0.21	0.03	IE	0.11	0.01	D	CS, D	T		0.39
Romania	22	22	T1	D	L, T	3.8	13	0.06	0.04	D	D	L, T	1.2	4.18	0.12	0.00	0.11		0.10						0.01
Russian Federation	144	144	T2	CS, D	L, T	1.7	12	0.04	0.02	D	CS, D	L	1.1	7.77	0.16	IE	0.06	IE	0.09	0.01	NA	NA			-
Slovakia	5	5	T1	D	L, T	2.4	11	IE	IE	D, T1	CS	L	1.3	5.95	0.23	0.38	0.01	0.18	NA	NA	D	CS			0.29
Slovenia	1997	2	T2	D	L, T	2.1	10	0.00	NO	T1	D	L	0.9	4.31	0.01	0.49	0.00	0.09	0.0941	0.0000	NA	NA			-
Spain	43	43	CS, T2	CR, CS, D	L, T	1.9	9	0.03	0.07	D	CS, D	L	0.5	2.31	0.00	0.09	0.03	0.04	0.09	10.00	CR	CR, CS	T		0.02
Sweden	1	9	T3	CS, D	L, T	3.0	11	0.06	NO	NA	NA		-	IE, NO	IE	IE	IE	IE	0.01	0.01	M	PS	T		0.20
Switzerland	7	7	D	CS	L, T	0.7	2	0.76	NO	CS	CS		0.1	0.21	0.01	NO	IE	IE	0.09	IE					0.03
Turkey	0	72	T1	D	L, T	9.4	18	0.08	0.05	NA	NA		-	NA	NE	NE	NE	NE	0.00	0.00					0.00
Ukraine	47	47	T2	CS, D	L, T	1.5	6	NA	0.03	T2	CS, D		0.4	1.53	0.05	0.30	0.02	0.13	0.07	0.01	NA	NA			-
United Kingdom	60	60	T2	CS	L, T	3.0	16	0.06	NA	CS, OTH	CS		0.1	0.64	IE	0.09	NE	NE	0.06	0.01	T1, T2	CS			0.07
United States	297	294	M	M	L, T	2.0	23	0.04	NA	D	D	T	0.5	5.99	0.10	NE	0.06	NE	0.18	0.02	NA	NA			-

<sup>a</sup> Information on methods and emission factors in this table is as reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method used or type of emission factor for all subcategories within the category 6.A Solid waste disposal on land.

<sup>b</sup> Information on methods and emission factors in this table is as reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method used or type of emission factor for all subcategories within the category 6.B Waste-water handling.

<sup>c</sup> Information on methods and emission factors in this table is as reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method used or type of emission factor for all subcategories within the category 6.C Waste incineration.

<sup>d</sup> Source of population data: HNPStats - The World Bank Group: World Development Indicators database, <http://devdata.worldbank.org/query/default.htm>.

<sup>e</sup> Source of default emission factors: IPCC Guidelines, volume 3, page 6.28.

