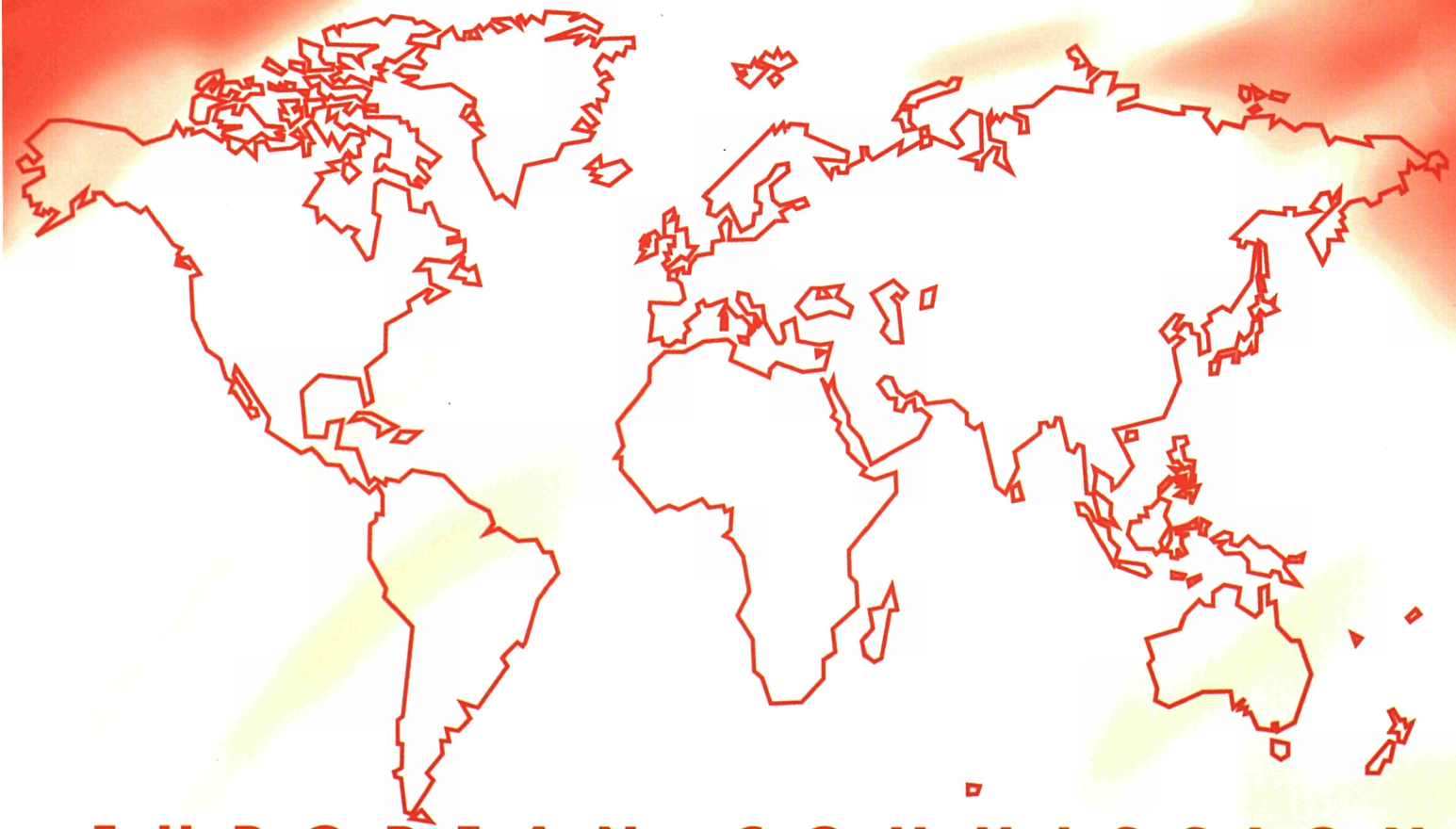
DIRECTORATE - GENERAL FOR ENERGY (DG XVII)

ENERGY IN EUROPE

1997 - ANNUAL ENERGY REVIEW

SPECIAL ISSUE - SEPTEMBER 1997



EUROPEAN COMMISSION

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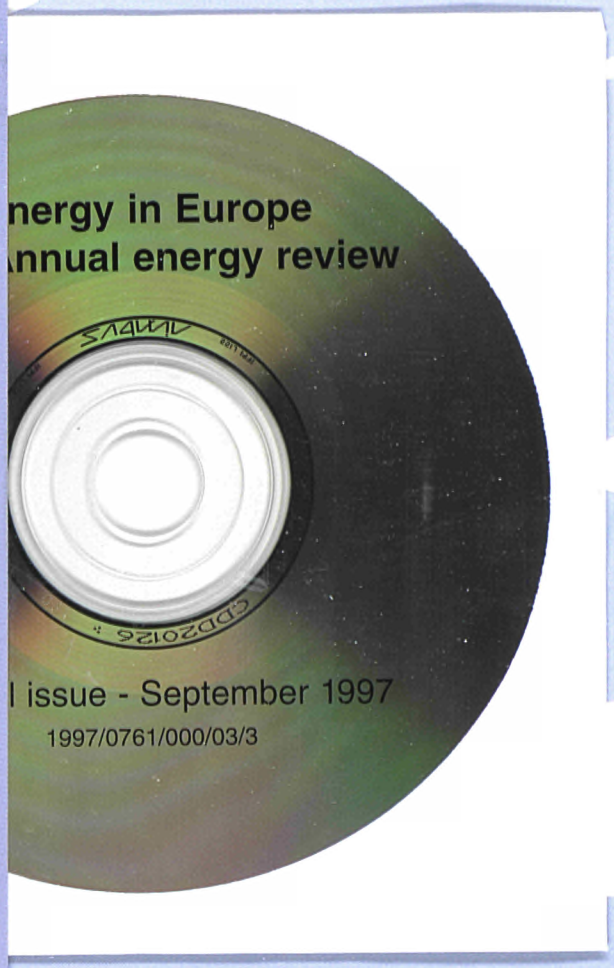

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Including a CD-Rom with global energy balances and indicators for 127 countries in the world

EUROPEAN COMMISSION

CONTENTS

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ABBREVIATIONS, DEFINITIONS AND UNITS

CIS	Community of Independant States
DG II	Directorate-General for Economic Affairs of the European Commission
DG XVII	Directorate-General for Energy of the European Commission
EFTA	European Free Trade Agreement
Energy Intensity	Ratio of GIC to GDP
EU	European Union
GCC	Gulf Co-operation Council
GDP	Gross Domestic Product
GIC	Gross Inland Consumption
GDR	German Democratic Republic
GW	GigaWatt, or 10^9 Watt
IAEA	International Atomic Energy Agency
IEA	International Energy Agency
IMF	International Monetary Fund
Kgoe	Kilogram oil equivalent
kl	Thousand litre
kWh	Thousand Watt.hour
l	Litre
MECU	Million ECU
Mt	Million metric tonne
Mtoe	Million toe
NAFTA	North American Free Trade Agreement
OECD	Organisation for Economic Co-operation and Development (excluding Hungary, Czech Republic and Poland)
OLADE	Organizacion Latinoamericana de Energia
S	Sulphur
SOEC	Statistical Office of the European Commission
STEO	Short-Term Energy Outlook for the European Union
t	Metric tonne, or 1000 kilograms
toe	Tonne of oil equivalent, or 10^7 kilocalories, or 41.86 GJ
TWh	Tera Watt.hour, or 10^{12} Watt.hour
UN	United Nations
UN-ECE	UN's Economic Commission for Europe
WB	World Bank

FOREWORD BY MR. CHRISTOS PAPOUTSIS,
Member of the Commission responsible for energy and Euratom supply agency

Security of energy supplies, integration of markets and environmentally sustainable development feature prominently in the current community policy debates. The external energy dependency of the Union is growing. Market integration is underway irreversibly, and developments in European electricity and gas markets confirm these apparent trends. Renewable energy sources, responding to growing environmental concerns, are recognised as increasingly important for sustainable development. The developing global view seeks to support productivity, sustainability and efficiency progress in energy markets by promoting even more cost-effective and environmentally-friendly actions in Community RT&D programmes.

Energy policy is facing new challenges and needs for adaptation. Progression of internal energy markets, international co-operation in the energy sector, the Kyoto conference on climate change and the need for a strategy to promote renewable energy sources are some examples of contemporary policy topics with important long-run repercussions. To support sound decision-making in energy policy issues and other matters with direct and indirect energy consequences, detailed and shared analysis is essential.

As both energy policy and energy markets are changing, so is the Annual Energy Review adapting to new situations by facilitating the sharing of analysis by different organisations who have themselves a variety of approaches and backgrounds. The Review continues to support energy policy discussions by providing a record of historical energy trends and by looking to the trends in the near to medium-term future. The second millennium is reaching its conclusion, and the target year adopted in Rio de Janeiro in 1992 is approaching. To cover this milestone, we have extended our forecast to include the first year of the new millennium. There are also other extensions to this edition; in addition to the traditional printed publication there is included a CD-ROM. With this approach, the Review seeks to serve simultaneously two markets for information. The first is those needing a quick and consistent overview of the world energy situation; the second is the specialists pursuing a detailed view with an option to proceed with the analysis. These changes are not the endpoint for the evolution of the Review. Reader reactions, progressing energy policy and changing market structures and trends will ensure that the Annual Energy Review will continue to evolve to match the needs of the readers.

The review is presented here
in ten parts
according to
the most important world regions.

The first part
provides an overview of world energy by region.

Part II analyses in detail European Union
including summary tables on energy prices.

Part III looks at the Rest of OECD, by regions:
NAFTA, OECD Pacific and EFTA

Part IV analyses Central and Eastern Europe in detail.

Part IV provides information on the former USSR.
In this part there is an attempt to show details
for each Republic of the former USSR,
to the extent of availability of statistical data.

The other parts look at the other world regions
but in less detail.

Finally, the Short-Term Energy Outlook
for the European Union is reviewed for the period 1997-2000.

Some of the key findings are summarised
in the next pages.

EXECUTIVE SUMMARY

WORLD

TOTAL ENERGY CONSUMPTION GREW BY ONLY 0.9% PER YEAR UNDER THE PRESSURE OF RESTRUCTURING EASTERN ECONOMIES:

• The 80's were characterised by a faster growth in the non-OECD area, 3.0% per year compared with 0.9% in the OECD. However, while the OECD area continued to increase its energy needs by 1.5% per year on average since 1990, the non-OECD world had a growth in demand limited to 0.3% annually. This drop in the non-OECD demand resulted from the significant decreases in Central and Eastern Europe and the former USSR that was just about compensated by the buoyant demand in the Middle East (+5.2% per year on average), in Asia (+5.1%) and in Latin America (+3.3%);

• In 1995, energy consumption rebounded in Central and Eastern Europe contributing to an increase in world energy consumption of 1.9%. First indicative figures demonstrate an accentuation of this trend in 1996 leading to a global increase of world energy consumption of about 3.0%;

• The final energy consumption by sector presented very contrasted evolutions. Industrial consumption driven by the efforts made by industry to reduce specific consumption per unit produced was, in 1994, about 3% below the level observed in 1980 and 9% below the peak reached in 1989. Energy consumption for transport, still the minor contributor, was increasing regularly by about 2% per annum in all part of the world. Energy consumption by tertiary and domestic sector, dependent on climatic conditions, increased on average by 1.8% since 1980. The difference between OECD region (+0.8% per annum) and non-OECD region (+2.8%) is due to increasing living standards in these regions

THE FUEL MIX IS CHANGING BUT OIL REMAINS PREDOMINANT:

• Oil remains the predominant energy source, keeping its share of 38% since 1990;

• Since 1990 Natural gas is growing broadly in line with overall energy consumption. Strong growth in OECD countries is balanced by diminishing energy demand in countries in transition. Demand was accelerating in 1995;

• Solid fuels have remained quite stable since 1990, after steady growth in the last two decades, but the consumption, driven by the power sector, was progressively displaced from OECD region to non-OECD region;

• The carbon free energy sources (nuclear and renewables) showed the most spectacular growth since 1990, with an increase of about 14%. Renewable energy sources accounted for 11.3% of total needs in 1995. About 50% of world biomass production remained located in Asia;

•Reflecting growing penetration of electricity in final demand, electricity generation increased by 3.1% per year world-wide, mainly due to sustained growth in non-OECD regions:

- Nuclear production increased fastest even if nuclear capacity grew more slowly since 1990;
- The contribution of thermal generation increased slowly. Inputs have been increasingly dominated by solid fuels, even if utilisation of gas doubled since 1980;
- Hydro production continued to increase, with major developments in Asia and Latin America.

OECD REGION WAS SLOWLY INCREASING ITS CONTRIBUTION TO WORLD ENERGY PRODUCTION:

• In the 90's, OECD production grew by 1.5% per year while non-OECD production increased by only 0.4% per year. In 1995, non-OECD saw a growth of about 2.0%;

• The non-OECD evolution was marked by substantial cutbacks of production in the countries in transition, compensated by production increases in developing countries;

• The OECD production gains were mainly in oil, gas and nuclear, while non-OECD countries increased predominantly their solid fuel production and renewables;

• OPEC as a whole remains the major oil producer, but its weight in total world oil production fell from 44% in 1980 (54% in 1973) to 41% in 1995, with a minimum share of 29% in 1985.

OECD ENERGY TRADE REMAINED STABLE IN THE 90'S:

• OECD absorbs about 80% of world interregional net exchanges, but all these exchanges represented only 16% of total world energy consumption in 1995;

• The European Union remains by far the world's largest importer with a steady annual growth of 2.1% since 1985. OECD Pacific is next largest importer with a relatively stable level since 1990 and NAFTA imports, the third largest, grew rapidly since 1990 but dropped by about 11% in 1995;

• Asia was continuously increasing its imports, starting from a negligible level in 1980 to reach 225 Mtoe in 1995, a level comparable with NAFTA;

• Net exporters remained, traditionally, the Middle East (797 Mtoe in 1995), Africa (321 Mtoe), CIS (241 Mtoe) and EFTA (143 Mtoe); all four mainly exporters of hydrocarbons;

• OPEC continued to dominate the oil market and Russia accounted for 40% of natural gas trade in 1995.

WORLD-WIDE CO_2 EMISSIONS INCREASED BY 2.5% BETWEEN 1990 AND 1995:

• Since 1990, CO_2 emissions have been increasing in almost all regions in the world, in some case by more than 5% per year (Asia and Middle East), with the exception of the European Union (-0.8% per year) which benefited from energy efficiency improvements and former Centrally Planned Economies due to the drastic reduction of energy consumption observed, mainly in CIS, since 1990. In fact, excluding former Centrally Planned Economies, world emissions grew by 2.3% on average since 1990;

• At the same time CO_2 emissions per capita showed a reduction of 0.6% a year over the last fourteen years (3.7 tons of CO_2 per capita in 1994 compared to 4.0 in 1980).

• The power generation sector remained largely the largest sector in terms of emissions. CO_2 emissions from the power sector grew by only 2.2% on average since 1980, with a relative slow down since 1990, to represent about 34% of total world emissions in 1994.

EUROPEAN UNION

ENERGY CONSUMPTION IS GROWING AGAIN

• Energy growth rebounded strongly in 1995 (+2.3%) after the turnaround of 1994 (+0.3%) following earlier consumption decreases. In 1996 gross inland consumption of energy grew 3.6%. In terms of gross national product the growth was 2.5% in 1995 compared to 2.9% in 1994;

• Gross inland consumption was 3.7% higher in 1995 than in 1990 (excluding the effects of EU expansion), while GDP measures over 7% growth, indicating a 3% energy intensity improvement during the first half of the 90's;

• The tertiary-domestic was the fastest growing (+2.4%) of the final use sectors in 1995. The previous year was exceptionally warm and as the temperature returned closer to its long-term average energy demand increased briskly. Year-to-year changes of energy demand in this sector continue to be strongly correlated with weather;

• Industrial use of energy grew 2.0% in 1995 compared with a 3.8% increase in industrial production, implying an almost 2% improvement in industrial energy intensity;

• Transport energy demand has increased 3.2% p.a. during last ten years, but in the previous two years has been below the long-term trend (0.5% in 1994 and 1.3% in 1995). Transport energy intensity improved by 1.1% in 1995;

FUEL SWITCHING WAS PARTICULARLY NOTICEABLE

• Natural gas demand increased 8.0% in 1995, well above its former trend of 3% p.a.. In 1996 growth was even faster, 11.6%, due to increased use in power generation;

• In 1995, 1.7% more oil was used than in 1994. One third of the increase occurred in the power sector, mainly in the Mediterranean Member States, and one third in the transport sector. In 1996 oil consumption grew 2.5% mainly because of the cold weather;

• The downward trend in solid fuel demand continued (-2.5%). Solid fuel use is now more than 20% lower than in 1990. Year 1996 saw a new decline in solid fuel use; hard coal -3.8% and lignite -2.2%;

• Once again, growth in electricity demand was second only to that of natural gas. Hydro and wind production remained unchanged, but all other electricity production expanded:

- Nuclear production grew 2.3% compared with a capacity increase of only 0.8% (1 GWe) in 1995. The production of nuclear energy grew further 5.8% in 1996;
- There was growth in all power sector fuel inputs, ranging from 12.6% of natural gas to 0.4% of solid fuels in 1995;

• Renewables' share in gross inland consumption (5.3%) remained roughly at its 1994 level;

MIXED MESSAGES ON ENERGY AND CARBON INTENSITIES

• Both energy and carbon intensities showed a deviation from their medium-term trends;

• Overall energy intensity remained practically unchanged in 1995 after a period of annual improvement of 0.7% between 1990 and 1994;

• Carbon intensity declined 0.6%, which is half the average rate since 1990;

NO BIG CHANGES IN ENERGY CONSUMER PRICES

• World oil prices, in real terms, remained at a low level but rose temporarly in 1996;

• Despite that, gasoline (0.6%) and especially heavy fuel oil (5.2%) prices rose;

• Energy prices for domestic consumers continued their slightly downward trend for all forms of energy, including heating oil (-3.4%);

CO_2 EMISSIONS INCREASED IN 1995 AFTER SEVERAL YEARS OF DECLINE

• 1995 diverged from the declining trend of CO_2 emissions observed in the first half of the 90's. Emissions increased 1.7% after a period of four years with average decrease of 0.8% p.a.;

• CO_2 emissions increased in all main sectors of energy use;

• However, total emissions are still 1.6% lower compared to 1990;

DEPENDENCY ON EXTERNAL ENERGY SUPPLIES STAYED UNCHANGED

• Total energy import dependency stayed unchanged at around 47%. About 40% of gas and solid fuel demand were satisfied using imports, and for oil demand the share was 78%;

• Oil production grew 1.7% in 1995 after an exceptional year (+23% in 1994). In 1996 production growth slowed further to 1.1%;

• The share of imported natural gas increased by one percent to 40% due to the difference between growth in demand (8.0%) and indigenous production (4.3%) in 1995. Production of natural gas increased by 12.7% in 1996;

• In 1995 solid fuel production remained at the 1994 level. Import dependency declined slightly to 40% as demand decreased by 2.5%. However, in 1996 coal production declined 4.3% and lignite production 2.0%;

• Nuclear production grew faster than gross inland consumption, adding to energy self-sufficiency in both 1995 and 1996;

SHORT-TERM ENERGY OUTLOOK FOR THE EUROPEAN UNION

• By combining the forecast growth of the European economy and the return to long-term average temperatures, the result is a total primary energy demand growth of 1.8% on average between 1998 and 2000, 1997 being stable;

• Solid fuels will steadily lose their market share with consumption declining by 10% between 1997 and 2000. Oil consumption will increase by 5% up to the turn of the century, stabilising its share during the 90's. Natural gas will reinforce its position as the second most important fuel with a jump in consumption of 19% between 1997 and 2000.

• Energy intensity is forecast to improve by 1.5% per annum. On the other hand energy consumption per capita will increase by 5% between 1997 and 2000 as it did between 1990 and 1996.

• Over the forecast period, CO_2 emissions will increase by about 3% to give in 2000 a level 3% higher than in 1990. CO_2 content per unit of GDP will decline by 8% until the turn of the century as they did during the first part of the decade.

The World is divided into the following regions:

EUROPEAN UNION

Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden and the United Kingdom;

EFTA

Iceland, Norway and Switzerland;

NAFTA

Canada, Mexico and the United States of America;

OECD PACIFIC

Australia, Japan and New Zealand;

OTHER OECD COUNTRIES

Include EFTA, NAFTA, OECD Pacific regions and Turkey;

CENTRAL AND EASTERN EUROPE

Albania, Bulgaria, Czech Republic, Hungary, Poland, Romania, Slovakia and former Yugoslavia;

BALTIC STATES

Estonia, Latvia and Lithuania;

CIS

Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine and Uzbekistan;

AFRICA

North Africa (Algeria, Egypt, Libya, Morocco and Tunisia) and all other African countries not included elsewhere;

MIDDLE EAST:

Bahrain, Israel, Iran, Iraq, Lebanon, Kuwait, Oman, Qatar, Saudi Arabia, Syria, United Arab Emirates and Yemen;

ASIA

China, Newly Industrialising Economies (Hong Kong, Singapore, South Korea and Taiwan) and all other Asian countries not included elsewhere and the Pacific islands;

LATIN AMERICA

Brazil, Venezuela and all other Central and South American countries.

Data cover the period from 1980 to 1995 for the OECD Countries and up to 1994 for all non-OECD Countries.
Data for 1995 in non-OECD Countries are shown wherever provisional figures were available.
The STEO covers the period from the third Quarter 1997 to the fourth Quarter of 2000.

THE LIST OF DATA SOURCE IS:

• All European Union and its Member States energy data were taken from the Statistical Office of the European Commission (SOEC). Data on electricity generating capacities were provided by ESAP (Belgium);

We call the reader's attention to the fact that data for the STEO are based on monthly statistics while all other data are based on annual balance sheets; The difference between monthly and annual series may sometimes be significant;

• Energy data for all other OECD Countries came from the International Energy Agency (IEA) energy balances; The respective macroeconomic and population data were taken from OECD, UN, World Bank and IMF statistics; Data on electricity generating capacities were provided by ESAP (Belgium);

• All energy data for non-OECD Countries, except Central and Eastern Europe and the former USSR, and Latin America came from the IEA energy balances; the respective macroeconomic and population data were taken from both UN, World Bank and IMF statistics; Wherever available, data on electricity generating capacities were provided by ESAP (Belgium); provisional data for 1995 in the non-OECD Countries are derived from "BP Statistical Review of World Energy 1996";

• All energy data for the Central and Eastern European Countries and the former USSR came from the IEA energy balances; The respective macroeconomic and population data were taken from the UN, World Bank, IMF and PlanEcon statistics; Wherever available, data on electricity generating capacities were provided by ESAP (Belgium);

• All data for Latin American Countries came from IEA and were checked against the respective energy balances provided by the OLADE; the respective macroeconomic and population and electricity generating capacities data were taken from the UN, OECD, World Bank and IMF statistics, completed with the OLADE statistics; provisional data for 1995 in the Latin American Countries are derived from "BP Statistical Review of World Energy 1996";

• Prices of oil products came from DGXVII statistics; Average prices for other fuels (solids, natural gas and electricity) were taken from the IEA "Energy Price Statistics".

Difficulties in collecting data for non-OECD Countries lead us to advise a degree of caution regarding the data quality in these cases. Thus, comparisons between series of absolute values should be regarded as purely indicative.

A FEW WORDS ON METHODOLOGY AND DEFINITIONS ARE NECESSARY.

GENERAL

• **Primary hydro-electricity** production is considered in terms of net calorific value (1 GWh = 86 toe) and **primary nuclear** production is calculated as fuel equivalent to produce the same amount of electricity in a power station with a thermal efficiency of 33%.

