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POCKET

Energy, transport and environment indicators

Data 1990-2000

THEME 7
Transport

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Introduction

Energy, Transport and Environment Indicators
This edition is the first to combine facts and figures from energy, transports and environment sectors in a single volume.
It is also for the first time that the pocketbook presents data for the thirteen Candidate Countries with the same structure as the Member States.

The pocketbook contains three chapters of selected indicators for Energy, Transport and Environment issues. They use energy supply, final energy consumption, renewable energy sources, the structure of the energy industry, energy efficiency, energy prices, emissions estimates greenhouse gases, other substances and waste. Transport indicators cover infrastructure, equipment, transport of passengers and freight and road safety. In the majority of cases the indicators contain national data for the 15 EU Member States, EFTA countries and Candidate Countries covering several years. Aggregated data for the EU Member States or the 10 Acceding Countries are available for the whole period from 1990 to 2000 (except for transport from 1995 to 2000). The main data source for the indicators is the harmonised EU Energy Statistics, although other official Eurostat data sources have also been used. The bulk of data on emissions have been provided by the European Environment Agency while the most important data sources for transport indicators are the EU legal acts on transport statistics and the common Eurostat, ECMT and UN-ECE yearly questionnaire.

More detailed data can be found on the Eurostat “New Cronos database” or on publication available on the Eurostat web site at http://europa.eu.int/comm/eurostat/ as well on DG Energy and Transport web site (DG TREN pocketbook updated on a regular basis at http://europa.eu.int/comm/energy_transport/etif/).

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Symbols and abbreviations

:	no data available
0	figure less than half of the unit used
-	nil (zero) not applicable
%	percentage
1234	*Estimates are printed in italic*

Units of measurement

ECU	European Currency Unit
GWh	Gigawatt hour
kg	kilogram
km	kilometre
Km^2	square kilometre
m^3	cubic metre
mio	million (10^6)
pkm	passenger-kilometre
tkm	tonne-kilometre
t	tonne
toe	tonne of oil equivalent

Chemical and related symbols

CFC	Chlorofluorocarbons
CH_4	Methane
CO	Carbon monoxide
CO_2	Carbon dioxide
HFC	Hydrofluorocarbons
K_2O	Potassium oxide (Potash)
N	Nitrogen
NH_3	Ammonia
NMVOC	Non-Methane Volatile Organic Compounds
N_2O	Nitrous oxide
NO_2	Nitrogen dioxide
NOx	Nitrogen oxides
PCF	Perfluorocarbons
P_2O_5	Phosphate
SF_6	Sulphur hexafluoride
SO_2	Sulphur dioxide

Abbreviations of the Countries and Aggregates

EU 15	The fifteen Member States of the EU
ACC	The ten Acceding Countries
CC 13	Candidate Countries
EFTA	European Free Trade Association

B	Belgium
DK	Denmark
D	Germany
EL	Greece
E	Spain
F	France
IRL	Ireland
I	Italy
L	Luxembourg
NL	Netherlands
A	Austria
P	Portugal
FIN	Finland
S	Sweden
UK	United Kingdom

IS	Iceland
LI	Liechtenstein
NO	Norway
CH	Switzerland

CZ	Czech Republic
EE	Estonia
CY	Cyprus
LV	Latvia
LT	Lithuania
HU	Hungary
MT	Malta
PL	Poland
SI	Slovenia
SK	Slovakia

BG	Bulgaria
RO	Romania
TR	Turkey

Other abbreviations

EEA	European Environment Agency
ECMT	European Conference of Ministers of Transport
GDP	Gross Domestic Product
NACE	Statistical Classification of economic activities in the European Community
OJ	Official Journal of the European Union
UIC	Union International des Chemins de fer
UNECE	United Nations Economic Commission for Europe
UNFCCC	United Nations Framework Convention on Climate Change

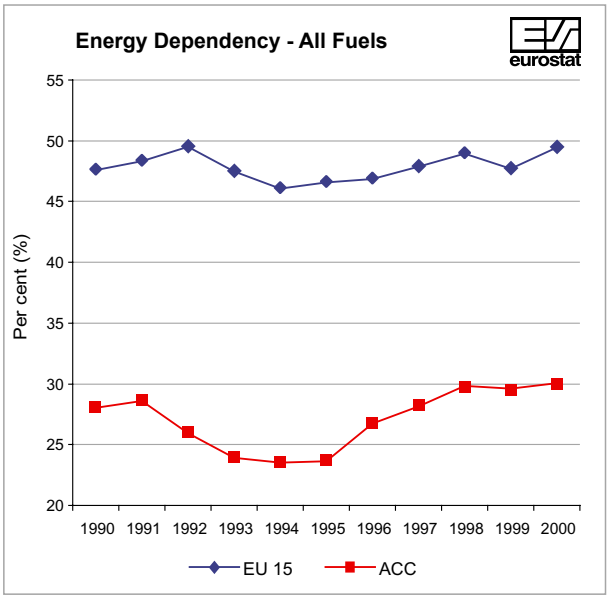
ENERGY INDICATORS

Energy Dependency - All Fuels

Per cent (%)

	1990	1995	2000
Belgium	75.7	80.4	77.7
Denmark	41.7	34.3	-33.8
Germany	46.5	57.5	59.7
Greece	62.1	65.8	69.5
Spain	64.4	71.5	76.5
France	53.1	48.4	51.1
Ireland	69.0	68.2	86.5
Italy	83.8	81.6	85.5
Luxembourg	99.0	97.7	99.8
Netherlands	22.4	19.3	38.6
Austria	67.4	66.0	66.4
Portugal	87.4	89.0	87.1
Finland	62.1	52.9	55.7
Sweden	37.4	37.5	39.7
United Kingdom	3.4	-16.4	-17.1
EU 15	**47.6**	**46.5**	**49.4**
Iceland	35.0	36.5	31.2
Norway	-437.0	-637.7	-729.3
Czech Republic	15.8	20.8	23.2
Estonia	44.6	33.9	31.6
Cyprus	103.4	101.3	100.6
Latvia	93.8	91.3	62.6
Lithuania	74.3	67.0	59.4
Hungary	51.4	50.0	56.2
Malta	100.0	104.7	100.5
Poland	2.2	-0.2	11.0
Slovenia	46.5	49.9	52.4
Slovakia	77.9	69.7	65.0
ACC	**28.0**	**23.6**	**30.0**
Bulgaria	63.6	57.2	46.2
Romania	33.2	31.3	21.9
Turkey	62.0	68.1	65.1
CC 13	**35.6**	**34.2**	**38.3**

Data Source: Eurostat, Energy Statistics



Per cent (%)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU 15	47.6	48.3	49.5	47.4	46.1	46.5	46.8	47.8	48.9	47.7	49.4
ACC	28.0	28.6	25.9	23.9	23.5	23.6	26.7	28.1	29.8	29.6	30.0

Data Source: Eurostat, Energy Statistics

Note: The quantities of fuels delivered to sea-going ships of all flags, including warships, are included

In 2000 the EU 15 energy dependency rate was 49.4%, an increase of about 2% since 1990. Overall, there were annual fluctuations in the energy dependency rate during the period 1990-2000, ranging from 46.1% in 1994 to a high of 49.5% in 1992.

Only three countries, Denmark, UK and Norway (an EFTA country) had a surplus of energy over their own requirements (i.e. negative energy dependency ratio), while six Member States had energy dependency ratios of over 75 %.

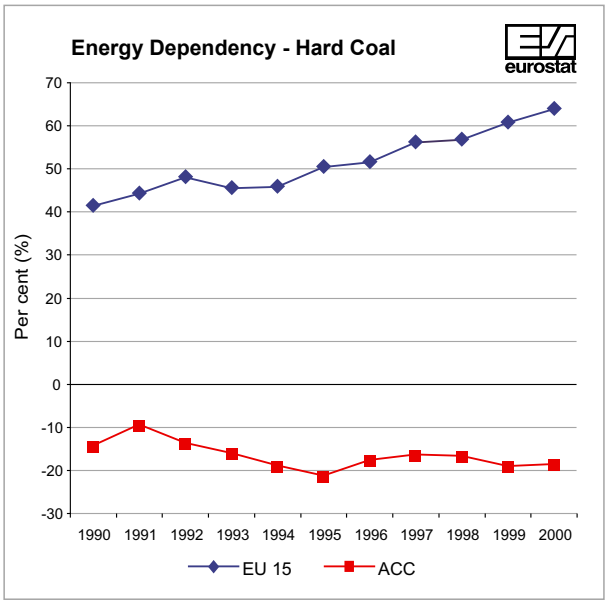
In the period 1990-2000 the energy dependency rate for the acceding countries reached a peak of 30% in 2000. It can be observed that, with the exception of Poland, the Czech Republic and Estonia, the acceding countries have a rate of energy dependency greater than 50%. The total of the acceding countries shows that the energy dependency rate is lower than for the EU 15, mainly due to Poland which is the biggest consumer (with around 43% of the total gross consumption of the acceding countries) but has a very low rate of energy dependency.

Energy Dependency - Hard Coal

Per cent (%)

	1990	1995	2000
Belgium	92.3	108.8	91.7
Denmark	102.2	118.0	94.1
Germany	8.0	18.2	35.0
Greece	100.0	95.1	105.9
Spain	42.5	49.9	65.8
France	66.3	60.5	87.7
Ireland	95.4	106.5	92.5
Italy	96.2	105.6	105.2
Luxembourg	100.0	100.0	100.0
Netherlands	104.5	97.6	101.9
Austria	84.3	86.5	95.8
Portugal	108.4	108.7	103.4
Finland	108.0	89.1	98.8
Sweden	95.6	100.1	100.9
United Kingdom	14.5	22.1	40.2
EU 15	**41.3**	**50.3**	**63.8**
Iceland	100.0	100.0	100.0
Norway	61.2	73.6	33.3
Czech Republic	-15.3	-21.0	-20.3
Estonia	97.7	102.0	114.3
Cyprus	113.3	130.8	103.1
Latvia	101.0	93.2	81.8
Lithuania	97.0	69.2	100.0
Hungary	52.8	81.7	99.7
Malta	-	-	-
Poland	-25.5	-31.6	-29.9
Slovenia	11.6	35.2	101.0
Slovakia	99.8	92.2	104.6
ACC	**-14.3**	**-21.3**	**-18.7**
Bulgaria	95.7	72.0	100.9
Romania	34.3	81.7	95.8
Turkey	80.4	83.4	90.3
CC 13	**-6.1**	**-9.7**	**-0.9**

Data Source: Eurostat, Energy Statistics



Per cent (%)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU 15	41.3	44.2	47.9	45.5	45.7	50.3	51.4	56.0	56.7	60.6	63.8
ACC	-14.3	-9.3	-13.7	-16.0	-18.9	-21.3	-17.7	-16.4	-16.6	-19.0	-18.7

Data Source: Eurostat, Energy Statistics

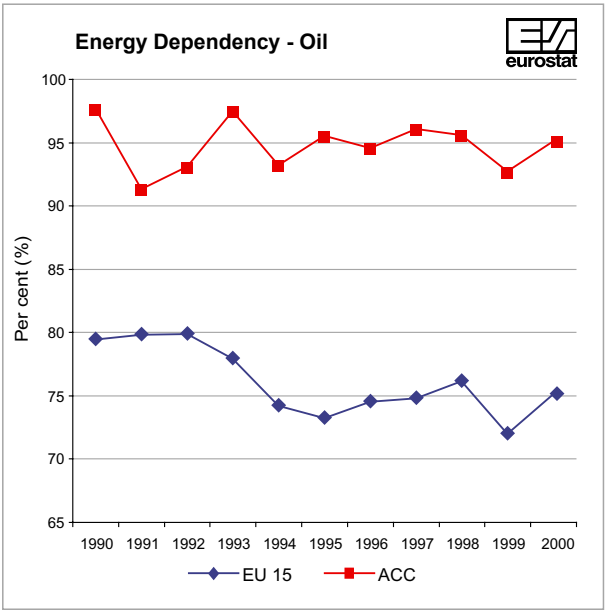
It was the EU's 15 energy dependency rate of hard coal, which showed the largest percentage increase during the period 1990-2000. Countries with their own hard coal resources (e.g. Germany, UK, Spain) have a comparatively lower hard coal import dependency (35%, 40%, and 66% respectively), while the remaining Member States import most or all of the coal they consume. Concerning the acceding countries, the Czech Republic and Poland are the only hard coal exporters in Europe. The average energy dependency rate of hard coal in 2000 was 64% in the EU 15 and -19% in the acceding countries. The latter is mainly attributable to the exports of the aforementioned two countries, some of those exports being destined to EU 15 countries.

Energy Dependency - Oil

Per cent (%)

	1990	1995	2000
Belgium	98.4	99.5	100.2
Denmark	29.9	13.4	-78.1
Germany	95.3	96.5	95.5
Greece	93.2	98.4	100.2
Spain	99.6	101.2	101.0
France	96.0	97.1	99.0
Ireland	107.1	100.0	104.1
Italy	97.2	93.9	96.7
Luxembourg	100.7	98.2	102.2
Netherlands	87.6	85.4	99.8
Austria	92.3	88.7	89.9
Portugal	101.2	100.6	98.8
Finland	99.8	94.8	105.6
Sweden	99.7	95.4	101.8
United Kingdom	-10.6	-57.3	-55.7
EU 15	**79.4**	**73.2**	**75.1**
Iceland	99.6	100.1	104.4
Norway	-806.9	-1 485.6	-1 470.2
Czech Republic	97.6	99.9	98.0
Estonia	103.3	105.3	101.8
Cyprus	103.0	101.1	100.6
Latvia	100.0	102.2	95.0
Lithuania	104.1	114.3	94.8
Hungary	75.8	71.5	77.3
Malta	100.0	104.7	100.5
Poland	104.6	96.1	98.5
Slovenia	102.9	97.8	101.4
Slovakia	100.3	106.5	92.3
ACC	**97.7**	**95.5**	**95.1**
Bulgaria	88.5	100.0	96.6
Romania	59.0	49.7	35.1
Turkey	88.8	91.7	93.3
CC 13	**87.7**	**88.1**	**88.1**

Data Source: Eurostat, Energy Statistics



Per cent (%)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU 15	79.4	79.8	79.9	77.9	74.2	73.2	74.5	74.8	76.1	72.0	75.1
ACC	97.7	91.3	93.1	97.5	93.2	95.5	94.6	96.0	95.6	92.7	95.1

Data Source: Eurostat, Energy Statistics

Note: The quantities of fuels delivered to sea-going ships of all flags, including warships, are included

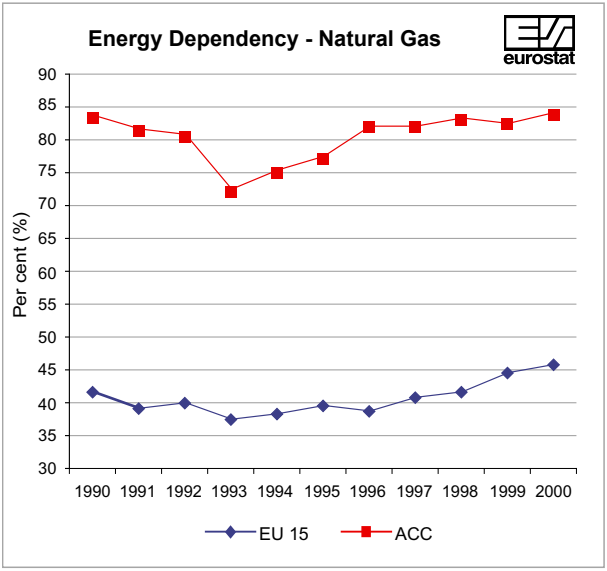
Denmark, UK, the Netherlands and Norway are oil exporting countries since they have the North Sea oil fields; the remaining countries produce a percentage of their consumption and import the rest. Norway is one of the main suppliers of oil to the EU 15 with a share of 23% in 2000. The EU 15 remains heavily dependent on imported oil, although this share fell slightly over the period 1990-2000. The acceding countries are even more dependent on imported oil, having an oil dependency of 95% in 2000.

Energy Dependency - Natural Gas

Per cent (%)

	1990	1995	2000
Belgium	100.6	98.2	99.3
Denmark	-51.1	-47.2	-64.8
Germany	76.0	79.7	79.1
Greece	-	-	99.1
Spain	74.2	97.4	101.6
France	97.9	92.8	100.0
Ireland	0.0	3.6	72.1
Italy	64.9	63.9	81.1
Luxembourg	100.0	100.0	100.0
Netherlands	-77.2	-77.4	-49.5
Austria	85.7	85.6	80.6
Portugal	-	-	100.3
Finland	100.0	100.0	100.0
Sweden	100.0	100.0	100.0
United Kingdom	13.1	1.0	-10.6
EU 15	**41.6**	**39.7**	**45.7**
Iceland	-	-	-
Norway	-1 122.1	-676.6	-1 161.5
Czech Republic	91.2	98.1	99.8
Estonia	100.0	100.0	100.0
Cyprus	-	-	-
Latvia	107.6	98.9	101.9
Lithuania	100.0	100.0	100.0
Hungary	58.0	60.3	75.3
Malta	-	-	-
Poland	75.8	64.6	66.4
Slovenia	94.8	100.5	99.3
Slovakia	105.2	86.8	98.8
ACC	**83.9**	**77.5**	**84.4**
Bulgaria	100.7	99.5	93.5
Romania	20.6	25.3	19.8
Turkey	93.9	97.9	95.4
CC 13	**60.9**	**66.3**	**73.5**

Data Source: Eurostat, Energy Statistics



Per cent (%)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU 15	41.6	39.4	40.2	37.6	38.4	39.7	38.8	41.0	41.7	44.7	45.7
ACC	83.9	81.6	80.7	72.7	75.2	77.5	82.2	82.2	83.2	82.6	84.4

Data Source: Eurostat, Energy Statistics

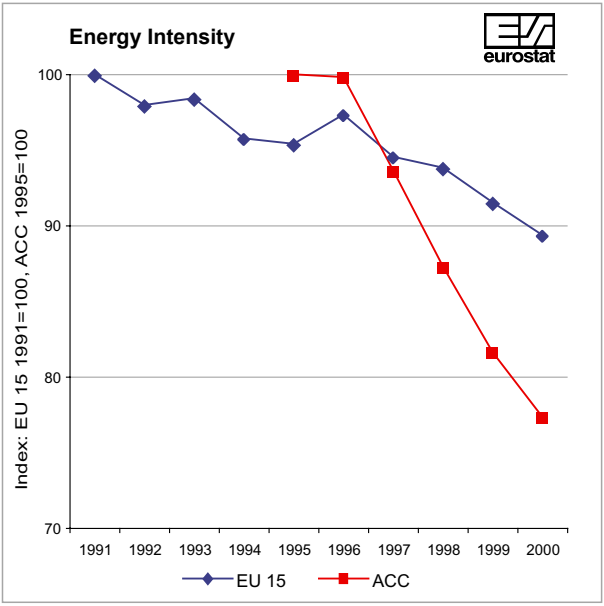
The EU 15 energy dependency rate for natural gas remained at the same level of around 40% over the period 1990-1998 though it has risen recently due to a strong increase in demand.
Denmark, the Netherlands, UK and Norway are exporters of natural gas from the North Sea deposits. The EU 15 energy dependency rate for natural gas was 45.7% in 2000, while for the acceding countries' energy dependency rate was 84.4%.

Energy Intensity

	(kgoe/1000 euro)			*Index (1991=100)*		
	1991	**1995**	**2000**	**1991**	**1995**	**2000**
Belgium	249	239	236	100	96	95
Denmark	153	148	125	100	97	82
Germany	194	179	165	100	92	85
Greece	257	269	264	100	104	103
Spain	221	229	227	100	103	103
France	207	199	190	100	96	92
Ireland	248	217	173	100	87	70
Italy	196	194	191	100	99	97
Luxembourg	305	241	189	100	79	62
Netherlands	239	231	199	100	97	83
Austria	161	147	138	100	91	86
Portugal	215	237	241	100	110	112
Finland	302	292	257	100	97	85
Sweden	275	263	213	100	95	77
United Kingdom	275	252	230	100	92	84
EU 15	**217**	**207**	**194**	**100**	**95**	**89**
Iceland	:	:	:	:	:	:
Norway	:	:	:	:	:	:
Czech Republic *	1113	1022	948	:	100	93
Estonia *	:	1875	1316	:	100	70
Cyprus *	:	286	287	:	100	100
Latvia *	1089	1101	841	:	100	76
Lithuania *	2241	1801	1327	:	100	74
Hungary *	:	739	599	:	100	81
Malta *	298	320	304	:	100	95
Poland *	:	1029	721	:	100	70
Slovenia *	400	424	366	:	100	86
Slovakia	:	1145	949	:	100	83
ACC *	**:**	**948**	**733**	**:**	**100**	**77**
Bulgaria *	2142	2326	1918	:	100	82
Romania *	1923	1663	1460	:	100	88
Turkey *	386	409	495	:	100	121
CC 13 *	**:**	**853**	**717**	**:**	**100**	**84**

* For the Candidate Countries, index's base year is 1995

Data Source: Eurostat, Energy Statistics, National Accounts



(kgoe/1000 euro)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU 15	217	212	213	208	207	211	205	203	198	194
ACC	:	:	:	:	948	947	888	828	774	733

GDP is in 1995 constat prices

Data Source: Eurostat, Energy Statistics, National Accounts

Over the last decade, energy intensity has decreased in the EU 15 and this reduction has been particularly pronounced since 1996. Energy intensity has fallen by 11%, with decreases in the majority of the Member States, except Spain, Greece and Portugal which all showed an increase in energy intensity. The same trend of reduction in energy intensity appears in the acceding countries. Actually, the decrease in energy intensity of the acceding countries (22% over the period 1995-2000) is even larger than that of the EU 15.
Comparing the actual values of energy intensity, the average for the EU 15 is 194kgoe/1000Euro while the average for the acceding countries is 733 kgoe/1000Euro, almost four times the EU 15 average.

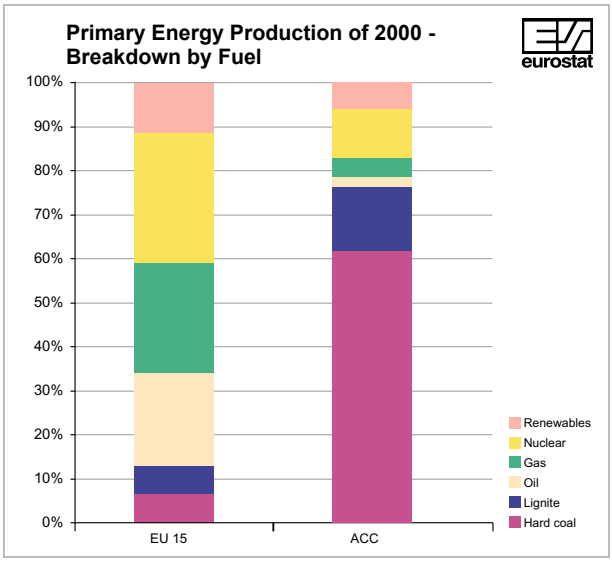
Primary Energy Production

	(ktoe)			Year 2000, share of each fuel to total					
	1990	**1995**	**2000**	**Hard Coal**	**Lignite**	**Oil**	**Gas**	**Nuclear**	**RES**
B	11 971	11 025	13 155	-	-	-	0	94	6
DK	10 637	15 729	27 622	-	-	66	27	-	7
D	185 829	140 182	131 916	18	27	3	12	33	7
EL	9 152	9 702	9 946	-	83	3	0	-	14
E	33 353	31 408	31 154	21	4	1	0	52	22
F	108 069	122 926	130 405	2	0	2	1	82	13
IRL	3 495	4 256	2 281	-	47	-	42	-	11
I	27 243	30 747	30 581	-	0	15	45	-	40
L	47	47	57	-	-	-	-	-	100
NL	60 262	65 910	56 912	-	-	4	91	2	3
A	8 708	8 748	9 453	-	3	11	16	-	70
P	2 659	2 607	3 131	-	-	-	-	-	100
FIN	11 735	13 187	14 805	-	8	-	-	39	53
S	29 606	31 138	29 570	-	1	-	-	50	49
UK	203 635	249 413	268 325	7	-	48	36	8	1
EU 15	**706 399**	**737 025**	**759 312**	**7**	**6**	**21**	**25**	**29**	**12**
IS	1 456	1 390	2 306	-	-	-	-	-	100
NO	120 053	181 832	224 721	0	-	74	20	-	6
CZ	38 306	31 367	29 450	85	0	1	0	12	2
EE	5 470	3 350	3 169	-	84	-	-	-	16
CY	:	:	36	-	-	-	-	-	100
LV	437	318	1 259	-	2	-	-	-	98
LT	4 474	3 288	3 161	-	0	10	-	69	21
HU	13 638	12 844	11 094	-	26	15	22	33	4
MT	:	:	:	:	:	:	:	:	:
PL	98 460	97 990	78 202	75	15	1	4	-	5
SI	2 902	3 020	3 037	-	35	0	0	41	24
SK	4 962	4 702	5 956	-	17	1	2	71	9
ACC	**168 649**	**156 879**	**135 364**	**62**	**15**	**2**	**4**	**11**	**6**
BG	9 136	10 191	9 823	1	43	0	0	48	8
RO	41 398	30 647	28 622	1	20	22	38	5	14
TR	16 866	18 106	27 163	3	45	10	2	-	40
CC 13	**236 049**	**215 823**	**200 972**	**42**	**21**	**6**	**9**	**10**	**12**

(Mtoe)

	1990	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**
EU 15	706.4	708.2	702.6	709.9	723.3	737.0	762.6	756.2	751.1	765.2	759.3
ACC	168.6	159.8	157.7	158.2	154.7	156.9	161.1	158.3	144.4	137.9	135.4

Data Source: Eurostat, Energy Statistics



(Mtoe)

	EU 15	**ACC**
Hard coal	50.8	83.5
Lignite	47.8	19.9
Oil	160.1	2.9
Gas	190.6	6.1
Nuclear	222.8	14.8
Renewables	87.2	8.2

Data Source: Eurostat, Energy Statistics

Primary energy commodities may be divided between fuels of fossil origin, nuclear energy and renewable energy commodities. Fossil fuels are taken from natural resources, which were formed from biomass in the geological past. Included in the definition of renewable energy is the energy generated from solar, wind, biomass, geothermal, hydropower and ocean resources.

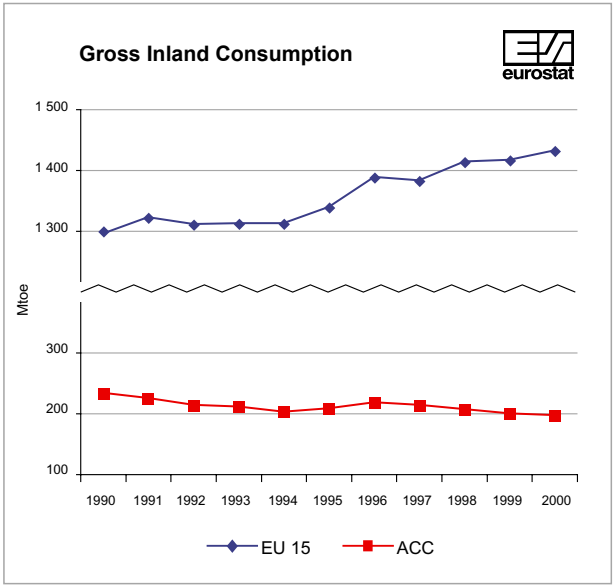
EU 15 primary energy production recorded a slight increase of 7.5% over the last decade. This was due to an increase in the primary production of all fuels except solid fuels, the primary production of which has shown a substantial fall over recent years. In 2000 nuclear heat (used for the production of electricity) was the most important energy source (accounting for 29% of the EU's 15 primary production), followed by natural gas (25%) and oil (21%). The contribution of renewables has also increased, but it remains low compared with other energy sources (11% of the total).

The situation is different for the acceding countries, since primary energy production has fallen by 20% over the last decade. The primary energy production for the year 2000, broken down by fuels, shows that in these countries the most important energy source was hard coal (accounting for 62% of the total), followed by lignite (15%), nuclear energy (11%), RES, natural gas and oil with small contribution. The main coal-producing countries are the Czech Republic, where coal contributes 85% of the primary energy production, and Poland with 75%.

Gross Inland Consumption

	(ktoe)			Year 2000, share of each fuel to total						
	1990	1995	2000	Hard Coal	Lignite	Oil	Gases	Nuclear	RES	Others
B	47 264	50 459	57 161	14	0	39	23	22	1	1
DK	17 607	20 411	19 671	20	-	46	23	-	11	0
D	356 074	337 091	339 475	13	11	38	21	13	3	1
EL	22 245	24 137	28 076	2	30	57	6	-	5	0
E	89 085	102 287	122 582	16	1	52	12	13	6	0
F	223 195	235 855	257 223	6	0	34	14	41	7	-2
IRL	10 251	11 024	14 029	13	6	55	24	-	2	0
I	154 797	162 742	175 715	7	0	51	33	-	7	2
L	3 551	3 335	3 628	3	0	63	18	-	2	14
NL	66 817	73 355	75 601	11	0	38	46	1	2	2
A	25 655	26 380	28 425	11	1	42	23	-	23	0
P	16 741	19 615	24 131	16	-	63	8	-	13	0
FIN	28 464	28 844	32 619	11	4	29	10	18	24	4
S	46 944	49 921	47 503	5	1	30	1	31	31	1
UK	211 543	218 452	229 973	16	-	35	38	9	1	1
EU 15	**1 320 234**	**1 363 908**	**1 455 812**	**11**	**4**	**40**	**23**	**15**	**6**	**1**
IS	2 214	2 141	3 230	3	-	26	-	-	71	-
NO	21 568	23 886	26 311	4	-	37	14	-	51	-6
CZ	46 963	40 690	40 101	54	0	19	19	9	1	-2
EE	9 918	5 115	4 563	1	64	11	15	-	11	-2
CY	1 817	1 936	2 348	1	0	99	-	-	0	-
LV	4 108	3 718	3 673	2	2	33	30	-	29	4
LT	16 363	8 299	7 201	1	0	32	29	30	9	-1
HU	28 030	25 219	24 881	4	12	28	39	15	1	1
MT	581	794	940	-	-	100	-	-	-	-
PL	100 029	100 011	89 996	49	14	22	11	-	4	0
SI	5 516	6 087	6 490	4	17	37	13	19	11	-1
SK	20 650	16 758	16 713	18	7	16	31	26	3	-1
ACC	**233 975**	**208 627**	**196 906**	**36**	**10**	**24**	**19**	**8**	**4**	**-1**
BG	27 961	23 304	18 430	13	23	23	14	25	4	-2
RO	61 319	45 063	37 009	5	16	27	37	4	11	0
TR	42 485	52 975	77 808	13	17	40	16	-	14	0
CC 13	**0**	**0**	**0**	**26**	**13**	**28**	**20**	**6**	**7**	**0**

Data Source: Eurostat, Energy Statistics



(Mtoe)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU 15	1 320	1 346	1 335	1 337	1 337	1 364	1 413	1 407	1 437	1 441	1 456
ACC	234	225	214	211	203	209	218	214	207	200	197

Data Source: Eurostat, Energy Statistics

The gross inland consumption in EU 15 has increased by 10% over the last decade. Oil is the most important fuel (40% of total gross inland consumption in 2000) and its contribution remained stable over the period. The share of natural gas in the total rose from 16.8% in 1990 to 23% in 2000, while that of solid fuels dwindled from 22.8% in 1990 to 14.8% in 2000. The switch from solid fuels to natural gas is due to environmental considerations.

The gross inland consumption of the acceding countries, on the other hand, fell by 16% over the same period The most important fuels contributing to the gross inland consumption were the solid fuels (hard coal and lignite), accounting for almost half (46%) of the total.

Imports of Energy Products, by Country of Origin

EU 15 Imports of Hard Coal, by Country of Origin

(1000 tonnes)

	1990	2000
South Africa	23 970	40 158
Australia	16 985	28 364
Colombia	9 225	23 029
Poland	12 771	19 721
USA	46 548	19 607
Other countries	17 772	34 889
Total	127 271	165 768

EU 15 Imports of Crude Oil, by Country of Origin

(1000 tonnes)

	1990	2000
Norway	52 374	114 841
former USSR	37 512	90 221
Saudi Arabia	49 691	65 143
Libya	50 908	45 542
Iran	55 595	35 475
Other Countries	178 970	140 490
Total	425 050	491 712

EU 15 Imports of Natural Gas, by Country of Origin

(Terajoules)

	1990	2000
former USSR	1 972 001	2 990 234
Algeria	1 077 541	2 185 196
Norway	1 030 691	1 908 668
Libya	58 029	33 442
Other Countries	229 225	869 364
Total	4 367 487	7 986 904

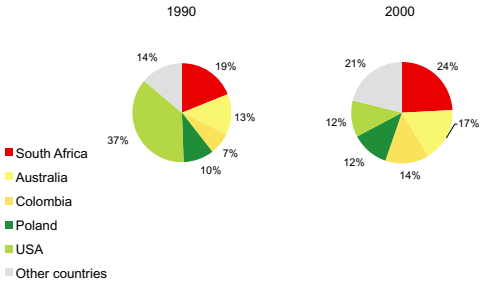
Data Source: Eurostat, Energy Statistics

The hard coal imports are almost uniformly distributed over the five main countries of origin (USA, South Africa, Australia, Poland and Colombia) while total imports have increased by 30% in the period 1990-2000.

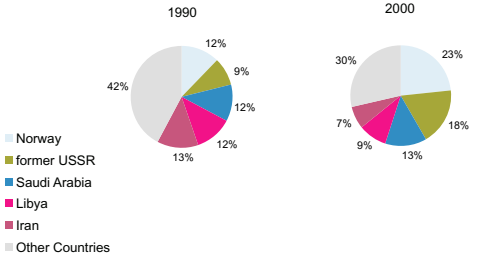
The origin of crude oil imports has changed over the last decade. Norway and countries of the former USSR covered 41% of the oil imports in 2000 (doubled from 1990) and the percentage of imports from Libya, Iran and Saudi Arabia was reduced from 37% in 1990 to 29% in 2000.

Imports of natural gas rose 83% from 1990 to 2000. As a consequence, imports from most supplying countries have increased significantly. However, the relative share of the former USSR has diminished while Algeria's share has increased.

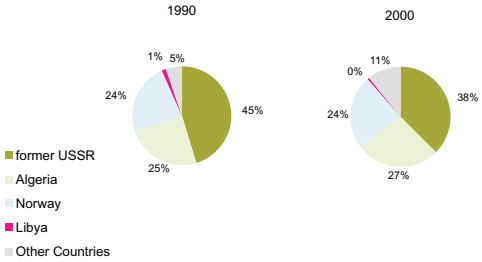
EU 15 Imports of Hard Coal, by Country of Origin



EU 15 Imports of Crude Oil, by Country of Origin



EU 15 Imports of Natural Gas, by Country of Origin



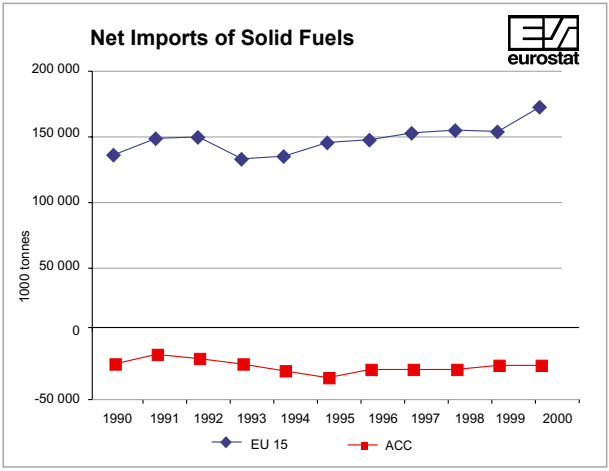
Data Source: Eurostat, Energy Statistics

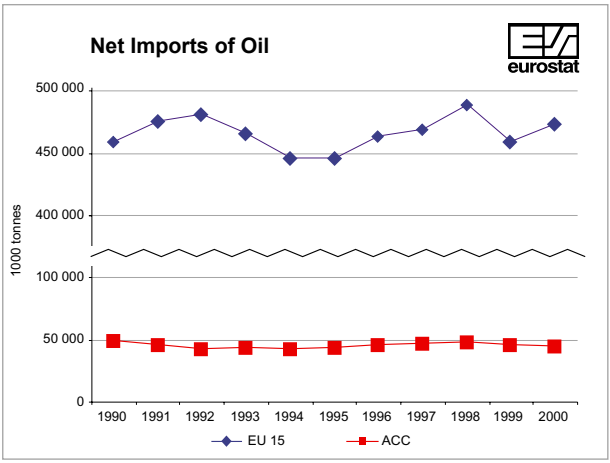
Net Imports of Solid Fuels and Oil

(1000 tonnes)

	Solid Fuels		Oil	
	1990	**2000**	**1990**	**2000**
Belgium	14 331	10 959	22 227	28 776
Denmark	8 795	6 339	2 698	-7 806
Germany	9 455	35 980	119 053	124 037
Greece	1 412	1 165	14 404	19 694
Spain	10 899	21 042	49 056	70 972
France	19 696	19 745	85 602	89 953
Ireland	3 123	2 553	4 990	8 132
Italy	20 492	19 410	90 403	88 911
Luxembourg	1 664	183	1 597	2 278
Netherlands	14 569	13 145	30 741	41 599
Austria	4 750	4 513	9 795	10 749
Portugal	4 671	6 287	12 198	15 827
Finland	6 886	5 520	10 423	10 405
Sweden	3 829	3 392	14 954	15 755
United Kingdom	12 330	22 821	-9 010	-45 481
EU 15	**136 902**	**173 054**	**459 131**	**473 801**
Iceland	95	148	729	949
Norway	993	889	-71 343	-150 740
Czech Republic	-13 485	-8 025	8 378	7 470
Estonia	2 763	1 330	3 228	613
Cyprus	97	60	1 897	2 572
Latvia	980	92	598	1 140
Lithuania	1 264	141	7 543	2 276
Hungary	2 929	1 720	6 555	5 283
Malta	-	-	617	1 261
Poland	-31 386	-25 477	14 347	19 899
Slovenia	245	519	1 771	2 363
Slovakia	13 283	5 750	4 737	2 778
ACC	**-23 310**	**-23 890**	**49 671**	**45 655**
Bulgaria	5 814	3 451	8 538	4 066
Romania	6 063	3 040	11 256	3 610
Turkey	5 042	13 723	20 270	28 942
CC 13	**-6 391**	**-3 676**	**89 735**	**82 273**

Data Source: Eurostat, Energy Statistics





(1000 tonnes)

Solid Fuels

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU 15	136 902	148 481	149 875	133 127	135 202	146 015	148 125	152 796	155 656	153 778	173 054
ACC	-23 310	-15 456	-18 526	-22 798	-27 903	-33 222	-26 911	-27 393	-27 010	-24 124	-23 890

Oil

EU 15	459 131	475 607	482 046	466 203	446 696	445 913	464 444	469 229	489 540	459 319	473 801
ACC	49 671	46 262	43 196	43 771	42 884	44 476	46 188	46 982	48 469	46 259	45 655

Data Source: Eurostat, Energy Statistics

While the EU 15 is mainly an importer of solid fuels, the acceding countries are mainly exporters. On the other hand, all the countries are importers of oil with the exception of the North Sea oil-producing countries (Denmark, UK, the Netherlands and Norway). However for the EU 15 in total, net imports of oil have increased only slightly (3%) over the decade, while for the acceding countries there was an 8% reduction over the same period.

