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Pocketbooks

Energy, transport and environment indicators

2010 edition

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Eurostat has set up, with the members of the 'European statistical system' (ESS), a network of user support centres which exist in nearly all Member States as well as in some EFTA countries. Their mission is to provide help and guidance to Internet users of European statistical data. Contact details for this support network can be found on Eurostat's website.

Foreword

The 2010 edition of this Pocketbook presents facts and figures from the domains of energy, transport and environment, all in a single volume. In view of the growing global political importance of issues such as climate change and energy security, the three domains have become increasingly interconnected. This creates the need for a comprehensive approach, comprising reliable and comparable statistical data, necessary for a better understanding of the complexity of the issues, for sound policy-making and for setting effective measures.

The indicators present national data for the 27 EU Member States, the EFTA and candidate countries. When available, the EU-27 aggregate is also provided. Data are generally available for the period between 1998 and 2008; transport mainly between 2003 and 2008. In the energy chapter, the main data sources are: reporting under Regulation (EC) No 1099/2008 of the European Parliament and of the Council on Energy Statistics and Directive 2008/92/EC concerning transparency of gas and electricity prices. In the transport chapter, the most important data sources are reporting under the EU legal acts on transport statistics and the Eurostat/UNECE/ITF Common Questionnaire. In the environment chapter, data on waste, water and environmental accounts are collected by Eurostat, while emissions data have been provided by the European Environment Agency. The FAO's Forest Resources Assessment 2010 is the source of data on biomass and carbon in forests, while the supply balances for carbon in wood products come from Eurostat.

Energy indicators include supply, the use of the transformation sector, final consumption, the share of renewable sources, the structure of the energy industry; energy dependency, energy efficiency, and energy prices.

Transport indicators cover equipment, volume of passengers and freight transport, modes of transport and road safety.

The *Environment* chapter includes indicators on climate change and greenhouse gas emissions, waste, water use, forestry, environmental protection expenditure, material flows and environmental accounts, including environmentally related taxes.

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Symbols and abbreviations

:	no data available
0	figure less than half of the unit used
-	"Not applicable" or "real zero" or "zero by default"
%	percentage
1234	*Estimates are printed in italic*
c	confidential

Units of measurement

ECU	European currency unit, data up to 31.12.1998
EUR	euro, data from 1.1.1999 on
GJ	giga Joule
GWh	gigawatt hour
kg	kilogram
kgoe	kilograms of oil equivalent
km	kilometre
km^2	square kilometre
ktoe	thousand tonnes of oil equivalent
m^3	cubic metre
mio	million (10^6)
Mtoe	million tonnes of oil equivalent
pkm	passenger-kilometre
tkm	tonne-kilometre
t	tonne
toe	tonne of oil equivalent
TWh	terawatt hour
vkm	vehicle-kilometre

Chemical and related symbols

CO_2	Carbon dioxide
DEU	Domestic Extraction Used
DMC	Domestic Material Consumption
DMI	Domestic Material Inputs
GHG	Greenhouse gases
GWP	Global warming potential

Other abbreviations

EEA	European Environment Agency
ECE	United Nations Economic Commission for Europe
EPE	Environmental protection expenditure
FAO	Food and Agriculture Organisation of the United Nations
GDP	Gross Domestic Product
IEA	International Energy Agency
IPCC	Intergovernmental Panel on Climate Change
ITF	International Transport Forum
MCPFE	Ministerial Conference on the Protection of Forests in Europe
NACE	Statistical Classification of economic activities in the European Community
OECD	Organisation for Economic Co-operation and Development
OJ	Official Journal of the European Union
OPEC	Organisation of the Petroleum Exporting Countries
UIC	Union International des Chemins de fer
UN	United Nations
UNECE	United Nations Economic Commission for Europe
UNFCCC	United Nations Framework Convention on Climate Change

Others related to forestry

FAWS	forests available for wood supply
FOWL	forests and other wooded land
OWL	other wooded land

Abbreviations of countries

EU-27	The 27 Member States of the European Union from 1 January 2007 (BE, BG, CZ, DK, DE, EE, IE, EL, ES, FR, IT, CY, LV, LT, LU, HU, MT, NL, AT, PL, PT, RO, SI, SK, FI, SE, UK)
EU-15	The 15 Member States of the European Union from 1 January 1995 to 30 April 2004 (BE, DK, DE, IE, EL, ES, FR, IT, LU, NL, AT, PT, FI, SE, UK)
EFTA	European Free Trade Association
BE	Belgium
BG	Bulgaria
CZ	Czech Republic
DK	Denmark
DE	Germany
EE	Estonia
IE	Ireland
EL	Greece
ES	Spain
FR	France
IT	Italy
CY	Cyprus
LV	Latvia
LT	Lithuania
LU	Luxembourg
HU	Hungary
MT	Malta
NL	Netherlands
AT	Austria
PL	Poland
PT	Portugal
RO	Romania
SI	Slovenia
SK	Slovakia
FI	Finland
SE	Sweden
UK	United Kingdom
IS[1]	Iceland
LI	Liechtenstein
NO	Norway
CH	Switzerland
HR	Croatia
MK[2]	The former Yugoslav Republic of Macedonia
TR	Turkey

[1] Also a candidate country.
[2] Provisional code which does not prejudge in any way the definitive nomenclature for this country, which will be agreed following the conclusion of negotiations currently taking place on this subject at the United Nations.

Introduction

EU Policy: Integrated climate change and energy policy

The data presented in this Pocketbook are especially pertinent to the issue of climate change and the related policy areas. As a complex global issue, climate change has become a key challenge and top priority. There is growing scientific evidence that the emissions of greenhouse gases produced by human activities influence the climate. The most prevalent source of emissions is the combustion of fossil fuels such as coal, oil and gas (nearly 80 % of all emissions are from energy, including transport, see graph 3.1.2), but also from agriculture, waste and other industrial processes.

Agreed on in 2008, the new EU climate and energy legislative package comprises comprehensive measures designed to: promote indigenous renewable energy sources, reduce greenhouse gas emissions, and boost the EU's energy security and competitiveness. This integrated climate change and energy policy aims to ensure that Europe has a sustainable future based on a low-carbon, energy-efficient economy. The agreement sets ambitious targets that are to be achieved by 2020:

- cutting EU greenhouse gas emissions by 20 % compared to 1990 levels; and going up to 30 % if other industrialised countries commit to similar reductions;
- reducing EU energy consumption by 20 % through increased energy efficiency;
- meeting 20 % of Europe's energy needs from renewable energy sources.

In addition, the EU has set itself a 10 % target for the use of renewable energy in transport by 2020. To make sure that biofuels are produced in an environmentally sustainable way and that they would not have a negative impact on global food prices, the EU has introduced strict sustainability criteria, including environmental and social conditions[1].

These EU targets go beyond existing international obligations under the UNFCCC's Kyoto Protocol — which has a commitment period running from 2008 to 2012 — and sets the EU on a path towards becoming a low-carbon, resource-efficient and climate resilient economy.

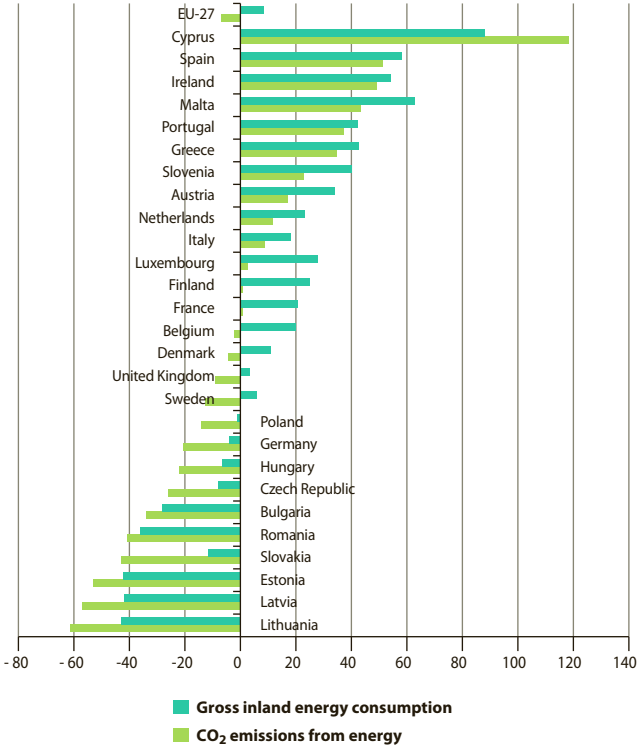
The interlinkages between energy, transport and environment

Various links can be made between the three domains of energy, transport and environment, using the data presented in this Pocketbook for the purposes of integrated analysis and better understanding of the cross-cutting nature of climate change. The examples presented below are just some instances of such analyses where Eurostat's data play a key role.

[1] *Ibid.*

De-coupling of energy use from greenhouse gas emissions

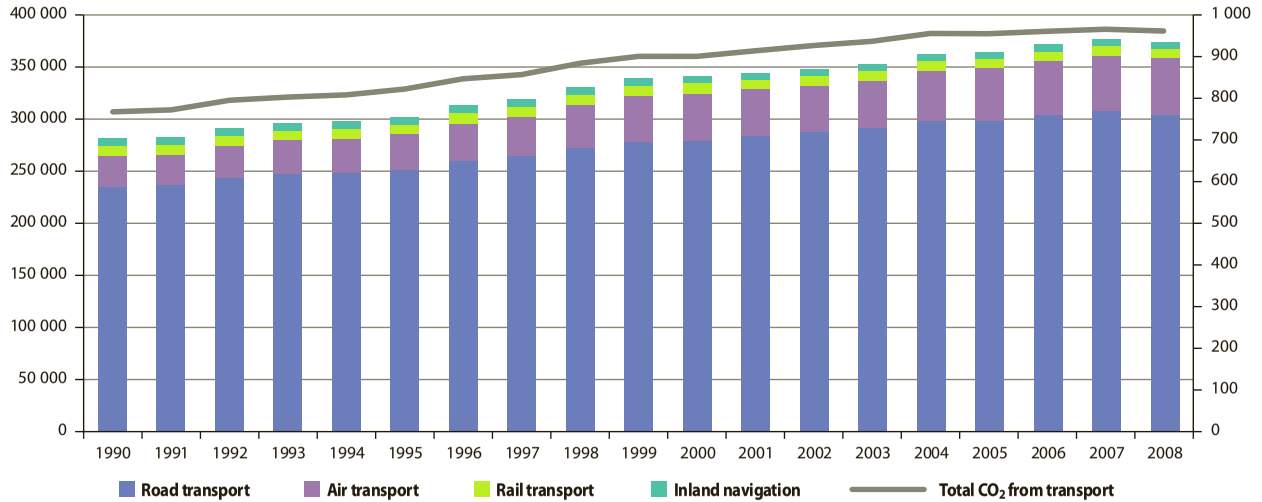
Figure 1: Change in CO_2 emissions and gross inland energy consumption between 1990 and 2008 (%)



Source: Eurostat, European Environment Agency

A comparison between energy use and the emissions arising from it allows us to see whether Europe is shifting towards "cleaner", low-carbon energy sources. Over the period 1990-2008, the EU-27 gross inland consumption increased, while CO_2 emissions decreased. This can be considered as a positive trend towards decoupling CO_2 emissions from energy use.

Figure 2: Final energy consumption in transport by mode and total CO_2 emissions from transport, EU-27 (thousand toe, left hand scale & Tg (million tonnes of CO_2), right hand scale)



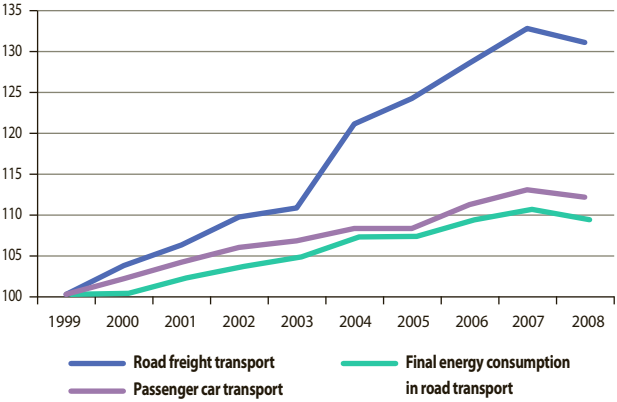
Source: Eurostat, European Environment Agency

Another type of cross-cutting analysis, using the data from this Pocketbook, involves looking at the different modes of transport and their fuel consumption to determine which type of transportation is responsible for the largest share of emissions — useful for policy makers when devising targeted measures. As the graph shows, road transport dominates the picture with over 80 % of the total emissions from transport, followed by air, rail and inland waterways. In terms of change over the last 18 years, however, air transport has a sharp growth of 86 %. While the total final energy consumption in transport has risen by 33 %, the total emissions from transport have increased by 25 %.

Road transport and its use of energy

Figure 2 clearly shows the predominance of road transport in terms of energy consumption. In Figure 3, we compare the energy use in road transport to transport performance, expressed in road freight and passenger car transport. Over the decade 1999-2008 the volume of road transport has increased: for road freight transport by over 30 % and for passenger car transport by over 10 %. The energy consumption has also increased but not as much — by less than 10 %. This could indicate a shift towards more efficient vehicles and/or a more efficient use of the vehicles.

Figure 3: Index of final energy consumption in road transport and volumes of road freight transport and passenger car transport, EU-27 (1999=100)

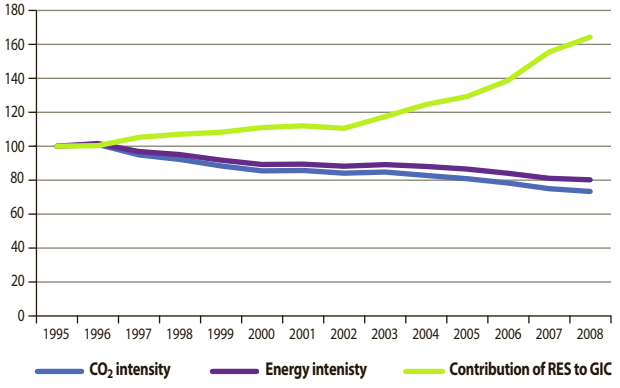


Source: Eurostat, Common Questionnaire, International Transport Forum, DG for Mobility and Transport Pocketbook, national sources

Note: The increase in the freight transport index in 2004 is mainly due to an improved methodology. For the EU-27 passenger transport index, estimates have been used for some countries and some years.

'Greening' the economy – the contribution of renewable energy sources

Figure 4: Index of CO_2 intensity, energy intensity and contribution of renewables to gross inland consumption, EU-27 (1995=100)

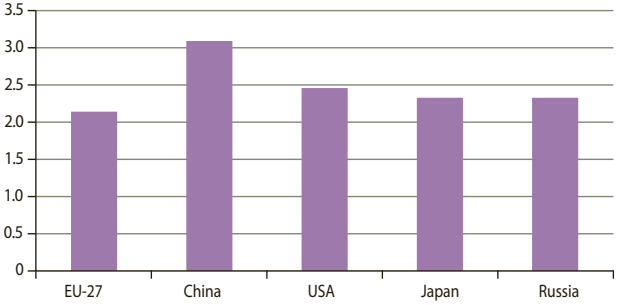


Source: Eurostat, European Environment Agency

Indicators that integrate economic variables, such as intensity (emissions per unit of GDP or energy use per unit of GDP), are useful when analysing the overall environmental trends of the economy, i.e. whether we are really moving towards a low-carbon "green" economy. As the graph shows, the EU's CO_2 emissions and energy intensity have gradually decreased since 1990 and the emissions have decreased more than the energy use. This suggests that Europe has moved closer to using "cleaner" forms of energy, namely renewable energies (hydro, wind, solar, etc.). As also seen Figure 4, over the period 1990-2008, the share of renewable energies in gross inland consumption has almost doubled, from 4.4 % to 8.4 %.

The EU as a global player – an international comparison

Figure 5: Carbon intensity of energy use, 2008 (t CO_2/toe)



Source: Eurostat, International Energy Agency

Since climate change is a global phenomenon and greenhouse gases have the same impact on the atmosphere regardless of where they are released, an international perspective is of great use when analysing data. As Eurostat does not collect information on countries outside of the European Statistical System (EU-27 plus EFTA plus candidate countries), data from international sources, compiled using similar methodology, have been used. The indicator above aims to show how polluting the energy use is in different countries – i.e. the higher the carbon intensity, the more emissions from energy. Compared to other larger world economies, the EU-27 ranks lowest with 2.13 tonnes of CO_2 per toe of energy consumed (China 3.08, USA 2.45, Japan 2.32 and Russia 2.32).

Conclusion

The above examples highlight some synergies relevant to the issue of climate change in the statistical domains of energy, transport and environment. The data presented in this Pocketbook can serve other policy needs too, e.g. energy security of supply, intermodal transport, environmentally-motivated economic measures (such as taxes), etc. Eurostat's role in such analyses is to provide high-quality, relevant statistics that underpin constructive policy-making.

For more information and detailed data please check:

- Free data available on the Eurostat website at http://ec.europa.eu/eurostat

- Climate change In the spotlight on the Eurostat website at http://epp.eurostat.ec.europa.eu/portal/page/portal/climate_change/overview

- DG Climate Action website at http://ec.europa.eu/environment/climat/home_en.htm

- DG Energy website at http://ec.europa.eu/energy/index_en.htm

- DG Mobility and Transport website at http://ec.europa.eu/transport/index_en.htm

- DG Environment website at http://ec.europa.eu/dgs/environment/index_en.htm

- European Environment Agency (EEA) website at http://eea.europa.eu

1

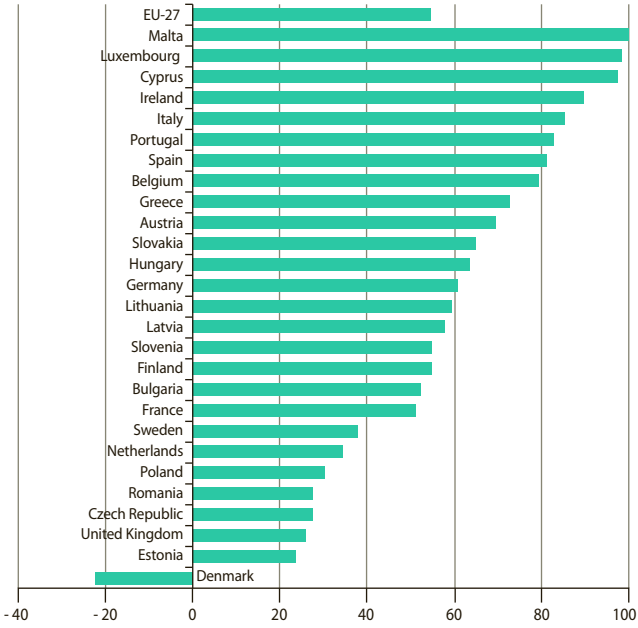
Energy indicators

Table 1.1.1: Energy dependency — all products (%)

	1998	2000	2005	2006	2007	2008
EU-27	46.1	46.8	52.6	53.8	53.1	54.8
Belgium	79.5	76.1	78.2	77.9	77.1	79.5
Bulgaria	49.9	46.5	47.3	46.1	51.6	52.3
Czech Republic	25.7	23.4	30.7	27.9	25.1	27.6
Denmark	6.0	- 34.8	- 50.8	- 35.9	- 24.9	- 22.3
Germany	61.4	59.7	61.6	61.3	58.6	60.9
Estonia	35.6	32.4	25.4	28.6	23.9	23.8
Ireland	81.2	84.5	89.7	90.9	88.3	89.9
Greece	69.5	69.4	68.6	71.9	71.1	72.9
Spain	74.5	76.7	81.3	81.5	79.5	81.4
France	51.3	51.4	51.7	51.4	50.4	51.2
Italy	81.9	87.1	84.4	86.9	85.4	85.4
Cyprus	96.9	98.8	100.7	102.5	95.9	97.5
Latvia	60.4	59.8	63.1	65.8	61.5	57.9
Lithuania	51.2	60.6	58.5	64.0	62.5	59.6
Luxembourg	99.6	99.8	98.0	98.9	97.5	98.6
Hungary	56.2	56.1	62.5	62.5	61.4	63.7
Malta	100.0	100.4	100.0	100.0	100.0	100.0
Netherlands	27.2	38.9	38.4	37.7	38.9	34.6
Austria	70.3	65.6	71.4	72.8	68.8	69.7
Poland	8.3	11.2	17.5	19.8	25.3	30.4
Portugal	83.4	85.0	88.4	83.1	82.0	83.0
Romania	28.5	21.9	27.6	29.2	31.5	27.7
Slovenia	52.2	52.5	52.1	52.0	52.4	55.0
Slovakia	71.7	66.0	65.5	64.0	69.0	65.1
Finland	54.5	56.0	54.7	54.3	53.4	55.0
Sweden	37.9	39.2	37.7	37.8	36.3	38.0
United Kingdom	- 15.7	- 16.8	13.6	21.3	20.2	26.1
Iceland	34.0	31.4	28.9	25.1	:	:
Norway	- 683.1	- 736.0	- 721.2	- 680.7	- 676.7	- 622.3
Switzerland	58.9	54.4	60.3	57.3	52.5	55.1
Croatia	49.5	53.3	58.6	54.3	56.9	60.3
The former Yugoslav Republic of Macedonia	:	:	:	:	47.5	45.9
Turkey	60.0	65.4	71.9	72.5	74.4	72.2

Source: Eurostat (online data code: nrg_100a)

Figure 1.1.1: Energy dependency — all products, 2008 (%)



Source: Eurostat (online data code: nrg_100a)

Table 1.1.1a: Energy dependency — all products, EU-27 (%)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
EU-27	46.1	45.2	46.8	47.5	47.6	49.0	50.3	52.6	53.8	53.1	54.8

Source: Eurostat (online data code: nrg_100a)

Note: The quantities of fuels delivered to sea-going ships of all flags, including warships, are included. Negative dependency rate indicates a net exporter country. Positive values over 100 **%** indicate stocks build-up during the reference year.

In 2008, EU-27 energy dependency was 54.8 %, an increase of 9 percentage points from 1998. Denmark was the only EU-27 Member State with a negative dependency rate in 2008 (- 22.3 %), a trend that began in 1999. The United Kingdom, a net exporter until 2003, became an importer in 2004. In 2008, its energy dependency reached 26.1 %.

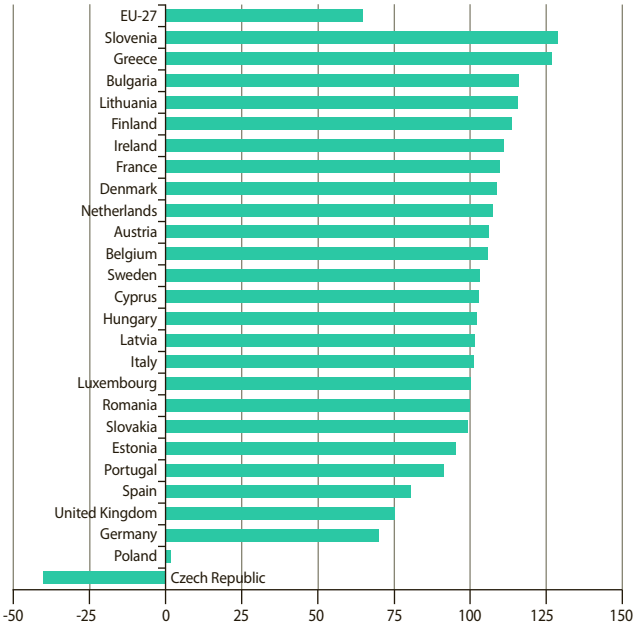
Over the last decade (1998-2008), Poland presented the highest increase with its dependency rising from 8.3 % in 1998 to 30.4 % in 2008. In contrast, Estonia experienced the highest decrease with 23.8 % dependency in 2008 compared to 35.6 % in 1998.

Table 1.1.2: Energy dependency — hard coal and derivatives (%)

	1998	2000	2005	2006	2007	2008
EU-27	36.2	42.6	56.4	58.6	58.6	64.4
Belgium	100.6	91.7	100.7	97.3	91.2	105.5
Bulgaria	99.1	101.2	94.8	92.2	102.1	115.8
Czech Republic	- 47.4	- 56.1	- 42.8	- 45.2	- 45.1	- 40.3
Denmark	84.2	94.8	94.3	93.5	100.4	108.4
Germany	29.2	39.3	58.5	63.9	65.4	69.9
Estonia	106.7	115.0	96.4	135.1	134.8	95.4
Ireland	98.2	91.8	102.4	99.8	94.4	110.9
Greece	102.0	105.8	112.4	80.6	82.8	126.6
Spain	55.2	65.8	73.9	82.4	71.5	80.2
France	77.0	87.5	92.9	105.9	91.8	109.3
Italy	97.7	105.2	99.6	99.3	99.4	100.8
Cyprus	80.8	102.0	121.2	116.7	67.3	102.5
Latvia	84.9	82.5	96.7	123.1	92.6	101.2
Lithuania	102.3	100.0	102.5	98.7	93.4	115.4
Luxembourg	100.0	100.0	100.0	100.0	100.0	100.0
Hungary	81.1	99.2	103.9	94.8	100.8	101.8
Malta	-	-	-	-	-	-
Netherlands	94.1	101.9	100.3	102.8	105.2	107.2
Austria	100.4	91.6	106.9	97.2	105.4	105.7
Poland	- 27.7	- 29.9	- 21.3	- 16.2	- 8.5	1.6
Portugal	100.3	103.4	96.3	105.7	100.6	91.2
Romania	75.8	95.8	102.2	98.2	98.2	99.2
Slovenia	91.4	100.7	93.6	100.5	96.0	128.5
Slovakia	95.0	104.6	105.2	91.2	105.0	98.9
Finland	88.8	97.6	102.6	87.8	94.5	113.3
Sweden	102.7	108.3	104.4	94.2	99.6	102.8
United Kingdom	34.4	39.7	71.1	75.5	69.5	75.1
Iceland	100.0	100.0	100.0	100.0	:	:
Norway	66.1	33.3	- 125.7	- 272.8	- 407.2	- 386.8
Switzerland	63.0	144.5	56.2	106.4	123.1	93.8
Croatia	78.9	112.1	90.6	109.7	101.8	113.0
The former Yugoslav Republic of Macedonia	:	:	:	:	98.9	120.4
Turkey	83.3	87.0	88.8	88.4	91.5	88.1

Source: Eurostat (online data code: nrg_101a)

Figure 1.1.2: Energy dependency — hard coal and derivatives, 2008 (%)



Source: Eurostat (online data code: nrg_101a)

Table 1.1.2a: Energy dependency — hard coal and derivatives, EU-27 (%)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
EU-27	36.2	38.4	42.6	47.2	47.3	49.0	53.8	56.4	58.6	58.6	64.4

Source: Eurostat (online data code: nrg_101a)

Note: Negative dependency rate indicates a net exporter country. Positive values over 100 % indicate stocks build-up during the reference year.

EU-27 dependency on imported hard coal and derivatives grew from 36.2 % in 1998 to 64.4 % in 2008. The Czech Republic was the only Member State with a negative dependency rate in 2008 (- 40.3 %). Poland, which was a net exporter until 2007, became dependent on hard coal imports in 2008 with its dependency rate reaching 1.6 %.

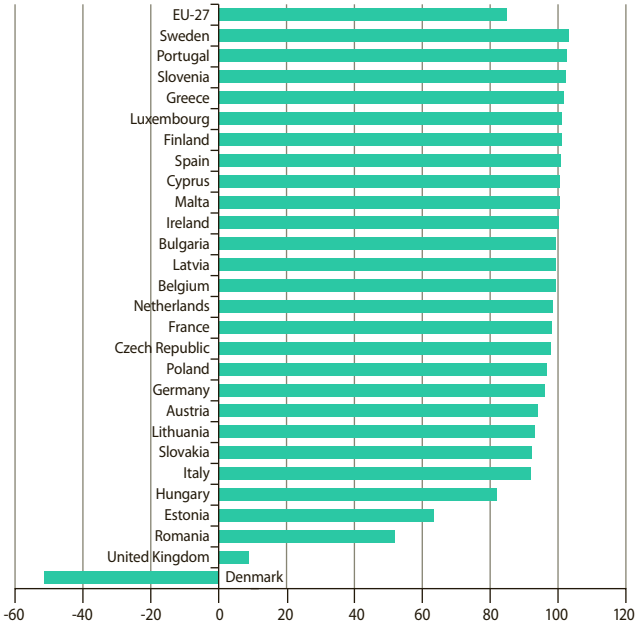
Between 1998 and 2008, Germany recorded the highest increase. Its hard coal dependency grew from 29.2 % in 1998 to 69.9 % in 2008. The United Kingdom followed with its dependency rising from 34.4 % to 75.1 %. However, the dependency rates of both countries remained among the lowest in the EU-27.

Table 1.1.3: Energy dependency — oil (%)

	1998	2000	2005	2006	2007	2008
EU-27	77.0	75.8	82.4	83.7	82.5	84.3
Belgium	101.8	100.2	100.8	100.8	97.4	98.8
Bulgaria	98.1	95.6	102.1	98.6	100.3	99.0
Czech Republic	99.3	94.5	97.5	96.6	96.2	97.5
Denmark	- 5.3	- 80.9	- 104.4	- 86.5	- 66.7	- 51.3
Germany	99.1	94.5	97.2	95.5	94.3	95.5
Estonia	85.2	77.4	69.0	74.8	72.8	63.0
Ireland	101.7	98.8	99.7	101.5	97.0	99.8
Greece	102.3	100.2	97.7	101.3	100.9	101.2
Spain	100.8	101.0	101.2	100.8	99.7	100.4
France	98.5	98.9	99.5	98.5	98.0	97.9
Italy	94.0	96.1	91.7	92.6	92.5	91.5
Cyprus	98.8	100.5	102.3	104.2	98.6	100.1
Latvia	102.4	94.4	102.2	102.4	98.1	98.9
Lithuania	88.2	100.8	92.8	97.7	93.8	92.6
Luxembourg	101.8	102.2	99.4	101.0	98.8	100.7
Hungary	81.5	77.5	77.9	78.0	82.7	81.7
Malta	100.0	100.4	100.0	100.0	100.0	100.0
Netherlands	92.7	99.7	97.1	95.7	92.5	97.9
Austria	93.8	89.5	91.6	96.3	91.6	93.5
Poland	96.6	97.1	96.1	98.1	102.2	96.4
Portugal	98.6	99.1	102.3	98.1	98.9	102.2
Romania	44.1	34.9	38.5	44.0	51.6	51.6
Slovenia	98.5	101.5	101.2	97.7	98.9	101.7
Slovakia	100.7	89.4	88.3	94.6	91.3	91.7
Finland	96.8	106.9	98.8	100.4	97.8	100.6
Sweden	103.9	100.8	103.8	99.3	99.2	102.7
United Kingdom	- 60.2	- 54.5	- 2.8	8.9	0.9	8.8
Iceland	100.3	104.3	102.0	97.4	:	:
Norway	- 1 519.4	- 1 468.9	- 1 160.6	- 1 006.5	- 1 056.6	- 839.4
Switzerland	101.2	96.3	101.6	100.4	97.4	100.5
Croatia	57.5	61.5	79.6	76.9	81.9	84.6
The former Yugoslav Republic of Macedonia	106.0	97.2	102.4	100.3	96.5	97.3
Turkey	90.1	93.3	90.8	94.0	96.4	93.4

Source: Eurostat (online data code: nrg_102a)

Figure 1.1.3: Energy dependency — oil, 2008 (%)



Source: Eurostat (online data code: nrg_102a)

Table 1.1.3a: Energy dependency — oil, EU-27 (%)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
EU-27	77.0	73.0	75.8	77.5	76.0	78.5	79.9	82.4	83.7	82.5	84.3

Source: Eurostat (online data code: nrg_102a)

Note: Negative dependency rate indicates a net exporter country. Positive values over 100 % indicate stocks build-up during the reference year.

EU-27 dependency on oil imports reached 84.3 % in 2008, while twenty two Member States presented dependency rates over 90 %.

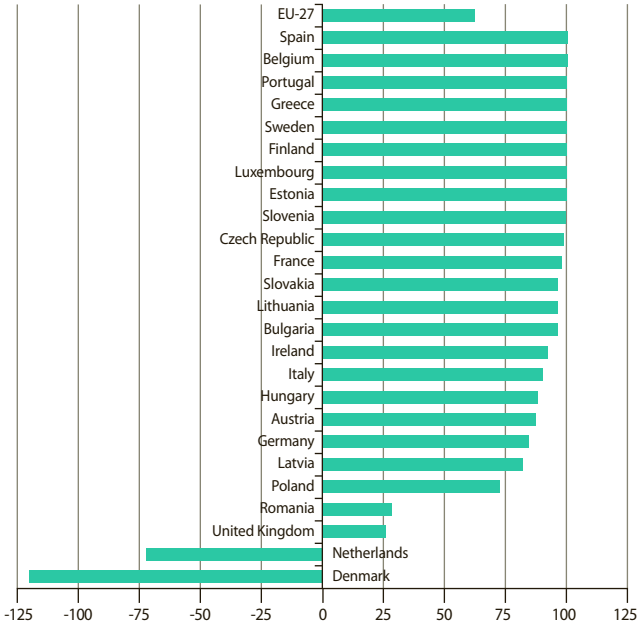
Denmark, which was the sole net exporter among the EU-27 Member States in 2008, experienced a tenfold increase in its exports over the last ten years (from - 5.3 % in 1998 to - 51.3 % in 2008). The United Kingdom exported oil until 2005, a trend that changed since 2006. In 2008, its dependency on imported oil reached 8.8 %, which was the lowest dependency rate in the EU. Romania, which was the country with the second lowest rate, presented the highest increase (from 44.1 % in 1998 to 51.6 % in 2008).

Table 1.1.4: Energy dependency — natural gas (%)

	1998	2000	2005	2006	2007	2008
EU-27	45.6	48.9	57.7	60.8	60.3	62.3
Belgium	99.7	99.3	100.6	100.2	99.8	100.4
Bulgaria	99.7	93.5	87.7	89.9	91.5	96.2
Czech Republic	99.1	99.8	97.8	104.5	93.4	98.7
Denmark	- 58.9	- 64.8	- 113.9	- 103.3	- 99.7	- 120.9
Germany	77.1	79.1	81.3	83.6	80.3	84.5
Estonia	100.0	100.0	100.0	100.0	100.0	100.0
Ireland	49.8	72.1	86.7	89.8	91.4	92.1
Greece	95.2	99.1	99.1	99.1	99.6	100.0
Spain	103.9	101.6	101.4	101.3	99.1	100.9
France	90.2	100.0	99.1	99.6	96.5	97.8
Italy	68.2	81.1	84.7	91.2	87.0	90.3
Cyprus	-	-	-	-	-	-
Latvia	106.4	101.9	105.6	108.8	96.8	82.2
Lithuania	100.0	100.0	100.6	101.0	102.9	96.3
Luxembourg	100.0	100.0	100.0	100.0	100.0	100.0
Hungary	72.4	75.4	81.1	82.2	79.9	88.1
Malta	-	-	-	-	-	-
Netherlands	- 63.8	- 49.1	- 59.3	- 61.6	- 63.5	- 72.7
Austria	78.7	80.6	88.1	87.7	81.0	87.2
Poland	67.8	66.3	69.7	71.9	66.7	72.7
Portugal	100.0	100.3	103.8	100.6	98.7	100.1
Romania	25.6	19.8	30.1	33.2	29.8	28.4
Slovenia	99.2	99.3	99.6	99.6	99.7	99.7
Slovakia	94.5	98.8	97.2	96.6	97.9	96.3
Finland	100.0	100.0	100.0	100.0	100.0	100.0
Sweden	100.0	100.0	100.0	100.0	100.0	100.0
United Kingdom	- 2.0	- 10.7	7.0	11.8	20.3	26.1
Iceland	-	-	-	-	-	-
Norway	- 860.4	- 1 161.4	- 1 873.2	- 1 907.3	- 1 665.1	- 1 693.2
Switzerland	100.0	100.0	100.0	100.0	100.0	100.0
Croatia	41.8	41.0	23.6	8.0	9.2	16.6
The former Yugoslav Republic of Macedonia	102.6	99.3	99.5	100.4	100.1	100.0
Turkey	94.6	95.4	97.1	96.9	97.8	100.2

Source: Eurostat (online data code: nrg_103a)

Figure 1.1.4: Energy dependency — natural gas, 2008 (%)



Source: Eurostat (online data code: nrg_103a)

Table 1.1.4a: Energy dependency — natural gas, EU-27 (%)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
EU-27	45.6	47.9	48.9	47.3	51.2	52.5	54.0	57.7	60.8	60.3	62.3

Source: Eurostat (online data code: nrg_103a)

Note: Negative dependency rate indicates a net exporter country. Positive values over 100 % indicate stocks build-up during the reference year.

EU-27 natural gas dependency rate grew by about 17 percentage points between 1998 and 2008, reaching 62.3 % in 2008.

In 2008, Denmark and the Netherlands were the only exporting countries among the EU-27. From 1998 to 2008 Denmark recorded a twofold increase in its natural gas exports (from - 58.9 % to - 120.9 %), while the Netherlands increased its exports from - 63.8 % to - 72.7 %. The United Kingdom exported natural gas up to 2003, but since 2004 it has been an importer. In 2008 its dependency rate reached 26.1 %, a sixteen-fold increase from 2004. Ireland has also presented a significant increase over the last decade with a natural gas dependency rate of 92.1 % in 2008 compared to 49.8 % in 1998. Malta and Cyprus have not introduced natural gas into their energy system.

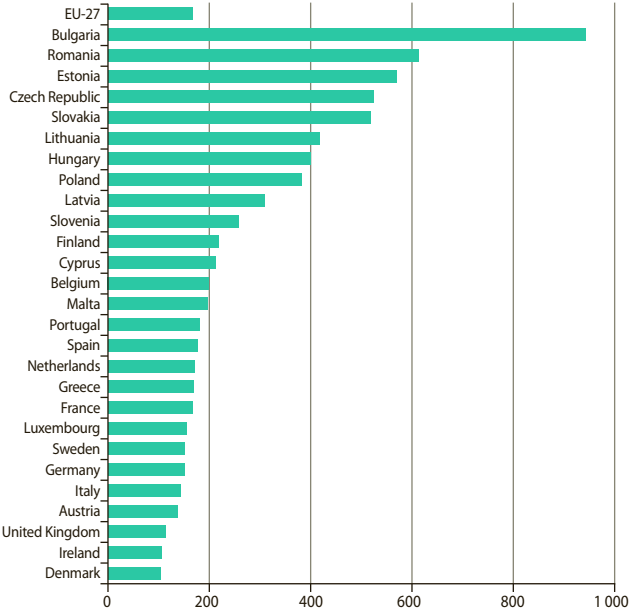
Table 1.2: Energy intensity

	(kgoe/1 000 EUR '00)			Index (2000=100)		
	1998	2003	2008	1998	2003	2008
EU-27	200	187	167	107.0	99.9	89.2
Belgium	256	237	200	105.0	97.3	82.0
Bulgaria	1 587	1 250	944	116.5	91.8	69.3
Czech Republic	704	686	525	106.8	104.0	79.7
Denmark	127	118	103	112.9	104.8	91.7
Germany	177	167	151	106.6	100.7	91.0
Estonia	956	709	571	117.6	87.2	70.2
Ireland	150	122	107	109.4	89.0	77.7
Greece	211	192	170	103.3	94.1	83.1
Spain	197	196	176	100.3	99.7	89.9
France	190	181	167	106.1	100.9	93.1
Italy	150	151	143	102.3	103.1	97.3
Cyprus	243	243	213	102.3	102.5	90.0
Latvia	563	409	309	127.6	92.8	70.0
Lithuania	770	577	418	134.8	101.0	73.1
Luxembourg	175	176	155	106.1	106.8	93.5
Hungary	545	465	401	111.8	95.4	82.3
Malta	:	214	195	:	112.1	101.9
Netherlands	199	191	172	107.9	103.6	92.8
Austria	151	153	138	107.3	109.0	98.4
Poland	565	464	384	115.5	94.9	78.5
Portugal	197	199	182	99.9	100.6	91.9
Romania	:	847	615	:	92.7	67.3
Slovenia	330	293	258	110.4	97.9	86.1
Slovakia	805	770	520	101.0	96.7	65.3
Finland	277	266	218	112.4	108.0	88.4
Sweden	206	178	152	116.3	100.2	85.7
United Kingdom	155	134	114	107.0	92.8	78.6
Iceland	310	337	:	90.3	98.0	:
Norway	147	143	137	103.0	99.9	95.7
Switzerland	101	97	89	106.0	101.3	92.8
Croatia	353	333	279	104.3	98.3	82.4
The former Yugoslav Republic of Macedonia	:	:	:	:	:	:
Turkey	258	260	245	96.4	97.1	91.6

N.B: Gross Domestic Product: chain-linked volumes, reference year 2000 (at 2000 exchange rates).

Source: Eurostat (online data code: tsien020)

Figure 1.2: Energy intensity, 2008 (kgoe/1 000 EUR '00)



Source: Eurostat (online data code: tsien020)

Table 1.2a: Energy intensity, EU-27 (kgoe/1 000 EUR '00)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
EU-27	200	193	187	188	185	187	185	181	176	169	167

Table 1.2b: Index of energy intensity, EU-27 (2000=100)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
EU-27	107.0	103.1	100.0	100.2	98.8	99.9	98.6	96.8	93.8	90.3	89.2

Source: Eurostat (online data code: tsien020)

Energy intensity in the EU-27 decreased by 17 % over the last decade and reached 167 kgoe/1 000 EUR'00 in 2008.

All Member States, except for Malta, decreased their energy intensities between 1998 and 2008. Seven Member States recorded decreases over 30 %. Lithuania and Latvia presented the most noteworthy decreases, as the amount of energy required to produce a unit of economic output dropped by 46 % and 45 % respectively, followed by Bulgaria (- 41 %) and Estonia (- 40 %). In spite of this decrease, in 2008 Bulgaria remained the most energy intensive economy (944), 54 % more intense than the second Romania (615) and about six times above the EU average. The lowest levels of energy intensity were observed in Denmark (103) and Ireland (107).

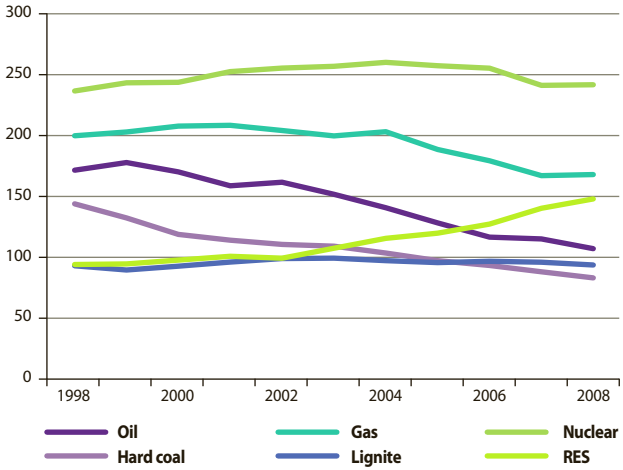
Table 1.3.1: Primary energy production, by fuel

	Total production (ktoe)			Share of each fuel to total production, 2008 (%)					
	1998	2003	2008	Hard coal	Lignite	Oil	Gas	Nuclear	RES
EU-27	939 989	925 266	842 712	10	11	13	20	29	18
BE	12 072	13 213	13 561	-	-	-	-	87	13
BG	10 179	10 098	10 060	0	48	0	2	40	10
CZ	30 542	34 073	32 496	26	44	1	0	21	8
DK	20 339	28 403	26 527	-	-	54	34	-	12
DE	131 672	133 840	132 488	9	28	2	9	29	22
EE	3 246	3 914	4 217	-	82	-	-	-	18
IE	2 389	1 866	1 520	-	42	-	23	-	34
EL	10 039	9 888	10 022	-	83	1	0	-	16
ES	32 028	32 782	30 266	14	-	0	0	50	35
FR	123 984	134 225	135 027	-	-	1	1	84	15
IT	30 134	27 274	26 447	0	-	20	29	-	51
CY	43	48	74	-	-	-	-	-	100
LV	1 771	1 730	1 784	-	0	-	-	-	100
LT	4 407	5 105	3 584	-	1	4	-	71	25
LU	50	60	84	-	-	-	-	-	100
HU	11 946	10 684	10 410	-	16	12	19	37	16
MT	-	-	-	-	-	-	-	-	-
NL	63 603	58 718	66 319	-	-	3	90	2	5
AT	8 699	9 335	10 610	-	0	9	12	-	78
PL	86 776	78 703	70 445	68	18	1	5	-	8
PT	3 734	4 336	4 441	-	-	-	-	-	100
RO	29 159	28 278	29 059	0	24	16	31	10	19
SI	3 036	3 245	3 641	-	33	-	0	44	23
SK	4 707	6 281	6 097	-	10	0	1	71	17
FI	13 148	15 606	16 251	-	7	-	-	36	56
SE	33 000	30 390	32 781	-	1	-	-	50	49
UK	269 286	243 171	164 499	6	-	44	38	8	3
IS	1 814	2 457	:	:	:	:	:	:	:
NO	206 573	236 016	219 332	1	-	53	40	-	6
CH	10 632	11 409	12 335	-	-	-	-	58	42
HR	3 987	3 732	3 929	-	-	22	56	-	22
MK	:	:	1 633	-	84	-	-	-	16
TR	29 130	23 873	29 051	5	52	7	3	-	32

Source: Eurostat (online data codes: nrg_100a, nrg_101a, nrg_102a, nrg_103a, nrg_104a and nrg_1072a)

Note: Figures do not sum to 100 % due to rounding.

Figure 1.3.1: Primary energy production, by fuel, EU-27 (Mtoe)



Source: Eurostat (online data codes: nrg_100a, nrg_101a, nrg_102a, nrg_103a, nrg_104a and nrg_1072a)

Table 1.3.1a: Primary energy production, by fuel, EU-27 (Mtoe)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Change 1998-08
Total	940	942	932	932	931	925	921	888	870	849	843	- 10 %
Oil	172	178	170	159	162	152	141	128	117	115	107	- 37 %
Gas	200	203	208	208	204	200	203	189	179	167	168	- 16 %
Nuclear	237	243	244	253	255	257	260	257	255	241	242	2 %
Hard coal	144	133	119	114	111	109	104	98	94	88	83	- 42 %
Lignite	93	90	93	96	99	100	98	96	97	96	94	1 %
RES	94	95	98	101	100	108	116	120	127	140	148	57 %

Source: Eurostat (online data codes: nrg_100a, nrg_101a, nrg_102a, nrg_103a, nrg_104a and nrg_1072a)

Production of primary energy in the EU-27 totaled 842.7 Mtoe in 2008. This continued the downward trend of EU-27 production, which recorded an overall 10 % reduction over the last decade.

Primary energy production in the EU-27 expanded across a range of energy sources. The most significant was nuclear energy (29 % of the total). Solid fuels accounted for 21 % of the total, followed by gas (20 %) and renewable energy sources (RES) (18 %). RES production includes energy generated from solar, wind, biomass, geothermal, hydro and ocean resources. Oil constituted the remaining 13 % share of the total.

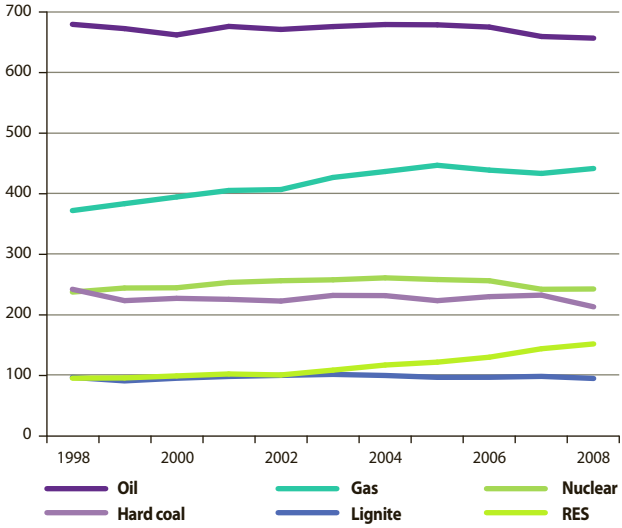
The United Kingdom dominated the production of energy in the EU-27 with a 20 % share of the total in 2008 compared to a 29 % share in 1998. Over this period, the United Kigdom experienced the most considerable reduction in its production (- 39 %). France and Germany each made up a share of 16 % of total EU-27 production in 2008. Compared to 1998, France increased its production by 9 %, while Germany maintained its production levels.

Table 1.3.2: Gross inland consumption, by fuel

	Total consumption (ktoe)			Share of each fuel to total consumption, 2008 (%)					
	1998	2003	2008	Hard coal	Lignite	Oil	Gas	Nuclear	RES
EU-27	1 722 731	1 802 902	1 799 294	12	5	36	24	13	8
BE	60 098	61 577	58 275	7	0	41	25	20	4
BG	20 170	19 567	20 034	14	24	25	15	20	5
CZ	41 196	45 613	45 080	14	30	22	16	15	5
DK	20 760	20 791	19 861	20	0	41	21	-	18
DE	346 727	348 322	343 675	13	11	35	22	11	9
EE	5 371	5 450	5 851	1	58	18	13	-	11
IE	12 970	15 025	15 786	9	6	53	28	-	4
EL	26 987	30 307	31 894	1	26	56	11	-	5
ES	112 642	135 308	141 879	10	-	48	25	11	8
FR	255 162	271 000	273 747	5	0	33	15	41	7
IT	169 875	184 186	181 373	9	0	43	38	-	8
CY	2 221	2 651	2 860	1	0	96	-	-	3
LV	4 331	4 289	4 595	2	0	34	29	-	30
LT	9 329	8 984	9 155	2	0	33	28	28	9
LU	3 282	4 208	4 563	2	0	64	24	-	3
HU	25 579	27 054	26 781	5	6	27	39	14	6
MT	828	911	948	-	-	100	-	-	-
NL	76 600	81 910	83 668	10	0	42	42	1	4
AT	29 167	32 693	33 895	11	0	39	22	-	25
PL	96 216	91 840	98 755	43	13	26	13	-	6
PT	23 171	25 665	24 919	10	-	52	17	-	18
RO	41 519	40 234	40 616	6	17	26	31	7	14
SI	6 435	6 906	7 736	4	16	39	11	21	11
SK	17 483	19 233	18 528	16	5	21	28	23	5
FI	33 423	37 333	36 319	9	5	30	11	16	25
SE	50 631	50 657	49 996	4	1	29	2	33	32
UK	230 557	231 187	218 506	16	-	36	39	6	3
IS	2 690	3 379	:	:	:	:	:	:	:
NO	25 543	27 279	29 834	3	-	40	16	-	45
CH	26 128	26 571	27 972	0	0	45	10	26	19
HR	8 048	8 845	9 104	8	0	49	28	-	9
MK	:	:	3 010	4	45	31	3	-	9
TR	72 543	79 402	100 318	14	15	31	30	-	9

Source: Eurostat (online data codes: nrg_100a, nrg_101a, nrg_102a, nrg_103a, nrg_104a and nrg_1072a)

Figure 1.3.2: Gross inland consumption, by fuel, EU-27 (Mtoe)



Source: Eurostat (online data codes: nrg_100a, nrg_101a, nrg_102a, nrg_103a, nrg_104a and nrg_1072a)

Table 1.3.2a: Gross inland consumption, by fuel, EU-27 (Mtoe)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Change 1998-08
Total	1 723	1 711	1 724	1 763	1 759	1 803	1 825	1 825	1 826	1 808	1 799	4 %
Oil	679	672	661	675	670	675	678	678	674	659	656	- 3 %
Gas	371	383	394	404	406	426	436	446	438	433	441	19 %
Nuclear	237	243	244	253	255	257	260	257	255	241	242	2 %
Hard coal	241	223	226	225	222	231	231	222	229	232	212	- 12 %
Lignite	96	90	94	97	99	101	99	96	96	97	94	- 2 %
RES	94	95	98	101	100	108	116	121	129	143	151	60 %

Source: Eurostat (online data codes: nrg_100a, nrg_101a, nrg_102a, nrg_103a, nrg_104a and nrg_1072a)

Gross inland consumption (GIC) in the EU-27 reached 1 799 Mtoe in 2008, a 4 % increase from 1998. However, EU-27 consumption has shown signs of stabilization compared to 2003 and it has gradually declined since 2006.