**Table 6.3****CH<sub>4</sub> emissions from solid waste disposal on land - trend information**

CH <sub>4</sub> emissions (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	726	704	1.0	1.7	-5.6	0.4	-2.3	2.3	0.5	1.3	2.0	-2.4	-0.8	-3.1
Austria	161	106	-0.2	-5.5	-5.4	-4.8	-3.7	-4.2	-4.3	-4.1	-1.8	1.2	1.1	-34.3
Belarus	112	202	0.2	2.9	22.6	1.0	4.1	7.2	1.3	1.6	3.3	34.5	10.2	80.2
Belgium	125	39	-0.7	-2.2	-6.8	-1.1	-6.1	-15.4	-7.3	-26.6	-15.7	-12.3	-9.8	-69.0
Bulgaria	515	216	-12.2	-7.2	-10.2	-18.2	-13.5	-1.2	2.8	-0.6	-0.1	0.5	7.8	-58.0
Canada	1,115	1,303	2.1	0.2	0.0	3.7	1.0	1.2	0.2	0.0	1.4	0.9	0.8	16.9
Croatia	11	23	5.6	5.9	6.0	6.3	6.2	6.6	6.2	5.9	5.6	5.5	5.5	120.1
Czech Republic	93	86	0.7	2.4	0.1	-14.9	1.3	-8.7	1.6	-3.3	9.7	3.4	2.5	-8.2
Denmark	64	51	1.8	-3.7	-0.9	-5.2	-3.8	2.5	0.1	-0.4	-4.8	2.8	-7.7	-19.5
Estonia	25	24	12.0	12.1	9.4	5.2	-6.4	2.5	-4.6	-48.5	-1.6	-6.2	6.9	-3.6
European Community	7,000	4,196	1.0	-1.9	-2.3	-5.4	-4.1	-5.4	-4.3	-6.9	-5.5	-6.0	-6.2	-40.0
Finland	174	109	1.4	-1.9	-2.5	-2.7	-4.5	-2.5	-6.4	-3.9	-7.8	-6.9	-5.8	-37.1
France	534	476	5.4	2.7	2.7	-13.3	0.1	-2.0	-2.8	-4.4	-5.3	-2.8	-3.0	-10.8
Germany	1,713	573	1.2	-6.5	-7.5	-8.7	-9.6	-9.7	-9.9	-10.6	-10.6	-11.6	-11.5	-66.5
Greece	86	113	2.4	0.7	3.0	3.1	1.9	-4.9	4.0	4.7	1.3	4.3	0.4	31.9
Hungary	188	167	-1.9	1.1	1.1	1.1	7.8	-6.9	5.1	9.3	-11.8	0.9	-5.6	-10.9
Iceland	5	7	3.5	2.5	4.1	2.4	2.1	2.8	4.2	3.3	4.2	-5.9	1.9	38.3
Ireland	63	80	2.5	3.7	3.9	-2.4	-13.3	-6.3	16.7	-11.5	9.5	9.7	5.1	26.0
Italy	633	690	6.4	5.0	1.3	1.4	-1.2	0.3	4.8	-1.0	-3.6	-4.2	-5.9	8.9
Japan	432	284	-0.8	-2.7	-2.6	-3.0	-3.8	-3.8	-4.4	-4.3	-4.6	-4.1	-3.8	-34.2
Latvia	13	25	7.2	6.5	6.3	5.5	4.5	3.9	4.5	5.1	0.9	-5.8	6.1	88.4
Liechtenstein	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Lithuania	52	45	3.0	2.2	-1.1	-1.5	-1.3	-0.7	-3.7	-2.9	-2.9	-2.9	-3.3	-12.2
Luxembourg	2	1	-14.8	0.8	4.6	1.5	1.4	0	-0.7	-12.1	-13.8	5.7	1.8	-26.5
Monaco	NA	NA	*	*	*	*	*	*	*	*	*	*	*	*
Netherlands	572	311	0.1	-5.1	-3.4	-3.2	-4.3	-8.5	-5.8	-6.0	-4.8	-6.6	-3.7	-45.7
New Zealand	104	72	1.3	-9.3	0.4	-1.0	-3.4	-7.1	0.7	-3.4	-3.5	-2.5	-5.7	-30.8
Norway	87	69	0.9	-0.7	-1.2	-1.6	-6.3	-7.1	1.8	-3.4	-3.7	-0.4	-0.4	-20.2
Poland	204	321	4.0	2.8	2.5	2.8	3.0	2.8	2.6	2.3	1.4	1.0	0.6	57.5
Portugal	185	226	4.6	4.3	4.4	4.6	5.3	5.1	-18.2	-6.1	5.2	0.2	0.4	22.2
Romania	156	280	-0.3	2.5	-0.3	-0.2	15.1	27.6	14.6	2.0	13.0	-9.2	0.0	78.8
Russian Federation	1,221	1,762	3.4	2.7	2.6	2.4	2.3	2.2	2.4	2.0	2.4	2.7	3.1	44.3
Slovakia	50	59	0.0	1.3	17.1	-14.5	-10.2	1.6	3.7	-5.9	25.9	15.0	-10.7	16.8
Slovenia	14	20	0.7	-1.5	-1.0	1.6	1.6	1.7	1.7	2.5	3.1	3.0	5.6	39.1
Spain	180	379	6.8	7.2	7.2	6.8	6.1	5.8	4.4	4.4	3.7	1.4	2.0	110.2
Sweden	137	98	1.5	-0.3	-0.9	-1.0	-1.6	-4.3	-3.1	-1.8	-6.6	-5.7	-1.0	-28.1
Switzerland	33	17	-2.4	-1.6	-3.7	-1.3	-6.8	-4.6	-8.1	-6.8	-5.0	3.5	-6.2	-49.7
Turkey	304	1,312	52.5	22.4	11.7	10.7	6.2	4.8	3.8	0.2	-2.4	3.3	-6.2	331.3
Ukraine	225	298	5.2	0.9	1.0	1.3	1.6	1.9	1.7	1.9	2.0	1.8	1.4	32.6
United Kingdom	2,370	944	-1.6	-3.2	-3.4	-7.9	-7.0	-9.1	-6.7	-13.2	-9.0	-12.6	-7.2	-60.2
United States	8,206	6,709	0.0	-4.1	-2.8	-4.5	-4.8	-1.9	-1.9	-2.0	2.7	1.9	-1.1	-18.2

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 6.4****Solid waste disposal on land: kg CH<sub>4</sub>/capita - trend information**