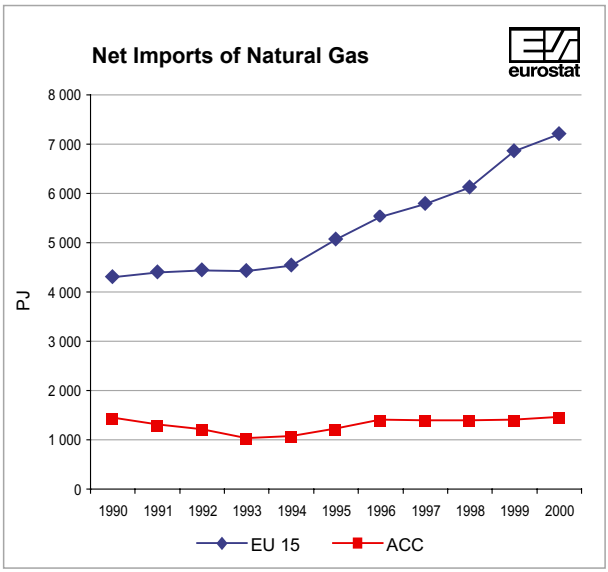
Net Imports of Natural Gas

(TJ)

	1990	1995	2000
Belgium	382 255	484 665	617 685
Denmark	-43 172	-69 610	-134 087
Germany	1 945 309	2 462 382	2 645 371
Greece	-	-	78 551
Spain	171 653	349 881	719 516
France	1 121 302	1 250 298	1 635 318
Ireland	-	3 946	115 259
Italy	1 177 468	1 327 229	2 186 824
Luxembourg	19 990	25 916	31 191
Netherlands	-1 107 135	-1 226 749	-799 705
Austria	208 797	252 014	245 062
Portugal	-	-	94 864
Finland	105 162	132 093	159 201
Sweden	24 584	31 415	32 508
United Kingdom	287 407	29 617	-433 117
EU 15	**4 293 620**	**5 053 097**	**7 194 441**
Iceland	-	-	-
Norway	-1 031 422	-1 153 287	-1 962 454
Czech republic	222 627	298 834	348 062
Estonia	56 861	24 388	30 797
Cyprus	-	-	-
Latvia	107 358	46 491	51 790
Lithuania	224 397	94 366	97 244
Hungary	240 515	257 342	338 788
Malta	-	-	-
Poland	315 069	270 286	307 355
Slovenia	33 639	34 902	36 120
Slovakia	249 025	191 502	241 349
ACC	**1 449 491**	**1 218 111**	**1 451 505**
Bulgaria	252 614	212 258	114 807
Romania	275 754	204 225	126 151
Turkey	124 750	263 542	560 616
CC 13	**2 102 609**	**1 898 136**	**2 253 079**

Data Source: Eurostat, Energy Statistics

eurostat



(PJ)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU 15	4 294	4 389	4 430	4 417	4 528	5 053	5 510	5 776	6 116	6 852	7 194
ACC	1 449	1 305	1 208	1 033	1 063	1 218	1 398	1 386	1 394	1 397	1 452

Data Source: Eurostat, Energy Statistics

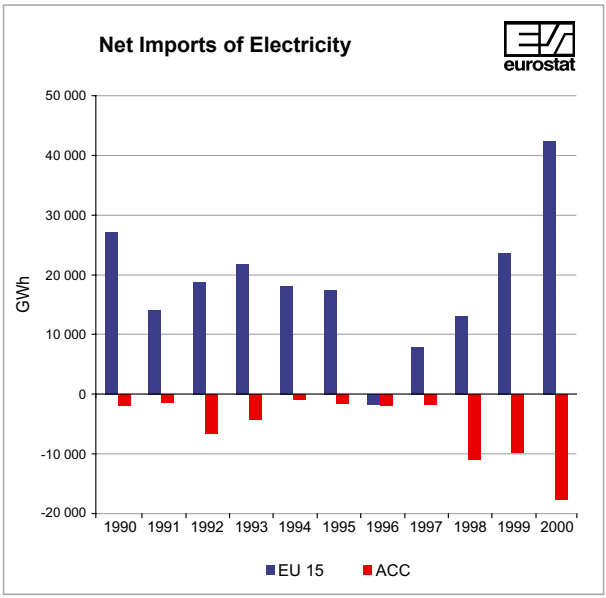
Most of the EU 15 and acceding countries import natural gas, with the exception of the North Sea producers: Denmark, the Netherlands and United Kingdom. Norway is the largest gas exporter of all the countries under consideration, while Germany, France and Italy are the largest importers. Ireland, Greece and Portugal are rather new in the gas market, since it was introduced in 1993, 1996 and 1997 respectively. Total net imports at EU 15 level rose by 68% over the last decade, whilst a notable decrease was observed in the acceding countries in the period 1990-1994, followed by an increase over the period 1995-2000. Thus, in 2000 the level of the net imports of natural gas in the acceding countries was the same as in 1990.

Net Imports of Electricity

(GWh)

	1990	1995	2000
Belgium	-3 724	4 072	4 326
Denmark	7 048	-794	665
Germany	789	4 824	3 057
Greece	711	797	-11
Spain	-420	4 486	4 441
France	-45 438	-69 841	-69 479
Ireland	:	-15	98
Italy	34 655	37 427	44 347
Luxembourg	3 910	5 003	5 722
Netherlands	9 208	11 393	18 915
Austria	-460	-2 470	-1 368
Portugal	37	914	931
Finland	10 643	6 974	11 880
Sweden	-1 768	-1 681	4 678
United Kingdom	11 943	16 313	14 174
EU 15	**27 134**	**17 402**	**42 376**
Iceland	-	-	-
Norway	-15 907	-6 666	-19 055
Czech Republic	-692	418	-10 017
Estonia	-7 002	-760	-929
Cyprus	-	-	-
Latvia	3 583	2 256	1 786
Lithuania	-11 976	-2 678	-1 336
Hungary	11 147	2 405	3 440
Malta	-	-	-
Poland	-1 041	-2 801	-6 373
Slovenia	-988	-1 652	-1 321
Slovakia	5 196	1 383	-2 696
ACC	**-1 773**	**-1 429**	**-17 446**
Bulgaria	3 790	-160	-4 620
Romania	9 476	299	-696
Turkey	-731	-696	3 354
CC 13	**10 762**	**-1 986**	**-19 408**

Data Source: Eurostat, Energy Statistics



(GWh)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU 15	27 134	14 170	18 792	21 873	18 046	17 402	-1 582	7 782	13 112	23 695	42 376
ACC	-1 773	-1 274	-6 409	-4 092	-815	-1 429	-1 791	-1 514	-10 805	-9 670	-17 446

Data Source: Eurostat, Energy Statistics

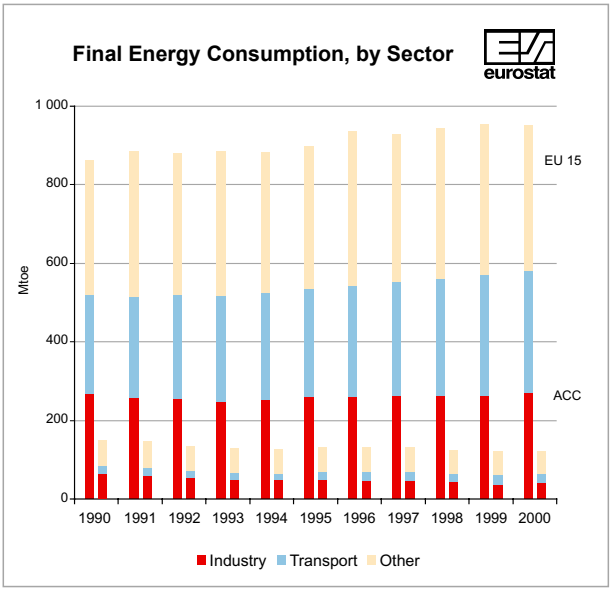
The net electricity imports of the European Union show a variable trend in the period under consideration and considerable differences between Member States. The largest net exporter of electricity in the EU 15 is France and the largest net importer is Italy, followed by the Netherlands and the United Kingdom.
Most of the acceding countries are net exporters of electricity, except Hungary and Latvia.

Final Energy Consumption, by Sector

(ktoe)

	Total		Industry		Transport		Other	
	1990	**2000**	**1990**	**2000**	**1990**	**2000**	**1990**	**2000**
B	31 299	36 944	11 889	13 657	7 704	9 662	11 707	13 625
DK	13 796	14 552	2 713	2 929	3 974	4 720	7 109	6 904
D	227 287	213 789	71 515	58 787	58 817	65 767	96 955	89 234
EL	14 534	18 508	3 953	4 432	5 816	7 196	4 764	6 880
E	56 524	79 288	19 750	25 393	22 326	32 783	14 448	21 112
F	136 068	150 410	37 045	35 414	41 908	51 593	57 115	63 403
IRL	7 135	10 395	1 834	2 182	1 965	3 895	3 336	4 318
I	110 415	126 057	36 903	39 951	33 403	41 341	40 109	44 765
L	3 325	3 544	1 725	954	1 007	1 877	593	714
NL	42 976	49 773	13 188	13 782	10 354	13 820	19 434	22 172
A	19 941	22 574	5 766	6 258	5 398	6 784	8 777	9 532
P	11 059	16 929	3 990	5 518	3 728	6 516	3 342	4 896
FIN	21 295	24 535	9 225	12 136	4 265	4 390	7 805	8 009
S	30 432	32 916	11 825	12 909	7 233	7 680	11 374	12 327
UK	136 718	149 613	34 591	35 933	45 451	51 476	56 675	62 203
EU 15	**862 805**	**949 826**	**265 912**	**270 233**	**253 350**	**309500**	**343 542**	**370 093**
IS	1 602	2 057	377	668	284	345	941	1 045
NO	16 084	18 046	6 097	6 988	4 123	4 437	5 864	6 621
CZ	33 935	24 080	17 315	10 730	2 804	4 099	13 816	9 250
EE	6 034	2 362	2 733	528	839	577	2 462	1 256
CY	1 265	1 616	424	238	645	1 077	196	302
LV	3 045	2 575	666	671	526	690	1 853	1 214
LT	9 260	3 647	3 049	672	1 928	1 048	4 283	1 927
HU	18 592	15 664	6 359	3 386	3 015	3 248	9 218	9 031
MT	332	513	:	69	221	319	111	125
PL	59 943	55 478	25 621	18 727	7 338	9 250	26 984	27 501
SI	3 368	4 475	1 468	1 445	928	1 313	972	1 718
SK	14 941	9 307	7 839	4 204	1 676	1 549	5 426	3 554
ACC	**150 715**	**119 717**	**65 474**	**40 670**	**19 920**	**23170**	**65 321**	**55 878**
BG	16 041	8 484	8 966	3 545	2 476	1 817	4 599	3 122
RO	33 251	22 400	21 988	8 983	4 417	3 421	6 846	9 996
TR	30 729	46 702	11 942	20 016	9 351	12 165	9 436	14 521
CC 13	**230 736**	**197 303**	**108 370**	**73 214**	**36 164**	**40 573**	**86 202**	**83 517**

Data Source: Eurostat, Energy Statistics



(Mtoe)

EU 15	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**
Total	863	884	880	885	881	899	936	928	944	953	950
Industry	266	257	254	247	252	259	261	263	262	263	270
Transport	253	257	265	271	272	276	284	289	300	308	310
Other	344	370	361	367	356	364	392	376	382	382	370
ACC											
Total	151	145	134	131	127	129	132	129	124	122	120
Industry	65	58	53	48	46	48	48	47	43	38	41
Transport	20	20	19	18	19	20	22	23	23	24	23
Other	65	67	62	64	61	61	62	60	59	59	56

Data Source: Eurostat, Energy Statistics

The final energy consumption of the EU 15 increased by 10% over the period 1990-2000. The increase was mainly due to the transport sector, up 22% over the last decade. Industry's final energy consumption rose only by 2% and the other sectors' by 8%, in the same period. In 2000, transport accounted for 33% of EU 15 final energy consumption, industry 28% and the households, commerce and public services sectors remains the largest final energy consumers, accounting for 39% of the total in the same year.

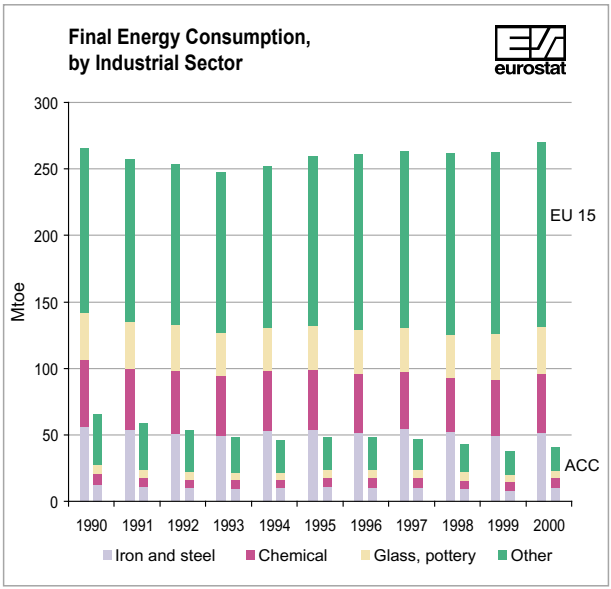
The final energy consumption of the acceding countries fell by 21% over the period 1990-2000. The main source of this reduction was the industry sector, down 38%, while final energy consumption in transport rose by 16% during the same period.

Final Energy Consumption, by Industrial Sector

(ktoe)

	Total industry		Iron and steel		Chemical		Glass, pottery	
	1990	**2000**	**1990**	**2000**	**1990**	**2000**	**1990**	**2000**
B	11 889	13 657	4 730	4 892	2 648	3 210	1 199	1 138
DK	2 713	2 929	109	112	263	253	480	650
D	71 515	58 787	17 088	14 818	17 648	11 867	8 290	7 058
EL	3 953	4 432	224	191	291	270	1 270	1 282
E	19 750	25 393	3 821	3 980	2 866	3 757	4 187	6 174
F	37 045	35 414	7 242	6 675	6 675	5 757	4 790	3 833
IRL	1 834	2 182	74	52	232	372	307	288
I	36 903	39 951	7 320	6 909	7 766	5 908	7 284	7 670
L	1 725	954	1 306	349	85	30	130	129
NL	13 188	13 782	2 157	2 097	5 551	4 584	962	833
A	5 766	6 258	1 803	1 429	589	635	723	716
P	3 990	5 518	268	270	427	442	1 016	2 099
FIN	9 225	12 136	1 389	1 644	563	608	843	309
S	11 825	12 909	1 548	1 730	750	664	610	487
UK	34 591	35 933	6 966	6 321	4 238	6 343	3 555	2 194
EU 15	**265 912**	**270 233**	**56 043**	**51 469**	**50 591**	**44 698**	**35 647**	**34 858**
IS	377	668	104	175	19	9	12	13
NO	6 097	6 988	1 328	1 331	745	1 040	230	338
CZ	17 315	10 730	2 478	3 100	1 277	1 658	777	1 125
EE	2 733	528	5	0	407	45	257	114
CY	424	238	-	-	3	1	224	164
LV	666	671	102	108	50	14	85	66
LT	3 049	672	4	6	503	57	974	152
HU	6 359	3 386	1 544	620	1 078	854	1 045	579
MT	:	69	-	-	-	-	-	-
PL	25 621	18 727	7 048	4 670	4 212	4 117	3 474	2 594
SI	1 468	1 445	207	175	56	115	111	219
SK	7 839	4 204	1 587	1 768	:	124	:	87
ACC	**65 474**	**40 670**	**12 975**	**10 447**	**7 586**	**6 985**	**6 947**	**5 100**
BG	8 966	3 545	1 388	958	2 757	1 028	1 110	483
RO	21 988	8 983	6 267	2 486	5 816	2 148	5 211	1 267
TR	11 942	20 016	1 619	1 951	1 503	1 319	542	968
CC 13	**108 370**	**73 214**	**22 249**	**15 842**	**17 662**	**11 480**	**13 810**	**7 818**

Data Source: Eurostat, Energy Statistics



(Mtoe)

EU 15	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**
Total industry	265.9	257.4	253.7	247.5	252.3	259.3	260.9	263.1	261.8	263.0	270.2
Iron and steel	56.0	53.8	51.0	49.2	53.1	54.2	52.0	55.0	52.5	49.5	51.5
Chemical	50.6	45.9	47.3	45.4	45.1	44.6	43.5	42.4	40.7	42.0	44.7
Glass, pottery	35.6	34.8	34.2	32.3	32.3	32.7	32.9	32.6	32.0	34.7	34.9
Other	123.6	122.8	121.2	120.6	121.7	127.8	132.5	133.1	136.6	136.8	139.2
ACC											
Total industry	65.5	58.5	53.0	48.5	46.3	48.4	47.8	46.7	42.6	38.3	40.7
Iron and steel	13.0	10.6	10.1	9.5	10.1	10.9	10.3	10.3	9.1	8.0	10.4
Chemical	7.6	6.9	6.5	6.2	5.7	6.6	7.0	7.3	7.0	6.5	7.0
Glass, pottery	6.9	6.3	5.3	5.8	6.0	6.3	6.4	6.2	5.9	5.3	5.1
Other	38.0	34.7	31.1	27.0	24.5	24.7	24.1	22.9	20.7	18.5	18.1

Data Source: Eurostat, Energy Statistics

The total energy consumption of all the industrial sectors of the EU 15 rose by 2% over the last decade. However the principal energy-intensive branches showed a distinct reduction in energy consumption (8.2% for iron and steel sector and 11.6% for the chemical sector). The energy consumption of the remaining sectors increased by 9.3% over the same period.

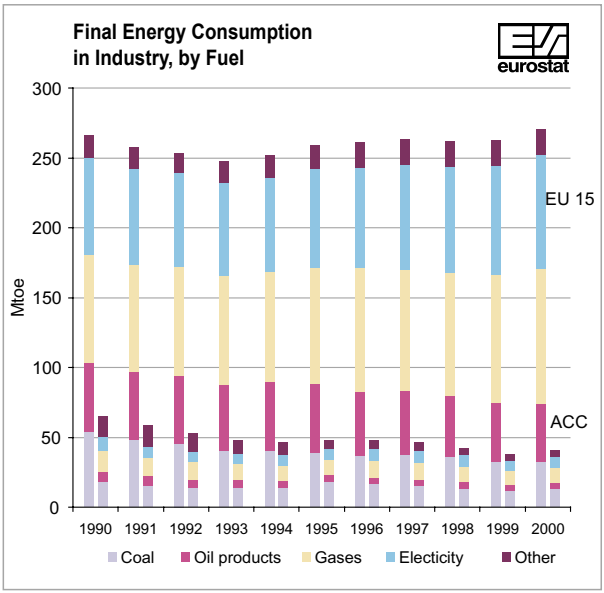
The industrial energy consumption of the acceding countries has fallen significantly. Over the period 1990-2000 the consumption of the iron and steel sector decreased by 20%, the chemical sector by 8% and the glass, pottery and building materials sector by 27%.

Final Energy Consumption in Industry, by Fuel

(ktoe)

	All products		Coal		Oil products		Gases		Electicity	
	1990	**2000**	**1990**	**2000**	**1990**	**2000**	**1990**	**2000**	**1990**	**2000**
B	11 889	13 657	3 237	3 164	1 988	1 420	3 731	5 172	2 625	3 428
DK	2 713	2 929	324	282	913	750	539	793	751	860
D	71 515	58 787	20 759	9 728	8 278	5 296	21 325	24 300	17 869	19 082
EL	3 953	4 432	1 034	852	1 679	1 935	8	239	1 041	1 165
E	19 750	25 393	3 144	1 607	5 510	5 647	4 043	9 387	5 441	7 364
F	37 045	35 414	7 360	5 057	7 331	4 456	10 829	12 641	9 860	11 620
IRL	1 834	2 182	261	50	761	902	363	470	386	664
I	36 903	39 951	4 177	3 449	8 488	6 409	13 716	16 950	9 530	12 197
L	1 725	954	746	120	273	73	481	413	225	331
NL	13 188	13 782	1 682	1 266	1 293	1 632	7 033	6 150	2 858	3 491
A	5 766	6 258	1 074	413	848	749	1 817	2 506	1 563	1 954
P	3 990	5 518	616	465	1 801	2 326	51	680	1 051	1 372
FIN	9 225	12 136	1 548	1 050	1 137	1 475	1 462	1 308	2 796	3 669
S	11 825	12 909	1 185	1 123	1 728	1 584	476	487	4 639	4 896
UK	34 591	35 933	6 831	3 789	7 303	7 023	11 301	14 955	8 654	9 780
EU 15	**265 912**	**270 233**	**53 977**	**32 415**	**49 332**	**41 676**	**77 173**	**96 451**	**69 287**	**81 873**
IS	377	668	64	100	93	118	-	-	220	451
NO	6 097	6 988	799	1 004	922	748	10	18	3 939	4 375
CZ	17 315	10 730	7 710	4 018	2 091	1 072	2 978	3 092	2 315	1 629
EE	2 733	528	356	79	697	89	373	79	254	157
CY	424	238	76	35	320	165	-	-	29	38
LV	666	671	22	8	1	147	368	207	274	123
LT	3 049	672	39	13	725	165	270	204	466	197
HU	6 359	3 386	575	325	896	278	3 497	1 516	1 182	757
MT	:	69	-	-	-	-	-	-	:	69
PL	25 621	18 727	7 051	7 529	946	1 817	4 255	3 461	3 675	3 478
SI	1 468	1 445	124	86	224	283	568	499	513	475
SK	7 839	4 204	2 573	1 173	1 084	261	2 874	1 915	1 290	838
ACC	**65 474**	**40 670**	**18 526**	**13 266**	**6 984**	**4 277**	**15 183**	**10 973**	**9 998**	**7 761**
BG	8 966	3 545	685	568	1 068	823	2 047	1 114	1 595	738
RO	21 988	8 983	2 333	642	2 098	1 537	14 228	4 321	3 292	1 712
TR	11 942	20 016	5 007	9 200	3 467	4 645	1 117	2 207	2 351	3 963
CC 13	**108 370**	**73 214**	**26 551**	**23 676**	**13 617**	**11 282**	**32 575**	**18 615**	**17 236**	**14 174**

Data Source: Eurostat, Energy Statistics



(Mtoe)

EU 15	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**
All fuels	265.9	257.4	253.7	247.5	252.3	259.3	260.9	263.1	261.8	263.0	270.2
Coal	54.0	48.2	45.2	40.0	40.4	39.2	36.4	37.7	36.0	32.7	32.4
Oil products	49.3	49.1	49.0	47.8	49.6	49.2	46.8	45.7	43.3	41.8	41.7
Gases	77.2	76.5	77.3	77.4	78.2	82.6	88.2	87.0	88.5	91.8	96.5
Electicity	69.3	68.1	67.8	66.9	68.0	71.4	71.7	74.3	76.0	77.9	81.9
Other	16.1	15.5	14.3	15.3	16.1	16.9	17.8	18.4	18.0	18.7	17.8
ACC											
All fuels	65.5	58.5	53.0	48.5	46.3	48.4	47.8	46.7	42.6	38.3	40.7
Coal	18.5	15.8	14.3	14.4	14.2	18.2	16.8	15.7	13.1	11.7	13.3
Oil products	7.0	6.4	5.5	4.9	4.7	4.5	4.1	4.3	5.1	4.5	4.3
Gases	15.2	12.7	12.5	11.8	10.8	11.6	12.3	11.8	11.3	9.9	11.0
Electicity	10.0	8.5	7.8	7.3	7.5	7.8	8.2	8.5	7.9	7.6	7.8
Other	14.8	15.0	12.9	10.1	9.1	6.4	6.5	6.4	5.2	4.6	4.4

Data Source: Eurostat, Energy Statistics

A clear trend in the EU 15 industry is the significant reduction in coal use (40% over the last decade). Consumption of oil was also decreased by 16% over the same period. It is evident that European industry is turning towards natural gas, a cleaner and more efficient fuel (25% increase over the last decade). There has also been a significant (18%) increase in electricity consumption by industry between, 1990 and 2000, which now amounts to 30% of the total final energy consumption in industry.

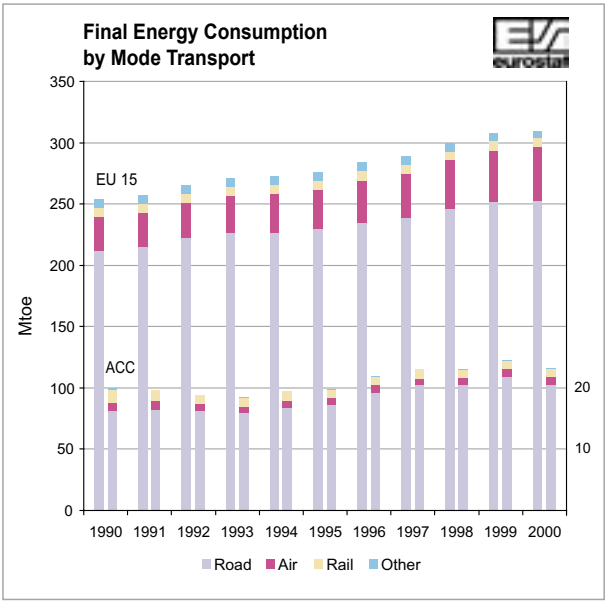
For the acceding countries the decrease of the total energy consumption in industry can also be observed in all fuels. In particular there was a reduction of 28% in coal, 39% in oil, 28% in gas and 22% in electricity use over this period.

Final Energy Consumption by Mode of Transport

(ktoe)

	Total		Rail		Road		Air	
	1990	**2000**	**1990**	**2000**	**1990**	**2000**	**1990**	**2000**
B	7 704	9 662	177	183	6 442	7 819	955	1 524
DK	3 974	4 720	113	103	3 063	3 680	648	822
D	58 817	65 767	2 116	1 939	50 418	56 187	5 627	7 362
EL	5 816	7 196	75	60	3 903	5 320	1 273	1 325
E	22 326	32 783	528	847	17 676	26 061	2 467	4 497
F	41 908	51 593	1 150	1 373	36 171	42 732	3 870	6 712
IRL	1 965	3 895	48	127	1 546	3 155	365	575
I	33 403	41 341	738	834	30 392	36 808	1 884	3 497
L	1 007	1 877	13	15	863	1 541	131	320
NL	10 354	13 820	147	176	8 038	9 629	1 614	3 348
A	5 398	6 784	316	328	4 755	5 862	327	587
P	3 728	6 516	82	88	3 026	5 592	576	793
FIN	4 265	4 390	99	94	3 631	3 670	463	508
S	7 233	7 680	252	299	6 074	6 330	764	934
UK	45 451	51 476	1 076	1 192	36 312	38 310	6 794	11 012
EU 15	**253 350**	**309 500**	**6 929**	**7 656**	**212 310**	**252 698**	**27 758**	**43 818**
IS	284	345	-	-	181	198	84	142
NO	4 123	4 437	104	176	2 591	2 958	505	658
CZ	2 804	4 099	272	295	2 311	3 604	221	200
EE	839	577	65	51	730	497	36	22
CY	645	1 077	2	2	414	785	229	290
LV	526	690	17	76	508	579	:	27
LT	1 928	1 048	114	75	1 225	943	389	27
HU	3 015	3 248	270	170	2 580	2 855	164	223
MT	221	319	-	-	149	209	72	110
PL	7 338	9 250	1 095	539	5 940	8 335	205	371
SI	928	1 313	29	23	872	1 265	27	25
SK	1 676	1 549	100	83	1 576	1 466	-	-
ACC	**19 920**	**23 170**	**1 964**	**1 314**	**16 305**	**20 538**	**1 343**	**1 295**
BG	2 476	1 817	216	77	1 958	1 638	284	101
RO	4 417	3 421	282	449	3 589	2 727	233	133
TR	9 351	12 165	243	268	8 377	10 444	480	1 261
CC 13	**36 164**	**40 573**	**2 705**	**2 108**	**30 229**	**35 347**	**2 340**	**2 790**

Data Source: Eurostat, Energy Statistics



(Mtoe)

EU 15	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**
Total	253.4	256.8	265.1	271.1	272.3	275.8	283.5	289.0	299.7	307.9	309.5
Road	212.3	215.3	222.3	226.9	226.8	229.2	234.8	238.9	246.2	251.7	252.7
Air	27.8	27.8	28.8	29.9	31.2	32.5	34.2	36.0	39.5	42.1	43.8
Rail	6.9	7.1	7.2	7.4	7.3	7.5	7.6	7.6	7.6	8.0	7.7
Other	6.4	6.6	6.9	6.9	6.9	6.7	6.9	6.5	6.5	6.0	5.3
ACC											
Total	19.9	19.6	18.9	18.5	19.4	19.9	22.0	23.1	23.1	24.4	23.2
Road	16.3	16.4	16.3	16.0	16.7	17.1	19.2	20.5	20.5	21.9	20.5
Air	1.3	1.5	1.1	1.0	1.2	1.2	1.2	1.1	1.2	1.2	1.3
Rail	2.0	1.6	1.5	1.5	1.5	1.4	1.5	1.5	1.3	1.3	1.3
Other	0.3	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0

Data Source: Eurostat, Energy Statistics

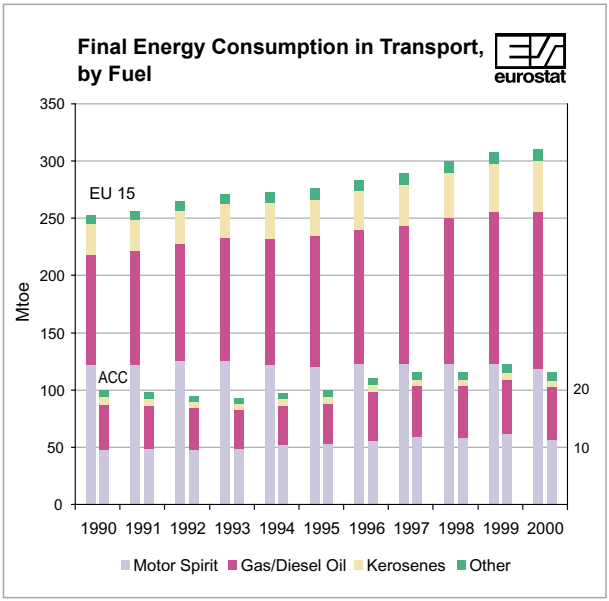
EU 15 energy consumption in transport was 22% more in 2000 than in 1990. Increases can be observed in all modes of transport: 19% in road transport, 58% in air transport and 10% in rail transport. The large increase in energy use in air transport indicates a corresponding increase in air travel in the EU 15 over the period 1990-2000.
Over the same period, in the acceding countries energy consumption by rail transport fell by 33%, while that of road transport rose by 26%, which suggests a shift in transport preferences.

Final Energy Consumption in Transport, by Fuel

(ktoe)

	All fuels		Motor Spirit		Kerosenes		Gas/Diesel Oil	
	1990	**2000**	**1990**	**2000**	**1990**	**2000**	**1990**	**2000**
B	7 704	9 662	2 869	2 362	952	1 521	3 714	5 494
DK	3 974	4 720	1 627	2 031	655	820	1 579	1 790
D	58 817	65 767	32 634	30 064	5 629	7 345	19 359	26 921
EL	5 816	7 196	2 502	3 394	1 264	1 325	1 779	2 216
E	22 326	32 783	8 571	8 969	2 456	4 486	10 573	18 676
F	41 908	51 593	19 153	14 631	3 839	6 683	18 093	28 679
IRL	1 965	3 895	930	1 542	365	574	663	1 750
I	33 403	41 341	13 750	17 534	1 872	3 491	15 559	17 654
L	1 007	1 877	433	607	131	320	433	939
NL	10 354	13 820	3 628	4 242	1 608	3 343	4 011	5 472
A	5 398	6 784	2 691	2 079	324	587	2 115	3 817
P	3 728	6 516	1 441	2 234	574	790	1 686	3 439
FIN	4 265	4 390	2 076	1 865	459	505	1 653	1 925
S	7 233	7 680	4 382	4 185	760	928	1 820	2 269
UK	45 451	51 476	25 577	22 546	6 779	10 971	12 562	17 148
EU 15	**253 350**	**309 500**	**122 265**	**118 286**	**27 668**	**43 690**	**95 598**	**138 188**
IS	284	345	143	151	82	141	53	52
NO	4 123	4 437	1 861	1 642	502	653	1 578	1 994
CZ	2 804	4 099	1 267	1 956	174	197	1 091	1 676
EE	839	577	516	295	36	20	268	255
CY	645	1 077	178	216	229	290	236	569
LV	526	690	494	306	:	27	:	326
LT	1 928	1 048	950	391	389	27	567	507
HU	3 015	3 248	1 817	1 408	164	219	931	1 532
MT	221	319	68	75	72	110	81	134
PL	7 338	9 250	3 195	5 215	196	369	3 355	2 828
SI	928	1 313	594	849	27	24	288	417
SK	1 676	1 549	440	633	-	-	1 136	834
ACC	**19 920**	**23 170**	**9 519**	**11 344**	**1 287**	**1 283**	**7 953**	**9 078**
BG	2 476	1 817	1 469	693	276	101	618	768
RO	4 417	3 421	2 189	1 301	275	128	1 348	1 732
TR	9 351	12 165	3 359	3 803	480	1 261	5 355	5 511
CC 13	**36 164**	**40 573**	**16 536**	**17 141**	**2 318**	**2 773**	**15 274**	**17 089**

Data Source: Eurostat, Energy Statistics



(Mtoe)

EU 15	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**
All fuels	253.4	256.8	265.1	271.1	272.3	275.8	283.5	289.0	299.7	307.9	309.5
Motor Spirit	122.3	122.4	124.8	125.9	122.1	121.0	123.1	122.5	122.9	123.3	118.3
Gas/Diesel Oil	95.6	98.7	103.3	106.8	110.0	113.3	116.9	121.0	127.7	133.0	138.2
Kerosenes	27.7	27.7	28.7	29.9	31.1	32.3	34.1	35.9	39.4	42.0	43.7
Other	7.8	8.1	8.2	8.5	9.0	9.1	9.4	9.6	9.7	9.6	9.3
ACC											
All fuels	19.9	19.6	18.9	18.5	19.4	19.9	22.0	23.1	23.1	24.4	23.2
Motor Spirit	9.5	9.8	9.6	9.6	10.4	10.7	11.2	11.7	11.7	12.4	11.3
Gas/Diesel Oil	8.0	7.4	7.2	7.0	6.9	6.8	8.4	9.0	9.0	9.3	9.1
Kerosenes	1.3	1.4	1.1	1.0	1.1	1.2	1.2	1.1	1.2	1.2	1.3
Other	1.2	1.0	1.0	0.9	1.0	1.1	1.2	1.3	1.3	1.4	1.5

Data Source: Eurostat, Energy Statistics

The 58% increase in kerosene consumption (which is the largest among the other fuels used in transport sector) shows a distinct change in the fuel mix over the period under consideration and is directly related to the corresponding increase in air transport.

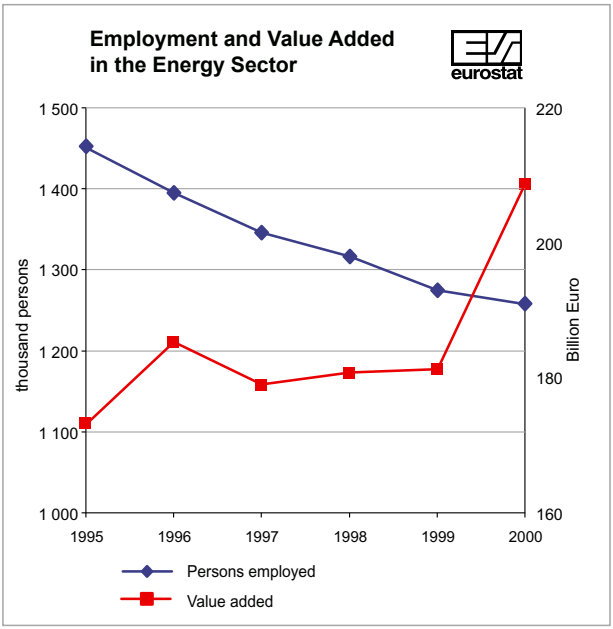
In the acceding countries the total consumption in transport increased by 16% over the period 1990-2000 due to the increases in the use of motor spirit (19%) and gas diesel oil (14%); the level of kerosene consumption remained stable.

Employment and Value Added in the Energy Sector

	Number of persons employed (thousand persons)		*Per cent (%)*
	1995	**2000**	**2000 share of total industry**
Belgium	29	26	4
Denmark	19	15	3
Germany	477	405	5
Greece	34	33	15
Spain	88	70	3
France	223	209	5
Ireland	14	11	4
Italy	181	162	3
Luxembourg	0.8	1.2	3
Netherlands	49	40	4
Austria	42	37	6
Portugal	22	18	2
Finland	19	21	5
Sweden	32	28	3
United Kingdom	210	173	4
EU 15	**1440**	**1247**	**4**

	Value added at factor cost (Billion euro)		*Per cent (%)*
	1995	**2000**	**2000 share of total industry**
Belgium	6.3	6.4	13
Denmark	3.8	2.8	12
Germany	40.7	44.6	11
Greece	1.8	2.2	22
Spain	11.9	13.3	12
France	25.9	26.0	13
Ireland	1.0	1.4	5
Italy	21.1	25.6	15
Luxembourg	0.1	0.2	7
Netherlands	5.5	12.3	21
Austria	5.4	5.8	16
Portugal	2.4	2.9	13
Finland	1.8	2.4	7
Sweden	5.2	5.2	11
United Kingdom	38.8	56.4	21
EU 15	**172**	**207**	**14**

Data Source: Eurostat, Structural Business Statistics



	1995	1996	1997	1998	1999	2000
Persons employed (thousand persons)	1 440	1 384	1 335	1 305	1 264	1 247
Value added (Billion Euro)	172	184	178	179	180	207

Data Source: Eurostat, Structural Business Statistics

Note: (NACE10+NACE 11+NACE 12+NACE 23+NACE 40)

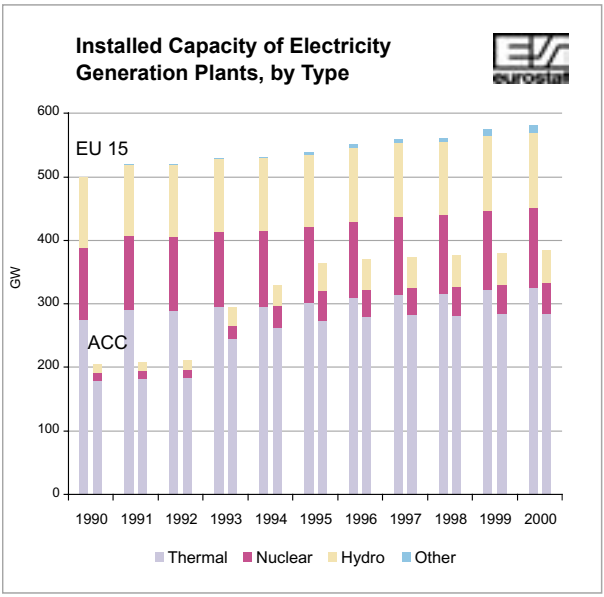
The energy sector in the EU 15 employs only 4.2% of the industrial workforce, but its contribution to the value added of industry was up to 13.9% in 2000.
Between the years 1995 and 2000, the value added at factor cost generated by energy sector increased by 20.8% corresponding to an increase of € 35 billion. In both reference years 1995 and 2000, about 73% of the total value added of the EU 15 energy sector is generated in the four large Member States UK, Germany, France and Italy.
Looking at the breakdown by sub-sector of the energy sector, electricity, gas, steam and hot water supply had a value added of € 125.4 billion; coke, oil refining and nuclear fuels yielded € 30.1 billion; the extraction of crude oil and natural gas € 43.85 billion and coal and lignite mining € 6.7 billion in 2000.