• **Biomass** data for OECD Countries (excluding European Union Member States) correspond to what the IEA shows in its energy balances under "Other Solid Fuels". Data for all non-OECD Countries correspond to IEA and UN data under the designation of "Vegetal Fuels". These data have been deeply revised for the present edition. In the case of the European Union see below.

• **Primary heat** (geothermal energy) is considered as being exclusively used for power generation. **Heat** shown in the final demand section is exclusively derived from other fuels (power generation and district heating). In the case of the European Union see below.

• In the **World Summary Energy Balance, gross energy consumption** corresponds to the total primary energy consumed including quantities delivered to marine bunkers. **Total final energy consumption** (TFEC) does not include any quantities used for non-energy purposes.

• **Energy intensity** is defined as the ratio of energy consumption to an economic activity indicator. In the case of total energy intensity, the ratio is between the Gross Inland Consumption and GDP.

• **CO_2 emissions** are given only on an indicative basis and were calculated using common emission factors across all countries. At world level, CO_2 emissions resulting from bunker fuels were included in the tables similarly to those resulting from fuels sold to airline transport.

EUROPEAN UNION

• The SOEC energy balance now available includes additional information on **renewable energy sources** (biomass, solar, wind and geothermal). The data related to renewable energy sources are available since 1985. This limits the analysis for Member States to the period 1985-1995 to ensure consistency in the times series.

• Data for **Germany** include both the former West Germany and the former German Democratic Republic.

More detailed definitions are shown in SOEC and IEA publications.

PART I WORLD

WORLD: Major trends (1980-1995)

- Total gross energy consumption increased by only 0.9% per year since 1990 under the pressure of restructuring eastern economies.
- Final energy consumption, driven by transport and domestic sectors, grew by 1.1% annually since 1980
- World energy production still dominated by oil, representing 38% of production, and by NAFTA region contributing to 25% of world total
- Energy production marked by a 30% reduction in CIS since 1990
- OPEC still covers more than 40% of world oil production
- Solid production in China, the largest world producer, expanded by about 5% in 1995
- World gas production increased very little since 1990
- Asia accounted for 50% of world biomass production
- OECD was the final destination of 80% of world net exchanges of energy
- Electricity share in final energy consumption increased by one third since 1980
- Inputs for electricity generation increasingly dominated by solid fuels
- Refinery capacities grew by 14% in non-OECD region since 1985
- GDP growth in developing regions, Asia excepted, remained lower than in OECD region
- World energy consumption per capita stable but Asia grew by more than 60% since 1980
- World energy intensity shows a slight but continuous downward trend of just under 1% since 1980
- Excluding former Centrally Planned Economies, world CO_2 emissions grew by 2.3% on average since 1990

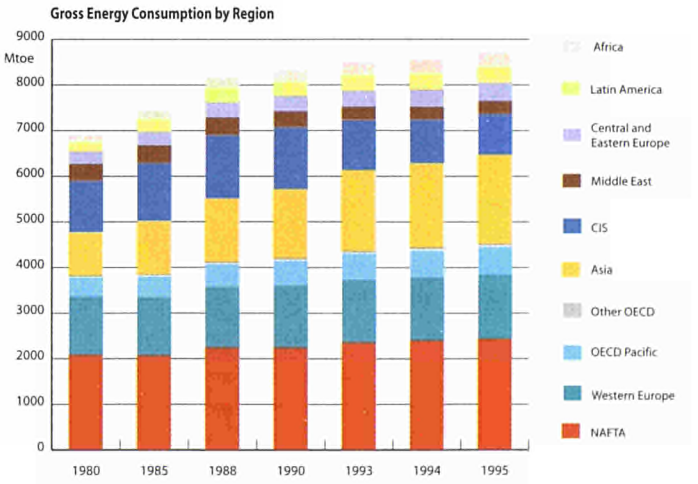
ENERGY OUTLOOK

Total gross energy consumption increased by only 0.9% per year since 1990…

Total **gross energy consumption** in the world as a whole increased from 1980 to 1995 by about 1.6% per year, but by only 0.9% since 1990. The developments in the period are characterised by a faster growth in the non-OECD area during the 80's (3.0% per year against 0.9% per year in the OECD). However, while the OECD area continued to increase its energy needs by 1.5% per year on average since 1990, the non-OECD world had a slight growth in demand limited to 0.3% annually. This drop in the non-OECD demand resulted from the significant decreases in Central and Eastern Europe and the former USSR that was just about compensated by the buoyant demand in the Middle East (+5.2% per year on average), in Asia (+5.1%) and in Latin America (+3.3%).

… under the pressure of eastern economies restructuring.

To appreciate the future evolution of gross energy consumption, it must be remembered that the restructuring of eastern economies will lead to a relaunch of the industrial activities and of the economy as a whole with, as a consequence, increasing consumption of energy. Already in 1995, energy consumption rebounded in Central and Eastern Europe contributing to an increase of world energy consumption by 1.9%. First indicative numbers demonstrate an increase of this trend in 1996 leading to a global increase of world energy consumption by about 3.0%.



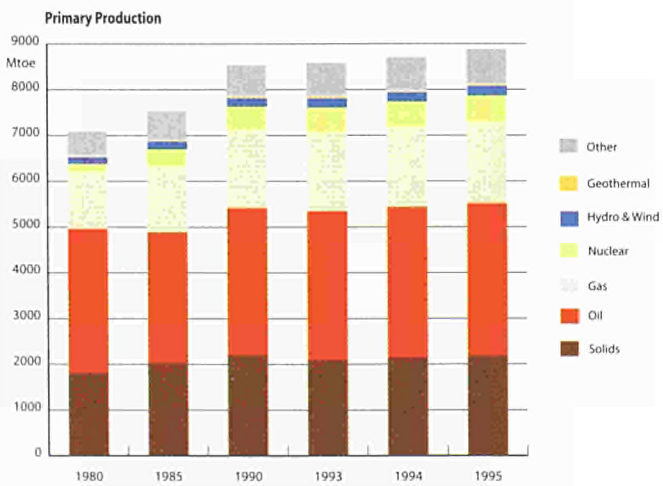
TOTAL GROSS ENERGY CONSUMPTION : TOTAL BY REGION

	1980	1985	1988	1990	1993	1994	1995	85/80	90/85	93/90	94/93	95/94
								Annual % Change				
World	7021.1	7556.2	8282.3	8446.9	8646.6	8682.7	8852.0	1.5%	2.3%	0.8%	0.4%	1.9%
Bunkers	109.0	95.4	104.8	117.9	127.7	128.8	132.3	-2.6%	4.3%	2.7%	0.9%	2.7%
Western Europe	1281.9	1286.2	1340.0	1366.7	1382.6	1386.4	1417.8	0.1%	1.2%	0.4%	0.3%	2.3%
European Union	1240.8	1241.2	1293.7	1318.2	1332.2	1335.8	1366.8	0.0%	1.2%	0.4%	0.3%	2.3%
EFTA	41.1	45.0	46.2	48.5	50.5	50.6	51.0	1.9%	1.5%	1.3%	0.3%	0.8%
Rest of OECD	2550.7	2567.8	2789.0	2841.5	2990.9	3058.8	3114.0	0.1%	2.0%	1.7%	2.3%	1.8%
NAFTA	2093.3	2076.7	2248.7	2249.2	2364.8	2411.3	2445.0	-0.2%	1.6%	1.7%	2.0%	1.4%
OECD Pacific	426.1	452.3	493.6	539.8	568.0	590.8	606.8	1.2%	3.6%	1.7%	4.0%	2.7%
Central and Eastern Europe	358.4	372.4	380.2	332.7	278.4	267.1	271.2	0.8%	-2.2%	-5.8%	-4.0%	1.5%
CIS (1)	1131.9	1272.4	1387.4	1363.4	1098.5	951.1	894.5	2.4%	1.4%	-6.9%	-13.4%	-6.0%
Africa	219.5	285.1	316.6	320.1	342.9	348.3	356.2	5.4%	2.3%	2.3%	1.6%	2.2%
Middle East	133.6	189.9	228.0	237.1	286.7	297.7	306.6	7.3%	4.5%	6.5%	3.8%	3.0%
Asia	951.9	1178.7	1395.1	1520.9	1769.1	1854.2	1952.1	4.4%	5.2%	5.2%	4.8%	5.3%
Latin America	284.1	308.3	341.2	346.5	369.7	390.2	407.4	1.6%	2.4%	2.2%	5.5%	4.4%
of which (%)												
European Union	17.7	16.4	15.6	15.6	15.4	15.4	15.4	-1.5%	-1.0%	-0.4%	-0.1%	0.4%
OECD	54.6	51.0	49.9	49.8	50.6	51.2	51.2	-1.3%	-0.5%	0.5%	1.2%	0.0%

(1) Including Baltic countries for statistical reasons

Final energy consumption, driven by transport and domestic sectors, increased by 1.1% annually since 1980…

The **final energy consumption** by sector showed very contrasting evolutions. In 1994, energy consumption by industry was, about 3% below the level observed in 1980 and 9% below the peak reached in 1989. Even if this is the consequence of the sharp decline in Eastern countries, the long term evolution integrates all the efforts made by industrials to reduce specific consumption per unit produced. Although consumption declined in the OECD region by 1.1% on average per year, it grew by 0.8% in non-OECD regions. Energy consumption for transport, still the minor contributor, was increasing regularly by about 2% per annum in all parts of the world, the share of OECD being stable around 69%. Energy consumption by tertiary and domestic sector depends on climatic conditions. It increased on average by 1.8% since 1980 with a contrasted evolution between OECD region (+0.8% per annum) and non-OECD region (+2.8% per year) in relation with increasing living standards in these regions. As a consequence, the share of the OECD region declined from 50% in 1980 to 43% in 1994. As a result of these regional evolutions, it is clear that the evolution in non-OECD regions will be the leading force for the future.



Total energy production marked by a 30% reduction in CIS since 1990…

Total **energy production** in the world as a whole (equivalent to gross energy consumption aside from some stock variations and statistical errors) increased from 1980 to 1995 by about 1.5% per year, but by only 0.8% since 1990. This recent trend is due to the impressive reduction of production in CIS (-490 Mtoe or a reduction by 30% between 1990 and 1995) and CEEC (-31 Mtoe or a reduction by 13%) compensated by increases in all other regions in the world, mainly in Asia (+292 Mtoe or +20%), in the Middle East (+162 Mtoe or +17%), in NAFTA countries (+97 Mtoe or +5%), in EFTA countries (+64 Mtoe or +49%) and in Africa (+63 Mtoe or +10%).

TOTAL CONSUMPTION BY INDUSTRY : TOTAL BY REGION

	1980	1985	1988	1990	1993	1994	1995	85/80	90/85	93/90	94/93	95/94
								Annual % Change				
World	1937.1	1929.6	2073.0	2046.2	1920.1	1886.2	na	-0.1%	1.2%	-2.1%	-1.8%	na
Western Europe	321.5	281.2	285.9	279.3	257.7	262.8	268.0	-2.6%	-0.1%	-2.7%	2.0%	2.0%
European Union	310.7	269.8	275.7	269.4	248.1	252.7	257.8	-2.8%	0.0%	-2.7%	1.8%	2.0%
EFTA	10.8	11.4	10.2	9.9	9.5	10.1	10.2	1.1%	-2.8%	-1.2%	6.0%	1.3%
Rest of OECD	611.8	568.0	594.9	562.0	527.5	535.1	549.5	-1.5%	-0.2%	-2.1%	1.4%	2.7%
NAFTA	478.4	433.2	453.1	412.1	378.4	383.7	395.0	-2.0%	-1.0%	-2.8%	1.4%	2.9%
OECD Pacific	126.1	126.2	131.2	137.9	136.4	139.6	141.4	0.0%	1.8%	-0.4%	2.4%	1.3%
Central and Eastern Europe	119.1	111.0	112.5	102.5	70.9	70.1	na	-1.4%	-1.6%	-11.5%	-1.2%	na
CIS (1)	427.6	420.4	451.5	454.3	340.7	268.1	na	-0.3%	1.6%	-9.1%	-21.3%	na
Africa	41.8	46.0	48.9	50.1	48.0	49.5	na	1.9%	1.7%	-1.4%	3.2%	na
Middle East	34.8	38.1	37.2	26.5	41.5	44.8	na	1.8%	-7.0%	16.1%	8.0%	na
Asia	304.3	385.2	454.3	482.9	539.8	550.9	na	4.8%	4.6%	3.8%	2.0%	na
Latin America	76.1	79.9	87.7	88.5	94.1	105.0	na	1.0%	2.1%	2.0%	11.6%	na
of which (%)												
European Union	16.0	14.0	13.3	13.2	12.9	13.4	na	-2.7%	-1.2%	-0.6%	3.7%	na
OECD	48.2	44.0	42.5	41.1	40.9	42.3	na	-1.8%	-1.3%	-0.2%	3.5%	na

TOTAL CONSUMPTION BY TRANSPORT : TOTAL BY REGION

	1980	1985	1988	1990	1993	1994	1995	85/80	90/85	93/90	94/93	95/94
								Annual % Change				
World	1137.6	1217.6	1365.4	1416.2	1467.1	1483.4	na	1.4%	3.1%	1.2%	1.1%	na
Western Europe	197.1	210.7	243.7	264.4	281.7	283.3	286.8	1.3%	4.6%	2.1%	0.6%	1.3%
European Union	189.2	201.8	233.6	253.6	270.8	272.2	275.8	1.3%	4.7%	2.2%	0.5%	1.3%
EFTA	7.8	8.9	10.1	10.8	10.9	11.1	11.0	2.5%	4.0%	0.2%	1.9%	-0.6%
Rest of OECD	583.5	602.2	669.3	687.8	715.5	741.9	757.1	0.6%	2.7%	1.3%	3.7%	2.1%
NAFTA	502.2	515.5	570.2	577.8	596.6	618.7	628.5	0.5%	2.3%	1.1%	3.7%	1.6%
OECD Pacific	75.7	80.1	90.4	100.5	107.6	112.3	116.4	1.1%	4.6%	2.3%	4.3%	3.7%
Central and Eastern Europe	29.1	26.7	28.1	27.9	22.8	23.0	na	-1.7%	0.9%	-6.5%	0.8%	na
CIS (1)	123.8	134.1	144.6	139.5	92.6	69.1	na	1.6%	0.8%	-12.8%	-25.3%	na
Africa	30.9	35.6	37.1	37.4	37.8	39.3	na	2.9%	1.0%	0.3%	3.9%	na
Middle East	30.0	42.0	44.8	41.8	55.8	58.4	na	7.0%	-0.1%	10.1%	4.6%	na
Asia	78.2	99.7	123.0	140.8	175.2	177.7	na	5.0%	7.1%	7.5%	1.4%	na
Latin America	65.0	66.6	74.8	76.6	85.7	90.7	na	0.5%	2.8%	3.8%	5.8%	na
of which (%)												
European Union	16.6	16.6	17.1	17.9	18.5	18.4	na	-0.1%	1.6%	1.0%	-0.6%	na
OECD	68.6	66.8	66.9	67.2	68.0	69.1	na	-0.5%	0.1%	0.4%	1.7%	na

TOTAL CONSUMPTION BY TERTIARY-DOMESTIC SECTOR : TOTAL BY REGION

	1980	1985	1988	1990	1993	1994	1995	85/80	90/85	93/90	94/93	95/94
								Annual % Change				
World	1810.8	2009.3	2157.5	2169.8	2369.7	2340.4	na	2.1%	1.5%	3.0%	-1.2%	na
Western Europe	359.2	369.4	365.1	358.3	385.6	373.2	382.4	0.6%	-0.6%	2.5%	-3.2%	2.5%
European Union	344.9	353.8	349.2	342.1	368.5	356.5	365.1	0.5%	-0.7%	2.5%	-3.3%	2.4%
EFTA	14.4	15.5	16.0	16.2	17.1	16.7	17.2	1.6%	0.9%	1.7%	-2.5%	3.5%
Rest of OECD	548.3	564.7	607.4	593.9	632.2	637.3	654.5	0.6%	1.0%	2.1%	0.8%	2.7%
NAFTA	464.7	467.0	496.0	476.7	504.6	506.1	517.5	0.1%	0.4%	1.9%	0.3%	2.3%
OECD Pacific	70.1	82.6	94.2	100.3	109.1	113.3	117.6	3.3%	4.0%	2.9%	3.8%	3.8%
Central and Eastern Europe	101.9	104.6	100.1	79.9	80.4	73.0	na	0.5%	-5.2%	0.2%	-9.2%	na
CIS (1)	253.7	305.1	326.8	327.3	385.8	356.6	na	3.8%	1.4%	5.6%	-7.6%	na
Africa	97.6	120.3	132.4	138.4	149.3	151.3	na	4.3%	2.8%	2.6%	1.3%	na
Middle East	22.7	38.1	57.6	78.4	81.7	84.8	na	10.9%	15.5%	1.4%	3.8%	na
Asia	373.3	444.2	498.6	521.8	575.6	582.8	na	3.5%	3.3%	3.3%	1.2%	na
Latin America	54.1	62.9	69.4	71.7	79.1	81.4	na	3.1%	2.7%	3.3%	2.9%	na
of which (%)												
European Union	19.0	17.6	16.2	15.8	15.6	15.2	na	-1.6%	-2.2%	-0.5%	-2.0%	na
OECD	50.1	46.5	45.1	43.9	42.9	43.2	na	-1.5%	-1.1%	-0.7%	0.5%	na

(1) Including Baltic countries for statistical reasons

TOTAL PRIMAY ENERGY PRODUCTION : TOTAL BY REGION

	1980	1985	1988	1990	1993	1994	1995	85/80	90/85	93/90	94/93	95/94
								Annual % Change				
World	7096.1	7535.2	8281.9	8542.2	8588.2	8722.7	8886.8	1.2%	2.5%	0.2%	1.6%	1.9%
Western Europe	669.9	819.6	847.6	838.3	875.9	907.5	936.2	4.1%	0.5%	1.5%	3.6%	3.2%
European Union	606.3	736.2	742.2	707.1	710.0	724.8	741.4	4.0%	-0.8%	0.1%	2.1%	2.3%
EFTA	63.6	83.4	105.4	131.2	165.9	182.6	194.8	5.6%	9.5%	8.1%	10.1%	6.6%
Rest of OECD	2055.2	2221.8	2317.4	2381.2	2412.1	2501.2	2532.8	1.6%	1.4%	0.4%	3.7%	1.3%
NAFTA	1903.0	1998.3	2074.0	2110.8	2111.5	2198.0	2208.2	1.0%	1.1%	0.0%	4.1%	0.5%
OECD Pacific	134.9	201.8	219.0	244.8	274.5	277.2	298.5	8.4%	3.9%	3.9%	1.0%	7.7%
Central and Eastern Europe	264.7	284.9	285.8	235.2	210.9	205.6	204.1	1.5%	-3.8%	-3.6%	-2.5%	-0.8%
CIS (1)	1357.8	1512.9	1677.0	1629.8	1288.5	1176.8	1140.1	2.2%	1.5%	-7.5%	-8.7%	-3.1%
Africa	491.6	530.1	567.2	616.6	658.5	658.8	680.3	1.5%	3.1%	2.2%	0.0%	3.3%
Middle East	999.2	605.1	842.0	954.5	1072.4	1102.9	1116.4	-9.5%	9.5%	4.0%	2.8%	1.2%
Asia	940.8	1203.4	1352.4	1465.8	1611.4	1683.0	1758.4	5.0%	4.0%	3.2%	4.4%	4.5%
Latin America	317.0	357.3	392.4	420.7	458.6	486.9	518.5	2.4%	3.3%	2.9%	6.2%	6.5%
of which (%)												
European Union	8.5	9.8	9.0	8.3	8.3	8.3	8.3	2.7%	-3.3%	0.0%	0.5%	0.4%
OECD	38.4	40.4	38.2	37.7	38.3	39.1	39.0	1.0%	-1.4%	0.5%	2.1%	-0.1%

(1) Including Baltic countries for statistical reasons

World energy production still dominated by oil, representing 38% of production…

In 1995, oil was still the most important fuel with 38% of the total (44% in 1980). Its production and consumption, however, have grown slower than total energy (0.4% per year in the period) even though its growth was increasingly above 1% these last two years. The second most important fuel is solid which kept a constant share of the total of about one quarter. Natural gas ranks third in meeting world needs with 20% in 1995 (18% in 1980) and it has had an average growth of 2.3% per year in the period, but only 0.6% on average between 1990 and 1994. Renewable energy sources (hydro, geothermal, biomass and wind) come fourth in satisfying world energy demand with almost 11% in 1995 (10% in 1980) and have had an annual average growth rate of almost 2.4%. Finally, nuclear energy grew the fastest in the period, mainly up to 1986 (16% per year). Its rate of growth slowed down between 1986 and 1990 to 6% per year and only 3.0% per year between 1990 and 1995.

Between 1980 and 1995, OECD and non-OECD areas had approximately the same growth in total energy production (about 1.5% per year), but evolution was slightly different in time and by regions. While between 1986 and 1990 the non-OECD world increased its production about twice as fast as did the OECD, it had a drop by 0.1% annually between 1991 and 1993 compared to an increase of 0.7% per year in the OECD. Apart from developments in the former USSR and in Central and Eastern Europe, production continued to increase mainly in Asia, in the Middle East and in Latin America. In 1994, energy production continued to fall in Central and Eastern Europe and in CIS, with even an acceleration of the trend in the CIS (-8.7%). On the other hand, production in the Middle East increased slowly by almost 3%, Asia by 4.4% an Latin America by 6.2%.

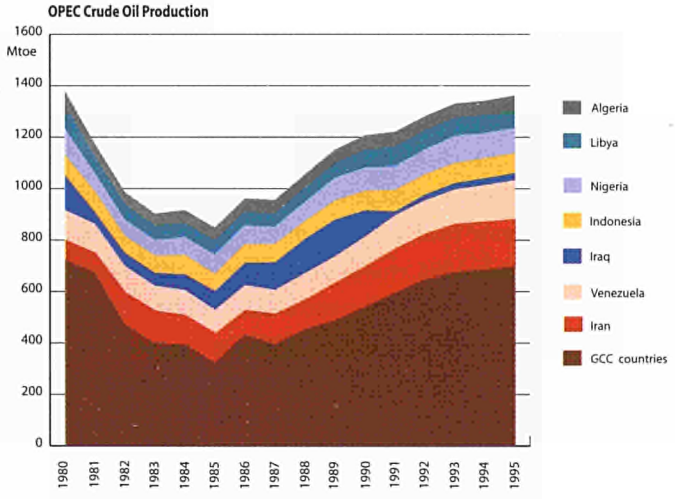
… and NAFTA region contributed to 25% of world energy production

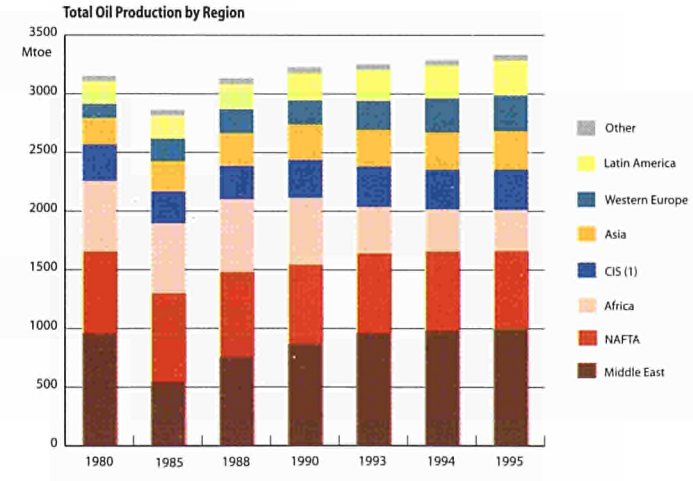
In 1995, to cover energy requirements, energy production increased by 1.9%. Energy production in CEEC and in CIS, still marked by limited slowdown, seems to be close to a limit of 15% of world production against 23% in 1980. On the other hand, sustained growth was observed in OECD Pacific, in EFTA countries, in Latin America and in Asia. In 1995 the European Union confirmed its upward trend (+2.3%). Its domestic production in 1993 reached the level of production of 1985. The main contributor to energy production remained the NAFTA region with about 25% of world production (27% in 1980), followed by Asia with 20% (13% in 1980) and by CIS and Middle East contributing for 13% (respectively 19% and 14% in 1980).

