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**SYNTHESIS AND ASSESSMENT REPORT ON THE GREENHOUSE GAS INVENTORIES  
SUBMITTED IN 2003**

**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> (hereinafter referred to as the review guidelines) to be applied from the year 2003. It also determined, by decision 18/CP.8, that the reporting guidelines adopted by decision 3/CP.5 should be used for the inventory due by 15 April 2003.
2. As part of the inventory review process, the COP 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 (desk reviews, centralized reviews and in-country reviews). 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.
3. In accordance with decision 19/CP.8, Part I of this present 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Party, will be provided to the corresponding expert review team as input for the individual review; Part II will not be published on the UNFCCC web site.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

4. This document contains Part I of the synthesis and assessment report, covering the national GHG inventories submitted in 2003 by those Annex I Parties that used the common reporting format (CRF) in accordance with the UNFCCC reporting guidelines (FCCC/CP/1999/7).
5. This document covers only the inventory information submitted in the CRF and not information contained in the national inventory reports. 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.
6. The completeness of this report is limited by the fact that only 29 out of 40 Annex I Parties submitted their inventory within six weeks after the due date for submissions. Accordingly, this report covers inventories submitted by: Austria, Belgium, Bulgaria, Canada, Czech Republic, Denmark, Estonia, European Community, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Latvia, Luxembourg, Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Slovakia, Spain, Sweden, Switzerland, United Kingdom of Great Britain and Northern Ireland, United States of America.<sup>2</sup>
7. 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 relating to GHG inventory estimates. Where possible, this information is provided for all 29 Parties and for

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

<sup>2</sup> Slovenia also submitted its inventory within this time period. However, because the information was not submitted in the CRF, it has not been included in this report.

the base year and for the years from 1995 to 2001. 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.

8. The inventory data were analyzed according to the sectors, subsectors and source 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).

9. To facilitate the analysis of the inventory data, the secretariat considers, for each individual Party, those source categories that are *key sources* 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 7 “Methodological choice and recalculations” of the *IPCC Good Practice Guidance and Uncertainty Management* (hereinafter referred to as the IPCC good practice guidance).<sup>3</sup> This identification has been performed at the level of detail recommended in that guidance. The land-use change and forestry sector has not been included in the calculation of the key source assessments.<sup>4</sup>

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

10. Blank cells in a table indicate that a Party did not report information for a given source and gas in the appropriate table of the CRF.

11. 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.

12. 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).

13. Key sources identified by the secretariat’s analysis are indicated by “L” for level and “T” for trend assessments in the “key source” columns. The column “Share of national total” indicates the contribution of that key source to the Party’s national total of GHG emissions in terms of CO<sub>2</sub> equivalent, excluding emissions and removals from land-use change and forestry.

14. 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.

15. Where Parties used notation keys (NO, NE, NA, IE, C, 0) these have been reproduced verbatim from the CRF tables provided by Parties. The notation keys, as described in the UNFCCC reporting guidelines (FCCC/CP/1999/7), are as follows:

NO	Not occurring	IE	Included elsewhere
NE	Not estimated	C	Confidential
NA	Not applicable	“0”	Estimates that are less than one half of the unit being used to record the inventory table

<sup>3</sup> For some Parties, identification of key sources at that level of detail was not possible due to insufficient reporting of disaggregated data. For these Parties, key sources 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).

<sup>4</sup> Emissions and removals associated with land-use change and forestry are not covered in the current edition of the IPCC good practice guidance. A separate IPCC report on good practice guidance for land use, land-use change and forestry is in preparation.

16. 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

17. 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	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		
C	CORINAIR		
CS	Country specific		
M	Model		

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

kg	kilogram (10 <sup>3</sup> grams)
t	tonne (10 <sup>6</sup> grams)
Mg	megagram (10 <sup>6</sup> grams) – same as tonne
kt	kilotonne (10 <sup>9</sup> grams) – same as kilotonne
Gg	gigagram (10 <sup>9</sup> grams)
Mt	megatonne (10 <sup>12</sup> grams)
TJ	terajoule (10 <sup>12</sup> joules)
PJ	petajoule (10 <sup>15</sup> joules)
Gg CO <sub>2</sub> equ	Gg of CO <sub>2</sub> equivalent
ha	hectare
kha	thousand hectares
Mha	million hectares
MM Bbl/yr	million barrels per year
TBtu	trillion British thermal units

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

CRF	common reporting format
NIR	national inventory report
A	actual emissions
P	potential emissions
AD	activity data
EF	emission factor
IEF	implied emission factor
GHG	greenhouse gas
GWP	global warming potential
C	carbon
N	nitrogen
NO <sub>x</sub>	nitrogen oxides
NH <sub>3</sub>	ammonia
NCV	net calorific value
GCV	gross calorific value
yr	year
dm	dry matter
Frac <sub>FUEL</sub>	fraction of livestock N excretion in excrements burned for fuel
Frac <sub>GRAZ</sub>	fraction of livestock N excreted and deposited onto soil during grazing
Frac <sub>NCRBF</sub>	fraction of N in non-N-fixing crop
Frac <sub>NCRO</sub>	fraction of N in N-fixing crop
Frac <sub>R</sub>	fraction of crop residue removed from the field as crop
Frac <sub>BURN</sub>	fraction of crop residue burned
Frac <sub>GASF</sub>	fraction of synthetic fertilizer N applied to soils which volatilizes as NH <sub>3</sub> and NO <sub>x</sub>
Frac <sub>GASM</sub>	fraction of livestock N excretion that volatilizes as NH <sub>3</sub> and NO <sub>x</sub>
Frac <sub>LEACH</sub>	fraction of N input to soils which is lost through leaching and run-off
L	level (key source applying the IPCC good practice guidance tier 1 level assessment)
LPG	liquefied petroleum gas
LTO	landing and take off cycle
NMVOC	non-methane volatile organic compounds
T	trend (key source applying the IPCC good practice guidance tier 1 trend assessment)
FAO	Food and Agriculture Organization of the United Nations
IEA	International Energy Agency
NGL	natural gas liquids

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	Relative change (%)
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	Relative change (%)
	Ratio: kg N <sub>2</sub> O /capita
	Relative change (%)

# General

**Table G.1**

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

Party	CRF for years:	Initial submission date	NIR	Submission date and version used in the S&A report	Sources of data for the trend tables
Austria	1990–2001	15/04/2003	<input checked="" type="checkbox"/>	15 April 2003 (v.1)	1990–2000: S2003
Belgium	1990–2001	15/04/2003	<input checked="" type="checkbox"/>	1990–2000: 27 May 2003 (v.2) 2001: 27 May 2003 (v.3)	1990–2000: S2003
Bulgaria	2000 and 2001	23/05/2003	<input checked="" type="checkbox"/>	23 May 2003 (v.1)	1988–1997: T2003; 1998: T2003/ S2000; 1999: T2003/S2001; 2000: S2003
Canada	1990–2001	15/04/2003	<input checked="" type="checkbox"/>	15 April 2003 (v.1)	1990–2000: S2003
Czech Republic	1994 and 2001	15/04/2003	<input checked="" type="checkbox"/>	23 May 2003 (v.2)	1990: T2003/S2002; 1996–1997 T2003; 1998 T2003/S2000; 1999 T2003/S2001; 2000 T2003/S2002
Denmark	1990–2001	15/04/2003	<input checked="" type="checkbox"/>	1990–2000: 15 April 2003 (v.1) 2001: 9 May 2003 (v.2)	1990–2000: S2003
Estonia	2001	14/04/2003		14 April 2003 (v.1)	1990–1998: T2003; 1999: T2003/S2001; 2000: T2003/S2002
European Community <sup>a</sup>	1990–2001	15/04/2003	<input checked="" type="checkbox"/>	28 May 2003 (v.2)	1990–2000: S2003
Finland	1990–2001	04/04/2003	<input checked="" type="checkbox"/>	4 April 2003 (v.1)	1990–2000: S2003
France	1990–2001	31/03/2003	<input checked="" type="checkbox"/>	31 March 2003 (v.1)	1990–2000: S2003
Germany	1990–2001	14/04/2003		28 May 2003 (v.2)	1990–2000: S2003
Greece	2001	24/04/2003		24 April 2003 (v.1)	1990–2000: S2002
Iceland	2001	05/05/2003		27 May 2003 (v.2)	1990–1998: T2003; 1999: T2003/S2001; 2000: T2003/S2002
Ireland	1990–2001	15/04/2003	<input checked="" type="checkbox"/>	14 May 2003 (v.2)	1990–2000: S2003
Italy	2001	15/04/2003		12 May 2003 (v.2)	1990–1997: T2003; 1998: T2003/ S2001; 1999: T2003/S2001; 2000: T2003/S2002
Latvia	1990–2001	15/04/2003	<input checked="" type="checkbox"/>	20 May 2003 (v.2)	1990–2000: S2003
Luxembourg <sup>b</sup>	2001	15/04/2003		15 April 2003 (v.1)	1999: S2001; 2000: S2002
Netherlands	1990–2001	14/04/2003	<input checked="" type="checkbox"/>	27 May 2003 (v.2)	1990–2000: S2003
New Zealand	2001	15/04/2003	<input checked="" type="checkbox"/>	20 May 2003 (v.2)	1990–1998: T2003/S2000; 1999: T2003/S2001; 2000: T2003/S2002
Norway	1990, 1998–2001	05/05/2003	<input checked="" type="checkbox"/>	5 May 2003 (v.1)	1990: S2003; 1995–1997: T2003; 1990, 1998–2000: S2003
Poland	2001	15/04/2003		23 May 2003 (v.2)	1990–1999: T2003; 2000: S2002/T2003
Portugal	1990–2001	09/04/2003		9 April 2003 (v.1)	1990–2000: S2003
Romania	2001	14/04/2003	<input checked="" type="checkbox"/>	14 May 2003 (v.1)	1990: T2003; 1995–2000: T2003/S2002
Slovakia	2000 and 2001	16/04/2003		16 April 2003 (v.1)	1990–1997: T2003; 1998: T2003/S2000; 1999: T2003/S2001; 2000: S2003
Spain	1990–2001	29/04/2003	<input checked="" type="checkbox"/>	29 April 2003 (v.1)	1990–2000: S2003
Sweden	1990–2001	15/04/2003	<input checked="" type="checkbox"/>	27 May 2003 (v.2)	1990–2000: S2003
Switzerland	1990 and 2001	15/04/2003		15 April 2003 (v.1)	1990: S2003; 1995–1997: T2003; 1998: T2003/ S2001; 1999: T2003/S2001; 2000: T2003/S2002
United Kingdom	1990–2001	14/04/2003	<input checked="" type="checkbox"/>	9 May 2003 (v.2)	1990–2000: S2003
United States	1990–2001	11/04/2003	<input checked="" type="checkbox"/>	22 May 2003 (v.2)	1990–2000: S2003

Legend: v.1/2/3 - version of the CRF used in the S&A report; S200x - submission 200x; T200x - trend tables from submission 200x.

NIR = national inventory report

<sup>a</sup> Summary tables for all member states are provided.

<sup>b</sup> The submission includes the following tables from the CRF: Summary 1.A, Summary 3, Table 7

Table G.2

Key sources: inventory year 2001 <sup>a</sup>

	Austria	Belgium	Bulgaria	Canada	Czech Republic	Denmark	Estonia	Finland	France	Germany	Greece	Iceland	Ireland	Italy	Latvia	Netherlands	New Zealand	Norway	Poland	Portugal	Romania	Slovakia	Spain	Sweden	Switzerland	United Kingdom	United States
Source categories																											
Energy																											
Stationary combustion – coal (CO <sub>2</sub> )	L, T	L	L	L, T	L	L, T	L	L, T	L, T	L, T	L, T	L	L, T	L	L, T	L, T	L	L	L	L, T	L	L	L, T	L, T	L, T	L, T	L, T
Stationary combustion – coal (CH <sub>4</sub> )										T																	
Stationary combustion – coal (N <sub>2</sub> O)			L		L						L, T												T	L			
Stationary combustion – oil (CO <sub>2</sub> )	L, T	L	L	L, T	L	L, T	L	L, T	L, T	L, T	L, T	L	L, T	L	L, T	L, T	L	L, T	L	L, T	L	L	L, T	L, T	L, T	L, T	L, T
Stationary combustion – oil (N <sub>2</sub> O)		L									T		L, T	L									L	L, T			
Stationary combustion – gas (CO <sub>2</sub> )	L, T	L	L	L, T	L	L, T	L	L, T	L, T	L, T	L, T		L, T	L	L, T	L, T	L	L, T	L	L, T	L	L	L, T	L, T	L, T	L, T	L, T
Stationary combustion – gas (CH <sub>4</sub> )				T		T																					
Stationary combustion – gas (N <sub>2</sub> O)																							T				
Stationary combustion – biomass (CH <sub>4</sub> )	T														L, T					T				T			
Stationary combustion – biomass (N <sub>2</sub> O)															T									T			
Stationary combustion – other fuels (CO <sub>2</sub> )	L, T	L				L		L, T	L, T	T				L		L, T					L	L		L, T			T
Mobile combustion – road vehicles (CO <sub>2</sub> )	L, T	L	L	L, T	L	L, T	L	L, T	L, T	L, T	L, T	L	L, T	L	L, T	L, T	L	L, T	L	L, T	L	L	L, T	L, T	L, T	L, T	L, T
Mobile combustion – road vehicles (CH <sub>4</sub> )																							T	T			
Mobile combustion – road vehicles (N <sub>2</sub> O)	L, T	L		L, T		T		L, T	L, T	L, T	T		T	L				L, T		L, T			T	L, T	L, T	L, T	L
Mobile combustion – water-borne navigation (CO <sub>2</sub> )		L		L				L, T				L			T			L, T		T			L	L			L
Mobile combustion – aircraft (CO <sub>2</sub> )				L, T					L, T	T	L, T						L	L, T		L, T			L	L	T	L	L, T
Railways (CO <sub>2</sub> )				L, T											L												
Other transportation (CO <sub>2</sub> )	L, T		L	L, T				L, T			L, T					L		L, T									L, T
Other transportation (N <sub>2</sub> O)																								T			
Fugitive emissions: coal mining and handling (CH <sub>4</sub> )			L	T	L		L		L, T	L, T	L, T						L		L		L	L	T			L, T	L, T
Fugitive emissions: oil and gas operations (CO <sub>2</sub> )				L, T		L, T										L, T	L	L, T					L			L, T	
Fugitive emissions: oil and gas operations (CH <sub>4</sub> )		L	L	L, T			L		L, T	L, T				L	L	L, T		L, T	L	T	L	L				L	L, T
Solid fuel transformation (CO <sub>2</sub> )																							L, T	T			
Other (fugitive emissions from solid fuels) (CO <sub>2</sub> )								L, T																			
Industrial processes																											
Cement production (CO <sub>2</sub> )	L, T	L	L	L	L	L, T	L	L, T	L, T	L	L, T	L	L, T	L	L			L, T	L	L, T	L	L	L, T	L, T	L, T	L	L, T
Lime production (CO <sub>2</sub> )		L	L							L											L	L					
Limestone and dolomite use (CO <sub>2</sub> )																						L					
Other (mineral products) (CO <sub>2</sub> )	T																										
Ammonia production (CO <sub>2</sub> )	L	L		L					T				L, T					L, T		T	L						T
Nitric acid production (N <sub>2</sub> O)	L, T	L	L		L			L, T	T		T		T			L, T		L, T	L	L, T			L, T	L, T		L	
Adipic acid production (N <sub>2</sub> O)				T					T	T				L												T	T
Carbide production (CO <sub>2</sub> )																		L, T									
Iron and steel industry (CO <sub>2</sub> )	L	L	L	L, T	L										L, T		L							L, T			L, T

<sup>a</sup> Source: UNFCCC secretariat key source analysis.

**Table G.2**

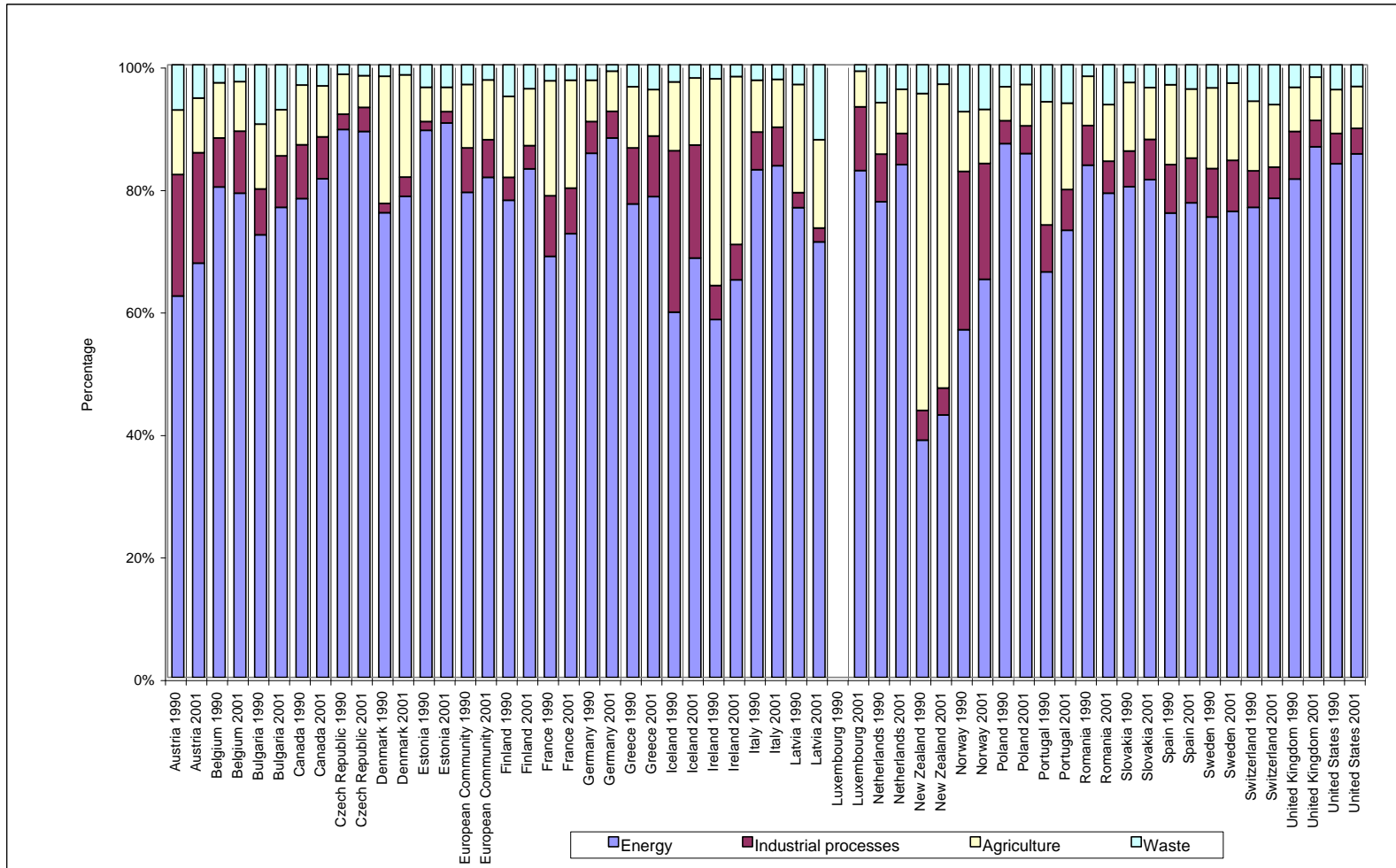
**Key sources: inventory year 2001 (continued)**

Source categories	Austria	Belgium	Bulgaria	Canada	Czech Republic	Denmark	Estonia	Finland	France	Germany	Greece	Iceland	Ireland	Italy	Latvia	Netherlands	New Zealand	Norway	Poland	Portugal	Romania	Slovakia	Spain	Sweden	Switzerland	United Kingdom	United States
Industrial processes, continued																											
Ferroalloys production (CO <sub>2</sub> )												L						L						L, T			
Aluminium production (CO <sub>2</sub> )				T								L						L, T							T		
Aluminium production (PFCs)				L, T							T	L				L, T		L, T					T	T	T	T	
Magnesium production (SF <sub>6</sub> )				T														L, T					T			T	
Other (metal production) (CO <sub>2</sub> )																		T									
Other (metal production) (SF <sub>6</sub> )																										T	
HFC-23 from HCFC production											L, T					T							L, T			T	
Other (by-product emissions; production of halocarbons and SF <sub>6</sub> )																									L, T		
ODS substitutes HFCs, PFCs, SF <sub>6</sub>	L, T	L		T		L, T		L, T	L, T	L, T	T			L		T		T					L, T	L, T	L, T	L, T	
Semiconductor manufacturing (HFCs, PFCs, SF <sub>6</sub> )	T												T														
Electrical equipment (SF <sub>6</sub> )																									T	T	
Other sources of SF <sub>6</sub>										T															T		
Other consumptions of halocarbons and SF <sub>6</sub>																										T	
Other (industrial processes) (CO <sub>2</sub> )		L		L, T																							
Solvents																											
Solvent and other product use (CO <sub>2</sub> )	T																							T			
Agriculture																											
Enteric fermentation in domestic livestock (CH <sub>4</sub> )	L, T	L	L	L	L	L, T	L	L, T	L, T	L, T	L, T	L	L, T	L	L, T	L, T	L	L, T	L	L, T	L	L	L, T	L, T	L, T	L, T	
Manure management (CH <sub>4</sub> )	L	L		L	L	L			L				L, T	L		L	L	L		L, T	L		L	L, T			
Manure management (N <sub>2</sub> O)	L, T	L						T		L			L	L	L				L	L, T		L	T	L, T	L		
Rice production (CH <sub>4</sub> )																				T							
Direct N <sub>2</sub> O emissions from agricultural soils	L, T		L	L, T	L	L, T		L, T	L, T	L	L, T	L	L, T	L	L	L, T	L	L, T	L	L, T	L	L	L, T	L, T	L, T	L	L
Animal production (N <sub>2</sub> O)									L, T		L, T		L, T				L			L, T			L, T	L, T		L, T	
Indirect N <sub>2</sub> O from nitrogen used in agriculture	L, T		L	L, T	L	L, T		L, T	L, T	L			L, T	L	L, T		L	L		L, T			L, T	L, T	L, T	L	L, T
Agricultural soils (CO <sub>2</sub> )								L, T										T					L, T	L, T	L, T	L	L, T
Other (agricultural soils) (N <sub>2</sub> O)																L							L				
Waste																											
Solid waste disposal sites (CH <sub>4</sub> )	L, T	L	L	L, T	L	L	L	L, T	L, T	L, T	L, T	L	L, T	L	L, T	L, T	L	L, T	L	L, T	L	L	L, T	L, T	L, T	L, T	
Waste-water handling (CH <sub>4</sub> )											T				L, T					L, T	L	L	L, T				
Waste-water handling (N <sub>2</sub> O)																				L							
Waste incineration (CO <sub>2</sub> )		L																		T			T		L, T		
Other (waste) (CO <sub>2</sub> )																T											
Other (waste) (CH <sub>4</sub> )	L	L																									
Other																											
Other (CO <sub>2</sub> )								L																			

Source: UNFCCC secretariat key source analysis.

**Figure G.2**

**GHG emissions by sector (without LUCF): base year and 2001 (%)<sup>a</sup>**

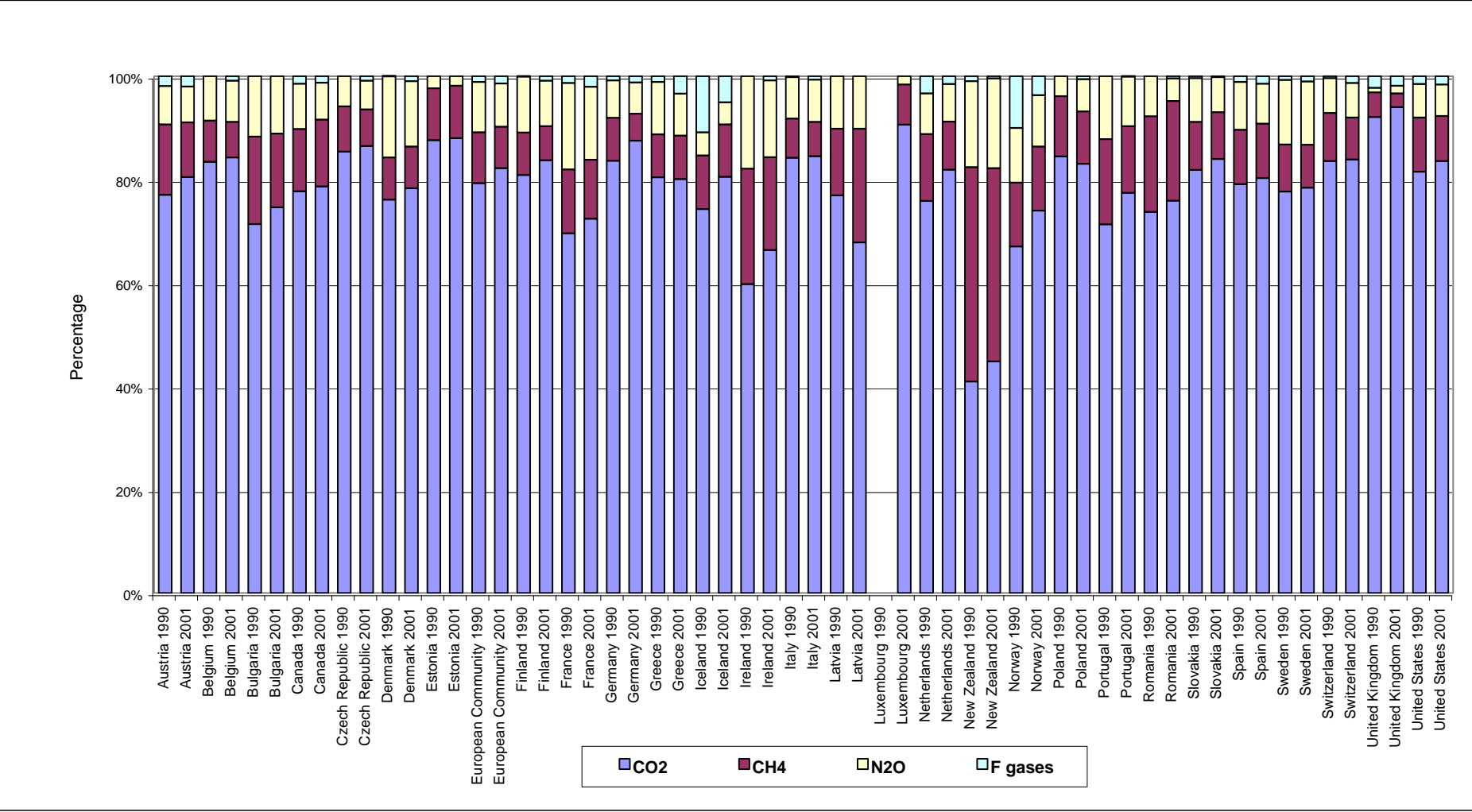


<sup>a</sup> In accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Poland (1988) and Romania (1989).



**Figure G.1**

**GHG emissions by gas: base year and 2001 (%)<sup>a</sup>**



<sup>a</sup> 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), Poland (1988) and Romania (1989).

**Table G.3****Recalculations for total CO<sub>2</sub> equivalent emissions****without land-use change and forestry: 2003 submission data (%)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000
Austria	0.89	2.79	5.85	3.48	5.49	3.00	2.75
Belgium	-1.14	-1.14	-1.05	-1.13	-0.58	-0.77	-1.38
Bulgaria	-8.08	-11.20	-11.11	-11.42	-12.11	-16.11	
Canada	0.07	-0.03	0.08	0.03	0.02	0.50	0.41
Czech Republic							
Denmark	-0.21	-0.06	-0.17	-0.20	-0.24	-0.23	-0.47
Estonia							
European Community	-0.38	-0.12	0.04	0.03	0.15	0.13	0.18
Finland	0.26	2.45	2.67	2.51	2.50	2.60	2.31
France	1.60	2.00	2.00	2.30	2.70	2.80	2.90
Germany							
Greece							
Iceland							
Ireland	-0.85	-0.01	0.09	0.33	0.05	0.59	1.87
Italy <sup>b</sup>							
Latvia							
Luxembourg							
Netherlands	-0.20	-0.13	-0.60	-1.60	-0.60	-0.60	-0.04
New Zealand	-15.59	-11.27	-10.67	-9.78	-9.39	-9.44	-8.59
Norway	-0.32				0.08	-0.06	0.52
Poland							
Portugal	-5.40	-4.54	-5.83	-5.60	-4.12	-3.18	-2.89
Romania							
Slovakia <sup>c</sup>							
Spain	0.41	0.39	0.15	0.45	0.34	0.04	0.29
Sweden	3.10	3.22	2.96	3.29	3.26	2.46	-0.59
Switzerland	0.10	-0.52	0.05	0.05	0.08	0.44	-0.63
United Kingdom	0.22	0.28	0.34	0.18	0.14	0.00	0.00
United States	0.15	0.51	0.56	0.51	0.67	0.29	0.66

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Recalculations are reported to have taken place but actual recalculated values have not been provided.

<sup>c</sup> For inventory year 2000 recalculations are reported for CO<sub>2</sub> emissions from industrial processes and N<sub>2</sub>O emissions from agriculture, but there is no information on the impact on the total GHG emission estimates.

**Table G.4****Reported recalculations for the base year and the latest year (%)**

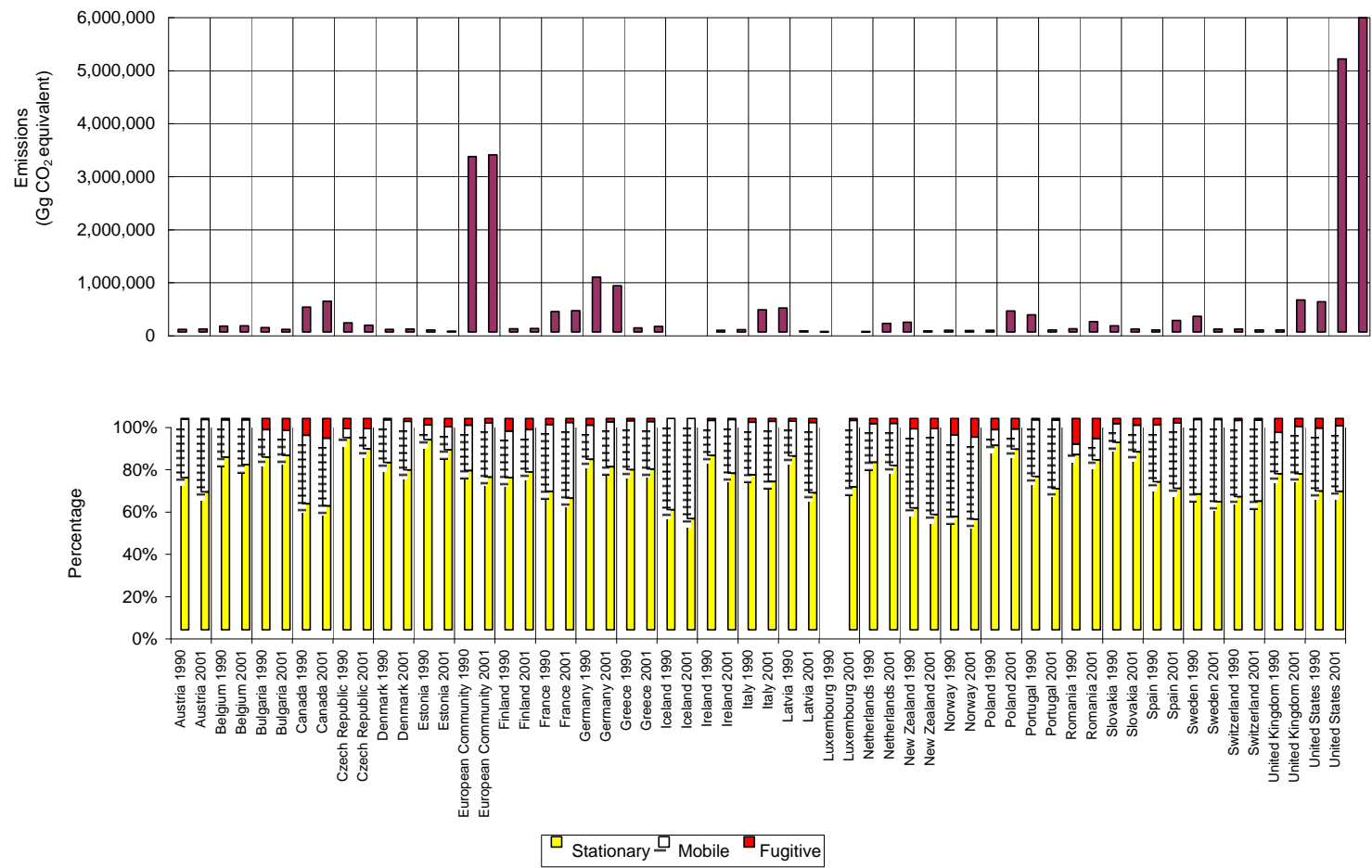
	Energy						Industrial processes						Solvents				Agriculture						LUCF		Waste							
	CO <sub>2</sub>		CH <sub>4</sub>		N <sub>2</sub> O		CO <sub>2</sub>		CH <sub>4</sub>		N <sub>2</sub> O		CO <sub>2</sub>		N <sub>2</sub> O		CO <sub>2</sub>		CH <sub>4</sub>		N <sub>2</sub> O		CO <sub>2</sub>		CO <sub>2</sub>		CH <sub>4</sub>		N <sub>2</sub> O			
	1990 <sup>a</sup>	2000	1990 <sup>a</sup>	2000	1990 <sup>a</sup>	2000	1990 <sup>a</sup>	2000	1990 <sup>a</sup>	2000	1990 <sup>a</sup>	2000	1990 <sup>a</sup>	2000	1990 <sup>a</sup>	2000	1990 <sup>a</sup>	2000	1990 <sup>a</sup>	2000	1990 <sup>a</sup>	2000	1990 <sup>a</sup>	2000	1990 <sup>a</sup>	2000	1990 <sup>a</sup>	2000	1990 <sup>a</sup>	2000		
Austria	-4.44	-2.02	5.59	-0.41	9.97	25.47	0.02	0.01	-0.22	-7.99	388.56	429.80							-3.19	7.21	262.34	261.92					-45.77	-89.35	-8.23	-10.41	-4.86	-9.53
Belgium	-0.20		2.76		8.56		0.00		-26.48		0.00				0.00		0.00		0.00		-18.53		0.00		0.01		-11.02		0.05			
Bulgaria	-0.86		-12.64		0.00		-0.27		-26.04		0.00						0.01		0.01		-46.50		0.01		0.00		-16.87		-17.72			
Canada	0.07	1.00	0.01	0.04	0.30	-1.12		-0.65								4.11	-65.09						73.97	223.51	0.00				0.00			
Czech Republic																																
Denmark	0.05	-0.17	-43.69	-25.57	1.04	0.82	0.00												0.96	1.25				240.39	253.47							
Estonia																																
Community	-0.30	0.31	-1.16	-2.15	-0.26	5.79	-3.24	-3.87	-0.50	-5.20	0.90	7.22	5.97	3.96	4.56	0.90	-0.21	-1.09	6.04	6.93	2.80	2.58	-3.55	-0.07	23.71	3.36	-15.54	-15.50	10.35	-10.52		
Finland		0.00															-0.21	-1.09	2.20	2.32	-2.11	-2.67	0.00				4.17	86.50	27.28	31.46		
France	-0.05	1.22	0.86	2.00	3.03	7.00	6.38	7.49	0.00	-0.45	-1.61	17.56	-0.02	-0.47	0.00	0.00	0.00	0.00	31.04	30.58	7.17	4.57	-0.94	-0.24	-0.43	-28.02	-38.81	-29.30	32.59	10.39		
Germany																																
Greece																																
Iceland																																
Ireland	0.67	0.40	8.54	7.36	0.07	0.07		2.65			0.00	0.00	0.00	0.00					-3.32	2.62	4.16	14.07	-26.03	45.94			-34.92	-20.78				
Italy																																
Latvia																																
Luxembourg																																
Netherlands	-0.40	0.31	-0.01	0.43	-0.80	4.12	-6.47	-9.00	0.00	-44.98		0.02	-100.00	-100.00		-10.93			0.67	0.36	-4.70				76.07	-22.69	-0.02	-0.43	-0.04	9.38		
New Zealand		-0.19																	-30.83	-20.36	-13.99	-2.85	1.24	0.81								
Norway	-0.49	0.15	-3.08	9.25	1.33	1.53	-2.83	-3.49					0.00	0.00	0.00				-0.74	1.18	13.88	15.02	0.00		1.26	3.73	0.30	1.50	0.00	0.00		
Poland																																
Portugal	-0.66	0.96	-11.77	11.84	-47.52	-23.10	-0.94	-3.18	3.81	40.43	0.01	0.01							0.00	0.00	0.00	0.00	-99.93	-48.97	14.75	-11.16	-45.50	-37.53	5.66	11.70		
Romania																																
Slovakia																																
Spain	0.19	0.68	2.38	7.63	-1.59	0.11	-1.29	-1.84	0.00	-1.50			-1.34	-0.18	0.00				2.98	3.52	2.48	1.43			0.00	0.08	0.00	-0.35	-0.01	0.45		
Sweden	0.27	-4.31	-8.85	0.47	0.35	3.48	1.72	0.89	-1.75	-0.08		1.07	189.37	68.20					-3.19	33.39	36.52	33.39										
Switzerland	-0.03	-0.88	2.71	-0.61	10.48	-0.22	-16.22	-21.20	-0.14	-0.05	0.04	0.00			-0.03	0.00			0.55	0.08	0.00	0.00	0.01	0.00	36.53	54.09	-10.91	-13.55	1.59	9.75		
United Kingdom	0.03	0.11	0.01	0.30	-0.16	0.40	0.00	-0.94	-0.06	0.58	-0.01	1.13							0.20	0.18	0.00	2.63	0.00	0.76	140.45	547.75	1.25	-15.46	0.00			
United States	0.08	0.79	0.87	2.07	-0.93	-2.02	0.70	-1.15		0.66	14.07	7.19							-4.81	-4.38	0.21	-0.83	-2.27	-7.52			-0.63	0.81	80.59	79.04		

<sup>a</sup> 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), Poland (1988) and Romania (1989).

Energy

Figure 1.1

Emissions and contribution of subsectors in energy<sup>a</sup>



<sup>a</sup> 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), Poland (1988) and Romania (1989).

**Table 1.1**

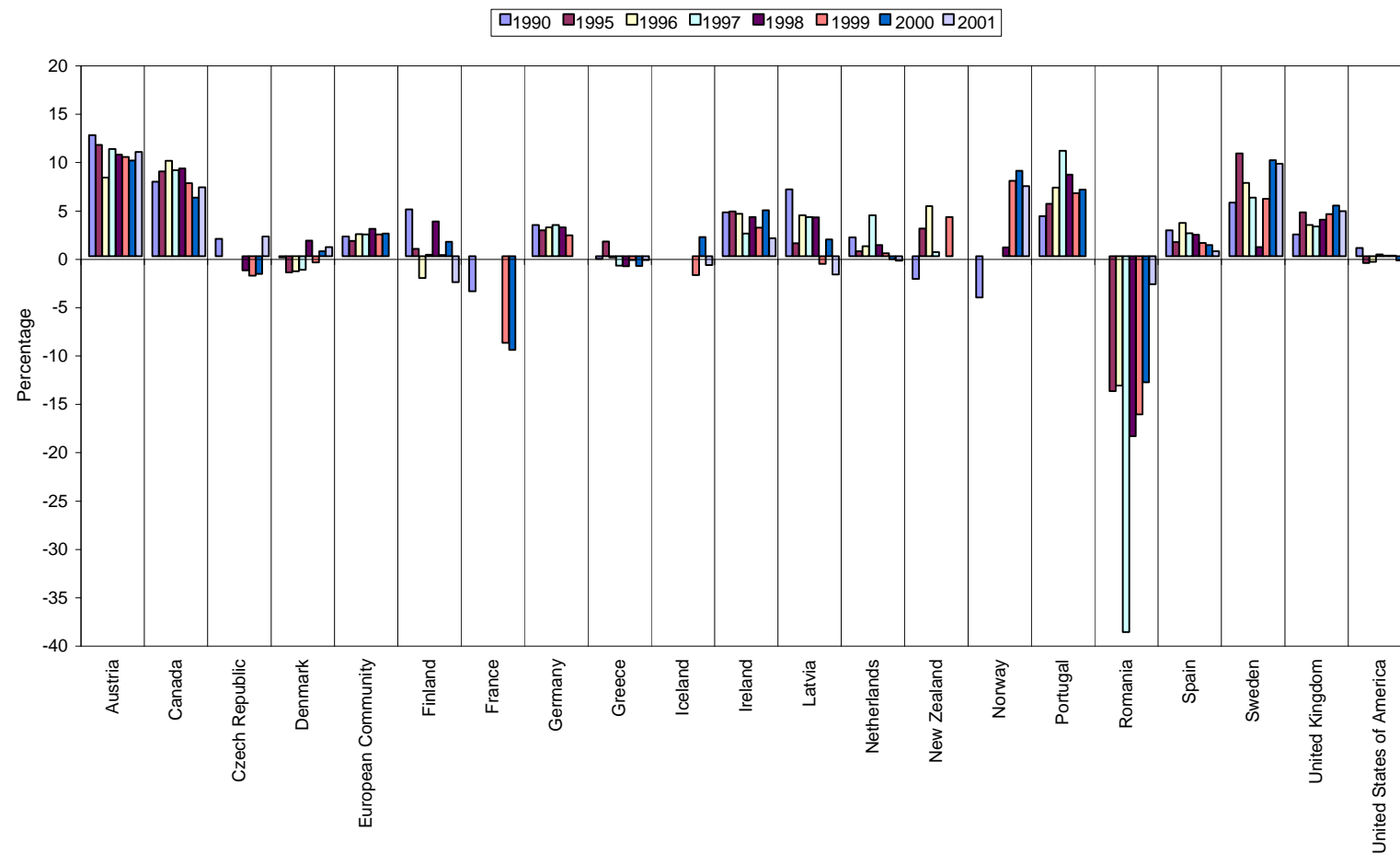
**Total CO<sub>2</sub> emissions from the reference approach and the sectoral approach (2001)**

	Reference approach	Sectoral approach	Difference	Explanation of the differences as reported in table 1.A(c) of the CRF
	(Gg CO <sub>2</sub> )		(%)	
<b>Austria</b>	61,661	55,672	10.8	All fuels: Emissions of the cement industry are included in category 2A. Emissions of iron and steel industry are included in category 2C. Solid fuels: Energy consumption: National approach includes coke oven coke for blast furnaces whereas in the reference approach a share is considered as non-energy use blast furnaces. CO <sub>2</sub> emissions: National approach does not separate between fuel related and non-fuel related CO <sub>2</sub> emissions for metal production. All CO <sub>2</sub> emissions are included in sector 2C: Metal production. Gaseous fuels: Energy consumption: National approach does not include losses and non-energy use. CO <sub>2</sub> emissions: National approach uses sector specific carbon contents (different from IPCC reference factor). Emissions from natural gas consumption of cement industry and iron and steel industry are reported under category "2 Industrial Processes". Liquid fuels: Energy consumption: National approach does not include non-energy use and energy losses. CO <sub>2</sub> emissions: Heat values and carbon contents are sector and fuel specific. The energy statistic is mass balanced only. Emissions from liquid fuels consumption of cement industry and iron and steel industry are reported under category "2 Industrial Processes". Other fuels: The national approach considers waste as an additional fuel type (e.g. municipal solid waste and industrial fuel waste).
<b>Belgium</b>	116,801	115,237	1.4	
<b>Bulgaria</b>	46,331	44,917	3.1	The discrepancy arises from the following sources: (I) The statistical difference between "apparent consumption" used in the reference approach and actual consumption used in the sectoral approach. (II) Not taking into account the losses during fuel transformation and the non-energy use of fuels in the sectoral approach. (III) Different emission factors applied in the sectoral approach for the different combustion technologies. (IV) The reference approach treats the non-energy use of fuels as if they were combusted. A correction is done by the carbon stored from non-energy fuel use, which is estimated from an approximate procedure which does not identify specific processes.
<b>Canada</b>	549,093	512,570	7.1	For a complete discussion and reconciliation of the national and reference approaches, please consult the most recent copy of Canada's National Inventory Report (NIR) specifically, the section describing: Energy/Fuel Combustion/Memo Items/Reference Approach.
<b>Czech Republic</b>	124,730	122,246	2.0	Regarding sectoral approach - when CO <sub>2</sub> from 2C1 is added (2,524 Gg CO <sub>2</sub> ), the total value for the Sectoral approach is 124,770 Gg CO <sub>2</sub> (very close to the reference approach result).
<b>Denmark</b>	52,633	52,145	0.9	Non-energy use of fuels is not included in the Danish national approach. Fuel consumption for non-energy (10.63 PJ) is subtracted in the reference approach to make results comparable. Inclusion of these fuels in future inventories will be considered. 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. (Other fuels of sources 1A1, 1A2 and 1A4)
<b>Estonia</b>	16,033	16,728	-4.2	
<b>European Community</b>		3,201,455		
<b>Finland</b>	58,860	60,492	-2.7	Secondary liquid fuels with notification "IE" are included in Other oil in Table 1.A(b). Anthracite is included in Other bituminous coal. All biomass fuels are included in Solid biomass. The relatively high difference in liquid fuels CO <sub>2</sub> emissions is due to statistical differences in national oil balance.
<b>France</b>		385,530		Anthracite is included with Other bituminous coal. Energy data relating to 2001 were not yet available when the CRF was elaborated.
<b>Germany</b>		846,352		
<b>Greece</b>	97,330	97,718	-0.4	
<b>Iceland</b>	1,768	1,784	-0.9	
<b>Ireland</b>	44,144	43,348	1.8	Liquid fuels. 0.21 PJ in Cell D12 is LPG used in Road Transport and should be included in Cell D9 (Liquid Fuels); the remaining difference is due to "rounding" between the reference approach and national approach. Solid fuels. The difference between the reference approach and national approach is 0.38 PJ. This is due to 9 ktoe of milled peat used in the manufacture of peat briquettes, which is not included in the national approach. This will be included in future submissions. Gaseous fuels. 18.882 PJ of natural gas used as feedstock in the manufacture of ammonia is not included in the national approach and accounts for the total difference.
<b>Italy</b>	434,658	436,039	-0.3	
<b>Latvia</b>	7,316	7,457	-1.9	There is made more detailed research on fuel consumption for domestic ships and aviation. In the national approach is used energy balance made by expert but in Reference approach are used data from Statistical Bureau.
<b>Luxembourg</b>		4,847		
<b>Netherlands</b>	175,904	176,715	-0.5	The energy consumption in the national approach is based on the data from the national inventory. These fuel data are not complete: 1) Not all CO <sub>2</sub> emissions (from combustion) submitted by industry are accompanied by fuel data in the inventory; 2) In industry reports some of the CO <sub>2</sub> emissions from combustion are allocated as process and thus the corresponding fuel data are not incorporated in the totals for the fuel data. 3) Industries may calculate and report actual CO <sub>2</sub> emissions from energy used as chemical fusing different overall CO <sub>2</sub> emission factors for the amount of energy carriers converted into produthan used in the reference approach for estimating non-reported feedstock emissions. 4) Industry firms report more heavy fuels used as chemical feedstock than the energy statistics used in the reference approach. The extent of these causes may differ from year to year, which then also cause situations in the difference between reference approach and national approach. In addition, the reference approach figures are calculated using preliminary values for the carbon content of crude oil and NGL.
<b>New Zealand</b>	29,205	28,980	0.8	IE refers to the fact that the 'Other' energy consumption and CO <sub>2</sub> emissions comprised LPG and fuel oil, which is included in row 9, under 'Liquid Fuels' reference approach figures (PJ) i.e. excluding coal, are verifiable via Ministry of Economic Development's "Energy Data File" published every six months. e national approach data however, is more detailed, and are from the Ministry of Economic Development's greenhouse gas database. These figures are not reported elsewhere. Hence both approaches are credible, and we are looking into the matter of minimizing the % difference.
<b>Norway</b>	34,324	32,003	7.3	

	Reference approach	Sectoral approach	Difference	Explanation of the differences as reported in table 1.A(c) of the CRF
	(Gg CO <sub>2</sub> )		(%)	
Poland	303,672	307,110	-1.1	
Portugal		58,991		Difference between sectoral and reference approach (CO <sub>2</sub> from fuel combustion): the sectoral approach CO <sub>2</sub> estimates depend 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.
Romania	101,775	104,812	-3.0	
Slovakia	38,999	38,542	1.2	Sectoral approach is based on totally independent data collection than the reference approach. The difference in fuel consumption between these two approaches can be caused by: using average net calorific value in the reference approach and fuel specific net calorific value in the sectoral approach, not full coverage of fuel consumption in the sectoral approach (not appropriate reporting by sources). Slovakia is using the reference approach as national total emission estimate of CO <sub>2</sub> , while consistent data series since 1990 exist only for the reference approach.
Spain	282,913	281,468	0.5	
Sweden	56,302	51,392	9.6	If energy consumption in 1B and 2 is taken into account, the difference in Energy consumption is 0.90% and the difference in CO <sub>2</sub> emissions is 3.36% See comparison 1990--2001, in appendix 13 of the Swedish National Inventory Report, for further information. Note that cell D12 and E12 includes gasoline consumption. Gasoline is a liquid fuel, hence not included in B12 and C12. (Also the case other years)
Switzerland	41,142	40,551	1.5	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". 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).
United Kingdom	561,600	536,632	4.7	A significant proportion of fuel consumption emissions occurs in 1B1b Solid Fuel Transformation, 2C Metal Production, 2B1 Ammonia Production including these sources with 1A in the comparison reduces the discrepancy to 3.5 %. This discrepancy arises from three sources: (1) The statistical difference between 'apparent consumption' used in the reference inventory and actual consumption used in the sectoral inventory. This statistical 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 and steel, lubricants combustion and ammonia production. The reference approach implicitly treats the non-energy use of fuel as if it were 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. (3) The reference approach uses data on primary fuels such as crude oil and natural gas liquids which are then corrected for imports, exports and stock changes of secondary fuels. Thus the estimates obtained will be 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 the 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.
United States	5,694,124	5,641,760	0.9	In order to accommodate the differences and limitations between the reference approach table of the CRF and that of the US Inventory, the following adaptations were made to table 1.A(b): 1) Orimulsion values refer to US Inventory's "Other Liquids" which has production. The carbon stored subtracted in column P refers to "Pentanes Plus." 2) Field production of motor gasoline is included in column F with "Gasoline" Imports. 3) Naphtha values refer to "Naphtha for Petrofeed" and "Special Naphtha." 4) Refinery Feedstocks values refer to US Inventory's "Other Oil for Petrofeed" and "Still Gas." 5) Other Oil values refer to US Inventory's "Waxes," "Asphalt/Road Oil," "Misc. Products," and "US Terr. Misc. Products." 6) Other Bit. Coal includes US Inventory's "Bituminous Coal" and "Unspecified Coal." 7) US 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). 8) Other includes waste combustion and geothermal emissions. Additional notes: 9) Table 1.A(b) - The United States reference approach is also provided in a separate Excel spreadsheet, which is more detailed than this table allows information to be reported. Specifically, the fuel types provided in the CRF tables differ from the fuel types as defined in the US, and no "other" options were offered in the CRF table. The US suggests revising the table to allow for additional fuel types. 10) "Other" reported above includes waste combustion, geothermal consumption, and adjustments to exclude petroleum coke for aluminum, ferroalloy, and titanium dioxide production; coking coal for iron and steel production; and natural gas for ammonia production. These fuels consumed as feedstocks are accounted for in the Industrial Processes section. The inclusion of waste combustion in this table gives higher totals for energy consumption and CO <sub>2</sub> emissions in the CRF reference approach than in the US Inventory reference approach which does not include waste combustion.

**Figure 1.2**

**Differences in CO<sub>2</sub> emissions from reference and sectoral approach for 1990–2001 (%)<sup>a</sup>**



**Note:** Only Parties that provided data for three or more of the years in the selected period are included in the graph.

<sup>a</sup> 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), Poland (1988) and Romania (1989).

**Table 1.2****Emissions from stationary combustion – trend information****CO<sub>2</sub> emissions (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	33,790	35,278	38,194	37,598	36,554	35,808	34,665	36,785
<b>Belgium</b>	89,383	94,706	96,737	91,645	95,550	91,812	90,752	91,075
<b>Bulgaria</b>	82,034	49,141	48,235	47,752	41,638	37,893	36,768	38,904
<b>Canada</b>	275,782	288,408	295,895	300,701	306,234	319,222	341,192	334,688
<b>Czech Republic</b>	152,805		119,620	122,534	113,707	105,485	113,310	110,185
<b>Denmark</b>	40,885	47,561	60,675	50,888	45,952	42,679	38,560	40,068
<b>Estonia</b>	34,801	17,991	19,010	18,787	16,598	15,221	15,464	14,807
<b>European Community</b>	2,441,954	2,329,968	2,394,132	2,321,762	2,348,074	2,305,283	2,322,373	2,367,530
<b>Finland</b>	41,418	44,757	50,226	48,283	45,105	44,047	42,553	47,923
<b>France</b>	244,636	237,440	251,156	243,174	262,978	248,492	243,191	244,860
<b>Germany</b>	824,552	695,883	719,711	687,303	675,316	642,655	649,134	668,039
<b>Greece<sup>b</sup></b>	58,435	60,343	62,134	65,995	69,139	67,686	74,003	75,269
<b>Iceland</b>	953	1,026	1,134	1,136	1,095	1,085	981	952
<b>Ireland</b>	24,617	26,084	26,563	28,052	28,939	29,868	31,124	32,285
<b>Italy</b>	299,695	302,189	298,073	301,445	308,890	313,122	315,985	310,848
<b>Latvia</b>	18,037	7,760	7,065	6,554	6,135	5,198	4,531	4,871
<b>Luxembourg<sup>b</sup></b>						3,403	3,257	3,343
<b>Netherlands</b>	127,379	137,077	144,217	131,910	136,675	132,037	135,449	141,107
<b>New Zealand</b>	13,601	12,973	13,820	15,582	13,826	15,064	15,307	16,673
<b>Norway</b>	15,318	16,480	18,539	18,671	18,386	17,977	18,003	18,615
<b>Poland</b>	434,760	312,657	335,400	324,214	298,731	287,581	274,075	276,988
<b>Portugal</b>	28,570	33,584	30,570	31,743	34,724	40,973	38,470	39,914
<b>Romania</b>		144,253	138,461	137,031	120,851	100,487	95,616	93,187
<b>Slovakia</b>	50,654	36,685	37,194	37,212	35,139	34,066	31,942	33,655
<b>Spain</b>	147,514	167,619	150,594	168,331	168,658	188,473	197,841	192,126
<b>Sweden</b>	33,243	34,683	38,319	33,456	34,188	32,054	29,064	30,420
<b>Switzerland</b>	25,432	25,657	26,355	25,118	26,088	25,519	24,037	25,226
<b>United Kingdom</b>	440,025	407,156	421,419	397,748	402,035	392,172	398,327	413,467
<b>United States</b>	3,358,374	3,582,213	3,727,835	3,794,266	3,789,062	3,799,667	3,954,787	3,860,889

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

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 Other.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>	8.3	-1.6	-2.8	-2.0	-3.2	6.1	8.9
<b>Belgium</b>	2.1	-5.3	4.3	-3.9	-1.2	0.4	1.9
<b>Bulgaria</b>	-1.8	-1.0	-12.8	-9.0	-3.0	5.8	-52.6
<b>Canada</b>	2.6	1.6	1.8	4.2	6.9	-1.9	21.4
<b>Czech Republic</b>		2.4	-7.2	-7.2	7.4	-2.8	
<b>Denmark</b>	27.6	-16.1	-9.7	-7.1	-9.7	3.9	-2.0
<b>Estonia</b>	5.7	-1.2	-11.7	-8.3	1.6	-4.3	-57.5
<b>European Community</b>	2.8	-3.0	1.1	-1.8	0.7	1.9	-3.0
<b>Finland</b>	12.2	-3.9	-6.6	-2.3	-3.4	12.6	15.7
<b>France</b>	5.8	-3.2	8.1	-5.5	-2.1	0.7	0.1
<b>Germany</b>	3.4	-4.5	-1.7	-4.8	1.0	2.9	-19.0
<b>Greece</b>	3.0	6.2	4.8	-2.1	9.3	1.7	28.8
<b>Iceland</b>	10.5	0.2	-3.7	-0.8	-9.6	-2.9	-0.1
<b>Ireland</b>	1.8	5.6	3.2	3.2	4.2	3.7	31.2
<b>Italy</b>	-1.4	1.1	2.5	1.4	0.9	-1.6	3.7
<b>Latvia</b>	-9.0	-7.2	-6.4	-15.3	-12.8	7.5	-73.0
<b>Luxembourg</b>					-4.3	2.6	
<b>Netherlands</b>	5.2	-8.5	3.6	-3.4	2.6	4.2	10.8
<b>New Zealand</b>	6.5	12.8	-11.3	8.9	1.6	8.9	22.6
<b>Norway</b>	12.5	0.7	-1.5	-2.2	0.1	3.4	21.5
<b>Poland</b>	7.3	-3.3	-7.9	-3.7	-4.7	1.1	-36.3
<b>Portugal</b>	-9.0	3.8	9.4	18.0	-6.1	3.8	39.7
<b>Romania</b>	-4.0	-1.0	-11.8	-16.9	-4.8	-2.5	-47.6
<b>Slovakia</b>	1.4	0.0	-5.6	-3.1	-6.2	5.4	-33.6
<b>Spain</b>	-10.2	11.8	0.2	11.7	5.0	-2.9	30.2
<b>Sweden</b>	10.5	-12.7	2.2	-6.2	-9.3	4.7	-8.5
<b>Switzerland</b>	2.7	-4.7	3.9	-2.2	-5.8	4.9	-0.8
<b>United Kingdom</b>	3.5	-5.6	1.1	-2.5	1.6	3.8	-6.0
<b>United States</b>	4.1	1.8	-0.1	0.3	4.1	-2.4	15.0



**Table 1.3**  
**Stationary combustion: liquid fuels, CO<sub>2</sub> (2001)**

	Key source	Share of national total	IEF in CRF based on	Energy industries					Manufacturing industries and construction			Other sectors						
				Methods and EF used <sup>a</sup>		CO <sub>2</sub> IEF			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	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	Agricultural / forestry / fisheries
Austria	L, T	17.9	NCV	C	CS	75.07	78.44	72.89		C	CS	61.71	CS	CS	74.61	73.98	74.87	74.01
Belgium	L	19.9	NCV			72.22	77.07	71.54	76.02			77.55			73.54	73.56	73.38	74.57
Bulgaria	L	6.1	NCV	T3	CS, D	70.02	73.79	NO	68.17	T2	CS, D	74.76	T2	CS, D	72.65	73.23	64.19	73.96
Canada	L, T	10.3	GCV	T2	CS	72.90	92.96	64.70	NA	T2	CS	71.80	T2	CS	69.35	67.40	71.47	67.46
Czech Republic	L, T	7.2	NCV	T1	D	74.36	75.76	73.10	73.32	T1	D	61.84	T1	D	67.60	71.99	62.44	73.33
Denmark	L, T	16.8	NCV	C	CS	73.55	79.15	59.30		C	CS	78.75	C	CS	74.04	73.96	73.91	74.21
Estonia	L	4.7	NCV			72.99	72.99					72.79			71.63	72.39	71.15	71.15
European Community				C, CS, D, T1, T2	C, CS, D, PS		NE	NE	NE	C, CS, D, T1, T2	C, CS, D, PS		C, CS, D, T1, T2	C, CS, D		NE	NE	NE
Finland	L, T	17.3	NCV	CS (T2)	CS/PS/D	73.62	76.18	72.00	NO	CS (T2)	CS/PS/D	73.39	CS (T2, T1)	CS/D	73.62	74.20	73.38	73.60
France	L, T	19.5	NCV	C	CS	67.19	77.78	62.02	78.12	C	CS	76.18	C	CS	73.49	74.31	73.08	73.40
Germany	L, T	13.8	NCV	CS	CS	69.42	70.24	69.27	74.70	CS	CS	75.02	CS	CS	73.74	73.81	73.68	74.16
Greece	L, T	18.7	NCV	C	C and CS	74.81	75.92	72.91	NO	C	C	59.43	C	C	72.98	72.38	73.03	74.70
Iceland	L	33.9	NCV	T1	D	73.33	73.33	NO	NO	T1	D	64.57	T1	D	73.57	62.44	72.14	73.66
Ireland	L, T	19.6	NCV	T1	PS, CS	78.88	80.06	67.55	NO	T1	PS, CS	78.29	T1	CS	72.93	73.73	72.22	73.30
Italy	L	22.4	NCV	D, T2	CS	76.00	76.97	74.27	74.80	D, T2	CS	81.96	D, T2	CS	73.38	74.04	73.34	73.17
Latvia	L, T	10.3	NCV	T1	D	76.25	76.25	NO	NO	T1	D	74.87	T1	D	71.68	73.86	67.85	74.25
Luxembourg				C	C					C	C		C	C				
Netherlands	L, T	2.8	NCV	CS/T2	PS, CS	49.88	49.65	75.53	73.72	CS/T2	PS, CS	57.04	CS/T2	CS	70.01	66.79	71.16	70.38
New Zealand	L	3.3	GCV	T1	CS/D	74.59	67.56	74.61	NE	T1	CS/D	67.72	T1	CS/D	67.49	66.94	59.86	68.49
Norway	L, T	15.3	NCV	T2	CS	62.02	73.32	58.20	73.55	T2	CS	68.13	T2	CS	73.43	73.60	73.09	73.50
Poland	L	7.5	NCV	T2	CS	69.58	75.14	67.04	72.92	T2	CS	73.88	T2	CS	72.52	72.71	69.37	73.76
Portugal	L, T	27.0	NCV	C+T2	C	74.23	76.49	70.01		C+T2	C	72.02	C+T2	C	68.98	72.33	63.11	73.59
Romania	L	9.0	NCV	D	D	76.39	76.39	IE	IE	D	D	70.28	D	D	66.47	69.79	62.91	76.59
Slovakia	L	3.9	NCV	SA	D	75.28	75.98	74.81		SA	D	65.74	SA	D	73.63	73.35		73.98
Spain	L, T	20.2	NCV	CS, C	PS, C	71.83	77.72	66.73	67.90	CS, C	PS, C	77.48	C	C	71.28	72.55	69.44	72.63
Sweden	L, T	27.4	NCV	CS	CS	68.30	75.46	63.87	75.30	CS	CS	72.27	CS	CS	74.99	74.28	75.11	75.28
Switzerland	L, T	35.2	NCV	RA, C	RA, CS	62.99	73.70	62.44	NO	C	CS	74.33	C	CS	73.70	73.70	73.70	73.65
United Kingdom	L, T	9.6	NCV	T2	CS	69.09	75.38	68.53	61.62	T2	CS	71.74	T2	CS	71.94	73.66	71.06	72.57
United States	L, T	9.7	GCV	T1	CS	74.55	74.55	IE	IE	T1	CS	40.71	T1	CS	66.13	67.91	65.26	IE

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

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 Other.

**Table 1.4**  
**Stationary combustion: solid fuels, CO<sub>2</sub> (2001)**

	Key source	Share of national total (%)	IEF in CRF based on	Energy industries					Manufacturing industries and construction			Other sectors					
				Methods and EF used <sup>a</sup>		CO <sub>2</sub> IEF			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	EF	Total	Public electricity and heat production	Manufacture of solid fuels and other energy industries	Methods	EF	Total	Methods	EF	Total	Commercial / institutional	Residential	Agricultural / forestry / fisheries
Austria	L, T	8.3	NCV	C	CS	97.50	97.50		C	CS	4.75	CS	CS	93.64	94.24	93.61	93.86
Belgium	L	17.1	NCV			102.13	107.25	45.38			105.45			93.46	93.47	93.55	92.71
Bulgaria	L	45.8	NCV	T3	CS, D	106.81	107.42	66.21	T2	CS, D	92.09	T2	CS, D	99.88	99.62	99.88	100.84
Canada	L, T	15.4	GCV	T2	CS	87.96	88.08	79.65	T2	CS	83.09	T2	CS	88.66	79.51	90.55	
Czech Republic	L, T	54.6	NCV	T1	D	96.99	97.81	68.27	T1	D	96.70	T1	D	98.05	98.45	97.90	99.81
Denmark	L, T	24.0	NCV	C	CS	95.00	95.00		C	CS	95.00	C	CS	95.00		95.00	95.00
Estonia	L	64.7	NCV			101.73	101.73				100.84			98.13	96.30	98.15	96.30
European Community				C, CS, D, T1, T2	C, CS, D, PS		NE	NE	C, CS, D, T1, T2	C, CS, D, PS		C, CS, D, T1, T2	C, CS, D		NE	NE	NE
Finland	L, T	19.4	NCV	CS (T2)	CS/PS/D	91.65	92.71	39.69	CS (T2)	CS/PS/D	97.74	CS (T2, T1)	CS/D	92.60		92.67	92.56
France	L, T	9.1	NCV	C	CS	106.51	105.43	106.25	C	CS	132.72	C	CS	95.00	95.00	95.00	95.00
Germany	L, T	36.7	NCV	CS	CS	102.03	102.19	96.64	CS	CS	91.59	CS	CS	99.91	110.95	97.74	94.10
Greece	L, T	35.3	NCV	C	C and CS	122.14	122.14	NO	C	C	93.01	C	C	95.48	NO	94.08	99.18
Iceland	L	1.7	NCV	T1	D		NO	NO	T1	D	92.71	T1	D		NO	NO	NO
Ireland	L, T	16.2	NCV	T1	PS, CS	99.53	99.53	NO	T1	PS, CS	97.72	T1	CS	98.46	98.86	98.46	NO
Italy	L	9.4	NCV	D, T2	CS	113.43	102.16	240.03	D, T2	CS	59.58	D, T2	CS	100.67	85.54	101.16	NO
Latvia	L, T	4.1	NCV	T1	D	101.07	101.03	103.85	T1	D	94.16	T1	D	92.77	92.82	92.71	92.71
Luxembourg				C	C				C	C		C	C				
Netherlands	L, T	10.0	NCV	CS/T2	PS, CS	93.43	93.43		CS/T2	PS, CS	95.35	CS/T2	CS	98.97	89.25	103.00	94.00
New Zealand	L	5.0	GCV	T1	CS/D	89.47	89.47	NE	T1	CS/D	89.47	T1	CS/D	89.47	89.47	89.47	89.47
Norway	L	1.3	NCV	T2	CS	88.94	88.94	NO	T2	CS	106.48	T2	CS	93.36	NO	94.46	86.12
Poland	L	60.1	NCV	T2	CS	97.31	98.24	75.72	T2	CS	105.48	T2	CS	92.45	97.04	91.26	97.62
Portugal	L, T	15.8	NCV	C+T2	C	92.04	92.00	96.30	C+T2	C	118.58	C+T2	C				
Romania	L	28.1	NCV	D	D	96.03	96.03	IE	D	D	93.45	D	D	98.26	96.20	99.17	95.94
Slovakia	L	26.2	NCV	SA	D	93.29	93.29		SA	D	94.40	SA	D	95.14	96.84	94.87	95.10
Spain	L, T	19.7	NCV	CS,C	PS,C	99.30	99.71	72.78	CS,C	PS,C	100.20	C	C	71.00	66.90	73.69	NO
Sweden	L, T	10.9	NCV	CS	CS	96.06	101.87	79.00	CS	CS	88.44	CS	CS		NO	NO	NO
Switzerland	L, T	1.2	NCV	RA, C	RA, CS	NO	NO	NO	C	CS	94.00	C	CS	94.00	NO	94.00	NO
United Kingdom	L, T	21.5	NCV	T2	CS	87.60	87.66	83.65	T2	CS	124.75	T2	CS	89.67	87.19	89.89	85.43
United States	L, T	28.7	GCV	T1	CS	89.39	89.39	IE	T1	CS	87.58	T1	CS	89.59	89.59	89.59	IE

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

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 Other.