Installed Capacity of Electricity Generation Plants, by Type

(MW)

	Total		Thermal		Nuclear		Hydro		Other	
	1990	**2000**	**1990**	**2000**	**1990**	**2000**	**1990**	**2000**	**1990**	**2000**
B	14 145	15 672	7 240	8 545	5 500	5 713	1 400	1 404	5	10
DK	9 133	13 050	8 780	10 226	-	-	10	10	343	2 814
D	97 600	118 267	68 440	80 794	22 260	22 396	6 850	8 982	50	6 095
EL	8 514	10 853	6 100	7 660	-	-	2 410	2 967	4	226
E	43 417	53 538	20 210	26 243	6 970	7 503	16 230	17 716	7	2 076
F	103 410	115 643	22 670	26 799	55 750	63 183	24 990	25 594	0	67
IRL	3 820	4 705	3 300	4 064	-	-	520	525	0	116
I	56 567	71 135	37 290	50 077	-	-	18 770	20 346	507	712
L	1 240	1 227	110	74	-	-	1 130	1 139	0	14
NL	17 568	21 012	16 960	20 070	510	449	40	38	58	455
A	16 690	17 736	5 740	6 134	-	-	10 950	11 547	0	55
P	7 396	10 903	4 050	6 275	-	-	3 344	4 526	2	102
FIN	13 220	16 258	8 240	10 698	2 360	2 640	2 620	2 882	0	38
S	34 187	33 571	7 880	7 526	9 970	9 461	16 330	16 372	7	212
UK	73 020	78 333	57 490	61 398	11 350	12 486	4 170	4 273	10	176
EU 15	**499 927**	**581 903**	**274 500**	**326 583**	**114 670**	**123 831**	**109 764**	**118 321**	**993**	**13 168**
IS	944	1 383	142	147	-	-	756	1 064	46	172
NO	:	28 162	:	270	-	-	:	27 878	:	14
CZ	:	15 215	:	11 302	:	1 760	:	2 153	-	-
EE	3 000	2 545	3 000	2 545	-	-	-	-	-	-
CY	471	1 004	471	1 004	-	-	-	-	-	-
LV	:	2 115	:	577	-	-	:	1 536	:	2
LT	:	6 557	:	2 643	:	3 000	:	914	-	-
HU	7 184	8 282	5 376	6 383	1 760	1 851	48	48	-	-
MT	:	515	:	515	-	-	-	-	-	-
PL	27 967	30 559	25 991	28 372	-	-	1 976	2 183	:	4
SI	2 531	2 614	1 144	1 115	632	656	755	843	-	-
SK	:	7 454	:	2 394	:	2 640	:	2 420	-	-
ACC	**41 153**	**76 860**	**35 982**	**56 850**	**2 392**	**9 907**	**2 779**	**10 097**	**:**	**6**
BG	:	11 033	:	5 673	:	3 480	:	1 880	-	-
RO	22 477	21 904	16 820	15 077	0	707	5 657	6 120	0	0
TR	16 318	27 264	9 536	16 052	-	-	6 764	11 175	18	37
CC 13	**79 948**	**137 061**	**62 338**	**93 652**	**2 392**	**14 094**	**15 200**	**29 272**	**18**	**43**

Data Source: Eurostat, Energy Statistics



(GW)

EU 15	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**
Total	500	521	520	530	531	539	550	559	562	575	582
Thermal	275	291	289	295	296	301	309	314	316	323	327
Nuclear	115	116	117	119	119	120	121	124	123	125	124
Hydro	110	112	112	114	114	115	116	116	116	118	118
Other	1	1	1	2	2	3	4	5	7	9	13
ACC											
Total	41	41	42	59	66	73	74	75	75	76	77
Thermal	36	36	37	49	52	55	56	57	56	57	57
Nuclear	2	2	2	4	7	9	9	9	9	9	10
Hydro	3	3	3	6	6	9	9	9	10	10	10
Other	0	0	0	0	0	0	0	0	0	0	0

Data Source: Eurostat, Energy Statistics

Note: "Other" includes: Wind, Geothermal and Photovoltaic

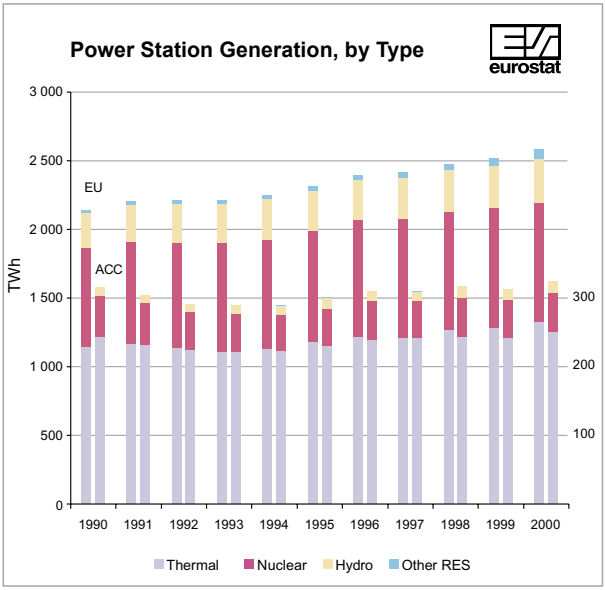
The total EU 15 installed capacity of electricity generation plant rose by 16% between 1990 and 2000. Thermal power plants provide the majority of capacity and increased by 19%, while installed nuclear capacity rose by 8% in the same period. The most important figure in the above table is the extraordinary increase in the installed capacity of RES (excluding hydro), which reached 13GW in 2000, although it still contributes only 2.3% of total installed capacity of electricity generation plants.
The most important installed capacity for the acceding countries is also thermal power plants which represented 74% of total installed capacity in 2000, followed by hydro plants (13%) and nuclear (13%).

Power Station Generation, by Type

(TWh)

	Total		Hydro		Thermal		Nuclear		Other RES	
	1990	2000	1990	2000	1990	2000	1990	2000	1990	2000
B	70	83	0	0	27	33	43	48	0.5	0.9
DK	26	36	0	0	25	30	-	-	0.7	6.1
D	546	569	16	23	374	360	152	170	3.3	15.5
EL	35	53	2	4	33	49	-	-	0.0	0.5
E	151	223	25	29	71	125	54	62	0.6	6.6
F	416	536	54	68	47	50	314	415	0.9	3.4
IRL	14	24	1	1	14	22	-	-	0.0	0.3
I	217	275	32	44	182	223	-	-	3.4	7.2
L	1	0	0	0	1	0	-	-	0.0	0.1
NL	72	90	0	0	67	81	4	4	1.1	4.1
A	49	60	31	42	17	17	-	-	1.1	1.7
P	28	43	9	11	19	30	-	-	0.7	1.8
FIN	54	70	11	15	19	24	19	22	5.0	8.6
S	146	146	73	79	3	5	68	57	2.1	4.3
UK	317	375	5	5	245	279	66	85	0.7	5.3
EU 15	**2 143**	**2 581**	**259**	**321**	**1 143**	**1 330**	**720**	**864**	**20.2**	**66.4**
IS	5	9	4	6	0	1	-	-	0.3	1.3
NO	122	142	121	142	0	1	-	-	0.0	0.1
CZ	63	73	1	2	49	58	13	14	-	-
EE	17	9	0	0	17	8	-	-	0.0	0.0
CY	2	3	-	-	2	3	-	-	-	-
LV	7	4	4	3	2	1	-	-	0.0	0.0
LT	28	11	0	0	11	2	17	8	-	-
HU	28	35	0	0	15	21	14	14	-	-
MT	1	2	-	-	1	2	-	-	-	-
PL	135	143	2	2	133	141	-	-	0.3	0.6
SI	12	14	3	4	5	5	5	5	-	-
SK	23	30	2	5	10	9	12	16	-	-
ACC	**317**	**324**	**13**	**16**	**244**	**251**	**60**	**57**	**0.3**	**0.6**
BG	42	41	2	3	26	20	15	18	0.0	0.0
RO	63	52	17	15	46	32	0	5	0.0	0.0
TR	58	125	23	31	34	94	-	-	0.1	0.1
CC 13	**480**	**542**	**55**	**64**	**350**	**396**	**75**	**81**	**0.3**	**0.7**

Data Source: Eurostat, Energy Statistics



(TWh)

EU 15	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**
Total	2 143	2 203	2 211	2 216	2 249	2 312	2 393	2 410	2 476	2 513	2 581
Thermal	1 143	1 166	1 143	1 107	1 133	1 181	1 220	1 216	1 270	1 288	1 330
Nuclear	720	747	760	794	792	810	851	860	854	867	864
Hydro	259	268	286	289	297	290	289	296	305	303	321
Other RES	20	21	22	25	27	31	34	39	46	54	66
ACC											
Total	317	304	292	289	290	301	311	311	318	313	324
Thermal	244	232	224	223	223	230	239	241	244	241	251
Nuclear	60	59	56	54	51	54	57	54	57	56	57
Hydro	13	12	11	13	15	16	14	14	16	15	16
Other RES	0.3	0.4	0.4	0.4	0.4	0.3	0.4	0.6	0.6	0.5	0.6

Data Source: Eurostat, Energy Statistics

Note: Thermal generation is without biomass

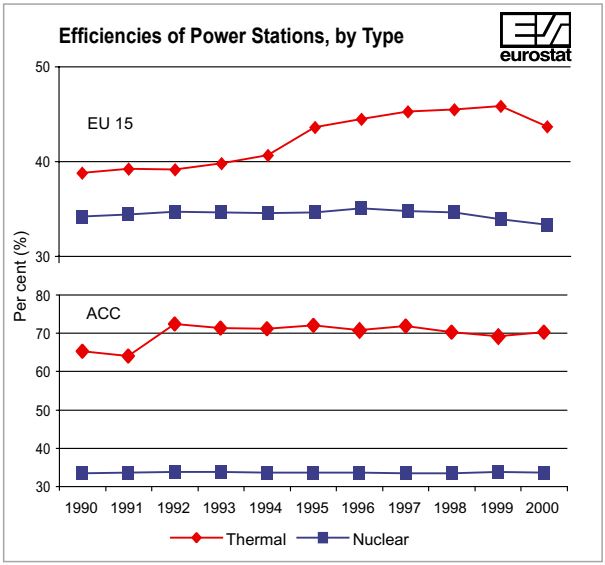
The increase in EU 15 total electricity generation over the last decade is 20%, comparable to the 16% increase of the installed capacity seen in the previous table. Renewable energy sources contributed 66.4 TWh in 2000, a rise in production of 230% over the period 1990-2000. Electricity generation of the acceding countries registered a 2% increase in 2000 compared with 1990. In 2000, the largest share of electricity generation was thermal electricity, accounting for 77% of the total, followed by nuclear energy (18%) and hydro energy (5%).

Efficiencies of Power Stations, by Type

Per cent (%)

	CHP		Thermal		Nuclear	
	1994	**2000**	**1990**	**2000**	**1990**	**2000**
Belgium	83.0	71.7	38.8	45.5	34.3	33.3
Denmark	63.0	72.7	57.0	64.6	-	-
Germany	76.2	75.6	36.0	38.9	34.9	33.3
Greece	62.7	56.0	32.5	36.6	-	-
Spain	75.4	73.1	36.9	41.3	34.1	33.3
France	74.3	78.7	35.6	34.9	34.1	33.3
Ireland	57.3	74.1	39.5	40.7	-	-
Italy	71.8	64.5	39.3	40.2	-	-
Luxembourg	:	86.0	25.1	69.3	-	-
Netherlands	71.4	68.8	42.2	54.4	34.2	33.4
Austria	70.0	65.5	45.4	62.6	-	-
Portugal	74.8	73.7	39.0	44.0	-	-
Finland	85.6	78.9	65.8	73.3	33.0	33.3
Sweden	79.1	84.2	97.5	92.0	33.0	33.3
United Kingdom	74.0	64.2	37.8	44.2	34.1	33.3
EU 15	**73.0**	**71.5**	**38.8**	**43.6**	**34.1**	**33.3**
Iceland	:	:	21.6	25.3	-	-
Norway	:	:	48.5	74.4	-	-
Czech Republic	:	:	64.1	46.4	33.3	33.3
Estonia	:	:	43.6	40.4	-	-
Cyprus	:	:	28.1	33.6	-	-
Latvia	:	:	55.8	78.8	-	-
Lithuania	:	:	84.8	71.9	33.7	34.4
Hungary	:	:	44.6	50.5	33.3	33.3
Malta	:	:	29.6	31.8	-	-
Polonia	:	:	49.7	46.8	-	-
Slovenia	:	:	36.9	43.6	33.3	33.3
Slovak Republic	:	:	72.1	40.6	33.3	33.3
ACC	**:**	**:**	**65.2**	**70.2**	**33.4**	**33.5**
Bulgaria	:	:	47.1	42.0	33.3	33.3
Romania	:	:	51.6	54.6	-	33.3
Turkey	:	:	33.2	36.1	-	-
CC 13	**:**	**:**	**49.7**	**59.8**	**33.4**	**33.4**

Data Source: Eurostat, Energy Statistics



Per cent (%)

EU 15	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**
Thermal	38.8	39.2	39.1	39.8	40.6	43.6	44.4	45.2	45.5	45.9	43.6
Nuclear	34.1	34.4	34.7	34.6	34.5	34.6	35.0	34.8	34.6	33.9	33.3
CHP	:	:	:	:	73.0	:	75.1	76.5	75.1	:	71.5
ACC											
Thermal	65.2	63.9	72.3	71.4	71.0	72.1	70.7	71.8	70.1	69.1	70.2
Nuclear	33.4	33.6	33.7	33.7	33.6	33.6	33.5	33.4	33.5	33.8	33.5
CHP	:	:	:	:	:	:	:	:	:	:	:

Data Source: Eurostat, Energy Statistics

Note: Variation in the efficiency is related to methodology in reporting figures in CHP production

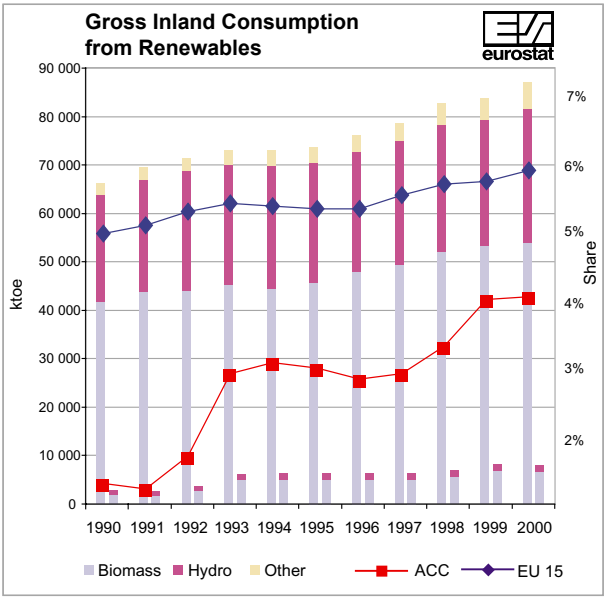
The CHP data are based on the Eurostat project in the Member States. The EU 15 efficiency of thermal power station grew steadily until 1999 (from 38.8% in 1990 to 45.9% in 1999). CHP plants have intrinsically higher efficiency due to the utilisation of two types of energy.
For the acceding countries, the efficiency of thermal power stations is higher (compared with EU 15 efficiency) due to the large number of CHP plants in operation in these countries.

Gross Inland Consumption from Renewables and Share on Total Gross Inland Consumption

(ktoe)

	Renewables		Hydro		Biomass		Other		Share %	
	1990	2000	1990	2000	1990	2000	1990	2000	1990	2000
B	649	731	23	39	623	687	3	3	1.4	1.3
DK	1 766	2 115	2	2	1 708	1 722	55	390	10.0	10.8
D	5 705	9 587	1 385	1 995	4 299	6 682	22	910	1.6	2.8
EL	1 105	1 403	152	318	893	946	59	140	5.0	5.0
E	5 961	6 994	2 184	2 534	3 752	4 014	24	446	6.7	5.7
F	15 729	17 392	4 636	5 805	10 956	11431	137	156	7.0	6.8
IRL	168	258	60	73	108	164	0	21	1.6	1.8
I	8 171	12 348	2 719	3 812	3 373	5 374	2 078	3 162	5.3	7.0
L	47	57	6	10	41	44	0	2	1.3	1.6
NL	770	1 622	7	12	757	1 529	7	80	1.2	2.1
A	5 772	6 595	2 708	3 576	3 049	2 951	15	67	22.5	23.2
P	2 544	3 131	787	974	1 742	2 053	14	104	15.2	13.0
FIN	5 270	7 799	934	1 261	4 337	6 532	0	7	18.5	23.9
S	11 569	14 554	6 234	6 757	5 332	7 752	4	44	24.6	30.6
UK	1 082	2 618	436	437	639	2 088	6	93	0.5	1.1
EU 15	**66 306**	**87 203**	**22 274**	**27 605**	**41 608**	**53970**	**2 424**	**5 627**	**5.0**	**6.0**
IS	1 456	2 306	361	547	0	2	1 095	1 758	65.8	71.4
NO	11 456	13 527	10 437	12 175	1 019	1 349	0	3	53.1	51.4
CZ	124	602	124	151	:	451	-	-	0.3	1.5
EE	460	506	0	0	460	505	-	-	4.6	11.1
CY	:	2	-	-	:	2	:	:	0.0	0.1
LV	387	1 061	387	242	:	818	-	-	9.4	28.9
LT	36	649	36	29	:	619	-	-	0.2	9.0
HU	15	401	15	15	:	381	:	5	0.1	1.6
MT	-	-	-	-	-	-	-	-	0.0	0.0
PL	1 597	3 560	139	181	1 458	3 379	-	-	1.6	4.0
SI	254	740	254	330	:	410	-	-	4.6	11.4
SK	162	498	162	406	:	91	-	-	0.8	3.0
ACC	**3 035**	**8 019**	**1 117**	**1 354**	**1 918**	**6 656**	**:**	**5**	**1.3**	**4.1**
BG	161	776	161	230	:	547	-	-	0.6	4.2
RO	2 606	4 034	1 460	1 271	1 146	2 763	-	-	4.2	10.9
TR	1 990	10 905	1 990	2 655	:	6 456	:	1 795	4.7	14.0
CC 13	**7 792**	**23 734**	**4 728**	**5 510**	**3 064**	**16422**	**:**	**1 795**	**2.1**	**7.2**

Data Source: Eurostat, Energy Statistics



(ktoe)

EU 15	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**
Share	5.0%	5.2%	5.3%	5.5%	5.5%	5.4%	5.4%	5.6%	5.7%	5.8%	6.0%
Renewables	66 306	69 385	71 359	73 043	72 958	73 675	76 160	78 697	82 649	83 915	87 203
Biomass	41 608	43 846	44 086	45 147	44 397	45 618	47 909	49 501	52 019	53 244	53 970
Hydro	22 274	23 083	24 587	24 882	25 535	24 947	24 814	25 453	26 264	26 089	27 605
Other	2 424	2 457	2 686	3 014	3 025	3 111	3 436	3 743	4 367	4 583	5 627
ACC											
Share	1.3%	1.2%	1.7%	2.9%	3.1%	3.0%	2.8%	2.9%	3.4%	4.1%	4.1%
Renewables	3 035	2 683	3 618	6 168	6 333	6 324	6 202	6 262	6 946	8 094	8 019
Biomass	1 918	1 693	2 628	5 069	5 059	4 985	4 975	5 026	5 542	6 757	6 656
Hydro	1 117	990	989	1 099	1 274	1 339	1 227	1 235	1 406	1 330	1 354
Other	0	0	0	0	0	0	0	0	0	4	5

Data Source: Eurostat, Energy Statistics

Note: "Other" include: Solar, Geothermal and Wind

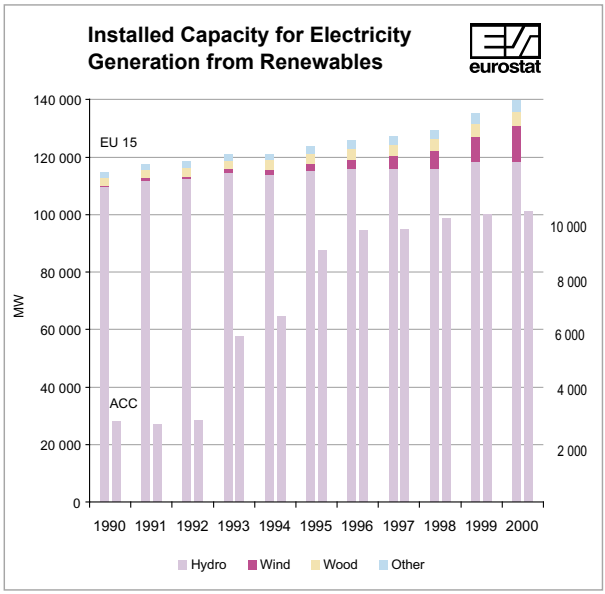
The EU 15 gross inland consumption from renewables rose by 32% over the period 1990-2000, but still made only a small contribution (5% in 1990 and 6% in 2000) to total gross inland consumption. In 2000, the most significant contribution was that of biomass (accounting for 62% of gross inland consumption from renewables), followed by hydro (32%) and other (6%).
The other renewable energy sources (solar, geothermal and wind) increased by 132% over the period 1990-2000, mainly due to the rapid increase of wind power.
For the acceding countries, the share of gross inland consumption from renewables in total gross inland consumption was 4.1% in 2000, less than in the Member States. For these countries too, biomass had the highest contribution (83%), followed by hydro (17%). In the acceding countries, other renewable sources made a lower contribution to gross inland consumption.

Installed Capacity for Electricity Generation from Renewables

(MW)

	Total		Hydro		Wind		Wood		Other	
	1990	2000	1990	2000	1990	2000	1990	2000	1990	2000
B	1 405	1 597	1 400	1 404	5	10	:	47	0	136
DK	413	3 184	10	10	343	2 814	40	86	20	274
D	7 679	16 136	6 850	8 982	48	6 095	:	129	781	930
EL	2 414	3 194	2 410	2 967	2	226	-	-	2	1
E	16 379	20 058	16 230	17 716	7	2 067	115	138	27	137
F	24 990	26 273	24 990	25 594	0	56	:	340	0	283
IRL	520	656	520	525	0	116	-	-	0	15
I	19 368	21 456	18 770	20 346	3	116	4	0	591	994
L	1 139	1 162	1 130	1 139	0	14	-	-	9	9
NL	247	917	40	38	57	442	-	-	150	437
A	11 356	12 358	10 950	11 547	0	54	400	747	6	10
P	3 346	5 070	3 344	4 526	1	83	:	360	1	101
FIN	3 604	4 221	2 620	2 882	0	38	983	1 300	1	1
S	17 567	18 169	16 330	16 372	7	209	1 200	1 490	30	98
UK	4 309	5 234	4 170	4 273	10	174	:	133	129	654
EU 15	**114 736**	**139 685**	**109 764**	**118 321**	**483**	**12 514**	**2 742**	**4 770**	**1 747**	**4 080**
IS	802	1 236	756	1 064	-	-	-	-	46	172
NO	246	27 927	:	27 878	0	14	99	35	147	0
CZ	:	2 153	:	2 153	-	-	-	-	-	-
EE	:	:	:	:	:	:	-	-	-	-
CY	-	-	-	-	-	-	-	-	-	-
LV	:	1 538	:	1 536	0	2	-	-	-	-
LT	:	914	:	914	-	-	-	-	-	-
HU	48	48	48	48	-	-	-	-	-	-
MT	-	-	-	-	-	-	-	-	-	-
PL	1 976	2 187	1 976	2 183	0	4	-	-	-	-
SI	755	843	755	843	-	-	-	-	-	-
SK	:	2 420	:	2 420	-	-	-	-	-	-
ACC	**2 779**	**10 103**	**2 779**	**10 097**	**0**	**6**	**-**	**-**	**-**	**-**
BG	:	1 880	:	1 880	-	-	-	-	-	-
RO	5 657	6 120	5 657	6 120	-	-	-	-	0	0
TR	6 782	11 212	6 764	11 175	0	19	-	-	18	18
CC 13	**15 218**	**29 315**	**15 200**	**29 272**	**0**	**25**	**-**	**-**	**18**	**18**

Data Source: Eurostat, Energy Statistics



(MW)

EU 15	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**
Total	114 736	117 362	118 472	121 121	121 237	123 708	125 834	127 335	129 451	135 225	139 685
Hydro	109 764	112 070	112 356	114 499	113 956	115 223	115 708	115 985	115 962	118 236	118 321
Wind	483	657	906	1 244	1 676	2 477	3 395	4 605	6 220	8 731	12 514
Wood	2 742	2 762	3 120	3 123	3 352	3 574	3 826	3 721	3 981	4 608	4 770
Other *	1 747	1 873	2 090	2 255	2 253	2 434	2 905	3 024	3 288	3 650	4 080
ACC											
Total	2 779	2 721	2 845	5 753	6 457	8 738	9 432	9 479	9 875	10 012	10 103
Hydro	2 779	2 721	2 845	5 753	6 457	8 738	9 431	9 478	9 872	10 008	10 097
Wind	0	0	0	0	0	0	1	1	3	4	6
Wood	:	:	:	:	:	:	:	:	:	:	:
Other	:	:	:	:	:	:	:	:	:	:	:

Data Source: Eurostat, Energy Statistics

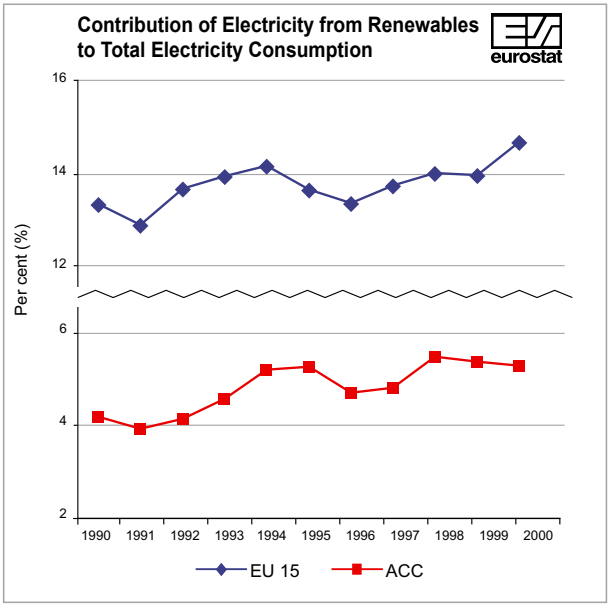
Note: "Other" includes: Municipal Solid Wastes, Biogas, Geothermal and Photovoltaic

Between 1990 and 2000 the EU 15 installed capacity for electricity generation from renewables increased by 21.7%. It can be seen that all types of capacity registered increases over this period. The most important increase was registered by wind capacity, accounting for 12.5 GW in 2000, compared with 0.5 GW in 1990.
The installed capacity of hydro plants was up only 8%. The capacity of wood-burning plants has increased by 74%, and a rather significant increase of 134% can be observed in other renewables.
In 2000, for the acceding countries, hydro represents almost all the installed capacity; the others (wind, wood and other) being lower or zero.

Contribution of Electricity from Renewables to Total Electricity Consumption

	(GWh) RES Electricity			Per cent (%) Share		
	1990	**1995**	**2000**	**1990**	**1995**	**2000**
B	766	948	1 324	1.1	1.2	1.5
DK	778	2 091	6 225	2.4	5.8	16.9
D	19 440	25 243	38 728	4.3	4.7	6.7
EL	1 770	3 563	4 144	5.0	8.4	7.7
E	26 015	24 587	36 046	17.2	14.3	15.7
F	54 771	75 085	70 878	14.6	17.7	15.0
IRL	697	729	1 186	4.8	4.1	4.9
I	35 012	41 615	51 511	13.9	14.9	16.0
L	113	137	199	2.1	2.2	2.9
NL	1 156	1 954	4 206	1.4	2.1	3.9
A	32 560	38 220	43 281	63.9	70.6	71.5
P	9 851	9 389	13 124	34.5	27.5	29.4
FIN	15 888	19 562	23 295	24.4	27.6	28.5
S	74 632	70 651	82 914	51.4	48.2	55.2
UK	5 762	6 903	10 390	1.7	2.0	2.7
EU 15	**279 211**	**320 677**	**387 451**	**13.4**	**13.7**	**14.7**
IS	300	290	1 323	3.4	3.0	9.4
NO	121 382	121 666	141 739	114.6	104.6	114.4
CZ	1 445	2 002	1 758	2.3	3.3	2.8
EE	:	2	18	0.0	0.0	0.2
CY	:	:	:	0.0	0.0	0.0
LV	4 496	2 937	2 823	43.9	47.1	47.7
LT	414	373	339	2.5	3.3	3.4
HU	178	163	178	0.4	0.4	0.5
MT	:	:	:	0.0	0.0	0.0
PL	1 874	2 236	2 659	1.4	1.6	1.9
SI	2 950	3 241	3 834	25.8	29.5	31.2
SK	1 880	4 961	4 726	6.4	17.9	16.9
ACC	**13 237**	**15 915**	**16 335**	**4.2**	**5.3**	**5.3**
BG	1 878	1 751	2 688	4.1	4.2	7.4
RO	16 980	16 696	14 778	23.0	28.0	28.8
TR	23 228	35 627	30 988	40.9	41.6	24.2
CC 13	**55 323**	**69 989**	**64 789**	**11.2**	**14.3**	**12.3**

Data Source: Eurostat, Energy Statistics



Per cent (%)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU 15	13.4	12.9	13.7	13.9	14.2	13.7	13.4	13.8	14.0	14.0	14.7
ACC	4.2	3.9	4.1	4.6	5.2	5.3	4.7	4.8	5.5	5.4	5.3

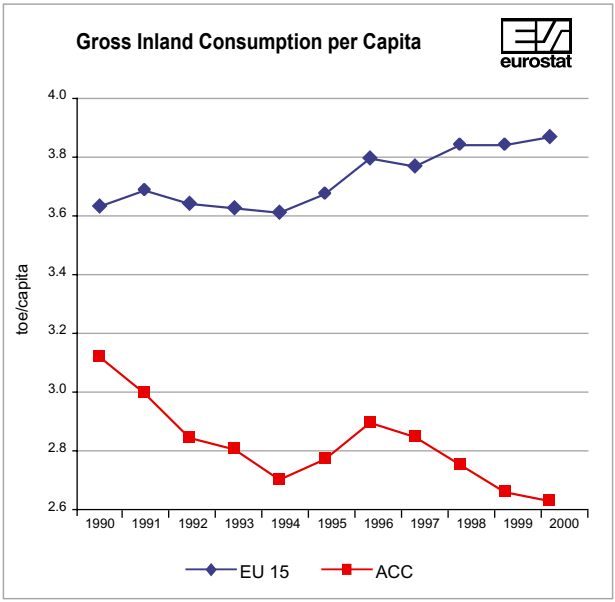
Data Source: Eurostat, Energy Statistics

The EU 15 contribution of electricity from renewables to total electricity consumption showed a small but regular increase over the period 1990-2000. In 2000 the share was 14.7%, compared with 13.4% in 1990. In 2000, EU 15 electricity generation from renewable sources was 388 TWh, with a large contribution from hydro power plants (83%).
In the acceding countries the contribution of electricity generation from renewables sources shrank compared with Member States, at 4.2% in 1990 and 3% in 2000. Also for these countries, the electricity generated from hydropower plants made a big contribution to the total (97% in 2000).

Gross Inland Consumption per Capita

	(toe/capita)			*Index (1990=100)*		
	1990	**1995**	**2000**	**1990**	**1995**	**2000**
B	4.75	4.98	5.58	100	105	117
DK	3.43	3.91	3.69	100	114	108
D	4.50	4.13	4.13	100	92	92
EL	2.20	2.31	2.66	100	105	121
E	2.29	2.61	3.09	100	114	134
F	3.94	4.08	4.38	100	104	111
IRL	2.92	3.06	3.71	100	105	127
I	2.73	2.84	3.05	100	104	112
L	9.36	8.20	8.33	100	88	89
NL	4.49	4.76	4.77	100	106	106
A	3.34	3.28	3.51	100	98	105
P	1.69	1.96	2.37	100	116	140
FIN	5.72	5.66	6.31	100	99	110
S	5.51	5.66	5.36	100	103	97
UK	3.68	3.73	3.86	100	101	105
EU 15	**3.63**	**3.67**	**3.87**	**100**	**101**	**107**
IS	8.72	8.02	11.58	100	92	133
NO	5.10	5.49	5.87	100	108	115
CZ	4.53	3.94	3.90	100	87	86
EE	6.31	3.43	3.33	100	54	53
CY	2.69	2.65	3.11	100	99	116
LV	1.54	1.47	1.54	100	96	100
LT	4.41	2.23	1.95	100	51	44
HU	2.70	2.46	2.48	100	91	92
MT	1.65	2.15	2.47	100	130	150
PL	2.63	2.59	2.33	100	99	89
SI	2.76	3.06	3.26	100	111	118
SK	3.91	3.13	3.10	100	80	79
ACC	**3.12**	**2.77**	**2.63**	**100**	**89**	**84**
BG	3.19	2.77	2.25	100	87	71
RO	2.64	1.98	1.65	100	75	62
TR	0.76	0.86	1.16	100	114	154
CC 13	**2.24**	**1.96**	**1.91**	**100**	**88**	**85**

Data Source: Eurostat, Energy Statistics, Social Statistics



(toe/capita)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU 15	3.63	3.68	3.64	3.62	3.61	3.67	3.79	3.77	3.84	3.84	3.87
ACC	3.12	2.99	2.84	2.80	2.70	2.77	2.89	2.85	2.75	2.66	2.63

Data Source: Eurostat, Energy Statistics, Social Statistics

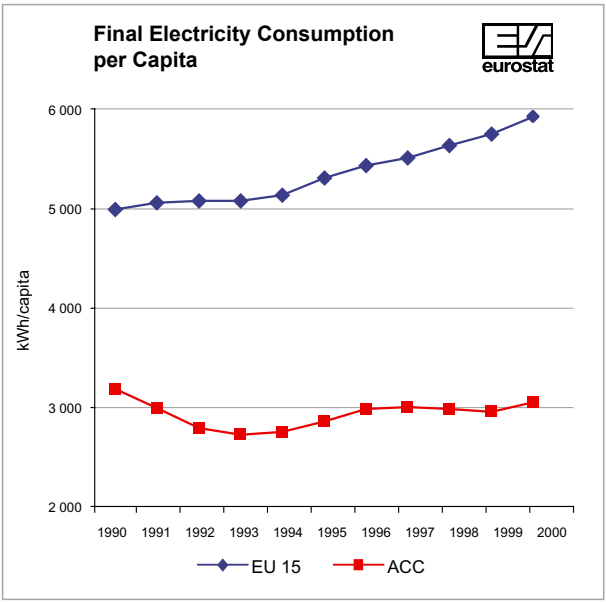
EU 15 gross inland consumption per capita showed a small increase of 7% in the period 1990-2000. It can be observed that from 1991 until 1994 the EU 15 gross inland consumption per capita fell steadily but after 1995 it began to rise again, reaching a peak of 3.87 toe per capita in 2000.

For the acceding countries, the gross inland consumption per capita fell by 16% over the period, reaching 2.63 toe per capita in 2000.

Final Electricity Consumption per Capita

	(kWh/capita)			*Index (1990=100)*		
	1990	**1995**	**2000**	**1990**	**1995**	**2000**
B	5 829	6 756	7 573	100	116	130
DK	5 699	5 989	6 090	100	105	107
D	5 644	5 550	5 874	100	98	104
EL	2 813	3 264	4 088	100	116	145
E	3 240	3 595	4 743	100	111	146
F	5 336	5 932	6 555	100	111	123
IRL	3 384	4 125	5 349	100	122	158
I	3 776	4 151	4 725	100	110	125
L	10 881	12 287	13 119	100	113	121
NL	4 937	5 386	6 174	100	109	125
A	5 613	5 805	6 403	100	103	114
P	2 373	2 877	3 763	100	121	159
FIN	11 849	12 808	14 589	100	108	123
S	14 114	14 130	14 526	100	100	103
UK	4 776	5 025	5 527	100	105	116
EU 15	**4 987**	**5 303**	**5 922**	**100**	**106**	**119**
IS	15 407	15 953	24 766	100	104	161
NO	22 869	23 863	24 490	100	104	107
CZ	4 649	4 648	4 802	100	100	103
EE	4 330	3 006	3 622	100	69	84
CY	2 598	3 046	3 969	100	117	153
LV	3 259	1 768	1 865	100	54	57
LT	3 200	1 709	1 669	100	53	52
HU	3 045	2 708	2 931	100	89	96
MT	2 582	3 408	4 740	100	132	184
PL	2 517	2 322	2 502	100	92	99
SI	4 879	4 717	5 293	100	97	108
SK	4 428	4 057	4 077	100	92	92
ACC	**3 181**	**2 857**	**3 048**	**100**	**90**	**96**
BG	4 023	3 404	2 946	100	85	73
RO	2 162	1 601	1 510	100	74	70
TR	800	1 057	1 434	100	132	179
CC 13	**2 261**	**2 055**	**2 217**	**100**	**91**	**98**

Data Source: Eurostat, Energy Statistics, Social Statistics



(kWh/capita)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU 15	4 987	5 055	5 074	5 077	5 139	5 303	5 428	5 513	5 637	5 748	5 922
ACC	3 181	2 986	2 788	2 722	2 749	2 857	2 983	3 003	2 980	2 957	3 048

Data Source: Eurostat, Energy Statistics, Social Statistics

Between 1990 and 2000, final electricity consumption per capita rose steadily, both for the EU 15 average and for each of the Member States. For the EU 15, the final electricity per capita registered the highest value over this period (5 922 kWh/head) in 2000. Sweden, Finland and Luxembourg have significantly higher values of this index, more than double the EU 15 average.

For the acceding countries the index fell from 1990 to 1994, but there seems to be a trend back to the previous values. So, in 2000 the final electricity per capita was 3 048 kWh, 2% less than the 1990 value.

Energy Intensity by Industrial Sector
EU 15 data

Iron and Steel Industry

Index (1990=100)

	1990	1995	2000
Final Energy Consumption	100	96	92
Value Added	100	106	101
Energy Intensity	100	91	91

Chemical Industry

Index (1990=100)

	1990	1995	2000
Final Energy Consumption	100	88	88
Value Added	100	112	133
Energy Intensity	100	79	66

Glass, Pottery and Building Materials Industry

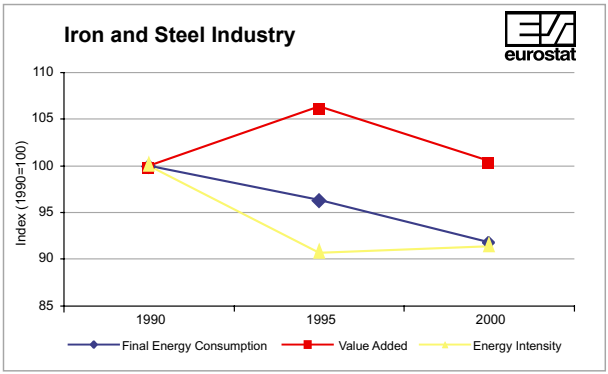
Index (1990=100)

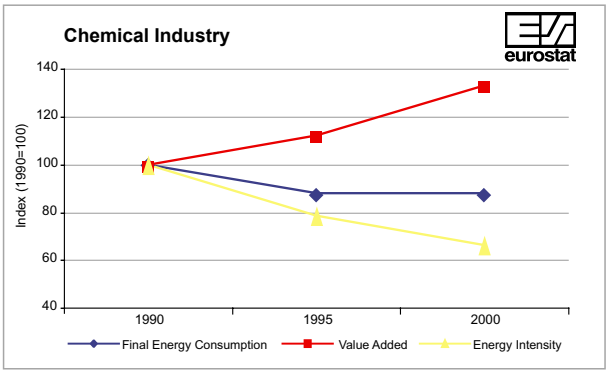
	1990	1995	2000
Final Energy Consumption	100	92	98
Value Added	100	96	107
Energy Intensity	100	96	92

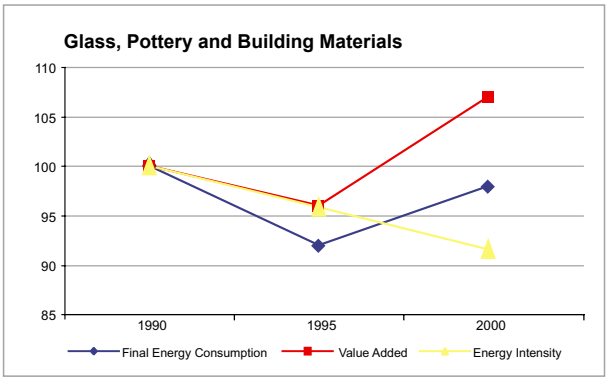
Data Source: Eurostat, Energy Statistics, Structural Business Statistics

The energy intensity of the high-consumption sectors (iron and steel, chemicals and glass, pottery and building materials) fell steadily over the period 1990-2000. This decrease is attributed to both the reduction of energy consumption and the increasing value added of each sector.

The fall in energy consumption is probably a sign of energy efficiency measures, but is also a result of change in the fuel mix for these industries; a cut of 33% in the use of solid fuels and 25% in the use of oil products, and a 19% increase in the use of gases (mainly natural gas) and a 4% increase in the use of electricity. The chemical industry is an interesting case since it exhibits an important increase of 33% in its value added and a corresponding decrease of 12% in energy consumption.