Between 1998 and 2008, there was a reduction in the consumption of solid fuels (- 9 %) and oil (- 3 %); while the consumption of RES and gas grew by 60 % and 19 % respectively. This change was reflected in the EU-27's energy mix. In 2008, oil and solid fuels accounted for 53 % of total EU-27 gross inland consumption, when in 1998 their share was 59 %. On the contrary, the share of gas increased from 22 % of the total in 1998 to 24 % in 2008 and the share of RES grew from 5 % in 1998 to 8 % in 2008.

Tables 1.3.3: Imports of energy products, by country of origin

Table 1.3.3a: Imports of natural gas, by country of origin (PJ)

	2000	2001	2002	2003	2004	2005	2006	2007	2008
Russia	4 540	4 422	4 555	4 895	4 951	5 101	5 107	4 844	5 096
Norway	1 950	2 132	2 644	2 758	2 802	3 064	3 307	3 541	3 900
Algeria	2 203	1 957	2 132	2 159	2 042	2 257	2 132	1 944	1 998
Nigeria	172	216	218	336	410	436	564	588	540
Libya	33	33	26	30	48	209	321	384	398
Other countries	224	303	359	494	865	1 322	1 397	1 350	1 650
Total	9 122	9 063	9 934	10 673	11 118	12 389	12 828	12 651	13 582

Table 1.3.3b: Imports of crude oil, by country of origin (Mt)

	2000	2001	2002	2003	2004	2005	2006	2007	2008
Russia	112	137	155	171	189	188	190	186	179
Norway	116	108	103	106	109	98	89	84	87
Saudi Arabia	65	57	53	62	64	61	51	40	39
Libya	46	44	39	46	50	51	53	56	57
Iran	35	31	26	35	36	35	36	34	31
Other countries	168	164	158	135	127	148	155	166	182
Total	542	542	534	554	575	580	574	566	575

Table 1.3.3c: Imports of hard coal, by country of origin (Mt)

	2000	2001	2002	2003	2004	2005	2006	2007	2008
South Africa	40	49	54	57	54	52	53	46	37
Russia	15	21	23	27	40	48	56	56	57
Australia	29	29	29	31	31	27	27	30	26
Colombia	23	23	21	23	24	24	26	29	27
USA	20	20	14	13	15	16	17	21	31
Indonesia	9	10	12	13	14	15	21	18	16
Other countries	49	55	46	45	24	19	18	23	23
Total	186	208	199	208	203	201	218	223	218

Source: Eurostat (online data codes: nrg_122a, nrg_123a and nrg_124a)

Figure 1.3.3a: Imports of natural gas, by country of origin (PJ)

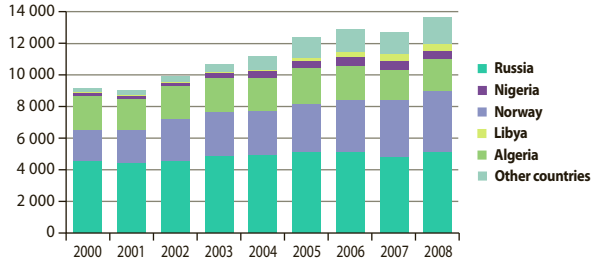


Figure 1.3.3b: Imports of crude oil, by country of origin (Mt)

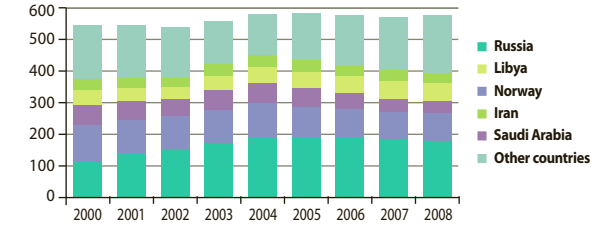
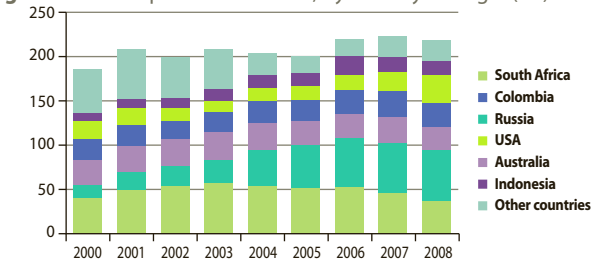


Figure 1.3.3c: Imports of hard coal, by country of origin (Mt)



Source: Eurostat (online data codes: nrg_122a, nrg_123a and nrg_124a)

From 2000 to 2008, the imports of natural gas, crude oil and hard coal in the EU-27 grew by 49 %, 6 % and 17 % respectively. In 2008, over one third (38 %) of EU-27 natural gas imports came from Russia. Between 2000 and 2008 imports from Russia presented a slight increase (12 %). However, the diversification of supply led to a decline of its share compared to 2000 (50 %), as the import volumes from other partner countries recorded considerable increases.

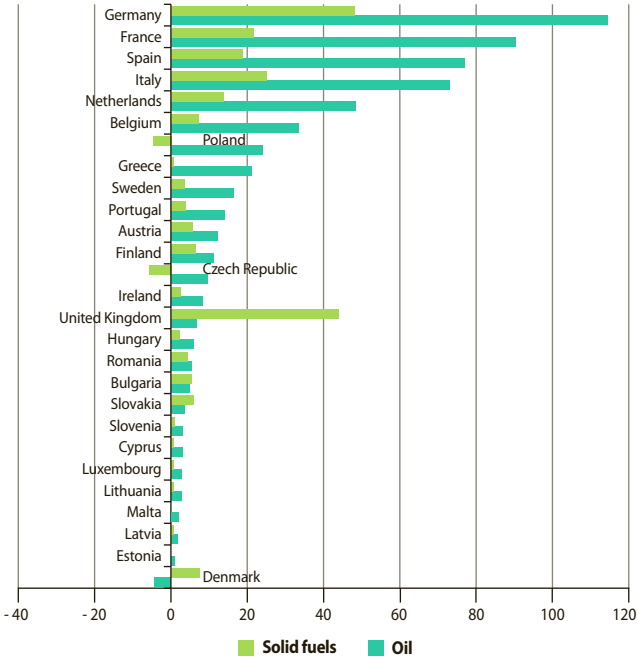
EU-27 crude oil imports from Russia grew by 59 % between 2000 and 2008. Imports from Libya also presented an increase over this time (26 %). Russia also became the principal EU-27 supplier of hard coal. In 2008, Russia accounted for 26 % of total EU-27 hard coal imports compared to 8 % in 2000.

Table 1.3.4: Net imports of solid fuels and oil (thousand tonnes)

	Solid fuels			Oil		
	1998	2003	2008	1998	2003	2008
EU-27	136 134	183 152	217 978	548 499	559 333	591 967
Belgium	12 371	8 726	7 267	30 901	32 717	33 300
Bulgaria	3 733	4 176	5 502	4 781	4 639	4 935
Czech Republic	- 9 805	- 5 618	- 5 394	8 236	8 326	9 530
Denmark	7 949	9 396	7 453	- 412	- 8 953	- 4 438
Germany	27 931	39 282	48 096	137 527	123 057	114 514
Estonia	1 279	965	8	1 139	785	829
Ireland	2 887	2 637	2 482	7 401	8 578	8 312
Greece	1 300	615	676	19 475	20 020	21 168
Spain	14 196	21 020	18 718	67 376	75 184	76 970
France	19 529	17 898	21 596	92 451	93 476	90 264
Italy	16 996	21 980	25 092	90 392	85 549	73 103
Cyprus	31	63	42	2 273	2 670	3 056
Latvia	136	131	165	1 741	1 456	1 708
Lithuania	238	302	392	3 443	2 187	2 822
Luxembourg	164	114	105	2 000	2 625	2 856
Hungary	1 714	1 655	2 300	6 045	4 659	5 866
Malta	-	-	-	888	1 865	1 898
Netherlands	13 086	14 492	13 752	36 273	40 836	48 403
Austria	4 501	5 227	5 720	12 157	13 073	12 273
Poland	- 27 164	- 22 876	- 4 442	18 418	19 717	24 085
Portugal	5 034	5 357	3 793	15 734	16 203	14 045
Romania	3 977	4 299	4 212	5 488	3 601	5 444
Slovenia	485	615	943	2 409	2 424	3 067
Slovakia	6 072	5 962	5 809	3 572	3 141	3 597
Finland	5 010	10 625	6 390	10 998	11 148	11 112
Sweden	3 715	3 969	3 497	17 407	17 914	16 478
United Kingdom	20 769	32 140	43 804	- 49 614	- 27 564	6 770
Iceland	100	138	:	878	864	:
Norway	1 252	- 1 645	- 2 233	- 140 804	- 141 813	- 101 278
Switzerland	97	114	261	13 108	11 959	12 214
Croatia	350	1 145	1 353	2 645	3 349	3 815
The former Yugoslav Republic of Macedonia	:	:	317	996	788	919
Turkey	10 984	16 675	19 705	26 681	28 158	29 194

Source: Eurostat (online data codes: nrg_101a and nrg_102a)

Figure 1.3.4: Net imports of solid fuels and oil, 2008 (mio tonnes)



Source: Eurostat (online data codes: nrg_101a and nrg_102a)

Table 1.3.4a: Net imports of solid fuels and oil, EU-27 (mio tonnes)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Solid fuels	136	135	155	172	167	183	198	197	212	217	218
Oil	548	514	528	551	538	559	574	593	602	581	592

Source: Eurostat (online data codes: nrg_101a and nrg_102a)

EU-27 net imports of solid fuels grew by 60 % between 1998 and 2008. This increase could be largely attributed to the top main importers, Germany and the United Kingdom (42 % share of total EU-27 imports). Over the past ten years, the United Kingdom doubled its solid fuels imports, while Germany increased them by 72 %. The Czech Republic and Poland were the only net exporters among the Member States in 2008. Over the last decade, the exporting activity in both countries showed a declining trend with Poland experiencing a sixfold decrease.

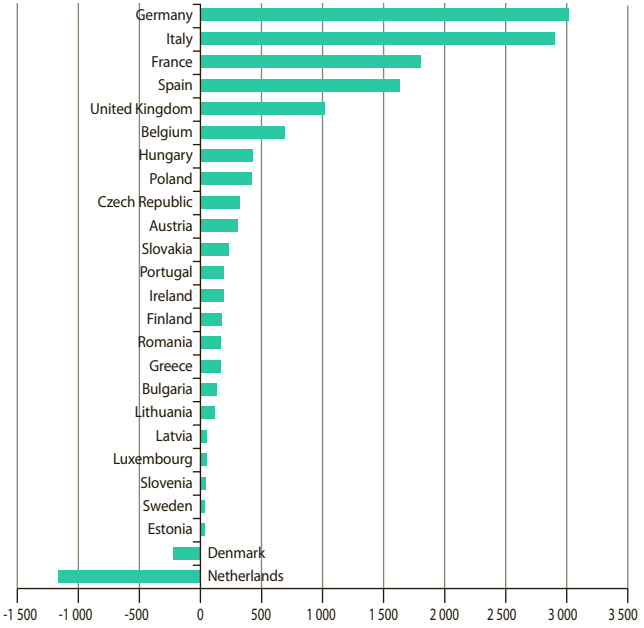
Compared to solid fuels, the net imports of oil in the EU-27 showed a lower increase (8 %) between 1998 and 2008. In 2008 Denmark was the only net exporter of oil with a tenfold increase in its exports since 1998. The United Kingdom, which exported oil until 2005, became an importer since.

Table 1.3.5: Net imports of natural gas (PJ)

	1998	2000	2005	2006	2007	2008
EU-27	7 874	8 957	11 973	12 395	12 132	12 769
Belgium	578	618	689	699	693	693
Bulgaria	145	128	114	121	128	130
Czech Republic	354	348	351	368	312	327
Denmark	- 117	- 134	- 233	- 218	- 188	- 229
Germany	2 607	2 645	3 058	3 091	2 873	3 009
Estonia	28	31	37	38	37	36
Ireland	65	115	140	168	182	192
Greece	32	79	108	127	155	163
Spain	561	720	1 407	1 472	1 466	1 639
France	1 402	1 664	1 894	1 836	1 727	1 814
Italy	1 623	2 187	2 784	2 935	2 815	2 921
Cyprus	-	-	-	-	-	-
Latvia	51	52	67	71	61	51
Lithuania	82	96	116	115	138	116
Luxembourg	29	31	55	57	56	51
Hungary	329	339	456	438	398	433
Malta	-	-	-	-	-	-
Netherlands	- 1 055	- 800	- 974	- 983	- 986	- 1 176
Austria	246	244	335	304	263	303
Poland	300	307	397	414	384	424
Portugal	32	95	181	170	175	193
Romania	178	126	195	223	180	164
Slovenia	38	38	43	42	42	41
Slovakia	249	265	268	242	232	231
Finland	155	159	167	180	173	179
Sweden	37	36	39	41	42	38
United Kingdom	- 76	- 433	278	444	774	1 024
Iceland	-	-	-	-	-	-
Norway	- 1 723	- 1 962	- 3 303	- 3 382	- 3 427	- 3 827
Switzerland	110	113	129	126	123	131
Croatia	42	42	26	9	12	20
The former Yugoslav Republic of Macedonia	1	2	3	3	4	5
Turkey	394	561	1 030	1 171	1 385	1 407

Source: Eurostat (online data code: nrg_103a)

Figure 1.3.5: Net imports of natural gas, 2008 (PJ)



Source: Eurostat (online data code: nrg_103a)

Table 1.3.5a: Net imports of natural gas, EU-27 (PJ)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
EU-27	7 874	8 521	8 957	8 895	9 661	10 398	10 946	11 973	12 395	12 132	12 769

Source: Eurostat (online data code: nrg_103a)

In 2008, EU-27 net imports of natural gas recorded a 62 % increase from 1998. Among EU-27 countries, the Netherlands and Denmark were the only net exporters with exports that amounted to 1 176 PJ and 229 PJ respectively in 2008. The United Kingdom exported natural gas until 2003, but has become an importer since.

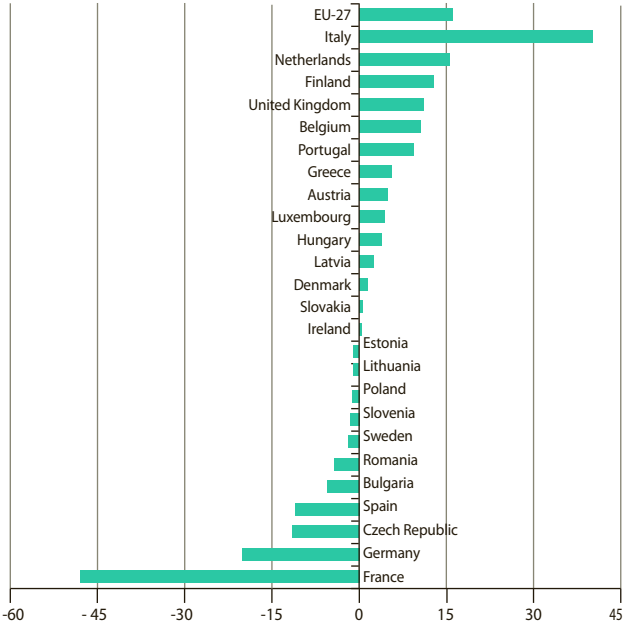
From 1998 to 2008, Portugal, Greece and Ireland recorded a sixfold, fivefold and threefold increase in their net imports of natural gas, mainly due to low penetration of natural gas back in 1998. Over the same period, Spain and Italy, two of the top importers in the EU-27, also presented an almost threefold and twofold increase respectively and in 2008 their share of total EU-27 natural gas imports reached 36 %.

Table 1.3.6: Net imports of electricity (GWh)

	1998	2000	2005	2006	2007	2008
EU-27	- 634	19 614	11 310	3 478	10 489	16 488
Belgium	1 393	4 326	6 304	10 157	6 779	10 597
Bulgaria	- 3 647	- 4 620	- 7 581	- 7 743	- 4 475	- 5 344
Czech Republic	- 2 461	- 10 017	- 12 634	- 12 631	- 16 153	- 11 469
Denmark	- 4 320	665	1 369	- 6 935	- 950	1 455
Germany	- 638	3 057	- 4 566	- 16 977	- 16 555	- 20 101
Estonia	- 390	- 929	- 1 608	- 750	- 2 420	- 941
Ireland	79	98	2 044	1 778	1 330	450
Greece	1 610	- 11	3 780	4 202	4 355	5 613
Spain	3 402	4 441	- 1 343	- 3 280	- 5 751	- 11 039
France	- 57 562	- 69 479	- 60 328	- 63 341	- 56 813	- 48 006
Italy	40 732	44 347	49 155	44 985	46 283	40 035
Cyprus	-	-	-	-	-	-
Latvia	530	1 786	2 148	2 508	3 000	2 520
Lithuania	- 6 082	- 1 336	- 2 966	- 428	- 1 372	- 957
Luxembourg	5 414	5 722	3 261	3 557	3 960	4 346
Hungary	740	3 440	6 227	7 207	3 986	3 903
Malta	-	-	-	-	-	-
Netherlands	11 814	18 915	18 293	21 459	17 574	15 851
Austria	- 163	- 1 368	2 665	6 850	6 619	4 863
Poland	- 3 474	- 6 373	- 11 186	- 10 986	- 5 348	- 1 223
Portugal	274	931	6 824	5 441	7 488	9 431
Romania	466	- 696	- 2 903	- 4 273	- 2 090	- 4 248
Slovenia	- 1 919	- 1 321	- 324	51	229	- 1 602
Slovakia	2 251	- 2 696	- 3 265	- 2 331	1 725	521
Finland	9 306	11 880	17 015	11 401	12 557	12 772
Sweden	- 10 697	4 678	- 7 392	6 040	1 316	- 1 961
United Kingdom	12 708	14 174	8 321	7 517	5 215	11 022
Iceland	-	-	-	-	-	-
Norway	3 634	- 19 055	- 12 042	854	- 10 035	- 13 863
Switzerland	- 5 954	- 7 070	6 350	2 703	- 2 062	- 1 135
Croatia	3 354	4 000	5 112	5 622	6 361	6 577
The former Yugoslav Republic of Macedonia	- 2	112	1 599	1 795	2 491	2 733
Turkey	3 000	3 354	- 1 162	- 1 663	- 1 558	- 333

Source: Eurostat (online data code: nrg_105a)

Figure 1.3.6: Net imports of electricity, 2008 (TWh)



Source: Eurostat (online data code: nrg_105a)

Table 1.3.6a: Net imports of electricity , EU-27 & top-5 importers & exporters (TWh)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
EU-27	- 0.6	11.2	19.6	4.8	12.5	- 1.7	- 7.3	11.3	3.5	10.5	16.5
Top-5 exporters	- 60.9	- 61.6	- 76.6	- 77.7	- 79.4	- 88.6	- 89.2	- 86.5	- 104.0	- 99.7	- 96.0
Top-5 importers	76.0	86.7	93.6	95.1	94.9	81.4	82.0	99.1	95.5	88.4	90.3

Source: Eurostat (online data code: nrg_105a)

Note: Top 5 EU-27 exporters and importers are drawn according to average activity levels of the last three years. Top 5 exporting countries are France, Germany, Czech Republic, Spain and Bulgaria. Top 5 importing countries are Italy, Netherlands, Finland, Belgium and the United Kingdom.

EU-27 net imports of electricity amounted to 16 488 GWh in 2008. Over the last decade, net electricity imports in the EU presented fluctuations.

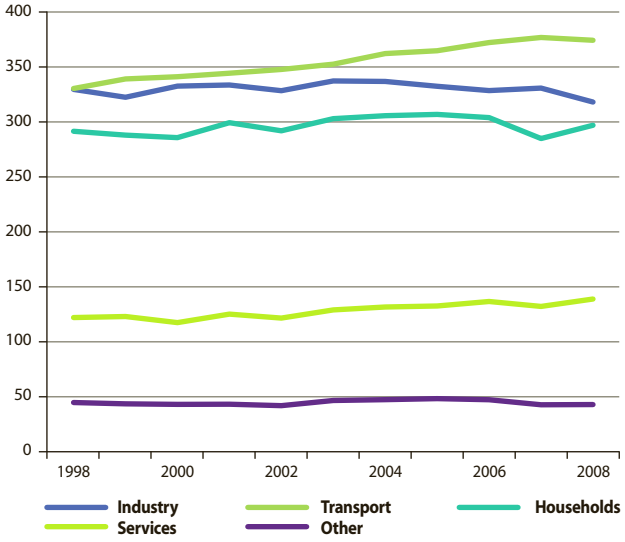
In 2008, the Member States with the highest electricity imports were Italy and the Netherlands. Both countries have traditionally been among the top net importers. On the contrary, France was the largest net exporter of electricity among EU Member States.

Table 1.4.1: Final energy consumption, by sector (Mtoe)

	Total		Industry		Transport		Households		Services	
	1998	2008	1998	2008	1998	2008	1998	2008	1998	2008
EU-27	1 116	1 169	329	318	330	374	291	297	121	138
BE	39.04	37.59	14.75	12.04	9.61	11.23	9.91	8.77	3.79	4.72
BG	9.93	9.61	4.69	3.54	1.92	2.84	2.40	2.13	0.18	0.92
CZ	24.47	25.35	11.29	9.11	3.93	6.46	5.67	5.80	2.63	3.12
DK	15.00	15.55	3.00	2.77	4.69	5.49	4.40	4.46	1.92	1.94
DE	223.53	224.01	57.52	60.44	65.05	61.43	66.30	68.15	24.53	25.98
EE	2.66	3.02	0.71	0.77	0.58	0.80	1.04	0.95	0.25	0.43
IE	9.31	13.19	2.00	2.48	3.31	5.43	2.39	3.16	1.32	1.81
EL	18.20	21.19	4.43	4.24	7.31	8.51	4.20	5.14	1.19	2.22
ES	71.88	95.42	22.59	26.77	30.57	40.19	11.04	15.70	5.46	9.15
FR	151.57	156.26	37.64	36.33	49.73	50.47	38.65	42.67	22.01	19.04
IT	120.31	128.19	37.04	36.55	41.16	43.87	27.89	27.37	10.53	16.89
CY	1.54	1.96	0.42	0.38	0.81	0.97	0.20	0.29	0.09	0.20
LV	3.58	4.16	0.70	0.68	0.69	1.28	1.50	1.46	0.55	0.61
LT	4.45	4.85	0.99	0.96	1.31	1.80	1.45	1.38	0.54	0.60
LU	3.19	4.33	0.89	0.88	1.56	2.62	0.63	0.68	0.08	0.12
HU	15.68	17.04	3.66	3.36	3.08	4.80	5.28	5.57	2.84	2.78
MT	0.30	0.49	0.04	0.05	0.14	0.31	0.07	0.08	0.04	0.06
NL	50.33	51.19	14.39	13.08	13.64	15.83	10.38	9.79	7.86	9.25
AT	22.86	26.98	6.57	8.83	6.75	8.43	6.32	6.49	2.66	2.65
PL	60.03	61.82	21.16	16.56	9.53	15.84	19.81	18.50	4.60	7.31
PT	16.15	18.29	5.94	5.56	5.72	7.28	2.67	3.12	1.19	1.95
RO	26.16	24.89	10.71	9.21	3.89	5.24	9.52	8.05	0.78	1.69
SI	4.27	5.23	1.16	1.48	1.38	2.05	1.03	1.11	0.69	0.50
SK	10.51	10.68	3.81	4.32	1.50	2.16	2.44	2.13	2.49	1.93
FI	24.30	25.88	11.51	12.45	4.36	4.96	5.39	4.99	1.48	1.76
SE	35.51	32.84	14.29	12.29	7.80	9.06	7.86	6.64	4.58	4.13
UK	150.79	148.62	37.51	32.78	50.22	54.93	42.75	42.07	16.84	16.30
IS	1.86	:	0.56	:	0.32	:	0.53	:	0.10	:
NO	18.26	18.89	6.51	6.75	4.65	5.12	3.95	3.79	2.34	2.45
CH	20.31	21.82	3.59	4.12	6.70	7.52	5.86	6.02	3.54	3.78
HR	5.20	6.58	1.44	1.69	1.46	2.13	1.61	1.78	:	0.71
MK	:	1.76	:	0.61	:	0.41	:	0.51	:	0.21
TR	49.85	71.86	17.72	19.67	11.16	16.25	16.57	22.61	1.62	7.61

Source: Eurostat (online data code: nrg_100a)

Figure 1.4.1: Final energy consumption, by sector, EU-27 (Mtoe)



Source: Eurostat (online data code: nrg_100a)

Table 1.4.1a: Final energy consumption, by sector, EU-27 (Mtoe)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Change 1998-08
Total	1 116	1 113	1 117	1 143	1 129	1 166	1 181	1 182	1 186	1 165	1 169	5 %
Industry	329	322	332	333	328	337	337	332	328	331	318	- 3 %
Transport	330	339	341	344	348	352	362	365	372	377	374	13 %
Households	291	288	285	299	292	303	305	307	304	285	297	2 %
Services	121	122	117	124	121	128	131	132	136	131	138	14 %
Other	44	42	42	42	41	45	46	47	46	42	42	- 4 %

Source: Eurostat (online data code: nrg_100a)

Final energy consumption in the EU-27 recorded a slight growth (5 %) between 1998 and 2008. At sector level, the largest growths were observed in services (14 %) and transport (13 %), whereas energy consumption by households showed a moderate increase (2 %) and energy consumption by the industrial sector declined by 3 %.

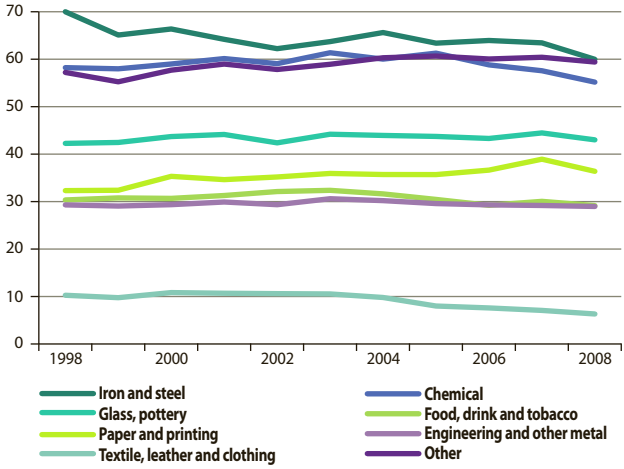
In 2008, the transport sector consumed almost a third (32 %) of EU-27 final energy, an increase of 2 percentage points since 1998. In contrast, the share of the industrial sector decreased from 30 % in 1998 to 27 % in 2008. In 2008, energy consumption by households and services accounted for 25 % and 12 % of the total respectively.

Table 1.4.2: Final energy consumption, by industrial sector (Mtoe)

	Total industry		Iron and steel		Chemical		Glass, pottery		Food, drink and tobacco		Paper and printing	
	1998	2008	1998	2008	1998	2008	1998	2008	1998	2008	1998	2008
EU-27	329	318	70	60	58	55	42	43	30	29	32	36
BE	14.75	12.04	4.54	3.20	4.50	3.47	1.27	1.46	0.68	0.95	0.44	0.73
BG	4.69	3.54	1.15	0.64	1.54	0.92	0.61	0.71	0.33	0.28	0.14	0.17
CZ	11.29	9.11	3.41	2.76	0.73	1.32	1.27	1.25	0.72	0.60	0.32	0.61
DK	3.00	2.77	0.11	0.07	0.25	0.23	0.68	0.57	0.75	0.71	0.14	0.14
DE	57.52	60.44	14.52	14.80	10.81	10.91	7.43	6.56	4.44	4.34	4.29	6.16
EE	0.71	0.77	0.00	0.00	0.18	0.12	0.12	0.20	0.12	0.07	0.05	0.05
IE	2.00	2.48	0.04	0.00	0.30	0.30	0.25	0.52	0.46	0.50	0.06	0.03
EL	4.43	4.24	0.15	0.23	0.36	0.26	1.33	1.12	0.59	0.66	0.14	0.14
ES	22.59	26.77	3.80	3.79	3.28	4.49	5.13	6.45	1.96	2.26	1.62	2.24
FR	37.64	36.33	7.32	6.04	5.84	7.29	3.76	4.14	4.64	4.70	3.48	2.56
IT	37.04	36.55	6.95	6.46	6.19	5.09	7.35	7.98	3.03	3.26	2.64	2.57
CY	0.42	0.38	-	0.00	0.00	0.00	0.21	0.23	0.01	0.02	0.00	0.00
LV	0.70	0.68	0.13	0.13	0.05	0.03	0.08	0.12	0.19	0.10	0.01	0.01
LT	0.99	0.96	0.01	0.00	0.22	0.26	0.21	0.20	0.21	0.17	0.04	0.02
LU	0.89	0.88	0.33	0.35	0.06	0.05	0.10	0.06	0.01	0.02	-	-
HU	3.66	3.36	0.72	0.63	0.83	0.62	0.65	0.66	0.50	0.45	0.18	0.17
MT	0.04	0.05	-	-	-	-	-	-	-	-	-	-
NL	14.39	13.08	2.39	2.32	5.24	4.03	0.83	0.77	2.35	2.05	1.00	0.91
AT	6.57	8.83	1.80	2.42	0.65	0.92	0.81	1.03	0.42	0.51	1.35	1.42
PL	21.16	16.56	4.91	3.22	4.17	3.67	3.11	2.67	2.58	1.90	1.20	1.18
PT	5.94	5.56	0.27	0.19	0.67	0.55	1.84	1.72	0.50	0.53	1.22	1.23
RO	10.71	9.21	3.89	2.78	1.80	2.94	1.03	0.58	0.82	0.69	0.27	0.12
SI	1.16	1.48	0.15	0.15	0.13	0.16	0.20	0.27	0.09	0.08	0.13	0.19
SK	3.81	4.32	1.49	1.77	0.71	0.47	0.52	0.45	0.23	0.16	0.22	0.55
FI	11.51	12.45	1.72	1.61	1.19	1.02	0.47	0.41	0.43	0.33	5.33	7.02
SE	14.29	12.29	1.70	1.85	2.21	0.77	0.46	0.44	0.51	0.40	5.81	5.96
UK	37.51	32.78	8.42	4.49	6.27	5.21	2.49	2.39	3.70	3.35	2.21	2.12
IS	0.56	:	0.11	:	0.01	:	0.01	:	0.09	:	0.00	:
NO	6.51	6.75	1.30	0.83	0.91	1.41	0.40	0.42	0.41	0.38	1.06	0.91
CH	3.59	4.12	0.01	0.24	0.59	0.79	0.38	0.49	0.15	0.46	0.42	0.56
HR	1.44	1.69	0.06	0.05	0.28	0.25	0.36	0.52	0.25	0.30	0.07	0.08
MK	:	0.61	:	0.39	:	0.01	:	0.11	:	0.04	:	0.00
TR	17.72	19.67	3.20	4.98	1.20	1.07	0.99	2.10	1.13	0.70	0.36	0.36

Source: Eurostat (online data code: nrg_100a)

Figure 1.4.2: Final energy consumption, by industrial sector, EU-27 (Mtoe)



Source: Eurostat (online data code: nrg_100a)

Table 1.4.2a: Final energy consumption, by industrial sector, EU-27 (Mtoe)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Change 1998-08
Total	329	322	332	333	328	337	337	332	328	331	318	- 3 %
Iron and steel	70	65	66	64	62	64	66	63	64	63	60	- 14 %
Chemical	58	58	59	60	59	61	60	61	59	57	55	- 5 %
Glass, pottery	42	42	44	44	42	44	44	44	43	44	43	2 %
Food, drink and tobacco	30	31	31	31	32	32	32	30	29	30	29	- 4 %
Paper and printing	32	32	35	35	35	36	36	36	37	39	36	13 %
Engineering and other metal	29	29	29	30	29	31	30	30	29	29	29	- 1 %
Textile, leather and clothing	10	10	11	11	11	10	10	8	8	7	6	- 39 %
Other	57	55	58	59	58	59	60	61	60	60	59	4 %

Source: Eurostat (online data code: nrg_100a)

Three sectors accounted for half of the final energy consumed by the EU-27 industry in 2008: The iron and steel sector with a 19 % share of the total, the chemical sector (17 %) and glass, pottery (14 %). Other sectors with noteworthy contribution to total industrial consumption were paper and printing (11 %), food, drink and tobacco (9 %) and the engineering and other metal industry (9 %).

From 1998 to 2008, the only sectors that showed increased consumptions were paper and printing (13 %) and glass and pottery (2 %).

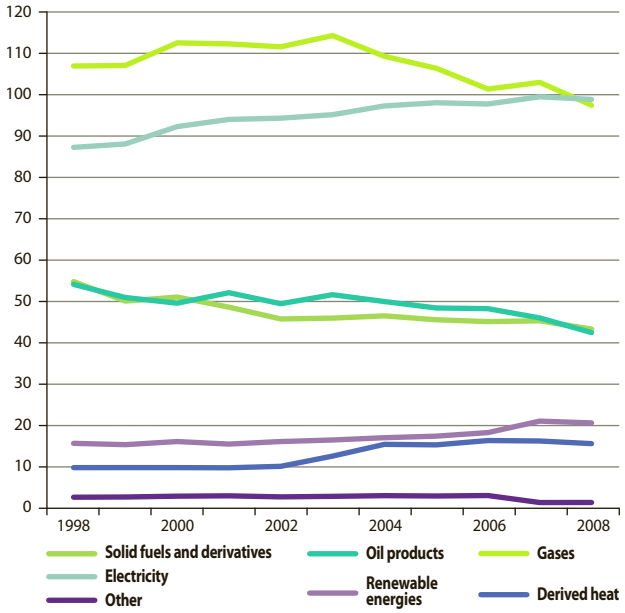
Over this period, the Member States presented varying trends in their industrial energy consumption. The highest increases took place in Austria (35 %), Slovenia (27 %) and Ireland (24 %), while Bulgaria and Poland experienced the largest decreases (- 25 % and – 22 % respectively).

Table 1.4.3: Final energy consumption in industry, by fuel

	All products (Mtoe)		Share to total final energy consumption in industry (%)											
			Solid fuels		Oil products		Gases		Electricity		Renewable energies		Derived heat	
	1998	2008	1998	2008	1998	2008	1998	2008	1998	2008	1998	2008	1998	2008
EU-27	329	318	17	14	16	13	32	31	26	31	5	6	3	5
BE	14.75	12.04	21	16	13	6	29	42	22	28	1	4	2	3
BG	4.69	3.54	14	14	25	17	33	26	20	26	1	1	7	13
CZ	11.29	9.11	26	28	12	5	31	32	14	23	3	4	14	7
DK	3.00	2.77	11	6	27	25	26	28	28	30	3	6	5	5
DE	57.52	60.44	18	15	12	7	36	33	31	34	1	6	3	5
EE	0.71	0.77	12	20	21	9	27	23	23	26	9	15	7	7
IE	2.00	2.48	4	5	41	38	20	24	31	28	5	6	-	-
EL	4.43	4.24	21	9	47	43	3	11	25	31	5	6	-	-
ES	22.59	26.77	7	5	27	20	32	36	27	33	6	6	0	-
FR	37.64	36.33	16	13	16	17	34	30	30	33	4	5	-	-
IT	37.04	36.55	10	9	17	18	43	31	29	33	1	1	-	8
CY	0.42	0.38	5	7	87	75	-	-	9	15	-	2	-	-
LV	0.70	0.68	1	7	33	12	30	38	18	21	10	19	7	1
LT	0.99	0.96	2	13	27	6	25	30	23	25	2	9	21	17
LU	0.89	0.88	12	8	9	9	42	39	34	42	-	-	2	2
HU	3.66	3.36	10	13	9	6	50	41	19	25	-	3	12	11
MT	0.04	0.05	-	-	-	-	-	-	100	100	-	-	-	-
NL	14.39	13.08	10	11	8	5	48	44	24	28	0	1	10	11
AT	6.57	8.83	17	14	13	11	35	33	25	27	7	9	2	2
PL	21.16	16.56	44	29	9	8	17	23	18	23	3	5	7	10
PT	5.94	5.56	7	1	45	22	4	19	21	27	21	25	1	5
RO	10.71	9.21	14	14	15	14	40	45	18	21	2	2	11	4
SI	1.16	1.48	4	5	12	12	43	36	37	37	2	5	2	5
SK	3.81	4.32	34	30	7	5	37	31	21	25	0	7	1	2
FI	11.51	12.45	11	7	10	12	16	9	30	30	29	27	3	15
SE	14.29	12.29	7	10	23	11	3	5	33	40	31	31	2	3
UK	37.51	32.78	18	18	16	16	40	33	25	30	1	1	-	2
IS	0.56	:	12	:	20	:	-	:	61	:	7	:	-	:
NO	6.51	6.75	16	10	11	15	0	4	65	64	8	6	0	0
CH	3.59	4.12	2	4	21	18	26	22	40	40	3	5	2	4
HR	1.44	1.69	5	9	31	31	36	34	18	20	5	3	5	3
MK	:	0.61	:	23	:	30	:	5	:	34	:	0	:	8
TR	17.72	19.67	43	36	23	7	11	20	21	32	0	1	-	5

Source: Eurostat (online data codes: nrg_100a, nrg_101a, nrg_102a, nrg_103a, nrg_105a, nrg_106a and nrg_1072a)

Figure 1.4.3: Final energy consumption in industry, by fuel, EU-27 (Mtoe)



Source: Eurostat (online data codes: nrg_100a, nrg_101a, nrg_102a, nrg_103a, nrg_105a, nrg_106a and nrg_1072a)

Table 1.4.3a: Final energy consumption in industry, by fuel, EU-27 (Mtoe)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Change 1998-08
Total	329	322	332	333	328	337	337	332	328	331	318	- 3 %
Solid fuels and derivatives	55	50	51	48	46	46	46	45	45	45	43	- 21 %
Oil products	54	51	49	52	49	51	50	48	48	46	42	- 22 %
Gases	107	107	112	112	111	114	109	106	101	103	97	- 9 %
Electricity	87	88	92	94	94	95	97	98	97	99	98	13 %
Renewable energies	16	15	16	15	16	16	17	17	18	21	20	32 %
Derived heat	10	10	10	10	10	12	15	15	16	16	15	60 %
Other	3	3	3	3	3	3	3	3	3	1	1	- 51 %

Source: Eurostat (online data codes: nrg_100a, nrg_101a, nrg_102a, nrg_103a, nrg_105a, nrg_106a and nrg_1072a)

In 2008, electricity and gases covered 62 % (31 % each) of the energy requirements of EU-27 industry, followed by solid fuels (14 %) and oil products (13 %). Renewable energies and derived heat made smaller contributions of 6 % and 5 % correspondingly.

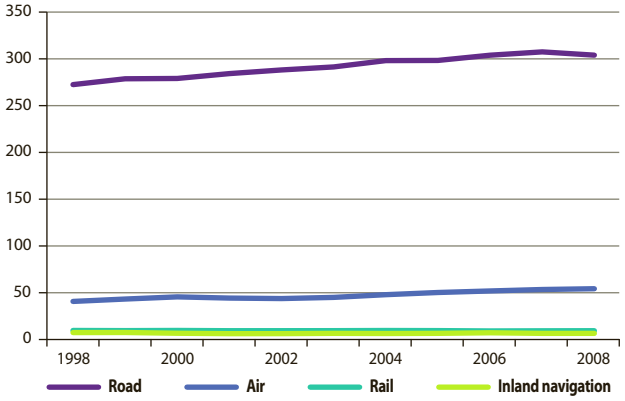
In 2008, the share of electricity to total final energy consumption in industry was significant in all Member States and varied from 15 % in Cyprus to 100 % in Malta. Similarly, the share of gases was over 20 % in twenty one Member States with the shares of Romania and the Netherlands being 45 % and 44 % respectively, the highest among Member States.

Table 1.4.4: Final energy consumption, by mode of transport (ktoe)

	Total transport		Road		Air		Rail		Inland navigation	
	1998	2008	1998	2008	1998	2008	1998	2008	1998	2008
EU-27	330 237	374 269	272 673	304 202	40 657	54 254	9 590	9 330	7 318	6 483
BE	9 608	11 227	7 538	8 877	1 591	2 044	181	185	299	121
BG	1 917	2 841	1 679	2 554	151	225	85	62	3	-
CZ	3 926	6 463	3 409	5 768	194	400	310	292	12	4
DK	4 685	5 490	3 677	4 303	771	940	107	109	129	139
DE	65 046	61 434	56 029	50 081	6 633	9 181	2 013	1 874	371	298
EE	577	796	502	727	17	29	53	33	6	7
IE	3 305	5 433	2 715	4 408	449	951	105	47	36	26
EL	7 308	8 510	5 177	6 524	1 201	1 335	58	57	872	593
ES	30 575	40 194	24 137	32 112	3 974	5 795	780	968	1 683	1 319
FR	49 731	50 470	41 359	41 506	6 072	7 315	1 413	1 343	887	306
IT	41 159	43 867	36 629	37 417	2 954	4 074	869	961	708	1 414
CY	810	973	545	680	265	294	-	-	-	-
LV	691	1 280	576	1 091	30	98	85	90	-	2
LT	1 314	1 797	1 200	1 634	29	78	81	79	4	6
LU	1 558	2 615	1 263	2 161	282	445	13	10	-	-
HU	3 079	4 803	2 706	4 362	195	276	177	165	1	-
MT	145	307	86	178	59	128	-	-	-	-
NL	13 644	15 827	9 546	11 669	3 266	3 769	171	167	661	222
AT	6 754	8 426	5 874	7 350	560	749	314	314	6	13
PL	9 532	15 841	8 671	14 891	261	536	587	408	13	5
PT	5 725	7 280	4 949	6 162	650	1 026	79	67	47	24
RO	3 887	5 238	3 140	4 633	113	244	417	291	216	71
SI	1 381	2 052	1 336	1 987	19	36	26	29	-	-
SK	1 498	2 159	1 381	2 049	30	63	87	47	-	-
FI	4 361	4 957	3 647	3 930	483	730	98	100	132	196
SE	7 800	9 055	6 530	7 777	883	992	257	208	130	78
UK	50 222	54 934	38 373	39 371	9 526	12 502	1 224	1 423	1 099	1 638
IS	317	:	189	:	121	:	-	:	7	:
NO	4 650	5 119	3 150	3 522	654	726	78	78	767	793
CH	6 701	7 518	5 009	5 770	1 464	1 456	222	282	6	9
HR	1 462	2 131	1 293	1 917	90	117	50	54	28	43
MK	:	407	:	394	16	6	6	7	-	-
TR	11 156	16 254	9 133	13 451	1 562	2 088	237	217	223	497

Source: Eurostat (online data code: nrg_100a)

Figure 1.4.4: Final energy consumption, by mode of transport, EU-27 (Mtoe)



Source: Eurostat (online data code: nrg_100a)

Table 1.4.4a: Final energy consumption, by mode of transport, EU-27 (Mtoe)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Change 1998-08
Total	330	339	341	344	348	352	362	365	372	377	374	13 %
Road	273	279	279	284	288	292	298	299	304	308	304	12 %
Air	41	43	46	44	44	45	48	50	52	53	54	33 %
Rail	10	9	10	9	9	9	10	9	9	9	9	- 3 %
Inland navigation	7	7	7	6	6	6	6	7	7	6	6	- 11 %

Source: Eurostat (online data code: nrg_100a)

Within the transport sector of the EU-27, road transport was the most energy consuming mode with an 81 % share of the total in 2008. Air transport was second with a 14 % share, while rail and inland navigation consumed about 2 % of the total.

The situation was similar in Member States. Road transport accounted for the largest share of their energy consumption and even exceeded 90 % of the total among new Member States, such as Slovenia (97 %), Slovakia (95 %) and Poland (94 %). In contrast, Malta and Cyprus had the lowest shares of consumption by road with 58 % and 70 % respectively. These two countries due to their geography and the absence of other transport modes displayed the largest shares of energy consumption by air. Regarding energy consumption by rail transport, new Member States recorded the highest shares with 7 % in Latvia and 6 % in Romania; while Greece displayed the highest share of energy consumption by inland navigation (7 %).

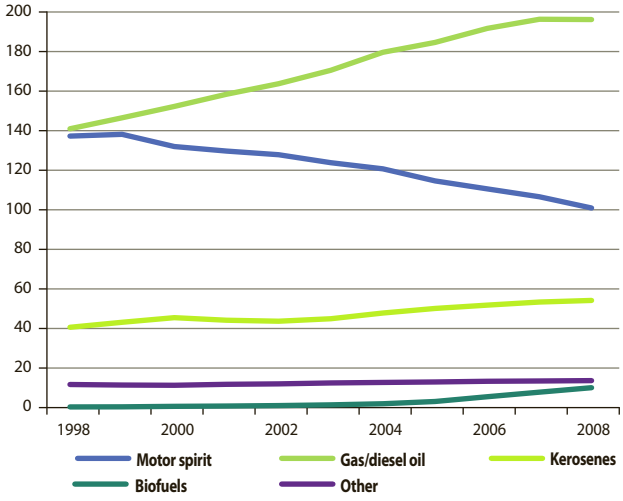
Air transport was the fastest growing sector between 1998 and 2008 with a 33 % overall increase for the EU-27. All Member States increased their energy consumption by air transport. Road transport experienced a much lesser increase of 12 %, while energy consumption by rail and navigation fell by 3 % and 11 % respectively.

Table 1.4.5: Final energy consumption in transport, by fuel

	All products (ktoe)		Share to total final energy consumption in transport (%)							
			Motor spirit		Kerosenes		Gas/diesel oil		Biofuels	
	1998	2008	1998	2008	1998	2008	1998	2008	1998	2008
EU-27	330 237	374 269	41	27	12	14	43	52	0	3
BE	9 608	11 227	27	14	17	18	51	65	-	1
BG	1 917	2 841	44	22	8	8	43	55	-	0
CZ	3 926	6 463	49	32	5	6	40	56	0	2
DK	4 685	5 490	44	33	16	17	38	49	-	0
DE	65 046	61 434	49	34	10	15	39	43	0	5
EE	577	796	53	42	2	3	43	53	-	-
IE	3 305	5 433	42	33	14	17	44	48	-	1
EL	7 308	8 510	45	50	16	16	31	30	-	1
ES	30 575	40 194	31	16	13	14	54	67	-	2
FR	49 731	50 470	31	17	12	14	54	61	1	5
IT	41 159	43 867	46	26	7	9	40	56	-	2
CY	810	973	25	40	33	30	42	28	-	1
LV	691	1 280	53	30	4	8	41	59	-	0
LT	1 314	1 797	49	24	2	4	45	57	-	3
LU	1 558	2 615	37	16	18	17	45	65	-	1
HU	3 079	4 803	47	33	6	6	44	55	-	3
MT	:	307	:	24	:	42	:	34	-	-
NL	13 644	15 827	32	28	24	24	38	44	-	2
AT	6 754	8 426	34	21	8	9	53	62	0	5
PL	9 532	15 841	55	26	3	3	35	54	-	3
PT	5 725	7 280	37	22	11	14	51	62	-	2
RO	3 887	5 238	39	30	3	4	50	61	-	2
SI	1 381	2 052	61	33	1	2	37	64	-	1
SK	1 498	2 159	42	30	2	3	50	58	-	6
FI	4 361	4 957	46	33	11	15	41	49	-	2
SE	7 800	9 055	54	39	11	11	31	43	-	4
UK	50 222	54 934	46	32	19	23	34	41	-	1
IS	317	:	48	:	38	:	14	:	:	:
NO	4 650	5 119	38	27	14	14	47	53	-	1
CH	6 701	7 518	60	47	22	19	15	30	-	0
HR	1 462	2 131	52	33	6	5	40	56	-	0
MK	:	407	:	30	:	2	:	53	:	2
TR	11 156	16 254	43	15	14	13	36	56	-	0

Source: Eurostat (online data codes: nrg_100a, nrg_102a and nrg_1073a)

Figure 1.4.5: Final energy consumption in transport, by fuel, EU-27 (Mtoe)



Source: Eurostat (online data codes: nrg_100a, nrg_102a and nrg_1073a)

Table 1.4.5a: Final energy consumption in transport, by fuel, EU-27 (Mtoe)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Change 1998-08
Total	330	339	341	344	348	352	362	365	372	377	374	13 %
Motor spirit	137	138	132	129	128	124	120	114	110	106	101	- 26 %
Gas/diesel oil	141	146	152	158	163	170	179	184	191	196	196	39 %
Kerosenes	41	43	45	44	44	45	48	50	52	53	54	33 %
Biofuels	0	0	1	1	1	1	2	3	6	8	10	2601 %
Other	12	11	11	12	12	12	13	13	13	13	14	17 %

Source: Eurostat (online data codes: nrg_100a, nrg_102a and nrg_1073a)

Over the last decade, significant changes were observed in the fuel mix consumed by the EU-27 transport sector. In 2008, gas/diesel oil accounted for 52 % of the total, an increase of almost 10 percentage points from 1998. Over the same period, the share of motor spirits dropped from 41 % to 27 %. Biofuels accounted for 3 % of total transport consumption in 2008.

In absolute terms, motor spirit consumption decreased by 26 % between 1998 and 2008. On the other hand, the consumption of all other fuels increased. Gas/diesel oil consumption recorded a 39% increase, kerosenes consumption grew by 33 % and the consumption of biofuels grew 26 times.

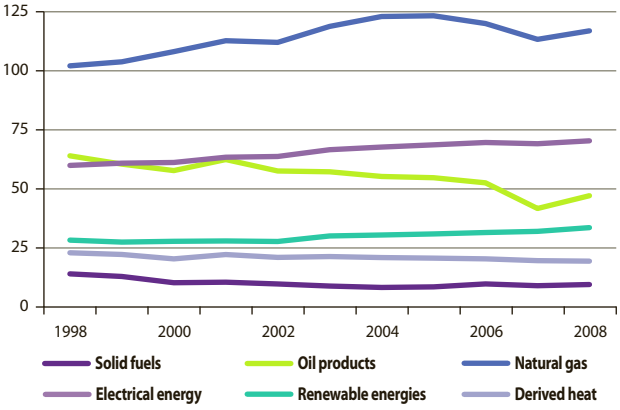
All Member States but Cyprus increased their gas/diesel oil consumption over the last ten years, while they all presented increases in kerosenes consumption.