**Table 1.5**  
**Stationary combustion: gaseous fuels, CO<sub>2</sub> (2001)**

	Key source	Share of national total	IEF in CRF based on	Energy industries						Manufacturing industries and construction			Other sectors					
				Methods and EF used <sup>a</sup>		CO <sub>2</sub> IEF				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	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	Agricultural / forestry / fisheries
Austria	L, T	15.9	NCV	C	CS	55.00	55.00	55.00	55.00	C	CS	47.46	CS	CS	55.00	55.00	55.00	55.00
Belgium	L	19.8	NCV			56.45	56.46	55.82				51.67			58.80	68.11	55.89	55.82
Bulgaria	L	7.2	NCV	T3	CS, D	55.82	55.82	55.82	55.82	T2	CS, D	55.82	T2	CS, D	55.82	55.82	55.82	55.82
Canada	L, T	20.8	GCV	T2	CS	50.96	49.65	49.65	51.75	T2	CS	43.77	T2	CS	49.65	49.65	49.65	49.65
Czech Republic	L, T	12.7	NCV	T1	D	55.82	55.82	55.82		T1	D	55.82	T1	D	55.82	55.82	55.82	55.82
Denmark	L, T	16.0	NCV	C	CS	57.25	57.25		57.25	C	CS	57.25	C	CS	57.25	57.25	57.25	57.25
Estonia	L	6.7	NCV			55.82	55.82					55.82			55.82	55.82	55.82	
European Community				C, CS, D, T1, T2	C, CS, D, PS		NE	NE	NE	C, CS, D, T1, T2	C, CS, D, PS		C, CS, D, T1, T2	C, CS, D		NE	NE	NE
Finland	L, T	10.8	NCV	CS (T2)	CS/PS/D	55.86	55.86	55.82		CS (T2)	CS/PS/D	55.47	CS (T2, T1)	CS/D	55.82	55.82	55.82	55.83
France	L, T	13.7	NCV	C	CS	57.00	57.00	57.06		C	CS	56.46	C	CS	57.00	57.00	57.00	57.00
Germany	L, T	16.5	NCV	CS	CS	55.99	55.99	56.00	55.99	CS	CS	56.00	CS	CS	56.00	56.00	56.00	56.00
Greece	L, T	2.9	NCV	C	C and CS	55.82	55.82	NO	55.82	C	C	49.70	C	C	55.82	55.82	55.82	NO
Iceland				T1	D		NO	NO	NO	T1	D		T1	D		NO	NO	NO
Ireland	L, T	10.3	NCV	T1	PS, CS	56.64	56.64	NO	NO	T1	PS, CS	54.94	T1	CS	54.94	54.94	54.94	NO
Italy	L	24.2	NCV	D, T2	CS	55.41	55.41	55.41	55.41	D, T2	CS	55.41	D, T2	CS	55.12	55.41	55.41	0.06
Latvia	L, T	28.4	NCV	T1	D	55.82	55.82	NO	NO	T1	D	55.82	T1	D	55.82	55.82	55.82	55.82
Luxembourg				C	C					C	C		C	C				
Netherlands	L, T	35.5	NCV	CS/T2	PS, CS	60.95	61.35		56.19	CS/T2	PS, CS	54.20	CS/T2	CS	55.96	56.02	55.92	56.00
New Zealand	L	14.8	GCV	T1	CS/D	52.27	51.88	58.73	46.99	T1	CS/D	30.32	T1	CS/D	51.99	51.99	51.99	NE
Norway	L	16.3	NCV	T2	CS	57.56	58.21	NO	57.56	T2	CS	58.21	T2	CS	58.21	58.21	58.21	NO
Poland	L	4.8	NCV	T2	CS	55.07	54.80	56.83	56.48	T2	CS	53.97	T2	CS	53.50	54.08	53.33	53.41
Portugal	L, T	4.7	NCV	C+T2	C	56.10	56.10			C+T2	C	56.04	C+T2	C	56.10	56.10	56.10	56.10
Romania	L	23.6	NCV	D	D	59.29	59.29	IE	IE	D	D	56.60	D	D	55.82	55.82	55.82	55.82
Slovakia	L	28.1	NCV	SA	D	58.63	58.63	58.63	58.59	SA	D	55.64	SA	D	58.63	58.63	58.63	58.63
Spain	L, T	10.1	NCV	CS,C	PS,C	59.36	63.14	46.43	56.00	CS,C	PS,C	53.13	C	C	56.00	56.00	56.00	56.00
Sweden	L, T	2.5	NCV	CS	CS	56.50	56.50	56.50	NO	CS	CS	56.50	CS	CS	56.50	56.50	56.50	56.50
Switzerland	L, T	10.8	NCV	RA, C	RA, CS	55.00	55.00	NO	NO	C	CS	55.00	C	CS	55.00	55.00	55.00	55.00
United Kingdom	L, T	31.6	NCV	T2	CS	59.16	58.17	57.96	62.37	T2	CS	57.96	T2	CS	116.51	57.96	177.48	57.96
United States	L, T	16.8	GCV	T1	CS	50.04	50.04	IE	IE	T1	CS	48.90	T1	CS	50.04	50.04	50.04	IE

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

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 Other.

**Table 1.6****Stationary combustion: other fuels, CO<sub>2</sub> (2001)**

	Key source	Share of national total (%)	IEF in CRF based on	1.A.1 Energy industries				1.A.2 Manufacturing industries and construction			1.A.4 Other sectors						
				Methods and EF used <sup>a</sup>		CO <sub>2</sub> IEF		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	EF	Total	Public electricity and heat production	Methods	EF	Total	Methods	EF	Total	Commercial / institutional	Residential	Agricultural / forestry / fisheries	
																	(t/TJ)
Austria	L, T	0.7	NCV	C	CS	60.17	60.17	C	CS	6.47	CS	CS	10.00	10.00			
Belgium	L	3.9	NCV			39.88	39.88			694.85			65.49	65.49			
Bulgaria		0.0	NCV	T3	CS, D		NO	T2	CS, D		T2	CS, D		NO	NO	NO	
Canada		0.0	GCV	T2	CS		NA	T2	CS		T2	CS		NA	NA	NA	
Czech Republic		0.0	NCV	T1	D			T1	D		T1	D					
Denmark	L	0.9	NCV	C	CS			C	CS		C	CS					
Estonia		0.1	NCV										62.44	62.44	62.44		
European Community				C, CS, D, T1, T2	C, CS, D, PS		NE	C, CS, D, T1, T2	C, CS, D, PS		C, CS, D, T1, T2	C, CS, D		NE	NE	NE	
Finland	L, T	11.8	NCV	CS (T2)	CS/PS/D	104.30	104.30	CS (T2)	CS/PS/D	95.16	CS (T2, T1)	CS/D	85.14	50.08	104.94	103.74	
France	L, T	1.4	NCV	C	CS	95.30	87.49	C	CS	48.80	C	CS	57.00	56.97	57.00		
Germany	T	0.1	NCV	CS	CS	15.03	15.00	CS	CS	20.00	CS	CS		NE	NE	NE	
Greece			NCV	C	C and CS		NO	C	C		C	C		NE	NO	NO	
Iceland		0.1	NCV	T1	D		NO	T1	D	99.71	T1	D		NO	NO	NO	
Ireland		0.0	NCV	T1	PS, CS		NO	T1	PS, CS		T1	CS		NO	NO	NO	
Italy	L	1.1	NCV	D, T2	CS	94.15	94.15	D, T2	CS	116.84	D, T2	CS	66.76	73.16	64.94	NO	
Latvia		0.0	NCV	T1	D		NO	T1	D		T1	D		NO	NO	NO	
Luxembourg				C	C			C	C		C	C					
Netherlands	L, T	15.8	NCV	CS/T2	PS, CS	254.13	253.79	CS/T2	PS, CS	1024.86	CS/T2	CS	60.68	55.46			
New Zealand		0.0	GCV	T1	CS/D		NO	T1	CS/D		T1	CS/D		NO	NO	NO	
Norway		0.3	NCV	T2	CS	23.94	23.94	T2	CS	23.90	T2	CS		NO	NO	NO	
Poland		0.0	NCV	T2	CS			T2	CS		T2	CS					
Portugal		0.2	NCV	C+T2	C			C+T2	C	63.13	C+T2	C					
Romania	L	2.1	NCV	D	D	72.60	72.60	D	D	61.19	D	D	73.50	74.94	72.60	94.15	
Slovakia	L	9.7	NCV	SA	D	22.10		SA	D	159.72	SA	D					
Spain		0.1	NCV	CS,C	PS,C	37.66	37.66	CS,C	PS,C	82.05	C	C					
Sweden	L, T	2.2	NCV	CS	CS	35.01	35.01	CS	CS	59.69	CS	CS		NO	NO	NO	
Switzerland		0.0	NCV	RA, C	RA, CS	NO	NO	C	CS	NO	C	CS	NO	NO	NO	NO	
United Kingdom		0.1	NCV	T2	CS	30.47	30.47	T2	CS	94.25	T2	CS	30.47	30.47			
United States	T	0.4	GCV	T1	CS	7.12	7.12	T1	CS		T1	CS		NE	NE	IE	

**Note:** This table is provided for the purpose of completeness. Parties report emissions and activity data from different fuels under other fuels in the CRF and, consequently, the CO<sub>2</sub> IEFs may not be comparable.

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

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 Other.

**Table 1.7****Stationary combustion: all fuels – trend information****Fuel consumption (TJ)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	672,901	742,661	784,703	788,249	768,271	757,682	739,307	774,426
<b>Belgium</b>							1,282,446	1,220,354
<b>Bulgaria</b>							443,367	457,022
<b>Canada</b>	4,844,702	5,202,432	5,333,678	5,391,627	5,467,150	5,696,048	6,029,655	6,001,410
<b>Czech Republic(a)</b>	1,735,609				1,347,911	1,274,971	1,340,798	1,362,682
<b>Denmark</b>	538,196	646,915	804,149	702,496	649,100	616,248	575,573	601,066
<b>Estonia<sup>b</sup></b>						191,133	198,404	181,668
<b>European Community</b>							NE	NE
<b>Finland</b>	685,933	785,829	847,858	858,127	824,918	829,369	817,179	863,274
<b>France</b>	3,632,673	3,630,481	3,863,471	3,712,344	3,992,763	3,805,156	3,735,669	3,850,796
<b>Germany</b>	8,698,914	8,807,211	9,234,657	8,875,371	8,773,973	8,409,836	8,440,210	8,737,177
<b>Greece<sup>b</sup></b>	627,642	653,550	698,083	732,144	771,628	762,566	839,102	856,073
<b>Iceland<sup>b</sup></b>						14,889	14,994	13,386
<b>Ireland</b>	305,636	341,099	345,568	365,466	385,470	399,881	417,047	431,910
<b>Italy</b>								4,714,273
<b>Latvia</b>	273076.9922	147849.998	145589.002	141979.9941	135813	116,453	104,734	131,299
<b>Luxembourg<sup>b</sup></b>						53,278		
<b>Netherlands</b>	1823316.969	1930917.063	2039120.375	1855744.813	1837368.906	1647042.656	2156656.813	1,822,750
<b>New Zealand<sup>b</sup></b>		290,430	311,721	332,754				362,378
<b>Norway</b>	274,754				332,581	328,356	333,543	347,182
<b>Poland<sup>b</sup></b>							3,178,140	3,255,473
<b>Portugal</b>	464,797	525,698	491,416	509,333	556,547	653,741	614,465	635,633
<b>Romania</b>		2,431,190	2,395,940	2,331,947	2,036,609	1,693,642	1,647,057	1,362,834
<b>Slovakia<sup>b</sup></b>					493,230		455,128	475,222
<b>Spain</b>	1,945,485	2,237,763	2,086,131	2,291,081	2,316,829	2,628,609	2,693,315	2,697,627
<b>Sweden</b>	555,681	626,665	698,029	619,132	628,351	608,363	558,432	611,285
<b>Switzerland</b>	374,624							389,859
<b>United Kingdom</b>	5,699,492	5,599,592	5,907,724	5,658,479	5,767,803	5,736,568	5,855,132	5,248,179
<b>United States</b>	54,257,648	58,634,434	60,696,546	61,350,334	61,113,268	61,497,046	63,706,770	61,964,012

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

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 Other.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>	6.9	-1.1	0.9	-1.9	-0.5	5.6	22.4
<b>Belgium</b>						-3.7	
<b>Bulgaria</b>						3.0	
<b>Canada</b>	2.6	1.9	1.8	3.7	4.1	-0.8	23.4
<b>Czech Republic</b>				-3.6	3.7	2.3	-16.7
<b>Denmark</b>	19.8	-10.3	-6.1	-3.9	-5.4	3.5	12.6
<b>Estonia</b>					2.3	-1.9	
<b>European Community</b>							
<b>Finland</b>	6.4	1.7	-2.4	1.2	-1.6	4.9	21.1
<b>France</b>	4.7	-2.1	5.6	-2.5	-1.3	2.7	9.7
<b>Germany</b>	3.8	-3.0	-0.5	-2.5	-0.1	2.2	2.8
<b>Greece</b>	5.5	4.3	6.0	0.2	5.7	2.4	33.0
<b>Iceland</b>					0.9	-5.9	
<b>Ireland</b>	3.5	6.4	7.4	5.5	4.2	4.8	55.9
<b>Italy</b>							
<b>Latvia</b>	-2.6	-2.2	-3.8	-12.3	-7.8	25.9	-48.2
<b>Luxembourg</b>							
<b>Netherlands</b>	4.8	-7.1	-0.4	-7.7	24.2	-12.4	3.9
<b>New Zealand</b>	5.1	5.2					
<b>Norway</b>				0.8	-1.3	3.6	24.2
<b>Poland</b>						2.9	
<b>Portugal</b>	-3.4	3.8	9.5	14.0	-2.0	2.3	46.9
<b>Romania</b>	0.0	-2.7	-12.1	-17.0	-1.4	-14.6	
<b>Slovakia</b>						5.4	
<b>Spain</b>	-2.8	7.0	3.8	11.1	2.6	1.6	43.6
<b>Sweden</b>	7.8	-8.0	1.5	-1.8	-5.6	6.9	9.7
<b>Switzerland</b>							5.4
<b>United Kingdom</b>	5.1	-3.1	1.3	-0.2	1.6	-8.2	-4.9
<b>United States</b>	3.2	1.0	0.2	1.5	3.3	-1.6	16.2

**Table 1.8**  
**Stationary combustion by fuel: liquid fuels – trend information**  
**Fuel consumption (TJ)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	190,616	216,012	230,550	233,132	234,988	218,893	196,434	213,299
<b>Belgium</b>							368,434	403,626
<b>Bulgaria</b>							52,737	54,345
<b>Canada</b>	1,055,630	965,910	955,316	976,055	983,092	960,951	973,496	1,033,463
<b>Czech Republic<sup>b</sup></b>	238,659				171,260	171,847	167,799	164,783
<b>Denmark</b>	160,398	176,844	203,488	185,535	171,739	166,358	155,477	154,973
<b>Estonia<sup>b</sup></b>						30,450	27,516	12,575
<b>European Community</b>							NE	NE
<b>Finland</b>	203,062	196,766	206,500	196,948	199,528	194,424	186,215	190,402
<b>France</b>	1,506,061	1,501,112	1,553,081	1,504,488	1,568,446	1,480,198	1,414,218	1,499,864
<b>Germany</b>	1,487,870	2,152,885	2,297,099	2,171,295	2,090,461	1,841,880	1,738,227	1,859,836
<b>Greece<sup>b</sup></b>	263,985	287,648	327,137	330,119	331,521.9375	316,097	347,038	355,942
<b>Iceland<sup>b</sup></b>						14,266	14,304	12,700
<b>Ireland</b>	94,664	123,594	126,891	137,453	151,437	173,501	174,003	180,912
<b>Italy</b>								1,590,963
<b>Latvia</b>	130,916	57,892	50,692	39,852	37,832	32,540	20,312	15,810
<b>Luxembourg<sup>b</sup></b>						17,863		
<b>Netherlands</b>	291,303	274,290	285,133	237,077	211,240	104,316	111,331	110,779
<b>New Zealand<sup>b</sup></b>		37,438	35,091	36,080				34,947
<b>Norway</b>	133,363				140,263	142,598	127,929	124,814
<b>Poland<sup>b</sup></b>							398,236	398,722
<b>Portugal</b>	247,910	275,565	249,118	259,991	296,421	295,435	272,087	314,300
<b>Romania<sup>b</sup></b>		844,777	812,666	846,674	772,214	596,321	599,626	182,181
<b>Slovakia<sup>b</sup></b>					41,342		31,326	29,248
<b>Spain</b>	845,814	1,002,470	936,427	956,027	983,301	1,036,191	1,049,932	1,053,249
<b>Sweden</b>	299,479	317,604	356,242	313,775	309,952	304,199	261,040	266,752
<b>Switzerland</b>	272,961							256,695
<b>United Kingdom</b>	1,264,630	1,144,299	1,154,908	1,023,781	969,008	897,175	846,271	892,952
<b>United States</b>	12,794,323	12,536,657	13,147,565	13,483,966	13,427,593	13,694,402	13,693,108	13,433,289

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

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 Other.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>	6.7	1.1	0.8	-6.8	-10.3	8.6	11.9
<b>Belgium</b>						9.6	
<b>Bulgaria</b>						3.0	
<b>Canada</b>	-1.1	2.2	0.7	-2.3	1.3	6.2	-2.1
<b>Czech Republic</b>				0.3	-2.4	-1.8	-31.0
<b>Denmark</b>	15.1	-8.8	-7.4	-3.1	-6.5	-0.3	-3.4
<b>Estonia</b>					-9.6	-54.3	
<b>European Community</b>							
<b>Finland</b>	4.9	-4.6	1.3	-2.6	-4.2	2.2	-6.2
<b>France</b>	3.5	-3.1	4.3	-5.6	-4.5	6.1	-0.4
<b>Germany</b>	6.7	-5.5	-3.7	-11.9	-5.6	7.0	25.0
<b>Greece</b>	13.7	0.9	0.4	-4.7	9.8	2.6	34.8
<b>Iceland</b>					0.3	-11.2	
<b>Ireland</b>	2.7	8.3	10.2	14.6	0.3	4.0	91.1
<b>Italy</b>							
<b>Latvia</b>	-12.4	-21.4	-5.1	-14.0	-37.6	-22.2	-87.9
<b>Luxembourg</b>							
<b>Netherlands</b>	4.0	-16.9	-10.9	-50.6	6.7	-0.5	-62.0
<b>New Zealand</b>	-6.3	2.8					
<b>Norway</b>				1.7	-10.3	-2.4	
<b>Poland</b>						0.1	
<b>Portugal</b>	-9.6	4.4	14.0	-0.3	-7.9	15.5	26.8
<b>Romania</b>	-3.8	4.2	-8.8	-22.8	0.6	-69.6	
<b>Slovakia</b>						-6.6	
<b>Spain</b>	-6.6	2.1	2.9	5.4	1.3	0.3	24.5
<b>Sweden</b>	12.2	-11.9	-1.2	-1.9	-14.2	2.2	-10.9
<b>Switzerland</b>							
<b>United Kingdom</b>	0.9	-11.4	-5.4	-7.4	-5.7	5.5	-29.4
<b>United States</b>	4.9	2.6	-0.4	2.0	0.0	-1.9	5.0

**Table 1.9****Stationary combustion by fuel: solid fuels – trend information****Fuel consumption (TJ)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
Austria	181,129	159,017	156,716	167,724	148,895	144,632	164,318	166,124
Belgium							278,130	247,891
Bulgaria							265,075	288,368
Canada	969,984	996,331	1,018,462	1,091,744	1,177,288	1,180,556	1,284,192	1,264,529
Czech Republic <sup>b</sup>	1,252,660				833,685	754,074	837,053	832,464
Denmark	254,837	273,899	375,387	280,011	233,355	197,985	165,921	175,451
Estonia <sup>b</sup>						114,997	117,114	123,600
European Community							NE	NE
Finland	167,071	178,123	220,974	206,643	148,994	149,933	149,177	167,656
France	645,528	487,052	517,971	462,057	553,555	497,409	492,519	433,426
Germany	5,182,874	3,881,144	3,862,127	3,694,033	3,618,161	3,460,336	3,665,773	3,660,917
Greece <sup>b</sup>	334,230	339,155	330,268	355,720	371,863	357,388	383,191	391,229
Iceland <sup>b</sup>						358	371	488
Ireland	146,999	130,126	125,520	127,404	126,986	110,448	109,317	113,923
Italy								542,885
Latvia	28,758	11,131	10,732	8,987	6,801	4,952	5,153	4,875
Luxembourg <sup>b</sup>						5,908		
Netherlands	299,600	293,863	253,405	256,219	265,026	228,674	8,510	236,110
New Zealand <sup>b</sup>		33,110	32,599	38,172				40,135
Norway	6,911				9,305	8,180	8,206	7,145
Poland <sup>b</sup>							2,325,870	2,350,825
Portugal	109,429	143,415	134,694	135,041	123,024	150,615	151,154	139,398
Romania <sup>b</sup>		591,680	570,990	669,667	490,401	406,869	346,018	435,264
Slovakia <sup>b</sup>					174,567		131,909	138,338
Spain	752,579	764,532	648,401	710,970	696,412	787,155	836,789	761,709
Sweden	89,198	78,844	91,737	76,605	81,241	70,950	74,171	83,264
Switzerland	16,835							6,606
United Kingdom	2,512,857	1,810,572	1,684,048	1,485,928	1,501,092	1,319,867	1,386,861	1,529,213
United States	19,033,156	20,274,956	21,261,114	21,779,222	21,960,654	21,971,646	22,979,314	22,334,508

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

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 Other.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
Austria	-1.4	7.0	-11.2	-2.9	13.6	1.1	-8.3
Belgium							-10.9
Bulgaria							8.8
Canada	2.2	7.2	7.8	0.3	8.8	-1.5	30.4
Czech Republic				-9.5	11.0	-0.5	-33.5
Denmark	37.1	-25.4	-16.7	-15.2	-16.2	5.7	-31.2
Estonia					1.8	5.5	
European Community							
Finland	24.1	-6.5	-27.9	0.6	-0.5	12.4	0.4
France	6.3	-10.8	19.8	-10.1	-1.0	-12.0	-32.9
Germany	-0.5	-4.4	-2.1	-4.4	5.9	-0.1	-29.4
Greece	-2.6	7.7	4.5	-3.9	7.2	2.1	17.1
Iceland					3.6	31.4	
Ireland	-3.5	1.5	-0.3	-13.0	-1.0	4.2	-22.5
Italy							
Latvia	-3.6	-16.3	-24.3	-27.2	4.1	-5.4	-83.0
Luxembourg							
Netherlands	-13.8	1.1	3.4	-13.7	-96.3	2,674.4	-21.2
New Zealand	-1.5	17.1					
Norway				-12.1	0.3	-12.9	3.4
Poland						1.1	
Portugal	-6.1	0.3	-8.9	22.4	0.4	-7.8	27.4
Romania	-3.5	17.3	-26.8	-17.0	-15.0	25.8	
Slovakia						4.9	
Spain	-15.2	9.6	-2.0	13.0	6.3	-9.0	1.2
Sweden	16.4	-16.5	6.1	-12.7	4.5	12.3	-6.7
Switzerland							-60.8
United Kingdom	-7.0	-11.8	1.0	-12.1	5.1	10.3	-39.1
United States	4.9	2.4	0.8	0.1	4.6	-2.8	17.3

**Table 1.10****Stationary combustion by fuel: gaseous fuels – trend information****Fuel consumption (TJ)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	198,555	250,329	271,226	261,454	265,246	267,933	255,758	261,606
<b>Belgium</b>							528,767	534,849
<b>Bulgaria</b>							95,615	85,169
<b>Canada</b>	2,316,119	2,661,930	2,785,576	2,747,867	2,711,398	2,923,309	3,123,128	3,094,993
<b>Czech Republic<sup>b</sup></b>	222,830				318,335	323,192	313,937	336,331
<b>Denmark</b>	76,099	135,645	160,599	169,726	180,202	187,959	183,757	193,450
<b>Estonia<sup>b</sup></b>						24,146	32,379	23,399
<b>European Community</b>							NE	NE
<b>Finland</b>	91,838	120,535	124,229	122,778	143,722	141,643	146,263	156,605
<b>France</b>	976,249	1,116,431	1,241,494	1,224,719	1,329,752	1,277,468	1,286,810	1,351,363
<b>Germany</b>	1,781,482	2,577,038	2,879,226	2,751,820	2,794,437	2,803,532	2,753,873	2,924,803
<b>Greece<sup>b</sup></b>	6,404	2,440	2,668	8,212	30,276	51,021	70,814	69,601
<b>Iceland<sup>b</sup></b>								
<b>Ireland</b>	59,411	79,926	87,295	94,789	100,232	108,941	126,902	129,540
<b>Italy</b>								2,382,370
<b>Latvia</b>	100,320	41,247	39,101	47,869	46,913	40,717	45,019	57,945
<b>Luxembourg<sup>b</sup></b>						28,793		
<b>Netherlands</b>	1,184,602	1,307,141	1,448,778	1,268,024	1,283,047	1,289,965	1,281,639	1,369,694
<b>New Zealand<sup>b</sup></b>	126,829	152,871	186,646	218,710	194,605	224,773	245,717	256,895
<b>Norway</b>	92,650				134,198	126,149	145,087	158,424
<b>Poland<sup>b</sup></b>							298,912	340,499
<b>Portugal</b>	1,369	1,990	2,133	5,133	28,157	96,652	80,178	70,258
<b>Romania<sup>b</sup></b>		835,547	807,956	676,151	639,883	566,471	575,491	607,324
<b>Slovakia<sup>b</sup></b>					229,622		227,286	240,646
<b>Spain</b>	184,242	317,746	347,661	460,374	471,434	554,168	636,195	711,796
<b>Sweden</b>	21,566	28,700	30,019	29,327	29,518	29,615	28,397	31,771
<b>Switzerland</b>	67,698							105,168
<b>United Kingdom</b>	1,887,821	2,576,518	2,997,490	3,075,674	3,218,289	3,434,334	3,534,858	2,733,981
<b>United States</b>	19,707,258	22,873,611	23,286,627	23,378,640	23,079,912	23,163,250	24,300,298	23,554,294

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

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 Other.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>	8.3	-3.6	1.5	1.0	-4.5	2.3	31.8
<b>Belgium</b>						1.2	
<b>Bulgaria</b>						-10.9	
<b>Canada</b>	4.6	-1.4	-1.3	7.8	6.8	-0.9	33.6
<b>Czech Republic</b>				1.5	-2.9	7.1	50.9
<b>Denmark</b>	18.4	5.7	6.2	4.3	-2.2	5.3	154.2
<b>Estonia</b>					34.1	-27.7	
<b>European Community</b>							
<b>Finland</b>	3.1	-1.2	17.1	-1.4	3.3	7.1	70.5
<b>France</b>	11.2	-1.4	8.6	-3.9	0.7	5.0	38.4
<b>Germany</b>	11.7	-4.4	1.5	0.3	-1.8	6.2	64.2
<b>Greece</b>	9.3	207.8	268.7	68.5	38.8	-1.7	986.8
<b>Iceland</b>							
<b>Ireland</b>	9.2	8.6	5.7	8.7	16.5	2.1	118.0
<b>Italy</b>							
<b>Latvia</b>	-5.2	22.4	-2.0	-13.2	10.6	28.7	-42.2
<b>Luxembourg</b>							
<b>Netherlands</b>	10.8	-12.5	1.2	0.5	-0.6	6.9	15.6
<b>New Zealand</b>	22.1	17.2	-11.0	15.5	9.3	4.5	102.6
<b>Norway</b>				-6.0	15.0	9.2	71.0
<b>Poland</b>						13.9	
<b>Portugal</b>	7.2	140.7	448.5	243.3	-17.0	-12.4	5,030.3
<b>Romania</b>	-3.3	-16.3	-5.4	-11.5	1.6	5.5	
<b>Slovakia</b>						5.9	
<b>Spain</b>	9.4	32.4	2.4	17.5	14.8	11.9	286.3
<b>Sweden</b>	4.6	-2.3	0.7	0.3	-4.1	11.9	47.3
<b>Switzerland</b>							55.3
<b>United Kingdom</b>	16.3	2.6	4.6	6.7	2.9	-22.7	44.8
<b>United States</b>	1.8	0.4	-1.3	0.4	4.9	-3.1	19.5



**Table 1.11****Stationary combustion by fuel: biomass – trend information****Fuel consumption (TJ)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	94,376	108,418	115,490	114,676	109,311	114,443	110,537	119,493
<b>Belgium</b>							16,645	18,098
<b>Bulgaria</b>							29,940	29,140
<b>Canada</b>	502,969	578,260	574,323	575,960	595,372	631,232	648,838	608,425
<b>Czech Republic<sup>b</sup></b>	21,460				24,631	25,858	22,009	29,104
<b>Denmark</b>	46,862	60,527	64,674	67,224	63,805	63,946	70,418	77,192
<b>Estonia<sup>b</sup></b>						21,258	21,119	21,798
<b>European Community</b>							NE	NE
<b>Finland</b>	169,787	212,224	210,949	244,134	250,617	266,829	268,697	255,535
<b>France</b>	439,368	446,400	472,250	439,370	459,747	454,930	442,373	471,728
<b>Germany</b>	134,838	137,024	138,634	202,113	208,722	214,779	219,802	225,451
<b>Greece<sup>b</sup></b>	23,023	24,307	38,010	38,094	37,967	38,059	38,059	39,257
<b>Iceland<sup>b</sup></b>						227	272	175
<b>Ireland</b>	4,564	7,453	5,862	5,820	5,945	5,652	5,862	7,536
<b>Italy</b>								107,805
<b>Latvia</b>	13,083	37,580	45,064	45,272	44,267	38,244	34,251	52,669
<b>Luxembourg<sup>b</sup></b>						714		
<b>Netherlands</b>	15,736	17,437	13,683	14,765	16,747	18,177	24,830	21,370
<b>New Zealand<sup>b</sup></b>		33,690	34,030	32,600				30,400
<b>Norway</b>	37,657				43,648	45,660	46,067	50,577
<b>Poland<sup>b</sup></b>							155,122	165,427
<b>Portugal</b>	105,049	103,569	104,264	107,737	107,069	108,903	108,864	109,601
<b>Romania<sup>b</sup></b>		159,186	204,328	139,455	124,758	115,650	114,973	89,256
<b>Slovakia<sup>b</sup></b>					3,159		4,068	4,125
<b>Spain</b>	157,767	146,740	145,188	152,071	154,137	155,980	157,341	157,700
<b>Sweden</b>	119,252	167,719	185,799	171,780	176,271	177,142	158,671	194,307
<b>Switzerland</b>	17,130							21,390
<b>United Kingdom</b>	27,816	48,782	50,376	52,778	53,306	60,168	62,123	64,994
<b>United States</b>	2,310,621	2,552,805	2,602,596	2,331,719	2,295,188	2,331,719	2,380,999	2,289,951

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

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 Other.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>	6.5	-0.7	-4.7	4.7	-3.4	8.1	26.6
<b>Belgium</b>						8.7	
<b>Bulgaria</b>						-2.7	
<b>Canada</b>	-0.7	0.3	3.4	6.0	2.8	-6.2	21.0
<b>Czech Republic</b>				5.0	-14.9	32.2	35.6
<b>Denmark</b>	6.9	3.9	-5.1	0.2	10.1	9.6	64.7
<b>Estonia</b>					-0.7	3.2	
<b>European Community</b>							
<b>Finland</b>	-0.6	15.7	2.7	6.5	0.7	-4.9	50.5
<b>France</b>	5.8	-7.0	4.6	-1.0	-2.8	6.6	7.4
<b>Germany</b>	1.2	45.8	3.3	2.9	2.3	2.6	67.2
<b>Greece</b>	56.4	0.2	-0.3	0.2	0.0	3.1	70.5
<b>Iceland</b>					19.9	-35.6	
<b>Ireland</b>	-21.3	-0.7	2.2	-4.9	3.7	28.6	65.1
<b>Italy</b>							
<b>Latvia</b>	19.9	0.5	-2.2	-13.6	-10.4	53.8	302.6
<b>Luxembourg</b>							
<b>Netherlands</b>	-21.5	7.9	13.4	8.5	36.6	-13.9	35.8
<b>New Zealand</b>	1.0	-4.2					
<b>Norway</b>				4.6	0.9	9.8	34.3
<b>Poland</b>						6.6	
<b>Portugal</b>	0.7	3.3	-0.6	1.7	0.0	0.7	4.3
<b>Romania</b>	28.4	-31.7	-10.5	-7.3	-0.6	-22.4	
<b>Slovakia</b>						1.4	
<b>Spain</b>	-1.1	4.7	1.4	1.2	0.9	0.2	0.0
<b>Sweden</b>	10.8	-7.5	2.6	0.5	-10.4	22.5	62.9
<b>Switzerland</b>							24.9
<b>United Kingdom</b>	3.3	4.8	1.0	12.9	3.2	4.6	133.7
<b>United States</b>	2.0	-10.4	-1.6	1.6	2.1	-3.8	-0.9

**Table 1.12****Stationary combustion consumption by fuel: other fuels – trend information****Fuel consumption (TJ)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	8,226	8,885	10,721	11,264	9,831	11,781	12,260	13,903
<b>Belgium</b>							90,470	15,890
<b>Bulgaria</b>							0	0
<b>Canada</b>	0	0	0	0	0	0	0	0
<b>Czech Republic<sup>b</sup></b>					0	0	0	0
<b>Denmark</b>	0	0	0	0	0	0	0	0
<b>Estonia<sup>b</sup></b>						282	276	296
<b>European Community</b>							NE	NE
<b>Finland</b>	54,175	78,181	85,206	87,624	82,057	76,540	66,827	93,076
<b>France</b>	65,468	79,486	78,675	81,711	81,263	95,152	99,749	94,415
<b>Germany</b>	111,850	59,121	57,572	56,109	62,192	89,310	62,536	66,171
<b>Greece<sup>b</sup></b>								44
<b>Iceland<sup>b</sup></b>						38	47	23
<b>Ireland</b>	0	0	0	0	871	1,340	963	0
<b>Italy</b>								90,250
<b>Latvia</b>	0	0	0	0	0	0	0	0
<b>Luxembourg<sup>b</sup></b>						0		
<b>Netherlands</b>	32,077	38,185	38,120	79,660	61,310	5,911	730,346	84,798
<b>New Zealand<sup>b</sup></b>		0	0	0				0
<b>Norway</b>	4,174				5,166	5,769	6,253	6,221
<b>Poland<sup>b</sup></b>							0	0
<b>Portugal</b>	1,040	1,159	1,207	1,430	1,877	2,136	2,182	2,077
<b>Romania</b>		0	0	0	9,353	8,331	10,949	48,809
<b>Slovakia<sup>b</sup></b>					44,539		60,539	62,864
<b>Spain</b>	5,084	6,276	8,453	11,639	11,543	95,116	13,058	13,173
<b>Sweden</b>	26,185	33,798	34,232	27,644	31,369	26,457	36,154	35,191
<b>Switzerland</b>	0							0
<b>United Kingdom</b>	6,368	19,421	20,902	20,318	26,108	25,024	25,020	27,040
<b>United States</b>	412,286	396,410	398,643	376,789	349,923	336,032	353,049	351,969

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

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 Other.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>	20.7	5.1	-12.7	19.8	4.1	13.4	69.0
<b>Belgium</b>						-82.4	
<b>Bulgaria</b>							
<b>Canada</b>							
<b>Czech Republic</b>							
<b>Denmark</b>							
<b>Estonia</b>					-2.1	7.2	
<b>European Community</b>							
<b>Finland</b>	9.0	2.8	-6.4	-6.7	-12.7	39.3	71.8
<b>France</b>	-1.0	3.9	-0.5	17.1	4.8	-5.3	44.2
<b>Germany</b>	-2.6	-2.5	10.8	43.6	-30.0	5.8	-40.8
<b>Greece</b>							
<b>Iceland</b>					23.9	-51.4	
<b>Ireland</b>				53.8	-28.1	-100.0	
<b>Italy</b>							
<b>Latvia</b>							
<b>Luxembourg</b>							
<b>Netherlands</b>	-0.2	109.0	-23.0	-90.4	12,255.7	-88.4	164.4
<b>New Zealand</b>							
<b>Norway</b>				11.7	8.4	-0.5	49.1
<b>Poland</b>							
<b>Portugal</b>	4.1	18.5	31.2	13.8	2.1	-4.8	
<b>Romania</b>				-10.9	31.4	345.8	
<b>Slovakia</b>						3.8	
<b>Spain</b>	34.7	37.7	-0.8	724.0	-86.3	0.9	159.1
<b>Sweden</b>	1.3	-19.2	13.5	-15.7	36.7	-2.7	34.4
<b>Switzerland</b>							
<b>United Kingdom</b>	7.6	-2.8	28.5	-4.2	0.0	8.1	324.6
<b>United States</b>	0.6	-5.5	-7.1	-4.0	5.1	-0.3	-14.6

**Table 1.13****Contribution of fuels in total energy consumption in stationary combustion (%)**

	Liquid fuel		Solid fuel		Gaseous fuel		Biomass		Other fuel	
	1990 <sup>a</sup>	2001	1990 <sup>a</sup>	2001	1990 <sup>a</sup>	2001	1990 <sup>a</sup>	2001	1990 <sup>a</sup>	2001
Austria	28.3	27.5	26.9	21.5	29.5	33.8	14.0	15.4	1.2	1.8
Belgium		33.1		20.3		43.8		1.5		1.3
Bulgaria		11.9		63.1		18.6		6.4		0.0
Canada	21.8	17.2	20.0	21.1	47.8	51.6	10.4	10.1	0.0	0.0
Czech Republic	13.8	12.1	72.2	61.1	12.8	24.7	1.2	2.1		0.0
Denmark	29.8	25.8	47.4	29.2	14.1	32.2	8.7	12.8	0.0	0.0
Estonia		6.9		68.0		12.9		12.0		0.2
European Community										
Finland	29.6	22.1	24.4	19.4	13.4	18.1	24.8	29.6	7.9	10.8
France	41.5	38.9	17.8	11.3	26.9	35.1	12.1	12.3	1.8	2.5
Germany	17.1	21.3	59.6	41.9	20.5	33.5	1.6	2.6	1.3	0.8
Greece <sup>b</sup>	42.1	41.6	53.3	45.7	1.0	8.1	3.7	4.6		0.0
Iceland		94.9		3.6				1.3		0.2
Ireland	31.0	41.9	48.1	26.4	19.4	30.0	1.5	1.7	0.0	0.0
Italy		33.7		11.5		50.5		2.3		1.9
Latvia	47.9	12.0	10.5	3.7	36.7	44.1	4.8	40.1	0.0	0.0
Luxembourg										
Netherlands	16.0	6.1	16.4	13.0	65.0	75.1	0.9	1.2	1.8	4.7
New Zealand		9.6		11.1		70.9		8.4		0.0
Norway	48.5	36.0	2.5	2.1	33.7	45.6	13.7	14.6	1.5	1.8
Poland		12.2		72.2		10.5		5.1		0.0
Portugal	53.3	49.4	23.5	21.9	0.3	11.1	22.6	17.2	0.2	0.3
Romania		13.4		31.9		44.6		6.5		3.6
Slovakia		6.2		29.1		50.6		0.9		13.2
Spain	43.5	39.0	38.7	28.2	9.5	26.4	8.1	5.8	0.3	0.5
Sweden	53.9	43.6	16.1	13.6	3.9	5.2	21.5	31.8	4.7	5.8
Switzerland	72.9	65.8	4.5	1.7	18.1	27.0	4.6	5.5	0.0	0.0
United Kingdom	22.2	17.0	44.1	29.1	33.1	52.1	0.5	1.2	0.1	0.5
United States	23.6	21.7	35.1	36.0	36.3	38.0	4.3	3.7	0.8	0.6

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

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 Other.

**Table 1.14****Energy industries: all fuels – trend information****CO<sub>2</sub> emissions (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	13,225	12,427	13,700	13,681	12,851	12,899	12,236	14,375
<b>Belgium</b>	28,572	30,327	29,293	27,960	30,011	27,022	27,482	26,669
<b>Bulgaria</b>	37,002	31,623	30,726	30,994	27,199	25,913	26,267	29,070
<b>Canada</b>	144,277	152,961	152,221	159,791	177,041	186,477	199,174	200,765
<b>Czech Republic</b>	59,171		57,818	59,180	58,706	53,848	60,160	59,538
<b>Denmark</b>	26,202	32,093	44,412	35,433	31,504	28,250	25,121	26,375
<b>Estonia</b>	29,753	16,363	17,127	16,850	14,791	13,478	13,945	13,912
<b>European Community</b>	1,144,434	1,079,944	1,093,426	1,058,364	1,088,645	1,070,061	1,102,660	1,119,301
<b>Finland</b>	18,517	22,456	27,509	24,673	21,395	21,029	19,815	26,762
<b>France</b>	67,636	57,955	62,322	58,891	71,382	64,657	63,694	57,487
<b>Germany</b>	412,896	351,862	357,461	339,487	341,258	327,852	340,043	345,293
<b>Greece<sup>b</sup></b>	43,302	45,056	44,205	47,668	50,254	50,220	55,058	55,579
<b>Iceland</b>	4	3	4	2	4	3	3	3
<b>Ireland</b>	11,057	13,239	13,959	14,643	15,047	15,728	16,016	17,145
<b>Italy</b>	138,957	142,785	139,231	142,246	150,342	149,379	157,835	155,279
<b>Latvia</b>	10,309	4,805	4,266	3,438	3,367	2,773	2,454	2,617
<b>Luxembourg<sup>b</sup></b>						103	255	266
<b>Netherlands</b>	51,305	56,540	58,338	57,181	60,195	56,671	61,222	64,776
<b>New Zealand</b>	6,032	4,728	5,314	6,945	5,197	6,520	6,126	7,581
<b>Norway</b>	7,247	8,922	9,776	10,240	9,861	9,489	10,488	10,735
<b>Poland</b>	260,537	187,346	195,987	192,784	184,916	180,001	176,324	177,878
<b>Portugal</b>	16,199	19,546	15,883	16,353	18,854	24,849	21,280	21,953
<b>Romania</b>	89,214	52,921	54,172	60,209	41,459	42,225	35,911	62,180
<b>Slovakia</b>	50,654	36,685	37,194	37,212	35,139	34,066	9,768	10,553
<b>Spain</b>	77,030	85,421	72,893	84,807	83,723	99,547	104,082	98,417
<b>Sweden</b>	10,169	11,575	15,724	11,490	12,671	11,127	8,336	9,697
<b>Switzerland</b>	976	1,121	1,295	1,212	1,435	1,191	990	1,070
<b>United Kingdom</b>	228,090	197,841	197,758	183,447	189,091	180,729	190,184	199,229
<b>United States</b>	1,804,982	1,931,768	2,003,873	2,070,836	2,160,348	2,173,496	2,277,831	2,242,763

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>	10.2	-0.1	-6.1	0.4	-5.1	17.5	8.7
<b>Belgium</b>	-3.4	-4.6	7.3	-10.0	1.7	-3.0	-6.7
<b>Bulgaria</b>	-2.8	0.9	-12.2	-4.7	1.4	10.7	-21.4
<b>Canada</b>	-0.5	5.0	10.8	5.3	6.8	0.8	39.2
<b>Czech Republic</b>		2.4	-0.8	-8.3	11.7	-1.0	0.6
<b>Denmark</b>	38.4	-20.2	-11.1	-10.3	-11.1	5.0	0.7
<b>Estonia</b>	4.7	-1.6	-12.2	-8.9	3.5	-0.2	-53.2
<b>European Community</b>	1.2	-3.2	2.9	-1.7	3.0	1.5	-2.2
<b>Finland</b>	22.5	-10.3	-13.3	-1.7	-5.8	35.1	44.5
<b>France</b>	7.5	-5.5	21.2	-9.4	-1.5	-9.7	-15.0
<b>Germany</b>	1.6	-5.0	0.5	-3.9	3.7	1.5	-16.4
<b>Greece</b>	-1.9	7.8	5.4	-0.1	9.6	0.9	28.4
<b>Iceland</b>	16.4	-45.9	97.1	-23.0	2.1	-15.8	-31.0
<b>Ireland</b>	5.4	4.9	2.8	4.5	1.8	7.0	55.1
<b>Italy</b>	-2.5	2.2	5.7	-0.6	5.7	-1.6	11.7
<b>Latvia</b>	-11.2	-19.4	-2.1	-17.6	-11.5	6.6	-74.6
<b>Luxembourg</b>					147.0	4.4	
<b>Netherlands</b>	3.2	-2.0	5.3	-5.9	8.0	5.8	26.3
<b>New Zealand</b>	12.4	30.7	-25.2	25.5	-6.0	23.8	25.7
<b>Norway</b>	9.6	4.7	-3.7	-3.8	10.5	2.4	48.1
<b>Poland</b>	4.6	-1.6	-4.1	-2.7	-2.0	0.9	-31.7
<b>Portugal</b>	-18.7	3.0	15.3	31.8	-14.4	3.2	35.5
<b>Romania</b>	2.4	11.1	-31.1	1.8	-15.0	73.1	-30.3
<b>Slovakia</b>	1.4	0.0	-5.6	-3.1	-71.3	8.0	-79.2
<b>Spain</b>	-14.7	16.3	-1.3	18.9	4.6	-5.4	27.8
<b>Sweden</b>	35.8	-26.9	10.3	-12.2	-25.1	16.3	-4.6
<b>Switzerland</b>	15.6	-6.4	18.4	-17.0	-16.8	8.1	9.6
<b>United Kingdom</b>	0.0	-7.2	3.1	-4.4	5.2	4.8	-12.7
<b>United States</b>	3.7	3.3	4.3	0.6	4.8	-1.5	24.3

**Table 1.15****Energy industries: liquid fuels – trend information****CO<sub>2</sub> emissions (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	2,860	3,347	3,685	3,984	4,454	4,044	3,111	3,524
<b>Belgium</b>							4,898	6,037
<b>Bulgaria</b>							710	727
<b>Canada</b>	35,451	33,869	32,273	33,766	37,679	39,241	39,172	42,235
<b>Czech Republic</b>	1,790				1,726	1,712	1,574	1,595
<b>Denmark</b>	1,847	4,103	5,829	5,237	4,718	4,521	4,213	4,151
<b>Estonia<sup>b</sup></b>						1,321	1,115	717
<b>European Community</b>							NE	NE
<b>Finland</b>	2,607	2,972	3,145	2,608	2,844	2,871	2,502	2,934
<b>France</b>	20,926	21,244	21,144	21,922	24,136	22,680	22,659	22,741
<b>Germany</b>	24,972	25,695	25,606	23,472	23,665	21,956	21,967	21,717
<b>Greece<sup>b</sup></b>	7,948	9,009	9,165	8,979	8,863	8,428	9,731	9,329
<b>Iceland<sup>b</sup></b>						3	3	3
<b>Ireland</b>	1,268	2,174	2,181	2,857	3,584	4,602	3,781	4,270
<b>Italy</b>								77,027
<b>Latvia</b>	4,891	2,886	2,711	1,331	1,436	1,180	598	402
<b>Luxembourg</b>						3		
<b>Netherlands</b>	9,383	9,828	9,911	9,966	9,441	435	1,478	1,851
<b>New Zealand<sup>b</sup></b>		271	214	153			168	180
<b>Norway</b>	1,792				2,378	2,519	2,446	1,850
<b>Poland<sup>b</sup></b>							7,694	7,702
<b>Portugal</b>	8,293	8,218	5,460	5,533	8,130	8,293	6,890	8,270
<b>Romania<sup>b</sup></b>		11,514	13,286	14,002	9,245	8,292	6,010	8,098
<b>Slovakia<sup>b</sup></b>					1,302		88	70
<b>Spain</b>	16,734	20,279	18,571	17,661	19,658	23,529	23,463	24,617
<b>Sweden</b>	4,268	5,903	8,881	5,829	6,361	5,775	3,184	3,853
<b>Switzerland</b>	691							722
<b>United Kingdom</b>	38,940	30,876	30,067	24,357	23,060	21,666	19,473	19,808
<b>United States</b>	99,010	59,710	64,530	73,506	103,231	95,613	89,935	100,676

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>	10.1	8.1	11.8	-9.2	-23.1	13.3	23.2
<b>Belgium</b>						23.2	
<b>Bulgaria</b>						2.3	
<b>Canada</b>	-4.7	4.6	11.6	4.1	-0.2	7.8	19.1
<b>Czech Republic</b>				-0.8	-8.1	1.4	-10.9
<b>Denmark</b>	42.1	-10.2	-9.9	-4.2	-6.8	-1.5	124.7
<b>Estonia</b>					-15.6	-35.7	
<b>European Community</b>							
<b>Finland</b>	5.8	-17.1	9.0	1.0	-12.9	17.3	12.5
<b>France</b>	-0.5	3.7	10.1	-6.0	-0.1	0.4	8.7
<b>Germany</b>	-0.3	-8.3	0.8	-7.2	0.1	-1.1	-13.0
<b>Greece</b>	1.7	-2.0	-1.3	-4.9	15.5	-4.1	17.4
<b>Iceland</b>					2.1	-15.8	
<b>Ireland</b>	0.3	31.0	25.5	28.4	-17.8	13.0	236.9
<b>Italy</b>							
<b>Latvia</b>	-6.1	-50.9	7.9	-17.8	-49.4	-32.7	-91.8
<b>Luxembourg</b>							
<b>Netherlands</b>	0.8	0.6	-5.3	-95.4	239.7	25.2	-80.3
<b>New Zealand</b>	-21.1	-28.5				7.2	
<b>Norway</b>				5.9	-2.9	-24.4	3.3
<b>Poland</b>						0.1	
<b>Portugal</b>	-33.6	1.3	46.9	2.0	-16.9	20.0	-0.3
<b>Romania</b>	15.4	5.4	-34.0	-10.3	-27.5	34.7	
<b>Slovakia</b>						-21.2	
<b>Spain</b>	-8.4	-4.9	11.3	19.7	-0.3	4.9	47.1
<b>Sweden</b>	50.5	-34.4	9.1	-9.2	-44.9	21.0	-9.7
<b>Switzerland</b>						300.0	4.4
<b>United Kingdom</b>	-2.6	-19.0	-5.3	-6.0	-10.1	1.7	-49.1
<b>United States</b>	8.1	13.9	40.4	-7.4	-5.9	11.9	1.7

**Table 1.16****Energy industries: solid fuels – trend information****CO<sub>2</sub> emissions (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	6,255	4,530	4,714	5,003	3,514	3,870	4,983	5,846
<b>Belgium</b>							14,187	12,461
<b>Bulgaria</b>							22,755	25,650
<b>Canada</b>	78,674	83,079	84,800	91,329	97,337	96,700	104,694	103,643
<b>Czech Republic</b>	55,516				54,562	49,539	56,098	55,575
<b>Denmark</b>	22,457	24,207	33,931	24,983	20,849	17,567	14,552	15,579
<b>Estonia<sup>b</sup></b>						10,960	11,186	12,071
<b>European Community</b>							NE	NE
<b>Finland</b>	9,279	9,724	13,895	12,044	8,171	8,309	8,034	10,211
<b>France</b>	38,372	28,203	31,994	27,830	37,851	32,457	31,511	25,374
<b>Germany</b>	364,146	302,365	304,370	289,733	290,101	277,556	290,984	294,541
<b>Greece<sup>b</sup></b>	35,257	35,953	34,941	38,466	40,501	39,764	42,259	43,219
<b>Iceland<sup>b</sup></b>								
<b>Ireland</b>	7,909	8,645	8,856	8,606	8,145	7,454	8,084	8,689
<b>Italy</b>								39,228
<b>Latvia</b>	1,312	538	567	356	263	157	262	161
<b>Luxembourg</b>								
<b>Netherlands</b>	22,008	22,191	21,930	24,060	26,715	22,040	111	21,576
<b>New Zealand<sup>b</sup></b>		561	614	1,199			844	1,284
<b>Norway</b>	52				63	63	58	66
<b>Poland<sup>b</sup></b>							167,122	168,331
<b>Portugal</b>	7,906	11,328	10,422	10,764	9,889	12,612	12,238	11,416
<b>Romania<sup>b</sup></b>		24,945	24,071	32,192	17,131	22,168	17,665	37,845
<b>Slovakia<sup>b</sup></b>					15,261		5,342	5,945
<b>Spain</b>	59,443	64,494	52,812	61,984	61,022	72,586	76,292	69,063
<b>Sweden</b>	4,873	4,317	5,388	4,209	4,748	3,905	3,721	4,371
<b>Switzerland</b>	50							NO
<b>United Kingdom</b>	180,801	126,668	117,122	99,703	102,650	87,366	98,617	108,088
<b>United States</b>	1,530,255	1,643,369	1,733,977	1,778,078	1,808,723	1,817,453	1,906,896	1,856,818

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>	4.1	6.1	-29.8	10.1	28.8	17.3	-6.5
<b>Belgium</b>						-12.2	
<b>Bulgaria</b>						12.7	
<b>Canada</b>	2.1	7.7	6.6	-0.7	8.3	-1.0	31.7
<b>Czech Republic</b>				-9.2	13.2	-0.9	0.1
<b>Denmark</b>	40.2	-26.4	-16.5	-15.7	-17.2	7.1	-30.6
<b>Estonia</b>					2.1	7.9	
<b>European Community</b>							
<b>Finland</b>	42.9	-13.3	-32.2	1.7	-3.3	27.1	10.0
<b>France</b>	13.4	-13.0	36.0	-14.3	-2.9	-19.5	-33.9
<b>Germany</b>	0.7	-4.8	0.1	-4.3	4.8	1.2	-19.1
<b>Greece</b>	-2.8	10.1	5.3	-1.8	6.3	2.3	22.6
<b>Iceland</b>							
<b>Ireland</b>	2.4	-2.8	-5.4	-8.5	8.5	7.5	9.9
<b>Italy</b>							
<b>Latvia</b>	5.4	-37.2	-26.1	-40.3	67.2	-38.6	-87.7
<b>Luxembourg</b>							
<b>Netherlands</b>	-1.2	9.7	11.0	-17.5	-99.5	19,331.2	-2.0
<b>New Zealand</b>	9.6	95.2				52.1	
<b>Norway</b>				0.9	-8.4	14.4	27.9
<b>Poland</b>						0.7	
<b>Portugal</b>	-8.0	3.3	-8.1	27.5	-3.0	-6.7	44.4
<b>Romania</b>	-3.5	33.7	-46.8	29.4	-20.3	114.2	
<b>Slovakia</b>						11.3	
<b>Spain</b>	-18.1	17.4	-1.6	19.0	5.1	-9.5	16.2
<b>Sweden</b>	24.8	-21.9	12.8	-17.8	-4.7	17.5	-10.3
<b>Switzerland</b>							
<b>United Kingdom</b>	-7.5	-14.9	3.0	-14.9	12.9	9.6	-40.2
<b>United States</b>	5.5	2.5	1.7	0.5	4.9	-2.6	21.3

**Table 1.17****Energy industries: gaseous fuels – trend information****CO<sub>2</sub> emissions (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	3,960	4,290	4,974	4,350	4,550	4,644	3,700	4,447
<b>Belgium</b>							8,137	7,902
<b>Bulgaria</b>							2,801	2,694
<b>Canada</b>	30,152	36,013	35,148	34,695	42,025	50,537	55,308	54,887
<b>Czech Republic</b>	1,866				2,417	2,597	2,488	2,368
<b>Denmark</b>	1,520	3,325	4,177	4,703	5,424	5,631	5,786	6,029
<b>Estonia<sup>b</sup></b>						1,197	1,644	1,124
<b>European Community</b>							NE	NE
<b>Finland</b>	2,659	3,552	3,920	4,000	4,738	4,756	5,017	5,882
<b>France</b>	1,583	1,966	2,700	2,697	2,670	2,244	2,242	2,179
<b>Germany</b>	22,194	23,225	26,911	25,662	26,857	27,191	26,445	28,337
<b>Greece<sup>b</sup></b>	97	94	99	224	890	2,028	3,067	3,032
<b>Iceland<sup>b</sup></b>								
<b>Ireland</b>	1,881	2,420	2,923	3,181	3,270	3,598	4,098	4,186
<b>Italy</b>								38,764
<b>Latvia</b>	4,107	1,382	989	1,752	1,668	1,436	1,594	2,053
<b>Luxembourg</b>						100		
<b>Netherlands</b>	15,513	18,780	21,120	22,128	21,712	22,676	21,095	24,651
<b>New Zealand<sup>b</sup></b>		2,935	3,807	5,227			5,104	6,118
<b>Norway</b>	5,306				7,303	6,778	7,838	8,672
<b>Poland<sup>b</sup></b>							1,508	1,846
<b>Portugal</b>				56	835	3,944	2,153	2,267
<b>Romania<sup>b</sup></b>		16,462	16,815	14,015	15,084	11,765	12,236	15,741
<b>Slovakia<sup>b</sup></b>					8,752		3,672	3,697
<b>Spain</b>	656	405	1,199	4,743	2,638	3,001	3,895	4,279
<b>Sweden</b>	435	692	685	690	663	670	649	742
<b>Switzerland</b>	235							348
<b>United Kingdom</b>	8,215	39,690	49,863	58,635	62,507	70,898	71,399	70,584
<b>United States</b>	175,320	228,323	204,989	218,873	248,014	260,050	280,639	284,915

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>	15.9	-12.5	4.6	2.1	-20.3	20.2	12.3
<b>Belgium</b>						-2.9	
<b>Bulgaria</b>						-3.8	
<b>Canada</b>	-2.4	-1.3	21.1	20.3	9.4	-0.8	82.0
<b>Czech Republic</b>				7.4	-4.2	-4.8	26.9
<b>Denmark</b>	25.6	12.6	15.3	3.8	2.8	4.2	296.7
<b>Estonia</b>					37.3	-31.6	
<b>European Community</b>							
<b>Finland</b>	10.4	2.0	18.5	0.4	5.5	17.2	121.2
<b>France</b>	37.3	-0.1	-1.0	-16.0	-0.1	-2.8	37.6
<b>Germany</b>	15.9	-4.6	4.7	1.2	-2.7	7.2	27.7
<b>Greece</b>	5.4	126.4	298.3	127.8	51.2	-1.2	3,026.7
<b>Iceland</b>							
<b>Ireland</b>	20.7	8.8	2.8	10.0	13.9	2.1	122.6
<b>Italy</b>							
<b>Latvia</b>	-28.4	77.1	-4.8	-13.9	11.0	28.8	-50.0
<b>Luxembourg</b>							
<b>Netherlands</b>	12.5	4.8	-1.9	4.4	-7.0	16.9	58.9
<b>New Zealand</b>	29.7	37.3				19.9	
<b>Norway</b>				-7.2	15.6	10.6	63.4
<b>Poland</b>						22.4	
<b>Portugal</b>			1,392.4	372.2	-45.4	5.3	
<b>Romania</b>	2.1	-16.7	7.6	-22.0	4.0	28.6	
<b>Slovakia</b>						0.7	
<b>Spain</b>	196.2	295.5	-44.4	13.8	29.8	9.9	552.7
<b>Sweden</b>	-1.1	0.8	-4.0	1.2	-3.2	14.3	70.6
<b>Switzerland</b>						8.6	48.2
<b>United Kingdom</b>	25.6	17.6	6.6	13.4	0.7	-1.1	759.3
<b>United States</b>	-10.2	6.8	13.3	4.9	7.9	1.5	62.5

**Table 1.18****Contribution of fuels in CO<sub>2</sub> emissions from energy industries (%)**

	Liquid fuels		Solid fuels		Gaseous fuels	
	1990 <sup>a</sup>	2001	1990 <sup>a</sup>	2001	1990 <sup>a</sup>	2001
Austria	21.6	24.5	47.3	40.7	29.9	30.9
Belgium		22.6		46.7		29.6
Bulgaria		2.5		88.2		9.3
Canada	24.6	21.0	54.5	51.6	20.9	27.3
Czech Republic	3.0	2.7	93.8	93.3	3.2	4.0
Denmark	7.0	15.7	85.7	59.1	5.8	22.9
Estonia		5.2		86.8		8.1
European Community						
Finland	14.1	11.0	50.1	38.2	14.4	22.0
France	30.9	39.6	56.7	44.1	2.3	3.8
Germany	6.0	6.3	88.2	85.3	5.4	8.2
Greece <sup>b</sup>	18.4	16.8	81.4	77.8	0.2	5.5
Iceland		100.0				
Ireland	11.5	24.9	71.5	50.7	17.0	24.4
Italy		49.6		25.3		25.0
Latvia	47.4	15.4	12.7	6.2	39.8	78.5
Luxembourg						
Netherlands	18.3	2.9	42.9	33.3	30.2	38.1
New Zealand		2.4		16.9		80.7
Norway	24.7	17.2	0.7	0.6	73.2	80.8
Poland		4.3		94.6		1.0
Portugal	51.2	37.7	48.8	52.0		10.3
Romania		13.0		60.9		25.3
Slovakia		0.7		56.3		35.0
Spain	21.7	25.0	77.2	70.2	0.9	4.3
Sweden	42.0	39.7	47.9	45.1	4.3	7.7
Switzerland	70.8	67.5	5.1	NO	24.1	32.5
United Kingdom	17.1	9.9	79.3	54.3	3.6	35.4
United States	5.5	4.5	84.8	82.8	9.7	12.7

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.



**Table 1.19****Manufacturing industries and construction: all fuels – trend information****CO<sub>2</sub> emissions (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	6,927	8,730	8,959	9,815	9,601	8,772	9,061	7,752
<b>Belgium</b>	33,181	33,473	31,277	32,301	33,851	34,102	34,001	33,589
<b>Bulgaria</b>	35,755	14,582	14,010	13,968	11,401	9,488	8,605	8,196
<b>Canada</b>	62,090	61,490	64,199	64,334	61,109	60,918	63,951	59,657
<b>Czech Republic<sup>b</sup></b>	59,457		43,867	43,341	35,376	34,156	36,130	34,879
<b>Denmark</b>	5,605	6,705	6,888	6,763	6,081	6,129	5,823	5,909
<b>Estonia</b>	2,655	633	730	655	666	660	483	588
<b>European Community</b>	642,348	604,249	591,759	602,615	598,874	590,241	590,851	585,160
<b>Finland</b>	14,358	13,866	13,534	15,194	15,282	15,844	15,956	13,855
<b>France</b>	82,620	82,283	83,573	85,428	89,210	82,596	82,691	83,514
<b>Germany</b>	196,457	150,012	144,166	144,138	138,587	135,698	136,199	132,536
<b>Greece<sup>b</sup></b>	9,792	9,603	10,412	10,570	10,772	9,552	10,415	10,390
<b>Iceland</b>	243	210	259	295	268	276	224	265
<b>Ireland</b>	3,833	3,528	3,512	3,988	3,917	4,238	4,743	4,726
<b>Italy</b>	84,033	83,204	80,967	83,865	80,065	81,082	80,103	77,095
<b>Latvia</b>	1,899	1,290	1,268	1,972	1,676	1,485	1,249	1,168
<b>Luxembourg<sup>b</sup></b>						1,785	1,734	1,651
<b>Netherlands</b>	41,888	42,601	43,000	38,868	42,437	42,300	39,677	40,197
<b>New Zealand<sup>b</sup></b>	4,757	5,448	5,847	5,882	5,829	5,850	6,362	6,249
<b>Norway</b>	3,485	3,636	4,164	4,256	4,438	4,288	4,131	4,066
<b>Poland<sup>b</sup></b>	62,994	68,122	74,682	70,024	63,186	53,271	52,056	47,184
<b>Portugal</b>	8,166	9,174	9,432	10,051	10,109	9,973	10,651	11,324
<b>Romania</b>	56,678	87,268	80,338	71,978	74,480	54,069	55,447	23,715
<b>Slovakia<sup>b</sup></b>							14,406	15,031
<b>Spain</b>	44,532	53,007	47,401	53,116	53,821	56,248	59,717	59,781
<b>Sweden</b>	11,567	13,019	12,478	12,748	12,494	11,780	12,652	12,695
<b>Switzerland</b>	5,102	4,802	4,535	4,412	4,548	5,428	5,086	5,384
<b>United Kingdom</b>	94,132	91,571	92,751	93,393	90,983	90,144	87,428	90,144
<b>United States</b>	955,308	1,002,553	1,039,501	1,050,767	1,000,078	973,163	991,109	937,651

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>	2.6	9.6	-2.2	-8.6	3.3	-14.4	11.9
<b>Belgium</b>	-6.6	3.3	4.8	0.7	-0.3	-1.2	1.2
<b>Bulgaria</b>	-3.9	-0.3	-18.4	-16.8	-9.3	-4.8	-77.1
<b>Canada</b>	4.4	0.2	-5.0	-0.3	5.0	-6.7	-3.9
<b>Czech Republic</b>		-1.2	-18.4	-3.4	5.8	-3.5	-41.3
<b>Denmark</b>	2.7	-1.8	-10.1	0.8	-5.0	1.5	5.4
<b>Estonia</b>	15.2	-10.2	1.7	-1.0	-26.8	21.8	-77.8
<b>European Community</b>	-2.1	1.8	-0.6	-1.4	0.1	-1.0	-8.9
<b>Finland</b>	-2.4	12.3	0.6	3.7	0.7	-13.2	-3.5
<b>France</b>	1.6	2.2	4.4	-7.4	0.1	1.0	1.1
<b>Germany</b>	-3.9	0.0	-3.9	-2.1	0.4	-2.7	-32.5
<b>Greece</b>	8.4	1.5	1.9	-11.3	9.0	-0.2	6.1
<b>Iceland</b>	23.5	13.8	-9.2	3.1	-18.6	18.3	9.3
<b>Ireland</b>	-0.5	13.5	-1.8	8.2	11.9	-0.4	23.3
<b>Italy</b>	-2.7	3.6	-4.5	1.3	-1.2	-3.8	-8.3
<b>Latvia</b>	-1.7	55.5	-15.0	-11.4	-15.9	-6.5	-38.5
<b>Luxembourg</b>					-2.9	-4.8	
<b>Netherlands</b>	0.9	-9.6	9.2	-0.3	-6.2	1.3	-4.0
<b>New Zealand</b>	7.3	0.6	-0.9	0.4	8.7	-1.8	31.4
<b>Norway</b>	14.5	2.2	4.3	-3.4	-3.6	-1.6	16.7
<b>Poland</b>	9.6	-6.2	-9.8	-15.7	-2.3	-9.4	-25.1
<b>Portugal</b>	2.8	6.6	0.6	-1.4	6.8	6.3	38.7
<b>Romania</b>	-8	-10	3	-27	3	-57	-58
<b>Slovakia</b>						4.3	
<b>Spain</b>	-10.6	12.1	1.3	4.5	6.2	0.1	34.2
<b>Sweden</b>	-4.2	2.2	-2.0	-5.7	7.4	0.3	9.7
<b>Switzerland</b>	-5.6	-2.7	3.1	19.4	-6.3	5.9	5.5
<b>United Kingdom</b>	1.3	0.7	-2.6	-0.9	-3.0	3.1	-4.2
<b>United States</b>	3.7	1.1	-4.8	-2.7	1.8	-5.4	-1.8

**Table 1.20****Manufacturing industries and construction: liquid fuels – trend information****CO<sub>2</sub> emissions (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	2,311	2,956	3,070	3,585	3,426	2,923	2,856	2,610
<b>Belgium</b>							5,259	5,433
<b>Bulgaria<sup>b</sup></b>					4,646	3,688	2,672	2,556
<b>Canada</b>	15,451	12,395	12,735	12,367	11,793	11,290	11,621	12,706
<b>Czech Republic<sup>b</sup></b>	9,917				7,451	7,533	7,689	7,220
<b>Denmark</b>	2,843	3,002	3,071	2,878	2,527	2,500	2,429	2,470
<b>Estonia<sup>b</sup></b>						88	95	104
<b>European Community</b>							NE	NE
<b>Finland</b>	4,294	3,611	3,580	4,018	4,101	4,790	4,775	4,494
<b>France</b>	30,033	29,638	30,258	29,807	32,000	28,244	26,880	27,705
<b>Germany</b>	28,392	27,730	26,484	25,313	24,285	22,173	16,734	14,997
<b>Greece<sup>b</sup></b>	5,479	5,654	6,558	6,860	6,576	6,028	6,311	6,269
<b>Iceland<sup>b</sup></b>						268	280	218
<b>Ireland</b>	2,007	2,372	2,288	2,761	2,382	2,540	3,132	3,189
<b>Italy</b>								24,366
<b>Latvia</b>	909	691	678	1,263	983	885	576	297
<b>Luxembourg<sup>b</sup></b>						370		
<b>Netherlands</b>	7,832	7,354	7,646	4,628	3,404	4,726	3,535	3,785
<b>New Zealand<sup>b</sup></b>		704	732	708			693	656
<b>Norway</b>	2,824				3,155	3,042	2,815	2,960
<b>Poland<sup>b</sup></b>							6,288	6,869
<b>Portugal</b>	5,543	6,878	7,096	7,822	7,676	7,026	6,375	8,079
<b>Romania<sup>b</sup></b>		49,135	44,628	38,687	45,237	34,161	35,938	4,127
<b>Slovakia</b>							1,728	1,803
<b>Spain</b>	22,971	28,926	24,687	28,106	28,329	27,717	27,999	26,695
<b>Sweden</b>	7,295	8,669	8,099	8,792	8,552	8,195	7,938	7,773
<b>Switzerland</b>	2,286							3,000
<b>United Kingdom</b>	27,460	27,293	27,313	25,321	23,170	21,131	20,822	23,950
<b>United States</b>	383,727	374,917	399,591	408,570	378,229	375,020	378,174	365,850

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>	3.9	16.8	-4.4	-14.7	-2.3	-8.6	12.9
<b>Belgium</b>						3.3	
<b>Bulgaria</b>				-20.6	-27.5	-4.3	
<b>Canada</b>	2.7	-2.9	-4.6	-4.3	2.9	9.3	-17.8
<b>Czech Republic</b>				1.1	2.1	-6.1	-27.2
<b>Denmark</b>	2.3	-6.3	-12.2	-1.1	-2.8	1.7	-13.1
<b>Estonia</b>					6.9	9.7	
<b>European Community</b>							
<b>Finland</b>	-0.9	12.2	2.1	16.8	-0.3	-5.9	4.7
<b>France</b>	2.1	-1.5	7.4	-11.7	-4.8	3.1	-7.8
<b>Germany</b>	-4.5	-4.4	-4.1	-8.7	-24.5	-10.4	-47.2
<b>Greece</b>	16.0	4.6	-4.1	-8.3	4.7	-0.7	14.4
<b>Iceland</b>					4.8	-22.3	
<b>Ireland</b>	-3.6	20.7	-13.7	6.7	23.3	1.8	58.9
<b>Italy</b>							
<b>Latvia</b>	-1.8	86.4	-22.2	-10.0	-34.9	-48.4	-67.3
<b>Luxembourg</b>							
<b>Netherlands</b>	4.0	-39.5	-26.4	38.8	-25.2	7.1	-51.7
<b>New Zealand</b>	4.0	-3.3				-5.4	
<b>Norway</b>				-3.6	-7.5	5.1	4.8
<b>Poland</b>						9.2	
<b>Portugal</b>	3.2	10.2	-1.9	-8.5	-9.3	26.7	45.7
<b>Romania</b>	-9.2	-13.3	16.9	-24.5	5.2	-88.5	
<b>Slovakia</b>						4.3	
<b>Spain</b>	-14.7	13.9	0.8	-2.2	1.0	-4.7	16.2
<b>Sweden</b>	-6.6	8.6	-2.7	-4.2	-3.1	-2.1	6.5
<b>Switzerland</b>						22.2	31.3
<b>United Kingdom</b>	0.1	-7.3	-8.5	-8.8	-1.5	15.0	-12.8
<b>United States</b>	6.6	2.2	-7.4	-0.8	0.8	-3.3	-4.7