Data Source: Eurostat, Energy Statistics, Structural Business Statistics

Energy Intensity by Industrial Sector
EU 15 data

Paper and Printing Industry

Index (1990=100)

	1990	1995	2000
Final Energy Consumption	100	116	170
Value Added	100	100	126
Energy Intensity	100	116	135

Food, Drink and Tobacco Industries

Index (1990=100)

	1990	1995	2000
Final Energy Consumption	100	105	113
Value Added	100	104	122
Energy Intensity	100	101	93

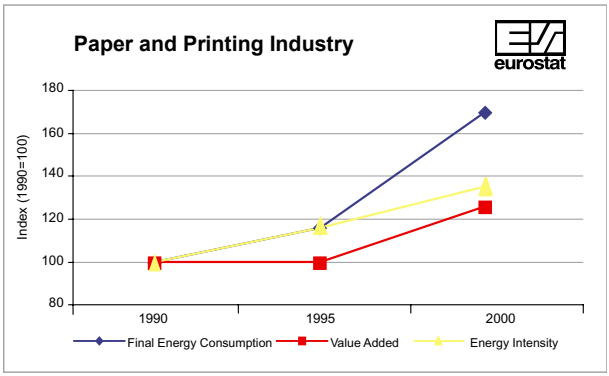
Textiles, Leather and Clothing Industries

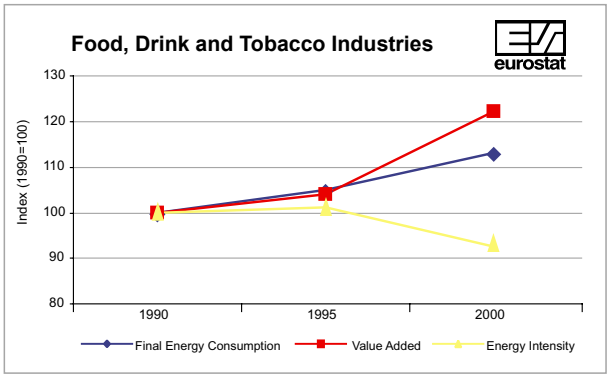
Index (1990=100)

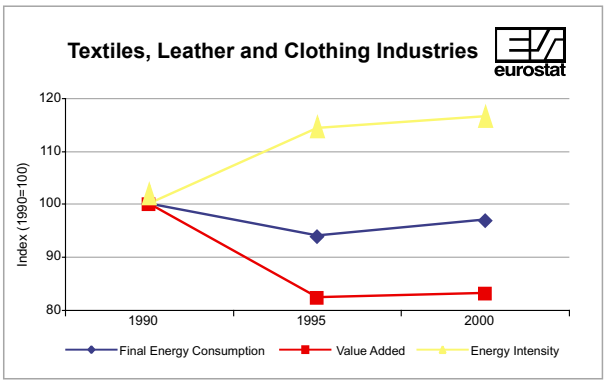
	1990	1995	2000
Final Energy Consumption	100	94	97
Value Added	100	82	83
Energy Intensity	100	114	117

Data Source: Eurostat, Energy Statistics, Structural Business Statistics

The final energy consumption of the paper and printing industry rose by 70% over the period 1990-2000 while the value added of the sector rose by only 26%, resulting in a rise in energy intensity. The energy intensity of the textile, leather and clothing industries also rose, but by only 17%. Remarkable is the change in the fuel mix for these industries too; 55% less use of solid fuels, 30% less use of oil products, 59% greater use of gases (mainly natural gas) and 27% greater use of electricity, while the increase in the use of all fuels was about 46% in the period 1990-2000.

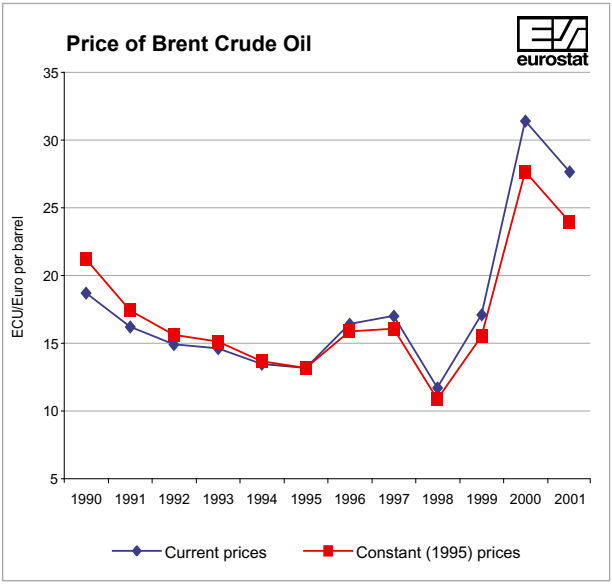






Data Source: Eurostat, Energy Statistics, Structural Business Statistics

Price of Brent Crude Oil



(ECU/Euro per barrel)

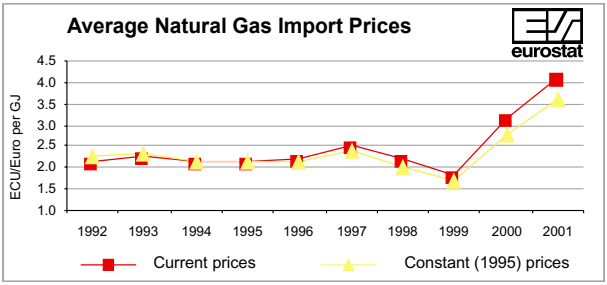
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Current prices	18.7	16.2	14.9	14.6	13.4	13.1	16.4	17.0	11.7	17.1	31.4	27.7
Constant (1995) prices	21.2	17.4	15.6	15.1	13.6	13.1	15.9	16.0	10.8	15.5	27.4	23.4

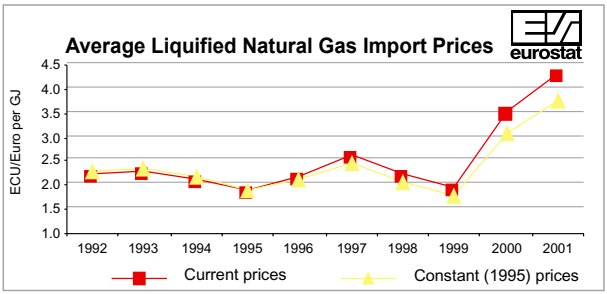
Data Source: Platt´s European Marketscan, BP Statistical Review

The average price of Brent crude oil remained relatively low over the period from 1990 to 1999. In 1990 the price of crude oil was high in response to concerns over security of supply relating to the Gulf War. The price subsequently fell by 29.9% (in current prices) over the next five years. Tensions in the Gulf led to prices rising again in 1996 and 1997. The dip in prices in 1998 has been attributed largely to the decrease in demand associated with the Asian economic crisis.

The OPEC decision to reduce oil production caused prices to start rising again in 1999. In 2000 the upward movement in oil prices continued as demand increased, through a combination of economic upturn and a cold winter in the United States. Although in 2001 Brent prices showed a downward trend the overall current price rise from 1990 to 2001 was 48%.

Average Gas Import Prices





(ECU/Euro per GJ)

Natural gas	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**
Current prices	2.16	2.27	2.12	2.14	2.22	2.53	2.21	1.86	3.17	4.15
Constant (1995) prices	2.26	2.35	2.15	2.14	2.14	2.39	2.04	1.68	2.79	3.59
Liquified natural gas (LNG)										
Current prices	2.22	2.29	2.15	1.90	2.19	2.65	2.26	1.98	3.53	4.33
Constant (1995) prices	2.31	2.37	2.19	1.90	2.12	2.49	2.09	1.80	3.11	3.75

Data Source: OECD/IEA

The average gas import prices for natural gas and LNG remained rather stable for the period from 1992 to 1998 in the EU 15 at around 2.2 Euro per GJ. After falling moderately in 1999 the gas import prices followed a sharp increase in the next two years showing the link to the crude oil prices.

Current prices for the 1992 to 2001 period for both natural gas and LNG almost doubled with percentage increases in the order of 92% and 95% respectively. This is probably attributed to the respective price increases of competing oil products. The average import price for LNG in the EU 15 is slightly higher than natural gas reflecting the higher transportation cost.

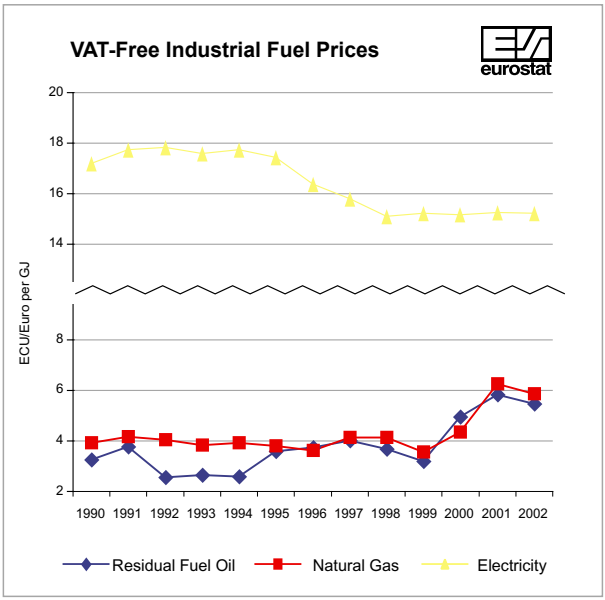
VAT-Free Industrial Fuel Prices

(ECU/Euro per GJ (NCV))

		B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	EU 15
Residual Fuel Oil	1990	2.90	3.85	3.22	3.17	3.19	3.01	3.46	3.56	3.02	4.23	:	3.49	:	:	2.98	**3.24**
	1995	2.86	3.27	3.06	3.89	3.59	3.54	3.34	3.61	3.08	4.10	2.93	3.70	:	8.18	3.04	**3.59**
	2000	3.55	4.87	3.88	5.23	4.86	4.13	:	4.74	3.94	5.00	4.12	5.12	5.19	10.47	:	**4.93**
	2001	3.97	5.62	4.11	5.92	6.10	4.73	:	5.33	4.52	5.50	4.77	7.35	5.55	13.34	:	**5.82**
	2002	3.53	5.75	4.24	4.91	5.26	4.77	:	5.06	3.64	5.05	4.21	6.18	6.94	11.73	:	**5.45**
Electricity	1990	15.97	12.17	20.65	15.33	19.67	13.75	14.56	16.67	13.42	12.11	:	17.81	:	:	15.78	**17.18**
	1995	16.75	13.03	22.31	13.39	17.14	15.58	14.06	17.33	13.42	13.17	19.11	18.19	12.28	:	14.40	**17.41**
	2000	15.36	:	15.19	13.33	15.64	13.64	14.72	20.03	12.39	:	:	14.58	10.56	7.86	16.00	**15.14**
	2001	15.89	:	14.83	13.33	14.28	13.39	14.75	23.56	10.94	:	:	14.72	10.47	6.75	14.78	**15.23**
	2002	16.22	:	14.76	13.89	13.61	13.53	18.00	23.11	11.14	:	:	15.44	11.33	7.28	14.56	**15.21**
Natural Gas	1990	3.89	:	5.03	:	3.82	3.40	2.53	3.43	4.33	3.15	:	:	:	:	3.75	**3.92**
	1995	3.66	3.52	4.86	:	3.12	3.17	:	3.64	4.28	3.39	:	:	2.92	:	3.43	**3.80**
	2000	4.05	4.76	4.94	:	4.33	4.25	:	4.45	5.36	4.08	6.08	:	4.81	:	3.31	**4.35**
	2001	6.15	6.16	7.85	:	5.98	6.11	:	6.49	7.34	:	7.36	:	5.80	9.36	3.91	**6.29**
	2002	4.96	4.81	7.30	:	4.65	4.78	5.01	5.80	5.69	:	6.53	4.63	5.44	8.59	5.66	**5.84**

Current prices

Data Source: Eurostat



(ECU/Euro per GJ)

EU 15	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Residual Fuel Oil	3.24	3.75	2.54	2.62	2.58	3.59	3.72	4.00	3.66	3.18	4.93	5.82	5.45
Natural Gas	3.93	4.15	4.03	3.83	3.90	3.80	3.60	4.11	4.14	3.54	4.33	6.25	5.84
Electricity	17.17	17.73	17.82	17.58	17.73	17.41	16.35	15.78	15.08	15.22	15.14	15.23	15.21

Current prices

Data Source: Eurostat

Between 1990 and 2002, industrial fuel current prices net of VAT (Value Added Tax) rose in the case of natural gas and residual fuel oil (by 49% and 68% respectively) but fell by 11% in the case of electricity.

The price of natural gas remained rather stable over the period 1990 to 2000 with a notable increase in the last two years of 2001-02. The price of residual fuel oil is even more closely linked to world oil prices, and therefore rose particularly strongly in 2000, a trend that continued in 2001 followed with a small decline in 2002.

The 11% increase in the price of electricity over the period of 1990 to 2002 is principally manifested in the last seven years. This reflects the move towards cheaper fuels for electricity generation such as natural gas and greater competition in electricity markets as a result of energy market liberalisation in Member States.

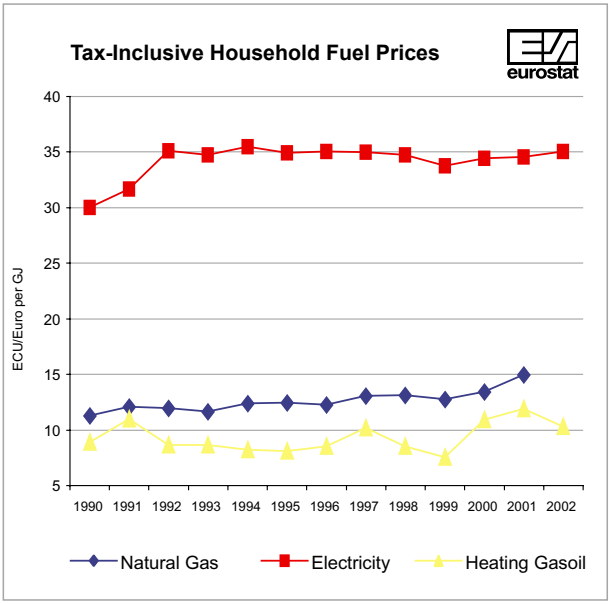
Tax-Inclusive Household Fuel Prices

(ECU/Euro per GJ)

		B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	**EU 15**
Heating Gasoil	1990	5.34	14.57	6.28	5.42	7.29	9.23	7.44	16.03	6.19	8.38	:	:	:	:	5.84	**8.88**
	1995	4.88	14.53	5.88	8.66	6.95	8.47	6.04	16.92	5.40	8.05	8.63	:	:	12.98	4.86	**8.02**
	2000	7.65	18.77	9.00	7.65	9.88	11.30	11.14	22.13	7.70	13.48	10.86	9.19	9.55	15.05	8.07	**10.88**
	2001	9.02	19.24	10.37	8.64	10.80	11.21	13.81	22.60	8.52	16.24	11.38	9.88	12.48	18.47	8.88	**11.91**
	2002	7.50	18.28	8.60	8.32	9.32	8.63	10.93	22.43	7.15	15.17	10.22	9.87	9.18	17.82	6.92	**10.28**
Electricity	1990	31.94	34.89	32.57	22.03	28.81	30.33	22.72	41.67	27.47	24.03	:	25.78	:	:	21.74	**29.97**
	1995	37.61	38.19	40.47	22.08	31.25	35.00	22.39	50.78	30.42	25.14	:	32.58	20.39	:	25.75	**34.90**
	2000	36.67	51.11	39.03	19.06	27.81	32.14	23.86	51.33	30.17	39.44	34.31	30.94	20.78	26.44	28.11	**34.04**
	2001	37.69	53.97	40.25	19.03	26.69	31.44	23.86	54.81	31.47	47.19	36.94	31.08	20.47	26.89	26.53	**34.56**
	2002	37.31	57.61	42.00	19.72	26.69	31.75	26.00	51.42	32.83	45.42	37.08	31.75	21.92	29.19	27.31	**35.02**
Natural Gas	1990	8.45	:	8.00	:	11.29	8.84	9.94	13.18	5.39	6.93	:	:	:	:	6.39	**8.53**
	1995	9.72	:	9.86	:	11.15	9.35	8.92	15.19	6.06	8.21	:	:	:	:	7.13	**9.99**
	2000	10.46	20.16	10.17	:	11.80	9.18	9.10	17.34	6.69	10.04	11.85	:	:	14.44	7.74	**10.98**
	2001	13.16	24.45	13.69	:	14.25	11.01	9.10	20.14	8.99	11.73	13.16	:	:	17.90	7.32	**12.80**
	2002	11.68	19.98	13.17	:	13.48	12.01	9.09	18.90	7.82	12.83	13.16	15.39	:	19.18	7.75	**12.63**

Current prices

Data Source: Eurostat



(ECU/Euro per GJ)

EU 15	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Natural Gas	11.28	12.06	11.96	11.62	12.38	12.43	12.26	13.05	13.11	12.72	13.42	14.95	:
Electricity	29.97	31.65	35.11	34.74	35.47	34.90	35.02	34.99	34.71	33.74	34.41	34.56	35.02
Heating Gasoil	8.89	10.98	8.65	8.59	8.21	8.04	8.50	10.14	8.50	7.54	10.88	11.91	10.28

Current prices

Data Source: Eurostat

Note: Prices refer to consumers D2 with annual consumption less than 16.74 GJ (4 652 kWh)

The tax-inclusive prices of all domestic (housing) fuels increased between 1990 and 2002. Unlike industrial fuel prices, household fuel prices are, among other things, affected by weather conditions, with colder years pushing up demand and prices.

Over the observation period (1990-2002), the current price of electricity increased by 17%, although has remained stable since 1992. The current price of heating gas oil in the same period increased by 16%, while for the period 1990 to 2001 the price for natural gas increased by 33%. In 2000 and 2001 natural gas and heating gas oil prices increased strongly as a result of increases in oil prices.

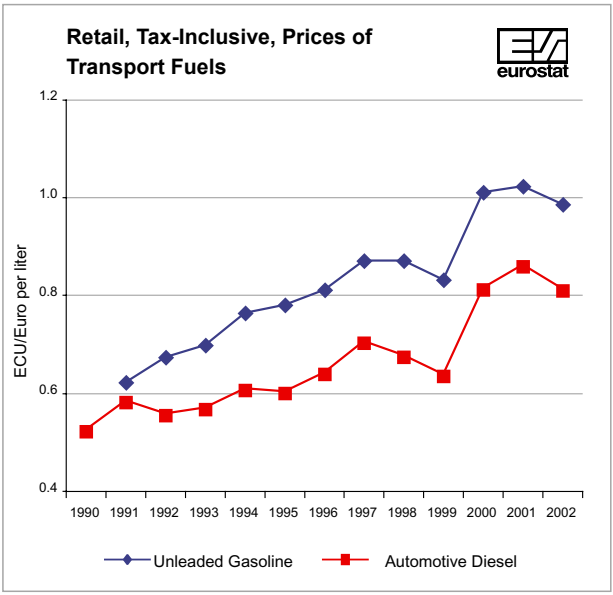
Retail, Tax-Inclusive, Prices of Transport Fuels

(ECU/Euro per liter)

		B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	**EU 15**
Unleaded Gasoline	1990	:	:	:	:	:	:	:	:	:	0.69	:	:	:	:	0.53	**:**
	1995	0.78	0.75	0.81	0.64	0.64	0.85	0.69	0.79	0.63	0.87	0.76	0.79	:	0.82	0.68	**0.78**
	2000	0.96	1.00	0.96	0.67	0.75	1.04	0.82	1.01	0.74	1.06	0.87	0.80	1.06	1.00	1.22	**1.01**
	2001	1.00	1.07	0.97	0.72	0.79	1.00	0.95	1.04	0.78	1.14	0.87	0.91	1.09	1.04	1.21	**1.02**
	2002	0.95	1.04	0.99	0.69	0.77	0.96	0.80	1.00	0.74	1.10	0.82	0.86	1.00	0.95	1.13	**0.99**
Automotive Diesel	1990	0.51	0.59	0.52	0.20	0.45	0.52	0.72	0.61	0.36	0.47	0.00	0.47	0.00	0.00	0.54	**0.53**
	1995	0.62	0.62	0.59	0.47	0.51	0.59	0.66	0.63	0.51	0.61	0.62	0.54	0.00	0.78	0.69	**0.60**
	2000	0.73	0.82	0.76	0.62	0.62	0.81	0.77	0.84	0.63	0.78	0.73	0.55	0.77	0.81	1.26	**0.81**
	2001	0.73	0.82	0.82	0.64	0.73	0.80	0.94	0.91	0.64	0.83	0.77	0.65	0.87	0.86	1.29	**0.86**
	2002	0.72	0.80	0.81	0.60	0.67	0.75	0.74	0.84	0.62	0.77	0.70	0.65	0.78	0.80	1.21	**0.81**

Current prices

Data Source: Eurostat



(ECU/Euro per liter)

EU 15	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Unleaded Gasoline	:	0.621	0.673	0.697	0.763	0.780	0.811	0.871	0.871	0.832	1.011	1.024	0.987
Automotive Diesel	0.525	0.585	0.558	0.571	0.609	0.602	0.642	0.707	0.677	0.638	0.814	0.862	0.812

Current prices
Data Source: Eurostat

Between 1991 and 2002 the retail (tax inclusive) price of unleaded gasoline rose by 59% while the price of diesel increased by 39% respectively. The price of unleaded gasoline was kept low during the early 1990s to encourage conversion from leaded to unleaded motor spirit. However, as an average, diesel prices remained about 25% cheaper than unleaded gasoline prices.

Both types of fuel exhibited analogous trends, with similar volatility over the period 1990 to 1999 reflecting global oil market price developments. In 2000, the price of unleaded gasoline and diesel increased due to the rapid rise in world oil prices and remained rather high for the next two years.

TRANSPORT INDICATORS

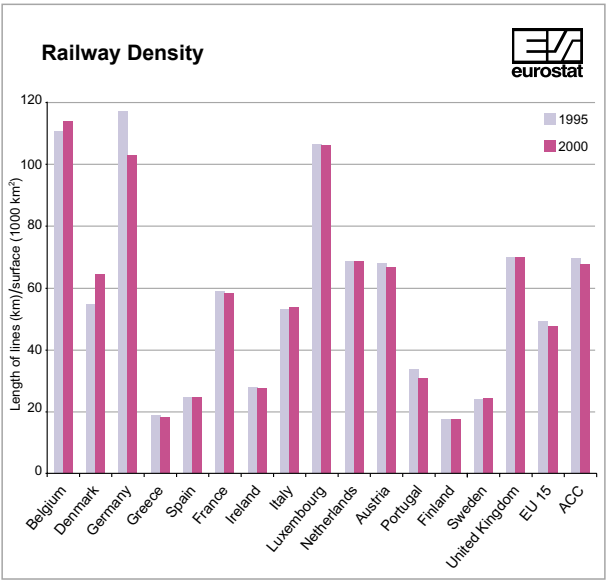
Railway Density

Length of lines (km)/surface (1000 km²)

	1995	1996	1997	1998	1999	2000
Belgium	110	111	112	114	114	114
Denmark	55	55	52	53	64	64
Germany	117	114	108	107	105	102
Greece	19	19	19	17	17	18
Spain	24	24	24	24	24	24
France	59	59	58	58	58	58
Ireland	28	28	27	27	27	27
Italy	53	53	53	53	53	54
Luxembourg	106	106	106	106	106	106
Netherlands	69	69	68	68	68	68
Austria	68	68	68	67	67	66
Portugal	33	33	33	30	31	31
Finland	17	17	17	17	17	17
Sweden	24	24	24	24	24	*24*
United Kingdom	70	70	70	70	70	70
EU 15	**49**	**49**	**48**	**48**	**48**	**47**
Iceland	-	-	-	-	-	-
Liechtenstein *	119	119	119	119	119	119
Norway	12	12	12	12	12	13
Switzerland	72	72	*73*	*75*	76	*76*
Czech Republic	120	120	120	120	120	120
Estonia	23	23	23	21	21	21
Cyprus	-	-	-	-	-	-
Latvia	37	37	37	37	37	37
Lithuania	31	31	31	31	29	29
Hungary	82	82	82	82	82	82
Malta	-	-	-	-	-	-
Poland	77	75	75	74	73	72
Slovenia	59	59	59	59	59	59
Slovakia	75	75	75	75	75	75
ACC	**70**	**69**	**69**	**68**	**68**	**67**
Bulgaria	39	39	39	39	39	39
Romania	48	48	48	46	46	46
Turkey	11	11	11	11	11	11
CC 13	**40**	**40**	**40**	**40**	**40**	**40**

* The 19km of railways in Liechtenstein are operated by the Austrian railways

Data Source: Eurostat, DG for Energy and Transport



Data Source: Eurostat, DG for Energy and Transport

In the EU 15 there has been a slight decrease in the density of railway lines over the time surveyed. This tendency is not related to a drop in railway traffic and transport, but rather to a more efficient use of the network and disbanding of not frequently used lines. The highest density is to be found in the Benelux countries and in Germany. The lowest density can be found in Finland and Greece. Finland is a typical case of a country with low population density, while the low railway density for Greece is mainly due to the geographical characteristics features of the country. Iceland has no railways and Norway a very low density, whereas Switzerland is well above the EU average.

The average density for the acceding countries is 67 km/1000km^2, which is higher than the EU 15 average; the Czech Republic has a density that is even higher than the one offered by Belgium. Malta and Cyprus do not have any railways.

Finally, among the candidate countries the value registered for Romania is very close to the EU 15 average, while Turkey has the lowest density of all countries surveyed.

Motorway Density

Length(km)/surface (1000 km²)

	1995	1996	1997	1998	1999	2000
Belgium	55	55	55	55	55	56
Denmark	18	19	20	20	21	22
Germany	31	31	32	32	32	33
Greece	3	4	*4*	*4*	*4*	5
Spain	14	14	15	16	18	18
France	15	16	16	17	18	18
Ireland	1	1	1	1	1	1
Italy	21	21	21	21	21	21
Luxembourg	44	44	44	44	44	44
Netherlands	54	54	57	54	56	56
Austria	19	19	19	19	19	19
Portugal	7	8	9	14	16	16
Finland	1	1	1	1	2	2
Sweden	3	3	3	4	4	4
United Kingdom	14	14	14	14	15	15
EU 15	**14**	**15**	**15**	**15**	**16**	**16**
Iceland	-	-	-	-	-	-
Liechtenstein	-	-	-	-	-	-
Norway	0	0	0	0	0	0
Switzerland *	29	30	30	31	31	31
Czech Republic	5	5	6	6	6	6
Estonia	1	1	2	2	2	2
Cyprus	18	21	22	22	23	26
Latvia	-	-	-	-	-	-
Lithuania	6	6	6	6	6	6
Hungary	4	4	4	5	5	5
Malta	-	-	-	-	-	-
Poland	1	1	1	1	1	1
Slovenia	14	15	16	18	20	21
Slovakia	4	4	4	6	6	6
ACC	**3**	**3**	**3**	**3**	**4**	**4**
Bulgaria	3	3	3	3	3	3
Romania	0	0	0	0	0	0
Turkey	2	2	2	2	2	2
CC 13	**2**	**2**	**2**	**3**	**3**	**3**

* only state motorways

Data Source: Eurostat, DG for Energy and Transport

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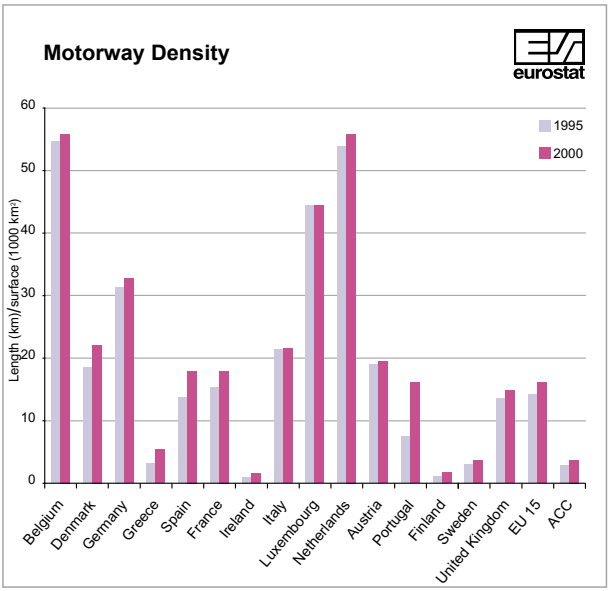


Data Source: Eurostat, DG for Energy and Transport

Over the years there has been a stable increase of motorway density in the EU 15. As for railways, the highest density is to be found in the Benelux countries and in Germany, whereas the more scarcely populated countries on the outskirts of the EU 15 have a lower density. To give an extreme example, we can cite the Netherlands and Belgium on one hand with 56km/1000km^2 and on the other side Ireland and Finland with 1 and 2km/1000km^2 respectively. To be noted also is the increase in Portugal, Spain and Greece over the latest years. Iceland is an exception together with Liechtenstein with no motorways. Norway has the lowest density within the EEA area, whereas Switzerland is well above the EU average with 31km/1000km^2.

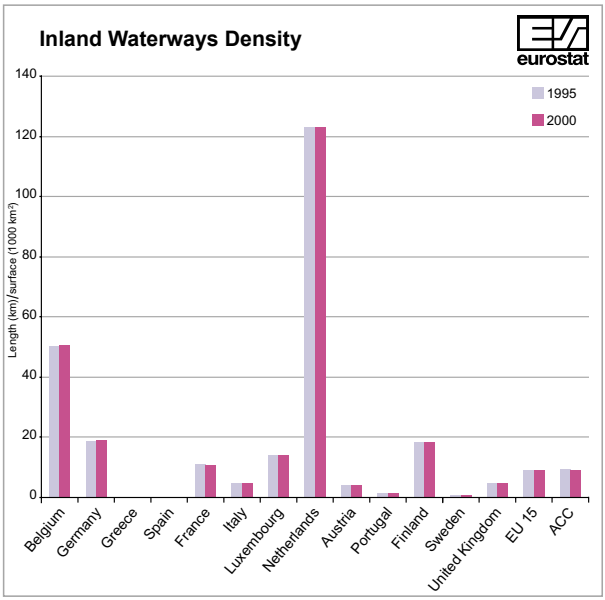
For the acceding countries and the candidate countries, motorway density is rather low (one fourth of the EU 15 average), with the exception of Cyprus and Slovenia, which have densities much higher than the EU 15 average. These countries also recorded a high increase of density during the period surveyed. Latvia and Malta do not have any motorways.

Inland Waterways Density

Length(km)/surface (1000 km²)

	1995	1996	1997	1998	1999	2000
Belgium	50	50	50	51	*51*	*51*
Denmark	-	-	-	-	-	-
Germany	19	19	19	19	19	19
Greece	0	0	0	*0*	*0*	*0*
Spain	*0*	*0*	*0*	*0*	*0*	*0*
France	11	10	11	11	10	11
Ireland	-	-	-	-	-	-
Italy	*5*	5	5	5	5	5
Luxembourg	14	14	14	14	14	14
Netherlands	123	123	123	123	*123*	*123*
Austria	4	4	4	4	4	4
Portugal	1	1	1	*1*	*1*	*1*
Finland	19	19	19	19	19	19
Sweden	1	1	1	*1*	*1*	*1*
United Kingdom	5	5	5	5	5	5
EU 15	**9**	**9**	**9**	**9**	**9**	**9**
Iceland	-	-	-	-	-	-
Liechtenstein	-	-	-	-	-	-
Norway	-	-	-	-	-	-
Switzerland	*18*	*18*	*18*	*18*	18	*18*
Czech Republic	9	9	9	8	8	8
Estonia	7	7	7	7	7	7
Cyprus	-	-	-	-	-	-
Latvia	-	-	-	-	-	-
Lithuania	6	6	6	6	6	6
Hungary	15	15	15	15	15	15
Malta	-	-	-	-	-	-
Poland	13	12	12	12	12	12
Slovenia	-	-	-	-	-	-
Slovakia	4	4	4	4	4	4
ACC	**9**	**9**	**9**	**9**	**9**	**9**
Bulgaria	4	4	4	4	4	4
Romania	7	7	7	7	7	7
Turkey	-	-	-	-	-	-
CC 13	**5**	**5**	**5**	**5**	**5**	**5**

Data Source: Eurostat, DG for Energy and Transport



DataSource: Eurostat, DG for Energy and Transport

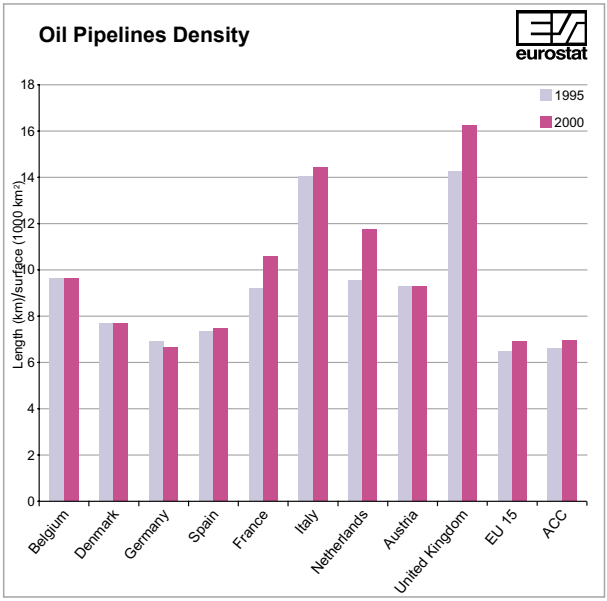
The inland waterway density was almost constant in the EU 15 in the period 1995-2000 but showed a decrease of 11% in the period of the last 3 decades. This network is very unbalanced, with some countries completely lacking inland waterways and, on the other hand, such countries as the Netherlands that have a very long waterway system. This leads to the exceptionally high density of 123km/1000km^2 compared with 9km/1000km^2 which is the average within the EU 15. The average value for the acceding countries is also 9km/1000km^2 with high values recorded in Latvia, Lithuania and Hungary, and the average for the candidate countries is 5km/1000km^2. To be noted is that some of the countries do not use their network for inland waterway transport.

Oil Pipelines Density

Length(km)/ surface (1000 km²)

	1995	1996	1997	1998	1999	2000
Belgium	10	10	10	10	10	*10*
Denmark	8	8	8	8	8	*8*
Germany	7	7	7	7	7	7
Greece	-	-	-	-	-	-
Spain	7	7	7	7	7	7
France	9	9	11	11	11	11
Ireland	-	-	-	-	-	-
Italy	14	14	14	14	14	14
Luxembourg	-	-	-	-	-	-
Netherlands	10	*10*	*10*	*12*	12	*12*
Austria	9	9	9	9	9	9
Portugal	-	-	-	-	-	-
Finland	-	-	-	-	-	-
Sweden	-	-	-	-	-	-
United Kingdom	14	14	16	16	16	16
EU 15	**6**	**6**	**7**	**7**	**7**	**7**
Iceland	-	-	-	-	-	-
Liechtenstein	-	-	-	-	-	-
Norway	11	13	14	18	21	24
Switzerland	6	6	3	3	3	3
Czech Republic	7	9	9	9	9	9
Estonia	-	-	-	-	-	-
Cyprus	-	-	-	-	-	-
Latvia	12	12	12	12	12	12
Lithuania	6	6	6	6	8	8
Hungary	9	9	9	9	9	9
Malta	-	-	-	-	-	-
Poland	7	7	7	7	7	7
Slovenia	-	-	-	-	-	-
Slovakia	-	-	-	-	-	-
ACC	**7**	**7**	**7**	**7**	**7**	**7**
Bulgaria	5	5	5	5	5	5
Romania	15	15	19	19	19	19
Turkey	1	3	3	3	3	3
CC 13	**5**	**6**	**7**	**7**	**7**	**7**

Data Source: Eurostat, DG for Energy and Transport



Data Source: Eurostat, DG for Energy and Transport

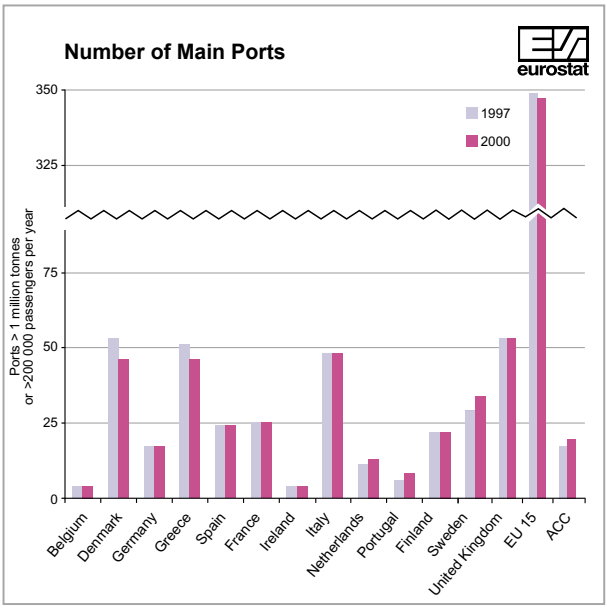
Oil pipelines do not have a negligible length; the average density for the EU 15 is 7km/1000km^2, which is the same as the average for the acceding countries and the candidate countries. There is a clear link that the oil producing countries normally report the densest network. The UK has the highest density among the EU 15 countries (16km/1000km^2) and Norway has the highest density in the EEA area with 24km/1000km^2. Latvia has a value of 12km/1000km^2, which could be considered rather high and Romania reports 19km/1000km^2. Please note that only data on oil pipelines are collected and that oil pipelines between the land and drilling platforms at sea are included.

Number of Main Ports

Ports handling more than 1 million tonnes per year or with more than 200 000 passengers movements per year

	1997	1998	1999	2000
Belgium	4	4	4	4
Denmark	53	50	46	46
Germany	17	17	17	17
Greece	51	54	55	46
Spain	24	24	24	24
France	25	26	25	25
Ireland	4	4	4	4
Italy	48	51	47	48
Luxembourg	-	-	-	-
Netherlands	11	13	13	13
Austria	-	-	-	-
Portugal	6	6	6	8
Finland	22	22	21	22
Sweden	29	29	34	34
United Kingdom	54	54	54	54
EU 15	**348**	**354**	**350**	**345**
Iceland	1	1	1	1
Liechtenstein	-	-	-	-
Norway	:	:	:	:
Switzerland	-	-	-	-
Czech Republic	-	-	-	-
Estonia	2	3	3	5
Cyprus	2	2	2	2
Latvia	3	3	3	3
Lithuania	1	1	1	1
Hungary	-	-	-	-
Malta	3	3	3	3
Poland	5	5	5	5
Slovenia	1	1	1	1
Slovakia	-	-	-	-
ACC	**17**	**18**	**18**	**20**
Bulgaria	4	4	4	4
Romania	2	2	2	2
Turkey	17	15	14	17
CC 13	**40**	**39**	**38**	**43**

Data Source: Eurostat



Data Source: Eurostat

At EU level, there are 345 ports handling over 1 million tonnes of freight or 200 000 passengers per year. In 2000, the five most important ports (Rotterdam - NL, Antwerp - B, Marseille - F, Hamburg - D and Le Havre - F) were responsible for 22% of the total freight handled in the European Union.

The largest number of ports are to be found in the UK, Italy, Greece and Denmark. The acceding countries have 20 main ports while the candidate countries have 43 ports, 17 of which are located in Turkey.

Number of Main Commercial Airports

Commercial Airports with >150 000 passenger units movements per year*

	2001
Belgium	4
Denmark	7
Germany	24
Greece	18
Spain	33
France	35
Ireland	5
Italy	28
Luxembourg	1
Netherlands	4
Austria	6
Portugal	8
Finland	10
Sweden	23
United Kingdom	29
EU 15	**235**
Iceland	3
Liechtenstein	-
Norway	16
Switzerland	5
Czech Republic	2
Estonia	1
Cyprus	2
Latvia	1
Lithuania	1
Hungary	1
Malta	1
Poland	6
Slovenia	1
Slovakia	1
ACC	**17**
Bulgaria	3
Romania	3
Turkey	15
CC 13	**38**

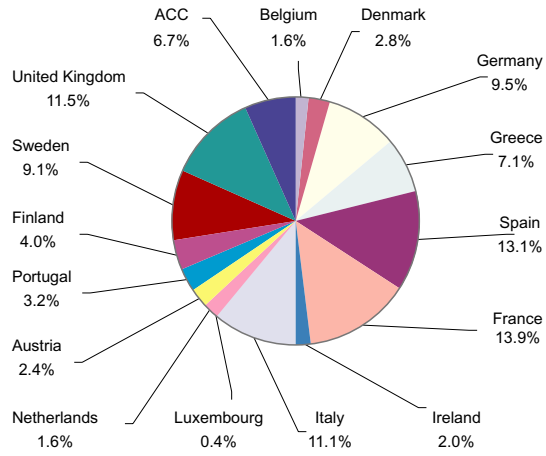
* One passenger unit is equivalent to either one passenger or 100 kg of freight and mail

Data Source: Eurostat

eurostat

Number of Main Commercial Airports

(Total EU-15 + ACC-10 = 252 airports)



Data Source: Eurostat

The vast majority of the commercial passengers or freight/mail transported by air embark, disembark or have direct transit in airports with more than 150 000 passenger units movements per year.
It is interesting to stress the important concentration in this field: more than 10% of the EU 15 passengers embark or disembark in the single airport of London/Heathrow which is, with more than 60 million passengers per year, the most important airport in Europe and the top 25 airports in EU 15 represent about 75% of the total number of passengers. The remaining 25% being shared between the 210 other airports in EU 15.