Emissions per capita (kg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	42.6	35.0	-0.3	1.1	-6.9	18.5	-19.0	1.1	-0.7	-0.1	0.9	-3.6	-2.0	-17.8
Austria	20.8	12.9	-1.3	-5.8	-5.5	-4.8	-3.8	-4.4	-4.4	-4.5	-2.3	0.8	0.5	-38.0
Belarus	11.0	20.5	0.1	3.3	23.0	1.4	4.6	7.5	1.6	1.9	3.8	35.2	10.7	86.9
Belgium	12.6	3.7	-1.0	-2.4	-7.0	-1.3	-6.3	-15.6	-7.5	-26.9	-16.1	-12.6	-10.2	-70.4
Bulgaria	57.4	27.9	-11.3	-6.8	-9.7	-17.8	-12.9	-0.6	4.7	1.3	0.5	1.1	8.7	-51.4
Canada	40.1	40.8	0.7	-0.6	-1.0	2.6	0.2	0.3	-0.7	-1.0	0.5	0.1	-0.3	1.6
Croatia	2.2	5.2	11.9	5.4	10.3	4.4	7.9	5.4	10.4	4.4	5.6	5.5	5.5	136.8
Czech Republic	9.0	8.4	1.3	2.5	0.3	-14.8	1.4	-8.6	1.7	-2.8	10.0	3.4	2.4	-6.9
Denmark	12.2	9.3	1.5	-4.1	-1.5	-5.6	-4.1	2.1	-0.3	-0.7	-5.0	1.7	-8.0	-24.1
Estonia	15.7	17.6	12.6	14.1	11.0	6.4	-5.4	3.2	-4.2	-48.3	-1.2	-5.8	7.3	12.1
European Community	19.2	10.9	0.6	-2.1	-2.6	-5.8	-4.3	-5.7	-4.9	-7.1	-5.8	-6.5	-6.6	-43.0
Finland	34.9	20.9	0.8	-2.2	-2.9	-3.0	-4.8	-2.7	-6.6	-4.1	-8.0	-7.1	-6.1	-40.1
France	9.4	7.9	5.0	2.4	2.4	-13.6	-0.2	-2.4	-3.2	-4.9	-5.9	-3.5	-3.6	-16.2
Germany	21.6	6.9	0.5	-6.6	-7.8	-8.9	-9.5	-9.7	-10.0	-10.8	-10.8	-11.7	-11.5	-67.8
Greece	8.4	10.2	1.4	-0.1	2.3	2.4	1.4	-5.3	3.6	4.2	0.9	4.0	0.1	21.2
Hungary	17.8	16.5	-1.9	1.3	1.3	1.3	8.1	-6.7	5.4	9.5	-11.6	1.2	-5.4	-7.2
Iceland	21.2	25.6	2.2	1.7	3.3	1.7	1.4	1.5	2.9	1.8	3.2	-6.4	1.0	20.6
Ireland	18.1	19.6	1.9	2.8	3.0	-3.4	-14.3	-7.6	15.2	-12.7	7.7	7.9	3.2	8.6
Italy	11.2	12.0	6.4	4.8	1.0	1.2	-1.3	0.2	4.7	-1.0	-3.6	-4.1	-5.8	7.3
Japan	3.5	2.2	-1.1	-3.1	-2.8	-3.3	-4.0	-4.0	-4.6	-4.5	-4.8	-4.2	-4.0	-36.4
Latvia	5.0	10.8	7.6	7.9	7.3	7.2	6.3	4.8	5.2	5.7	1.8	-5.3	6.7	117.6
Liechtenstein		NO										*	*	*
Lithuania	14.0	13.2	2.9	3.0	-0.4	-0.8	-0.6	0.0	-2.8	-2.4	-2.5	-2.5	-2.8	-5.5
Luxembourg	4.1	2.5	-16.0	-0.6	3.1	0.0	0.2	-1.3	-2.1	-12.4	-14.6	4.1	1.0	-38.0
Monaco														
Netherlands	38.3	19.1	-0.7	-5.6	-3.7	-3.8	-4.8	-9.1	-6.6	-6.7	-5.4	-7.0	-4.1	-50.1
New Zealand	30.1	17.7	0.0	-10.6	-1.2	-2.3	-4.2	-7.6	0.1	-3.9	-5.0	-4.3	-6.9	-41.2
Norway	20.5	15.1	0.4	-1.3	-1.7	-2.1	-6.9	-7.7	1.1	-3.9	-4.2	-1.2	-0.7	-26.3
Poland	5.4	8.4	3.7	2.7	2.4	2.7	2.9	2.8	2.6	3.4	1.4	1.1	0.7	56.2
Portugal	18.7	21.6	4.2	4.0	4.1	4.2	4.9	4.6	-18.6	-6.7	4.4	-0.5	-0.2	15.2
Romania	6.8	12.9	-0.2	2.7	0.0	0.1	15.4	27.8	14.7	3.5	14.7	-8.9	0.3	90.9
Russian Federation	8.2	12.2	3.2	2.8	2.9	2.7	2.6	2.6	2.4	2.3	2.9	3.2	3.6	48.8
Slovakia	9.5	10.9	0.0	0.9	16.9	-14.6	-10.3	1.5	3.8	-5.7	25.9	15.0	-10.8	14.7
Slovenia	7.2	9.9	0.5	-1.6	-1.1	1.9	1.8	1.5	1.6	2.3	3.0	2.9	5.5	37.9
Spain	4.6	8.9	6.6	7.0	6.9	5.8	5.8	4.8	3.6	3.8	2.4	-0.5	0.3	91.2
Sweden	16.0	10.9	0.8	-0.8	-1.0	-1.1	-1.7	-4.3	-3.3	-2.1	-6.9	-6.0	-1.4	-31.5
Switzerland	4.9	2.2	-3.6	-2.3	-4.1	-1.5	-7.1	-5.0	-8.7	-7.4	-5.8	2.7	-6.9	-54.3
Turkey	5.4	18.3	49.6	20.2	9.7	8.7	4.4	3.0	2.1	-1.4	-4.0	1.8	-7.5	237.7
Ukraine	4.3	6.3	4.9	1.7	1.9	2.2	2.5	2.8	2.7	2.9	3.0	2.7	2.2	45.0
United Kingdom	41.2	15.8	-1.9	-3.3	-3.6	-8.1	-7.2	-9.3	-8.2	-12.9	-8.7	-13.0	-7.7	-61.7
United States	32.9	22.8	-1.3	-5.2	-3.9	-5.6	-5.9	-3.0	-3.0	-3.1	1.6	1.0	-2.0	-30.5

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 6.5****CH<sub>4</sub> recovered from managed solid waste disposal sites - trend information**