OPEC still covers more than 40% of world oil production…

Oil remains the dominant fuel in world production and

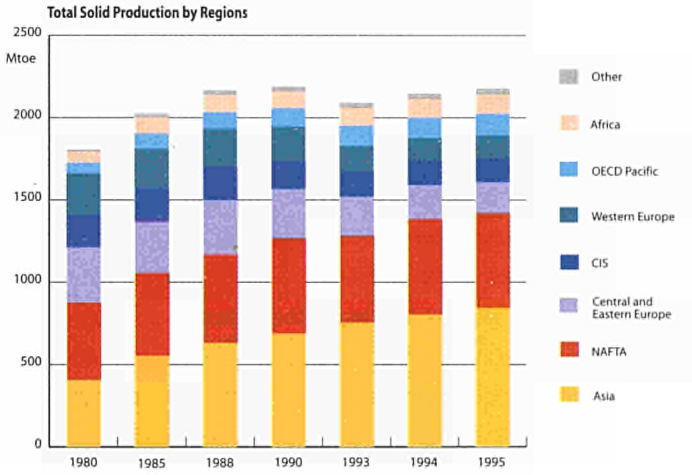
consumption, although as stated above it has lost share in total energy production, with a 1995 production level only 6% higher than in 1980. OPEC as a whole remains the major oil producer, but its weight in total world oil production fell from 44% in 1980 (54% in 1973) to 41% in 1995, with a minimum share of 29% in 1985. Since 1990, the share of Western Europe has sharply increased (from 6% in 1990 to 9% in 1995) in line with the increasing North Sea production. Since 1990 production losses in CIS and Eastern countries have been compensated only by the Middle East (128 Mtoe), Western Europe (100 Mtoe) and Latin America (66 Mtoe), the other regions being quite stable, in particular the NAFTA region, the second world producer.





Solid production in China, the largest world producer, expanded by about 5% in 1995…

The share of **solids** has remained quite stable since 1980 at about 25% of the total with a peak at 27% in 1985. The largest producer in 1995 remained Asia (39% of the total compared to 22% in 1980), followed by NAFTA (26% in 1995, the same level as in 1980). Increased production in these two regions compensated slowdown in CIS and Eastern countries due to economic and political reforms and shutdown in the European Union as a consequence of the restructuration of the coal sector. In 1995, the two biggest producers are China (650 Mtoe) and Unites States (531 Mtoe), followed by India (132 Mtoe), Australia (128 Mtoe) and Russia (108 Mtoe). In 1995 China was responsible for about 80% of the world production increase.



Gas production increased very little since 1990…

Amongst the fossil fuels, **natural gas** production showed the major increase between 1980 and 1990 with a total gain of 38% but since 1990 the production increased by only 3%. The share of natural gas grew from 17% in 1980 to 20% in 1990, remaining at this level since then. The two major contributors during this period were the CIS (360 Mtoe in 1980 and 515 Mtoe in 1995, with a peak of 656 Mtoe in 1990) and the NAFTA region (542 Mtoe in 1980, compared to 592 Mtoe in 1995). Their share in total gas production slowed down from 72% in 1980 to 63% in 1995. Production is increasing fastest in Asia with an annual growth of almost 8% per year on average since 1980. All

TOTAL SOLID PRODUCTION : TOTAL BY REGION

	1980	1985	1988	1990	1993	1994	1995	85/80	90/85	93/90	94/93	95/94
								Annual % Change				
World	1809.0	2026.4	2168.1	2192.8	2092.1	2149.4	2181.7	2.3%	1.6%	-1.6%	2.7%	1.5%
Western Europe	257.8	240.3	231.1	210.5	155.9	137.7	137.6	-1.4%	-2.6%	-9.5%	-11.7%	0.0%
European Union	257.6	239.9	230.9	210.3	155.7	137.4	137.4	-1.4%	-2.6%	-9.5%	-11.7%	0.0%
EFTA	0.2	0.4	0.2	0.2	0.2	0.2	0.2	11.9%	-10.6%	-3.9%	12.2%	-3.0%
Rest of OECD	541.0	605.2	647.7	704.8	664.9	715.5	721.4	2.3%	3.1%	-1.9%	7.6%	0.8%
NAFTA	470.2	502.5	537.1	580.2	528.5	579.2	576.2	1.3%	2.9%	-3.1%	9.6%	-0.5%
OECD Pacific	64.6	92.1	99.2	112.3	124.7	124.2	133.1	7.3%	4.0%	3.6%	-0.4%	7.2%
Central and Eastern Europe	192.2	202.6	203.9	167.3	150.7	147.0	145.8	1.1%	-3.8%	-3.4%	-2.5%	-0.8%
CIS (1)	338.7	312.5	331.8	300.5	237.8	208.3	188.5	-1.6%	-0.8%	-7.5%	-12.4%	-9.5%
Africa	69.8	103.8	109.3	105.6	110.2	118.2	123.2	8.3%	0.4%	1.4%	7.3%	4.2%
Middle East	0.6	0.8	0.8	0.8	1.0	1.0	1.0	6.8%	1.5%	5.6%	-0.6%	0.0%
Asia	402.6	550.8	628.0	684.8	752.4	800.9	840.6	6.5%	4.5%	3.2%	6.4%	5.0%
Latin America	6.2	10.5	15.5	18.4	19.3	20.9	23.6	11.2%	11.8%	1.5%	8.7%	12.9%
of which (%)												
European Union	14.2	11.8	10.7	9.6	7.4	6.4	6.3	-3.6%	-4.1%	-8.1%	-14.1%	-1.5%
OECD	43.8	41.2	40.0	41.2	38.7	39.1	38.8	-1.2%	0.0%	-2.1%	1.2%	-0.8%

TOTAL OIL PRODUCTION : TOTAL BY REGION

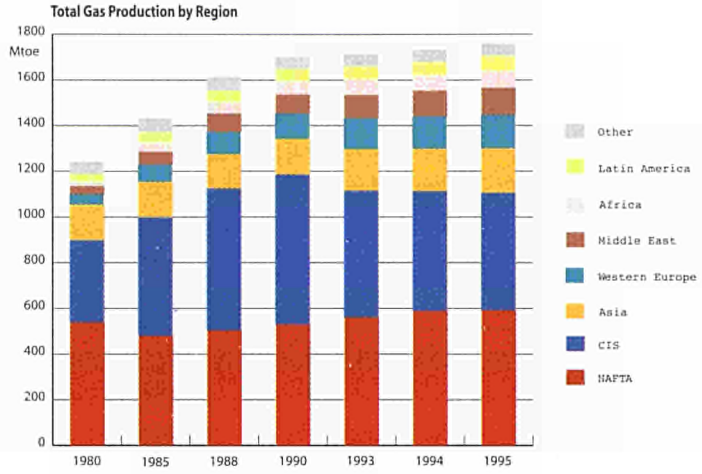
	1980	1985	1988	1990	1993	1994	1995	85/80	90/85	93/90	94/93	95/94
								Annual % Change				
World	3155.3	2865.1	3136.0	3230.3	3254.6	3289.5	3334.8	-1.9%	2.4%	0.3%	1.1%	1.4%
Western Europe	119.4	190.5	202.6	201.8	244.9	288.6	301.5	9.8%	1.2%	6.7%	17.9%	4.5%
European Union	94.4	151.0	144.7	117.5	127.3	156.6	159.2	9.8%	-4.9%	2.7%	23.0%	1.7%
EFTA	25.0	39.5	57.9	84.4	117.6	132.0	142.3	9.6%	16.4%	11.7%	12.3%	7.8%
Rest of OECD	714.8	781.8	750.5	708.2	703.7	697.2	695.5	1.8%	-2.0%	-0.2%	-0.9%	-0.2%
NAFTA	690.3	750.0	717.3	673.4	669.2	664.6	661.5	1.7%	-2.1%	-0.2%	-0.7%	-0.5%
OECD Pacific	22.2	29.6	30.5	31.0	30.6	28.8	30.4	6.0%	0.9%	-0.5%	-5.8%	5.4%
Central and Eastern Europe	21.0	19.2	16.8	14.6	13.1	12.8	12.4	-1.8%	-5.4%	-3.4%	-2.6%	-3.1%
CIS	606.2	598.2	627.4	573.5	402.4	363.8	355.4	-0.3%	-0.8%	-11.1%	-9.6%	-2.3%
Africa	310.8	270.5	282.6	323.9	343.4	336.6	342.9	-2.7%	3.7%	2.0%	-2.0%	1.9%
Middle East	961.2	547.4	757.8	867.4	967.4	988.2	995.1	-10.7%	9.6%	3.7%	2.1%	0.7%
Asia	226.8	261.3	282.7	305.3	314.8	320.4	329.9	2.9%	3.2%	1.0%	1.8%	3.0%
Latin America	195.1	196.1	215.6	235.7	264.8	282.0	302.1	0.1%	3.7%	4.0%	6.5%	7.1%
of which (%)												
European Union	3.0	5.3	4.6	3.6	3.9	4.8	4.8	12.0%	-7.2%	2.5%	21.7%	0.3%
OECD	26.4	33.9	30.4	28.2	29.1	30.0	29.9	5.1%	-3.7%	1.1%	2.8%	-0.2%

TOTAL GAS PRODUCTION : TOTAL BY REGION

	1980	1985	1988	1990	1993	1994	1995	85/80	90/85	93/90	94/93	95/94
								Annual % Change				
World	1243.3	1434.4	1615.6	1704.0	1714.3	1733.2	1760.6	2.9%	3.5%	0.2%	1.1%	1.6%
Western Europe	156.1	155.1	150.3	156.8	183.0	186.7	194.8	-0.1%	0.2%	5.3%	2.0%	4.3%
European Union	133.3	131.7	124.5	132.7	157.9	159.6	166.5	-0.2%	0.1%	6.0%	1.1%	4.3%
EFTA	22.8	23.4	25.9	24.1	25.1	27.1	28.3	0.6%	0.6%	1.3%	8.1%	4.3%
Rest of OECD	550.1	496.2	522.5	553.1	587.9	618.5	622.7	-2.0%	2.2%	2.1%	5.2%	0.7%
NAFTA	539.7	480.0	503.6	530.1	560.5	589.8	591.7	-2.3%	2.0%	1.9%	5.2%	0.3%
OECD Pacific	10.3	16.2	18.8	22.8	27.2	28.6	30.9	9.5%	7.1%	6.0%	5.1%	7.9%
Central and Eastern Europe	43.5	45.1	41.8	30.9	25.1	23.0	22.6	0.7%	-7.3%	-6.7%	-8.3%	-1.8%
CIS	359.6	520.1	622.7	656.3	554.6	523.4	514.5	7.7%	4.8%	-5.5%	-5.6%	-1.7%
Africa	20.4	42.5	52.0	60.0	72.2	69.1	75.5	15.8%	7.1%	6.3%	-4.3%	9.4%
Middle East	36.2	54.9	80.9	83.9	101.1	111.8	118.2	8.7%	8.8%	6.4%	10.6%	5.7%
Asia	44.8	77.0	97.3	111.2	136.2	141.9	148.1	11.4%	7.6%	7.0%	4.2%	4.4%
Latin America	32.5	43.4	48.0	51.8	54.3	58.7	64.1	5.9%	3.6%	1.6%	8.1%	9.2%
of which (%)												
European Union	10.7	9.2	7.7	7.8	9.2	9.2	9.5	-3.1%	-3.2%	5.8%	0.0%	2.7%
OECD	56.8	45.4	41.6	41.7	45.0	46.5	46.4	-4.4%	-1.7%	2.6%	3.3%	-0.1%

(1) Including Baltic countries for statistical reasons

the other regions are also increasing their production bur at more moderate rates. Since 1990, consumption of gas increased only for power generation.



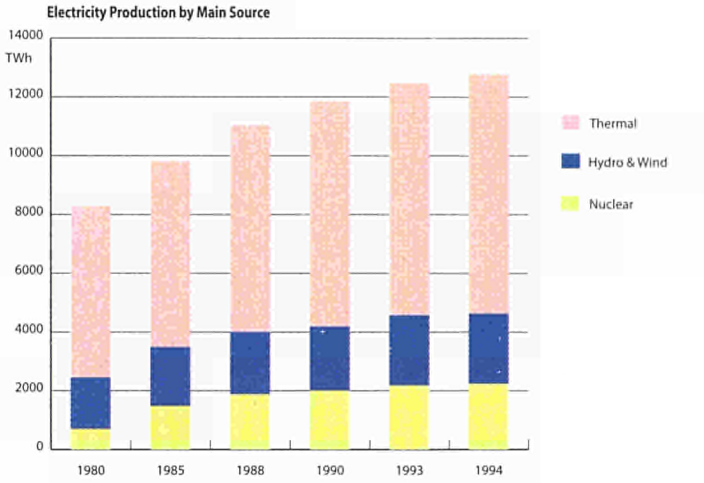
Asia accounted for 50% of world biomass production…

Amongst the non-fossil fuels, it must be noted :

- the contribution of **nuclear** increased from 2.6% in 1980 to 6.8% in 1995, with capacities mainly located in OECD
- the share of **hydro** was quite stable at around 2.3% of the total with major development in non-OECD countries where the potential for extension is mainly located for geographic reasons
- the **Biomass** contribution increased slowly (from 7.5% in 1980 to 8.5% in 1995). About 50% of world production remained located in Asia where biomass constituted a major source of energy for some countries.

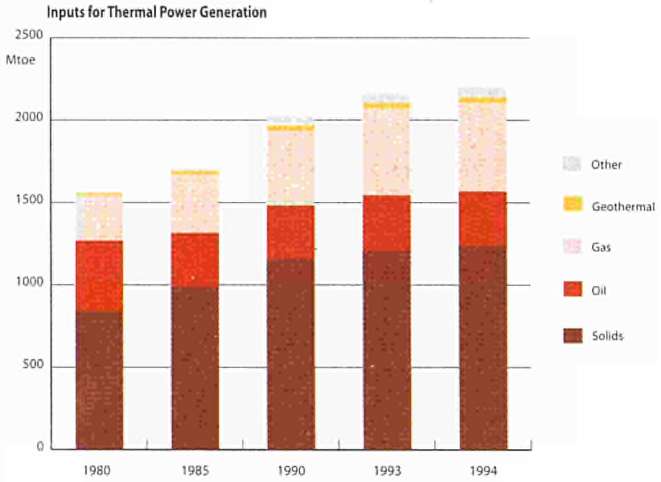
Electricity share in final energy consumption increased by one third since 1980…

As the share of **electricity** in final energy consumption increased by one third since 1980, electricity generation has shown a world-wide sustained increase of 3.1% per year between 1980 and 1994. Thermal production continues to largely dominate total electricity generation, although its share decreased from 70% in 1980 to 64% in 1993. Nuclear showed a strong growth until 1990 of 11% per year on average. After 1990, the growth in nuclear output has slowed down considerably due to lack of investments mainly in Western Europe and North America. Nuclear contribution passed from 9% in 1980 to 18% in 1994. Hydro power, depending on hydraulic conditions, grew regularly on average by 2.3% per year since 1980. The installed capacity reached 3004 Gwe in 1994, compared with 1989 GWe in 1980, or an annual increase of about 3% per year since 1980. Nuclear capacity has been developed during the 80's and has increased more smoothly since then. Hydro capacity continued its expansion by about 3% per year on average since 1980. Thermal units, which represent 56% of additional capacity since 1980, grew by about 2.5% per year on the considered period.



Inputs for electricity generation increasingly dominated by solid fuels…

Inputs for electricity generation have been increasingly dominated by solid fuels. While these represented 54% of total inputs in 1980, they were 56% in 1994. The consumption was mainly located in NAFTA region increasing by 50% since 1980, in Asia, which increased fourfold, and in the European union stable since 1980. It means that the OECD region still represents 56% of solid fuels consumption for power generation. Oil use was stable since 1985. The utilisation of gas doubled since 1980. The main consumers are respectively: CIS (212 Mtoe or 40% of world consumption for power generation), NAFTA (126 Mtoe) and the European



Union (46 Mtoe). In 1994, the shares of the different fuel inputs were: Solids (56%); Gas (24%); Oil (15%); and Renewable sources (4%).

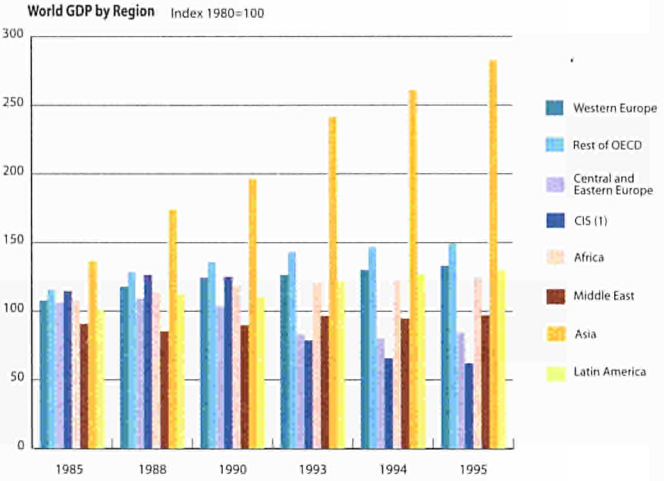
Refinery capacities increased by 14% in non-OECD region since 1985…

The refinery capacities increased slowly by 0.5% per year on average since 1985. In the OECD region, in-depth restructuring led to a reduction of installed capacity by 3% since 1985. On the other hand, the utilisation rate of the capacity increased regularly from 72% in 1985 to 90% in 1995. It has increased profitability of the refinery sector to face increasing costly investment in conversion units to adapt the production to the demand and to provide cleaner fuels on the market . In the non-OECD region capacity grew by 14% since 1985, the main investment being located in the Middle East to increase the valorisation of crude production, and in China doped by a buoyant demand .

COMPETITIVENESS

GDP growth in developing regions, Asia excepted, remained lower than in OECD region…

While world population grew regularly by 1.7% per annum, world GDP increased regularly since 1980 by 2.4% per year on average. Economic activity was more sustained during the second part of the 80's followed by a relative slow down, between 1990 and 1993 mainly in the OECD countries. Asia is indisputably the driver of the growth with an average growth rate of 7.1% par year these last fifteen years. As a consequence, Asia doubled its share in world GDP to reach 10% in 1995. None of the other developing regions perform better that OECD region with the exception of Latin America since the beginning of the 90's.



Two of the main energy indicators are energy consumption per capita and energy intensity. However a word of caution is necessary. While consumption per capita is to a large extent related to wealth and living standards, the comparison between different regions can be misleading. In fact, the same ratio in two regions does not necessarily imply the same life style or stage of economic development. Different economic structures combined with various types of technology being applied, especially in terms of energy-using equipment, typically results in different levels of energy intensity, even if the consumption per capita is the same. Comparing the energy intensity with the GDP per capita for each region in 1995, three groups can be identified:

- OECD region with high incomes and low energy intensity characterising industrialised countries;
- Old centrally planned economies with low income and high energy intensity, the economic development of these countries being based on energy-intensive industries with low efficiency energy equipment;
- Developing regions with low income and energy intensity in between.

Looking to the evolution since 1980, the general conclusion is that countries at a low stage of development will

tend to decrease their intensity from high levels as incomes increases. At the other extreme, countries at a high stage of economic development, which have already gained a lot in terms of energy efficiency, tend to stabilise their intensities due to the demands of very high living standards.

World energy consumption per capita stable but Asia grew by more than 60% since 1980...

Comparing **energy consumption per capita** in 1995 across regions, it is clear that NAFTA shows by far the highest ratio, although the inclusion of Mexico lowers this indicator to some extent. At the other extreme, Africa and Asia have the lowest levels, significantly under the world average (two thirds below). At world level energy consumption per capita remained stable, the growth in both developing regions and OECD region being compensated since 1988 by the slowdown in CIS and CEEC. To appreciate future evolution it must be stressed that Asia, which represented more than 50% of the world population in 1995, saw its consumption per capita grow by about 60% since 1980.