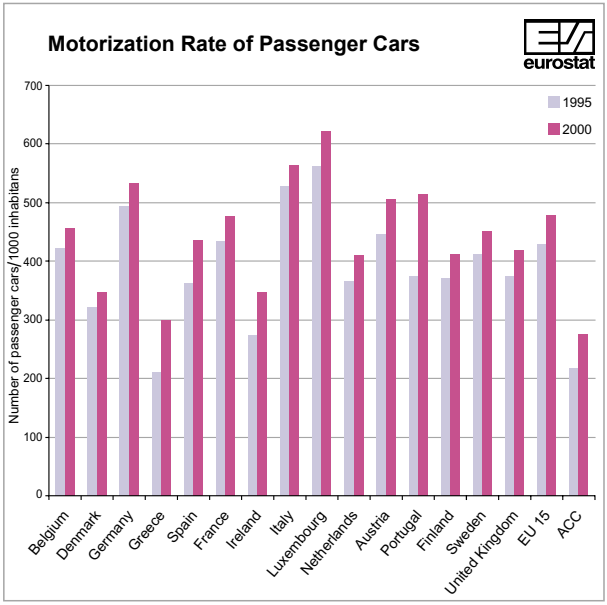
The number of "main commercial airports" in a specific country depends more on its surface and number of islands than on the population: Germany which has, by far, the most important population in Europe, is only in fourth position in terms of number of main airports whereas Sweden which has almost 10 times less inhabitants than Germany but whose surface is a bit larger, almost has the same number of "main airports". The density of airports in the 10 acceding countries is nevertheless about 3 times less important than in the EU 15 countries (the weight of acceding countries compared to EU 15 is about 23% in terms of surface, but only 7% in terms of number of main airports).
All 10 acceding countries taken together have less main commercial airports (17 main commercial airports) than 7 individual EU countries.

Motorization Rate of Passenger Cars

Number of passenger cars/1000 inhabitants

	1995	1996	1997	1998	1999	2000
Belgium	422	427	*430*	440	448	456
Denmark	321	330	337	343	346	347
Germany	495	500	504	508	516	532
Greece	211	223	238	254	275	*300*
Spain	362	376	389	407	425	437
France	434	439	448	459	469	476
Ireland	274	291	309	322	338	347
Italy	529	531	535	548	556	564
Luxembourg	561	553	580	593	608	623
Netherlands	366	374	380	390	401	411
Austria	447	458	469	481	496	505
Portugal	374	398	424	453	485	514
Finland	372	379	379	392	403	412
Sweden	411	413	418	428	439	451
United Kingdom	375	388	397	404	414	420
EU 15	**430**	**438**	**446**	**456**	**467**	**478**
Iceland	445	465	487	511	544	565
Liechtenstein	612	622	638	646	656	*600*
Norway	387	379	399	403	407	412
Switzerland	459	462	469	476	485	493
Czech Republic	295	309	329	339	334	335
Estonia	258	277	293	311	326	339
Cyprus	300	307	316	333	341	354
Latvia	132	153	175	197	218	235
Lithuania	193	212	238	265	294	317
Hungary	220	222	226	219	224	*240*
Malta	488	446	490	463	480	490
Poland	195	209	221	230	240	259
Slovenia	357	373	392	410	428	437
Slovakia	189	197	211	222	229	236
ACC	**217**	**229**	**243**	**252**	**261**	**275**
Bulgaria	196	204	208	219	232	244
Romania	97	106	116	125	133	139
Turkey	*51*	54	58	61	64	68
CC 13	**140**	**147**	**156**	**162**	**168**	**177**

Data Source: Eurostat, DG for Energy and Transport



Data Source: Eurostat, DG for Energy and Transport

The number of passenger cars per 1000 inhabitants has continually increased from 394 in 1990, 430 in 1995 to 478 in 2000 in EU 15. This is generally accepted as one way of measuring the standard of living. The highest level of 623 in 2000 is to be found in Luxembourg, while the lowest of roughly 300 is found in Greece. Between 1995 and 2000, the highest increase in the number of cars per 1000 inhabitants was reported by Greece with 42%, Portugal 37%, Ireland 26% and Spain 20%. This is mainly believed to be associated with the general growth of the economy of these countries.

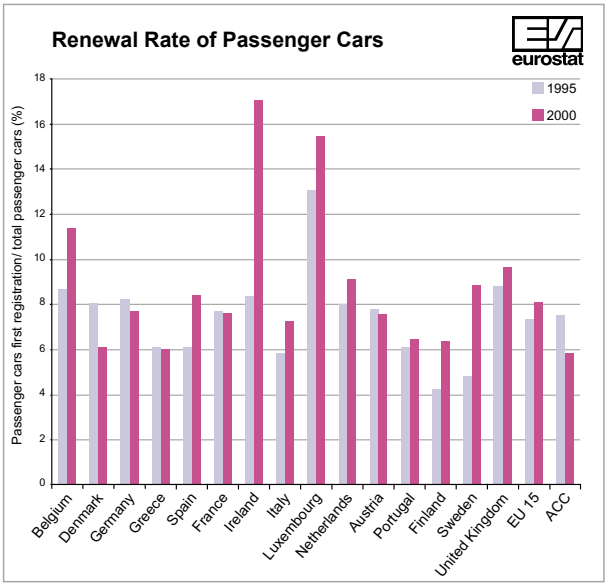
The average value for the EFTA countries was 465 passenger cars per 1000 inhabitants, which is very close to the EU 15 average.
For the acceding countries the corresponding value was 275, and for the candidate countries it was 177 passenger cars per 1000 inhabitants, ranging from Turkey with 68 to Malta with 490 passenger cars per 1000 inhabitants. There are still some problems of definitions applied differently in the countries, mainly on the distinction between a lorry and a passenger car (i.e. vans, pick-ups, etc.). Therefore one should be cautious in interpreting the figures.

Renewal Rate of Passenger Cars

Passenger cars
first registration/ total passenger cars (%)

	1995	1996	1997	1998	1999	2000
Belgium	8.7	9.4	*9.0*	10.3	11.0	11.4
Denmark	8.0	8.2	8.6	9.0	7.8	6.1
Germany	8.2	8.5	8.5	9.0	9.0	7.7
Greece	6.1	6.1	6.7	6.9	*7.0*	*6.0*
Spain	6.1	6.6	7.1	8.0	8.9	8.4
France	7.7	8.4	6.6	7.2	7.8	7.6
Ireland	8.4	10.3	11.1	11.6	13.4	17.1
Italy	5.8	6.0	7.8	7.7	7.2	7.2
Luxembourg	*13.0*	*13.0*	*13.0*	14.4	15.6	15.5
Netherlands	*8.0*	*8.0*	8.1	8.9	9.6	9.1
Austria	7.8	8.3	7.3	7.6	7.8	7.6
Portugal	6.1	6.7	6.7	7.1	7.1	6.5
Finland	4.2	4.9	5.4	6.3	6.6	6.3
Sweden	4.8	5.5	7.0	7.6	8.6	8.9
United Kingdom	8.8	9.2	9.6	9.9	9.6	9.7
EU 15	**7.4**	**7.8**	**8.0**	**8.4**	**8.5**	**8.1**
Iceland	5.8	7.6	8.9	10.8	11.3	9.3
Liechtenstein	9.3	9.8	8.4	9.3	10.0	*10.0*
Norway	5.8	8.8	8.8	7.9	6.8	6.9
Switzerland	8.3	8.3	8.1	8.7	9.1	8.9
Czech Republic	*7.0*	*6.0*	*6.0*	*6.0*	*6.0*	6.0
Estonia	11.6	8.8	8.3	7.2	5.3	4.8
Cyprus	8.2	9.0	8.6	10.0	7.8	7.1
Latvia	14.9	13.7	16.6	11.9	8.7	6.4
Lithuania	21.6	15.6	19.6	15.0	13.0	9.9
Hungary	5.7	4.6	3.7	5.1	6.2	6.3
Malta	6.3	6.9	5.5	6.2	7.3	6.9
Poland	6.0	7.8	8.5	6.3	6.5	5.2
Slovenia	9.0	8.3	8.2	8.7	9.6	7.5
Slovakia	*11.0*	10.2	7.5	6.4	4.7	4.3
ACC	**7.5**	**7.8**	**8.0**	**6.8**	**6.8**	**5.8**
Bulgaria	3.4	4.1	1.6	3.9	5.4	4.9
Romania	8.1	8.1	8.9	7.7	5.3	4.8
Turkey	6.6	6.7	8.4	7.1	5.8	7.9
CC 13	**7.2**	**7.4**	**7.7**	**6.7**	**6.4**	**6.0**

Data Source: Eurostat



Data Source: Eurostat

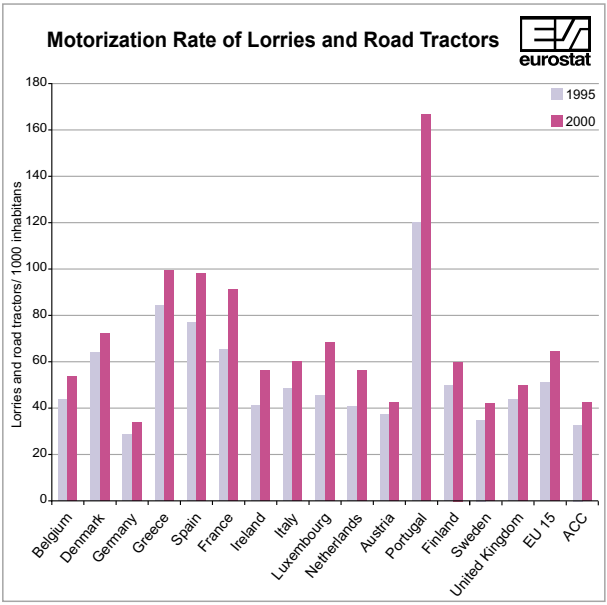
The average renewal rate in EU 15 was 8% in 2000, which means an average of 12.5 years of usage for each passenger car. The highest rate of 17% was reported by Ireland and the lowest of 6% by Greece. The average for the acceding countries was 5.8% in 2000 and it has decreased since 1995, and the candidate countries show a similar trend. Also here attention must be given to the problems of definitions applied differently in the countries, mainly on the distinction between a lorry and a passenger car (i.e. vans, pick ups etc.). Therefore one should be cautious in interpreting the figures.

Motorization Rate of Lorries and Road Tractors

Lorries and road tractors/1000 inhabitants

	1995	1996	1997	1998	1999	2000
Belgium	44	45	*47*	49	51	53
Denmark	64	65	65	67	70	72
Germany	29	29	30	31	32	34
Greece	84	87	90	93	*100*	*100*
Spain	77	80	84	89	94	98
France	65	64	62	89	90	92
Ireland	*41*	*42*	*45*	*48*	*52*	*56*
Italy	49	54	55	57	58	60
Luxembourg	*45*	*45*	*47*	*49*	52	68
Netherlands	41	42	45	49	53	56
Austria	38	38	39	40	41	42
Portugal	120	127	136	146	156	167
Finland	50	51	53	55	58	60
Sweden	35	35	36	39	41	42
United Kingdom	44	47	47	*49*	*49*	*50*
EU 15	**51**	**53**	**54**	**60**	**62**	**65**
Iceland	55	57	59	60	64	69
Liechtenstein	*66*	*70*	*73*	*76*	*79*	*82*
Norway	34	*35*	36	36	36	*36*
Switzerland	37	37	37	38	38	39
Czech Republic	21	24	26	27	28	29
Estonia	*47*	*51*	*55*	*59*	*61*	*63*
Cyprus	138	141	142	146	148	151
Latvia	27	29	31	35	37	41
Lithuania	29	24	25	27	26	27
Hungary	32	33	34	33	34	35
Malta	*120*	*110*	*130*	*120*	*120*	*120*
Poland	35	37	39	40	44	49
Slovenia	21	23	24	25	26	27
Slovakia	28	27	28	29	30	28
ACC	***33***	**34**	**36**	**37**	**39**	**42**
Bulgaria	31	32	33	34	36	37
Romania	15	16	17	18	20	20
Turkey	*12*	13	15	16	17	19
CC 13	**23**	**24**	**25**	**27**	**28**	**30**

Data Source: Eurostat, DG for Energy and Transport



Data Source: Eurostat, DG for Energy and Transport

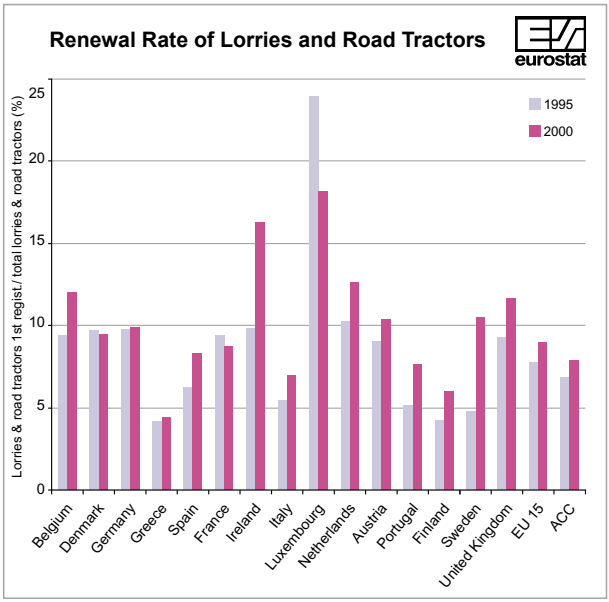
Portugal had the highest number of lorries and road tractors (167 per 1000 inhabitants) with Greece coming second (100 per 1000 inhabitants) while the average for the EU 15 was 65 in 2000. Cyprus and Malta have very high values as well, due to the fact that there is no rail network, so all inland transport of goods is done by road. The average for the acceding countries was 42 and the average for the candidate countries was 30 per 1000 inhabitants. It is most probable that the difference is related to transport culture, i.e. many small lorries doing the same job as fewer big lorries. Also here attention must be given to the problems of definitions applied differently in the countries, mainly on the distinction between a lorry and a passenger car (i.e. vans, pick ups etc.). Therefore one should be cautious in interpreting the figures

Renewal Rate of Lorries and Road Tractors

Lorries and road tractors
first registration/ total lorries and road tractors (%)

	1995	1996	1997	1998	1999	2000
Belgium	9.4	9.6	*10.5*	12.2	13.2	12.0
Denmark	9.7	9.2	10.1	9.6	10.0	9.4
Germany	9.8	9.0	9.5	10.4	10.9	9.9
Greece	4.1	3.8	4.3	4.2	*4.2*	*4.4*
Spain	6.2	6.6	7.5	8.1	9.0	8.3
France	9.4	10.0	9.7	7.6	8.1	8.8
Ireland	*9.8*	*11.2*	*11.9*	*13.9*	*15.8*	*16.2*
Italy	5.4	5.8	5.5	6.2	6.2	7.0
Luxembourg	*23.9*	*23.7*	*22.4*	*21.7*	*21.7*	*18.1*
Netherlands	10.2	12.7	13.7	14.9	13.8	12.6
Austria	9.0	9.1	9.5	10.1	10.2	10.4
Portugal	5.1	6.0	6.8	7.4	7.1	7.6
Finland	4.2	5.0	6.1	6.5	6.6	6.0
Sweden	4.8	6.8	8.0	9.1	9.7	10.5
United Kingdom	9.3	8.9	9.5	10.4	*10.8*	*11.6*
EU 15	**7.7**	**7.9**	**8.3**	**8.5**	**8.9**	**9.0**
Iceland	6.0	6.6	8.1	9.3	10.4	11.2
Liechtenstein	7.8	*8.7*	*8.1*	*9.1*	*9.6*	*9.4*
Norway	*3.8*	*3.7*	*3.6*	4.4	3.4	*3.7*
Switzerland	7.0	7.0	7.4	8.1	8.5	9.6
Czech Republic	*11.9*	*10.8*	*10.0*	*9.6*	*9.1*	*9.1*
Estonia	*6.9*	*5.8*	*7.3*	*6.4*	*4.8*	*5.6*
Cyprus	9.6	7.8	5.9	6.8	6.1	6.0
Latvia	*5.0*	3.7	5.7	6.9	7.4	5.6
Lithuania	10.2	9.3	15.3	13.4	8.0	8.0
Hungary	9.8	8.1	7.1	8.9	9.5	9.7
Malta	*9.2*	*10.9*	*9.2*	*6.3*	*5.3*	*4.6*
Poland	5.1	5.6	5.8	7.3	8.8	7.9
Slovenia	9.5	8.6	7.8	7.8	8.9	8.3
Slovakia	*4.3*	*5.1*	5.7	6.4	4.8	5.6
ACC	**6.9**	**6.7**	**6.9**	**7.8**	**8.3**	**7.9**
Bulgaria	3.4	4.4	1.7	3.6	3.6	3.4
Romania	*6.7*	*6.6*	*6.4*	6.5	7.2	1.4
Turkey	4.7	7.8	12.5	11.6	7.0	9.8
CC 13	**6.2**	**6.7**	**7.7**	**8.3**	**7.7**	**7.5**

Data Source: Eurostat, DG for Energy and Transport



Data Source: Eurostat, DG for Energy and Transport

The corresponding renewal rates for the countries with high values of lorries per 1000 inhabitants were rather low: 7.6% for Portugal and 4.4% for Greece. On the other side Belgium, Ireland, Luxembourg, the Netherlands, Austria, Sweden and the UK all had a renewal rate of over 10%. Of the EFTA countries, only Iceland was above, even though both Switzerland and Liechtenstein almost reached 10% (9.6 and 9.4). The average for the acceding countries was 7.9%, slightly above the average of 7.5% recorded by the candidate countries. Also here attention must be given to the problems of definitions applied differently in the countries, mainly on the distinction between a lorry and a passenger car (i.e. vans, pick ups etc.). Therefore one should be cautious in interpreting the figures.

Number of Commercial Aircraft

	Commercial aircrafts with empty weight > 9 tonnes
	2000
Belgium	193
Denmark	182
Germany	861
Greece	96
Spain	462
France	683
Ireland	110
Italy	433
Luxembourg	52
Netherlands	231
Austria	151
Portugal	99
Finland	85
Sweden	161
United Kingdom	1091
EU 15	**4890**
Iceland	44
Liechtenstein	-
Norway	15
Switzerland	61
Czech Republic	44
Estonia	16
Cyprus	12
Latvia	21
Lithuania	19
Hungary	38
Malta	8
Poland	50
Slovenia	7
Slovakia	8
ACC	**223**
Bulgaria	34
Romania	31
Turkey	36
CC 13	**324**

Data Source: Eurostat, Airclaims

Number of Commercial Aircraft

(Total EU 15 + ACC = 5113 aircrafts)

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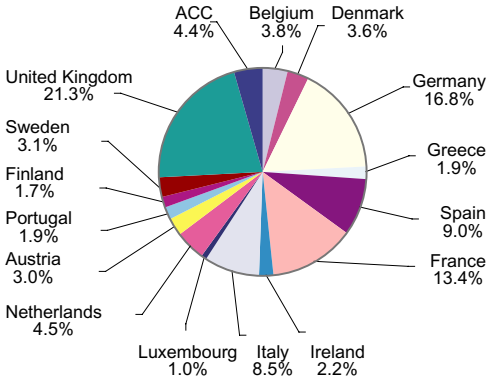


Data Source: Eurostat, Airclaims

All smaller EU 15 countries (with less than 10 million inhabitants), weigh more in terms of number of commercial aircraft than in terms of population. For instance, Ireland, with a population of about 1% of the total EU 15 population, represents 2.25% of the number of aircraft registered in all EU 15 countries.

Among the 5 most populated EU countries, only the United Kingdom has a higher share in terms of number of aircraft (22.3%) than in terms of population (15.84%).

As far as the acceding countries are concerned, their relative weight in terms of number of aircraft registered in EU 15 plus acceding countries is, with less than 5%, a lot lower than their weight in terms of population (16.5%).

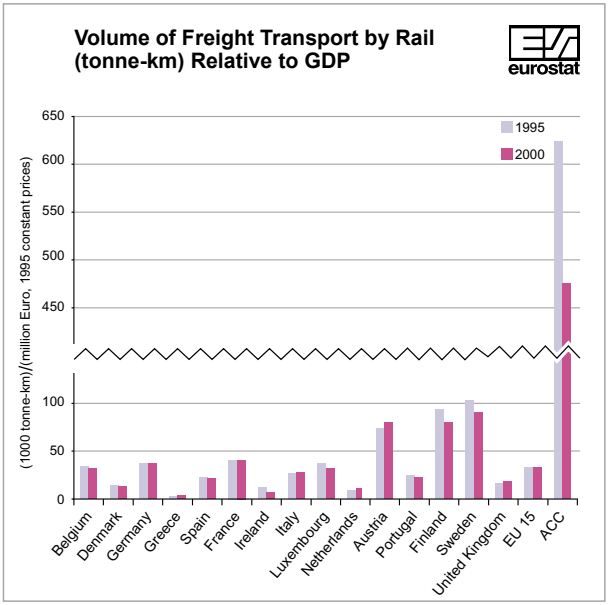
Volume of Freight Transport by Rail (tonne-km) Relative to GDP

(1000 tonne-km)/(million Euro, 1995 constant prices)

	1995	1996	1997	1998	1999	2000
Belgium	34	34	34	34	32	32
Denmark	14	12	14	14	13	13
Germany	37	36	38	37	35	37
Greece	3	4	3	3	3	4
Spain	22	21	23	23	22	22
France	41	41	44	43	41	41
Ireland	12	11	8	8	7	6
Italy	26	25	26	25	24	27
Luxembourg	36	35	39	36	34	31
Netherlands	10	9	10	11	9	10
Austria	73	73	76	76	76	81
Portugal	24	22	25	22	23	22
Finland	94	85	90	86	82	81
Sweden	102	98	97	94	89	90
United Kingdom	15	17	18	18	19	18
EU 15	**33**	**33**	**34**	**34**	**32**	**33**
Iceland	**-**	**-**	-	-	-	-
Liechtenstein	:	:	:	:	:	:
Norway	24	22	19	19	19	18
Switzerland	37	34	36	37	40	38
Czech Republic	568	538	510	459	408	414
Estonia	1 410	1 481	1 639	1 867	2 255	2 337
Cyprus	-	-	-	-	-	-
Latvia	2 888	3 544	3 680	3 268	2 986	3 046
Lithuania	1 567	1 680	1 666	1 519	1 501	1 644
Hungary	247	221	225	215	196	195
Malta	-	-	-	-	-	-
Poland	702	654	615	528	459	433
Slovenia	215	172	184	177	164	161
Slovakia *	934	776	756	691	572	638
ACC	**622**	**594**	**579**	**519**	**463**	**476**
Bulgaria *	858	832	869	690	581	576
Romania	894	861	835	660	590	645
Turkey	66	64	64	55	56	62
CC 13	**461**	**437**	**421**	**367**	**337**	**344**

** included transit (for Slovakia only in 1998)*

Data Source: Eurostat



Data Source: Eurostat

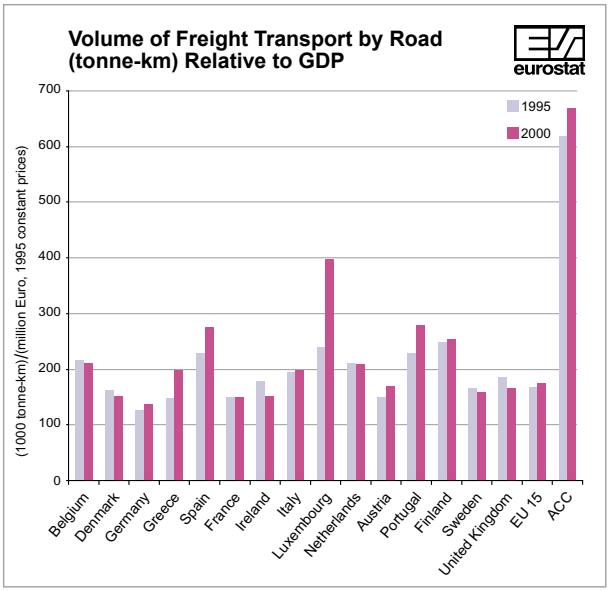
The volume of freight transport by rail for the EU 15 on average remained at the same level as in 1995. The tendency for the member states is for the volume of freight transport by rail to remain constant or to slightly decrease over the period 1995-2000.
The average value for the EU 15 was 33 thousand tonne-km/million Euro, in 2000, which is similar to the average value of 31 for the EFTA countries. There is a huge difference between the corresponding value for acceding countries which was 476 in 2000 and the candidate countries which was 344 in the same year. However the volume of freight transport by rail was reduced by 23% in the acceding countries over the period 1995-2000, and by 25% in the candidate countries.

Volume of Freight Transport by Road (tonne-km) Relative to GDP

(1000 tonne-km)/(million Euro, 1995 constant prices)

	1995	1996	1997	1998	1999	2000
Belgium	215	195	197	*180*	160	211
Denmark	162	151	148	*140*	152	153
Germany	*126*	*124*	*128*	*131*	139	137
Greece	147	*173*	190	*209*	*210*	*200*
Spain	227	*220*	*230*	*250*	259	276
France	150	150	148	149	157	150
Ireland	*180*	*170*	*150*	*150*	138	151
Italy	194	*207*	200	*210*	198	200
Luxembourg	*240*	*240*	*290*	*320*	359	397
Netherlands	212	212	208	*210*	227	209
Austria	*150*	*150*	*153*	*160*	*171*	170
Portugal	227	*270*	279	272	269	*280*
Finland	*250*	*242*	*230*	*245*	*250*	255
Sweden	166	173	*180*	*160*	*160*	160
United Kingdom	186	187	*184*	*181*	171	165
EU 15	**167**	**169**	**169**	**172**	**174**	**174**
Iceland	:	:	:	:	:	:
Liechtenstein	:	:	:	:	:	:
Norway	85	105	112	115	115	93
Switzerland	60	65	70	75	74	**72**
Czech Republic	786	724	987	832	903	923
Estonia	568	669	891	1 164	1 229	1 134
Cyprus	:	:	:	:	:	:
Latvia	543	630	883	1 033	1 017	1 096
Lithuania	1 120	869	994	1 032	1 481	1 432
Hungary	*400*	*410*	*410*	493	471	460
Malta	*1 300*	*1 300*	*1 300*	*1 300*	*1 200*	*1 200*
Poland	527	548	579	603	587	583
Slovenia	111	104	103	106	97	104
Slovakia	1 813	1 023	938	1 051	1 074	1 213
ACC	**619**	**564**	**625**	**635**	**642**	**670**
Bulgaria	:	:	:	:	:	666
Romania	729	703	822	627	540	564
Turkey	868	979	938	990	1 031	1 027
CC 13	**:**	**:**	**:**	**:**	**:**	**788**

Data Source: Eurostat, DG for Energy and Transport



Data Source: Eurostat, DG for Energy and Transport

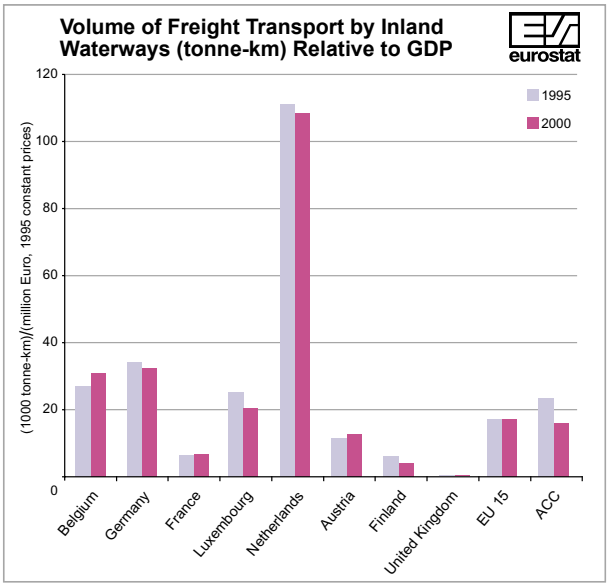
During the reference period 1995-2000, road freight transport measured in tonne-kilometers relative to GDP has increased in EU 15 on average by 4%. The average value of 174 thousand tonne-km per million Euro in 2000 is five times higher than the corresponding value for rail transport. Luxembourg leads in 2000 the list with a value of 397 whereas the lowest value occurs for Germany with 137. The size of the countries and the respective GDP and performed transport volumes play certainly an important role in this context. For the EFTA countries, the volume of road transport is with an average of 78 thousand tonne-km per million Euro rather low. For the acceding countries the index of road freight transport has increased by 8% over the period considered, and has a rather high value of 670, compared to the EU 15 average. Considering the development over time, this indicator has increased most in Luxembourg and least in France.

Volume of Freight Transport by Inland Waterways (tonne-km) Relative to GDP

(1000 tonne-km)/(million Euro, 1995 constant prices)

	1995	1996	1997	1998	1999	2000
Belgium	27	27	26	27	27	30
Denmark	-	-	-	-	-	-
Germany	34	32	32	33	31	32
Greece	-	-	-	-	-	-
Spain	-	-	-	-	-	-
France	6	5	6	6	6	7
Ireland	-	-	-	-	-	-
Italy	-	-	-	-	-	-
Luxembourg	24	22	23	22	20	20
Netherlands	112	109	121	115	112	108
Austria	11	11	11	12	11	12
Portugal	-	-	-	-	-	-
Finland	*6*	*5*	*5*	*4*	*4*	*4*
Sweden	-	-	-	-	-	-
United Kingdom	0.3	0.2	0.2	0.2	0.2	0.2
EU 15	**17**	**17**	**17**	**17**	**17**	**17**
Iceland	-	-	-	-	-	-
Liechtenstein	-	-	-	-	-	-
Norway	-	-	-	-	-	-
Switzerland	0.7	0.6	0.5	0.5	0.5	0.5
Czech Republic	34	27	19	22	22	18
Estonia	0.0	0.0	0.0	0.0	0.6	0.3
Cyprus	-	-	-	-	-	-
Latvia	-	-	-	-	-	-
Lithuania	3.9	1.5	1.7	2.6	0.6	0.4
Hungary	*43*	*40*	*40*	41	24	21
Malta	-	-	-	-	-	-
Poland	9	8	8	9	8	9
Slovenia	-	-	-	-	-	-
Slovakia	100	103	93	77	96	78
ACC	**23**	**22**	**19**	**19**	**17**	**16**
Bulgaria	52	56	70	63	21	33
Romania	115	134	163	167	113	104
Turkey	-	-	-	-	-	-
CC 13	**23**	**23**	**23**	**22**	**17**	**16**

Data Source: Eurostat, DG for Energy and Transport



Data Source: Eurostat, DG for Energy and Transport

The index for freight transport by inland waterways is almost constant over the period 1995-2000, and is rather low compared to the rail and road transport respectively. The Netherlands have the highest value for this index, which is to be expected since the country has the largest network of inland waterways in the EU 15, and the freight transferred by inland waterways is almost half of that transferred by road and rail transport together.

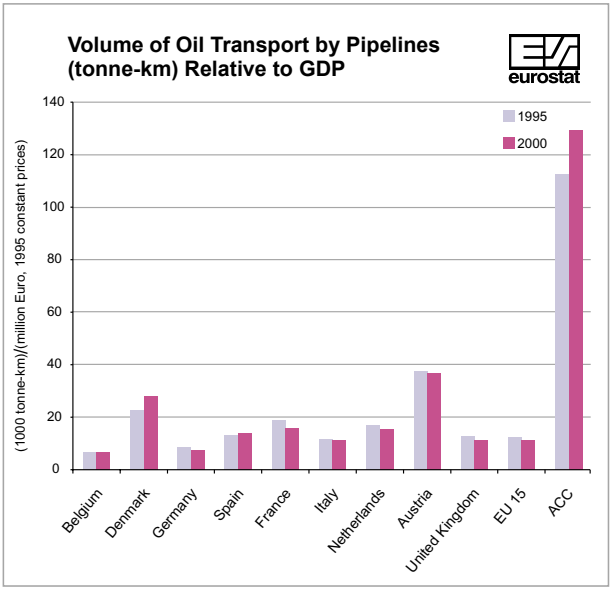
For the acceding countries there is a reduction of 32% over the period 1995-2000 of the index for transport using inland waterways.

Volume of Oil Transport by Pipelines (tonne-km) Relative to GDP

(1000 tonne-km)/(million Euro, 1995 constant prices)

	1995	1996	1997	1998	1999	2000
Belgium	7	7	7	7	7	7
Denmark	23	24	26	26	28	*28*
Germany	9	8	7	8	8	7
Greece	-	-	-	-	-	-
Spain	13	13	14	14	14	14
France	19	18	18	17	16	16
Ireland	-	-	-	-	-	-
Italy	12	12	11	12	12	11
Luxembourg	-	-	-	-	-	-
Netherlands	17	18	18	17	16	15
Austria	38	39	43	42	38	37
Portugal	-	-	-	-	-	-
Finland	-	-	-	-	-	-
Sweden	-	-	-	-	-	-
United Kingdom	13	13	12	12	12	11
EU 15	**12**	**12**	**12**	**12**	**12**	**11**
Iceland	-	-	-	-	-	-
Liechtenstein	-	-	-	-	-	-
Norway	47	43	34	32	30	*30*
Switzerland	5	5	1	1	1	1
Czech Republic	57	55	51	51	44	38
Estonia	-	-	-	-	-	-
Cyprus	-	-	-	-	-	-
Latvia	1 574	1 730	1 676	1 652	1 481	1 480
Lithuania	435	478	513	545	503	637
Hungary	48	49	50	51	46	42
Malta	-	-	-	-	-	-
Poland	139	149	136	160	162	163
Slovenia	-	-	-	-	-	-
Slovakia	-	-	-	-	-	-
ACC	**112**	**120**	**116**	**128**	**123**	**129**
Bulgaria	41	40	31	27	36	39
Romania	108	94	87	90	66	55
Turkey	25	29	141	258	297	263
CC 13	**81**	**85**	**121**	**169**	**176**	**170**

Data Source: Eurostat, DG for Energy and Transport



Data Source: Eurostat, DG for Energy and Transport

The ratio of tonne-km over million Euro for oil transport by pipelines is constant in the EU 15 over the period 1995-2000. Austria and Denmark are having a much greater ratio than any other EU Member State with 37 and 28 respectively, compared to the EU 15 (and EFTA) average of 11 recorded in 2000. A small reduction appears in the EFTA countries data, while for the acceding countries (average 129) there is an increase of 15% and for the candidate countries (average 170) an increase of 110%, mainly due to a more than tenfold increase in Turkey. Latvia (1480) and Lithuania (637) have a huge value of this index, since there are important pipelines connecting the Russian oil deposits with the Baltic Sea ports. This, together with the high value for Poland (163) and Turkey (263), brings the candidate countries level up to its high average.

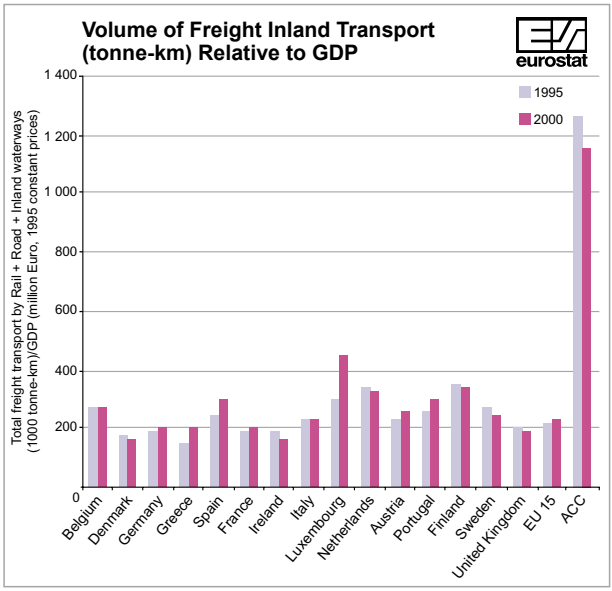
Volume of Freight Inland Transport (tonne-km) Relative to GDP

Total freight transport by Rail + Road + Inland waterways (1000 tonne-km)/GDP (million Euro, 1995 constant prices)

	1995	1996	1997	1998	1999	2000
Belgium	277	256	257	*242*	219	272
Denmark	177	163	162	*157*	165	166
Germany	197	*192*	*198*	*202*	206	206
Greece	150	*176*	194	*212*	*213*	*206*
Spain	249	*244*	*253*	*274*	281	297
France	196	196	198	198	204	198
Ireland	187	*177*	*162*	*155*	145	158
Italy	231	*231*	223	*235*	222	227
Luxembourg	*295*	*302*	*346*	*377*	413	448
Netherlands	333	330	339	*333*	349	327
Austria	232	*235*	*241*	*244*	*258*	263
Portugal	252	*293*	304	294	292	*301*
Finland	*347*	*332*	*330*	*335*	*334*	*339*
Sweden	269	271	*275*	*257*	*245*	250
United Kingdom	202	204	*202*	*200*	190	184
EU 15	**219**	**218**	**220**	**223**	**223**	**225**
Iceland	:	:	:	:	:	:
Liechtenstein	:	:	:	:	:	:
Norway	109	127	131	134	134	111
Switzerland	98	99	107	113	115	111
Czech Republic	1 388	1 289	1 516	1 313	1 333	1 355
Estonia	1 977	2 150	2 530	3 031	3 484	3 472
Cyprus	:	:	:	:	:	:
Latvia	3 431	4 174	4 563	4 301	4 003	4 142
Lithuania	2 691	2 550	2 662	2 554	2 983	3 076
Hungary	*694*	*675*	*676*	749	691	677
Malta	*1 289*	*1 278*	*1 256*	*1 250*	*1 236*	*1 197*
Poland	1 238	1 211	1 202	1 140	1 053	1 025
Slovenia	326	276	287	284	261	265
Slovakia *	2 847	1 902	1 787	1 818	1 742	1 929
ACC	**1 264**	**1 180**	**1 224**	**1 173**	**1 123**	**1 162**
Bulgaria*	:	:	:	:	:	1 275
Romania	1 737	1 698	1 821	1 453	1 242	1 313
Turkey	934	1 044	1 002	1 045	1 087	1 090
CC 13	**1 177**	**1 163**	**1 178**	**1 135**	**1 107**	**1 148**

** for rail: included transit (for Slovakia only in 1998)*

Data Source: Eurostat, DG for Energy and Transport



Data Source: Eurostat, DG for Energy and Transport

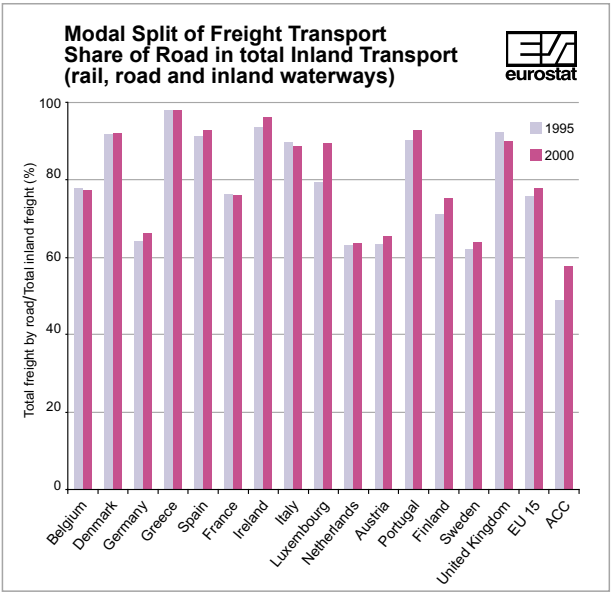
When analysing this table it is important to note that total inland transport includes rail, road and inland waterways and excludes pipelines. The total freight inland transport index for EU 15 has during the reference period 1995-2000 increased by almost 3% on average. Compared to the EU 15 average for 2000 Luxembourg reports with 52% above the average the highest value whereas the lowest value is reached in Ireland with a 15% lower than the average value. For the EFTA countries an increase of 9% during the reference period is to be noted while a decrease of 8% on average occurs in the acceding countries during that period.