**Table 1.21****Manufacturing industries and construction: solid fuels – trend information****CO<sub>2</sub> emissions (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	451	584	633	832	879	627	785	462
<b>Belgium</b>							12,810	12,416
<b>Bulgaria<sup>b</sup></b>					5,802	3,436	3,456	3,656
<b>Canada</b>	7,175	6,514	6,773	6,940	6,663	6,817	7,379	7,034
<b>Czech Republic<sup>b</sup></b>	43,555				20,758	19,370	21,737	20,061
<b>Denmark</b>	1,429	1,589	1,573	1,481	1,207	1,157	1,104	967
<b>Estonia<sup>b</sup></b>						519	324	402
<b>European Community</b>							NE	NE
<b>Finland</b>	6,410	5,665	5,399	5,875	5,780	5,734	5,965	5,476
<b>France</b>	28,993	25,910	25,251	26,320	25,377	24,875	25,468	24,647
<b>Germany</b>	120,391	72,295	68,819	70,178	65,105	63,064	69,263	67,046
<b>Greece<sup>b</sup></b>	4,144	3,928	3,826	3,557	3,585	2,852	3,347	3,388
<b>Iceland<sup>b</sup></b>						33	34	45
<b>Ireland</b>	970	436	511	368	625	763	319	311
<b>Italy</b>								11,601
<b>Latvia</b>	82	39	33	108	73	53	37	37
<b>Luxembourg<sup>b</sup></b>						549		
<b>Netherlands</b>	6,101	5,242	1,230	663	662	1,431	542	464
<b>New Zealand<sup>b</sup></b>		1,798	1,733	1,693			1,402	1,837
<b>Norway</b>	661				907	777	847	668
<b>Poland<sup>b</sup></b>							39,615	33,745
<b>Portugal</b>	2,557	2,223	2,260	2,027	1,732	1,581	2,097	1,821
<b>Romania<sup>b</sup></b>		22,554	21,639	21,632	20,639	11,882	11,240	3,817
<b>Slovakia</b>							5,312	5,599
<b>Spain</b>	13,462	9,692	8,045	7,914	6,153	5,669	5,614	6,081
<b>Sweden</b>	3,097	2,836	2,850	2,886	2,802	2,630	3,233	3,340
<b>Switzerland</b>	1,468							609
<b>United Kingdom</b>	37,515	32,640	30,586	31,116	29,398	27,913	22,862	24,293
<b>United States</b>	151,637	148,825	145,283	146,441	137,758	131,694	134,006	126,332

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>	8.3	31.4	5.7	-28.7	25.2	-41.2	2.2
<b>Belgium</b>						-3.1	
<b>Bulgaria</b>				-40.8	0.6	5.8	
<b>Canada</b>	4.0	2.5	-4.0	2.3	8.2	-4.7	-2.0
<b>Czech Republic</b>				-6.7	12.2	-7.7	-53.9
<b>Denmark</b>	-1.0	-5.9	-18.4	-4.2	-4.6	-12.4	-32.3
<b>Estonia</b>					-37.5	24.0	
<b>European Community</b>							
<b>Finland</b>	-4.7	8.8	-1.6	-0.8	4.0	-8.2	-14.6
<b>France</b>	-2.5	4.2	-3.6	-2.0	2.4	-3.2	-15.0
<b>Germany</b>	-4.8	2.0	-7.2	-3.1	9.8	-3.2	-44.3
<b>Greece</b>	-2.6	-7.0	0.8	-20.4	17.3	1.2	-18.3
<b>Iceland</b>					3.6	31.4	
<b>Ireland</b>	17.3	-27.9	69.6	22.2	-58.2	-2.5	-68.0
<b>Italy</b>							
<b>Latvia</b>	-15.2	232.0	-33.1	-27.6	-29.0	-1.1	-54.9
<b>Luxembourg</b>							
<b>Netherlands</b>	-76.5	-46.1	-0.1	116.1	-62.1	-14.3	-92.4
<b>New Zealand</b>	-3.6	-2.3				31.0	
<b>Norway</b>				-14.3	9.0	-21.1	1.2
<b>Poland</b>						-14.8	
<b>Portugal</b>	1.7	-10.3	-14.5	-8.7	32.6	-13.2	-28.8
<b>Romania</b>	-4.1	0.0	-4.6	-42.4	-5.4	-66.0	
<b>Slovakia</b>						5.4	
<b>Spain</b>	-17.0	-1.6	-22.3	-7.9	-1.0	8.3	-54.8
<b>Sweden</b>	0.5	1.2	-2.9	-6.1	22.9	3.3	7.8
<b>Switzerland</b>						662.8	-58.5
<b>United Kingdom</b>	-6.3	1.7	-5.5	-5.0	-18.1	6.3	-35.2
<b>United States</b>	-2.4	0.8	-5.9	-4.4	1.8	-5.7	-16.7

**Table 1.22****Manufacturing industries and construction: gaseous fuels – trend information****CO<sub>2</sub> emissions (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	4,115	5,159	5,216	5,358	5,270	5,181	5,391	4,656
<b>Belgium</b>							10,399	10,214
<b>Bulgaria<sup>b</sup></b>					3,907	2,365	2,477	1,983
<b>Canada</b>	39,465	42,582	44,691	45,027	42,652	42,811	44,952	39,917
<b>Czech Republic<sup>b</sup></b>	5,984				7,167	7,252	6,704	7,598
<b>Denmark</b>	1,333	2,115	2,244	2,405	2,347	2,472	2,279	2,457
<b>Estonia<sup>b</sup></b>						53	64	83
<b>European Community</b>							NE	NE
<b>Finland</b>	2,094	2,570	2,419	2,379	2,672	2,724	2,783	2,224
<b>France</b>	23,592	26,152	27,491	28,484	31,286	28,650	29,324	30,294
<b>Germany</b>	45,751	49,562	48,471	48,347	48,799	50,206	49,812	50,099
<b>Greece<sup>b</sup></b>	169	21	28	152	611	672	756	733
<b>Iceland</b>								0
<b>Ireland</b>	856	720	713	858	911	934	1,293	1,226
<b>Italy</b>								41,093
<b>Latvia</b>	908	561	558	600	620	548	636	834
<b>Luxembourg<sup>b</sup></b>						866		
<b>Netherlands</b>	18,282	18,516	18,217	14,008	17,676	17,280	17,641	17,936
<b>New Zealand<sup>b</sup></b>		2,946	3,381	3,482			4,206	3,756
<b>Norway</b>					370	459	467	436
<b>Poland<sup>b</sup></b>							6,153	6,570
<b>Portugal</b>				111	582	1,230	2,041	1,293
<b>Romania<sup>b</sup></b>		15,579	14,071	11,659	8,603	8,025	8,269	13,376
<b>Slovakia</b>							3,397	3,666
<b>Spain</b>	8,099	14,388	14,653	17,077	19,308	22,783	26,015	26,921
<b>Sweden</b>	600	645	711	686	701	685	663	727
<b>Switzerland</b>	1,347							1,775
<b>United Kingdom</b>	29,157	31,553	34,767	36,888	38,365	41,044	43,688	41,846
<b>United States</b>	419,943	478,811	494,627	495,757	484,092	466,449	478,929	445,469

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>	1.1	2.7	-1.6	-1.7	4.1	-13.6	13.1
<b>Belgium</b>						-1.8	
<b>Bulgaria</b>				-39.5	4.7	-19.9	
<b>Canada</b>	5.0	0.8	-5.3	0.4	5.0	-11.2	1.1
<b>Czech Republic</b>				1.2	-7.6	13.3	27.0
<b>Denmark</b>	6.1	7.2	-2.4	5.3	-7.8	7.8	84.3
<b>Estonia</b>					21.1	28.6	
<b>European Community</b>							
<b>Finland</b>	-5.9	-1.6	12.3	1.9	2.2	-20.1	6.2
<b>France</b>	5.1	3.6	9.8	-8.4	2.4	3.3	28.4
<b>Germany</b>	-2.2	-0.3	0.9	2.9	-0.8	0.6	9.5
<b>Greece</b>	37.7	435.9	300.9	10.0	12.5	-3.1	333.7
<b>Iceland</b>							
<b>Ireland</b>	-1.0	20.3	6.2	2.5	38.4	-5.2	43.3
<b>Italy</b>							
<b>Latvia</b>	-0.6	7.6	3.4	-11.7	16.1	31.1	-8.1
<b>Luxembourg</b>							
<b>Netherlands</b>	-1.6	-23.1	26.2	-2.2	2.1	1.7	-1.9
<b>New Zealand</b>	14.8	3.0				-10.7	
<b>Norway</b>				24.0	1.8	-6.8	
<b>Poland</b>						6.8	
<b>Portugal</b>			422.5	111.3	65.9	-36.6	
<b>Romania</b>	-9.7	-17.1	-26.2	-6.7	3.0	61.8	
<b>Slovakia</b>						7.9	
<b>Spain</b>	1.8	16.5	13.1	18.0	14.2	3.5	232.4
<b>Sweden</b>	10.2	-3.5	2.2	-2.3	-3.3	9.7	21.2
<b>Switzerland</b>						12.3	31.8
<b>United Kingdom</b>	10.2	6.1	4.0	7.0	6.4	-4.2	43.5
<b>United States</b>	3.3	0.2	-2.4	-3.6	2.7	-7.0	6.1

**Table 1.23****Contribution of fuels in CO<sub>2</sub> emissions from Manufacturing industries and construction (%)**

	Liquid fuels		Solid fuels		Gaseous fuels	
	1990 <sup>a</sup>	2001	1990 <sup>a</sup>	2001	1990 <sup>a</sup>	2001
<b>Austria</b>	33.4	33.7	6.5	6.0	59.4	60.1
<b>Belgium</b>		16.2		37.0		30.4
<b>Bulgaria</b>		31.2		44.6		24.2
<b>Canada</b>	24.9	21.3	11.6	11.8	63.6	66.9
<b>Czech Republic</b>		20.7		57.5		21.8
<b>Denmark</b>	50.7	41.8	25.5	16.4	23.8	41.6
<b>Estonia</b>		17.6		68.3		14.0
<b>European Community</b>						
<b>Finland</b>	29.9	32.4	44.6	39.5	14.6	16.1
<b>France</b>	36.4	33.2	35.1	29.5	28.6	36.3
<b>Germany</b>	14.5	11.3	61.3	50.6	23.3	37.8
<b>Greece<sup>b</sup></b>	56.0	60.3	42.3	32.6	1.7	7.1
<b>Iceland</b>		82.1		17.0		
<b>Ireland</b>	52.4	67.5	25.3	6.6	22.3	25.9
<b>Italy</b>		31.6		15.0		53.3
<b>Latvia</b>	47.9	25.4	4.3	3.2	47.8	71.4
<b>Luxembourg</b>						
<b>Netherlands</b>	18.7	9.4	14.6	1.2	43.6	44.6
<b>New Zealand</b>		10.5		29.4		60.1
<b>Norway</b>	81.0	72.8	19.0	16.4		10.7
<b>Poland</b>		14.6		71.5		13.9
<b>Portugal</b>	67.9	71.3	31.3	16.1		11.4
<b>Romania</b>		17.4		16.1		56.4
<b>Slovakia</b>		12.0		37.3		24.4
<b>Spain</b>	51.6	44.7	30.2	10.2	18.2	45.0
<b>Sweden</b>	63.1	61.2	26.8	26.3	5.2	5.7
<b>Switzerland</b>	44.8	55.7	28.8	11.3	26.4	33.0
<b>United Kingdom</b>	29.2	26.6	39.9	26.9	31.0	46.4
<b>United States</b>	40.2	39.0	15.9	13.5	44.0	47.5

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Table 1.24****Other sectors (commercial / institutional, residential, agriculture / forestry / fisheries): all fuels – trend information****CO<sub>2</sub> emissions (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	13,638	14,121	15,534	14,101	14,102	14,137	13,368	14,658
<b>Belgium</b>	27,630	30,905	36,166	31,383	31,689	30,688	29,269	30,817
<b>Bulgaria</b>	7,612	2,621	3,238	2,678	2,989	2,491	1,896	1,638
<b>Canada</b>	69,415	73,957	79,476	76,576	68,085	71,827	78,066	74,266
<b>Czech Republic</b>	34,177		17,936	20,013	19,624	17,481	17,019	14,581
<b>Denmark</b>	8,959	8,511	9,198	8,520	8,162	8,119	7,505	7,688
<b>Estonia</b>	2,392	994	1,153	1,281	1,140	1,083	1,036	306
<b>European Community</b>	635,096	633,655	697,081	650,014	650,818	636,724	621,237	655,763
<b>Finland</b>	7,571	6,679	6,483	6,598	6,659	6,369	5,796	6,022
<b>France</b>	94,381	97,203	105,261	98,854	102,386	101,239	96,807	103,859
<b>Germany</b>	203,439	189,987	214,918	200,629	192,405	176,485	170,467	187,893
<b>Greece<sup>b</sup></b>	5,341	5,685	7,517	7,757	8,112	7,914	8,530	9,300
<b>Iceland</b>	704	811	870	839	817	801	748	664
<b>Ireland</b>	9,726	9,317	9,092	9,421	9,974	9,903	10,364	10,414
<b>Italy</b>	75,664	74,764	76,697	73,802	77,447	81,554	77,240	78,120
<b>Latvia</b>	5,830	1,665	1,531	1,144	1,092	940	827	1,086
<b>Luxembourg<sup>b</sup></b>						1,515	1,268	1,426
<b>Netherlands</b>	34,185	37,933	42,742	35,861	34,032	33,066	34,550	36,134
<b>New Zealand</b>	2,812	2,797	2,658	2,755	2,801	2,694	2,819	2,842
<b>Norway</b>	4,130	3,467	4,192	3,750	3,728	3,809	3,206	3,520
<b>Poland</b>	111,229	56,324	64,106	60,857	50,103	54,011	45,400	50,084
<b>Portugal</b>	4,197	4,864	5,255	5,339	5,761	6,151	6,539	6,637
<b>Romania</b>	28,274	4,064	3,950	4,844	4,912	4,194	4,259	7,292
<b>Slovakia<sup>b</sup></b>					6,183	6,748	6,168	6,607
<b>Spain</b>	25,953	29,191	30,300	30,408	31,114	32,679	34,041	33,928
<b>Sweden</b>	10,597	9,386	9,422	8,633	8,553	8,740	7,682	7,757
<b>Switzerland</b>	18,651	19,051	19,850	18,826	19,445	18,248	17,317	18,125
<b>United Kingdom</b>	112,538	113,874	127,121	117,295	118,779	118,164	117,812	121,109
<b>United States</b>	550,307	585,396	624,955	608,725	558,292	578,955	608,169	599,193

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>	10.0	-9.2	0.0	0.2	-5.4	9.6	7.5
<b>Belgium</b>	17.0	-13.2	1.0	-3.2	-4.6	5.3	11.5
<b>Bulgaria</b>	23.5	-17.3	11.6	-16.6	-23.9	-13.6	-78.5
<b>Canada</b>	7.5	-3.6	-11.1	5.5	8.7	-4.9	7.0
<b>Czech Republic</b>		11.6	-1.9	-10.9	-2.6	-14.3	-57.3
<b>Denmark</b>	8.1	-7.4	-4.2	-0.5	-7.6	2.4	-14.2
<b>Estonia</b>	16.0	11.1	-11.0	-5.0	-4.3	-70.4	-87.2
<b>European Community</b>	10.0	-6.8	0.1	-2.2	-2.4	5.6	3.3
<b>Finland</b>	-2.9	1.8	0.9	-4.4	-9.0	3.9	-20.5
<b>France</b>	8.3	-6.1	3.6	-1.1	-4.4	7.3	10.0
<b>Germany</b>	13.1	-6.6	-4.1	-8.3	-3.4	10.2	-7.6
<b>Greece</b>	32.2	3.2	4.6	-2.4	7.8	9.0	74.1
<b>Iceland</b>	7.3	-3.6	-2.6	-1.9	-6.6	-11.3	-5.7
<b>Ireland</b>	-2.4	3.6	5.9	-0.7	4.7	0.5	7.1
<b>Italy</b>	2.6	-3.8	4.9	5.3	-5.3	1.1	3.2
<b>Latvia</b>	-8.0	-25.3	-4.5	-13.9	-12.0	31.3	-81.4
<b>Luxembourg</b>					-16.3	12.5	
<b>Netherlands</b>	12.7	-16.1	-5.1	-2.8	4.5	4.6	5.7
<b>New Zealand</b>	-5.0	3.6	1.7	-3.8	4.6	0.8	1.1
<b>Norway</b>	20.9	-10.5	-0.6	2.2	-15.8	9.8	-14.8
<b>Poland</b>	13.8	-5.1	-17.7	7.8	-15.9	10.3	-55.0
<b>Portugal</b>	8.0	1.6	7.9	6.8	6.3	1.5	58.1
<b>Romania</b>	-2.8	22.6	1.4	-14.6	1.6	71.2	-74.2
<b>Slovakia</b>				9.1	-8.6	7.1	
<b>Spain</b>	3.8	0.4	2.3	5.0	4.2	-0.3	30.7
<b>Sweden</b>	0.4	-8.4	-0.9	2.2	-12.1	1.0	-26.8
<b>Switzerland</b>	4.2	-5.2	3.3	-6.2	-5.1	4.7	-2.8
<b>United Kingdom</b>	11.6	-7.7	1.3	-0.5	-0.3	2.8	7.6
<b>United States</b>	6.8	-2.6	-8.3	3.7	5.0	-1.5	8.9

**Table 1.25****Other sectors (commercial / institutional, residential, agriculture / forestry / fisheries): liquid fuels – trend information****CO<sub>2</sub> emissions (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	8,593	8,602	9,695	8,768	8,852	8,841	8,065	9,257
<b>Belgium</b>							17,411	18,383
<b>Bulgaria<sup>b</sup></b>					417	594	506	710
<b>Canada</b>	22,239	20,055	21,012	20,486	17,721	18,257	19,418	19,217
<b>Czech Republic<sup>b</sup></b>	2,618				1,074	960	774	673
<b>Denmark</b>	7,140	5,982	6,299	5,809	5,582	5,413	4,970	4,974
<b>Estonia<sup>b</sup></b>						816	794	95
<b>European Community</b>							NE	NE
<b>Finland</b>	7,274	6,488	5,989	6,090	6,265	5,972	5,490	5,663
<b>France</b>	59,853	59,322	62,177	58,643	59,238	58,165	53,947	58,629
<b>Germany</b>	91,532	104,311	116,046	110,317	105,196	90,921	88,190	99,026
<b>Greece<sup>b</sup></b>	5,204	5,484	7,295	7,546	7,914	7,775	8,369	9,178
<b>Iceland<sup>b</sup></b>						798	748	664
<b>Ireland</b>	3,670	4,712	4,829	5,000	5,235	5,840	6,247	6,274
<b>Italy</b>								20,181
<b>Latvia</b>	3,958	807	455	416	438	386	340	471
<b>Luxembourg<sup>b</sup></b>						870		
<b>Netherlands</b>	1,352	973	898	666	709	685	581	513
<b>New Zealand<sup>b</sup></b>		1,612	1,489	1,615				1,542
<b>Norway</b>	4,091				3,712	3,793	3,191	3,489
<b>Poland<sup>b</sup></b>							14,312	13,370
<b>Portugal</b>	4,120	4,752	5,136	5,218	5,599	5,903	6,238	6,257
<b>Romania<sup>b</sup></b>		326	241	780	680	277	374	1,159
<b>Slovakia<sup>b</sup></b>					36	36	35	35
<b>Spain</b>	22,285	24,792	25,365	25,086	25,184	26,131	27,145	26,085
<b>Sweden</b>	10,257	9,089	9,117	8,337	8,241	8,421	7,389	7,431
<b>Switzerland</b>	16,446							14,452
<b>United Kingdom</b>	20,156	20,456	21,917	20,036	19,825	17,912	16,792	16,613
<b>United States</b>	154,183	145,378	156,374	150,573	138,317	146,213	153,806	152,819

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>	12.7	-9.6	1.0	-0.1	-8.8	14.8	7.7
<b>Belgium</b>						5.6	
<b>Bulgaria<sup>b</sup></b>				42.3	-14.8	40.4	
<b>Canada</b>	4.8	-2.5	-13.5	3.0	6.4	-1.0	-13.6
<b>Czech Republic<sup>b</sup></b>				-10.6	-19.3	-13.1	-74.3
<b>Denmark</b>	5.3	-7.8	-3.9	-3.0	-8.2	0.1	-30.3
<b>Estonia<sup>b</sup></b>					-2.6	-88.0	
<b>European Community</b>							
<b>Finland</b>	-7.7	1.7	2.9	-4.7	-8.1	3.1	-22.2
<b>France</b>	4.8	-5.7	1.0	-1.8	-7.3	8.7	-2.0
<b>Germany</b>	11.2	-4.9	-4.6	-13.6	-3.0	12.3	8.2
<b>Greece<sup>b</sup></b>	33.0	3.4	4.9	-1.8	7.6	9.7	76.4
<b>Iceland<sup>b</sup></b>					-6.2	-11.3	
<b>Ireland</b>	2.5	3.5	4.7	11.5	7.0	0.4	71.0
<b>Italy</b>							
<b>Latvia</b>	-43.6	-8.6	5.2	-11.8	-11.9	38.4	-88.1
<b>Luxembourg<sup>b</sup></b>							
<b>Netherlands</b>	-7.7	-25.9	6.5	-3.4	-15.1	-11.8	-62.1
<b>New Zealand<sup>b</sup></b>	-7.7	8.5					
<b>Norway</b>				2.2	-15.9	9.3	-14.7
<b>Poland<sup>b</sup></b>						-6.6	
<b>Portugal</b>	8.1	1.6	7.3	5.4	5.7	0.3	51.9
<b>Romania<sup>b</sup></b>	-26.2	223.9	-12.9	-59.2	35.0	209.8	
<b>Slovakia<sup>b</sup></b>				0.0	-3.3	1.4	
<b>Spain</b>	2.3	-1.1	0.4	3.8	3.9	-3.9	17.1
<b>Sweden</b>	0.3	-8.6	-1.1	2.2	-12.2	0.6	-27.5
<b>Switzerland</b>						10.6	-12.1
<b>United Kingdom</b>	7.1	-8.6	-1.1	-9.6	-6.3	-1.1	-17.6
<b>United States</b>	7.6	-3.7	-8.1	5.7	5.2	-0.6	-0.9

**Table 1.26****Other sectors (commercial / institutional, residential, agriculture / forestry / fisheries): solid fuels – trend information****CO<sub>2</sub> emissions (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	2,791	1,790	1,751	1,395	1,222	1,132	988	848
<b>Belgium</b>							734	760
<b>Bulgaria<sup>b</sup></b>					2,523	1,847	1,331	851
<b>Canada</b>	191	195	193	179	158	151	148	144
<b>Czech Republic<sup>b</sup></b>	25,370				9,221	7,060	6,767	5,100
<b>Denmark</b>	318	224	158	138	98	85	107	122
<b>Estonia<sup>b</sup></b>						151	125	94
<b>European Community</b>							NE	NE
<b>Finland</b>	57	19	25	9	26	24	24	20
<b>France</b>	4,401	2,518	2,232	1,500	1,181	1,245	1,061	902
<b>Germany</b>	66,103	14,846	13,772	10,874	7,004	6,579	4,906	4,123
<b>Greece<sup>b</sup></b>	120	181	203	191	167	112	131	92
<b>Iceland<sup>b</sup></b>								
<b>Ireland</b>	5,587	3,625	3,103	3,287	3,439	2,607	2,433	2,309
<b>Italy</b>								235
<b>Latvia</b>	1,286	498	439	408	324	265	205	268
<b>Luxembourg<sup>b</sup></b>						25		
<b>Netherlands</b>	81	33	32	26	35	27	28	30
<b>New Zealand<sup>b</sup></b>		671	637	613				470
<b>Norway</b>	35				14	11	11	11
<b>Poland<sup>b</sup></b>							22,670	27,435
<b>Portugal</b>								
<b>Romania<sup>b</sup></b>		78	375	301	53	102	63	35
<b>Slovakia<sup>b</sup></b>					1,695	2,260	1,697	1,434
<b>Spain</b>	2,300	1,440	1,371	1,350	1,258	906	545	394
<b>Sweden</b>	157	12	5	16	8			
<b>Switzerland</b>	64							12
<b>United Kingdom</b>	19,445	11,190	11,642	10,520	9,406	9,498	7,750	9,019
<b>United States</b>	14,758	12,725	13,149	13,648	9,944	11,051	9,736	9,736

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>	-2.2	-20.3	-12.4	-7.3	-12.7	-14.2	-69.6
<b>Belgium</b>						3.6	
<b>Bulgaria</b>				-26.8	-27.9	-36.1	
<b>Canada</b>	-0.8	-7.3	-12.0	-4.2	-2.0	-2.5	-24.8
<b>Czech Republic</b>				-23.4	-4.1	-24.6	-79.9
<b>Denmark</b>	-29.5	-13.0	-28.7	-13.8	26.2	14.1	-61.7
<b>Estonia</b>					-17.1	-25.2	
<b>European Community</b>							
<b>Finland</b>	32.3	-62.8	175.3	-5.1	-2.3	-16.1	-64.9
<b>France</b>	-11.3	-32.8	-21.3	5.4	-14.7	-15.0	-79.5
<b>Germany</b>	-7.2	-21.0	-35.6	-6.1	-25.4	-16.0	-93.8
<b>Greece</b>	12.2	-6.1	-12.5	-32.8	16.8	-29.8	-23.3
<b>Iceland</b>							
<b>Ireland</b>	-14.4	5.9	4.6	-24.2	-6.7	-5.1	-58.7
<b>Italy</b>							
<b>Latvia</b>	-11.7	-7.2	-20.5	-18.3	-22.7	30.9	-79.1
<b>Luxembourg</b>							
<b>Netherlands</b>	-3.6	-17.1	33.5	-24.2	7.2	7.0	-62.6
<b>New Zealand</b>	-5.1	-3.8					
<b>Norway</b>				-16.4	-7.0	8.3	-67.1
<b>Poland</b>						21.0	
<b>Portugal</b>							
<b>Romania</b>	380.1	-19.6	-82.4	92.8	-38.6	-44.6	
<b>Slovakia</b>				33.3	-24.9	-15.5	
<b>Spain</b>	-4.8	-1.5	-6.8	-28.0	-39.8	-27.7	-82.9
<b>Sweden</b>	-60.0	217.0	-50.0				
<b>Switzerland</b>						-40.9	-80.9
<b>United Kingdom</b>	4.0	-9.6	-10.6	1.0	-18.4	16.4	-53.6
<b>United States</b>	3.3	3.8	-27.1	11.1	-11.9	0.0	-34.0



**Table 1.27****Other sectors (commercial / institutional, residential, agriculture / forestry / fisheries): gaseous fuels – trend information****CO<sub>2</sub> emissions (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	2,252	3,723	4,084	3,932	4,022	4,157	4,308	4,546
<b>Belgium</b>							11,046	11,596
<b>Bulgaria<sup>b</sup></b>					49	51	59	77
<b>Canada</b>	46,985	53,708	58,271	55,911	50,207	53,419	58,500	54,906
<b>Czech Republic<sup>b</sup></b>	4,589				8,185	8,191	8,332	8,808
<b>Denmark</b>	1,478	2,278	2,717	2,550	2,482	2,592	2,427	2,590
<b>Estonia<sup>b</sup></b>						98	99	99
<b>European Community</b>							NE	NE
<b>Finland</b>	99	142	297	322	241	260	181	215
<b>France</b>	30,057	35,293	40,798	38,639	41,871	41,751	41,727	44,265
<b>Germany</b>	45,804	70,830	85,100	79,438	80,205	78,985	77,370	84,743
<b>Greece<sup>b</sup></b>	17	19	19	20	31	26	30	30
<b>Iceland<sup>b</sup></b>								
<b>Ireland</b>	469	980	1,159	1,134	1,300	1,456	1,684	1,831
<b>Italy</b>								51,883
<b>Latvia</b>	586	360	636	320	330	289	282	347
<b>Luxembourg<sup>b</sup></b>						620		
<b>Netherlands</b>	32,454	36,917	41,810	35,162	33,262	32,347	33,932	35,499
<b>New Zealand<sup>b</sup></b>		513	532	528				830
<b>Norway</b>					1	3	3	17
<b>Poland<sup>b</sup></b>							8,418	9,279
<b>Portugal</b>	77	112	120	121	162	248	301	380
<b>Romania<sup>b</sup></b>		3,660	3,335	3,762	4,180	3,811	3,808	5,890
<b>Slovakia<sup>b</sup></b>					4,446	4,446	4,435	5,138
<b>Spain</b>	1,367	2,959	3,564	3,972	4,672	5,642	6,350	7,449
<b>Sweden</b>	184	285	301	281	304	320	293	326
<b>Switzerland</b>	2,141							3,661
<b>United Kingdom</b>	72,878	82,169	93,501	86,721	89,519	90,715	93,221	95,420
<b>United States</b>	381,365	427,293	455,431	444,503	410,031	421,691	444,627	436,638

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>	9.7	-3.7	2.3	3.3	3.6	5.5	101.8
<b>Belgium</b>						5.0	
<b>Bulgaria</b>				4.0	16.0	30.0	
<b>Canada</b>	8.5	-4.0	-10.2	6.4	9.5	-6.1	16.9
<b>Czech Republic</b>				0.1	1.7	5.7	92.0
<b>Denmark</b>	19.3	-6.1	-2.7	4.4	-6.4	6.7	75.3
<b>Estonia</b>					1.4	0.1	
<b>European Community</b>							
<b>Finland</b>	108.6	8.5	-25.3	7.9	-30.4	18.9	118.3
<b>France</b>	15.6	-5.3	8.4	-0.3	-0.1	6.1	47.3
<b>Germany</b>	20.1	-6.7	1.0	-1.5	-2.0	9.5	85.0
<b>Greece</b>	0.0	4.4	56.6	-14.8	15.0	-0.4	78.6
<b>Iceland</b>							
<b>Ireland</b>	18.3	-2.2	14.6	12.0	15.6	8.7	290.2
<b>Italy</b>							
<b>Latvia</b>	76.8	-49.7	3.2	-12.5	-2.3	22.9	-40.7
<b>Luxembourg</b>							
<b>Netherlands</b>	13.3	-15.9	-5.4	-2.7	4.9	4.6	9.4
<b>New Zealand</b>	3.7	-0.9					
<b>Norway</b>				106.4	6.2	435.6	
<b>Poland</b>						10.2	
<b>Portugal</b>	7.2	0.8	34.5	53.0	21.1	26.4	394.6
<b>Romania</b>	-8.9	12.8	11.1	-8.8	-0.1	54.7	
<b>Slovakia</b>				0.0	-0.2	15.8	
<b>Spain</b>	20.4	11.4	17.6	20.8	12.5	17.3	444.8
<b>Sweden</b>	5.6	-6.6	8.3	5.2	-8.5	11.4	77.3
<b>Switzerland</b>						4.6	71.0
<b>United Kingdom</b>	13.8	-7.3	3.2	1.3	2.8	2.4	30.9
<b>United States</b>	6.6	-2.4	-7.8	2.8	5.4	-1.8	14.5

**Table 1.28****Contribution of fuels in CO<sub>2</sub> emissions from Other sectors (%)**

	Liquid fuels		Solid fuels		Gaseous fuels	
	1990 <sup>a</sup>	2001	1990 <sup>a</sup>	2001	1990 <sup>a</sup>	2001
<b>Austria</b>	63.0	63.2	20.5	5.8	16.5	31.0
<b>Belgium</b>		59.7		2.5		37.6
<b>Bulgaria</b>		43.3		52.0		4.7
<b>Canada</b>	32.0	25.9	0.3	0.2	67.7	73.9
<b>Czech Republic</b>	8.0	4.6	77.9	35.0	14.1	60.4
<b>Denmark</b>	79.7	64.7	3.6	1.6	16.5	33.7
<b>Estonia</b>		31.0		30.5		32.4
<b>European Community</b>						
<b>Finland</b>	96.1	94.0	0.7	0.3	1.3	3.6
<b>France</b>	63.4	56.5	4.7	0.9	31.8	42.6
<b>Germany</b>	45.0	52.7	32.5	2.2	22.5	45.1
<b>Greece<sup>b</sup></b>	97.4	98.7	2.2	1.0	0.3	0.3
<b>Iceland</b>		100.0		0.0		0.0
<b>Ireland</b>	37.7	60.2	57.4	22.2	4.8	17.6
<b>Italy</b>		25.8		0.3		66.4
<b>Latvia</b>	67.9	43.3	22.1	24.7	10.0	32.0
<b>Luxembourg</b>						
<b>Netherlands</b>	4.0	1.4	0.2	0.1	94.9	98.2
<b>New Zealand</b>		54.2		16.5		29.2
<b>Norway</b>	99.1	99.1	0.8	0.3	0.0	0.5
<b>Poland</b>		26.7		54.8		18.5
<b>Portugal</b>	98.2	94.3	0.0	0.0	1.8	5.7
<b>Romania</b>		15.9		0.5		80.8
<b>Slovakia</b>		0.5		21.7		77.8
<b>Spain</b>	85.9	76.9	8.9	1.2	5.3	22.0
<b>Sweden</b>	96.8	95.8	1.5	0.0	1.7	4.2
<b>Switzerland</b>	88.2	79.7	0.3	0.1	11.5	20.2
<b>United Kingdom</b>	17.9	13.7	17.3	7.4	64.8	78.8
<b>United States</b>	28.0	25.5	2.7	1.6	69.3	72.9

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Table 1.29****Transport: all fuels – trend information****CO<sub>2</sub> emissions (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	12,739	14,451	16,103	15,051	17,136	16,497	17,481	18,887
<b>Belgium</b>	19,610	21,727	22,195	22,903	23,276	23,832	24,107	24,162
<b>Bulgaria</b>	12,639	6,845	6,306	5,315	6,475	6,212	5,881	6,014
<b>Canada</b>	146,123	159,470	163,962	170,373	174,291	179,053	180,627	177,882
<b>Czech Republic</b>	7,275		9,896	11,392	10,779	12,016	11,110	12,061
<b>Denmark</b>	10,404	11,775	11,976	12,102	12,125	12,182	12,046	12,077
<b>Estonia</b>	2,693	1,103	1,047	1,212	1,352	1,203	1,030	1,921
<b>European Community</b>	695,003	752,889	769,248	778,309	802,558	822,186	823,606	833,925
<b>Finland</b>	12,475	11,125	10,994	11,531	12,299	12,734	12,379	12,569
<b>France</b>	119,135	129,301	130,748	132,972	135,140	138,227	137,738	140,670
<b>Germany</b>	162,281	176,563	176,658	177,157	180,420	186,065	182,697	178,313
<b>Greece<sup>b</sup></b>	18,039	19,435	19,925	20,523	22,149	22,908	21,678	22,448
<b>Iceland</b>	721	749	735	776	781	819	830	832
<b>Ireland</b>	5,020	6,369	7,128	7,753	8,848	9,819	10,211	11,063
<b>Italy</b>	102,023	112,240	113,348	115,150	118,977	120,016	120,571	125,191
<b>Latvia</b>	3,538	2,246	2,074	2,063	2,040	1,978	2,006	2,587
<b>Luxembourg<sup>b</sup></b>						1,337	1,451	1,504
<b>Netherlands</b>	29,122	32,163	32,642	33,067	33,785	34,795	35,212	35,608
<b>New Zealand</b>	8,664	10,869	10,989	11,242	11,439	11,732	11,955	12,307
<b>Norway</b>	11,098	12,074	12,717	12,962	13,305	13,902	13,024	13,388
<b>Poland</b>	28,238	25,285	28,098	26,662	28,126	31,382	28,207	30,121
<b>Portugal</b>	10,701	13,855	14,556	15,177	16,694	17,645	19,185	19,077
<b>Romania</b>	7,893	6,065	7,788	7,715	7,600	6,176	6,917	11,625
<b>Slovakia</b>	5,070	4,378	4,434	4,591	4,950	4,821	4,319	4,887
<b>Spain</b>	57,497	65,634	70,181	70,803	77,831	82,668	85,108	89,341
<b>Sweden</b>	18,337	18,955	18,784	19,015	19,603	19,726	19,582	19,848
<b>Switzerland</b>	14,206	13,847	13,911	14,488	14,716	15,342	15,611	15,325
<b>United Kingdom</b>	116,753	118,112	122,769	123,872	123,004	123,736	124,218	123,165
<b>United States</b>	1,470,453	1,577,807	1,617,381	1,626,942	1,653,911	1,713,040	1,762,734	1,780,871

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>	11.4	-6.5	13.9	-3.7	6.0	8.0	48.3
<b>Belgium</b>	2.2	3.2	1.6	2.4	1.2	0.2	23.2
<b>Bulgaria</b>	-7.9	-15.7	21.8	-4.1	-5.3	2.2	-52.4
<b>Canada</b>	2.8	3.9	2.3	2.7	0.9	-1.5	21.7
<b>Czech Republic</b>		15.1	-5.4	11.5	-7.5	8.6	65.8
<b>Denmark</b>	1.7	1.1	0.2	0.5	-1.1	0.3	16.1
<b>Estonia</b>	-5.1	15.7	11.6	-11.0	-14.4	86.5	-28.7
<b>European Community</b>	2.2	1.2	3.1	2.4	0.2	1.3	20.0
<b>Finland</b>	-1.2	4.9	6.7	3.5	-2.8	1.5	0.8
<b>France</b>	1.1	1.7	1.6	2.3	-0.4	2.1	18.1
<b>Germany</b>	0.1	0.3	1.8	3.1	-1.8	-2.4	9.9
<b>Greece</b>	2.5	3.0	7.9	3.4	-5.4	3.6	24.4
<b>Iceland</b>	-1.9	5.6	0.6	4.9	1.3	0.3	15.5
<b>Ireland</b>	11.9	8.8	14.1	11.0	4.0	8.3	120.4
<b>Italy</b>	1.0	1.6	3.3	0.9	0.5	3.8	22.7
<b>Latvia</b>	-7.7	-0.5	-1.1	-3.0	1.4	29.0	-26.9
<b>Luxembourg</b>					8.5	3.7	
<b>Netherlands</b>	1.5	1.3	2.2	3.0	1.2	1.1	22.3
<b>New Zealand</b>	1.1	2.3	1.8	2.6	1.9	2.9	42.0
<b>Norway</b>	5.3	1.9	2.6	4.5	-6.3	2.8	20.6
<b>Poland</b>	11.1	-5.1	5.5	11.6	-10.1	6.8	6.7
<b>Portugal</b>	5.1	4.3	10.0	5.7	8.7	-0.6	78.3
<b>Romania</b>	28.4	-0.9	-1.5	-18.7	12.0	68.1	47.3
<b>Slovakia</b>	1.3	3.5	7.8	-2.6	-10.4	13.2	-3.6
<b>Spain</b>	6.9	0.9	9.9	6.2	3.0	5.0	55.4
<b>Sweden</b>	-0.9	1.2	3.1	0.6	-0.7	1.4	8.2
<b>Switzerland</b>	0.5	4.1	1.6	4.3	1.7	-1.8	7.9
<b>United Kingdom</b>	3.9	0.9	-0.7	0.6	0.4	-0.8	5.5
<b>United States</b>	2.5	0.6	1.7	3.6	2.9	1.0	21.1

**Table 1.29 (continued)****Transport: all fuels – trend information****N<sub>2</sub>O emissions (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	1.57	3.03	2.97	2.85	3.04	2.83	2.77	2.76
<b>Belgium</b>	0.99	1.73	1.86	1.98	2.07	2.39	2.72	2.75
<b>Bulgaria</b>	0.23	0.14	0.13	0.12	0.13	0.12	0.11	0.11
<b>Canada</b>	20.71	28.34	28.37	29.00	28.84	32.42	29.08	28.70
<b>Czech Republic</b>	0.26		1.77	1.94	1.41	1.58	1.66	1.75
<b>Denmark</b>	0.47	0.87	0.94	1.05	1.12	1.16	1.22	1.27
<b>Estonia</b>	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.02
<b>European Community</b>	37.61	59.14	63.70	67.63	72.83	77.42	80.24	85.04
<b>Finland</b>	2.03	1.80	1.94	2.02	2.45	2.30	2.21	2.24
<b>France</b>	5.24	8.25	9.10	9.83	10.53	11.35	11.83	12.77
<b>Germany</b>	9.87	17.49	18.02	18.50	18.88	19.65	19.85	20.85
<b>Greece<sup>b</sup></b>	1.66	1.88	1.95	2.04	2.12	2.15	2.18	2.32
<b>Iceland</b>	0.02	0.04	0.04	0.07	0.07	0.10	0.10	0.10
<b>Ireland</b>	0.28	0.56	0.71	0.86	1.03	1.26	1.21	1.33
<b>Italy</b>	5.58	7.03	7.58	8.13	9.18	9.91	10.26	11.14
<b>Latvia</b>	0.41	0.09	0.08	0.09	0.09	0.17	0.17	0.22
<b>Luxembourg<sup>b</sup></b>						0.14	0.16	0.17
<b>Netherlands</b>	1.20	1.94	1.97	2.00	2.01	2.03	2.00	1.98
<b>New Zealand</b>	0.36	0.46	0.47	0.48	0.49	0.50	0.52	0.53
<b>Norway</b>	0.53	1.01	1.19	1.37	1.57	1.79	1.91	2.21
<b>Poland</b>	1.30	1.31	1.44	1.36	1.67	1.87	1.89	2.00
<b>Portugal</b>	0.44	0.87	1.01	1.13	1.33	1.48	1.68	1.83
<b>Romania</b>	0.27	0.07	0.10	0.09	0.09	0.07	0.08	0.11
<b>Slovakia</b>	0.23	0.36	0.40	0.45	0.53	0.54	0.50	0.58
<b>Spain</b>	2.51	3.79	4.28	4.67	5.40	6.02	6.42	6.98
<b>Sweden</b>	1.38	1.69	1.81	1.88	1.86	2.02	2.17	2.28
<b>Switzerland</b>	1.13	1.76	1.87	1.97	2.02	2.09	2.06	1.95
<b>United Kingdom</b>	4.35	8.10	9.45	10.56	11.67	12.73	13.55	14.38
<b>United States</b>	163.33	196.55	195.83	194.58	192.42	189.52	185.36	176.63

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>	-1.9	-4.2	6.7	-6.9	-2.1	-0.5	75.9
<b>Belgium</b>	7.2	6.4	4.9	15.2	13.7	1.1	177.8
<b>Bulgaria</b>	-7.6	-11.8	9.4	-2.7	-9.9	-0.1	-51.4
<b>Canada</b>	0.1	2.2	-0.6	12.4	-10.3	-1.3	38.6
<b>Czech Republic</b>		9.5	-27.6	12.4	5.1	5.7	575.8
<b>Denmark</b>	8.6	11.5	6.2	3.8	5.4	3.7	168.3
<b>Estonia</b>	-4.4	17.0	6.7	-7.0	-13.9	74.4	-29.8
<b>European Community</b>	7.7	6.2	7.7	6.3	3.6	6.0	126.1
<b>Finland</b>	7.5	4.1	21.5	-6.0	-4.1	1.3	9.9
<b>France</b>	10.3	8.1	7.1	7.8	4.2	7.9	143.5
<b>Germany</b>	3.0	2.6	2.0	4.1	1.1	5.0	111.4
<b>Greece</b>	4.0	4.5	4.1	1.7	1.2	6.3	39.6
<b>Iceland</b>	-0.9	56.2	2.0	46.1	-0.6	0.6	391.0
<b>Ireland</b>	27.2	20.5	20.2	22.0	-4.1	10.7	376.9
<b>Italy</b>	7.8	7.3	12.9	8.0	3.5	8.6	99.6
<b>Latvia</b>	-6.1	5.8	2.8	85.4	2.1	28.1	-46.0
<b>Luxembourg</b>					17.5	3.4	
<b>Netherlands</b>	1.6	1.2	0.5	1.1	-1.7	-1.1	64.9
<b>New Zealand</b>	2.2	2.1	2.1	2.0	4.0	1.3	46.3
<b>Norway</b>	17.8	14.9	14.6	14.0	7.1	15.5	319.6
<b>Poland</b>	9.9	-5.6	22.8	12.0	1.1	5.7	53.7
<b>Portugal</b>	15.7	12.7	16.9	11.7	13.8	8.6	314.3
<b>Romania</b>	33.6	-1.7	-2.1	-19.4	8.4	33.1	-60.9
<b>Slovakia</b>	11.3	12.1	17.0	1.7	-8.0	17.4	154.3
<b>Spain</b>	12.7	9.3	15.7	11.3	6.8	8.7	178.3
<b>Sweden</b>	7.0	4.0	-1.1	8.5	7.5	4.8	64.7
<b>Switzerland</b>	6.2	5.6	2.3	3.8	-1.4	-5.5	72.9
<b>United Kingdom</b>	16.7	11.8	10.5	9.0	6.5	6.1	230.7
<b>United States</b>	-0.4	-0.6	-1.1	-1.5	-2.2	-4.7	8.1

**Table 1.30**

**Road transportation, CO<sub>2</sub>, N<sub>2</sub>O (2001)**

	CO <sub>2</sub> emissions							N <sub>2</sub> O emissions						
	Key source	Share of national total (%)	Methods and EF used <sup>a</sup>		CO <sub>2</sub> IEF			Key source	Share of national total (%)	Methods and EF used <sup>a</sup>		N <sub>2</sub> O IEF		
					IEF in CRF based on	Gasoline	Diesel oil					IEF in CRF based on	Gasoline	Diesel oil
						(t/TJ)	(kg/TJ)							
IPCC default EF <sup>b</sup>			Methods	EF	NCV	72.1 (US) 73.0 (Europe)	72.1 (US) 74.0 (Europe)			Methods	EF	NCV	3-43 (US) 1-20 (Europe)	1-14 (US) 3-4 (Europe)
Austria	L, T	20.8	M	CS	NCV	73.95	73.67	L, T	1.0	M	CS	NCV	27.37	2.78
Belgium	L	15.6			NCV	66.28	71.92	L	0.5			NCV	7.36	7.42
Bulgaria	L	7.9	T2	C, CS, D	NCV	72.16	76.14		0.0	T2	C, CS, D	NCV	1.08	1.91
Canada	L, T	17.8	CS	CS	GCV	67.43	71.28	L, T	0.8	CS	CS	GCV	13.41	2.19
Czech Republic	L	7.6	T1	D	NCV	68.61	73.33		0.4	T2	D, PS	NCV	18.91	3.08
Denmark	L, T	16.2	M/C	CS	NCV	73.00	74.00	T	0.5	M/C	M/C	NCV	10.60	5.00
Estonia	L	8.7			NCV	68.61	73.33		0.0			NCV	0.60	0.60
European Community			C, CS, D, M, T1, T2	C, CS, M		NE	NE		0.0	C, CS, D, M, T1, T2, T3	C, CS, D, M		NE	NE
Finland	L, T	13.5	CS (M)	CS	NCV	72.70	73.00	L, T	0.7	CS (M)	CS/M	NCV	16.62	3.22
France	L, T	23.4	C /CS	C /M /CS	NCV	72.35	75.02	L, T	0.7	C /CS	C /M /CS	NCV	8.19	6.52
Germany	L, T	16.8	CS	CS	NCV	72.00	74.00	L, T	0.6	CS	CS	NCV	9.89	7.80
Greece	L, T	12.4	C	C	NCV	68.61	72.43	T	0.3	C	C	NCV	5.45	4.48
Iceland	L	29.5	T1	D	NCV	68.61	73.33		1.1	T1	D	NCV	13.20	2.74
Ireland	L, T	14.7	T1	CS	NCV	69.96	73.30	T	0.5	T1	C	NCV	9.95	5.65
Italy	L	21.1	D, T2	CS	NCV	71.11	73.15	L	0.6	D, T3	D, C	NCV	7.62	5.78
Latvia	L, T	20.3	T1	D	NCV	68.60	74.00		0.3	T1	D	NCV	4.15	3.58
Luxembourg			C	C						C	C			
Netherlands	L, T	14.6	CS/T2(Box 2)	CS	NCV	72.30	73.30		0.3	CS/T3(road);T1(rest)	CS(road)/D(rest)	NCV	4.83	3.61
New Zealand	L	15.4	T1	CS/D	GCV	65.93	68.01		0.2	T1	D	GCV	3.00	3.00
Norway	L, T	16.6	M, T1, CS/T2	CS	NCV	71.30	73.55	L, T	1.1	CS, T2, CS/T2	CS, D, C	NCV	24.48	3.36
Poland	L	7.4	T2	CS	NCV	64.80	71.03		0.2	T2	CS	NCV	5.22	3.55
Portugal	L, T	20.8	C	C	NCV	71.10	72.45	L, T	0.7	C	C	NCV	12.37	3.98
Romania	L	6.5	D	D	NCV	68.61	73.33		0.0	T1	T1	NCV	0.60	0.60
Slovakia	L	9.3	M	M	NCV	72.94	73.75		0.3	M	M	NCV	10.98	4.18
Spain	L, T	21.2	C	C	NCV	71.26	72.63	L, T	0.5	C	C	NCV	6.10	5.73
Sweden	L, T	25.8	CS	CS	NCV	72.60	75.30	L, T	0.9	CS	CS	NCV	10.29	3.54
Switzerland	L, T	28.0	CS	CS	NCV	73.90	73.60	L, T	1.1	CS	CS, D	NCV	11.39	2.77
United Kingdom	L, T	17.8	T2	CS	NCV	70.06	72.54	L, T	0.6	T2/T3	D	NCV	11.15	4.64
United States	L, T	20.2	T1, T2	CS	GCV	66.54	67.73	L	0.7	T1, T2, M	D, CS, M	GCV	9.37	2.30

<sup>a</sup> Information on methods and emission factors included in this table is as reported by Parties. 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.

**Table 1.31****Road transportation – trend information****CO<sub>2</sub> emissions (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	12,280	13,918	15,567	14,504	16,461	15,703	16,583	17,895
<b>Belgium</b>	18,976	21,116	21,575	22,326	22,654	23,100	23,386	23,500
<b>Bulgaria<sup>b</sup></b>					5,151	5,324	5,008	5,187
<b>Canada</b>	102,868	112,440	114,246	119,533	120,502	115,782	125,582	127,487
<b>Czech Republic<sup>b</sup></b>	5,995				10,316	11,348	10,344	11,286
<b>Denmark</b>	9,351	10,648	10,821	11,026	11,215	11,350	11,230	11,273
<b>Estonia<sup>b</sup></b>						909	761	1,695
<b>European Community</b>	NE	NE	NE	NE	NE	NE	NE	NE
<b>Finland</b>	11,111	10,325	10,192	10,701	10,807	10,880	10,648	10,905
<b>France</b>	111,403	120,789	121,884	124,078	126,008	128,833	128,462	131,482
<b>Germany</b>	150,183	164,990	165,025	165,942	169,374	174,878	171,505	167,658
<b>Greece<sup>b</sup></b>	11,873	13,872	14,509	14,851	15,561	15,845	16,031	16,407
<b>Iceland<sup>b</sup></b>						769	786	788
<b>Ireland</b>	4,680	5,915	6,609	7,205	8,264	9,121	9,544	10,300
<b>Italy</b>								114,835
<b>Latvia</b>	2,666	2,208	2,045	2,029	2,002	1,732	1,756	2,317
<b>Luxembourg<sup>b</sup></b>						1,313		
<b>Netherlands</b>	25,374	28,399	29,158	29,518	30,236	31,111	31,468	31,984
<b>New Zealand</b>		9,527	9,727	10,067				11,103
<b>Norway</b>	7,850				9,065	9,283	8,749	9,319
<b>Poland<sup>b</sup></b>							26,920	28,353
<b>Portugal</b>	9,249	12,406	13,055	13,719	15,165	15,934	17,486	17,420
<b>Romania<sup>b</sup></b>		5,195	7,027	6,870	6,843	5,758	6,469	9,662
<b>Slovakia<sup>b</sup></b>					4,580	4,493	4,017	4,587
<b>Spain</b>	51,390	60,341	64,251	64,879	71,387	75,304	77,315	81,072
<b>Sweden</b>	16,624	17,482	17,359	17,477	17,970	18,004	17,896	18,182
<b>Switzerland</b>	13,762							14,954
<b>United Kingdom</b>	109,211	110,737	115,048	116,515	115,784	116,778	117,372	116,777
<b>United States</b>	1,120,931	1,227,893	1,258,241	1,280,491	1,316,430	1,361,491	1,378,938	1,402,462

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>	11.8	-6.8	13.5	-4.6	5.6	7.9	45.7
<b>Belgium</b>	2.2	3.5	1.5	2.0	1.2	0.5	23.8
<b>Bulgaria</b>				3.4	-5.9	3.6	
<b>Canada</b>	1.6	4.6	0.8	-3.9	8.5	1.5	23.9
<b>Czech Republic</b>				10.0	-8.8	9.1	88.2
<b>Denmark</b>	1.6	1.9	1.7	1.2	-1.1	0.4	20.6
<b>Estonia</b>					-16.3	122.6	
<b>European Community</b>							
<b>Finland</b>	-1.3	5.0	1.0	0.7	-2.1	2.4	-1.9
<b>France</b>	0.9	1.8	1.6	2.2	-0.3	2.4	18.0
<b>Germany</b>	0.0	0.6	2.1	3.2	-1.9	-2.2	11.6
<b>Greece</b>	4.6	2.4	4.8	1.8	1.2	2.3	38.2
<b>Iceland</b>					2.1	0.2	
<b>Ireland</b>	11.7	9.0	14.7	10.4	4.6	7.9	120.1
<b>Italy</b>							
<b>Latvia</b>	-7.4	-0.8	-1.3	-13.5	1.4	32.0	-13.1
<b>Luxembourg</b>							
<b>Netherlands</b>	2.7	1.2	2.4	2.9	1.1	1.6	26.0
<b>New Zealand</b>	2.1	3.5					
<b>Norway</b>				2.4	-5.8	6.5	18.7
<b>Poland</b>						5.3	
<b>Portugal</b>	5.2	5.1	10.5	5.1	9.7	-0.4	88.3
<b>Romania</b>	35.3	-2.2	-0.4	-15.9	12.4	49.3	
<b>Slovakia</b>				-1.9	-10.6	14.2	
<b>Spain</b>	6.5	1.0	10.0	5.5	2.7	4.9	57.8
<b>Sweden</b>	-0.7	0.7	2.8	0.2	-0.6	1.6	9.4
<b>Switzerland</b>						-1.8	8.7
<b>United Kingdom</b>	3.9	1.3	-0.6	0.9	0.5	-0.5	6.9
<b>United States</b>	2.5	1.8	2.8	3.4	1.3	1.7	25.1

**Table 1.31****Road transportation – trend information (continued)****N<sub>2</sub>O emissions (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	1.53	3.00	2.94	2.81	3.00	2.79	2.73	2.72
<b>Belgium</b>	0.85	1.60	1.73	1.84	1.93	2.23	2.45	2.48
<b>Bulgaria<sup>b</sup></b>					0.97	0.10	0.09	0.09
<b>Canada</b>	11.76	19.11	18.86	19.10	18.69	18.51	18.05	18.53
<b>Czech Republic<sup>b</sup></b>	0.23				1.39	1.57	1.64	1.74
<b>Denmark</b>	0.42	0.81	0.89	1.00	1.07	1.12	1.18	1.23
<b>Estonia<sup>b</sup></b>						0.01	0.01	0.01
<b>European Community</b>	NE	NE	NE	NE	NE	NE	NE	NE
<b>Finland</b>	1.34	1.41	1.55	1.62	1.68	1.75	1.75	1.79
<b>France</b>	5.14	8.14	8.99	9.72	10.42	11.23	11.72	12.65
<b>Germany</b>	9.39	17.07	17.60	18.10	18.49	19.26	19.47	20.49
<b>Greece<sup>b</sup></b>	0.46	0.80	0.86	0.95	1.00	1.03	1.09	1.20
<b>Iceland<sup>b</sup></b>						0.10	0.10	0.10
<b>Ireland</b>	0.18	0.43	0.55	0.68	0.85	1.05	1.00	1.10
<b>Italy</b>					8.79	9.57	9.92	10.54
<b>Latvia</b>	0.07	0.08	0.08	0.08	0.08	0.08	0.08	0.12
<b>Luxembourg<sup>b</sup></b>						0.14		
<b>Netherlands</b>	1.10	1.84	1.88	1.90	1.91	1.93	1.90	1.88
<b>New Zealand</b>	0.34	0.43	0.44	0.45	0.46	0.48	0.49	0.50
<b>Norway</b>	0.30				1.29	1.50	1.64	1.93
<b>Poland<sup>b</sup></b>							1.82	1.90
<b>Portugal</b>	0.38	0.81	0.94	1.07	1.27	1.42	1.62	1.77
<b>Romania<sup>b</sup></b>		0.06	0.08	0.08	0.08	0.07	0.08	0.08
<b>Slovakia<sup>b</sup></b>					0.38	0.41	0.38	0.47
<b>Spain</b>	2.17	3.51	3.96	4.35	5.08	5.66	6.05	6.58
<b>Sweden</b>	0.82	1.26	1.36	1.44	1.56	1.71	1.85	1.97
<b>Switzerland</b>	1.11							1.94
<b>United Kingdom</b>	3.32	7.10	8.46	9.69	10.81	11.90	12.76	13.64
<b>United States</b>	153.85	186.88	185.93	185.08	182.99	179.49	174.72	166.59

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>	-1.9	-4.3	6.7	-7.1	-2.1	-0.4	77.6
<b>Belgium</b>	7.7	6.8	4.8	15.6	9.7	1.2	190.6
<b>Bulgaria</b>				-89.5	-11.7	1.6	
<b>Canada</b>	-1.3	1.2	-2.2	-1.0	-2.5	2.7	57.5
<b>Czech Republic</b>				12.5	4.9	5.7	661.9
<b>Denmark</b>	8.9	12.9	7.4	4.4	5.7	3.8	190.7
<b>Estonia</b>					-17.5	127.6	
<b>European Community</b>							
<b>Finland</b>	9.7	4.3	3.9	4.3	0.0	2.3	33.6
<b>France</b>	10.4	8.2	7.2	7.8	4.4	7.9	146.4
<b>Germany</b>	3.1	2.8	2.1	4.2	1.1	5.2	118.1
<b>Greece</b>	7.8	10.1	5.8	2.7	5.6	10.1	159.4
<b>Iceland</b>					-0.4	0.6	
<b>Ireland</b>	26.0	24.3	24.6	23.6	-5.0	10.8	509.4
<b>Italy</b>				8.9	3.6	6.3	
<b>Latvia</b>	-1.8	5.3	2.8	-8.9	4.4	51.6	77.7
<b>Luxembourg</b>							
<b>Netherlands</b>	2.0	1.2	0.5	1.1	-1.8	-0.9	71.3
<b>New Zealand</b>	2.1	3.4	2.0	2.9	2.7	2.1	45.6
<b>Norway</b>				16.0	9.5	17.9	550.3
<b>Poland</b>						4.2	
<b>Portugal</b>	17.1	13.8	17.9	12.0	14.4	9.0	369.4
<b>Romania</b>	45.3	-4.3	-0.3	-15.6	14.0	7.3	
<b>Slovakia</b>				6.8	-7.3	22.4	
<b>Spain</b>	12.9	9.8	16.8	11.5	6.9	8.7	202.9
<b>Sweden</b>	8.2	6.1	8.1	9.6	8.4	6.3	141.2
<b>Switzerland</b>						-5.5	74.0
<b>United Kingdom</b>	19.1	14.6	11.6	10.1	7.2	6.9	310.6
<b>United States</b>	-0.5	-0.5	-1.1	-1.9	-2.7	-4.7	8.3

**Table 1.31****Road transportation – trend information (continued)****N<sub>2</sub>O implied emission factors for gasoline (kg/TJ)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	12.56	27.02	27.63	28.22	28.31	28.26	28.11	27.37
<b>Belgium</b>							7.09	7.36
<b>Bulgaria<sup>b</sup></b>					0.94		1.12	1.08
<b>Canada</b>	9.89	15.62	15.31	15.00	14.34	13.97	13.34	13.41
<b>Czech Republic<sup>b</sup></b>	2.44				16.54	16.71	19.44	18.91
<b>Denmark</b>	2.24	6.37	7.09	8.22	8.86	9.28	10.05	10.60
<b>Estonia<sup>b</sup></b>						0.60	0.37	0.60
<b>European Community</b>							NE	NE
<b>Finland</b>	3.90	6.00	9.00	10.51	11.70	12.62	13.97	16.62
<b>France</b>	1.77	3.55	4.44	5.24	5.94	6.68	7.47	8.19
<b>Germany</b>	5.39	10.86	11.20	11.37	11.14	10.71	10.32	9.89
<b>Greece<sup>b</sup></b>	1.82	3.84	4.09	4.46	4.61	4.70	5.04	5.45
<b>Iceland<sup>b</sup></b>						13.20	13.20	13.20
<b>Ireland</b>	1.92	6.17	7.44	9.10	10.50	12.44	9.50	9.95
<b>Italy</b>								7.62
<b>Latvia</b>	1.60	2.15	2.33	2.47	2.67	3.00	3.26	4.15
<b>Luxembourg<sup>b</sup></b>						11.50		
<b>Netherlands</b>	3.35	5.96	5.83	5.81	5.59	5.40	5.09	4.83
<b>New Zealand</b>							3.00	3.00
<b>Norway</b>	2.56				15.52	18.43	21.38	24.48
<b>Poland<sup>b</sup></b>							5.12	5.22
<b>Portugal</b>	1.76	5.42	6.57	7.68	8.85	10.03	11.24	12.37
<b>Romania<sup>b</sup></b>		0.60	0.60	0.60	0.60	0.60	0.60	0.60
<b>Slovakia<sup>b</sup></b>						9.45	10.15	10.98
<b>Spain</b>	1.76	3.41	3.83	4.30	4.75	5.24	5.68	6.10
<b>Sweden</b>	3.67	6.09	6.72	7.28	8.10	8.79	9.71	10.29
<b>Switzerland</b>	6.71							11.39
<b>United Kingdom</b>	1.71	4.95	6.01	7.11	8.30	9.18	10.04	11.15
<b>United States</b>	10.50	11.84	11.53	11.34	10.93	10.41	10.04	9.37

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>	2.3	2.1	0.3	-0.2	-0.5	-2.7	117.9
<b>Belgium</b>						3.8	
<b>Bulgaria</b>						-3.0	
<b>Canada</b>	-2.0	-2.0	-4.4	-2.6	-4.5	0.6	35.7
<b>Czech Republic</b>				1.0	16.3	-2.7	675.8
<b>Denmark</b>	11.3	15.9	7.8	4.7	8.4	5.5	373.6
<b>Estonia</b>					-39.0	64.0	
<b>European Community</b>							
<b>Finland</b>	49.8	16.8	11.4	7.8	10.7	19.0	326.5
<b>France</b>	25.2	17.9	13.4	12.3	12.0	9.5	363.2
<b>Germany</b>	3.2	1.4	-2.0	-3.9	-3.7	-4.1	83.4
<b>Greece</b>	6.5	9.1	3.2	2.0	7.4	8.1	198.8
<b>Iceland</b>					0.0	0.0	
<b>Ireland</b>	20.6	22.3	15.4	18.5	-23.6	4.7	416.9
<b>Italy</b>							
<b>Latvia</b>	8.6	6.0	8.1	12.1	8.9	27.1	159.1
<b>Luxembourg</b>							
<b>Netherlands</b>	-2.2	-0.4	-3.9	-3.4	-5.6	-5.1	44.4
<b>New Zealand</b>						0.0	
<b>Norway</b>				18.8	16.0	14.5	856.1
<b>Poland</b>						1.9	
<b>Portugal</b>	21.3	16.8	15.2	13.3	12.1	10.0	603.5
<b>Romania</b>	0.0	0.0	0.0	0.0	0.0	0.0	
<b>Slovakia</b>					7.3	8.2	
<b>Spain</b>	12.1	12.3	10.6	10.2	8.3	7.5	246.0
<b>Sweden</b>	10.3	8.4	11.2	8.6	10.5	6.0	180.7
<b>Switzerland</b>						-3.1	69.9
<b>United Kingdom</b>	21.3	18.3	16.8	10.7	9.3	11.0	550.1
<b>United States</b>	-2.7	-1.7	-3.6	-4.7	-3.5	-6.8	-10.8



**Table 1.31****Road transportation – trend information (continued)****N<sub>2</sub>O implied emission factors for diesel (kg/TJ)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	3.54	3.12	3.17	3.04	3.01	2.93	2.88	2.78
<b>Belgium</b>							7.48	7.42
<b>Bulgaria<sup>b</sup></b>					1.91	1.87	1.91	1.91
<b>Canada</b>	2.22	2.17	2.16	2.16	2.18	2.19	2.19	2.19
<b>Czech Republic<sup>b</sup></b>	3.00				3.00	3.00	3.00	3.08
<b>Denmark</b>	4.54	4.65	4.67	4.69	4.71	4.78	4.96	5.00
<b>Estonia<sup>b</sup></b>						0.60		0.60
<b>European Community</b>							NE	NE
<b>Finland</b>	3.90	5.01	4.00	3.00	3.01	3.70	3.59	3.22
<b>France</b>	5.25	6.00	6.09	6.09	6.17	6.26	6.29	6.52
<b>Germany</b>	3.01	3.05	3.14	3.41	3.89	4.83	5.98	7.80
<b>Greece<sup>b</sup></b>	4.15	4.31	4.25	4.45	4.36	4.31	4.25	4.48
<b>Iceland<sup>b</sup></b>						2.74	2.74	2.74
<b>Ireland</b>	4.04	4.09	4.21	4.22	4.15	4.11	5.50	5.65
<b>Italy</b>								5.78
<b>Latvia</b>	3.42	3.27	3.36	3.47	3.53	3.52	3.54	3.58
<b>Luxembourg<sup>b</sup></b>						3.53		
<b>Netherlands</b>	2.75	2.92	3.01	3.13	3.26	3.39	3.54	3.61
<b>New Zealand</b>								3.00
<b>Norway</b>	3.08				3.44	3.40	3.38	3.36
<b>Poland<sup>b</sup></b>							3.57	3.55
<b>Portugal</b>	3.97	3.98	3.98	3.98	3.98	3.98	3.98	3.98
<b>Romania<sup>b</sup></b>		0.60	0.60	0.60	0.60	0.60	0.60	0.60
<b>Slovakia<sup>b</sup></b>						4.20	4.15	4.18
<b>Spain</b>	4.37	4.84	4.96	5.26	5.39	5.54	5.63	5.73
<b>Sweden</b>	3.39	3.10	3.21	3.15	3.13	3.43	3.52	3.54
<b>Switzerland</b>	2.73							2.77
<b>United Kingdom</b>	3.20	3.92	4.00	4.14	4.23	4.48	4.57	4.64
<b>United States</b>	2.33	2.47	2.44	2.43	2.36	2.32	2.29	2.30

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>	1.4	-4.1	-0.9	-2.6	-1.9	-3.3	-21.5
<b>Belgium</b>							-0.7
<b>Bulgaria</b>				-2.1	2.2	0.0	
<b>Canada</b>	-0.2	0.0	0.8	0.6	-0.2	0.0	-1.5
<b>Czech Republic</b>				0.0	0.0	2.6	2.7
<b>Denmark</b>	0.4	0.5	0.5	1.5	3.8	0.8	10.2
<b>Estonia</b>							
<b>European Community</b>							
<b>Finland</b>	-20.0	-25.0	0.1	23.0	-2.9	-10.4	-17.6
<b>France</b>	1.5	0.0	1.3	1.5	0.5	3.6	24.0
<b>Germany</b>	2.8	8.5	14.1	24.3	23.8	30.3	158.9
<b>Greece</b>	-1.6	4.9	-2.0	-1.3	-1.4	5.6	8.1
<b>Iceland</b>					0.0	0.0	
<b>Ireland</b>	2.9	0.2	-1.7	-0.9	33.7	2.7	39.7
<b>Italy</b>							
<b>Latvia</b>	2.7	3.3	1.8	-0.3	0.6	1.1	4.5
<b>Luxembourg</b>							
<b>Netherlands</b>	3.4	4.0	4.0	4.1	4.5	1.8	31.2
<b>New Zealand</b>							
<b>Norway</b>				-1.3	-0.4	-0.7	8.9
<b>Poland</b>						-0.6	
<b>Portugal</b>	0.1	0.0	0.0	0.0	-0.1	0.1	0.4
<b>Romania</b>	0.0	0.0	0.0	0.0	0.0	0.0	
<b>Slovakia</b>					-1.2	0.8	
<b>Spain</b>	2.4	6.1	2.5	2.8	1.7	1.7	31.0
<b>Sweden</b>	3.4	-1.9	-0.6	9.7	2.5	0.5	4.4
<b>Switzerland</b>						0.3	1.5
<b>United Kingdom</b>	2.1	3.3	2.2	6.0	2.0	1.5	45.0
<b>United States</b>	-1.5	-0.3	-3.0	-1.7	-1.0	0.2	-1.6

**Table 1.32****Civil aviation and navigation (domestic), CO<sub>2</sub> (2001)**

	Methods and EF used <sup>a</sup>		IEF in CRF based on	Civil aviation (domestic)			International aviation		Navigation (domestic)				International marine		
	Methods	EF		Key source	Share of national total (%)	CO <sub>2</sub> IEF		CO <sub>2</sub> IEF		Key source	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
IPCC default EF <sup>b</sup>			NCV			72.80	72.10	72.80	72.10			77.60	73.00	77.60	75.0-77.6
Austria	M	CS	NCV		0.1	72.56	74.12	72.56			0.1		73.67		
Belgium			NCV		0.0	73.07	68.61			L	0.3		73.52		
Bulgaria	T2	C, CS, D	NCV		0.1	70.60	70.80	70.60	NO			NO	NO	81.52	76.08
Canada	CS	CS	GCV	L, T	1.6	68.18	69.51	68.18		L	0.7	72.71	71.28	72.71	71.28
Czech Republic	T1	D	NCV		0.1	70.79	68.61	64.16			0.0		73.33		
Denmark	M/C	CS	NCV		0.2	72.00	73.00	72.00	73.00		0.6	78.00	74.00	78.00	74.00
Estonia			NCV		0.3	70.79					0.1		73.33	75.82	73.33
European Community	C, CS, D, M, T1, T2	C, CS, M				NE	NE	NE	NE			NE	NE	NE	NE
Finland	CS (M)	CS	NCV		0.4	70.78	70.92	70.79	NO	L, T	0.6	76.64	73.37	76.64	73.31
France	C /CS	C /M /CS	NCV	L, T	1.0	71.59	IE	71.59			0.4	78.00	75.00	78.00	75.00
Germany	CS	CS	NCV	T	0.4	74.00	IE	NE	NE		0.1	NO	74.00	78.00	74.00
Greece	C	C	NCV	L, T	0.9	64.72	IE	89.88	NO	L	1.6	76.59	72.17	76.59	73.33
Iceland	T1	D	NCV		0.9	70.79	68.61	70.79	68.61		0.8	76.59	73.33	76.59	73.33
Ireland	T1	CS	NCV		0.2	71.40		71.40	69.96		0.2	76.00	73.30		73.30
Italy	D, T2	CS	NCV	L	0.5	70.55	70.78	70.05	NO	L	1.2	75.37	73.15	76.77	IE
Latvia	T1	D	NCV		0.0	70.80	NO	70.80	NO	T	0.5	76.59	74.00	76.59	NO
Luxembourg	C	C													
Netherlands	CS/T2(Box 2)	CS	NCV		0.1	73.00	IE	73.00			0.4		73.00	77.00	73.00
New Zealand	T1	CS/D	GCV	L	1.0	68.31	68.31	68.31	NE		0.4	NE	NE	72.96	68.01
Norway	M, T1, CS/T2	CS	NCV	L, T	1.9	73.09	71.30	73.09	NO	L, T	4.1	78.82	73.55	78.82	73.55
Poland	T2	CS	NCV		0.1	70.41		70.42			0.1	72.61	70.44	72.59	72.03
Portugal	C	C	NCV	L, T	1.6	70.54	70.69	70.54		T	0.2	77.87	75.61	77.81	74.47
Romania	D	D	NCV		0.3	70.79	68.61	NE	NE		0.2		72.60		
Slovakia	M	M			0.1		based on LTO	IE	IE		0.2		75.01	NO	NO
Spain	C	C	NCV	L	1.5	72.92	72.92	72.70		L	0.5	78.89	73.38	78.90	73.40
Sweden	CS	CS	NCV	L	0.9	73.10	72.30	73.10	NO	L	0.9	76.20	75.30	76.20	75.30
Switzerland	CS	CS	NCV	T	0.4	73.20	IE	73.20	IE		0.2	IE	73.78	NO	NO
United Kingdom	T2	CS	NCV	L	0.4	71.76	70.58	71.76	IE		0.3	75.42	72.54	75.42	72.54
United States	T1, T2	CS	GCV	L, T	2.7	66.51	64.92	66.51	NE	L	0.8	73.94	72.86	73.94	68.64

<sup>a</sup> Information on methods and emission factors included in this table is as reported by Parties. 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).