GROSS DOMESTIC PRODUCT PER CAPITA : TOTAL BY REGION

Thousand 1985 MECU/inhabitant	1980	1985	1988	1990	1993	1994	1995	85/80	90/85	93/90	94/93	95/94
								Annual % Change				
World	2.91	3.00	3.16	3.22	3.17	3.20	3.22	0.6%	1.4%	-0.5%	1.0%	0.7%
Western Europe	12.25	13.04	14.18	14.83	14.84	15.21	15.55	1.3%	2.6%	0.0%	2.5%	2.2%
European Union	12.02	12.78	13.92	14.56	14.58	14.95	15.29	1.2%	2.6%	0.0%	2.5%	2.3%
EFTA	20.02	21.52	22.62	23.40	23.25	23.64	23.82	1.5%	1.7%	-0.2%	1.7%	0.8%
Rest of OECD	11.27	12.26	13.15	13.58	13.84	14.03	14.09	1.7%	2.1%	0.6%	1.4%	0.4%
NAFTA	11.91	12.73	13.47	13.66	13.82	14.13	14.18	1.3%	1.4%	0.4%	2.2%	0.4%
OECD Pacific	12.94	14.90	16.59	17.86	18.62	18.73	18.86	2.9%	3.7%	1.4%	0.6%	0.7%
Central and Eastern Europe	1.95	2.02	2.06	1.93	1.55	1.50	1.58	0.7%	-0.9%	-7.1%	-3.2%	5.2%
CIS (1)	2.22	2.45	2.64	2.57	1.59	1.32	1.25	1.9%	1.0%	-14.8%	-16.6%	-5.5%
Africa	0.61	0.57	0.55	0.54	0.51	0.50	0.50	-1.3%	-0.8%	-2.3%	-1.5%	-0.4%
Middle East	4.14	3.07	2.59	2.53	2.48	2.37	2.34	-5.8%	-3.8%	-0.6%	-4.5%	-1.2%
Asia	0.28	0.35	0.42	0.46	0.54	0.57	0.61	4.6%	5.6%	5.3%	6.4%	6.3%
Latin America	2.15	1.96	2.06	1.95	2.03	2.09	2.11	-1.8%	-0.1%	1.3%	2.8%	0.9%

(1) Including Baltic countries for statistical reasons

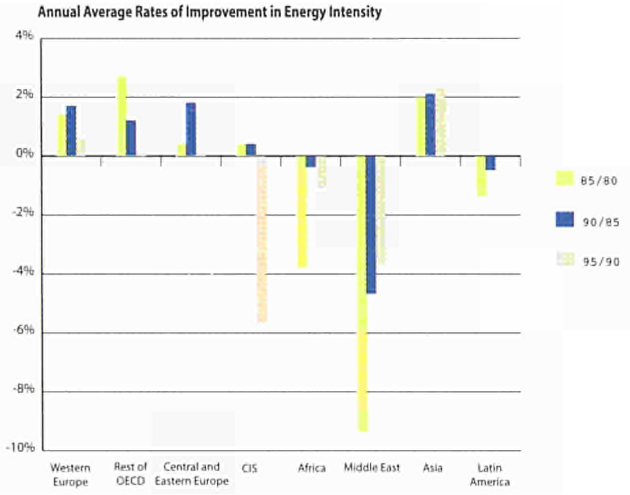
GROSS INLAND ENERGY CONSUMPTION PER CAPITA : TOTAL BY REGION

MTOE	1980	1985	1988	1990	1993	1994	1995	85/80	90/85	93/90	94/93	95/94
								Annual % Change				
World	1.56	1.55	1.62	1.59	1.55	1.54	1.54	-0.1%	0.5%	-0.9%	-1.1%	0.3%
Western Europe	3.51	3.48	3.60	3.64	3.63	3.62	3.70	-0.2%	0.9%	-0.1%	-0.1%	2.1%
European Union	3.50	3.46	3.58	3.62	3.60	3.60	3.68	-0.2%	0.9%	-0.1%	-0.1%	2.2%
EFTA	3.86	4.12	4.14	4.28	4.35	4.32	4.32	1.3%	0.8%	0.5%	-0.6%	0.0%
Rest of OECD	5.12	4.84	5.08	5.06	5.14	5.20	5.23	-1.1%	0.9%	0.6%	1.1%	0.7%
NAFTA	6.55	6.11	6.37	6.21	6.28	6.32	6.33	-1.4%	0.3%	0.4%	0.7%	0.1%
OECD Pacific	3.17	3.24	3.47	3.75	3.90	4.04	4.13	0.4%	3.0%	1.3%	3.6%	2.3%
Mediterranean	0.70	0.77	0.87	0.94	0.97	0.93	1.00	1.8%	3.9%	1.4%	-4.1%	7.4%
Central and Eastern Europe	3.07	3.11	3.14	2.72	2.27	2.18	2.21	0.3%	-2.6%	-5.9%	-4.1%	1.5%
CIS (1)	4.27	4.61	4.91	4.75	3.76	3.25	3.05	1.5%	0.6%	-7.5%	-13.6%	-6.1%
Africa	0.47	0.53	0.54	0.51	0.51	0.50	0.50	2.5%	-0.4%	-0.5%	-1.2%	-0.8%
Middle East	1.46	1.70	1.82	1.76	1.95	1.97	1.95	3.0%	0.7%	3.4%	1.0%	-0.7%
Asia	0.41	0.47	0.52	0.55	0.61	0.63	0.65	2.6%	3.4%	3.4%	3.2%	3.4%
Latin America	0.99	0.97	1.02	0.99	1.00	1.04	1.08	-0.4%	0.4%	0.3%	3.7%	3.4%

(1) Including Baltic countries for statistical reasons

*World **energy intensity** shows a slight but continuous downward trend of just under 1% since 1980...*

Total world **energy intensity** shows a slight but continuous downward trend by a little less than 1% between 1980 and 1995. EFTA has the lowest intensity, followed directly by OECD Pacific, which nevertheless presented an increasing trend (+2% on average these last three years) resulting in an energy intensity equivalent in 1995 to the 1985 level. This evolution must be related to loss in energy efficiency observed mainly in Japan. It must be stressed that Asia demonstrated the best improvement since 1980, a little above 2% per year and increasing regularly. NAFTA, directly followed by the European Union, has the second lowest ratio although a stabilisation between 1990 and 1992 in relation to a bad economic climate in the OECD region during this period. On the other hand, energy intensity increased in Latin America (0.6% per year), in Africa (1.7%) and in the Middle East (+5.9%) mainly in relation to the industrialisation of these regions. In the case of the Middle East, gross domestic product also directly depended on oil market revenues. Fluctuation in exported volume and oil prices induced a GDP equivalent to the 1985 one in 1995. In that way, increasing energy intensity is in fact the result of this evolution and doesn't reflect less efficient use of energy by final consumers. Finally, CIS which improved its ratio by roughly 1.2% per year during the 80's, lost in five year all this advantage, presenting in 1995 an energy intensity amongst 25% higher than in 1980.



Looking at energy intensity by sector at the world level, it must be stressed that improvements occurred in all final sectors. If the major improvement was observed in industry with a reduction of one third since 1980, tertiary-domestic and transport are also gaining. It is particularly interesting for the transport sector, demonstrating that the development of improved vehicles is able to counterbalance rapid motorization in developing regions.

ENERGY INTENSITY : TOTAL BY REGION

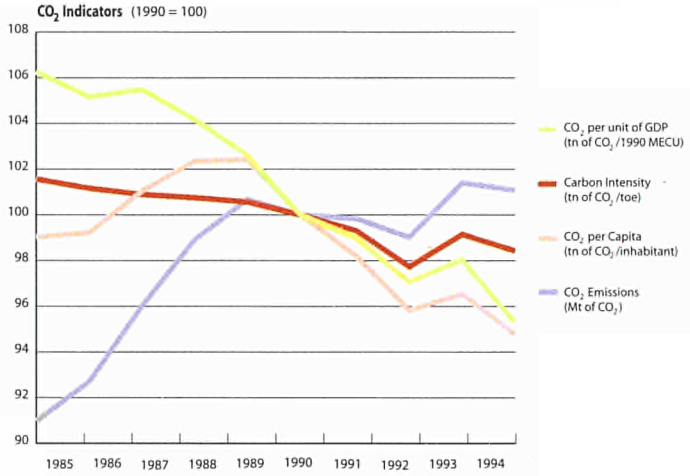
toe/1985 MECU	1980	1985	1988	1990	1993	1994	1995	85/80	90/85	93/90	94/93	95/94
								Annual % Change				
World	539	518	512	495	490	480	477	-0.8%	-0.9%	-0.4%	-2.1%	-0.5%
Western Europe	286	267	254	245	244	238	238	-1.4%	-1.7%	-0.1%	-2.5%	-0.2%
European Union	291	271	257	248	247	241	241	-1.4%	-1.7%	-0.2%	-2.5%	-0.1%
EFTA	193	191	183	183	187	183	181	-0.2%	-0.9%	0.7%	-2.2%	-0.8%
Rest of OECD	454	395	386	372	372	371	371	-2.7%	-1.2%	-0.1%	-0.3%	0.2%
NAFTA	550	480	473	455	454	447	446	-2.7%	-1.1%	0.0%	-1.5%	-0.3%
OECD Pacific	245	217	209	210	210	216	219	-2.4%	-0.7%	-0.1%	3.0%	1.6%
Mediterranean	449	441	433	444	424	438	446	-0.3%	0.1%	-1.5%	3.3%	1.9%
Central and Eastern Europe	1572	1539	1526	1408	1465	1451	1401	-0.4%	-1.8%	1.3%	-0.9%	-3.5%
CIS (1)	1923	1885	1863	1852	2368	2454	2439	-0.4%	-0.4%	8.5%	3.7%	-0.6%
Africa	770	927	978	945	998	1001	997	3.8%	0.4%	1.8%	0.3%	-0.4%
Middle East	353	552	705	696	784	829	833	9.4%	4.7%	4.1%	5.8%	0.5%
Asia	1469	1330	1236	1195	1131	1097	1066	-2.0%	-2.1%	-1.8%	-3.0%	-2.8%
Latin America	463	496	494	510	494	498	511	1.4%	0.5%	-1.0%	0.9%	2.5%

(1) Including Baltic countries for statistical reasons

ENVIRONMENT

Excluding former Centrally Planned Economies, world emissions grew by 2.3% on average since 1990…

CO_2 emissions indicators are of primordial importance in the current political debate. CO_2 emissions are given on an indicative basis, being calculated using common emission factors by energy aggregates across all countries in the world. World-wide **emissions of CO_2** increased steadily by almost 1.4% per year during the 80's and by only 0.3% per year since then. But this result must be explained. Since 1990, CO_2 emissions have been increasing in almost all regions in the world, in some cases by more than 5% per year (Asia and Middle East), with the exception of the European Union (-0.8% per year) which benefited from energy efficiency improvements and former Centrally Planned Economies due to the drastic reduction of energy consumption observed, mainly in CIS since 1990. In fact, excluding former Centrally Planned Economies, world emissions grew by 2.3% on average since 1990, slowing down only in the European Union. At the same time CO_2 emissions per capita showed a reduction of 0.6% a year over the last fourteen years (3.7 tons of CO_2 per capita in 1994 compared to 4.0 in 1980). Finally carbon intensity declined regularly on the whole period, the main improvements being observed in the tertiary-domestic sector.



The contribution of CO_2 emissions from power generation increased from 28% in 1980 to 33% in 1995…

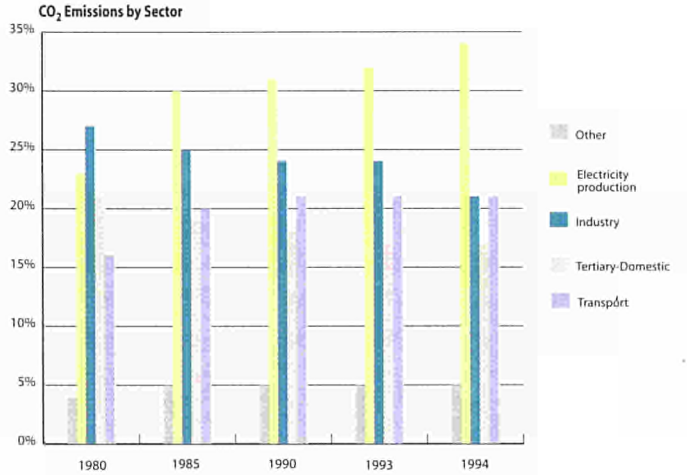
Looking at CO_2 world-wide emissions by sector, the first conclusion is that the power generation sector remained by far the largest sector in terms of emissions. CO_2 emissions from the power sector grew by only 2.2% on average since 1980, with a relative slowdown since 1990, to represent about 34% of total world emissions in 1994. This is a consequence of rapid electrification in developing regions and this trend will continue in the near future. Within the final demand sectors, transport was the only one with steadily increasing emissions since 1980 (3.1% per year on average in the period). Nevertheless, short term evolution

CO_2 EMISSIONS (1) : TOTAL BY REGION

	1980	1985	1988	1990	1993	1994	1995	85/80	90/85	93/90	94/93	95/94
								Annual % Change				
World	17935	18686	20321	20578	20893	20831	21106 (3)	0.8%	1.9%	0.5%	-0.3%	1.3%
Western Europe	3341	3166	3222	3271	3208	3180	3234	-29.3%	0.7%	-0.6%	-0.9%	1.7%
European Union	3268	3091	3146	3193	3128	3098	3151	-1.1%	0.7%	-0.7%	-1.0%	1.7%
EFTA	73	75	76	77	81	82	83	0.6%	0.5%	1.4%	1.7%	1.5%
Rest of OECD	6716	6639	7135	7243	7477	7644	7735	-0.2%	1.8%	1.1%	2.2%	1.2%
NAFTA	5506	5398	5785	5778	5960	6065	6128	-0.4%	1.4%	1.0%	1.8%	1.0%
OECD Pacific	1139	1147	1242	1337	1375	1438	1453	0.1%	3.1%	0.9%	4.6%	1.0%
Central and Eastern Europe	1094	1123	1121	967	829	795	na	0.5%	-2.9%	-5.0%	-4.1%	na
CIS (2)	3207	3339	3587	3500	2818	2417	na	0.8%	0.9%	-7.0%	-14.2%	na
Africa	424	495	536	558	578	591	na	3.2%	2.4%	1.2%	2.3%	na
Middle East	366	512	593	622	759	804	na	6.9%	4.0%	6.9%	5.9%	na
Asia	2253	2869	3519	3810	4553	4680	na	5.0%	5.8%	6.1%	2.8%	na
Latin America	535	543	608	607	670	720	na	0.3%	2.3%	3.3%	7.5%	na
of which (%)												
European Union	18.2	16.5	15.5	15.5	15.0	14.9	na	-1.9%	-1.3%	-1.2%	-0.7%	na
OECD	55.7	52.0	50.4	50.5	50.5	51.3	na	-1.4%	-0.6%	0.0%	1.6%	na

(1) in this table emissions from each region include those resulting from bunker fuels
(2) Including Baltic countries for statistical reasons
(3) estimated value

demonstrated an increase of only 1% per year since 1990 in line with the evolution of the energy intensity of this sector, wich was encouraging for the future. The domestic and tertiary sectors showed a downward trend (-0.5% per year between 1980 and 1995, excluding any correction for climatic conditions) in relation to the progression of natural gas and distributed heat on the heating market in place of heating oil and solids. Industry presented the greatest fall in CO_2 emissions between 1980 and 1994 (-0.9% per year). The evolution in industry is linked to the improvements of industrial equipment, the greater use of electricity and the move away from more CO_2-intensive fuels.



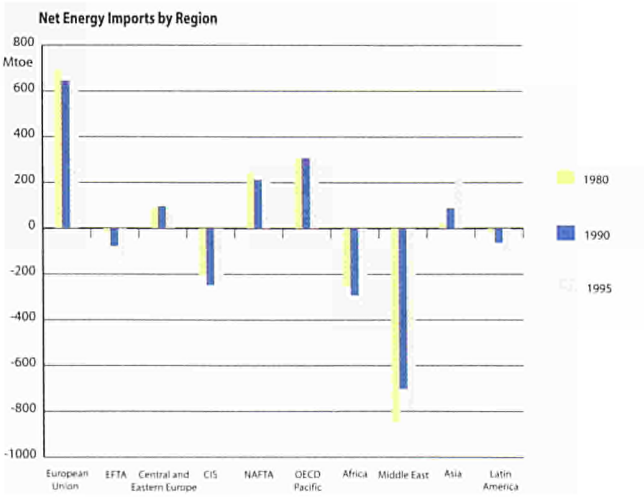
WORLD : CO_2 Emissions by sectors

European Union	1980	1985	1988	1990	1993	1994	85/80	90/85	92/90	93/92	94/93
							Annual % Change				
Total	17935	18686	20321	20578	20893	20831	0,8%	1,9%	-0.4%	2.3%	-0,3%
Bunkers	276	296	325	365	396	399	1,3%	4,3%	4.4%	-0.7%	0,8%
Transformation	6355	6748	7456	7699	8251	8364	1,2%	2,7%	1.6%	3.7%	1,4%
Power Generation	5104	5562	6228	6456	6871	6963	1,7%	3,0%	1.1%	4.1%	1,3%
Energy sector	1251	1186	1228	1244	1380	1401	-1,0%	0,9%	4.3%	2.1%	1,5%
Final Demand sectors	11303	11642	12541	12513	12246	12067	0,6%	1,5%	-1.8%	1.5%	-1,5%
Industry	4760	4554	4817	4771	4289	4223	-0,9%	0,9%	-6.7%	3.2%	-1,5%
Transport	2890	3676	4116	4265	4390	4439	4,9%	3,0%	2.1%	-1.2%	1,1%
Domestic and Tertiary	3654	3412	3608	3477	3567	3405	-1,4%	0,4%	-0.2%	3.0%	-4,5%

GLOBAL MARKETS

OECD was the final destination of 80% of world net exchanges

The world **energy trade** (net energy imports) shows that the European Union is by far the largest net importer with a steady annual growth of 2.1% since 1985. OECD Pacific is the second ranking with a relatively stable level since 1980, except for the drop in mid-1980's and the sharp increase by 7% in 1994. The NAFTA region is also an important importer with a similar profile to that of the European Union, although with a faster growth rate between 1985 and 1994 (+17% per year) to retrieve in 1995 the same level as in 1980. As a consequence of these evolution, it is clear that the OECD region is globally a net exporter of energy, absorbing in 1995 about 80% of world net exchange. Amongst



the non-OECD regions although Central and Eastern Europe stabilise their level of imports at about 60%, mainly oil and gas from CIS, Asia was increasing continuously its imports starting from a negligible level in 1980 to reach 225 Mtoe in 1995, a level comparable with NAFTA.

The net exporters remained: the Middle East (797 Mtoe in 1995), Africa (321 Mtoe), CIS (241 Mtoe) and EFTA (143 Mtoe), all four mainly exporters of hydrocarbons. If OPEC continued to dominate the oil market, it must be stressed that Russia accounted for 40% of the exchange of natural gas in 1995.

Finally, it must be stressed that interregional exchanges of energy represented in 1995 only 16% of total world energy consumption (19% in 1980).

NET ENERGY IMPORT : TOTAL BY REGION

Mtoe	1980	1985	1988	1990	1993	1994	1995	85/80	90/85	93/90	94/93	95/94
								Annual % Change				
Western Europe	669,9	488.6	520.3	563.6	537.6	502.0	508.2	-6.1%	2.9%	-1.6%	-6.6%	1.2%
European Union	688.4	527.2	579.2	644.0	652.5	633.5	651.1	-5.2%	4.1%	0.4%	-2.9%	2.8%
EFTA	-21.5	-38.6	-58.9	-80.4	-114.9	-131.5	-142.8	12.4%	15.8%	12.6%	14.5%	8.6%
Rest of OECD	562.3	340.7	478.0	546.3	584.6	630.5	600.2	-9.5%	9.9%	2.3%	7.8%	-4.8%
NAFTA	242.6	66.5	181.7	211.9	251.2	275.7	244.5	-22.8%	26.1%	5.8%	9.8%	-11.3%
OECD Pacific	305.5	257.1	272.7	306.6	300.9	322.9	318.3	-3.4%	3.6%	-0.6%	7.3%	-1.4%
Mediterranean	14.2	17.2	23.6	27.8	32.5	32.0	37.4	3.9%	10.1%	5.4%	-1.7%	16.9%
Central and Eastern Europe	76.2	71.9	79.0	78.1	57.0	51.4	56.9	-1.1%	1.7%	-10.0%	-9.8%	10.6%
CIS (1)	-212.2	-219.2	-274.6	-249.5	-185.2	-210.7	-241.1	0.6%	2.6%	-9.4%	13.8%	14.4%
Africa	-260.1	-241.6	-247.0	-294.6	-311.7	-302.1	-320.8	-1.5%	4.0%	1.9%	-3.1%	6.2%
Middle East	-854.6	-401.8	-599.6	-705.1	-772.5	-791.7	-797.3	-14.0%	11.9%	3.1%	2.5%	0.7%
Asia	19.4	1.2	55.4	88.0	190.1	202.4	224.8	-42.6%	135.6%	29.3%	6.5%	11.1%
Latin America	-24.4	-39.5	-44.1	-64.7	-83.0	-95.2	-104.7	10.1%	10.4%	8.6%	14.7%	10.1%
of which												
OECD	1232.1	829.3	998.3	1109.9	1122.3	1132.5	1108.4	-7.6%	6.0%	0.4%	0.9%	-2.1%

(1) Including Baltic countries for statistical reasons

WORLD : SUMMARY ENERGY BALANCE

Mtoe	1980	1985	1990	1993	1994	1995(3)	85/80	90/85	93/90	94/93	95/94
							Annual % Change				
Primary Production	7096	7535	8542	8588	8723	8887	1.2%	2.5%	0.2%	1.6%	1.9%
Solids	1809	2026	2193	2092	2149	2182	2.3%	1.6%	-1.6%	2.7%	1.5%
Oil	3155	2865	3230	3255	3290	3335	-1.9%	2.4%	0.3%	1.1%	1.4%
Natural gas	1243	1434	1704	1714	1733	1761	2.9%	3.5%	0.2%	1.1%	1.6%
Nuclear	187	387	519	562	577	601	15.6%	6.0%	2.7%	2.6%	4.2%
Hydro & Wind	150	172	187	205	205	218	2.7%	1.7%	3.1%	0.3%	6.2%
Geothermal	12	20	32	35	36	35	11.0%	9.6%	2.9%	2.7%	-2.8%
Other	540	631	677	725	732	755	3.2%	1.4%	2.3%	1.0%	3.2%
Net Imports(1)	-12	16	-20	25	-4	-64	-	-	-	-	1388.1%
Solids	7	9	1	6	3	-7	6.9%	-35.3%	76.3%	-45.1%	-
Oil	-16	12	-25	18	-14	-48	-	-	-	na	236.7%
Crude oil	17	61	31	51	32	na	29.0%	-12.8%	18.4%	-37.5%	na
Oil products	-33	-49	-55	-33	-46	na	8.2%	2.5%	-15.6%	38.7%	na
Natural gas	-2	-5	4	3	7	-8	15.6%	-	-10.9%	156.5%	-
Electricity	0	0	0	-1	0	-1	-	-39.9%	218.4%	-68.8%	178.1%
Gross Inland Consumption	6912	7461	8329	8519	8554	8720	1.5%	2.2%	0.8%	0.4%	1.9%
Solids	1796	2037	2169	2143	2158	2174	2.5%	1.3%	-0.4%	0.7%	0.8%
Oil	2984	2787	3064	3133	3126	3173	-1.4%	1.9%	0.7%	-0.2%	1.5%
Natural gas	1239	1428	1680	1716	1719	1763	2.9%	3.3%	0.7%	0.2%	2.6%
Other (2)	893	1209	1415	1526	1551	1609	6.3%	3.2%	2.5%	1.6%	3.8%
Electricity Generation in TWh	8308	9836	11869	12494	12793	na	3.4%	3.8%	1.7%	2.4%	na
Nuclear	713	1492	2013	2192	2241	na	15.9%	6.2%	2.9%	2.2%	na
Hydro & wind	1750	2007	2185	2390	2396	na	2.8%	1.7%	3.0%	0.3%	na
Thermal	5845	6337	7671	7912	8156	na	1.6%	3.9%	1.0%	3.1%	na
Generation Capacity in GWe	1989	2441	2757	2931	3004	na	4.2%	2.5%	2.1%	2.5%	na
Nuclear	142	253	330	341	346	na	12.3%	5.4%	1.2%	1.3%	na
Hydro & wind	468	564	647	691	710	na	3.8%	2.8%	2.2%	2.8%	na
Thermal	1379	1623	1781	1899	1948	na	3.3%	1.9%	2.1%	2.6%	na
Average Load Factor in %	47.7	46.0	49.1	48.7	48.6	na	-0.7%	1.3%	-0.3%	-0.1%	na
Fuel Inputs for Thermal Power Generation	1563	1705	2024	2164	2201	na	1.8%	3.5%	2.2%	1.7%	na
Solids	843	987	1159	1211	1237	na	3.2%	3.3%	1.5%	2.2%	na
Oil	426	329	323	333	331	na	-5.0%	-0.4%	1.0%	-0.5%	na
Gas	275	358	458	530	539	na	5.4%	5.1%	5.0%	1.6%	na
Geothermal	12	20	31	34	34	na	11.2%	9.5%	3.0%	1.1%	na
Other	7	11	54	56	60	na	9.0%	36.6%	1.5%	5.8%	na
Average Thermal Efficiency in %	32.2	32.0	32.6	31.5	31.9	na	-0.1%	0.4%	-1.2%	1.3%	na
Non-Energy Uses	340	348	415	391	426	na	0.5%	3.6%	-1.9%	8.8%	na
Total Final Energy Demand	4877	5145	5617	5770	5724	na	1.1%	1.8%	0.9%	-0.8%	na
Solids	808	865	865	780	736	na	1.4%	0.0%	-3.4%	-5.6%	na
Oil	2051	1995	2187	2238	2240	na	-0.6%	1.9%	0.8%	0.1%	na
Gas	803	848	966	936	931	na	1.1%	2.6%	-1.0%	-0.6%	na
Electricity	587	694	832	883	906	na	3.4%	3.7%	2.0%	2.6%	na
Heat	131	172	189	316	292	na	5.5%	2.0%	18.6%	-7.5%	na
Other	497	571	578	617	619	na	2.8%	0.2%	2.2%	0.3%	na
CO_2 Emissions in Mt of CO_2 (4)	17658	18390	20212	20497	20432	20698	0.8%	1.9%	0.5%	-0.3%	1.3%
Indicators											
Population (Million)	4417	4800	5224	5488	5571	5665	1.7%	1.7%	1.7%	1.5%	1.7%
GDP (index 1985=100)	89.2	100.0	116.8	120.8	123.9	126.9	2.3%	3.2%	1.1%	2.5%	2.4%
GDP (1990 MECU)	12833	14393	16812	17386	17829	18264	2.3%	3.2%	1.1%	2.5%	2.4%
Gross Inl Cons./GDP (toe/1985 MECU)	538.6	518.4	495.4	490.0	479.8	477.4	-0.8%	-0.9%	-0.4%	-2.1%	-0.5%
Gross Inl Cons./Capita (toe/inhabitant)	1.56	1.55	1.59	1.55	1.54	1.54	-0.1%	0.5%	-0.9%	-1.1%	0.3%
Electricity Generated/Capita (kWh/inhabitant)	1881	2049	2272	2277	2296	na	1.7%	2.1%	0.1%	0.9%	na
CO_2 Emissions/Capita (t of CO_2/inhabitant)	4.0	3.8	3.9	3.7	3.7	3.7	-0.8%	0.2%	-1.2%	-1.8%	-0.3%