Modal Split of Freight Transport
Share of Road in total Inland Transport (%)

Total transport of freight by road (1000 tonne-km)/Total transport of freight by inland (rail+road+inland waterways) (%)

	1995	1996	1997	1998	1999	2000
Belgium	77.8	76.3	76.7	*75.1*	73.1	*77.4*
Denmark	91.8	92.4	91.6	*91.2*	92.3	92.0
Germany	*64.2*	*64.7*	*64.6*	*65.2*	67.6	66.4
Greece	97.9	*97.9*	98.2	*98.5*	*98.4*	*98.1*
Spain	91.2	*91.2*	*90.9*	*91.7*	92.1	92.8
France	76.5	76.4	74.9	75.3	76.8	76.0
Ireland	*93.7*	*93.8*	*94.9*	*95.1*	95.3	96.1
Italy	88.8	*89.3*	88.1	*89.2*	89.2	88.1
Luxembourg	*79.5*	*81.0*	*82.1*	*84.5*	86.9	88.6
Netherlands	63.5	64.3	61.4	*62.3*	65.0	63.8
Austria	*63.6*	*64.3*	*63.7*	*64.0*	*66.3*	64.8
Portugal	90.3	92.6	91.7	92.5	92.3	*92.8*
Finland	*71.2*	*72.8*	*71.1*	*73.0*	*74.2*	*75.1*
Sweden	62.0	63.9	*64.6*	*63.5*	*63.5*	63.9
United Kingdom	92.3	91.6	*90.8*	*90.8*	90.1	90.0
EU 15	**76.9**	**77.3**	**76.5**	**77.1**	**77.9**	**77.6**
Iceland	100.0	100.0	100.0	100.0	100.0	100.0
Liechtenstein	:	:	:	:	:	:
Norway	78.0	82.5	85.4	85.9	86.0	83.6
Switzerland	61.0	65.4	65.6	66.6	64.6	*65.4*
Czech Republic	56.6	56.2	65.1	63.3	67.7	68.1
Estonia	28.7	31.1	35.2	38.4	35.3	32.7
Cyprus	100.0	100.0	100.0	100.0	100.0	100.0
Latvia	15.8	15.1	19.4	24.0	25.4	26.5
Lithuania	41.6	34.1	37.4	40.4	49.6	46.5
Hungary	*58.3*	*61.3*	*60.8*	65.8	68.2	68.0
Malta	100.0	100.0	100.0	100.0	100.0	100.0
Poland	42.6	45.3	48.1	52.9	55.7	56.9
Slovenia	34.2	37.8	35.9	37.5	37.2	39.2
Slovakia	63.7	53.8	52.5	57.8	61.6	62.9
ACC	**49.0**	**47.8**	**51.1**	**54.1**	**57.2**	**57.6**
Bulgaria	:	:	:	:	:	52.3
Romania	42.0	41.4	45.1	43.1	43.5	42.9
Turkey	93.0	93.8	93.6	94.8	94.8	94.3
CC 13	**58.9**	**60.5**	**62.4**	**65.7**	**68.0**	**68.7**

Data Source: Eurostat, DG for Energy and Transport



Data Source: Eurostat, DG for Energy and Transport

When analysing this table it is important to note that total inland transport includes rail, road and inland waterways and excludes pipelines. It is obvious that road transport is in 2000 by far the most important freight transport mode in terms of tonne-km, ranging from 98.1% of the total transport in Greece to 58.4% in Austria. On average 77% of freight transport in EU 15 is performed on road. In the EFTA countries this share is around 72%, with Iceland performing 100% of the freight transport by road.
Also Cyprus and Malta cover all their freight transport needs by road, whereas in Latvia this share is only 26.5%. On average in the acceding countries road transport covers 57.6% of the total inland freight transport and in candidate countries this percentage is 68.7%.

Tonnage of Freight Transport by Rail

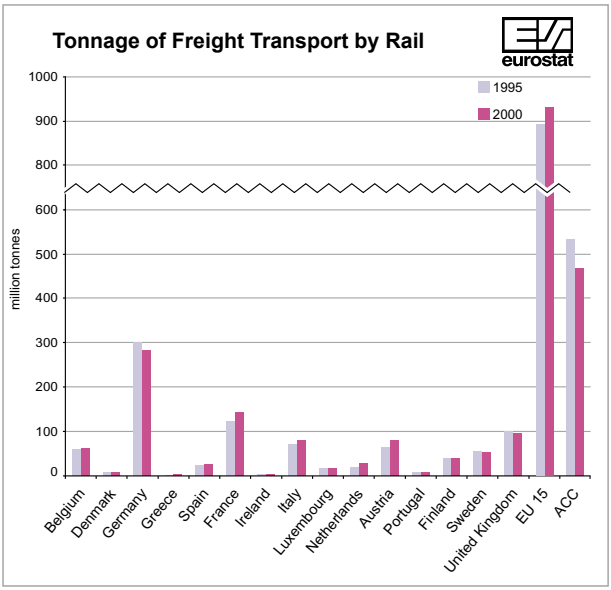
(million tonnes)

	1995	1996	1997	1998	1999	2000
Belgium	60	57	59	61	59	61
Denmark	9	8	8	8	7	8
Germany	300	288	295	289	277	283
Greece	1	2	2	2	2	3
Spain	25	24	25	26	25	26
France	123	126	135	137	137	142
Ireland	3	3	3	3	*3*	*3*
Italy	72	68	75	76	74	80
Luxembourg	15	15	16	17	18	18
Netherlands	20	21	23	*25*	*27*	*28*
Austria	65	66	71	73	74	81
Portugal	8	8	9	9	9	9
Finland	39	38	40	41	40	41
Sweden	55	53	*48*	48	*46*	52
United Kingdom	101	102	105	102	92	95
EU 15*	**897**	**880**	**915**	**915**	**890**	**930**
Iceland	-	-	-	-	-	-
Liechtenstein	:	:	:	:	:	:
Norway**	21	15	7	7	8	8
Switzerland	47	44	47	49	55	59
Czech Republic	109	107	111	105	91	98
Estonia	24	25	:	:	:	:
Cyprus	-	-	-	-	-	-
Latvia	29	35	41	38	33	36
Lithuania	26	29	30	31	28	31
Hungary	*45*	48	51	53	49	50
Malta	-	-	-	-	-	-
Poland	225	219	222	203	185	185
Slovenia	14	12	13	13	13	14
Slovakia	61	58	59	57	49	54
ACC*	**532**	**534**	**529**	**499**	**449**	**468**
Bulgaria	33	30	29	24	21	21
Romania	104	104	93	76	63	71
Turkey	15	16	17	16	15	18
CC 13*	**685**	**684**	**669**	**615**	**548**	**579**

* Totals and double counting: International freight transported between 2 countries which are part of the same aggregate (EU 15, ACC or CC 13) is counted twice in the Total. This can represent an overcounting estimated to up to 17% for EU 15.

** The transport of ore on the "Ofoten Line" ceased during 1996

Data Source: Eurostat, UIC



Data Source: Eurostat, UIC

The tonnage of goods transported by rail increased by 4% in the Member States from 1995 to 2000. For this same period of observation, the candidate countries recorded an average fall of 15% of their tonnage transported.

In absolute terms, Germany transported in 2000, 283 million tonnes, which corresponds to more than 30% of the total volume of the Member States. Among the acceding countries, Poland was responsible for almost 40% of the total.

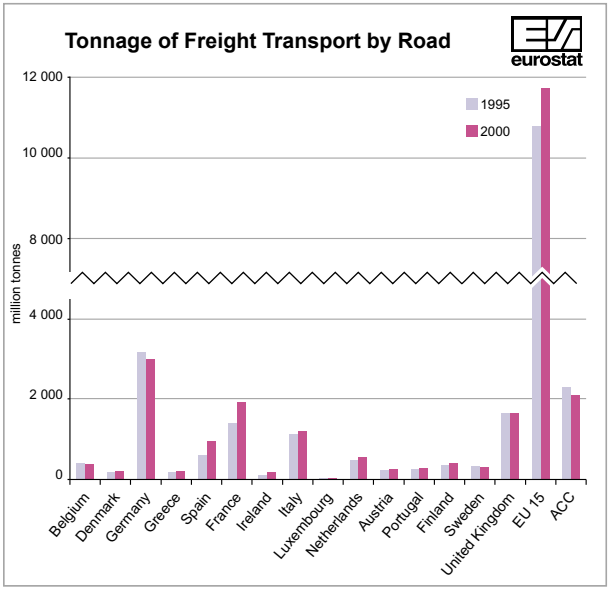
It is also important to note that for 2000 all the countries recorded an increase in the number of tonnes transported in comparison with the previous period.

Tonnage of Freight Transport by Road

(million tonnes)

	1995	1996	1997	1998	1999	2000
Belgium	424	365	307	345	315	396
Denmark	189	192	201	204	216	223
Germany	3 170	3 015	2 981	2 968	3 181	3 005
Greece	179	177	204	*190*	*190*	*200*
Spain	609	589	628	718	826	944
France	1 388	1 726	1 770	1 788	1 890	1 919
Ireland	*110*	*120*	*130*	*140*	*160*	185
Italy	1 129	1 141	1 153	*1 100*	1 080	1 204
Luxembourg	36	*33*	24	*25*	24	26
Netherlands	485	475	486	500	586	562
Austria	243	257	258	260	274	277
Portugal	269	244	262	272	280	*290*
Finland	*370*	380	389	406	416	422
Sweden	331	301	299	313	306	329
United Kingdom	1 672	1 700	1 709	1 696	1 638	1 660
EU 15	**10 605**	**10 713**	**10 799**	**10 918**	**11 384**	**11 640**
Iceland	:	:	:	:	:	:
Liechtenstein	:	:	:	:	:	:
Norway	223	210	222	225	230	225
Switzerland	:	:	:	:	:	:
Czech Republic	584	685	521	471	448	415
Estonia	10	11	13	:	:	:
Cyprus	:	:	:	:	:	:
Latvia	25	29	25	34	33	33
Lithuania	138	89	59	55	46	45
Hungary	*260*	*260*	268	258	263	261
Malta	:	:	:	:	:	:
Poland	1 087	1 092	1 111	1 077	1 068	1 083
Slovenia	:	31	52	80	87	103
Slovakia	204	204	212	186	151	171
ACC	**2 307**	**2 401**	**2 262**	**2 161**	**2 097**	**2 111**
Bulgaria	:	:	144	:	:	122
Romania	*250*	*250*	246	314	279	:
Turkey	:	:	:	:	:	:
CC 13	**:**	**:**	**:**	**:**	**:**	**:**

Data Source: Eurostat



Data Source: Eurostat

Note: Cross Trade and cabotage freight are not counted in the total tonnage

When analysing this table it should be noted that the figures presented show total transport (national and international transport) by the hauliers registered in the reporting countries. The figures do however exclude cabotage and cross trade transport.

As indicated in the table, road haulage accounted in the EU in 1995 for 10 600 million tonnes of total transport and increased by around 8% until the year 2000. Out of the 11 462 million tonnes in 2000 the biggest share was realised with 26.22 % by German hauliers. Luxembourg contributed with 26 million tonnes only for 0.23 % which is not surprising considering the size of the country. This share would however have been slightly higher if cabotage transport was considered as well.

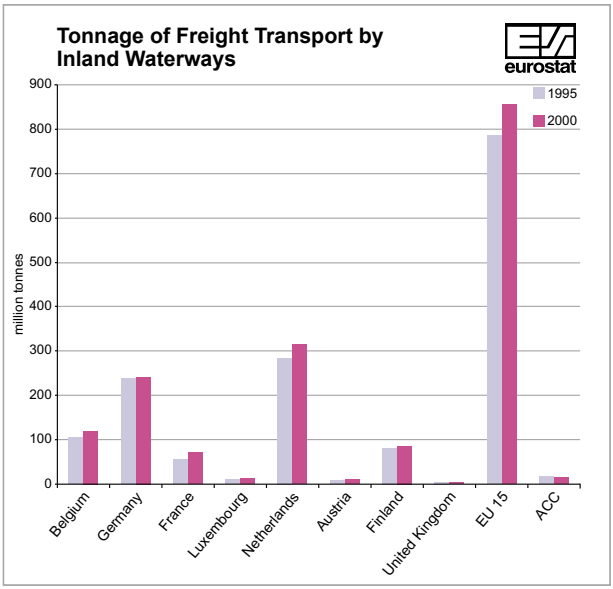
Tonnage of Freight Transport by Inland Waterways

(million tonnes)

	1995	1996	1997	1998	1999	2000
Belgium	106	107	106	106	110	120
Denmark	-	-	-	-	-	-
Germany	238	227	233	236	229	242
Greece	-	-	-	-	-	-
Spain	-	-	-	-	-	-
France	55	47	58	62	66	71
Ireland	-	-	-	-	-	-
Italy	-	-	-	-	-	-
Luxembourg	10	10	10	11	11	12
Netherlands	286	289	319	316	311	314
Austria	9	9	9	10	10	11
Portugal	-	-	-	-	-	-
Finland	*81*	*82*	83	84	84	86
Sweden	-	-	-	-	-	-
United Kingdom	*5*	6	5	4	4	4
EU 15	**790**	**777**	**824**	**830**	**825**	**860**
Iceland	-	:	:	:	:	:
Liechtenstein	-	:	:	:	:	:
Norway	-	:	:	:	:	:
Switzerland	8	8	:	:	:	:
Czech Republic	4	3	2	2	2	2
Estonia	-	-	-	-	-	-
Cyprus	-	-	-	-	-	-
Latvia	-	-	-	-	-	-
Lithuania	0.1	0.1	0.2	0.2	0.0	0.0
Hungary	*2*	2	2	2	2	2
Malta	-	-	-	-	-	-
Poland	9	9	9	9	8	10
Slovenia	-	-	-	-	-	-
Slovakia	2	1	1	1	2	2
ACC	**18**	**16**	**15**	**15**	**14**	**16**
Bulgaria*	*1*	1	1	1	0	1
Romania	*14*	14	16	15	14	*14*
Turkey	-	-	-	-	-	-
CC 13	**33**	**31**	**32**	**30**	**28**	**31**

* only public transport enterprises

Data Source: Eurostat



Data Source: Eurostat

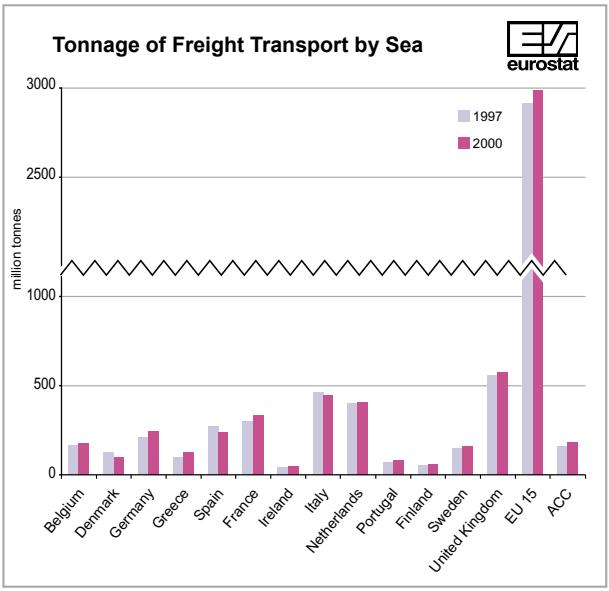
Freight transport by inland waterways in the European Union accounted in 2000 for 6.5% of total inland transport (excluding pipelines) while transport by road and rail represent respectively 86% and 7%.
Between the year 1995 and 2000 the total volume of this mode of transport in the European Union increased for nearly 8% to 860 million tonnes in 2000. Germany and the Netherlands are the two main countries contributing to the importance of this activity. In 2000, they accounted for 64% of goods carried by inland waterways in the European Union.
With the exception of Poland most of the other acceding countries having inland waterways transport report only traffic on the Danube river, which has been highly affected by the war in the Balkans. Freight transport by inland waterways in the acceding countries accounted in 2000 only 0.6% of their total inland transport (excluding pipelines).

Tonnage of Freight Transport by Sea

(million tonnes)

	1997	1998	1999	2000
Belgium	162	171	166	179
Denmark	124	105	97	97
Germany	213	217	222	243
Greece	101	111	113	128
Spain	271	280	296	235
France	305	319	315	337
Ireland	36	40	43	45
Italy	459	476	463	447
Luxembourg	-	-	-	-
Netherlands	402	405	396	406
Austria	-	-	-	-
Portugal	75	77	77	81
Finland	55	58	59	56
Sweden	150	156	156	159
United Kingdom	558	568	565	573
EU 15	**2 912**	**2 982**	**2 967**	**2 985**
Iceland	:	:	:	:
Liechtenstein	-	-	-	-
Norway	:	:	:	:
Switzerland	-	-	-	-
Czech Republic	-	-	-	-
Estonia	23	27	34	40
Cyprus	7	6	6	7
Latvia	51	52	49	52
Lithuania	16	15	16	23
Hungary	-	-	-	-
Malta	3	4	4	4
Poland	51	51	50	48
Slovenia	7	8	8	9
Slovakia	-	-	-	-
ACC	**159**	**164**	**168**	**183**
Bulgaria	7	5	5	7
Romania	32	28	23	25
Turkey	138	143	135	141
CC 13	**335**	**340**	**331**	**356**

Data Source: Eurostat



Data Source: Eurostat

Caution must be taken when considering the total figures (inwards + outwards), as the national transport includes some double-counting (goods loaded and unloaded). With this in mind, in 2000 almost 3000 million tonnes were handled in the EU. Of these, around two thirds were goods unloaded and the remaining third goods loaded. Overall, the volume of goods handled increased by 3.2% since 1997. It must be said, however, that two Member States registered a fall in the volume handled since 1997: Italy and Denmark (for Italy, mainly due to the change on the definition of "goods" in order to comply with the Directive). In Denmark, in particular, the volume fell from 124 million tonnes in 1997 to 97 million tonnes in 2000 (mainly due the decrease of coal imports since 1998 and to the discontinuation of the Storeb_lt ferry services). The United Kingdom leads by far with more than 573 million tonnes, in part a reflection of the UK's pivotal role in the production and distribution of North Sea oil. The UK is followed by Italy and the Netherlands. Overall, Germany and Belgium progressed most, with an increase of 9.4% and 8.4% respectively.

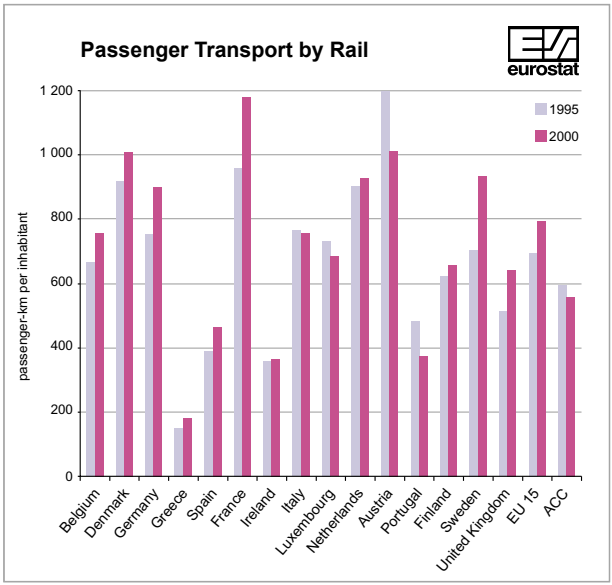
Passenger Transport by Rail

(passenger-km per inhabitant)

	1995	1996	1997	1998	1999	2000
Belgium	667	668	686	696	719	756
Denmark	917	878	942	973	966	1 008
Germany	753	751	723	721	887	900
Greece	150	167	179	148	150	*180*
Spain	390	397	421	443	458	465
France	961	1 030	1 058	1 099	1 131	1 181
Ireland	358	356	378	383	388	365
Italy	765	780	758	719	753	757
Luxembourg	732	722	713	703	694	684
Netherlands	904	907	922	949	904	929
Austria	1 196	1 202	1 008	987	988	1 012
Portugal	483	448	452	454	431	375
Finland	623	635	657	655	661	658
Sweden	705	700	770	791	839	936
United Kingdom	513	546	592	616	651	643
EU 15	**696**	**714**	**719**	**726**	**779**	**794**
Iceland	-	-	-	-	-	-
Liechtenstein *	:	:	:	:	:	:
Norway	546	559	581	584	599	561
Switzerland	1 663	1 649	1 749	1 758	1 834	1 851
Czech Republic	775	786	749	682	674	711
Estonia	284	210	180	163	169	192
Cyprus	-	-	-	-	-	-
Latvia	499	461	467	432	408	301
Lithuania	304	257	227	216	201	165
Hungary	825	842	854	878	945	*970*
Malta	-	-	-	-	-	-
Poland	543	513	516	532	557	510
Slovenia	281	285	282	288	286	320
Slovakia	784	701	568	574	550	531
ACC	**597**	**575**	**561**	**562**	**579**	**558**
Bulgaria	558	606	708	574	465	425
Romania	832	812	700	596	548	518
Turkey	*96*	86	94	98	96	90
CC 13	**446**	**430**	**415**	**394**	**388**	**368**

* Included in Austrian data

Data Source: Eurostat, DG for Energy and Transport



Data Source: Eurostat, DG for Energy and Transport

The passenger kilometers (pkm) per inhabitant increased on average by 14% in EU 15 between 1995 and 2000. Apart from Italy, Luxembourg, Austria and Portugal, all the other Member States showed an increase in this indicator, which varies from 2% in Ireland to almost 33% in Sweden. In absolute figures, it is France which in 2000 recorded the largest number of passenger kilometers per inhabitant, certainly due to the major development of high speed lines.

In the acceding countries, the number of passenger-km per inhabitant dropped on average by 6.5% between 1995 and 2000. Except for Slovenia and Hungary, all the other countries recorded a fall which reached -46% in Lithuania.

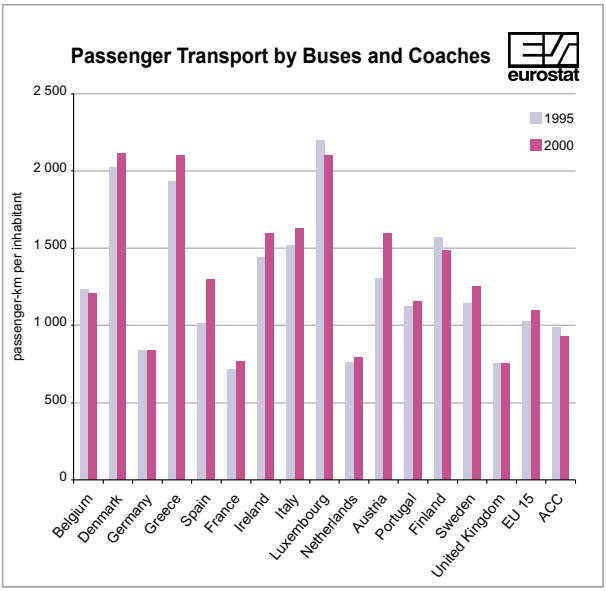
With almost 1000 pkm per inhabitant, Hungary offers the highest figure in the acceding countries.

Passenger Transport by Buses and Coaches

(passenger - km per inhabitant)

	1995	1996	1997	1998	1999	2000
Belgium	1 233	1 122	1 169	1 176	1 193	1 210
Denmark	2 027	2 160	2 121	2 099	2 099	2 116
Germany	839	834	829	831	*830*	*840*
Greece	1 932	1 947	1 972	2 016	2 040	*2 100*
Spain	1 010	*1 100*	1 118	1 252	1 262	*1 300*
France	719	731	722	731	732	769
Ireland	1 441	1 458	1 497	1 535	*1 600*	*1 600*
Italy	1 520	1 545	1 565	1 573	1 605	1 627
Luxembourg	*2 200*	*2 200*	*2 100*	*2 100*	*2 100*	*2 100*
Netherlands	763	773	769	802	797	*790*
Austria	1 305	1 551	*1 600*	*1 600*	*1 600*	*1 600*
Portugal	1 124	1 109	1 037	1 127	1 128	1 156
Finland	1 566	1 561	1 556	1 514	1 471	1 488
Sweden	1 144	1 165	1 198	1 209	1 242	1 251
United Kingdom	756	751	732	760	756	753
EU 15	**1 027**	**1 048**	**1 046**	**1 073**	**1 081**	**1 094**
Iceland	*1 600*	*1 600*	1 597	1 671	1 687	1 693
Liechtenstein	:	:	:	:	:	:
Norway	861	940	964	998	992	985
Switzerland	824	834	846	844	*840*	*840*
Czech Republic	1 062	944	854	843	841	930
Estonia	1 380	1 423	1 535	1 562	1 578	1 921
Cyprus	:	:	:	:	:	:
Latvia	729	645	697	777	983	989
Lithuania	546	471	407	370	331	271
Hungary	934	958	1 001	1 050	1 119	*1 200*
Malta	:	:	:	:	:	:
Poland	882	880	857	880	860	821
Slovenia	1 260	1 181	1 105	1 059	978	795
Slovakia	2 087	2 065	1 852	1 640	1 452	1 562
ACC	**984**	**961**	**927**	**929**	**916**	**926**
Bulgaria	842	630	527	466	261	164
Romania	544	568	600	398	370	343
Turkey	*1 400*	1 501	1 538	1 508	1 429	1 348
CC 13	**1 076**	**1 089**	**1 089**	**1 051**	**1 005**	**973**

Data Source: Eurostat, DG for Energy and Transport



Data Source: Eurostat, DG for Energy and Transport

After passenger cars, more passenger kilometres are performed by buses and coaches than by any other mode of inland transport in the EU. With almost 1 100 kilometres performed per capita it means 300km more then rail transport. The range is rather narrow with The Netherlands at one end with 2 116km and the United Kingdom at the other with 753km per person and year. Over the period 1995-2000 it was stable with the EU 15 average increasing slightly from 1 027 to 1 094. The same trend can also be found in EFTA countries, with an increase of the average from 852 km to 909 km whereas in the acceding countries and the candidate countries a very slight downward trend can be found (candidate countries: 1 076km to 973km). The extremes are to be found in Estonia with 1 921km and in Bulgaria with 164km.

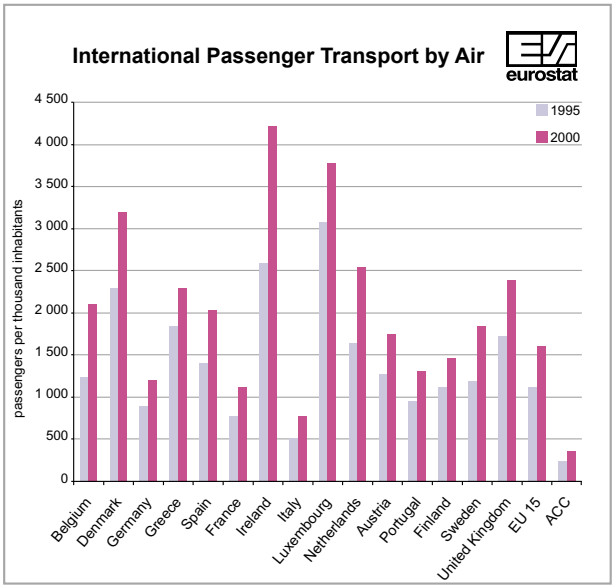
International Passenger Transport by Air

(passengers per thousand inhabitants)

	1995	1996	1997	1998	1999	2000
Belgium	1 234	1 315	1 564	1 811	1 956	2 106
Denmark	2 292	2 450	2 632	2 850	3 019	3 204
Germany	895	934	996	1 038	1 120	1 199
Greece	1 847	1 739	1 906	1 874	2 127	*2 300*
Spain	1 403	1 453	1 580	1 743	1 922	2 031
France	772	844	895	961	1 029	1 113
Ireland	2 589	2 598	3 247	3 574	3 909	4 217
Italy	513	544	585	609	676	767
Luxembourg	3 075	3 062	3 381	3 487	3 640	3 775
Netherlands	1 642	1 794	2 027	2 206	2 357	2 538
Austria	1 276	1 356	1 459	1 576	1 641	1 753
Portugal	956	966	1 018	1 144	1 219	1 310
Finland	1 115	1 131	1 253	1 356	1 344	1 468
Sweden	1 191	1 303	1 442	1 559	1 716	1 836
United Kingdom	1 723	1 784	1 935	2 118	2 243	2 390
EU 15	***1 127***	***1 179***	***1 283***	***1 383***	***1 492***	***1 604***
Iceland	3 526	3 901	4 124	4 565	4 835	5 263
Liechtenstein	-	-	-	-	-	-
Norway	*1 400*	*1 500*	*1 600*	*1 600*	1 662	1 832
Switzerland	3 005	3 116	3 425	3 628	3 990	4 364
Czech Republic	317	370	410	430	477	551
Estonia	245	291	341	384	388	408
Cyprus	6 250	5 873	6 157	6 683	7 256	7 965
Latvia	195	200	215	227	234	243
Lithuania	113	117	129	142	146	157
Hungary	287	325	356	390	430	*470*
Malta	6 862	6 885	7 337	7 616	7 869	7 789
Poland	70	74	87	104	112	122
Slovenia	326	341	366	407	462	509
Slovakia	*24*	24	29	39	29	27
ACC*	***240***	***253***	***278***	***305***	***330***	***360***
Bulgaria	264	264	272	277	260	256
Romania	*73*	*71*	70	75	80	92
Turkey	*290*	326	355	333	267	334
CC 13*	***236***	***256***	***278***	***284***	***270***	***310***

* Passengers travelling between 2 countries which are in the same aggregate are counted twice in this aggregate (ACC or CC 13)

Data Source: Eurostat, national statistics



Data Source: Eurostat, National statistics

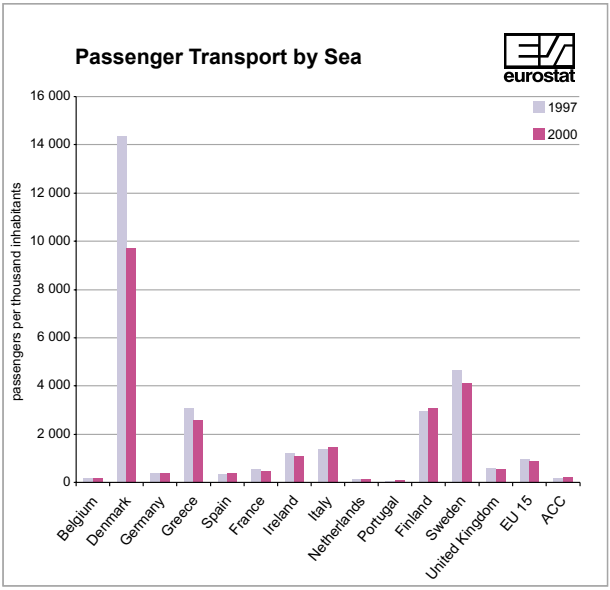
Aviation is, by far, the fastest growing mode of transport for passengers in EU with, between 1995 and 2000, an average annual increase of 7.33% in EU15 and 8.46% in acceding countries.
Two EU countries (Ireland and Belgium) as well as four acceding countries (Czech republic, Estonia, Hungary and Poland) even showed more than 10% of average annual increase.
Even with the restriction explained in the footnote, it can be considered that on average, each EU15 inhabitant made more than one international trip in 2000.
The highest number of international trips in EU15 being registered in Ireland and the lowest in Italy (5.5 times more in Ireland than in Italy).
As far as acceding countries are concerned, the number of international air passengers per inhabitant can be very different according to the countries. The extremes are showed on one side by Cyprus and Malta which registered almost 8 international passengers per inhabitant and on the other side by Slovakia which registered 0.03 international passenger per inhabitant.
For Malta and Cyprus, the figures reflect the importance of tourism.
For Slovakia, the very low figure can probably be explained on one hand by the proximity of the capital city (Bratislava) with the capital city of Austria, so with Vienna International airport and on the other hand by the youth of Bratislava as capital city (since the independence of Slovakia in 1993)

Passenger Transport by Sea

(passengers per thousand inhabitants)

	1997	1998	1999	2000
Belgium	191	166	152	148
Denmark	14 367	11 962	10 775	9 707
Germany	*380*	*380*	*380*	382
Greece	3 073	3 363	3 528	*2 600*
Spain	354	389	409	365
France	569	528	519	473
Ireland	1 192	1 261	1 160	1 110
Italy	1 394	1 400	1 482	1 495
Luxembourg	-	-	-	-
Netherlands	126	117	123	126
Austria	-	-	-	-
Portugal	*47*	47	46	52
Finland	2 955	3 102	3 126	3 084
Sweden	4 629	4 717	4 693	4 122
United Kingdom	615	623	602	567
EU 15	**983**	**960**	**956**	**887**
Iceland	:	:	:	:
Liechtenstein	-	-	-	-
Norway	*1 300*	*1 400*	*1 500*	*1 500*
Switzerland	-	-	-	-
Czech Republic	-	-	-	-
Estonia	4 207	4 661	5 213	5 428
Cyprus	963	984	1 094	1 367
Latvia	25	41	31	32
Lithuania	19	21	21	29
Hungary	-	-	-	-
Malta	7 718	7 729	8 256	8 198
Poland	56	60	81	116
Slovenia	22	21	19	19
Slovakia	-	-	-	-
ACC	**161**	**172**	**195**	**218**
Bulgaria	3	1	-	-
Romania	:	:	:	:
Turkey	33	29	17	20
CC 13	**:**	**:**	**:**	**:**

Data Source: Eurostat



Data Source: Eurostat

Sea transport of passengers was reduced by 10% in the EU over the period 1997-2000. Figures should be treated with care: it takes into account passengers having made national, international intra-EU and extra-EU journeys. Thus, passengers in national and international intra-EU traffic are double counted, once at embarkation and once at disembarkation. Although Italian ports registered the most passengers, Denmark was the country with the highest figure in passengers per thousand inhabitants. Since 1997, Danish figures have been declining. The drop in passenger numbers can largely be attributed to the discontinuation of the Storeb_lt ferry services. Both the geographical characteristics of the country with numerous ferries between the various Danish islands and the ferry connections with Germany, Sweden and Norway explain the high numbers. Sweden comes second, despite a drop of 11% compared to 1999. Largely responsible for the frequentation of Swedish ports are the ferries to and from Denmark and Germany. During the period under review, France and Belgium's passenger numbers show a noticeable decrease in 2000 compared to the previous years. The decrease might be explained by a consolidation of the ferry connections and the fact that an increasing number of passengers have chosen to use the connection via the Channel Tunnel with the “Eurostar” train services.

Number of Persons Killed in Road Accidents

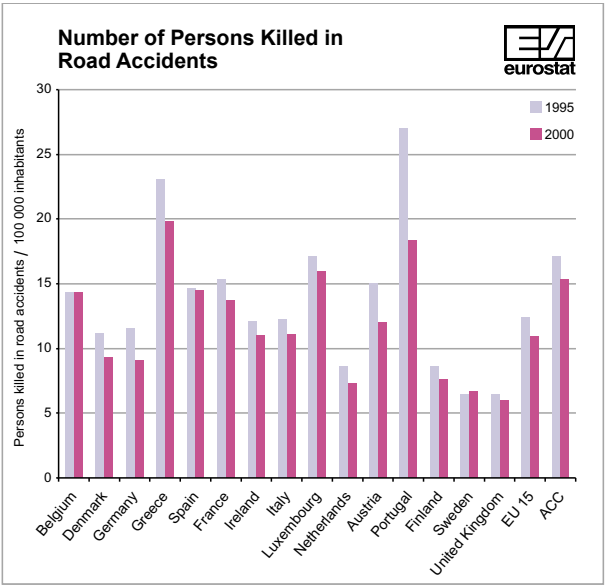
(Persons killed in road accidents / 100 000 inhabitants)

	1995	1996	1997	1998	1999	2000
Belgium	14	13	13	15	14	14
Denmark	11	10	9	9	10	9
Germany	12	11	10	9	9	9
Greece *	23	21	20	21	20	*20*
Spain *	15	14	14	15	14	14
France *	15	15	15	15	14	14
Ireland	12	12	13	12	11	11
Italy *	12	12	12	11	12	11
Luxembourg	17	17	14	13	13	16
Netherlands	9	8	8	7	8	7
Austria	15	13	14	12	13	12
Portugal *	27	27	25	21	20	18
Finland	9	8	9	8	8	8
Sweden	6	6	6	6	7	7
United Kingdom	6	6	6	6	6	6
EU 15	**12**	**12**	**12**	**11**	**11**	**11**
Iceland	9	4	6	10	8	11
Liechtenstein	6	10	19	0	0	9
Norway	7	6	7	8	7	8
Switzerland	10	9	8	8	8	8
Czech Republic	15	15	15	13	14	14
Estonia	22	14	19	20	16	15
Cyprus	16	17	15	15	15	15
Latvia **	24	22	21	26	25	25
Lithuania	18	18	20	22	20	17
Hungary	16	13	14	14	13	*12*
Malta	4	5	5	5	1	4
Poland	18	16	19	18	17	16
Slovenia	21	20	18	16	17	16
Slovakia	12	12	15	16	12	12
ACC	**17**	**16**	**17**	**17**	**16**	**15**
Bulgaria	15	12	11	12	13	12
Romania	13	13	13	12	11	11
Turkey	10	9	8	10	9	9
CC 13	**14**	**13**	**13**	**13**	**13**	**12**

* for the countries not applying the UN "died within 30 day's of the accident" correction factors have been applied, for Greece only in 1995

** persons dying within 7 days after accident, no correction factor is applied

Data Source: Eurostat



Data Source: Eurostat

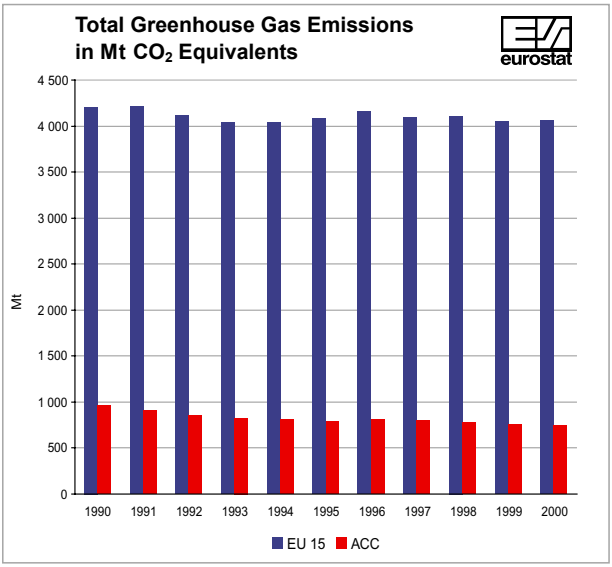
The price for transport is still high at EU level, with the number of deaths in road accidents totalling 41 thousand persons in 2000. The only positive thing about this is that there has been a decrease of more than 27% since 1990, even though the traffic has increased during the same period. Counted in deaths per 100 000 inhabitants, the figures for UK, Sweden and the Netherlands are 6, 7 and 7 respectively, well below the EU average of 11. On the other side, Portugal and Greece can be found with 18 and 20 deaths per 100 000 inhabitants. The EFTA countries are slightly below the EU average, with 8 deaths per 100 000 inhabitants. In the candidate countries, both extremes can be found, ranging from Malta (4) to Latvia (25), with an average of 12 deaths per 100 000 inhabitants. There can be several reasons for these differences, such as driving habits, poor infrastructure, vehicle fleet (small and/or old vehicles) and the implementation (or lack of) road safety measures.

ENVIRONMENT INDICATORS

Total Greenhouse Gas Emissions in Mt CO_2 Equivalents

	1990	1995	2000 *(Mt)*
Belgium	143.1	153.5	151.9
Denmark	69.4	77.4	68.5
Germany	1 222.8	1 071.2	991.4
Greece	104.8	110.4	129.7
Spain	286.4	318.1	386.0
France	551.8	547.1	542.3
Ireland	53.4	57.2	66.3
Italy	522.1	528.1	543.5
Luxembourg	10.8	7.7	5.9
Netherlands	210.3	223.6	216.9
Austria	77.4	78.6	79.8
Portugal	65.1	73.3	84.7
Finland	77.1	75.2	74.0
Sweden	70.6	72.7	69.4
United Kingdom	742.5	685.5	649.1
EU 15	**4 207.6**	**4 079.8**	**4 059.3**
Iceland	2.1	2.3	2.6
Norway	52.0	51.6	55.3
Czech Republic	192.0	150.9	146.7
Estonia	43.5	22.3	19.7
Cyprus	5.0	6.0	7.0
Latvia	31.0	13.4	10.6
Lithuania	51.5	23.9	23.9
Hungary	86.6	77.9	83.8
Malta	2.2	2.7	2.8
Poland	459.0	416.5	384.6
Slovenia	18.3	19.0	19.8
Slovakia	72.6	54.1	48.5
ACC	**961.8**	**786.7**	**747.4**
Bulgaria	137.7	98.1	77.6
Romania	229.1	164.0	164.0
Turkey	167.4	197.2	256.2
CC 13	**1 496.1**	**1 246.0**	**1 245.2**

Data Source: European Environment Agency
European Topic Centre on Air and Climate Change, UNFCCC



(Mt)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU 15	4 208	4 217	4 118	4 030	4 039	4 080	4 157	4 092	4 112	4 048	4 059
ACC	962	906	860	824	815	787	813	804	772	761	747

Data Source: European Environment Agency
European Topic Centre on Air and Climate Change, UNFCCC

Note: Total GHG emissions comprise the Kyoto basket of 6 greenhouse gases: CO_2, CH_4, N_2O, HFCs, PFCs and SF_6 weighted according to their global warming potential expressed in CO_2 equivalents.
Data exclude emissions and removals due to land use change and forestry (LUCF).