CH <sub>4</sub> emissions (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	2	133	0	-21.3	220.4	6.9	32.1	-7.2	6.0	0.4	-5.6	28.0	10.9	6,669.2
Austria	4	22	19.3	23.4	19.3	7.8	0.9	4.5	4.0	4.6	0.0	0	0	442.8
Belarus	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Belgium	0	34	*	46.7	58.9	-7.2	13.8	15.7	8.3	50.6	5.8	-3.7	0.0	*
Bulgaria	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Canada	211	311	1.6	9.0	8.7	-7.4	1.5	1.5	6.7	6.3	-0.3	-0.3	0	47.7
Croatia	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Czech Republic	3	16	0	0.0	74.8	95.5	10.9	4.6	-2.3	5.3	9.8	3.4	2.5	404.0
Denmark	1	10	39.3	60.6	9.7	36.5	18.2	-12.9	-3.9	-9.1	11.8	-30.0	32.5	1,965.0
Estonia	NO	2	*	-7.1	0	0	0	0	0	0	0	0	-28.5	*
European Community	822	4,344	27.1	13.2	10.1	17.6	9.9	11.7	7.4	11.9	6.4	6.5	4.1	428.4
Finland	NO	30	*	45.4	52.0	48.1	61.2	-5.3	70.3	16.2	43.4	18.6	9.4	*
France	46	604	12.6	26.4	23.0	99.7	15.2	17.2	17.7	16.9	13.2	7.4	0.5	1,207.0
Germany	268	682	14.6	11.0	8.6	6.5	5.1	4.4	3.7	2.9	2.9	1.7	2.0	154.1
Greece	7	41	4.4	29.7	6.5	7.7	17.0	58.3	4.8	3.1	15.4	4.2	16.8	453.0
Hungary	NO	3	*	*	*	*	*	0	0	0	0	1,324.8	-3.1	*
Iceland	0	1	*	*	*	*	128.6	45.4	23.2	-5.3	172.2	3.2	22.5	*
Ireland	NO	40	*	*	*	*	278.5	42.9	-22.7	72.7	4.1	5.2	10.4	*
Italy	107	351	4.3	3.1	5.1	5.8	19.5	9.2	-2.7	20.6	14.8	10.8	14.0	226.8
Japan	1	0.45	-38.0	102.7	6.7	13.1	-5.5	18.3	-29.9	-11.9	-7.1	-20.4	1.1	-41.0
Latvia	NO	3	*	*	*	*	*	*	*	*	*	251.5	-17.1	*
Liechtenstein	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Lithuania	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Luxembourg	NO	0.33	*	*	*	*	0	0	0	199,999,999,900.0	95.0	-15.4	0	*
Monaco	0	0	*	*	*	*	*	*	*	*	*	*	*	*
Netherlands	26	49	37.0	14.9	-6.3	-14.2	-9.4	23.4	-0.8	1.4	-6.1	-0.2	-21.0	90.4
New Zealand	NE	46	*	180.3	3.8	9.9	19.9	30.0	-0.9	10.1	8.9	5.4	11.7	*
Norway	1	20	182.5	28.1	16.7	14.7	44.0	33.2	-15.1	9.4	7.7	-3.0	-4.8	2,063.4
Poland	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Portugal	NO	52	*	*	*	*	*	*	*	275.6	13.1	7.5	7.8	*
Romania														
Russian Federation	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Slovakia	IE	IE	*	*	*	*	*	*	*	*	*	*	*	*
Slovenia	NO	5	167.0	38.0	24.9	7.3	6.8	6.4	6.0	5.7	6.6	8.1	-0.9	*
Spain	19	70	6.8	4.4	5.7	-6.0	4.7	16.6	44.2	6.6	-2.4	17.7	17.4	275.7
Sweden	12	30	12.5	0	0	0	0	10.0	3.0	-4.7	10.9	1.4	-17.3	151.1
Switzerland	9	11	0	0	0	0	0	0	-32.7	0	0	0	0	19.8
Turkey														
Ukraine	NA	NA	*	*	*	*	*	*	*	*	*	*	*	*
United Kingdom	322	2,377	35.7	15.6	12.0	18.7	12.1	13.0	8.0	13.0	7.0	8.2	3.9	639.1
United States	931	5,343	17.1	29.0	15.9	19.6	18.4	8.7	9.1	10.2	3.2	4.0	7.9	474.2

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 6.6**  
**Waste generation rate**