**Table 1.33****Domestic and international aviation, activity data (2001)**

	Activity data in CRF based on	Civil aviation (domestic)						International aviation			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)		(%)
Austria	NCV	1,575	1,338	-15.1	87	0	-100.0	22,253	23,320	4.8	23,915	24,658	3.1
Belgium	NCV	67	1,516	2,151.7	67	134	101.8		48,469	100.0	134	50,119	37,319.6
Bulgaria	NCV	619			38			5,571			6,228		
Canada	GCV	168,758	156,204	-7.4	3,526	3,537	0.3	46,371	47,922	3.3	218,655	207,662	-5.0
Czech Republic	NCV	1,765	3,300	87.0	88	90	2.3	6,841	5,841	-14.6	8,694	9,276	6.7
Denmark	NCV	2,239	2,140	-4.4	99	90	-9.9	33,019	34,468	4.4	35,365	36,698	3.8
Estonia	NCV	688	0	-100.0	0	0	0.0	0	713	100.0	688	713	3.7
European Community		NE			NE			NE			NE	0	
Finland	NCV	5,021	6,599	31.4	65	134	106.8	14,890	15,339	3.0	19,976	22,072	10.5
France	NCV	81,922	67,196	-18.0	IE	1,254	100.0	200,025	222,947	11.5	281,947	291,398	3.4
Germany	NCV	58,000			IE			NE			58,000		
Greece	NCV	18,866	18,014	-4.5	IE	0		32,863	32,862	0.0	51,728	50,877	-1.6
Iceland	NCV	303	312	3.1	44	45	2.9	4,931	4,949	0.4	5,278	5,306	0.5
Ireland	NCV	1,527	1,605	5.1	NE	45	100.0	27,780	30,365	9.3	29,350	32,015	9.1
Italy	NCV	38,096	3,389	-91.1	483	493	2.0	124,042	147,323	18.8	162,622	151,205	-7.0
Latvia	NCV	68	0	-100.0	NO	0	0.0	794	1,159	46.1	862	1,159	34.5
Luxembourg											0	0	
Netherlands	NCV	2,697	2,631	-2.5	IE	134	100.0	135,122	138,450	2.5	137,819	141,260	2.5
New Zealand	GCV	9,983	12,673	26.9	644	660	2.5	27,885	28,209	1.2	38,512	41,542	7.9
Norway	NCV	14,436	11,816	-18.1	104	134	29.5	11,431	15,651	36.9	25,970	27,601	6.3
Poland	NCV	6,457	0	-100.0	0	0	0.0	4,774	15,071	215.7	11,231	15,205	35.4
Portugal		18,828	7,223	-61.6	94	134	43.3	13,932	25,550	83.4	32,855	32,908	0.2
Romania	NCV	5,349	0	-100.0	687	134	-80.5	NE	4,905	100.0	6,036	5,039	-16.5
Slovakia			1,382	100.0	based on LTO cycles			IE			0	1,382	100.0
Spain	NCV	76,617	74,018	-3.4	434	493	13.6	116,812	119,856	2.6	193,863	194,368	0.3
Sweden	NCV	8,506	10,256	20.6	51	179	254.3	25,595	30,811	20.4	34,152	41,246	20.8
Switzerland	NCV	3,207	1,962	-38.8	IE	224	100.0	60,949	64,343	5.6	64,156	66,528	3.7
United Kingdom	NCV	38,329	91,899	139.8	2,651	2,554	-3.7	384,779	365,856	-4.9	425,760	460,354	8.1
United States	GCV	2,729,441	2,842,177	4.1	36,861	43,195	17.2	885,110	769,238	-13.1	3,651,412	3,654,610	0.1

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

**Table 1.34****Domestic and international navigation, activity data (2001)**

	Activity data in CRF based on	Navigation (domestic)						International marine transport						Total residual oil and 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	Difference	CRF	IEA <sup>a</sup>	Difference	CRF	IEA	Difference
		(TJ)		(%)	(TJ)		(%)	(TJ)		(%)	(TJ)		(%)	(TJ)		(%)	(TJ)		(%)
Austria	NCV	0	0	0.0	743	347	-53.4	0	0	0.0	0	0	0.0	0	0	0.0	743	347	-53.4
Belgium	NCV		4,863	100.0	5,959	2,687	-54.9		186,537	100.0		33,497	100.0	0	191,400	100.0	5,959	36,183	507.2
Bulgaria		NO	0	0.0	NO		0.0	42		-100.0	3,975		-100.0	42	0	-100.0	3,975	0	-100.0
Canada	GCV	33,851	32,705	-3.4	38,103	38,635	1.4	43,658	37,951	-13.1	7,549	7,709	2.1	77,509	70,656	-8.8	45,652	46,344	1.5
Czech Republic	NCV	0	0	0.0	423	260	-38.5	NO	0	0.0	NO	0	0.0	0	0	0.0	423	260	-38.5
Denmark	NCV	1,513	1,487	-1.7	3,605	3,293	-8.6	25,924	24,799	-4.3	21,389	21,710	1.5	27,437	26,286	-4.2	24,994	25,003	0.0
Estonia	NCV	0	0	0.0	212	520	145.3	2,287	2,291	0.2	1,902	1,950	2.5	2,287	2,291	0.2	2,114	2,470	16.8
European Community		NE			NE		0.0	NE		0.0	NE		0.0	NE	0	0.0	NE	0	0.0
Finland	NCV	1,751	1,527	-12.8	2,410	4,247	76.2	17,914	17,765	-0.8	6,029	6,153	2.1	19,665	19,293	-1.9	8,439	10,400	23.2
France	NCV	1,750	1,206	-31.1	20,044	20,973	4.6	86,860	102,935	18.5	18,778	20,930	11.5	88,610	104,141	17.5	38,822	41,903	7.9
Germany	NCV	NO		0.0	11,427		-100.0	66,000		-100.0	20,750		-100.0	66,000	0	-100.0	32,177	0	-100.0
Greece	NCV	13,464	13,465	0.0	15,431	14,950	-3.1	117,877	117,887	0.0	26,518	26,520	0.0	131,341	131,352	0.0	41,949	41,470	-1.1
Iceland	NCV	113	121	6.8	160	173	8.6	79	80	1.8	1,950	1,907	-2.2	192	201	4.8	2,110	2,080	-1.4
Ireland	NCV	837	804	-4.0	837	43	-94.8	0	1,447	100.0	5,317	5,417	1.9	837	2,251	168.8	6,155	5,460	-11.3
Italy	NCV	67,212	0	-100.0	11,736	10,963	-6.6	52,618	85,210	61.9	IE	31,287	100.0	119,830	85,210	-28.9	11,736	42,250	260.0
Latvia	NCV	213	201	-5.8	510	520	2.0	2,399	3,899	62.5	NO	4,333	100.0	2,612	4,100	56.9	510	4,853	851.6
Luxembourg																			
Netherlands	NCV		0	0.0	13,280	13,433	1.2	523,717	513,469	-2.0	93,626	95,030	1.5	523,717	513,469	-2.0	106,906	108,463	1.5
New Zealand	GCV	NE	0	0.0	NE	4,607	100.0	8,744	7,319	-16.3	2,184	3,375	54.6	8,744	7,319	-16.3	2,184	7,982	265.5
Norway	NCV	250	241	-3.7	30,816	27,907	-9.4	14,851	14,228	-4.2	19,761	19,847	0.4	15,102	14,470	-4.2	50,577	47,753	-5.6
Poland	NCV	2,230	0	-100.0	1,170	87	-92.6	10,425	9,847	-5.5	958	953	-0.5	12,655	9,847	-22.2	2,128	1,040	-51.1
Portugal		521	0	-100.0	2,029	2,123	4.7	18,241	13,264	-27.3	5,123	6,630	29.4	18,762	13,264	-29.3	7,151	8,753	22.4
Romania	NCV	0	3658	100.0	3,691	563	-84.7	NE	0	0.0	NE	0	0.0	0	3,658	100.0	3,691	563	-84.7
Slovakia	NCV			0.0	1,592	1592	0.0	NO	0	0.0	NO	0	0.0	0	0	0.0	1,592	1,592	0.0
Spain	NCV	19,094	8,722	-54.3	8,057	49,963	520.1	236,335	236,578	0.1	42,930	43,247	0.7	255,429	245,300	-4.0	50,986	93,210	82.8
Sweden	NCV	1,779	1,728	-2.8	4,615	4,853	5.2	52,968	51,327	-3.1	6,281	6,457	2.8	54,746	53,055	-3.1	10,896	11,310	3.8
Switzerland	NCV	IE	0	0.0	1,488	390	-73.8	NO	0	0.0	NO	520	100.0	IE/NO	0	0.0	1,488	910	-38.8
United Kingdom	NCV	1,322	1,246	-5.7	27,960	26,737	-4.4	34,754	33,803	-2.7	49,463	62,097	25.5	36,076	35,049	-2.8	77,423	88,833	14.7
United States	GCV	432,579	3,258	-99.2	360,865	0	-100.0	449,493	556,571	23.8	76,384	304,748	299.0	882,071	559,829	-36.5	437,249	304,748	-30.3

<sup>a</sup> Source: IEA [unpublished]

**Table 1.35**  
**Civil aviation (domestic) – trend information**  
**CO<sub>2</sub> emissions (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	65	88	100	106	118	121	125	121
<b>Belgium</b>	8	7	5	4	4	146	9	9
<b>Bulgaria<sup>b</sup></b>					120	35	32	46
<b>Canada</b>	10,407	10,527	11,558	12,054	12,582	13,168	13,306	11,751
<b>Czech Republic<sup>b</sup></b>	82				14	13	95	131
<b>Denmark</b>	216	198	206	213	194	174	155	168
<b>Estonia<sup>b</sup></b>						67	65	49
<b>European Community</b>	NE	NE	NE	NE	NE	NE	NE	NE
<b>Finland</b>	403	353	380	413	447	465	367	360
<b>France</b>	4,541	5,305	5,726	5,778	6,080	6,053	6,173	5,865
<b>Germany</b>	2,897	3,472	3,634	3,774	3,881	4,164	4,396	4,292
<b>Greece<sup>b</sup></b>	1,458	1,215	1,278	1,228	1,149	1,679	1,445	1,221
<b>Iceland<sup>b</sup></b>						32	28	24
<b>Ireland</b>	59	63	64	69	80	84	96	109
<b>Italy</b>								2,722
<b>Latvia</b>	5	3	3	3	4	2	4	5
<b>Luxembourg</b>								
<b>Netherlands</b>	492	346	298	321	362	420	282	197
<b>New Zealand<sup>b</sup></b>		861	830	811				726
<b>Norway</b>	678				1,005	1,155	1,056	1,062
<b>Poland<sup>b</sup></b>							479	455
<b>Portugal</b>	799	965	1,033	1,064	1,187	1,317	1,311	1,335
<b>Romania<sup>b</sup></b>		0	7	17	22	23	19	426
<b>Slovakia</b>					32	28	32	27
<b>Spain</b>	4,135	3,308	3,831	4,128	4,722	5,188	5,497	5,618
<b>Sweden</b>	673	623	604	654	667	699	644	625
<b>Switzerland</b>	312							235
<b>United Kingdom</b>	2,158	2,380	2,487	2,572	2,689	2,753	2,801	2,938
<b>United States</b>	176,881	171,450	180,156	178,962	183,025	186,771	195,318	183,929

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>	13.9	5.2	11.4	2.6	3.6	-3.4	86.1
<b>Belgium</b>	-27.2	-18.1	1.7	3,180.1	-93.5	0.0	14.4
<b>Bulgaria</b>				-70.4	-10.1	45.4	
<b>Canada</b>	9.8	4.3	4.4	4.7	1.0	-11.7	12.9
<b>Czech Republic</b>				-5.5	621.4	37.2	59.5
<b>Denmark</b>	3.8	3.4	-8.6	-10.7	-10.5	8.4	-22.2
<b>Estonia</b>					-3.2	-25.1	
<b>European Community</b>							
<b>Finland</b>	7.7	8.6	8.3	4.0	-21.0	-2.0	-10.6
<b>France</b>	7.9	0.9	5.2	-0.4	2.0	-5.0	29.2
<b>Germany</b>	4.7	3.9	2.8	7.3	5.6	-2.4	48.1
<b>Greece</b>	5.2	-4.0	-6.4	46.2	-14.0	-15.5	-16.3
<b>Iceland</b>					-12.1	-12.1	
<b>Ireland</b>	2.9	7.4	15.1	6.2	13.7	13.5	84.6
<b>Italy</b>							
<b>Latvia</b>	3.8	4.2	14.8	-39.7	73.1	18.7	6.2
<b>Luxembourg</b>							
<b>Netherlands</b>	-13.8	7.4	12.9	15.9	-32.7	-30.3	-60.0
<b>New Zealand</b>	-3.6	-2.3					
<b>Norway</b>				14.9	-8.6	0.6	56.6
<b>Poland</b>						-5.0	
<b>Portugal</b>	7.1	3.0	11.5	11.0	-0.4	1.8	67.0
<b>Romania</b>	6,317.4	135.6	26.3	2.9	-17.5	2,193.4	
<b>Slovakia</b>				-12.3	14.3	-14.7	
<b>Spain</b>	15.8	7.7	14.4	9.9	6.0	2.2	35.9
<b>Sweden</b>	-3.0	8.3	2.0	4.7	-7.9	-2.9	-7.1
<b>Switzerland</b>						-0.8	-24.8
<b>United Kingdom</b>	4.5	3.4	4.5	2.4	1.8	4.9	36.1
<b>United States</b>	5.1	-0.7	2.3	2.0	4.6	-5.8	4.0

**Table 1.36****International bunkers: aviation – trend information****CO<sub>2</sub> emissions (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	886	1,327	1,466	1,526	1,578	1,542	1,675	1,615
<b>Belgium</b>	3,095	2,418	3,109	3,912	4,709	4,381	3,907	3,445
<b>Bulgaria</b>	1,037	549	472	428	280	319	270	393
<b>Canada</b>	2,729	2,603	3,073	2,992	2,879	3,032	3,026	3,162
<b>Czech Republic</b>	617		459	407	225	539	343	439
<b>Denmark</b>	1,762	1,867	1,970	2,010	2,158	2,290	2,348	2,378
<b>Estonia</b>								
<b>European Community</b>	56,160	70,512	74,989	80,097	86,320	92,178	97,268	102,221
<b>Finland</b>	974	867	957	965	990	1,058	1,027	1,054
<b>France</b>	8,618	10,513	11,240	11,634	12,255	13,761	14,361	14,320
<b>Germany</b>	11,589	13,887	14,537	15,097	15,523	16,656	24,266	17,168
<b>Greece<sup>b</sup></b>	2,840	3,108	2,959	2,945	3,090	2,881	3,139	2,954
<b>Iceland</b>	220	236	272	292	338	363	408	349
<b>Ireland</b>	1,059	1,085	1,206	1,258	1,296	1,542	1,566	1,986
<b>Italy</b>	4,195	5,854	6,435	6,648	7,189	7,712	8,591	8,689
<b>Latvia</b>	104	47	49	51	59	61	51	56
<b>Luxembourg<sup>b</sup></b>						1,019	971	1,051
<b>Netherlands</b>	4,497	7,665	8,249	8,979	9,709	10,070	10,067	9,864
<b>New Zealand</b>	1,359	1,582	1,649	1,724	1,723	1,968	1,780	1,905
<b>Norway</b>	619	586	691	771	821	942	913	835
<b>Poland</b>	NE	308	280	346	342	346	358	336
<b>Portugal</b>	883	853	770	796	796	868	972	983
<b>Romania</b>							NO	NE
<b>Slovakia</b>								
<b>Spain</b>	3,432	6,211	6,554	7,071	7,478	7,737	8,314	8,492
<b>Sweden</b>	1,335	1,437	1,476	1,560	1,673	1,879	1,926	1,871
<b>Switzerland</b>	3,207	3,774	3,915	4,064	4,249	4,538	4,743	4,461
<b>United Kingdom</b>	14,791	19,080	20,301	21,622	24,198	26,494	29,412	27,613
<b>United States</b>	46,591	51,117	52,164	55,898	54,959	58,833	58,409	58,869

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>	10.5	4.0	3.5	-2.3	8.6	-3.6	82.3
<b>Belgium</b>	28.6	25.8	20.4	-7.0	-10.8	-11.8	11.3
<b>Bulgaria</b>	-14.1	-9.4	-34.5	14.1	-15.5	45.8	-62.1
<b>Canada</b>	18.0	-2.6	-3.8	5.3	-0.2	4.5	15.9
<b>Czech Republic</b>		-11.3	-44.8	139.7	-36.3	28.0	-28.8
<b>Denmark</b>	5.5	2.0	7.4	6.1	2.5	1.3	34.9
<b>Estonia</b>							
<b>European Community</b>	6.3	6.8	7.8	6.8	5.5	5.1	82.0
<b>Finland</b>	10.4	0.8	2.6	6.9	-2.9	2.6	8.2
<b>France</b>	6.9	3.5	5.3	12.3	4.4	-0.3	66.2
<b>Germany</b>	4.7	3.9	2.8	7.3	45.7	-29.3	48.1
<b>Greece</b>	-4.8	-0.5	4.9	-6.8	9.0	-5.9	4.0
<b>Iceland</b>	15.0	7.6	15.8	7.5	12.2	-14.4	58.9
<b>Ireland</b>	11.1	4.3	3.0	19.0	1.6	26.9	87.6
<b>Italy</b>	9.9	3.3	8.1	7.3	11.4	1.1	107.1
<b>Latvia</b>	3.8	4.1	14.9	4.4	-16.5	9.5	-45.9
<b>Luxembourg</b>					-4.7	8.2	
<b>Netherlands</b>	7.6	8.8	8.1	3.7	0.0	-2.0	119.3
<b>New Zealand</b>	4.2	4.5	-0.1	14.2	-9.5	7.0	40.2
<b>Norway</b>	18.1	11.5	6.6	14.6	-3.1	-8.5	34.9
<b>Poland</b>	-9.2	23.6	-1.0	1.0	3.6	-6.1	
<b>Portugal</b>	-9.7	3.4	-0.1	9.1	12.0	1.1	11.3
<b>Romania</b>							
<b>Slovakia</b>							
<b>Spain</b>	5.5	7.9	5.7	3.5	7.5	2.1	147.5
<b>Sweden</b>	2.7	5.7	7.2	12.3	2.5	-2.9	40.1
<b>Switzerland</b>	3.7	3.8	4.5	6.8	4.5	-5.9	39.1
<b>United Kingdom</b>	6.4	6.5	11.9	9.5	11.0	-6.1	86.7
<b>United States</b>	2.0	7.2	-1.7	7.0	-0.7	0.8	26.4

**Table 1.37****Navigation (domestic) – trend information****CO<sub>2</sub> emissions (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	52	54	54	62	62	63	63	64
<b>Belgium</b>	312	312	313	325	336	368	438	438
<b>Bulgaria<sup>b</sup></b>					10	8	0	0
<b>Canada</b>	4,733	4,064	4,158	4,216	4,827	4,646	4,776	5,177
<b>Czech Republic<sup>b</sup></b>	56				32	32	29	31
<b>Denmark</b>	539	625	648	571	468	426	433	424
<b>Estonia<sup>b</sup></b>						18	24	22
<b>European Community</b>	NE	NE	NE	NE	NE	NE	NE	NE
<b>Finland</b>	227	264	258	249	257	501	481	464
<b>France</b>	1,907	2,014	1,868	1,905	1,882	2,056	1,855	2,150
<b>Germany</b>	2,050	1,744	1,602	1,267	1,161	946	877	846
<b>Greece<sup>b</sup></b>	1,825	1,744	1,493	1,812	2,793	2,761	1,580	2,145
<b>Iceland<sup>b</sup></b>						18	16	20
<b>Ireland</b>	85	104	104	110	116	132	122	125
<b>Italy</b>								6,639
<b>Latvia</b>	464	18	18	22	24	44	41	54
<b>Luxembourg<sup>b</sup></b>						6		
<b>Netherlands</b>	877	920	800	848	817	807	1,004	969
<b>New Zealand</b>	250	332	285	210	177	219	376	293
<b>Norway</b>	1,929				2,534	2,766	2,521	2,286
<b>Poland<sup>b</sup></b>							80	244
<b>Portugal</b>	477	314	313	246	204	258	254	194
<b>Romania</b>		77	3	11	5	4	6	270
<b>Slovakia<sup>b</sup></b>					166	142	114	119
<b>Spain</b>	1,536	1,603	1,652	1,317	1,322	1,770	1,850	2,098
<b>Sweden</b>	645	453	443	507	582	645	670	668
<b>Switzerland</b>	101							110
<b>United Kingdom</b>	3,461	3,102	3,415	3,262	3,005	2,741	2,648	2,128
<b>United States</b>	48,596	51,659	48,111	33,643	27,399	38,584	59,672	58,278

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>	0.1	14.5	1.0	0.7	0.7	0.7	22.5
<b>Belgium</b>	0.1	3.9	3.5	9.5	19.0	0.0	40.4
<b>Bulgaria</b>				-13.8			
<b>Canada</b>	2.3	1.4	14.5	-3.7	2.8	8.4	9.4
<b>Czech Republic</b>				0.8	-9.1	5.7	-44.6
<b>Denmark</b>	3.6	-11.9	-17.9	-9.0	1.5	-2.1	-21.3
<b>Estonia</b>					29.6	-8.1	
<b>European Community</b>							
<b>Finland</b>	-2.3	-3.4	3.0	95.4	-4.1	-3.6	104.4
<b>France</b>	-7.3	2.0	-1.2	9.2	-9.8	15.9	12.7
<b>Germany</b>	-8.1	-20.9	-8.4	-18.5	-7.3	-3.6	-58.7
<b>Greece</b>	-14.3	21.4	54.1	-1.2	-42.8	35.8	17.5
<b>Iceland</b>					-8.9	23.4	
<b>Ireland</b>	-0.2	6.0	5.6	13.3	-7.2	2.4	46.9
<b>Italy</b>				-8.8	-10.0	6.1	
<b>Latvia</b>	-0.4	25.0	8.8	82.6	-6.4	30.4	-88.3
<b>Luxembourg</b>							
<b>Netherlands</b>	-12.9	5.9	-3.7	-1.1	24.3	-3.4	10.5
<b>New Zealand</b>	-14.3	-26.1	-15.9	23.5	71.9	-22.1	16.9
<b>Norway</b>				9.2	-8.9	-9.3	18.5
<b>Poland</b>						207.3	
<b>Portugal</b>	-0.3	-21.6	-17.1	26.6	-1.7	-23.5	-59.4
<b>Romania</b>	-96.3	269.6	-49.6	-16.9	45.0	4,129.3	
<b>Slovakia</b>				-14.5	-19.8	4.8	
<b>Spain</b>	3.1	-20.3	0.3	33.9	4.5	13.4	36.5
<b>Sweden</b>	-2.4	14.5	14.9	10.7	3.9	-0.3	3.6
<b>Switzerland</b>				-1.7	-1.0	56.7	8.5
<b>United Kingdom</b>	10.1	-4.5	-7.9	-8.8	-3.4	-19.6	-38.5
<b>United States</b>	-6.9	-30.1	-18.6	40.8	54.7	-2.3	19.9

**Table 1.38****International bunkers: marine – trend information****CO<sub>2</sub> emissions (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	NO	NO	NO	NO	NO	NO	NO	NO
<b>Belgium</b>	13,303	12,955	15,376	17,605	18,159	14,586	16,046	16,057
<b>Bulgaria</b>	1,016	882	732	1,092	1,233	26	205	306
<b>Canada</b>	2,995	3,313	3,085	3,046	3,776	3,368	3,446	3,712
<b>Czech Republic</b>								
<b>Denmark</b>	3,095	5,073	4,820	4,419	4,429	4,166	4,281	3,605
<b>Estonia</b>	0	276	289	319	339	362	329	313
<b>European Community</b>	99,361	102,393	109,925	120,524	125,739	119,678	125,268	133,950
<b>Finland</b>	1,800	1,044	1,181	1,286	1,658	1,764	2,032	1,815
<b>France</b>	8,137	7,217	7,568	8,379	9,166	9,311	9,625	8,183
<b>Germany</b>	7,980	6,533	6,472	6,922	6,565	6,685	17,582	6,684
<b>Greece<sup>b</sup></b>	8,028	11,254	9,864	9,927	11,058	9,838	11,359	11,030
<b>Iceland</b>	99	141	124	149	177	164	219	149
<b>Ireland</b>	56	368	497	484	503	543	477	390
<b>Italy</b>	4,396	4,043	3,006	3,062	3,339	3,089	3,851	4,189
<b>Latvia</b>	89	101	104	148	178	156	185	184
<b>Luxembourg</b>								
<b>Netherlands</b>	35,267	36,621	37,196	39,530	39,822	41,143	43,429	47,682
<b>New Zealand</b>	1,031	1,125	1,063	1,112	1,073	916	746	787
<b>Norway</b>	1,478	2,256	2,480	3,000	2,899	2,733	2,712	2,624
<b>Poland</b>	NE	1,814	1,789	1,903	1,749	1,338	1,265	826
<b>Portugal</b>	1,194	1,039	1,112	1,158	1,225	1,492	1,624	1,801
<b>Romania</b>							NO	NE
<b>Slovakia</b>								
<b>Spain</b>	11,780	10,296	15,029	18,532	19,546	19,074	19,496	21,797
<b>Sweden</b>	2,162	3,394	3,597	4,218	4,820	4,719	4,622	4,509
<b>Switzerland</b>	NO	NO	NO	NO	NO	NO	NO	NO
<b>United Kingdom</b>	6,559	6,599	7,213	8,064	8,788	6,357	5,594	6,209
<b>United States</b>	67,272	49,921	50,109	53,960	57,900	46,429	40,859	38,478

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>							
<b>Belgium</b>	18.7	14.5	3.1	-19.7	10.0	0.1	20.7
<b>Bulgaria</b>	-17.1	49.3	12.9	-97.9	704.1	49.0	-69.9
<b>Canada</b>	-6.9	-1.3	24.0	-10.8	2.3	7.7	24.0
<b>Czech Republic</b>							
<b>Denmark</b>	-5.0	-8.3	0.2	-5.9	2.8	-15.8	16.5
<b>Estonia</b>	4.5	10.7	6.2	6.7	-9.3	-4.8	
<b>European Community</b>	7.4	9.6	4.3	-4.8	4.7	6.9	34.8
<b>Finland</b>	13.1	8.9	28.9	6.4	15.2	-10.7	0.8
<b>France</b>	4.9	10.7	9.4	1.6	3.4	-15.0	0.6
<b>Germany</b>	-0.9	6.9	-5.1	1.8	163.0	-62.0	-16.2
<b>Greece</b>	-12.4	0.6	11.4	-11.0	15.5	-2.9	37.4
<b>Iceland</b>	-11.9	20.0	18.7	-7.2	33.4	-31.8	50.6
<b>Ireland</b>	35.2	-2.7	3.8	8.0	-12.2	-18.2	592.8
<b>Italy</b>	-25.7	1.9	9.0	-7.5	24.7	8.8	-4.7
<b>Latvia</b>	2.9	42.1	19.9	-12.1	18.2	-0.5	105.6
<b>Luxembourg</b>							
<b>Netherlands</b>	1.6	6.3	0.7	3.3	5.6	9.8	35.2
<b>New Zealand</b>	-5.6	4.7	-3.5	-14.6	-18.6	5.4	-23.7
<b>Norway</b>	10.0	21.0	-3.4	-5.7	-0.8	-3.2	77.5
<b>Poland</b>	-1.4	6.4	-8.1	-23.5	-5.4	-34.7	
<b>Portugal</b>	7.0	4.2	5.8	21.8	8.9	10.9	50.9
<b>Romania</b>							
<b>Slovakia</b>							
<b>Spain</b>	46.0	23.3	5.5	-2.4	2.2	11.8	85.0
<b>Sweden</b>	6.0	17.3	14.3	-2.1	-2.0	-2.5	108.5
<b>Switzerland</b>							
<b>United Kingdom</b>	9.3	11.8	9.0	-27.7	-12.0	11.0	-5.3
<b>United States</b>	0.4	7.7	7.3	-19.8	-12.0	-5.8	-42.8



**Table 1.39****Fugitive emissions from fuels: coal mining and handling, CH<sub>4</sub> (2001)**

	Key source	Share of national total (%)	Methods and EF used <sup>a</sup>		Activity data					CH <sub>4</sub> IEF			
			Methods	EF	CRF			IEA	Difference	Underground mines		Surface mines	
					Underground mines	Surface mines	Total	Total		Mining activities	Post-mining activities	Mining activities	Post-mining activities
					(Mt)					(kg/t)			
IPCC default EF <sup>b</sup>										4.50-16.75	0.60-2.68	0.20-1.34	0-0.13
Austria		0.0	C	CS	NO	1	1	1	-17.1			0.01	
Belgium		0.0			NO	NO	NO	0					
Bulgaria	L	1.8	T1	D	3	24	27			11.73	1.67	0.80	0.07
Canada	T	0.1	CS	CS	1	84	86	70	-18.5				
Czech Republic	L	3.5	T3	CS	15	48	63	66	4.6	11.93	1.58	0.77	0.07
Denmark		0.1	D	D	0	0	0	0					
Estonia	L	1.2			7	5	12	12	1.4	1.34	0.13	0.20	0.07
European Community		0.4	C, CS, D, T1, T2	C, CS, D	NE	NE	0						
Finland		0.0	CS	CS	NO	NO	0	0					
France	L, T	0.3	C	CS	2	0	2	2	-12.9	32.14		7.36	
Germany	L, T	0.8	CS	CS	27	175	203		-100.0	9.11	0.58	0.07	NE
Greece	L, T	1.1	T1	D	NA	66	66	66	-0.5	NO	NO	1.00	IE
Iceland					NO	NO	0	0		NO	NO	NO	NO
Ireland		0.0	NA	NA				0					
Italy		0.0	D, C	D, CS	0	0	0	0	6.1	6.70		1.34	
Latvia		0.0	NO	NO	NO	NO	0	0		NO	NO	NO	NO
Luxembourg			NA	NA									
Netherlands		0.0	IE		NO	NO	0	0		NO	NO	NO	NO
New Zealand	L	0.7	T1	CS/D	1	3	4	4	-5.2	24.70	1.75	0.26	0.02
Norway		0.0	T1	D	2		2	2	0.0	0.54	IE	NO	NO
Poland	L	3.1	CS	CS	104	60	164	223	36.4	5.47	IE	0.01	
Portugal		0.0	C+T2	C	NO	NO	0	0	0.0				
Romania	L	2.2	T1	T1	10	24	35	121	248.4	11.73	1.55	0.77	0.06
Slovakia	L	1.0	T1	CS	3	NO	3	0	-100.0	6.70	0.30	NO	NO
Spain	T	0.3	T1	CS	12,570	14,117	26,687	19,240	-27.9	0.00	0.00	0.00	0.00
Sweden		0.0	CS	CS	NO	NO	0	0					
Switzerland		0.0			NO	NO	0	0					
United Kingdom	L, T	0.8	T2	CS	17	14	32	32	0.0	12.57	1.16	0.34	
United States	L, T	0.9	T2, T3	CS	345	678	1,023	1,023	0.0	5.26	1.59	0.67	0.11

<sup>a</sup> Information on methods and emission factors included in this table is as reported by Parties. 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 of default emission factors: IPCC Guidelines, volume 3, pages 1.105–1.110 (Tier 1).

**Table 1.40****Fugitive emissions from fuels: coal mining and handling – trend information****CH<sub>4</sub> emissions (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
Austria	0	0	0	0	0	0	0	0
Belgium	NO	NO	NO	NO	NO	NO	NO	NO
Bulgaria <sup>b</sup>					64	56	57	58
Canada	91	82	84	78	65	51	45	47
Czech Republic <sup>b</sup>	362				253	229	239	245
Denmark								
Estonia <sup>b</sup>						10	11	11
European Community	NE	NE	NE	NE	NE	NE	NE	NE
Finland								
France	170	186	137	117	116	111	111	71
Germany	1,134	749	651	617	553	509	396	278
Greece <sup>b</sup>	44	49	51	50	52	53	54	67
Iceland								
Ireland	NO	NO	NO	NO	NO	NO	NO	NO
Italy								1
Latvia	NO	NO	NO	NO	NO	NO	NO	NO
Luxembourg								
Netherlands								
New Zealand <sup>b</sup>		20	30	19				25
Norway	0				0	0	0	1
Poland							567	570
Portugal	3							
Romania <sup>b</sup>		228	232	188	145	127	160	159
Slovakia <sup>b</sup>					28	26	26	24
Spain	84	67	69	67	61	56	56	49
Sweden		NO	NO	NO	NO	NO	NO	
Switzerland	NO	NO	NO	NO	NO	NO	NO	NO
United Kingdom	818	504	473	445	378	310	264	243
United States	4,149	3,502	3,255	3,244	3,235	3,033	2,902	2,893

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
Austria	-14.6	2.0	0.9	-0.2	10.3	0.0	-48.7
Belgium							
Bulgaria				-12.1	1.9	1.1	
Canada	3.1	-7.2	-16.8	-20.7	-12.2	4.3	-48.3
Czech Republic				-9.5	4.4	2.4	-32.4
Denmark							
Estonia					15.5	-2.0	
European Community							
Finland							
France	-26.4	-14.6	-0.6	-4.3	0.0	-35.9	-58.0
Germany	-13.1	-5.2	-10.5	-8.0	-22.1	-30.0	-75.5
Greece	3.6	-1.6	3.5	1.9	3.0	22.8	51.2
Iceland							
Ireland							
Italy							
Latvia							
Luxembourg							
Netherlands							
New Zealand	51.5	-37.6					
Norway				23.1	56.4	182.9	490.5
Poland						0.6	
Portugal							
Romania	1.7	-19.0	-22.5	-12.7	26.3	-1.0	
Slovakia				-5.1	-2.7	-6.1	
Spain	2.3	-1.8	-10.1	-7.7	0.8	-12.2	-41.2
Sweden							
Switzerland							
United Kingdom	-6.1	-5.9	-15.0	-17.9	-14.8	-8.2	-70.3
United States	-7.0	-0.3	-0.3	-6.3	-4.3	-0.3	-30.3

**Table 1.41**

**Fugitive emissions from fuels: oil and natural gas, CH<sub>4</sub>, CO<sub>2</sub> (2001)**

	CH <sub>4</sub>				CO <sub>2</sub>				Oil											
	Key source	Share of national total (%)	Methods and EF used <sup>a</sup>		Key source	Share of national total (%)	Methods and EF used <sup>a</sup>		Production				Transport				Refining (R) / Storage (S)			
			Methods	EF			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
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
Austria		0.1	C	CS		0.2	C, CS	CS, PS		IE	IE			IE	IE		31,663	NE	Mt	Oil refined (SNAP 0401)
Belgium	L	0.6																		
Bulgaria	L	2.4	T1	D			NE	NE	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	L, T	5.4	CS	CS	L, T	2.1	CS	CS	6,758	792	10 <sup>3</sup> m <sup>3</sup>	Conventional oil, heavy oil and crude oil production	NA	NA		Liquid product transport	NE	NE		NA
Czech Republic		0.3	T1, T3	D, CS			NE		5,287		PJ	(e.g. PJ of oil produced)	NO			(e.g. PJ oil loaded in tankers)	1,320		PJ	(e.g. PJ oil refined)
Denmark		0.1	C	C	L, T	0.9	C	C				(e.g. PJ of oil produced)				(e.g. PJ oil loaded in tankers)				(e.g. PJ oil refined)
Estonia	L	2.4							4,000			(e.g. PJ of oil produced)	745			(e.g. PJ oil loaded in tankers)				(e.g. PJ oil refined)
European Community			C, CS, T1, T2, T3	C, CS, PS			C, CS, MB <sup>d</sup> , T1, T3	C, CS, PS		NE	NE		NE	NE			NE	NE		
Finland		0.0	CS	PS		0.0	CS	PS	NO	NO		(e.g. PJ of oil produced)	NE/0	NE/0	kt	kt oil loaded in tankers	NE/0	NE/0	kt	kt oil refined
France	L, T	0.3	C	CS		0.8	C	CS			PJ	PJ Produced			PJ	PJ loaded	42	914,464	PJ	PJ refined
Germany	L, T	0.7	CS	CS			NE	NE	NE	NE		(e.g. PJ of oil produced)	NE	NE		(e.g. PJ oil loaded in tankers)	0.02	NE	t	(crude oil and products)
Greece		0.1	C	C					2,650		PJ	Oil production	745		PJ	Imports of crude oil	745		PJ	Refinery input (crude oil & NGL)
Iceland									NO	NO			NO	NO			NO	NO		
Ireland		0.1	T1	CS		0.2	T1	CS				(e.g. PJ of oil produced)				(e.g. PJ oil loaded in tankers)				(e.g. PJ oil refined)
Italy	L	0.9	C, CS	CS		0.2	C, CS	CS	289		Gg	(Gg of oil produced)					20	11,647	Gg	(Gg oil refined)
Latvia	L	1.4	CS	PS			NE	NE	NO	NO		(e.g. PJ of oil produced)	NE	NE		(e.g. PJ oil loaded in tankers)	NO	NO		(e.g. PJ oil refined)
Luxembourg			C	C			C	C												
Netherlands	L, T	1.3	CS/T1	CS	L, T	0.8	CS/T3;>97	CS	IE	IE	10 <sup>6</sup> m <sup>3</sup>	m <sup>3</sup> oil produced					13	597,275	PJ	Refinery input: Crude oil, NGL, Other input
New Zealand		0.5	T1	CS/D	L	0.8	T1	CS/D	NE	NE		(e.g. PJ of oil produced)	0.8	NE	TJ	Transport of crude oil	1	NE	TJ	Refining/storage
Norway	L, T	1.2	CS	CS	L, T	4.4	CS	CS				2,439	98,347	PJ		Oil loaded	47,362	PJ		Oil refined
Poland	L	1.2	CS	CS		0.1			61,803	6,314,989	PJ	PJ of oil produced	NE	NE		NE	NE	NE		NE
Portugal	T	0.2	C+T2	C		0.4	MB		NO	NO			60,000	1,100,000	Mt	Consumption of crude	84,385	9,984,085	Mt	Production (crude and other materials)
Romania	L	5.3	T1	T1			NE	NE	300		PJ	(e.g. PJ of oil produced)	745		PJ	(e.g. PJ oil loaded in tankers)	45		PJ	(e.g. PJ oil refined)
Slovakia	L	1.6	D	D,CS			NA	NA	2,650			Production	745		PJ	Transport of crude oil (transfer)	745			Refining
Spain		0.3	CS,C	PS,C	L	0.6			9		Mg	Crude oil produced	27		Gg	Transport of crude oil	1	32,855	Gg	Oil refined
Sweden		0.0	CS	CS		0.0	CS	CS	NO	NO		(e.g. PJ of oil produced)	IE	IE		(e.g. PJ oil loaded in tankers)	IE	IE		(e.g. PJ oil refined)
Switzerland		0.5	C	CS		0.2	C	CS									1,042	NO	PJ	Crude oil used
United Kingdom	L	1.3	T3	CS	L, T	0.9	T3	CS	600	64,797	PJ	Oil and gas produced.	113	NO	Gg	Offshore loading of oil only	27	NO	PJ	Oil refinery throughput
United States	L, T	2.0	M	M		0.1	T2	CS	462,395	NE	MM Bbl/yr	Total oil produced	925		MM Bbl/yr	Total oil produced	4,894	NE	MM Bbl/yr	Total oil produced

<sup>a</sup> Information on methods and emission factors included in this table is as reported by Parties. 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.

<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 see the IPCC good practice guidance, table 2.16, pages 2.86–2.87.

<sup>d</sup> M = mass balance

Table 1.41

Fugitive emissions from fuels: oil and natural gas, CH<sub>4</sub>, CO<sub>2</sub> (2001) (continued)

	Natural Gas														
	Production/processing				Transmission				Distribution				Other leakage		
	CH <sub>4</sub> IEF <sup>a</sup>	CO <sub>2</sub> IEF	Unit	Activity data	CH <sub>4</sub> IEF <sup>a</sup>	CO <sub>2</sub> IEF	Unit	Activity data	CH <sub>4</sub> IEF <sup>a</sup>	CO <sub>2</sub> IEF	Unit	Activity data	CH <sub>4</sub> IEF <sup>a</sup>	CO <sub>2</sub> IEF	Activity data
	Value			Description	Value			Description	Value			Description	Value		Description
IPCC default EF <sup>c</sup>	46,000-314,000		PJ	Gas produced	57,000-628,000		PJ	Gas consumed/produced	57,000-288,000		PJ	Gas consumed/produced	0-384,000		PJ Gas consumed
Austria	IE	314,696	10 <sup>6</sup> m <sup>3</sup>	NG Production (SNAP 0503)	IE	IE			698	2,950	10 <sup>6</sup> m <sup>3</sup>	NG distribution (SNAP 0506)	IE	IE	
Belgium															
Bulgaria	227,000	NE	PJ	(e.g. PJ gas produced)	500,000	NE	PJ	(e.g. PJ gas consumed)							
Canada	2,837	115	10 <sup>6</sup> m <sup>3</sup>	Gross new production of natural gas (also includes oil and gas well drilling and servicing)	3,255	24	km	Pipeline distance	744	NE	km	Pipeline distance - leakage	NA	NA	
Czech Republic	49,741		PJ	(e.g. PJ gas produced)	3,188		PJ	(e.g. PJ gas consumed)	106,388		PJ	(e.g. PJ gas consumed)	49,748		PJ (e.g. PJ gas consumed)
Denmark	0.7		10 <sup>3</sup> m <sup>3</sup>	(e.g. PJ gas produced)	26		10 <sup>6</sup> m <sup>3</sup>	Gas produced and stock change							
Estonia	458,000			(e.g. PJ gas produced)	458,000			(e.g. PJ gas consumed)							
European Community	NE	NE			NE	NE			NE	NE			NE	NE	
Finland	NO	NO		(e.g. PJ gas produced)	NE/0	NE/0	PJ	PJ gas consumed	NE/0	NE/0	PJ	PJ gas distributed via local networks	1,000		t of natural gas released from pipelines
France	492	2,443,430	PJ	PJ Production (natural gas from crude oil extraction)	58,945		PJ	PJ Consumed (total amount of gas consumed)							
Germany	62	NE	TJ		9	NE	TJ		472	NE	km	(distribution net)	42	NO	TJ (gas consumed)
Greece	21,000		PJ	Natural gas production					102,500		PJ	Natural gas consumption			
Iceland	NO	NO			NO	NO			NO	NO			NO	NO	
Ireland	43,680	2,821,084	PJ	PJ of gas produced				(e.g. PJ gas consumed)	71,674		PJ	PJ of gas consumed			(e.g. PJ gas consumed)
Italy	179		10 <sup>6</sup> m <sup>3</sup>	(Mm <sup>3</sup> gas produced)	384		10 <sup>6</sup> m <sup>3</sup>	(Mm <sup>3</sup> gas transported)	7,704		10 <sup>6</sup> m <sup>3</sup>	(Mm <sup>3</sup> gas transported)			
Latvia	NO	NO		(e.g. PJ gas produced)	NE	NE		(e.g. PJ gas consumed)	NE	NE		(e.g. PJ gas consumed)		NE/NO	
Luxembourg															
Netherlands	30,265	86,191	PJ	Gas produced	1,474	71	PJ	gas transported	81,049	2,859	PJ	gas distributed			
New Zealand	NE	NE		(e.g. PJ gas produced)	207	20	TJ	Energy content of fugitive emission	NE	NE		(e.g. PJ gas consumed)	NE	NE	(e.g. PJ gas consumed)
Norway															
Poland	100,982	56,154	PJ	PJ of gas produced	442,072	3,240	PJ	PJ of gas used	NE	NE		NE	NE	NE	NE
Portugal	NO	NO			100		TJ	Gas consumed					NE	NE	
Romania	288,000		PJ	(e.g. PJ gas produced)	364,300		PJ	(e.g. PJ gas consumed)							PJ (e.g. PJ gas consumed)
Slovakia	67,000		PJ	Production	2,000		PJ	Transfer					120,000		PJ Consumed
Spain	70,889		PJ	PJ gas produced (NCV)	27,414	380	PJ	PJ gas (NCV)	36,023	505	PJ	PJ gas consumed (NCV)			
Sweden	NO	NO		(e.g. PJ gas produced)	IE	IE		(e.g. PJ gas consumed)	IE	IE		(e.g. PJ gas consumed)			
Switzerland					112126.64	497503.06	PJ	Apparent gas consumption							
United Kingdom	IE	IE		(e.g. PJ gas produced)	IE	IE		(e.g. PJ gas consumed)	101,253	NO	PJ	Gas consumed	IE	IE	(e.g. PJ gas consumed)
United States	111,077	NE	bill ft <sup>3</sup> yr	Total natural gas produced	87,111	IE	bill ft <sup>3</sup> yr	Total natural gas consumed	72,627	NE	bill ft <sup>3</sup> yr	Total Natural Gas Consumed	IE		NA

<sup>a</sup> Information on methods and emission factors included in this table is as reported by Parties. 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.<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 see the IPCC good practice guidance, table 2.16, pages 2.86–2.87.

**Table 1.41****Fugitive emissions from fuels: oil and natural gas, CH<sub>4</sub>, CO<sub>2</sub> (2001) (continued)**

	Venting and flaring																	
	Oil			Gas														
	Venting <sup>a</sup>			Venting <sup>a</sup>			Flaring <sup>a</sup>			Venting <sup>a</sup>			Combined					
	CH <sub>4</sub> IEF <sup>b</sup>	Activity data		CH <sub>4</sub> IEF <sup>b</sup>	Activity data		CH <sub>4</sub> IEF <sup>b</sup>	CO2 IEF	Activity data		CH <sub>4</sub> IEF <sup>b</sup>	Activity data		CH <sub>4</sub> IEF <sup>b</sup>	CO2 IEF	Activity data		
	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	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
Austria																		
Belgium										(e.g. PJ gas consumption)								
Bulgaria	2,000	PJ	(e.g. PJ oil produced)	18,000	PJ	(e.g. PJ gas produced)	NE	NE			NE			NE	NE			
Canada	NE		NA	NE		NA	IE	IE		NA	NE	10 <sup>6</sup> m <sup>3</sup>	Net withdrawals of natural gas	141	33,285	10 <sup>6</sup> m <sup>3</sup>	Gross new production of natural gas	
Czech Republic			(e.g. PJ oil produced)			(e.g. PJ gas produced)				(e.g. PJ gas consumption)								
Denmark							0	57	GJ	(e.g. PJ gas consumption)								
Estonia	4,000		(e.g. PJ oil produced)	18,000		(e.g. PJ gas produced)												
European Community																		
Finland		kt	kt oil refined			(e.g. PJ gas produced)				(e.g. PJ gas consumption)								
France														470,612	96,807,000	PJ	PJ consumed	
Germany	NE		(e.g. PJ oil produced)	NE		(e.g. PJ gas produced)	NE	NE		(natural gas)	NE			NE	NE			
Greece	2,000	PJ	Oil production	NE	PJ	Natural gas production												
Hungary																		
Iceland	NO			NO			NO	NO			NO			NO	NO			
Ireland			(e.g. PJ oil produced)			(e.g. PJ gas consumed)		2,299,795	kt	Quantity of gas flared								
Italy				IE						(e.g. PJ gas consumption)								
Latvia	NO		(e.g. PJ oil produced)	NO		(e.g. PJ gas produced)	C	NO			NO			NO	NO			
Luxembourg																		
Netherlands											IE			IE	IE			
New Zealand	IE		(e.g. PJ oil produced)	IE		(e.g. PJ gas produced)	IE	IE		(e.g. PJ gas consumption)	IE			87	35,462	TJ	Venting and flaring from oil and gas	
Norway	IE		(e.g. PJ oil produced)	IE		(e.g. PJ gas produced)	7,161	60,421,004	PJ	Gas flared	1,375	PJ	Oil and gas produced	IE	IE			
Poland	NE		NE	NE		NE	NE	NE		NE	NE		NE	NE	NE		NE	
Portugal	340	Mt	Oil refined															
Romania		PJ	(e.g. PJ oil produced)	6,000	PJ	(e.g. PJ gas produced)			PJ	(e.g. PJ gas consumption)		PJ				PJ		
Slovakia																		
Spain			(e.g. PJ oil produced)			(e.g. PJ gas produced)	5.4	56,291	PJ	PJ gas consumption (NCV)								
Sweden	IE		(e.g. PJ oil produced)	IE		(e.g. PJ gas produced)	IE	IE		(e.g. PJ gas consumption)	IE			IE	IE			
Switzerland																		
United Kingdom			(e.g. PJ oil produced)			(e.g. PJ gas produced)				(e.g. PJ gas consumption)				291,025	77,725,144	PJ	Gas consumption	
United States	IE		(e.g. PJ oil produced)	IE		(e.g. PJ gas produced)	IE	IE		(e.g. PJ gas consumption)	IE		NA	IE	54,706,668	TBtu	Flared gas	

<sup>a</sup> Information on methods and emission factors included in this table is as reported by Parties. 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.<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 good practice guidance, table 2.16, pages 2.86–2.87.

**Table 1.42****Fugitive emissions from fuels: oil and natural gas – trend information****CO<sub>2</sub> emissions (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
Austria	120	149	95	143	165	194	187	207
Belgium	NE	NE	NE	NE	NE	NE	0	NE
Bulgaria	NE	NE	NE	NE	NE	NE	NE	NE
Canada	9,833	12,974	13,485	13,632	13,787	14,395	14,802	15,307
Czech Republic								0
Denmark	240	365	400	565	422	903	593	633
Estonia								0
European Community	17,247	15,886	16,256	15,778	16,210	16,098	15,880	16,377
Finland	42	40	24	26	24	24	25	23
France	4,306	3,921	4,005	4,237	4,145	3,997	4,077	4,208
Germany	NE	NE	NE	NE	NE	NE	NE	NE
Greece								0
Iceland	NO	NO	NO	NO	NO	NO	NO	NO
Ireland	139	167	161	141	108	117	71	134
Italy	999	1,053	1,054	1,108	1,204	1,202	1,291	1,296
Latvia	NO/NE	NO/NE	NO/NE	NO/NE	NO/NE	NO/NE	NO/NE	NO/NE
Luxembourg								0
Netherlands	308	810	1,003	1,018	1,554	1,516	1,591	1,666
New Zealand <sup>b</sup>	615	628	673	760				574
Norway	2,003	1,989	2,196	2,169	2,122	2,606	2,729	2,490
Poland	53	86	94	86	105	125	184	216
Portugal	155	224	215	227	247	272	289	347
Romania							NA	NE
Slovakia								0
Spain	1,779	1,923	1,903	1,974	2,045	1,982	2,244	2,193
Sweden	22	11	26	27	19	NO	3	15
Switzerland	75	83	92	89	91	93	89	93
United Kingdom	9,138	7,224	7,372	6,312	6,277	5,891	5,509	5,658
United States	5,514	8,729	8,233	7,565	6,250	6,679	5,525	5,179

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
Austria	-36.6	51.5	15.3	17.7	-3.5	10.4	72.5
Belgium							
Bulgaria							
Canada	3.9	1.1	1.1	4.4	2.8	3.4	55.7
Czech Republic							
Denmark	9.6	41.1	-25.3	113.8	-34.3	6.8	163.9
Estonia							
European Community	2.3	-2.9	2.7	-0.7	-1.4	3.1	-5.0
Finland	-39.9	11.3	-7.9	0.0	3.0	-9.8	-46.0
France	2.1	5.8	-2.2	-3.6	2.0	3.2	-2.3
Germany							
Greece							
Iceland							
Ireland	-3.6	-12.3	-23.5	8.5	-39.5	89.2	-3.5
Italy	0.2	5.1	8.6	-0.1	7.4	0.4	29.8
Latvia							
Luxembourg							
Netherlands	23.8	1.5	52.6	-2.4	5.0	4.7	440.6
New Zealand	7.2	12.9	-11.8				-6.7
Norway	10.4	-1.2	-2.2	22.8	4.7	-8.7	24.3
Poland	9.3	-8.5	22.1	19.0	47.1	17.4	307.3
Portugal	-3.6	5.4	8.9	10.0	6.4	20.0	124.4
Romania							
Slovakia							
Spain	-1.0	3.7	3.6	-3.1	13.2	-2.3	23.2
Sweden	131.2	5.3	-29.6			496.7	-29.8
Switzerland	10.5	-3.3	2.5	2.2	-4.5	4.4	24.7
United Kingdom	2.0	-14.4	-0.5	-6.2	-6.5	2.7	-38.1
United States	-5.7	-8.1	-17.4	6.9	-17.3	-6.3	-6.1

**Table 1.42****Fugitive emissions from fuels: oil and natural gas – trend information (continued)****CH<sub>4</sub> emissions (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	5	6	6	6	6	6	6	6
<b>Belgium</b>	36	33	36	36	40	43	42	41
<b>Bulgaria</b>	133	122	124	99	88	73	83	76
<b>Canada</b>	1,247	1,671	1,785	1,787	1,774	1,776	1,822	1,832
<b>Czech Republic</b>	32		32	35	28	29	29	23
<b>Denmark</b>	1	3	3	4	3	4	4	4
<b>Estonia</b>	38	18	20	19	18	18	20	22
<b>European Community</b>	1,570	1,463	1,480	1,416	1,404	1,375	1,340	1,349
<b>Finland</b>	0	0	1	0	1	0	0	1
<b>France</b>	118	96	92	92	92	91	91	91
<b>Germany</b>	368	359	374	362	360	355	350	353
<b>Greece<sup>b</sup></b>	0	0	0	0	1	1	2	8
<b>Iceland</b>								
<b>Ireland</b>	7	6	6	6	5	5	5	5
<b>Italy</b>	317	274	271	267	266	263	261	242
<b>Latvia</b>	13	10	10	9	9	9	8	8
<b>Luxembourg<sup>b</sup></b>						2	2	2
<b>Netherlands</b>	179	170	188	156	147	144	131	134
<b>New Zealand<sup>b</sup></b>	15	14	15	17	18	18		18
<b>Norway</b>	14	25	25	28	25	24	29	33
<b>Poland</b>	205	186	197	193	196	191	206	216
<b>Portugal</b>	2	2	2	2	5	12	10	9
<b>Romania</b>		534	525	440	404	386	381	378
<b>Slovakia</b>	35	35	36	36	35	36	35	37
<b>Spain</b>	28	35	36	42	45	35	40	47
<b>Sweden</b>	0	0	0	0	0	0	0	0
<b>Switzerland</b>	15	13	13	13	12	12	12	12
<b>United Kingdom</b>	513	477	464	441	433	413	396	405
<b>United States</b>	7,119	7,212	7,207	7,124	6,994	6,756	6,782	6,599

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

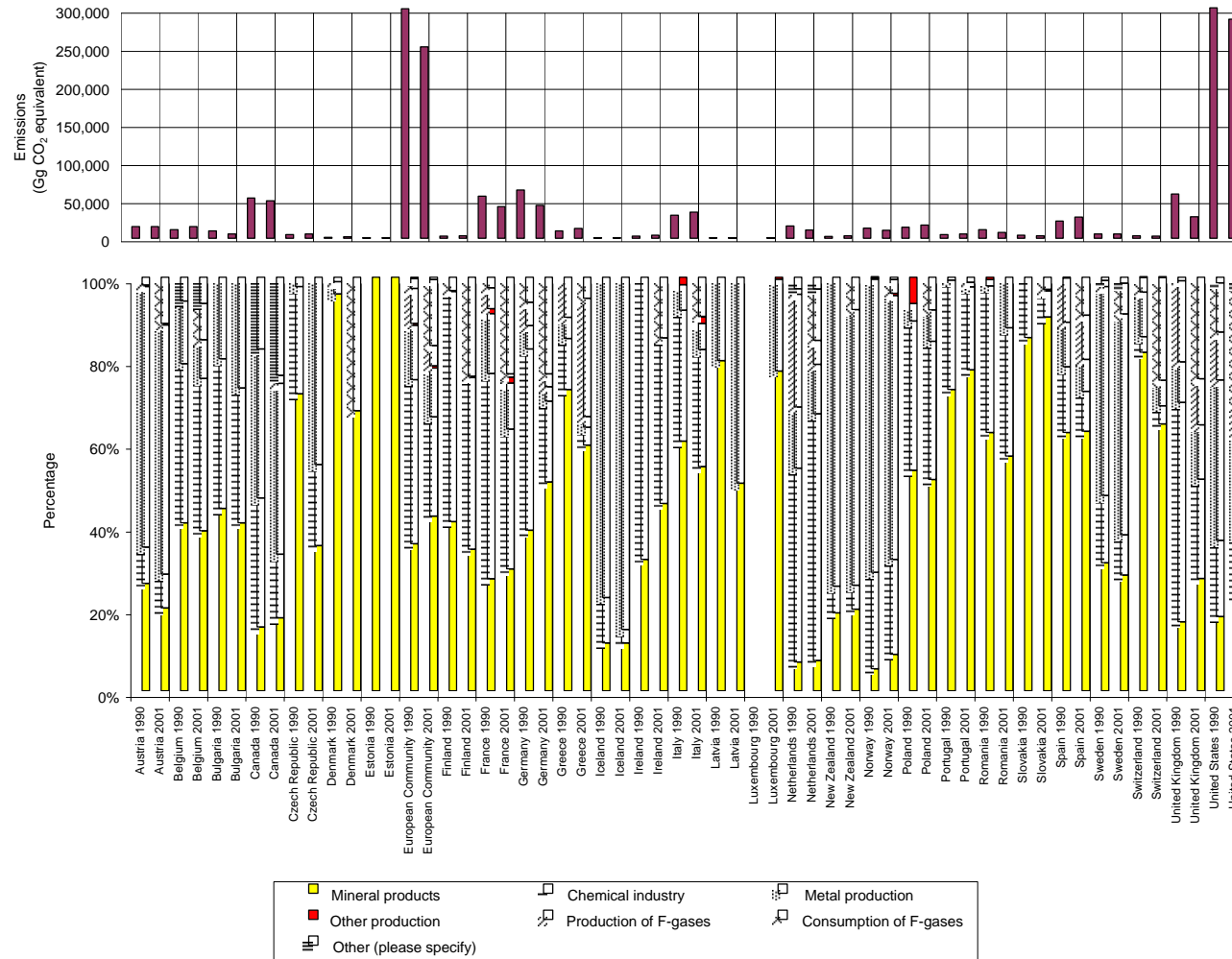
**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>	6.3	-3.1	2.5	1.8	-3.4	5.1	33.3
<b>Belgium</b>	8.7	-0.4	12.0	8.0	-1.4	-3.0	15.6
<b>Bulgaria</b>	1.6	-19.9	-11.6	-17.1	13.5	-7.6	-42.8
<b>Canada</b>	6.8	0.1	-0.7	0.1	2.6	0.5	46.9
<b>Czech Republic</b>		8.4	-19.4	2.1	0.0	-19.1	-27.7
<b>Denmark</b>	-6.5	16.7	-14.0	45.9	-20.1	5.4	278.0
<b>Estonia</b>	10.6	-2.6	-5.5	-2.6	14.8	7.5	-42.0
<b>European Community</b>	1.1	-4.3	-0.8	-2.1	-2.6	0.7	-14.0
<b>Finland</b>	194.0	-30.3	47.1	-41.6	5.4	144.7	434.1
<b>France</b>	-4.5	0.0	-0.1	-0.5	0.1	-0.7	-23.0
<b>Germany</b>	4.1	-3.0	-0.8	-1.2	-1.5	1.0	-4.1
<b>Greece</b>	12.2	101.0	230.5	59.2	42.5	452.9	3,814.1
<b>Iceland</b>							
<b>Ireland</b>	-2.9	-3.4	-11.1	-2.4	-3.6	1.3	-31.4
<b>Italy</b>	-1.3	-1.5	-0.2	-1.2	-0.7	-7.3	-23.7
<b>Latvia</b>	-3.6	-6.7	-4.1	-4.7	-7.5	-3.0	-41.0
<b>Luxembourg</b>					2.2	3.6	
<b>Netherlands</b>	10.6	-16.9	-6.3	-1.5	-9.3	2.6	-24.9
<b>New Zealand</b>	8.0	14.7	7.7	-3.0	-0.6		19.5
<b>Norway</b>	0.3	12.8	-8.5	-5.2	18.8	15.0	139.9
<b>Poland</b>	5.9	-2.0	1.6	-2.2	7.5	5.0	5.4
<b>Portugal</b>	-7.2	18.8	101.6	136.1	-15.0	-6.2	420.3
<b>Romania</b>	-1.7	-16.1	-8.4	-4.4	-1.2	-1.0	-64.0
<b>Slovakia</b>	4.7	0.9	-4.6	3.1	-2.5	5.0	4.6
<b>Spain</b>	2.6	17.6	7.2	-23.5	14.5	19.5	70.0
<b>Sweden</b>	173.7	8.7	-35.4	-100.0		667.6	-8.4
<b>Switzerland</b>	-0.5	-0.9	-0.8	-0.8	-1.0	-0.7	-16.9
<b>United Kingdom</b>	-2.7	-5.0	-1.8	-4.5	-4.1	2.1	-21.1
<b>United States</b>	-0.1	-1.2	-1.8	-3.4	0.4	-2.7	-7.3

## Industrial processes

**Figure 2.1**

**Emissions and contribution of subsectors in industrial processes<sup>a</sup>**



<sup>a</sup> 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), Poland (1988) and Romania (1989).



**Table 2.1**  
**Mineral products, CO<sub>2</sub> (2001)**

	Methods and EF used <sup>a</sup>		Cement production						Lime production			
	Methods	EF	Key source	Share of national total	Activity data (production)				CO <sub>2</sub> IEF	Key source	Share of national total	CO <sub>2</sub> IEF
					Description <sup>b</sup>	CRF	UN <sup>c</sup>	Difference <sup>d</sup>				
						(kt)	(%)	(t/t)				
IPCC default EF <sup>e</sup>									0.499 (cement)			
IPCC default EF <sup>f</sup>									0.51 (clinker)			0.59-0.86
Austria	C, CS	CS	L, T	2.7	Cement produced	3,581	3,863	7.9	0.66		0.34	0.87
Belgium			L	2.3			8,000			L	1.42	
Bulgaria	D	D	L	1.6	Clinker production	1,984	2,088	5.3	0.52	L	1.39	0.79
Canada	T1	CS	L	0.9	Cement production data	12,986	12,986	0.0	0.50		0.24	0.79
Czech Republic	T1	D	L	1.2	(e.g. cement production)	3,591	3,591	0.0	0.50		0.00	
Denmark	CS	CS	L, T	2.0	Cement production	2,529	2,678	5.9	0.54		0.15	0.23
Estonia			L	1.7	(e.g. cement or clinker production)	682	405	-40.6	0.50		0.08	0.79
European Community	C, CS, D, T2	C, CS, D, PS, T2							NE			NE
Finland	D	PS/D	L, T	0.8	Cement production	1,325	1,325	0.0	0.47		0.52	0.79
France	C	CS	L, T	1.5	kt of clinker	16,503	20,652	25.1	0.53		0.49	0.79
Germany	CS	CS	L	1.4	(Clinker production)	24,523	33,689	37.4	0.56	L	0.59	0.76
Greece	C	C	L, T	5.7	(Cement production)	15,000	15,563	3.8	0.50		0.21	0.79
Iceland	D	D	L	2.1	(e.g. cement or clinker production)	128	125	-2.1	0.44			
Ireland	D	D	L, T	2.4	Clinker production	3,300	2,500	-24.2	0.50		0.26	0.75
Italy	D	D	L	2.8	(Clinker production)	30,438	38,965	28.0	0.51		0.47	0.79
Latvia	T1/C	D	L	1	(e.g. cement or clinker production)	C	500		C			NE
Luxembourg	C	C					725					
Netherlands	CS/T2 (clinker)	PS, CS		0.2	Clinker production	886	3,400	283.9	0.49			IE
New Zealand	T1	CS		0.7	Cement production	1,088	950	-12.7	0.48		0.14	0.72
Norway	D	CS	L, T	1.5			1,870				0.07	
Poland	T1	CS	L	1.6	Production	12,074	12,074	0.0	0.50		0.42	0.79
Portugal	D+C	D+C	L, T	4.5	Total cement production	6,682	10,079	50.8	0.56			
Romania	D	D	L	1.9	(Cement production)	5,668	5,668	0.0	0.50	L	0.95	0.79
Slovakia	D	D	L	2.5	Clinker production	2,400	3,123	30.1	0.51	L	1.08	0.76
Spain	CS,C,D,T2	CS,C,D,T2	L, T	4.0	Clinker production	28,383	40,512	42.7	0.54		0.34	0.72
Sweden	CS	CS	L, T	1.7	Use of limestone	3,011	2,644	-12.2	0.40		0.52	0.77
Switzerland	C	CS	L, T	3.2	Clinker production	3,275	3,600	9.9			0.07	
United Kingdom	T2	D	L	0.8	Clinker production	10,573	12,800		0.50		0.15	0.44
United States	D,CS	D,CS	L, T	0.6	Clinker production	79,979	88,900	11.2	0.52		0.19	0.68

<sup>a</sup> Information on methods and emission factors is included in this table as reported by Parties. It may not reflect the actual method used or type of emission factor 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> Cement production from the United Nations Industrial Commodity Production Statistics Database (as of 6 June 2003), United Nations, Department of Economic and Social Affairs, Statistics Division, United Nations, New York. Data are for the year 2001, except for Belgium and the United Kingdom for which data are for the year 2000.

<sup>d</sup> As the United Nations data given in this table are for cement production, they are likely to differ from the CRF data specified as clinker. In instances where only 2000 data from the United Nations were available, no percentage comparisons with the CRF data for 2001 are given here.