(1) corresponds to statistical errors
(2) Includes nuclear, hydro and wind, net imports of electricity, and other energy sources
(3) Estimates
(4) Excluding bunkers

WORLD : MAIN INDICATORS

	1980	1985	1990	1993	1994	1995	85/80	90/85	93/90	94/93	95/94
							Annual % Change				
Gross Inland Consumption (Mtoe)	6912.1	7460.8	8329.0	8518.9	8553.9	8719.7	1.5%	2.2%	0.8%	0.4%	1.9%
Power Generation	1553.4	1834.9	2177.4	2330.8	2368.7	na	3.4%	3.5%	2.3%	1.6%	na
Energy Branch	319.1	362.9	411.6	421.6	426.6	na	2.6%	2.5%	0.8%	1.2%	na
Final Energy Consumption	4886.3	5156.6	5632.1	5756.9	5709.9	na	1.1%	1.8%	0.7%	-0.8%	na
Industry	1937.1	1929.6	2046.2	1920.1	1886.2	na	-0.1%	1.2%	-2.1%	-1.8%	na
Transport	1137.6	1217.6	1416.2	1467.1	1483.4	na	1.4%	3.1%	1.2%	1.1%	na
Tertiary-Domestic	1810.8	2009.3	2169.8	2369.7	2340.4	na	2.1%	1.5%	3.0%	-1.2%	na
Energy Intensity (toe/1990 MECU)	538.6	518.4	495.4	490.0	479.8	477.4	-0.8%	-0.9%	-0.4%	-2.1%	-0.5%
Power Generation	121.1	127.5	129.5	134.1	132.9	na	1.0%	0.3%	1.2%	-0.9%	na
Final Energy Consumption	380.8	358.3	335.0	331.1	320.3	na	-1.2%	-1.3%	-0.4%	-3.3%	na
Industry	151.0	134.1	121.7	110.4	105.8	na	-2.3%	-1.9%	-3.2%	-4.2%	na
Transport	88.6	84.6	84.2	84.4	83.2	na	-0.9%	-0.1%	0.1%	-1.4%	na
Tertiary-Domestic	141.1	139.6	129.1	136.3	131.3	na	-0.2%	-1.6%	1.8%	-3.7%	na
Energy per capita (Kgoe/inhabitant)	1565	1554	1594	1552	1535	1539	-0.1%	0.5%	-0.9%	-1.1%	0.3%
Power Generation	352	382	417	425	425	na	1.7%	1.7%	0.6%	0.1%	na
Final Energy Consumption	1106	1074	1078	1049	1025	na	-0.6%	0.1%	-0.9%	-2.3%	na
Industry	439	402	392	350	339	na	-1.7%	-0.5%	-3.7%	-3.2%	na
Transport	258	254	271	267	266	na	-0.3%	1.3%	-0.5%	-0.4%	na
Tertiary-Domestic	410	419	415	432	420	na	0.4%	-0.2%	1.3%	-2.7%	na
Electricity Share (%)											
Final Energy Consumption	12.0%	13.5%	14.8%	15.3%	15.9%	na	2.3%	1.9%	1.2%	3.4%	na
Industry	15.4%	17.3%	18.9%	20.2%	21.0%	na	2.4%	1.8%	2.2%	3.7%	na
Transport	1.2%	1.3%	1.3%	1.3%	1.3%	na	1.1%	-0.5%	2.1%	-3.7%	na
Tertiary-Domestic	15.2%	17.1%	19.7%	20.1%	21.0%	na	2.4%	2.8%	0.6%	4.6%	na
CO_2 Emissions (Mt of CO_2)	17658	18390	20212	20497	20432	20698	0.8%	1.9%	0.5%	-0.3%	1.3%
Power Generation	5104	5562	6456	6871	6963	na	1.7%	3.0%	2.1%	1.3%	na
Energy Branch	726	789	870	854	866	na	1.7%	2.0%	-0.6%	1.4%	na
Final Energy Consumption	11303	11642	12513	12246	12067	na	0.6%	1.5%	-0.7%	-1.5%	na
Industry	4760	4554	4771	4289	4223	na	-0.9%	0.9%	-3.5%	-1.5%	na
Transport	2890	3676	4265	4390	4439	na	4.9%	3.0%	1.0%	1.1%	na
Tertiary-Domestic	3654	3412	3477	3567	3405	na	-1.4%	0.4%	0.9%	-4.5%	na
Carbon intensity (tn of CO_2/toe)	2.6	2.5	2.4	2.4	2.4	2.4	-0.7%	-0.3%	-0.3%	-0.7%	-0.6%
Power Generation	3.3	3.0	3.0	2.9	2.9	na	-1.6%	-0.4%	-0.2%	-0.3%	na
Energy Branch	2.3	2.2	2.1	2.0	2.0	na	-0.9%	-0.6%	-1.4%	0.2%	na
Final Energy Consumption	2.3	2.3	2.2	2.1	2.1	na	-0.5%	-0.3%	-1.4%	-0.6%	na
Industry	2.5	2.4	2.3	2.2	2.2	na	-0.8%	-0.2%	-1.4%	0.2%	na
Transport	2.5	3.0	3.0	3.0	3.0	na	3.5%	0.0%	-0.2%	0.0%	na
Tertiary-Domestic	2.0	1.7	1.6	1.5	1.5	na	-3.4%	-1.2%	-2.1%	-3.3%	na
CO_2 per capita (kg of CO_2/inhabitant)	3998	3831	3869	3735	3667	3665	-0.8%	0.2%	-1.2%	-1.8%	-0.3%
Final Energy Consumption	2559	2425	2395	2231	2166	na	-1.1%	-0.3%	-2.3%	-2.9%	na
Industry	1078	949	913	782	758	na	-2.5%	-0.8%	-5.1%	-3.0%	na
Transport	654	766	816	800	797	na	3.2%	1.3%	-0.7%	-0.4%	na
Tertiary-Domestic	827	711	666	650	611	na	-3.0%	-1.3%	-0.8%	-6.0%	na
CO_2 per unit of GDP (tn of CO_2/1990 MECU)	1376	1278	1202	1179	1146	1133	-1.5%	-1.2%	-0.7%	-2.8%	-1.1%
Power Generation	398	386	384	395	391	na	-0.6%	-0.1%	1.0%	-1.2%	na
Public Thermal Power Generation	304	368	365	365	363	na	3.9%	-0.1%	0.0%	-0.6%	na
Autoprod. Thermal Power Generation	13	19	19	31	28	na	7.4%	0.1%	17.2%	-8.2%	na
Energy Branch	57	55	52	49	49	na	-0.6%	-1.1%	-1.7%	-1.1%	na
Final Energy Consumption	881	809	744	704	677	na	-1.7%	-1.6%	-1.8%	-3.9%	na
Industry	371	316	284	247	237	na	-3.1%	-2.2%	-4.6%	-4.0%	na
Transport	225	255	254	252	249	na	2.6%	-0.1%	-0.2%	-1.4%	na
Tertiary-Domestic	285	237	207	205	191	na	-3.6%	-2.7%	-0.3%	-6.9%	na

PART II EUROPEAN UNION

The European Union is one of the largest energy consuming regions in the world. In 1995 it consumed 1366 Mtoe, one third of total OECD primary energy consumption and about one sixth of world consumption. Although examined as a whole region, European union is in fact fairly contrasted, ranging from countries with cold climates such as those in Scandinavia to those with milder climates in the Mediterranean. Similarly, there are substantial differences in national gross production and in income levels. Both of these factors result in widely differing patterns of living standards and energy consumption.

ENERGY OUTLOOK – Energy Demand : Recent evolution (1985-1995)

- GDP growth recovered in 1994 and 1995
- Structure of GDP changed significantly
- With about 50% of final consumption, oil largely remained the first energy source

INDUSTRY

- Industrial energy consumption rebounded in 1994 and 1995
- Specific industrial energy intensity decreased by about 20% during the last ten years
- The contribution of gas and electricity together reached 60% of total industrial consumption in 1995
- Improvements in industrial energy intensity required industrial production growth
- Throughout the European Union, the differences between minimum and maximum energy prices for industry remained considerable

TRANSPORT

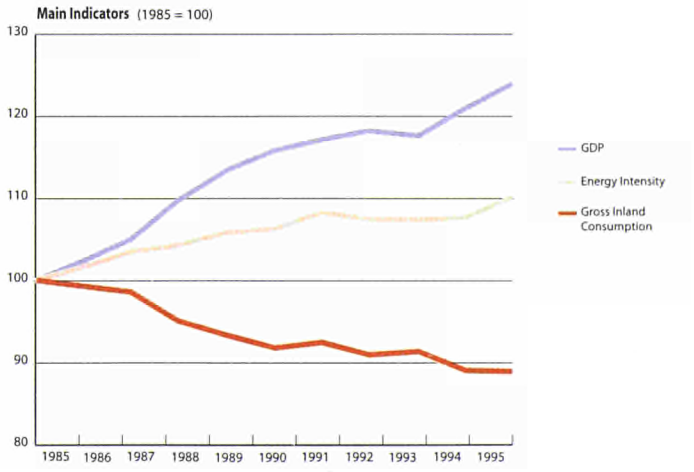
- Transport sector only responsible for the increase of final energy consumption in the period 85-95
- Increasing energy and environmental implications of road transport
- Diesel oil share reached 46% of the total road consumption in 1995
- Surging demand for air transport
- Transport energy intensity declining since 1994
- Average prices for transport fuel presented large discrepancies throughout the European Union

TERTIARY-DOMESTIC

- Energy consumption mainly dependent on weather conditions
- Energies distributed by networks reinforce their contribution from 49% in 1985 to 64% in 1995
- Technological improvements balanced by the emergence of new appliances
- Energy intensity, corrected for climatic effects, seems to be quite stable since 1985
- Energy prices for tertiary-domestic showed a global decrease

GDP growth recovered in 1994 and 1995....

The volume of energy consumed is largely a function, among other variables, of economic activity. During the 80's, GDP grew on average by 2.2% per annum with a marked acceleration in the period 1986-1990 (3% per year). Since then, GDP growth has been marked by a slowdown to 0.5% between 1991 and 1992, followed by sustained recovery in 1994 (+2.9%) and 1995 (+2.5%). Within total GDP, the service sector has grown faster than the industrial sector during the last twenty years, and thus the structure of GDP has changed significantly. The higher energy prices that followed the first oil shock led to many industries relocating outside the European Union to regions where labour and/or energy costs were lower. This shift in the structure of the economy has energy demand implications, as industry is typically more energy intensive than the service sector.



1 To avoid a break in the time series, the analysis of the European Union includes all data regarding the former German Democratic Republic.

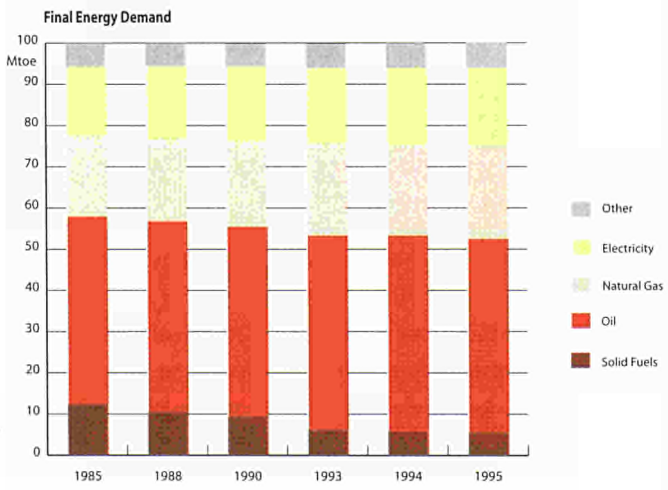
GROSS DOMESTIC PRODUCT (BILLIONS 1990 ECUS)

	1974	1980	1985	1990	1993	1994	1995	74/80	80/85	90/85	93/90	94/93	95/94	95/90
								Annual % Change						
Austria	84.5	99.3	105.7	123.6	130.3	133.2	135.1	2.7%	1.3%	3.2%	1.8%	2.3%	1.4%	1.8%
Belgium	110.1	125.9	130.7	152.6	155.5	159.1	162.2	2.3%	0.7%	3.2%	0.6%	2.3%	1.9%	1.2%
Denmark	74.2	83.5	94.8	101.7	104.9	109.4	112.5	2.0%	2.6%	1.4%	1.0%	4.4%	2.8%	2.0%
Finland	67.2	78.0	89.9	106.2	94.0	98.2	102.4	2.5%	2.9%	3.4%	-4.0%	4.4%	4.2%	-0.7%
France	644.3	750.7	811.0	941.5	946.4	971.8	993.2	2.6%	1.6%	3.0%	0.2%	2.7%	2.2%	1.1%
Germany	947.5	1098.7	1163.4	1297.4	1352.6	1391.3	1418.1	2.5%	1.2%	2.2%	1.4%	2.9%	1.9%	1.8%
Greece	36.6	48.1	51.5	65.3	67.7	69.2	70.6	4.6%	1.4%	4.8%	1.2%	2.2%	2.0%	1.6%
Ireland	19.1	25.2	28.7	35.9	39.9	42.9	47.5	4.7%	2.6%	4.6%	3.6%	7.3%	10.7%	5.7%
Italy	566.7	694.6	744.0	861.2	865.8	884.2	910.4	3.5%	1.4%	3.0%	0.2%	2.1%	3.0%	1.1%
Luxembourg	5.2	5.5	6.7	8.1	9.2	9.6	9.9	0.7%	4.3%	3.9%	4.1%	3.8%	3.2%	3.9%
Netherlands	160.3	182.2	191.7	223.4	234.9	242.8	248.0	2.2%	1.0%	3.1%	1.7%	3.4%	2.1%	2.1%
Portugal	33.7	40.8	41.6	53.1	55.5	56.1	57.5	3.2%	0.4%	5.0%	1.5%	1.1%	2.5%	1.6%
Spain	263.4	289.3	311.3	387.8	394.5	402.9	414.1	1.6%	1.5%	4.5%	0.6%	2.1%	2.8%	1.3%
Sweden	135.8	148.8	161.5	180.8	172.4	178.1	184.5	1.5%	1.7%	2.3%	-1.6%	3.3%	3.6%	0.4%
United Kingdom	545.1	592.0	653.4	769.6	766.3	796.1	815.9	1.4%	2.0%	3.3%	-0.1%	3.9%	2.5%	1.2%
EUROPEAN UNION	**3693.9**	**4262.5**	**4586.0**	**5308.2**	**5389.9**	**5544.9**	**5681.8**	**2.4%**	**1.5%**	**3.0%**	**0.5%**	**2.9%**	**2.5%**	**1.4%**

FINAL ENERGY CONSUMPTION

With about 50% of final consumption, oil largely remained the first energy source…

The **total final energy demand** in the European Union (899 Mtoe in 1995) increased slightly by 1.6% yearly over the period 1985-1995. Oil largely remained the first energy source (around 47% of the demand) but its consumption increased slower than the global energy demand (1.4% over the period 1985-1995). Gas (23% share in 1995) and electricity demand (19% share) increased by 2.7% a year, reinforcing the contribution of energy distributed networks. A clear reduction in the demand for solid fuels was noticed with a share dropping from 9 to 5%. At the same time, the heat demand annually by 7.2%, with a peak increase of 25% during 1993. However, this increase results partly from a better accounting of cogenerated heat in industry. The contribution of renewable energy forms (biomass, wind, photovoltaic, ...) remained stable and as a consequence their share declined from 4.4% in 1985 to 4.0% in 1995. These developments resulted from a switch from solid fuels and to a lesser extent from oil in both Industry and the Domestic and Tertiary sector. The declining contribution of solid fuels must be associated to the conversion of the iron and steel sectors to electrical furnaces and the continuing closing of mines limiting deliveries to the local workers, completed by the increasing standard of living in the new German Landers.



INDUSTRY

Industrial consumption rebounded in 1994 and 1995…

Energy consumption in Industry shows an annual increase of about 0.5% over the period 1985-1995. The trend is fairly continuous, except over the two last years. The favourable evolution of industrial production increased consumption by about 2% per annum. The indices of industrial production reflect the '93 recession with a slowdown of 3.2% in the European Union as a whole, followed by sustained recovery in 1994 (5.1%) and 1995 (3.8%). The period 90-95 demonstrated a limited increase but the

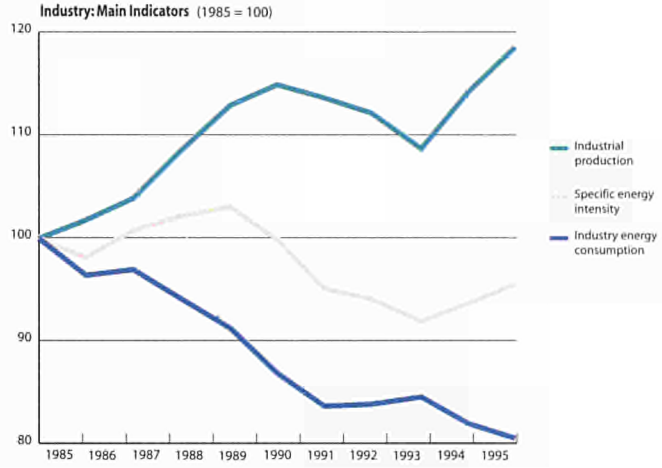
INDICES OF INDUSTRIAL PRODUCTION (1990=100)

	1980	1985	1988	1990	1993	1994	1995	80/85	90/85	93/90	94/93	95/94	95/85
										Annual % Change			
Austria	na	na	na	100.0	99.9	105.9	112.3	na	na	0.0%	6.0%	6.0%	na
Belgium	81.5	84.9	92.5	100.0	92.9	94.6	98.6	0.8%	3.3%	-2.4%	1.8%	4.2%	1.5%
Denmark	76.3	92.8	97.1	100.0	100.4	111.2	115.8	4.0%	1.5%	0.1%	10.7%	4.2%	2.2%
Finland	na	87.9	97.1	100.0	96.9	107.3	115.3	na	2.6%	-1.0%	10.7%	7.5%	2.8%
France	89.3	87.1	94.1	100.0	93.9	97.6	99.3	-0.5%	2.8%	-2.1%	3.9%	1.8%	1.3%
Germany	82.6	85.5	90.5	100.0	90.5	93.9	95.9	na	na	-3.3%	3.8%	2.1%	1.1%
Greece	90.9	97.2	100.8	100.0	94.8	95.7	97.4	1.4%	0.6%	-1.8%	1.0%	1.8%	0.0%
Ireland	54.2	69.6	85.6	100.0	119.1	133.3	158.5	5.1%	7.5%	6.0%	11.9%	18.9%	8.6%
Italy	87.6	84.8	96.9	100.0	95.7	101.7	107.9	-0.6%	3.3%	-1.4%	6.2%	6.1%	2.4%
Luxembourg	69.7	84.6	93.1	100.0	95.2	100.7	101.3	4.0%	3.4%	-1.6%	5.8%	0.5%	1.8%
Netherlands	85.3	90.8	94.1	100.0	100.2	103.2	105.6	1.3%	1.9%	0.1%	3.0%	2.4%	1.5%
Portugal	62.5	73.9	85.9	100.0	95.2	94.9	99.4	3.4%	6.2%	-1.6%	-0.3%	4.7%	3.0%
Spain	82.9	86.0	95.5	100.0	91.8	98.7	103.3	0.7%	3.1%	-2.8%	7.5%	4.7%	1.8%
Sweden	81.3	90.1	94.0	100.0	93.3	103.8	114.1	2.1%	2.1%	-2.3%	11.2%	10.0%	2.4%
United Kingdom	na	88.2	98.2	100.0	98.4	103.5	106.0	na	2.6%	-0.5%	5.2%	2.4%	1.9%
EUROPEAN UNION	**na**	**na**	**94.4**	**100.0**	**94.6**	**99.4**	**103.2**	**na**	**na**	**-1.8%**	**5.1%**	**3.8%**	**na**

trends are very contrasted in the various Member States: the best score is realised by Ireland, (+58%) followed by the Nordic countries (Denmark and Finland +15% and Sweden +14%) and Austria (+12%). The weakest scores are obtained by Germany affected by the reunification (-4%), Greece (-3%) and Belgium (-1%).

Specific industrial energy intensity decreased by about 20% during the last ten years…

From 1985 to 1995 industrial production grew on average by 1.7% per annum. Evidence of the shift away from energy intensive industries such as iron-steel and of continuous improvement of energy efficiency is indicated by the 0.5% per annum decline in industrial energy consumption during the same period. As a result, **specific industrial energy intensity**[2] decreased by about 20% between 1985 and 1995. It must be stressed that improvement in specific energy intensity occurred only with increasing industrial activity. During the short recession between 1991 and 1993, lower utilisation of existing capacities and reduction in investments induced an increase of energy intensity by about 1%. The analysis of the specific energy intensity ratio is complex: technological improvements happened but at the same time structural changes took place. The restructuring of European industry that started after the second petroleum shock, was pursued, and induced a further reduction of activity in energy-intensive branches, such as iron and steel, chemicals and non-metallic minerals. In addition these last years have been marked by the decline of manufacturing industries, including textile, penalised by labour costs.



Structure of GDP changed significantly…

When available, the specific industrial energy intensity indicator must be preferred to the industrial energy intensity indicator defined as the ratio between industrial energy indicator and GDP. This second indicator reflects not only energy efficiency improvements in industrial sectors but also the reducing contribution of industry in GDP.

STRUCTURAL COMPOSITION OF GDP

	1980	1985	1990	1994
Agriculture	3.3%	3.3%	3.0%	2.9%
Services	59.9%	61.1%	62.4%	62.9%
Industry	36.8%	35.6%	34.6%	34.2%

2 Defined as the ratio of energy demand to industrial production.

The contribution of gas and electricity together reached 60% of total consumption in 1995…

In terms of **fuel mix**, significant changes occurred during the past ten years with the declining contribution of solids on the coke and steamcoal markets. Gas and electricity, which presents a growth rate of about 1.5% per annum in the period 1985-1995, largely replaced solid fuels. But, from 1992, in line with low oil prices, the rebound of oil consumption in almost all industrial sectors except non-metallic minerals must be underlined (+ 7% between 1993 and 1995). Overall , the resulting share of each fuel changed over the period 1985-1995 as follows : Solids from 24% to 15%, Oil from 21% to 19%, Gas from 26% to 31%, and electricity from 23% to 28%.