Waste generation (kg/person/day)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	2.65	2.60	2.7	0.5	0.3	1.9	5.1	-3.6	2.6	-5.2	1.0	0.6	-3.8	-1.9
Austria	0.95	0.91	-7.8	-4.3	4.9	-1.5	0.6	3.4	-1.8	-2.2	16.9	23.7	-0.7	-4.1
Belarus	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Belgium	0.00	0.00	*	*	*	*	*	*	*	*	*	*	*	*
Bulgaria	2.24	1.09	-11.5	-6.7	-9.7	-8.9	-11.8	1.4	2.8	0.9	0.3	0.8	-2.7	-51.3
Canada	1.99	2.81	4.0	2.6	2.5	2.4	3.7	1.2	3.7	0.4	-0.2	3.9	1.9	40.6
Croatia	0.57	0.81	-1.8	5.2	9.8	3.0	5.8	2.7	-2.7	-1.4	4.2	2.7	5.2	42.1
Czech Republic	1.00	1.25	2.3	2.4	2.5	2.5	2.4	-7.6	0.2	2.9	10.4	-1.9	0.0	24.5
Denmark	5.43	6.78	2.1	2.9	11.9	-0.9	-5.2	-0.4	6.2	-2.4	2.3	-4.0	5.6	25.0
Estonia	0.63	0.93	*	*	*	0	0	-36.5	57.4	0	*	*	*	48.2
European Community	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Finland	1.70	1.22	-7.0	-4.4	-4.5	-5.9	5.9	2.1	10.8	-8.1	1.1	-4.7	-0.3	-28.1
France	0.82	0.98	2.5	2.4	1.8	-1.2	2.7	0.3	1.4	0.8	0.6	0	0	20.4
Germany	1.61	0.94	-12.2	-9.6	-10.5	-19.9	48.3	0.5	0.3	-1.2	-0.1	1.1	3.2	-41.7
Greece	0.82	1.22	0.6	3.0	2.9	3.0	3.3	3.2	3.0	2.8	2.7	2.8	2.7	48.4
Hungary	1.87	1.29	-11.0	-24.8	4.8	2.5	5.0	-2.0	-7.1	0.2	0.0	9.0	-4.5	-30.9
Iceland	0.00	0.00	*	*	*	*	*	*	*	*	*	*	*	*
Ireland	1.00	1.87	0	0	0	0	0	0	0	50.0	24.7	0	0	87.0
Italy	1.07	1.46	5.0	-4.3	0.5	2.3	0.8	5.5	1.8	1.3	1.2	0.2	3.4	36.6
Japan	1.12	1.11	-0.2	-0.1	0.8	-0.2	0.5	-0.6	1.9	-0.7	-1.2	0	-0.5	-1.3
Latvia	NA	NA	*	*	*	*	*	*	*	*	*	*	*	*
Liechtenstein	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Lithuania	1.47	0.83	1.6	-22.0	-5.4	0.3	4.9	-28.6	4.6	-3.2	-4.0	-8.7	14.2	-43.8
Luxembourg	NE	NE	*	*	0	-2.9	3.6	2.9	1.7	-1.7	1.7	3.9	*	*
Monaco	0.00	0.41	*	-2.0	2.4	7.0	-0.6	-8.7	6.4	-5.2	-5.0	10.3	5.7	*
Netherlands	1.52	1.70	0	-2.2	2.6	4.7	0.5	1.0	2.9	-0.1	1.2	-1.9	2.0	12.1
New Zealand	2.39	2.03	0	-1.6	-2.2	-1.8	-1.4	-1.3	-1.3	-1.7	-2.3	-2.3	0	-14.9
Norway														
Poland	318.97	0.00	*	*	*	*	*	*	*	*	0.0	-99.8	*	*
Portugal	0.76	1.09	3.0	3.5	3.4	3.3	3.3	3.2	1.9	3.8	2.5	1.8	-1.1	44.6
Romania	0.57	0	0	0	0	0								
Russian Federation	0.66	1.00	1.1	1.7	1.7	1.8	1.7	2.0	6.2	-1.7	6.7	7.1	7.9	50.6
Slovakia	0.00	0.00	*	*	*	*	*	*	*	*	-1.8	4.4	*	*
Slovenia	1.29	1.19	0	0	0	0	-0.4	0.4	-2.7	-0.1	-2.9	1.6	-4.0	-8.0
Spain	0.91	1.56	0.9	3.4	5.4	11.8	3.1	4.7	2.6	1.2	3.7	1.6	3.0	71.0
Sweden	1.02	1.26	0.0	0.0	-0.3	12.1	5.0	-1.9	-0.5	3.5	5.9	-0.1	-1.1	24.0
Switzerland	1.94	2.02	-3.1	0	1.1	1.7	3.3	4.2	3.0	-1.0	0.5	-1.0	1.0	4.1
Turkey														
Ukraine	0.79	0.91	-7.6	9.1	6.7	7.8	7.2	5.4	6.4	6.0	1.1	1.1	1.1	15.2
United Kingdom	NA	NA	*	*	*	*	*	*	*	*	*	*	*	*
United States	2.04	2.04	0.5	-1.6	1.1	0.0	0.4	2.9	-1.9	-2.4	0.7	0.4	0	0

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 6.7a****CH<sub>4</sub> emissions from waste-water handling - trend information**