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

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

**Table 2.2****Mineral products – trend information****CO<sub>2</sub> emissions (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	3,975	3,232	3,229	3,370	3,110	3,108	3,060	3,074
<b>Belgium</b>	4,569	5,620	5,620	5,254	5,327	5,298	5,875	5,875
<b>Bulgaria</b>	4,607	2,320	2,437	2,037	1,403	1,878	2,140	2,243
<b>Canada</b>	8,161	7,691	8,034	8,184	8,683	9,097	8,704	8,650
<b>Czech Republic</b>	3,380		2,479	2,498	2,661	2,362	2,251	2,000
<b>Denmark</b>	1,005	1,311	1,388	1,539	1,436	1,402	1,453	1,464
<b>Estonia</b>	614	221	207	226	368	347	354	356
<b>European Community</b>	106,934	103,242	99,457	102,528	104,698	105,931	107,476	105,952
<b>Finland</b>	1,175	836	863	878	921	1,002	1,072	1,042
<b>France</b>	14,945	12,285	12,021	11,724	12,363	11,978	12,203	12,231
<b>Germany</b>	24,512	23,794	22,007	22,660	23,115	23,525	23,515	21,802
<b>Greece<sup>b</sup></b>	6,984	7,386	7,579	7,635	7,565	7,619	7,625	7,752
<b>Iceland</b>	50	36	40	45	52	59	63	57
<b>Ireland</b>	941	1,068	1,080	1,190	1,192	1,279	1,761	1,833
<b>Italy</b>	18,223	17,768	16,302	16,513	16,722	17,488	18,061	18,473
<b>Latvia</b>	570	129	187	154	237	163	131	126
<b>Luxembourg<sup>b</sup></b>						520	547	483
<b>Netherlands</b>	1,124	1,114	899	1,084	1,025	975	857	805
<b>New Zealand</b>	448	586	581	599	574	635	630	628
<b>Norway</b>	707	959	962	1,027	969	960	967	925
<b>Poland</b>	12,036	9,364	8,193	9,872	9,790	9,983	10,573	8,841
<b>Portugal</b>	3,426	3,908	3,788	4,140	4,194	4,333	4,349	4,330
<b>Romania</b>	9,223	4,831	5,460	5,213	5,205	4,875	4,799	4,420
<b>Slovakia</b>	3,354	2,688	2,572	2,676	3,382	3,459	2,998	2,950
<b>Spain</b>	14,076	14,534	14,168	14,911	16,077	16,719	17,074	17,457
<b>Sweden</b>	1,765	1,801	1,709	1,642	1,645	1,590	1,592	1,630
<b>Switzerland</b>	2,568	1,981	1,787	1,607	1,607	1,606	1,722	1,754
<b>United Kingdom</b>	9,629	8,585	8,804	9,623	9,639	9,097	8,500	7,702
<b>United States</b>	54,127	60,998	62,427	63,418	64,788	65,345	64,449	63,645

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>	-0.1	4.4	-7.7	0.0	-1.6	0.4	-22.7
<b>Belgium</b>	0.0	-6.5	1.4	-0.6	10.9	0.0	28.6
<b>Bulgaria</b>	5.0	-16.4	-31.1	33.9	13.9	4.8	-51.3
<b>Canada</b>	4.5	1.9	6.1	4.8	-4.3	-0.6	6.0
<b>Czech Republic</b>		0.8	6.5	-11.2	-4.7	-11.1	-40.8
<b>Denmark</b>	5.9	10.9	-6.7	-2.4	3.7	0.8	45.6
<b>Estonia</b>	-6.5	9.2	62.7	-5.7	2.2	0.4	-42.1
<b>European Community</b>	-3.7	3.1	2.1	1.2	1.5	-1.4	-0.9
<b>Finland</b>	3.1	1.8	4.9	8.7	7.0	-2.8	-11.4
<b>France</b>	-2.1	-2.5	5.5	-3.1	1.9	0.2	-18.2
<b>Germany</b>	-7.5	3.0	2.0	1.8	0.0	-7.3	-11.1
<b>Greece</b>	2.6	0.7	-0.9	0.7	0.1	1.7	11.0
<b>Iceland</b>	10.7	11.4	16.9	13.4	6.7	-10.4	12.0
<b>Ireland</b>	1.2	10.2	0.2	7.3	37.7	4.1	94.7
<b>Italy</b>	-8.3	1.3	1.3	4.6	3.3	2.3	1.4
<b>Latvia</b>	45.3	-17.7	54.0	-31.3	-19.6	-3.9	-77.9
<b>Luxembourg</b>					5.3	-11.7	
<b>Netherlands</b>	-19.3	20.5	-5.4	-4.9	-12.1	-6.1	-28.4
<b>New Zealand</b>	-0.9	3.1	-4.1	10.6	-0.8	-0.3	40.0
<b>Norway</b>	0.2	6.8	-5.7	-0.9	0.8	-4.4	30.7
<b>Poland</b>	-12.5	20.5	-0.8	2.0	5.9	-16.4	-26.5
<b>Portugal</b>	-3.1	9.3	1.3	3.3	0.4	-0.4	26.4
<b>Romania</b>	13.0	-4.5	-0.2	-6.3	-1.6	-7.9	-52.1
<b>Slovakia</b>	-4.3	4.0	26.4	2.3	-13.3	-1.6	-12.0
<b>Spain</b>	-2.5	5.2	7.8	4.0	2.1	2.2	24.0
<b>Sweden</b>	-5.1	-3.9	0.2	-3.4	0.1	2.4	-7.6
<b>Switzerland</b>	-9.8	-10.1	0.0	-0.1	7.3	1.9	-31.7
<b>United Kingdom</b>	2.6	9.3	0.2	-5.6	-6.6	-9.4	-20.0
<b>United States</b>	2.3	1.6	2.2	0.9	-1.4	-1.2	17.6

**Table 2.3**

**Cement production – trend information**

**CO<sub>2</sub> emissions (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	3,088	2,498	2,496	2,643	2,382	2,381	2,347	2,347
<b>Belgium</b>	2,760	3,496	3,203	3,398	3,410	3,344	3,511	3,511
<b>Bulgaria</b>							1,092	1,032
<b>Canada</b>	5,873	5,361	5,794	5,868	6,062	6,312	6,306	6,493
<b>Czech Republic<sup>b</sup></b>	3,207				2430	2,114	2,040	1,790
<b>Denmark</b>	883	1,203	1,282	1,426	1,333	1,295	1,348	1,361
<b>Estonia<sup>b</sup></b>						321	339	340
<b>European Community</b>	NE	NE	NE	NE	NE	NE	NE	NE
<b>Finland</b>	777	428	460	543	581	618	670	625
<b>France</b>	10,948	8,644	8,444	8,120	8,695	8,395	8,570	8,664
<b>Germany</b>	16,146	15,780	14,571	14,969	15,549	15,673	15,639	13,855
<b>Greece<sup>b</sup></b>	6,760	7,129	7,328	7,278	7,328	7,328	7,328	7,478
<b>Iceland<sup>b</sup></b>						59	63	56
<b>Ireland</b>	750	900	900	1,000	1,000	1,125	1,575	1,650
<b>Italy<sup>b</sup></b>					17,756	18,413	19,151	15,435
<b>Latvia</b>	371	102	162	123	183	151	120	124
<b>Luxembourg</b>								
<b>Netherlands</b>	400	339	251	376	376	486	437	432
<b>New Zealand<sup>b</sup></b>	367	503	503	503	479	528	520	524
<b>Norway</b>	653				882	876	889	838
<b>Poland<sup>b</sup></b>							7,523	6,037
<b>Portugal</b>	3,024	3,367	3,313	3,483	3,458	3,740	3,773	3,754
<b>Romania<sup>b</sup></b>		3,411	3,468	3,267	3,279	3,117	3,020	2,825
<b>Slovakia</b>							1,158	1,217
<b>Spain</b>	12,534	12,622	12,367	13,017	14,096	14,732	15,034	15,327
<b>Sweden</b>	1,366	1,399	1,313	1,192	1,224	1,230	1,209	1,192
<b>Switzerland</b>	2,524							1,720
<b>United Kingdom</b>	6,659	5,737	5,857	6,126	6,242	5,962	5,780	5,334
<b>United States</b>	33,278	36,847	37,079	38,323	39,218	39,991	41,190	41,357

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>	-0.1	5.9	-9.9	-0.1	-1.4	0.0	-24.0
<b>Belgium</b>	-8.4	6.1	0.4	-1.9	5.0	0.0	27.2
<b>Bulgaria</b>							-5.5
<b>Canada</b>	8.1	1.3	3.3	4.1	-0.1	3.0	10.6
<b>Czech Republic</b>					-3.5	-12.3	-44.2
<b>Denmark</b>	6.6	11.2	-6.5	-2.9	4.1	0.9	54.1
<b>Estonia</b>					5.3	0.4	
<b>European Community</b>							
<b>Finland</b>	7.5	18.1	7.0	6.3	8.6	-6.8	-19.7
<b>France</b>	-2.3	-3.8	7.1	-3.5	2.1	1.1	-20.9
<b>Germany</b>	-7.7	2.7	3.9	0.8	-0.2	-11.4	-14.2
<b>Greece</b>	2.8	-0.7			0.0	2.0	10.6
<b>Iceland</b>					7.3	-11.0	
<b>Ireland</b>	0.0	11.1	0.0	12.5	40.0	4.8	120.0
<b>Italy</b>				3.7	4.0	-19.4	
<b>Latvia</b>	59.3	-24.3	48.9	-17.4	-20.7	3.5	-66.6
<b>Luxembourg</b>							
<b>Netherlands</b>	-26.0	49.8	0.0	29.2	-10.1	-1.1	8.0
<b>New Zealand</b>	-0.1	0.1	-4.9	10.3	-1.5	0.8	42.9
<b>Norway</b>				-0.7	1.5	-5.8	28.3
<b>Poland</b>						-19.8	
<b>Portugal</b>	-1.6	5.1	-0.7	8.1	0.9	-0.5	24.1
<b>Romania</b>	1.7	-5.8	0.4	-4.9	-3.1	-6.4	
<b>Slovakia</b>						5.1	
<b>Spain</b>	-2.0	5.3	8.3	4.5	2.1	1.9	22.3
<b>Sweden</b>	-6.1	-9.2	2.7	0.5	-1.7	-1.5	-12.8
<b>Switzerland</b>							-31.9
<b>United Kingdom</b>	2.1	4.6	1.9	-4.5	-3.0	-7.7	-19.9
<b>United States</b>	0.6	3.4	2.3	2.0	3.0	0.4	24.3

**Table 2.3****Cement production – trend information (continued)****CO<sub>2</sub> implied emission factors (t/t)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
Austria	0.66	0.65	0.66	0.68	0.65	0.65	0.66	0.66
Belgium								
Bulgaria							0.52	0.52
Canada								
Czech Republic <sup>b</sup>	0.50				0.50	0.50	0.50	0.50
Denmark	0.55	0.53	0.53	0.53	0.53	0.53	0.54	0.54
Estonia <sup>b</sup>						0.50	0.50	0.50
European Community							NE	NE
Finland	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47
France	0.52	0.53	0.52	0.52	0.52	0.52	0.53	0.53
Germany	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56
Greece <sup>b</sup>	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Iceland <sup>b</sup>						0.44	0.44	0.44
Ireland	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Italy <sup>b</sup>					0.50	0.50	0.50	0.51
Latvia	0.50	0.50	0.50	0.50	0.50			C
Luxembourg								
Netherlands	0.43	0.43	0.43	0.54	0.47	0.51	0.49	0.49
New Zealand <sup>b</sup>	0.51	0.51	0.51	0.49	0.50	0.49	0.49	0.48
Norway								
Poland <sup>b</sup>							0.50	0.50
Portugal	0.42	0.42	0.39	0.37	0.38	0.40	0.39	0.56
Romania <sup>b</sup>		0.50	0.50	0.50	0.50	0.50	0.50	0.50
Slovakia							0.51	0.51
Spain	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54
Sweden	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Switzerland	0.53							0.53
United Kingdom	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
United States	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
Austria	1.5	2.4	-3.9	0.2	0.7	0.0	-0.7
Belgium							
Bulgaria						0.0	
Canada							
Czech Republic				0.0	0.0	0.0	0.0
Denmark	0.2	0.0	-0.5	1.1	0.9	0.0	-1.3
Estonia					0.0	0.0	
European Community							
Finland	0.0	0.0	0.0	0.0	0.0	0.0	0.0
France	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Germany	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Greece	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Iceland					0.6	-0.6	
Ireland	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Italy				0.0	0.0	1.4	
Latvia	0.0	0.0	0.1				
Luxembourg							
Netherlands	0.0	26.1	-13.0	8.0	-3.9	0.0	14.5
New Zealand	0.0	-3.3	1.6	-2.2	-0.3	-1.4	-5.6
Norway							
Poland						0.0	
Portugal	-5.9	-5.3	1.7	5.4	-1.6	42.6	33.5
Romania	0.0	0.0	0.0	0.0	0.0	0.0	
Slovakia						0.0	
Spain	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sweden	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Switzerland							0.0
United Kingdom	0.0	0.0	0.0	0.0	0.0	0.0	0.0
United States	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Table 2.4**  
**Chemical industry, CO<sub>2</sub> and N<sub>2</sub>O (2001)**

	Methods and EF used <sup>a</sup>		CO <sub>2</sub>							Methods and EF used <sup>a</sup>		N <sub>2</sub> O										
			2.B.1 Ammonia production						2.B.2 Nitric acid production							2.B.3 Adipic acid production						
	Methods	EF	Key source	Share of national total (%)	Activity data (production)				CO <sub>2</sub> IEF (t/t)	Methods	EF	Key source	Share of national total (%)	Activity data (production)				N <sub>2</sub> O IEF (t/t)	Key source	Share of national total (%)	N <sub>2</sub> O IEF (t/t)	
					CRF (2001) <sup>b</sup>	CRF (2000) <sup>b</sup>	UN <sup>b,c</sup>	Difference (%)						CRF (2001) <sup>b</sup>	CRF (2000) <sup>b</sup>	UN <sup>b,c</sup>	Difference (%)					
																						(kt)
IPCC default EF <sup>d</sup>									1.5 - 1.6									0.002 - 0.019				0.3
Austria	C	PS	L	0.5	448	482			0.99	C	PS	L, T	0.9	511	534			0.005				
Belgium			L	1.0			788					L	2.7									
Bulgaria	T1b	D		0.8	580	647	585	0.9	0.86	D	D	L	2.0	696	707	707	0	0.006				NO
Canada	T1	CS	L	0.8	4,297	4,888	4,297	0.0	1.38	T2-T3	CS		0.1	1,054	1,074	1,054	0	0.002	T	0.1		C
Czech Republic	IE				251	307	213	-15.1		T2	PS	L	0.7	505	505	114	-77.4	0.007				
Denmark					0	0	0							382	433							
Estonia							108						0.0	0	0					0.0		
European Community	C, CS, D, MB, T1, T1a	C, CS, D, PS							NE	C, CS, D, PS, T2	C, CS, D, PS						NE				NE	
Finland	NO	NO			NO	NO	80,000			D	PS	L, T	1.6	430	451		0.009					
France	C	CS	T	0.5	1,680	1,862	1,370	-18.5	1.56	C	CS/ PS	T	0.9	2,671	3,065		0.006	T	0.9			
Germany	CS	CS		0	2,603	2,634	1,082	-58.4	0.69	CS	CS		0.4	2,139	2,436		0.005	T	0.3	0.04		
Greece	C	C				NA	57			C	C	T	0.4	0	406		4.507					NO
Iceland	D	D					7			CS	CS											
Ireland	D,T1a	D	L, T	1.5	451	384	443	-1.8	2.30	D	CS	T	0.8	260	260		0.007			0.0		
Italy	D	D, C, CS		0.1	430	508	434	0.9	1.50	D	D, CS		0.2	527	556		0.007	L	1.4	0.33		
Latvia	NO	NO			NO	NO			NO	NO	NO			NO	NO		NO					NO
Luxembourg	C	C								C	C											
Netherlands	CS/IE	PS, CS			C	C	1,940		IE	CS/T2	PS	L, T	2.4	C	C		C				NO	
New Zealand	T1	CS			163	163	117	-28.3	NO					NA	NA		NA				NA	
Norway	D	CS,D	L, T	0.7			323			CS3	PS	L, T	3.0									
Poland	T1/CS	CS		0.3	1,169	1,208	1,169	0	1.00	CS	CS	L	1.1	2,060	2,007	2,060	0.0	0.006				NO
Portugal <sup>e</sup>	MB+D+C	D+C	T	0.5	138	138	202	46.4	2.87	D+C	D+C	L, T	0.7	244	244		0.008		0.0			
Romania	T1b	T1b	L	1.2	1,155	1,255	1,155	0	1.60	D	D		0.4	215	344		0.008					
Slovakia					IE	IE	354		IE	D	CS		0.4	464	407		0.001					NO
Spain	C,D	C,D		0.1	539	545	436	-19.1	0.92	C	CS,C	L, T	0.5	942	1,063		0.007					
Sweden	CS	CS			NE	NE	4			C	CS	L, T	0.7	282	425	57	-79.8					NO
Switzerland	C	CS								C	CS		0.2	65	65							
United Kingdom	T1	CS		0.2	35	45	850	2309.5	38.92	PS	CS	L	0.5	1,651	2,029		0.007	T	0.3	0.04		
United States	D	D	T	0.2	11,374	14,342	9,730	-14.5	1.46	D	CS,PS		0.3	7,097	7,692	7,074	-0.3	0.008	T	0.1	0.02	

<sup>a</sup> Information on methods and emission factors is included in this table as reported by Parties. 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> As United Nations data for the year 2001 were not available for all Parties at the time of preparation of this synthesis and assessment report, for the comparisons of United Nations and CRF data in this table, data for the years 2001 and 2000 from the CRF are provided together with the respective United Nations data for 2001 or 2000.

<sup>c</sup> Source of data: Industrial Commodity Production Statistics Database (as of 6 June 2003), Department of Economic and Social Affairs, Statistics Division, United Nations, New York. Data are for 2001, except for ammonia data are for 2000 for Iceland, and for nitric acid data are for 2000 for Bulgaria.

<sup>d</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

<sup>e</sup> Mass balance is indicated by MB.

**Table 2.5****Chemical industry – trend information****CO<sub>2</sub> emissions (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	424	489	484	475	521	492	484	462
<b>Belgium</b>	778	1,575	1,504	1,525	1,477	1,536	1,498	1,562
<b>Bulgaria</b>	1,246	1,072	1,063	878	474	338	570	507
<b>Canada</b>	5,008	6,482	6,524	6,675	6,610	6,847	6,845	5,923
<b>Czech Republic</b>								
<b>Denmark</b>	0	0	0	0	0	0	0	0
<b>Estonia<sup>b</sup></b>						218		
<b>European Community</b>	12,884	11,490	11,079	10,742	10,877	10,329	10,781	10,769
<b>Finland</b>	NE	NE	NE	NE	NE	NE	NE	NE
<b>France</b>	3,029	2,846	2,988	2,908	2,868	2,749	2,933	2,649
<b>Germany</b>	2,190	1,815	1,791	1,778	1,785	1,721	1,835	1,811
<b>Greece<sup>b</sup></b>	470	120	165	151	181			
<b>Iceland</b>	0	0	0	0	0	0	0	0
<b>Ireland</b>	989	973	922	1,074	1,058	943	883	1,037
<b>Italy</b>	2,237	938	639	719	666	588	673	694
<b>Latvia</b>	NO	NO	NO	NO	NO	NO	NO	NO
<b>Luxembourg</b>								
<b>Netherlands</b>	0	0	0	0	0	0	0	0
<b>New Zealand</b>	152	145	167	174	190	191	179	183
<b>Norway</b>	1,029	1,156	1,091	1,007	791	513	733	717
<b>Poland</b>	29	199	163	136	79	61	1,263	1,214
<b>Portugal</b>	633	640	477	473	499	497	499	507
<b>Romania</b>		2,963	3,026	1,591	804	1,375	2,050	1,888
<b>Slovakia</b>								
<b>Spain</b>	673	628	640	660	629	607	603	603
<b>Sweden</b>	104	87	89	88	82	81	72	71
<b>Switzerland</b>	13	13	13	13	13	13	13	13
<b>United Kingdom</b>	1,358	1,379	1,379	888	1,111	1,113	1,301	1,373
<b>United States</b>	21,510	23,211	23,077	23,648	24,939	23,677	22,738	19,703

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>	-0.9	-1.9	9.6	-5.4	-1.7	-4.5	9.1
<b>Belgium</b>	-4.5	1.4	-3.2	4.0	-2.5	4.2	100.7
<b>Bulgaria</b>	-0.8	-17.4	-46.0	-28.7	68.4	-11.1	-59.3
<b>Canada</b>	0.6	2.3	-1.0	3.6	0.0	-13.5	18.3
<b>Czech Republic</b>							
<b>Denmark</b>							
<b>Estonia</b>							
<b>European Community</b>	-3.6	-3.0	1.3	-5.0	4.4	-0.1	-16.4
<b>Finland</b>							
<b>France</b>	5.0	-2.7	-1.4	-4.1	6.7	-9.7	-12.5
<b>Germany</b>	-1.3	-0.7	0.4	-3.6	6.6	-1.3	-17.3
<b>Greece</b>	38.1	-8.8	20.3				
<b>Iceland</b>							
<b>Ireland</b>	-5.2	16.5	-1.5	-10.9	-6.3	17.4	4.9
<b>Italy</b>	-31.9	12.6	-7.4	-11.7	14.3	3.2	-69.0
<b>Latvia</b>							
<b>Luxembourg</b>							
<b>Netherlands</b>							
<b>New Zealand</b>	14.5	4.4	9.3	0.7	-6.2	1.9	20.1
<b>Norway</b>	-5.6	-7.7	-21.4	-35.2	43.0	-2.2	-30.3
<b>Poland</b>	-18.1	-16.6	-41.9	-22.8	1,971.1	-3.9	4,085.9
<b>Portugal</b>	-25.5	-0.8	5.5	-0.5	0.5	1.5	-20.0
<b>Romania</b>	2.1	-47.4	-49.4	71.0	49.0	-7.9	
<b>Slovakia</b>							
<b>Spain</b>	1.8	3.2	-4.8	-3.4	-0.7	0.1	-10.4
<b>Sweden</b>	2.0	-0.9	-7.5	-0.7	-11.0	-2.1	-32.1
<b>Switzerland</b>	0.0	0.0	-2.1	0.0	0.0	0.0	-2.1
<b>United Kingdom</b>	0.0	-35.6	25.0	0.2	16.9	5.6	1.1
<b>United States</b>	-0.6	2.5	5.5	-5.1	-4.0	-13.3	-8.4

**Table 2.5****Chemical industry – trend information (continued)****N<sub>2</sub>O emissions (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	2.9	2.8	2.8	2.8	2.9	3.0	3.1	2.5
<b>Belgium</b>	11.5	13.8	15.1	14.5	15.1	14.4	13.6	13.0
<b>Bulgaria</b>	7.8	6.2	6.3	5.2	3.1	2.4	4.2	4.2
<b>Canada</b>	37.1	37.1	39.6	34.4	18.8	8.2	5.5	5.2
<b>Czech Republic</b>	3.9		3.3	3.6	3.9	3.2	3.6	3.6
<b>Denmark</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Estonia</b>								
<b>European Community</b>	342.2	314.5	324.8	311.2	236.3	162.7	160.6	158.6
<b>Finland</b>	5.1	4.5	4.5	4.5	4.3	4.3	4.3	4.1
<b>France</b>	78.5	84.1	84.5	83.6	59.8	41.3	36.6	36.6
<b>Germany</b>	82.4	82.3	87.1	74.1	29.9	16.6	16.4	21.4
<b>Greece<sup>b</sup></b>	2.3	1.8	2.1	1.8	1.8	1.8	1.8	1.8
<b>Iceland</b>	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1
<b>Ireland</b>	3.3	2.6	2.6	2.6	2.6	2.6	2.6	1.9
<b>Italy</b>	23.4	25.2	24.3	24.5	24.9	25.7	27.5	28.6
<b>Latvia</b>	NO	NO	NO	NO	NO	NO	NO	NO
<b>Luxembourg</b>								
<b>Netherlands</b>	24.4	24.2	24.2	24.2	24.1	23.2	23.0	21.2
<b>New Zealand</b>								
<b>Norway</b>	6.7	5.3	5.2	4.8	5.4	6.1	5.6	5.5
<b>Poland</b>	20.1	15.8	16.2	15.7	12.9	12.1	14.0	14.4
<b>Portugal</b>	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0
<b>Romania</b>	24.4	5.9	5.5	4.6	1.0	1.6	2.7	1.7
<b>Slovakia</b>	1.9	2.3	0.5	0.5	0.5	0.5	0.5	0.7
<b>Spain</b>	9.3	7.7	7.9	7.5	7.0	7.6	7.4	6.6
<b>Sweden</b>	2.7	2.3	2.2	2.2	2.5	2.2	2.1	1.6
<b>Switzerland</b>	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
<b>United Kingdom</b>	94.4	61.3	65.5	67.0	59.4	18.1	20.2	17.4
<b>United States</b>	106.6	119.7	121.8	101.7	86.7	82.6	81.0	72.6

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>	2.0	-1.4	4.0	3.0	3.3	-17.4	-13.3
<b>Belgium</b>	9.5	-3.7	4.2	-4.7	-5.6	-4.3	13.2
<b>Bulgaria</b>	2.1	-17.7	-40.0	-24.4	79.5	-1.5	-46.5
<b>Canada</b>	6.6	-13.0	-45.3	-56.6	-33.0	-6.0	-86.1
<b>Czech Republic</b>		8.3	7.1	-16.5	12.6	-1.1	-8.1
<b>Denmark</b>							
<b>Estonia</b>							
<b>European Community</b>	3.3	-4.2	-24.1	-31.1	-1.3	-1.2	-53.7
<b>Finland</b>	0.0	0.6	-5.8	0.3	-0.3	-4.7	-21.0
<b>France</b>	0.5	-1.1	-28.4	-31.0	-11.3	-0.2	-53.4
<b>Germany</b>	5.9	-14.9	-59.7	-44.6	-1.0	30.5	-74.0
<b>Greece</b>	14.2	-12.0	-0.2	0.2	0.0	0.0	-20.4
<b>Iceland</b>	16.9	-16.6	-12.8	1.0	-48.5	-13.3	-66.6
<b>Ireland</b>	0.0	0.0	0.0	0.0	0.0	-28.1	-43.6
<b>Italy</b>	-3.4	0.7	1.8	3.1	7.2	4.0	22.4
<b>Latvia</b>							
<b>Luxembourg</b>							
<b>Netherlands</b>	0.1	-0.2	-0.2	-3.8	-1.0	-7.8	-13.1
<b>New Zealand</b>							
<b>Norway</b>	-1.1	-8.6	14.0	11.2	-7.7	-2.3	-17.8
<b>Poland</b>	2.6	-3.1	-17.8	-6.5	16.2	2.4	-28.5
<b>Portugal</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.6
<b>Romania</b>	-6.8	-16.4	-77.8	52.8	71.9	-37.5	-93.1
<b>Slovakia</b>	-77.8	3.7	-6.4	4.8	-7.5	38.9	-64.1
<b>Spain</b>	2.4	-5.4	-6.1	8.3	-1.7	-11.4	-29.1
<b>Sweden</b>	-3.9	-1.2	12.3	-11.3	-4.9	-23.9	-40.3
<b>Switzerland</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>United Kingdom</b>	6.8	2.3	-11.3	-69.5	11.3	-13.9	-81.6
<b>United States</b>	1.8	-16.5	-14.8	-4.7	-1.9	-10.3	-31.8

**Table 2.6****Chemical industry: ammonia production – trend information (continued)****CO<sub>2</sub> implied emission factors (t/t)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
Austria	0.86	0.99	0.96	0.95	1.03	0.96	0.96	0.99
Belgium								
Bulgaria <sup>b</sup>					0.86	0.86	0.86	0.86
Canada								
Czech Republic								
Denmark								
Estonia <sup>b</sup>						1.50		
European Community							NE	NE
Finland								
France	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56
Germany	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Greece <sup>b</sup>	1.50							
Iceland								
Ireland	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30
Italy <sup>b</sup>					1.00	1.00	1.50	1.50
Latvia							NO	NO
Luxembourg								
Netherlands	NO	IE	IE	IE	IE	IE	IE	IE
New Zealand <sup>b</sup>	NE	0.00	0.00	NA	0.00	0.00	NO	NO
Norway								
Poland <sup>b</sup>							1.00	1.00
Portugal	3.08	3.00	2.87	2.87	2.87	2.87	2.87	2.87
Romania <sup>b</sup>		1.60	1.60	1.60	1.60	1.60	1.60	1.60
Slovakia								
Spain	0.91	0.91	0.92	0.92	0.92	0.92	0.92	0.92
Sweden								NE
Switzerland								
United Kingdom	31.75	31.46	31.46	25.12	28.62	26.54	29.15	38.92
United States	1.25	1.30	1.25	1.27	1.31	1.31	1.37	1.46

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
Austria	-3.1	-0.7	8.6	-7.0	-0.3	2.7	14.8
Belgium							
Bulgaria				0.0	0.0	0.0	
Canada							
Czech Republic							
Denmark							
Estonia							
European Community							
Finland							
France	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Germany	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Greece							
Iceland							
Ireland	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Italy				0.0	50.0	0.0	
Latvia							
Luxembourg							
Netherlands							
New Zealand							
Norway							
Poland						0.0	
Portugal	-4.2	0.0	0.0	0.0	0.0	0.0	-6.6
Romania	0.0	0.0	0.0	0.0	0.0	0.0	
Slovakia							
Spain	0.4	-0.2	0.1	-0.2	0.0	0.0	0.2
Sweden							
Switzerland							
United Kingdom	0.0	-20.2	14.0	-7.3	9.8	33.5	22.6
United States	-3.7	2.0	2.9	0.2	4.2	6.8	16.5



**Table 2.6****Chemical industry: ammonia production – trend information****CO<sub>2</sub> emissions (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	396	468	465	457	501	472	463	442
<b>Belgium</b>	778	1,571	1,501	1,505	1,452	1,504	1,443	1,510
<b>Bulgaria<sup>b</sup></b>					454	326	558	500
<b>Canada</b>	5,008	6,482	6,524	6,675	6,610	6,847	6,845	5,923
<b>Czech Republic<sup>b</sup></b>							IE	IE
<b>Denmark</b>								
<b>Estonia<sup>b</sup></b>						218		
<b>European Community</b>	NE	NE	NE	NE	NE	NE	NE	NE
<b>Finland</b>	NO	NO	NO	NO	NO	NO	NO	NO
<b>France</b>	3,007	2,826	2,966	2,889	2,844	2,723	2,905	2,622
<b>Germany</b>	1,747	1,789	1,770	1,757	1,765	1,704	1,817	1,796
<b>Greece<sup>b</sup></b>	470	120	165	151	181	NO	NO	
<b>Iceland</b>								
<b>Ireland</b>	989	973	922	1,074	1,058	943	883	1,037
<b>Italy<sup>b</sup></b>					497	451	762	645
<b>Latvia</b>	NO	NO	NO	NO	NO	NO	NO	NO
<b>Luxembourg</b>								
<b>Netherlands</b>	IE	IE	IE	IE	IE	IE	IE	IE
<b>New Zealand<sup>b</sup></b>	NE	NE	NE	163	163	NO	NO	NO
<b>Norway</b>	579				407	180	400	367
<b>Poland<sup>b</sup></b>							1,208	1,169
<b>Portugal</b>	569	563	396	396	396	396	396	396
<b>Romania<sup>b</sup></b>		2,894	2,946	1,522	749	1,334	2,008	1,848
<b>Slovakia<sup>b</sup></b>						IE	IE	IE
<b>Spain</b>	550	505	519	546	512	487	499	493
<b>Sweden</b>	NE	NE	NE	NE	NE	NE	NE	NE
<b>Switzerland</b>	NO							NO
<b>United Kingdom</b>	1,358	1,379	1,379	888	1,111	1,113	1,301	1,373
<b>United States</b>	19,306	20,453	20,282	20,650	21,934	20,615	19,587	16,588

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>	-0.6	-1.8	9.7	-5.8	-1.9	-4.5	11.6
<b>Belgium</b>	-4.4	0.2	-3.5	3.5	-4.0	4.7	94.1
<b>Bulgaria</b>				-28.2	71.1	-10.4	
<b>Canada</b>	0.6	2.3	-1.0	3.6	0.0	-13.5	18.3
<b>Czech Republic</b>							
<b>Denmark</b>							
<b>Estonia</b>							
<b>European Community</b>							
<b>Finland</b>							
<b>France</b>	5.0	-2.6	-1.5	-4.3	6.7	-9.8	-12.8
<b>Germany</b>	-1.1	-0.7	0.4	-3.4	6.6	-1.2	2.8
<b>Greece</b>	38.1	-8.8	20.3				
<b>Iceland</b>							
<b>Ireland</b>	-5.2	16.5	-1.5	-10.9	-6.3	17.4	4.9
<b>Italy</b>				-9.4	69.1	-15.3	
<b>Latvia</b>							
<b>Luxembourg</b>							
<b>Netherlands</b>							
<b>New Zealand</b>							
<b>Norway</b>				-55.7	121.9	-8.2	-36.7
<b>Poland</b>						-3.2	
<b>Portugal</b>	-29.6	0.0	0.0	0.0	0.0	0.0	-30.3
<b>Romania</b>	1.8	-48.3	-50.8	78.2	50.5	-8.0	
<b>Slovakia</b>							
<b>Spain</b>	2.7	5.2	-6.2	-5.0	2.6	-1.2	-10.2
<b>Sweden</b>							
<b>Switzerland</b>							
<b>United Kingdom</b>	0.0	-35.6	25.0	0.2	16.9	5.6	1.1
<b>United States</b>	-0.8	1.8	6.2	-6.0	-5.0	-15.3	-14.1

**Table 2.7****Chemical industry: nitric acid production – trend information****N<sub>2</sub>O emissions (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	2.9	2.8	2.8	2.8	2.9	3.0	3.1	2.5
<b>Belgium</b>	11.5	13.8	15.1	NE	15.1	14.4	13.6	13.0
<b>Bulgaria<sup>b</sup></b>					3.1	2.4	4.2	4.2
<b>Canada</b>	2.5	2.5	2.6	2.5	2.5	2.5	2.6	2.6
<b>Czech Republic<sup>b</sup></b>	3.6				3.6	3.0	3.4	3.3
<b>Denmark</b>								
<b>Estonia<sup>b</sup></b>						0.0	0.0	0.0
<b>European Community</b>	NE	NE	NE	NE	NE	NE	NE	NE
<b>Finland</b>	5.1	4.5	4.5	4.5	4.3	4.3	4.3	4.1
<b>France</b>	21.2	18.8	18.8	19.3	19.2	18.5	19.1	16.0
<b>Germany</b>	15.1	12.7	12.1	12.1	12.0	12.5	13.4	11.8
<b>Greece<sup>b</sup></b>	2.3	1.8	2.1	1.8	1.8	1.8	1.8	1.8
<b>Iceland</b>								
<b>Ireland</b>	3.3	2.6	2.6	2.6	2.6	2.6	2.6	1.9
<b>Italy<sup>b</sup></b>					3.2	2.9	3.8	3.6
<b>Latvia</b>	NO	NO	NO	NO	NO	NO	NO	NO
<b>Luxembourg</b>								
<b>Netherlands</b>	20.4	20.3	20.2	20.2	20.1	19.1	19.0	17.2
<b>New Zealand<sup>b</sup></b>	NA	NA						
<b>Norway</b>	6.7				5.4	6.1	5.6	5.5
<b>Poland<sup>b</sup></b>							12.9	13.3
<b>Portugal</b>	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0
<b>Romania<sup>b</sup></b>		4.0	3.6	1.9	1.0	1.6	2.7	1.7
<b>Slovakia<sup>b</sup></b>					0.2	0.2	0.5	0.7
<b>Spain</b>	9.3	7.7	7.9	7.5	7.0	7.6	7.4	6.6
<b>Sweden</b>	2.6	2.3	2.2	2.2	2.4	2.1	2.1	1.5
<b>Switzerland</b>	0.3							0.3
<b>United Kingdom</b>	13.3	9.9	10.2	9.7	11.1	16.0	14.9	11.6
<b>United States</b>	57.6	64.2	66.8	68.5	67.4	64.9	61.5	56.8

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>	2.0	-1.4	4.0	3.0	3.3	-17.4	-13.3
<b>Belgium</b>	9.5			-4.7	-5.6	-4.3	13.2
<b>Bulgaria</b>				-24.4	79.5	-1.5	
<b>Canada</b>	1.3	-0.8	-1.9	1.9	1.8	-0.5	2.3
<b>Czech Republic</b>				-17.8	13.8	-1.1	-8.7
<b>Denmark</b>							
<b>Estonia</b>					0.0	0.0	
<b>European Community</b>							
<b>Finland</b>	0.0	0.6	-5.8	0.3	-0.3	-4.7	-21.0
<b>France</b>	0.0	2.7	-0.5	-3.5	3.0	-16.1	-24.4
<b>Germany</b>	-4.8	0.3	-0.6	4.1	6.9	-12.2	-22.0
<b>Greece</b>	14.2	-12.0	-0.2	0.2	0.0	0.0	-20.4
<b>Iceland</b>							
<b>Ireland</b>	0.0	0.0	0.0	0.0	0.0	-28.1	-43.6
<b>Italy</b>				-10.0	28.9	-5.4	
<b>Latvia</b>							
<b>Luxembourg</b>							
<b>Netherlands</b>	-0.2	-0.3	-0.3	-4.9	-0.8	-9.4	-15.7
<b>New Zealand</b>							
<b>Norway</b>				11.2	-7.7	-2.3	-17.8
<b>Poland</b>						2.6	
<b>Portugal</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.6
<b>Romania</b>	-10.5	-46.4	-46.9	52.8	71.6	-37.4	
<b>Slovakia</b>				-13.7	136.9	38.9	
<b>Spain</b>	2.4	-5.4	-6.1	8.3	-1.7	-11.4	-29.1
<b>Sweden</b>	-4.0	-1.2	12.7	-12.3	-3.7	-25.0	-41.1
<b>Switzerland</b>							0.0
<b>United Kingdom</b>	2.8	-5.4	15.2	43.5	-7.0	-21.9	-12.8
<b>United States</b>	4.1	2.5	-1.6	-3.7	-5.2	-7.7	-1.4

**Table 2.7****Chemical industry: nitric acid production – trend information (continued)****N<sub>2</sub>O implied emission factors (t/t)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
Austria	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.005
Belgium								
Bulgaria <sup>b</sup>					0.006	0.006	0.006	0.006
Canada								
Czech Republic <sup>b</sup>	0.007				0.007	0.006	0.007	0.007
Denmark								
Estonia								
European Community							NE	NE
Finland	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
France	0.007	0.007	0.006	0.006	0.007	0.006	0.006	0.006
Germany	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Greece <sup>b</sup>	0.005	0.005	0.004	0.005	0.004	0.005	0.005	4.507
Iceland								
Ireland	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.007
Italy <sup>b</sup>					0.007	0.007	0.007	0.007
Latvia							NO	NO
Luxembourg								
Netherlands	C	C	C	C	C	C	C	C
New Zealand <sup>b</sup>							NA	NA
Norway								
Poland <sup>b</sup>							0.006	0.006
Portugal	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008
Romania <sup>b</sup>		0.008	0.008	0.008	0.008	0.008	0.008	0.008
Slovakia <sup>b</sup>					0.001	0.000	0.001	0.001
Spain	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007
Sweden	0.007	0.005	0.005	0.006	0.006	0.006	0.005	0.006
Switzerland	0.005							0.005
United Kingdom	0.006	0.004	0.004	0.004	0.004	0.007	0.007	0.007
United States	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
Austria	-0.4	-0.1	0.8	1.4	-0.8	-13.7	-10.0
Belgium							
Bulgaria				0.0	0.0	0.0	
Canada							
Czech Republic				-3.8	2.5	-1.2	-4.2
Denmark							
Estonia							
European Community							
Finland	0.0	0.0	0.0	0.0	0.1	0.1	0.8
France	-9.3	8.8	2.0	-2.6	-2.4	-3.7	-9.4
Germany	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Greece	0.0	0.2	-0.2	0.2	0.0	99,900.0	100,049.3
Iceland							
Ireland	0.0	0.0	0.0	0.0	0.0	-28.1	-26.5
Italy				0.0	0.0	0.0	
Latvia							
Luxembourg							
Netherlands							
New Zealand							
Norway							
Poland						0.0	
Portugal	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Romania	0.0	0.0	0.0	0.0	0.0	0.0	
Slovakia				-17.8	156.5	22.0	
Spain	-4.0	0.0	0.0	0.0	0.0	0.0	0.0
Sweden	0.0	1.4	9.9	-8.5	-13.1	12.9	-21.9
Switzerland							0.0
United Kingdom	1.2	-1.7	3.8	53.6	11.8	-4.0	27.1
United States	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Table 2.8****Chemical industry: adipic acid production – trend information****N<sub>2</sub>O emissions (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
Austria	NE	NE	NE	NE	NE	NE	NE	NE
Belgium				NO			NO	NO
Bulgaria <sup>b</sup>					NO	NO	NO	NO
Canada	34.6	34.6	37.0	31.9	16.3	5.6	2.9	2.6
Czech Republic <sup>b</sup>	NO					NO	NO	NO
Denmark								
Estonia <sup>b</sup>						0.0	0.0	0.0
European Community	NE	NE	NE	NE	NE	NE	NE	NE
Finland	NO	NO	NO	NO	NO	NO	NO	NO
France	47.8	55.2	56.7	56.2	31.4	14.7	10.3	15.6
Germany	67.3	69.6	75.1	62.0	17.8	4.0	3.0	9.6
Greece								NO
Iceland								
Ireland	NO	NO	0.0	NO	NO	NO	0.0	0.0
Italy <sup>b</sup>					18.6	18.6	21.4	25.1
Latvia	NO	NO	NO	NO	NO	NO	NO	NO
Luxembourg								
Netherlands	NO	NO	NO	NO	NO	NO	NO	NO
New Zealand								
Norway								
Poland <sup>b</sup>							NO	NO
Portugal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Romania <sup>b</sup>		1.9	1.9	2.7	0.0	0.0	NO	NE
Slovakia <sup>b</sup>						NO	NO	NO
Spain								
Sweden	NO	NO	NO	NO	NO	NO	NO	NO
Switzerland	NO							NO
United Kingdom	81.1	51.3	55.2	57.3	48.3	2.1	5.3	5.8
United States	49.0	55.5	55.0	33.3	19.3	17.7	19.5	15.9

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
Austria							
Belgium							
Bulgaria							
Canada	6.9	-13.8	-48.8	-65.5	-48.6	-10.8	-92.5
Czech Republic							
Denmark							
Estonia					0.0	0.0	
European Community							
Finland							
France	2.8	-0.9	-44.2	-53.2	-29.6	51.0	-67.3
Germany	7.8	-17.4	-71.2	-77.4	-25.5	221.1	-85.7
Greece							
Iceland							
Ireland							
Italy				0.0	14.9	17.0	
Latvia							
Luxembourg							
Netherlands							
New Zealand							
Norway							
Poland							
Portugal							
Romania	0.8	39.7	-100.0	0.0			
Slovakia							
Spain							
Sweden							
Switzerland							
United Kingdom	7.6	3.8	-15.8	-95.6	148.0	8.8	-92.9
United States	-1.0	-39.5	-41.9	-8.5	10.2	-18.5	-67.6

**Table 2.8****Chemical industry: adipic acid production – trend information (continued)****N<sub>2</sub>O implied emission factors (t/t)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
Austria								
Belgium								
Bulgaria							NO	NO
Canada								
Czech Republic								
Denmark								
Estonia								
European Community							NE	NE
Finland								
France								
Germany	0.33	0.33	0.33	0.25	0.07	0.02	0.01	0.04
Greece								NO
Iceland								
Ireland								
Italy <sup>b</sup>					0.30	0.30	0.30	0.33
Latvia							NO	NO
Luxembourg								
Netherlands	NO	NO	NO	NO	NO	NO	NO	NO
New Zealand <sup>b</sup>							NA	NA
Norway								
Poland							NO	NO
Portugal								
Romania <sup>b</sup>		0.30	0.30	0.30				
Slovakia							NO	NO
Spain								
Sweden								NO
Switzerland	NO							
United Kingdom	0.31	0.33	0.36	0.37	0.29	0.01	0.03	0.04
United States	0.07	0.07	0.07	0.04	0.02	0.02	0.02	0.02

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
Austria							
Belgium							
Bulgaria							
Canada							
Czech Republic							
Denmark							
Estonia							
European Community							
Finland							
France							
Germany	0.0	-24.3	-70.4	-78.6	-34.4	318.1	-86.8
Greece							
Iceland							
Ireland							
Italy				0.0	0.0	11.0	
Latvia							
Luxembourg							
Netherlands							
New Zealand							
Norway							
Poland							
Portugal							
Romania	0.0	0.0					
Slovakia							
Spain							
Sweden							
Switzerland							
United Kingdom	8.9	0.9	-20.5	-94.9	111.0	24.0	-87.3
United States	-2.0	-41.7	-41.3	-13.0	8.1	-9.7	-71.5

**Table 2.9**  
**Metal production, CO<sub>2</sub> (2001)**

	Methods and EF used <sup>a</sup>		Iron & steel <sup>b</sup>												Aluminium production							
			Key source	Share of national total	CO <sub>2</sub> IEF	Steel				CO <sub>2</sub> IEF	Pig iron				Key source	Share of national total	Activity data (production)				CO <sub>2</sub> IEF	
	Activity data (production)					Activity data (production)					Activity data (production)											
	CRF (2000) <sup>c</sup>	CRF (2001)				UN <sup>d</sup>	Difference	CRF (2000) <sup>c</sup>	CRF (2001)		UN <sup>d</sup>	Difference	CRF (2000) <sup>c</sup>	CRF (2001)			UN <sup>d</sup>	Difference				
																			(%)	(t/t)		(kt)
IPCC default EF <sup>e</sup>					1.5 - 1.6																1.5 - 1.8	
Austria	C	CS, PS	L	10.8		5,150	5,108	1,539	-69.9	1.81	5,150	5,108	4,375	-14.3			NO	NO				
Belgium			L	0.9				12,000					8,500									
Bulgaria	D	D	L	2.1		1,776	1,695	2,000	18.0	0.82	2,216	1,121	1,200	7.0	NO	0.0	3.2	1.6			1.65	
Canada	T1-T2	CS	L, T	1.1	NA	NA	NA	16,300		NA	NA	NA	8,302		NA	T	0.6	2,385	2,583	2,583	0.0	1.61
Czech Republic	T1	D	L	1.7		6,219	6,316	2,430	-61.5		4,620	4,671	4,651	-0.4	0.54		NO	NO				
Denmark						0	0	5			0	0					0	0	33			
Estonia																	0	0				
European Community	C, CS, D, T2	C, CS, D, PS								NE					NE						NE	
Finland	NO	NO				NA	NA	4,100			NA	NA	31,455				NO	NO				
France	C	CS		0.4		21,215	19,614	20,000	2.0	0.05	13,660	12,040	12,270	1.9	0.08	0.1	438	458	460	0.5	1.46	
Germany	CS	CS		NE		46,375	44,803	10,289	-77.0	NE	30,845	29,184	30,000	2.8	NE	0.1	1,216	1,275	652	-48.9	0.62	
Greece	C	C				NA	NA	1,000		NE	NA	NA			NE	0.2	C	C	163		C	
Iceland	D	D													L	5.1	226	244	169	-30.6	0.56	
Ireland	NA	NA						100									0	0				
Italy	D, C	D, C, CS		0.2		26,623	26,526	26,526	0.0	0.04	11,176	10,562	10,263	-2.8	IE	0.1	190	188	188	0.0	1.55	
Latvia	T1a	D	L, T	1.1		NE	NE	510		NE	NE	NE			NE		NO	NO			NO	
Luxembourg	C	C						2,725					0									
Netherlands	CS/IE	PS, CS				5,659	6,000	6,000	0.0	IE			5,305		IE		303	293	294	0.3	IE	
New Zealand	T1	CS	L	2.2		730	801	700	-12.6	1.95	12,000	14,426	600	-95.8	IE	0.7	329	324	322	-0.6	1.56	
Norway	D, CS3	D, PS		0.4									60		L, T	3.1	1,270	1,241	1,068	-14.0	1.41	
Poland	T1/CS	CS		0.0		IE	IE	11,000		IE	IE	IE	5,343		IE	0.0	47	55	45	-18.1	1.80	
Portugal	D+C	D+C		0.0	0.04	IE	IE				NO	NO	82			0.0	19	20	18	-9.0	1.80	
Romania	T1b	T1b				4,672		4,936				3243	3,212	-1.0		0.2	181	183	182	-0.6	1.50	
Slovakia	IE					IE	IE	17		IE	IE	IE	3,000		IE		IE	IE	110		IE	
Spain	C	C		0.2		16,000	16,631	15,000	-9.8	0.05	4,267	4,322	4,094	-5.3		0.2	366	376	376	0.0	1.55	
Sweden	CS	CS	L, T	3.0		IE	IE	5,450		IE	116	88	1,433	1532.1	0.48		0.3	101	102	102	0.0	1.84
Switzerland	C	CS		0.1		765	950	1,100	15.8			IE			T	0.1	36	36	36	-0.3		
United Kingdom	T2	CS		0.3		3,518	3,184	15,000	371.2	0.01	10,891	9,870	9,900	0.3	-0.15	0.1	305	341	341	0.0	1.54	
United States	D	D,CS	L, T	0.9		47,859	42,743	90,100	110.8	0.00	1,588	5,433	42,100	674.9	0.15	0.1	3,468	2,637	2,637	0.0	1.56	

<sup>a</sup> Information on methods and emission factors is included in this table as reported by Parties. 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 Poland; CO<sub>2</sub> emission estimates from coke (2.C.1.4) were reported by only Canada, Latvia, Sweden, the United Kingdom and the United States.

<sup>c</sup> As UN data for 2001 were not available for all Parties at the time of preparation of this synthesis and assessment report, for the comparisons of UN and CRF data in this table, data for the years 2001 and 2000 from the CRF are provided along with the respective UN data for 2001 and 2000.

<sup>d</sup> Source of data for crude steel: UN Industrial Commodity Production Statistics Database (as of 6 June 2003), Department of Economic and Social Affairs, Statistics Division, United Nations, New York.

<sup>e</sup> Source of data for pig iron: UN Industrial Commodity Production Statistics Database (as of 6 June 2003), Department of Economic and Social Affairs, Statistics Division, United Nations, New York.

<sup>f</sup> Source of data for aluminium: UN Industrial Commodity Production Statistics Database (as of 6 June 2003), Department of Economic and Social Affairs, Statistics Division, United Nations, New York. Data are for primary production, except for Denmark and Portugal where only total production data were available.

<sup>g</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> – trend information****CO<sub>2</sub> emissions (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	8,461	8,585	8,084	9,107	8,385	8,456	8,591	9,245
<b>Belgium</b>	1,671	1,615	1,602	1,512	1,627	1,622	1,514	1,391
<b>Bulgaria</b>	2,485	2,323	2,101	2,260	1,877	1,711	1,483	1,422
<b>Canada</b>	10,222	11,984	12,015	11,895	12,133	12,420	12,403	12,083
<b>Czech Republic</b>	IE		IE	IE	IE	IE	IE	2,524
<b>Denmark</b>	0	0	0	0	0	0	0	0
<b>Estonia</b>								
<b>European Community</b>	25,702	24,759	23,716	24,126	22,763	23,640	23,976	23,856
<b>Finland</b>	IE	IE	IE	IE	IE	IE	IE	IE
<b>France</b>	4,559	4,621	3,415	3,946	3,824	3,402	3,025	2,892
<b>Germany</b>	904	703	704	699	748	775	787	797
<b>Greece<sup>b</sup></b>	232	203	203	206	226	248	252	251
<b>Iceland</b>	340	389	384	438	458	482	427	340
<b>Ireland</b>	NE	NO	NO	NO	NO	NE	NO	NO
<b>Italy</b>	1,804	1,660	1,669	1,659	1,627	1,481	1,592	1,585
<b>Latvia</b>	144	16	91	136	125	137	182	125
<b>Luxembourg<sup>b</sup></b>						147	131	139
<b>Netherlands</b>	0	17	0	3	0	0	0	0
<b>New Zealand</b>	1,786	2,005	1,994	1,854	1,991	2,043	2,013	2,065
<b>Norway</b>	4,289	4,469	4,798	4,707	5,126	5,231	5,248	5,084
<b>Poland</b>	738	581	582	656	617	565	510	458
<b>Portugal</b>	35	45	44	52	53	56	60	62
<b>Romania</b>		3,780	3,566	3,800	3,589	2,489	2,769	275
<b>Slovakia</b>								
<b>Spain</b>	1,579	1,604	1,584	1,706	1,778	1,796	1,860	1,947
<b>Sweden</b>	2,445	2,900	3,048	2,898	2,747	2,704	2,976	2,808
<b>Switzerland</b>	235	107	116	118	127	131	134	136
<b>United Kingdom</b>	3,161	2,540	3,132	2,073	1,610	2,953	3,187	2,738
<b>United States</b>	93,708	81,488	75,857	79,523	75,249	72,268	72,885	64,517

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>	-5.8	12.7	-7.9	0.9	1.6	7.6	9.3
<b>Belgium</b>	-0.8	-5.7	7.6	-0.4	-6.6	-8.1	-16.8
<b>Bulgaria</b>	-9.5	7.5	-16.9	-8.9	-13.3	-4.1	-42.8
<b>Canada</b>	0.3	-1.0	2.0	2.4	-0.1	-2.6	18.2
<b>Czech Republic</b>							
<b>Denmark</b>							
<b>Estonia</b>							
<b>European Community</b>	-4.2	1.7	-5.7	3.9	1.4	-0.5	-7.2
<b>Finland</b>							
<b>France</b>	-26.1	15.5	-3.1	-11.0	-11.1	-4.4	-36.6
<b>Germany</b>	0.2	-0.7	7.0	3.6	1.6	1.2	-11.9
<b>Greece</b>	0.0	1.3	10.1	9.5	1.7	-0.3	8.3
<b>Iceland</b>	-1.2	14.0	4.6	5.3	-11.5	-20.3	0.0
<b>Ireland</b>							
<b>Italy</b>	0.5	-0.6	-2.0	-9.0	7.5	-0.4	-12.2
<b>Latvia</b>	455.3	49.8	-8.2	9.1	33.3	-31.3	-13.2
<b>Luxembourg</b>					-10.6	6.0	
<b>Netherlands</b>	-99.8	9,270.3	-100.0				
<b>New Zealand</b>	-0.5	-7.0	7.4	2.6	-1.5	2.6	15.6
<b>Norway</b>	7.4	-1.9	8.9	2.1	0.3	-3.1	18.5
<b>Poland</b>	0.2	12.7	-5.9	-8.4	-9.7	-10.2	-37.9
<b>Portugal</b>	-2.5	17.4	1.6	6.9	7.0	3.0	78.0
<b>Romania</b>	-5.7	6.5	-5.5	-30.7	11.3	-90.1	
<b>Slovakia</b>							
<b>Spain</b>	-1.3	7.7	4.2	1.0	3.6	4.7	23.3
<b>Sweden</b>	5.1	-4.9	-5.2	-1.5	10.1	-5.7	14.8
<b>Switzerland</b>	8.4	1.2	8.0	2.9	2.1	1.7	-42.3
<b>United Kingdom</b>	23.3	-33.8	-22.3	83.4	7.9	-14.1	-13.4
<b>United States</b>	-6.9	4.8	-5.4	-4.0	0.9	-11.5	-31.2

**Table 2.11****Metal production: iron and steel – trend information****CO<sub>2</sub> emissions (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	8,461	8,585	8,084	9,107	8,385	8,456	8,591	9,245
<b>Belgium</b>	1,671	1,615	1,602	1,512	1,627	1,622	1,514	1,391
<b>Bulgaria<sup>b</sup></b>					1,837	1,668	1,458	1,391
<b>Canada</b>	7,585	8,440	8,289	8,100	8,316	8,501	8,511	7,920
<b>Czech Republic</b>								2,524
<b>Denmark</b>								
<b>Estonia<sup>b</sup></b>						0		0
<b>European Community</b>	NE	NE	NE	NE	NE	NE	NE	NE
<b>Finland</b>	IE	IE	IE	IE	IE	IE	IE	IE
<b>France</b>	4,047	4,049	2,818	3,330	3,186	2,730	2,386	2,224
<b>Germany</b>		NE	NE	NE	NE	NE	NE	NE
<b>Greece</b>								
<b>Iceland<sup>b</sup></b>						NO		
<b>Ireland</b>	NE	NO	0	NO	NO	NE	NO	0
<b>Italy<sup>b</sup></b>					997	962	991	988
<b>Latvia</b>	144	16	91	136	125	137	182	125
<b>Luxembourg</b>								
<b>Netherlands</b>								
<b>New Zealand<sup>b</sup></b>							1,493	1,561
<b>Norway</b>	170				191	194	207	245
<b>Poland<sup>b</sup></b>							207	170
<b>Portugal</b>	15	17	15	21	20	22	24	24
<b>Romania</b>		3,324	3,084	3,384	3,212	2,227	2,369	0
<b>Slovakia</b>								
<b>Spain</b>	690	659	604	716	776	777	826	858
<b>Sweden</b>	1,866	2,237	2,332	2,242	2,053	2,021	2,263	2,095
<b>Switzerland</b>	111							77
<b>United Kingdom</b>	2,711	2,171	2,759	1,689	1,209	2,532	2,717	2,214
<b>United States</b>	85,414	74,357	68,324	71,864	67,429	64,376	65,755	59,074

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>	-5.8	12.7	-7.9	0.9	1.6	7.6	9.3
<b>Belgium</b>	-0.8	-5.7	7.6	-0.4	-6.6	-8.1	-16.8
<b>Bulgaria</b>				-9.2	-12.6	-4.6	
<b>Canada</b>	-1.8	-2.3	2.7	2.2	0.1	-6.9	4.4
<b>Czech Republic</b>							
<b>Denmark</b>							
<b>Estonia</b>							
<b>European Community</b>							
<b>Finland</b>							
<b>France</b>	-30.4	18.2	-4.3	-14.3	-12.6	-6.8	-45.0
<b>Germany</b>							
<b>Greece</b>							
<b>Iceland</b>							
<b>Ireland</b>							
<b>Italy</b>				-3.5	3.1	-0.4	
<b>Latvia</b>	455.3	49.8	-8.2	9.1	33.3	-31.3	-13.2
<b>Luxembourg</b>							
<b>Netherlands</b>							
<b>New Zealand</b>						4.5	
<b>Norway</b>				1.1	7.1	18.0	43.9
<b>Poland</b>						-17.8	
<b>Portugal</b>	-11.1	39.3	-4.7	9.1	9.9	0.0	55.0
<b>Romania</b>	-7.2	9.7	-5.1	-30.7	6.4	-100.0	
<b>Slovakia</b>							
<b>Spain</b>	-8.3	18.7	8.3	0.1	6.4	3.8	24.4
<b>Sweden</b>	4.3	-3.9	-8.4	-1.5	12.0	-7.4	12.3
<b>Switzerland</b>							-30.6
<b>United Kingdom</b>	27.1	-38.8	-28.4	109.3	7.3	-18.5	-18.3
<b>United States</b>	-8.1	5.2	-6.2	-4.5	2.1	-10.2	-30.8



**Table 2.11****Metal production: iron and steel – trend information (continued)****CO<sub>2</sub> implied emission factors steel (t/t)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
Austria	2.16	1.90	2.00	1.94	1.78	1.78	1.67	1.81
Belgium								
Bulgaria <sup>b</sup>					0.82	0.82	0.82	0.82
Canada	NA	NA	NA	NA	NA	NA	NA	NA
Czech Republic								
Denmark								
Estonia								
European Community							NE	NE
Finland								
France	0.08	0.07	0.06	0.06	0.06	0.06	0.04	0.05
Germany	NE	NE	NE	NE	NE	NE	NE	NE
Greece								NE
Iceland								
Ireland								
Italy <sup>b</sup>					0.04	0.04	0.04	0.04
Latvia								NE
Luxembourg								
Netherlands	IE	IE	IE	IE	IE	IE	IE	IE
New Zealand <sup>b</sup>							2.05	1.95
Norway								
Poland <sup>b</sup>							IE	IE
Portugal								
Romania								
Slovakia							IE	IE
Spain	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Sweden								
Switzerland	0.09							0.08
United Kingdom	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
United States	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
Austria	5.5	-3.1	-8.1	-0.1	-6.3	8.5	-16.1
Belgium							
Bulgaria				0.0	0.0	0.0	
Canada							
Czech Republic							
Denmark							
Estonia							
European Community							
Finland							
France	-12.1	-2.9	0.0	-2.0	-25.1	14.9	-36.6
Germany							
Greece							
Iceland							
Ireland							
Italy				0.4	-4.1	0.0	
Latvia							
Luxembourg							
Netherlands							
New Zealand						-4.7	
Norway							
Poland							
Portugal							
Romania							
Slovakia							
Spain	0.0	-0.2	-0.1	-0.1	-0.2	-0.1	-2.1
Sweden							
Switzerland							-5.9
United Kingdom	0.0	0.0	0.0	0.0	0.0	0.0	0.0
United States	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Table 2.12****Metal production: aluminium – trend information****CO<sub>2</sub> emissions (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	NE	NE	NE	NE	NE	NE	NE	NE
<b>Belgium</b>							NA	NA
<b>Bulgaria<sup>b</sup></b>					11	7	5	3
<b>Canada</b>	2,636	3,545	3,726	3,794	3,817	3,919	3,892	4,163
<b>Czech Republic</b>								NO
<b>Denmark</b>								
<b>Estonia<sup>b</sup></b>						0	0	0
<b>European Community</b>	NE	NE	NE	NE	NE	NE	NE	NE
<b>Finland</b>	NO	NO	NO	NO	NO	NO	NO	NO
<b>France</b>	512	572	597	616	637	672	639	668
<b>Germany</b>	904	703	704	699	748	775	787	797
<b>Greece<sup>b</sup></b>	232	203	203	206	226	248	252	251
<b>Iceland</b>						347	223	136
<b>Ireland</b>	NE	NO	0	NO	NO	NE	NO	0
<b>Italy<sup>b</sup></b>					290	290	294	291
<b>Latvia</b>	NO	NO	NO	NO	NO	NO	NO	NO
<b>Luxembourg</b>								
<b>Netherlands</b>	IE	IE	IE	IE	IE	IE	IE	IE
<b>New Zealand</b>	458	470	493	504	541	535	520	504
<b>Norway</b>	1,431				1,645	1,700	1,734	1,752
<b>Poland<sup>b</sup></b>							84	98
<b>Portugal</b>	17	26	27	28	30	32	34	36
<b>Romania<sup>b</sup></b>		216	218	246	263	261	272	275
<b>Slovakia<sup>b</sup></b>						IE	IE	IE
<b>Spain</b>	551	560	560	558	558	564	567	583
<b>Sweden</b>	179	174	184	184	187	188	195	187
<b>Switzerland</b>	115							58
<b>United Kingdom</b>	450	369	372	384	401	421	470	525
<b>United States</b>	6,315	5,265	5,580	5,621	5,792	5,895	5,410	4,114

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>							
<b>Belgium</b>							
<b>Bulgaria</b>				-37.3	-23.9	-50.8	
<b>Canada</b>	5.1	1.8	0.6	2.7	-0.7	7.0	57.9
<b>Czech Republic</b>							
<b>Denmark</b>							
<b>Estonia</b>							
<b>European Community</b>							
<b>Finland</b>							
<b>France</b>	4.3	3.2	3.5	5.5	-4.9	4.6	30.6
<b>Germany</b>	0.2	-0.7	7.0	3.6	1.6	1.2	-11.9
<b>Greece</b>	0.0	1.3			1.7	-0.3	8.3
<b>Iceland</b>					-35.7	-38.9	
<b>Ireland</b>							
<b>Italy</b>				0.1	1.4	-1.2	
<b>Latvia</b>							
<b>Luxembourg</b>							
<b>Netherlands</b>							
<b>New Zealand</b>	4.9	2.2	7.4	-1.2	-2.8	-3.0	10.1
<b>Norway</b>				3.3	2.0	1.0	22.4
<b>Poland</b>						16.5	
<b>Portugal</b>	2.9	6.8	6.4	6.0	5.7	5.4	111.5
<b>Romania</b>	0.7	13.1	6.7	-0.6	4.0	1.1	
<b>Slovakia</b>							
<b>Spain</b>	0.0	-0.5	0.2	1.0	0.5	3.0	5.9
<b>Sweden</b>	6.1	-0.5	2.1	0.6	3.6	-4.2	4.3
<b>Switzerland</b>							-49.4
<b>United Kingdom</b>	0.9	3.2	4.3	5.2	11.5	11.7	16.5
<b>United States</b>	6.0	0.7	3.1	1.8	-8.2	-24.0	-34.9

**Table 2.12****Metal production: aluminium – trend information (continued)****CO<sub>2</sub> implied emission factors (t/t)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
Austria								
Belgium								
Bulgaria <sup>b</sup>					1.65	1.65	1.65	1.65
Canada	1.68	1.63	1.63	1.63	1.63	1.63	1.63	1.61
Czech Republic								
Denmark								
Estonia								
European Community								
Finland								
France	1.57	1.57	1.57	1.54	1.52	1.49	1.46	1.46
Germany	0.71	0.71	0.71	0.70	0.68	0.67	0.65	0.62
Greece								C
Iceland <sup>b</sup>						1.56	0.99	0.56
Ireland								
Italy <sup>b</sup>					1.55	1.55	1.55	1.55
Latvia							NO	NO
Luxembourg								
Netherlands	IE	IE	IE	IE	IE	IE	IE	IE
New Zealand	1.73	1.73	1.73	1.62	1.70	1.63	1.58	1.56
Norway	1.65				1.58	1.45	1.37	1.41
Poland <sup>b</sup>							1.80	1.80
Portugal	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80
Romania <sup>b</sup>		1.50	1.50	1.50	1.50	1.50	1.50	1.50
Slovakia							IE	IE
Spain	1.55	1.55	1.55	1.55	1.55	1.55	1.55	1.55
Sweden	1.86	1.83	1.89	1.88	1.95	1.90	1.93	1.84
Switzerland	1.60							
United Kingdom	1.55	1.55	1.55	1.55	1.55	1.55	1.54	1.54
United States	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
Austria							
Belgium							
Bulgaria				0.0	0.0	0.0	
Canada							
Czech Republic							
Denmark							
Estonia							
European Community							
Finland							
France	0.0	-1.8	-1.8	-1.8	-1.8	0.0	-7.0
Germany	0.3	-1.8	-3.0	-0.2	-4.0	-3.4	-11.6
Greece							
Iceland					-36.9	-43.3	
Ireland							
Italy				0.0	0.0	0.0	
Latvia							
Luxembourg							
Netherlands							
New Zealand	0.1	-6.4	5.1	-4.3	-3.1	-1.5	-10.3
Norway				-8.0	-6.1	3.4	-14.5
Poland						0.0	
Portugal	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Romania	0.0	0.0	0.0	0.0	0.0	0.0	
Slovakia							
Spain	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sweden	3.4	-0.6	3.7	-2.7	1.8		
Switzerland							
United Kingdom	0.0	-0.1	0.0	-0.1	-0.5	0.0	-0.9
United States	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Table 2.13****Metal production, PFCs and SF<sub>6</sub> (2001)**

	PFCs											SF <sub>6</sub>							
	Methods and EF used <sup>a</sup>		2.C.3 Aluminium production - PFCs									Methods and EF used <sup>b</sup>		2.C.4.2 SF <sub>6</sub> used in magnesium foundries					
	Methods	EF	Key source	Share of national total	Activity data (Aluminium production)				IEF		Ratio <sup>f</sup> IEF CF <sub>4</sub> / IEF C <sub>2</sub> F <sub>6</sub>	Methods	EF	Key source	Share of national total	Activity data		SF <sub>6</sub> -IEF	Actual emissions SF <sub>6</sub> <sup>h</sup>
					CRF (2000) <sup>c</sup>	CRF (2001) <sup>c,d</sup>	UN <sup>e</sup>	Difference	CF <sub>4</sub>	C <sub>2</sub> F <sub>6</sub>						Description	Value		
IPCC default EF <sup>f</sup>									0.31-1.7	0.04-0.17								1 <sup>g</sup>	
Austria					NO	NO										Cast magnesium [t]	3,600		0.0
Belgium																			
Bulgaria	D	D		0.0	3.2	1.6			0.00	0.01	0.1	NE	NE			NO			NO
Canada	T2	CS	L, T	0.9	2,384.9	2,582.7	2,582.7	0.0	0.00	0.00	12.5	T3	PS	T	0.3	Point source SF <sub>6</sub> data from magnesium smelters	70,000	0	84.6
Czech Republic						NO											NO		
Denmark							32.6												
Estonia																			
European Community	CS, D, PS, T1, T2, T3a, T3b	CS, D, PS, T3a							NE	NE		NE	NE					NE	NE
Finland	NO	NO			NO	NO						T2, T1a	NA			(SF <sub>6</sub> consumption)	C		C
France				0.1	437.7	457.7	459.8	0.5	0.17	0.02	10.0				0.2	(SF <sub>6</sub> consumption)	48	1000	47.5
Germany	T3a	T3a		0.0	643.8	652.8	651.6	-0.2	0.00	0.00	10.0	T1	T1		0.0	Cover gas	17,723	0	14.0
Greece			T	0.1	C	C	163.0		C	C						NA	NA	NE	NE
Iceland	CS	CS	L	3.0	226.0	244.0	169.5	-30.5	0.04	0.00	9.0								
Ireland	NA	NA			NO							NA	NA						
Italy	D, T1	CS		0.0	189.8	187.5	187.5	0.0	0.00	0.00	10.0				0.1	SF <sub>6</sub> consumption	19	1	18.8
Latvia	NO	NO			NO	NO			NO	NO		NO	NO				NO	NO	NO
Luxembourg																			
Netherlands	CS/T2&T3b	PS	L, T	0.6	302.6	293.2	294.0	0.3	0.00	0.00	4.6	NO							
New Zealand				0.1	329.0	0.3	322.3		0.02	0.00	9.0							NO	NO
Norway			L, T	1.8	1,031.0	1,038.7	1,067.6	2.8	0.00	0.00	24.5								
Poland	T1c	D		0.2	46.9	54.6	44.7	-18.1	2.00	0.20	10.0								
Portugal	D	D			NO	NO	18.0												
Romania	T1c	T1c		0.5	181.0	183.0	181.8	-0.6	0.50	0.05	10.2	NE	NE				NE		
Slovakia				0.0	109.8	110.1	110.1	0.0	0.00	0.00	10.0						NO	NO	NO
Spain	NO		T	0.0	365.6	376.4	376.4	0.0	0.07	0.00	14.8	NO					NO		
Sweden	T2	CS	T	0.4	101.1	101.8	101.8	0.0	0.00	0.00	9.0	D	D	T	0.1	SF <sub>6</sub> consumption	2	1	2.0
Switzerland	T2	M	T	0.0	35.5	36.0	36.2	0.6	0.03	0.00	10.0	T2	M		0.0				1.0
United Kingdom	T2/PS	CS	T	0.0	305.1	340.8	340.8	0.0	0.10			T2/PS	CS		0.1	SF <sub>6</sub> consumption	32	1000	32.0
United States	CS	PS	T	0.1	3,468.0	2,637.0	2,637.0	0.0	0.00	0.00	9.2	CS	CS	T	0.0	Primary and secondary production and casting activity	C	C	105.7

**Note**

IEF for SF<sub>6</sub> used in aluminium foundries is reported only by Germany. This category has therefore not been included in this table.

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

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

<sup>c</sup> As United Nations data for 2001 were not available for all Parties for the comparisons of United Nations and CRF data in this table, data for the years 2000 from the CRF are provided together with the respective United Nations data for 2000.

<sup>d</sup> This column includes aluminium production data provided for CF<sub>4</sub> and C<sub>2</sub>F<sub>6</sub> in tables 2 (II), C.E of the CRF.

<sup>e</sup> Source of data for aluminium: United Nations Industrial Commodity Production Statistics Database (as of 6 June 2003), Department of Economic and Social Affairs, Statistics Division, United Nations, New York. Data are for primary production, except for Denmark and Portugal where only total production data were available.