Table 1.4.6: Final energy consumption in households, by fuel

	All products (Mtoe)		Share to total final energy consumption in households (%)											
			Solid fuels		Oil products		Natural gas		Electrical energy		Renewable energies		Derived heat	
	1998	2008	1998	2008	1998	2008	1998	2008	1998	2008	1998	2008	1998	2008
EU-27	291	297	5	3	22	16	35	39	21	24	10	11	8	7
BE	9.91	8.77	2	2	42	38	34	38	20	20	2	3	0	0
BG	2.40	2.13	22	10	1	1	-	2	38	41	15	30	25	17
CZ	5.67	5.80	21	8	1	0	37	35	22	22	-	18	20	16
DK	4.40	4.46	0	-	22	11	15	14	19	21	8	21	35	33
DE	66.30	68.15	2	1	35	24	35	43	17	18	6	9	5	6
EE	1.04	0.95	3	1	5	1	4	5	11	17	33	41	43	35
IE	2.39	3.16	33	16	32	39	14	21	20	23	1	1	-	-
EL	4.20	5.14	1	0	54	50	-	4	26	30	19	15	-	1
ES	11.04	15.70	2	1	35	22	13	23	32	39	18	14	-	-
FR	38.65	42.67	2	1	28	19	23	33	27	31	20	16	-	-
IT	27.89	27.37	0	0	24	14	54	59	18	21	4	5	-	0
CY	0.20	0.29	-	-	39	32	-	-	40	49	21	19	-	-
LV	1.50	1.46	2	1	2	2	5	8	6	12	48	50	37	27
LT	1.45	1.38	3	4	5	3	9	11	10	17	32	29	42	37
LU	0.63	0.68	0	-	53	34	34	49	9	10	2	2	1	5
HU	5.28	5.57	4	3	6	2	55	59	16	18	5	8	14	10
MT	0.07	0.08	-	-	35	30	-	-	65	70	-	-	-	-
NL	10.38	9.79	0	0	1	1	78	73	17	22	2	3	2	2
AT	6.32	6.49	4	1	27	22	20	18	18	22	24	26	7	10
PL	19.81	18.50	30	30	3	4	17	17	9	13	12	13	29	23
PT	2.67	3.12	-	-	26	18	0	7	28	37	43	38	0	0
RO	9.52	8.05	0	1	5	4	23	27	7	11	28	43	36	15
SI	1.03	1.11	1	-	46	28	5	9	22	25	14	29	11	9
SK	2.44	2.13	3	3	1	1	59	55	20	18	0	2	17	21
FI	5.39	4.99	0	0	26	11	0	1	29	36	19	23	25	29
SE	7.86	6.64	-	-	16	1	1	1	46	50	8	10	28	37
UK	42.75	42.07	5	1	8	7	64	67	22	24	0	1	-	0
IS	0.53	:	-	:	3	:	-	:	9	:	65	:	23	:
NO	3.95	3.79	0	-	8	4	-	0	76	78	15	16	1	2
CH	5.86	6.02	0	0	56	45	14	17	22	26	5	10	2	2
HR	1.61	1.78	1	0	18	13	26	31	28	32	19	15	8	8
MK	:	0.51	:	1	:	9	:	-	:	53	:	31	:	7
TR	16.57	22.61	10	22	20	7	13	29	10	15	46	27	-	-

Source: Eurostat (online data codes: nrg_100a, nrg_101a, nrg_102a, nrg_103a, nrg_105a, nrg_106a and nrg_1071a)

Figure 1.4.6: Final energy consumption in households, by fuel, EU-27 (Mtoe)



Source: Eurostat (online data codes: nrg_100a, nrg_101a, nrg_102a, nrg_103a, nrg_105a, nrg_106a and nrg_1071a)

Table 1.4.6a: Final energy consumption in households, by fuel, EU-27 (Mtoe)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Change 1998-08
Total	291	288	285	299	292	303	305	307	304	285	297	2 %
Solid fuels	14	13	10	10	10	9	8	9	10	9	10	- 32 %
Oil products	64	60	58	62	58	57	55	55	53	42	47	- 26 %
Natural gas	102	104	108	113	112	119	123	123	120	113	117	15 %
Electrical energy	60	61	61	63	64	67	68	69	70	69	70	17 %
Renewable energies	28	27	28	28	28	30	30	31	32	32	34	19 %
Derived heat	23	22	20	22	21	21	21	21	20	20	19	- 15 %

Source: Eurostat (online data codes: nrg_100a, nrg_101a, nrg_102a, nrg_103a, nrg_105a, nrg_106a and nrg_1071a)

Between 1998 and 2008, EU-27 final energy consumption in households presented a slight increase (2 %). Over this period, only slight alterations were observed in the fuel blend used to cover the energy needs of households. Decreases were recorded in the consumption of solid fuels (- 32 %), oil products (- 26 %) and derived heat (- 15 %). In contrast there were increases in the consumption of renewable energies (19 %), electrical energy (17 %) and natural gas (15 %).

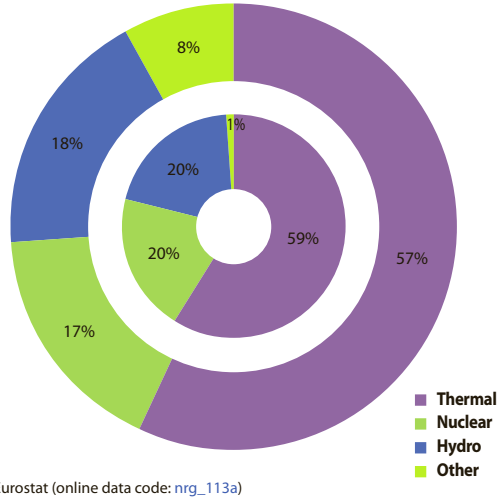
As a result, in 2008, natural gas consumption covered 39 % of the total energy needs of households, an increase of 4 percentage points from 1998. The share of electrical energy also grew from 21 % in 1998 to 24 % in 2008; while the share of oil products was 16 % in 2008, a decrease of 6 percentage points from 1998.

Table 1.5.1: Installed capacity of electricity generation plants, by type (MW)

	Total		Thermal		Nuclear		Hydro		Other	
	1998	2008	1998	2008	1998	2008	1998	2008	1998	2008
EU-27	670 651	799 133	393 488	458 216	136 117	133 086	134 262	142 705	6 784	65 126
BE	15 395	16 697	8 272	9 130	5 713	5 825	1 404	1 418	6	324
BG	11 678	9 637	5 873	4 647	3 446	1 892	2 359	2 984	-	114
CZ	14 892	17 685	11 098	11 583	1 760	3 760	2 033	2 192	1	150
DK	12 210	12 495	10 756	9 320	-	-	11	9	1 443	3 166
DE	113 624	133 937	79 784	79 555	22 314	20 486	8 854	10 001	2 672	23 895
EE	2 629	2 644	2 623	2 563	-	-	6	4	-	77
IE	4 457	7 202	3 872	5 643	-	-	525	531	60	1 028
EL	10 016	14 241	7 120	10 043	-	-	2 856	3 176	40	1 022
ES	50 023	90 194	25 243	47 832	7 300	7 365	16 632	18 451	848	16 546
FR	112 348	117 618	25 558	25 648	61 675	63 260	25 095	25 288	20	3 422
IT	72 352	97 878	51 583	72 407	-	-	20 058	21 275	711	4 196
CY	699	1 193	699	1 193	-	-	-	-	-	-
LV	2 104	2 154	581	590	-	-	1 522	1 536	1	28
LT	5 686	4 630	2 461	2 518	2 367	1 183	858	875	-	54
LU	1 202	1 644	59	467	-	-	1 133	1 134	10	43
HU	7 850	8 630	5 959	6 505	1 843	1 940	48	51	-	134
MT	460	571	460	571	-	-	-	-	-	-
NL	20 160	24 826	19 311	22 130	449	510	37	37	363	2 149
AT	17 859	20 748	5 982	7 247	-	-	11 444	12 504	433	997
PL	30 173	32 677	27 997	29 816	-	-	2 174	2 335	2	526
PT	9 786	15 704	5 227	7 767	-	-	4 501	5 055	58	2 882
RO	22 558	19 644	15 770	11 866	707	1 411	6 081	6 362	-	5
SI	2 571	2 988	1 097	1 295	664	666	810	1 027	-	-
SK	7 777	7 338	3 160	2 585	2 200	2 200	2 417	2 548	-	5
FI	16 143	16 642	10 605	10 726	2 640	2 671	2 881	3 102	17	143
SE	33 025	33 935	6 508	7 746	10 083	8 938	16 260	16 437	174	814
UK	73 380	85 581	55 830	66 823	12 956	10 979	4 263	4 373	331	3 406
IS	1 244	:	148	:	-	:	956	:	140	:
NO	27 912	30 745	263	653	-	-	27 645	29 732	4	360
CH	17 500	19 355	761	870	3 127	3 220	13 609	15 251	3	14
HR	:	3 908	:	1 816	-	-	2 079	2 075	:	17
MK	:	1 585	:	1 010	:	-	:	575	:	-
TR	23 354	41 817	13 020	27 595	-	-	10 307	13 828	27	394

Source: Eurostat (online data code: nrg_113a)

Figure 1.5.1: Breakdown of installed capacity of electricity generation plants, by type, EU-27, 1998 & 2008 (%)



Source: Eurostat (online data code: nrg_113a)

Table 1.5.1a: Installed capacity of electricity generation plants by type, EU-27 (GW)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Total	671	683	694	703	715	728	738	749	764	782	799
Thermal	393	400	407	410	412	424	428	434	442	451	458
Nuclear	136	138	137	137	138	137	136	135	134	133	133
Hydro	134	136	136	137	141	137	138	139	140	142	143
Other	7	10	13	18	24	29	35	41	48	57	65

Source: Eurostat (online data code: nrg_113a)

EU-27 total installed capacity of electricity generation plants grew continuously with an annual rate of about 1.9 % between 1998 and 2008. A breakdown by type shows that over this period the installed capacity of RES recorded the most striking increase (tenfold). As a result, the share of RES capacity as part of the total grew from 1 % in 1998 to 8 % in 2008. Thermal plants accounted for 57 % of the total capacity in 2008, while nuclear and hydro plants made up 17 % and 18 % respectively.

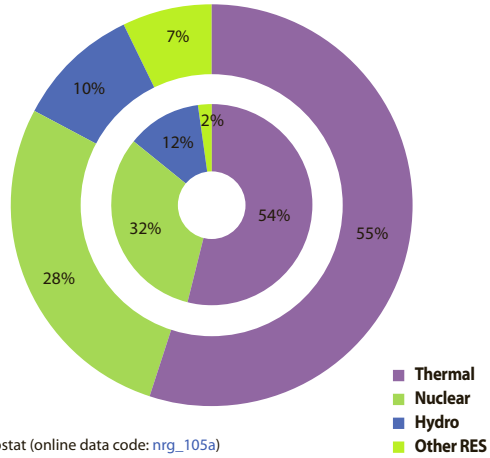
At Member State level, most of the electric capacity came from thermal plants in twenty two countries. The only exceptions were Latvia, Luxembourg, Austria and Sweden, where hydro plants accounted for most of their capacity, and France, where nuclear accounted for over half of the total.

Table 1.5.2: Power station generation, by type (GWh)

	Total		Thermal		Nuclear		Hydro		Other RES	
	1998	2008	1998	2008	1998	2008	1998	2008	1998	2008
EU-27	2 889 531	3 351 364	1 566 343	1 847 026	932 851	937 236	343 351	327 352	46 986	239 750
BE	82 133	83 582	35 039	32 939	46 165	45 568	389	410	540	4 665
BG	41 483	44 584	21 485	25 873	16 899	15 765	3 097	2 824	2	122
CZ	64 624	83 179	49 463	52 889	13 178	26 551	1 396	2 024	587	1 715
DK	41 110	36 391	36 793	25 517	-	-	27	26	4 290	10 848
DE	552 340	635 631	364 067	392 338	161 644	148 495	17 216	20 942	9 413	73 856
EE	8 521	10 581	8 504	10 384	-	-	4	28	13	169
IE	20 893	29 354	19 723	25 815	-	-	916	969	254	2 570
EL	46 183	62 912	42 393	57 162	-	-	3 717	3 312	73	2 438
ES	193 408	311 150	97 413	189 860	58 993	58 973	34 005	23 500	2 997	38 817
FR	507 067	570 268	53 938	54 942	387 990	439 468	62 667	64 239	2 472	11 619
IT	257 840	319 045	210 930	259 326	-	-	41 220	41 623	5 690	18 096
CY	2 954	5 079	2 954	5 064	-	-	-	-	-	15
LV	5 797	5 274	1 479	2 061	-	-	4 316	3 109	2	104
LT	17 153	13 326	3 182	2 830	13 554	9 894	417	402	-	200
LU	366	2 724	195	2 402	-	-	115	132	56	190
HU	37 188	40 027	22 979	22 742	13 949	14 818	155	213	105	2 254
MT	1 721	2 276	1 721	2 276	-	-	-	-	-	-
NL	91 116	107 643	83 829	92 432	3 814	4 169	112	102	3 361	10 940
AT	55 911	64 371	16 984	19 753	-	-	37 164	37 946	1 763	6 672
PL	140 771	155 582	137 866	149 134	-	-	2 309	2 152	596	4 296
PT	38 969	45 663	24 817	30 745	-	-	12 983	6 798	1 169	8 120
RO	53 496	64 955	29 299	36 506	5 307	11 226	18 879	17 195	11	28
SI	13 728	16 400	5 237	5 820	5 042	6 273	3 449	4 018	-	289
SK	25 200	28 760	9 505	7 481	11 394	16 703	4 301	4 039	-	537
FI	70 170	77 436	26 545	26 526	21 853	22 958	15 051	17 112	6 721	10 840
SE	158 310	149 894	7 322	3 753	73 583	63 889	74 328	69 069	3 077	13 183
UK	361 079	385 277	252 681	310 456	99 486	52 486	5 118	5 168	3 794	17 167
IS	6 936	:	660	:	-	:	5 621	:	655	:
NO	116 122	141 701	421	787	-	-	115 394	139 554	307	1 360
CH	62 315	67 119	1 801	1 176	25 830	27 700	33 471	36 036	1 213	2 207
HR	10 890	12 216	5 427	6 939	-	-	5 458	5 216	5	61
MK	7 048	6 311	5 965	5 471	-	-	1 083	840	-	-
TR	111 107	198 580	68 539	164 159	-	-	42 229	33 270	339	1 151

Source: Eurostat (online data code: nrg_105a)

Figure 1.5.2: Breakdown of power station generation, by type, EU-27, 1998 & 2008 (%)



Source: Eurostat (online data code: nrg_105a)

Table 1.5.2a: Power station generation, by type, EU-27 (TWh)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Total	2 890	2 916	2 997	3 083	3 089	3 189	3 261	3 280	3 323	3 342	3 351
Thermal	1 566	1 576	1 631	1 657	1 693	1 779	1 795	1 817	1 844	1 882	1 847
Nuclear	933	943	945	979	990	996	1 008	998	990	935	937
Hydro	343	341	353	373	315	306	324	307	309	310	327
Other RES	47	55	68	75	91	108	134	158	181	215	240

Source: Eurostat (online data code: nrg_105a)

Total gross electricity generation in the EU-27 was 3 351 TWh in 2008. Thermal power stations accounted for over half (55 %) of the total; while nuclear and hydro power stations accounted for 28 % and 10 % respectively. Other RES provided 7 % of the total, a share that grew by 5 percentage points between 1998 and 2008.

In eighteen Member States over half of their electricity production came from thermal stations in 2008. The exceptions were Belgium, France, Lithuania and Slovakia where nuclear stations accounted for the largest share. In Latvia and Austria hydro stations generated 59 % of the total, while in Slovenia and Finland thermal and nuclear stations played an equal part in electricity production. In Sweden hydro and nuclear stations made the largest contribution to electricity production.

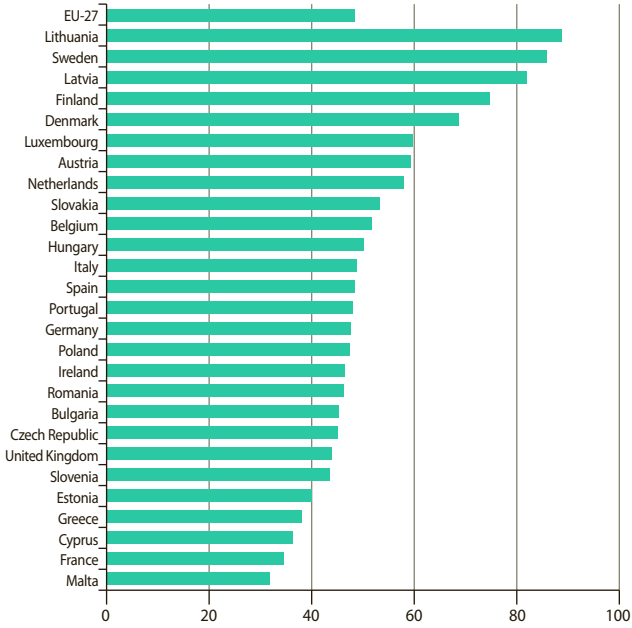
Electricity generation in the EU-27 grew by 16 % over the last decade. The most rapid growth in electricity generation took place in Luxembourg (sevenfold), while Cyprus (72 %) and Spain (61 %) followed. The only Member States that generated less electricity in 2008 compared to 1998 were Lithuania (- 22 %), Denmark (- 11 %), Latvia (- 9 %) and Sweden (- 5 %).

Table 1.5.3: Thermal efficiency of power stations (%)

	1998	2000	2005	2006	2007	2008
EU-27	46.0	45.8	48.2	48.2	48.3	48.5
Belgium	44.4	45.9	48.6	50.4	51.5	51.8
Bulgaria	41.2	41.5	41.7	42.1	42.5	45.3
Czech Republic	49.3	47.1	46.0	45.6	44.9	45.2
Denmark	61.9	64.6	71.2	64.9	65.5	68.8
Germany	45.8	44.1	46.9	46.5	46.2	47.5
Estonia	38.5	40.4	42.3	43.5	42.1	40.0
Ireland	38.2	40.6	43.3	42.7	46.0	46.5
Greece	35.2	36.9	37.5	38.5	38.8	38.1
Spain	41.1	41.3	46.7	45.3	45.4	48.4
France	37.9	34.8	34.5	33.6	33.8	34.5
Italy	40.1	40.5	49.4	50.5	51.8	48.8
Cyprus	32.3	32.8	35.0	36.4	36.2	36.3
Latvia	81.2	77.7	83.8	85.9	86.2	82.1
Lithuania	69.9	76.7	79.9	83.4	87.5	88.9
Luxembourg	70.4	68.5	58.8	58.9	58.1	59.4
Hungary	48.7	49.1	50.3	51.1	49.8	50.1
Malta	22.5	27.8	29.7	32.3	29.8	31.8
Netherlands	58.8	59.6	60.1	57.9	58.8	58.0
Austria	55.2	57.2	57.3	57.2	58.2	59.2
Poland	46.8	46.8	48.3	47.8	47.4	47.5
Portugal	42.8	44.2	47.2	47.9	48.3	48.0
Romania	58.9	54.4	51.8	50.2	48.3	46.3
Slovenia	41.0	43.7	44.2	43.9	42.3	43.5
Slovakia	43.8	46.0	54.2	53.8	55.9	53.4
Finland	73.9	73.3	76.6	68.8	71.0	74.8
Sweden	84.8	83.1	83.9	84.4	86.1	86.0
United Kingdom	40.9	44.0	43.0	43.4	44.7	43.9
Iceland	25.6	25.3	23.7	21.5	:	:
Norway	87.3	81.8	102.2	100.2	94.8	85.5
Switzerland	65.2	72.1	75.2	74.6	72.9	71.4
Croatia	48.7	49.9	50.8	50.2	47.8	50.1
The former Yugoslav Republic of Macedonia	:	:	:	:	34.2	34.7
Turkey	35.2	42.0	48.2	47.7	46.8	46.3

Source: Eurostat (online data code: nrg_100a)

Figure 1.5.3: Thermal efficiency of power stations, 2008 (%)



Source: Eurostat (online data code: nrg_100a)

Table 1.5.3a: Thermal efficiency of power stations, EU-27 (%)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
EU-27	46.0	45.9	45.8	45.9	45.6	46.3	47.7	48.2	48.2	48.3	48.5

Source: Eurostat (online data code: nrg_100a)

Thermal efficiency of power stations is calculated as the ratio between the output of electricity and heat from electricity and combined heat and power (CHP) power plants and the input of fuels to these plants.

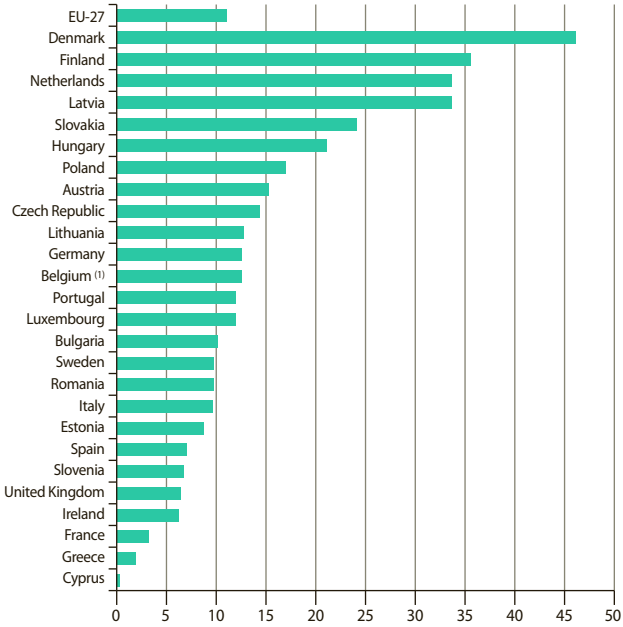
From 1998 to 2008, EU-27 thermal efficiency of power stations grew by 2.5 percentage points and reached 48.5 % in 2008. All but five countries (Romania, Luxembourg, Czech Republic, France and the Netherlands) increased their thermal efficiency over the last decade. This increase was mostly attributed to technological advances, the increase in CHP plants and the replacement of old thermal power plants with new, more efficient. Lithuania, which was the country with the highest thermal efficiency in 2008 (88.9 %), experienced the highest increase in its thermal efficiency over the decade of 19 percentage points.

Table 1.5.4: Combined heat and power generation (% of gross electricity generation)

	2004	2005	2006	2007	2008
EU-27	10.5	11.1	10.9	10.9	11.0
Belgium	8.4	8.5	8.7	12.5	:
Bulgaria	7.3	6.1	6.0	9.4	10.0
Czech Republic	16.4	16.8	15.1	13.0	14.2
Denmark	50.0	52.1	40.7	42.8	46.1
Germany	9.3	12.6	12.5	12.2	12.5
Estonia	9.9	10.2	10.7	7.1	8.6
Ireland	2.6	2.4	5.6	6.3	6.2
Greece	1.5	1.7	1.7	1.6	1.9
Spain	7.9	7.8	7.2	7.1	7.0
France	4.1	4.0	3.2	3.2	3.1
Italy	8.1	9.0	9.8	10.3	9.5
Cyprus	-	0.3	0.3	0.3	0.3
Latvia	32.0	30.7	42.6	40.9	33.6
Lithuania	11.6	15.5	14.3	13.2	12.7
Luxembourg	10.6	10.1	10.9	9.9	11.9
Hungary	18.2	19.1	22.4	21.4	21.1
Malta	-	-	-	-	-
Netherlands	29.5	29.4	29.9	30.1	33.6
Austria	15.2	15.4	16.1	15.6	15.3
Poland	17.0	16.8	16.0	17.3	16.9
Portugal	11.0	11.6	11.6	12.3	11.9
Romania	26.4	26.2	18.0	10.7	9.6
Slovenia	6.4	7.3	7.4	7.2	6.7
Slovakia	15.3	15.3	27.6	25.6	24.0
Finland	34.0	38.9	34.9	34.4	35.6
Sweden	8.1	6.7	8.0	8.2	9.6
United Kingdom	6.7	6.8	6.3	6.4	6.4
Iceland	:	:	14.4	14.4	:
Norway	:	:	0.1	0.1	0.1
Switzerland	:	:	:	:	:
Croatia	:	:	:	:	:
The former Yugoslav Republic of Macedonia	:	:	:	:	:
Turkey	4.0	4.4	4.4	4.6	4.2

Source: Eurostat

Figure 1.5.4: Combined heat and power generation, 2008 (% of gross electricity generation)



(1) 2007 data instead of 2008.

Source: Eurostat

Note: Combined heat and power (CHP) or cogeneration is a technology used to improve energy efficiency through the generation of heat and power in the same plant, generally using a gas turbine with heat recovery. Heat delivered from CHP plants may be used for process or space-heating purposes in any sector of economic activity including the residential sector. CHP thus reduces the need for additional fuel combustion for the generation of heat and avoids the associated environmental impacts, such as CO_2 emissions.

This indicator is defined as the ratio between gross CHP electricity generation and total gross electricity generation. It is a measure of the penetration of CHP in electricity markets. The data collection for combined heat and power generation is based on Community Directive 2004/8/EC on the promotion of cogeneration based on a useful heat demand in the internal market. The Directive does not include targets, but it aims at promoting CHP generation.

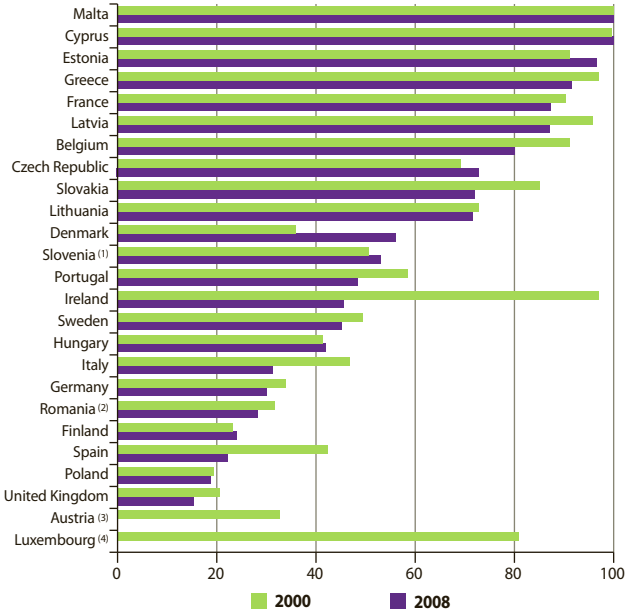
The share of electricity produced by cogeneration processes in the EU-27 rose to 11 % in 2008, a moderate increase of 0.5 percentage points from 2004. Large differences can be observed amongst Member States with variations of the shares between 0.3 % in Cyprus and 46.1 % in Denmark. Between 2004 and 2008, Romania recorded the highest decrease in its CHP share from 26.4 % in 1998 to 9.6 % in 2008. For the same period, Slovakia reported an increase of 8.7 percentage points and in 2008 its CHP share reached 24 %.

Table 1.5.5: Market share of the largest generator in the electricity market (%)

	2000	2005	2006	2007	2008
EU-27	:	:	:	:	:
Belgium	91.1	85.0	82.3	83.9	80.0
Bulgaria	:	:	:	:	:
Czech Republic	69.2	72.0	73.5	74.2	72.9
Denmark	36.0	33.0	54.0	47.0	56.0
Germany	34.0	:	31.0	30.0	30.0
Estonia	91.0	92.0	91.0	94.0	96.5
Ireland	97.0	71.0	51.1	48.0	45.6
Greece	97.0	97.0	94.6	91.6	91.6
Spain	42.4	35.0	31.0	31.0	22.2
France	90.2	89.1	88.7	88.0	87.3
Italy	46.7	38.6	34.6	31.3	31.3
Cyprus	99.6	100.0	100.0	100.0	100.0
Latvia	95.8	92.7	95.0	86.0	87.0
Lithuania	72.8	70.3	69.7	70.5	71.5
Luxembourg	:	:	:	:	:
Hungary	41.3	38.7	41.7	40.9	42.0
Malta	100.0	100.0	100.0	100.0	100.0
Netherlands	:	:	:	:	:
Austria	32.6	:	:	:	:
Poland	19.5	18.5	17.3	16.5	18.9
Portugal	58.5	53.9	54.5	55.6	48.5
Romania	:	36.4	31.1	27.5	28.3
Slovenia	:	50.1	51.4	82.0	53.0
Slovakia	85.1	83.6	70.0	72.4	71.9
Finland	23.3	23.0	26.0	26.0	24.0
Sweden	49.5	47.0	45.0	45.0	45.2
United Kingdom	20.6	20.5	22.2	18.5	15.3
Iceland	:	:	:	:	:
Norway	30.6	30.0	30.9	32.5	27.4
Switzerland	:	:	:	:	:
Croatia	:	87.0	83.0	84.0	85.0
The former Yugoslav Republic of Macedonia	:	:	:	:	:
Turkey	75.0	38.0	:	:	:

Source: Eurostat (online data code: nrg_ind_331a)

Figure 1.5.5: Market share of the largest generator in the electricity market (%)



(1) 2002 data instead of 2000.
(2) 2004 data instead of 2000.
(3) 2008 data not available.
(4) Data are for 2004.

Source: Eurostat (online data code: nrg_ind_331a)

Note: The indicator shows the market share of the largest electricity generator in each country. To calculate this indicator, the total net electricity production during each reference year is taken into account. It means that the electricity used by generators for their own consumption is not taken into account. Then, the net production of each generator during the same year is considered in order to calculate the corresponding market shares. Only the largest market share is reported under this indicator.

The market share of the largest electricity generator is a measure of the electricity market liberalization. In 2008, electricity generation in Cyprus and Malta was a complete monopoly, as 100 % of their electricity came from one generator. Estonia and Greece also reported shares for the largest generator that exceeded 90 % (96.5 % and 91.6 % respectively). In contrast, the Member States with the lowest shares were the United Kingdom (15.3 %) and Poland (18.9 %).

Over the last decade, the most considerable change took place in the electricity market of Ireland, where the share of the largest generator fell from 97 % in 1998 to 45.6 % in 2008. Spain followed with a 22.2 % share of the largest generator in 2008 compared to 42.4 % in 1998. In contrast, the most notable increase was observed in Denmark, as in 2008 the largest electricity generator made up 56% of the market, an increase of 20 percentage points from 1998.

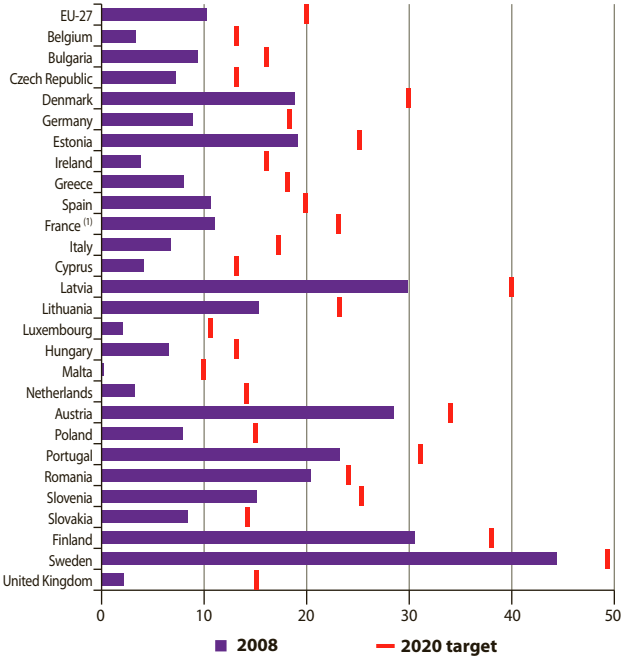
Table 1.6.1: Share of renewable energy in gross final energy consumption (%)

	2006	2007	2008	2020 target
EU-27	8.8	9.7	10.3	20.0
Belgium	2.7	3.0	3.3	13.0
Bulgaria	9.3	9.1	9.4	16.0
Czech Republic	6.4	7.3	7.2	13.0
Denmark	16.8	18.1	18.8	30.0
Germany	6.9	9.0	8.9	18.0
Estonia	16.1	17.1	19.1	25.0
Ireland	3.0	3.4	3.8	16.0
Greece	7.2	8.1	8.0	18.0
Spain	9.1	9.6	10.7	20.0
France (1)	9.6	10.2	11.0	23.0
Italy	5.3	5.2	6.8	17.0
Cyprus	2.5	3.1	4.1	13.0
Latvia	31.3	29.7	29.9	40.0
Lithuania	14.7	14.2	15.3	23.0
Luxembourg	0.9	2.0	2.1	11.0
Hungary	5.1	6.0	6.6	13.0
Malta	0.1	0.2	0.2	10.0
Netherlands	2.5	3.0	3.2	14.0
Austria	24.8	26.6	28.5	34.0
Poland	7.4	7.4	7.9	15.0
Portugal	20.5	22.2	23.2	31.0
Romania	17.5	18.7	20.4	24.0
Slovenia	15.5	15.6	15.1	25.0
Slovakia	6.2	7.4	8.4	14.0
Finland	29.2	28.9	30.5	38.0
Sweden	42.7	44.2	44.4	49.0
United Kingdom	1.5	1.7	2.2	15.0
Iceland	:	:	:	-
Norway	:	:	:	-
Switzerland	:	:	:	-
Croatia	:	:	:	-
The former Yugoslav Republic of Macedonia	:	:	:	-
Turkey	:	:	:	-

(1) "France métropolitaine", excluding the four overseas departments (French Guyana, Guadeloupe, Martinique and Réunion).

Source: Eurostat (Europe 2020 indicators — online data code: t2020_31)

Figure 1.6.1: Share of renewable energy in gross final energy consumption and target for 2020 (%)



(1) "France métropolitaine", excluding the four overseas departments (French Guyana, Guadeloupe, Martinique and Réunion).

Source: Eurostat (Europe 2020 indicators — online data code: t2020_31)

This indicator can be considered as an estimate of the relevant indicator described in Directive 2009/28/EC on the promotion of the use of energy from renewable sources. The Directive set individual targets for all Member States with a view to reaching an overall EU target of a 20 % share of total energy consumption from renewables by 2020. The targets take into account the different starting points of the Member States, the renewable energy potential and economic performance.

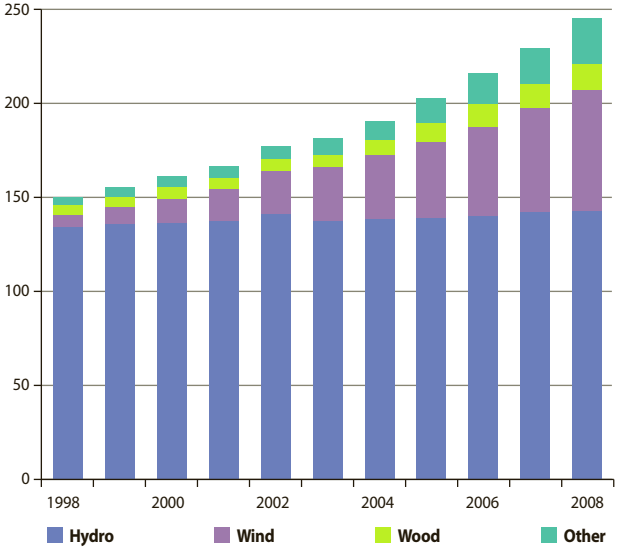
In 2008, energy from renewable sources contributed 10.3 % of EU-27 gross final energy consumption. The highest share of consumption from renewable sources was recorded in Sweden (44.4 %), Finland (30.5 %), Latvia (29.9 %), Austria (28.5 %) and Portugal (23.2 %) and the lowest in Malta (0.2 %), Luxembourg (2.1 %) and the United Kingdom (2.2 %). From 2006 to 2008, Austria recorded the highest increase in its share from 24.8 % to 28.5 %.

Table 1.6.2: Installed capacity for electricity generation from renewables (MW)

	Total		Hydro		Wind		Wood		Other	
	1998	2008	1998	2008	1998	2008	1998	2008	1998	2008
EU-27	*149 834*	245 393	134 262	142 705	6 225	64 429	5 217	14 006	*4 130*	24 253
BE	1 565	2 607	1 404	1 418	6	324	155	442	-	423
BG	2 359	3 098	2 359	2 984	-	114	-	-	-	-
CZ	2 034	3 009	2 033	2 192	1	150	-	468	-	199
DK	1 810	4 201	11	9	1 443	3 166	95	558	261	468
DE	13 373	45 598	8 854	10 001	2 672	23 895	795	1 380	1 052	10 322
EE	6	95	6	4	-	77	-	10	-	4
IE	609	1 617	525	531	60	1 028	-	-	24	58
EL	2 944	4 290	2 856	3 176	38	1 022	48	-	2	92
ES	17 709	39 128	16 632	18 451	848	16 546	128	374	101	3 757
FR	25 727	30 119	25 095	25 288	20	3 422	340	265	272	1 144
IT	21 356	29 845	20 058	21 275	164	3 525	154	2 131	980	2 914
CY	-	-	-	-	-	-	-	-	-	-
LV	1 523	1 581	1 522	1 536	1	28	-	3	-	14
LT	858	961	858	875	-	54	-	16	-	16
LU	1 152	1 223	1 133	1 134	10	43	-	-	9	46
HU	77	621	48	51	-	134	5	356	24	80
MT	-	-	-	-	-	-	-	-	-	-
NL	932	3 488	37	37	363	2 149	26	405	506	897
AT	*12 230*	16 247	11 444	12 504	27	996	747	2 024	*12*	723
PL	2 186	3 005	2 174	2 335	2	526	-	40	10	104
PT	4 771	8 392	4 501	5 055	48	2 857	209	293	13	187
RO	6 081	6 382	6 081	6 362	-	5	-	15	-	-
SI	810	1 093	810	1 027	-	-	-	48	-	18
SK	2 417	2 714	2 417	2 548	-	5	-	147	-	14
FI	4 000	5 008	2 881	3 102	17	143	1 100	1 757	2	6
SE	17 842	20 491	16 260	16 437	174	814	1 331	2 761	77	479
UK	5 463	10 580	4 263	4 373	331	3 406	84	513	785	2 288
IS	1 096	:	956	:	-	:	-	:	140	:
NO	27 780	30 204	27 645	29 732	4	360	100	79	31	33
CH	13 869	15 706	13 609	15 251	3	14	-	-	257	441
HR	2 079	2 092	2 079	2 075	-	17	-	-	-	-
MK	:	575	:	575	:	-	:	-	:	-
TR	10 355	14 357	10 307	13 828	9	364	21	69	18	96

Source: Eurostat (online data code: nrg_113a)

Figure 1.6.2: Installed capacity for electricity generation from renewables, EU-27 (GW)



Source: Eurostat (online data code: nrg_113a)

Table 1.6.2a: Installed capacity for electricity generation from renewables, EU-27 (GW)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Change 1998-08
Total	*150*	*155*	161	167	177	182	191	203	216	229	245	64 %
Hydro	134	136	136	137	141	137	138	139	140	142	143	6 %
Wind	6	9	13	17	23	29	34	41	48	56	64	935 %
Wood	5	6	6	6	6	7	8	10	12	13	14	168 %
Other	*4*	*5*	6	6	7	9	10	13	16	19	24	487 %

Source: Eurostat (online data code: nrg_113a)

The installed capacity for electricity generation from renewables in the EU-27 grew continually between 1998 and 2008 with an annual growth rate of 6.4 %. The most striking increase (tenfold) was recorded in wind capacity. As a result, its share of the total grew from 4 % in 1998 to 26 % in 2008. The capacity of other renewables, which include geothermal, photovoltaics, municipal solid waste and biogas, presented a sixfold increase from 1998 to 2008. Its share of the total grew from 3 % in 1998 to 10 % in 2008. In 2008, hydro capacity still made up the largest contribution to the total with a 58 % share in 2008 compared to 90 % in 1998.

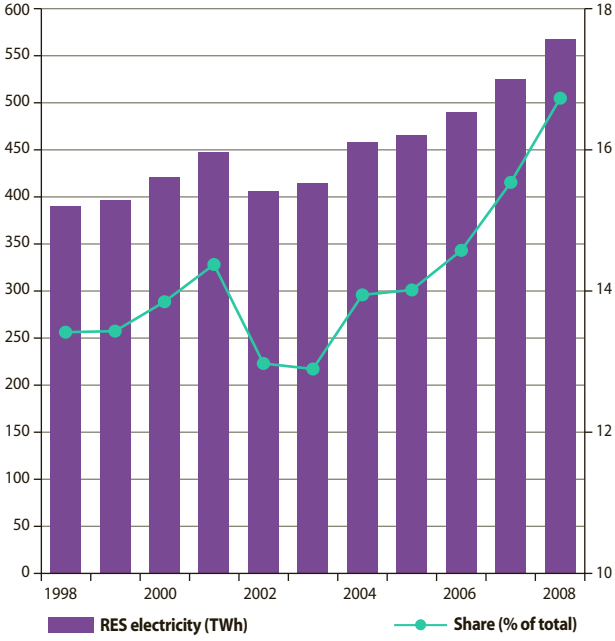
At country level, in 2008, Germany had the largest electricity generation capacity from renewables, which made up 19 % of total EU-27 capacity. Significant capacities were also available in Spain (16 %), France (12 %), Italy (12 %) and Sweden (8 %).

Table 1.6.3: Contribution of electricity from renewables to total electricity consumption

	RES electricity (GWh)			Share (% of total)		
	1998	2003	2008	1998	2003	2008
EU-27	390 337	414 414	567 086	13.4	12.9	16.7
Belgium	929	1 674	5 075	1.1	1.8	5.3
Bulgaria	3 099	3 029	2 946	8.1	7.8	7.4
Czech Republic	1 983	1 884	3 739	3.2	2.8	5.2
Denmark	4 317	8 746	10 874	11.7	23.2	28.7
Germany	26 629	48 600	94 798	4.8	8.2	15.4
Estonia	17	46	197	0.2	0.6	2.0
Ireland	1 170	1 122	3 539	5.5	4.3	11.7
Greece	3 790	5 892	5 750	7.9	9.7	8.3
Spain	37 002	57 435	62 301	18.6	21.7	20.6
France	65 139	64 970	75 858	14.4	13.0	14.4
Italy	46 910	47 211	59 719	15.6	13.7	16.6
Cyprus	-	1	15	-	0.0	0.3
Latvia	4 318	2 338	3 213	68.2	35.4	41.2
Lithuania	417	332	602	3.6	2.8	4.6
Luxembourg	171	169	322	2.5	2.3	4.1
Hungary	260	369	2 467	0.7	0.9	5.6
Malta	-	-	-	-	-	-
Netherlands	3 473	5 319	11 042	3.4	4.7	8.9
Austria	38 927	35 183	44 618	67.9	53.5	62.0
Poland	2 905	2 249	6 448	2.1	1.6	4.2
Portugal	14 152	18 089	14 918	36.0	36.4	26.9
Romania	18 890	13 262	17 223	35.0	24.3	28.4
Slovenia	3 449	3 079	4 307	29.2	22.0	29.1
Slovakia	4 301	3 594	4 576	15.5	12.4	15.5
Finland	21 772	19 386	27 952	27.4	21.8	31.0
Sweden	77 405	59 228	82 252	52.4	39.9	55.5
United Kingdom	8 912	11 207	22 335	2.4	2.8	5.6
Iceland	6 276	8 494	:	99.9	99.9	:
Norway	115 701	106 228	140 914	95.9	92.1	109.4
Switzerland	34 684	36 509	38 243	60.3	56.7	56.4
Croatia	5 463	4 876	5 277	38.3	29.4	27.9
The former Yugoslav Republic of Macedonia	1 083	1 374	840	15.4	17.9	9.3
Turkey	42 568	35 560	34 421	37.3	25.2	17.4

Source: Eurostat (online data codes: nrg_105a, nrg_1071a and nrg_1072a)

Figure 1.6.3: Contribution of electricity from renewables to total electricity consumption, EU-27



Source: Eurostat (online data codes: nrg_105a, nrg_1071a and nrg_1072a)

Table 1.6.3a: Contribution of electricity from renewables to total electricity consumption, EU-27

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
RES electricity (TWh)	390	396	421	447	406	414	458	465	489	525	567
Share (% of total)	13.4	13.4	13.8	14.4	13.0	12.9	13.9	14.0	14.6	15.5	16.7

Source: Eurostat (online data codes: nrg_105a, nrg_1071a and nrg_1072a)

Electricity generation from renewables in the EU-27 amounted to 567 TWh in 2008. Compared to 1998, RES electricity grew by 45 %. In terms of contribution of RES electricity to total electricity consumption the increase has been rather moderate, as the share grew from 13.4 % in 1998 to 16.7 % in 2008.

In absolute terms, the Member States with the highest electricity generation from renewables were Germany (95 TWh), Sweden (82 TWh) and France (76 TWh). Sweden was also the country with the second highest share of renewables to total electricity consumption in 2008 (55.5 %). The highest share was observed in Austria (62 %).

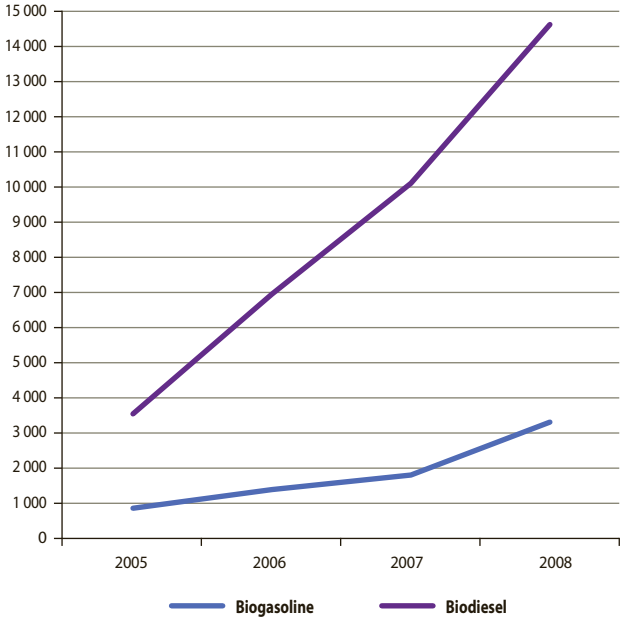
Table 1.6.4: Biofuels production capacity (thousand tonnes per year)

	Total			Biogasoline			Biodiesel		
	2006	2007	2008	2006	2007	2008	2006	2007	2008
EU-27	11 503	14 998	21 000	1 411	1 823	3 322	6 992	10 131	14 629
Belgium	-	-	1 034	-	-	369	-	-	665
Bulgaria	100	45	228	-	-	30	-	-	198
Czech Republic	197	346	493	2	-	160	195	346	333
Denmark	-	-	-	-	-	-	-	-	-
Germany	6 984	7 966	8 955	484	576	875	3 500	4 390	5 080
Estonia	-	-	-	-	-	-	-	-	-
Ireland	-	-	-	-	-	-	-	-	-
Greece	395	575	575	-	-	-	395	575	575
Spain	824	1 367	2 182	422	422	456	402	945	1 726
France	1 156	2 132	3 429	479	785	942	677	1 348	2 488
Italy	1 500	1 917	2 589	-	-	332	1 500	1 917	2 257
Cyprus	-	-	14	-	-	-	-	-	14
Latvia	27	27	158	13	13	13	14	14	145
Lithuania	-	164	190	-	17	40	-	147	150
Luxembourg	-	-	-	-	-	-	-	-	-
Hungary	14	11	200	-	-	-	14	11	150
Malta	-	-	-	-	-	-	-	-	-
Netherlands	81	199	530	11	10	10	70	189	520
Austria	28	28	28	-	-	-	28	28	28
Poland	-	-	-	-	-	-	-	-	-
Portugal	120	120	120	-	-	-	120	120	120
Romania	-	-	-	-	-	-	-	-	-
Slovenia	-	-	-	-	-	-	-	-	-
Slovakia	77	101	275	-	-	95	77	101	180
Finland	-	-	-	-	-	-	-	-	-
Sweden	-	-	-	-	-	-	-	-	-
United Kingdom	-	-	-	-	-	-	-	-	-
Iceland	-	-	-	-	-	-	-	-	-
Norway	-	-	-	-	-	-	-	-	-
Switzerland	-	-	-	-	-	-	-	-	-
Croatia	:	:	:	:	:	:	-	29	61
The former Yugoslav Republic of Macedonia	:	:	:	:	:	:	:	:	:
Turkey	166	1 071	1 066	-	-	-	166	1 071	1 066

Source: Eurostat (online data code: nrg_114a)

Note: Except for biogasoline and biodiesel, other biofuels are also included in the total.

Figure 1.6.4: Biofuels production capacity, EU-27 (thousand tonnes per year)



Source: Eurostat (online data code: nrg_114a)

Table 1.6.4a: Biofuels production capacity, EU-27 (thousand tonnes per year)

	2005	2006	2007	2008
Total	4 480	11 503	14 998	21 000
Biogasoline	882	1 411	1 823	3 322
Biodiesel	3 598	6 992	10 131	14 629

Source: Eurostat (online data code: nrg_114a)

From 2005 to 2008, total EU-27 biofuels production capacity presented a fivefold increase. In 2008, total biofuels capacity in the EU-27 was 21 000 thousand tonnes. Biodiesel accounted for 70 % of total capacity, while biogasoline accounted for 16 %.

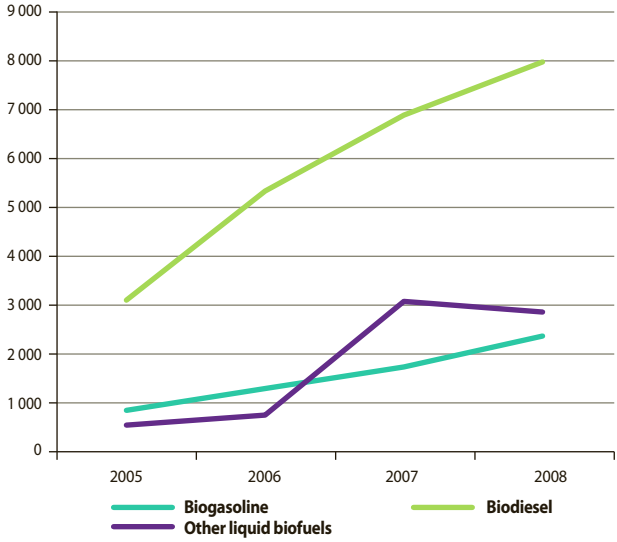
In 2008, the biofuel capacity in four Member States (Germany, France, Italy and Spain) made up 82 % of the EU-27 total. Total capacity in Germany was 8 955 thousand tonnes (43 % of the EU-27 total).