CH <sub>4</sub> emissions (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	122	85	-1.3	-4.4	-7.0	-4.1	-5.4	-2.0	-1.2	4.3	-2.4	-3.2	-1.4	-30.4
Austria	5	2	-0.3	-4.1	-8.0	-8.8	-9.7	-8.0	-8.7	-9.4	-10.0	-11.3	0.0	-60.1
Belarus	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Belgium	4	3	0.4	-0.5	-0.5	-1.0	-1.1	-4.7	-1.4	-12.5	-1.4	-0.8	-0.7	-21.8
Bulgaria	88	59	-22.3	32.3	-5.0	-15.1	-13.7	-12.3	-6.1	-18.9	-5.0	168.4	0.4	-33.2
Canada	11	12	-8.0	-2.7	12.9	-7.3	-0.3	20.9	-12.5	0.8	0.3	1.4	1.7	10.5
Croatia	NE, NO	3	*	*	*	*	*	*	*	*	*	*	*	*
Czech Republic	39	24	-3.6	-4.1	-6.9	3.9	-2.2	-7.0	-6.1	-3.6	7.3	-7.8	-0.6	-37.8
Denmark	6	13	-2.4	16.3	14.2	22.8	1.8	-6.2	-8.3	6.6	34.1	-3.5	-11.6	110.7
Estonia	6	0	252.7	-37.3	106.3	60.3	-2.5	-32.7	-21.9	-0.4	15.7	6.3	-98.2	-96.4
European Community	602	472	-2.7	-0.2	-2.3	-0.4	-0.7	-1.9	-3.5	-6.1	0.3	-1.0	-2.1	-21.5
Finland	7	6	-5.8	1.8	-2.6	-1.3	-2.5	-2.8	-2.1	-1.2	0.7	-2.6	-1.3	-18.4
France	34	54	6.6	5.3	5.0	4.8	4.6	4.6	0.7	-7.4	2.0	2.0	1.9	58.6
Germany	106	4	-23.3	-5.3	-25.2	-33.7	-50.8	-9.7	-10.7	-12.0	-13.6	-15.7	-18.7	-95.9
Greece	110	25	-2.2	-2.5	-1.8	-4.7	-3.0	-6.4	-19.5	-38.4	-13.7	-16.3	-18.2	-77.7
Hungary	67	49	-12.8	2.2	2.1	-3.5	3.7	-7.3	2.1	-3.8	-1.0	-14.9	15.2	-25.8
Iceland	0	0	1.5	0.4	0.7	0.9	15.4	24.1	39.9	1.2	72.5	0.8	1.0	334.2
Ireland	1	1	0.6	-1.0	-1.0	23.1	13.2	3.8	4.3	2.8	2.7	1.6	1.6	65.0
Italy	94	110	4.0	-0.1	1.0	1.4	0.5	0.2	0.9	1.0	0.4	-0.6	0.5	17.5
Japan	101	71	-2.0	-3.2	-1.9	-2.5	-2.6	-2.8	-2.9	-3.3	-3.1	-2.9	0.5	-29.4
Latvia	17	10	-1.5	-2.6	-1.2	-0.5	0.2	-1.5	0.1	9.9	-1.5	0.0	-0.1	-38.9
Liechtenstein	0	0	0.0	-9.1	10.0	0.0	9.1	8.3	0.0	-7.7	0.0	0.0	8.3	44.4
Lithuania	40	24	-7.6	7.0	-3.0	20.9	3.1	-34.5	37.5	-13.0	-9.1	31.3	16.2	-39.4
Luxembourg	NE, NO	NE, NO	*	*	*	*	*	*	*	*	*	*	*	*
Monaco	NA	NA	*	*	*	*	*	*	*	*	*	*	*	*
Netherlands	14	11	33.4	-14.4	-1.4	-2.5	-0.5	2.4	-6.5	-0.3	2.3	-6.1	6.3	-22.5
New Zealand	7	8	0.5	0.5	0.4	0.4	0.4	0.5	0.4	0.4	0.5	0.6	0.5	6.6
Norway	1	1	0.5	0.5	0.5	0.5	0.6	0.7	0.4	0.6	0.5	0.6	0.6	7.9
Poland	103	169	-5.2	-6.2	1.0	2.1	3.8	-4.6	-27.1	-1.7	-2.4	-5.2	1.1	63.1
Portugal	128	107	0.6	1.2	-5.6	1.9	2.0	-5.2	-3.0	-3.7	-1.2	-0.7	-6.2	-16.4
Romania	81	91	-3.7	-5.6	-5.9	3.2	-14.2	6.4	4.9	-4.9	0.0	3.9	14.6	12.5
Russian Federation	1,264	1,118	-4.9	5.8	-9.6	2.2	2.9	10.6	7.5	3.7	3.4	4.4	3.8	-11.5
Slovakia	48	32	-5.5	0.0	-0.8	0.7	-3.0	1.4	-11.5	0.9	0.2	-9.6	-0.2	-33.5
Slovenia	10	9	-7.1	-0.5	-1.3	13.2	3.2	2.5	2.5	-2.2	1.5	-1.1	5.1	-13.3
Spain	59	99	3.6	3.3	2.7	6.1	4.7	3.7	2.9	3.3	4.4	3.8	2.9	67.3
Sweden	IE, NO	IE, NO	*	*	*	*	*	*	*	*	*	*	*	*
Switzerland	1	2	1.7	1.1	0.9	0.5	0.7	1.0	1.0	1.1	0.8	0.8	0.7	14.9
Turkey														
Ukraine	76	72	1.6	0.0	-0.2	-1.3	-1.6	-1.4	-1.5	-0.8	-1.0	-0.4	-0.5	-4.9
United Kingdom	34	38	-6.3	-4.5	2.7	2.6	2.6	-3.0	2.4	0.7	0.6	1.1	-0.3	12.6
United States	1,180	1,758	4.1	3.5	2.7	3.2	2.7	3.4	2.1	0.9	3.3	2.1	0.9	49.0

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 6.7b****N<sub>2</sub>O emissions from waste-water handling - trend information**