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

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

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

**Table 2.14****Metal production: aluminium – trend information****CF<sub>4</sub> emissions (t)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
Austria	129.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Belgium		NO	NO	NO	NO	NO		
Bulgaria <sup>b</sup>					9.4	5.9	4.5	2.2
Canada	813.9	826.6	807.8	819.5	827.6	849.6	843.8	850.1
Czech Republic								
Denmark								
Estonia <sup>b</sup>						0.0	0.0	0.0
European Community	NE	NE	NE	NE	NE	NE	NE	NE
Finland	NO	NO	NO	NO	NO	NO	NO	NO
France	308.6	88.9	87.4	92.7	120.8	157.3	115.1	78.7
Germany	NE	209.0	198.0	145.0	157.0	116.0	48.0	50.1
Greece <sup>b</sup>	34.7	11.2	9.7	22.3	27.5	17.8	20.0	12.3
Iceland <sup>b</sup>						17.7	14.3	10.5
Ireland	NO	NO	NO	NO	NO	NO	NO	0.0
Italy <sup>b</sup>					11.2	11.2	11.4	11.3
Latvia	NO	NO	NO	NO	NO	NO	NO	NO
Luxembourg								
Netherlands	301.0	223.0	247.0	261.0	195.2	153.9	160.4	155.0
New Zealand <sup>b</sup>	80.1	24.3	24.3	27.8	8.3	9.9	7.6	7.8
Norway	441.0				184.8	163.7	131.1	149.2
Poland <sup>b</sup>							93.9	109.2
Portugal	NO	NO	NO	NO	NO	NO	NO	NO
Romania <sup>b</sup>		72.0	72.5	82.0	87.5	87.0	90.5	91.5
Slovakia <sup>b</sup>						1.5	1.5	1.5
Spain	114.3	108.0	103.0	105.7	99.7	91.2	50.0	24.7
Sweden	58.5	50.6	43.9	40.1	38.9	42.8	35.1	34.5
Switzerland	13.8							1.0
United Kingdom	300.0	55.0	44.0	35.0	33.0	28.1	38.6	33.0
United States	2,433.9	1,613.9	1,709.3	1,510.4	1,243.1	1,231.0	1,091.4	551.3

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
Austria							-100
Belgium							
Bulgaria				-37.3	-23.9	-50.8	
Canada	-2.3	1.5	1.0	2.7	-0.7	0.7	4.4
Czech Republic							
Denmark							
Estonia							
European Community							
Finland							
France	-1.7	6.0	30.3	30.2	-26.8	-31.6	-74.5
Germany	-5.3	-26.8	8.3	-26.1	-58.6	4.3	
Greece	-13.5	130.2	23.4	-35.4	12.6	-38.4	-64.5
Iceland					-19.5	-26.1	
Ireland							
Italy				0.1	1.4	-1.2	
Latvia							
Luxembourg							
Netherlands	10.8	5.7	-25.2	-21.1	4.2	-3.4	-48.5
New Zealand	0.0	14.4	-70.0	18.8	-23.6	3.6	-90.2
Norway				-11.4	-19.9	13.8	-66.2
Poland						16.3	
Portugal							
Romania	0.7	13.1	6.7	-0.6	4.0	1.1	
Slovakia					0.5	0.3	
Spain	-4.6	2.6	-5.7	-8.5	-45.2	-50.7	-78.4
Sweden	-13.2	-8.6	-3.1	10.0	-17.9	-1.8	-41.1
Switzerland							-92.5
United Kingdom	-20.0	-20.5	-5.7	-14.8	37.3	-14.5	-89.0
United States	5.9	-11.6	-17.7	-1.0	-11.3	-49.5	-77.4

**Table 2.15**  
**Production of halocarbons and SF<sub>6</sub> (2001)**

	HFCs							PFCs		SF <sub>6</sub>		
	Methods and EF used <sup>a</sup>		By-product emissions, production of HCFC-22					Methods and EF used <sup>a</sup>		Methods and EF used <sup>a</sup>		
			Key source	Share of national total	Activity data (HCFC-22 production)		IEF					
					CRF	International <sup>b</sup>						HFC 23
IPCC default EF <sup>c</sup>							40					
Austria					NO							
Belgium												
Bulgaria	NE	NE			NO		NO	NE	NE	NE	NE	
Canada	NA	NA			NA	X		NA	NA	NA	NA	
Czech Republic	NO				NO			NO		NO		
Denmark	NO							NO		NO		
Estonia												
European Community	CS, D, PS, T1, T2	CS, D, PS, T1, T2					NE	NE	NE	NE	NE	
Finland	NO	NO			NO			NO	NO	NO	NO	
France	CS	CS	T	0.0	C	X	0.00	CS	CS			
Germany	T1	T1		0.1	30,000.00	X	0.00	NO	NO	T1	T1	
Greece	T1	D	L, T	2.8	C	X	C	CS	CS			
Iceland												
Ireland	NA	NA						NA	NA	NA	NA	
Italy	CS	CS				X		CS	CS	CS	CS	
Latvia	NO	NO			NO		NO	NO	NO	NO	NO	
Luxembourg	NA	NA						NA	NA	NA	NA	
Netherlands	CS/T2	PS	T	0.2	C	X	C	NO		NO		
New Zealand					NO		NO					
Norway												
Poland					NE		NE					
Portugal					NO							
Romania	NE	NE			NE			NE	NE	NE	NE	
Slovakia	NO	NO			NO		NO	NO	NO	NO	NO	
Spain	D,CS,T2	D,PS,T2	L, T	0.8	11,269	X	22.02	CS,T3	PS,T3	NO	NO	
Sweden <sup>a</sup>	NO	NO			NO		NO	NO	NO	NO	NO	
Switzerland												
United Kingdom <sup>d</sup>	T2/PS	CS		0.5	IE	X		T2/PS	CS	NO	NO	
United States	M, T2a	M, CS	T	0.3	152,368	X	0.01	M, T2a	M, CS	CS	CS	

<sup>a</sup> Information on methods and emission factors is included in this table as reported by Parties. 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> An 'X' in this column indicates that an estimate of aggregated production of HCFCs for 2000 is available from the Secretariat of the Montreal Protocol. Usually HFC-23 occurs only during the production of HCFC-22.

<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. Under that category, the activity data value was 31,311 t for 2000 and the implied emission factor was 9.23.

**Table 2.16****Production of halocarbons and SF<sub>6</sub>, HFC-23 – trend information****HFC-23 emissions (t)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
Austria	NO	NO	NO	NO	NO	NO	NO	NO
Belgium		NO	NO	NO	NO	NO		
Bulgaria <sup>b</sup>					NO			NO
Canada	NO	NO	NO	NO	NO	NO	NO	NO
Czech Republic								
Denmark								
Estonia								
European Community	NE	NE	NE	NE	NE	NE	NE	NE
Finland	NO	NO	NO	NO	NO	NO	NO	NO
France	166	15	10	10	19	28	17	19
Germany	NE	360	260	250	240	226	100	90
Greece <sup>b</sup>	80	278	320	338	320	320	320	320
Iceland								
Ireland	NE	NO	NO	NO	NO	NO	NO	
Italy <sup>b</sup>					0		0	0
Latvia	NO	NO	NO	NO	NO	NO	NO	NO
Luxembourg								
Netherlands	379	492	589	573	666	294	207	38
New Zealand <sup>b</sup>	0	NA	NA	NA	NA	NA	NO	NO
Norway								
Poland <sup>b</sup>							NE	NE
Portugal	NO	NO	NO	NO	NO	NO	NO	NO
Romania								
Slovakia <sup>b</sup>						NO	NO	NO
Spain	205	396	432	495	434	504	540	248
Sweden	NO	NO	NO	NO	NO	NO	NO	NO
Switzerland	NO							NO
United Kingdom	IE	IE	IE	IE	IE	IE	IE	IE
United States	2,990	2,310	2,660	2,563	3,432	2,599	2,546	1,694

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
Austria							
Belgium							
Bulgaria							
Canada							
Czech Republic							
Denmark							
Estonia							
European Community							
Finland							
France	-33.3	0.0	90.0	47.9	-40.2	11.3	-88.7
Germany	-27.8	-3.8	-4.0	-5.8	-55.8	-10.0	
Greece	15.2	5.7	-5.5	0.0	0.0	0.0	300.4
Iceland							
Ireland							
Italy							
Latvia							
Luxembourg							
Netherlands	19.6	-2.6	16.1	-55.8	-29.6	-81.4	-89.9
New Zealand							
Norway							
Poland							
Portugal							
Romania							
Slovakia							
Spain	9.0	14.4	-12.2	16.0	7.3	-54.1	20.8
Sweden							
Switzerland							
United Kingdom							
United States	15.2	-3.6	33.9	-24.3	-2.0	-33.5	-43.3

**Table 2.17**  
Consumption of halocarbons and SF<sub>6</sub>, HFCs (2001)

	Methods and EF <sup>a</sup>		HFC-23			HFC-32			HFC-41			HFC-431-0nec			HFC-125			HFC-134			HFC-134a			
	Method	EF	P <sup>d</sup>	A <sup>e</sup>	Ratio P/A	P	A	Ratio P/A	P	A	Ratio P/A	P	A	Ratio P/A	P	A	Ratio P/A	P	A	Ratio P/A	P	A	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)		2.F(p)	2.F(a)		2.F(p)	2.F(a)		
			(Gg CO <sub>2</sub> equ.)			(Gg CO <sub>2</sub> equ.)			(Gg CO <sub>2</sub> equ.)			(Gg CO <sub>2</sub> equ.)			(Gg CO <sub>2</sub> equ.)			(Gg CO <sub>2</sub> equ.)			(Gg CO <sub>2</sub> equ.)			
Austria	CS	CS	362.70	6.44	56.34	15.99	1.14	14.09							817.59	61.33	13.33				3,115.80	848.99	3.67	
Belgium						8.25	4.03	2.05							376.72	260.40	1.45				1,100.58	589.42	1.87	
Bulgaria	T1a	D	7.04												19.82						33.16			
Canada	T2	D	1.65	1.64	1.01	0.42	0.14	2.96							39.19	118.00	0.33				1,720.42	679.53	2.53	
Czech Republic	T1		3.38			3.06									179.91						574.59			
Denmark	M/CS	CS					7.18									136.56						349.37		
Estonia																								
European Community	C, CS, D, M,	C, CS, D, PS,	NE	NE		NE	NE		NE	NE		NE	NE		NE	NE		NE	NE		NE	NE		
Finland	T2, T1a & T1b	D				9.05	5.03	1.80							295.43	144.31	2.05				505.65	263.69	1.92	
France	CS/ T2	CS		71.96			23.98					173.88				1,174.63						3,790.74		
Germany	T2	T2	362.70	82.28	4.41	89.56	11.05	8.10	NO	NO		6.50	6.50	1.00	1,803.23	888.42	2.03	NO	NO		5,395.19	4,613.32	1.17	
Greece							70.54									310.89						284.55		
Iceland	T1	D				0.03									23.17						6.76			
Ireland	NA	NA	13.85	11.68	1.19	29.17	1.46	20.00							628.49	56.80	11.07				364.21	78.12	4.66	
Italy	D, T2	CS		13.45		3.25	93.13	0.03							1,671.60	671.68	2.49		0.06		4,371.90	1,548.45	2.82	
Latvia	NE	NE	NO/NE	NE		NO/NE	NE		NO/NE	NE		NO/NE	NE		NO/NE	NE		NO/NE	NE		NO/NE	NE	NE	
Luxembourg	C	C																						
Netherlands <sup>b</sup>	M,CS/T2	CS													753.20	119.38	6.31				702.00	638.90	1.10	
New Zealand	T2	D	NO	NO		NE	0.03	NE	NO	NO		NO	NO		NE	35.94	NE	NO	NO		NE	138.50	NE	
Norway	T2	CS	0.90	0.84	1.07	6.34	0.98	6.44							314.65	92.21	3.41				429.68	93.39	4.60	
Poland	T1a, T1b, T2	D	13.57	1.99	6.82	3.11	1.29	2.41							290.47	131.18	2.21				813.70	961.50	0.85	
Portugal	D	D														0.98						59.46		
Romania	NE	NE																						
Slovakia	D	D,CS	0.87	0.65	1.33	1.88	0.38	4.95							44.88	9.42	4.76				87.31	55.74	1.57	
Spain	D,CS,T2	D,PS,T2		603.15												151.88						1,248.81		
Sweden	T2	CS,D	1.14	0.80	1.43	8.12	0.25	31.94							195.25	9.26	21.08				414.53	326.78	1.27	
Switzerland	T2	M	NO	NO	NA	12.06	2.04	5.92	NO	NO	NA	NO	NO	NA	128.97	56.47	2.28	NO	NO	NA	811.48	338.48	2.40	
United Kingdom	T2	D/CS	11,536.23	5,498.43	2.10		IE			IE			IE			IE			IE			IE		
United States	M, T2a	M, CS	5,348.41	644.91	8.29	2,790.41	156.19	17.87							37,880.21	5,233.47	7.24				92,435.50	41,017.38	2.25	

	HFC-152a			HFC-143			HFC-143a			HFC-227ea			HFC-236fa			HFC-245ca			Total			
	P	A	Ratio P/A	P	A	Ratio P/A	P	A	Ratio P/A	P	A	Ratio P/A	P	A	Ratio P/A	P	A	Ratio P/A	P	A	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)		2.F(p)	2.F(a)		2.F(p)	2.F(a)		2.F(p)
	(Gg CO <sub>2</sub> equ.)	(Gg CO <sub>2</sub> equ.)	(Gg CO <sub>2</sub> equ.)	(Gg CO <sub>2</sub> equ.)	(Gg CO <sub>2</sub> equ.)	(Gg CO <sub>2</sub> equ.)	(Gg CO <sub>2</sub> equ.)	(Gg CO <sub>2</sub> equ.)	(Gg CO <sub>2</sub> equ.)	(Gg CO <sub>2</sub> equ.)	(Gg CO <sub>2</sub> equ.)	(Gg CO <sub>2</sub> equ.)	(Gg CO <sub>2</sub> equ.)	(Gg CO <sub>2</sub> equ.)	(Gg CO <sub>2</sub> equ.)	(Gg CO <sub>2</sub> equ.)	(Gg CO <sub>2</sub> equ.)	(Gg CO <sub>2</sub> equ.)	(Gg CO <sub>2</sub> equ.)	(Gg CO <sub>2</sub> equ.)		
Austria	64.68	63.31	1.02				680.34	51.55	13.20	33.35	0.50	67.32							5,090.46	1,033.25	4.93	
Belgium	11.04	7.25	1.52				706.06	366.32	1.93										2,202.65	1,227.42	1.79	
Bulgaria							28.90			8.58									97.50			
Canada	2.57	4.39	0.59				47.18	113.67	0.42	3.10									1,814.53	917.38	1.98	
Czech Republic	0.33						256.99			2.90			24.00						1,045.17			
Denmark		1.88						152.33											1,138.48	647.32		
Estonia																						
European Community	NE	NE		NE	NE		NE	NE		NE	NE		NE	NE		NE	NE		NE	31,383.12		
Finland	10.28	0.52	19.67				363.85	168.42	2.16										1,191.50	656.87	1.81	
France								2,749.00		23.83										8,008.01		
Germany	256.20	258.39	0.99	NO	NO		2,220.42	1,061.19	2.09	1,152.78	110.43	10.44	NO	NO		NO	NO		11,286.59	7,031.59	1.61	
Greece																				665.98		
Iceland	0.06						23.77												53.78			
Ireland							659.45	73.56	8.96	103.11	9.29	11.10							1,798.28	230.90	7.79	
Italy							258.40	381.18	0.68	133.40	0.14	920.00							6,438.55	2,708.10	2.38	
Latvia	NO/NE	NE	NE	NO/NE	NE	NE	NO/NE	NE	NE	NO/NE	NE	NE	NO/NE	NE	NE	NO/NE	NE	NE	NONE	NE	NE	
Luxembourg																						
Netherlands <sup>b</sup>							828.40	147.06	5.63	150.00	37.40	4.01							2,433.60	942.73		
New Zealand	NE	NO	NE	NO	NO		NE	56.74	NE	NO	0.46	NE	NO	NO		NO	NO			231.67		
Norway	10.64	1.42	7.49				400.96	102.03	3.93	14.27	0.81	17.61							1,177.44	291.68	4.04	
Poland	0.86	1.05	0.82				425.30	174.50	2.44	31.56	11.05	2.86							1,578.57	1,282.56	1.23	
Portugal		0.20						1.58													62.22	
Romania																						
Slovakia	0.45	0.14	3.20				64.59	13.21	4.89	23.20	2.32	10.00	13.61	1.36	10.00				236.79	83.23	2.85	
Spain								238.08			48.88			4.24						2,295.04		
Sweden	25.24	24.14	1.05				142.89	10.71	13.34	3.43	0.00	986.67							790.60	371.96	2.13	
Switzerland	12.23	3.16	3.87	NO	NO	NA	111.35	73.58	1.51	0.29	0.14	2.00	NO	NO	NA	NO	NO	NA	1,076.39	473.86	2.27	
United Kingdom <sup>c</sup>		IE			IE			IE			IE			IE			IE			11,536.23	5,498.43	2.10
United States							33,766.78	4,338.29	7.78				3,429.28	2,329.03	1.47				225,282.05	63,830.35	3.53	

<sup>a</sup> Information on methods and emission factors is included in this table as reported by Parties. 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> The Netherlands reported aggregated emissions of some HFCs. They are reported as unspecified and not as HFC-227ea.

<sup>c</sup> The United Kingdom reported aggregated HFCs emissions for the industrial processes sector in the HFC-23 column.

<sup>d</sup> P = potential emissions

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



Table 2.17 (continued)

Consumption of halocarbons and SF<sub>6</sub>, PFCs and SF<sub>6</sub> (2001) (continued)

	Methods and EF <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>			C <sub>2</sub> F <sub>12</sub>			C <sub>2</sub> F <sub>14</sub>			Total		
	Method	EF	P <sup>d</sup>	A <sup>e</sup>	Ratio P/A	P	A	Ratio P/A	P	A	Ratio P/A	P	A	Ratio P/A	P	A	Ratio P/A	P	A	Ratio P/A	P	A	Ratio P/A	P	A	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)		2.F(p)	2.F(a)		2.F(p)	2.F(a)		2.F(p)	2.F(a)	
			(Gg CO <sub>2</sub> equ.)	(Gg CO <sub>2</sub> equ.)		(Gg CO <sub>2</sub> equ.)	(Gg CO <sub>2</sub> equ.)		(Gg CO <sub>2</sub> equ.)	(Gg CO <sub>2</sub> equ.)		(Gg CO <sub>2</sub> equ.)	(Gg CO <sub>2</sub> equ.)		(Gg CO <sub>2</sub> equ.)	(Gg CO <sub>2</sub> equ.)		(Gg CO <sub>2</sub> equ.)	(Gg CO <sub>2</sub> equ.)		(Gg CO <sub>2</sub> equ.)	(Gg CO <sub>2</sub> equ.)		(Gg CO <sub>2</sub> equ.)	(Gg CO <sub>2</sub> equ.)	
Austria	CS	CS		9.53			15.63																NE	25.16		
Belgium																										
Bulgaria	NE	NE																								
Canada	T2	D	5.46	3.12	1.75	29.49	11.75	2.51	18.88	1.67	11.32	0.12	0.00	336.63	0.00	0.07	0.01	0.15	0.08	1.85	2.23	2.42	0.92	56.34	19.12	2.95
Czech Republic	T1		1.84			5.46			7.18															14.49		
Denmark	M/CS	CS								22.13														26.19	22.13	
Estonia																										
European Community	NE	NE	NE	NE		NE	NE		NE	NE		NE	NE		NE	NE		NE	NE		NE	NE		NE	2,346.95	
Finland	T2, T1a, T1b	NA							21.60	19.74	1.07													21.94	20.06	1.09
France	CS/ T2	CS		192.73			413.75			0.03														128.38		734.89
Germany	T2	T2	240.50	125.11	1.92	294.40	122.21	2.41	110.60	103.29	1.07	NO	NO		5.22	0.79	6.59	NO	NO		NO	NO		650.72	351.40	1.85
Greece																										
Iceland																										
Ireland	NA	NA	56.67	47.32	1.20	395.60	249.18	1.59																452.27	296.50	1.53
Italy	D, T1	CS		107.81			99.12									11.30									218.23	
Latvia	NE	NE	NO/NE	NE	NE	NO/NE	NE	NE	NO/NE	NE	NE	NO/NE	NE	NE	NO/NE	NE	NE	NO/NE	NE	NE	NO/NE	NE	NE	NO/NE	NE	NE
Luxembourg	NA	NA																								
Netherlands <sup>b</sup>	T2, T3b	D														136.08									136.08	
New Zealand	T2	D	0.00	107.81		0.00	99.12		NE	0.00		0.00	0.00		0.00	11.30		0.00	0.00		0.00	0.00		0.00	0.00	
Norway									0.39	0.39	1.00													0.39	0.39	1.00
Poland	T1a, T2	D							0.63			202.30	70.81	2.86										202.93	70.81	2.87
Portugal																										
Romania	NE	NE																								
Slovakia	D	D/CS	4.16																					4.16		
Spain	D/CS,T2	D/PS,T2								50.69			2.62												53.31	
Sweden	T2	CS	7.80	2.54	3.07	8.28	4.79	1.73	0.70	0.62	1.14													16.78	7.95	2.11
Switzerland	T2	M	5.85	4.30	1.36	19.32	12.10	1.60	0.70	2.03	0.34	NO	NO	NA	NO	NO	NA	NO	NO	NA	NO	NO	NA	25.87	18.43	1.40
United Kingdom <sup>c</sup>	T2	D/CS						IE			IE		IE	NA		IE	NA		IE			IE		547.42	481.23	1.14
United States	M, T2a	M, CS	1,341.34	1,414.91	0.95	4,287.63	3,001.34	1.43	459.39	183.76	2.50													6,088.36	4,600.01	1.32

Total PFCs	Method and EF used <sup>a</sup>		SF <sub>6</sub>		Ratio P/A
	Method	EF	P	A	
			2.F(p)	2.F(a)	
			(Gg CO <sub>2</sub> equ.)		
Austria	CS	CS	9,184.46	669.30	13.72
Belgium			193.14	105.16	1.84
Bulgaria	D	D	2.39	1.10	2.17
Canada	NA	NA			
Czech Republic	T1		223.20		
Denmark	M/CS	CS	30.43		
Estonia					
European Community	C, CS, D, M, T1, T1a, T1b, T2, T3b, T2	C, CS, D, PS, T1, T2	NE	6,543.03	
Finland	T2, T1a & T1b	D	68.49	55.03	1.24
France	CS/ T2	CS		965.75	
Germany	CS, T2, T1	CS, T2, T1	7,042.85	2,740.62	2.57
Greece					
Iceland	D	D			
Ireland	NA	NA	82.84	66.75	1.24
Italy	D, T3c	CS	5,903.30	345.06	17.11
Latvia	T2	D	NO/NE	0.02	NE
Luxembourg	C	C			
Netherlands	T2, T3b	PS/CS/D		296.09	
New Zealand	T2	D	35.46	16.86	2.10
Norway			257.37	66.09	3.89
Poland	T1a, T2	D	55.54	17.56	3.16
Portugal	D	CS		6.53	
Romania	NE	NE			
Slovakia	D	D/CS	71.89	13.48	5.33
Spain	CS, T2	CS, T2		212.31	
Sweden	T2	CS	270.02	52.64	5.13
Switzerland	T2	M	375.80	185.88	2.02
United Kingdom <sup>c</sup>	T2	CS	1,865.63	997.36	1.87
United States	CS	CS	28,096.16	16,051.58	1.75

<sup>a</sup> Information on methods and emission factors is included in this table as reported by Parties. 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> The Netherlands reported aggregated emissions of all PFCs for the industrial processes sector. They are reported as unspecified and not as c-C<sub>4</sub>F<sub>10</sub>.<sup>c</sup> The United Kingdom reported aggregated PFCs emissions for the industrial processes sector under fugitive emissions.<sup>d</sup> P = Potential emissions<sup>e</sup> A = Actual emissions

**Table 2.18****Consumption of halocarbons and SF<sub>6</sub> – trend information****HFC-134a emissions (t)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	1	414	458	509	568	602	653	653
<b>Belgium</b>		253	296	351	369	405	415	453
<b>Bulgaria</b>								
<b>Canada</b>		285	543	406	523	523	523	523
<b>Czech Republic</b>								
<b>Denmark</b>		155	210	190	230	259	278	269
<b>Estonia</b>								
<b>European Community</b>	NE	NE	NE	NE	NE	NE	NE	NE
<b>Finland</b>		15	38	89	91	127	240	203
<b>France</b>		787	1,441	1,977	2,158	2,438	2,826	2,916
<b>Germany</b>	NE	1,451	1,735	2,033	2,318	2,375	2,691	3,549
<b>Greece<sup>b</sup></b>		29	47	70	95	132	174	219
<b>Iceland</b>								
<b>Ireland</b>	NE	7	10	17	31	34	44	60
<b>Italy<sup>b</sup></b>					554	1,789	971	1,191
<b>Latvia</b>	NO	NE	NE	NE	NE	NE	NE	NE
<b>Luxembourg</b>								
<b>Netherlands</b>		178	389	602	696	709	629	491
<b>New Zealand<sup>b</sup></b>	NA	NE	NE	NE	NE	103	104	107
<b>Norway</b>					38	50	61	72
<b>Poland<sup>b</sup></b>							538	740
<b>Portugal</b>			0	1	5	14	27	46
<b>Romania</b>								
<b>Slovakia<sup>b</sup></b>						44	48	43
<b>Spain</b>		2	62	143	353	617	807	961
<b>Sweden</b>	3	90	120	180	204	243	255	251
<b>Switzerland</b>	0				223	187	239	260
<b>United Kingdom</b>								
<b>United States</b>	564	12,232	16,211	20,166	23,089	26,095	28,906	31,552

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>	10.5	11.2	11.5	6.0	8.5	0.0	48,146.9
<b>Belgium</b>	16.8	18.7	5.1	9.8	2.4	9.3	
<b>Bulgaria</b>							
<b>Canada</b>	90.7	-25.3	28.9	0.0	0.0	0.0	
<b>Czech Republic</b>							
<b>Denmark</b>	35.6	-9.6	21.1	12.7	7.5	-3.5	
<b>Estonia</b>							
<b>European Community</b>							
<b>Finland</b>	158.8	136.6	1.7	39.2	90.0	-15.6	
<b>France</b>	83.0	37.2	9.2	13.0	15.9	3.2	
<b>Germany</b>	19.6	17.2	14.0	2.4	13.3	31.9	
<b>Greece</b>	62.9	46.7	36.7	38.5	31.9	26.1	
<b>Iceland</b>							
<b>Ireland</b>	30.8	77.3	80.2	12.2	27.5	37.0	
<b>Italy</b>				222.9	-45.7	22.7	
<b>Latvia</b>							
<b>Luxembourg</b>							
<b>Netherlands</b>	117.9	55.0	15.6	1.8	-11.2	-21.9	
<b>New Zealand</b>					1.2	2.5	
<b>Norway</b>				31.5	21.6	17.6	
<b>Poland</b>						37.4	
<b>Portugal</b>		421.9	288.4	185.4	94.4	67.9	
<b>Romania</b>							
<b>Slovakia</b>					7.4	-10.2	
<b>Spain</b>	3,734.0	130.4	147.0	74.5	30.9	19.0	
<b>Sweden</b>	32.7	49.7	13.2	19.6	5.0	-1.6	8,392.3
<b>Switzerland</b>				-16.0	27.7	9.0	1,502,340.6
<b>United Kingdom</b>							
<b>United States</b>	32.5	24.4	14.5	13.0	10.8	9.2	5,493.3

**Table 2.18****Consumption of halocarbons and SF<sub>6</sub> – trend information (continued)****SF<sub>6</sub> emissions (t)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
Austria	11	31	27	33	33	30	28	28
Belgium		4	9	9	4	4	5	4
Bulgaria							0	0
Canada								
Czech Republic								
Denmark	1	3	2	2	2	2	2	1
Estonia								
European Community	247	402	389	395	384	302	287	274
Finland	4	2	2	2	1	1	1	2
France	44	49	50	50	48	41	40	40
Germany	NE	267	252	246	234	166	147	115
Greece								
Iceland								
Ireland	NE	3	4	6	4	3	2	3
Italy <sup>b</sup>					16	16	7	14
Latvia	NO/NE	0	0	0	0	0	0	0
Luxembourg								
Netherlands	8	12	12	13	12	11	11	12
New Zealand <sup>b</sup>	NE	1	1	1	1	1	1	1
Norway	2				3	3	3	3
Poland <sup>b</sup>							1	1
Portugal		0	0	0	0	0	0	0
Romania								
Slovakia <sup>b</sup>					1	1	1	1
Spain	2	4	4	5	6	8	9	9
Sweden	3	4	3	5	3	3	2	2
Switzerland	5							8
United Kingdom	10	22	23	23	37	38	40	42
United States	1,360	1,185	1,190	1,095	916	732	689	672

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
Austria	-13.1	25.7	-1.0	-10.5	-5.4	0.0	153.1
Belgium	100.7	0.0	-53.7	0.0	13.8	-3.3	
Bulgaria						3.3	
Canada							
Czech Republic							
Denmark	-28.1	14.2	-27.3	13.9	-22.0	-19.8	154.6
Estonia							
European Community	-3.2	1.5	-2.7	-21.3	-5.0	-4.7	10.7
Finland	-34.8	10.8	-32.8	25.3	-8.9	12.5	-58.6
France	1.3	0.0	-5.0	-14.3	-1.3	0.5	-8.9
Germany	-5.7	-2.3	-4.9	-29.1	-11.3	-22.0	
Greece							
Iceland							
Ireland	21.6	30.8	-31.4	-30.0	-18.2	28.6	
Italy				3.5	-59.7	121.7	
Latvia	16.0	39.4	18.8	23.6	20.9	17.7	
Luxembourg							
Netherlands	3.5	9.3	-5.4	-10.0	1.4	10.2	58.4
New Zealand	53.9	5.1	11.3	5.1	-46.1	2.7	
Norway				2.1	2.1	2.1	65.3
Poland						2.1	
Portugal	3.3	3.2	3.1	9.2	8.5	7.8	
Romania							
Slovakia				3.6	3.4	2.8	
Spain	8.3	20.3	15.3	31.9	13.8	0.6	280.8
Sweden	-23.0	45.0	-47.6	1.5	-38.5	41.2	-36.9
Switzerland							65.2
United Kingdom	3.3	-1.4	62.6	1.8	5.0	5.1	305.2
United States	0.4	-8.0	-16.3	-20.1	-5.9	-2.6	-50.6

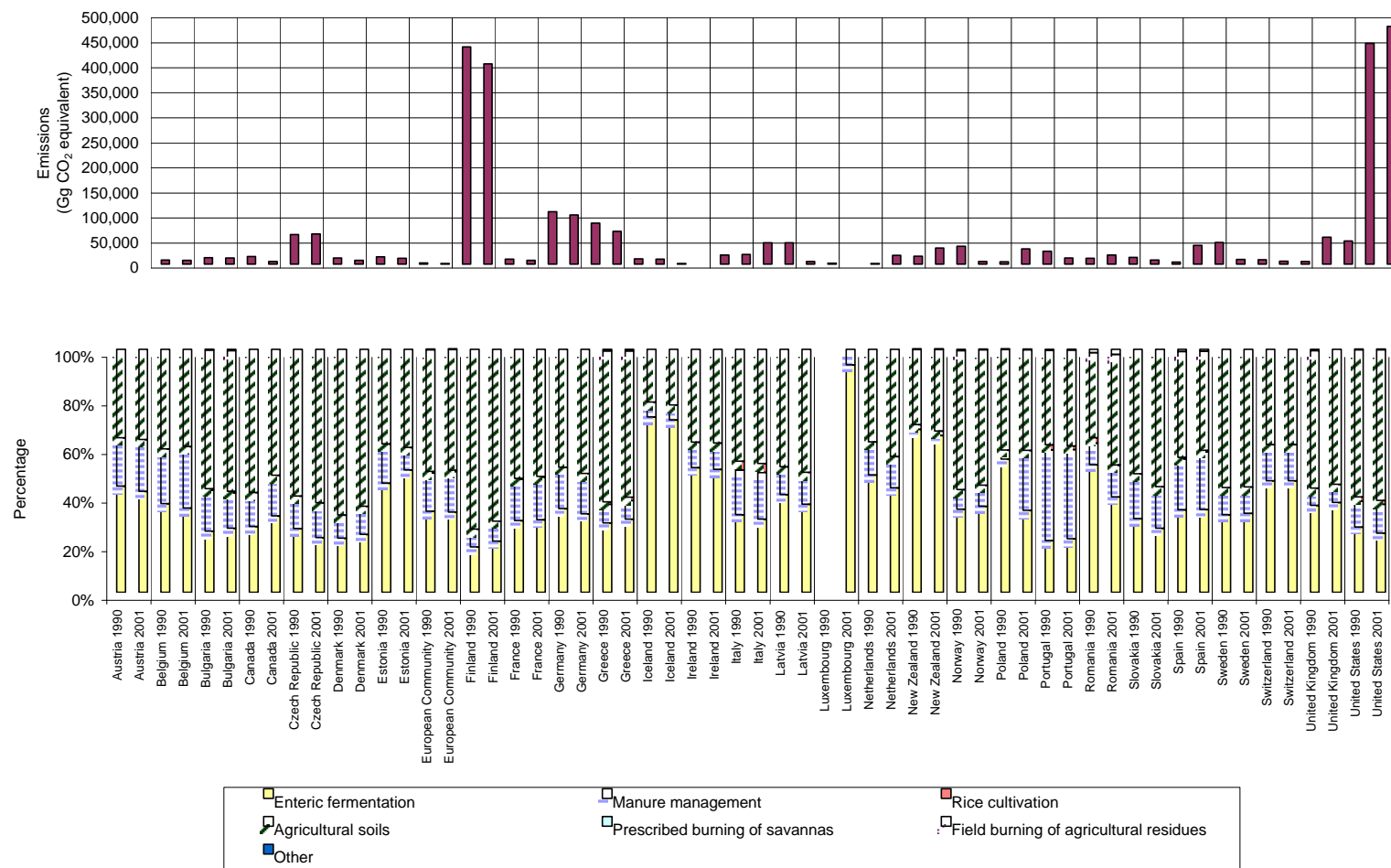
**Table 3.1****Solvent and other product use, CO<sub>2</sub> and N<sub>2</sub>O (2001)**

	Methods and EF used		Methods and EF used		Key source	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	
	Method	EF	Method	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)
Austria	C, CS	CS	CS	CS	T	0.1	2.65				
Belgium											
Bulgaria	NE	NE	NE	NE			NE		NE		NA
Canada	NA	NA	CS	CS							
Czech Republic	C	C, CS	D	D		0.1	3.14	0.1	3.14		
Denmark						0.1					
Estonia											
European Community	NE	NE	NE	NE			NE		NE		NE
Finland	NO	NO	CS	CS			NE		NE		NO
France	C	CS				0.2	2.97	0.0	2.58		
Germany	NE	NE	CS	CS			NE		NE		NE
Greece	C	C				0.0		0.0			
Iceland											
Ireland	CS, C	CS, C	NA	NA		0.0	3.12	0.0	3.12		
Italy	D	D				0.1	0.77	0.0	2.44		NO
Latvia	D	D	T1	D		0.5	1.56	0.1	0.00		NO
Luxembourg	C	C	NA	NA							
Netherlands	CS	CS	CS	CS							
New Zealand							NE		NE		NE
Norway	M	CS	CS			0.0	3.00	0.0	3.00		NE
Poland							NE		NE		NE
Portugal	MB					0.1	0.76	0.0	3.12		
Romania	NE	NE	NE	NE							
Slovakia											
Spain	D	D	CS	CS		0.1	0.65	0.0	5.86		
Sweden	CS	CS	CS	CS	T	0.1	0.51	0.0	3.12		
Switzerland	CS	CS	CS	CS			NO		NO		NO
United Kingdom	T2	CS	NE								
United States	NE	NE	NE	NE			NE		NE		NE

## Agriculture

**Figure 4.1**

**Emissions and contribution of subsectors in agriculture<sup>a</sup>**



<sup>a</sup> 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), Poland (1988) and Romania (1989).

**Table 4.1****Enteric fermentation, CH<sub>4</sub> (2001)**

	Key source	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)			CH <sub>4</sub> IEF	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	(kg CH <sub>4</sub> /head/yr)	CRF	FAO <sup>b</sup>	Difference	(kg CH <sub>4</sub> /head/yr)
					(thousands of head)	(%)	(kg CH <sub>4</sub> /head/yr)	(thousands of head)	(%)	(thousands of head)	(%)	(thousands of head)	(%)				
IPCC default EF <sup>c</sup>								56 - 118 <sup>d</sup>	44 - 56 <sup>d</sup>				8.0				1.5
Austria	L, T	3.7	T1, T2	D, CS	2118	2,155	1.7	101	53	320	358	10.5	8.0	3,440	3,427	-0.4	1.5
Belgium <sup>e</sup>	L	2.8			3038	3,245	6.4			157	167	6.0	5.6	6,836	7,349	7.0	0.7
Bulgaria	L	2.0	T1	D	575	640	10.2	81	56	1,512	2,286	33.9	8.0	718	1,144	37.2	1.5
Canada	L	2.6	T1	D	14,516	13,608	-6.7	80	56	629	948	33.7	8.0	13,903	13,576	-2.4	1.5
Czech Republic	L	1.1	T2	CS	1,582	1,582	0.0	68	24	90	90	0.3	5.0	3,594	3,594	0.0	3.4
Denmark	L, T	4.0	T1/T2	CS	1,907	1,907	0.0	104	37	77	152	49.3	8.0	10,110	12,608	19.8	1.5
Estonia	L	2.0			261	253	-3.0	81	56	29	29	0.7	5.0	345	300	-14.9	1.0
European Community		3.2	C, CS, D, T1, T2	C, CS, D, T1, T2	0					NE				NE			
Finland	L, T	1.9	T1/T2	CS/D	1,037	1,037	0.0	114	42	96	96	0.0	8.0	1,261	1,261	0.0	1.5
France	L, T	5.2	C	CS	20,754	20,462	-1.4	103	52	9,477	9,443	-0.4	8.0	10,397	15,382	32.4	1.5
Germany	L, T	2.1	C/D	C/D	14,582	14,568	-0.1	100	48	2,767	2,771	0.1	5.0	25,780	25,767	-0.1	1.5
Greece	L, T	2.3	T1	D	598	579	-3.3	81	56	9,017	9,269	2.7	8.0	969	936	-3.6	1.5
Iceland	L	7.8	D	D	70	70	0.0	100	48	474	474	0.0	8.0	4.6	44	89.6	1.5
Ireland	L, T	13.8	D	CS, D	6,894	6,330	-8.9	100	50	6,386	5,056	-26.3	8.0	1,750	1,732	-1.1	1.5
Italy	L	2.3	D, T1, T2	D, CS	7,002	7,211	2.9	111	51	10,952	11,089	1.2	8.0	8,451	8,329	-1.5	1.5
Latvia	L, T	5.2	T1	D	385	367	-5.0	81	56	29	29	-1.4	8.0	429	394	-9.0	1.5
Luxembourg <sup>e</sup>			C	C													
Netherlands	L, T	3.1	cattle 90: T2; rest: T1	cattle: CS; rest: D	4,047	4,047	0.0	81	46	1,296	1,296	0.0	8.0	13,073	13,073	0.0	1.5
New Zealand	L	32.0	T2	CS	9,521	9,281	-2.6	75	56	41,361	45,385	8.9	10.6	356	354	-0.4	1.5
Norway	L, T	3.1	T1	D	977	987	1.0	100	48	1,770	2,408	26.5	8.0	608,592	392	-155351.4	0.0
Poland	L	2.3	T2	CS	5,734	5,734	0.0	90	38	343	343	0.1	10.1	17,105	17,106	0.0	1.5
Portugal	L, T	3.1	T1	D	1,414	1,414	0.0	100	48	3,579	5,578	35.8	8.0	2,338	2,338	0.0	1.5
Romania	L	3.6	T1	T1	2,740	2,870	4.5	81	56	7,657	7,657	0.0	5.0	4,797	4,797	0.0	1.0
Slovakia	L	2.2	T1,T2	D,CS	645	645	0.0	100	56	358	358	0.0	8.0	1,469	1,488	1.3	1.5
Spain	L, T	3.8	CS,T1,T2	T1,T2	6,375	6,164	-3.4	106	59	24,301	24,400	0.4	8.6	24,998	22,149	-12.9	1.3
Sweden	L, T	4.1	T1,CS	D,CS	1,651	1,652	0.0	127	56	452	452	-0.1	8.0	1,891	1,891	0.0	1.7
Switzerland	L, T	4.7	CS	CS	1,611	1,611	0.0	104	42	420	420	0.0	7.1	1,548	1,548	0.0	1.1
United Kingdom	L	2.6	T2	D/CS	10,602	10,600	0.0	117	43	36,716	36,697		4.8	5,845	5,845	0.0	1.5
United States	L, T	1.7	M, T1, T2	M, CS, D	101,592	97,277	-4.4	99	44	6,965	6,965	0.0	8.0	58,960	59,138	0.3	1.5

<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 the various livestock types within the category 4 from 4.A Enteric fermentation.

<sup>b</sup> Source of international statistics: FAO, <http://apps.fao.org/> follow the link "Agriculture" and then the link "Live Animals".

<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 / yr) are provided by regions as shown below (see footnote c for source reference):

<sup>e</sup> In the FAO statistics, Belgium and Luxembourg are aggregated.

	North America	Western Europe	Eastern Europe	Oceania	Asia
Dairy cattle	118	100	81	68	56
Non-dairy cattle	47	48	56	53	44

**Table 4.2****Enteric fermentation – trend information****CH<sub>4</sub> emissions (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	169	159	158	155	155	154	152	150
<b>Belgium</b>	220	221	218	212	212	212	199	200
<b>Bulgaria</b>	193	85	82	79	82	83	79	62
<b>Canada</b>	762	861	867	875	855	849	843	895
<b>Czech Republic</b>	156		98	93	86	85	81	81
<b>Denmark</b>	152	145	145	140	140	130	129	131
<b>Estonia</b>	52	27	24	26	22	19	18	18
<b>European Community</b>	6,861	6,509	6,535	6,451	6,413	6,386	6,297	6,268
<b>Finland</b>	89	78	78	79	77	76	75	75
<b>France</b>	1,469	1,409	1,407	1,389	1,379	1,378	1,392	1,396
<b>Germany</b>	1,335	1,092	1,085	1,056	1,029	1,023	995	998
<b>Greece<sup>b</sup></b>	142	140	140	140	140	139	139	143
<b>Iceland</b>	11	10	10	10	10	10	9.9	9.9
<b>Ireland</b>	437	459	464	473	483	483	473	461
<b>Italy</b>	649	636	628	627	619	608	603	609
<b>Latvia</b>	98	39	37	35	32	28	27	28
<b>Luxembourg<sup>b</sup></b>						16	16	16
<b>Netherlands</b>	402	377	366	353	341	334	319	322
<b>New Zealand</b>	1,018	1,056	1,059	1,063	1,070	1,075	1,101	1,101
<b>Norway</b>	82	84	85	85	85	85	84	83
<b>Poland</b>	806	565	545	550	534	469	432	414
<b>Portugal</b>	124	119	118	117	116	124	123	123
<b>Romania</b>	520	318	314	307	288	269	271	255
<b>Slovakia</b>	116	74	68	63	55	53	52	52
<b>Spain</b>	602	612	658	651	666	675	679	696
<b>Sweden</b>	144	148	147	147	143	142	138	137
<b>Switzerland</b>	132	128	126	124	120	119	118	119
<b>United Kingdom</b>	911	899	907	895	895	895	865	813
<b>United States</b>	5,612	5,855	5,737	5,635	5,557	5,551	5,509	5,468

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>	-1.2	-1.3	-0.3	-0.8	-1.0	-1.5	-11.4
<b>Belgium</b>	-1.2	-2.8	0.1	-0.1	-6.2	0.7	-8.9
<b>Bulgaria</b>	-3.4	-3.5	2.9	1.5	-4.4	-21.5	-67.7
<b>Canada</b>	0.7	1.0	-2.2	-0.8	-0.7	6.2	17.5
<b>Czech Republic</b>		-5.1	-7.6	-0.8	-4.9	-0.2	-48.1
<b>Denmark</b>	-0.1	-3.3	0.1	-7.2	-0.5	1.2	-13.8
<b>Estonia</b>	-8.3	5.8	-14.6	-12.8	-5.0	1.1	-64.6
<b>European Community</b>	0.4	-1.3	-0.6	-0.4	-1.4	-0.5	-8.6
<b>Finland</b>	0.4	1.0	-2.4	-1.7	-0.6	-1.0	-16.3
<b>France</b>	-0.2	-1.2	-0.7	-0.1	1.0	0.3	-5.0
<b>Germany</b>	-0.6	-2.7	-2.5	-0.7	-2.7	0.3	-25.3
<b>Greece</b>	0.3	-0.2	-0.3	-0.3	-0.1	2.8	0.8
<b>Iceland</b>	0.9	1.1	0.9	-1.1	-4.3	-0.7	-10.1
<b>Ireland</b>	1.1	1.9	2.1	0.0	-2.1	-2.5	5.4
<b>Italy</b>	-1.2	-0.2	-1.3	-1.8	-0.7	0.8	-6.2
<b>Latvia</b>	-5.7	-6.4	-8.8	-13.1	-2.4	4.5	-71.3
<b>Luxembourg</b>					-1.4	0.1	
<b>Netherlands</b>	-2.9	-3.6	-3.2	-2.2	-4.3	0.9	-19.8
<b>New Zealand</b>	0.2	0.4	0.7	0.5	2.4	0.1	8.2
<b>Norway</b>	0.8	0.2	0.9	-0.6	-1.7	-0.9	1.5
<b>Poland</b>	-3.5	1.0	-3.0	-12.1	-7.9	-4.3	-48.7
<b>Portugal</b>	-1.1	-0.8	-0.3	6.2	-0.5	0.0	-0.9
<b>Romania</b>	-1.3	-2.4	-6.0	-6.8	0.8	-5.8	-50.9
<b>Slovakia</b>	-8.1	-7.6	-12.1	-3.1	-1.8	0.2	-54.9
<b>Spain</b>	7.5	-1.0	2.3	1.4	0.5	2.5	15.5
<b>Sweden</b>	-0.6	0.2	-2.9	-1.1	-2.4	-0.9	-5.0
<b>Switzerland</b>	-1.3	-1.5	-3.0	-1.5	-0.4	0.6	-9.8
<b>United Kingdom</b>	0.9	-1.3	0.1	0.0	-3.4	-6.0	-10.7
<b>United States</b>	-2.0	-1.8	-1.4	-0.1	-0.8	-0.7	-2.6

**Table 4.3****Enteric fermentation: dairy cattle – trend information****CH<sub>4</sub> emissions (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
Austria	80	64	65	68	70	68	62	60
Belgium	99	99	96	87	94	89	85	87
Bulgaria <sup>b</sup>					33	35	34	28
Canada	196	181	181	176	173	166	160	128
Czech Republic <sup>b</sup>	80				44	44	42	42
Denmark	78	73	73	70	70	67	66	65
Estonia <sup>b</sup>						11	11	10
European Community	NE	NE	NE	NE	NE	NE	NE	NE
Finland	48	41	40	41	41	40	40	40
France	531	465	457	447	443	440	439	439
Germany	635	522	519	502	483	476	457	454
Greece <sup>b</sup>	20	19	19	18	18	18	17	19
Iceland <sup>b</sup>						2.8	2.7	2.6
Ireland	136	126	126	126	126	125	123	122
Italy <sup>b</sup>					241	248	233	239
Latvia	43	24	22	21	20	17	17	17
Luxembourg								
Netherlands	291	266	262	252	248	242	230	235
New Zealand <sup>b</sup>	263	315	323	330	334	342	342	373
Norway	34				35	35	34	34
Poland <sup>b</sup>							279	270
Portugal	40	36	36	36	36	36	36	36
Romania <sup>b</sup>		131	132	129	122	119	115	108
Slovakia <sup>b</sup>					26	26	24	24
Spain	143	128	130	127	129	127	122	122
Sweden	69	61	58	59	56	56	54	53
Switzerland <sup>b</sup>	81				73	71.70	73	75
United Kingdom	296	284	285	281	277	282	272	264
United States	1,375	1,320	1,254	1,255	1,251	1,266	1,284	1,282

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
Austria	0.5	5.1	2.9	-2.6	-9.5	-2.1	-24.2
Belgium	-2.9	-8.9	7.2	-5.5	-4.4	2.5	-12.3
Bulgaria				5.2	-0.6	-19.7	
Canada	0.2	-3.2	-1.4	-4.3	-3.3	-20.3	-35.0
Czech Republic				-0.3	-4.2	-0.7	-48.1
Denmark	-0.3	-4.3	-0.2	-4.3	-0.7	-1.9	-17.2
Estonia					-5.3	-1.8	
European Community							
Finland	-1.2	1.7	-1.5	-1.2	1.0	0.0	-15.0
France	-1.8	-2.0	-1.1	-0.7	-0.1	-0.1	-17.4
Germany	-0.7	-3.2	-3.9	-1.4	-4.1	-0.5	-28.4
Greece	-0.7	-1.6	-1.6	-1.6	-1.5	11.5	-2.8
Iceland					-4.3	-3.1	
Ireland	0.0	-0.1	-0.2	-1.0	-1.3	-1.1	-10.2
Italy				2.7	-5.8	2.3	
Latvia	-5.2	-5.0	-8.0	-14.9	-0.7	2.2	-60.9
Luxembourg							
Netherlands	-1.2	-3.9	-1.7	-2.5	-4.6	2.0	-19.1
New Zealand	2.7	2.2	1.2	2.3	0.1	9.0	41.9
Norway				-0.6	-1.6	-1.0	-1.1
Poland						-3.0	
Portugal	-0.5	0.0	-1.9	0.6	-0.6	0.0	-11.9
Romania	0.4	-1.7	-5.8	-2.7	-3.1	-5.9	
Slovakia				0.7	-7.8	0.9	
Spain	1.3	-2.1	1.0	-1.5	-3.6	-0.5	-14.8
Sweden	-5.1	1.7	-4.5	0.5	-4.8	-0.7	-23.1
Switzerland				-2.0	2.2	1.7	-8.0
United Kingdom	0.4	-1.4	-1.3	1.7	-3.4	-2.9	-10.8
United States	-5.0	0.1	-0.3	1.2	1.5	-0.2	-6.8



**Table 4.3****Enteric fermentation: dairy cattle – trend information (continued)****CH<sub>4</sub> implied emission factors (kg/head/year)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
Austria	88	91	93	95	96	98	99	101
Belgium							IE	
Bulgaria <sup>b</sup>					81	81	81	81
Canada	99	99	99	99	99	100	100	80
Czech Republic <sup>b</sup>	67				68	68	68	68
Denmark	104	104	104	104	104	104	104	104
Estonia <sup>b</sup>						81	81	81
European Community							NE	
Finland	97	103	103	105	106	108	111	114
France	99	101	102	102	102	103	103	103
Germany	100	100	100	100	100	100	100	100
Greece <sup>b</sup>	81	81	81	81	81	81	81	81
Iceland <sup>b</sup>						100	100	100
Ireland	100	100	100	100	100	100	100	100
Italy <sup>b</sup>						118	113	111
Latvia	81	81	81	81	81	81	81	81
Luxembourg								
Netherlands	81	81	80	80	81	81	81	81
New Zealand <sup>b</sup>	77	77	77	77	77	77	77	74.74
Norway	100				100	100	100	100
Poland <sup>b</sup>							90	90
Portugal	100	100	100	100	100	100	100	100
Romania <sup>b</sup>		81	81	81	81	81	81	81
Slovakia <sup>b</sup>					92	96	100	100
Spain	89	101	98	98	99	104	106	106
Sweden	120	126	124	126	125	126	125	127
Switzerland <sup>b</sup>	102				99	99	103	104
United Kingdom	104	109	110	113	114	115	116	117
United States	97	98	94	96	96	97	98	99

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
Austria	1.8	1.7	1.8	1.7	1.7	1.7	14.7
Belgium							
Bulgaria				0.0	0.0	0.0	
Canada	0.0	0.1	0.0	0.3	0.2	-19.5	-18.6
Czech Republic				0.0	0.0	0.0	1.5
Denmark	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Estonia					0.0	0.0	
European Community							
Finland	0.4	2.0	0.5	1.6	3.3	2.6	17.4
France	0.2	0.4	0.2	0.3	0.2	-0.1	4.1
Germany	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Greece	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Iceland					0.0	0.0	
Ireland	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Italy					-3.9	-1.9	
Latvia	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Luxembourg							
Netherlands	-0.6	0.0	1.1	0.4	-0.2	0.0	0.7
New Zealand	0.0	0.0	0.0	0.0	0.0	-2.7	-2.7
Norway				0.0	0.0	0.0	0.0
Poland						0.0	
Portugal	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Romania	0.0	0.0	0.0	0.0	0.0	0.0	
Slovakia				4.3	4.2	0.0	
Spain	-2.3	0.3	0.7	4.5	2.6	-0.4	19.5
Sweden	-1.9	1.2	-0.5	0.5	-0.2	1.7	6.0
Switzerland				-0.4	3.8	0.9	1.5
United Kingdom	1.0	3.0	0.9	1.0	0.9	0.7	12.8
United States	-3.6	1.3	0.8	0.9	1.1	0.4	1.5

**Table 4.4****Enteric fermentation: non-dairy cattle – trend information****CH<sub>4</sub> emissions (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
Austria	80	85	83	77	75	76	81	80
Belgium	114	115	115	117	111	114	107	107
Bulgaria <sup>b</sup>					13	14	13	13
Canada	538	650	653	668	650	650	649	729
Czech Republic <sup>b</sup>	53				25	24	23	23
Denmark	56	51	52	49	48	46	46	47
Estonia <sup>b</sup>						7.2	6.8	7.4
European Community	NE	NE	NE	NE	NE	NE	NE	NE
Finland	36	31	31	32	31	30	29	29
France	820	833	840	832	828	831	846	851
Germany	629	511	506	489	484	485	478	482
Greece <sup>b</sup>	21	20	20	19	19	19	18	20
Iceland <sup>b</sup>						2.2	2.2	2.1
Ireland	246	272	279	289	298	299	292	284
Italy <sup>b</sup>					283	276	249	245
Latvia	51	14	13	12	11	10	9	10
Luxembourg								
Netherlands	75	74	66	63	59	57	55	53
New Zealand <sup>b</sup>	312	337	325	314	308	309	317	254
Norway	31				33	32	31	31
Poland <sup>b</sup>							114	104
Portugal	47	46	46	44	44	51	51	51
Romania <sup>b</sup>		95	96	94	89	86	84	79
Slovakia <sup>b</sup>					24	17	23	22
Spain	210	259	275	271	281	291	292	311
Sweden	61	72	74	74	73	71	71	70
Switzerland <sup>b</sup>	44				39	38.16	38	38
United Kingdom	391	394	404	392	389	386	377	358
United States	3,961	4,272	4,227	4,124	4,046	4,035	3,976	3,936

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
Austria	-2.7	-6.6	-3.3	1.5	6.8	-1.2	-0.6
Belgium	0.0	2.2	-5.5	2.9	-6.0	-0.4	-6.1
Bulgaria				5.8	-5.3	-1.1	
Canada	0.5	2.3	-2.7	0.1	-0.2	12.3	35.6
Czech Republic				-3.0	-5.5	1.3	-56.7
Denmark	0.3	-4.2	-1.9	-4.7	-1.2	4.2	-14.5
Estonia					-5.5	8.3	
European Community							
Finland	2.6	0.2	-3.0	-1.7	-2.7	-1.8	-19.2
France	0.8	-0.9	-0.5	0.3	1.8	0.6	3.7
Germany	-0.9	-3.4	-1.0	0.2	-1.6	0.9	-23.4
Greece	0.7	-1.3	-2.0	-2.9	-1.5	10.0	-5.8
Iceland					-2.6	-2.5	
Ireland	2.4	3.4	3.4	0.3	-2.5	-2.8	15.2
Italy				-2.4	-10.0	-1.5	
Latvia	-5.1	-8.0	-10.3	-10.4	-5.7	8.5	-80.5
Luxembourg							
Netherlands	-10.4	-4.7	-6.0	-3.1	-3.7	-3.8	-29.0
New Zealand	-3.3	-3.4	-1.9	0.4	2.5	-19.9	-18.6
Norway				-3.0	-3.6	-0.9	0.4
Poland						-8.6	
Portugal	-1.1	-2.7	-1.2	16.7	-0.5	0.0	9.0
Romania	0.5	-1.8	-5.8	-2.8	-2.9	-6.0	
Slovakia				-29.7	36.4	-0.8	
Spain	6.1	-1.5	3.9	3.5	0.2	6.4	47.7
Sweden	2.5	-0.4	-1.5	-2.1	-0.4	-1.7	14.7
Switzerland				-1.9	-0.8	-0.1	-14.9
United Kingdom	2.4	-2.9	-0.9	-0.8	-2.3	-4.9	-8.4
United States	-1.0	-2.4	-1.9	-0.3	-1.5	-1.0	-0.6

**Table 4.4****Enteric fermentation: non-dairy cattle – trend information (continued)****CH<sub>4</sub> implied emission factors (kg/head/year)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
Austria	48	52	52	52	52	52	53	53
Belgium							IE	
Bulgaria <sup>b</sup>					56	56	56	56
Canada	54	55	54	54	54	54	54	56
Czech Republic <sup>b</sup>	24				24	24	24	24
Denmark	37	37	37	37	37	37	37	37
Estonia <sup>b</sup>						56	56	56
European Community							NE	
Finland	41	41	42	42	42	42	42	42
France	50	51	52	52	52	52	52	52
Germany	48	48	48	48	48	48	48	48
Greece <sup>b</sup>	56	56	56	56	56	56	56	56
Iceland <sup>b</sup>						48	48	48
Ireland	50	50	50	50	50	50	50	50
Italy <sup>b</sup>						54	50	51
Latvia	56	56	56	56	56	56	56	56
Luxembourg								
Netherlands	57	54	52	50	48	47	45	46
New Zealand <sup>b</sup>	68	68	68	68	68	68	67	56
Norway	48				48	48	48	48
Poland <sup>b</sup>							38	38
Portugal	48	48	48	48	48	48	48	48
Romania <sup>b</sup>		56	56	56	56	56	56	56
Slovakia <sup>b</sup>					56	56	56	56
Spain	61	60	59	59	58	58	59	59
Sweden	53	56	56	56	56	56	56	56
Switzerland <sup>b</sup>	42				43	43	43	42
United Kingdom	42	43	43	43	43	43	43	43
United States	46	45	45	45	45	45	45	44

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
Austria	0.1	-0.5	-1.0	0.7	1.3	-0.3	9.8
Belgium							
Bulgaria				0.0	0.0	0.0	
Canada	-0.3	-0.4	0.1	-0.3	-0.2	4.4	3.9
Czech Republic				0.0	0.0	0.0	-3.5
Denmark	0.0	0.0	0.0	0.0	0.0	0.0	-1.1
Estonia					0.0	0.0	
European Community							
Finland	2.1	0.4	-0.7	1.0	0.3	-0.3	3.0
France	0.3	0.3	0.0	0.1	0.0	-0.3	2.6
Germany	0.0	0.1	-0.1	0.0	0.0	0.0	0.0
Greece	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Iceland					0.0	0.0	
Ireland	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Italy					-7.0	1.4	
Latvia	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Luxembourg							
Netherlands	-4.7	-3.6	-3.1	-3.9	-3.5	2.9	-18.6
New Zealand	0.0	0.0	0.0	0.0	0.0	-17.1	-17.1
Norway				0.0	0.0	0.0	0.0
Poland						0.0	
Portugal	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Romania	0.0	0.0	0.0	0.0	0.0	0.0	
Slovakia				0.0	0.0	0.0	
Spain	-0.3	-1.4	-0.3	-0.4	1.4	0.8	-1.9
Sweden	0.2	0.4	0.3	-0.1	0.2	0.1	6.2
Switzerland				0.4	0.3	-2.0	1.2
United Kingdom	0.3	0.3	0.1	0.1	-0.2	0.2	1.2
United States	-0.9	-0.3	-0.2	0.5	-0.6	-0.3	-3.5

**Table 4.5****Manure management, CH<sub>4</sub> (2001)**

	Key source	Share of national total  (%)	Methods and EF used <sup>a</sup>		Cattle		Sheep	Swine
			Methods	EF	Dairy cattle	Non-dairy cattle		
					CH <sub>4</sub> IEF (kg CH <sub>4</sub> /head/yr)			
IPCC default EF <sup>b</sup>					6 to 81	1 to 38	0.19 to 0.37	3 to 20
Austria	L	1.1	T1, T2	D, CS	18.77	7.10	0.19	5.85
Belgium	L	1.7			NE	NE	1.39	10.09
Bulgaria		0.6	T1, T2	D, CS	18.30	12.21	0.28	9.94
Canada	L	0.8	T1	D	36.00	1.00	0.19	10.00
Czech Republic	L	0.5	T2	CS	3.29	1.01	0.23	7.87
Denmark	L	1.3	T2	CS	21.80	1.60	0.46	2.53
Estonia		0.3			6.00	4.00	0.19	4.00
European Community		1.1	C, CS, D, T1, T2	C, CS, D, T1, T2	NE	NE	NE	NE
Finland		0.3	T2	CS/D	8.31	2.28	0.19	3.37
France	L	2.6	CS/ T2	T2	44.00	21.37	0.28	10.00
Germany		0.4	C/D	C/D	14.04	6.01	0.04	3.00
Greece		0.4	T1	D	19.00	13.00	0.28	7.00
Iceland		0.7	D	D	14.00	6.00	0.19	3.00
Ireland	L, T	2.0	D	CS, D	15.90	6.40		5.40
Italy	L	0.7	D, T1, T2	D, CS	20.05	11.17	0.19	7.96
Latvia		1	T1	D	6.00	4.00	0.19	4.00
Luxembourg			C	C				
Netherlands	L	0.8	CS/T2	CS (=D, corrected)	8.25	12.49	0.49	3.09
New Zealand	L	0.8	T2	CS	0.89	0.91	0.18	20.00
Norway	L	0.6	T2	D, CS	14.41	8.57	0.73	0.00
Poland		0.2	T2	CS	3.00	0.95	0.18	1.11
Portugal	L, T	3.7	T2	D (CS)	25.73	1.88	1.60	54.53
Romania	L	1.2	T2	T2	19.00	13.00	0.16	7.00
Slovakia		0.4	D	D,CS	6.00	4.00	0.19	4.00
Spain	L	2.2	CS,T1,T2	T1,T2	14.11	3.78	0.23	13.97
Sweden	L, T	0.6	T1,T2	D,CS	12.32	5.66	0.19	2.94
Switzerland		0.8	CS	CS	14.43	3.38	0.14	3.40
United Kingdom		0.3	T2	D/CS	13.20	4.24	0.11	3.00
United States		0.6	M, T1, T2	M, CS, D	55.36	1.75	0.26	13.82

<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 the various livestock types within the category CH<sub>4</sub> from 4.B Manure management.

<sup>b</sup> Source of default emission factors: IPCC Guidelines, Volume 3, tables 4–5 and 4–6 (pages 4.12 to 4.13). Default emission factors are provided according to climate regions (cool, temperate, warm), as shown in box 1.

**Box 1. Default IPCC default emission factors according to climate regions<sup>b</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
	Sheep								
	cool	temperate	warm						
Developed countries	0.19	0.28	0.37						

**Table 4.6**  
**Manure management, N<sub>2</sub>O (2001)**

	Key source	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	Swine	Sheep	Poultry		
			N <sub>2</sub> O IEF (kg N <sub>2</sub> O-N / kg N)												
														(kg N / head / yr)	
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>		
Austria	L, T	0.8					0		63	34	18	20	0.9		
Belgium	L	0.3				IE		IE							
Bulgaria		0.5	D	D		0.001	0.001	0.02	0.005	70	50	20	16	0.6	
Canada		0.6	T1	D		0.000	0.001	0.02	0.005	105	45	12	4.1	0.4	
Czech Republic <sup>c</sup>		0.3	D	D			1.000	20.00	5.000	100	70	20	20	1.0	
Denmark		0.6					0.001	0.01		125	22	2.4	19	0.1	
Estonia		0.05					0.001	0.02	0.005	0.07	0.05	0.02	0.02	0.0	
European Community		0.5	C, CS, D, T1, T2	C, CS, D, T2		NE	NE	NE	NE	NE	NE	NE	NE	NE	
Finland	T	0.5	D	D/CS			0.001	0.02		96	35	9.6	16	0.4	
France	L	0.5	T2	T2			0.001	0.02	0.005	100	72	20	20	0.6	
Germany	L	0.6	C/D	C/D		NE	NE	NE	126,181.8	100	70	20	20	0.6	
Greece		0.2	T1	D		NO	0.001	0.02	0.005	70	50	16	12	0.6	
Iceland		0					NE			0.07	0.02	0.01	0.00	0.0	
Ireland	L	1.0	D	CS, D		0.001	0.001	0.02		93	50	12	8.0	0.6	
Italy	L	0.8	D	D, CS		NO	0.001	0.02	0.020	104	46	12	16	0.6	
Latvia	L	1	T1	D/CS		0.001	0.001	0.02	0.005	71	51	10	6	0.9	
Luxembourg															
Netherlands		0.09	CS	CS				0.001							
New Zealand		0.1				0.001		0.02	0.005	110	72	16	15	0.6	
Norway		0.2	D	D, CS		NO	0.001	0.02	0.005	90	34	7.0	9.6	0.3	
Poland	L, T	1.5	T2	CS		NE	0.001	0.02		70	50	20	16	0.6	
Portugal	L, T	1.4	T2	D (CS)		0.003	0.003	0.02		108	54	17	41	1.1	
Romania		0.03	T2	T2			0.001	0.02	0.005	0.07	0.05	0	0.02	0.0	
Slovakia	L, T	1.0	D	C,D,CS		NO	0.001	0.02		100	60		16		
Spain	T	0.4	CS,D	D			0.001	0.02	0.005	70	33	10	9.7	0.4	
Sweden	L, T	0.8	T1,T2	D,CS		NO	0.001	0.02	0.020	130	45	9	6.0	0.4	
Switzerland	L	0.8	CS	CS		NO	0.001	0.02	NO	111			12	0.5	
United Kingdom		0.2	T1	D/CS			0.001	0.02	0.004	120	49	10	6.8	0.7	
United States		0.3	M, T1, T2	D		0.005	0.006	0.02	0.014	84	48	8.4	4.1	0.4	

<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.B Manure management.

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

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

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

<sup>e</sup> The Czech Republic reported activity data for N excretion per AWMS in the unit *t N/year* instead of *kg N/year* as required in the CRF. The values for the N<sub>2</sub>O IEF from the Czech Republic do therefore not correspond to the unit given in this table.