Table 1.6.5: Primary production of biofuels

	Total (thousand tonnes)			Share of biogasoline and biodiesel to total biofuels, 2008 (%)	
	2006	2007	2008	Biogasoline	Biodiesel
EU-27	7 407	11 733	13 238	18.0	60.4
Belgium	33	183	323	5.0	85.8
Bulgaria	9	4	12	-	83.3
Czech Republic	112	109	135	44.4	55.6
Denmark	70	70	99	-	90.9
Germany	4 469	7 187	6 292	10.0	50.3
Estonia	-	-	-	-	-
Ireland	4	18	24	-	87.5
Greece	48	92	69	-	100.0
Spain	242	522	493	55.2	44.8
France	824	1 390	2 352	25.0	75.0
Italy	223	202	777	11.6	86.0
Cyprus	-	-	7	-	100.0
Latvia	12	21	40	30.0	70.0
Lithuania	20	40	82	20.7	79.3
Luxembourg	1	1	-	-	-
Hungary	17	23	199	31.2	68.8
Malta	-	-	-	-	-
Netherlands	149	139	140	5.0	59.3
Austria	182	326	350	20.0	40.0
Poland	208	141	356	25.8	72.5
Portugal	79	184	169	-	100.0
Romania	-	22	186	-	100.0
Slovenia	2	5	8	-	100.0
Slovakia	43	70	179	41.3	58.7
Finland	-	-	11	-	100.0
Sweden	404	543	598	55.7	25.8
United Kingdom	256	441	337	16.3	83.7
Iceland	-	-	-	-	-
Norway	-	-	-	-	-
Switzerland	9	14	14	21.4	78.6
Croatia	-	4	4	-	100.0
The former Yugoslav Republic of Macedonia	-	-	11	-	100.0
Turkey	21	14	75	37.3	62.7

Source: Eurostat (online data code: nrg_1073a)

Figure 1.6.5: Primary production of biofuels, EU-27 (thousand tonnes)



Source: Eurostat (online data code: nrg_1073a)

Table 1.6.5a: Primary production of biofuels, EU-27 (thousand tonnes)

	2005	2006	2007	2008	Change 2005-08
Total	4 520	7 407	11 733	13 238	193 %
Biogasoline	855	1 302	1 744	2 377	178 %
Biodiesel	3 112	5 347	6 902	7 992	157 %
Other liquid biofuels	552	758	3 087	2 869	419 %

Source: Eurostat (online data code: nrg_1073a)

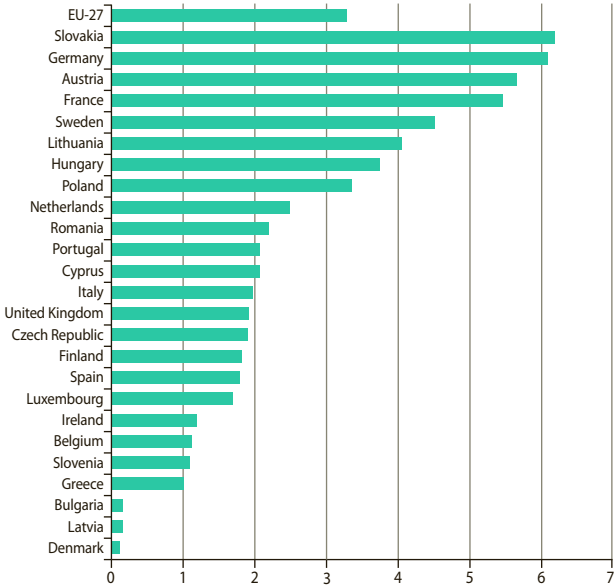
In 2008, total primary production of biofuels in the EU-27 was 13 238 thousand tonnes, a threefold increase since 2005. Biodiesel contributed about 60 % of the total production in 2008, while biogasoline accounted for 18 %. In 2008, 48 % of total EU-27 biofuel production came from Germany. France was second with 18 % of the total.

Table 1.6.6: Share of biofuels in fuel consumption of transport (%)

	1998	2000	2005	2006	2007	2008
EU-27	0.13	0.24	1.03	1.80	2.52	3.29
Belgium	-	-	-	-	1.08	1.13
Bulgaria	-	-	-	0.37	0.17	0.16
Czech Republic	0.41	1.56	0.05	0.34	0.55	1.91
Denmark	-	-	-	0.09	0.13	0.11
Germany	0.16	0.39	3.72	6.53	7.43	6.09
Estonia	:	:	:	:	:	:
Ireland	-	-	0.03	0.05	0.68	1.20
Greece	-	-	-	0.68	1.21	1.01
Spain	-	0.18	0.77	0.50	1.09	1.80
France	0.62	0.75	0.96	1.69	3.38	5.47
Italy	-	-	0.47	0.42	0.37	1.98
Cyprus	-	-	-	-	0.13	2.07
Latvia	-	-	0.24	0.24	0.15	0.15
Lithuania	-	-	0.29	1.56	3.52	4.06
Luxembourg	-	-	0.04	0.04	1.65	1.70
Hungary	-	-	0.13	0.25	0.67	3.75
Malta	:	:	:	:	:	:
Netherlands	-	-	-	0.36	2.72	2.49
Austria	0.12	0.15	0.61	3.52	4.32	5.67
Poland	-	-	0.49	0.82	0.77	3.36
Portugal	-	-	0.00	1.13	2.15	2.08
Romania	-	-	-	-	0.93	2.20
Slovenia	-	-	-	0.12	0.77	1.10
Slovakia	-	-	0.66	2.58	4.68	6.19
Finland	-	-	-	0.02	0.03	1.83
Sweden	-	-	1.84	2.54	3.80	4.52
United Kingdom	-	-	0.17	0.43	0.83	1.93
Iceland	:	:	:	:	:	:
Norway	-	-	-	0.13	0.71	1.83
Switzerland	-	-	0.12	0.14	0.21	0.20
Croatia	-	-	-	-	0.13	0.09
The former Yugoslav Republic of Macedonia	-	-	-	-	-	2.78
Turkey	-	-	-	0.17	0.09	0.55

Source: Eurostat (online data codes: nrg_100a and nrg_1073a)

Figure 1.6.6: Share of biofuels in fuel consumption of transport, 2008 (%)



Source: Eurostat (online data codes: nrg_100a and nrg_1073a)

Note: This indicator is defined as the percentage of biofuels, calculated on the basis of energy content, in the petrol and diesel consumption of transport.

In 2008 the share of biofuels in fuel consumption of transport in the EU-27 was 3.29 %. Ten years ago, the share was 0.13 % and biofuels were used only in the Czech Republic, Germany, France and Austria.

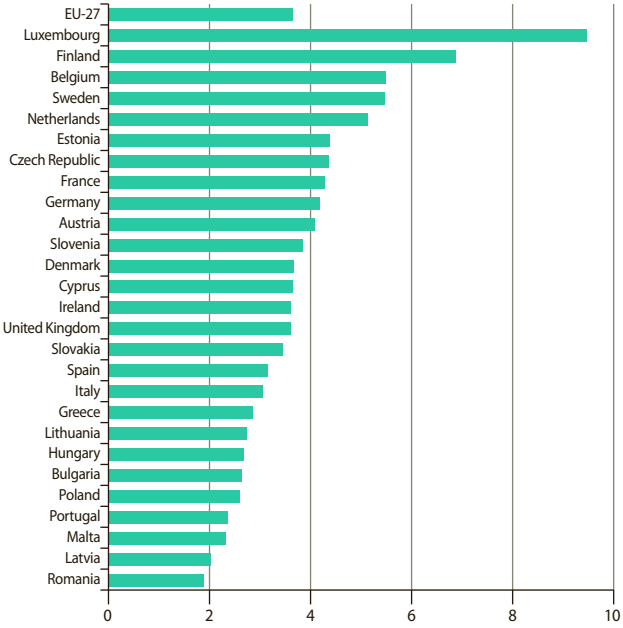
In the last decade, the use of biofuels in transport became gradually more widespread and its share has been growing at a faster pace; especially from 2005 to 2008 when the share has been growing by about 0.8 percentage points each year. Among Member States, in 2008, the highest shares of biofuel consumption in transport were observed in Slovakia (6.19 %), Germany (6.09 %), Austria (5.67 %) and France (5.47 %).

Table 1.7.1: Gross inland consumption per capita

	(toe per capita)			Index (2000=100)		
	1998	2003	2008	1998	2003	2008
EU-27	3.58	3.70	3.62	100.3	103.7	101.2
Belgium	5.90	5.95	5.46	98.2	99.1	91.0
Bulgaria	2.44	2.49	2.62	106.8	109.4	115.0
Czech Republic	4.00	4.47	4.34	101.4	113.4	110.1
Denmark	3.92	3.86	3.63	107.0	105.4	99.0
Germany	4.23	4.22	4.18	101.4	101.3	100.3
Estonia	3.86	4.02	4.36	105.7	110.2	119.6
Ireland	3.51	3.79	3.59	92.4	99.7	94.3
Greece	2.50	2.75	2.84	96.5	106.4	109.9
Spain	2.84	3.25	3.13	92.1	105.2	101.5
France	4.26	4.38	4.28	99.8	102.7	100.3
Italy	2.99	3.21	3.04	97.3	104.7	99.2
Cyprus	3.29	3.71	3.62	95.1	107.1	104.7
Latvia	1.79	1.84	2.02	113.7	116.9	128.6
Lithuania	2.62	2.59	2.72	130.1	128.9	135.1
Luxembourg	7.78	9.39	9.43	92.7	111.9	112.4
Hungary	2.49	2.67	2.67	101.7	109.0	108.9
Malta	2.20	2.29	2.31	103.6	108.0	108.8
Netherlands	4.89	5.06	5.10	100.5	103.9	104.7
Austria	3.66	4.04	4.07	100.6	110.9	112.0
Poland	2.49	2.40	2.59	106.0	102.4	110.4
Portugal	2.29	2.47	2.35	93.2	100.3	95.4
Romania	1.84	1.85	1.89	111.5	111.8	114.1
Slovenia	3.24	3.46	3.85	100.5	107.3	119.3
Slovakia	3.25	3.58	3.43	99.9	110.0	105.6
Finland	6.49	7.17	6.85	103.2	113.9	108.9
Sweden	5.72	5.67	5.44	106.5	105.5	101.4
United Kingdom	3.95	3.89	3.57	100.2	98.7	90.7
Iceland	9.87	11.71	:	85.2	101.0	:
Norway	5.78	5.99	6.30	99.1	102.7	108.0
Switzerland	3.68	3.63	3.68	102.0	100.7	102.1
Croatia	1.77	1.99	2.05	101.9	114.4	117.9
The former Yugoslav Republic of Macedonia	:	:	1.47	:	:	:
Turkey	1.12	1.14	1.42	96.7	98.1	122.5

Source: Eurostat (online data codes: nrg_100a and demo_pjan)

Figure 1.7.1: Gross inland consumption per capita, 2008 (toe per capita)



Source: Eurostat (online data codes: nrg_100a and demo_pjan)

Table 1.7.1a: Gross inland consumption per capita, EU-27 (toe per capita)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
EU-27	3.58	3.55	3.57	3.64	3.63	3.70	3.73	3.72	3.70	3.65	3.62

Source: Eurostat (online data codes: nrg_100a and demo_pjan)

Gross inland consumption (GIC) per capita in the EU-27 has only presented slight changes over the last ten years. Between 1998 and 2008, it grew by 1 % and reached 3.62 toe per capita. However, the differences among Member States have been significant. In 2008, Luxembourg, which presented the highest gross inland consumption (9.4 toe per capita), also experienced the highest increase since 1998 (21 %). Finland, Belgium, Sweden and the Netherlands also recorded high levels of GIC per capita, which were above the EU-27 average by at least 40 % in 2008. On the contrary, GIC per capita in Romania was almost half the EU-27 average.

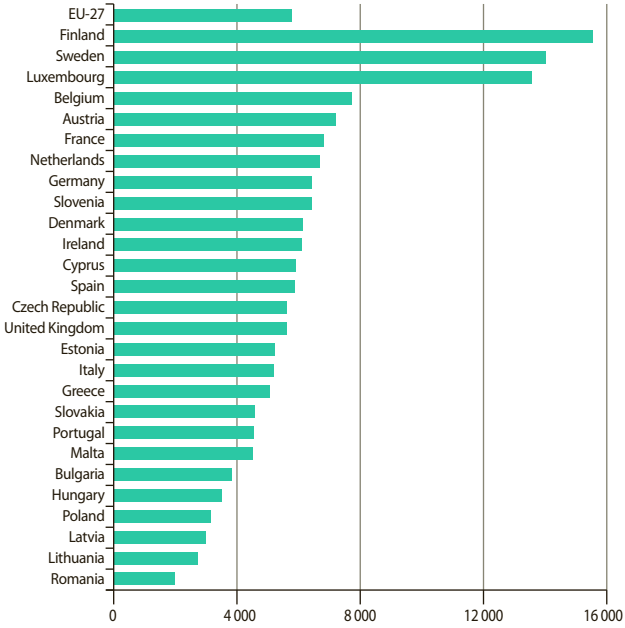
Compared to 1998, all but five Member States (United Kingdom, Denmark, Belgium, Sweden and Germany) experienced increases in GIC per capita in 2008. Apart from Luxembourg, high increases were also observed in Slovenia (19 %) and Greece (14 %).

Table 1.7.2: Final electricity consumption per capita

	(kWh per capita)			Index (2000=100)		
	1998	2003	2008	1998	2003	2008
EU-27	4 992	5 483	5 738	95.8	105.2	110.1
Belgium	7 256	7 694	7 747	95.8	101.6	102.3
Bulgaria	3 122	3 200	3 748	106.0	108.6	127.2
Czech Republic	4 742	5 133	5 587	98.8	106.9	116.4
Denmark	6 052	6 013	6 095	99.4	98.8	100.1
Germany	5 684	6 166	6 392	96.8	105.0	108.8
Estonia	3 675	4 110	5 214	101.5	113.5	144.0
Ireland	4 792	5 811	6 061	89.2	108.2	112.9
Greece	3 637	4 415	5 051	91.9	111.6	127.6
Spain	4 167	5 280	5 860	88.6	112.2	124.5
France	6 126	6 599	6 772	96.4	103.8	106.5
Italy	4 477	5 076	5 180	93.5	106.0	108.2
Cyprus	3 873	5 097	5 871	89.3	117.5	135.3
Latvia	1 843	2 222	2 910	98.9	119.2	156.2
Lithuania	1 889	2 063	2 679	107.5	117.4	152.5
Luxembourg	12 539	13 384	13 547	95.3	101.7	103.0
Hungary	2 818	3 096	3 417	97.9	107.5	118.6
Malta	3 724	4 573	4 509	90.3	111.0	109.4
Netherlands	5 913	6 202	6 653	95.9	100.6	107.9
Austria	6 129	6 757	7 141	95.4	105.1	111.1
Poland	2 508	2 638	3 082	98.6	103.7	121.2
Portugal	3 348	4 147	4 554	88.9	110.2	121.0
Romania	1 623	1 721	1 940	107.4	113.9	128.5
Slovenia	5 083	6 038	6 370	96.0	114.1	120.4
Slovakia	3 902	4 273	4 585	95.7	104.8	112.5
Finland	14 144	15 530	15 586	96.9	106.4	106.8
Sweden	14 291	14 478	14 010	98.4	99.7	96.4
United Kingdom	5 406	5 657	5 583	96.5	100.9	99.6
Iceland	20 196	26 141	:	81.5	105.6	:
Norway	24 774	22 660	23 531	101.3	92.7	96.2
Switzerland	6 994	7 537	7 734	95.7	103.1	105.8
Croatia	2 439	2 909	3 632	93.0	110.9	138.5
The former Yugoslav Republic of Macedonia	2 727	2 815	3 372	105.9	109.3	130.9
Turkey	1 327	1 582	2 256	92.6	110.4	157.4

Source: Eurostat (online data codes: nrg_100a and demo_pjan)

Figure 1.7.2: Final electricity consumption per capita, 2008 (kWh per capita)



Source: Eurostat (online data codes: nrg_100a and demo_pjan)

Table 1.7.2a: Final electricity consumption per capita, EU-27 (kWh per capita)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
EU-27	4 992	5 068	5 213	5 358	5 365	5 483	5 572	5 625	5 725	5 741	5 738

Source: Eurostat (online data codes: nrg_100a and demo_pjan)

EU-27 final electricity consumption per capita grew by 15 % over the last ten years. From 1998 to 2006, the average annual growth rate was 1.8 %. However, from 2006 EU-27 final energy consumption per capita remained relatively stable at 5 738 kWh per capita in 2008. All Member States but Sweden increased their consumption between 1998 and 2008. The most considerable increases were observed in Latvia (58 %), Cyprus (52 %), Estonia (42 %), Lithuania (42 %) and Spain (41 %).

The highest final electricity consumptions per capita were recorded in Finland, Sweden and Luxembourg. In the last decade these three countries have maintained remarkably high levels of consumption. In 2008, the consumption in Finland was 2.7 times above the EU average, while the consumption in Sweden and Luxembourg was 2.4 times above the average.

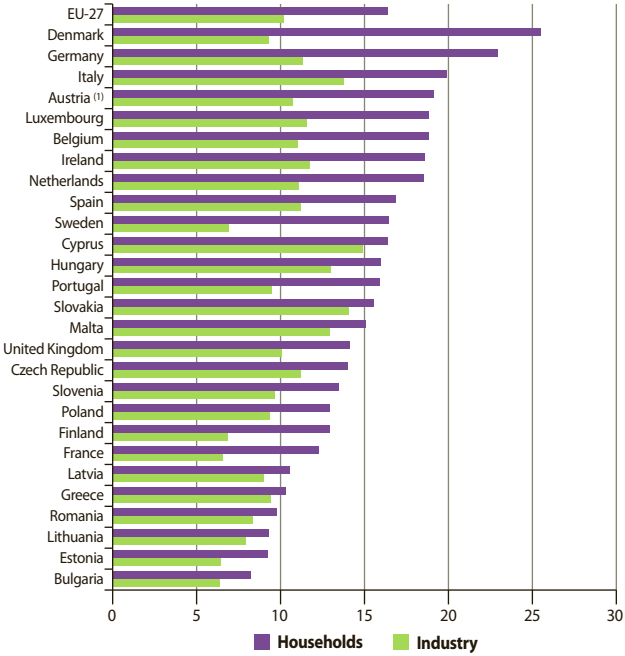
Table 1.8.1: Electricity prices in households and industry, 2nd semester 2009

	Electricity prices in households (EUR/100 KWh)		
	Real price	Taxes	
	All taxes included	VAT	Other taxes
EU-27	16.4	2.2	2.0
Belgium	18.8	3.3	1.5
Bulgaria	8.2	1.3	-
Czech Republic	13.9	2.2	0.1
Denmark	25.5	5.1	9.2
Germany	22.9	3.7	5.7
Estonia	9.2	1.5	0.7
Ireland	18.6	2.2	-
Greece	10.3	0.9	0.1
Spain	16.8	2.3	0.7
France	12.3	1.8	1.3
Italy	20.0	1.8	:
Cyprus	16.4	2.1	0.2
Latvia	10.5	0.9	-
Lithuania	9.3	1.6	-
Luxembourg	18.8	1.1	1.2
Hungary	16.0	2.6	0.1
Malta	15.1	0.7	-
Netherlands	18.5	3.0	1.6
Austria	19.1	3.2	2.1
Poland	12.9	2.3	0.5
Portugal	15.9	0.7	1.4
Romania	9.8	1.6	-
Slovenia	13.4	2.2	0.7
Slovakia	15.6	2.5	-
Finland	12.9	2.3	0.9
Sweden	16.5	3.3	2.6
United Kingdom	14.1	0.7	-
Iceland	:	:	:
Norway	15.6	3.1	1.3
Switzerland	:	:	:
Croatia	11.6	2.2	0.1
FYR of Macedonia	:	:	:
Turkey	11.8	1.8	0.6

	Electricity prices in industry (EUR/100 KWh)	
	Price excluding all recoverable taxes	Non recoverable taxes
EU-27	10.2	1.1
Belgium	11.1	0.9
Bulgaria	6.4	0.0
Czech Republic	11.2	0.1
Denmark	9.3	1.3
Germany	11.3	1.8
Estonia	6.5	0.7
Ireland	11.8	0.0
Greece	9.4	0.8
Spain	11.2	0.5
France	6.6	0.6
Italy	13.7	:
Cyprus	14.9	0.2
Latvia	8.9	-
Lithuania	7.9	-
Luxembourg	11.6	0.4
Hungary	13.0	0.2
Malta	12.9	-
Netherlands	11.1	1.8
Austria	:	:
Poland	9.3	0.5
Portugal	9.4	0.1
Romania	8.3	-
Slovenia	9.6	0.4
Slovakia	14.0	0.1
Finland	6.8	0.3
Sweden	6.9	0.1
United Kingdom	10.1	0.4
Iceland	:	:
Norway	8.0	1.3
Switzerland	:	:
Croatia	9.0	0.1
FYR of Macedonia	:	:
Turkey	7.9	0.3

Source: Eurostat (online data codes: nrg_pc_204 and nrg_pc_205)

Figure 1.8.1: Electricity prices in households and industry, 2nd semester 2009 (EUR/100 KWh)



(1) Industry data: 2nd semester 2008 instead of 2nd semester 2009.

Source: Eurostat (online data codes: nrg_pc_204 and nrg_pc_205)

Note: Table and graph prices refer to the following consumer bands:
Households: band Dc (annual consumption between 2 500 and 5 000 kWh)
Industry: band Ic (annual consumption between 500 and 2 000 MWh).

The legal basis for the collection of industrial gas and electricity prices is defined by Council Directive 90/377/EEC. The collection of prices for household consumers is done on a voluntary agreement with the Member States.

Due to the liberalisation of the electricity market, the methodology that defines the collection of the electricity prices became outdated. In June 2007, the Commission adopted a modernized methodology for these price data collections. The data presented here follow this new methodology.

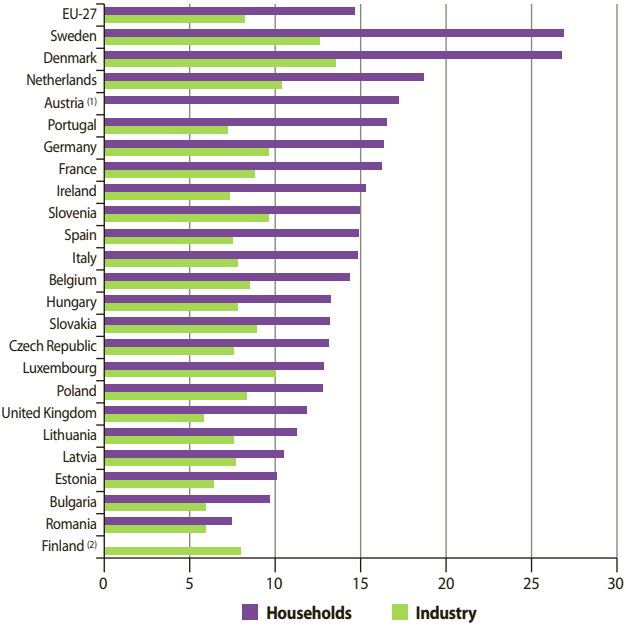
Table 1.8.2: Natural gas prices in households and industry, 2nd semester 2009

	Natural gas prices in households (EUR/GJ)		
	Real price	Taxes	
	All taxes included	VAT	Other taxes
EU-27	14.7	2.0	1.2
Belgium	14.3	2.5	0.4
Bulgaria	9.7	1.6	-
Czech Republic	13.1	2.1	-
Denmark	26.8	5.3	8.1
Germany	16.4	2.6	1.7
Estonia	10.1	1.7	0.4
Ireland	15.3	1.8	-
Spain	14.9	2.1	-
France	16.2	2.4	-
Italy	14.8	2.5	2.7
Latvia	10.5	1.0	-
Lithuania	11.3	1.9	-
Luxembourg	12.8	1.1	0.8
Hungary	13.2	2.6	-
Netherlands	18.7	3.0	5.0
Austria	17.2	2.9	1.9
Poland	12.8	2.3	-
Portugal	16.5	0.8	-
Romania	7.5	1.2	2.2
Slovenia	15.0	2.5	0.8
Slovakia	13.2	2.1	-
Finland	:	:	:
Sweden	26.9	5.4	6.1
United Kingdom	11.8	0.6	-
Iceland	:	:	:
Norway	:	:	:
Switzerland	:	:	:
Croatia	9.1	1.7	-
FYR of Macedonia	:	:	:
Turkey	8.5	1.3	0.3

	Natural gas prices in industry (EUR/GJ)	
	Price excluding all recoverable taxes	Non recoverable taxes
EU-27	8.2	0.7
Belgium	8.5	0.4
Bulgaria	6.0	-
Czech Republic	7.6	0.3
Denmark	13.6	8.1
Germany	9.6	1.1
Estonia	6.4	0.6
Ireland	7.3	-
Spain	7.5	-
France	8.8	0.3
Italy	7.8	0.4
Latvia	7.7	-
Lithuania	7.6	-
Luxembourg	10.0	0.1
Hungary	7.8	0.3
Netherlands	10.4	1.6
Austria	:	:
Poland	8.4	-
Portugal	7.2	-
Romania	5.9	2.1
Slovenia	9.6	0.8
Slovakia	8.9	0.2
Finland	8.0	0.6
Sweden	12.6	1.7
United Kingdom	5.8	0.3
Iceland	:	:
Norway	:	:
Switzerland	:	:
Croatia	7.4	-
FYR of Macedonia	:	:
Turkey	6.3	0.3

Source: Eurostat (online data codes: nrg_pc_202 and nrg_pc_203)

Figure 1.8.2: Natural gas prices in households and industry, 2nd semester 2009 (EUR/GJ)



(1) Natural gas prices in industry not available.
(2) Natural gas prices in households not available.

Source: Eurostat (online data codes: nrg_pc_202 and nrg_pc_203)

Note: Table and graph prices refer to the following consumer bands:
Households: band D2 (annual consumption between 20 and 200 GJ)
Industry: band I3 (annual consumption between 10 000 and 100 000 GJ).

The legal basis for the collection of industrial gas and electricity prices is defined by Council Directive 90/377/EEC. The collection of prices for household consumers is done on a voluntary agreement with the Member States.

Due to the liberalisation of the electricity market, the methodology that defines the collection of the electricity prices became outdated. In June 2007, the Commission adopted a modernized methodology for these price data collections. The data presented here follow this new methodology.

2 Transport indicators

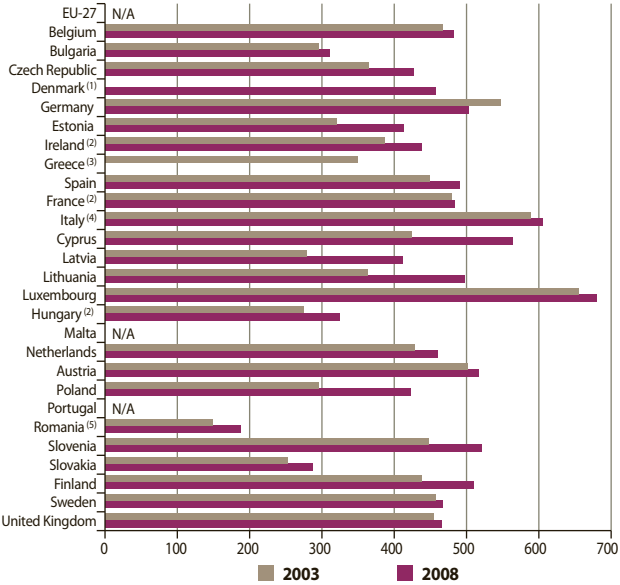
Table 2.1.1: Motorisation rate of passenger cars (number of passenger cars/1 000 inhabitants)

	2003	2004	2005	2006	2007	2008
EU-27	:	:	:	:	:	:
Belgium	466	469	471	473	477	481
Bulgaria	294	313	327	229	271	310
Czech Republic	363	374	387	401	416	426
Denmark	:	:	:	457	:	:
Germany	545	550	559	565	500	503
Estonia (1)	320	349	366	412	390	412
Ireland	387	393	404	:	437	:
Greece	349	:	:	:	:	:
Spain	449	461	471	481	489	489
France	478	480	480	481	483	:
Italy	:	587	593	601	603	:
Cyprus	424	459	474	487	528	563
Latvia	278	296	322	358	397	411
Lithuania	363	382	425	468	469	496
Luxembourg	654	657	666	672	676	678
Hungary	274	280	286	319	324	:
Malta	:	:	:	:	:	:
Netherlands	427	430	435	443	452	460
Austria	500	505	507	509	513	515
Poland	294	314	323	351	383	422
Portugal	:	:	:	:	:	:
Romania	:	149	:	149	164	187
Slovenia	446	456	:	489	504	520
Slovakia	252	222	242	247	266	286
Finland	437	450	464	477	487	509
Sweden	456	458	461	464	467	466
United Kingdom	453	465	471	461	464	464
Iceland	579	*602*	*637*	:	:	:
Liechtenstein	695	698	:	696	693	720
Norway	:	432	440	449	460	464
Switzerland	513	518	521	:	:	:
Croatia	289	299	309	321	340	350
The former Yugoslav Republic of Macedonia	:	:	124	:	122	:
Turkey	:	:	:	:	:	:

(1) A cleaned up database has been use in 2007.

Source: Eurostat (online data codes: road_eqs_carmot and demo_pjan), United Nations Economic Commission for Europe, national statistics

Figure 2.1.1: Motorisation rate of passenger cars (number of passenger cars/1 000 inhabitants)



(1) 2006 data instead of 2008. 2003 data not available.
(2) 2007 data instead of 2008.
(3) 2008 data not available.
(4) 2007 data instead of 2008 and 2004 data instead of 2003.
(5) 2004 data instead of 2003.

Source: Eurostat (online data codes: road_eqs_carmot and demo_pjan), United Nations Economic Commission for Europe, national statistics

Note: The numbers that have been used represent the stock at the end of the year, except for Belgium: 1 August, Switzerland: 30 September and Liechtenstein: 1 July. In the case of Bulgaria, new more reliable data from 2006, because vehicles had to get new number plates until end-2006. Those which hadn't done so have been removed from the database.

From 2003 to 2008, all Member States but Germany increased their motorisation rates. The highest increases were observed in Eastern Europe. In Latvia the number of passenger cars per 1 000 inhabitants grew from 278 to 411, a 48 % increase. Poland followed with a 43 % increase and a motorisation rate of 422 in 2008 compared to 294 in 2003.

Among the EU-27 countries, the highest motorisation rates were observed in Luxembourg (678 passenger cars/1 000 inhabitants in 2008) and Italy (603 in 2007). In 2008, five more Member States (Cyprus, Slovenia, Austria, Finland and Germany) had rates over 500 — at least one car per two inhabitants. The lowest rate was observed in Romania (187), with less than one car per five inhabitants.

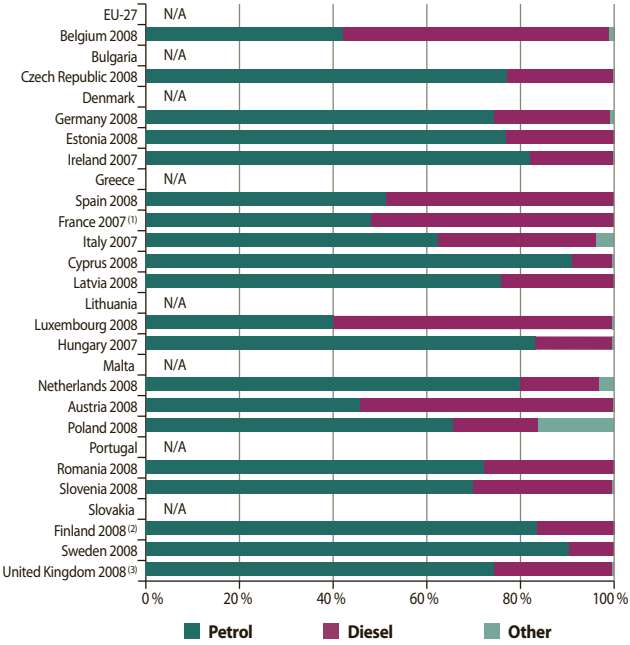
Table 2.1.2: Passenger cars, by fuel type (thousand passenger cars)

	Total		Petrol		Diesel		Other	
	2003	2008	2003	2008	2003	2008	2003	2008
EU-27	:	:	:	:	:	:	:	:
Belgium	4 821	5 131	2 557	2 161	2 174	2 903	90	67
Bulgaria	2 309	2 366	:	:	:	:	:	:
Czech Republic	3 706	4 423	3 124	3 410	576	1 008	6	5
Denmark	:	:	:	:	:	:	:	:
Germany	45 023	41 321	36 702	30 639	8 294	10 290	27	:
Estonia	434	552	381	424	54	128	-	-
Ireland (1)	1 532	1 883	1 303	1 542	204	338	25	3
Greece	3 840	:	:	:	:	:	:	:
Spain	18 688	22 145	12 096	11 345	6 592	10 797	-	3
France (2)	29 560	30 700	16 831	14 778	12 729	15 924	:	:
Italy (3)	33 973	35 680	24 100	22 180	8 572	12 065	1 301	1 435
Cyprus	303	444	269	403	34	40	-	1
Latvia	649	933	558	706	91	227	0	0
Lithuania	1 257	1 671	:	:	:	:	:	:
Luxembourg	293	328	176	131	117	196	-	1
Hungary (1)	2 777	3 262	2 418	2 706	344	550	15	6
Malta	:	:	:	:	:	:	:	:
Netherlands	6 909	7 542	5 625	6 012	1 022	1 277	262	253
Austria	4 054	4 285	2 169	1 958	1 885	2 323	-	4
Poland	11 244	16 080	9 506	10 535	1 008	2 906	730	2 639
Portugal	:	:	:	:	:	:	:	:
Romania (4)	3 225	4 027	:	2 901	:	1 125	:	1
Slovenia (5)	980	1 045	741	730	237	313	2	2
Slovakia	1 356	1 545	:	:	:	:	:	:
Finland (6)	2 275	2 700	1 995	2 236	264	447	16	:
Sweden	4 075	4 279	3 878	3 860	196	417	1	2
United Kingdom (7)	26 953	28 390	21 805	21 064	4 400	7 227	:	99
Iceland (8)	167	*187*	148	*163*	19	*24*	-	-
Liechtenstein	24	25	21	20	2	5	-	0
Norway (4)	1 978	2 197	1 721	1 597	255	598	2	2
Switzerland (8)	3 754	3 864	3 491	:	262	380	1	:
Croatia	1 282	1 551	947	987	335	525	-	39
The former Yugoslav Republic of Macedonia (1)	:	249	:	191	:	47	:	11
Turkey	:	:	:	:	:	:	:	:

(1) 2007 data instead of 2008.
(2) 2007 data instead of 2008. In total: Other fuels than petrol and diesel not included.
(3) 2007 data instead of 2008 and 2004 data instead of 2003.
(4) 2004 data instead of 2003.
(5) 2006 data instead of 2003.
(6) Total: Including Åland; Petrol and diesel: Excluding Åland.
(7) 2008 data: Great Britain only.
(8) 2005 data instead of 2008.

Source: Eurostat (online data code: road_eqs_carmot), International Transport Forum, United Nations Economic Commission for Europe Common Questionnaire on inland transport

Figure 2.1.2: Share of passenger cars, by fuel type, last year available (%)



(1) Other fuels than petrol and diesel not included.
(2) Excluding Åland.
(3) Great Britain only.

Source: Eurostat (online data code: road_eqs_carmot), International Transport Forum, United Nations Economic Commission for Europe Common Questionnaire on inland transport

In 16 out of the 20 Member States for which data were available, over half of the passenger cars were petrol-driven. At country level, in 2008, the share of petrol-driven cars ranged from 40 % in Luxembourg to 91 % and 90 % in Cyprus and Sweden respectively.

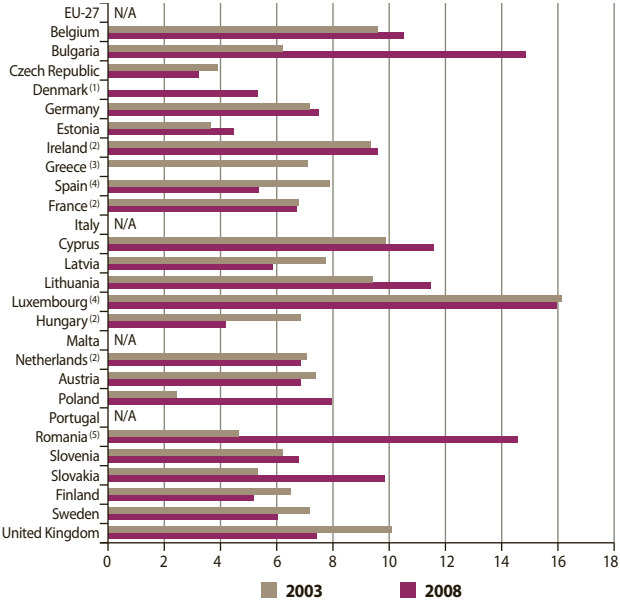
Diesel-driven cars accounted for over half of the total in Luxembourg (60 %), Belgium (57 %), Austria (54 %) and France (52 % in 2007).

Table 2.1.3: Renewal rate of passenger cars (passenger cars first registration/total passenger cars — %)

	2003	2004	2005	2006	2007	2008
EU-27	:	:	:	:	:	:
Belgium	9.6	10.0	9.9	10.7	10.5	10.5
Bulgaria	6.2	6.2	:	10.3	16.8	14.9
Czech Republic	3.9	3.2	3.2	2.9	3.2	3.2
Denmark	:	:	:	5.3	:	:
Germany	7.2	7.2	7.3	7.4	7.6	7.5
Estonia	3.6	3.5	:	4.6	5.9	4.5
Ireland	9.3	9.5	:	:	9.6	:
Greece	7.1	:	:	:	:	:
Spain	:	:	:	7.9	7.5	5.4
France	6.8	6.7	:	6.6	6.7	:
Italy	:	:	:	:	:	:
Cyprus	9.9	13.1	10.9	10.0	12.4	11.6
Latvia	7.8	8.4	9.4	11.8	11.8	5.9
Lithuania	9.4	10.2	11.9	11.6	13.9	11.5
Luxembourg	:	:	:	16.1	15.9	16.0
Hungary	6.8	6.7	:	4.7	4.2	:
Malta	:	:	:	:	:	:
Netherlands	7.1	6.9	6.6	6.7	6.8	:
Austria	7.4	7.6	:	7.3	7.0	6.9
Poland	2.4	7.0	7.9	6.9	7.7	8.0
Portugal	:	:	:	:	:	:
Romania	:	4.6	:	9.7	12.3	14.6
Slovenia	6.2	6.5	:	6.1	6.7	6.8
Slovakia	5.3	6.0	:	:	10.2	9.8
Finland	6.5	6.1	:	5.8	4.9	5.2
Sweden	7.2	7.2	7.2	7.2	7.6	6.0
United Kingdom	10.1	9.6	:	8.4	8.5	7.4
Iceland	6.5	8.0	11.8	:	:	:
Liechtenstein	:	:	:	7.8	8.2	7.9
Norway	:	7.4	:	6.8	7.6	6.3
Switzerland	7.2	7.0	6.7	:	:	:
Croatia	8.1	7.5	:	8.0	7.2	6.2
The former Yugoslav Republic of Macedonia	:	:	:	:	6.8	:
Turkey	:	:	:	:	:	:

Source: Eurostat (online data codes: road_eqr_carm and road_eqs_carmot), Association des Constructeurs Européens d'Automobiles, United Nations Economic Commission for Europe, national statistics

Figure 2.1.3: Renewal rate of passenger cars (passenger cars first registration/total passenger cars — %)



(1) 2006 data instead of 2008. 2003 data not available.
(2) 2007 data instead of 2008.
(3) 2008 data not available.
(4) 2006 data instead of 2003.
(5) 2004 data instead of 2003.

Source: Eurostat (online data codes: road_eqr_carm and road_eqs_carmot), Association des Constructeurs Européens d'Automobiles, United Nations Economic Commission for Europe, national statistics

In 2008, the renewal rate of passenger cars — the ratio of first registered to total passenger cars — varied between 3.2 % in the Czech Republic and 16.0 % in Luxembourg. Besides Luxembourg, there was at least one new car in every ten in Bulgaria, Romania, Cyprus, Lithuania and Belgium.

Similarly to the motorisation rate, high increases in the renewal rate were observed in Eastern European countries. In Poland the share of first registered passenger cars grew from 2.4 % in 2003 to 8.0 % in 2008. Romania's renewal rate was 14.6 % in 2008 compared to 4.6 % in 2004 and in Bulgaria it increased from 6.2 % (2003) to 14.9 % in 2008. Half of the Member States presented lower renewal rates in 2008 compared to 2003.

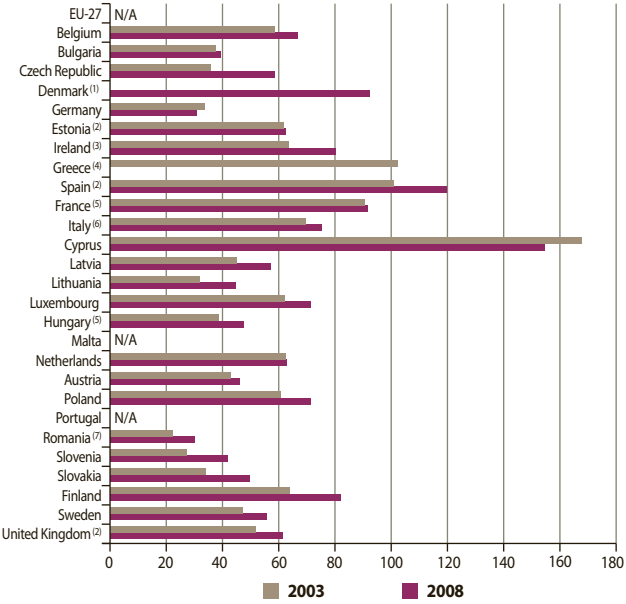
Table 2.1.4: Motorisation rate of lorries and road tractors (number of lorries and road tractors/1 000 inhabitants)

	2003	2004	2005	2006	2007	2008
EU-27	:	:	:	:	:	:
Belgium	58	60	62	64	65	67
Bulgaria	37	41	43	29	34	39
Czech Republic	36	39	43	48	54	59
Denmark	:	:	:	92	:	:
Germany	34	33	34	34	30	31
Estonia (1)	62	63	64	69	60	62
Ireland (2)	63	67	:	:	80	:
Greece	102	:	:	:	:	:
Spain (3)	101	104	108	117	120	119
France	90	90	90	90	92	:
Italy (2)	:	69	71	74	75	:
Cyprus	167	161	158	151	151	154
Latvia	45	46	49	53	57	57
Lithuania	32	34	36	40	44	45
Luxembourg	62	62	64	66	68	71
Hungary	39	39	41	46	47	:
Malta	:	:	:	:	:	:
Netherlands	62	64	62	61	62	63
Austria	43	43	44	44	45	46
Poland	61	63	60	63	66	71
Portugal	:	:	:	:	:	:
Romania	:	22	:	21	23	30
Slovenia	27	28	:	35	39	42
Slovakia	34	32	:	39	44	50
Finland	64	69	73	73	76	82
Sweden	47	49	51	53	55	56
United Kingdom (4)	52	61	62	59	61	61
Iceland	74	*79*	*87*	:	:	:
Liechtenstein	76	76	:	72	73	76
Norway	:	98	101	105	110	110
Switzerland	40	40	41	:	:	:
Croatia	33	35	36	37	37	38
The former Yugoslav Republic of Macedonia	:	:	9	:	8	:
Turkey	:	:	:	:	:	:

(1) Data from 2003 to 2007 only include lorries.
(2) Data only include lorries.
(3) Data from 2003 to 2005 only include lorries.
(4) 2003 data only include lorries.

Source: Eurostat (online data codes: road_eqs_lormot, road_eqs_roaene and demo_pjan), United Nations Economic Commission for Europe, national statistics

Figure 2.1.4: Motorisation rate of lorries and road tractors (number of lorries and road tractors/1 000 inhabitants)



(1) 2006 data instead of 2008. 2003 data not available.
(2) 2003 data only include lorries.
(3) 2007 data instead of 2008; data only include lorries.
(4) 2008 data not available.
(5) 2007 data instead of 2008.
(6) 2004 data instead of 2003 and 2007 data instead of 2008; data only include lorries.
(7) 2004 data instead of 2003.

Source: Eurostat (online data codes: road_eqs_lormot, road_eqs_roaene and demo_pjan), United Nations Economic Commission for Europe, national statistics

Note: The stock at the end of the year has been used except for Belgium: 1 August, Switzerland: 30 September and Liechtenstein: 1 July. As a rule, data include heavy and light goods vehicles, lorries and road tractors. Due to varying concepts of such vehicles, data are not fully comparable between countries. In the case of Bulgaria, new more reliable data from 2006, because vehicles had to get new number plates until end-2006. Those which hadn't done so have been removed from the database.

Over the past six years, the motorisation rate of lorries and road tractors recorded an increase in most Member States. The only exceptions were Germany and Cyprus with an 8 % decrease. In spite of this decrease, Cyprus had the highest rate in 2008 (154 lorries and road tractors per 1 000 inhabitants), 29 % higher than the rate of Spain (119). In contrast, the motorisation rates in Romania, Germany and Bulgaria were the lowest (30, 31 and 39 respectively).

From 2003 to 2008, the highest increases were recorded in the Czech Republic (63 %) and Slovenia (54 %).

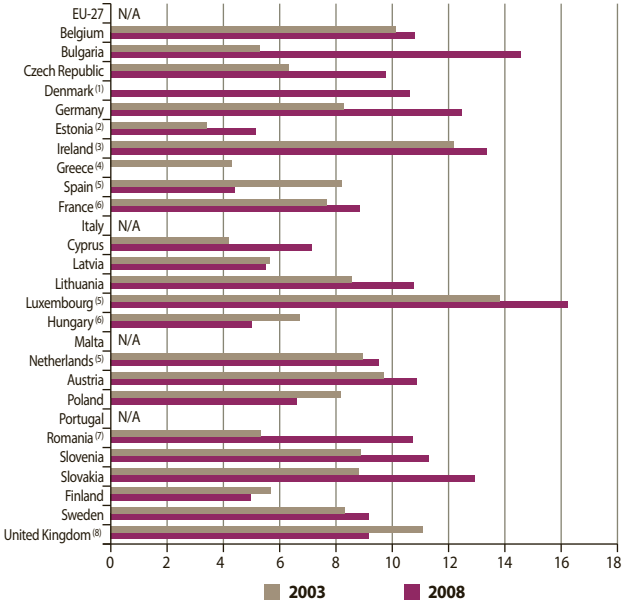
Table 2.1.5: Renewal rate of lorries and road tractors (lorries and road tractors first registration/total lorries and road tractors — %)

	2003	2004	2005	2006	2007	2008
EU-27	:	:	:	:	:	:
Belgium	10.1	10.4	11.0	10.2	11.2	10.8
Bulgaria	5.3	6.1	6.7	10.9	14.2	14.5
Czech Republic	6.3	8.5	10.2	11.1	12.6	9.7
Denmark	:	:	:	10.6	:	:
Germany	8.2	8.9	9.2	9.7	12.6	12.4
Estonia (1)	3.4	3.5	4.4	5.6	7.9	5.1
Ireland (2)	12.2	11.6	:	:	13.3	:
Greece	4.3	:	:	:	:	:
Spain	:	:	:	8.2	7.8	4.4
France	7.6	8.1	8.4	8.7	8.8	:
Italy	:	:	:	:	:	:
Cyprus	4.2	4.1	4.0	4.9	6.1	7.1
Latvia	5.6	6.7	7.9	9.7	10.6	5.5
Lithuania	8.5	10.9	13.0	13.3	15.6	10.7
Luxembourg	:	:	:	13.8	15.2	16.2
Hungary	6.7	6.1	4.8	4.6	5.0	:
Malta	:	:	:	:	:	:
Netherlands	8.9	9.7	7.9	8.4	9.5	:
Austria	9.7	10.9	10.3	10.4	10.9	10.8
Poland	8.2	6.2	6.1	5.3	6.8	6.6
Portugal	:	:	:	:	:	:
Romania (3)	:	5.3	:	11.8	13.6	10.7
Slovenia	8.8	9.6	:	10.9	11.8	11.3
Slovakia	8.8	9.4	:	:	14.3	12.9
Finland	5.7	6.2	5.2	5.5	5.5	5.0
Sweden	8.3	8.6	9.2	9.7	10.4	9.2
United Kingdom	:	11.1	10.8	10.7	10.4	9.2
Iceland	7.9	*10.6*	*14.0*	:	:	:
Liechtenstein	5.8	8.1	:	8.5	6.5	9.9
Norway	:	8.7	9.7	10.8	10.7	8.4
Switzerland	7.2	7.5	7.7	:	:	:
Croatia	10.1	8.5	8.1	8.5	8.4	7.8
The former Yugoslav Republic of Macedonia	:	:	3.3	:	4.4	:
Turkey	:	:	:	:	:	:

(1) Data from 2003 to 2007 only include lorries.
(2) Data only include lorries.
(3) 2008 data for first registration and data for the total only include lorries.

Source: Eurostat (online data codes: road_eqr_lorrin, road_eqr_tracm, road_eqs_lormot and road_eqs_roaene), DG for Mobility and Transport, Association des Constructeurs Européens d'Automobiles, United Nations Economic Commission for Europe, national statistics

Figure 2.1.5: Renewal rate of lorries and road tractors (lorries and road tractors first registration/total lorries and road tractors — %)



(1) 2006 data instead of 2008. 2003 data not avaialable.
(2) 2003 data only include lorries.
(3) 2007 data instead of 2008; data only include lorries.
(4) 2008 data not available.
(5) 2006 data instead of 2003.
(6) 2007 data instead of 2008.
(7) 2004 data instead of 2003; 2008 data for first registration and data for the total only include lorries.
(8) 2004 data instead of 2003.

Source: Eurostat (online data codes: road_eqr_lorrin, road_eqr_tracm, road_eqs_lormot and road_eqs_roaene), DG for Mobility and Transport, Association des Constructeurs Européens d'Automobiles, United Nations Economic Commission for Europe, national statistics

In the latest year available, 11 Member States reported renewal rates of lorries and road tractors over 10 %. The highest rates were reported by Luxembourg (16.2 % in 2008), Bulgaria (14.5 % in 2008) and Ireland (13.3 % in 2007). On the other hand, Spain had the lowest rate in 2008 (4.4 %).

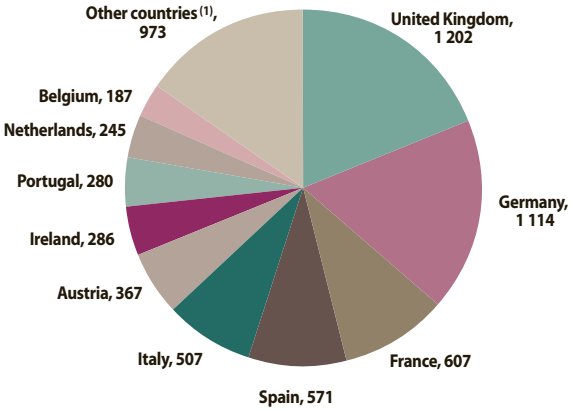
Between 2003 and 2008, the rate of Bulgaria showed an almost threefold increase, followed by a twofold increase in Romania. In contrast, the motorisation rate almost halved in Spain from 2006 to 2008.

Table 2.1.6: Airfleet by operator country (number of commercial aircrafts)

	2004	2005	2006	2007	2008
EU-27	:	:	:	6 374	:
Belgium	:	:	:	183	187
Bulgaria	:	97	128	102	:
Czech Republic	75	67	78	87	95
Denmark	:	:	:	152	133
Germany	:	:	:	1 061	1 114
Estonia	25	28	26	20	23
Ireland	146	186	223	267	286
Greece	:	:	:	95	:
Spain	:	:	:	618	571
France	:	:	:	583	607
Italy	:	:	:	492	507
Cyprus	11	18	20	16	17
Latvia	46	31	46	51	54
Lithuania	26	28	26	41	36
Luxembourg	:	:	:	91	:
Hungary	40	57	69	67	73
Malta	:	:	:	21	28
Netherlands	:	:	:	230	245
Austria	:	:	:	306	367
Poland	:	:	:	98	94
Portugal	90	177	:	240	280
Romania	:	:	:	58	67
Slovenia	11	12	19	28	33
Slovakia	36	33	22	25	37
Finland	49	88	:	106	116
Sweden	:	:	:	160	167
United Kingdom	:	:	:	1 176	1 202
Iceland	:	:	:	137	140
Liechtenstein	:	:	:	:	:
Norway	:	:	:	115	120
Switzerland	:	:	:	288	316
Croatia	:	:	:	:	24
The former Yugoslav Republic of Macedonia	:	:	:	:	:
Turkey	:	:	:	229	273

Source: Airclaims, also available at Eurostat (online data code: avia_eq_arc_typ)

Figure 2.1.6: Airfleet by operator country, EU-27 2008 top ten (number of commercial aircrafts)



(1) Other countries exclude Bulgaria, Greece and Luxembourg for which 2008 data are not available.

Source: Airclaims, also available at Eurostat (online data code: avia_eq_arc_typ)

Note: All military aircrafts excluded.