N <sub>2</sub> O emissions (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	1.54	1.82	1.4	1.1	1.4	1.2	1.0	1.1	1.2	1.2	1.3	1.2	1.3	18.1
Austria	0.05	0.65	3.3	67.2	35.3	13.6	28.2	14.5	16.9	21.9	-0.8	3.8	1.1	1079.9
Belarus	0.73	0.74	-2.7	-4.6	6.5	4.5	4.3	4.2	0	1.3	0	-4.2	1.6	1.4
Belgium	0.87	0.86	1.4	-0.5	-0.2	0.2	1.0	1.5	-7.6	2.7	-0.4	0.4	0.4	-1.1
Bulgaria	1.00	0.48	-9.8	-7.5	-4.8	-11.0	11.6	2.9	-5.4	-4.7	1.5	0.4	-0.8	-51.7
Canada	2.80	3.22	1.2	1.0	1.1	1.0	0.8	0.8	0.9	1.1	1.1	0.9	0.9	15.3
Croatia	0.25	0.29	-1.8	9.4	-4.6	0.1	-3.2	4.9	-4.5	7.1	5.6	-2.1	-2.1	18.4
Czech Republic	0.52	0.64	-0.5	0.0	-0.2	-0.1	-0.1	-0.1	25.0	-0.8	0.0	0.0	0.1	23.1
Denmark	0.28	0.17	-4.7	-7.6	-18.5	-6.1	1.2	-6.1	5.6	-12.4	1.7	-14.5	6.9	-39.3
Estonia	0.15	0.12	*	*	*	*	*	*	*	*	*	*	*	-20.8
European Community	28.36	29.82	-0.5	-0.5	0.9	0.4	1.6	0.2	1.6	0.5	0.2	-0.4	0.5	5.2
Finland	0.46	0.34	-4.5	0.5	-3.0	-1.3	-5.0	-3.9	-0.3	-0.1	-4.7	0.6	-2.1	-26.9
France	4.11	4.05	0.7	0.6	-0.3	-2.2	-2.3	-0.5	10.9	-7.7	0.1	0.1	0.1	-1.4
Germany	7.17	7.34	-0.4	-0.7	2.4	-5.2	5.5	0.2	0.1	2.3	0.1	-1.0	0.0	2.4
Greece	1.05	1.19	1.9	0.9	-0.3	2.2	0.2	2.4	-0.6	-0.7	0.1	0.3	0.3	13.0
Hungary	NA, NE	NA, NE	*	*	*	*	*	*	*	*	*	*	*	*
Iceland	0.02	0.02	1.5	0.4	0.7	0.9	1.2	1.4	1.4	1.2	0.7	0.8	1.0	14.7
Ireland	0.37	0.42	1.4	-3.1	1.1	3.0	2.1	2.8	4.2	-0.8	1.3	1.6	1.6	15.2
Italy	3.37	3.44	-0.6	0.1	0.3	0.2	-0.1	0.2	0.1	-0.2	0.3	0.2	0.3	2.0
Japan	4.16	3.84	1.7	-1.4	1.7	0.8	-1.3	-2.9	-1.0	-1.8	-1.5	-0.1	1.4	-7.8
Latvia	0.18	0.16	-0.3	-1.3	-0.6	-0.8	-0.9	-0.8	-2.6	-0.5	-0.7	-0.7	-0.2	-12.9
Liechtenstein	0.00	0.00	3.8	0.0	0.0	0.0	3.6	0.0	3.4	0.0	3.3	0.0	0.0	19.2
Lithuania	0.26	0.25	0.1	-0.8	-0.5	0.3	-0.7	-0.7	-0.4	-0.6	0.9	-0.5	-0.3	-4.8
Luxembourg	NE, NO	NE, NO	*	*	*	*	*	*	*	*	*	*	*	*
Monaco	0.00	0.00	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.6	9.6
Netherlands	1.66	1.29	1.9	-7.3	-2.0	-1.3	2.4	-4.1	-2.7	1.2	-1.9	-6.4	0.4	-22.3
New Zealand	0.47	0.53	0	2.1	0	0	2.0	0	0	2.0	0	2.2	0.6	11.6
Norway	0.29	0.35	0	3.5	6.4	7.8	0.2	1.1	-10.3	2.4	-7.2	6.9	0.1	20.5
Poland	3.68	4.24	1.9	1.1	1.3	-1.2	1.9	-0.2	-1.1	-1.0	0.8	0.4	21.2	15.1
Portugal	1.51	1.87	2.0	0.4	-0.6	2.1	6.0	1.6	0.7	1.7	0.2	1.2	0.7	23.6
Romania	2.21	2.07	-0.1	-0.2	-0.3	-0.3	-0.2	-0.2	-0.1	-0.1	-2.7	-0.3	-0.3	-6.4
Russian Federation	17.49	12.37	-14.1	-1.2	-1.5	1.3	-0.6	-2.1	-1.7	2.5	2.8	1.0	0.4	-29.2
Slovakia	0.06	0.09	1.0	-5.9	10.1	-6.6	4.3	-13.8	-15.0	108.7	77.0	-27.7	7.2	34.9
Slovenia	0.19	0.19	-5.8	3.3	5.5	-1.9	-1.8	8.5	-2.3	-2.0	0.3	0	0	-0.8
Spain	3.46	3.85	-3.8	-3.6	0.1	4.5	1.0	0.6	2.6	2.0	3.5	-0.9	3.5	11.3
Sweden	0.63	0.45	0	3.6	0	-7.4	-7.2	-0.8	-7.8	-0.8	-3.7	0.0	-0.4	-28.8
Switzerland	0.62	0.67	1.2	0.6	0.3	0.1	0.3	0.5	0.6	1.1	0.8	0.8	0.7	9.7
Turkey														
Ukraine	5.02	3.46	-6.6	-6.2	-3.8	-2.3	0.0	-4.4	0.9	1.5	3.6	-2.6	2.1	-31.1
United Kingdom	3.33	3.90	-0.9	1.0	3.4	11.1	-1.1	-0.1	-0.3	3.1	-0.6	0.9	-0.9	17.0
United States	41.64	51.69	2.8	-0.4	1.4	1.9	1.9	3.3	0.8	0.4	0.3	1.2	1.2	24.1