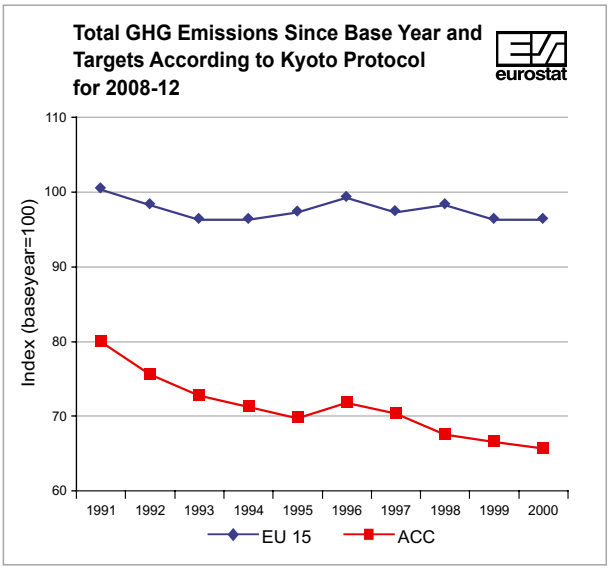
The large decrease in GHG emissions achieved during the period 1990-1995 in EU 15 was not maintained during the period 1995-2000. Amongst non-EU countries, only Malta, Cyprus, Slovenia and Turkey have shown an increase in GHG emissions. All other countries showed significant reductions. This can be associated with the reduction in energy consumption shown in the energy chapter of this publication.

Total Greenhouse Gas Emissions Since Base Year and Targets According to Kyoto Protocol for 2008-12

(Index (1990=100))

	1991	1995	1999	2000	targets
Belgium	104	107	106	106	92
Denmark	116	112	105	99	92
Germany	96	88	81	81	92
Greece	100	105	118	124	92
Spain	102	111	129	135	92
France	104	99	99	98	92
Ireland	101	107	122	124	92
Italy	100	101	103	104	92
Luxembourg	105	71	55	55	92
Netherlands	105	106	104	103	92
Austria	105	102	103	103	92
Portugal	103	113	131	130	92
Finland	97	98	99	96	92
Sweden	101	103	100	98	92
United Kingdom	100	92	87	87	92
EU 15	**100**	**97**	**96**	**96**	**92**
Iceland	97	108	122	122	110
Norway	95	99	108	106	101
Czech Republic	94	79	73	76	92
Estonia	93	51	45	45	92
Cyprus	100	120	140	140	:
Latvia	80	43	36	34	92
Lithuania	89	46	46	46	92
Hungary	87	77	84	82	94
Malta	108	122	126	129	:
Poland	78	74	71	68	94
Slovenia	89	95	99	99	92
Slovakia	88	74	71	67	92
ACC	**80**	**69**	**66**	**65**	**:**
Bulgaria	74	62	49	49	92
Romania	68	62	62	62	92
Turkey	104	118	144	153	:
CC 13	**92**	**85**	**84**	**85**	**:**

Data Source: European Environment Agency
European Topic Centre on Air and Climate Change, UNFCCC



(Index (baseyear=100)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU 15	100	98	96	96	97	99	97	98	96	96
ACC	80	75	72	71	69	71	70	67	66	65

Data Source: European Environment Agency
European Topic Centre on Air and Climate Change, UNFCCC

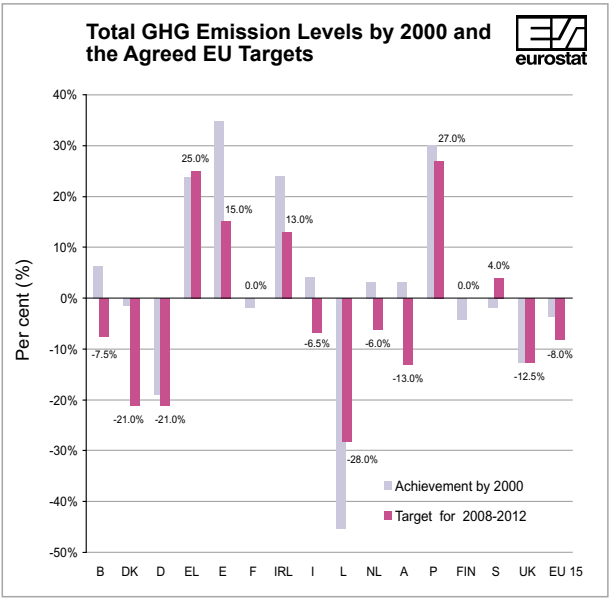
Note: Data for ACC exclude Malta and Cyprus; for CC 13 excluding Turkey; Baseyear: all EU countries have selected 1990 as their base year for the calculation of the first three greenhouse gases. The Kyoto Protocol allows a choice between 1990 and 1995 as base year for the calculation of the initial assigned amount of a Party, for the three groups of fluorinated gases that are part of its scope.
CC 13 selections different from 1990 are: BG and PL 1988, HU 1985-1987, RO 1989, SI 1986.
No targets exist for Cyprus, Malta and Turkey or the groups of ACC and CC 13

The EU 15 target set in the Kyoto protocol is for an 8% reduction with respect to 1990 levels. A 3.5% reduction has been achieved over the last decade. This could be a positive sign that the final target will be met.

Total GHG Emission Levels by 2000 and the Agreed EU Targets

	(Mt)			Per cent (%)
	1990	**2000**	**Change 1990-2000**	**Target for 2008-2012**
Belgium	143.1	151.9	6.2	-7.5
Denmark	69.4	68.5	-1.2	-21.0
Germany	1 222.8	991.4	-18.9	-21.0
Greece	104.8	129.7	23.8	25.0
Spain	286.4	386.0	34.8	15.0
France	551.8	542.3	-1.7	0.0
Ireland	53.4	66.3	24.0	13.0
Italy	522.1	543.5	4.1	-6.5
Luxembourg	10.8	5.9	-45.1	-28.0
Netherlands	210.3	216.9	3.1	-6.0
Austria	77.4	79.8	3.1	-13.0
Portugal	65.1	84.7	30.1	27.0
Finland	77.1	74.0	-4.1	0.0
Sweden	70.6	69.4	-1.7	4.0
United Kingdom	742.5	649.1	-12.6	-12.5
EU 15	**4 207.6**	**4 059.3**	**-3.5**	**-8.0**

Data Source: European Environment Agency
European Topic Centre on Air and Climate Change, UNFCCC



Data Source: European Environment Agency
European Topic Centre on Air and Climate Change, UNFCCC

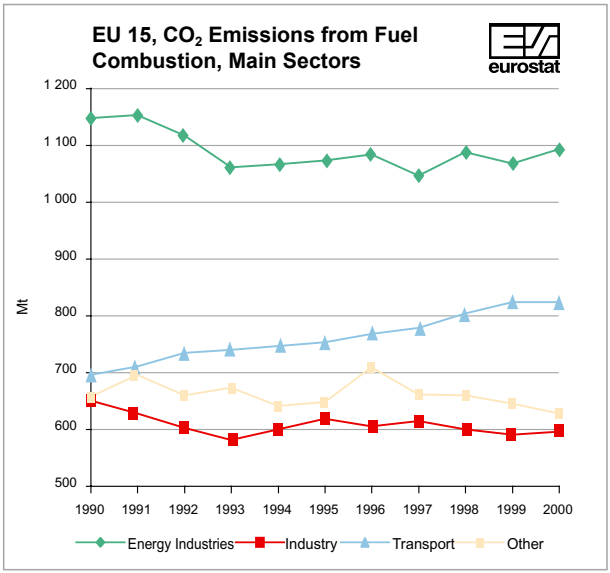
Council decision 2002/358/EC set a percentage decrease or increase in GHG emission for each of the EU 15 countries. An increase was allowed for Spain, Portugal, Ireland and Greece to account for the high economic growth rates, a smaller growth was allowed for Sweden and zero growth for France and Finland. However, Portugal, Spain and Ireland have already passed their permitted level of increase and by the end of 2000 Greece had almost reached its quota. France, Finland and Sweden show a decrease in their emission levels.

CO_2 Emissions from Fuel Combustion, Main Sectors

(Gg)

	Energy Industries		Industry		Transport		Other	
	1990	**2000**	**1990**	**2000**	**1990**	**2000**	**1990**	**2000**
B	28 572	27 357	33 023	32 344	19 610	23 999	28 005	30 425
DK	26 202	25 250	5 605	5 823	10 381	12 028	9 078	7 592
D	412 896	337 466	196 457	139 425	162 281	182 910	215 199	171 958
EL	43 302	55 058	9 792	10 415	18 039	21 678	5 341	8 530
E	76 717	103 542	44 530	58 203	57 656	85 118	25 953	34 436
F	65 492	60 173	84 924	81 081	119 159	137 783	94 375	97 258
IRL	11 057	16 016	3 833	4 743	4 961	10 115	9 726	10 364
I	142 927	152 078	86 908	82 159	101 769	121 189	77 125	77 097
L	1 277	255	5 258	1 734	870	1 451	1 277	1 268
NL	51 513	59 085	41 889	43 003	29 085	35 120	34 656	32 935
A	14 395	12 137	8 450	10 607	11 944	16 937	13 908	13 638
P	15 884	22 377	8 797	10 056	11 221	19 633	3 630	5 040
FIN	18 517	19 815	14 358	15 956	12 475	12 379	8 543	6 782
S	10 170	10 704	11 776	12 558	18 736	19 568	10 756	8 021
UK	228 089	190 833	94 133	86 510	116 581	123 046	117 803	121 223
EU 15	**1 147 013**	**1 092 146**	**649 732**	**594 615**	**694 767**	**822 954**	**655 374**	**626 568**
IS	:	:	:	:	:	:	:	:
NO	:	:	:	:	:	:	:	:
CZ	59 171	60 160	59 457	36 130	7 275	11 110	34 177	17 019
EE	29 753	13 945	2 655	483	2 693	1 030	2 392	1 036
CY	2 800	2 800	:	:	:	:	:	:
LV	8 288	2 705	2 683	1 003	6 011	2 120	5 982	919
LT	16 425	7 923	5 396	964	5 791	3 754	9 720	1 340
HU	29 746	22 403	7 893	10 826	8 208	9 325	22 258	13 180
MT	1 397	1 784	60	58	342	496	96	106
PL	236 582	176 324	49 820	52 056	29 103	28 207	55 928	45 695
SI	5 911	5 362	3 011	2 361	2 660	4 199	1 610	2 883
SK	50 654	32 647	0	0	5 070	4 319	0	0
ACC	**440 728**	**326 053**	**:**	**:**	**:**	**:**	**:**	**:**
BG	39 664	26 322	19 890	9 488	10 864	6 212	6 387	2 491
RO	74 856	113 583	49 585	:	9 417	7 744	31 525	:
TR	30 320	72 320	41 220	68 100	:	:	29 210	33 480
CC 13	**585 567**	**538 278**	**:**	**:**	**:**	**:**	**:**	**:**

Data Source: European Environment Agency
European Topic Centre on Air and Climate Change, UNFCCC



(Mt)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Energy Industries	1 147	1 152	1 116	1 060	1 066	1 073	1 083	1 046	1 087	1 066	1 092
Industry	650	626	601	580	599	617	603	614	599	590	595
Transport	695	709	734	738	746	752	767	778	803	823	823
Other	655	695	659	673	641	647	708	660	658	643	627

Data Source: European Environment Agency
European Topic Centre on Air and Climate Change, UNFCCC

Note: Sectors in accordance with IPCC and EMEP classifications

The main source of CO_2 emissions is fuel combustion. For EU 15 the energy industries produce the largest percentage of CO_2 emissions (35% in 2000). Transport is the second largest CO_2 producing sector (26% in 2000), and it shows a steadily increasing trend in all EU 15 countries. The emissions of the energy industries and the other industrial sectors in EU 15 have shown an overall tendency to decrease over the decade.

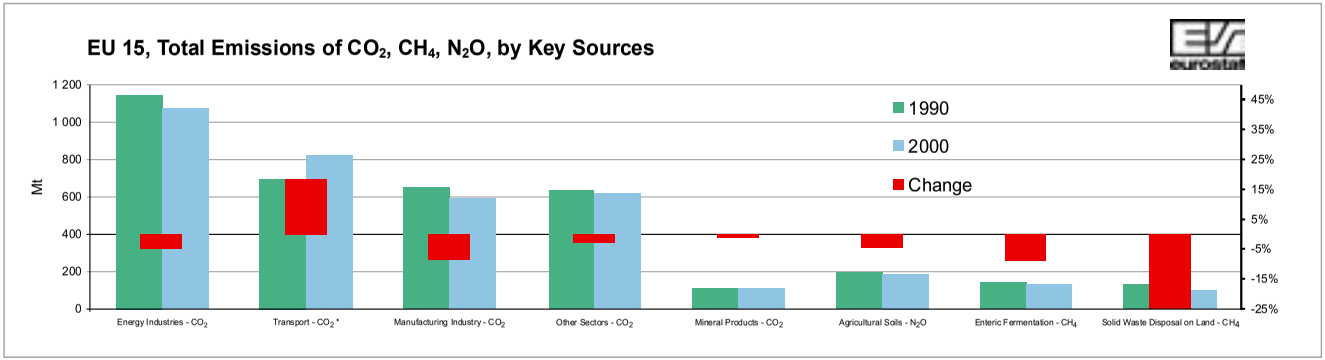
EU 15, Total Emissions of CO_2, CH_4 , N_2O, by Key Sources

	(Mt) 1990	2000	Per cent (%) Change
Energy Industries - CO_2	1 147	1 092	-4.8
Transport - CO_2*	695	823	18.5
Manufacturing Industry - CO_2	650	595	-8.5
Other Sectors - CO_2	636	619	-2.6
Mineral Products - CO_2	112	111	-0.8
Agricultural Soils - N_2O	198	190	-4.2
Enteric Fermentation - CH_4	144	131	-8.8
Solid Waste Disposal on Land - CH_4	133	99	-25.8

* domestic transport activities

Data Source: European Environment Agency
European Topic Centre on Air and Climate Change, UNFCCC

As already discussed on the previous pages, the CO_2 emissions from all the fuel consuming sectors have decreased over the last decade. The largest decrease of 8.5% is from manufacturing industry. CO_2 emissions from transport have increased considerably over the decade, an increase which is consistent with the corresponding increase in fuel consumption. Another important point is the reduction in CH_4 emissions due to a change in the method of solid waste disposal on land.



* domestic transport activities

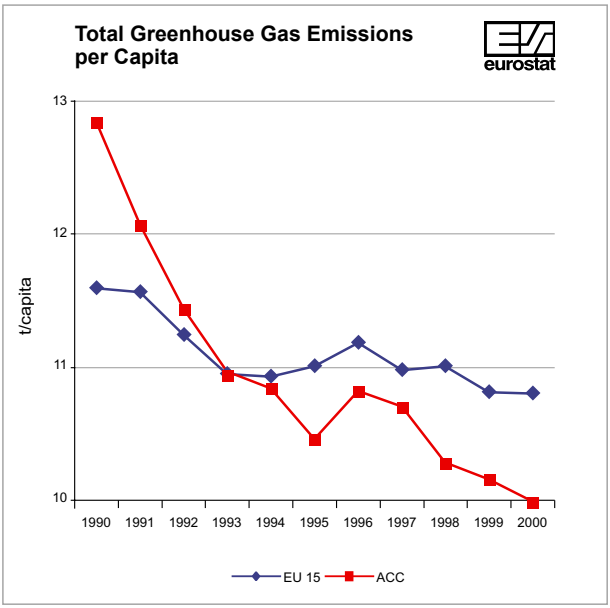
Data Source: European Environment Agency
European Topic Centre on Air and Climate Change, UNFCCC

Total Greenhouse Gas Emissions per Capita

GHG in CO_2 eq. (t/capita)

	1990	1995	1999	2000
Belgium	14.4	15.2	14.8	14.8
Denmark	13.5	14.8	13.7	12.9
Germany	15.5	13.1	12.1	12.1
Greece	10.4	10.6	11.8	12.3
Spain	7.4	8.1	9.4	9.7
France	9.8	9.5	9.4	9.2
Ireland	15.2	15.9	17.5	17.5
Italy	9.2	9.2	9.4	9.4
Luxembourg	28.6	19.0	13.9	13.7
Netherlands	14.1	14.5	13.8	13.7
Austria	10.1	9.8	9.9	9.8
Portugal	6.6	7.4	8.6	8.3
Finland	15.5	14.7	14.8	14.3
Sweden	8.3	8.3	8.0	7.8
United Kingdom	12.9	11.7	10.9	10.9
EU 15	**11.6**	**11.0**	**10.8**	**10.8**
Iceland	8.4	8.6	9.4	9.3
Norway	12.3	11.9	12.6	12.3
Czech Republic	18.5	14.6	13.6	14.3
Estonia	27.7	14.9	13.6	14.4
Cyprus	7.4	8.2	9.3	9.3
Latvia	11.6	5.3	4.6	4.4
Lithuania	13.9	6.4	6.4	6.4
Hungary	8.3	7.6	8.5	8.3
Malta	6.3	7.3	7.3	7.5
Poland	12.1	10.8	10.4	9.9
Slovenia	9.2	9.5	10.0	9.9
Slovakia	13.7	10.1	9.5	9.0
ACC	**12.8**	**10.4**	**10.1**	**10.0**
Bulgaria	15.7	11.6	9.4	9.5
Romania	9.9	7.2	7.3	7.3
Turkey	3.0	3.2	3.7	3.8
CC13	**9.2**	**7.4**	**7.3**	**7.2**

Data Source: European Environment Agency
European Topic Centre on Air and Climate Change, UNFCCC



GHG in CO_2 eq. (t/capita)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU 15	11.6	11.5	11.2	10.9	10.9	11.0	11.2	11.0	11.0	10.8	10.8
ACC	12.8	12.0	11.4	10.9	10.8	10.4	10.8	10.7	10.3	10.1	10.0

Data Source: European Environment Agency
European Topic Centre on Air and Climate Change, UNFCCC

Note: GHG in CO_2 equivalent comprise all six gases without land use change and forestry (LUCF)

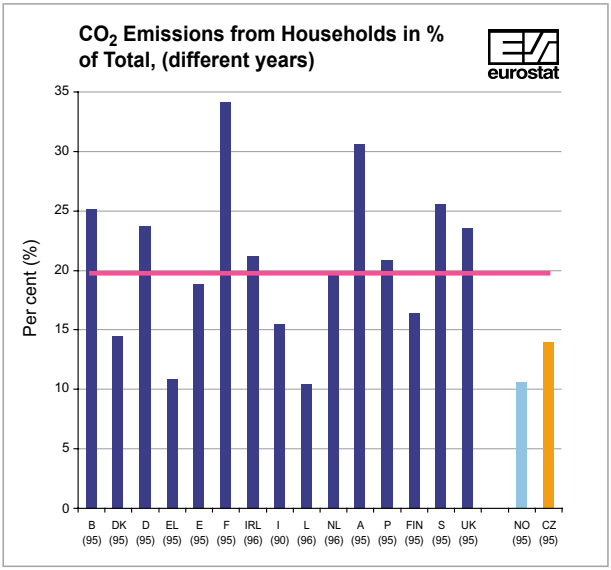
Sweden has the lowest GHG emission per capita in EU 15 (7.8 in 2000) while Ireland has the highest (17.5 in 2000). The average GHG per capita for the EU 15 is of the same order as for the acceding countries while the average for the candidate countries is even lower (mainly due to the very low value for Turkey, which is only 3.8 in 2000).

CO_2 Emissions from Households in % of Total, (different years)

			(Mt)	*Per cent(%)*
	Industry*	**Households****	**Total*****	**Share**
B (95)	91.6	30.8	122.4	25.2
DK (95)	66.8	11.5	79.7	14.5
D (95)	691.4	214.4	905.8	23.7
EL (95)	80.3	9.8	90.2	10.9
E (95)	201.9	46.9	248.8	18.9
F (95)	306.7	159.1	465.8	34.2
IRL (96)	29.1	7.8	36.9	21.2
I (90)	389.4	71.6	461.0	15.5
L (96)	6.4	0.8	7.2	10.4
NL (96)	163.8	40.4	205.2	19.7
A (95)	43.0	19.1	62.4	30.6
P (95)	50.7	13.4	64.1	20.9
FIN (95)	68.4	13.6	83.0	16.4
S (95)	45.1	16.2	63.5	25.5
UK (95)	442.1	136.4	578.4	23.6
NO (95)	44.4	5.2	49.6	10.6
CZ (95)	110.0	18.1	128.9	14.0

* based on NACE rev. 1; 50-93, excl. 60-64
** consumption; excluding electricity
*** including not allocated emissions

Data Source: Eurostat



Data Source:Eurostat

Note: Data on emissions to air and energy use based on the industrial classification (NACE) used in NAMEA (National Accounts Matrix including Environmental Accounts) are provided by Member States and other countries within pilot studies.Information is available from the draft NAMEA-air compilation guide.

CO_2 emissions from households are mainly due to the use of fossil fuels for heating. The share, of these emissions in the total CO_2 emissions, according to surveys performed, is high in France (34%) and Austria (30%) with an average of 20% for the EU 15.

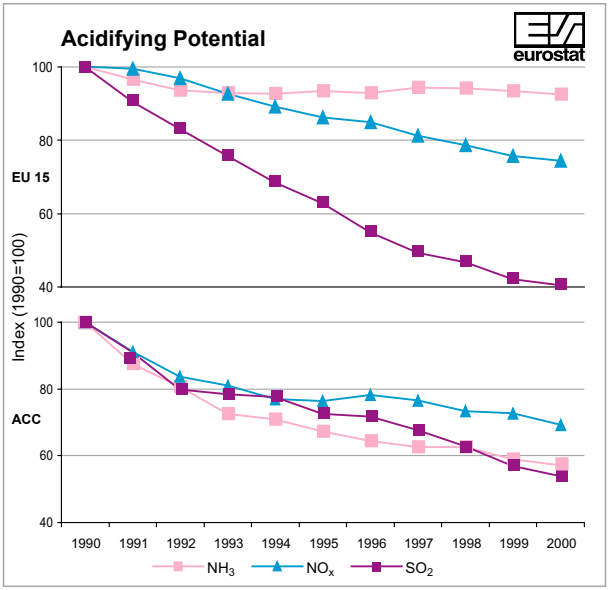
Emissions of Acidifying Substances

(Mg)

	1990	1995	2000
Belgium	24 438	20 454	17 799
Denmark	19 440	16 939	11 314
Germany	270 170	142 426	98 293
Greece	27 547	29 691	29 564
Spain	123 378	113 458	109 287
France	128 407	113 034	98 242
Ireland	14 982	14 579	14 032
Italy	121 227	106 865	87 479
Luxembourg	1 416	1 174	892
Netherlands	32 158	25 899	20 980
Austria	11 921	10 016	9 247
Portugal	24 279	25 186	25 803
Finland	17 035	10 832	9 376
Sweden	15 410	12 459	10 485
United Kingdom	196 405	137 941	86 799
EU 15	**1 028 212**	**780 954**	**629 592**
Iceland	2 105	1 728	2 252
Norway	18 415	22 764	23 607
Czech Republic	83 983	48 193	21 300
Estonia	11 038	5 520	4 399
Cyprus	1 842	1 697	2 075
Latvia	8 383	3 811	2 049
Lithuania	15 313	6 586	3 862
Hungary	44 283	30 691	23 401
Malta	:	:	:
Poland	166 335	123 197	86 380
Slovenia	8 933	6 657	5 421
Slovakia	25 336	13 591	7 800
ACC	**365 447**	**239 944**	**156 686**
Bulgaria	79 153	57 760	38 004
Romania	70 485	48 435	48 435
Turkey	64 086	72 761	86 666
CC 13	**579 171**	**418 900**	**329 791**

Table includes SO_2, NO_x, NH_3 weighted according to their acidifying potential

Data Source: European Environment Agency
European Topic Centre on Air and Climate Change, UNFCCC



acidifying potential (kt)

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU 15	NH_3	222	214	208	206	206	207	206	210	209	208	206
	NO_x	291	289	282	270	260	251	247	236	229	220	217
	SO_2	515	465	428	390	353	323	282	254	240	216	207
ACC	NH_3	87	76	70	63	62	58	56	54	54	51	50
	NO_x	103	94	86	83	79	79	80	79	75	75	71
	SO_2	389	354	310	305	301	282	279	263	244	221	209

Data Source: European Environment Agency
European Topic Centre on Air and Climate Change, UNFCCC

On average for EU 15 the emissions of SO_2 have decreased substantially (over 60%) over the last decade. This decrease is due to the installation of desulphurisation units in power plants, the reduction in the use of solid fuels in industry and electricity production and the use of liquid fuels with lower sulphur content in industry. A decrease can be seen for the other substances as well, although not so profound. The average reduction for all the acidifying substances in EU 15 was about 39% over the last decade. The corresponding reduction for the acceding countries was 57% and for the candidate countries 43%.

Emissions of Tropospheric Ozone Precursor Gases

troposhperic ozone forming potential (TOFP), equivalents (kt)

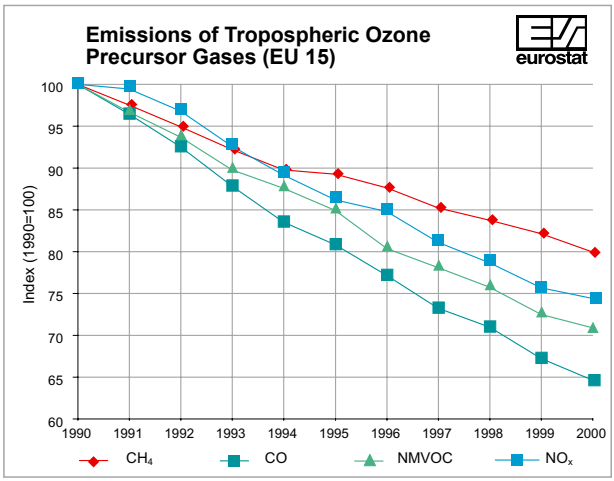
	1990	1995	1999	2000
B	822	766	720	720
DK	592	551	473	461
D	7 830	5 208	4 238	4 235
EL	886	932	1 036	1 036
E	3 629	3 605	3 678	3 673
F	5 931	5 087	4 379	4 174
IRL	308	288	283	282
I	5 464	5 404	4 174	4 174
L	67	54	40	41
NL	1 350	1 074	897	885
A	762	626	580	569
P	898	1 039	1 064	1 064
FIN	656	555	534	508
S	1 069	962	861	814
UK	6 724	5 251	4 112	3 837
EU15	**36 988**	**31 402**	**27 069**	**26 473**

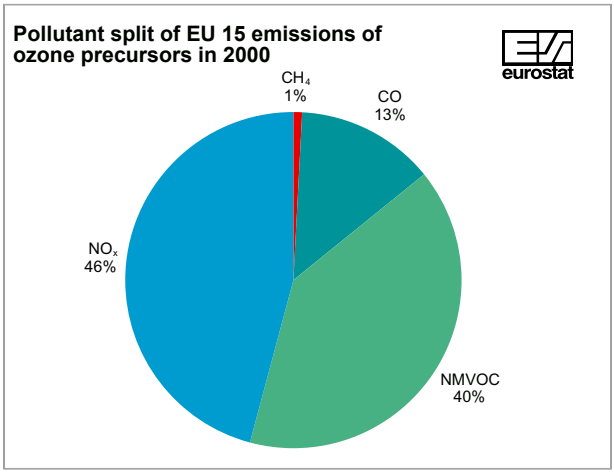
troposhperic ozone forming potential (TOFP), equivalents (kt)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
CH_4	283	276	268	261	254	252	248	241	237	232	226
CO	5 508	5 312	5 097	4 838	4 600	4 452	4 249	4 033	3 909	3 703	3 560
NMVOC	14 859	14 365	13 919	13 338	13 013	12 617	11 942	11 602	11 254	10 771	10 533
NO_x	16 338	16 245	15 815	15 126	14 566	14 081	13 853	13 250	12 851	12 363	12 154
SUM	36 988	36 198	35 100	33 563	32 434	31 402	30 291	29 126	28 251	27 069	26 473

Data Source: European Environment Agency
European Topic Centre on Air and Climate Change

Four pollutants (CH_4, CO, NMVOC and NO_x) contribute to the formation of tropospheric ozone ('ozone precurors'). Total ozone precursor emissions are falling in most countries and the EU as a whole and have been reduced in the EU by 28% between 1990 and 2000. The reduction varies from -20% for CH_4 up to -39% for CO emissions. The reduction for NO_x is about 29% mainly due to the expansion in the use of low NO_x combustion technology and catalytic converters. The 29% reduction of Non Methane Volatile Organic Compounds (NMVOC) is also attributed to the use of catalytic converters in cars and a reduction in fugitive emissions from fuel handling processes (e.g. petrol stations). However, substantial reductions of both NMVOCs and NO_x are still required to achieve 2010 targets of the EU national emissions ceilings directive.





Data Source: European Environment Agency
European Topic Centre on Air and Climate Change

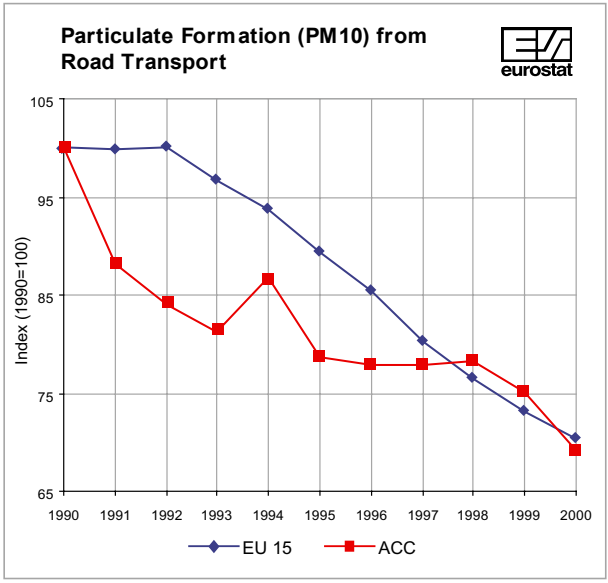
Note: Weighting factors are used to derive tropospheric ozone forming potentials (TOFP) so that emissions can be combined in terms of their contribution to tropospheric ozone: CH_4 0.014, CO 0.11, NMVOC 1.0 and NO_x 1.22.

Emissions of Particulate Matter (PM10) from Road Transport

	(kt)			Per cent (%) Change
	1990	**1995**	**2000**	**1995-2000**
Belgium	149	162	137	-15.3
Denmark	114	103	86	-16.2
Germany	1 409	1 156	936	-19.0
Greece	98	101	102	1.1
Spain	530	552	514	-6.8
France	1 148	1 061	777	-26.8
Ireland	43	47	49	4.2
Italy	927	902	718	-20.4
Luxembourg	9	10	7	-29.7
Netherlands	253	204	168	-17.6
Austria	79	74	78	5.6
Portugal	115	146	151	3.4
Finland	146	122	100	-17.5
Sweden	167	141	106	-24.4
United Kingdom	1 246	963	596	-38.1
EU 15	**6 432**	**5 742**	**4 525**	**-21.2**
Iceland	:	:	:	:
Norway	:	:	:	:
Czech Republic	131	163	154	-5.6
Estonia	48	30	19	-36.6
Cyprus	13	13	15	19.8
Latvia	63	23	19	-19.5
Lithuania	51	22	24	7.6
Hungary	113	96	105	8.9
Malta	:	:	:	:
Poland	434	308	243	-21.1
Slovenia	35	40	34	-15.1
Slovakia	43	38	31	-17.2
ACC*	**933**	**734**	**645**	**-12.2**
Bulgaria	127	80	54	-33.3
Romania	49	24	24	0.0
Turkey	275	325	311	-4.3
CC 13*	**1 383**	**1 164**	**1 034**	**-11.2**

*Excluding Malta

Data Source: European Environment Agency
European Topic Centre on Air and Climate Change, UNFCCC



(kt)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU 15	6 432	6 419	6 432	6 213	6 022	5 742	5 496	5 161	4 921	4 700	4 525
ACC*	933	823	783	757	810	734	727	726	729	699	645

*Excluding Malta

Data Source: European Environment Agency
European Topic Centre on Air and Climate Change, UNFCCC

Particulate matter emissions from road transport have, on average, decreased by 30% in EU 15. A similar reduction is observed in acceding countries (candidate countries, 25% reduction).
In the EU, the largest decrease appeared in the UK (52%) while Greece, Ireland and Portugal showed an increase which is consistent with an increase of fuel consumption for road transport activities.

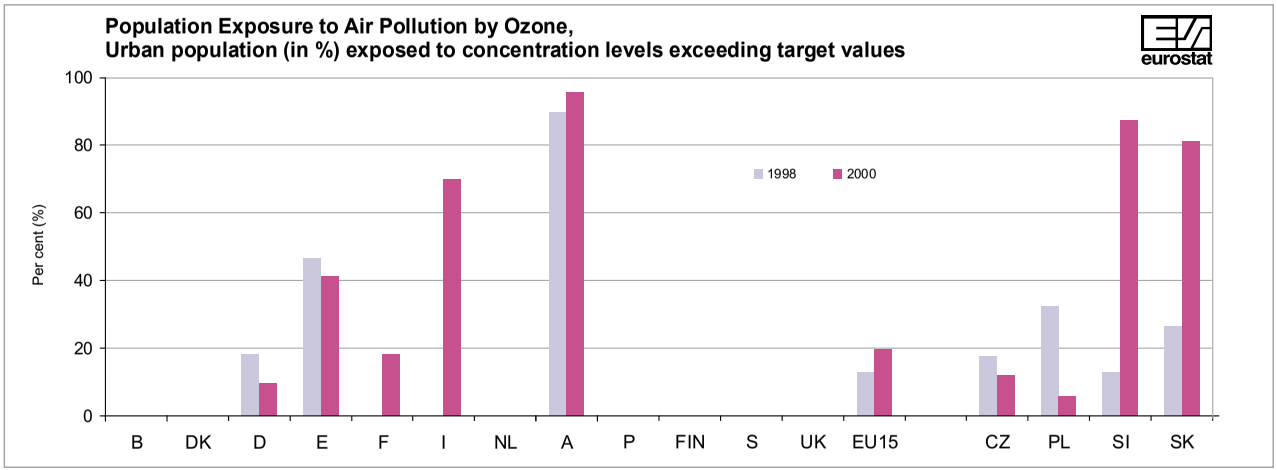
Population Exposure to Air Pollution by Ozone

Per cent (%)

	1998	2000
Belgium	0	0
Denmark	0	:
Germany	18	10
Greece	:	:
Spain	46	41
France	:	18
Ireland	:	:
Italy	:	70
Luxembourg	:	:
Netherlands	0	0
Austria	90	95
Portugal	:	0
Finland	0	0
Sweden	0	0
United Kingdom	0	0
EU 15	**13**	**20**
Iceland	:	:
Norway	:	:
Czech Republic	18	12
Estonia	:	:
Cyprus	:	:
Latvia	:	:
Lithuania	:	:
Hungary	:	:
Malta	:	:
Poland	32	6
Slovenia	13	87
Slovakia	26	81
ACC	**:**	**:**
Bulgaria	:	:
Romania	:	:
Turkey	:	:
CC 13	**:**	**:**

Data Source: Eurostat, European Environment Agency (EEA), European Topic Centre on Air and Climate Change (ETC ACC)

The percentage of the urban population that is exposed to air pollution by ozone is presented for two years (1998 and 2000). On average there seems to be an increase in EU 15, although these results are not conclusive as two years are not enough to reach conclusions. However there are five countries for which the percentage is zero consistently over the referenced years. Only the countries for which data exist are presented in the graph.



Data Source: Eurostat, European Environment Agency (EEA), European Topic Centre on Air and Climate Change (ETC ACC)

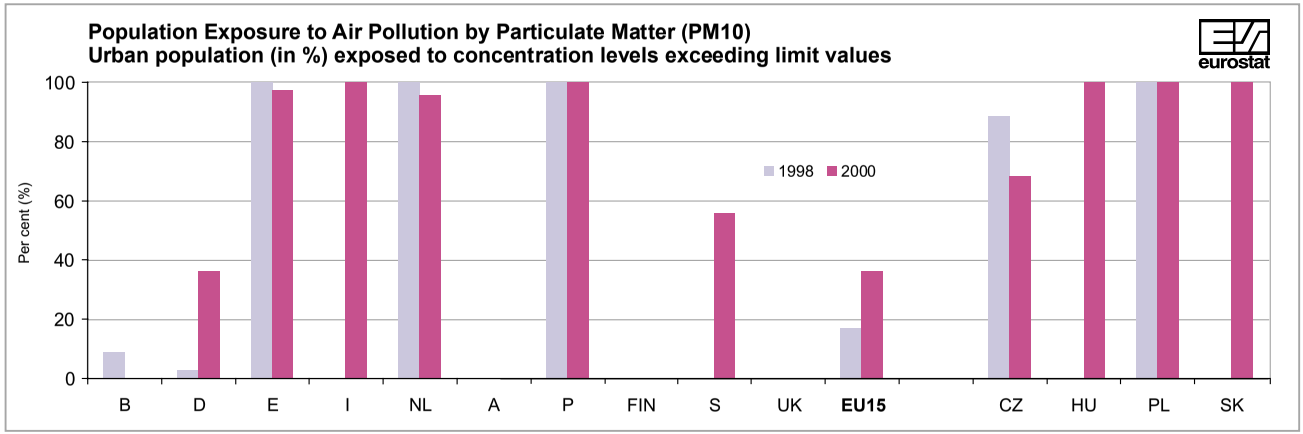
Population Exposure to Air Pollution by Particulate Matter (PM10)

Per cent (%)

	1998	2000
Belgium	9	0
Denmark	:	:
Germany	3	36
Greece	:	:
Spain	100	98
France	:	:
Ireland	:	:
Italy	:	100
Luxembourg	:	:
Netherlands	100	96
Austria	:	0
Portugal	100	100
Finland	0	0
Sweden	0	56
United Kingdom	0	0
EU 15	**17**	**36**
Iceland	:	:
Norway	:	:
Czech Republic	89	68
Estonia	:	:
Cyprus	:	:
Latvia	:	:
Lithuania	:	:
Hungary	:	100
Malta	:	:
Poland	100	100
Slovenia	:	:
Slovakia	:	100
ACC	**:**	**:**
Bulgaria	:	:
Romania	:	:
Turkey	:	:
CC 13	**:**	**:**

Data Source: Eurostat, European Environment Agency (EEA), European Topic Centre on Air and Climate Change (ETC ACC)

The percentage of population exposed to air pollution by particulate matter is higher than the corresponding percentage for ozone pollution, and reaches 100%. On average the percentage in EU 15 has doubled from 1998 to 2000.