In 2008, the five largest Member States also reported the largest numbers of commercial aircraft. In the United Kingdom the airfleet was 1 202; Germany followed with 1 114. The smallest airfleet were found in Cyprus (17) and Estonia (23). In terms of shares of the EU-27 total, in 2007, the United Kingdom accounted for 18 % and Germany for 17 %.

Over the last five years (2004-2008), the airfleet of Portugal and Slovenia showed a threefold increase, while in Finland and Ireland the increase was about twofold.

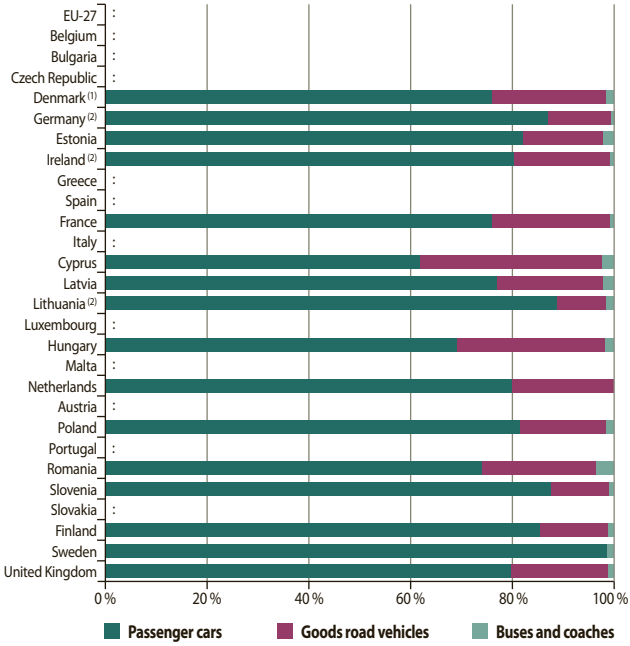
Table 2.2.1: Road traffic volumes on national territory, by type of vehicle (million vehicle-kilometres)

	Passenger cars		Goods road vehicles		Buses and coaches	
	2005	2008	2005	2008	2005	2008
EU-27	:	:	:	:	:	:
Belgium	:	:	:	:	:	:
Bulgaria	:	:	:	:	:	:
Czech Republic	:	:	:	:	:	:
Denmark (1)	:	34 704	:	10 235	:	629
Germany (2)	:	584 600	:	82 900	:	3 295
Estonia	6 373	7 681	1 485	1 486	203	184
Ireland (2)	:	32 741	:	7 745	:	276
Greece	:	:	:	:	:	:
Spain	:	:	:	:	:	:
France	:	412 933	:	126 494	:	3 268
Italy	:	:	:	:	:	:
Cyprus	:	3 926	:	2 276	:	138
Latvia	7 979	9 946	1 937	2 674	252	277
Lithuania (2)	:	18 995	:	2 059	:	309
Luxembourg	:	:	:	:	:	:
Hungary	:	27 180	:	11 451	:	663
Malta	:	:	:	:	:	:
Netherlands	96 930	101 685	24 760	25 358	:	:
Austria	:	:	:	:	:	:
Poland	:	144 877	:	29 743	:	2 703
Portugal	:	:	:	:	:	:
Romania	:	*34 887*	:	*10 569*	:	*1 592*
Slovenia	:	15 170	:	1 996	:	143
Slovakia	:	:	:	:	:	:
Finland	:	45 285	:	7 115	:	580
Sweden	63 188	63 658	:	:	876	852
United Kingdom	397 191	401 749	91 600	96 832	5 174	5 184
Iceland	:	:	:	:	:	:
Liechtenstein	:	:	:	:	:	:
Norway (2)	:	32 714	:	9 626	:	694
Switzerland	:	:	:	:	:	:
Croatia	17 520	19 456	1 960	1 946	335	306
The former Yugoslav Republic of Macedonia	:	:	:	:	:	:
Turkey	:	:	:	:	:	:

(1) Data represent road traffic of national vehicles on national territory.
(2) Data represent road traffic of national vehicles on all territories.

Source: Eurostat (online data code: road_tf_veh), International Transport Forum, United Nations Economic Commission for Europe Common Questionnaire and Pilot Questionnaire

Figure 2.2.1: Share of road traffic volumes on national territory, by type of vehicle, 2008 (%)



(1) Data represent road traffic of national vehicles on national territory.
(2) Data represent road traffic of national vehicles on all territories.

Source: Eurostat (online data code: road_tf_veh), International Transport Forum, United Nations Economic Commission for Europe Common Questionnaire and Pilot Questionnaire

Road traffic volumes were dominated by passenger cars. In all countries over 60 % of the total road traffic was conducted by passenger cars in 2008. The volumes of traffic by goods road vehicles fluctuated between a 10 % share of the total in Lithuania and a 36 % share in Cyprus. The shares of buses and coaches were significantly lower; the highest was recorded in Romania (3 %).

In absolute values, the highest volumes of road traffic were recorded in the largest countries. Transport by passenger cars was 585 billion vehicle-kilometres in Germany, 413 in France and 402 in the United Kingdom. Similarly, transport by goods vehicles equaled 126 billion vehicle-kilometres in France, 97 in the United Kingdom and 83 in Germany; while transport by buses and coaches amounted to 5 billion vehicle-kilometres in the United Kingdom, 3 in Germany and 3 in France.

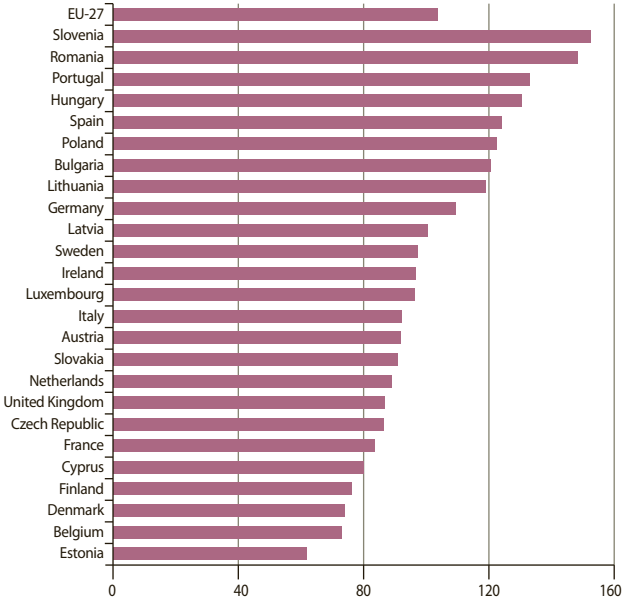
Table 2.3.1: Index of inland freight transport volume relative to GDP (inland freight transport volume measured in tonne-km/GDP in chain-linked volumes at 2000 exchange rates, 2000=100)

	2000	2005	2006	2007	2008
EU-27 (1)	100.0	*105.4*	*106.0*	*106.5*	*104.0*
Belgium	100.0	84.9	*82.5*	*80.0*	*72.8*
Bulgaria (2)	100.0	128.0	118.3	116.6	120.7
Czech Republic	100.0	88.5	94.0	86.2	86.6
Denmark	100.0	91.1	80.7	77.9	73.8
Germany	100.0	106.1	109.7	111.7	110.0
Estonia	100.0	87.0	76.7	66.5	61.8
Ireland	100.0	109.3	100.6	102.9	97.0
Greece	:	:	:	:	:
Spain	100.0	130.1	129.4	133.1	123.9
France	100.0	87.2	87.6	88.7	83.4
Italy	100.0	108.2	*95.5*	*91.2*	*92.0*
Cyprus	100.0	96.6	77.6	76.1	80.0
Latvia	100.0	105.0	91.6	95.2	101.0
Lithuania	100.0	116.8	118.5	120.5	119.0
Luxembourg	100.0	92.2	88.2	87.7	96.1
Hungary (2)	100.0	105.1	118.4	132.4	131.1
Malta	:	:	:	:	:
Netherlands	100.0	98.7	95.2	91.4	89.1
Austria	100.0	98.5	102.2	97.7	91.4
Poland	100.0	108.9	115.2	121.6	122.5
Portugal	100.0	148.6	153.8	155.9	133.0
Romania	100.0	174.2	171.4	165.6	148.5
Slovenia	100.0	128.7	132.0	138.4	152.5
Slovakia (2)	100.0	93.7	86.9	92.0	90.9
Finland	100.0	86.7	81.4	76.7	76.4
Sweden	100.0	95.3	94.4	94.4	97.1
United Kingdom	100.0	*91.3*	*93.3*	*90.2*	*87.0*
Iceland	100.0	*113.1*	*119.2*	:	:
Liechtenstein	:	:	:	:	:
Norway	100.0	105.9	109.9	107.6	111.9
Switzerland (3)	100.0	97.2	97.7	93.0	92.4
Croatia (4)	:	110.9	117.3	116.0	121.4
The former Yugoslav Republic of Macedonia	100.0	141.5	198.5	141.2	:
Turkey (5)	100.0	82.2	81.7	79.8	:

(1) EU aggregates include estimates done for missing data on road freight transport of Greece and Malta.
(2) Break in series in 2000.
(3) Road transport data cover only the haulage by CH vehicles on CH territory; Data taken from DG for Mobility and Transport.
(4) 2002=100.
(5) In the case of road transport only national transport data have been used.

Source: Eurostat (online data code: tsien060), DG for Mobility and Transport, International Transport Forum, national statistics, estimates

Figure 2.3.1: Index of inland freight transport volume relative to GDP, 2008 (2000=100)



Source: Eurostat (online data code: tsien060), DG for Mobility and Transport, International Transport Forum, national statistics, estimates

Note: This indicator includes transport by road, rail and inland waterways. Rail and inland waterways transport are based on movements on national territory, regardless of the nationality of the vehicle or vessel. Road transport is based on all movements of vehicles registered in the reporting country and covers only the haulage of heavy goods vehicles (usually>3.5 tonnes load capacity).

In 2008, the EU-27 index of inland freight transport relative to GDP was 104. The highest indices were observed in Slovenia and Romania, followed by Portugal and Hungary. On the contrary, the indices were low in Estonia, Belgium, Denmark, Finland and Cyprus.

Between 2005 and 2008, 18 Member States reported a decrease in their index. The most considerable decreases were recorded in three of the countries with the lowest indices: Estonia (- 29 %), Denmark (- 19 %) and Cyprus (- 17 %).

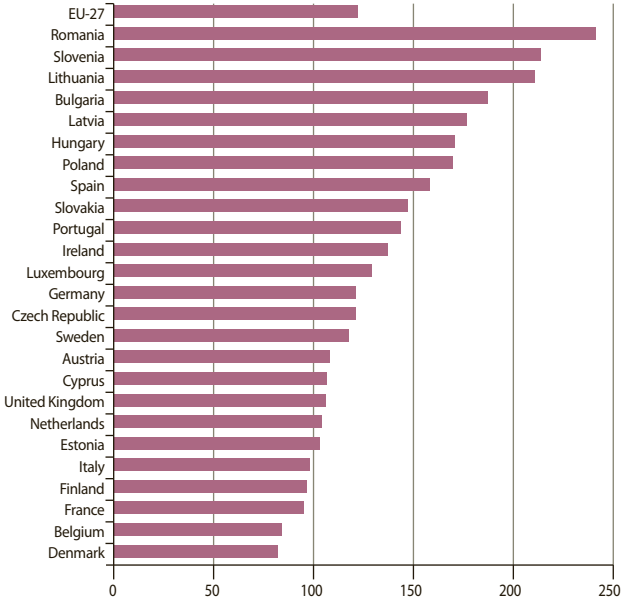
Table 2.3.2: Index of inland freight transport growth (total transport of rail, road and inland waterways in tonne-km, 2000=100)

	2000	2005	2006	2007	2008
EU-27 (1) (2)	100.0	*115.3*	*119.7*	*123.6*	*121.9*
Belgium	100.0	91.8	*91.8*	*91.5*	*84.1*
Bulgaria (2)	100.0	165.6	162.8	170.4	186.9
Czech Republic	100.0	106.3	120.6	117.5	120.9
Denmark	100.0	96.9	88.8	87.2	81.9
Germany	100.0	109.3	116.6	121.6	121.3
Estonia	100.0	127.4	123.5	114.9	102.9
Ireland	100.0	142.7	138.3	150.0	137.1
Greece	:	:	:	:	:
Spain	100.0	152.7	158.1	168.4	158.1
France	100.0	94.7	97.3	100.8	95.1
Italy	100.0	113.0	101.8	98.6	*98.2*
Cyprus	100.0	113.3	94.7	97.7	106.3
Latvia	100.0	155.7	152.4	174.1	176.4
Lithuania	100.0	170.0	185.9	207.7	210.8
Luxembourg	100.0	110.0	111.1	117.6	128.9
Hungary (2)	100.0	129.4	151.5	171.0	170.4
Malta	:	:	:	:	:
Netherlands	100.0	105.4	105.1	104.5	104.0
Austria	100.0	106.6	114.5	113.3	108.2
Poland	100.0	126.7	142.4	160.5	169.8
Portugal	100.0	155.2	162.9	168.1	143.5
Romania	100.0	230.0	244.1	250.9	241.3
Slovenia	100.0	154.3	167.3	187.3	213.8
Slovakia (2)	100.0	119.1	119.8	140.2	147.1
Finland	100.0	98.7	96.8	95.6	96.5
Sweden	100.0	108.1	111.6	114.5	117.6
United Kingdom	100.0	103.3	108.6	107.7	*106.0*
Iceland	100.0	*139.6*	*153.4*	:	:
Liechtenstein	:	:	:	:	:
Norway	100.0	118.2	125.4	126.2	133.6
Switzerland (3)	100.0	103.7	108.0	106.6	108.0
Croatia (4)	:	126.5	140.0	146.1	156.5
The former Yugoslav Republic of Macedonia	100.0	151.8	221.3	166.8	117.2
Turkey (5)	100.0	102.7	109.1	111.5	:

(1) EU aggregates include estimates done for missing data on road freight transport of Greece and Malta.
(2) Break in series in 2000.
(3) Road transport data cover only the haulage by CH vehicles on CH territory; Data taken from DG for Mobility and Transport.
(4) 2002=100.
(5) In the case of road transport only national transport data have been used.

Source: Eurostat, DG for Mobility and Transport, International Transport Forum, national statistics, estimates

Figure 2.3.2: Index of inland freight transport growth, 2008 (2000=100)



Source: Eurostat, DG for Mobility and Transport, International Transport Forum, national statistics, estimates

Note: This indicator includes transport by road, rail and inland waterways. Rail and inland waterways transport are based on movements on national territory, regardless of the nationality of the vehicle or vessel. Road transport is based on all movements of vehicles registered in the reporting country and covers only the haulage of heavy goods vehicles (usually>3.5 tonnes load capacity).

The index of inland freight transport in the EU-27, recorded in tonne-kilometres, grew continuously between 2000 and 2007. However, in 2008 it marked a slight drop compared to 2007 and equaled 121.9.

Member States from Eastern Europe recorded not only the highest indices of inland freight transport in 2008, but also the most notable increases from 2005 to 2008. The most striking increases took place in Slovenia (39 %), Poland (34 %), Hungary (32 %), Lithuania (24 %) and Slovakia (24 %). In contrast, Denmark, Belgium, France, Finland and Italy presented the lowest indices in 2008. Between 2005 and 2008, the decreases in Denmark and Italy ranked among the highest (- 16 % and - 13 % respectively).

Table 2.3.3: Modal split of inland freight transport — shares of road, IWW and rail in total inland transport (% of total inland freight tonne-km)

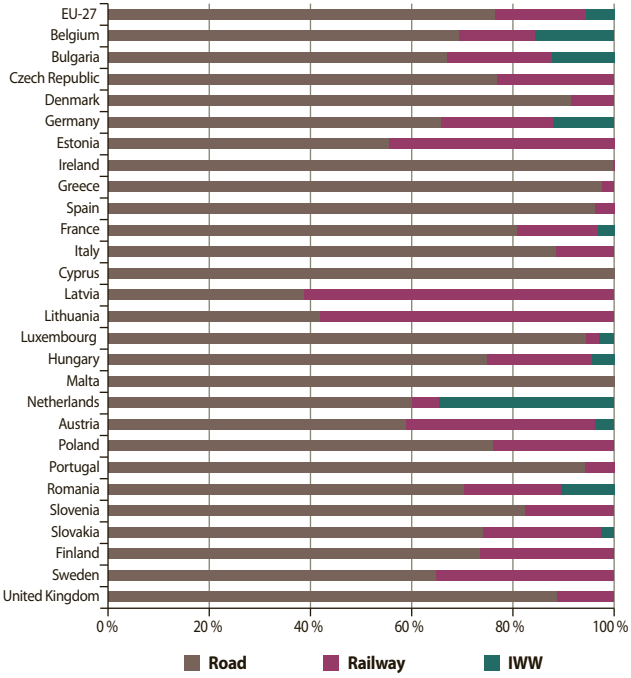
	2000			2007			2008		
	Road	Railway	IWW	Road	Railway	IWW	Road	Railway	IWW
EU-27	*74*	*20*	*7*	*76*	*18*	*6*	*76*	*18*	*6*
Belgium	77	12	11	70	15	15	69	15	16
Bulgaria	52	45	3	70	25	5	67	21	13
Czech Republic	68	32	0	75	25	0	77	23	0
Denmark	92	8	-	92	8	-	91	9	-
Germany	65	19	16	66	22	12	66	22	12
Estonia	37	63	0	43	57	0	55	45	0
Ireland	96	4	-	99	1	-	99	1	-
Greece	:	:	:	97	3	-	97	3	-
Spain	93	7	-	96	4	-	96	4	-
France	76	21	3	81	16	3	81	16	4
Italy	89	11	0	*88*	*12*	*0*	*88*	*12*	0
Cyprus	100	-	-	100	-	-	100	-	-
Latvia	27	74	0	42	58	0	39	61	0
Lithuania	47	53	0	59	42	0	58	42	0
Luxembourg	88	8	4	94	3	3	94	3	3
Hungary (1)	68	29	3	75	21	5	75	21	5
Malta	100	-	-	100	-	-	100	-	-
Netherlands	63	4	33	59	6	35	60	5	35
Austria	65	31	5	61	35	4	59	37	4
Poland	57	42	1	74	26	0	76	24	0
Portugal	93	8	-	95	5	-	94	6	-
Romania	43	49	8	71	19	10	70	19	11
Slovenia	*72*	*28*	-	79	21	-	82	18	-
Slovakia (1)	53	42	5	72	26	3	74	23	3
Finland	76	24	0	74	26	0	73	27	0
Sweden	64	36	-	64	36	-	65	35	-
United Kingdom	90	10	0	*87*	*13*	*0*	*89*	*12*	0
Iceland	100	-	-	100	-	-	100	-	-
Liechtenstein	:	:	:	:	:	:	:	:	:
Norway	84	17	-	85	15	-	85	15	-
Switzerland (2)	47	53	0	46	54	0	46	54	0
Croatia (3)	:	:	:	74	25	1	73	22	6
The former Yugoslav Republic of Macedonia	87	13	-	89	12	-	:	:	:
Turkey (4)	94	6	-	95	5	-	:	:	-

(1) Break in series in 2000.
(2) Road transport data cover only haulage by CH vehicles on CH territory; Data taken from DG for Mobility and Transport.
(3) Break in series in 2008.
(4) In the case of road transport only national transport data have been used.

Source: Eurostat (online data code: tsdtr220), DG for Mobility and Transport, International Transport Forum, national statistics, estimates

Note: Due to rounding the sums (of the modal split percentages) do not always equal 100.

Figure 2.3.3: Modal split of inland freight transport, 2008
(% of total inland freight tonne-km)



Source: Eurostat (online data code: tsdtr220), DG for Mobility and Transport, International Transport Forum, national statistics, estimates

Note: This indicator includes transport by road, rail and inland waterways. Rail and inland waterways transport are based on movements on national territory, regardless of the nationality of the vehicle or vessel. Road transport is based on all movements of vehicles registered in the reporting country and covers only the haulage of heavy goods vehicles (usually>3.5 tonnes load capacity).

Between 2000 and 2008, road transport gained market share against railway and inland waterways. In 2008, the modal share of road transport accounted for 76 % of total EU-27 inland freight transport. Back in 2000 its share was 74 %. In contrast, the share of railway transport fell from 20 % in 2000 to 18 % in 2008 and the share of inland waterways from 7 % to 6 %.

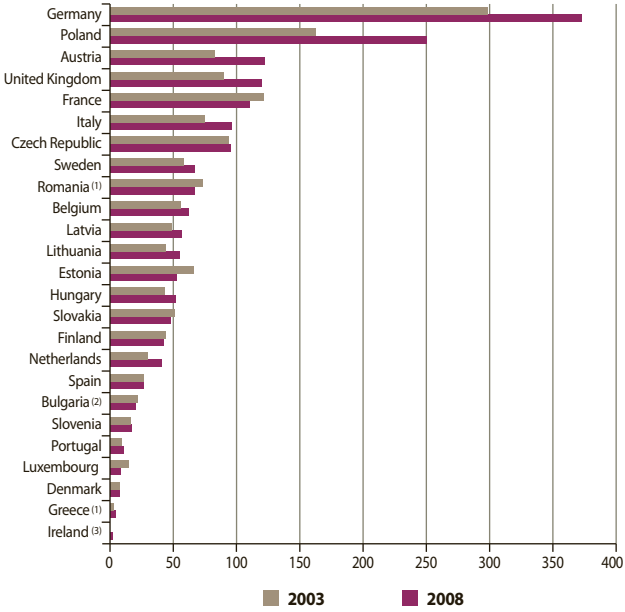
At country level, road transport made up over half of their freight transport in all countries but Latvia, where railway transport accounted for 61 %. Railway transport accounted for the largest share in Latvia with 61 %. The only country with a considerable share of inland waterways was the Netherlands (35 %).

Table 2.3.4: Goods freight transport by rail (million tonnes)

	2003	2004	2005	2006	2007	2008
EU-27	:	:	:	c	1 823	1 798
Belgium	56	c	c	c	66	61
Bulgaria	:	:	:	22	22	20
Czech Republic	93	89	86	97	100	95
Denmark	8	8	8	7	7	7
Germany	297	310	317	346	361	371
Estonia	66	66	68	61	69	53
Ireland	c	2	2	1	1	1
Greece	:	3	3	4	5	4
Spain	26	31	30	30	30	27
France	121	117	108	109	111	110
Italy	74	84	90	102	105	96
Cyprus	-	-	-	-	-	-
Latvia	48	51	55	49	52	56
Lithuania	43	46	49	50	54	55
Luxembourg	15	16	11	12	8	9
Hungary	43	52	51	55	52	52
Malta	-	-	-	-	-	-
Netherlands	30	34	35	37	41	41
Austria	82	93	102	111	116	122
Poland	162	283	270	291	245	249
Portugal	9	10	10	10	11	10
Romania	:	73	69	68	69	67
Slovenia	16	16	16	17	18	17
Slovakia	51	50	49	52	52	48
Finland	44	43	41	44	40	42
Sweden	58	60	63	65	68	67
United Kingdom	89	119	121	127	123	119
Iceland	:	:	:	:	:	:
Liechtenstein	:	2	2	2	2	2
Norway	21	23	25	25	25	25
Switzerland	:	:	:	:	:	70
Croatia	:	12	14	15	16	15
The former Yugoslav Republic of Macedonia	:	:	:	:	:	:
Turkey	16	18	19	20	21	23

Source: Eurostat (online data code: ttr00006)

Figure 2.3.4: Goods freight transport by rail (million tonnes)



(1) 2004 data instead of 2003.
(2) 2006 data instead of 2003.
(3) 2003 data confidential.

Source: Eurostat (online data code: ttr00006)

In 2008, the volume of freight transport by rail in the EU-27 amounted to 1 798 million tonnes, approximately 1 % lower than 2007.

About 371 million tonnes were carried through railways in Germany in 2008, a 21 % share of the EU-27 total. Railways in Poland carried 249 million tonnes of rail freight, a 14 % share of the EU total. Amounts of goods that exceeded 100 million tonnes were also dealt with in the railways of Austria (122), the United Kingdom (119) and France (110).

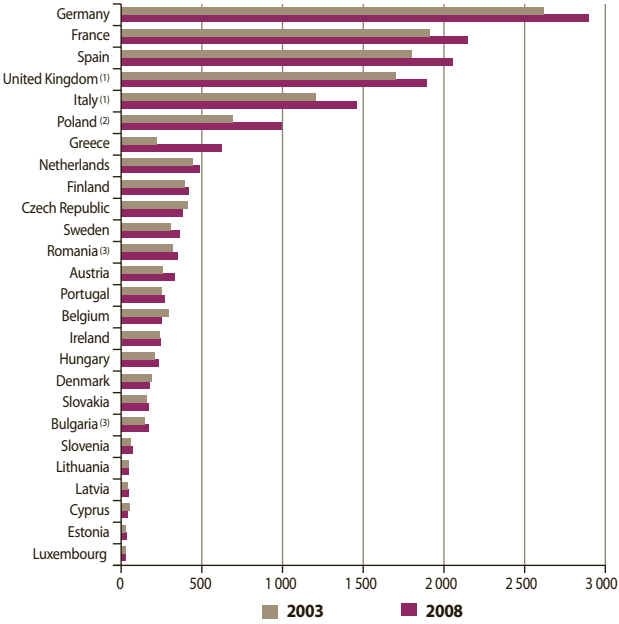
From 2003 to 2008, two of the Member States with the highest volumes of freight by rail, also presented the most remarkable increases, Poland (54 %) and Austria (48 %). In nine countries the amount of goods transported by rail dropped. The highest decrease was observed in Ireland (- 66 %), which was the country with the lowest volume of freight transport by rail in 2008 (1 million tonnes).

Table 2.3.5: Goods freight transport by road (million tonnes)

	2003	2004	2005	2006	2007	2008
EU-27	:	:	:	:	:	:
Belgium	293	267	265	274	279	250
Bulgaria	:	:	:	144	128	168
Czech Republic	411	428	424	398	408	382
Denmark	190	174	190	178	184	179
Germany	2 619	2 625	2 613	2 759	2 848	2 896
Estonia	25	23	26	30	35	36
Ireland	237	263	285	294	298	241
Greece	222	440	430	501	480	625
Spain	1 801	1 952	2 148	2 326	2 345	2 053
France	1 913	2 007	1 997	2 114	2 191	2 144
Italy	1 207	1 378	1 460	1 446	1 461	:
Cyprus	55	43	54	44	40	42
Latvia	41	43	47	48	54	46
Lithuania	46	45	46	45	49	46
Luxembourg	26	26	23	24	27	27
Hungary	208	204	216	233	218	232
Malta	:	:	:	:	:	:
Netherlands	443	469	472	475	499	485
Austria	256	242	248	316	314	332
Poland	:	690	811	823	895	994
Portugal	254	300	306	291	290	268
Romania	:	:	:	317	339	347
Slovenia	61	64	70	72	72	71
Slovakia	161	163	175	161	152	168
Finland	393	392	392	390	414	418
Sweden	304	319	349	334	353	360
United Kingdom	1 703	1 803	1 805	1 874	1 893	:
Iceland	:	:	:	:	:	:
Liechtenstein	:	:	:	:	:	:
Norway	226	240	241	245	262	282
Switzerland	:	:	:	:	:	271
Croatia	:	:	:	:	:	102
The former Yugoslav Republic of Macedonia	:	:	:	:	:	:
Turkey	:	:	:	:	:	:

Source: Eurostat (online data code: road_go_ta_tott)

Figure 2.3.5: Goods freight transport by road (million tonnes)



(1) 2007 data instead of 2008.
(2) 2004 data instead of 2003.
(3) 2006 data instead of 2003.

Source: Eurostat (online data code: road_go_ta_tott)

During the period 2003-2008, the volume of goods (in tonnes) transported by road grew in most Member States. In Greece the increase was almost threefold, while in Poland and Estonia it was 44 % and 42 % respectively. On the other hand, in four countries (Cyprus, Belgium, the Czech Republic and Denmark) the transport of goods by road was lower in 2008 compared to 2003. In Cyprus the decrease reached 25 %.

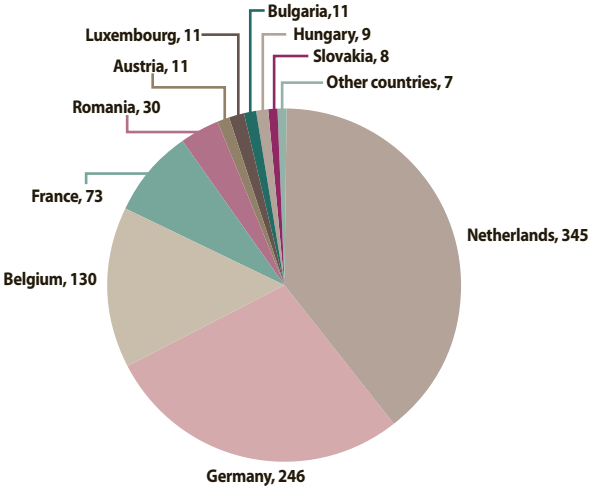
2 896 million tonnes of goods were transported on the roads of Germany in 2008, 11 % higher than in 2003. France and Spain followed with 2 144 and 2 053 million tonnes respectively. These volumes were 12 % and 14 % higher than the volumes in 2003.

Table 2.3.6: Goods freight transport by inland waterways (million tonnes)

	2003	2004	2005	2006	2007	2008
EU-27	:	:	:	:	:	:
Belgium	137	147	160	166	135	130
Bulgaria	7	4	5	6	7	11
Czech Republic	1	1	2	1	1	1
Denmark	-	-	-	-	-	-
Germany	220	236	237	243	249	246
Estonia	-	-	-	-	-	-
Ireland	-	-	-	-	-	-
Greece	-	-	-	-	-	-
Spain	-	-	-	-	-	-
France	64	67	68	71	76	73
Italy	:	:	:	:	:	:
Cyprus	-	-	-	-	-	-
Latvia	-	-	-	-	-	-
Lithuania	-	-	-	-	-	-
Luxembourg	10	11	10	11	10	11
Hungary	:	7	8	7	8	9
Malta	-	-	-	-	-	-
Netherlands	293	319	318	318	353	345
Austria	:	:	9	9	12	11
Poland	:	:	7	7	6	6
Portugal	-	-	-	-	-	-
Romania	:	:	33	29	29	30
Slovenia	-	-	-	-	-	-
Slovakia	:	:	2	2	8	8
Finland	:	:	:	:	:	:
Sweden	-	-	-	-	-	-
United Kingdom	:	:	:	:	:	:
Iceland	-	-	-	-	-	-
Liechtenstein	-	-	-	-	-	-
Norway	-	-	-	-	-	-
Switzerland	:	:	:	:	:	:
Croatia	:	:	:	:	:	6
The former Yugoslav Republic of Macedonia	-	-	-	-	-	-
Turkey	-	-	-	-	-	-

Source: Eurostat (online data code: ttr00007)

Figure 2.3.6: Goods freight transport by inland waterways, EU-27 2008 top ten (million tonnes)



Source: Eurostat (online data code: ttr00007)

Note: Only the countries with international or transit transport exceeding 1 million tonnes report their data to Eurostat.

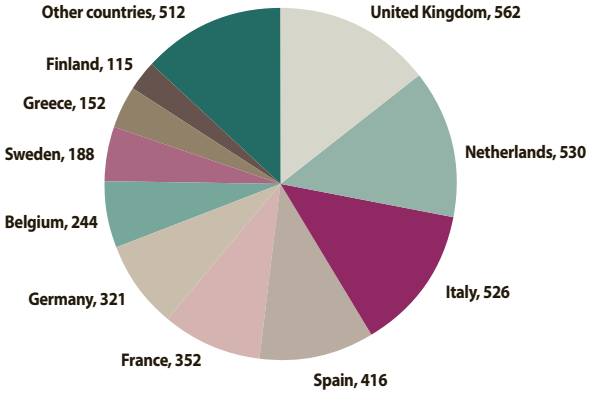
In 2008, 345 million tonnes of goods were carried through the inland waterways of the Netherlands, an additional 18 % to the volume carried in 2003. Germany followed with 246 million tonnes and a 12 % increase from 2003. Both countries had considerable inland waterways lengths.

Table 2.3.7: Goods freight transport by sea (gross weight of seaborne goods handled in all ports in million tonnes)

	2003	2004	2005	2006	2007	2008
EU-27	3 452	3 570	3 719	3 836	3 937	3 919
Belgium	181	188	207	219	236	244
Bulgaria	21	23	25	28	25	27
Czech Republic	-	-	-	-	-	-
Denmark	104	100	100	108	110	106
Germany	255	272	285	303	315	321
Estonia	47	45	47	50	45	36
Ireland	46	48	52	53	54	51
Greece	163	158	151	159	164	152
Spain	344	373	400	414	427	416
France	330	334	341	350	347	352
Italy	477	485	509	520	537	526
Cyprus	7	7	7	8	7	8
Latvia	55	55	60	57	61	61
Lithuania	30	26	26	27	29	36
Luxembourg	-	-	-	-	-	-
Hungary	-	-	-	-	-	-
Malta	5	5	5	5	5	6
Netherlands	410	441	461	477	507	530
Austria	-	-	-	-	-	-
Poland	51	52	55	53	52	49
Portugal	57	59	65	67	68	65
Romania	36	41	48	47	49	50
Slovenia	11	12	13	15	16	17
Slovakia	-	-	-	-	-	-
Finland	104	107	100	111	115	115
Sweden	161	167	178	180	185	188
United Kingdom	556	573	585	584	582	562
Iceland	5	5	6	6	:	:
Liechtenstein	-	-	-	-	-	-
Norway	187	198	202	197	199	193
Switzerland	-	-	-	-	-	-
Croatia	20	25	26	26	30	29
The former Yugoslav Republic of Macedonia	-	-	-	-	-	-
Turkey	:	:	:	:	:	:

Source: Eurostat (online data code: mar_go_aa)

Figure 2.3.7: Goods freight transport by sea, EU-27 2008 top ten (million tonnes of goods handled in all ports)



Source: Eurostat (online data code: mar_go_aa)

The volume of freight transported by sea in the EU-27 grew by 14 % during the last six years. The growth was continuous between 2003 and 2007, but in 2008 there was a slight drop compared to 2007 (- 0.5 %).

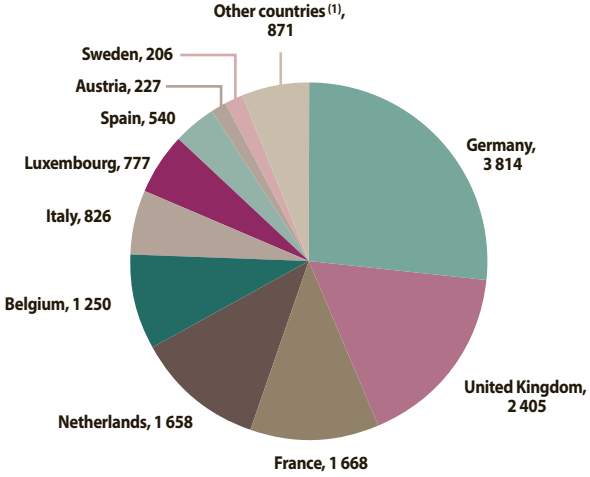
Ports in the United Kingdom handled 562 million tonnes of goods in 2008, a 14 % share of the EU total. Large volumes were also handled in the ports of the Netherlands (530 million tonnes) and Italy (526 million tonnes).

Table 2.3.8: Goods freight transport by air (thousand tonnes)

	2003	2004	2005	2006	2007	2008
EU-27	:	:	:	:	:	:
Belgium	606	660	694	1 125	1 368	1 250
Bulgaria	:	:	:	:	19	20
Czech Republic	53	57	56	59	60	56
Denmark	9	8	8	8	8	:
Germany	2 556	2 889	3 113	3 387	3 582	3 814
Estonia	5	5	10	10	23	42
Ireland	42	59	86	128	130	122
Greece	137	112	105	107	103	112
Spain	440	519	498	485	513	540
France	1 416	1 485	1 476	1 592	1 702	1 668
Italy	672	811	794	837	928	826
Cyprus	31	36	38	44	41	42
Latvia	14	8	15	12	7	7
Lithuania	:	:	10	13	13	9
Luxembourg	603	617	625	634	703	777
Hungary	51	60	56	65	68	63
Malta	16	16	17	18	18	18
Netherlands	1 389	1 512	1 551	1 621	1 550	1 658
Austria	137	180	208	229	228	227
Poland	:	30	30	39	45	58
Portugal	124	127	128	132	128	134
Romania	:	19	18	21	19	24
Slovenia	:	5	5	9	25	10
Slovakia	13	8	4	5	2	7
Finland	96	116	113	124	144	148
Sweden	126	153	:	:	:	206
United Kingdom	2 281	2 468	2 447	2 384	2 433	2 405
Iceland	42	56	60	62	54	55
Liechtenstein	:	:	:	:	:	:
Norway	83	84	87	86	76	71
Switzerland	322	319	334	335	369	363
Croatia	:	:	:	:	:	8
The former Yugoslav Republic of Macedonia	:	:	:	:	:	:
Turkey	:	:	:	:	:	:

Source: Eurostat (online data code: avia_gooc)

Figure 2.3.8: Goods freight transport by air, EU-27 2008 top ten (thousand tonnes)



(1) Other countries exclude Denmark, for which data are not available.

Source: Eurostat (online data code: avia_gooc)

During the period 2003-2008, goods freight transport by air recorded growths in the majority of Member States.

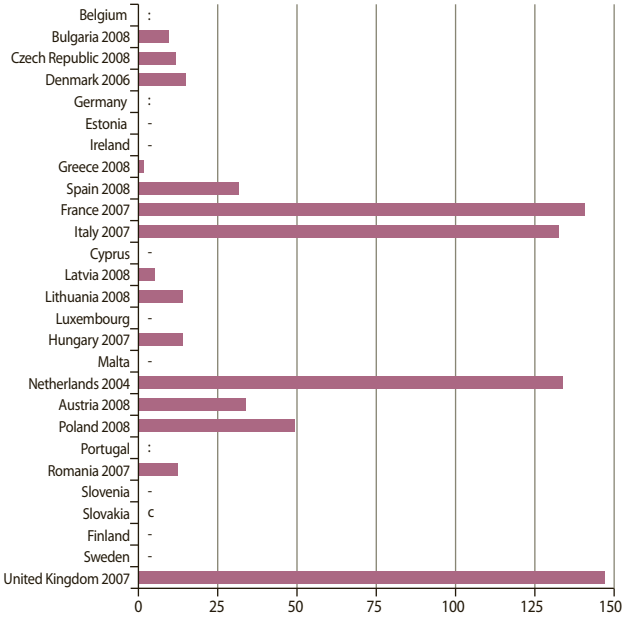
3 814 thousand tonnes of air freight were carried through German airports in 2008, while airports in the United Kingdom dealt with 2 405 thousand tonnes. Smaller Member States also showed remarkable air freight, most notably the Netherlands (1 658 thousand tonnes), Belgium (1 250) and Luxembourg (777).

Table 2.3.9: Goods freight transport by oil pipelines (million tonnes)

	2003	2004	2005	2006	2007	2008
EU-27	:	:	:	:	:	:
Belgium	:	:	:	:	:	:
Bulgaria	6	6	8	9	10	10
Czech Republic	9	9	11	11	10	12
Denmark	:	:	:	15	:	:
Germany	:	:	:	:	:	:
Estonia	-	-	-	-	-	-
Ireland	-	-	-	-	-	-
Greece	:	1	1	2	2	2
Spain	30	33	37	36	32	32
France	80	78	77	81	140	:
Italy	113	112	133	134	132	:
Cyprus	-	-	-	-	-	-
Latvia	21	19	20	15	6	5
Lithuania	31	27	26	20	16	14
Luxembourg	-	-	-	-	-	-
Hungary	12	13	14	14	14	:
Malta	-	-	-	-	-	-
Netherlands	126	133	:	:	:	:
Austria	36	35	35	35	32	34
Poland	52	53	54	56	53	49
Portugal	:	:	:	:	:	:
Romania	:	13	13	13	12	:
Slovenia	-	-	-	-	-	-
Slovakia	:	:	:	:	:	c
Finland	-	-	-	-	-	-
Sweden	-	-	-	-	-	-
United Kingdom	141	158	168	159	146	:
Iceland	-	-	-	-	-	-
Liechtenstein	-	-	-	-	-	-
Norway	:	:	:	34	:	:
Switzerland	6	6	:	:	:	:
Croatia	7	7	7	:	7	6
The former Yugoslav Republic of Macedonia	:	:	1	:	1	:
Turkey	:	:	:	:	:	:

Source: Eurostat (online data code: pipe_go_ton)

Figure 2.3.9: Goods freight transport by oil pipelines, last year available (million tonnes)



Source: Eurostat (online data code: pipe_go_ton)

The greatest volume of freight transport by oil pipelines was reported by the United Kingdom (146 million tonnes in 2007). Significant amounts of freight were also carried through oil pipelines in France (140 million tones in 2007), the Netherlands (133 in 2004) and Italy (132 in 2007).

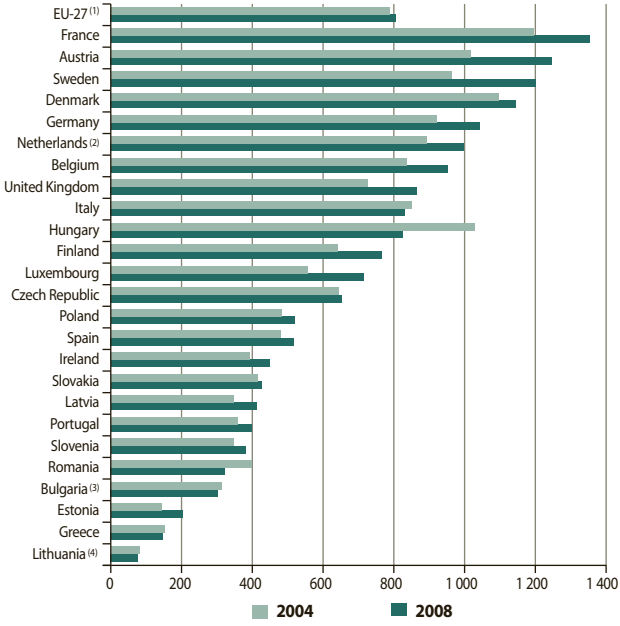
In the last six years, the volumes of freight transported by oil pipelines grew by 75 % in France. However, gradual declines were observed in Latvia (- 76 %) and Lithuania (- 55 %).

Table 2.4.1: Passenger transport by rail (1 000 million passenger-km)

	2004	2005	2006	2007	2008
EU-27	:	:	388	399	c
Belgium	9	9	9	9	10
Bulgaria	:	:	2	2	2
Czech Republic	7	7	7	7	7
Denmark	6	6	6	6	6
Germany	76	75	79	83	86
Estonia	0	0	0	0	0
Ireland	2	2	2	2	2
Greece	2	2	2	2	2
Spain	20	21	22	21	23
France	74	77	80	82	87
Italy	49	50	50	50	50
Cyprus	-	-	-	-	-
Latvia	1	1	1	1	1
Lithuania	:	0	0	0	0
Luxembourg	0	0	0	0	0
Hungary	10	10	10	9	8
Malta	-	-	-	-	-
Netherlands	15	:	16	16	c
Austria	8	9	9	9	10
Poland	18	18	18	20	20
Portugal	4	4	4	4	4
Romania	9	8	8	7	7
Slovenia	1	1	1	1	1
Slovakia	2	2	2	2	2
Finland	3	3	4	4	4
Sweden	9	9	10	10	11
United Kingdom	43	44	47	50	53
Iceland	:	:	:	:	:
Liechtenstein	0	0	0	0	0
Norway	:	3	3	3	3
Switzerland	:	:	:	:	18
Croatia	1	1	1	2	2
The former Yugoslav Republic of Macedonia	:	:	:	:	:
Turkey	5	5	5	6	5

Source: Eurostat (online data code: ttr00015), DG for Mobility and Transport, International Transport Forum, Union Internationale des Chemins de Fer, national statistics

Figure 2.4.1: Passenger transport by rail (passenger-km per inhabitant)



(1) 2007 data instead of 2008 and 2006 data instead of 2004.
(2) 2007 data instead of 2008.
(3) 2006 data instead of 2004.
(4) 2005 data instead of 2004.

Source: Eurostat (online data codes: ttr00015 and demo_pjan) , DG for Mobility and Transport, International Transport Forum, Union Internationale des Chemins de Fer, national statistics

Passenger transport is measured by the number of passenger-kilometres traveled, which represent the transport of one passenger over one kilometre. In 2007, the total passenger-km traveled by rail in the EU-27 amounted to 399 billion. In 2008, the largest numbers of passenger-km were reported by France (87 billion) and Germany (86 billion).

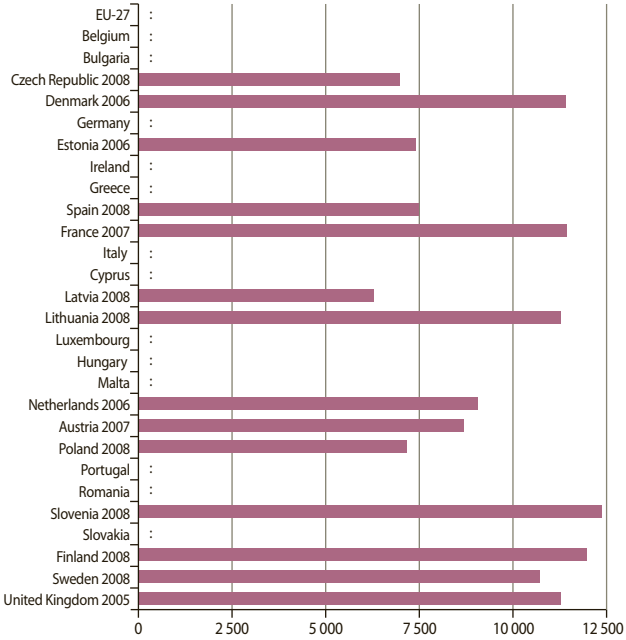
Approximately 805 passenger-km were traveled per inhabitant in the EU-27 in 2007, a 2 % increase from 2006. The highest average distances traveled by rail per inhabitant were recorded in France (1 352), Austria (1 246), Sweden (1 200), Denmark (1 144) and Germany (1 042). In the years 2004-2008, most Member States showed increased use of rail transport per inhabitant. The only exceptions were Hungary, Romania, Lithuania, Bulgaria, Italy and Greece.

Table 2.4.2: Passenger transport by passenger cars (1 000 million passenger-km)

	2003	2004	2005	2006	2007	2008
EU-27	:	:	:	:	:	:
Belgium	:	:	:	:	:	:
Bulgaria	:	:	:	:	:	:
Czech Republic	*67*	*68*	*69*	*70*	*72*	*72*
Denmark	:	:	:	62	:	:
Germany	:	:	:	:	:	:
Estonia	:	:	11	10	:	:
Ireland	:	:	:	:	:	:
Greece	:	:	:	:	:	:
Spain	346	330	338	341	343	339
France	739	737	727	724	728	:
Italy	:	:	:	:	:	:
Cyprus	:	:	:	:	:	:
Latvia	:	12	*12*	14	16	*14*
Lithuania	*19*	*26*	*35*	39	39	38
Luxembourg	:	:	:	:	:	:
Hungary	:	:	:	:	:	:
Malta	:	:	:	:	:	:
Netherlands	146	152	149	148	:	:
Austria	69	70	71	71	72	:
Poland	:	:	:	:	:	*274*
Portugal	:	:	:	:	:	:
Romania	:	:	:	:	:	:
Slovenia	21	:	23	23	24	25
Slovakia	:	:	:	:	:	:
Finland	60	61	62	62	64	63
Sweden	96	97	97	97	99	98
United Kingdom	677	673	678	:	:	:
Iceland	5	*5*	*5*	:	:	:
Liechtenstein	:	:	:	:	:	:
Norway	:	53	53	52	53	:
Switzerland	74	:	:	:	:	:
Croatia	:	:	:	:	:	:
The former Yugoslav Republic of Macedonia	:	:	:	:	:	:
Turkey	:	:	:	:	:	:

Source: Eurostat (online data code: road_pa_mov)

Figure 2.4.2: Passenger transport by passenger cars, last year available (passenger-km per inhabitant)



Source: Eurostat (online data codes: road_pa_mov and demo_pjan)

Car transport accounted for a sizable proportion of passenger transport among all Member States for which data were available.

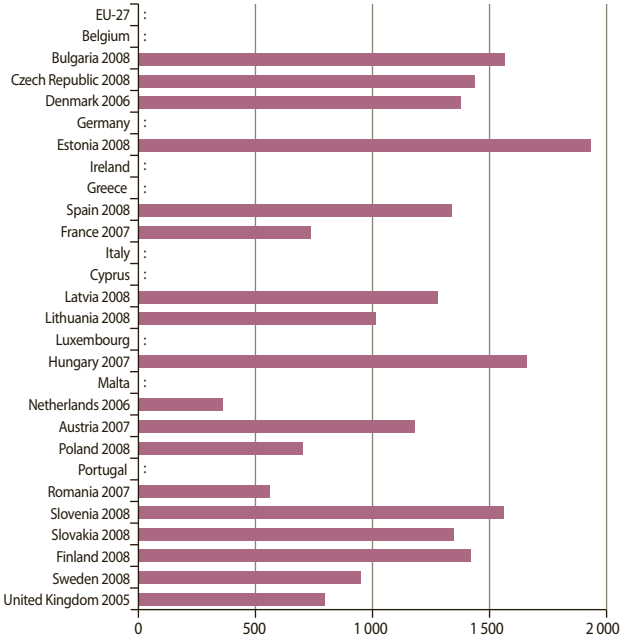
The highest volume of passenger-km was reported by France (728 billion in 2007), followed by the United Kingdom (678 billion in 2005). In terms of passenger-km per inhabitant, the situation was differentiated, as some of the smaller Member States presented notable car transport. In Slovenia 12 375 passenger-km by car were traveled per inhabitant in 2008. Strong car reliance per inhabitant was also recorded in Finland (11 961 in 2008), France (11 439 in 2007), Denmark (11 414 in 2006), the United Kingdom (11 289 in 2005), Lithuania (11 285 in 2008) and Sweden (10 718 in 2008).

Table 2.4.3: Passenger transport by buses and coaches (1 000 million passenger-km)

	2003	2004	2005	2006	2007	2008
EU-27	:	:	:	:	:	:
Belgium	:	:	:	:	:	:
Bulgaria	:	:	12	12	12	12
Czech Republic	15	14	16	16	15	15
Denmark	:	:	:	7	:	:
Germany	:	:	:	:	:	:
Estonia	3	3	3	3	2	3
Ireland	:	:	:	:	:	:
Greece	:	:	:	:	:	:
Spain	49	53	53	49	59	61
France	43	44	44	45	47	:
Italy	:	:	:	:	:	:
Cyprus	:	:	:	:	:	:
Latvia	3	3	3	3	3	3
Lithuania	3	4	4	3	4	3
Luxembourg	:	:	:	:	:	:
Hungary	19	17	18	18	17	:
Malta	:	:	:	:	:	:
Netherlands	7	7	7	6	:	:
Austria	9	10	9	9	10	:
Poland	30	30	29	28	27	27
Portugal	:	:	:	:	:	:
Romania (1)	:	9	12	12	12	:
Slovenia	3	3	3	3	3	3
Slovakia	9	10	9	:	8	7
Finland	8	8	8	8	8	8
Sweden	9	9	9	9	9	9
United Kingdom	47	48	48	:	:	:
Iceland	1	*1*	*1*	:	:	:
Liechtenstein	-	-	:	-	-	:
Norway	:	4	4	4	4	:
Switzerland	:	:	:	:	:	:
Croatia	4	3	3	4	4	3
The former Yugoslav Republic of Macedonia	:	:	1	:	1	:
Turkey	:	:	:	:	:	:

Source: Eurostat (online data code: road_pa_mov)

Figure 2.4.3: Passenger transport by buses and coaches, last year available (passenger-km per inhabitant)



Source: Eurostat (online data codes: road_pa_mov and demo_pjan)

Note: Data are not harmonised and therefore not fully comparable.