EUROPEAN UNION : INDUSTRY - FINAL ENERGY CONSUMPTION

Mtoe	1985	1988	1990	1993	1994	1995	90/85	93/90	94/93	95/94	95/85
							Annual % Change				
Total consumption	269.8	275.7	269.4	248.1	252.7	257.8	0.0%	-2.7%	1.8%	2.0%	-0.5%
Iron & Steel	62.3	58.6	56.6	48.9	52.5	53.3	-1.9%	-4.7%	7.3%	1.5%	-1.6%
Chemicals	48.2	50.3	50.0	44.1	44.5	43.7	0.7%	-4.1%	0.7%	-1.8%	-1.0%
Building Materials	35.8	36.2	36.6	31.9	31.5	32.5	0.4%	-4.5%	-1.1%	3.1%	-1.0%
Other	123.4	130.5	126.2	123.1	124.2	128.3	0.4%	-0.8%	0.9%	3.3%	0.4%
Solids	64.4	58.7	54.8	40.5	40.3	39.2	-3.2%	-9.6%	-0.6%	-2.6%	-4.8%
Iron & Steel	29.1	26.4	25.9	21.4	23.8	23.9	-2.3%	-6.2%	10.8%	0.6%	-2.0%
Chemicals	7.0	7.0	6.2	3.3	3.3	2.7	-2.4%	-18.9%	-1.6%	-15.9%	-9.0%
Building Materials	13.7	11.5	10.9	8.2	7.7	7.4	-4.4%	-9.2%	-5.6%	-3.5%	-5.9%
Other	14.5	13.8	11.7	7.6	5.5	5.1	-4.2%	-13.4%	-27.3%	-7.1%	-9.9%
Oil	56.6	55.9	48.5	47.0	49.4	50.1	-3.0%	-1.0%	4.9%	1.5%	-1.2%
Iron & Steel	4.1	4.3	3.8	3.7	3.9	3.8	-1.5%	-1.2%	5.2%	-2.7%	-0.9%
Chemicals	11.7	11.9	9.9	8.5	9.1	9.3	-3.4%	-4.9%	7.2%	1.6%	-2.3%
Building Materials	8.8	9.3	9.5	8.4	8.5	8.4	1.6%	-4.0%	1.3%	-1.4%	-0.4%
Other	32.0	30.3	25.3	26.4	27.8	28.6	-4.6%	1.4%	5.3%	2.9%	-1.1%
Gas	69.9	76.1	79.6	77.5	78.4	80.9	2.6%	-0.9%	1.1%	3.2%	1.5%
Iron & Steel	20.5	19.1	18.4	16.1	16.8	17.0	-2.1%	-4.4%	4.1%	1.3%	-1.8%
Chemicals	15.4	16.5	17.6	17.3	17.7	17.3	2.6%	-0.5%	1.8%	-2.2%	1.1%
Building Materials	8.9	10.3	11.2	10.7	10.7	11.4	4.6%	-1.3%	-0.4%	6.7%	2.5%
Other	25.1	30.1	32.4	33.4	33.3	35.3	5.3%	1.0%	-0.2%	6.0%	3.5%
Electricity	62.5	68.2	70.0	68.4	69.4	71.6	2.3%	-0.8%	1.5%	3.1%	1.4%
Iron & Steel	8.5	8.7	8.3	7.7	8.1	8.6	-0.3%	-2.5%	5.0%	6.3%	0.2%
Chemicals	13.5	14.4	15.8	14.8	14.3	14.2	3.3%	-2.2%	-3.5%	-0.5%	0.5%
Building Materials	4.3	4.9	5.0	4.6	4.7	5.3	3.2%	-2.4%	0.8%	14.2%	2.3%
Other	36.3	40.3	40.9	41.2	42.4	43.4	2.4%	0.3%	2.8%	2.6%	1.8%
Heat	4.2	4.7	4.4	2.2	2.2	2.7	0.9%	-20.8%	0.7%	22.0%	-4.4%
Industrial Production Index (1990=100)	na	94.4	100.0	94.6	99.4	103.2	na	-1.8%	5.1%	3.8%	na
Industrial Energy Intensity (1990=100)	na	108.4	100.0	97.3	94.4	92.7	na	-0.9%	-3.1%	-1.7%	na

Improvements in energy intensity required industrial production growth…

Energy developments in industry on a Member State basis show large discrepancies, with Ireland presenting a reduction of industrial energy intensity of about 47% in the 1990-95 period simultaneously with the fastest growth in industrial activity as a result of a very in-depth restructuring towards high added values industries. Austria, Denmark and to a lesser extent Sweden who presented the most sustained industrial production after Ireland, are also amongst the best performers in terms of global energy efficiency. The situation in the five major Member States (France, Germany, Italy, Spain and the United Kingdom) is not so clear. Between 1985 and 1990, except Italy, all of them registered a progression of industrial production by about 15% accompanied by a progress in energy intensity of about 10% with the exception of Germany (which doubled the performance) and Italy which only stabilised energy intensity. Since 1990, the evolution is more contrasted. The evolution of industrial production ranged from a reduction by 4% in Germany to an increase by 8% in Italy although

the brackets for energy intensity goes from –8% in the United Kingdom to +6% in Germany in line with the restructuring and the closing of old industries in the new Landers. The share of total industrial energy demand of these five Member States remained globally stable, representing about three-quarters of the European Union consumption. The most spectacular improvement occurred in Luxembourg in '94 and '95, largely the result of the reconversion of the Iron and Steel industry to electrical furnaces.

Throughout the European Union, the differences between minimum and maximum energy prices remained considerable…

The average **prices of energy for industrial consumers** (1990 ECU per toe), over the 1985-1995 period show an average yearly decrease of 3.4% for steam coal, 9.2% for heavy oil, 7.8% for natural gas and 2.5% for electricity considering a weighted average at the European level. In 1995, the average European price per toe of heavy fuel (119 ECU) and natural gas (117 ECU) were about the same, about 7% more expensive than steam coal (110 ECU). Electricity prices remained about five times higher (568 ECU per toe). From country to country, the prices for the different energy sources show important discrepancies in both value and trends depending on supply conditions, market mechanisms and taxation. The gaps between extreme prices remained considerable: from 82 ECU/toe (Belgium) to 170 ECU/toe (Finland) for heavy fuel oil, from 87 ECU/toe (Belgium) to 228 ECU/toe (Ireland) for natural gas and from 354 ECU/toe (Sweden) to 903 ECU/toe (Italy) for electricity.

INDUSTRIAL ENERGY CONSUMPTION

	1985	1988	1990	1993	1994	1995	90/85	93/90	94/93	95/94	95/85
							Annual % Change				
Austria											
Total Consumption (Mtoe)	5.8	5.7	5.7	5.3	5.3	5.6	-0.3%	-2.5%	0.2%	4.3%	-0.5%
Share in European Union (%)	2.4%	2.3%	2.3%	2.1%	2.1%	2.2%	-0.9%	-1.9%	-1.6%	2.2%	-1.0%
Specific Industrial Energy Intensity (1990=100)	na	na	100.0	92.8	87.7	86.3	na	-2.5%	-5.5%	-1.6%	na
Belgium											
Total Consumption (Mtoe)	10.6	11.1	11.5	11.1	11.7	11.8	1.5%	-1.1%	5.3%	0.8%	1.0%
Share in European Union (%)	4.3%	4.4%	4.5%	4.5%	4.6%	4.6%	0.9%	-0.6%	3.4%	-1.2%	0.5%
Specific Industrial Energy Intensity (1990=100)	109.4	105.0	100.0	104.1	107.7	104.1	-1.8%	1.4%	3.4%	-3.3%	-0.5%
Denmark											
Total Consumption (Mtoe)	2.7	2.7	2.8	2.8	2.9	3.0	0.6%	-0.6%	6.3%	1.3%	0.8%
Share in European Union (%)	1.1%	1.1%	1.1%	1.1%	1.2%	1.1%	0.0%	-0.1%	4.4%	-0.7%	0.3%
Specific Industrial Energy Intensity (1990=100)	104.7	100.7	100.0	97.8	93.9	91.3	-0.9%	-0.7%	-4.0%	-2.8%	-1.4%
Finland											
Total Consumption (Mtoe)	8.0	8.4	8.8	9.9	9.8	10.1	1.9%	3.8%	-0.2%	3.2%	2.4%
Share in European Union (%)	3.3%	3.3%	3.5%	4.0%	3.9%	3.9%	1.3%	4.3%	-2.1%	1.1%	1.8%
Specific Industrial Energy Intensity (1990=100)	103.7	97.9	100.0	115.3	103.9	99.7	-0.7%	4.9%	-9.9%	-4.0%	-0.4%
France											
Total Consumption (Mtoe)	37.8	36.8	36.8	36.3	34.9	37.4	-0.5%	-0.4%	-4.0%	7.3%	-0.1%
Share in European Union (%)	15.4%	14.6%	14.6%	14.6%	13.8%	14.5%	-1.1%	0.1%	-5.7%	5.2%	-0.6%
Specific Industrial Energy Intensity (1990=100)	118.0	106.2	100.0	105.1	97.1	102.4	-3.3%	1.7%	-7.6%	5.4%	-1.4%
Germany											
Total Consumption (Mtoe)	61.0	61.3	59.2	60.2	60.5	60.4	-0.6%	0.6%	0.6%	-0.3%	-0.1%
Share in European Union (%)	24.9%	24.3%	23.4%	24.3%	24.0%	23.4%	-1.2%	1.1%	-1.2%	-2.3%	-0.6%
Specific Industrial Energy Intensity (1990=100)	120.5	114.6	100.0	112.4	109.0	106.4	na	4.0%	-3.0%	-2.3%	na
Greece											
Total Consumption (Mtoe)	3.7	4.0	3.9	3.6	3.7	4.0	0.9%	-2.0%	1.9%	8.5%	0.8%
Share in European Union (%)	1.5%	1.6%	1.5%	1.5%	1.5%	1.6%	0.3%	-1.5%	0.1%	6.4%	0.3%
Specific Industrial Energy Intensity (1990=100)	98.4	103.5	100.0	99.2	100.1	106.8	0.3%	-0.3%	0.9%	6.7%	0.8%
Ireland											
Total Consumption (Mtoe)	1.8	1.8	2.1	1.6	1.7	1.8	3.3%	-8.1%	6.4%	2.0%	-0.1%
Share in European Union (%)	0.7%	0.7%	0.8%	0.7%	0.7%	0.7%	2.8%	-7.6%	4.5%	0.0%	-0.6%
Specific Industrial Energy Intensity (1990=100)	121.9	101.9	100.0	65.1	61.9	53.1	-3.9%	-13.3%	-4.9%	-14.2%	-8.0%
Italy											
Total Consumption (Mtoe)	31.5	35.1	36.9	34.9	35.9	37.1	3.2%	-1.8%	2.7%	3.4%	1.7%
Share in European Union (%)	12.8%	13.9%	14.6%	14.1%	14.2%	14.4%	2.6%	-1.2%	0.9%	1.4%	1.2%
Specific Industrial Energy Intensity (1990=100)	100.7	98.2	100.0	98.9	95.7	93.3	-0.1%	-0.4%	-3.2%	-2.5%	-0.8%
Luxembourg											
Total Consumption (Mtoe)	1.8	1.6	1.7	1.6	1.6	1.2	-0.6%	-1.4%	-5.6%	-23.8%	-4.0%
Share in European Union (%)	0.7%	0.6%	0.7%	0.7%	0.6%	0.5%	-1.2%	-0.9%	-7.3%	-25.3%	-4.4%
Specific Industrial Energy Intensity (1990=100)	121.9	102.0	100.0	100.6	89.7	68.0	-3.9%	0.2%	-10.8%	-24.2%	-5.7%
Netherlands											
Total Consumption (Mtoe)	13.7	13.1	13.2	13.2	12.5	13.9	-0.7%	0.0%	-5.8%	11.7%	0.2%
Share in European Union (%)	5.6%	5.2%	5.2%	5.3%	4.9%	5.4%	-1.3%	0.6%	-7.5%	9.5%	-0.3%
Specific Industrial Energy Intensity (1990=100)	114.2	105.5	100.0	99.9	91.4	99.7	-2.6%	0.0%	-8.6%	9.1%	-1.3%
Portugal											
Total Consumption (Mtoe)	3.7	3.8	4.1	4.4	4.6	4.3	2.3%	2.0%	4.0%	-5.6%	1.6%
Share in European Union (%)	1.5%	1.5%	1.6%	1.8%	1.8%	1.7%	1.8%	2.6%	2.1%	-7.5%	1.1%
Specific Industrial Energy Intensity (1990=100)	120.6	107.6	100.0	111.5	116.3	104.9	-3.7%	3.7%	4.3%	-9.8%	-1.4%
Spain											
Total Consumption (Mtoe)	18.8	19.4	19.8	19.2	20.6	20.9	1.0%	-0.9%	7.1%	1.6%	1.0%
Share in European Union (%)	7.7%	7.7%	7.8%	7.7%	8.1%	8.1%	0.4%	-0.4%	5.2%	-0.4%	0.5%
Specific Industrial Energy Intensity (1990=100)	110.9	102.9	100.0	105.9	105.6	102.5	-2.1%	1.9%	-0.3%	-2.9%	-0.8%
Sweden											
Total Consumption (Mtoe)	11.9	11.8	11.6	11.8	12.3	12.6	-0.5%	0.6%	4.3%	2.6%	0.6%
Share in European Union (%)	4.8%	4.7%	4.6%	4.8%	4.9%	4.9%	-1.0%	1.2%	2.4%	0.6%	0.1%
Specific Industrial Energy Intensity (1990=100)	113.7	108.7	100.0	109.3	102.5	95.6	-2.5%	3.0%	-6.2%	-6.7%	-1.7%
United Kingdom											
Total Consumption (Mtoe)	32.4	35.3	34.2	32.1	34.7	33.6	1.1%	-2.2%	8.0%	-2.9%	0.4%
Share in European Union (%)	13.2%	14.0%	13.6%	12.9%	13.7%	13.0%	0.6%	-1.6%	6.1%	-4.9%	-0.1%
Specific Industrial Energy Intensity (1990=100)	107.3	104.8	100.0	95.2	97.8	92.7	-1.4%	-1.6%	2.7%	-5.3%	-1.5%
European Union											
Total Consumption (Mtoe)	245.34	252.21	252.35	248.11	252.69	257.79	0.6%	-0.6%	1.8%	2.0%	0.5%
Specific Industrial Energy Intensity (1990=100)	na	108.4	100.0	97.3	94.4	92.7	na	-0.9%	-3.1%	-1.7%	na

ENERGY PRICES TO INDUSTRIAL CONSUMERS IN CONSTANT 1990 ECU PER TOE (1)(2)

		1985	1988	1990	1992	1993	1994	1995	90/85	93/90	94/93	95/94	95/85
									Annual % Change				
Austria	Steam Coal	154.6	97.0	91.7	89.4	76.5	71.8	72.4	-9.9%	-5.8%	-6.2%	0.9%	-7.3%
	Heavy fuel oil 3.5% S	310.5	109.2	98.7	96.0	89.8	72.5	84.5	-20.5%	-3.1%	-19.2%	16.4%	-12.2%
	Natural gas	304.7	150.8	138.9	130.1	122.5	118.6	115.8	-14.5%	-4.1%	-3.2%	-2.3%	-9.2%
	Electricity	726.2	699.4	598.2	575.8	600.7	579.1	561.2	-3.8%	0.1%	-3.6%	-3.1%	-2.5%
Belgium	Steam Coal	120.6	72.8	62.4	na	na	na	na	-12.3%	-	-	-	-
	Heavy fuel oil 3.5% S	270.5	85.1	98.4	73.5	80.1	85.0	82.1	-18.3%	-6.6%	6.1%	-3.5%	-11.2%
	Natural gas	273.6	106.0	113.7	103.6	97.0	88.2	87.2	-16.1%	-5.2%	-9.1%	-1.1%	-10.8%
	Electricity	775.2	582.4	584.7	533.7	518.8	487.8	**491.0**	-5.5%	-3.9%	-6.0%	0.7%	-4.5%
Denmark	Steam Coal	191.4	127.3	134.9	121.8	84.5	79.5	78.5	-6.7%	-14.4%	-5.9%	-1.2%	-8.5%
	Heavy fuel oil 3.5% S	286.2	111.1	120.4	95.0	112.5	107.7	102.9	-15.9%	-2.2%	-4.2%	-4.5%	-9.7%
	Electricity	875.7	533.2	569.8	569.6	638.3	548.7	521.1	-8.2%	3.9%	-14.0%	-5.0%	-5.1%
Finland	Steam Coal	128.7	75.5	78.7	78.7	79.4	87.7	113.2	-9.4%	0.3%	10.3%	29.1%	-1.3%
	Heavy fuel oil 3.5% S	345.5	132.1	144.9	127.3	154.4	167.0	170.1	-15.9%	2.1%	8.1%	1.9%	-6.8%
	Natural gas	270.8	97.9	97.3	93.1	98.9	104.3	117.2	-18.5%	0.5%	5.4%	12.4%	-8.0%
	Electricity	765.6	621.7	578.4	570.2	604.4	585.8	591.2	-5.5%	1.5%	-3.1%	0.9%	-2.6%
France	Steam Coal	144.6	111.2	106.1	102.4	101.2	99.5	97.8	-6.0%	-1.6%	-1.7%	-1.7%	-3.8%
	Heavy fuel oil 3.5% S	288.2	98.7	110.2	89.4	81.8	107.9	107.7	-17.5%	-9.5%	32.0%	-0.2%	-9.4%
	Natural gas	271.1	123.2	122.2	110.7	108.6	103.8	104.2	-14.7%	-3.9%	-4.5%	0.4%	-9.1%
	Electricity	599.3	517.2	516.5	481.5	483.1	452.0	452.5	-2.9%	-2.2%	-6.4%	0.1%	-2.8%
Germany	Steam Coal	209.0	211.2	202.8	202.2	195.2	190.3	**188.0**	-0.6%	-1.3%	-2.5%	-1.2%	-1.1%
	Heavy fuel oil 3.5% S	284.5	96.1	115.0	96.6	87.0	87.8	90.0	-16.6%	-8.9%	0.9%	2.5%	-10.9%
	Natural gas	284.0	127.8	147.7	141.8	134.7	126.7	**125.0**	-12.3%	-3.0%	-5.9%	-1.3%	-7.9%
	Electricity	833.2	880.0	835.3	765.2	747.3	735.1	699.5	0.0%	-3.6%	-1.6%	-4.8%	-1.7%
Greece	Heavy fuel oil 3.5% S	284.9	169.2	129.3	114.6	99.7	118.7	119.8	-14.6%	-8.3%	19.0%	0.9%	-8.3%
	Electricity	775.4	657.6	593.3	553.1	495.4	440.7	431.0	-5.2%	-5.8%	-11.0%	-2.2%	-5.7%
Ireland	Heavy fuel oil 3.5% S	328.2	130.9	129.9	108.4	119.2	122.9	129.7	-16.9%	-2.8%	3.1%	5.5%	-8.9%
	Natural gas	389.0	280.4	260.8	245.1	240.8	234.4	228.5	-7.7%	-2.6%	-2.6%	-2.5%	-5.2%
	Electricity	965.7	700.3	619.5	582.4	574.3	561.4	547.3	-8.5%	-2.5%	-2.2%	-2.5%	-5.5%
Italy	Steam Coal	131.9	74.6	65.8	53.6	67.7	63.6	68.4	-13.0%	0.9%	-6.0%	7.4%	-6.4%
	Heavy fuel oil 3.5% S	303.0	88.3	150.9	139.8	137.3	141.4	143.3	-13.0%	-3.1%	3.0%	1.4%	-7.2%
	Natural gas	271.7	86.9	123.7	128.3	132.8	137.5	145.6	-14.6%	2.4%	3.6%	5.9%	-6.0%
	Electricity	1183.0	863.3	893.9	948.1	935.3	928.3	903.5	-5.4%	1.5%	-0.7%	-2.7%	-2.7%
Luxembourg	Heavy fuel oil 3.5% S	287.6	93.4	106.7	101.1	89.7	93.0	94.0	-18.0%	-5.6%	3.7%	1.1%	-10.6%
	Electricity	739.6	708.0	**649.0**	**592.4**	**575.8**	**541.4**	**545.0**	-2.6%	-3.9%	-6.0%	0.7%	-3.0%
Netherlands	Steam Coal	129.1	65.0	70.6	na	na	na	na	-11.4%	-	-	-	-
	Heavy fuel oil 3.5% S	275.3	119.8	147.5	129.7	120.0	117.3	119.1	-11.7%	-6.7%	-2.2%	1.5%	-8.0%
	Natural gas	234.9	97.9	98.6	86.6	87.8	82.6	89.7	-15.9%	-3.8%	-6.0%	8.7%	-9.2%
	Electricity	690.4	451.0	479.3	422.3	540.1	522.3	522.5	-7.0%	4.1%	-3.3%	0.0%	-2.7%
Portugal	Steam Coal	158.7	88.6	70.2	53.4	48.2	na	na	-15.1%	-11.8%	-	-	-
	Heavy fuel oil 3.5% S	294.9	163.2	147.8	126.0	119.2	110.7	105.5	-12.9%	-6.9%	-7.1%	-4.6%	-9.8%
	Electricity	1050.7	1115.4	1059.7	1035.8	973.3	913.7	830.9	0.2%	-2.8%	-6.1%	-9.1%	-2.3%
Spain	Heavy fuel oil 3.5% S	365.8	130.8	119.9	97.3	105.4	122.0	139.4	-20.0%	-4.2%	15.7%	14.3%	-9.2%
	Natural gas	359.5	155.7	129.0	106.0	106.5	114.3	119.2	-18.5%	-6.2%	7.3%	4.3%	-10.5%
	Electricity	969.3	1015.6	892.7	859.6	825.2	768.6	705.6	-1.6%	-2.6%	-6.9%	-8.2%	-3.1%
Sweden	Steam Coal	145.6	107.6	98.2	na	na	na	na	-7.6%	-	-	-	-
	Heavy fuel oil 3.5% S	432.8	250.3	304.1	264.3	164.6	147.6	149.0	-6.8%	-18.5%	-10.4%	1.0%	-10.1%
	Electricity	503.6	465.5	456.2	445.2	363.4	360.7	354.3	-2.0%	-7.3%	-0.7%	-1.8%	-3.5%
United Kingdom	Steam Coal	151.3	113.2	99.5	88.2	81.1	78.3	70.2	-8.1%	-6.6%	-3.4%	-10.3%	-7.4%
	Heavy fuel oil 3.5% S	293.4	109.6	108.1	84.2	84.1	94.6	107.2	-18.1%	-8.0%	12.6%	13.3%	-9.6%
	Natural gas	212.3	152.2	124.9	118.8	115.0	113.3	95.5	-10.1%	-2.7%	-1.5%	-15.7%	-7.7%
	Electricity	777.3	711.0	648.1	640.6	664.3	624.1	597.9	-3.6%	0.8%	-6.1%	-4.2%	-2.6%
European Union	Steam Coal	155.8	130.3	121.4	120.4	116.8	112.2	**110.0**	-4.9%	-1.3%	-3.9%	-2.0%	-3.4%
	Heavy fuel oil 3.5% S	311.5	114.6	129.4	107.2	102.7	112.8	118.7	-16.1%	-7.4%	9.8%	5.2%	-9.2%
	Natural gas	263.0	121.4	128.0	122.8	120.4	117.6	**117.0**	-13.4%	-2.0%	-2.4%	-0.5%	-7.8%
	Electricity	734.0	658.9	635.7	621.3	614.7	590.6	**568.0**	-2.8%	-1.1%	-3.9%	-3.8%	-2.5%

(1) Excluding Refundable VAT
(2) Estimates marked in bold

TRANSPORT

Transport sector only responsible for the increase of final energy consumption in the period between '85-95…

Energy consumption in Transport grew from 1985 to 1995 at an average annual rate of 3.2% but in the period 1990-95, the growth remained limited to 1.7% per year. In 1995, total energy demand in the transport sector (excluding marine bunkers) was 276 Mtoe or 30.7% of total final energy consumption compared to a share limited to 24.5% in 1985. It underlines the predominant contribution of the transport sector in the evolution of final energy consumption. Between 1985 and 1995 the increase of energy consumption for transport, about 74 Mtoe, is equivalent to the total increase of final energy consumption.