IPCC defaults:

	North America	Western Europe	Eastern 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 4.7****Manure management – trend information****CH<sub>4</sub> emissions (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	41	47	46	46	46	44	43	43
<b>Belgium</b>	114	121	121	122	122	123	127	123
<b>Bulgaria</b>	73	35	32	28	30	30	27	19
<b>Canada</b>	219	238	241	236	242	243	242	261
<b>Czech Republic</b>	48		36	36	35	35	33	32
<b>Denmark</b>	43	45	44	44	46	40	41	42
<b>Estonia</b>	18	9	8	7	7	6	6	3
<b>European Community</b>	2,151	2,110	2,106	2,120	2,140	2,129	2,146	2,156
<b>Finland</b>	9	10	10	11	10	10	10	10
<b>France</b>	707	682	684	677	674	672	677	683
<b>Germany</b>	269	218	218	224	217	215	210	212
<b>Greece<sup>b</sup></b>	24	23	23	23	23	23	22	23
<b>Iceland</b>	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
<b>Ireland</b>	60	65	66	67	69	69	68	66
<b>Italy</b>	191	183	185	185	187	184	183	188
<b>Latvia</b>	13	5	5	4	4	4	4	4
<b>Luxembourg<sup>b</sup></b>						1	1	1
<b>Netherlands</b>	103	100	98	93	93	91	91	88
<b>New Zealand</b>	27	27	27	27	27	27	26	26
<b>Norway</b>	14	15	15	15	15	15	15	15
<b>Poland</b>	56	49	45	46	46	39	36	36
<b>Portugal</b>	165	151	148	149	147	148	148	148
<b>Romania</b>	81	135	115	116	104	103	93	82
<b>Slovakia</b>	19	14	13	12	11	10	10	10
<b>Spain</b>	296	336	332	350	374	380	402	408
<b>Sweden</b>	16	19	19	19	18	18	17	20
<b>Switzerland</b>	22	20	20	20	19	19	19	19
<b>United Kingdom</b>	111	110	111	111	111	110	105	101
<b>United States</b>	1,490	1,723	1,661	1,741	1,858	1,852	1,820	1,850

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>	-1.7	0.1	1.3	-5.1	-2.8	1.0	4.9
<b>Belgium</b>	-0.1	1.0	0.6	0.7	2.9	-3.2	8.3
<b>Bulgaria</b>	-8.5	-11.6	6.1	2.2	-10.6	-28.7	-73.4
<b>Canada</b>	1.2	-2.2	2.6	0.5	-0.5	7.8	19.1
<b>Czech Republic</b>		0.7	-2.6	0.1	-7.3	-2.2	-33.8
<b>Denmark</b>	-1.4	0.7	2.9	-11.2	1.2	2.8	-1.7
<b>Estonia</b>	-12.3	-7.1	-2.0	-12.8	-2.1	-53.9	-83.8
<b>European Community</b>	-0.2	0.7	0.9	-0.5	0.8	0.4	0.2
<b>Finland</b>	-0.4	3.7	-2.8	-2.3	-0.6	-3.5	2.9
<b>France</b>	0.3	-1.0	-0.5	-0.4	0.8	0.8	-3.5
<b>Germany</b>	0.3	2.4	-3.1	-0.6	-2.4	0.6	-21.4
<b>Greece</b>	0.0	-0.4	-0.5	-0.8	-0.5	3.8	-1.3
<b>Iceland</b>	0.4	0.3	0.5	-1.7	-3.5	-1.8	-9.2
<b>Ireland</b>	1.6	2.3	2.6	0.3	-1.7	-2.1	10.7
<b>Italy</b>	1.0	0.0	1.0	-1.6	-0.3	2.5	-1.7
<b>Latvia</b>	-10.3	-6.3	-6.3	-8.7	-2.7	7.1	-70.0
<b>Luxembourg</b>					-1.7	0.2	
<b>Netherlands</b>	-2.6	-4.7	0.2	-2.4	0.0	-3.0	-14.6
<b>New Zealand</b>	0.0	-1.2	-1.1	-1.0	-0.9	-0.3	-3.9
<b>Norway</b>	1.8	0.2	1.3	-0.9	-0.9	-0.4	6.5
<b>Poland</b>	-8.9	3.1	0.6	-16.3	-7.2	-1.0	-36.4
<b>Portugal</b>	-2.1	0.8	-1.0	0.7	-0.6	0.0	-10.6
<b>Romania</b>	-15.0	0.7	-9.9	-1.1	-10.2	-11.1	2.2
<b>Slovakia</b>	-5.0	-8.2	-11.8	-3.5	-3.5	0.2	-46.5
<b>Spain</b>	-1.2	5.2	7.0	1.6	5.7	1.5	37.8
<b>Sweden</b>	1.7	-3.1	-0.9	-1.5	-4.1	13.0	22.6
<b>Switzerland</b>	-2.5	-2.2	-2.1	-0.9	0.3	0.7	-11.1
<b>United Kingdom</b>	0.9	-0.1	0.7	-1.6	-4.0	-4.1	-8.9
<b>United States</b>	-3.6	4.8	6.7	-0.3	-1.7	1.6	24.2

**Table 4.7****Manure management – trend information (continued)****N<sub>2</sub>O emissions (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3
<b>Belgium</b>	1.5	1.5	1.5	1.5	6.0	1.5	1.5	1.6
<b>Bulgaria</b>	3.4	1.6	1.5	1.4	1.5	1.5	1.4	1.0
<b>Canada</b>	11.9	13.6	13.8	14.0	13.8	13.9	13.9	14.8
<b>Czech Republic</b>	2.1		1.5	1.5	1.4	1.4	1.4	1.3
<b>Denmark</b>	1.5	1.6	1.6	1.5	1.5	1.5	1.4	1.4
<b>Estonia</b>	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>European Community</b>	75.8	70.0	70.3	70.6	70.4	70.4	68.9	69.6
<b>Finland</b>	1.8	1.5	1.5	1.5	1.4	1.4	1.3	1.3
<b>France</b>	9.9	9.5	9.6	9.5	9.5	9.4	9.4	9.5
<b>Germany</b>	26.4	21.4	21.4	21.7	21.1	21.1	20.7	20.8
<b>Greece<sup>b</sup></b>	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9
<b>Iceland</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Ireland</b>	2.0	2.2	2.2	2.2	2.3	2.3	2.3	2.2
<b>Italy</b>	12.4	12.9	13.0	13.1	13.3	13.3	12.8	13.6
<b>Latvia</b>	1.0	0.6	0.5	0.5	0.5	0.4	0.4	0.4
<b>Luxembourg</b>								
<b>Netherlands</b>	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.6
<b>New Zealand</b>	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
<b>Norway</b>	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
<b>Poland</b>	NE	NE	NE	NE	NE	20.1	18.7	18.2
<b>Portugal</b>	3.6	3.6	3.5	3.6	3.6	4.0	3.9	3.9
<b>Romania</b>		0.1	0.1	0.2	0.1	0.1	0.5	0.2
<b>Slovakia</b>	3.5	2.4	2.2	2.0	1.8	1.7	1.6	1.6
<b>Spain</b>	5.3	5.0	5.1	5.1	5.2	5.2	5.2	5.2
<b>Sweden</b>	2.4	2.0	2.0	2.1	2.1	1.9	1.9	1.8
<b>Switzerland</b>	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.3
<b>United Kingdom</b>	4.9	4.8	4.9	4.9	4.9	4.9	4.6	4.4
<b>United States</b>	52.2	53.4	54.7	55.7	55.9	56.0	57.7	58.1

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>	-1.4	-0.7	0.0	-1.5	-1.5	-1.3	-5.2
<b>Belgium</b>	-1.9	0.0	298.7	-74.6	-0.7	2.6	2.0
<b>Bulgaria</b>	-6.9	-8.5	7.0	3.3	-8.0	-25.3	-69.6
<b>Canada</b>	1.7	1.5	-1.4	0.3	0.1	6.5	24.6
<b>Czech Republic</b>		-1.5	-5.6	0.0	-5.6	-0.8	-37.1
<b>Denmark</b>	0.1	-7.7	3.6	-2.1	-3.5	0.4	-4.4
<b>Estonia</b>	-10.1	-3.8	-4.5	-12.7	-4.5	23.8	-56.7
<b>European Community</b>	0.3	0.5	-0.3	0.0	-2.1	1.0	-8.2
<b>Finland</b>	-1.2	0.0	-4.3	-4.5	-1.9	-2.9	-27.7
<b>France</b>	0.3	-0.7	-0.3	-0.8	0.2	0.7	-4.5
<b>Germany</b>	0.2	1.3	-2.5	-0.2	-1.9	0.7	-21.2
<b>Greece</b>	-0.2	-1.1	-1.5	-2.9	-0.2	9.3	-3.5
<b>Iceland</b>							
<b>Ireland</b>	1.9	2.6	2.6	0.1	-2.2	-2.4	9.0
<b>Italy</b>	0.9	1.2	1.6	-0.5	-3.4	6.0	9.6
<b>Latvia</b>	-6.5	-6.6	-8.4	-11.9	-2.7	6.1	-56.5
<b>Luxembourg</b>							
<b>Netherlands</b>	-2.2	-4.3	-2.7	-3.2	-5.0	-1.6	-7.6
<b>New Zealand</b>	3.6	2.5	3.4	3.8	4.6	3.8	52.4
<b>Norway</b>	1.2	-0.4	1.0	-0.4	-1.5	-0.9	1.7
<b>Poland</b>					-7.2	-2.5	
<b>Portugal</b>	-1.0	0.4	1.7	10.3	-2.0	0.0	7.5
<b>Romania</b>	-25.9	50.1	-36.0	20.1	330.0	-69.9	
<b>Slovakia</b>	-7.5	-8.3	-12.1	-5.3	-2.5	0.2	-53.9
<b>Spain</b>	1.4	0.3	2.0	0.1	-0.9	0.6	-1.1
<b>Sweden</b>	0.2	4.1	0.1	-6.7	-2.1	-5.6	-25.2
<b>Switzerland</b>	-0.8	-0.6	-0.2	-0.9	-0.1	-2.3	-8.2
<b>United Kingdom</b>	1.1	0.0	0.0	1.3	-6.1	-4.2	-8.9
<b>United States</b>	2.5	1.8	0.3	0.1	3.1	0.6	11.3

**Table 4.8**  
**Agricultural soils, N<sub>2</sub>O (2001)**

	Methods and EF used <sup>a</sup>		Direct soil emissions								Animal production			Indirect soil emissions					
			Key source <sup>b</sup>	Share of national total <sup>b</sup>	Synthetic fertilizers		Animal wastes applied to soils	N-fixing crops	Crop residue	Cultivation of histosols	Key source <sup>b</sup>	Share of national total <sup>b</sup>	Pasture range and paddock (grazing)	Key source <sup>b</sup>	Share of national total <sup>b</sup>	Atmospheric deposition		Nitrogen reaching and run-off	
	Activity data	N <sub>2</sub> O IEF			N <sub>2</sub> O IEF	Activity data (kg N / year)										N <sub>2</sub> O IEF (kg N <sub>2</sub> O-N / kg N)	Activity data (kg N/year )	N <sub>2</sub> O IEF (kg N <sub>2</sub> O-N / kg N)	
	Use of synthetic fertilizers	N <sub>2</sub> O IEF																	
	(kg N / yr)						(kg N <sub>2</sub> O-N / kg N)	(kg N <sub>2</sub> O-N / kg dry biomass <sup>c</sup> )	(kg N <sub>2</sub> O-N / ha)	(%)			(kg N <sub>2</sub> O-N / kg N)						(%)
IPCC default EF <sup>c</sup>					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>f</sup>		0.025 (0.002-0.12) <sup>f</sup>		
Austria	T1	D	L, T	1.8	118,557,136	0.0125	0.0125	0.0125	0.0125		0.2	0.020	L, T	1.2	23,994,910	0.010	77,508,128	0.025	
Belgium											0.0			0.0					
Bulgaria	D	D	L	1.8	151,165,792	0.0100	0.0100	0.0003	0.0001	5.00	0.8	0.020	L	1.8	38,551,940	0.010	83,022,208	0.025	
Canada	T1	D	L, T	3.0	1,597,095,040	0.0113	0.0092	0.0125	0.0137	5.00	0.4	0.020	L, T	1.0	394,606,016	0.010	415,772,000	0.025	
Czech Republic	D	D	L	1.8	191,689,200	0.0125	0.0125	0.0125	0.0125	5.00	0.2	0.020	L	1.3	65,828,020	0.010	130,690,232	0.025	
Denmark	CS/M	CS/M	L, T	6.5	233,683,008	0.0120	0.0090	0.0125	0.0125	8.00	0.4	0.019	L, T	3.8	73,548,656	0.010	188,500,000	0.025	
Estonia				1.1	17,642,700	0.0125	0.0125	0.0008	0.0002		0.0	0.020		0.5	2,438,772	0.010	6,598,608	0.025	
European Community	C, CS, D, M, T1a,	C, CS, D, M, T2			NE	NE	NE	NE	NE	NE	0.0	NE		0.0	NE	NE	NE	NE	
Finland	D	D/CS	L, T	3.2	164,705,792	0.0125	0.0125	0.0125	0.0125	8.00	0.2	0.020	L, T	0.7	25,817,528	0.010	36,866,288	0.025	
France	T2	T2	L, T	4.6	2,316,473,856	0.0113	0.0110	0.0008	0.0001		L	1.1	0.020	L, T	3.4	632,842,752	0.010	1,296,735,232	0.025
Germany	CS	CS	L	2.3	1,815,965,056	0.0125	0.0030	0.0125	0.0125	5.00	0.2	0.012	L	0.9	481,549,600	0.010	805,458,816	0.016	
Greece	T1	D	L, T	1.9	283,510,016	0.0125	0.0125	0.0008	0.0002		L, T	2.7	0.020						
Iceland	D	D	L	2.3	6,307,492	0.0191	1.0000												
Ireland	D	CS, D	L, T	4.2	390,544,640	0.0125	0.0125	0.0007	0.0001		L, T	4.2	0.020	L, T	2.2	96,842,952	0.010	88,282,688	0.025
Italy	D	D, CS	L	1.6	713,545,024	0.0125	0.0125	0.0005	0.0001	8.00	0.4	0.020	L	1.4	260,052,304	0.010	508,616,352	0.025	
Latvia	T1	D	L	4.1	28,440,000	0.0125	0.0125	0.0125	0.0125	8.00	0.7	0.020	L, T	2.5	9,722,480	0.010	19,323,720	0.025	
Luxembourg	C	C																	
Netherlands	CS/T1b(D&I)	CS	L, T	2.2	330,200,000	0.0110	0.0200	0.0098	NE	IE	0.4	0.016				NE		IE	
New Zealand	D	CS/D	L	2.5	214,873,200	0.0125	0.0125	0.0007	0.0001	8.01	L	9.9	0.010	L	4.3	331,989,856	0.010	124,552,624	0.025
Norway <sup>g,h</sup>	D	D, CS	L, T	3.7	100,592,000	0.0119	0.0104	a)	b)	8.00	0.3	0.019	L	0.9	21,552,956	0.008	35,192,504	0.025	
Poland	T2	CS	L	2.6	805,500,032	0.0080	0.0100	0.0100	0.0100	5.00	0.2	0.020			NE	NE	NE	NE	
Portugal	D	D	L, T	1.8	130,000,000	0.0113	0.0108	0.0011	0.0001		L, T	1.9	0.019	L, T	1.8	35,494,156	0.010	112,354,816	0.025
Romania	D	D	L	3.4	241,200,000	0.0125	0.0125	0.0007	0.0002	5.00	0.0	0.020		0.8	28,897,714	0.010	83,546,568	0.025	
Slovakia <sup>i</sup>	C, CS	C,D, CS	L	3.7	73,210,496	0.0125	0.0125	0.0125	0.0125	IE	0.2	0.020		0.8	24,985,232	0.010	23,183,812	0.025	
Spain	CS,D	CS,D	L, T	2.3	999,241,408	0.0125	0.0125	0.0125	0.0125		L, T	0.9	0.020	L, T	1.4	356,301,696	0.010	294,288,096	0.025
Sweden	D,C	CS	L, T	4.1	196,897,728	0.0079	0.0250	0.0006	0.0001	8.02	L, T	0.6	0.017	L, T	1.3	38,153,000	0.010	61,966,000	0.025
Switzerland	CS	CS	L, T	2.3	60,348,000	0.0125	0.0125	0.0004	0.0000	5.00		0.3	0.020	L, T	1.4	51,602,880	0.010	39,454,428	0.025
United Kingdom	T1a/T1b	D	L	1.8	1,126,368,128	0.0126	0.0125	0.0008	0.0002	5.00	L	0.7	0.020	L	1.4	345,814,784	0.010	593,930,048	0.025
United States	T1a, T1b	D	L	2.5	9,741,246,464	0.0125	0.0125	0.0125	0.0125	9.23	L, T	0.6	0.020	L, T	1.1	2,521,784,320	0.010	5,373,900,800	0.025

<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> Information on key sources and the percentage of national total refers to subcategory 4.D.1 Direct soil emissions, except for Belgium and the European Community, where the information refers to the entire category 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.) It should be noted that for the sub-sources N-fixing crops and crop residue the IPCC default emission factors are not directly comparable to the N<sub>2</sub>O implied emission factors because of the use of different units; the unit of default emission factors is kg N<sub>2</sub>O-N/kg N, while in the CRF the unit relates to the amount of dry biomass (kg N<sub>2</sub>O-N/kg dry biomass).

<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 4.12, page 4.43.

<sup>g</sup> Norway indicated in the CRF that biological N-fixation is estimated to 8 Gg N/yr.

<sup>h</sup> Norway indicated in the CRF that the N amount in crop residues is assumed to be equal to the amount of N in all the yield (78,069 t in 2001).

<sup>i</sup> Slovakia reported the IEF for N-fixing crops and crop residue in the unit kg N<sub>2</sub>O-N/kg N.



**Table 4.9****Agricultural soils, N<sub>2</sub>O – trend information****N<sub>2</sub>O emissions (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	10	10	9	10	9	9	9	9
<b>Belgium</b>	16	16	16	16	16	16	15	15
<b>Bulgaria</b>	27	12	11	11	10	10	10	9
<b>Canada</b>	88	98	103	104	105	108	109	101
<b>Czech Republic</b>	24		19	18	16	16	15	15
<b>Denmark</b>	32	28	27	26	26	26	25	24
<b>Estonia</b>	3	1	1	1	1	1	1	1
<b>European Community</b>	692	650	658	662	658	660	655	635
<b>Finland</b>	14	12	12	11	11	11	11	11
<b>France</b>	180	170	172	174	174	174	171	166
<b>Germany</b>	128	108	107	106	107	110	111	108
<b>Greece<sup>b</sup></b>	21	19	19	20	19	19	21	19
<b>Iceland</b>	0	0	0	0	0	0	0	0
<b>Ireland</b>	22	24	24	24	25	25	25	24
<b>Italy</b>	64	65	64	67	65	65	64	65
<b>Latvia</b>	8	2	2	3	2	2	2	3
<b>Luxembourg</b>								
<b>Netherlands</b>	22	26	26	25	25	25	23	23
<b>New Zealand</b>	32	35	36	36	36	37	38	39
<b>Norway</b>	9	9	9	9	9	9	9	9
<b>Poland</b>	43	31	30	31	31	35	35	35
<b>Portugal</b>	15	15	15	14	15	15	15	15
<b>Romania</b>	25	16	14	15	14	13	21	20
<b>Slovakia</b>	13	8	8	8	8	7	7	8
<b>Spain</b>	53	48	56	53	54	57	60	57
<b>Sweden</b>	18	17	17	17	17	16	16	16
<b>Switzerland</b>	8	7	7	7	7	7	7	7
<b>United Kingdom</b>	98	94	94	97	94	92	89	83
<b>United States</b>	863	916	946	962	965	958	950	949

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>	-7.0	11.9	-8.9	-0.9	-0.5	-1.1	-4.7
<b>Belgium</b>	-2.6	-1.0	1.3	0.8	-2.7	-0.9	-6.8
<b>Bulgaria</b>	-5.0	-4.3	-7.2	0.7	2.0	-7.7	-65.9
<b>Canada</b>	5.6	0.1	1.5	2.5	0.7	-6.7	14.8
<b>Czech Republic</b>		-6.8	-10.1	-1.5	-2.8	1.5	-36.5
<b>Denmark</b>	-3.4	-3.8	0.8	-0.6	-2.4	-4.8	-23.7
<b>Estonia</b>	-7.9	10.8	4.0	-18.2	18.5	-14.8	-67.3
<b>European Community</b>	1.2	0.6	-0.6	0.3	-0.7	-3.1	-8.2
<b>Finland</b>	-3.7	-2.5	-2.4	-3.1	1.5	-1.4	-21.9
<b>France</b>	1.5	1.3	-0.2	0.0	-1.9	-2.5	-7.5
<b>Germany</b>	-0.2	-1.4	1.2	2.4	1.2	-3.1	-16.1
<b>Greece</b>	2.8	4.1	-2.4	-0.6	6.1	-5.3	-7.2
<b>Iceland</b>	3.1	-11.0	3.7	9.5	5.2	-3.4	-4.3
<b>Ireland</b>	1.9	0.3	1.3	0.8	-0.4	-3.4	7.9
<b>Italy</b>	-1.5	5.1	-3.3	0.3	-1.1	0.5	1.5
<b>Latvia</b>	2.1	4.1	-3.3	-10.1	7.8	13.6	-66.7
<b>Luxembourg</b>							
<b>Netherlands</b>	-1.7	-1.5	-2.8	0.0	-8.1	-0.3	4.6
<b>New Zealand</b>	1.0	0.4	1.3	1.4	4.0	2.1	22.0
<b>Norway</b>	-1.7	0.6	0.5	-1.4	0.6	-1.8	-4.3
<b>Poland</b>	-3.1	2.5	0.0	13.8	-2.6	0.0	-19.8
<b>Portugal</b>	1.0	-2.5	3.3	2.3	-0.9	0.0	-3.3
<b>Romania</b>	-13.6	5.4	-7.7	-5.8	59.4	-1.9	-19.7
<b>Slovakia</b>	-0.8	1.1	-5.5	-5.0	0.6	2.8	-43.0
<b>Spain</b>	16.4	-5.3	3.3	4.1	6.5	-6.2	7.7
<b>Sweden</b>	0.2	1.0	-1.3	-5.1	-0.5	0.5	-7.4
<b>Switzerland</b>	-1.1	-1.7	-1.2	-1.3	0.1	-0.9	-9.7
<b>United Kingdom</b>	0.6	3.1	-2.9	-2.0	-3.8	-6.4	-15.0
<b>United States</b>	3.2	1.7	0.3	-0.7	-0.8	-0.1	10.0

**Table 4.10****Agricultural soils: parameters used (2001)****Parameters (fractions) used to estimate N<sub>2</sub>O emissions in the agricultural soils category (direct and indirect emissions)**

	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 of N excreted)	(kg N / kg of fertilizer or manure N)
IPCC defaults EF	0.25 <sup>a</sup>	no default <sup>b</sup>	no default <sup>b</sup>	0.03 <sup>a</sup>	0.015 <sup>a</sup>	0.45 <sup>a</sup>	0.1 <sup>a</sup>	0.2 <sup>a</sup>	0.3 (0.1 - 0.8) <sup>a</sup>
Austria	0.01	0.00	0.16	0.00	0.015	0.34	0.03	0.18	0.30
Belgium									
Bulgaria	0.10	0.00	0.02	0.03	0.015	0.10	0.10	0.20	0.30
Canada									
Czech Republic									
Denmark	NO	NO	0.12				0.02	0.28	0.38
Estonia	0.90	0.00	0.20	0.01	0.030	0.55	0.10	0.20	0.30
European Community									
Finland	NZ	0.00	0.22	0.01	0.041	0.43	0.01	0.31	0.15
France	NA	NA	0.28	CS	CS	CS	0.10	0.10	0.30
Germany									
Greece	0.25	0.00		0.03	0.015	0.45	0.10	0.20	
Iceland									
Ireland	0.00	0.00	0.65	as GPG	as GPG	as GPG	0.04	0.17	0.10
Italy	0.10	0.00	0.25	0.03	0.015	0.45	0.10	0.38	0.30
Latvia	NO	NO	0.28	0.01	0.030	0.55	0.10	0.20	0.30
Luxembourg									
Netherlands									
New Zealand	0.50	0.00		0.03	0.015	0.45	0.10	0.20	0.07
Norway	0.00	no	0.23	ne	ne	ne	0.04	0.17	0.18
Poland									
Portugal	0.05	0.00	0.49	0.01	0.023	0.72	0.10	0.12	0.27
Romania	0.75	0.00	0.02	0.01	0.030	0.55	0.10	0.20	0.30
Slovakia			0.06				0.10	0.20	0.14
Spain	NA	0.00	NA	NA	NA	NA	0.08	0.36	0.15
Sweden	NO	NO	0.39	0.01	0.020	0.20	0.01	0.33	0.20
Switzerland	0.00	0.00	see table 4.B(a)	see table 4.F	see table 4.F	see table 4.F	0.08	see table 4.A	0.20
United Kingdom	0.00	0.00	0.54	0.03	0.015	0.45	0.10	0.20	0.30
United States	0.13	NO	0.22, 0.11, 0, 0.9, 0.92, 0.92	0.03	0.0048, 0.0058, 0.0062, 0.0062, 0.007, 0.007, 0.0072, 0.0077, 0.0106, 0.0108, 0.023, 0.03	0.38, 0.5, 0.39, 0.43, 0.43, 0.42, 0.42, 0.45, 0.5, 0.42, 0.32, 1	0.10	0.20	0.30

**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 which volatilizes as NH <sub>3</sub> and NO <sub>x</sub>
Frac <sub>NCRBF</sub>	Fraction of N in non-N-fixing crop	Frac <sub>GASM</sub>	Fraction livestock N excretion that volatilizes as NH <sub>3</sub> and NO <sub>x</sub>
Frac <sub>NCRO</sub>	Fraction of N in N-fixing crop	Frac <sub>LEACH</sub>	Fraction of N input to soils which is lost through leaching and runoff
Frac <sub>R</sub>	Fraction of crop residue removed from the field as crop		

<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.

**Table 4.11****Agricultural soils, CO<sub>2</sub> – trend information****CO<sub>2</sub> emissions/removals (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	NE	NE	NE	NE	NE	NE	NE	NE
<b>Belgium</b>								
<b>Bulgaria</b>	NO	NO	NO	NO	NO	NO	NO	NO
<b>Canada</b>	7,553	3,464	2,082	1,539	1,011	475	62	-299
<b>Czech Republic</b>								
<b>Denmark</b>								
<b>Estonia</b>								
<b>European Community</b>	3,208	1,718	1,818	2,055	2,024	2,007	2,023	1,946
<b>Finland</b>	3,208	1,718	1,818	2,055	2,024	2,007	2,023	1,946
<b>France</b>								
<b>Germany</b>	NE	NE	NE	NE	NE	NE	NE	NE
<b>Greece</b>								
<b>Iceland</b>	4	4	5	5	5	5	5	5
<b>Ireland</b>	IE	IE		IE	IE	IE	IE	IE
<b>Italy</b>								
<b>Latvia</b>								
<b>Luxembourg</b>								
<b>Netherlands</b>	NE	NE	NE	NE	NE	NE	NE	NE
<b>New Zealand</b>								NE
<b>Norway</b>	217	171	152	149	134	129	108	113
<b>Poland</b>	IE	IE	IE	IE	IE	IE	IE	IE
<b>Portugal</b>	NE	NE	NE	NE	NE	NE	NE	NE
<b>Romania<sup>b</sup></b>							NA	NE
<b>Slovakia</b>								
<b>Spain</b>								
<b>Sweden</b>	IE	IE	IE	IE	IE	IE	IE	IE
<b>Switzerland</b>	NE	NE	NE	NE	NE	NE	NE	NE
<b>United Kingdom</b>	IE	IE	IE	IE	IE	IE	IE	IE
<b>United States</b>	IE	IE	IE	IE	IE	IE	IE	IE

<sup>a</sup> 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), Poland (1988) and Romania (1989).

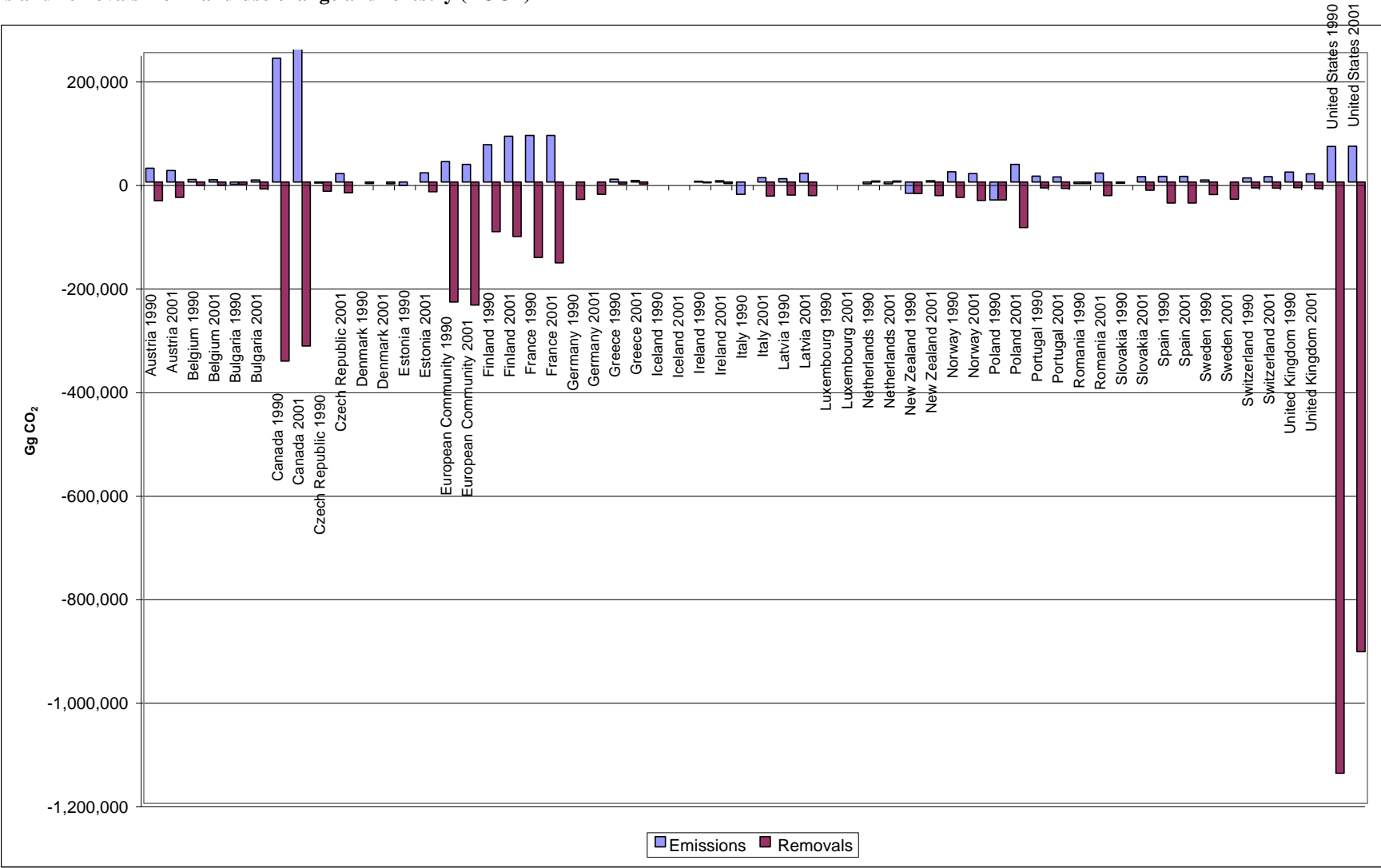
<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>							
<b>Belgium</b>							
<b>Bulgaria</b>							
<b>Canada</b>	-40	-26	-34	-53	-87	-584	-104
<b>Czech Republic</b>							
<b>Denmark</b>							
<b>Estonia</b>							
<b>European Community</b>	5.8	13.0	-1.5	-0.8	0.8	-3.8	-39.3
<b>Finland</b>	6	13	-1	-1	1	-4	-39
<b>France</b>							
<b>Germany</b>							
<b>Greece</b>							
<b>Iceland</b>	5.0	7.0	5.8	-12.2	5.9	-6.4	8.8
<b>Ireland</b>							
<b>Italy</b>							
<b>Latvia</b>							
<b>Luxembourg</b>							
<b>Netherlands</b>							
<b>New Zealand</b>							
<b>Norway</b>	-11.3	-1.6	-10.3	-3.3	-16.4	4.8	-47.7
<b>Poland</b>							
<b>Portugal</b>							
<b>Romania</b>							
<b>Slovakia</b>							
<b>Spain</b>							
<b>Sweden</b>							
<b>Switzerland</b>							
<b>United Kingdom</b>							
<b>United States</b>							

Land use change and forestry

Figure 5.1  
Emissions and removals from land-use change and forestry (LUCF)



**Table 5.1****Methods and emission factors used (2001)**

	Changes in forest and other woody biomass stocks			Forest/grassland conversion			Abandonment of lands			CO <sub>2</sub> emissions / removals from soils			Others		
	Methods	EF	Provision of activity data in CRF	Methods	EF	Provision of activity data in CRF	Methods	EF	Provision of activity data in CRF	Methods	EF	Provision of activity data in CRF	Methods	EF	Provision of activity data in CRF
Austria	D	CS	CRF												
Belgium			CRF												
Bulgaria	CS	CS	CRF	NE	NE		NE	NE		NE	NE				
Canada	CS/D	CS	CRF	CS/D	CS	CRF	D	CS	CRF	CS/D	CS		NA	NA	
Czech Republic	CS	CS	CRF	NO			NO			NE					
Denmark	CS/M	CS/M	CRF												
Estonia			CRF						CRF			CRF			
European Community	NE	NE		NE	NE		NE	NE		NE	NE		NE	NE	
Finland	CS	CS		NO	NO		NO	NO		D	D	CRF			
France	CS	CS	CRF	CS	CS	CRF	CS	CS		CS	CS	CRF			
Germany	CS	CS	CRF	NE	NE		NE	NE		NE	NE		NO	NO	
Greece			CRF			CRF						CRF			
Iceland	CS	CS	CRF							CS	CS				
Ireland <sup>a</sup>	CS	CS	CRF	NA	NA		NA	NA		D	D	CRF	NA	NA	
Italy	D, CS	D, CS	CRF				D	D	CRF	D	D, CS	CRF			
Latvia	D	D/CS	CRF	D	D/CS	CRF	D	D/CS	CRF	D	D	CRF	NO	NO	
Luxembourg															
Netherlands	T1	CS	CRF	NE			NE			NE			NO		
New Zealand	CS/M	CS/M		CS/D	CS/D		NE	NE		NE	NE				
Norway	CS	D, CS	CRF							CS	CS	CRF			
Poland	T1	D	CRF	T1	D	CRF	D	D	CRF	T1	D	CRF	T1	D	
Portugal	D	D	CRF												
Romania	D	D	CRF	D	D	CRF									
Slovakia	D,CS	D,CS	CRF	D,CS	D,CS	CRF	D,CS	D,CS		D,CS	D,CS	CRF			
Spain	CS	CS	CRF	NE			NE			NE			NO		
Sweden	D	CS	CRF							D, CS	CS	CRF			
Switzerland	CS	CS	CRF												
United Kingdom	M	M		NO	NO		NE	NE		D/CS/M	CS/CS/CS		CS	CS	
United States	CS	CS	CRF	IE, NE	IE, NA		IE, NE	IE, NA		CS, D	CS, D	CRF	CS	CS	

<sup>a</sup> CRF table 5.A has been modified by the Party.

**Table 5.2**Net CO<sub>2</sub> emissions/removals from Changes in forest and other woody biomass stocks – trend informationCO<sub>2</sub> emissions/removals (Gg)

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
Austria	-9,215	-7,254	-5,385	-7,633	-7,633	-7,633	-7,633	-7,633
Belgium	-1,600	-1,911	-1,889	-1,867	-1,845	-1,823	-1,822	-1,814
Bulgaria	-4,657	-7,519	-7,190	-5,852	-6,233	-6,608	-8,976	-9,467
Canada	-108,687	-14,234	-42,527	-51,383	-36,745	-31,632	-55,733	-39,271
Czech Republic	-2,128		-4,486	-4,639	-3,757	-3,401	-4,016	-4,363
Denmark	-3,118	-3,128	-3,134	-3,142	-3,152	-3,161	-3,517	-3,531
Estonia	-7,463	-7,901	-8,345	-7,217	-6,906	-6,493	-6,399	2,095
European Community	-231,103	-229,409	-238,432	-239,726	-233,221	-237,449	-223,548	-237,225
Finland	-23,798	-14,687	-21,032	-12,637	-9,713	-10,821	-11,953	-16,851
France	-68,079	-74,400	-77,221	-80,551	-80,509	-82,060	-76,306	-79,309
Germany	-33,689	-33,400	-33,400	-33,400	-33,400	-33,400	-23,695	-23,695
Greece <sup>b</sup>	18	-772	-506	-548	-1,060	-147	-185	-1,796
Iceland	-2	-22	-25	-28	-31	-35	-39	-43
Ireland	-450	-429	-420	-498	-574	-501	-407	-1,007
Italy	-28,605	-27,316	-27,886	-27,255	-25,745	-25,668	-25,543	-27,113
Latvia	-19,714	-15,819	-15,993	-12,773	-11,114	-10,101	-9,413	-10,368
Luxembourg <sup>b</sup>						-295	-295	-295
Netherlands	1,422	1,232	1,398	1,180	1,380	1,236	1,413	1,413
New Zealand	-22,985	-18,256	-18,756	-20,151	-22,008	-24,092	-25,831	-26,149
Norway	-9,765	-15,693	-17,607	-16,499	-17,588	-17,767	-18,743	-18,968
Poland	-24,990	-33,125	-31,996	-29,880	-19,151	-39,767	42,744	-48,260
Portugal	-3	-2,005	-2,091	-2,179	-2,258	-2,359	-2,152	-2,152
Romania	-2,925	-8,744	-8,542	-8,344	-10,697	-9,723	-9,096	-10,014
Slovakia	-1,753	-1,786	-1,734	-975	-1,474	-1,107	-1,410	-4,760
Spain	-29,252	-29,252	-29,252	-29,252	-29,252	-29,252	-29,252	-29,252
Sweden	-24,100	-25,100	-26,100	-31,100	-28,100	-31,100	-31,100	-33,220
Switzerland	-3,188	-4,310	-4,461	-4,637	-4,571	-4,226	-1,821	-1,529
United Kingdom	-7,304	-8,518	-8,426	-8,316	-8,184	-8,122	-8,309	-8,144
United States	-803,000	-799,333	-799,333	-792,000	-784,667	-795,667	-788,333	-792,000

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

Relative change (%)

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
Austria	-25.8	41.7	0.0	0.0	0.0	0.0	-17.2
Belgium	-1.2	-1.2	-1.2	-1.2	-0.1	-0.4	13.4
Bulgaria	-4.4	-18.6	6.5	6.0	35.8	5.5	103.3
Canada	198.8	20.8	-28.5	-13.9	76.2	-29.5	-63.9
Czech Republic		3.4	-19.0	-9.5	18.1	8.6	105.0
Denmark	0.2	0.3	0.3	0.3	11.3	0.4	13.2
Estonia	5.6	-13.5	-4.3	-6.0	-283.6	-132.7	-128.1
European Community	3.9	0.5	-2.7	1.8	-5.9	6.1	2.6
Finland	43.2	-39.9	-23.1	11.4	10.5	41.0	-29.2
France	3.8	4.3	-0.1	1.9	-7.0	3.9	16.5
Germany	0.0	0.0	0.0	0.0	-29.1	0.0	-29.7
Greece	-34.5	8.3	93.5	-86.1	26.1	868.5	-9,886.0
Iceland	15.2	11.3	13.3	12.3	11.0	8.6	1,757.3
Ireland	-2.0	18.5	15.2	-12.7	-18.6	147.2	123.7
Italy	2.1	-2.3	-5.5	-0.3	-0.5	6.1	-5.2
Latvia	1.1	-20.1	-13.0	-9.1	-6.8	10.1	-47.4
Luxembourg					0.0	0.0	
Netherlands	13.4	-15.5	16.9	-10.4	14.4	0.0	-0.6
New Zealand	2.7	7.4	9.2	9.5	7.2	1.2	13.8
Norway	12.2	-6.3	6.6	1.0	5.5	1.2	94.2
Poland	-3.4	-6.6	-35.9	107.6	-207.5	-212.9	93.1
Portugal	4.3	4.2	3.6	4.5	-8.8	0.0	77,864.6
Romania	-2.3	-2.3	28.2	-9.1	-6.4	10.1	242.3
Slovakia	-2.9	-43.8	51.2	-24.9	27.4	237.5	171.5
Spain	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sweden	4.0	19.2	-9.6	10.7	0.0	6.8	37.8
Switzerland	3.5	3.9	-1.4	-7.5	-56.9	-16.0	-52.0
United Kingdom	-1.1	-1.3	-1.6	-0.8	2.3	-2.0	11.5
United States	0.0	-0.9	-0.9	1.4	-0.9	0.5	-1.4

**Tables 5.3 and 5.4**

**Changes in forest and other woody biomass stocks: temperate and boreal forests (2001)**

(Average annual growth rates and implied carbon uptake factors )

	Species as specified by Parties	Temperate forests								Boreal forests	
		Plantations		Commercial evergreen		Commercial deciduous		Other			
		Average annual growth rate	Implied carbon uptake factor	Average annual growth rate	Implied carbon uptake factor	Average annual growth rate	Implied carbon uptake factor	Average annual growth rate	Implied carbon uptake factor	Average annual growth rate	Implied carbon uptake factor
		(t dm/ha/yr)	(t C/ha/yr)	(t dm/ha/yr)	(t C/ha/yr)	(t dm/ha/yr)	(t C/ha/yr)	(t dm/ha/yr)	(t C/ha/yr)	(t dm/ha/yr)	(t C/ha/yr)
Austria		NE		4.91	2.41	5.15	2.49				
Belgium				9.50	4.75	4.97	2.48				
Bulgaria		NE	NE	different	1.19	different	1.00				
Canada	Canadian Wood Production Forest (aggregate value)	NA	NA	NA	NA	NA	NA	1.81	0.72		
Czech Republic	Commercial (Evergreen + decidous)							4.79	2.16		
Denmark	Conifers (before 1990)	9.00	4.50								
	Broadleaves (before 1990)	5.20	2.60								
Estonia										5.01	2.25
European Community		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Finland											
France	Forest as a whole							4.75	2.38		
Germany		NO	NO					NO	NO	NO	NO
	Betulus sp.			4.27	2.13						
Greece		NA	NE					NA			
	Oxia					1.58					
	Dris					0.27					
	Other					1.26					
	Fir			0.84							
	Red Fir			5.90							
	Pine sp			0.71							
	Other			1.26							
Iceland										2.4	1.20
Ireland											
Italy	Total							2.84	0.00		
Latvia				4.93	2.46	5.32	2.66				
	Clearing and rough afforestation							0.81	0.41		
	Bushes							0.50	0.25		
	Newly afforested land							0.81	0.41		
Luxembourg											
Netherlands											
	Forest land coniferous							4.67	2.33		
	Forest land broadleaved							5.68	2.84		
New Zealand											
Norway										1.13	1.05
Poland		IE	IE	IE	IE	IE	IE				
	Other forest deciduous							3.48	1.74		
	Other forest Evergreen							3.41	1.71		
	State forest deciduous							6.24	3.12		
	State forest evergreen							4.95	2.47		

**Tables 5.3 and 5.4**

**Changes in forest and other woody biomass stocks: temperate and boreal forests (2001) (continued)**

(Average annual growth rates and implied carbon uptake factors )

	Species as specified by Parties	Temperate forests								Boreal forests	
		Plantations		Commercial evergreen		Commercial deciduous		Other		Average annual growth rate	Implied carbon uptake factor
		Average annual growth rate	Implied carbon uptake factor	Average annual growth rate	Implied carbon uptake factor	Average annual growth rate	Implied carbon uptake factor	Average annual growth rate	Implied carbon uptake factor		
		(t dm/ha/yr)	(t C/ha/yr)	(t dm/ha/yr)	(t C/ha/yr)	(t dm/ha/yr)	(t C/ha/yr)	(t dm/ha/yr)	(t C/ha/yr)	(t dm/ha/yr)	(t C/ha/yr)
Portugal	Total forest							2.02	1.01		
Romania				3.00	1.50	2.00	1.00				
Slovakia		NO	NO	NO	NO	NO	NO	NO	NO		
	<i>Picea abies</i>							3.40	1.70		
	<i>Abies alba</i>							3.49	1.75		
	<i>Pinus sp.</i>							3.42	1.71		
	<i>Larix decidua</i>							3.60	1.80		
	<i>Other coniferous</i>							1.37	0.69		
	<i>Quercus robur, petr.</i>							4.16	2.04		
	<i>Fagus sylvatica</i>							5.71	2.80		
	<i>Carpinus betulus</i>							5.35	2.62		
	<i>Acer sp.</i>							4.91	2.40		
	<i>Fraxinus excelsior</i>							4.84	2.37		
	<i>Ulmus sp.</i>							4.68	2.29		
	<i>Quercus cerris</i>							4.58	2.24		
	<i>Robinia pseudoac.</i>							2.90	1.42		
	<i>Betulus sp.</i>							1.50	0.73		
	<i>Alnus sp.</i>							2.46	1.20		
	<i>Tilia sp.</i>							3.89	1.91		
	<i>Breeding poplars</i>							2.51	1.23		
	<i>Populus sp.</i>							1.39	0.68		
	<i>Salix sp.</i>							2.16	1.06		
	Other broadleaves							1.28	0.63		
Spain				1.56	0.70	1.16	0.52				
	<i>Pinus radiata</i>	8.51	3.82								
	<i>Eucalyptus</i>	7.39	3.32								
Sweden								5.38	2.64	2.9	1.44
Switzerland			NO	5.06	2.53	7.33	3.67				
United Kingdom											
United States	Evergreen	2.05	1.02								
	Deciduous	-0.17	-0.09								
				IE	NE	IE	NE			NE	NE
	Plantations-other							1.73	0.87		
	Naturally regenerated-evergreen							-0.33	-0.16		
	Naturally regenerated-deciduous							2.24	1.12		
	Naturally regenerated-other							1.78	0.89		



**Tables 5.5 and 5.6**

**Changes in forest and other woody biomass stocks: Temperate forests (plantation/commercial evergreen and deciduous) – trend information**  
**Area of forest/biomass stocks (kha) and average annual growth rate (t dm/ha/year)**

	Evergreen (Evg) / Deciduous (Dec)	IPCC default growth rate <sup>a</sup>	1990 <sup>b</sup>		1995		1996		1997		1998		1999		2000		2001	
			Area	Growth rate	Area	Growth rate	Area	Growth rate	Area	Growth rate	Area	Growth rate	Area	Growth rate	Area	Growth rate	Area	Growth rate
			t dm/ha/yr	(kha)	(t dm/ha/yr)	(kha)	(t dm/ha/yr)	(kha)	(t dm/ha/yr)	(kha)	(t dm/ha/yr)	(kha)	(t dm/ha/yr)	(kha)	(t dm/ha/yr)	(kha)	(t dm/ha/yr)	(kha)
Plantations																		
Austria		6.0-4.0	2	NE	2	NE	2	NE	2	NE	2	NE	2	NE	2	NE	2	NE
Denmark	Conifers (before 1990)	6.0-4.0															274	9.00
	Broadleaves (bef. 1990)	6.0-4.0															164	5.20
Spain	Eucaliptus	6.0-4.0	553	7.39	553	7.39	553	7.39	553	7.39	553	7.39	553	7.39	553	7.39	553	7.39
	Pinus radiata	6.0-4.0	245	8.51	245	8.51	245	8.51	245	8.51	245	8.51	245	8.51	245	8.51	245	8.51
United States	Evergreen / Deciduous	6.0-4.0	8,708	5.1	8,708	5.1	8,708	5.1	13,553	2	13,553	2	13,553	2	13,553	2	13,553	2.00
	Deciduous	6.0-4.0	948	1.2	948	1.2	948	1.2	951	-0.2	951	-0.2	951	-0.2	951	-0.2	951	-0.20
Commercial evergreen and deciduous																		
Austria	Evergreen	3	2,561	5.95	2,534	4.91	2,534	4.91	2,534	4.91	2,534	4.91	2,534	4.91	2,534	4.91	2,534	4.91
	Deciduous	2	777	6.22	818	5.15	818	5.15	818	5.15	818	5.15	818	5.15	818	5.15	818	5.15
Belgium	Evergreen	3													226	9.50	225	9.50
	Deciduous	2													250	4.97	251	4.97
Bulgaria	Evergreen	3													1,138		1,146	
	Deciduous	2													2,260		2,320	
Greece	Evergreen	3	543	0.84	543	0.84	543	0.84	543	0.84	543	0.84	543	0.84	543	0.84	543	0.84
	Evergreen	3	3	5.90	3	5.90	3	5.90	3	5.90	3	5.90	3	5.90	3	5.90	3	5.90
	Evergreen	3	879	0.71	879	0.71	879	0.71	879	0.71	879	0.71	879	0.71	879	0.71	879	0.71
	Evergreen	3	5	1.26	5	1.26	5	1.26	5	1.26	5	1.26	5	1.26	5	1.26	5	1.26
	Deciduous - Oxia	2	337	1.58	337	1.58	337	1.58	337	1.58	337	1.58	337	1.58	337	1.58	337	1.58
	Deciduous - Dris	2	1,472	0.27	1,472	0.27	1,472	0.27	1,472	0.27	1,472	0.27	1,472	0.27	1,472	0.27	1,472	0.27
	Deciduous - other	2	121	1.26	121	1.26	121	1.26	121	1.26	121	1.26	121	1.26	121	1.26	121	1.26
Latvia	Evergreen	3	1,500	4.91	1,465	5.30	1,472	5.28	1,474	5.27	1,607	4.83	1,421	5.47	1,549	5.03	1,580	4.93
	Deciduous	2	1,000	5.55	977	5.73	982	5.70	982	5.70	1,072	5.22	1,028	5.44	1,032	5.43	1,053	5.32
Romania	Evergreen	3															1,853	3.00
	Deciduous	2															4,372	2.00
Spain	Evergreen	3	7,719	1.56	7,719	1.56	7,719	1.56	7,719	1.56	7,719	1.56	7,719	1.56	7,719	1.56	7,719	1.56
	Deciduous	2	5,389	1.16	5,389	1.16	5,389	1.16	5,389	1.16	5,389	1.16	5,389	1.16	5,389	1.16	5,389	1.16
Switzerland	Evergreen	3	780	5.06													786	5.06
	Deciduous	2	295	7.33													330	7.33
United States	Evergreen	3	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE
	Deciduous	2	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE

<sup>a</sup> Source of default emission factors: Plantations; IPCC Guidelines, volume 3, table 5.3, page 5.21, commercial evergreen and deciduous; IPCC Guidelines, volume 3, table 5.2, page 5.20.

<sup>b</sup> 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), Poland (1988) and Romania (1989).

**Tables 5.5 and 5.6 (continued)**

**Changes in forest and other woody biomass stocks: Temperate forests (plantation/commercial evergreen and deciduous) – trend information**  
**Area of forest/biomass stocks (kha) and average annual growth rate (t dm/ha/year)**

**Average annual growth rate: relative change (%)**

		1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
Plantations								
Austria								
Denmark	Conifers (before 1990)							
	Broadleaves (bef. 1990)							
Spain	Eucaliptus	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Pinus radiata	0.00	0.00	0.00	0.00	0.00	0.00	0.00
United States	Evergreen / Deciduous	0.00	-60.78	0.00	0.00	0.00	0.00	-60.78
	Deciduous	0.00	-116.67	0.00	0.00	0.00	0.00	-116.67
Commercial evergreen and deciduous								
Austria	Evergreen	0.00	0.00	0.00	0.00	0.00	0.00	-17.43
	Deciduous	0.00	0.00	0.00	0.00	0.00	0.00	-17.22
Belgium	Evergreen							0.00
	Deciduous						0.00	
Bulgaria	Evergreen							
	Deciduous							
Greece	(all)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Latvia	Evergreen	-0.49	-0.08	-8.32	13.14	-8.07	-1.99	0.38
	Deciduous	-0.49	-0.08	-8.32	4.21	-0.25	-1.99	-4.14
Romania	Evergreen							
	Deciduous							
Spain	Evergreen	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Deciduous	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Switzerland	Evergreen							0.00
	Deciduous							0.00

**Area of forest/biomass stocks: relative change (%)**

		1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
Plantations								
Austria		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Denmark								
Spain		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
United States		0.00	55.64	0.00	0.00	0.00	0.00	55.64
		0.00	0.32	0.00	0.00	0.00	0.00	0.32
Commercial evergreen and deciduous								
Austria		0.00	0.00	0.00	0.00	0.00	0.00	-1.06
		0.00	0.00	0.00	0.00	0.00	0.00	5.31
Belgium							-0.60	
							0.06	
Bulgaria							0.74	
							2.63	
Greece		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Latvia		0.49	0.08	9.08	-11.62	9.01	2.03	5.34
		0.49	0.08	9.08	-4.04	0.40	2.03	5.34
Romania								
Spain		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
Switzerland								0.77
								11.86

**Table 5.7****Changes in forest and other woody biomass stocks: temperate forests (Other) – trend information****Area of forest/biomass stocks (kha) and average annual growth rate (t dm/ha/year)**

	Evergreen / Deciduous	1990 <sup>a</sup>		1995		1996		1997		1998		1999		2000		2001	
		Area	Growth rate	Area	Growth rate	Area	Growth rate	Area	Growth rate	Area	Growth rate	Area	Growth rate	Area	Growth rate	Area	Growth rate
		(k ha)	(t dm/ha/yr)	(k ha)	(t dm/ha/yr)	(k ha)	(t dm/ha/yr)	(k ha)	(t dm/ha/yr)	(k ha)	(t dm/ha/yr)	(k ha)	(t dm/ha/yr)	(k ha)	(t dm/ha/yr)	(k ha)	(t dm/ha/yr)
	Other																
Canada	Canadian Wood Production Forest (aggregate value)	126,697	1.82	121,289	1.82	120,084	1.82	119,266	1.82	118,438	1.82	117,086	1.82	116,134	1.82	115,410	1.81
Czech Republic	Commercial															2,556	4.79
France	Forest as a whole	15,195	4.80	16,534	4.74	16,564	4.80	16,741	4.78					16,835	4.76	16,835	4.75
Germany	Evergreen/deciduous	10,144	4.27	10,144	4.27	10,144	4.27	10,144	4.27	10,144	4.27	10,144	4.27	10,144	4.27	10,144	4.27
Greece	Other (specify)															3,154	
Italy	Total															6,879	2.84
Latvia	Clearing and rough afforestation	140	0.81	140	0.81	140	0.81	140	0.81	140	0.81	140	0.81	140	0.81	140	0.81
	Bushes	111	0.50	111	0.50	125	0.81	111	0.50	111	0.50	111	0.50	111	0.50	111	0.50
	Newly afforested land			125	0.81	111	0.50	125	0.81	125	0.81	125	0.81	4	0.81	4	0.81
Netherlands	forest land coniferous	190	4.61	195	4.74	195	4.66	195	4.74	195	4.74	195	4.69	196	4.67	196	4.67
	forest land broadleaved	151	5.38	156	5.57	157	5.59	159	5.69	161	5.72	163	5.70	164	5.68	164	5.68
Poland	Other forest deciduous															412	3.48
	Other forest Evergreen															1,134	3.41
	State forest deciduous															1,564	6.24
	State forest evergreen															5,463	4.95
Portugal	Other (specify)																3,164.80
	Forest as a whole	3,140	2.09	3,202	2.11	3,221	2.11	3,239	2.10	3,258	2.09	3,276	2.08	3,295	2.02	3,295	2.02
Slovakia	Picea abies													515	2.55	515	3.40
	Abies alba													81	2.69	81	3.49
	Pinus sp.													127	2.39	144	3.42
	Larix decidua													44	2.58	45	3.60
	Other coniferous													19	1.10	20	1.37
	Quercus robur, petr.													222	3.89	213	4.16
	Fagus sylvatica													596	4.42	586	5.71
	Carpinus betulus													110	2.40	109	5.35
	Acer sp.													35	3.16	35	4.91
	Fraxinus excelsior													25	3.22	25	4.84
	Ulmus sp.													2	2.99	1	4.68
	Quercus cerris													48	3.74	47	4.58
	Robinia pseudoac.													35	2.76	34	2.90
	Betulus sp.													25	1.01	27	1.50
	Alnus sp.													12	1.76	14	2.46
	Tilia sp.													6	1.93	7	3.89
	Breeding poplars													12	2.42	11	2.51
	Populus sp.													8	2.69	7	1.39
	Salix sp.													2	2.65	2	2.16
	Other broadleaves													6	1.64	4	1.28
Sweden	Other (specify)															824	5.38
United States	Plantations other	1,270	1.70	1,270	1.70	1,270	1.70	1,787	3.90	1,787	3.90	1,787	3.90	1,787	3.90	1,787	3.90
	Evergreen	103,953	0.10	103,953	0.10	103,953	0.10	99,041	-0.30	99,041	-0.30	99,041	-0.30	99,041	-0.30	99,041	-0.30
	Deciduous	95,639	2.00	95,639	2.00	95,639	2.00	98,898	2.20	98,898	2.20	98,898	2.20	98,898	2.20	98,898	2.20
	Other	35,076	1.30	35,076	1.30	35,076	1.30	35,799	1.80	35,799	1.80	35,799	1.80	35,799	1.80	35,799	1.80

<sup>a</sup> In accordance with decisions 9/CP.2 and 11/CP.4, some Parties with economies in transition use base years other than 1990: Poland (1988).

**Table 5.7 (continued)**

**Changes in forest and other woody biomass stocks: temperate forests (Other) – trend information**

**Area of forest/biomass stocks (kha) and average annual growth rate (t dm/ha/year)**

**Average annual growth rate: relative change (%)**

		1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
		Other						
Canada	Canadian Wood Production Forest (aggr)	0.02	-0.01	-0.04	0.01	-0.02	-0.04	-0.10
Czech Republic	Commercial							
France	Forest as a whole	1.28	-0.52				-0.31	-1.08
Germany	Evergreen/deciduous	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Greece	Other (specify)							
Italy	Total							
Latvia	Clearing and rough afforestation	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Bushes	62.00	-38.27	0.00	0.00	0.00	0.00	0.00
	Newly afforested land	-38.27	62.00	0.00	0.00	0.00	0.00	0.00
Netherlands	forest land coniferous	-1.57	1.68	0.03	-1.04	-0.52	0.00	1.22
	forest land broadleaved	0.46	1.77	0.58	-0.46	-0.34	0.00	5.52
Poland	Other forest deciduous							
	Other forest Evergreen							
	State forest deciduous	-0.41	-0.40	-0.46	-0.29	-2.74	0.00	-3.03
	State forest evergreen						33.18	
Portugal	Other (specify)						29.81	
	Forest as a whole						42.93	
Slovakia	Picea abies						39.53	
	Abies alba						24.91	
	Pinus sp.						6.94	
	Larix decidua						29.23	
	Other coniferous						122.75	
	Quercus robur, petr.						55.25	
	Fagus sylvatica						50.31	
	Carpinus betulus						56.52	
	Acer sp.						22.35	
	Fraxinus excelsior						5.22	
	Ulmus sp.						48.12	
	Quercus cerris						39.60	
	Robinia pseudoac.						101.45	
	Betulus sp.						3.88	
	Alnus sp.						-48.48	
	Tilia sp.						-18.49	
	Breeding poplars						-22.20	
	Populus sp.							
	Salix sp.	0.00	129.41	0.00	0.00	0.00	0.00	129.41
	Other broadleaves	0.00	-400.00	0.00	0.00	0.00	0.00	-400.00
Sweden	Other (specify)	0.00	10.00	0.00	0.00	0.00	0.00	10.00
United States	Plantations other	0.00	38.46	0.00	0.00	0.00	0.00	38.46
	Evergreen							
	Deciduous							
	Other							

**Area of forest/biomass stocks: relative change (%)**

		1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
		Other						
Canada		-0.99	-0.68	-0.69	-1.14	-0.81	-0.62	-8.91
Republic								
France		0.18	1.07				0.00	10.79
Germany		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Greece								
Italy								
Latvia		0.00	0.00	0.00	0.00	0.00	0.00	0.00
		12.61	-11.20	0.00	0.00	0.00	0.00	0.00
		-11.20	12.61	0.00	0.00	-96.80	0.00	
Netherlands		0.30	-0.20	0.09	0.10	0.56	0.00	3.16
		0.85	1.45	1.08	1.06	0.50	0.00	8.34
Poland								
		0.58	0.58	0.57	0.57	0.57	0.00	4.94
							0.10	
Portugal							-0.05	
							12.82	
Slovakia							0.82	
							4.95	
							-3.87	
							-1.73	
							-0.57	
							1.06	
							0.72	
							-60.01	
							-2.45	
							-3.38	
							8.41	
							21.61	
							19.95	
							-8.38	
							-5.04	
							19.97	
							-23.37	
		0.00	40.73	0.00	0.00	0.00	0.00	40.73
		0.00	-4.73	0.00	0.00	0.00	0.00	-4.73
Sweden		0.00	3.41	0.00	0.00	0.00	0.00	3.41
United States		0.00	2.06	0.00	0.00	0.00	0.00	2.06

**Table 5.8****Changes in forest and other woody biomass stocks – trend information****CO<sub>2</sub> emissions (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	26,679	22,554	24,423	22,175	22,175	22,175	22,175	22,175
<b>Belgium</b>	5,067	4,668	4,668	4,668	4,668	4,668	4,398	4,384
<b>Bulgaria</b>							4,582	4,091
<b>Canada</b>	230,498	310,409	279,058	268,126	280,546	282,223	255,663	270,199
<b>Czech Republic</b>	15,503				15,287	16,048	16,442	16,304
<b>Denmark</b>	0	0	0	0	0	0	0	0
<b>Estonia</b>								17,867
<b>European Community</b>	0	0	0	0	0	0	0	0
<b>Finland</b>	72,141	83,129	76,969	85,934	90,424	90,447	91,139	88,231
<b>France</b>	74,183	74,783	74,068	71,535	73,732	73,159	76,200	72,742
<b>Germany</b>	NE	NE	NE	NE	NE	NE	NE	NE
<b>Greece<sup>b</sup></b>	4,023	3,233	3,499	3,457	2,945	3,858	3,819	2,209
<b>Iceland</b>								0
<b>Ireland</b>	1,181	1,681	1,739	1,638	1,861	1,959	2,122	2,038
<b>Italy</b>								0
<b>Latvia</b>	5,622	10,370	10,196	13,417	15,075	16,089	16,641	15,686
<b>Luxembourg</b>								
<b>Netherlands</b>	3,302	3,402	3,574	3,522	3,600	3,410	3,593	3,593
<b>New Zealand</b>								0
<b>Norway</b>	19,727				15,899	16,306	15,953	16,359
<b>Poland</b>							33,308	32,085
<b>Portugal</b>	11,273	10,407	10,341	10,275	10,209	10,143	10,077	10,077
<b>Romania</b>		17,644	17,803	17,973	15,560	16,517	17,124	16,209
<b>Slovakia</b>							10,021	10,230
<b>Spain</b>	11,022	11,022	11,022	11,022	11,022	11,022	11,022	11,022
<b>Sweden</b>	0	0	0	0	0	0	0	0
<b>Switzerland</b>	8,014							10,201
<b>United Kingdom</b>	0	0	0	0	0	0	0	0
<b>United States</b>	25,098	25,098	25,098	25,098	25,098	25,098	25,098	25,098

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>	8.3	-9.2	0.0	0.0	0.0	0.0	-16.9
<b>Belgium</b>	0.0	0.0	0.0	0.0	-5.8	-0.3	-13.5
<b>Bulgaria</b>							-10.7
<b>Canada</b>	-10.1	-3.9	4.6	0.6	-9.4	5.7	17.2
<b>Czech Republic</b>				5.0	2.5	-0.8	5.2
<b>Denmark</b>							
<b>Estonia</b>							
<b>European Community</b>							
<b>Finland</b>	-7.4	11.6	5.2	0.0	0.8	-3.2	22.3
<b>France</b>	-1.0	-3.4	3.1	-0.8	4.2	-4.5	-1.9
<b>Germany</b>							
<b>Greece</b>	8.2	-1.2	-14.8	31.0	-1.0	-42.2	-45.1
<b>Iceland</b>							
<b>Ireland</b>	3.5	-5.8	13.6	5.3	8.3	-4.0	72.6
<b>Italy</b>							
<b>Latvia</b>	-1.7	31.6	12.4	6.7	3.4	-5.7	179.0
<b>Luxembourg</b>							
<b>Netherlands</b>	5.0	-1.4	2.2	-5.3	5.4	0.0	8.8
<b>New Zealand</b>							
<b>Norway</b>				2.6	-2.2	2.5	-17.1
<b>Poland</b>						-3.7	
<b>Portugal</b>	-0.6	-0.6	-0.6	-0.6	-0.6	0.0	-10.6
<b>Romania</b>	0.9	1.0	-13.4	6.1	3.7	-5.3	
<b>Slovakia</b>						2.1	
<b>Spain</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Sweden</b>							
<b>Switzerland</b>							27.3
<b>United Kingdom</b>							
<b>United States</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Table 5.8****Changes in forest and other woody biomass stocks – trend information (continued)****CO<sub>2</sub> removals (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	-35,894	-29,808	-29,808	-29,808	-29,808	-29,808	-29,808	-29,808
<b>Belgium</b>	-6,667	-6,579	-6,557	-6,535	-6,513	-6,491	-6,219	-6,198
<b>Bulgaria<sup>b</sup></b>							-13,558	-13,558
<b>Canada</b>	-339,185	-324,643	-321,585	-319,510	-317,291	-313,856	-311,395	-309,470
<b>Czech Republic</b>	-17,631				-19,044	-19,449	-20,458	-20,667
<b>Denmark</b>	-3,118	-3,128	-3,134	-3,142	-3,152	-3,161	-3,517	-3,531
<b>Estonia</b>						-12,245	-11,924	-15,772
<b>European Community</b>	-231,103	-229,409	-238,432	-239,726	-233,221	-237,449	-223,548	-237,225
<b>Finland</b>	-95,939	-97,817	-98,001	-98,571	-100,137	-101,268	-103,093	-105,082
<b>France</b>	-142,262	-149,183	-151,289	-152,086	-154,241	-155,219	-152,506	-152,051
<b>Germany</b>	-33,689	-33,400	-33,400	-33,400	-33,400	-33,400	-23,695	-23,695
<b>Greece</b>	-4,005	-4,005	-4,005	-4,005	-4,005	-4,005	-4,005	-4,005
<b>Iceland</b>							-39	-43
<b>Ireland</b>	-1,631	-2,109	-2,159	-2,136	-2,435	-2,460	-2,530	-3,045
<b>Italy</b>					-24,969	-25,315	-25,699	-27,113
<b>Latvia</b>	-25,336	-26,189	-26,189	-26,189	-26,189	-26,189	-26,054	-26,054
<b>Luxembourg</b>								
<b>Netherlands</b>	1,881	2,170	2,176	2,342	2,220	2,175	2,180	2,180
<b>New Zealand</b>								-26,149
<b>Norway</b>	-29,492				-33,486	-34,074	-34,696	-35,326
<b>Poland</b>							-76,051	-80,345
<b>Portugal</b>	-11,276	-12,412	-12,432	-12,454	-12,467	-12,502	-12,229	-12,229
<b>Romania<sup>b</sup></b>		-26,387	-26,345	-26,318	-26,257	-26,241	-26,220	-26,222
<b>Slovakia</b>							-11,431	-14,990
<b>Spain</b>	-40,275	-40,275	-40,275	-40,275	-40,275	-40,275	-40,275	-40,275
<b>Sweden</b>	-24,100	-25,100	-26,100	-31,100	-28,100	-31,100	-31,100	-33,220
<b>Switzerland<sup>b</sup></b>	-11,202				-6,109	-4,226	-11,673	-11,730
<b>United Kingdom</b>	-7,304	-8,518	-8,426	-8,316	-8,184	-8,122	-8,309	-8,144
<b>United States</b>	-828,098	-824,432	-824,432	-817,098	-809,765	-820,765	-813,432	-817,098

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>	0.0	0.0	0.0	0.0	0.0	0.0	-17.0
<b>Belgium</b>	-0.3	-0.3	-0.3	-0.3	-4.2	-0.3	-7.0
<b>Bulgaria</b>						0.0	
<b>Canada</b>	-0.9	-0.6	-0.7	-1.1	-0.8	-0.6	-8.8
<b>Czech Republic</b>				2.1	5.2	1.0	17.2
<b>Denmark</b>	0.2	0.3	0.3	0.3	11.3	0.4	13.2
<b>Estonia</b>					-2.6	32.3	
<b>European Community</b>	3.9	0.5	-2.7	1.8	-5.9	6.1	2.6
<b>Finland</b>	0.2	0.6	1.6	1.1	1.8	1.9	9.5
<b>France</b>	1.4	0.5	1.4	0.6	-1.7	-0.3	6.9
<b>Germany</b>	0.0	0.0	0.0	0.0	-29.1	0.0	-29.7
<b>Greece</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Iceland</b>						8.6	
<b>Ireland</b>	2.4	-1.1	14.0	1.0	2.8	20.4	86.7
<b>Italy</b>				1.4	1.5	5.5	
<b>Latvia</b>	0.0	0.0	0.0	0.0	-0.5	0.0	2.8
<b>Luxembourg</b>							
<b>Netherlands</b>	0.3	7.6	-5.2	-2.0	0.2	0.0	15.9
<b>New Zealand</b>							
<b>Norway</b>				1.8	1.8	1.8	19.8
<b>Poland</b>						5.6	
<b>Portugal</b>	0.2	0.2	0.1	0.3	-2.2	0.0	8.5
<b>Romania</b>	-0.2	-0.1	-0.2	-0.1	-0.1	0.0	
<b>Slovakia</b>						31.1	
<b>Spain</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Sweden</b>	4.0	19.2	-9.6	10.7	0.0	6.8	37.8
<b>Switzerland</b>				-30.8	176.2	0.5	4.7
<b>United Kingdom</b>	-1.1	-1.3	-1.6	-0.8	2.3	-2.0	11.5
<b>United States</b>	0.0	-0.9	-0.9	1.4	-0.9	0.5	-1.3

**Table 5.9****Forest/grassland conversion – trend information****CO<sub>2</sub> emissions (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
Austria	IE	IE	IE	IE	IE	IE	IE	IE
Belgium	0	0	0	0	0	0	0	0
Bulgaria	NE	NE	NE	NE	NE	NE	NE	NE
Canada	1,419	2,381	2,840	2,912	3,022	3,140	3,399	3,762
Czech Republic								0
Denmark	0	0	0	0	0	0	0	0
Estonia	75	47	39	37	38	35	27	0
European Community	10,176	9,876	9,900	10,016	13,491	10,361	14,108	10,518
Finland	IE	IE	IE	IE	IE	IE	IE	IE
France	8,753	9,216	9,216	9,360	9,809	9,809	9,881	9,881
Germany	NE	NE	NE	NE	NE	NE	NE	NE
Greece <sup>b</sup>	1,423	660	684	656	3,682	552	4,227	637
Iceland								0
Ireland	NO	0	0	0	NO	NO	0	0
Italy					0	0	0	0
Latvia	631	1,174	1,153	1,521	1,710	1,824	1,125	1,059
Luxembourg								
Netherlands	NE	NE	NE	NE	NE	NE	NE	NE
New Zealand	870	2,279	2,509	2,252	1,133	1,421	1,435	1,549
Norway	0				0	0	0	0
Poland	959	157	81	101	87	42	62	58
Portugal	0	0	0	0	0	0	0	0
Romania		709	737	631	627	777	922	982
Slovakia	141	119	111	111	131	125	113	115
Spain	0	0	0	0	0	0	0	0
Sweden	0	0	0	0	0	0	0	0
Switzerland	NO	NO	NO	NO	NO	NO	NO	NO
United Kingdom	0	0	0	0	0	0	0	0
United States	0	0	0	0	0	0	0	0

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
Austria							
Belgium							
Bulgaria							
Canada	19.3	2.5	3.8	3.9	8.2	10.7	165.1
Czech Republic							
Denmark							
Estonia	-17.3	-6.1	2.3	-6.9	-23.1	-100.0	-100.0
European Community	0.2	1.2	34.7	-23.2	36.2	-25.4	3.4
Finland							
France	0.0	1.6	4.8	0.0	0.7	0.0	12.9
Germany							
Greece(a)	3.6	-4.1	461.4	-85.0	665.2	-84.9	-55.2
Iceland							
Ireland							
Italy				-16.5			
Latvia	-1.8	31.9	12.4	6.7	-38.3	-5.9	67.9
Luxembourg							
Netherlands							
New Zealand	10.1	-10.3	-49.7	25.4	1.0	7.9	78.1
Norway							
Poland	-48.4	24.7	-13.9	-51.7	46.9	-6.4	-94.0
Portugal							
Romania	3.9	-14.4	-0.5	23.8	18.7	6.5	
Slovakia	-6.1	-0.6	18.4	-4.6	-9.4	1.1	-18.6
Spain							
Sweden							
Switzerland							
United Kingdom							
United States							

**Table 5.10****Forest/grassland conversion: average annual net loss of biomass (t dm/ha) (2001)**

	On- and off-site burning			Decay			Difference in annual net loss of biomass (t dm/ha/yr)
	Area converted annually (kha/yr)	Average annual net loss of biomass (t dm/ha/yr)	Annual net loss of biomass (kt dm/yr)	Average area converted (kha/yr)	Average annual net loss of biomass (t dm/ha/yr)	Annual net loss of biomass (kt dm/yr)	
	Original natural ecosystem: Tropical, wet / very moist						
Default <sup>a</sup>		(225-300)			(225-300)		
France	0.80	142.50	114.00				
	Original natural ecosystem: temperate / coniferous						
Default <sup>b</sup>		(220-295)			(220-295)		
Greece	4.55	33.86	154.21				
Poland	0.72	139.07	99.85	0.51	139.07	71.46	
Romania	0.82	248.00	202.86	0.82	202.86	165.94	
Slovakia			816.96	0.88	62.48	54.98	
	Original natural ecosystem: temperate / broadleaf						
Default <sup>b</sup>		(175-250)			(175-250)		
Greece	2.33	19.72	46.02				
Romania	1.91	202.00	385.82	1.91	385.82	736.92	
Slovakia			1367.08				
	Original natural ecosystem: temperate - mixed broadleaf / coniferous						
Default <sup>b</sup>		(175-295)			(175-295)		
Canada	16.00	102.31	1637.00				
France	58.63	86.27	5057.71				
Greece	9.43	19.72	185.97				
	Original natural ecosystem: grasslands						
Default <sup>c</sup>							
Canada	36.20	1.93	70.00				
Greece	5.53	0.00					
Poland				0.72	10.00	7.23	
	Original natural ecosystem: boreal, mixed coniferous / broadleaf						
Default <sup>b</sup>		(40-87)			(40-87)		
Canada	4.90	39.80	195.00				

<sup>a</sup> Source of default emission factors: IPCC Guidelines, volume 3, table 5.4, page 5.26.<sup>b</sup> Source of default emission factors: IPCC Guidelines, volume 3, table 5.6, page 5.30.<sup>c</sup> No IPCC default values available.