Data Source: Eurostat, European Environment Agency (EEA), European Topic Centre on Air and Climate Change (ETC ACC)

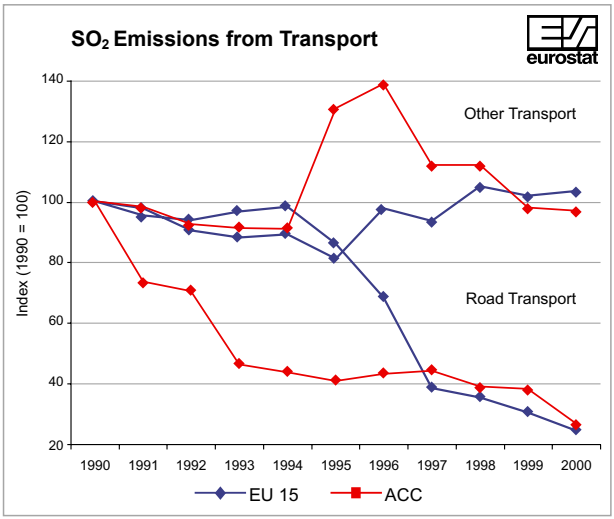
SO_2 Emissions from Transport

(kt)

	Road Transport			Other Transport		
	1990	1995	2000	1990	1995	2000
Belgium	15.1	16.9	6.2	0.3	0.6	0.8
Denmark	5.8	1.8	0.5	9.4	5.8	2.6
Germany	86.0	69.0	26.0	27.0	11.0	5.0
Greece	17.0	9.0	5.0	33.0	27.0	47.0
Spain	56.0	50.0	17.0	53.0	53.0	42.0
France	139.0	114.0	22.0	34.0	26.0	23.0
Ireland	5.2	5.4	1.5	2.3	2.1	1.9
Italy	103.1	102.0	30.0	20.8	21.8	96.0
Luxembourg	0.4	0.6	0.3	0.1	0.1	0.1
Netherlands	12.6	12.2	4.0	16.7	17.4	19.6
Austria	3.5	4.6	2.7	2.5	1.0	0.8
Portugal	13.2	17.4	6.5	28.4	21.4	21.3
Finland	5.4	1.8	0.2	1.7	1.0	4.5
Sweden	8.0	1.7	0.5	12.1	1.4	1.0
United Kingdom	63.0	51.0	6.0	47.0	44.0	32.0
EU 15	**533**	**457**	**129**	**288**	**234**	**298**
Iceland	0.0	0.3	:	2.0	2.7	:
Norway	3.5	1.9	0.7	7.6	2.9	3.5
Czech Republic	5.3	6.8	3.9	0.6	0.7	3.7
Estonia	13.1	8.3	0.6	0.7	0.7	0.7
Cyprus	8.3	7.8	9.4	0.7	0.7	0.8
Latvia	5.5	4.8	1.5	:	:	:
Lithuania	6.0	1.0	0.8	3.0	8.0	0.1
Hungary	16.0	6.6	2.3	0.7	0.9	0.6
Malta	:	:	:	:	:	:
Poland	140.0	42.0	32.0	9.0	9.0	9.0
Slovenia	3.3	1.9	2.0	0.5	0.2	0.1
Slovakia	2.9	2.2	0.7	0.5	0.3	0.2
ACC *	**200**	**81**	**53**	**16**	**20**	**15**
Bulgaria	10.3	5.6	3.3	16.3	18.5	25.1
Romania	5.0	3.0	3.0	33.0	24.0	24.0
Turkey	:	:	:	:	:	:
CC 13	**:**	**:**	**:**	**:**	**:**	**:**

* Excluding Malta and Latvia

Data Source: European Environment Agency
European Topic Centre on Air and Climate Change, UNFCCC



(kt)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Road Transport											
EU 15	533.3	508.2	499.8	514.4	523.2	457.4	363.0	203.5	187.1	161.1	128.6
ACC *	200.4	147.0	140.6	92.4	86.8	81.4	86.0	88.1	77.8	76.0	53.0
Other Transport											
EU 15	288.2	280.9	260.2	253.1	256.6	233.6	281.3	269.1	302.1	293.5	297.6
ACC **	15.7	15.4	14.5	14.3	14.2	20.5	21.7	17.5	17.5	15.3	15.2

* Excluding Malta
** Excluding Malta and Latvia

Data Source: European Environment Agency
European Topic Centre on Air and Climate Change, UNFCCC

SO_2 emissions from road transport were reduced dramatically (almost 76%), from 1990 to 2000 in the EU 15 and by 74% in acceding countries. However SO_2 emissions from the other modes of transport are almost at the same level as in 1990, after a sharp increase (almost 40% in 1996) for EU 15. The reduction of SO_2 emissions from road transport is mainly attributed to the low sulphur content gasoline which has been gradually made available in several member states since 1992.

Evolution of Take-up of Pollution Control Technologies in Passenger Cars - EU 15

Stock of cars

(million units)

1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
143.2	151.0	154.8	158.3	157.6	160.0	163.3	166.7	170.9	175.5	179.4

Breakdown of cars

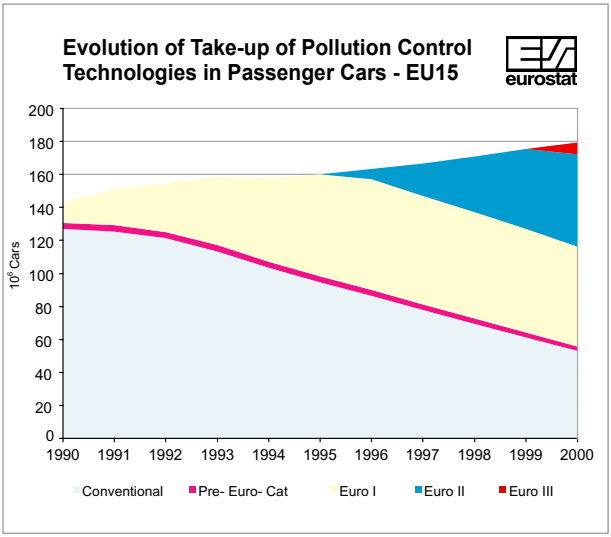
Per cent (%)

Conventional	88.7	83.1	78.4	71.6	65.6	59.1	52.9	46.7	40.7	34.9	29.6
Pre-Euro-Cat	2.5	2.5	2.4	2.3	2.3	2.2	2.1	2.0	1.8	1.6	1.4
Euro I	8.8	14.4	19.2	26.1	32.1	38.6	41.1	39.6	37.8	35.8	33.8
Euro II	0.0	0.0	0.0	0.0	0.0	0.0	3.9	11.7	19.8	27.7	31.1
Euro III	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.1

Data Source: Eurostat

European regulatory emission standards (applying to passenger cars of serial production)

Standard	Directive	as from	CO	NO_x	VOC's
Petrol Engine					*(g/km)*
"EURO-I"	91/441/EEC	02-07-1996	4.05	0.49	0.66
"EURO-II"	94/12/EEC	02-01-2000	3.28	0.25	0.34
"EURO-III"	98/69/EC	02-01-2004	2.30	0.15	0.20
"EURO-IV"	98/69/EC	02-01-2009	1.00	0.08	0.10
Diesel Engine					
"EURO-I"	91/441/EEC	02-07-1996	2.88	0.78	0.20
"EURO-II"	94/12/EEC	02-01-2000	1.06	0.73	0.19
"EURO-III"	98/69/EC	02-01-2004	0.64	0.50	0.06
"EURO-IV"	98/69/EC	02-01-2009	0.50	0.25	0.05



(10^6 Cars)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Conventional	127.0	125.5	121.3	113.4	103.4	94.6	86.4	77.9	69.5	61.3	53.0
Pre-Euro-Cat	3.6	3.8	3.7	3.7	3.7	3.6	3.5	3.3	3.1	2.8	2.5
Euro I	12.6	21.7	29.7	41.2	50.6	61.8	67.1	65.9	64.6	62.8	60.7
Euro II	0.0	0.0	0.0	0.0	0.0	0.0	6.3	19.6	33.8	48.6	55.8
Euro III	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.4

Data Source: Eurostat

The stock of cars in the EU 15 has increased by 25% over the past decade. In 2000 almost one third of the total number of cars was equipped with conventional technology. Most of the other cars met Euro I and Euro II standards. The number of conventional cars has been decreasing linearly since 1992, and they have been replaced by cars meeting stricter emissions standards. Euro III standard is slowly taking effect.

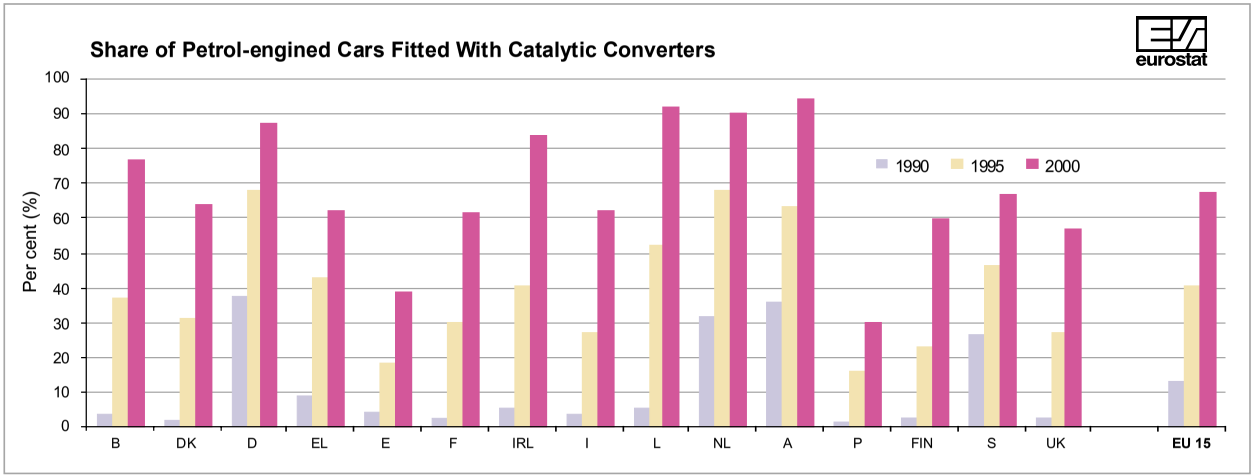
Share of Petrol-engined Cars Fitted With Catalytic Converters

Per cent(%)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
B	3	7	11	20	29	37	45	53	61	69	77
DK	2	7	12	17	25	31	38	46	52	58	64
D	38	45	52	57	63	68	72	77	82	85	87
EL	9	18	29	35	39	43	46	50	54	58	62
E	4	5	7	11	15	18	22	26	30	34	39
F	3	5	8	15	23	30	38	43	49	55	61
IRL	5	14	21	27	34	40	48	56	63	72	84
I	3	6	9	15	21	27	33	41	48	55	62
L	5	12	17	30	41	52	62	70	78	86	92
NL	32	40	47	56	62	68	73	78	82	86	90
A	36	38	40	49	56	63	71	77	83	89	94
P	1	3	5	9	13	16	19	22	25	28	30
FIN	2	5	7	12	17	23	29	37	44	52	60
S	26	31	35	39	43	46	51	56	61	67	67
UK	3	5	7	13	20	27	33	39	46	51	57
EU15	**12.9**	**17.1**	**21.0**	**28.4**	**34.6**	**40.6**	**46.3**	**52.0**	**57.7**	**62.7**	**67.5**

Data Source: Eurostat estimates

Germany, Netherlands Austria and Sweden were the countries with the largest percentage of cars fitted with catalytic converters in 1990. In 2000 the lowest shares of catalytic cars were in Portugal (30%) and Spain (39%). In the other countries the corresponding share was 57% and more. The highest penetration (94%) was observed in Austria. On average 67.5% of the cars in the EU 15 were fitted with catalytic converters in 2000.



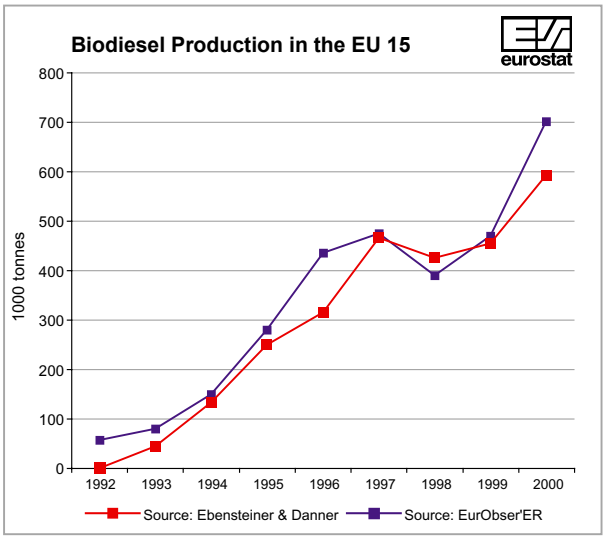
Data Source: Eurostat estimates

Production of Biodiesel in the EU 15

(1000 tonnes)

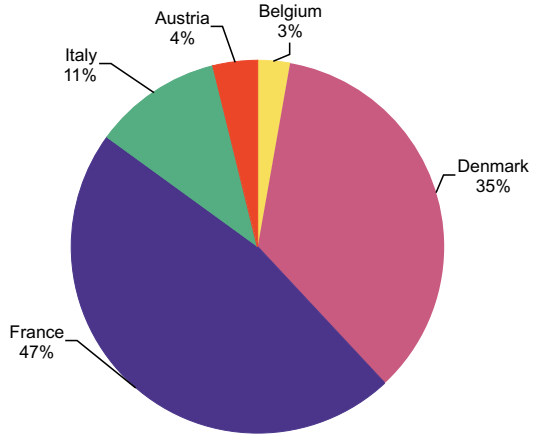
	1993	1994	1995	1996	1997	1998	1999	2000
Belgium	:	:	:	:	:	:	:	20
Denmark	0	0	0	0	93	117	128	246
France	8	65	150	215	250	250	250	329
Italy	36	54	82	83	101	34	56	78
Austria	:	14	18	17	22	25	25	28

Data Source: Eurostat, EurObser'ER



Biodiesel Production in the EU Member States, Year 2000

eurostat



Data Source: EurObser'ER

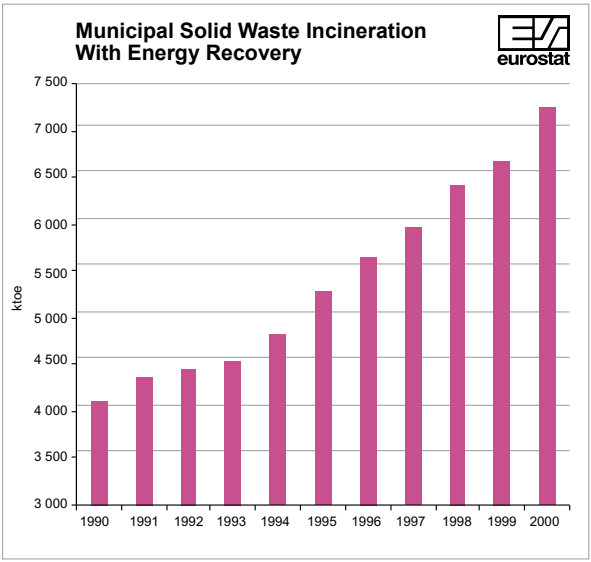
According to the White Paper on Renewable Sources of Energy (1997), EU member states should make a firm commitment to achieve the target of covering 7% of the total consumption with bio-fuels, by 2010. The commercial production of bio-diesel started in 1993 and in 2000 had reached a total of 700 kt in five countries. France produces almost half (47%) of the total amount of bio-diesel in EU 15, Denmark coming second with a share of 35%.

Municipal Solid Waste Incineration With Energy Recovery

(ktoe)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
B	281	289	297	311	298	323	325	341	314	304	314
DK	382	402	419	453	477	560	607	660	652	695	725
D	1 063	1 063	1 063	1 036	1 066	1 073	1 103	1 083	1 339	1 416	1 416
EL	0	0	0	0	0	0	0	0	0	0	0
E	81	81	87	87	116	187	211	244	275	199	279
F	1 050	1 253	1 255	1 256	1 266	1 640	1 610	1 514	1 560	1 560	1 811
IRL	0	0	0	0	0	0	0	0	0	0	0
I	191	197	197	215	265	124	134	172	273	374	356
L	25	26	26	25	24	23	18	23	23	20	28
NL	429	454	441	447	473	497	774	943	994	1 090	1 098
A	67	77	89	95	97	95	120	125	121	127	149
P	0	0	0	0	0	0	0	0	0	57	174
FIN	19	18	18	17	16	12	8	10	4	15	45
S	355	352	364	373	362	390	372	426	417	422	403
UK	160	165	185	234	352	358	369	427	435	406	445
EU 15	**4 103**	**4 376**	**4 440**	**4 548**	**4 811**	**5 283**	**5 648**	**5 968**	**6 406**	**6 685**	**7 243**

Data Source: Eurostat, Energy Statistics



Data Source: Eurostat, Energy Statistics

Incineration of municipal solid waste with energy recovery increased constantly from 1990 to 2000. Large differences in this development are noticeable from country to country. In some countries, Denmark in particular, incineration of waste has become the most important waste management option, while in other countries, e.g. Greece, there is no incineration of waste. However, generally there is a clear tendency towards incineration of waste.

Managing Natural Resources More Responsibly, Protected Areas for Biodiversity

Per cent (%)

	Habitats *	Birds **
Belgium	5.3	14.1
Denmark	6.6	22.3
Germany	6.4	7.6
Greece	17.9	6.1
Spain	21.8	13.6
France	6.2	1.6
Ireland	10	3.2
Italy	13.7	6.2
Luxembourg	13.6	6.2
Netherlands	6.7	24.1
Austria	10.6	14.7
Portugal	17.3	9.4
Finland	12.4	8.1
Sweden	13.5	5.5
United Kingdom	9.7	5.4
EU 15	**13.8**	**7.7**

*Area proposed under the Habitats Directive as percentage of total area: June 2002
**Area proposed under the Birds Directive as percentage of total area: June 2002

Data Source: European Commission, DG Environment

The indicator is based on information provided under the Council Directive 92/43/EEC of 21 May 1992 (Habitat Directive) on the conservation of natural habitats and of wild fauna and flora and under Council Directive 79/409/EEC of 2 April 1979 (Birds Directive) on the conservation of wild birds. In the EU 15, there are more than 15 000 sites proposed under the Habitats Directive and more than 2 700 sites designated under the Birds Directive.

Data Source: European Commission, DG Environment

ECO-EFFICIENCY

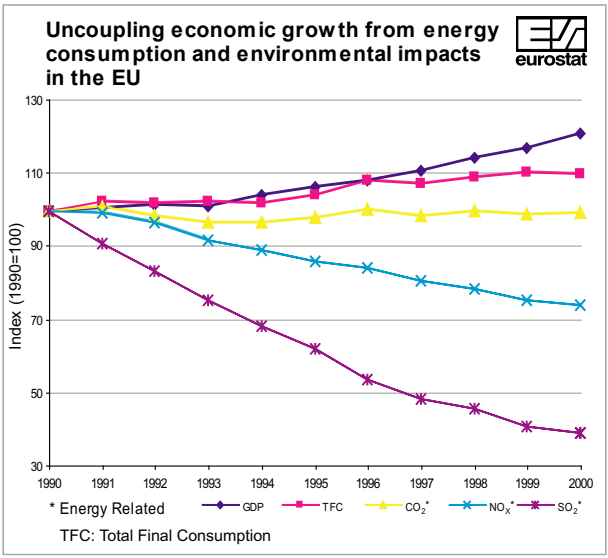
Uncoupling economic growth from energy consumption and environmental impacts in the EU 15

(Index 1990=100)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
GDP	100	101	102	101	104	107	108	111	114	117	121
Energy consumption	100	102	102	103	102	104	109	108	109	110	110
CO_2 emissions*	100	101	99	97	97	98	100	98	100	99	100
NO_X emissions*	100	99	97	92	89	86	85	81	79	76	74
SO_2 emissions*	100	91	84	76	68	62	54	48	46	41	39

* Energy Related Emissions

Data Source: Eurostat, Energy Statistics, Structural Business Statistics
European Topic Centre on Air and Climate Change



Data Source: Eurostat, Energy Statistics, Structural Business Statistics
European Topic Centre on Air and Climate Change

"eco" comprises both the ecological aspect of natural resources (and environmental management) as well as the economic aspect of the efficient use of the resources. This provides a useful guideline for the measurement of sustainability and environmental performance of economic sectors or branches. Figures show that economic activities decouple from the environmental impact they cause while growing in volume.

Total Investments in Electricity, Gas and Water Supply (all environmental domains)

(1000 Euro, Current Prices)

	1996	1997	1998	1999	2000
Belgium	40 382	36 162	71 096	19 912	:
Denmark	:	:	:	:	:
Germany *	487 028	330 893	147 273	265 872	102 258
Greece	96 292	100 289	130 407	138 344	:
Spain	:	116 429	87 484	10 764	66 610
France	221 100	201 781	151 998	132 646	97 293
Ireland	:	:	10 989	:	:
Italy	:	:	:	:	:
Luxembourg	:	:	:	:	:
Netherlands	:	20 671	13 876	20 329	:
Austria	32 900	14 540	10 249	8 818	:
Portugal	12 737	12 939	18 045	24 266	9 245
Finland	33 656	62 598	4 638	6 901	:
Sweden	:	100 333	:	46 778	48 430
United Kingdom	:	86 667	:	157 878	308 461
Iceland	:	:	:	:	:
Norway	:	:	:	:	:
Czech Republic	390 560	407 568	315 049	254 654	124 470
Estonia	7 370	25 365	20 050	16 856	20 147
Cyprus	:	:	12	:	:
Latvia	:	197	757	208	215
Lithuania	:	11 286	1 748	3 325	5 106
Hungary	:	19 338	34 946	43 336	55 429
Malta	:	:	:	:	:
Poland	535 316	487 145	614 200	543 868	373 802
Slovenia	25 848	29 913	19 050	8 663	36 014
Slovakia	:	:	245 763	80 818	22 635
Bulgaria	2 994	5 104	7 002	10 737	56 984
Romania	51 298	74 362	96 748	83 694	12 345
Turkey	41 397	103 525	4 696	:	:

* Excluding integrated investments

Data Source: Eurostat

Environmental protection investments vary considerably from year to year and between the countries. This is due to the fact that individual enterprises or specific industries have, as a result of increased governmental demands or the availability of new standard technology very large investments in a single year, which are followed by small investments amounts in subsequent years.
In some countries (e.g. UK and Belgium) more than half of the money invested in environmental protection is spent on cleaner technologies and other measures to reduce the generation of pollution at the source. However, in most countries the majority of the environmental protection investments aim at taking care of and treating the pollution generated by production processes. It should be stressed that pollution prevention investments are sometimes difficult to measure correctly which may lead to some underestimation. In addition, pollution prevention may occur as a positive side-effect from e.g. normal replacement of worn-out machinery where no expenditure specifically linked to environmental protection can be identified.

Total Investments by main sectors for the Protection of Air in 1999 and 2000

(1000 Euro, Current prices)

	MINING AND QUARRYING		MANUFACTURING		ELECTRICITY, GAS AND WATER SUPPLY		PUBLIC SECTOR	
	1999	2000	1999	2000	1999	2000	1999	2000
B	597	:	81 455	:	15 417	:	103	97
DK	:	:	:	:	:	:	119 173	158 205
D*	10 226	19 940	541 969	629 912	173 839	50 107	15 339	:
EL	:	:	:	:	:	:	619	:
E	1 839	4 417	214 964	274 356	829	1 953	8 210	:
F	:	:	:	:	:	:	:	:
IRL	:	:	:	:	:	:	:	:
I	:	:	:	:	:	:	:	:
L	:	:	:	:	:	:	:	:
NL	8 803	:	206 788	:	8 213	:	:	:
A	2 658	:	61 739	:	5 201	:	3 639	:
P	1 329	1 912	56 157	120 349	13 465	7 601	1 826	2 358
FIN	585	:	36 979	:	4 444	:	:	:
S	341	2 250	137 950	115 806	:	28 063	:	:
UK	:	139 464	:	756 385	:	182 123	12 652	13 538
IS	:	:	:	:	:	:	:	:
NO	:	:	:	:	:	:	:	:
CZ	1 427	6 452	117 064	56 973	181 598	48 882	108 074	108 781
EE	0	0	4 219	5 747	5 194	7 856	35	170
CY	:	:	:	:	:	:	:	:
LV	416		304	54	144	215	:	:
LT	22	2	4 710	5 640	2 744	3 504	75	101
HU	2 987	69	41 445	111 927	21 664	37 763	:	:
MT	:	:	:	:	:	:	:	:
PL	4 221	9 421	418 438	212 980	434 098	279 145	54 239	52 590
SI	:	:	4 955	5 498	3 649	31 203	:	257
SK	:	:	:	:	:	:	:	:
BG	0	0	6 647	5 647	1 534	33 369	0	0
RO	882	1 889	18 066	44 082	6 296	1 824	:	0
TR	:	:	:	:	:	:	:	:

* Excluding integrated investments

Data Source: Eurostat

In most EU countries, manufacturing industry typically accounts for more than 80% of the total amount of money industry spends on environmental protection, while Energy and water supply accounts for around 10 percent and Mining and quarrying have only a minor share. Pollution prevention investments lead to a modified or adapted production process. They serve to reduce the amount of pollution generated. When a new production process is introduced, the environmental protection expenditure consists of the outlays over and above what would have been paid for a cheaper, viable, but less environmentally benign equipment. Where an existing plant is modified, the environmental investment is equal to the total outlays for the environmental adaptation.

Annex A: Glossary of Terms used in the Energy and Environment Sections

Acidifying substances:

The acidifying substances considered in this publication are sulphur dioxide (SO_2) and nitrogen oxide (NO_x) and ammonia (NH_3). Emissions of these gases are associated with the formation of acid rain.

Acid Equivalent:

Acid Equivalents are weighting factors used to aggregate the emissions of different substances that have different acidifying effects and present a single figure for the acidification issue. They represent an oversimplified approach to a very complex process of chemical interactivity. Acid equivalents are estimated as follows: sulphur dioxide *1/32; nitrogen oxide *1/46 and ammonia *1/17.

CHP:

See "Combined Heat and Power"

CO_2 Equivalent:

Emissions of some substances resulting from burning of fossil fuels (CO_2, CH_4, N_2O, HFC, PFC and SF_6) significantly change the composition of the atmosphere and cause the greenhouse effect and global warming. These substances have individual global warming potentials (GWP) ranging from 1 (CO_2) to 23 900 (SF_6). In order to aggregate the emissions of the different substances and present a single figure for the climate change issue they are expressed in CO_2 equivalents.

Cogeneration:

See "Combined Heat and Power"

Combined Heat and Power:

A combined heat and power (also referred to as a cogeneration or a CHP) unit is an installation in which heat energy released from fuel is transmitted to electrical generator sets which are designed and operated in such a way that energy is partly used for generating electrical energy and partly for supplying heat for various purposes. The thermal efficiency of a combined heat and power unit is significantly higher than that of a unit producing electricity only.

Constant Price:

The constant price of a commodity is its price considered in constant terms, taking account of inflation.

Current Price:

The current (or nominal) price of a commodity is its price considered in current terms, without taking account of inflation.

Energy Dependency:

Energy dependency shows the extent to which a country relies upon imports of a fuel in order to meet its energy needs. It is calculated using the following formula: net imports / (gross inland consumption + bunkers) for the specific fuel

Energy Intensity:

Energy intensity gives an indication of the effectiveness with which energy is being used to produce added value. It is defined as the ratio of Gross Inland Consumption of energy to Gross Domestic Product.

Energy System:

The energy system is the total of the energy transformation sector and final energy consumption.

Final Energy Consumption:

Final energy consumption is the energy finally consumed in the transport, industrial, commercial, agricultural, public and household sectors. It excludes deliveries to the energy transformation sector and to the energy industries themselves.

GCV:

See "Gross Calorific Value"

GDP:

See "Gross Domestic Product"

Global Warming Potential (GWP):

The global warming potential is the estimated potential of a greenhouse gas contributing to global warming in the atmosphere. It is based on its effect over a 100-year time horizon. For example, the GWP of methane is estimated to be 21 times higher than GWP of CO_2 that was set to 1.0.

Greenhouse Gases:

According to UNFCCC, greenhouse gases comprise carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O) and hydrofuorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF_6).

Gross Calorific Value:

The gross calorific value (GCV) is the total amount of heat released by a unit quantity of fuel, when it is burned completely with oxygen, and when the products of combustion are returned to ambient temperature. This quantity includes the heat of condensation of any water vapour contained in the fuel and of the water vapour formed by the combustion of any hydrogen contained in the fuel.

Gross Domestic Product:

The gross domestic product (GDP) is the value of the output of all goods and services produced within the borders of a country.

Gross Inland Consumption:

Gross inland consumption is the quantity of energy consumed within the borders of a country. It is calculated using the following formula: primary production + recovered products + imports + stock changes – exports - bunkers (i.e. quantities supplied to sea-going ships)

Hard Coal and Derived Products:

Hard coal and derived products include hard coal, patent fuels, hard coke, gasworks coke and coal semi-coke.

Lignite and Derived Products:

Lignite and derived products include lignite, peat, brown coal briquettes and peat briquettes.

Natural Gas:

Natural gas occurs in natural underground deposits, and may or may not be associated with oil deposits. It contains essentially methane, but also small proportions of other gases. It also covers methane recovered in coal mines.

NCV:

See "Net Calorific Value"

Net Calorific Value:

The net calorific value (NCV) is the amount of heat released by a unit quantity of fuel, when it is burned completely with oxygen, and when the products of combustion are returned to ambient temperature. This quantity does not include the heat of condensation of any water vapour contained in the fuel nor of the water vapour formed by the combustion of any hydrogen contained in the fuel.

Nominal Price:

See "Current Price"

Power Station Efficiency:

The efficiency of a thermal or nuclear power station is defined as the ratio between the output, i.e. the gross electricity generated, and the fuel input. In the case of a combined heat and power installation the output is the gross electricity generated plus the heat produced.

Primary Energy Production:

Primary energy production is the extraction of energy from a natural source. The precise definition depends on the fuel involved:

> *Hard coal, lignite:* Quantities of fuels extracted or produced, calculated after any operation for removal of inert matter. In general, production includes the quantities consumed by the producer during the production process (e.g. for heating or operation of equipment and auxiliaries) as well as any quantities supplied to other on-site producers of energy for transformation or other uses.

Crude oil: Quantities of fuels extracted or produced within national boundaries, including off-shore production. Production includes only marketable production, and excludes any quantities returned to formation. Production includes all crude oil, natural gas liquids (NGL), condensates and oil from shale and tar sands, etc.

Natural gas: Quantities of dry gas, measured after purification and extraction of natural gas liquids and sulphur. The production includes only marketable production, and excludes any quantities re-injected, vented and flared, and any extraction losses. The production includes all quantities used within the natural gas industry, in gas extraction, pipeline systems and processing plants.

Nuclear heat: Quantities of heat produced in a reactor. Production is the actual heat produced or the heat calculated on the basis of the gross electricity generated and the thermal efficiency of the nuclear plant.

Hydropower, Wind energy, Solar photovoltaic energy: Quantities of electricity generated. Production is calculated on the basis of the gross electricity generated and a conversion factor of 3 600 kJ/kWh.

Geothermal energy: Quantities of heat extracted from geothermal fluids. Production is calculated on the basis of the difference between the enthalpy of the fluid produced in the production borehole and that of the fluid disposed of via the re-injection borehole.

Biomass / Wastes: In the case of municipal solid wastes (MSW), wood, wood wastes and other solid wastes, production is the heat produced after combustion and corresponds to the heat content (NCV) of the fuel.

In the case of anaerobic digestion of wet wastes, production is the heat content (NCV) of the biogases produced. The production includes all quantities of gas consumed in the installation for the fermentation processes, and excludes all quantities of flared gases. In the case of biofuels, the production is the heat content (NCV) of the fuel.

Real Price:

See "Constant Price"

Renewable Energy:

Renewable energy includes hydroelectricity, biomass, wind, solar, tidal and geothermal energies.

Value Added:

The value added (to a product, or added value of a product) is the increase in the value of that product as the result of a particular stage of the production process.

Annex B: Methodology for the calculation of EU-wide average fuel prices

Electricity

Electricity prices are collected by Eurostat from the Member States of EU based on the principles of Directive 90/377/EEC for Price Transparency. The prices are as of 1st January in the year shown. Prices are collected at a variety of locations in each country and for a number of different consumers. For *domestic* prices, the standard consumer used is *Dd* - one with an annual consumption of 7 500 kWh which corresponds to a standard dwelling of 100m^2 with 4-5 rooms plus a kitchen. For industrial prices, the standard consumer used is *Ig* - one with an annual consumption of 24 GWh and a maximum demand of 4 000 kW. More detailed information on the collection of electricity prices can be found in Eurostat's Electricity Prices publication.

The average price in each country is calculated as the median of the prices in the various locations. The average EU price is then calculated by taking a weighted average of the prices in individual countries. *Domestic* prices are weighted by the final energy consumption of electricity in households recorded annually by Eurostat. *Industrial* prices are weighted by the final energy consumption of electricity in industry recorded by the same survey. Since price data are available for 2001 and 2002 but consumption data is not, the prices for 2001 and 2002 have been weighted by 2000 consumption; this should have only a small effect on the EU average.

The survey collects prices all taxes included, prices without VAT and prices all taxes excluded. The *domestic* prices shown here are prices all taxes included while *industrial* prices are shown without VAT (i.e. what industry will actually pay for the energy).

Natural gas

Natural gas prices are collected by Eurostat on a similar basis to electricity prices following the same regulation. Again, the prices are as of 1st January in the year shown. The EU averages are also calculated in the same way albeit using different standard consumers and different consumption measures to weight the country prices. For *domestic* consumers, the standard consumer used is D3 (annual consumption of 83.70 GJ i.e. 23 260 kWh) while for *industrial* consumers it is I4-1 (annual consumption of 418 600 GJ i.e. 116.30 GWh). More detailed information on the collection of natural gas prices can be found in Eurostat's Gas Prices publication.
The average price in each country is calculated as the median of the prices in the various locations. The average EU price is then calculated by taking a weighted average of the prices in individual countries.

Domestic natural gas prices are weighted by final energy consumption of gas in households while *industrial* prices are weighted by final consumption in industry. Since price data are available for 2001 and 2002 but consumption data is not, the prices for 2001 and 2002 have been weighted by 2000 consumption; this should have only a small effect on the EU average.

The survey collects prices all taxes included, prices without VAT and prices all taxes excluded. The *domestic* prices shown here are prices all taxes included while *industrial* prices are shown without VAT (i.e. what industry will actually pay for the energy).

Petroleum products

The heating gasoil, residual fuel oil, unleaded gasoline and automotive diesel prices are supplied to DG-TREN of the Commission by the Member States as those being the most representative price levels actually charged to consumers for the specific categories of sale listed below. This data collection is based on Council Decision 1999/280/EC and Commission Decision 1999/566/EC. The prices given are as of 15th January in each year.

The heating gasoil prices given are for deliveries of between 2 000 and 5 000 litres while those for residual fuel oil are for monthly deliveries of less than 2 000 tonnes or annual deliveries of less than 24 000 tonnes. Average pump prices are given for unleaded gasoline and automotive diesel fuel.

The EU average prices are calculated by weighting the prices from each country by the final energy consumption of heating gasoil in households, of residual fuel oil in industry and of the two automotive fuels (separately) in transport for the respective products. Since price data are available for 2001 and 2002 but consumption data is not (with the exception of unleaded gasoline for which consumption figures are available also for 2001), the prices for 2001 and 2002 have been weighted by 2000 consumption (with the exception of prices for unleaded gasoline in 2002 which have been weighted by 2001 consumption); this should have only a small effect on the EU average.

Annex C: Calorific Values and Conversion Factors

Calorific Values

		kJ (NCV)	kgoe (NCV)
Hard coal	1 kg	17 200 - 30 700	0.411 - 0.733
Recovered hard coal	1 kg	13 800 - 28 300	0.330 - 0.676
Patent fuels	1 kg	26 800 - 31 400	0.640 - 0.750
Hard coke	1 kg	28 500	0.681
Brown coal	1 kg	5 600 - 10 500	0.134 - 0.251
Black lignite	1 kg	10 500 - 21 000	0.251 - 0.502
Peat	1 kg	7 800 - 13 800	0.186 - 0.330
Brown coal briquettes	1 kg	20 000	0.478
Tar	1 kg	37 700	0.900
Benzol	1 kg	39 500	0.943
Oil equivalent*	1 kg	41 868	1
Crude oil	1 kg	41 600 - 42 800	0.994 - 1.022
Feedstocks	1 kg	42 500	1.015
Refinery gas	1 kg	50 000	1.194
LPG	1 kg	46 000	1.099
Motor spirit	1 kg	44 000	1.051
Kerosenes, jet fuels	1 kg	43 000	1.027
Naphtha	1 kg	44 000	1.051
Gas diesel oil	1 kg	42 300	1.010
Residual fuel oil	1 kg	40 000	0.955
White spirit, industrial spirit	1 kg	44 000	1.051
Lubricants	1 kg	42 300	1.010
Bitumen	1 kg	37 700	0.900
Petroleum cokes	1 kg	31 400	0.750
Others petroleum products (paraffins, waxes, etc.)	1 kg	30 000	0.717
Natural gas	1 MJ (GCV)	900	0.0215
Coke-oven gas	1 MJ (GCV)	900	0.0215
Blast-furnace gas	1 MJ (GCV)	1 000	0.0239
Works gas	1 MJ (GCV)	900	0.0215
Nuclear energy	1 MJ (GCV)	1 000	0.0239
Biomass	1 MJ (GCV)	1 000	0.024
Solar energy	1 MJ (GCV)	1 000	0.024
Geothermal energy	1 MJ (GCV)	1 000	0.024
Hydro energy	1 kWh	3 600	0.086
Wind energy	1 kWh	3 600	0.086
Derived heat	1 MJ (GCV)	1 000	0.024
Electrical energy	1 kWh	3 600	0.086

* The tonne of oil equivalent is a conventional standardised unit defined on the basis of a tonne of oil with a net calorific value of 41 868 kilojoules/kg. The conversion coefficients from the specific units to kgoe (kilogramme of oil equivalent) are thus computed by dividing the conversion co-efficients to the kilojoules by 41 868.

The following prefixes are used for multiples of toe, joules, watts and watt hours:

kilo (k)	=	1 000	or	10^3
mega (M)	=	1 000 000	or	10^6
giga (G)	=	1 000 000 000	or	10^9
tera (T)	=	1 000 000 000 000	or	10^{12}
peta (P)	=	1 000 000 000 000 000	or	10^{15}

Conversion Factors

Energy	*To*	***TJ***	***Gcal***	***Mtoe***	***MBtu***	***GWh***
From						
TJ		1	238.8	2.388×10^{-5}	947.8	0.2778
Gcal		4.1868×10^{-3}	1	1×10^{-7}	3.968	1.163×10^{-3}
Mtoe		4.1868×10^{4}	1×10^{7}	1	3.968×10^{7}	11 630
Mbtu		1.0551×10^{-3}	0.252	2.52×10^{-8}	1	2.931×10^{-4}
GWh		3.6	860	8.6×10^{-5}	3 412	1

Annex D: Transport Section - Terms and Methodology

The main terms used in the field of transport statistics are defined on the "Eurostat concepts and definitions database (CODED)" accessible under the Eurostat web site at "http://forum.europa.eu.int/irc/dsis/coded/info/data/coded/en/Theme7.htm" (or "http://europa.eu.int/comm/eurostat" + language selection + Metadata + "classifications and definitions" + "Eurostat concepts and definitions database (CODED)" + "Transport").

The indicators presented in the transport section of this pocket book represent a small window open on the very detailed data collected by Eurostat in the framework of legal acts and voluntary data agreements.

According to a commonly agreed breakdown, the indicators are presented on the one hand by domains of interest (infrastructure, equipment, quantity and performances for the transport of freight and passengers, safety) and on the other hand, by modes of transport (rail, road, inland waterways, pipelines, maritime and aviation).

Most of the tables show figures covering each year between 1995 and 2000 and for up to 32 countries that are members of the European Union (EU or EU 15) or of the European Free Trade Association (EFTA) or that are candidates for EU membership (candidate countries: ACC or CC 13). A special focus has been made on a comparison between the ten countries which should join the European Union in 2004 (acceding countries: ACC) and the EU 15 countries.

To facilitate the comparisons between smaller and bigger countries, most of the indicators combine basic transport figures with surface, population or Gross Domestic Product (GDP).

Eurostat "NewCronos" database has been used as the main source for the indicators, while DG for Energy and Transport figures have been used as an additional source. For some missing indicators/countries, figures from miscellaneous international or national bodies have been used and some estimations (put in italics) have been made.

Two main channels are used by Eurostat to collect statistical data:

1. Legal acts on transport statistics which cover detailed data collections for all the main modes of transport:
   - Rail freight, passengers, traffic and accidents: Regulation (EC) No 91/2003 of the European Parliament and of the Council of 16 December 2002
     (O.J. L 14 of 21.1.2003)
   - Road freight: Council Regulation EC 1172/98 of 25 May 1998
     (O.J. L 163 of 6.6.1998)

- Inland waterways: Council Directive 80/1119/EEC of 17 Nov 1980 **(O.J. L 339 of 15.12.1980)**
- Maritime freight, passengers and traffic: Council Directive 95/64/EC Of 8 Dec 1995 **(O.J. L 320 of 30.12.1995)**
- Aviation passengers, freight and traffic: Regulation (EC) No 437/2003 of the European Parliament and of the Council of 27 February 2003 **(O.J. L 66 of 11.3.2003)**
- Road accidents: Council Decision 93/704/EC of 30 Nov 1993 **(O.J. L 329 of 30.12.1993)**

2. the so called "Common Questionnaire" of Eurostat, UN-ECE and ECMT, which is used to collect, on a voluntary basis, annual aggregated data covering many aspects of inland modes of transport (rail, road, inland waterways and pipelines). Other voluntary agreements cover the collection of other types of data such as regional transport indicators.

The main dissemination channel used for Eurostat data is the NewCronos database which covers, from the early eighties, millions of transport figures from all EU countries plus, to a lesser extent, statistics from EFTA, Mediterranean and candidate countries. CD-ROMs and some miscellaneous publications in paper and electronic formats are also available, such as the Panorama of transport and "Statistics in Focus".