Data availability does not facilitate comparisons among countries for the same year. Taking this into account, the highest values for passenger transport by buses and coaches were observed in Spain (61 billion passenger-km in 2008), the United Kingdom (48 billion in 2005) and France (47 billion in 2007).

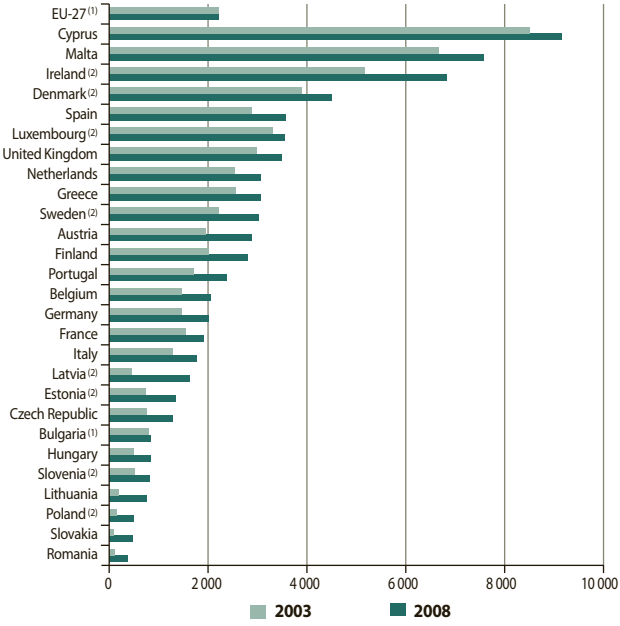
The largest volumes of passenger-km per inhabitant were recorded in Estonia (1 940 in 2008), Hungary (1 663 in 2007), Bulgaria (1 569 in 2008) and Slovenia (1 565 in 2008).

Table 2.4.4: Passenger transport by air (1 000 passengers)

	2003	2004	2005	2006	2007	2008
EU-27	:	:	:	:	1 093 839	1 101 889
Belgium	15 096	17 469	17 814	19 155	20 805	21 982
Bulgaria	:	:	:	:	6 071	6 418
Czech Republic	7 761	9 950	11 266	12 171	13 098	13 429
Denmark	:	21 006	22 173	22 966	24 042	24 629
Germany	121 136	135 850	145 977	154 146	163 844	166 095
Estonia	:	991	1 393	1 533	1 723	1 804
Ireland	:	20 851	24 254	27 558	29 840	30 018
Greece	28 165	29 509	30 799	32 762	34 786	34 404
Spain	120 239	129 771	143 680	150 599	163 523	161 401
France	96 292	103 039	107 955	113 183	120 034	122 724
Italy	73 917	81 213	87 906	95 914	106 294	105 217
Cyprus	6 077	6 421	6 782	6 714	7 004	7 218
Latvia	:	1 056	1 872	2 488	3 156	3 687
Lithuania	722	994	1 434	1 799	2 196	2 552
Luxembourg	:	1 509	1 538	1 597	1 634	1 713
Hungary	5 010	6 380	7 918	8 246	8 580	8 429
Malta	2 648	2 790	2 757	2 700	2 971	3 110
Netherlands	41 168	44 494	46 433	48 583	50 501	50 419
Austria	15 799	18 297	19 685	20 825	22 926	23 900
Poland	:	6 092	7 080	13 738	17 120	18 727
Portugal	17 739	18 423	20 272	22 027	24 324	25 180
Romania	2 718	3 193	3 494	4 900	6 909	8 031
Slovenia	:	1 046	1 217	1 327	1 504	1 649
Slovakia	626	1 081	1 519	2 124	2 232	2 596
Finland	10 516	11 785	12 348	13 443	14 465	14 851
Sweden	:	19 957	20 997	25 745	26 967	27 817
United Kingdom	177 902	192 280	204 013	211 229	217 288	213 888
Iceland	1 562	1 889	2 111	2 278	2 462	2 241
Liechtenstein	:	:	:	:	:	:
Norway	18 825	19 621	18 579	24 053	26 386	27 717
Switzerland	25 676	26 568	28 876	31 829	34 538	36 596
Croatia	:	:	:	:	:	4 504
The former Yugoslav Republic of Macedonia	:	:	:	:	:	:
Turkey	:	:	:	:	:	:

Source: Eurostat (online data code: ttr00012)

Figure 2.4.4: Passenger transport by air (passengers per thousand inhabitants)



(1) 2007 data instead of 2003.
(2) 2004 data instead of 2003.

Source: Eurostat (online data codes: ttr00012 and demo_pjan)

In 2008, about 1 102 million passengers were transported by air in the EU-27. 19 % traveled through the airports of the United Kingdom and 15 % through the airports of Germany and Spain. In the past six years, there has been an increase in the use of air transport in all Member States. The increase in Slovakia was fourfold and in Lithuania, Latvia and Poland at least threefold.

In 2008, the ratio of air passengers per thousand inhabitants in the EU-27 was 2 214. In Cyprus air passenger transport per inhabitant was 4 times above the EU-27 average, while in Malta and Ireland it was at least 3 times higher.

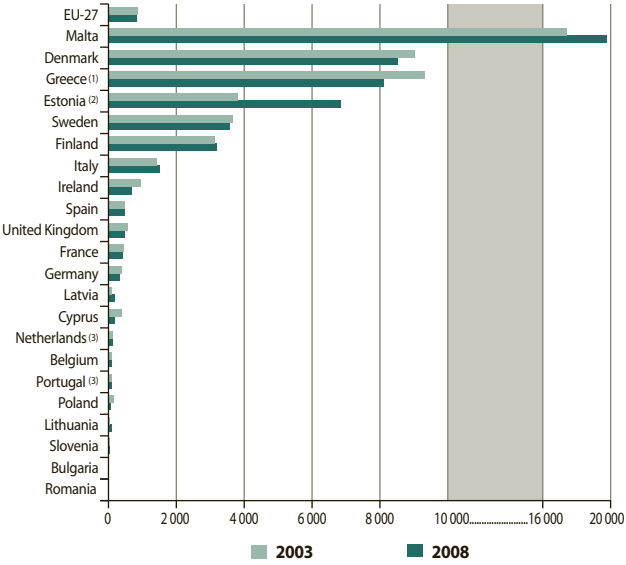
Table 2.4.5: Passenger transport by sea (number of seaborne passengers embarked and disembarked in all ports — 1 000 passengers)

	2003	2004	2005	2006	2007	2008
EU-27	419 387	413 458	395 293	406 561	414 232	412 877
Belgium (1)	739	787	922	891	909	799
Bulgaria	4	6	13	15	10	8
Czech Republic	-	-	-	-	-	-
Denmark	48 653	48 555	47 924	48 145	48 409	46 657
Germany	32 146	29 815	29 490	29 256	30 200	28 945
Estonia (2)	5 172	6 452	8 639	8 546	8 665	9 190
Ireland	3 747	3 550	3 275	3 207	3 225	3 108
Greece (3)	102 760	96 744	86 068	90 402	92 423	91 101
Spain	20 041	21 694	22 410	22 167	23 134	22 478
France	27 405	27 068	25 804	26 402	27 048	26 813
Italy	82 576	83 316	78 753	85 984	86 970	90 156
Cyprus	287	247	194	228	174	150
Latvia	118	130	144	217	362	437
Lithuania	135	146	166	190	212	212
Luxembourg	-	-	-	-	-	-
Hungary	-	-	-	-	-	-
Malta	6 942	7 250	7 103	7 328	7 802	8 132
Netherlands (4)	2 015	2 012	2 116	2 127	1 871	1 959
Austria	-	-	-	-	-	-
Poland	3 188	2 031	1 640	1 737	2 456	2 647
Portugal (4)	616	650	662	686	735	762
Romania	:	:	:	:	0	1
Slovenia	47	42	35	30	51	50
Slovakia	-	-	-	-	-	-
Finland	16 341	16 806	17 112	16 739	16 450	16 975
Sweden	32 748	33 318	32 617	32 334	32 662	32 745
United Kingdom	33 708	32 837	30 207	29 930	30 465	29 555
Iceland	407	404	422	433	:	:
Liechtenstein	-	-	-	-	-	-
Norway	4 656	5 787	6 663	6 280	6 447	6 208
Switzerland	-	-	-	-	-	-
Croatia	19 483	21 519	22 182	23 061	24 611	26 044
The former Yugoslav Republic of Macedonia	-	-	-	-	-	-
Turkey	:	:	:	:	:	:

(1) The increase registered between 2004 and 2005 is partly due to an improvement of the data reporting system.
(2) Up to 2004 data exclude national transport.
(3) In 2003 data exclude cruise passengers.
(4) Data exclude cruise passengers.

Source: Eurostat (online data code: mar_pa_aa)

Figure 2.4.5: Passenger transport by sea (passengers per thousand inhabitants)



(1) 2003 data exclude cruise passengers.
(2) 2003 data exclude national transport.
(3) Data exclude cruise passengers.

Source: Eurostat (online data codes: mar_pa_aa and demo_pjan)

413 million passengers passed through EU-27 ports in 2008, a 2 % decrease since 2003. 22 % of the EU total was handled by the ports of Greece, another 22 % by the ports of Italy and 11 % by the ports of Denmark. Between 2003 and 2008, the most striking increase — almost fourfold — was recorded in Latvia.

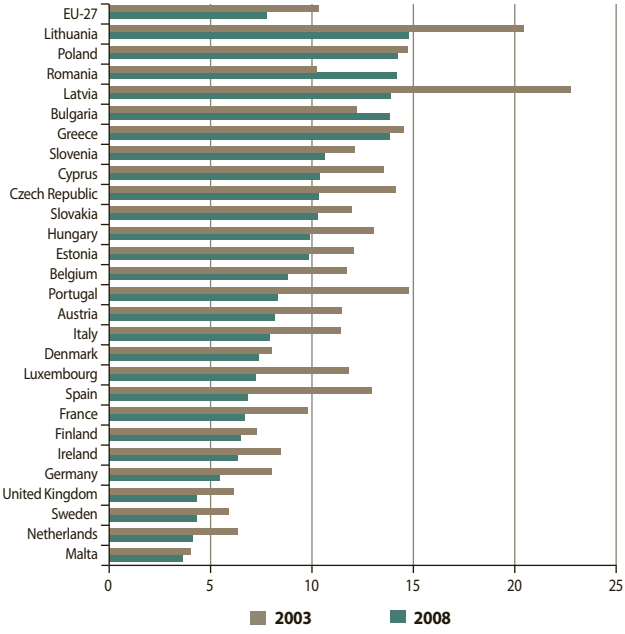
As far as passengers per thousand inhabitants are concerned, Malta presented a particularly high value (19 820) in 2008. Denmark and Greece ranked second and third with 8 521 and 8 124 passengers per thousand inhabitants respectively.

Table 2.5.1: Persons killed in road accidents (persons killed in road accidents/100 000 inhabitants)

	2003	2004	2005	2006	2007	2008
EU-27	10	10	9	9	9	8
Belgium	12	11	10	10	10	9
Bulgaria	12	12	12	14	13	14
Czech Republic	14	14	13	10	12	10
Denmark	8	7	6	6	7	7
Germany	8	7	6	6	6	5
Estonia	12	13	13	15	15	10
Ireland	9	9	10	9	8	6
Greece	15	15	15	15	14	14
Spain	13	11	10	9	9	7
France	10	9	8	7	7	7
Italy	11	11	10	10	9	8
Cyprus	14	16	14	11	11	10
Latvia	23	22	19	18	18	14
Lithuania	20	22	23	22	22	15
Luxembourg	12	11	10	8	9	7
Hungary	13	13	13	13	12	10
Malta	4	3	4	3	3	4
Netherlands	6	5	5	4	4	4
Austria	11	11	9	9	8	8
Poland	15	15	14	14	15	14
Portugal	15	12	12	9	9	8
Romania	10	11	12	12	13	14
Slovenia	12	14	13	13	15	11
Slovakia	12	11	10	11	12	10
Finland	7	7	7	6	7	6
Sweden	6	5	5	5	5	4
United Kingdom	6	6	6	5	5	4
Iceland	8	8	6	10	5	4
Liechtenstein	15	3	6	-	-	3
Norway	6	6	5	5	5	5
Switzerland	7	7	6	5	5	5
Croatia	16	14	13	14	14	15
The former Yugoslav Republic of Macedonia	6	8	7	7	8	8
Turkey	6	6	6	6	7	6

Source: Community database on Accidents on the Roads in Europe, DG for Mobility and Transport, also available at Eurostat (online data codes: tsdtr420 and demo_pjan)

Figure 2.5.1: Persons killed in road accidents (persons killed in road accidents/100 000 inhabitants)



Source: Community database on Accidents on the Roads in Europe, DG for Mobility and Transport, also available at Eurostat (online data codes: tsdtr420 and demo_pjan)

Note: Fatalities caused by road accidents include drivers and passengers of motorised vehicles and pedal cycles as well as pedestrians, killed within 30 days from the day of the accident. For Member States not using this definition, corrective factors were applied.

The trend in the number of persons killed in road accidents presented a continuous decrease for the EU-27 between 2003 and 2008. The Commission has a target to halve the number of road fatalities between 2001 and 2010 by raising awareness and making cars safer, among other measures. In 2008, the number of persons killed in road accidents for the EU-27 was 38 875, a 23 % decrease since 2003. Except for Romania and Bulgaria, the rest of the EU-27 presented decreases in the number of persons killed in road accidents.

The countries of East Europe recorded highest numbers of road fatalities in 2008. In Lithuania 15 persons were killed per 100 000 inhabitants. Poland, Romania, Latvia, Bulgaria and Greece followed with 14 persons per 100 000 inhabitants.

3 Environment indicators

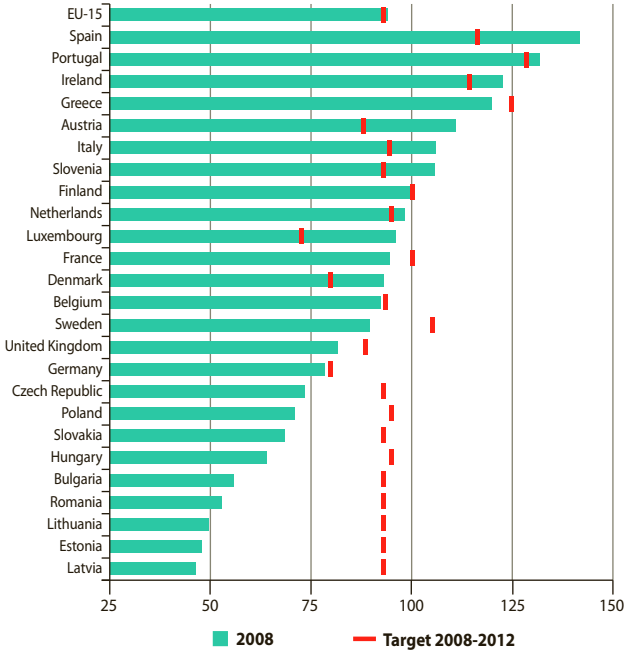
Table 3.1.1: Greenhouse gas emissions and agreed reduction targets (Kyoto base year emissions: Index=100)

	1990	1995	2000	2005	2006	2007	2008	Target 2008-12
EU-27 (1)	100.0	93.7	90.9	91.9	91.6	90.5	88.7	:
EU-15	99.5	97.0	96.5	97.2	96.3	94.9	93.1	92.0
Belgium	98.4	102.6	99.3	97.1	93.5	89.4	91.4	92.5
Bulgaria	88.5	67.0	52.2	53.3	54.3	57.2	55.4	92.0
Czech Republic	100.5	79.0	75.9	74.8	75.6	75.9	72.8	92.0
Denmark	99.4	110.1	98.5	92.1	103.4	96.4	92.1	79.0
Germany	99.9	89.4	83.1	79.3	79.8	77.7	77.7	79.0
Estonia	95.8	49.0	42.7	45.5	44.4	51.7	47.5	92.0
Ireland	98.6	105.2	121.8	123.8	122.8	121.7	121.3	113.0
Greece	96.5	100.8	116.7	124.2	120.3	123.3	118.6	125.0
Spain	98.4	108.7	131.4	150.2	147.5	151.4	140.0	115.0
France	99.9	98.8	98.8	98.7	95.8	94.0	93.5	100.0
Italy	100.0	102.4	106.4	110.8	108.7	106.9	104.8	93.5
Cyprus (1)	100.0	126.4	172.8	182.0	184.2	187.0	193.9	:
Latvia	103.4	48.6	39.4	43.8	45.4	47.4	45.9	92.0
Lithuania	100.6	44.3	39.2	46.5	48.0	51.5	49.2	92.0
Luxembourg	99.6	78.7	75.2	100.8	100.2	97.1	94.9	72.0
Hungary	84.4	68.2	66.8	69.2	67.7	65.6	63.4	94.0
Malta (1)	100.0	118.8	126.9	141.7	143.4	146.9	144.2	:
Netherlands	99.5	105.4	100.7	99.7	98.0	97.1	97.1	94.0
Austria	98.9	101.0	101.6	117.5	113.5	110.0	109.6	87.0
Poland	80.5	78.1	69.3	69.2	71.5	71.0	70.2	94.0
Portugal	98.6	116.3	135.2	144.0	136.5	132.8	130.3	127.0
Romania	87.0	64.9	49.0	53.7	55.4	54.9	52.4	92.0
Slovenia	90.8	90.7	92.5	99.3	100.4	101.1	104.6	92.0
Slovakia	102.6	74.0	68.3	69.5	69.2	66.3	67.8	92.0
Finland	99.1	99.7	97.3	96.4	112.2	110.0	98.8	100.0
Sweden	100.4	102.9	95.4	93.8	93.2	91.7	88.7	104.0
United Kingdom	99.4	91.7	86.6	84.3	83.7	82.4	80.9	87.5
Iceland	101.4	95.1	111.8	110.6	126.6	133.8	144.9	110.0
Liechtenstein	100.0	102.6	111.0	118.2	119.1	106.1	114.8	92.0
Norway	100.3	100.2	107.4	108.0	107.5	111.1	108.2	101.0
Switzerland	100.3	97.1	98.3	102.3	101.4	97.8	100.8	92.0
Croatia (1)	100.0	73.0	82.4	96.7	98.1	102.8	99.1	95.0
The former Yugoslav Republic of Macedonia	:	:	:	:	:	:	:	:
Turkey (1)	100.0	127.0	158.8	176.4	186.9	203.2	196.0	:

(1) There is no legal EU target, artificial base year 1990.

Source: European Environment Agency, also available at Eurostat (online data code: env_air_ind)

Figure 3.1.1: Index of greenhouse gas emissions in 2008 from the base year and agreed reduction targets according to Kyoto Protocol for 2008-2012



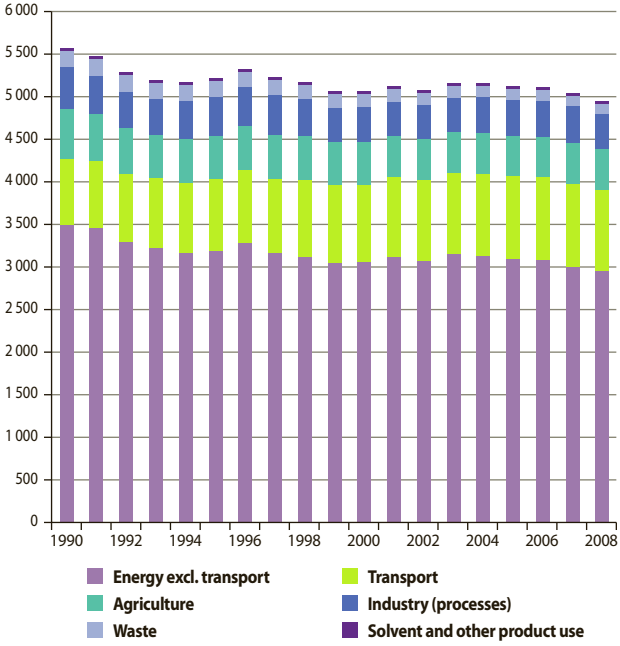
Source: European Environment Agency, also available at Eurostat (online data code: env_air_ind)

The Kyoto Protocol is an international agreement that includes legally-binding greenhouse gas (GHG) emissions targets for the industrialised countries and aims to an overall reduction of at least 5 % from the 1990 levels by the period 2008-2012. The Protocol defined individual targets per country. The EU agreed to an 8 % reduction of its GHG emissions by 2008-2012 compared to the Kyoto base year and redistributed this target among its then 15 Member States under the burden-sharing agreement (Council Decision 2002/358/EC).

Between the Kyoto base year and 2008, GHG emissions in the EU-15 fell by roughly 7 %. Over this period, Spain recorded the highest increase in its GHG emissions (40 %), followed by Portugal (30 %), Ireland (21 %) and Greece (19 %). In contrast, significant decreases were observed in Latvia (- 54 %), Estonia (- 53 %), Lithuania (- 51 %), Romania (- 48 %) and Bulgaria (- 45 %).

In 2008, among the largest emitters, Germany (19 % share of total EU-27 emissions), the United Kingdom (13 %) and France (11 %) decreased their emissions by 22 %, 19 % and 7 % respectively compared to the base year; while Italy (11 % of the total) increased them by 5 %.

Figure 3.1.2: EU-27 greenhouse gas emissions, breakdown by sector (million tonnes of CO_2 equivalent)



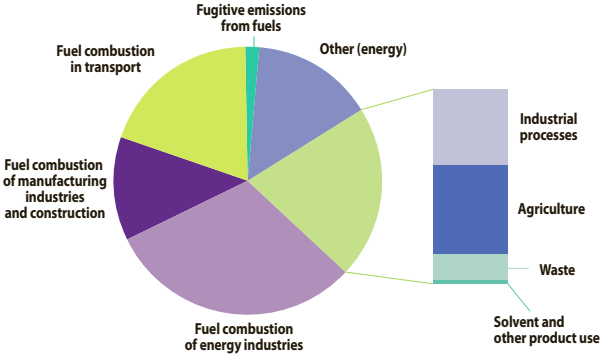
Source: European Environment Agency, also available at Eurostat (online data code: env_air_gge)

Table 3.1.2: EU-27 greenhouse gas emissions, breakdown by sector (Global warming potential in million tonnes of CO_2 equivalent)

	1990	1995	2000	2005	2006	2007	2008
Total	5 567	5 215	5 062	5 117	5 100	5 039	4 940
Energy excl. transport	3 489	3 188	3 047	3 095	3 076	2 999	2 945
Transport	778	836	915	968	974	979	962
Agriculture	592	513	501	475	472	472	472
Industry (processes)	484	463	413	420	421	434	410
Waste	207	201	173	146	145	142	139
Solvent and other product use	17	14	14	13	13	13	12

Source: European Environment Agency, also available at Eurostat (online data code: env_air_gge)

Figure 3.1.2a: EU-27 greenhouse gas emissions, breakdown by sector, 2008



Source: European Environment Agency, also available at Eurostat (online data code: env_air_gge)

Table 3.1.2a: EU-27 greenhouse gas emissions, breakdown by sector, 2008

Sector	% of total
Energy related	
Fuel combustion of energy industries	30.9
Fuel combustion of manufacturing industries and construction	12.3
Fuel combustion in transport	19.5
Fugitive emissions from fuels	1.7
Other (energy)	14.7
Non-energy related	
Industrial processes	8.3
Agriculture	9.6
Waste	2.8
Solvent and other product use	0.2

Source: European Environment Agency, also available at Eurostat (online data code: env_air_gge)

Total EU-27 GHG emissions recorded an 11 % decrease between 1990 and 2008. In 2008, 79 % of the total GHG emissions were energy-related. Fuel combustion in the energy sector and manufacturing industries accounted for 60 % of this share, while the transport sector made up the remaining 19 %. In 2008, emissions by non-energy related sectors comprised agriculture (10 %), followed by industrial processes (8 %) and waste (3 %).

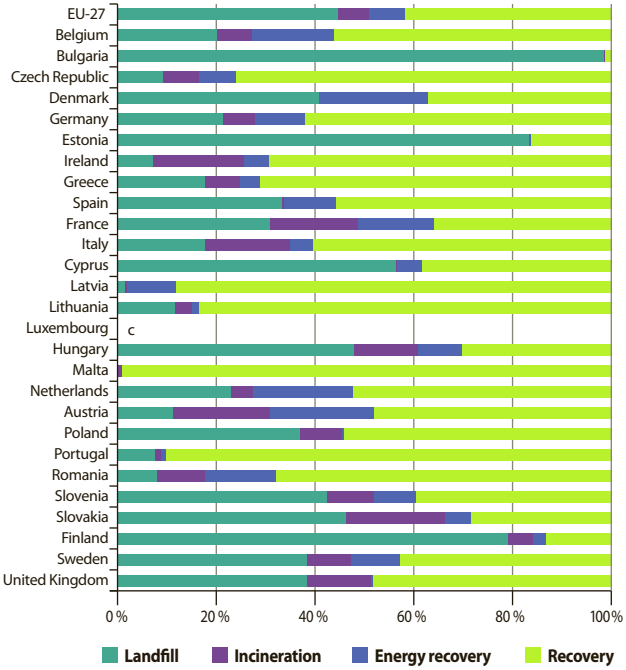
In the last 18 years, transport was the only sector that presented an increase (24 %) in its emissions. Emissions from waste fell by 33 %, from agriculture by 20 %, from the energy and manufacturing industries by 16 % and from industrial processes by 15 %.

Table 3.2.1: Total waste generated (hazardous, non-hazardous) (thousand tonnes)

	Hazardous waste		Non-hazardous waste	
	2006	2008	2006	2008
EU-27	88 690	100 690	2 872 270	2 550 860
Belgium	*4 039*	5 524	*55 313*	43 950
Bulgaria	785	13 043	241 704	273 050
Czech Republic	1 307	1 510	23 439	23 909
Denmark	493	420	14 210	14 736
Germany	21 705	22 323	342 081	350 473
Estonia	6 619	7 538	12 314	12 046
Ireland	*709*	*709*	*28 890*	*28 890*
Greece	275	*275*	51 050	*51 050*
Spain	4 028	3 649	156 918	145 606
France	9 622	10 893	436 244	334 109
Italy	7 465	*7 465*	147 560	*147 560*
Cyprus	17	24	1 232	1 819
Latvia	65	67	1 793	1 428
Lithuania	127	116	7 538	6 719
Luxembourg	234	199	9 353	9 393
Hungary	*1 300*	*671*	*20 987*	*19 715*
Malta	51	*51*	2 810	*1 444*
Netherlands	4 949	4 724	88 859	94 867
Austria	962	1 330	53 325	54 979
Poland	2 381	4 075	264 360	206 798
Portugal	*6 063*	3 368	*28 890*	33 112
Romania	1 032	524	343 393	188 799
Slovenia	116	153	5 919	4 886
Slovakia	533	527	13 969	10 945
Finland	2 711	2 163	69 495	79 630
Sweden	2 654	2 063	112 929	84 105
United Kingdom	8 448	7 285	337 695	326 842
Iceland	:	:	:	:
Liechtenstein	:	0	:	0
Norway	757	1 336	8 295	9 091
Switzerland	:	:	:	:
Croatia	:	228	:	3 945
The former Yugoslav Republic of Macedonia	:	6	:	1 356
Turkey	:	1 024	46 081	63 746

Source: Eurostat (online data code: env_wasgen)

Figure 3.2.1: Hazardous waste treatment by type, 2008
(% of total hazardous waste)



Source: Eurostat (online data code: env_wastrt)

In 2008, 2 652 million tonnes of waste were generated in the EU-27. 96 % of this amount was non-hazardous waste, while the remaining 4 % was hazardous — harmful for health or the environment. Since 2006, the amount of hazardous waste has grown by 14 % and the amount of non-hazardous waste has dropped by 11 %.

At country level, the largest amounts of non-hazardous waste were recorded in Germany (350 million tonnes), France (334) and the United Kingdom (327). Regarding hazardous waste, the largest amounts were observed in Germany (22 million tonnes) and Bulgaria (13).

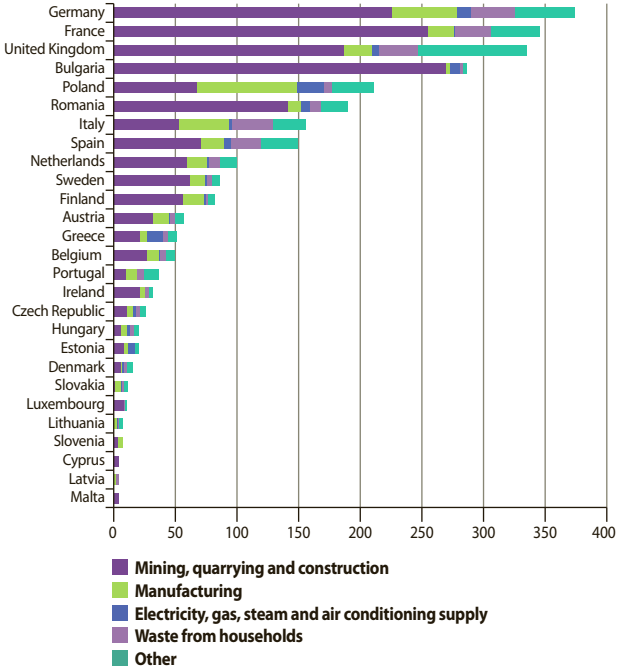
The share of hazardous waste did not exceed 6 % of the total in most countries. The only exceptions were Estonia (38 %), Belgium (11 %) and Portugal (9 %). The main types of hazardous waste treatment varied across Member States. The most common were recovery and landfilling.

Table 3.2.2: Waste generation by economic activity, 2008 (thousand tonnes)

	Total waste	Mining, quarrying and construction	Manufacturing	Electricity, gas, steam and air conditioning supply	Waste from households	Other
EU-27	2 651 550	1 603 090	363 120	95 090	221 480	368 410
BE	49 474	26 865	10 090	1 087	4 459	*6 973*
BG	286 093	269 387	3 447	7 655	2 907	2 697
CZ	25 420	10 818	5 293	1 920	3 176	4 214
DK	15 155	5 677	1 454	1 358	2 514	4 152
DE	372 796	225 495	52 322	11 708	35 405	47 866
EE	19 584	8 297	3 772	5 424	440	1 652
IE	*29 599*	*21 365*	4 067	*347*	*1 979*	*1 482*
EL	*51 325*	*21 717*	5 285	*12 986*	*4 133*	*7 205*
ES	149 254	70 643	19 369	4 872	24 431	29 939
FR	345 002	254 175	21 640	1 004	29 311	38 872
IT	*155 025*	*53 321*	39 997	*3 005*	*32 523*	*26 179*
CY	1 843	936	138	2	433	334
LV	1 495	15	501	20	606	353
LT	6 835	415	2 758	51	1 363	2 248
LU	9 592	8 292	673	1	276	350
HU	*20 385*	*5 818*	*4 789*	3 050	*3 466*	*3 262*
MT	*1 495*	1 099	13	0	168	*215*
NL	99 591	59 746	15 824	1 318	9 482	13 222
AT	56 309	32 068	13 077	569	3 819	6 776
PL	210 873	67 848	80 626	21 971	6 879	33 549
PT	36 480	9 976	9 001	255	5 157	12 091
RO	189 323	141 007	11 064	7 058	8 464	21 730
SI	5 038	1 431	1 735	354	714	805
SK	11 472	1 453	4 469	1 151	1 772	2 627
FI	81 793	56 252	16 948	1 531	1 674	5 387
SE	86 169	62 012	11 927	1 508	4 393	6 328
UK	334 127	186 962	22 837	4 885	31 539	87 904
IS	:	:	:	:	:	:
LI	0	0	0	0	0	0
NO	10 427	1 612	3 689	46	2 365	2 715
CH	:	:	:	:	:	:
HR	4 172	163	1 727	136	0	2 145
MK	1 362	:	:	:	:	:
TR	64 770	:	10 741	25 525	28 454	:

Source: Eurostat (online data code: env_wastrt)

Figure 3.2.2: Waste generation by economic activity, 2008 (million tonnes)



Source: Eurostat (online data code: env_wastrt)

In 2008, the mining, quarrying and construction industries accounted for 60 % of the 2 652 million tonnes of waste generated in the EU-27. The manufacturing industry generated 14 % of the total, households 8 % and electricity, gas, steam and air conditioning supply 4 %. Other economic activities made up the remaining 14 %.

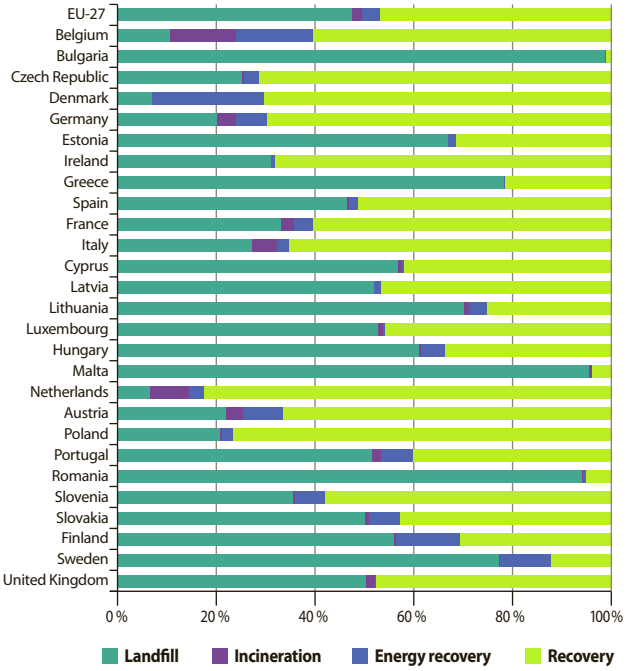
In 22 Member States the mining, quarrying and construction industries were responsible for the largest share of waste. However, in Lithuania, Slovakia, Poland and Slovenia the manufacturing industry accounted for the majority of generated waste and in Latvia waste from households made up 41 % of the total.

Table 3.2.3: Waste management, 2008 (thousand tonnes)

	Recovery	Energy recovery	Incineration	Deposit onto or into land
EU-27	1 090 570	81 870	48 370	1 111 230
Belgium	17 345	4 453	3 883	3 050
Bulgaria	2 700	94	61	276 745
Czech Republic	13 442	556	69	4 792
Denmark	10 283	3 320	0	1 034
Germany	255 337	23 316	13 895	74 485
Estonia	5 456	257	0	11 675
Ireland	*15 462*	*142*	*35*	*7 074*
Greece	*10 527*	*16*	*16*	*38 432*
Spain	70 355	2 552	490	64 036
France	194 549	12 056	8 612	106 864
Italy	*75 633*	*2 633*	*6 020*	*31 640*
Cyprus	745	8	14	1 014
Latvia	646	18	0	721
Lithuania	1 361	194	52	3 809
Luxembourg	5 311	38	135	6 147
Hungary	5 307	767	65	9 684
Malta	43	0	6	1 070
Netherlands	67 619	2 456	6 369	5 512
Austria	32 150	3 904	1 594	10 706
Poland	107 179	3 122	630	29 147
Portugal	8 812	1 432	400	11 390
Romania	7 710	1 247	47	148 940
Slovenia	3 040	314	16	1 873
Slovakia	3 875	586	66	4 562
Finland	22 855	9 809	170	42 189
Sweden	9 818	8 411	87	62 920
United Kingdom	143 008	171	5 635	151 715
Iceland	:	:	:	:
Liechtenstein	:	:	:	:
Norway	4 542	2 091	514	2 390
Switzerland	:	:	:	:
Croatia	384	321	25	2 579
The former Yugoslav Republic of Macedonia	323	0	0	1 180
Turkey	14 632	143	81	45 190

Source: Eurostat (online data code: env_wastrt)

Figure 3.2.3: Waste management, 2008 (% of total waste)



Source: Eurostat (online data code: env_wastrt)

In 2008, the main waste management options in the EU-27 were deposit onto or into land and recovery. About 48 % of waste was deposited and 47 % was recovered. Energy recovery and incineration were less common with 4 % and 2 % respectively. Compared to 2004, deposit was the only treatment type that recorded a decrease (- 9 %). The volume of deposited waste in 2004 made up 53 % of the total.

Important differences can be observed among Member States. Bulgaria, Malta and Romania deposited 99 %, 96 % and 94 % of their waste in 2008. In contrast, the Netherlands recovered 83 %. Compared to the EU average, energy recovery was considerably higher in Denmark (23 %), Belgium (15 %), Finland (13 %) and Sweden (10 %). Belgium also incinerated an outstandingly higher proportion than the EU average (14 %).

Table 3.2.4: Municipal waste generated[1] (kg per capita)

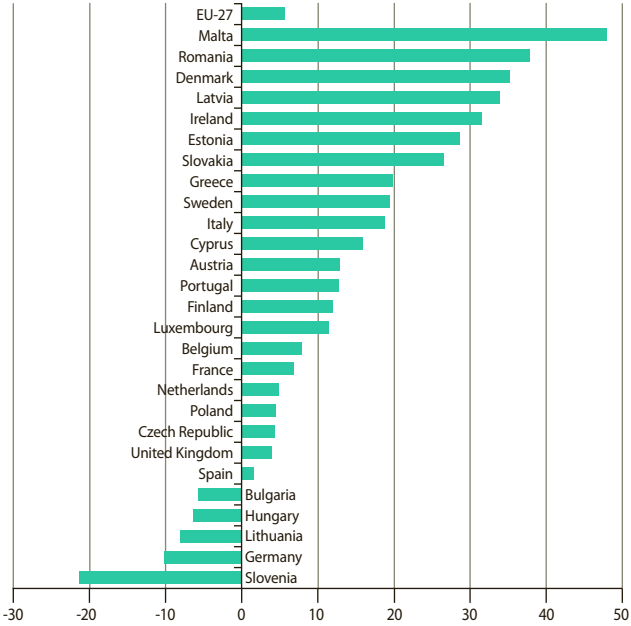
	1998	2000	2005	2006	2007	2008	Change 1998-2008 (%)
EU-27	496	523	517	523	525	524	5.6
Belgium	*457*	*476*	481	484	*497*	*493*	7.9
Bulgaria	495	516	475	446	468	467	- 5.7
Czech Republic	293	334	289	296	294	306	4.4
Denmark	593	665	737	741	*801*	*802*	35.2
Germany	*647*	*643*	564	563	582	*581*	- 10.2
Estonia	400	440	*436*	*466*	*507*	*515*	28.8
Ireland	557	603	740	804	788	733	31.6
Greece	378	408	438	443	448	453	19.8
Spain	566	662	597	599	590	*575*	1.6
France	508	516	532	538	544	*543*	6.9
Italy	472	509	542	553	550	*561*	18.9
Cyprus	664	680	739	745	*754*	*770*	16.0
Latvia	*247*	*270*	310	411	377	331	34.0
Lithuania	443	363	376	390	400	407	- 8.1
Luxembourg	629	658	678	688	*694*	*701*	11.4
Hungary	484	445	460	468	456	453	- 6.4
Malta	*470*	547	624	624	652	696	48.1
Netherlands	593	616	624	622	630	*622*	4.9
Austria	532	581	620	654	598	*601*	13.0
Poland	306	316	*319*	*321*	*322*	*320*	4.6
Portugal	423	472	446	454	*472*	*477*	12.8
Romania	*277*	355	*377*	*388*	*378*	*382*	37.9
Slovenia	584	*513*	423	432	441	459	- 21.4
Slovakia	259	254	289	301	309	328	26.6
Finland	466	503	479	495	507	522	12.0
Sweden	431	428	482	497	518	515	19.5
United Kingdom	543	578	585	587	572	*565*	4.1
Iceland	452	466	521	570	*566*	*555*	22.8
Liechtenstein	:	:	:	:	:	:	:
Norway	647	615	427	461	494	490	- 24.3
Switzerland	613	657	663	711	724	741	20.9
Croatia	:	:	:	:	:	:	:
The former Yugoslav Republic of Macedonia	:	:	:	:	:	:	:
Turkey	510	*458*	*438*	415	*430*	*428*	- 16.1

[1] Break in series for: Estonia 2001, Lithuania 1999, Hungary 2000, Portugal, Slovenia and Slovakia 2002, Turkey 2004, Norway 2001, Switzerland 2004.

Source: Eurostat (online data code: tsdpc210)

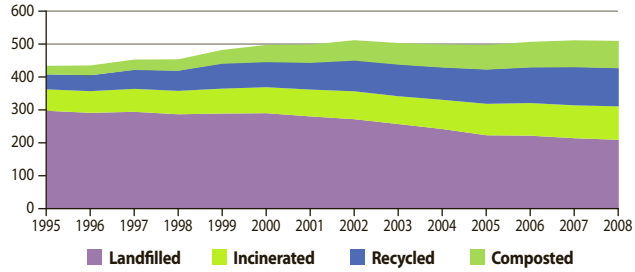
Note: This indicator presents the amount of municipal waste generated. It consists of waste collected by or on behalf of municipal authorities and disposed of through the waste management system. The bulk of this waste stream is from households, though similar wastes from sources such as commerce, offices and public institutions are included. For areas not covered by a municipal waste scheme an estimation has been made of the amount of waste generated. The quantity of waste generated is expressed in kg per person per year (per capita).

Figure 3.2.4a: Change in municipal waste generation per capita, 1998-2008 (%)



Source: Eurostat (online data code: tsdpc210)

Figure 3.2.4b: Municipal waste generation and treatment, EU-27, 1995-2008 (kg per capita)



Source: Eurostat (online data codes: tsien130_esms and demo_pjan)

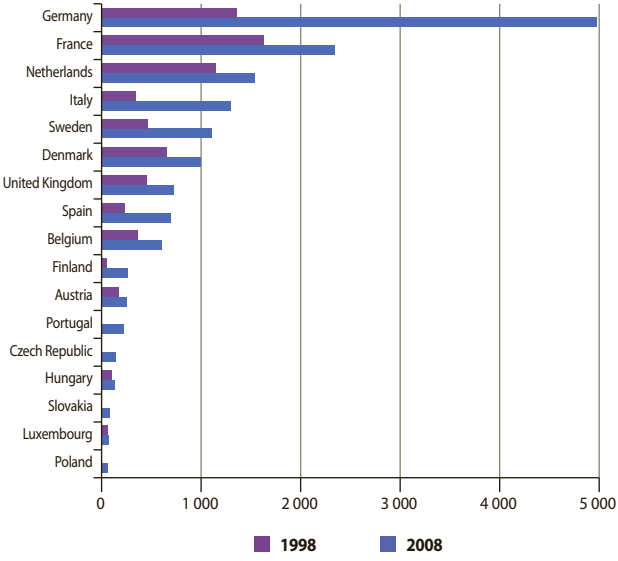
EU-27 municipal waste generation per capita reached 524 kg in 2008. Between 1995 and 2008, notable changes were observed in waste treatment. Among the EU-27 countries, in 2008, municipal waste generation varied from 306 kg per capita in the Czech Republic to 802 kg per capita in Denmark. In the last decade, most countries recorded increases in their volumes of municipal waste generation per capita. The highest increase was observed in Malta (48 %).

Table 3.2.5: Energy production from municipal waste incineration (thousand tonnes oil equivalent)

	1998	2000	2005	2006	2007	2008
EU-27	6 465	7 441	10 318	10 969	14 438	14 848
Belgium	314	323	490	589	368	562
Bulgaria	-	-	-	-	-	:
Czech Republic	0	88	97	95	96	100
Denmark	635	726	903	918	935	957
Germany	1 339	1 362	1 662	1 838	4 933	4 923
Estonia	-	-	-	-	-	:
Ireland	-	-	-	-	-	:
Greece	-	-	-	-	-	:
Spain	187	229	379	504	618	656
France	1 560	1 857	2 278	2 199	2 272	2 328
Italy	273	334	1 111	1 281	1 400	1 278
Cyprus	0	0	0	0	0	0
Latvia	-	-	-	-	-	:
Lithuania	-	-	-	-	-	:
Luxembourg	23	27	36	38	39	38
Hungary	60	58	66	94	108	92
Malta	-	-	-	-	-	-
Netherlands	1 129	1 189	1 355	1 324	1 386	1 489
Austria	114	108	194	264	249	207
Poland	0	2	18	39	43	19
Portugal	0	174	207	201	188	183
Romania	-	-	-	-	-	:
Slovenia	-	-	-	-	-	:
Slovakia	0	0	35	42	38	46
Finland	15	45	157	134	172	210
Sweden	416	498	736	765	923	1 059
United Kingdom	402	420	595	643	669	702
Iceland	1	2	2	2	:	:
Liechtenstein	:	:	:	:	:	:
Norway	127	128	191	195	203	218
Switzerland	370	435	839	897	1 000	942
Croatia	-	-	-	-	-	:
The former Yugoslav Republic of Macedonia	:	:	:	:	:	:
Turkey	-	-	-	-	-	:

Source: Eurostat (online data code: nrg_1071a)

Figure 3.2.5: Energy production from municipal waste incineration (thousand tonnes oil equivalent)



Source: Eurostat (online data code: nrg_1071a)

Energy production from municipal waste incineration in the EU-27 was 14 848 ktoe in 2008. Over the last ten years, incineration of municipal solid waste for energy production more than doubled. In 2008, Germany accounted for 33 % of total EU-27 production, followed by France (16 %), Netherlands (10 %) and Italy (9 %).

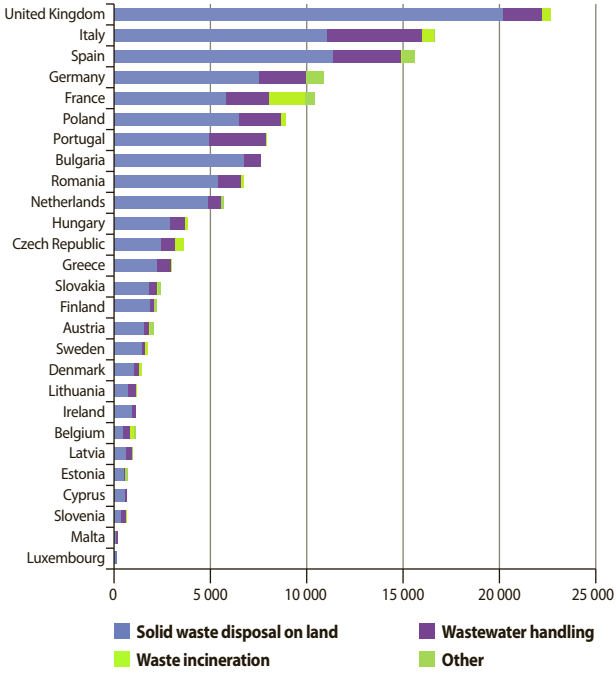
Between 1998 and 2008, all Member States recorded significant increases in their energy production from municipal waste incineration. Finland showed the highest increase (fourteen-fold). However, its share of the EU total did not exceed 1.4 %. Among the main producers, Italy presented an almost fivefold and Germany an almost fourfold increase.

Table 3.2.6: Greenhouse gas emissions from waste treatment, 2008 (thousand tonnes of CO_2 equivalent)

	Total	Solid waste disposal on land	Wastewater handling	Waste incineration	Other
EU-27	138 949	104 142	27 992	4 054	2 761
Belgium	1 015	482	397	91	46
Bulgaria	7 592	6 720	872	-	-
Czech Republic	3 605	2 430	718	456	-
Denmark	1 241	1 057	152	32	-
Germany	10 859	7 518	2 410	-	931
Estonia	675	514	39	-	121
Ireland	1 095	936	159	-	-
Greece	2 969	2 257	709	4	-
Spain	15 565	11 336	3 558	10	662
France	10 381	5 802	2 262	1 840	477
Italy	16 614	11 076	4 879	655	4
Cyprus	637	592	45	-	-
Latvia	917	607	308	1	2
Lithuania	1 140	758	382	1	-
Luxembourg	69	39	14	-	16
Hungary	3 725	2 933	726	67	-
Malta	176	149	27	0	-
Netherlands	5 655	4 896	657	-	102
Austria	2 024	1 557	291	12	163
Poland	8 911	6 502	2 166	244	-
Portugal	7 879	4 916	2 961	2	-
Romania	6 615	5 385	1 190	40	-
Slovenia	620	400	217	4	-
Slovakia	2 380	1 812	434	16	117
Finland	2 202	1 853	230	-	119
Sweden	1 740	1 465	147	128	-
United Kingdom	22 647	20 150	2 044	453	-
Iceland	221	196	23	1	2
Liechtenstein	2	0	1	0	1
Norway	1 215	1 053	162	0	-
Switzerland	650	258	233	43	116
Croatia	930	655	274	0	-
The former Yugoslav Republic of Macedonia	:	:	:	:	:
Turkey	33 922	30 170	3 753	-	-

Source: European Environment Agency

Figure 3.2.6: Greenhouse gas emissions from waste treatment, 2008 (thousand tonnes of CO_2 equivalent)



Source: European Environment Agency

GHG emissions from waste treatment in the EU-27 amounted to 138 949 thousand tonnes of CO_2 equivalent in 2008. Solid waste disposal on land accounted for 75 % of this amount, while wastewater handling contributed 20 % and waste incineration 3 %. Between 1990 and 2008, all waste treatment methods recorded decreased GHG emissions due to better management of waste (less waste going to landfill) and higher rates of recycling and incineration with energy recovery. Emissions from waste disposal on land fell by 39 %, emissions from wastewater handling by 11 % and emissions from waste incineration by 26 %.

The United Kingdom was the largest contributor (16 %) to the EU-27's emissions from waste in 2008, in spite of a 57 % reduction in its emissions compared to 1990. Italy (12 %), Spain (11 %) and Germany (8 %) also made significant contributions. Since 1990, Germany recorded the largest reduction in its emissions from waste (- 73 %).

Table 3.2.7: Recycling and recovery rate for packaging waste, 2007 (%)

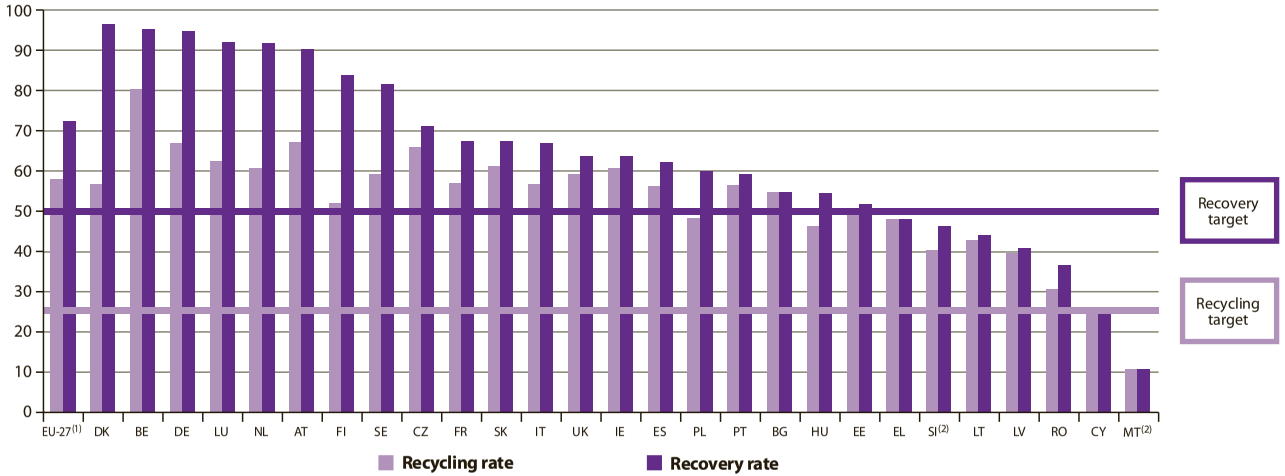
	Recycling rate	Recovery rate
EU-27[1]	58	72
Belgium	80	95
Bulgaria	55	55
Czech Republic	66	71
Denmark	57	97
Germany	67	95
Estonia	50	52
Ireland	61	64
Greece	48	48
Spain	56	62
France	57	67
Italy	57	67
Cyprus	26	26
Latvia	40	41
Lithuania	43	44
Luxembourg	63	92
Hungary	46	55
Malta [2]	11	11
Netherlands	61	92
Austria	67	90
Poland	48	60
Portugal	57	59
Romania	31	37
Slovenia[2]	40	46
Slovakia	61	67
Finland	52	84
Sweden	59	82
United Kingdom	59	64
Iceland	:	:
Liechtenstein	88	100
Norway	68	90
Switzerland	:	:
Croatia	:	:
The former Yugoslav Republic of Macedonia	:	:
Turkey	:	:

[1] The EU-27 recycling and recovery rates are estimates by Eurostat. They include 2006 data for MT and SI.
[2] Data are for 2006.