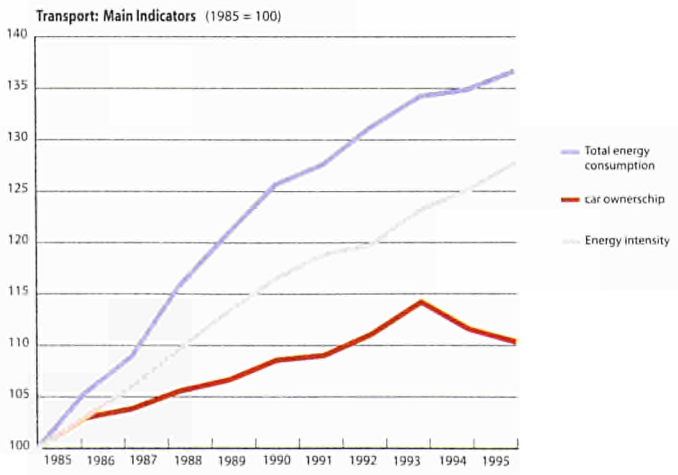
EUROPEAN UNION : TRANSPORT ENERGY CONSUMPTION

Mtoe	1985	1988	1990	1993	1994	1995	90/85	93/90	94/93	95/94	95/85
							Annual % Change				
Total consumption	201.84	233.57	253.57	270.83	272.20	275.82	4.7%	2.2%	0.5%	1.3%	3.2%
Solids	0.32	0.13	0.10	0.01	0.01	0.01	-21.4%	-47.8%	-6.7%	10.2%	-26.8%
Oil	197.89	229.59	249.26	266.11	267.33	270.83	4.7%	2.2%	0.5%	1.3%	3.2%
of which:											
Road	**169.71**	**196.66**	**212.07**	**226.34**	**226.37**	**228.83**	**4.6%**	**2.2%**	**0.0%**	**1.1%**	**3.0%**
Motor Gasoline	*105.07*	*116.48*	*121.72*	*125.45*	*121.66*	*120.43*	*3.0%*	*1.0%*	*-3.0%*	*-1.0%*	*1.4%*
Diesel Oil	*62.32*	*77.63*	*87.66*	*98.33*	*102.03*	*105.64*	*7.1%*	*3.9%*	*3.8%*	*3.5%*	*5.4%*
Air	**20.75**	**25.08**	**27.66**	**30.05**	**31.30**	**32.57**	**5.9%**	**2.8%**	**4.2%**	**4.0%**	**4.6%**
Jet Fuel	*20.59*	*24.89*	*27.51*	*29.92*	*31.18*	*32.43*	*6.0%*	*2.8%*	*4.2%*	*4.0%*	*4.6%*
Gas	0.24	0.22	0.21	0.24	0.25	0.27	-2.9%	4.7%	4.7%	6.8%	1.0%
Electricity	3.39	3.63	4.00	4.47	4.61	4.70	3.4%	3.7%	3.1%	2.0%	3.3%
Transport Energy Intensity (toe/1990 Mecu)	44.01	46.44	47.77	50.25	49.09	48.54	1.7%	1.7%	-2.3%	-1.1%	1.0%
Transport Energy Intensity (1990=100)	92.14	97.22	100.00	105.19	102.76	101.62	1.7%	1.7%	-2.3%	-1.1%	1.0%
Nb. of Vehicles (millions)	135.23	146.55	157.32	173.26	176.53	180.60	3.1%	3.3%	1.9%	2.3%	2.9%
Specific Consumption in Road Traffic (toe/vehicle)	1.25	1.34	1.35	1.31	1.28	1.27	1.4%	-1.0%	-1.8%	-1.2%	0.1%

Increasing energy and environmental implications of road transport…

Within the transport sector, road transport is the largest subsector, accounting for 83% of total energy demand. The energy and environmental implications of road transport are increasing because the expected growth in traffic volumes is likely to more than offset the expected energy efficiency improvements in vehicle performance. Also, the rate of car ownership is steadily increasing with the number of cars in the European Union having increased by about 3% over the past ten years. In addition, larger cars (over 1500cc) have increased their share of new registrations at the expense of smaller cars (below 1500cc). This trend demonstrates that technological improvements are increasingly being directed towards greater consumer comfort levels rather than lower fuel consumption.

Marked differences in car ownership rates still exist among countries. Differences in income levels and fuel prices are not a sufficient explanation of these differences. Factors such as different tax regimes for the purchase, ownership and use of cars also influence ownership levels. Fuel consumption is a function of car ownership but also of vehicle utilisation. Car utilisation per annum varies greatly within Europe, ranging from 11000 km in Italy to almost 19000 Km in Finland.



Diesel oil share reached 46% of the total road consumption in 1995…

Total freight transport has increased by more than 70% over the past 25 years and the road transport of goods has more than doubled. This implies that the proportion of freight transported by road has increased at the expense of other means of transport, mainly rail. Road transport advantages are manifold: commercial vehicles are more flexible and reliable, as well as faster, than other modes of transport; they can be easily integrated into production and distribution structures. Consequently, the share of diesel oil in road consumption continued to increase, passing from 41% in 1990 to 46% in 1995 as a consequence of increasing freight transport and dieselisation of cars.

The quality of oil products was improving continuously since 1985, driven by environmental considerations. In 1993, Austria became the first European country to ban the use of leaded gasoline, followed by Sweden in 1994. Globally, the share of unleaded gasoline has increased very rapidly as a result of widening fiscal measures and regulations imposing catalytic converters on new vehicles.

Surging demand for air transport…

The demand for aviation fuel grew on average by 4.6% per annum from 1985 to 1995, as a result of rising real incomes implying increasing leisure air travel. This was in addition to the increase in business travel that occurred as the region's economies became more and more integrated. In addition, the cost of fuel represents only a fraction of the price of an air ticket and thus the demand for air travel is very unresponsive to fuel price management. Finally, liberalisation of air transport has induced significant reduction in tariffs.

Transport energy intensity declining since 1994…

The **transport energy intensity** grew continuously by 1.5% over the last decade, but recent observations both at the European and Member State level seem to indicate that the Transport energy Intensity perhaps peaked in the beginning of the 90's. But without statistical disaggregation between private and freight transport it is not currently possible to estimate this new evolution. In fact, the elasticity of energy consumption in the transport sector to GDP was 1.4 over the period 1985-1995, but presented very large variations during this period: 1.4 in the period 1985-1990, 4.4 during the recession period 1991-1993 and finally only 0.2 in 1994 and 0.5 in 1995. Except for Ireland, all Member States showed increases in the transport energy intensity on the period 1985-1995. Luxembourg has the highest degree of both transport energy intensity increases and consumption per vehicle. This only reflects the fact that consumers in neighbouring Member States (Belgium, France and Germany) took advantage of lower prices and got a part of their supplies in Luxembourg. Between 1990 and 1995, five categories of behaviour could be identified: the first concerns Portugal and Luxembourg where the intensity increased by more than 2.5% per annum; the second includes Spain and Germany with an increase between 2.1% and 2.3%; a third includes Austria, Belgium, Finland, Greece, Italy, Netherlands and Sweden where the intensity increased between 0.9% and 1.4% per year; a fourth includes France and the United Kingdom where the intensity was quite stable; and finally Ireland (-0.4% per year) and Denmark (-1.1% per year) which presented gains in intensity.

Average prices for transport fuel presented large discrepancies throughout the European Union….

Actual prices for transport fuel (1990 ECU per toe) decreased significantly from 1985 to 1995, by a yearly average of 2.1% for gasoline and 2.7% for diesel despite significant tax increases in many Member States. Large price fluctuations existed per Member State and per fuel. In addition relative prices of gasoline versus diesel differed very sharply per country, inducing eventual distortions in competition in the road transport sector. In 1995, leaded gasoline prices ranged between 1362 and 725 ECU/toe; unleaded gasoline between 1261 and 675 ECU/toe and diesel prices ranged between 724 and 369 ECU/toe. The difference between leaded and unleaded gasoline in a same country ranged, during 1994, between 102 (Belgium) and 5 (Denmark) ECU/toe; with an average difference of 72 ECU/toe. Comparing unleaded gasoline and diesel, the difference in price ranged between 610 and 268 ECU/toe, with an average value of 427 ECU/toe over all the Member States.

Because of the transport sector's unresponsiveness to fuel price changes in the short to medium term, many European governments have been encouraged to tax fuel as a source of revenue. The tax share of the retail price of road transport fuels has increased over time and typically now stands at about 70% in the European Union compared with less than 40% in the United States. As a consequence, any increases in the crude oil price will have a limited impact on the road transport sector's energy demand as the high tax component of the retail price dampens the direct impact of increase in oil prices.

TRANSPORT ENERGY CONSUMPTION

Mtoe	1985	1988	1990	1993	1994	1995	90/85	93/90	94/93	95/94	95/85	95/90
							Annual % Change					
Austria	**4.52**	**5.06**	**5.40**	**6.07**	**6.08**	**6.23**	**3.6%**	**4.0%**	**0.2%**	**2.4%**	**3.3%**	**2.4%**
Transport Energy Intensity (toe/1985 Mecu)	42.73	44.55	43.66	46.62	45.68	46.11	0.4%	2.2%	-2.0%	0.9%	0.8%	0.9%
Road Consumption	4.02	4.47	4.75	5.33	5.30	5.39	3.4%	3.9%	-0.4%	1.7%	3.0%	2.2%
Specific consumption (toe/vehicle)	1.28	1.31	1.31	1.31	1.27	1.25	0.4%	0.2%	-3.4%	-1.2%	-0.2%	-0.6%
Belgium	**6.13**	**7.39**	**7.70**	**8.35**	**8.48**	**8.48**	**4.7%**	**2.7%**	**1.5%**	**0.0%**	**3.3%**	**1.9%**
Transport Energy Intensity (toe/1985 Mecu)	46.93	51.91	50.48	53.70	53.27	52.27	1.5%	2.1%	-0.8%	-1.9%	1.1%	1.1%
Road Consumption	5.12	6.39	6.44	6.91	7.06	7.08	4.7%	2.3%	2.3%	0.3%	3.3%	1.9%
Specific consumption (toe/vehicle)	1.41	1.63	1.54	1.52	1.51	1.51	1.7%	-0.5%	-0.3%	-0.3%	0.6%	-0.3%
Denmark	**3.63**	**3.96**	**4.50**	**4.38**	**4.58**	**4.64**	**4.4%**	**-0.9%**	**4.4%**	**1.4%**	**2.5%**	**0.3%**
Transport Energy Intensity (toe/1985 Mecu)	38.32	39.71	44.24	41.81	41.82	41.24	2.9%	-1.9%	0.0%	-1.4%	0.7%	-1.1%
Road Consumption	2.80	2.81	3.20	3.33	3.50	3.54	2.7%	1.4%	4.9%	1.2%	2.4%	1.8%
Specific consumption (toe/vehicle)	1.58	1.48	1.68	1.61	1.69	1.70	1.3%	-1.5%	5.0%	0.9%	0.8%	0.0%
Finland	**3.35**	**3.92**	**4.27**	**4.03**	**4.16**	**4.11**	**5.0%**	**-1.9%**	**3.2%**	**-1.3%**	**2.1%**	**-0.5%**
Transport Energy Intensity (toe/1985 Mecu)	37.24	38.99	40.17	42.82	42.35	40.11	1.5%	2.2%	-1.1%	-5.3%	0.7%	1.1%
Road Consumption	2.90	3.36	3.63	3.47	3.56	3.50	4.6%	-1.5%	2.5%	-1.4%	1.9%	-0.4%
Specific consumption (toe/vehicle)	1.35	1.56	1.64	1.63	1.67	1.63	4.0%	-0.3%	2.7%	-2.3%	1.9%	0.3%
France	**33.50**	**38.65**	**41.91**	**44.53**	**43.52**	**43.97**	**4.6%**	**2.0%**	**-2.3%**	**1.0%**	**2.8%**	**0.8%**
Transport Energy Intensity (toe/1985 Mecu)	41.31	43.68	44.51	47.05	44.78	44.27	1.5%	1.9%	-4.8%	-1.1%	0.7%	0.1%
Road Consumption	29.39	33.75	36.17	38.17	37.07	37.30	4.2%	1.8%	-2.9%	0.6%	2.4%	0.5%
Specific consumption (toe/vehicle)	1.21	1.29	1.32	1.35	1.29	1.28	1.8%	0.7%	-4.6%	-0.9%	0.5%	-0.5%
Germany	**42.17**	**47.68**	**51.62**	**62.43**	**61.95**	**62.86**	**4.1%**	**6.5%**	**-0.8%**	**1.5%**	**4.1%**	**3.7%**
Transport Energy Intensity (toe/1985 Mecu)	36.25	38.68	39.79	46.15	44.53	44.33	1.9%	5.1%	-3.5%	-0.4%	2.0%	2.3%
Road Consumption	36.57	41.48	44.24	54.03	53.16	54.19	3.9%	6.9%	-1.6%	1.9%	4.0%	3.7%
Specific consumption (toe/vehicle)	1.33	1.36	1.36	1.32	1.26	1.26	0.4%	-1.0%	-4.2%	-0.2%	-0.6%	-1.5%
Greece	**4.68**	**5.18**	**5.82**	**6.45**	**6.44**	**6.43**	**4.5%**	**3.5%**	**-0.1%**	**-0.2%**	**3.2%**	**2.1%**
Transport Energy Intensity (toe/1985 Mecu)	90.78	82.38	89.13	95.27	93.09	91.07	-0.4%	2.2%	-2.3%	-2.2%	0.0%	0.9%
Road Consumption	3.06	3.56	3.90	4.38	4.44	4.58	5.0%	3.9%	1.3%	3.2%	4.1%	2.6%
Specific consumption (toe/vehicle)	1.64	1.63	1.56	1.65	1.64	1.61	-1.0%	2.0%	-0.6%	-2.2%	-0.2%	1.1%
Ireland	**1.69**	**1.81**	**1.97**	**2.08**	**2.30**	**2.30**	**3.1%**	**1.8%**	**10.9%**	**0.0%**	**3.1%**	**3.2%**
Transport Energy Intensity (toe/1985 Mecu)	59.01	58.39	54.85	51.96	53.70	48.50	-1.5%	-1.8%	3.4%	-9.7%	-1.9%	-0.4%
Road Consumption	1.43	1.40	1.56	1.74	1.81	1.81	1.7%	3.7%	4.2%	0.0%	2.4%	3.0%
Specific consumption (toe/vehicle)	1.71	1.59	1.65	1.67	1.66	1.65	-0.7%	0.3%	-0.4%	-1.0%	-0.4%	0.1%
Italy	**27.75**	**31.11**	**33.40**	**36.60**	**36.72**	**37.62**	**3.8%**	**3.1%**	**0.3%**	**2.5%**	**3.1%**	**1.9%**
Transport Energy Intensity (toe/1985 Mecu)	37.30	37.97	38.79	42.27	41.53	41.32	0.8%	2.9%	-1.8%	-0.5%	1.0%	1.4%
Road Consumption	24.99	28.44	30.39	33.22	33.24	33.94	4.0%	3.0%	0.1%	2.1%	3.1%	1.8%
Specific consumption (toe/vehicle)	0.99	1.02	1.01	1.01	1.01	1.00	0.3%	0.0%	0.1%	-0.9%	0.0%	0.0%
Luxembourg	**0.60**	**0.74**	**1.01**	**1.29**	**1.34**	**1.30**	**10.9%**	**8.5%**	**4.1%**	**-2.7%**	**8.1%**	**5.9%**
Transport Energy Intensity (toe/1985 Mecu)	88.90	96.51	123.55	139.97	140.37	132.38	6.8%	4.2%	0.3%	-5.7%	4.1%	2.6%
Road Consumption	0.51	0.62	0.87	1.15	1.17	1.11	11.2%	9.6%	1.8%	-5.1%	8.0%	6.0%
Specific consumption (toe/vehicle)	3.08	3.23	4.13	4.72	4.58	4.10	6.0%	4.6%	-3.0%	-10.4%	2.9%	2.1%
Netherlands	**8.80**	**9.69**	**10.32**	**11.54**	**11.77**	**12.37**	**3.2%**	**3.8%**	**2.1%**	**5.1%**	**3.5%**	**2.7%**
Transport Energy Intensity (toe/1985 Mecu)	45.91	47.29	46.18	49.11	48.48	49.86	0.1%	2.1%	-1.3%	2.9%	0.8%	1.0%
Road Consumption	7.47	7.52	8.04	8.59	8.71	8.95	1.5%	2.2%	1.4%	2.7%	1.8%	1.6%
Specific consumption (toe/vehicle)	1.33	1.32	1.33	1.34	1.34	1.36	-0.1%	0.4%	0.0%	1.2%	0.2%	0.2%
Portugal	**2.66**	**3.32**	**3.73**	**4.48**	**4.69**	**4.87**	**7.0%**	**6.2%**	**4.7%**	**3.9%**	**6.2%**	**4.6%**
Transport Energy Intensity (toe/1985 Mecu)	63.86	68.50	70.29	80.59	83.47	84.60	1.9%	4.7%	3.6%	1.4%	2.9%	3.5%
Road Consumption	2.06	2.65	3.03	3.76	3.95	4.10	8.0%	7.5%	5.1%	4.0%	7.1%	5.5%
Specific consumption (toe/vehicle)	0.92	1.02	0.96	0.98	0.95	0.93	0.8%	0.4%	-2.9%	-1.5%	0.1%	-0.4%
Spain	**15.06**	**20.24**	**22.33**	**24.57**	**25.68**	**26.07**	**8.2%**	**3.2%**	**4.5%**	**1.5%**	**5.6%**	**2.8%**
Transport Energy Intensity (toe/1985 Mecu)	48.39	56.72	57.58	62.28	63.75	62.96	3.5%	2.7%	2.4%	-1.2%	2.7%	2.1%
Road Consumption	11.81	15.81	17.68	19.45	20.21	20.47	8.4%	3.2%	3.9%	1.3%	5.7%	2.7%
Specific consumption (toe/vehicle)	1.08	1.23	1.22	1.21	1.22	1.20	2.4%	-0.4%	1.1%	-1.7%	1.0%	0.0%
Sweden	**6.43**	**7.47**	**7.23**	**7.30**	**7.56**	**7.66**	**2.4%**	**0.3%**	**3.5%**	**1.4%**	**1.8%**	**0.9%**
Transport Energy Intensity (toe/1985 Mecu)	39.82	42.89	40.00	42.36	42.44	41.54	0.1%	1.9%	0.2%	-2.1%	0.4%	1.2%
Road Consumption	5.37	6.21	6.07	6.16	6.40	6.43	2.5%	0.5%	3.9%	0.5%	1.8%	1.0%
Specific consumption (toe/vehicle)	1.40	1.61	1.55	1.58	1.63	1.63	2.1%	0.8%	3.1%	-0.3%	1.6%	1.1%
United Kingdom	**35.80**	**41.72**	**45.45**	**46.75**	**46.93**	**46.91**	**4.9%**	**0.9%**	**0.4%**	**-0.1%**	**2.7%**	**0.6%**
Transport Energy Intensity (toe/1985 Mecu)	54.79	55.61	59.06	61.00	58.96	57.49	1.5%	1.1%	-3.4%	-2.5%	0.5%	0.0%
Road Consumption	28.62	33.90	36.31	36.90	37.05	36.69	4.9%	0.5%	0.4%	-1.0%	2.5%	0.4%
Specific consumption (toe/vehicle)	1.44	1.52	1.51	1.53	1.51	1.47	0.9%	0.6%	-1.5%	-2.9%	0.2%	0.0%
European Union	**201.84**	**233.57**	**253.57**	**270.83**	**272.20**	**275.82**	**4.7%**	**2.2%**	**0.5%**	**1.3%**	**3.2%**	**1.4%**
Transport Energy Intensity (toe/1985 Mecu)	44.0	46.4	47.8	50.2	49.1	48.5	1.7%	1.7%	-2.3%	-1.1%	1.0%	0.5%
Road Consumption	169.7	196.7	212.1	226.3	226.4	228.8	4.6%	2.2%	0.0%	1.1%	3.0%	1.3%
Specific consumption (toe/vehicle)	1.25	1.34	1.35	1.31	1.28	1.27	1.4%	-1.0%	-1.8%	-1.2%	0.1%	-1.0%

ENERGY PRICES TO TRANSPORT SECTOR IN CONSTANT 1990 ECU PER TOE (1)