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

**Table 6.8****CO<sub>2</sub> emissions from waste incineration - trend information**

CO <sub>2</sub> emissions (Gg)			Relative change (%)											
	Base year <sup>a</sup>	2004	1990 to 1991	1994 to 1995	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	2001 to 2002	2002 to 2003	2003 to 2004	Base year <sup>a</sup> to 2004
Australia	21	28	0.7	26.0	-12.1	15.5	1.2	1.8	-3.9	1	1	1	1	33.0
Austria	27	12	-13.0	3.0	2.9	2.9	2.8	2.7	0	0	0	0	0	-54.4
Belarus	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Belgium	337	440	-37.6	-17.1	5.1	6.5	-16.2	18.6	7.2	11.5	59.8	2.2	-0.5	30.6
Bulgaria	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Canada	267	201	1.6	-4.3	-3.7	-2.9	-2.0	-2.8	1.9	0.0	-9.3	5.0	5.8	-24.6
Croatia	NE	0	*	*	*	*	*	*	*	*	*	*	*	*
Czech Republic	0	327	*	0	0	0	0	0	0	0	0	3.2	-11.3	*
Denmark	IE	IE	*	*	*	*	*	*	*	*	*	*	*	*
Estonia	NA	NA	*	*	*	*	*	*	*	*	*	*	*	*
European Community	5,180	3,238	-5.4	-15.5	1.9	-11.1	-4.3	-5.2	0.6	2.9	5.5	-3.0	-7.3	-37.5
Finland	NE	IE	*	*	*	*	*	*	*	*	*	*	*	*
France	2,300	1,566	-0.8	-2.1	-3.8	-9.1	-7.2	-5.5	3.6	-3.8	-0.3	-1.3	-8.0	-31.9
Germany	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Greece	0	1	0	0	0	0	0	0	0	0	173.3	90.9	24.6	550.0
Hungary	98	126	67.1	-2.3	0.2	2.7	5.0	-1.2	-1.2	1.4	-27.0	-7.0	26.4	28.7
Iceland	19	2	-0.8	-11.8	-10.4	-3.6	-15.3	-18.2	-6.0	-7.3	-7.1	-14.7	-53.0	-87.0
Ireland	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Italy	496	211	4.9	-6.3	-2.3	9.4	-0.7	-22.0	-48.8	10.3	10.2	-11.9	-2.4	-57.6
Japan	21,996	35,698	1.8	4.0	5.4	3.7	0.5	1.4	4.2	0.2	0.2	8.4	1.7	62.3
Latvia	NE, NO	0	*	*	*	*	*	*	59.9	98.6	-87.2	22.2	20.1	*
Liechtenstein	NO	NO	*	*	*	*	*	*	*	*	*	*	*	*
Lithuania	4	3	8.4	261.1	-66.2	-0.9	5.1	-56.6	195.4	32.1	-8.2	169.0	-48.5	-22.5
Luxembourg	10	10	0	0	0	0	0	0	0	0	0	0	0	0
Monaco	NA	NA	*	*	*	*	*	*	*	*	*	*	*	*
Netherlands	IE	IE	*	*	*	*	*	*	*	*	*	*	*	*
New Zealand	NE	NE	*	*	*	*	*	*	*	*	*	*	*	*
Norway	0	20	0	-18.3	-8.3	13,079.7	203.4	-14.8	91.9	-62.0	-2.8	-3.4	-36.0	10,396.6
Poland	579	292	-9.9	1.1	1.3	-0.3	6.1	-16.0	25.7	-3.7	3.8	1.6	-35.8	-49.6
Portugal	10	330	0.0	0.0	11.7	16.4	-24.7	1,356.5	151.2	-3.0	2.5	-2.4	-5.7	3175.0
Romania	NA	9	*	*	-1.2	12.0	37.9	-8.6	171.8	26.8	-7.6	7.8	-7.5	*
Russian Federation	NA	NA	*	*	*	*	*	*	*	*	*	*	*	*
Slovakia	IE	148	*	*	*	*	*	*	*	-13.5	5.9	-2.0	5.5	*
Slovenia	NO	IE	*	*	*	*	*	*	*	*	*	*	*	*
Spain	750	76	-21.1	-82.0	115.0	26.9	7.7	-24.9	-31.9	53.0	-2.3	-35.3	-57.5	-89.9
Sweden	44	140	19.0	-12.9	14.9	3.0	-2.8	-2.0	-7.8	6.8	27.9	99.2	16.0	219.9
Switzerland	53	15	-8.1	-11.9	-7.3	-7.9	-8.6	-9.4	-10.4	-11.6	-13.1	-0.4	-0.4	-71.1
Turkey														
Ukraine	IE	IE	*	*	*	*	*	*	*	*	*	*	*	*
United Kingdom	1,205	452	-0.5	-5.4	1.7	-43.6	0.9	-9.3	1.4	5.7	-1.8	-4.4	-1.7	-62.5
United States	IE	IE	*	*	*	*	*	*	*	*	*	*	*	*

<sup>a</sup> In accordance with the UNFCCC reporting guidelines on annual GHG inventories of Annex I Parties, the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).