Source: European Commission, DG Environment - Reports on the implementation of Community waste legislation, also available at Eurostat (online data code: env_waspac)

According to the Directive on packaging and packaging waste, in 2001, Member States had a minimum recovery target of 50 % and a recycling target of 25 %. For 2008 these targets were set to 60 % and 55 % respectively.

Figure 3.2.7: Recycling and recovery rate for packaging waste, 2007 (%)



(1) Data for EU-27 in 2007 is estimated by Eurostat.
(2) Data are for 2006.

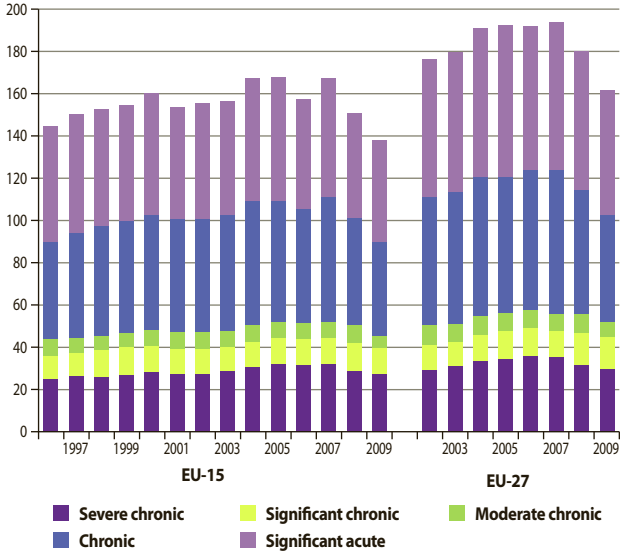
Source: European Commission, DG Environment - Reports on the implementation of Community waste legislation, also available at Eurostat (online data code: env_waspac)

Table 3.2.8: Production of environmentally harmful chemicals (million tonnes)

		EU-15														EU-27							
	Impact on the environment	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2002	2003	2004	2005	2006	2007	2008	2009
Harmful	Severe chronic	26	27	26	28	29	28	28	29	31	33	32	33	29	28	30	31	34	35	36	36	32	30
	Significant chronic	11	11	13	13	12	11	12	11	12	12	12	12	13	12	12	12	12	13	13	13	15	15
	Moderate chronic	8	7	7	7	8	8	8	8	8	8	8	7	8	6	9	9	9	9	9	8	9	7
	Chronic	46	50	52	53	54	53	53	55	59	57	53	59	51	44	60	62	66	64	66	68	59	51
	Significant acute	54	56	55	54	57	53	55	53	58	58	52	56	50	48	65	66	70	72	68	70	65	59
	Total	145	151	153	154	160	153	156	157	167	168	157	167	151	138	176	179	191	193	192	194	180	162
	No impact	112	121	120	117	138	131	135	134	137	137	139	145	135	112	154	153	158	158	163	168	155	129

Source: Eurostat, derived from production statistics

Figure 3.2.8: Production of environmentally harmful chemicals (million tonnes)



Source: Eurostat, derived from production statistics

The aggregated production volumes of environmentally harmful chemicals are divided into five impact classes. The most harmful ones are the 'severe chronic', followed by 'significant chronic', 'moderate chronic', 'chronic' and 'significant acute' chemicals. The indicator monitors progress in shifting production from the most environmentally harmful to less harmful chemicals.

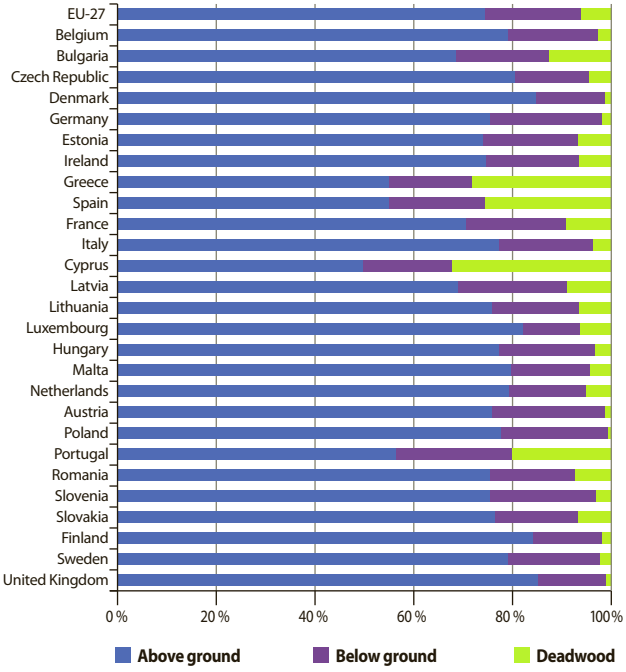
The EU-27 production of environmentally harmful chemicals (all five environmental impact classes) grew from 2002 to 2007 by 10.2 % to the highest value of 194 million tonnes. Production fell by 31 million tonnes (- 16 %) in 2008/09 and stood at 163 million tonnes in 2009; it was 7.4 % lower than in 2002. The EU-15 production of environmentally harmful chemicals (all five impact classes) increased from 1996 to 2005 by 34 % to the highest value (168 million tonnes). In 2009, the production in EU-15 stood at 138 million tonnes and was 4.8 % lower than in 1996. In the EU-27 the share of production of classified environmentally harmful chemicals in the European Union's total chemical output was 53.3 % in 2002 and 55.8 % in 2009. The chemical industry in countries from the 12 new Member States produced in 2009 — with 25 million tonnes — 15.3 % of the environmentally harmful chemicals in the EU-27.

Table 3.3.1: Stock of wood and biomass on forest and other wooded land, 2010

	Forest					Other wooded land				
	Growing stock		Biomass stock			Growing stock		Biomass stock		
	Commercial	Total	Above ground	Below ground	Deadwood	Commercial	Total	Above ground	Below ground	Deadwood
	million m^3		million t			million m^3		million t		
EU-27	*21 551*	23 966	15 946	4 105	*1 222*	*43*	*203*	*186*	*71*	*105*
BE	168	168	106	25	3	*0*	*1*	*0*	*0*	*0*
BG	656	656	337	93	62	-	-	-	-	-
CZ	769	769	639	118	36	-	-	-	-	-
DK	108	108	63	10	1	1	1	1	0	0
DE	*1 210*	3 492	2 165	645	55	-	-	-	-	-
EE	449	449	264	69	24	6	6	4	1	0
IE	73	74	36	9	3	*0*	*1*	*0*	*0*	*0*
EL	*185*	185	132	37	*61*	*2*	*54*	*20*	*10*	*17*
ES	873	912	670	228	*285*	*2*	*2*	*73*	*35*	*60*
FR	2 584	2 584	1 979	564	*250*	*1*	*33*	*12*	*6*	*10*
IT	1 384	1 384	952	235	37	*2*	64	48	11	*11*
CY	8	9	5	1	*3*	*0*	*4*	*2*	*1*	*1*
LV	633	633	411	132	*53*	2	2	1	0	*1*
LT	470	470	248	57	22	2	2	1	0	0
LU	26	26	17	2	*1*	*0*	*0*	*0*	*0*	*0*
HU	339	359	227	57	10	-	-	-	-	-
MT	*0*	0	0	0	*0*	-	-	-	-	-
NL	70	70	46	9	3	-	-	-	-	-
AT	1 135	1 135	620	185	10	0	2	1	0	1
PL	2 049	2 049	1 479	415	11	-	-	-	-	-
PT	154	186	154	64	*54*	*0*	2	*1*	*1*	*1*
RO	1 390	1 390	1 070	245	*103*	*0*	*3*	*1*	*1*	*1*
SI	416	416	278	79	12	1	1	1	0	-
SK	514	514	351	76	31	-	-	-	-	-
FI	2 150	2 189	1 428	237	32	10	10	7	1	0
SE	3 358	3 358	2 035	476	58	11	11	10	2	1
UK	379	379	234	38	3	1	1	1	-	-
IS	*0*	0	0	0	*0*	*0*	1	2	0	*1*
LI	*1*	2	1	*0*	0	*0*	*0*	*0*	*0*	*0*
NO	987	987	671	118	37	25	25	20	2	5
CH	428	428	234	70	20	*0*	*1*	*1*	*0*	*0*
HR	:	:	:	:	:	:	:	:	:	:
MK	:	:	:	:	:	:	:	:	:	:
TR	:	:	:	:	:	:	:	:	:	:

Source: Forest Resources Assessment 2010 (Food and Agriculture Organisation); growing stock will be published in Eurostat (online data code: for_vol)

Figure 3.3.1: Breakdown of biomass stock in forest and other wooded land, by category, 2010 (%)



Source: Forest Resources Assessment 2010 (Food and Agriculture Organisation); growing stock will be published in Eurostat (online data code: for_vol)

Growing stock provides information on existing wood resources and its estimates form the basis for the estimation of biomass and carbon stocks for most countries. In 2010, the estimated total growing stock on forest and other wooded land (FOWL) in the EU-27 amounted to 24 168 million m^3 of wood. Of these, 23 966 million m^3 were in forests, while the remaining 203 million m^3 were on other wooded land. Commercial growing stock, which refers to the growing stock of commercial species and not to forests available for wood supply (FAWS) amounted to 21 593 million m^3. About 89 % of the EU-27's total growing stock is made up of commercial species. In absolute terms, the largest total growing stocks are found in Germany, Sweden, France, Finland and Poland.

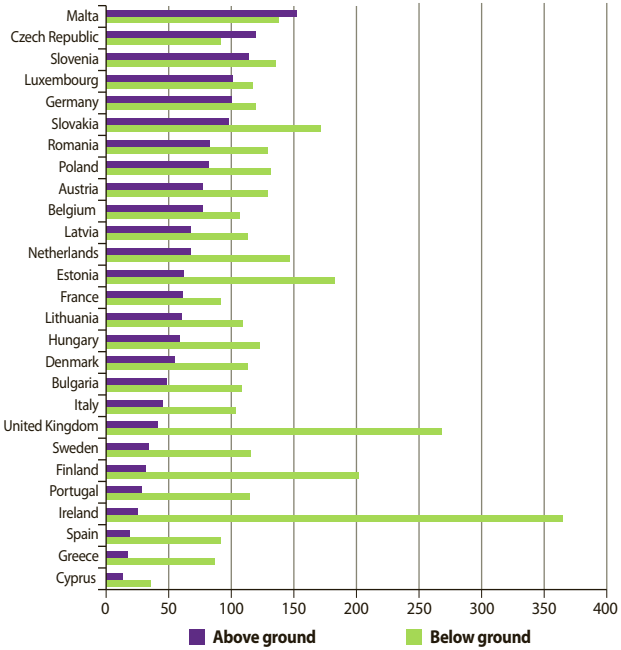
Biomass stock is measured by analysing ecosystem productivity and assessing energy potential and the role of forests in the carbon cycle. It is expressed as dry weight of living organisms. In 2010, total biomass (above and below ground) in the EU-27's forests amounted to 20 051 million tonnes, with a further 257 million tones on other wooded land. Deadwood was about 1 222 million tonnes in EU-27's forests and 105 million tonnes on other wooded land.

Table 3.3.2: Stock of carbon on forest and other wooded land, 2010 (million tonnes of carbon)

	Forest					Other wooded land				
	Above ground	Below ground	Deadwood	Litter	Soil	Above ground	Below ground	Deadwood	Litter	Soil
EU-27	*7 812*	*2 008*	*622*	*2 322*	*16 214*	*91*	*34*	*52*	*168*	*1 526*
BE	52	12	2	14	48	*0*	*0*	*0*	*0*	*1*
BG	158	44	*32*	7	373	-	-	-	-	-
CZ	300	55	17	17	170	-	-	-	-	-
DK	32	5	1	7	*52*	0	0	0	1	*2*
DE	1 082	323	27	138	858	-	-	-	-	-
EE	131	34	12	28	346	2	0	0	*1*	21
IE	18	5	1	0	280	*0*	*0*	*0*	*0*	*2*
EL	62	17	*32*	*49*	*376*	*10*	*5*	*8*	*22*	*100*
ES	315	107	*147*	*227*	*1 751*	*36*	*17*	*30*	*78*	*362*
FR	940	268	*129*	138	1 120	*6*	*3*	*5*	*13*	*61*
IT	448	110	17	40	808	23	5	*6*	*14*	156
CY	2	1	*1*	*2*	*4*	*1*	*0*	*1*	*2*	5
LV	206	66	*27*	70	248	1	0	*0*	2	7
LT	124	29	11	52	156	1	0	0	2	6
LU	8	1	*1*	2	7	*0*	*0*	*0*	*0*	*0*
HU	114	28	5	*25*	*195*	-	-	-	-	-
MT	0	0	*0*	*0*	*0*	-	-	-	-	-
NL	23	5	2	9	40	-	-	-	-	-
AT	304	89	5	*48*	*374*	*0*	*0*	*0*	*1*	*4*
PL	756	212	6	*116*	*900*	-	-	-	-	-
PT	73	30	*28*	*43*	*333*	*1*	*0*	*0*	*1*	*6*
RO	503	115	*53*	149	597	*1*	*0*	*1*	*1*	*6*
SI	139	39	6	7	123	0	0	-	0	2
SK	174	38	15	22	271	-	-	-	-	-
FI	714	118	16	258	3 853	4	1	0	12	453
SE	1 017	238	*29*	829	2 201	5	1	0	16	330
UK	117	19	2	25	730	-	-	-	-	3
IS	0	0	*0*	0	3	1	0	*0*	0	7
LI	0	0	*0*	*0*	*1*	*0*	*0*	*0*	*0*	*0*
NO	336	59	19	*126*	*970*	10	1	2	*22*	*102*
CH	110	33	9	27	95	*0*	*0*	*0*	2	6
HR	:	:	:	:	:	:	:	:	:	:
MK	:	:	:	:	:	:	:	:	:	:
TR	:	:	:	:	:	:	:	:	:	:

Source: Forest Resources Assessment 2010 (Food and Agriculture Organisation); carbon stock will be published in Eurostat (online data code: for_vol)

Figure 3.3.2: Above and below ground carbon stocks[1] on wooded land per unit of area, 2010 (tonnes of carbon/ha of FOWL area)



[1] Above ground carbon stock is the sum of above ground biomass and deadwood; Below ground carbon stock is the sum of litter, soil and below ground biomass.

Source: Forest Resources Assessment 2010 (Food and Agriculture Organisation); carbon stock will be published in Eurostat (online data code: for_vol)

Forests influence the global carbon cycle due to their role as carbon stores, as sources of carbon emissions and as carbon sinks. Carbon stocks in forests can be conserved or increased through sustainable management, planting and rehabilitation. In contrast, they are reduced through deforestation, degradation and poor forest management.

In 2010, the total carbon stock on FOWL was estimated at 30 848 million tonnes. 58 % of this amount was stored in soil, 26 % in above-ground biomass, 8 % in litter, 7 % in below-ground biomass and 2 % in deadwood. At Member State level, Finland's FOWL stored the most significant total amounts of carbon in absolute values (5 429 million tonnes), followed by Sweden (4 667) and Spain (3 069). However, Figure 3.3.2 shows a different aspect when looking at the carbon stock per unit of FOWL. Below-ground stocks are highest per unit of area in Ireland, the United Kingdom, Finland and Estonia, all countries with large areas of peat bogs. The carbon above ground on wooded land is dwarfed in relation to what is below ground, highlighting how important it is to preserve peat bogs in order to keep carbon stored there.

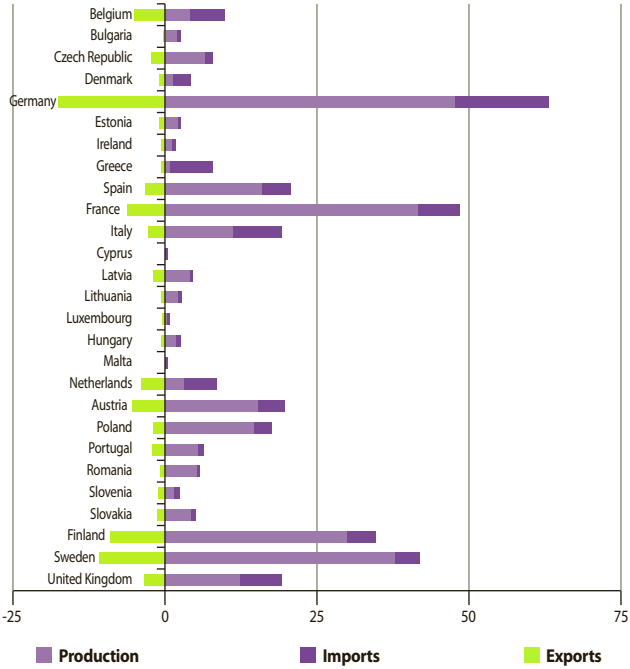
Table 3.3.3: Supply balance for wood products (million tonnes of carbon)

	2006			2007			2008		
	Exports	Imports	Production	Exports	Imports	Production	Exports	Imports	Production
EU-27	*23*	*24*	*274*	*23*	*23*	*295*	*23*	*20*	*275*
BE	*5*	*5*	*4*	*5*	*6*	*4*	*5*	*6*	*4*
BG	*0*	*0*	*2*	*1*	*1*	*2*	*0*	*1*	*2*
CZ	*2*	*1*	*7*	*2*	*1*	*8*	*2*	*1*	*7*
DK	*1*	*4*	*1*	*1*	*3*	*1*	*1*	*3*	*1*
DE	*14*	*13*	*44*	*17*	*16*	*56*	*18*	*15*	*48*
EE	*1*	*1*	*3*	*1*	*1*	*2*	*1*	*0*	*2*
IE	*1*	*1*	*1*	*1*	*1*	*2*	*1*	*1*	*1*
EL	*1*	*2*	*1*	*1*	*1*	*1*	*1*	*7*	*1*
ES	*3*	*6*	*17*	*3*	*6*	*16*	*3*	*5*	*16*
FR	*7*	*7*	*43*	*7*	*7*	*43*	*6*	*7*	*42*
IT	*3*	*9*	*12*	*3*	*9*	*12*	*3*	*8*	*11*
CY	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
LV	*2*	*1*	*5*	*2*	*1*	*5*	*2*	*0*	*4*
LT	*1*	*0*	*2*	*1*	*1*	*2*	*1*	*1*	*2*
LU	*1*	*1*	*1*	*0*	*1*	*0*	*0*	*0*	*0*
HU	*1*	*1*	*2*	*1*	*1*	*2*	*1*	*1*	*2*
MT	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
NL	*4*	*5*	*4*	*4*	*5*	*3*	*4*	*5*	*3*
AT	*5*	*5*	*15*	*6*	*5*	*16*	*5*	*4*	*15*
PL	*2*	*2*	*14*	*2*	*3*	*15*	*2*	*3*	*15*
PT	*2*	*1*	*6*	*2*	*1*	*6*	*2*	*1*	*6*
RO	*1*	*0*	*5*	*1*	*1*	*6*	*1*	*0*	*5*
SI	*1*	*1*	*2*	*1*	*1*	*2*	*1*	*1*	*2*
SK	*1*	*1*	*4*	*1*	*1*	*4*	*1*	*1*	*4*
FI	*10*	*5*	*32*	*10*	*4*	*34*	*9*	*5*	*30*
SE	*11*	*4*	*36*	*11*	*4*	*40*	*11*	*4*	*38*
UK	*3*	*7*	*13*	*3*	*8*	*13*	*3*	*7*	*12*
IS	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
LI	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
NO	*2*	*1*	*5*	*2*	*2*	*5*	*2*	*1*	*5*
CH	*2*	*1*	*4*	*2*	*1*	*4*	*1*	*1*	*4*
HR	:	:	:	:	:	:	:	:	:
MK	:	:	:	:	:	:	:	:	:
TR	:	:	:	:	:	:	:	:	:

Source: Eurostat (online data codes: for_basic, for_swpan and for_pp)

Note: The exports and imports for the EU-27 cover only extra-EU trade, while the country data cover all trade.

Figure 3.3.3: Supply balance for wood products, 2008 (million tonnes of carbon)



Source: Eurostat (online data codes: for_basic, for_swpan and for_pp)

A supply balance for wood products shows production plus imports minus exports. It is a measure of the self-sufficiency of countries for wood products. In order to make products in different units of measurement comparable, the data were converted to tonnes of carbon using recommended conversion factors. The EU-27's wood production was 275 million tonnes of carbon in 2008. Between 2006 and 2007, production grew by 7 %, but in 2008 it dropped again to 2006 levels.

In 2008, exports to countries outside the EU-27 amounted to approximately 23 million tonnes of carbon, a slight decrease of 1 % from 2006. Imports from countries outside the EU-27 amounted to 20 million tonnes of carbon in 2008, a 17 % decrease from 2006. In 2008, Germany had the largest production of wood products, followed by France, Sweden and Finland.

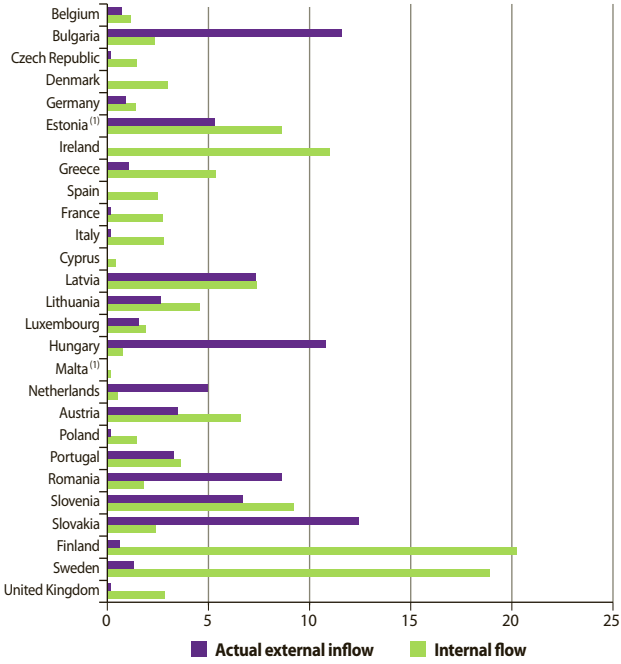
Table 3.4.1: Water resources: LTAA [1] — split into external inflow and internal flow

	Water resources (million m³/year)			Water resources per capita [2] (thousand m³ per capita per year)		
	Internal flow	Actual external inflow	Total freshwater sources	Internal flow	Actual external inflow	Total freshwater sources
EU-27	:	:	:	:	:	:
Belgium	12 327	7 606	19 933	1.16	0.72	1.88
Bulgaria	18 085	89 141	107 226	2.36	11.61	13.96
Czech Republic	15 237	740	15 977	1.48	0.07	1.55
Denmark	16 340	*0*	16 340	3.00	*0.00*	3.00
Germany	117 000	75 000	188 000	1.42	0.91	2.28
Estonia	:	:	12 347	:	:	9.20
Ireland	47 500	:	47 500	11.01	:	11.01
Greece	60 000	12 000	72 000	5.37	1.07	6.44
Spain	111 133	*0*	111 133	2.50	*0.00*	2.50
France	175 293	11 000	186 293	2.76	0.17	2.93
Italy	167 000	8 000	175 000	2.82	0.14	2.96
Cyprus	327	*0*	327	0.42	*0.00*	0.42
Latvia	16 901	16 830	33 731	7.41	7.38	14.79
Lithuania	15 510	8 990	24 500	4.58	2.66	7.24
Luxembourg	905	739	1 644	1.90	1.55	3.45
Hungary	7 533	108 897	116 430	0.75	10.82	11.57
Malta [3]	*71*	*0*	*71*	*0.17*	*0.00*	*0.17*
Netherlands	8 480	81 200	89 680	0.52	4.96	5.48
Austria	55 000	29 000	84 000	6.64	3.50	10.14
Poland	54 800	8 300	63 100	1.44	0.22	1.66
Portugal	38 593	35 000	73 593	3.64	3.30	6.94
Romania	39 415	*186 320*	*225 735*	1.83	*8.64*	*10.47*
Slovenia	18 596	13 496	32 092	9.25	6.71	15.96
Slovakia	13 074	67 252	80 326	2.42	12.47	14.89
Finland	107 000	3 200	110 000	20.28	0.61	20.85
Sweden	172 710	11 830	183 360	18.95	1.30	20.12
United Kingdom	172 502	2 841	175 342	2.84	0.05	2.88
Iceland	170 000	:	170 000	552.54	:	552.54
Liechtenstein	:	:	:	:	:	:
Norway	377 290	12 152	389 442	80.60	2.60	83.19
Switzerland	40 714	12 798	53 512	5.42	1.70	7.13
Croatia	23 007	:	:	5.18	:	:
The former Yugoslav Republic of Macedonia	:	1 014	:	:	0.50	:
Turkey	227 400	6 900	234 300	3.26	0.10	3.36

[1] LTAA: Long term annual average (>20 years).
[2] The population used was of the 1st January 2007.
[3] Data for the last 5 available years have been used.

Source: Eurostat (online data code: env_watq1a)

Figure 3.4.1: Water resources: LTAA — split into external inflow and internal flow (thousand m^3 per capita per year)



(1) Data for the last 5 available years have been used.

Source: Eurostat (online data code: env_watq1a)

Note: Water statistics data are collected through the Joint OECD/Eurostat Questionnaire on Inland Waters. Due to absence of legal obligation data availability is limited.

Renewable fresh water resources are the sum of internal flow and actual external inflow. Internal flow is the volume of precipitation (all forms) minus the evaporation from surfaces and the evapotranspiration by plants. Actual external inflow refers to the inflow of water from neighbouring territories either at the surface (river flow) or subsurface (groundwater flow). In order to account for the annual fluctuations in rainfall and evaporation/transpiration, water resources are calculated as long term annual averages (LTAA) for 20 years or more.

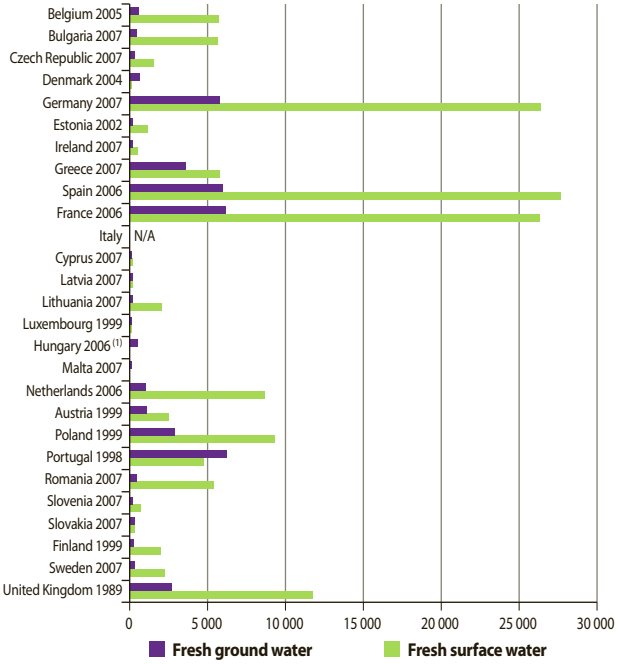
In absolute values, there are considerable variations among Member States and per capita values also varied significantly among countries, based on population density, hydrology and geography. Finland had the highest total fresh water sources per capita (20.8 thousand m^3/capita/year), followed by Sweden (20.1). These two countries also recorded the largest volumes of internal flow per capita. Slovakia recorded the highest external inflow per capita. In contrast, the lowest total per capita volumes were observed in Malta (0.2) and Cyprus (0.4).

Table 3.4.2: Abstraction of fresh water (million m^3 per year)

	1990	1995	2000	2005	2006	2007
EU-27	:	:	:	:	:	:
Belgium	:	8 242	7 535	6 389	:	:
Bulgaria	10 218	6 326	6 132	6 017	6 557	6 182
Czech Republic	3 623	2 743	1 918	1 949	1 937	1 969
Denmark	1 261	887	726	:	:	:
Germany	:	43 374	:	:	:	32 301
Estonia	3 215	1 780	1 471	:	:	:
Ireland	:	:	:	799	:	730
Greece	7 862	7 787	9 924	9 654	9 447	9 539
Spain	:	:	37 071	34 958	33 760	:
France	:	:	32 715	33 873	32 552	:
Italy	:	:	:	:	:	:
Cyprus	:	:	187	221	218	209
Latvia	:	*418*	283	238	209	211
Lithuania	4 311	4 582	3 578	2 365	2 081	2 269
Luxembourg	:	57	:	:	:	:
Hungary	:	:	:	:	:	:
Malta	:	20	19	14	13	14
Netherlands	*7 800*	:	:	10 326	9 779	:
Austria	3 807	3 449	:	:	:	:
Poland	15 164	12 924	:	:	:	:
Portugal	*7 288*	:	:	:	:	:
Romania	17 510	10 300	7 967	5 301	5 330	5 934
Slovenia	:	:	:	924	907	935
Slovakia	2 116	1 386	1 171	907	:	688
Finland	2 327	2 535	:	:	:	:
Sweden	2 968	2 725	2 688	2 630	2 630	2 630
United Kingdom	:	:	:	:	:	:
Iceland	:	165	163	165	:	:
Liechtenstein	:	:	:	:	:	:
Norway	:	:	:	:	:	:
Switzerland	2 665	2 571	2 564	2 507	2 660	:
Croatia	:	:	:	:	:	:
The former Yugoslav Republic of Macedonia	:	:	692	1 157	900	551
Turkey	*28 073*	*33 482*	*43 650*	:	:	:

Source: Eurostat (online data code: env_watq2_1)

Figure 3.4.2: Abstraction of fresh water, by source, last year available (million m^3 per year)



(1) Fresh surface water data not available.

Source: Eurostat (online data code: env_watq2_1)

Total abstraction of fresh water showed considerable differences among Member States. Spain and France in 2006 and Germany in 2007 reported significant total water abstraction.

The volumes of abstracted groundwater depended on the availability of resources and abstraction practices. The highest volumes were reported by Portugal, France and Spain. Over the last ten years, in most Member States the volumes of abstracted groundwater fell, except for Spain (42 %), Greece (17 %), Slovenia (19 %) and Cyprus (1 %).

Regarding surface water abstraction, in Cyprus and Netherlands the increase over the past decade was 88 % and 63 % respectively. A contrasting trend was observed in Slovakia and Lithuania, where the decrease exceeded 50 %.

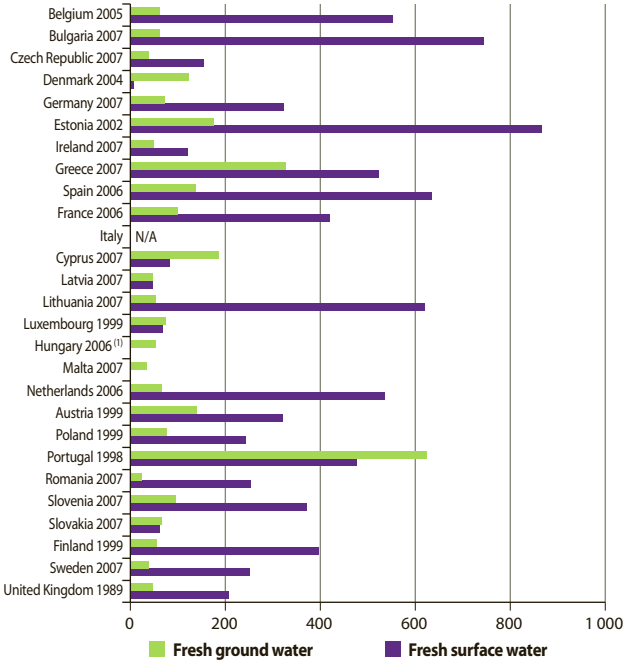
The breakdown of abstraction between groundwater and fresh water revealed also large differences between countries.

Table 3.4.3: Abstraction of fresh water per capita (m^3 per capita per year)

	1990	1995	2000	2005	2006	2007
EU-27	:	:	:	:	:	:
Belgium	:	814	736	612	:	:
Bulgaria	1 165	751	749	775	850	805
Czech Republic	350	265	187	191	189	191
Denmark	246	170	136	:	:	:
Germany	:	532	:	:	:	392
Estonia	2 047	1 229	1 072	:	:	:
Ireland	:	:	:	194	:	169
Greece	777	735	910	871	849	854
Spain	:	:	926	812	772	:
France	:	:	556	541	517	:
Italy	:	:	:	:	:	:
Cyprus	:	:	271	294	285	268
Latvia	:	*167*	119	103	91	93
Lithuania	1 167	1 258	1 019	690	611	670
Luxembourg	:	141	:	:	:	:
Hungary	:	:	:	:	:	:
Malta	:	55	49	35	32	34
Netherlands	*524*	:	:	633	599	:
Austria	498	434	:	:	:	:
Poland	399	335	:	:	:	:
Portugal	*729*	:	:	:	:	:
Romania	754	454	355	245	247	275
Slovenia	:	:	:	462	453	465
Slovakia	400	259	217	168	:	128
Finland	468	497	:	:	:	:
Sweden	348	309	303	292	291	289
United Kingdom	:	:	:	:	:	:
Iceland	:	618	584	562	:	:
Liechtenstein	:	:	:	:	:	:
Norway	:	:	:	:	:	:
Switzerland	399	366	358	338	357	:
Croatia	:	:	:	:	:	:
The former Yugoslav Republic of Macedonia	:	:	342	568	441	270
Turkey	*506*	*547*	*653*	:	:	:

Source: Eurostat (online data code: env_watq2_1)

Figure 3.4.3: Abstraction of fresh water per capita, by source, last year available (m^3 per capita per year)



(1) Fresh surface water data not available.

Source: Eurostat (online data code: env_watq2_1)

The Member States with the highest groundwater abstraction per capita were Portugal (622 m^3/capita in 1998) and Greece (327 in 2007). Regarding the abstraction of surface water per capita the highest volumes were observed in Estonia (864 in 2002) and Bulgaria (743 in 2007).

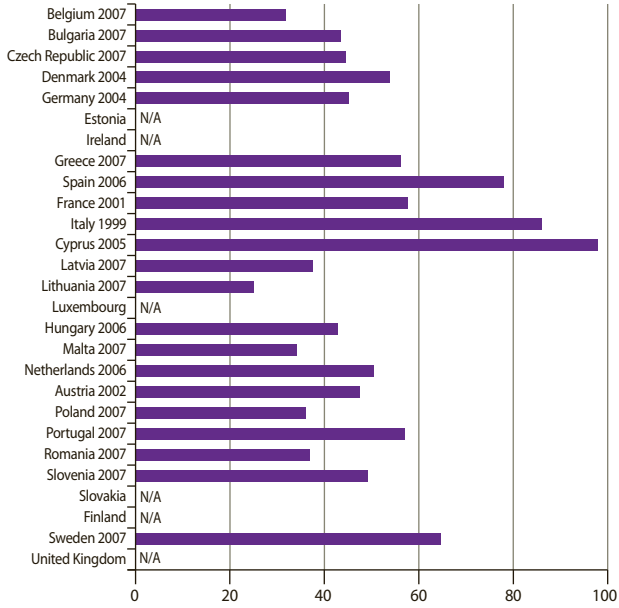
Between 1995 and 2007 (depending on data availability), most Member States decreased their abstraction of fresh water per capita. The only exceptions were Greece (16 %), the Netherlands (14 %), Bulgaria (7 %) and Slovenia (1 %).

Table 3.4.4: Use of water (public water supply) by the domestic sector (households and services) per capita (m^3 per capita per year)

	1990	1995	2000	2005	2006	2007
EU-27	:	:	:	:	:	:
Belgium	:	24	24	33	33	32
Bulgaria	81	50	47	41	42	43
Czech Republic	53	38	49	45	44	44
Denmark	76	:	:	:	:	:
Germany	:	47	:	:	:	:
Estonia	:	:	:	:	:	:
Ireland	:	:	:	:	:	:
Greece	:	:	51	58	58	56
Spain	:	:	82	80	78	:
France	:	:	:	:	:	:
Italy	87	:	:	:	:	:
Cyprus	:	71	69	98	:	:
Latvia	:	:	35	34	36	37
Lithuania	:	:	:	23	24	25
Luxembourg	:	:	:	:	:	:
Hungary	56	57	62	47	43	:
Malta	:	32	30	21	27	34
Netherlands	*60*	:	:	49	50	:
Austria	:	46	47	:	:	:
Poland	:	49	39	36	37	36
Portugal	:	:	:	51	50	57
Romania	:	:	:	:	:	37
Slovenia	:	:	:	47	48	49
Slovakia	:	:	:	:	:	:
Finland	:	:	:	:	:	:
Sweden	74	72	70	65	65	65
United Kingdom	:	:	:	:	:	:
Iceland	:	:	:	:	:	:
Liechtenstein	:	:	:	:	:	:
Norway	:	:	179	:	101	101
Switzerland	111	100	105	94	95	:
Croatia	:	44	45	49	52	55
The former Yugoslav Republic of Macedonia	:	:	42	41	42	42
Turkey	:	:	:	:	31	:

Source: Eurostat (online data code: env_watq3)

Figure 3.4.4: Use of water (public water supply) by the domestic sector per capita, last year available (m^3 per capita per year)



Source: Eurostat (online data code: env_watq3)

Per capita use of water from public water supply by the domestic sector varied among the EU-27. It ranged between 25 m^3 per capita per year for Lithuania in 2007 and 98 for Cyprus in 2005. Similarly to previous water indicators, data availability was limited and fragmentary; therefore drawing solid conclusions should be dealt with caution.

Per capita water use by the domestic sector was higher among the Mediterranean countries (Cyprus, Italy, Spain, France, Portugal and Greece). The only exception was Malta, which reported one of the lowest water uses. Except for Mediterranean countries, Sweden also recorded significant domestic water use per capita. On the contrary, the lowest figures appeared among the new Member States and Belgium.

Depending on data availability, from 1995 to 2007, the trends in the evolution of domestic water use per capita have also varied per Member State. Lithuania doubled its use between 2002 and 2007.

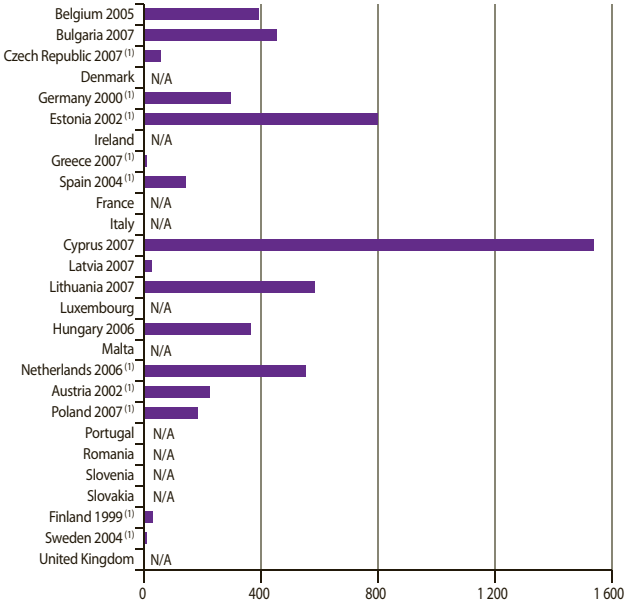
Table 3.4.5: Water use for energy production (cooling water)

	Water use for energy production (cooling water) per capita (m^3 per capita per year)						Water use for energy production (cooling purposes) — share of total water use in the country (%)					
	1990	1995	2000	2005	2006	2007	1990	1995	2000	2005	2006	2007
EU-27	:	:	:	:	:	:	:	:	:	:	:	:
BE	:	532	488	396	:	:	:	66	68	66	:	:
BG	493	501	423	536	538	455	55	76	78	81	82	77
CZ (1)	99	78	49	:	57	59	34	38	33	:	34	35
DK	:	:	:	:	:	:	:	:	:	:	:	:
DE (1)	:	:	300	:	:	:	:	:	:	:	:	:
EE (1)	:	:	814	:	:	:	:	:	87	:	:	:
IE	:	:	:	:	:	:	:	:	:	:	:	:
EL (1)	:	:	:	:	:	9	:	:	:	:	:	2
ES (1)	:	:	148	:	:	:	:	:	35	:	:	:
FR	:	:	:	:	:	:	:	:	:	:	:	:
IT	:	:	:	:	:	:	:	:	:	:	:	:
CY	:	:	:	1 324	1 502	1 539	:	:	:	:	:	:
LV	:	:	34	29	27	27	:	:	23	21	22	21
LT	:	:	:	612	525	584	:	:	:	88	88	88
LU	:	:	:	:	:	:	:	:	:	:	:	:
HU	:	376	379	362	366	:	:	67	:	:	:	:
MT	:	:	:	:	:	:	:	:	:	:	:	:
NL (1)	563	:	:	599	556	:	67	:	:	66	64	:
AT (1)	208	173	204	:	:	:	:	:	:	:	:	:
PL (1)	180	173	166	173	192	186	50	57	62	64	65	65
PT	:	:	:	:	:	:	:	:	:	:	:	:
RO	:	:	:	:	:	:	:	:	:	:	:	:
SI	:	:	:	:	:	:	:	:	:	:	:	:
SK	:	:	:	:	:	:	:	:	:	:	:	:
FI (1)	:	90	:	:	:	:	:	:	:	:	:	:
SE (1)	3	7	10	:	:	:	1	2	3	:	:	:
UK	:	:	:	:	:	:	:	:	:	:	:	:
IS	:	:	:	:	:	:	:	:	:	:	:	:
LI	:	:	:	:	:	:	:	:	:	:	:	:
NO	:	:	:	:	:	:	:	:	:	:	:	:
CH	225	214	210	203	225	:	56	58	59	60	63	:
HR	:	:	:	:	:	:	:	:	:	:	:	:
MK	:	:	:	:	:	:	:	:	:	:	:	:
TR	:	29	28	:	37	:	:	:	:	:	:	:

(1) Public water supply data not available. Data include self supply only.

Source: Eurostat (online data code: env_watq3)

Figure 3.4.5: Water use for energy production (cooling water) per capita, last year available (m^3 per capita per year)



(1) Public water supply data not available. Data include self supply only.

Source: Eurostat (online data code: env_watq3)

Data on water use for energy production were scarce. In most cases they only included self supply which is most relevant for this use. Considerable differences were observed among countries. In 2007, Cyprus presented the highest water use for cooling water in energy production with 1 539 m^3 per capita. On the other hand, water use for cooling water in Greece in 2007 reached 9 m^3 per capita. This value refers solely to self supply.

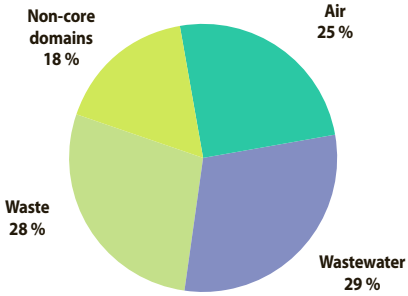
The share of water use for energy production over total water use also varied considerably. In 2007, in Lithuania it was 88 %, while in Latvia it only reached 21 %.

Table 3.5.1: Manufacturing sector's environmental protection expenditure by environmental domain in EU-27 for 2006 (thousand EUR)

	Total domains	Air	Wastewater	Waste	Non-core domains
EU-27	*36 717 137*	*9 114 456*	*10 926 650*	*10 243 467*	*6 432 565*
Belgium	:	:	:	:	:
Bulgaria	144 017	75 872	27 142	16 177	24 825
Czech Republic	557 345	154 126	123 636	164 370	115 213
Denmark	:	:	:	:	:
Germany	:	:	:	:	:
Estonia	82 989	15 179	26 440	33 298	8 072
Ireland	:	:	:	:	:
Greece	:	:	:	:	:
Spain	2 212 245	560 176	518 227	862 015	271 828
France	:	:	:	:	:
Italy	:	:	:	:	:
Cyprus	25 494	8 257	4 754	8 027	4 457
Latvia	:	:	:	:	:
Lithuania	79 057	28 462	22 702	24 023	3 870
Luxembourg	:	:	:	:	:
Hungary	397 619	61 309	116 521	140 712	79 077
Malta	:	:	:	:	:
Netherlands	:	:	:	:	:
Austria	:	:	:	:	:
Poland	1 140 206	312 919	418 440	344 113	64 735
Portugal	364 753	159 017	81 769	83 981	39 986
Romania	346 588	126 751	83 697	75 359	60 781
Slovenia	189 063	59 294	56 203	53 771	19 795
Slovakia	195 516	79 167	31 469	45 943	38 936
Finland	544 100	132 900	202 800	146 100	62 300
Sweden	813 461	210 717	210 707	202 856	189 182
United Kingdom	3 566 075	416 294	1 137 400	1 351 708	660 672
Iceland	:	:	:	:	:
Liechtenstein	:	:	:	:	:
Norway	450 268	126 628	137 017	159 583	27 040
Switzerland	:	:	:	:	:
Croatia	129 931	31 127	34 115	33 573	31 117
The former Yugoslav Republic of Macedonia	:	:	:	:	:
Turkey	:	:	:	:	:

Source: Eurostat (online data code: env_ac_exp1)

Figure 3.5.1: Manufacturing sector's environmental protection expenditure by environmental domain in EU-27 for 2006, share of total domains



Source: Eurostat (online data code: env_ac_exp1)

Environmental protection expenditure (EPE) is an indication of the expenses made towards the prevention, reduction and elimination of pollution resulting from the production or consumption of goods and services.

In 2006, the EU-27 industry sector (mining and quarrying, manufacturing, electricity, gas and water supply) spent about 50 billion EUR on prevention and reduction of environmental pressures, an amount slightly above 0.4 % of GDP. Manufacturing sector, with more than 80 %, has the biggest share in the total environmental protection expenditure of the industry sector[1].

In 2006, the amount of manufacturing sector's expenditure was relatively equally distributed among the environmental domains. The expenditure in order to tackle environmental issues relating to wastewater management made up 29 % of the total, followed by waste management (28 %) and protection of ambient air and climate (25 %). Protection and remediation of soil, groundwater and surface water, noise and vibration abatement, protection of biodiversity and landscapes, protection against radiation, research and development and other environmental protection activities form the non-core domains which accounted for 18 % of the total expenditure of the manufacturing sector.

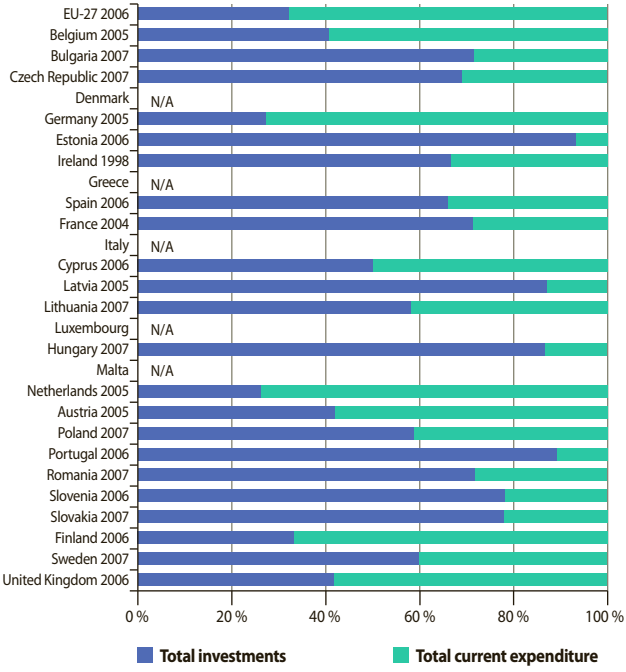
[1] http://epp.eurostat.ec.europa.eu/portal/page/portal/product_details/publication?p_product_code=KS-SF-10-031

Table 3.5.2: Share of investments and current expenditure for air protection in total EPE for the manufacturing sector, last year available (thousand EUR)

	Environmental protection expenditure	Total investments	Total current expenditure
EU-27 2006	*9 114 456*	*2 969 709*	*6 144 747*
Belgium 2005	170 709	69 556	101 153
Bulgaria 2007	54 372	38 903	15 469
Czech Republic 2007	213 905	147 882	66 023
Denmark	:	:	:
Germany 2005	1 760 000	480 000	1 280 000
Estonia 2006	15 179	14 156	1 023
Ireland 1998	31 852	21 231	10 622
Greece 2003	:	:	4 871
Spain 2006	560 176	370 058	190 118
France 2004	459 900	328 000	131 900
Italy 2005	:	:	161 918
Cyprus 2006	8 257	4 134	4 123
Latvia 2005	6 424	5 604	820
Lithuania 2007	21 605	12 572	9 033
Luxembourg	:	:	:
Hungary 2007	132 449	115 044	17 405
Malta	:	:	:
Netherlands 2005	431 964	113 064	318 900
Austria 2005	230 313	96 813	133 500
Poland 2007	253 067	148 928	104 139
Portugal 2006	159 017	141 886	17 131
Romania 2007	151 794	109 157	42 637
Slovenia 2006	59 294	46 437	12 857
Slovakia 2007	72 479	56 551	15 928
Finland 2006	132 900	44 200	88 700
Sweden 2007	178 943	107 307	71 637
United Kingdom 2006	416 294	174 263	242 031
Iceland	:	:	:
Liechtenstein	:	:	:
Norway 2006	126 628	74 225	52 403
Switzerland 2003	150 152	107 690	42 462
Croatia 2007	50 061	33 654	16 407
The former Yugoslav Republic of Macedonia	:	:	:
Turkey 1997	25 461	11 359	14 102

Source: Eurostat (online data code: env_ac_exp1)

Figure 3.5.2: Share of investments and current expenditure for air protection in total EPE for the manufacturing sector, last year available



Source: Eurostat (online data code: env_ac_exp1)

In the context of the efforts made to combat climate change, it might be interesting to look at the various components of environmental protection expenditure in the domain of ambient air and climate. Environmental protection expenditure is the sum of total investments and total current expenditure of the sector, and investments can be either for pollution treatment or pollution prevention.

In 2006, the total air protection expenditure by the EU-27 manufacturing sector was slightly above 9 billion EUR. Current expenditure represented 67 % of this amount, while total investments made up the remaining 33 %.