**Table 5.11**

**Forest/grassland conversion: area converted annually (kha/yr) – trend information**  
**Temperate coniferous, on- and off-site burning (kha/yr)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
Austria	NO	NO	NO	NO	NO	NO	NO	NO
Belgium								
Bulgaria								
Canada	NA	NA	NA	NA	NA	NA	NA	NA
Czech Republic								
Denmark								
Estonia								
European Community							NE	NE
Finland								
France								
Germany	NE	NE	NE	NE	NE	NE	NE	NE
Greece <sup>b</sup>	13.6	4.9	4.1	4.9	33.5	3.2	29.9	4.6
Iceland						NE		
Ireland	NE	NE	NE	NE	NE	NE	0.0	0.0
Italy								
Latvia	NO	NO	NO	NO	NO	NO	NO	NO
Luxembourg								
Netherlands								
New Zealand								
Norway								
Poland <sup>b</sup>							0.7	0.7
Portugal								
Romania <sup>b</sup>		0.6	0.5	0.4	0.5	0.6	0.8	0.8
Slovakia <sup>b</sup>					NA	NA	NA	NA
Spain	NE	NE	NE	NE	NE	NE	NE	NE
Sweden	NO							
Switzerland								
United Kingdom								
United States	NE	NE	NE	NE	NE	NE	NE	NE

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
Austria							
Belgium							
Bulgaria							
Canada							
Czech Republic							
Denmark							
Estonia							
European Community							
Finland							
France							
Germany							
Greece	-16.4	19.8	583.7	-90.4	835.3	-84.8	-66.5
Iceland							
Ireland							
Italy							
Latvia							
Luxembourg							
Netherlands							
New Zealand							
Norway							
Poland						-0.3	
Portugal							
Romania	-13.0	-16.9	21.2	25.0	19.0	6.2	
Slovakia							
Spain							
Sweden							
Switzerland							
United Kingdom							
United States							

**Table 5.11**

**Forest/grassland conversion: area converted annually (kha/yr) – trend information (continued)**  
**Temperate broadleaf, on and off-site burning (kha/yr)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
Austria	NO	NO	NO	NO	NO	NO	NO	NO
Belgium								
Bulgaria								
Canada	NA	NA	NA	NA	NA	NA	NA	NA
Czech Republic								
Denmark								
Estonia								
European Community							NE	NE
Finland								
France								
Germany	NE	NE	NE	NE	NE	NE	NE	NE
Greece <sup>b</sup>	5.0	1.2	1.9	1.1	12.5	1.2	21.4	2.3
Iceland						NE		
Ireland	NE	NE	NE	NE	NE	NE	0.0	0.0
Italy								
Latvia	NO	NO	NO	NO	NO	NO	NO	NO
Luxembourg								
Netherlands								
New Zealand								
Norway								
Poland							0.0	0.0
Portugal								
Romania <sup>b</sup>		1.4	1.5	1.3	1.2	1.5	1.8	1.9
Slovakia						NA	NA	NA
Spain	NE	NE	NE	NE	NE	NE	NE	NE
Sweden	NO							
Switzerland								
United Kingdom								
United States	NE	NE	NE	NE	NE	NE	NE	NE

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
Austria							
Belgium							
Bulgaria							
Canada							
Czech Republic							
Denmark							
Estonia							
European Community							
Finland							
France							
Germany							
Greece	59.0	-40.9	1036.4	-90.4	1685.8	-89.1	-53.1
Iceland							
Ireland							
Italy							
Latvia							
Luxembourg							
Netherlands							
New Zealand							
Norway							
Poland							
Portugal							
Romania	11.8	-15.8	-5.5	23.2	19.1	6.1	
Slovakia							
Spain							
Sweden							
Switzerland							
United Kingdom							
United States							

**Table 5.11****Forest/grassland conversion: area converted annually (kha/yr) – trend information (continued)****Temperate mixed: broadleaf/coniferous, on- and off-site burning (kha/yr)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
Austria	NO	NO	NO	NO	NO	NO	NO	NO
Belgium								
Bulgaria								
Canada	3.1	8.3	10.5	11.2	12.0	12.6	14.1	16.0
Czech Republic								
Denmark								
Estonia								
European Community							NE	NE
Finland								
France	58.6	58.6	58.6	58.6			58.6	58.6
Germany	NE	NE	NE	NE	NE	NE	NE	NE
Greece								9.4
Iceland						NE		
Ireland	NE	NE	NE	NE	NE	NE	NE	NE
Italy								
Latvia	NO	NO	NO	NO	NO	NO	NO	NO
Luxembourg								
Netherlands								
New Zealand								
Norway								
Poland							0.0	0.0
Portugal								
Romania <sup>b</sup>							NA	NO
Slovakia <sup>b</sup>						NO	NO	NO
Spain	NE	NE	NE	NE	NE	NE	NE	NE
Sweden	NO							
Switzerland								
United Kingdom								
United States	NE	NE	NE	NE	NE	NE	NE	NE

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
Austria							
Belgium							
Bulgaria							
Canada	26.5	6.7	7.1	5.0	11.9	13.5	416.1
Czech Republic							
Denmark							
Estonia							
European Community							
Finland							
France	0.0	0.0				0.0	0.0
Germany							
Greece							
Iceland							
Ireland							
Italy							
Latvia							
Luxembourg							
Netherlands							
New Zealand							
Norway							
Poland							
Portugal							
Romania							
Slovakia							
Spain							
Sweden							
Switzerland							
United Kingdom							
United States							

**Table 5.11**

**Forest/grassland conversion: area converted annually (kha/yr) – trend information (continued)**  
**Boreal mixed, on- and off-site burning (kha/yr)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
Austria	NO	NO	NO	NO	NO	NO	NO	NO
Belgium								
Bulgaria								
Canada	8.8	6.8	6.9	6.4	5.8	5.4	5.1	4.9
Czech Republic								
Denmark								
Estonia <sup>b</sup>						0.1	0.1	0.0
European Community							NE	NE
Finland								
France								
Germany	NO	NO	NO	NO	NO	NO	NO	NO
Greece <sup>b</sup>	NA	NA	NA	NA	NA	NA	NA	NA
Iceland						NE		
Ireland	NA	NO	NO	NO	NA	NA		
Italy								
Latvia	NO	NO	NO	NO	NO	NO	NO	NO
Luxembourg								
Netherlands								
New Zealand								
Norway								
Poland <sup>b</sup>							NO	NO
Portugal								
Romania <sup>b</sup>							NO	NO
Slovakia <sup>b</sup>						NO	NO	NO
Spain	NO	NO	NO	NO	NO	NO	NO	NO
Sweden								
Switzerland								
United Kingdom								
United States	NE	NE	NE	NE	NE	NE	NE	NE

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
Austria							
Belgium							
Bulgaria							
Canada	1.5	-7.2	-9.4	-6.9	-5.6	-3.9	-44.3
Czech Republic							
Denmark							
Estonia					0.0		
European Community							
Finland							
France							
Germany							
Greece							
Iceland							
Ireland							
Italy							
Latvia							
Luxembourg							
Netherlands							
New Zealand							
Norway							
Poland							
Portugal							
Romania							
Slovakia							
Spain							
Sweden							
Switzerland							
United Kingdom							
United States							

**Table 5.11****Forest/grassland conversion: area converted annually (kha/yr) – trend information (continued)****Boreal grassland, on- and off-site burning (kha/yr)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
Austria	NO	NO	NO	NO	NO	NO	NO	NO
Belgium								
Bulgaria								
Canada	58.7	42.5	40.5	39.3	37.9	37.8	36.8	36.2
Czech Republic								
Denmark								
Estonia								
European Community							NE	NE
Finland								
France								
Germany	NE	NE	NE	NE	NE	NE	NE	NE
Greece <sup>b</sup>	4.8	2.9	9.3	8.3	19.8	2.4	19.2	5.5
Iceland						NE		
Ireland	NE				NE	NE		
Italy								
Latvia	NO	NO	NO	NO	NO	NO	NO	NO
Luxembourg								
Netherlands								
New Zealand								
Norway								
Poland <sup>b</sup>							0.6	0.0
Portugal								
Romania <sup>b</sup>							NA	NE
Slovakia <sup>b</sup>						NO	NO	NO
Spain	NE	NE	NE	NE	NE	NE	NE	NE
Sweden	NO							
Switzerland								
United Kingdom								
United States	NE	NE	NE	NE	NE	NE	NE	NE

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
Austria							
Belgium							
Bulgaria							
Canada	-4.7	-3.0	-3.6	-0.3	-2.6	-1.6	-38.3
Czech Republic							
Denmark							
Estonia							
European Community							
Finland							
France							
Germany							
Greece	221.0	-11.0	139.3	-87.9	700.0	-71.2	14.0
Iceland							
Ireland							
Italy							
Latvia							
Luxembourg							
Netherlands							
New Zealand							
Norway							
Poland							
Portugal							
Romania							
Slovakia							
Spain							
Sweden							
Switzerland							
United Kingdom							
United States							

**Table 5.12****Abandonment of managed land – trend information****CO<sub>2</sub> removals (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
Austria	IE	IE	IE	IE	IE	IE	IE	IE
Belgium	NO	NO	NO	NO	NO	NO	NO	NO
Bulgaria	NE				0	0	0	0
Canada	-3,245	-3,183	-3,157	-3,183	-3,212	-3,241	-3,271	-3,300
Czech Republic								0
Denmark	0	0	0	0	0	0	0	0
Estonia <sup>b</sup>	-1,985	-1,339	-1,721	-1,580	-1,612	-2,296	-2,456	-2,835
European Community	-150	-196	-199	-201	-202	-201	-204	-202
Finland	0	0	0	0	0	0	0	0
France	-48	-48	-48	-48	-48	-48	-48	-48
Germany	NE	NE	NE	NE	NE	NE	NE	NE
Greece <sup>b</sup>	0	0	0	0	0	0	0	0
Iceland								0
Ireland	NO	0	0	0	NE	NE	0	0
Italy	-102	-148	-151	-153	-154	-153	-156	-154
Latvia	NO	-12	-18	-14	-20	-24	-29	-38
Luxembourg								
Netherlands	NE	NE	NE	NE	NE	NE	NE	NE
New Zealand								0
Norway	0				0	0	0	0
Poland	-10,715	-7,125	-7,919	-7,905	-7,881	IE	IE	IE
Portugal	0	0	0	0	0	0	0	0
Romania <sup>b</sup>							NA	0
Slovakia <sup>b</sup>					-1,407	-1,415	0	0
Spain	0	0	0	0	0	0	0	0
Sweden	0	0	0	0	0	0	0	0
Switzerland	IE	IE	IE	IE	IE	IE	IE	IE
United Kingdom	0	0	0	0	0	0	0	0
United States	0	0	0	0	0	0	0	0

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
Austria							
Belgium							
Bulgaria							
Canada	-0.8	0.8	0.9	0.9	0.9	0.9	1.7
Czech Republic							
Denmark							
Estonia	28.5	-8.2	2.0	42.5	7.0	15.4	42.8
European Community	1.5	1.1	0.1	0.0	1.1	-1.0	34.4
Finland							
France	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Germany							
Greece							
Iceland							
Ireland							
Italy	2.0	1.5	0.1	0.0	1.4	-1.3	50.6
Latvia	58.7	-24.5	42.4	23.3	19.6	31.5	
Luxembourg							
Netherlands							
New Zealand							
Norway							
Poland	11.1	-0.2	-0.3				
Portugal							
Romania							
Slovakia				0.6			
Spain							
Sweden							
Switzerland							
United Kingdom							
United States							

**Table 5.13****Abandonment of managed land (2001)****Annual above ground biomass growth rate (t dm/ha/yr) and rate of biomass C uptake (t C/ha/yr)**

	Annual rate of biomass growth		C fraction of biomass		Rate of biomass C uptake	
	<20 yrs t dm/ha/yr	> 20 yrs t dm/ha/yr	<20 yrs	> 20 yrs	<20 yrs t C/ha/yr	> 20 yrs t C/ha/yr
<b>Temperate: Mixed coniferous / broadleaf</b>						
<b>Default<sup>a</sup></b>	(2.0-3.0)	(2.0-3.0)				
<b>Canada</b>	0.95	0.95	0.50	0.50	0.48	0.47
<b>Italy</b>	2.00		0.50		1.00	
<b>Latvia</b>	0.50		0.50		0.25	
<b>Poland</b>			0.50	0.50		
<b>Temperate: Broadleaf</b>						
<b>Default<sup>a</sup></b>	(2.0)	(2.0)				
<b>Latvia</b>	0.50		0.50			
<b>Poland</b>			0.50	0.50		
<b>Temperate: Coniferous</b>						
<b>Default<sup>a</sup></b>	(3.0)	(3.0)				
<b>Latvia</b>	0.50		0.50			
<b>Poland</b>			0.50	0.50		
<b>Boreal: Mixed Broadleaf / Coniferous</b>						
<b>Default<sup>b</sup></b>	(0.7-2.0)	(0.7-6.4)				
<b>Canada</b>	0.21	0.21	0.50	0.50	0.11	0.11
<b>Estonia</b>	5.01		0.45	0.45	2.25	
<b>Grassland</b>						
<b>Default<sup>c</sup></b>						
<b>Canada</b>			0.50	0.50		
<b>Poland</b>			0.50	0.50		

<sup>a</sup> Source of default emission factors: IPCC Guidelines, volume 3, table 5.2, page 5.20.<sup>b</sup> Source of default emission factors: IPCC Guidelines, volume 2, table 5.8, page 5.22.<sup>c</sup> No IPCC default values available.

**Table 5.13****Abandonment of managed land (2001) (continued)****Abandonment area (kha) – first 20 years<sup>a</sup>**

		1990 <sup>b</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Canada</b>	Temperate Forests: Mixed Broadleaf/Coniferous	884	531	469	448	427	406	385	364
	Grasslands/Tundra: Grasslands	301	178	156	155	191	228	265	301
	Boreal Forests: Mixed Broadleaf/ Coniferous	131	73	63	62	67	71	77	81
<b>Estonia</b>	Boreal Forests: Mixed Broadleaf/ Coniferous						325	361	343
<b>Italy</b>	Temperate Forests: Mixed Broadleaf/Coniferous							1,748	42
<b>Latvia</b>	Temperate Forests: Mixed Broadleaf/Coniferous	NO	13	20	15	22	27	32	42
<b>Poland</b>	Temperate Forests: Mixed Broadleaf/Coniferous								0
	Temperate Forests: Coniferous								0
	Temperate Forests: Broadleaf								0
	Grasslands/Tundra: Grasslands								0

<sup>a</sup> Only Parties reporting data under this category were included in the table.

<sup>b</sup> 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), Poland (1988) and Romania

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Canada</b>	-11.7	-4.6	-4.6	-5.0	-5.1	-5.6	-58.9
	-12.4	-1.0	23.6	19.4	16.0	13.8	0.2
	-13.7	-2.4	8.1	6.8	7.7	5.9	-37.9
<b>Estonia</b>					11.1	-5.1	
<b>Italy</b>						-97.6	
<b>Latvia</b>	58.7	-24.5	42.4	23.3	19.6	31.5	
<b>Poland</b>							



**Table 5.14****CO<sub>2</sub> emissions and removals from soils – trend information****Net CO<sub>2</sub> emissions/removals (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	NE	NE	NE	NE	NE	NE	NE	NE
<b>Belgium</b>	NE	NE	NE	NE	NE	NE	NE	NE
<b>Bulgaria</b>	NE	NE	NE	NE	NE	NE	0	0
<b>Canada</b>	3,525	2,391	2,636	2,512	2,351	2,237	2,261	2,431
<b>Czech Republic</b>								0
<b>Denmark</b>	0	0	0	0	0	0	0	0
<b>Estonia</b>	3,053	1,411	420	-347	-42	646	463	1.0
<b>European Community</b>	29,442	28,326	28,688	29,872	29,245	28,154	29,367	23,673
<b>Finland</b>	3,208	1,718	1,818	2,055	2,024	2,007	2,023	1,946
<b>France</b>	3,672	3,176	3,253	3,081	3,068	2,954	3,377	3,106
<b>Germany</b>	NE	NE	NE	NE	NE	NE	NE	NE
<b>Greece<sup>b</sup></b>	0	-253	-253	-508	-84	-339	-202	-169
<b>Iceland</b>								0
<b>Ireland</b>	384	374	416	467	413	379	360	378
<b>Italy</b>	5,175	7,866	7,815	9,645	8,472	8,110	10,066	8,612
<b>Latvia</b>	134	116	102	113	92	93	95	91
<b>Luxembourg</b>								
<b>Netherlands</b>	NE	NE	NE	NE	NE	NE	NE	NE
<b>New Zealand</b>	346	507	520	536	587	638	690	741
<b>Norway</b>	217				134	129	108	113
<b>Poland</b>	IE	-2,787	-2,782	-2,837	-2,876	-3,739	-412	-5,437
<b>Portugal</b>	0	0	0	0	0	0	0	0
<b>Romania</b>							NA	NE
<b>Slovakia</b>	-815	-1,016	-805	-547	-593	-669	-1,146	-619
<b>Spain</b>	0	0	0	0	0	0	0	0
<b>Sweden</b>	3,808	3,807	3,831	3,812	3,769	3,795	3,794	137
<b>Switzerland</b>	NE	NE	NE	NE	NE	NE	NE	NE
<b>United Kingdom</b>	16,404	13,355	13,626	13,374	13,607	13,256	11,972	11,609
<b>United States</b>	-251,594	-253,231	-251,980	-39,600	-37,133	-37,559	-39,429	-40,831

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>							
<b>Belgium</b>							
<b>Bulgaria</b>							
<b>Canada</b>	10.3	-4.7	-6.4	-4.8	1.1	7.5	-31.0
<b>Czech Republic</b>							
<b>Denmark</b>							
<b>Estonia</b>	-70.2	-182.6	-87.8	-1,623.1	-28.4	-99.8	-100.0
<b>European Community</b>	1.3	4.1	-2.1	-3.7	4.3	-19.4	-19.6
<b>Finland</b>	5.8	13.0	-1.5	-0.8	0.8	-3.8	-39.3
<b>France</b>	2.4	-5.3	-0.4	-3.7	14.3	-8.0	-15.4
<b>Germany</b>							
<b>Greece</b>	0.0	100.7	-83.4	302.2	-40.5	-16.0	
<b>Iceland</b>							
<b>Ireland</b>	11.3	12.3	-11.7	-8.1	-5.0	5.1	-1.6
<b>Italy</b>	-0.6	23.4	-12.2	-4.3	24.1	-14.4	66.4
<b>Latvia</b>	-12.0	10.1	-18.2	0.9	1.7	-3.6	-32.1
<b>Luxembourg</b>							
<b>Netherlands</b>							
<b>New Zealand</b>	2.6	3.1	9.5	8.7	8.2	7.4	114.2
<b>Norway</b>				-3.3	-16.4	4.8	-47.7
<b>Poland</b>	-0.2	2.0	1.4	30.0	-89.0	1,219.8	
<b>Portugal</b>							
<b>Romania</b>							
<b>Slovakia</b>	-20.8	-32.1	8.5	12.8	71.3	-46.0	-24.0
<b>Spain</b>							
<b>Sweden</b>	0.6	-0.5	-1.1	0.7	0.0	-96.4	-96.4
<b>Switzerland</b>							
<b>United Kingdom</b>	2.0	-1.8	1.7	-2.6	-9.7	-3.0	-29.2
<b>United States</b>	-0.5	-84.3	-6.2	1.1	5.0	3.6	-83.8

**Table 5.15**

Cultivation of mineral soils: average annual rate of soils C uptake/removal (tC/ha/year) (2001)

	Average annual rate of soil C uptake/removal (t C/ha/yr)					
	High activity	Low activity	Sandy	Volcanic	Wetland	Other
Default <sup>a</sup>						
Austria						
Belgium						
Bulgaria						
Canada	IE	IE	IE	IE	IE	
Czech Republic						
Denmark						
Estonia	0.00	0.00	0.00	0.00	0.00	
European Community	NE	NE	NE	NE	NE	
Finland	-0.06	-0.06	-0.02			
France						
Germany	NE	NE	NE	NE	NE	
Greece	2.31	0.00	0.00	0.00	0.00	
Iceland						
Ireland						
Italy						0.10
Latvia						
Luxembourg						
Netherlands						
New Zealand						
Norway						
Poland	0.02	-0.01	-0.01		0.11	
Portugal						
Romania						
Slovakia	NO	NO	NO	NO	NO	
Spain						
Sweden						
Switzerland						
United Kingdom						
United States	0.03	0.03	0.02	-0.05	0.02	

<sup>a</sup> No IPCC default values available.

<sup>b</sup> Source of default emission factors: IPCC Guidelines, volume 2, table 5.11, page 5.29.

**Table 5.16**

Cultivation of organic soils: annual loss rate (Mg/ha/year) (2001)

	Annual loss rate (Mg C/ha/yr)						Histosol cultivation	
	Cool temperate		Warm temperate		Tropical		Table 4.D.	Table 5.D.
	Upland crops	Pasture/forest	Upland crops	Pasture/forest	Upland crops	Pasture/forest	(ha)	
Default <sup>b</sup>	1	0.25	10	2.5	20	5		
Austria							NO	
Belgium								
Bulgaria							205	
Canada	IE	IE	NO	NO	NO	NO	29,802	NE
Czech Republic							1,695	
Denmark							18,400	
Estonia		4.3						
European Community	NE	NE	NE	NE	NE	NE	NE	NE
Finland	1.19	1.09					300,500	300,500
France								
Germany	NE	NE	NE	NE	NO	NO	1,348,007	NE
Greece	0	0	0	0	0	0		
Iceland							NO	
Ireland							0	
Italy							9,000	
Latvia	1						27,672	
Luxembourg								
Netherlands							NE	
New Zealand								
Norway							175,000	
Poland	NO	NO	NO	NO	NO	NO	1,269,000	NO
Portugal							NE	
Romania							35,400	
Slovakia	NO	NO	NO	NO	NO	NO	IE	NO
Spain							NO	NO
Sweden	5	3					244,000	
Switzerland								
United Kingdom							39,200	
United States	11	2.7	14	3.5	14	3.5	642,399	1,153,882

**Table 5.17**

Liming of agricultural soils: C conversion factor

	C conversion factor	
	Limestone	Dolomite
Default <sup>a</sup>		
Austria		
Belgium		
Bulgaria		
Canada		
Czech Republic		
Denmark		
Estonia		
European Community		
Finland	0.12	0.13
France	0.12	0.12
Germany		
Greece		
Iceland		
Ireland	0.12	
Italy		
Latvia	0.12	
Luxembourg		
Netherlands		
New Zealand		
Norway	0.12	
Poland		
Portugal		
Romania		
Slovakia	0.12	0.12
Spain		
Sweden		
Switzerland		
United Kingdom		
United States	0.12	0.13

**Table 5.18****Cultivation of mineral soils – trend information****Net CO<sub>2</sub> emission/removals (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
Austria								
Belgium								
Bulgaria								
Canada								
Czech Republic								
Denmark								
Estonia <sup>b</sup>						616	433	-29
European Community	NE	NE	NE	NE	NE	NE	NE	NE
Finland								
France								
Germany	NE	NE	NE	NE	NE	NE	NE	NE
Greece <sup>b</sup>		-253	-253	-508	-84	-339	-202	-169
Iceland								
Ireland	NE				NE	NE		
Italy <sup>b</sup>					8,634	8,374	9,415	8,612
Latvia								
Luxembourg								
Netherlands								
New Zealand							NE	
Norway								
Poland							681	728
Portugal								
Romania								
Slovakia <sup>b</sup>					-593	-669	-1,147	-620
Spain								
Sweden								
Switzerland	NE					NE		NE
United Kingdom	14,187	12,810	12,843	12,316	12,106	12,198	11,743	11,649
United States	-57,095	-58,581	-57,281	-57,388	-55,812	-55,709	-57,312	-59,053

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
Austria							
Belgium							
Bulgaria							
Canada							
Czech Republic							
Denmark							
Estonia					-29.8	-106.8	
European Community							
Finland							
France							
Germany							
Greece	0.0	100.7	-83.4	302.2	-40.5	-16.0	
Iceland							
Ireland							
Italy				-3.0	12.4	-8.5	
Latvia							
Luxembourg							
Netherlands							
New Zealand							
Norway							
Poland						6.9	
Portugal							
Romania							
Slovakia				13.0	71.3	-46.0	
Spain							
Sweden							
Switzerland							
United Kingdom	0.3	-4.1	-1.7	0.8	-3.7	-0.8	-17.9
United States	-2.2	0.2	-2.7	-0.2	2.9	3.0	3.4

**Table 5.19****Cultivation of organic soils – trend information****Net CO<sub>2</sub> emission/removals (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
Austria								
Belgium								
Bulgaria								
Canada								
Czech Republic								
Denmark								
Estonia <sup>b</sup>						30	30	30
European Community	NE	NE	NE	NE	NE	NE	NE	NE
Finland								
France								
Germany	NE	NE	NE	NE	NE	NE	NE	NE
Greece								
Iceland								
Ireland	NE	NE	NE	NE	NE	NE	NE	NE
Italy								
Latvia	130	112	99	111	90	91	90	91
Luxembourg								
Netherlands								
New Zealand							NE	NE
Norway								
Poland								
Portugal								
Romania								
Slovakia								
Spain								
Sweden	3,638	3,638	3,638	3,638	3,638	3,638	3,638	
Switzerland	NE					NE	NE	NE
United Kingdom								
United States	34,344	34,753	34,753	34,753	34,753	34,753	34,753	34,753

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
Austria							
Belgium							
Bulgaria							
Canada							
Czech Republic							
Denmark							
Estonia					0.0	0.0	
European Community							
Finland							
France							
Germany							
Greece							
Iceland							
Ireland							
Italy							
Latvia	-11.5	12.6	-19.1	0.8	-0.8	0.8	-29.9
Luxembourg							
Netherlands							
New Zealand							
Norway							
Poland							
Portugal							
Romania							
Slovakia							
Spain							
Sweden	0.0	0.0	0.0	0.0	0.0		
Switzerland							
United Kingdom							
United States	0.0	0.0	0.0	0.0	0.0	0.0	1.2

**Table 5.20****Liming of agricultural soils – trend information****Net CO<sub>2</sub> emission/removals (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
Austria								
Belgium								
Bulgaria								
Canada								
Czech Republic								
Denmark								
Estonia								
European Community	NE	NE	NE	NE	NE	NE	NE	NE
Finland								
France	552	657	601	709	647	623	518	518
Germany	NE	NE	NE	NE	NE	NE	NE	NE
Greece								
Iceland								
Ireland	384	374	416	467	413	379	360	378
Italy								
Latvia	5	5	3	1	2	2	4	0
Luxembourg								
Netherlands								
New Zealand								741
Norway								
Poland								
Portugal								
Romania								
Slovakia						0	1	1
Spain								
Sweden	170	169	193	174	131	156	156	137
Switzerland	NO						NO	NO
United Kingdom	1,430	1,529	1,515	1,346	1,058	887	794	729
United States	9,490	8,931	8,882	8,702	9,593	9,064	8,797	9,135

<sup>a</sup> 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), Poland (1988) and Romania (1989).

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
Austria							
Belgium							
Bulgaria							
Canada							
Czech Republic							
Denmark							
Estonia							
European Community							
Finland							
France	-8.5	17.9	-8.7	-3.7	-17.0	0.0	-6.2
Germany							
Greece							
Iceland							
Ireland	11.3	12.3	-11.7	-8.1	-5.0	5.1	-1.6
Italy							
Latvia	-25.5	-61.5	56.2	4.3	108.2	-93.1	-93.3
Luxembourg							
Netherlands							
New Zealand						51.0	
Norway							
Poland							
Portugal							
Romania							
Slovakia					145.5	0.0	
Spain							
Sweden	14.0	-9.6	-24.9	19.6	-0.1	-12.3	-19.3
Switzerland							
United Kingdom	-0.9	-11.1	-21.4	-16.2	-10.5	-8.2	-49.0
United States	-0.5	-2.0	10.2	-5.5	-2.9	3.8	-3.7

**Table 5.21****Other sources/sinks in LUCF – trend information****CO<sub>2</sub> net emission/removal and non-CO<sub>2</sub> GHG (Gg)<sup>a</sup>**

	Specification	Gas	1990	1995	1996	1997	1998	1999	2000	2001
<b>Czech Republic</b>	On-site burning of Cleared Forest	CH <sub>4</sub>	3		2	2	2	3	2	3
		N <sub>2</sub> O	0		0	0	0	0	0	0
		NO <sub>x</sub>	0						0	0
		CO	23						21	23
<b>France</b>	Managed forests for CH <sub>4</sub> , N <sub>2</sub> O, NMVOC	CO <sub>2</sub>	0					0	0	0
		CH <sub>4</sub>	87	87	87	87	87	87	87	87
		N <sub>2</sub> O	17	17	17	17	17	17	17	17
<b>Iceland</b>	Revegetation	CO <sub>2</sub>	-3	-34	-41	-53	-62	-77	-92	-102
<b>Spain</b>	Managed forests	CO <sub>2</sub>	0	0	0	0	0	0	0	0
		NO <sub>x</sub>	2	2	2	2	2	2	2	2
<b>United Kingdom</b>	Changes in Crop Biomass	CO <sub>2</sub>	-1,100	-1,100	-1,100	-1,100	-1,100	-1,100	-1,100	-1,100
	Peat Extraction	CO <sub>2</sub>	792	950	869	815	704	822	816	855
<b>United States</b>	Landfilled Yard Trimmings	CO <sub>2</sub>	-6,875	-11,609	-9,703	-9,021	-8,678	-7,828	-6,875	-5,306

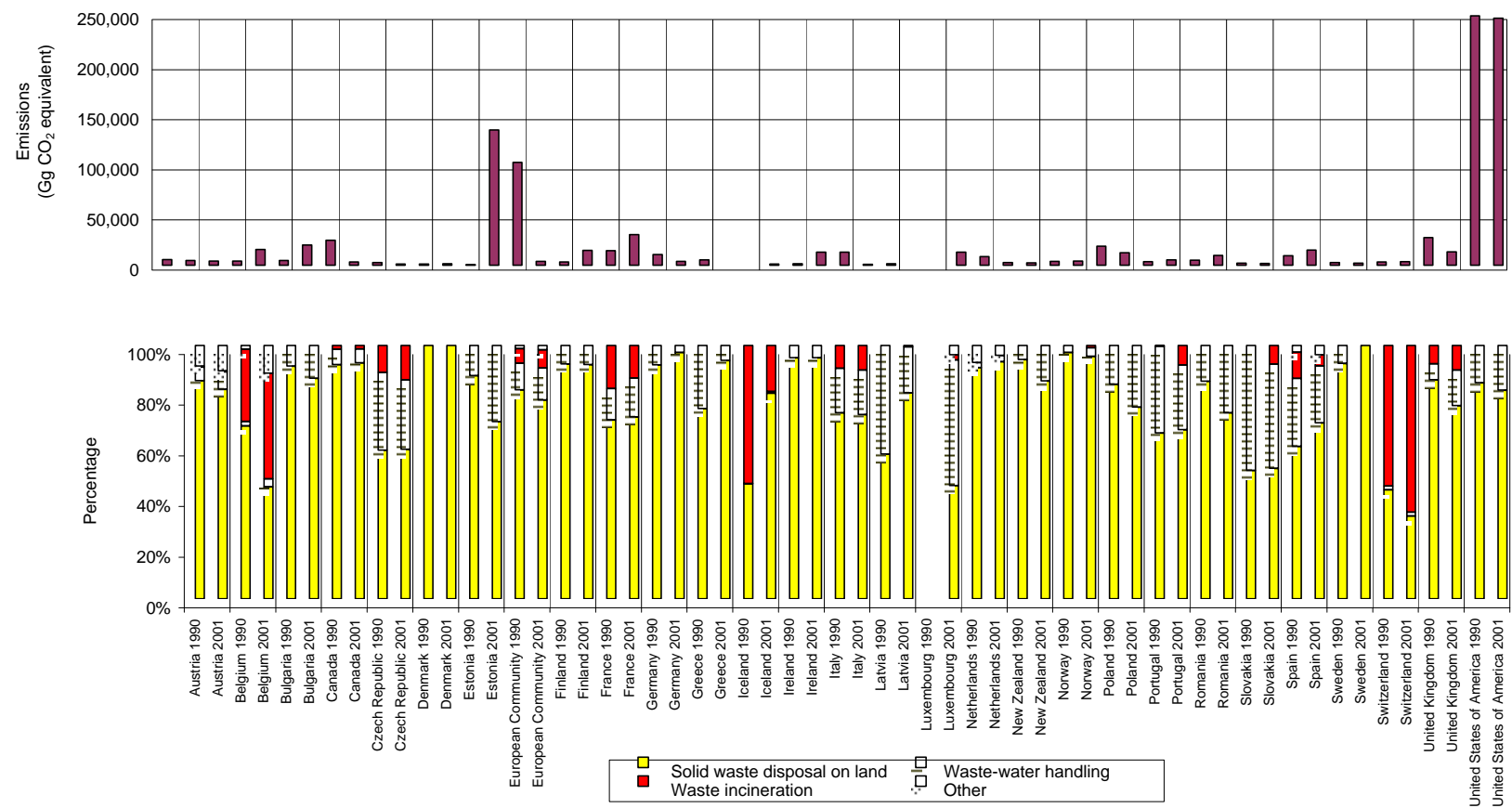
<sup>a</sup> Only Parties reporting data under this category were included in the table.**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Czech Republic</b>		-2.7	0.0	14.8	-8.3	9.4	0.3
		-2.7	0.0	14.8	-100.0		0.3
						9.4	0.3
						9.4	0.3
<b>France</b>							
	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	0.0
<b>Iceland</b>	18.4	29.6	18.3	23.0	19.6	11.6	3,200.5
<b>Spain</b>							
	0.0	-6.9	-0.8	0.9	0.0	0.0	-6.1
<b>United Kingdom</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	-8.5	-6.2	-13.7	16.8	-0.7	4.7	8.0
<b>United States</b>	-16.4	-7.0	-3.8	-9.8	-12.2	-22.8	-22.8

## Waste

**Figure 6.1**

Emissions and contribution of subsectors in waste<sup>a</sup>



<sup>a</sup> 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), Poland (1988) and Romania (1989).

Table 6.1

Solid waste disposal on land, waste-water handling and waste incineration (2001)

Activity data			6.A Solid waste disposal on land								6.B Wastewater handling										6.C 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				
			Methods and EF used <sup>a</sup>		Key source	Share of national total	Emissions per capita	CH <sub>4</sub> IEF		Methods and EF used <sup>b</sup>		Key source	Share of national total	Emissions per capita	CH <sub>4</sub> IEF				Emissions per capita (kg)	N <sub>2</sub> O IEF	Methods and EF used <sup>c</sup>		Key source	Share of national total (%)	IEF (kg/t)
															Domestic/ commercial		Industrial								
															Waste- water	Sludge	Waste- water	Sludge							
CRF	World Bank <sup>d</sup>	Methods	EF		(%)	(kg)	(t/t)	(t/t)	Methods	EF		(kg)	(kg)	kg / kg DC					kg N <sub>2</sub> O -N/kg sewage N	Methods	EF		(%)		
IPCC default EF <sup>e</sup>																		0.01							
Austria	8	8	CS	CS	L, T	4.5	22	0.05		C	CS		0.4	1.76					0.01	0.00	C	CS		0.0	
Belgium		10			L	1.2	8						0.0	0.13					0.03			L	1.1		
Bulgaria	8	8	D	D,CS	L	6.4	25	0.07	NE	D	D,CS		0.7	2.86	0.06	0.06	0.04	0.04	0.06	0.01	NO	NO			
Canada	31	31	CS	CS	L, T	3.2	35	NA	NA	CS	CS		0.1	0.61	NA	NE	NE	NE	0.10	NA	CS	CS		0.0	NA
Czech Republic	10	10	T1, T3	CS	L	1.0	7	0.03		T2	D, CS		0.4	2.43	0.10	0.01	0.01	0.01	0.06	0.16				0.2	3,500.0
Denmark		5	CS/M	CS/M	L	1.7	10	0.04		NE			0.0	0.00					0.00		IE				NE
Estonia		1			L	2.6	18						1.1	7.61	0.12		0.12								
European Community			C, CS, M,	C, CS,		2.0		NE	NE	NE			0.2		NE	NE	NE	NE		NE	NE	NE		0.1	NE
Finland	5	5	T2	D/CS	L, T	3.6	27	0.05		D	D/CS		0.2	1.19	0.04		0.00		0.07	0.01	NO	NO			
France		59	CS/ T2	CS/ T2	L	1.8	8	0.01	0.47	CS/T2	CS/T2		0.2	0.93	0.04				0.06		C	CS/ PS		0.3	
Germany		82	T1	CS	L, T	1.0	6	0.03	NO	CS	CS		0.0	0.12	IE	IE	NE	NE	0.00		NO	NO			NO
Greece	11	11	T1	D	L, T	3.8	23	0.07		T1	D	T	0.2	1.43	0.07	NE	NE	NE		NE					NE
Iceland		0	CS	CS	L	1.8	8	0.01		D	CS		0.0	0.06	0.00				0.00					0.4	
Ireland		4	T2	CS, D	L, T	1.8	16	0.06		NA	NA		0.0						0.06	10.00	NA	NA			
Italy	58	58	D, T2	D, CS	L	1.8	8	0.02		D	D, CS		0.2	1.09	NO	IE	0.3	IE	0.05	IE	D	CS		0.2	1,159.2
Latvia		2	T1	D	L, T	10	23	0.08		T2	D	L, T	1.8	4.07	0.16	NA	0.07	NA	0.07	0.01	C	D		0.1	
Luxembourg		0	C	C			5			C	C			0.50					0.04		C	C			
Netherlands	16	16	M, CS/T2	CS	L, T	3.7	24	0.08		CS/T2	CS		0.0	0.05	IE	IE	NE	NE	0.04	NE	NO (IE)			0.0	IE
New Zealand	4	4	T2	CS	L	2.8	25	0.03	NE	D/CS	D/CS		0.2	2.03					0.14	0.01					
Norway	5	5	M3	CS	L, T	6.9	41	0.12		D	D		0.0	0.22	0.01				0.09		D	CS		0.1	
Poland		39	T1	D/CS	L	2.5	12	0.05		T1	D/CS		0.6	2.73	0.01	0.11	0.03		0.07	0.01	T1	D		0.0	1,000.0
Portugal	10	10	T2	T2+CS	L, T	4.2	17	0.00	0.07	D	D+CS	L, T	0.9	3.73	0.13	0.15	0.00		0.18		D	D+C	T	0.4	1,007.2
Romania	12	22	D	D	L	4.8	15	0.09	0.06	D	D	L	1.5	4.77	0.14	0.26	0.14		0.05	0.00	NE	NE			
Slovakia	5	5	D	D	L	1.9			IE	IE	D,CS	D, CS	1.5		0.23	0.30	0.01	0.18		NA	D	D		0.3	
Spain	40	41	T2	CS,T2	L, T	2.7	12	0.04	0.04	D	CS,D	L, T	0.6	2.70	0.00	0.04	0.03	0.02	0.09	0.01	C	CS,C	T	0.1	
Sweden	9	9	T2	D,CS	L, T	2.8	11	0.07					0.0		NO	NO	NO	NO	0.05	3.65					
Switzerland	7	7	CS	CS	L, T	2.0	7	0.23		CS	CS		0.1	0.21	0.01				0.01		CS	CS	L, T	4.1	
United Kingdom	60	59	M	CS	L, T	1.6	8	0.01		M	CS		0.1	0.63		0.02			0.06	0.07	T2	CS		0.2	
United States	285	285	M	M	L, T	2.9	34	0.05	NA	D	D		0.4	4.73	0.10	NE	0.06	NE	0.17	0.02	CS	CS		0.0	IE

<sup>a</sup> Information on methods and emission factors is included in this table as reported by Parties. 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 is included in this table as reported by Parties. 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 is included in this table as reported by Parties. 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> Population data are from HNP Stats (Health, Nutrition and Population), the World Bank.<sup>e</sup> Source of default emission factors: IPCC Guidelines, volume 3, page 6.28.



**Table 6.2****Solid waste disposal on land – trend information****CH<sub>4</sub> emissions (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	235	211	207	200	192	189	185	183
<b>Belgium</b>	135	129	122	121	115	100	95	84
<b>Bulgaria</b>	613	400	356	294	254	196	201	200
<b>Canada</b>	882	970	973	996	1,018	1,053	1,075	1,098
<b>Czech Republic</b>	93		95	81	82	76	76	73
<b>Denmark</b>	62	63	62	59	55	53	57	56
<b>Estonia</b>	67	44	48	51	48	49	47	24
<b>European Community</b>	5,285	4,598	4,494	4,304	4,158	3,995	3,901	3,824
<b>Finland</b>	175	173	168	164	156	152	143	138
<b>France</b>	498	616	634	550	540	517	501	479
<b>Germany</b>	1,347	673	573	547	516	500	488	488
<b>Greece</b>	134	171	179	187	200	214	227	240
<b>Iceland</b>	2	2	2	2	2	2	2	2
<b>Ireland</b>	55	65	68	66	55	52	58	61
<b>Italy</b>	454	455	460	461	453	445	449	455
<b>Latvia</b>	26	32	32	30	30	30	30	54
<b>Luxembourg</b>						3	3	2
<b>Netherlands</b>	562	480	476	463	445	428	404	390
<b>New Zealand</b>	124	116	116	101	101	100	99	95
<b>Norway</b>	182	189	191	190	187	187	189	185
<b>Poland</b>	835	759	562	588	784	825	810	447
<b>Portugal</b>	115	135	140	144	148	156	162	167
<b>Romania</b>	222	603	595	596	576	575	594	338
<b>Slovakia</b>	50	51	60	51	46	47	48	45
<b>Spain</b>	257	373	397	423	442	458	481	499
<b>Sweden</b>	122	114	113	111	109	102	97	94
<b>Switzerland</b>	59	56	55	55	54	53	52	50
<b>United Kingdom</b>	1,131	938	892	806	729	626	552	487
<b>United States</b>	10,099	10,290	10,100	9,880	9,639	9,701	9,798	9,663

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>	-2.0	-3.4	-3.9	-1.6	-2.2	-1.1	-22.0
<b>Belgium</b>	-5.6	-0.4	-4.8	-12.9	-5.4	-11.4	-37.5
<b>Bulgaria</b>	-10.9	-17.5	-13.5	-23.0	2.8	-0.6	-67.4
<b>Canada</b>	0.3	2.4	2.2	3.4	2.1	2.1	24.4
<b>Czech Republic</b>		-14.9	1.3	-7.3	0.0	-3.3	-21.2
<b>Denmark</b>	-1.0	-4.8	-6.3	-4.6	7.9	-2.4	-10.9
<b>Estonia</b>	9.4	5.2	-6.4	2.5	-4.6	-48.5	-64.4
<b>European Community</b>	-2.3	-4.2	-3.4	-3.9	-2.4	-2.0	-27.7
<b>Finland</b>	-2.5	-2.7	-4.6	-2.4	-6.0	-3.6	-21.2
<b>France</b>	2.9	-13.3	-1.8	-4.2	-3.2	-4.2	-3.8
<b>Germany</b>	-14.8	-4.5	-5.7	-3.3	-2.3	0.0	-63.8
<b>Greece</b>	4.8	4.2	6.8	7.3	6.0	5.7	79.3
<b>Iceland</b>	7.9	-0.8	-16.0	4.4	4.2	0.9	30.7
<b>Ireland</b>	4.0	-2.9	-15.9	-6.6	12.8	4.6	10.2
<b>Italy</b>	1.1	0.1	-1.7	-1.8	1.1	1.3	0.3
<b>Latvia</b>	-3.0	-5.8	1.3	-1.8	2.2	77.5	109.5
<b>Luxembourg</b>					-0.2	-14.2	
<b>Netherlands</b>	-0.9	-2.7	-4.0	-3.7	-5.7	-3.5	-30.7
<b>New Zealand</b>	0.0	-12.9	0.5	-1.3	-1.2	-3.7	-23.4
<b>Norway</b>	1.1	-0.6	-1.8	0.2	0.9	-2.1	1.7
<b>Poland</b>	-25.9	4.6	33.3	5.2	-1.8	-44.8	-46.5
<b>Portugal</b>	3.2	3.2	2.8	5.1	3.9	3.3	45.0
<b>Romania</b>	-1.4	0.2	-3.4	-0.2	3.4	-43.1	52.1
<b>Slovakia</b>	17.1	-14.4	-10.2	1.6	3.7	-5.9	-9.7
<b>Spain</b>	6.4	6.6	4.7	3.6	5.0	3.8	94.5
<b>Sweden</b>	-1.3	-1.4	-2.2	-6.0	-5.3	-3.1	-22.8
<b>Switzerland</b>	-0.6	-1.0	-1.5	-2.1	-2.4	-3.3	-16.0
<b>United Kingdom</b>	-4.9	-9.7	-9.6	-14.0	-11.8	-11.8	-56.9
<b>United States</b>	-1.8	-2.2	-2.4	0.6	1.0	-1.4	-4.3

**Table 6.2****Solid waste disposal on land – trend information (continued)****Ratio: kg CH<sub>4</sub>/capita**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	30.4	26.2	25.7	24.8	23.8	23.4	22.8	22.5
<b>Belgium</b>	13.5	12.7	12.0	11.9	11.3	9.8	9.3	8.2
<b>Bulgaria</b>	70.3	47.6	42.6	35.3	30.8	23.8	24.6	24.9
<b>Canada</b>	31.8	33.0	32.8	33.2	33.7	34.5	34.9	35.3
<b>Czech Republic</b>	9.0		9.2	7.8	8.0	7.4	7.4	7.2
<b>Denmark</b>	12.1	12.0	11.8	11.2	10.5	9.9	10.7	10.4
<b>Estonia</b>	43.0	30.7	34.1	36.3	34.3	35.4	34.0	17.6
<b>European Community</b>								
<b>Finland</b>	35.1	33.8	32.8	31.9	30.3	29.5	27.7	26.6
<b>France</b>	8.8	10.7	10.9	9.4	9.2	8.8	8.5	8.1
<b>Germany</b>	17.0	8.2	7.0	6.7	6.3	6.1	5.9	5.9
<b>Greece</b>	13.2	16.4	17.1	17.8	19.0	20.3	21.5	22.7
<b>Iceland</b>	6.7	8.5	9.1	8.9	7.5	7.7	7.9	8.0
<b>Ireland</b>	15.7	18.0	18.6	17.9	14.9	13.7	15.3	15.8
<b>Italy</b>	8.0	8.0	8.0	8.0	7.9	7.7	7.8	7.9
<b>Latvia</b>	9.6	12.9	12.7	12.1	12.5	12.4	12.7	22.7
<b>Luxembourg</b>						6.2	6.1	5.2
<b>Netherlands</b>	37.6	31.0	30.7	29.7	28.3	27.1	25.4	24.3
<b>New Zealand</b>	36.1	31.6	31.1	26.7	26.7	26.2	25.7	24.7
<b>Norway</b>	42.8	43.4	43.7	43.2	42.1	41.9	42.0	41.0
<b>Poland</b>	21.9	19.7	14.6	15.2	20.3	21.3	21.0	11.6
<b>Portugal</b>	11.7	13.6	14.1	14.5	14.9	15.6	16.2	16.7
<b>Romania</b>	9.6	26.6	26.3	26.4	25.6	25.6	26.5	15.1
<b>Slovakia</b>	9.5	9.5	11.1	9.5	8.5	8.6	8.9	8.4
<b>Spain</b>	6.6	9.5	10.1	10.6	11.1	11.4	11.9	12.1
<b>Sweden</b>	14.2	12.9	12.8	12.6	12.3	11.5	10.9	10.6
<b>Switzerland</b>	8.9	7.9	7.8	7.7	7.6	7.4	7.2	6.9
<b>United Kingdom</b>	19.7	16.1	15.3	13.8	12.4	10.7	9.4	8.3
<b>United States</b>	40.5	38.9	37.7	36.4	35.0	34.8	34.7	33.9

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>	-2.2	-3.5	-4.0	-1.8	-2.5	-1.3	-25.9
<b>Belgium</b>	-5.8	-0.6	-5.0	-13.1	-5.7	-11.7	-39.5
<b>Bulgaria</b>	-10.4	-17.1	-12.9	-22.5	3.3	1.2	-64.5
<b>Canada</b>	-0.8	1.3	1.3	2.6	1.2	1.1	11.3
<b>Czech Republic</b>		-14.8	1.4	-7.1	0.1	-2.8	-20.1
<b>Denmark</b>	-1.6	-5.2	-6.6	-4.9	7.4	-2.8	-14.5
<b>Estonia</b>	11.0	6.4	-5.4	3.2	-4.2	-48.3	-59.1
<b>European Community</b>							
<b>Finland</b>	-2.8	-3.0	-4.9	-2.6	-6.2	-3.9	-24.2
<b>France</b>	2.6	-13.6	-2.1	-4.5	-3.7	-4.7	-7.8
<b>Germany</b>	-15.1	-4.7	-5.6	-3.3	-2.4	-0.1	-65.0
<b>Greece</b>	4.7	4.0	6.6	7.0	5.8	5.4	72.0
<b>Iceland</b>	7.1	-1.6	-16.7	3.1	3.3	0.2	18.1
<b>Ireland</b>	3.2	-3.9	-16.9	-7.6	11.5	3.4	0.6
<b>Italy</b>	0.8	-0.1	-1.8	-1.9	1.0	0.8	-1.8
<b>Latvia</b>	-2.1	-4.3	3.0	-1.0	3.0	78.5	137.2
<b>Luxembourg</b>					-1.5	-14.8	
<b>Netherlands</b>	-1.2	-3.3	-4.5	-4.3	-6.4	-4.2	-35.4
<b>New Zealand</b>	-1.6	-14.0	-0.3	-1.8	-1.7	-4.2	-31.6
<b>Norway</b>	0.6	-1.1	-2.4	-0.5	0.2	-2.6	-4.4
<b>Poland</b>	-26.0	4.5	33.3	5.2	-1.8	-44.8	-47.2
<b>Portugal</b>	3.2	3.1	2.5	4.9	3.7	3.1	43.1
<b>Romania</b>	-1.1	0.4	-3.1	0.0	3.5	-43.1	57.5
<b>Slovakia</b>	16.9	-14.6	-10.3	1.5	3.6	-5.9	-11.7
<b>Spain</b>	6.0	5.5	4.4	2.7	4.2	2.3	83.7
<b>Sweden</b>	-1.4	-1.5	-2.2	-6.0	-5.4	-3.4	-25.7
<b>Switzerland</b>	-1.0	-1.2	-1.8	-2.5	-2.9	-4.0	-22.0
<b>United Kingdom</b>	-5.0	-9.9	-9.7	-14.2	-12.0	-11.9	-57.8
<b>United States</b>	-3.1	-3.4	-3.7	-0.6	-0.3	-2.4	-16.3

**Table 6.3****Waste-water handling – trend information****CH<sub>4</sub> emissions (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	13.73	14.29	14.31	14.34	14.35	14.37	14.40	14.32
<b>Belgium</b>	0.27	0.25	0.25	0.00	0.27	0.27	1.33	1.31
<b>Bulgaria</b>	44.55	49.34	46.86	39.79	34.31	34.87	28.27	22.93
<b>Canada</b>	16.93	18.06	18.30	18.51	18.68	18.82	18.96	19.11
<b>Czech Republic</b>	39.31		29.02	29.64	30.77	27.43	27.52	24.84
<b>Denmark</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Estonia</b>	9.14	6.14	12.68	20.32	19.82	13.34	10.41	10.37
<b>European Community</b>	366.47	342.26	346.90	352.84	361.71	362.96	358.68	351.62
<b>Finland</b>	7.29	6.96	6.76	6.77	6.62	6.40	6.26	6.19
<b>France</b>	33.96	45.41	47.61	49.90	52.20	54.48	54.84	55.13
<b>Germany</b>	51.91	9.70	9.70	9.70	10.00	10.00	10.00	10.00
<b>Greece</b>	44.68	39.41	38.48	37.18	35.59	33.69	26.28	15.15
<b>Iceland</b>	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02
<b>Ireland</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Italy</b>	63.05	62.89	63.64	63.53	63.66	64.11	63.72	63.23
<b>Latvia</b>	16.52	9.63	9.51	9.46	9.47	9.33	9.42	9.60
<b>Luxembourg</b>						0.22	0.22	0.22
<b>Netherlands</b>	6.55	1.46	1.27	0.79	3.65	2.06	0.78	0.78
<b>New Zealand</b>	7.46	7.63	7.66	7.69	7.72	7.76	7.79	7.81
<b>Norway</b>	0.93	0.95	0.96	0.96	0.97	0.98	0.98	0.99
<b>Poland</b>	130.60	88.59	89.53	88.96	86.25	80.27	76.11	105.57
<b>Portugal</b>	39.17	40.49	39.85	39.21	38.56	37.91	37.25	37.41
<b>Romania</b>	18.40	119.55	103.96	116.52	101.56	107.24	108.95	106.89
<b>Slovakia</b>	48.19	40.38	40.04	40.31	39.11	39.63	35.10	35.42
<b>Spain</b>	72.30	86.86	89.55	95.01	99.45	103.42	106.71	110.81
<b>Sweden</b>	NO	NO	NO	NO	NO	NO	NO	NO
<b>Switzerland</b>	1.35	1.48	1.51	1.52	1.53	1.53	1.54	1.55
<b>United Kingdom</b>	33.38	34.33	35.27	36.21	37.15	36.02	36.89	37.06
<b>United States</b>	1,146.64	1,266.86	1,278.06	1,301.37	1,317.59	1,340.82	1,348.13	1,349.92

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>	0.1	0.2	0.1	0.2	0.2	-0.6	4.3
<b>Belgium</b>	0.0			-0.4	392.1	-1.9	383.3
<b>Bulgaria</b>	-5.0	-15.1	-13.8	1.6	-18.9	-18.9	-48.5
<b>Canada</b>	1.3	1.2	0.9	0.8	0.7	0.8	12.9
<b>Czech Republic</b>		2.1	3.8	-10.8	0.3	-9.7	-36.8
<b>Denmark</b>							
<b>Estonia</b>	106.3	60.3	-2.5	-32.7	-21.9	-0.4	13.6
<b>European Community</b>	1.4	1.7	2.5	0.3	-1.2	-2.0	-4.1
<b>Finland</b>	-2.8	0.1	-2.2	-3.3	-2.3	-1.1	-15.1
<b>France</b>	4.8	4.8	4.6	4.4	0.7	0.5	62.3
<b>Germany</b>	0.0	0.0	3.1	0.0	0.0	0.0	-80.7
<b>Greece</b>	-2.4	-3.4	-4.3	-5.3	-22.0	-42.3	-66.1
<b>Iceland</b>	0.0	0.0	200.0	0.0	0.0	0.0	200.0
<b>Ireland</b>							
<b>Italy</b>	1.2	-0.2	0.2	0.7	-0.6	-0.8	0.3
<b>Latvia</b>	-1.2	-0.5	0.2	-1.5	1.0	1.8	-41.9
<b>Luxembourg</b>					0.3	0.6	
<b>Netherlands</b>	-13.3	-37.5	361.0	-43.4	-62.4	0.0	-88.2
<b>New Zealand</b>	0.4	0.4	0.4	0.5	0.4	0.2	4.6
<b>Norway</b>	0.5	0.5	0.6	0.7	0.4	0.6	6.2
<b>Poland</b>	1.1	-0.6	-3.0	-6.9	-5.2	38.7	-19.2
<b>Portugal</b>	-1.6	-1.6	-1.7	-1.7	-1.7	0.4	-4.5
<b>Romania</b>	-13.0	12.1	-12.8	5.6	1.6	-1.9	480.9
<b>Slovakia</b>	-0.8	0.7	-3.0	1.3	-11.4	0.9	-26.5
<b>Spain</b>	3.1	6.1	4.7	4.0	3.2	3.8	53.3
<b>Sweden</b>							
<b>Switzerland</b>	2.0	1.1	0.2	0.3	0.4	0.8	15.1
<b>United Kingdom</b>	2.7	2.7	2.6	-3.1	2.4	0.5	11.0
<b>United States</b>	0.9	1.8	1.2	1.8	0.5	0.1	17.7

**Table 6.3****Waste-water handling – trend information (continued)****Ratio: kg CH<sub>4</sub>/capita**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
Austria	1.78	1.78	1.78	1.78	1.78	1.78	1.78	1.76
Belgium	0.03	0.03	0.02	0.00	0.03	0.03	0.13	0.13
Bulgaria	5.11	5.87	5.61	4.79	4.16	4.25	3.46	2.86
Canada	0.61	0.62	0.62	0.62	0.62	0.62	0.62	0.61
Czech Republic	3.79		2.81	2.88	2.99	2.67	2.68	2.43
Denmark	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Estonia	5.82	4.28	8.95	14.51	14.30	9.70	7.60	7.61
European Community								
Finland	1.46	1.36	1.32	1.32	1.28	1.24	1.21	1.19
France	0.60	0.79	0.82	0.86	0.89	0.93	0.93	0.93
Germany	0.65	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Greece	4.40	3.77	3.67	3.54	3.38	3.20	2.49	1.43
Iceland	0.02	0.02	0.02	0.02	0.07	0.07	0.06	0.06
Ireland	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Italy	1.11	1.10	1.11	1.10	1.11	1.11	1.10	1.09
Latvia	6.19	3.83	3.82	3.86	3.93	3.90	3.97	4.07
Luxembourg						0.51	0.50	0.50
Netherlands	0.44	0.09	0.08	0.05	0.23	0.13	0.05	0.05
New Zealand	2.17	2.09	2.06	2.04	2.04	2.04	2.03	2.03
Norway	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
Poland	3.43	2.30	2.32	2.30	2.23	2.08	1.97	2.73
Portugal	3.96	4.08	4.01	3.94	3.87	3.79	3.72	3.73
Romania	0.79	5.27	4.60	5.17	4.51	4.78	4.86	4.77
Slovakia	9.12	7.53	7.45	7.49	7.26	7.35	6.50	6.56
Spain	1.86	2.22	2.28	2.39	2.50	2.57	2.63	2.70
Sweden								
Switzerland	0.20	0.21	0.21	0.21	0.21	0.21	0.21	0.21
United Kingdom	0.58	0.59	0.60	0.62	0.63	0.61	0.63	0.63
United States	4.60	4.78	4.76	4.79	4.79	4.81	4.78	4.73

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
Austria	0.0	0.0	0.0	0.0	0.0	-0.8	-0.9
Belgium	-0.2			-0.7	390.9	-2.2	368.4
Bulgaria	-4.5	-14.6	-13.2	2.2	-18.5	-17.4	-44.0
Canada	0.2	0.1	0.0	-0.1	-0.1	-0.2	0.9
Czech Republic		2.2	3.9	-10.7	0.4	-9.3	-35.9
Denmark							
Estonia	109.4	62.1	-1.5	-32.2	-21.6	0.0	30.6
European Community							
Finland	-3.1	-0.2	-2.4	-3.5	-2.4	-1.4	-18.4
France	4.5	4.5	4.3	4.0	0.2	0.0	55.6
Germany	-0.3	-0.2	3.1	0.0	-0.1	-0.1	-81.4
Greece	-2.5	-3.6	-4.4	-5.5	-22.2	-42.5	-67.5
Iceland	-0.7	-0.7	197.8	-1.3	-0.9	-0.7	171.1
Ireland							
Italy	0.9	-0.4	0.1	0.6	-0.7	-1.2	-1.8
Latvia	-0.3	1.2	1.8	-0.7	1.8	2.4	-34.3
Luxembourg					-1.1	-0.1	
Netherlands	-13.6	-37.8	358.4	-43.8	-62.7	-0.7	-89.0
New Zealand	-1.2	-0.9	-0.4	0.0	-0.1	-0.3	-6.6
Norway	0.0	0.0	0.0	0.1	-0.3	0.1	-0.2
Poland	1.0	-0.7	-3.1	-6.9	-5.2	38.7	-20.3
Portugal	-1.6	-1.8	-1.9	-1.9	-1.9	0.3	-5.7
Romania	-12.8	12.3	-12.6	5.8	1.7	-1.8	501.6
Slovakia	-1.0	0.5	-3.1	1.2	-11.5	0.9	-28.1
Spain	2.8	5.0	4.4	3.1	2.4	2.3	44.8
Sweden							
Switzerland	1.5	0.9	-0.1	-0.1	-0.2	0.1	6.9
United Kingdom	2.6	2.5	2.4	-3.2	2.3	0.3	8.7
United States	-0.4	0.5	0.0	0.5	-0.7	-1.0	2.9

**Table 6.3****Waste-water handling – trend information (continued)****N<sub>2</sub>O emissions (Gg)**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	0.07	0.08	0.08	0.08	0.08	0.08	0.08	0.08
<b>Belgium</b>	0.23	0.00	0.00	0.00	0.33	0.33	0.33	0.33
<b>Bulgaria</b>	0.76	0.57	0.54	0.47	0.53	0.54	0.51	0.47
<b>Canada</b>	2.80	2.96	3.00	3.03	3.05	3.08	3.10	3.14
<b>Czech Republic</b>	0.65		0.65	0.65	0.65	0.65	0.65	0.64
<b>Denmark</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Estonia</b>								
<b>European Community</b>	20.94	17.34	17.47	17.48	17.64	17.69	17.98	18.00
<b>Finland</b>	0.46	0.41	0.39	0.39	0.37	0.36	0.36	0.35
<b>France</b>	3.65	3.70	3.68	3.57	3.46	3.47	3.51	3.53
<b>Germany</b>	4.16	0.25	0.26	0.30	0.30	0.30	0.30	0.30
<b>Greece</b>	NE	NE	NE	NE	NE	NE	NE	
<b>Iceland</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Ireland</b>	0.19	0.20	0.20	0.20	0.20	0.20	0.21	0.21
<b>Italy</b>	3.12	3.16	3.17	3.18	3.17	3.17	3.18	3.18
<b>Latvia</b>	0.18	0.17	0.17	0.17	0.17	0.17	0.16	0.16
<b>Luxembourg</b>						0.02	0.02	0.02
<b>Netherlands</b>	0.40	0.49	0.48	0.58	0.53	0.57	0.63	0.62
<b>New Zealand</b>	NE	NE	NE	NE	NE	NE	NE	0.52
<b>Norway</b>	0.29	0.33	0.36	0.38	0.38	0.39	0.35	0.39
<b>Poland</b>	NE	NE	NE	NE	NE	NE	2.60	2.59
<b>Portugal</b>	1.44	1.66	1.69	1.68	1.74	1.78	1.79	1.82
<b>Romania</b>		1.07	1.07	1.06	1.06	1.06	1.06	1.06
<b>Slovakia</b>	0.07	0.04	0.04	0.04	0.04	0.04	0.03	0.06
<b>Spain</b>	3.23	3.39	3.40	3.40	3.43	3.44	3.48	3.50
<b>Sweden</b>	0.63	0.60	0.60	0.59	0.52	0.51	0.47	0.47
<b>Switzerland</b>	0.06	0.07	0.07	0.07	0.07	0.07	0.07	0.07
<b>United Kingdom</b>	3.33	3.39	3.51	3.50	3.50	3.45	3.64	3.58
<b>United States</b>	41.01	44.98	45.58	46.46	47.21	48.73	48.85	49.34

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>	1.8	-0.6	3.0	-2.4	0.2	0.0	9.0
<b>Belgium</b>				0.2	-1.0	0.0	43.5
<b>Bulgaria</b>	-5.7	-13.0	13.0	3.0	-6.4	-7.5	-37.9
<b>Canada</b>	1.1	1.1	0.9	0.8	0.8	1.1	12.2
<b>Czech Republic</b>		0.0	0.0	0.0	0.1	-0.7	-0.7
<b>Denmark</b>							
<b>Estonia</b>							
<b>European Community</b>	0.8	0.0	1.0	0.3	1.6	0.1	-14.1
<b>Finland</b>	-3.3	-1.1	-4.6	-4.1	-0.2	-0.4	-22.1
<b>France</b>	-0.7	-3.0	-3.1	0.5	1.1	0.5	-3.2
<b>Germany</b>	4.2	14.3	0.0	0.0	0.0	0.0	-92.8
<b>Greece</b>							
<b>Iceland</b>							
<b>Ireland</b>	1.0	1.0	0.5	1.0	1.0	2.4	9.3
<b>Italy</b>	0.4	0.2	-0.1	0.0	0.1	0.0	1.9
<b>Latvia</b>	-0.6	-0.8	-0.9	-0.8	-2.6	-0.5	-11.5
<b>Luxembourg</b>					-11.7	0.6	
<b>Netherlands</b>	-2.7	20.4	-7.3	5.9	10.7	-0.3	54.2
<b>New Zealand</b>							
<b>Norway</b>	6.4	7.8	0.2	1.1	-10.3	13.4	34.4
<b>Poland</b>						-0.5	
<b>Portugal</b>	1.7	-0.5	3.5	2.5	0.4	1.9	26.2
<b>Romania</b>	0.0	-0.9	0.0	0.0	0.0	0.0	
<b>Slovakia</b>	10.3	-7.0	2.5	-12.2	-15.5	108.8	-2.3
<b>Spain</b>	0.4	-0.2	0.9	0.5	1.0	0.6	8.2
<b>Sweden</b>	0.0	-1.1	-13.1	-0.8	-7.8	0.0	-25.2
<b>Switzerland</b>	2.0	1.1	0.2	0.3	0.4	0.8	15.1
<b>United Kingdom</b>	3.5	-0.1	-0.2	-1.3	5.4	-1.5	7.4
<b>United States</b>	1.3	1.9	1.6	3.2	0.2	1.0	20.3

**Table 6.3****Waste-water handling – trend information (continued)****Ratio: kg N<sub>2</sub>O/capita**

	1990 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001
<b>Austria</b>	0.009	0.009	0.010	0.009	0.010	0.009	0.009	0.009
<b>Belgium</b>	0.023	0.000	0.000	0.000	0.033	0.033	0.032	0.032
<b>Bulgaria</b>	0.087	0.068	0.064	0.056	0.064	0.066	0.062	0.059
<b>Canada</b>	0.101	0.101	0.101	0.101	0.101	0.101	0.101	0.101
<b>Czech Republic</b>	0.062	0.000	0.063	0.063	0.063	0.063	0.063	0.063
<b>Denmark</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>Estonia</b>								
<b>European Community</b>								
<b>Finland</b>	0.091	0.080	0.077	0.076	0.072	0.069	0.069	0.068
<b>France</b>	0.064	0.064	0.063	0.061	0.059	0.059	0.060	0.060
<b>Germany</b>	0.052	0.003	0.003	0.004	0.004	0.004	0.004	0.004
<b>Greece</b>								
<b>Iceland</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>Ireland</b>	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055
<b>Italy</b>	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055
<b>Latvia</b>	0.069	0.069	0.069	0.070	0.070	0.070	0.069	0.069
<b>Luxembourg</b>						0.046	0.040	0.040
<b>Netherlands</b>	0.027	0.032	0.031	0.037	0.034	0.036	0.039	0.039
<b>New Zealand</b>								0.136
<b>Norway</b>	0.069	0.077	0.081	0.087	0.087	0.087	0.077	0.087
<b>Poland</b>							0.067	0.067
<b>Portugal</b>	0.146	0.167	0.170	0.169	0.174	0.178	0.179	0.182
<b>Romania</b>	0.000	0.047	0.047	0.047	0.047	0.047	0.047	0.047
<b>Slovakia</b>	0.012	0.007	0.008	0.007	0.008	0.007	0.006	0.012
<b>Spain</b>	0.083	0.086	0.086	0.085	0.086	0.086	0.086	0.085
<b>Sweden</b>	0.074	0.068	0.068	0.067	0.058	0.058	0.053	0.053
<b>Switzerland</b>	0.009	0.010	0.010	0.010	0.010	0.010	0.010	0.010
<b>United Kingdom</b>	0.058	0.058	0.060	0.060	0.060	0.059	0.062	0.061
<b>United States</b>	0.164	0.170	0.170	0.171	0.172	0.175	0.173	0.173

<sup>a</sup> 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), Poland (1988) and Romania (1989).

<sup>b</sup> Data for the years prior to 2001 presented in this table are taken from the 2002, 2001 and/or 2000 submissions, as available, as the Party did not provide CRF tables for the entire time series in its 2003 inventory submission. Following information provided by the Party in table 8 of the CRF, no recalculations of this source category seem to have been undertaken for the inventory years prior to 2001 since the last inventory submission.

**Relative change (%)**

	1995 to 1996	1996 to 1997	1997 to 1998	1998 to 1999	1999 to 2000	2000 to 2001	1990 to 2001
<b>Austria</b>	1.6	-0.7	2.9	-2.6	0.0	-0.3	3.6
<b>Belgium</b>				-0.1	-1.3	-0.3	39.0
<b>Bulgaria</b>	-5.2	-12.6	13.8	3.6	-5.9	-5.8	-32.5
<b>Canada</b>	0.0	0.0	0.0	0.0	0.0	0.1	0.3
<b>Czech Republic</b>		0.1	0.1	0.1	0.2	-0.3	0.6
<b>Denmark</b>							
<b>Estonia</b>							
<b>European Community</b>							
<b>Finland</b>	-3.6	-1.4	-4.8	-4.4	-0.3	-0.7	-25.1
<b>France</b>	-1.0	-3.3	-3.4	0.1	0.6	0.0	-7.2
<b>Germany</b>	3.8	14.1	0.0	0.0	-0.1	-0.1	-93.0
<b>Greece</b>							
<b>Iceland</b>							
<b>Ireland</b>	0.2	0.0	-0.6	-0.1	-0.1	1.2	-0.2
<b>Italy</b>	0.1	0.0	-0.2	-0.1	0.1	-0.4	-0.3
<b>Latvia</b>	0.3	0.8	0.8	0.1	-1.9	0.1	0.2
<b>Luxembourg</b>					-12.9	-0.1	
<b>Netherlands</b>	-3.1	19.7	-7.9	5.1	9.9	-1.0	43.7
<b>New Zealand</b>							
<b>Norway</b>	5.9	7.2	-0.4	0.5	-11.0	12.9	26.3
<b>Poland</b>						-0.4	
<b>Portugal</b>	1.7	-0.7	3.3	2.2	0.2	1.7	24.6
<b>Romania</b>	0.3	-0.7	0.2	0.2	0.1	0.1	
<b>Slovakia</b>	10.0	-7.1	2.4	-12.3	-15.6	108.6	-4.5
<b>Spain</b>	0.0	-1.2	0.6	-0.3	0.3	-0.9	2.2
<b>Sweden</b>	-0.1	-1.1	-13.1	-0.9	-8.0	-0.3	-28.0
<b>Switzerland</b>	1.5	0.9	-0.1	-0.1	-0.2	0.1	6.9
<b>United Kingdom</b>	3.4	-0.3	-0.4	-1.5	5.2	-1.7	5.1
<b>United States</b>	0.0	0.6	0.3	1.9	-1.0	-0.1	5.2