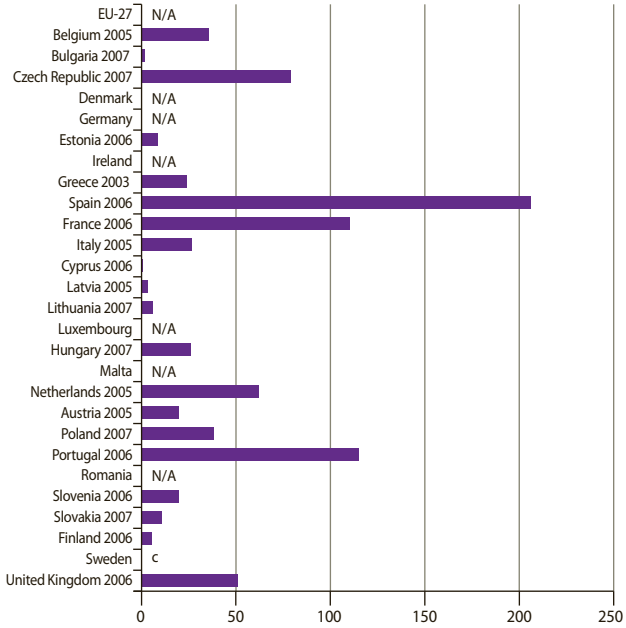
Among European countries, the manufacturing sector of Germany recorded in 2005 the highest level of expenditure for air protection (1 760 million EUR), of which 73 % represented current expenditure. Spain followed with 560 million EUR in 2006, of which 66 % investment expenditures. High level of air protection expenditure was also recorded in France (460 million EUR in 2004 with 71 % going to investment), the Netherlands (432 million in 2005 with 74 % current expenditure) and the United Kingdom (416 million in 2006 with 58 % current expenditure).

Table 3.5.3: Evolution of investments in "cleaner technologies" (pollution prevention investments) for air protection in the manufacturing sector (thousand EUR)

	2001	2002	2003	2004	2005	2006	2007
EU-27	:	:	:	:	:	:	:
Belgium	:	23 800	:	:	35 698	:	:
Bulgaria	0	0	0	0	0	1 670	709
Czech Republic	:	:	25 099	36 443	41 854	51 520	78 731
Denmark	:	:	:	:	:	:	:
Germany	:	:	:	:	:	:	:
Estonia	1 055	2 710	562	805	818	8 641	:
Ireland	:	:	:	:	:	:	:
Greece	:	4 586	24 022	:	:	:	:
Spain	77 310	92 910	105 690	154 620	181 767	205 703	:
France	121 800	73 500	73 500	54 700	92 500	111 000	:
Italy	35 325	85 504	42 212	98 107	26 734	:	:
Cyprus	509	6 508	572	1 021	270	56	:
Latvia	0	3 098	3 278	1 427	3 303	:	:
Lithuania	7 353	4 472	2 969	4 683	2 027	1 187	6 270
Luxembourg	:	:	:	:	:	:	:
Hungary	10 628	14 430	71 020	7 963	9 002	14 978	26 051
Malta	:	:	:	:	:	:	:
Netherlands	86 354	140 935	:	:	61 900	:	:
Austria	:	16 241	15 504	16 977	19 696	:	:
Poland	29 002	22 502	37 890	20 301	47 825	90 197	38 375
Portugal	52 492	44 725	78 052	79 000	107 700	114 786	:
Romania	:	:	:	:	:	:	:
Slovenia	19 346	11 518	10 680	8 704	16 016	19 787	:
Slovakia	:	:	3 459	6 803	2 522	21 864	10 644
Finland	19 034	9 750	17 609	11 332	15 800	5 300	:
Sweden	:	c	c	c	c	c	c
United Kingdom	199 397	65 678	63 440	67 486	115 677	51 047	:
Iceland	:	:	:	:	:	:	:
Liechtenstein	:	:	:	:	:	:	:
Norway	:	17 740	24 827	16 309	25 221	9 009	:
Switzerland	:	:	69 854	:	:	:	:
Croatia	:	:	:	5 589	3 689	3 576	3 114
The former Yugoslav Republic of Macedonia	:	:	:	:	:	:	:
Turkey	:	:	:	:	:	:	:

Source: Eurostat (online data code: env_ac_exp1)

Figure 3.5.3: Investments in "cleaner technologies" (pollution prevention investments) for air protection in the manufacturing sector, last year available (million EUR)



Source: Eurostat (online data code: env_ac_exp1)

Investment expenditure on environmental protection involves all expenses made for environmental protection purposes on machinery, equipment and land. Total investment can be either in the direction of pollution treatment or pollution prevention. Pollution treatment or end-of-pipe investments have no influence on the amount of pollution generated, but aim at its treatment after its generation.

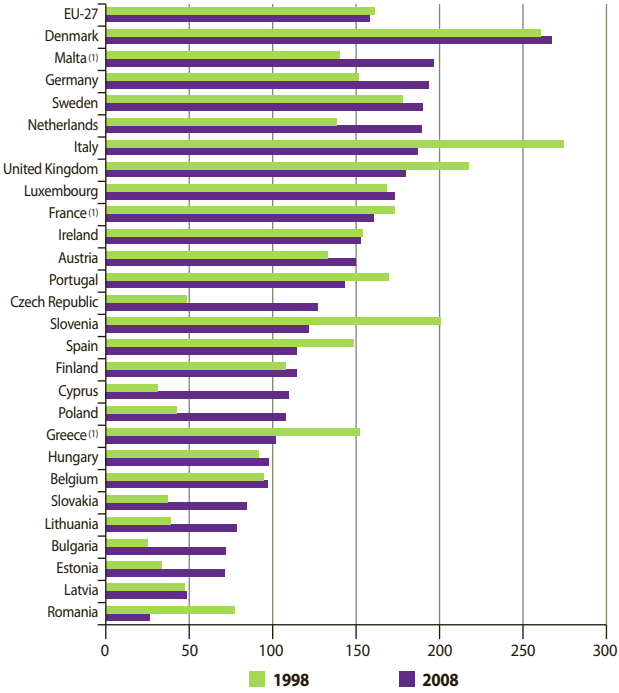
Pollution prevention investments are defined as capital expenditure on new, or modification of existing, methods, technologies, processes, equipment (or parts thereof) designed to prevent or reduce the amount of pollution created at the source, thereby reducing the environmental impacts associated with the release of pollutants and/or with polluting activities. From 2001 to 2007, the trend for investments in air pollution prevention technologies by the manufacturing industry was not uniform among European countries. Moreover, annual variations were observed per country. In absolute values, in 2006 the highest level of investments in "cleaner technologies" was recorded in Spain (206 million EUR), Portugal (115 million EUR) and France (111 million EUR), while in 2001 the countries spending most were: the United Kingdom (199 million EUR), France (122 million EUR) and the Netherlands (86 million EUR).

Table 3.5.4: Implicit tax rate on energy (EUR per toe)

	1998	2000	2005	2006	2007	2008
EU-27	161.3	171.7	165.3	164.3	164.9	158.2
Belgium	95.0	92.4	106.9	103.0	112.3	97.1
Bulgaria	24.8	36.4	52.6	52.8	65.2	71.7
Czech Republic	48.7	55.2	93.5	99.4	108.5	127.1
Denmark	261.4	300.8	290.3	279.8	272.6	267.8
Germany	152.1	192.7	206.6	202.0	203.5	193.8
Estonia	33.4	32.2	65.4	68.8	70.5	71.5
Ireland	154.0	140.5	154.7	150.7	153.2	153.1
Greece	152.5	117.3	100.3	96.3	102.0	:
Spain	148.7	137.8	119.3	119.8	117.7	114.6
France	173.3	173.2	163.0	163.3	160.7	:
Italy	274.8	248.7	208.0	210.1	200.2	187.4
Cyprus	31.3	43.1	128.2	125.5	122.6	110.0
Latvia	47.3	48.3	55.1	52.9	49.8	48.4
Lithuania	38.8	58.0	78.3	74.5	77.4	78.5
Luxembourg	169.0	164.3	177.7	168.5	167.6	173.3
Hungary	91.5	79.7	86.8	85.6	97.8	98.0
Malta	140.6	142.2	127.1	138.3	197.0	:
Netherlands	138.5	154.4	182.2	193.1	177.5	189.8
Austria	133.1	141.8	149.5	141.3	150.2	150.2
Poland	42.8	58.9	84.2	87.6	101.3	108.0
Portugal	170.2	111.8	148.8	148.1	149.1	143.4
Romania	77.2	58.2	24.7	26.2	32.2	26.2
Slovenia	201.4	118.3	114.5	113.7	123.9	121.7
Slovakia	37.3	42.4	65.0	67.8	77.3	84.6
Finland	108.2	108.7	111.7	105.1	102.7	114.5
Sweden	178.3	182.0	196.9	199.6	196.6	190.1
United Kingdom	217.8	249.5	212.5	210.9	218.0	180.2
Iceland	:	:	:	:	:	:
Liechtenstein	:	:	:	:	:	:
Norway	177.0	176.1	162.4	160.7	159.1	150.7
Switzerland	:	:	:	:	:	:
Croatia	:	:	:	:	:	:
The former Yugoslav Republic of Macedonia	:	:	:	:	:	:
Turkey	:	:	:	:	:	:

Source: Eurostat (online data code: tsien040)

Figure 3.5.4: Implicit tax rate on energy (EUR per toe)



(1) 2007 data instead of 2008.

Source: Eurostat (online data code: tsien040)

Implicit tax rate on energy is the ratio between energy tax revenues and final energy consumption. It measures the taxes levied on the use of energy which contributes to foster energy efficiency. The implicit tax rate on energy for the EU-27 grew by 6 % between 1998 and 2000 and it fell by 8 % from 2000 to 2008.

In 2008, Denmark displayed the highest rate (268 EUR per toe). On the other hand, Eastern European countries presented the lowest rates. Romania, which was the country with the lowest rate (26), also reported the most notable decrease (- 66 %) between 1998 and 2008. From 1998 to 2008, the most considerable increases were observed in Cyprus and Bulgaria (about threefold). In spite of this increase, both countries remained below the EU average.

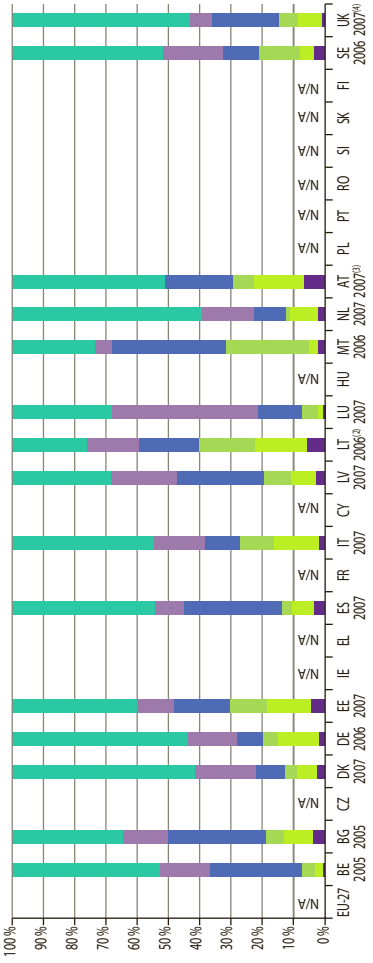
Table 3.5.5: Energy taxes in the European countries by their payers, last year available (thousand EUR)

	Agriculture, hunting, forestry and fishing	Mining and quarrying; Manufacturing	Electricity, gas and water supply; Construction	Transport, storage and communication	Other services [1]	Total activities by households	Not classified
EU-27	:	:	:	:	:	:	:
BE 2005	35 015	107 894	189 948	1 297 228	722 835	2 112 579	0
BG 2005	23 184	54 841	33 977	184 910	84 169	211 485	:
CZ	:	:	:	:	:	:	:
DK 2007	127 833	307 328	190 792	451 408	940 064	2 867 433	0
DE 2006	915 098	6 004 813	2 359 165	3 851 153	7 330 922	26 233 850	:
EE 2007	10 457	33 118	28 063	41 199	28 237	93 867	0
IE	:	:	:	:	:	:	:
EL	:	:	:	:	:	:	:
ES 2007	487 200	925 000	424 600	4 169 000	1 271 300	6 135 000	1 144 900
FR	:	:	:	:	:	:	:
IT 2007	601 769	4 244 543	3 311 380	3 355 310	4 771 363	13 668 910	1 823 726
CY	:	:	:	:	:	:	:
LV 2007	11 461	30 112	33 454	105 909	81 667	122 172	:
LT 2006 [2]	20 485	61 842	64 565	70 156	61 849	88 534	:
LU 2007	4 976	15 767	43 989	126 939	410 150	285 989	:
HU	:	:	:	:	:	:	:
MT 2006	1 082	1 192	12 164	16 645	2 475	12 146	0
NL 2007	246 000	893 000	145 000	1 057 000	1 685 000	6 264 000	:
AT 2007	245 907	577 984	257 031	796 852	:	1 793 706	:
PL	:	:	:	:	:	:	:
PT	:	:	:	:	:	:	:
RO	:	:	:	:	:	:	:
SI	:	:	:	:	:	:	:
SK	:	:	:	:	:	:	:
FI	:	:	:	:	:	:	:
SE 2006	257 430	340 112	946 098	864 669	1 409 641	3 579 653	1 991
UK 2007 [3]	376 646	2 768 638	2 223 110	7 862 129	2 443 592	20 853 909	401 129
IS	:	:	:	:	:	:	:
LI	:	:	:	:	:	:	:
NO 2007 [2]	63 835	242 398	182 081	869 817	399 472	1 287 132	:
CH	:	:	:	:	:	:	:
HR	:	:	:	:	:	:	:
MK	:	:	:	:	:	:	:
TR	:	:	:	:	:	:	:

(1) Other services include: Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods; Hotels and restaurants; Financial intermediation; Real estate; public administration and community services; activities of households; extra-territorial organizations.
(2) Other Services: Real estate; public administration and community services; activities of households; extra-territorial organizations data not available.
(3) Other services: Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods; Hotels and restaurants; Financial intermediation data confidential.

Source: Eurostat (online data code: env_ac_taxind)

Figure 3.5.5: Energy taxes in the European countries by their payers, last year available (%)



(1) Other services include: Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods; Hotels and restaurants; Financial intermediation; Real estate; public administration and community services; activities of households; extra-territorial organizations.
(2) Other Services: Real estate; public administration and community services; activities of households; extra-territorial organizations data not available.
(3) Other services data not available.
(4) Other services: Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods; Hotels and restaurants; Financial intermediation data confidential.

Source: Eurostat (online data code: env_ac_taxind)

Data availability regarding the distribution of energy taxes, as well as transport taxes and pollution/resource taxes by their payers is rather limited at this point in time. Among European countries, for which data were available, households pay between 24 % (in Lithuania) and 61 % (in the Netherlands) of energy taxes. The contribution of the transport sector to energy taxes was also considerable in some countries like Belgium, Bulgaria, Malta, Austria, Latvia, Spain, the United Kingdom and Norway, where it reached over 20 % of total energy taxes, but not more than 36 %.

Interesting phenomena might be seen in Luxembourg, where 46 % of energy taxes were paid by the other services sector (including real estate; public administration and community services; activities of households; extra-territorial organizations), or in Malta, where the electricity, gas and water supply and construction sectors paid 27 % of energy taxes.

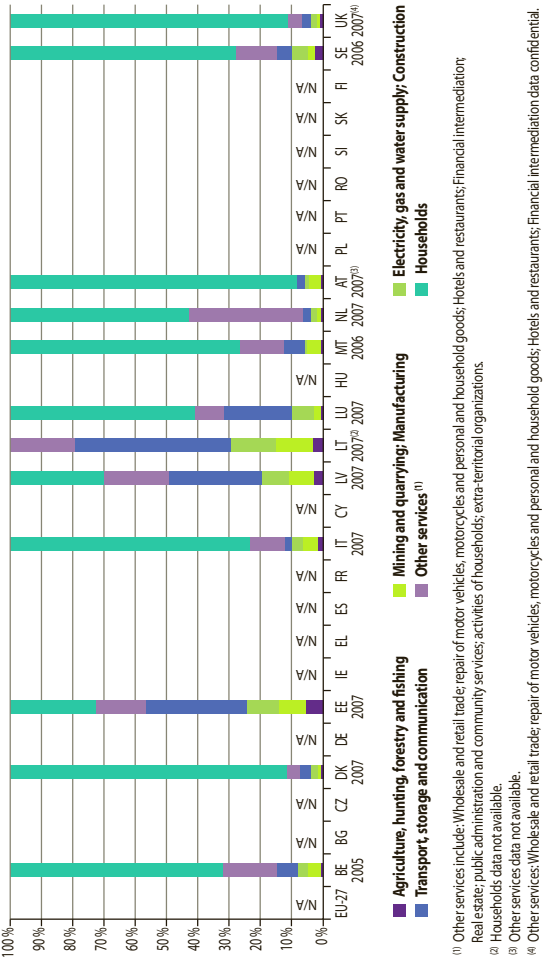
Table 3.5.6: Transport taxes in the European countries by their payers, last year available (thousand EUR)

	Agriculture, hunting, forestry and fishing	Mining and quarrying; Manufacturing	Electricity, gas and water supply; Construction	Transport, storage and communication	Other services [1]	Total activities by households	Not classified
EU-27	:	:	:	:	:	:	:
BE 2005	17 077	98 457	77 322	172 110	418 820	1 669 445	65 056
BG	:	:	:	:	:	:	:
CZ	:	:	:	:	:	:	:
DK 2007	21 447	37 861	85 823	124 941	161 699	3 295 049	1 292 044
DE	:	:	:	:	:	:	:
EE 2007	614	952	1 106	3 564	1 726	2 999	0
IE	:	:	:	:	:	:	:
EL	:	:	:	:	:	:	:
ES 2007	:	:	:	:	:	3 857 000	430 000
FR	:	:	:	:	:	:	:
IT 2007	96 561	285 131	187 602	127 650	635 056	4 384 000	3 476 000
CY	:	:	:	:	:	:	:
LV 2007	1 841	4 849	5 151	17 919	12 460	18 010	:
LT 2007	1 332	4 721	5 908	20 013	8 370	:	:
LU 2007	82	1 474	4 733	14 029	6 101	38 887	:
HU	:	:	:	:	:	:	:
MT 2006	414	3 155	309	4 269	9 228	47 764	0
NL 2007	18 760	117 103	132 110	210 809	2 815 217	4 449 000	:
AT 2007	10 980	69 771	25 199	43 904	:	1 652 357	:
PL	:	:	:	:	:	:	:
PT	:	:	:	:	:	:	:
RO	:	:	:	:	:	:	:
SI	:	:	:	:	:	:	:
SK	:	:	:	:	:	:	:
FI	:	:	:	:	:	:	:
SE 2006	31 083	28 207	56 745	56 192	151 542	837 905	62 055
UK 2007 [2]	90 233	86 878	176 594	250 384	369 236	7 690 178	791 229
IS	:	:	:	:	:	:	:
LI	:	:	:	:	:	:	:
NO 2006 [3]	12 624	134 960	93 833	177 640	550 850	2 385 773	:
CH	:	:	:	:	:	:	:
HR	:	:	:	:	:	:	:
MK	:	:	:	:	:	:	:
TR	:	:	:	:	:	:	:

(1) Other services include: Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods; Hotels and restaurants; Financial intermediation; Real estate; public administration and community services; activities of households; extra-territorial organizations.
(2) Other services: Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods; Hotels and restaurants; Financial intermediation data confidential.
(3) Other Services: Real estate; public administration and community services; activities of households; extra-territorial organizations data not available.

Source: Eurostat (online data code: env_ac_taxind)

Figure 3.5.6: Transport taxes in the European countries by their payers, last year available (%)



(1) Other services include: Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods; Hotels and restaurants; Financial intermediation; Real estate; public administration and community services; activities of households; extra-territorial organizations.
(2) Households data not available.
(3) Other services data not available.
(4) Other services: Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods; Hotels and restaurants; Financial intermediation data confidential.

Source: Eurostat (online data code: env_ac_taxind)

As noticed for energy taxes, households also made the most considerable payments of transport taxes in the European countries for which data were available. The only exceptions were Estonia, where the transport, storage and communication sector paid the largest share of transport taxes (33 %) and Latvia with 30 % of transport taxes. Lithuania is a particular case, in the sense that 50 % of transport taxes were paid by the transport, storage and communication sector, but at the same time data for households' contribution were not available. Households paid 92 % of transport taxes in Austria, 89 % in the United Kingdom and 88 % in Denmark.

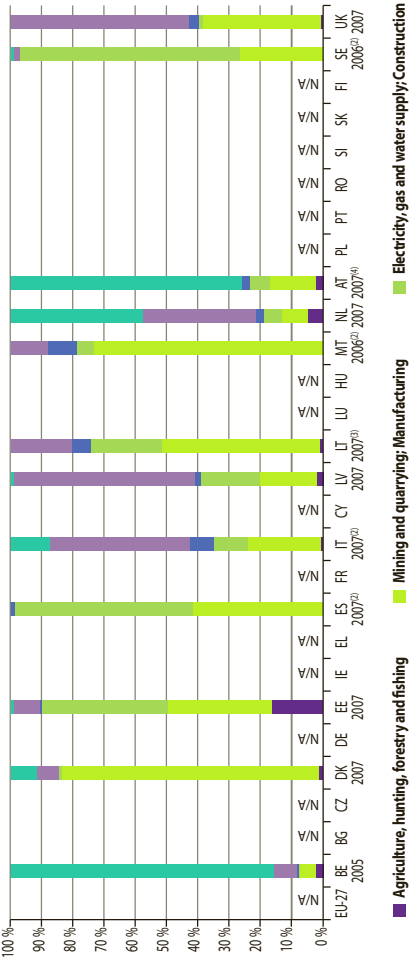
Table 3.5.7: Pollution/resource taxes in the European countries by their payers, last year available (thousand EUR)

	Agriculture, hunting, forestry and fishing	Mining and quarrying; Manufacturing	Electricity, gas and water supply; Construction	Transport, storage and communication	Other services [1]	Total activities by households	Not classified
EU-27	:	:	:	:	:	:	:
BE 2005	11 629	27 555	2 237	2 084	36 520	427 215	87 400
BG	:	:	:	:	:	:	:
CZ	:	:	:	:	:	:	:
DK 2007	45 012	2 644 971	24 294	5 529	233 574	259 977	9 988
DE	:	:	:	:	:	:	:
EE 2007	15 175	30 432	37 401	279	7 972	421	0
IE	:	:	:	:	:	:	:
EL	:	:	:	:	:	:	:
ES 2007 [2]	300	58 500	81 200	2 000	0	0	34 000
FR	:	:	:	:	:	:	:
IT 2007 [2]	3 810	116 209	53 923	39 327	221 862	62 690	180
CY	:	:	:	:	:	:	:
LV 2007	294	2 748	2 792	272	8 773	36	:
LT 2007	319	14 162	6 343	1 767	5 445	:	:
LU	:	:	:	:	:	:	:
HU	:	:	:	:	:	:	:
MT 2006 [2]	:	3 462	252	450	547	:	:
NL 2007	22 000	37 000	24 000	12 000	159 000	186 000	:
AT 2007	9 644	62 179	26 046	10 592	:	308 750	:
PL	:	:	:	:	:	:	:
PT	:	:	:	:	:	:	:
RO	:	:	:	:	:	:	:
SI	:	:	:	:	:	:	:
SK	:	:	:	:	:	:	:
FI	:	:	:	:	:	:	:
SE 2006 [2]	:	2 387	6 275	0	231	24	32 631
UK 2007	3 850	586 345	23 213	46 573	894 955	0	0
IS	:	:	:	:	:	:	:
LI	:	:	:	:	:	:	:
NO 2006 [2]	1 457	8 109	3 035	3 399	22 906	126 973	:
CH	:	:	:	:	:	:	:
HR	:	:	:	:	:	:	:
MK	:	:	:	:	:	:	:
TR	:	:	:	:	:	:	:

[1] Other services include: Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods; Hotels and restaurants; Financial intermediation; Real estate; public administration and community services; activities of households; extra-territorial organizations.
[2] Resource taxes data not available.

Source: Eurostat (online data code: env_ac_taxind)

Figure 3.5.7: Pollution/resource taxes in the European countries by their payers, last year available (%)



(1) Other services include: Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods; Hotels and restaurants; Financial intermediation; Real estate; public administration and community services; activities of households; extra-territorial organizations.
(2) Resource taxes data not available.
(3) Households data not available.
(4) Other services data not available.

Source: Eurostat (online data code: env_ac_taxind)

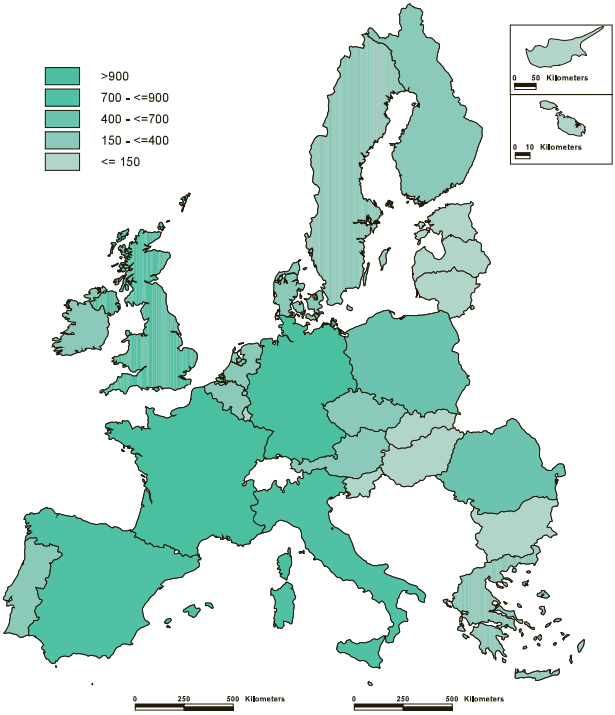
In the case of pollution/resource taxes, the mining, quarrying and manufacturing sectors paid the largest shares of total pollution/resource taxes in Denmark (82 %) and Malta (73 %). Households paid significant pollution/resource taxes in Belgium (84 %), Norway (77 %) and Austria (74 %). The electricity, gas and water supply and construction sectors made the largest contribution in Sweden (70 %), Spain (57 %) and Estonia (41 %). The only Member States where the agriculture, hunting, forestry and fishing sector made up a notable share of total pollution/resource taxes was Estonia (17 %).

Table 3.6.1: Domestic material consumption by material, 2007 (thousand tonnes)

	Total	Biomass	Metal ores	Non-metallic minerals	Fossil energy materials /carriers	Other products	Waste for final treatment and disposal
EU-27	8 200 305	1 728 709	312 047	4 250 607	1 908 871	5 050	- 4 978
BE	195 685	49 756	9 542	95 618	40 825	- 39	- 17
BG	142 247	11 674	30 794	60 062	40 909	- 1 192	0
CZ	196 650	24 222	4 411	94 780	72 708	533	- 4
DK	155 530	34 516	2 097	82 115	36 051	751	0
DE	1 314 170	262 044	43 709	591 026	429 578	- 12 186	- 1
EE	38 171	5 024	152	16 671	16 297	26	1
IE	229 540	38 656	7 907	166 537	17 467	453	- 1 481
EL	186 334	32 177	13 057	51 343	88 390	1 368	0
ES	877 811	144 179	28 992	562 637	141 030	967	5
FR	907 955	247 964	24 179	487 393	144 057	4 362	0
IT	804 257	146 896	29 793	447 438	182 383	- 2 254	2
CY	20 020	2 278	585	14 257	2 630	269	0
LV	48 594	23 165	171	22 534	2 781	185	- 243
LT	48 614	16 704	536	25 706	5 887	- 218	0
LU	6 821	2 050	38	4 757	- 136	111	0
HU	109 684	17 936	2 665	61 381	27 808	- 106	0
MT	2 234	603	99	501	954	76	0
NL	184 299	46 204	7 408	54 673	76 475	2 288	- 2 749
AT	172 154	46 285	9 598	87 575	29 838	- 808	- 333
PL	642 108	179 604	49 107	254 119	161 418	- 2 141	0
PT	218 109	31 804	2 119	161 664	21 568	1 129	- 175
RO	427 914	50 426	6 023	307 716	63 252	496	0
SI	62 372	7 306	955	45 193	9 011	- 92	0
SK	67 801	19 277	2 678	29 044	16 047	755	1
FI	207 033	33 545	8 690	134 362	28 906	1 530	0
SE	183 454	54 869	6 187	103 192	17 752	1 441	13
UK	750 745	199 547	20 554	288 314	234 983	7 347	0
IS	:	:	:	:	:	:	:
LI	:	:	:	:	:	:	:
NO	173 628	20 299	5 460	69 594	79 680	- 1 403	- 2
CH	92 145	20 051	2 245	52 064	15 237	2 563	- 16
HR	:	:	:	:	:	:	:
MK	:	:	:	:	:	:	:
TR	719 518	206 447	47 702	341 554	122 692	1 123	0

Source: Eurostat (online data codes: tsdpc230 or env_ac_mfa)

Map 3.6.1: Domestic material consumption, 2007 (million tonnes)



Source: Eurostat (online data codes: tsdpc230 or env_ac_mfa)

Domestic material consumption (DMC) measures the total amount of materials directly used by an economy and it can provide an assessment of the absolute level of the use of resources. It is defined as the annual quantity of raw materials extracted from the domestic territory, plus all physical imports minus all physical exports.

In 2007, total DMC in the EU-27 was approximately 8 200 million tonnes. From 2000 to 2003, DMC decreased by 3 %. However, since 2003 it has increased by 11 %, reaching an overall increase of 8 % between 2000 and 2007. This trend was in accordance with the development in Domestic Extraction Used (DEU).

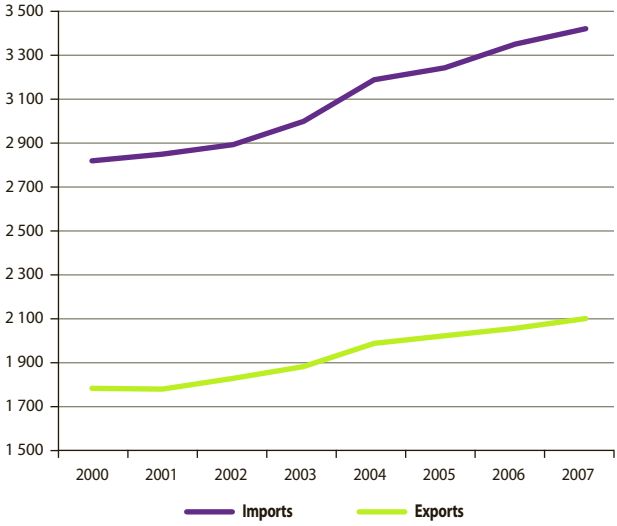
On a breakdown by material, non-metallic minerals made up 52 % of total EU-27 DMC in 2007. Fossil energy materials/carriers and biomass accounted for approximately similar shares with 23 % and 21 % of the total respectively, while metal ores made up the remaining 4 %. From 2000 to 2007, consumption of minerals and metal ores grew by 14 % and 10 % respectively; while the consumption of fossil fuels showed a moderate increase (3 %).

Table 3.6.2: Total imports and exports of materials in the EU-27, 2000-2007 (million tonnes)

Imports	2000	2001	2002	2003	2004	2005	2006	2007
Total	2 824	2 854	2 897	3 003	3 193	3 247	3 355	3 425
Biomass	495	510	526	538	564	587	594	614
Metal ores (gross ores)	496	486	486	508	566	544	601	632
Non-metallic minerals	332	328	327	328	340	348	357	381
Fossil energy materials/carriers	1 384	1 414	1 438	1 503	1 585	1 629	1 659	1 643
Other products	116	117	119	126	137	138	143	153
Waste for final treatment and disposal	0	1	1	1	1	1	1	2
Exports								
Total	1 782	1 779	1 828	1 881	1 987	2 022	2 056	2 100
Biomass	454	451	463	486	496	527	529	535
Metal ores (gross ores)	319	322	328	343	381	377	406	425
Non-metallic minerals	314	305	304	304	314	327	332	344
Fossil energy materials/carriers	575	580	604	615	654	646	641	641
Other products	118	118	123	127	135	140	141	148
Waste for final treatment and disposal	3	4	5	6	7	6	6	7

Source: Eurostat (online data code: env_ac_mfa)

Figure 3.6.2: Total imports and exports of materials in the EU-27 (million tonnes)



Source: Eurostat (online data code: env_ac_mfa)

Between 2000 and 2007, the total imports and exports of materials in the EU-27 grew by 21 % and 18 % respectively. Over this period, imports grew continuously, while exports presented a slight decrease between 2000 and 2001 (- 0.2 %), but they kept rising since. The amount of imports was about 63 % higher than the amount of exports.

In 2007, the imports of fossil fuels in the EU-27 accounted for almost half of the total and reached 1 643 million tonnes. From 2000 to 2006, their growth was continuous, while from 2006 to 2007 it marked a slight decrease (- 1 %). The imports of biomass and metal ores were at similar levels (18 % of the total). Since 2000, the amount of imported biomass and metal ores grew by 24 % and 27 % respectively.

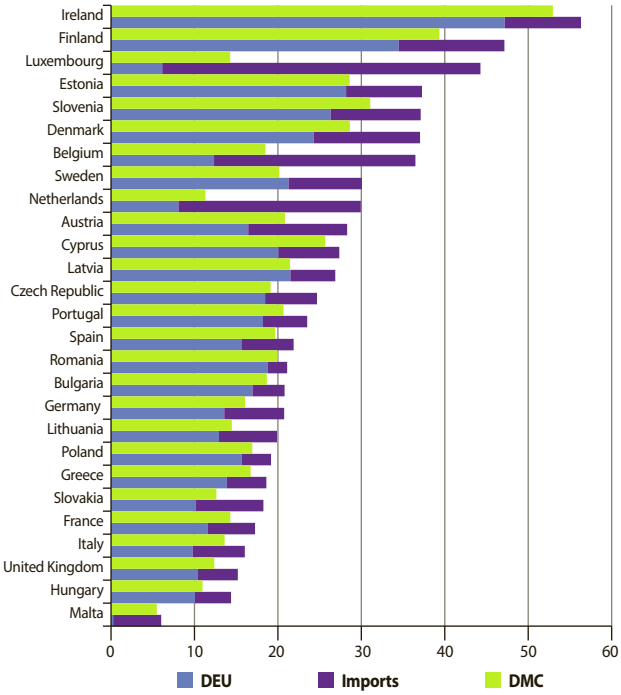
In 2007, the amount of fossil fuels exported by the EU-27 made up a 31 % share of total exports, while biomass and metal ores contributed 25 % and 20 % to total exports. From 2000 to 2007, the EU-27 presented increased exporting activity for all materials. The highest increase was observed in metal ores (33 %).

Table 3.6.3: Domestic material input and domestic material consumption per capita, 2007 (tonnes per capita)

	Domestic material input	of which:		Domestic material consumption
		Domestic extraction used	Imports	
EU-27	:	13.85	6.90	16.52
Belgium	36.29	12.28	24.01	18.42
Bulgaria	20.69	16.87	3.82	18.57
Czech Republic	24.56	18.37	6.18	19.03
Denmark	36.85	24.15	12.69	28.48
Germany	20.64	13.50	7.14	15.97
Estonia	37.08	28.03	9.05	28.45
Ireland	56.04	46.93	9.10	52.68
Greece	18.52	13.81	4.71	16.65
Spain	21.77	15.54	6.23	19.56
France	17.17	11.50	5.66	14.23
Italy	15.95	9.72	6.23	13.55
Cyprus	27.22	19.96	7.26	25.54
Latvia	26.74	21.39	5.35	21.35
Lithuania	19.79	12.87	6.92	14.40
Luxembourg	44.05	6.11	37.94	14.21
Hungary	14.31	10.01	4.30	10.91
Malta	5.98	0.29	5.69	5.46
Netherlands	29.78	8.04	21.74	11.25
Austria	28.15	16.36	11.79	20.74
Poland	19.08	15.56	3.52	16.84
Portugal	23.39	18.11	5.28	20.56
Romania	21.00	18.66	2.34	19.86
Slovenia	36.92	26.18	10.74	30.91
Slovakia	18.17	10.10	8.07	12.56
Finland	46.90	34.29	12.61	39.15
Sweden	29.91	21.16	8.75	20.05
United Kingdom	15.12	10.31	4.81	12.31
Iceland	:	:	:	:
Liechtenstein	:	:	:	:
Norway	82.15	74.68	7.47	36.87
Switzerland	14.63	7.84	6.79	12.20
Croatia	:	:	:	:
The former Yugoslav Republic of Macedonia	:	:	:	:
Turkey	11.23	9.10	2.13	10.26

Source: Eurostat (online data codes: tsdpc220 or env_ac_mfa and demo_gind)

Figure 3.6.3: Domestic material input and domestic material consumption per capita, 2007 (tonnes per capita)



Source: Eurostat (online data codes: tsdpc220 or env_ac_mfa and demo_gind)

Direct Material Input (DMI) measures the direct input of materials for use into the economy. DMI equals domestic extraction used plus imports. Domestic material consumption (DMC) equals DMI minus exports. The relation of DMC to DMI indicates to which extent material resource inputs are used for own domestic consumption or are exported for consumption in other economies.

In 2007, DMC in the EU-27 was at 16.5 tonnes per capita, while data for DMI were not available. At Member State level, DMI ranged between 6 tonnes per capita in Malta to 56 tonnes per capita in Ireland. High DMI was also observed in Finland (47) and Luxembourg (44).

The highest shares of DMI use for own DMC were recorded in Romania (95 %), Ireland (94 %), Cyprus (94 %) and Malta (91 %). In contrast, the share was low in Luxembourg (32 %) and the Netherlands (38 %). The reasons of the diversion in these shares differ across countries.

Annex A: Glossary of terms used in the energy section

Biofuels
Liquid or gaseous fuels used primarily for transport produced from biomass. Biofuels comprise biogasoline, biodiesel and other liquid biofuels. Second-generation biofuels refer to biofuels produced from wastes, residues, non-food cellulosic material and lingo-cellulosic material.

CHP
See "Combined Heat and Power".

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.

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

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.

Final energy consumption
Final energy consumption is the energy consumed in the following sectors: industry, transport, commercial and public services, agriculture/forestry, fishing, residential and other. It excludes the non-energy consumption, deliveries to the energy transformation sector and to the energy sector.

GCV
See "Gross Calorific Value".

GDP
See "Gross Domestic Product".

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 (anthracite, coking coal, bituminous coal and sub-bituminous coal), patent fuels, coke oven coke and coal tar.

Installed capacity
Installed capacity represents the maximum active power that can be supplied, continuously, with all plants running.

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

Natural gas
Natural gas comprises gases, occurring in underground deposits, whether liquefied or gaseous, consisting mainly of methane. It includes both "non-associated" gas originating from fields producing hydrocarbons only in gaseous form, and "associated" gas produced in association with crude oil as well as methane recovered from 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 the water vapour formed by the combustion of hydrogen contained in the fuel.

Net import
Net import is calculated as the difference between imports and exports.

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.

– *Natural gas:* Quantities of dry gas within national boundaries, 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, Solar photovoltaic:* 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.

RES

See "Renewable Energy".

Renewable energy

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

Annex B: Terms and methodology used in the transport section

The main terms used in the field of transport statistics are defined in 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.

Further clarification of the terms used in transport statistics can be found in the Eurostat/ITF/UNECE "Illustrated Glossary for Transport Statistics" publication, available at http://www.unece.org/trans/main/wp6/pdfdocs/glossen4.pdf.

The indicators presented in the transport section of this pocket book represent a small part of 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 (equipment, vehicle-kilometres, quantity and performance 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).

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

Eurostat's on-line database has been used as the main source for the indicators, while figures from the DG for Mobility and Transport have been used as an additional source. For some missing data, figures from miscellaneous international or national bodies have been used and some estimates (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: Council Directive 80/1177/EEC of 4 December 1980 **(O.J. L 350 of 23.12.1980)** replaced by Regulation (EC) No 91/2003 of the European Parliament and of the Council of 16 December 2002 (rail freight, passengers, traffic and accidents) **(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: Regulation (EC) 1365/2006 of the European Parliament and of the Council of 6 September 2006 **(O.J. L 264 of 25.9.2006)**
   - Maritime: Directive 2009/42/EC of the European Parliament and of the Council of 6 May 2009 on statistical returns in respect of carriage of goods and passengers by sea **(O.J. L 141 of 6.6.2009)**
   - 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 November 1993 **(O.J. L 329 of 30.12.1993)**
2. The "Common Questionnaire" of Eurostat, UNECE and ITF, 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 on-line database which covers, from the early eighties, millions of transport figures from EU countries plus, to a lesser extent, statistics from EFTA, Mediterranean and Candidate countries. Some miscellaneous publications in paper and electronic formats are also available, such as the "Panorama of transport" and several "Statistics in Focus".

Annex C: Glossary of terms used in the environment section

Carbon content of woody biomass and wood products

Different tree species store different amounts of carbon, which are released into the atmosphere when the wood is incinerated or ultimately broken down during the process of decomposition. Before that happens, the carbon remains stored in products made from wood (rafters used in buildings, panels, veneers, paper, cardboard, etc). The International Panel for Climate Change has developed carbon factors for estimating the carbon content of forests and of different types of wood products[1]. These factors were applied to standard forest data on standing volume of forest trees, net annual increment and wood products to convert these data to tonnes of carbon.

CO_2 equivalent

Emissions of some substances resulting from burning of fossil fuels and other activities like industrial processes or agriculture significantly change the composition of the atmosphere and cause the anthropogenic greenhouse effect: carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O) and hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF_6). 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.

CRF – Common reporting format for source and sink categories

The CRF is used by countries for reporting of greenhouse gas inventories since 2000 under the United Nations Framework Convention on Climate Change (UNFCCC), the Kyoto Protocol, and EU GHG Monitoring Mechanism (Decision 280/2004/EC). It is in line with the 1996 IPCC Guidelines (IPCC 19971), and is described in the Reporting guidelines (http://www.unfccc.int/resource/docs/cop5/07.pdf). The sources categories in the highest aggregated levels are the following:

CRF 1 Energy
CRF 2 Industrial Processes
CRF 3 Solvent and Other Product Use
CRF 4 Agriculture
CRF 5 Land-Use Change & Forestry
CRF 6 Waste
CRF 7 Other

Please note that the fuel combustion for energy use in the industry and in the agriculture as well as the waste incineration with energy use – all these emissions count to the CRF source and sink categories "Energy".

Domestic Extraction Used (DEU)

Domestic extraction used (DEU) is the input from the natural environment to be used in the economy. DEU is the annual amount of raw material (except for water and air) extracted from the natural environment.

Domestic Material Consumption (DMC)

Domestic material consumption (DMC) measures the total amount of materials directly used by an economy and is defined as the annual quantity of raw

[1] http://www.ipcc-nggip.iges.or.jp/public/2006gl/vol4.html

materials extracted from the domestic territory, plus all physical imports minus all physical exports. It is important to note that the term "consumption" as used in DMC denotes apparent consumption and not final consumption. DMC does not include upstream "hidden" flows related to Imports and Exports of raw materials and products.

Domestic Material Input

Direct Material Input (DMI) measures the direct input of materials for use into the economy, i.e. all materials which are of economic value and are used in production and consumption activities. DMI equals domestic (used) extraction plus imports.

Environmental protection expenditure

Environmental protection expenditure (EPE) include all purposeful activities directly aimed at the prevention, reduction and elimination of pollution or any other degradation of the environment resulting from the production process or from the consumption of goods and services.

Environmental protection investments

Investment for environmental protection includes all outlays in a given year (purchases and own-account production) for machinery, equipment and land used for Environmental Protection purposes. It is the sum of two categories:

- End-of-pipe (pollution treatment) investments. These investments do not affect the production process itself, and the amount of pollution generated, instead they serve to treat pollution already generated.
- Investments in integrated technologies (pollution prevention investments). These are investments which lead to a modified or adapted production process. They serve to reduce the amount of pollution generated.

Total current expenditure for environmental protection

There are used also in the data reported under Structural Business Statistics regulation, and includes both internal current expenditure and fees/purchases:

- *Internal current expenditure (in-house)*
  Internal current expenditure includes the use of energy, material, maintenance and own personnel for measures made by the sector to protect the environment. A large part of internal expenditure is related to operating environmental protection equipment. There are also other internal expenditure such as general administration, education, information, environmental management and certification, research and development.

  Internal current expenditure includes purchases of connected and adapted non-capital goods such as extra cost for low sulphur fuels. These are sometimes not part of specific surveys but estimated based on existing information e.g. on number of units and unit costs. The coverage of adapted and connected products in the figures reported could vary considerably between countries.

  Internal current expenditure exclude purchases of environmental protection services bought from the Public sector or Specialized producers such as waste collection, sewage treatment, environmental consultancy services, or surveillance fees. All such purchases are reported under Fees/Purchases.

- *Fees/Purchases*
  Fees/Purchases include all purchases of environmental protection services, both from public and private producers. These payments are clearly linked

with an environmental protection activity done outside the enterprise and should exclude e.g. fines and penalties. The payments include:

- Payments to specialised producers (enterprises) for waste and wastewater collection and treatment and payments to environmental consultants linked e.g. with environmental management and education.
- Payments to public sector for waste and wastewater collection and treatment (whatever the name of the payments — fees, charges etc) as well as permits and surveillance fees.

Payments of taxes directly used for financing environmental protection expenditure — so called earmarked environmental taxes are excluded, but are reported as Subsidies/Transfers. Payments of general environmental or green taxes (such as energy taxes) are excluded completely from this statistics.

Environmental domains

The scope of environmental protection is defined according to the Classification of Environmental Protection Activities (CEPA 2000), which distinguishes nine different environmental domains grouped for practical reasons in 2 categories:

- Core domains: protection of ambient air and climate (Air); wastewater management (wastewater); waste management (waste);
- Non-core domains: protection and remediation of soil, groundwater and surface water; noise and vibration abatement; protection of biodiversity and landscape; protection against radiation; research and development and other environmental protection activities.

Implicit tax rate on energy

The indicator expresses energy tax revenues in relation to final energy consumption calculated for a calendar year (Euro per ton oil equivalent, deflated with the final demand deflator). It measures the taxes levied on the use of energy which contributes to foster energy efficiency.

Energy Tax Revenues is the sum of taxes on energy products used for both mobile and immobile purposes.

Final Energy Consumption include energy consumed in the transport, industrial, commercial, agricultural, public and households sectors but exclude deliveries to the energy transformation sector and to the energy industries themselves. The different energy products are aggregated on the basis of their net calorific value, and expressed in tons of oil equivalent.

Environmentally related taxes

Called "environmental taxes" for practical reasons, these taxes are the ones whose tax base is a physical unit (or a proxy of it) of something that has a proven, specific negative impact on the environment. The concept consists of the revenues from four types of taxes: energy-, transport-, pollution- and resource taxes. Carbon dioxide taxes are included under energy as they are often an integral part of general energy taxes, and excluded are general Value Added Tax (VAT).

For the purpose of this publication, environmentally related taxes can be broken down by:
- Sectors: industry, private households activities, non-residents and not-allocated (impossible to be allocated to the first 3 categories)
- Industry: includes the breakdown of the first category described in Sectors according to NACE.

Fluorinated gases (F-gases)

Hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF_6) are greenhouse gases with a very high global warming potential. The main uses of HFCs are as refrigerants, cleaning solvents and foam blowing agents. PFCs are used in semi-conductor manufacture and as cleaning solvents, and SF_6 is used in high-voltage switch gear and magnesium production.

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. These substances have individual GWP ranging from 1 (carbon dioxide), 21 (methane), 310 (nitrous oxide) to 23 900 (sulphur hexafluoride). Hydrofuorocarbons and perfluorocarbons comprise a large number of different gases that have different GWPs (IPCC, 1996).

Greenhouse Gases (GHG)

These emissions are reported under 1992 United Nations Framework Convention on Climate Change and for the EU member states under the Decision 280/2004/EC. According to the Kyoto Protocol anthropogenic emissions of the six greenhouse gases (the 'Kyoto basket') are aggregated using the global warming potential: carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O) and hydrofuorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF_6).

Kyoto base year

In general, the base year it is 1990 for carbon dioxide, methane, nitrous oxide, and 1995 for the fluorinated gases (hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride). Some countries have selected different base years: Bulgaria (1988), Hungary (average 1985–87), Poland (1988), Romania (1989) and Slovenia (1986).

Kyoto reduction targets

In the first quantified emission limitation and reduction commitment period, from 2008 to 2012, the EU-15 has agreed to an 8 % reduction in its greenhouse gas emissions compared to 1990. Individual targets for each of the EU-15 countries have been agreed under the EU burden sharing agreement (Council Decision 2002/358/EC4) which allows five countries (Greece, Ireland, Portugal, Spain and Sweden) to increase emissions, provided these are off set by reductions in the other Member States. The new EU Member States and candidate countries have differing targets under the Kyoto Protocol which became binding to its Parties worldwide in February 2005. No targets exist for Cyprus, Malta and Turkey.

NACE

Nomenclature statistique des Activités économiques dans la Communauté Européenne; in English: Statistical classification of economic activities in the European Community. NACE is organised in sections and sub-sections.

Sections of NACE rev 1.1

A	Agriculture, hunting and forestry
B	Fishing
C	Mining and quarrying
D	Manufacturing
E	Electricity, gas and water supply
F	Construction
G	Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods
H	Hotels and restaurants
I	Transport, storage and communication
J	Financial intermediation
K	Real estate, renting and business activities
L	Public administration and defence; compulsory social security
M	Education
N	Health and social work
O	Other community, social and personal service activities
P	Activities of households
Q	Extra-territorial organizations and bodies

Sub-sections of NACE rev 1.1

DA	Manufacture of food products, beverages and tobacco
DB	Manufacture of textiles and textile products
DC	Manufacture of leather and leather products
DD	Manufacture of wood and wood products
DE	Manufacture of pulp, paper and paper products; publishing and printing
DF	Manufacture of coke, refined petroleum products and nuclear fuel
DG	Manufacture of chemicals, chemical products and man-made fibres
DH	Manufacture of rubber and plastic products
DI	Manufacture of other non-metallic mineral products
DJ	Manufacture of basic metals and fabricated metal products
DK	Manufacture of machinery and equipment n.e.c.
DL	Manufacture of electrical and optical equipment
DM	Manufacture of transport equipment
DN	Manufacturing n.e.c

[1] http://www.ipcc-nggip.iges.or.jp/public/2006gl/vol4.html

Net annual increment

The average annual volume over the reference period of gross increment less natural losses[2]. It is measured in cubic metres over bark (including the bark).

Waste

Waste means any substance or object which the holder discards or intends or is required to discard. Municipal waste generated consists of waste collected by or on behalf of municipal authorities and disposed of through the waste management system. The bulk of this waste stream is from households, though similar wastes from sources such as commerce, offices and public institutions are included. For areas not covered by a municipal waste scheme an estimation has been made of the amount of waste generated.

Water

Water net abstraction (= water withdrawal):
Water gross abstraction minus returned water.

Cooling water:
Water which is used to absorb and remove heat. In the questionnaire cooling water is broken down into cooling water used in the generation of electricity in power stations, and cooling water used in other industrial processes.

Public water supply:
Water supplied by economic units engaged in collection, purification and distribution of water (including desalting of sea water to produce water as the principal product of interest, and excluding system operation for agricultural purposes and treatment of waste water solely in order to prevent pollution). It corresponds to division 41 (NACE/ISIC) independently of the sector involved. Deliveries of water from one public supply undertaking to another are excluded.

[2] http://stats.oecd.org/glossary/detail.asp?ID=6517

Annex D: 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*	1kg	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	49 500	1.182
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	42 600	1.017
Residual fuel oil	1 kg	40 000	0.955
White spirit, industrial spirit	1 kg	43 600	1.041
Lubricants	1 kg	42 000	1.003
Bitumen	1 kg	39 000	0.931
Petroleum cokes	1 kg	32 000	0.764
Others petroleum products (paraffins, waxes, etc.)	1 kg	40 000	0.955
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

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