	1985	1988	1990	1993	1994	1995	90/85	93/90	94/93	95/94	95/85
							Annual % Change				
Austria											
Premium leaded gasoline	1258.7	900.6	978.6	na	na	na	-4.9%	na	na	na	na
Premium Unleaded gasoline (95)	na	870.4	940.6	831.6	845.8	915.5	na	-4.0%	1.7%	8.2%	na
Diesel	831.1	584.8	600.9	503.5	480.0	509.5	-6.3%	-5.7%	-4.7%	6.2%	-4.8%
Belgium											
Premium leaded gasoline	1278.8	899.2	1038.4	1043.1	1045.9	1025.3	-4.1%	0.2%	0.3%	-2.0%	-2.2%
Premium Unleaded gasoline (95)	na	na	975.1	927.0	940.9	923.4	na	-1.7%	1.5%	-1.9%	na
Diesel	637.6	387.0	499.1	539.2	520.8	502.5	-4.8%	2.6%	-3.4%	-3.5%	-2.4%
Denmark											
Premium leaded gasoline	1298.8	1226.2	1096.9	934.0	913.0	964.5	-3.3%	-5.2%	-2.2%	5.6%	-2.9%
Premium Unleaded gasoline (98)	na	na	1022.0	918.1	908.1	959.8	na	-3.5%	-1.1%	5.7%	na
Diesel	522.6	277.6	289.4	460.5	438.0	450.9	-11.2%	16.7%	-4.9%	2.9%	-1.5%
Finland											
Premium leaded gasoline	1390.2	1070.6	1179.1	1372.9	na	na	-3.2%	5.2%	na	na	na
Premium Unleaded gasoline (95)	na	na	1087.8	1205.5	1164.0	1225.9	na	3.5%	-3.4%	5.3%	na
Diesel	881.8	793.4	921.4	866.4	675.8	637.8	0.9%	-2.0%	-22.0%	-5.6%	-3.2%
France											
Premium leaded gasoline	1291.6	1023.7	1059.7	999.2	1014.6	1042.8	-3.9%	-1.9%	1.5%	2.8%	-2.1%
Premium Unleaded gasoline (95)	na	na	1035.3	938.6	952.2	999.7	na	-3.2%	1.4%	5.0%	na
Diesel	802.7	540.1	521.0	499.3	516.1	502.0	-8.3%	-1.4%	3.4%	-2.7%	-4.6%
Germany											
Premium leaded gasoline	1066.5	746.9	885.9	939.1	1014.0	1001.2	-3.6%	2.0%	8.0%	-1.3%	-0.6%
Premium Unleaded gasoline (95)	na	713.3	817.5	859.5	933.7	917.7	na	1.7%	8.6%	-1.7%	na
Diesel	739.4	478.0	512.6	488.0	504.7	489.0	-7.1%	-1.6%	3.4%	-3.1%	-4.0%
Greece											
Premium leaded gasoline	1038.6	718.0	783.2	866.9	777.2	724.7	-5.5%	3.4%	-10.4%	-6.8%	-3.5%
Premium Unleaded gasoline (95)	na	774.0	738.9	810.5	724.4	675.4	na	3.1%	-10.6%	-6.8%	na
Diesel	472.2	289.4	290.7	428.0	373.0	368.9	-9.2%	13.8%	-12.9%	-1.1%	-2.4%
Ireland											
Premium leaded gasoline	1395.7	1116.4	1125.7	984.0	966.7	956.6	-4.2%	-4.4%	-1.8%	-1.0%	-3.7%
Premium Unleaded gasoline (95)	na	na	1086.4	939.3	905.2	888.7	na	na	-3.6%	-1.8%	na
Diesel	833.5	686.1	680.4	640.9	642.1	612.1	-4.0%	-2.0%	0.2%	-4.7%	-3.0%
Italy											
Premium leaded gasoline	1653.8	1461.4	1400.5	1313.6	1325.7	1362.4	-3.3%	-2.1%	0.9%	2.8%	-1.9%
Premium Unleaded gasoline (95)	na	na	1382.4	1244.4	1235.7	1281.3	na	-3.4%	-0.7%	3.7%	na
Diesel	656.5	558.8	670.3	725.7	700.5	723.8	0.4%	2.7%	-3.5%	3.3%	1.0%
Luxembourg											
Premium leaded gasoline	961.4	735.4	740.1	769.7	775.1	789.6	-5.1%	1.3%	0.7%	1.9%	-1.9%
Premium Unleaded gasoline (95)	na	na	705.0	666.2	683.0	698.8	na	-1.9%	2.5%	2.3%	na
Diesel	585.4	355.1	374.6	432.8	438.9	430.2	-8.5%	4.9%	1.4%	-2.0%	-3.0%
Netherlands											
Premium leaded gasoline	1259.4	1063.4	1126.4	1124.4	1139.5	1118.6	-2.2%	-0.1%	1.4%	-1.8%	-1.2%
Premium Unleaded gasoline (95)	1219.6	1025.9	1077.6	1029.4	1046.1	1026.4	-2.4%	-1.5%	1.6%	-1.9%	-1.7%
Diesel	593.7	392.7	500.5	630.8	633.6	616.9	-3.4%	8.0%	0.4%	-2.6%	0.4%
Portugal											
Premium leaded gasoline	1467.5	1196.6	1077.2	925.7	898.6	869.8	-6.0%	-4.9%	-2.9%	-3.2%	-5.1%
Premium Unleaded gasoline (95)	na	1196.6	1032.0	864.5	876.3	858.7	na	-5.7%	1.4%	-2.0%	na
Diesel	762.9	615.2	586.2	515.1	492.0	477.7	-5.1%	-4.2%	-4.5%	-2.9%	-4.6%
Spain											
Premium leaded gasoline	1349.6	918.9	877.6	944.4	940.0	930.8	-8.2%	2.5%	-0.5%	-1.0%	-3.6%
Premium Unleaded gasoline (95)	na	na	na	915.9	912.4	881.0	na	na	-0.4%	-3.4%	na
Diesel	789.3	535.1	517.8	560.3	536.5	511.5	-8.1%	2.7%	-4.2%	-4.7%	-4.2%
Sweden											
Premium leaded gasoline	1149.5	958.8	1179.5	1251.3	1197.0	1173.4	0.5%	2.0%	-4.3%	-2.0%	0.2%
Premium Unleaded gasoline (95)	na	na	na	1195.0	1143.8	1116.3	na	na	-4.3%	-2.4%	na
Diesel	664.6	498.7	634.2	580.7	669.6	662.6	-0.9%	-2.9%	15.3%	-1.0%	0.0%
United Kingdom											
Premium leaded gasoline	1166.8	896.2	911.6	984.9	1010.8	1025.6	-4.8%	2.6%	2.6%	1.5%	-1.3%
Premium Unleaded gasoline (95)	na	na	852.8	908.4	913.1	924.2	na	2.1%	0.5%	1.2%	na
Diesel	834.8	599.2	603.8	644.4	657.4	670.5	-6.3%	2.2%	2.0%	2.0%	-2.2%
European Union											
Premium leaded gasoline	1249.3	961.6	1012.7	1032.3	1054.3	1059.3	-4.1%	0.6%	2.1%	0.5%	-1.6%
Premium Unleaded gasoline (95)	1219.6	774.0	966.7	959.4	980.0	987.3	-4.5%	-0.3%	2.2%	0.7%	-2.1%
Diesel	734.0	524.8	559.4	568.3	565.6	559.9	-5.3%	0.5%	-0.5%	-1.0%	-2.7%

(1) Excluding refundable VAT only for Diesel

DOMESTIC AND TERTIARY

Energy consumption mainly dependent on weather conditions...

In 1995, the domestic and tertiary sectors represented around 40% of total final energy consumption. **Energy consumption in the domestic and tertiary sectors** remained fairly constant (average yearly growth of 0.3%) over the period 1985-1995 under the pressure of continual increase of specific uses (electrical appliances and cooking) and of climatic conditions. In fact, energy consumption in this sector, although a function of population, number of households, private income and evolution of the services sector, is also highly dependent on weather conditions (space heating) and thus presents some marked fluctuations reflecting prevailing weather conditions. Apart from electricity, and due to severe limitations in statistical availability, it is not possible to give an accurate picture of energy demand split between the domestic, the commercial and the services sectors.

EUROPEAN UNION : DOMESTIC AND TERTIARY - FINAL ENERGY CONSUMPTION

Mtoe	1985	1988	1990	1993	1994	1995	90/85	93/90	94/93	95/94	95/85
							Annual % Change				
Total consumption	**353.85**	**349.17**	**342.06**	**368.50**	**356.51**	**365.14**	**-0.7%**	**2.5%**	**-3.3%**	**2.4%**	**0.3%**
Solids	38.03	31.58	26.58	14.69	11.94	9.92	-6.9%	-17.9%	-18.7%	-16.9%	-12.6%
Oil	119.21	110.47	98.60	103.61	99.43	99.96	-3.7%	1.7%	-4.0%	0.5%	-1.7%
of which:											
Gas Diesel Oil	*96.23*	*89.67*	*79.56*	*84.22*	*80.37*	*81.24*	*-3.7%*	*1.9%*	*-4.6%*	*1.1%*	*-1.7%*
Gas	93.89	96.95	101.47	122.34	116.26	123.62	1.6%	6.4%	-5.0%	6.3%	2.8%
Electricity	71.06	78.07	82.67	89.65	91.15	93.38	3.1%	2.7%	1.7%	2.5%	2.8%
of which :											
Residential	*40.50*	*42.61*	*44.61*	*49.03*	*49.56*	*50.00*	*2.0%*	*3.2%*	*1.1%*	*0.9%*	*2.1%*
Commercial & Public Services	*28.09*	*32.92*	*35.37*	*37.79*	*38.73*	*40.38*	*4.7%*	*2.2%*	*2.5%*	*4.3%*	*3.7%*
Heat	9.89	10.25	10.52	14.87	15.47	15.48	1.2%	12.2%	4.1%	0.0%	4.6%
Renewable (1)	21.77	21.84	22.22	23.34	22.26	22.79	0.4%	1.7%	-4.6%	2.3%	0.5%
Total consumption per Capita (toe/inhabitant)	0.99	0.97	0.94	1.00	0.96	0.98	-1.0%	2.0%	-3.6%	2.3%	0.0%
Absolute Degree Days (Eur12)	2836	2268	2141	2354	2142	2209	-5.5%	3.2%	-9.0%	3.1%	-2.5%
Difference to Average in %	7%	-8%	-13%	-4%	-13%	-10%	-	-	-	-	-

(1) Geothermal heat. solar heat, biomass

Energies distributed by networks increase their contribution from 49% in 1985 to 64% in 1995...

In terms of **fuel mix**, solid fuel consumption dropped by 74% from 1985 to 1995, and represents, so far, less than 3% of the total energy consumption. Oil demand dropped throughout the whole period on an average of 1.7% per year but presented wide fluctuations related to weather conditions, and still represents, in 1995, 27% of the total demand. Gas and electricity consumption slowly increased their penetration in this sector to attain, in 1995, 34% and 26% respectively of total consumption (27% and 20% in 1985 respectively). The penetration of electricity is the strongest especially in the service sector. Heat progressively increased its share of the market by 4.6% per year, and now represents more than 4% of the total energy demand. Renewable energy remained stable over the decade. It represents, in 1995, 6% of the energy demand in the domestic and tertiary sector.

Technological improvements balanced by the emergence of new appliances...

Over the past ten years, a number of factors are important in determining energy demand in tertiary and domestic sectors, including the market saturation of some electricity appliances. Higher energy efficiency in new buildings have had a dampening effect, whereas rising private incomes have resulted in a larger area of living space per household and in greater appliance penetration. Technological change both improved appliances in use and led to the development of new appliances. Thus, while the appliance stock such as refrigerators consumed less energy, the emergence of new appliances, e.g. video recorders or home computers, partly offset this improvement.

For **Greece**, Portugal and Spain, the fast growers in energy needs, the increase in energy consumption mainly reflects an improvement in living standards inducing, in particular, requirements for air conditioning. In the case of all other Member States the analysis is less straightforward. In fact, in most of the latter Member States, energy consumption for space heating is quite important and thus the evolution depends to a large extent on wea-ther conditions. For Germany, the main explanation of the reduction of energy consumption consists in technology dissemination and renovation in the new Landers that compensate largely the improvement of life standard.

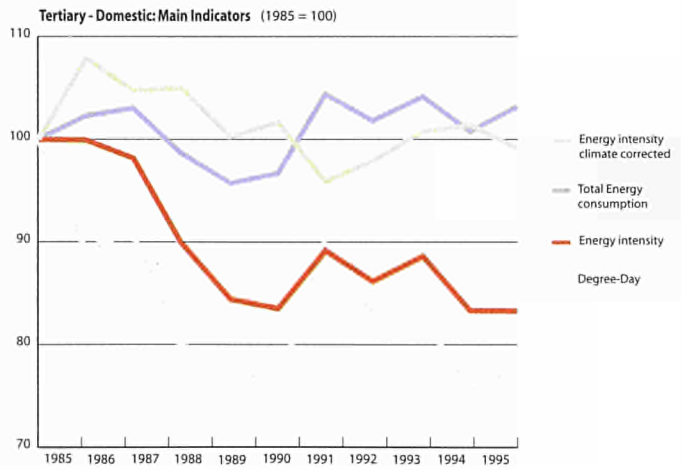
CLIMATIC CONDITIONS : VARIATION TO AVERAGE (% DEGREE-DAY VARIATIONS)

	1985	1988	1990	1991	1992	1993	1994	1995
Austria	na	na	na	na	na	na	na	na
Belgium	8.4%	-11.0%	-17.2%	0.5%	-5.6%	-7.1%	-12.0%	-10.5%
Denmark	11.9%	-3.0%	-16.4%	-2.5%	-6.8%	-4.8%	-4.3%	0.6%
Finland	na	na	na	na	na	na	na	na
France	9.1%	-10.0%	-13.4%	5.5%	-3.4%	-4.4%	-15.4%	-12.2%
Germany	6.7%	-9.7%	-14.4%	1.9%	-2.0%	-8.3%	-14.1%	-7.4%
Greece	na	8.3%	-16.0%	7.6%	1.6%	1.1%	-11.6%	-5.6%
Ireland	6.3%	-3.3%	-7.9%	1.6%	-0.7%	1.8%	-2.3%	-0.8%
Italy	6.7%	-4.2%	-8.6%	8.3%	-12.7%	-7.4%	-21.1%	-10.5%
Luxembourg	9.2%	-8.6%	-13.6%	1.2%	-8.1%	-7.0%	-12.6%	-9.9%
Netherlands	8.6%	-13.0%	-18.2%	0.6%	-8.6%	-5.5%	-9.9%	-7.6%
Portugal	na	1.1%	-3.6%	15.0%	1.6%	13.3%	-8.9%	-24.1%
Spain	na	-1.6%	-4.1%	15.6%	4.0%	12.2%	-7.4%	-21.1%
Sweden	na	na	na	na	na	na	na	na
United Kingdom	3.6%	-7.3%	-14.0%	-1.6%	-4.9%	-3.3%	-8.1%	-10.2%
European Union (Eur 12)	**6.7%**	**-7.6%**	**-12.8%**	**3.8%**	**-4.1%**	**-4.2%**	**-12.8%**	**-10.1%**

Note : + means colder, and - means warmer.

Energy intensity, corrected for climatic effects, appears quite stable since 1985…

Measuring **intensity** gains in the domestic and tertiary sectors is a very difficult task. The classical ratio of energy consumption to the GDP demonstrated a global improvement of about 16% since 1985. But at the same time more favourable climatic conditions in 1995 versus 1985 reduced the requirements of heating by more than 20%. Estimating possible correction of the total energy consumption to take into account standard climatic conditions[3], it appears that the new calculated energy intensity seems to be quite stable since 1985. Its relative stability over the period suggests that increased standards of living and the growth of the services sector have made up for all the technological and other efficiency improvements introduced, mainly since 1980.



Energy prices for tertiary-domestic showed a global decrease…

Energy **prices for tertiary-domestic**, expressed in 1990 ECU per toe, show a global decrease over the period 1985-1995. The decrease is rather marginal for electricity: -0.9% per year for European Union as a whole with extremes going from +1.8% in Sweden to –4.7% in the Netherlands. The most important price decrease concerns heating oil: -5.8% on average over the European Union where extremes comprise between -10.3% in Belgium and +1.4% in Italy. The average decrease of natural gas prices is also significant: -2.8% at the European level where extremes comprise between –7.5% in Austria and +1.1 in Italy.

The 1995 **cost of heating oil** showed large discrepancies per Member State: 177 ECU/toe in Belgium compared to 820 in Italy, for an European average price of 306 ECU/toe. Natural gas prices ranged between 143 ECU/toe in Finland and 592 ECU/toe in Italy, for an European average price of 320 ECU/toe. Minimum price for electricity was 792 ECU/toe in Greece and maximum price was 1700 ECU/toe in Spain, with an European average of 1174 ECU/toe.

3 Estimation made considering that for European Union as a whole, about 70% of total energy consumption is sensitive to climatic conditions. SOEC is analysing the possibilities of weather corrections for energy statistics. Our estimates stick only to qualitative statements.

ENERGY PRICES TO DOMESTIC CONSUMERS IN CONSTANT 1990 ECU PER TOE (1)

		1985	1988	1990	1993	1994	1995(2)	90/85	93/90	94/93	95/94	95/85
								Annual % Change				
Austria	Steam Coal	572.0	448.9	417.6	369.4	353.3	353.5	-6.1%	-4.0%	-4.3%	0.0%	-4.7%
	Heating Oil	660.3	357.0	413.9	333.6	312.4	310.8	-8.9%	-6.9%	-6.3%	-0.5%	-7.3%
	Natural gas	597.5	333.1	308.5	286.6	279.9	273.8	-12.4%	-2.4%	-2.3%	-2.2%	-7.5%
	Electricity	1569.0	1526.7	1425.4	1373.7	1334.2	**1330.0**	-1.9%	-1.2%	-2.9%	-0.3%	-1.6%
Belgium	Steam Coal	395.2	383.7	338.6	344.3	328.1	318.1	-3.0%	0.6%	-4.7%	-3.1%	-2.1%
	Heating Oil	522.2	203.9	244.6	213.2	193.3	176.8	-14.1%	-4.5%	-9.3%	-8.5%	-10.3%
	Natural gas	516.2	326.4	327.4	298.5	305.6	300.2	-8.7%	-3.0%	2.4%	-1.8%	-5.3%
	Electricity	1832.2	1594.8	1560.2	1458.9	1449.2	**1445.0**	-3.2%	-2.2%	-0.7%	-0.3%	-2.3%
Denmark	Steam Coal	385.1	412.5	439.2	432.3	423.9	432.5	2.7%	-0.5%	-1.9%	2.0%	1.2%
	Heating Oil	686.4	647.3	657.5	610.7	581.7	563.8	-0.9%	-2.4%	-4.8%	-3.1%	-1.9%
	Natural gas	609.6	576.2	529.9	499.7	477.6	447.5	-2.8%	-1.9%	-4.4%	-6.3%	-3.0%
	Electricity	1635.3	1502.9	1506.0	1629.7	1573.3	1569.9	-1.6%	2.7%	-3.5%	-0.2%	-0.4%
Finland	Heating Oil	531.1	258.3	336.9	380.6	341.0	316.7	-8.7%	4.1%	-10.4%	-7.1%	-5.0%
	Natural gas	270.8	116.6	117.3	120.7	127.2	142.9	-15.4%	1.0%	5.4%	12.4%	-6.2%
	Electricity	988.3	973.3	942.0	1005.4	992.5	1014.9	-1.0%	2.2%	-1.3%	2.3%	0.3%
France	Steam Coal	654.1	640.3	467.0	453.0	445.2	441.5	-6.5%	-1.0%	-1.7%	-0.8%	-3.9%
	Heating Oil	608.7	339.2	380.1	337.4	323.2	311.7	-9.0%	-3.9%	-4.2%	-3.6%	-6.5%
	Natural gas	565.5	398.9	373.7	346.7	336.4	323.8	-8.0%	-2.5%	-3.0%	-3.7%	-5.4%
	Electricity	1527.9	1401.4	1374.3	1292.9	1276.7	1253.5	-2.1%	-2.0%	-1.3%	-1.8%	-2.0%
Germany	Steam Coal	583.2	571.3	543.6	462.0	453.1	**460.0**	-1.4%	-5.3%	-1.9%	1.5%	-2.3%
	Heating Oil	496.6	198.2	281.4	238.5	214.1	203.0	-10.7%	-5.4%	-10.2%	-5.2%	-8.6%
	Natural gas	460.6	287.8	312.3	305.9	299.0	285.1	-7.5%	-0.7%	-2.2%	-4.7%	-4.7%
	Electricity	1460.2	1557.2	1500.0	1414.1	1420.1	1420.9	0.5%	-1.9%	0.4%	0.1%	-0.3%
Greece	Heating Oil	489.3	317.9	324.2	379.8	360.5	356.8	-7.9%	5.4%	-5.1%	-1.0%	-3.1%
	Electricity	1103.5	1087.8	1081.6	853.9	790.0	792.4	-0.4%	-7.6%	-7.5%	0.3%	-3.3%
Ireland	Steam Coal	300.8	259.9	274.3	332.2	321.9	**323.2**	-1.8%	6.6%	-3.1%	0.4%	0.7%
	Heating Oil	543.6	393.9	395.9	363.6	341.6	332.0	-6.1%	-2.8%	-6.1%	-2.8%	-4.8%
	Natural gas	620.2	407.9	379.3	356.9	348.8	340.0	-9.4%	-2.0%	-2.2%	-2.5%	-5.8%
	Electricity	1493.0	1316.0	1222.3	1158.5	1132.4	1102.6	-3.9%	-1.8%	-2.2%	-2.6%	-3.0%
Italy	Heating Oil	714.7	589.4	745.2	842.2	816.7	820.2	0.8%	4.2%	-3.0%	0.4%	1.4%
	Natural gas	529.5	426.3	505.6	562.8	581.7	**591.8**	-0.9%	3.6%	3.4%	1.7%	1.1%
	Electricity	1692.4	1430.1	1435.7	1500.1	1665.8	1649.7	-3.2%	1.5%	11.0%	-1.0%	-0.3%
Luxembourg	Steam Coal	409.4	419.7	392.2	384.7	373.0	366.3	-0.9%	-0.6%	-3.1%	-1.8%	-1.1%
	Heating Oil	471.8	231.8	254.7	224.1	203.8	191.1	-11.6%	-4.2%	-9.1%	-6.2%	-8.6%
	Natural gas	355.3	186.1	194.5	184.3	183.2	180.6	-11.3%	-1.8%	-0.6%	-1.4%	-6.5%
	Electricity	1189.1	1163.6	1134.8	985.1	981.0	1029.4	-0.9%	-4.6%	-0.4%	4.9%	-1.4%
Netherlands	Heating Oil	523.2	296.4	353.4	271.6	249.9	236.6	-7.5%	-8.4%	-8.0%	-5.3%	-7.6%
	Natural gas	366.7	248.9	264.2	223.0	223.4	217.0	-6.3%	-5.5%	0.2%	-2.9%	-5.1%
	Electricity	1522.3	1093.7	1072.8	958.6	933.7	945.4	-6.8%	-3.7%	-2.6%	1.3%	-4.7%
Portugal	Heating Oil	762.9	638.9	608.7	540.8	516.6	501.5	-4.4%	-3.9%	-4.5%	-2.9%	-4.1%
	Electricity	1431.7	1455.7	1346.8	1311.2	1284.2	1233.1	-1.2%	-0.9%	-2.1%	-4.0%	-1.5%
Spain	Heating Oil	576.3	352.1	364.1	379.2	323.2	291.9	-8.8%	1.4%	-14.8%	-9.7%	-6.6%
	Natural gas	745.3	496.1	482.4	464.1	456.0	456.8	-8.3%	-1.3%	-1.7%	0.2%	-4.8%
	Electricity	1794.7	1739.1	1739.9	1723.0	1724.5	1700.0	-0.6%	-0.3%	0.1%	-1.4%	-0.5%
Sweden	Heating Oil	587.7	382.5	559.3	540.0	518.6	501.9	-1.0%	-1.2%	-4.0%	-3.2%	-1.6%
	Electricity	708.4	689.1	804.1	843.0	844.2	849.9	2.6%	1.6%	0.1%	0.7%	1.8%
United Kingdom	Steam Coal	313.7	289.4	264.7	259.0	266.9	262.5	-3.3%	-0.7%	3.0%	-1.7%	-1.8%
	Heating Oil	492.7	219.9	250.7	206.1	198.7	201.0	-12.6%	-6.3%	-3.5%	1.1%	-8.6%
	Natural gas	305.6	274.8	259.5	238.7	246.9	246.9	-3.2%	-2.7%	3.5%	0.0%	-2.1%
	Electricity	1165.9	1105.0	1086.1	1124.2	1132.7	1110.5	-1.4%	1.2%	0.8%	-2.0%	-0.5%
European Union	Steam Coal	394.0	366.0	331.3	329.9	321.0	**318.1**	-3.4%	-0.1%	-2.7%	-0.9%	-2.1%
	Heating Oil	559.5	309.5	380.9	346.4	317.1	306.4	-7.4%	-3.1%	-8.5%	-3.4%	-5.8%
	Natural gas	425.4	317.2	330.5	323.0	323.6	**320.5**	-4.9%	-0.8%	0.2%	-1.0%	-2.8%
	Electricity	1279.2	1216.8	1199.4	1175.8	1191.4	**1174.3**	-1.3%	-0.7%	1.3%	-1.4%	-0.9%

(1) Includind all taxes
(2) Estimated marked in bold

ENERGY OUTLOOK – Energy supply: Recent evolution (1985-1995)

POWER GENERATION

- Smoothed grow rate of electricity
- Electricity production growth is mainly covered by incremental thermal production…
- …essentially produced by new combined cycle units
- Increasing contribution of combined heat and power
- These last two years, incremental production in thermal stations covered only by gas

REFINERY

- Closure of crude oil distillation capacity increased utilisation rate to 87%…
- …but refining profitability remained insufficient to sustain the industrial development of the refinery sector.

GROSS INLAND CONSUMPTION

- Share of natural gas in gross inland consumption reached 20% in 1995
- Gross inland consumption grew more rapidly in southern European countries
- The European oil market is becoming more and more captive
- Natural gas showed a continuous progression of its growth rate
- In-depth restructuring in producing countries reduced solid consumption over the past ten years by 25%

INDIGENOUS PRODUCTION

- Progressive increase of indigenous production since 1992, led by crude oil
- Contribution of renewable energy still limited to about 5% of gross inland consumption
- Primary energy production dominated by the United Kingdom, Germany and France

ELECTRICITY SECTOR

Smoothed grow rate of electricity …

Electricity consumption since 1985 shows a steady increase of 2.2% per year on average. However, in the 90's a slower growth (1.6%) was registered compared to the sustained rate in the second half of the 80's (2.7%) Due to the economic slow-down of 1993, electricity demand growth recovered to only 0.25% in 1993. In 1994 and 1995, sustained by economic activity, the demand growth recovered levels closer to the long term average, 1.6% in 1994 and 2.7% respectively in 1995. The share of electricity in final demand is increasing significantly. In industry it increased at a European average from 23.2 to 27.8% between 1985 and 1995. The lowest penetration occurred in Luxembourg in relation to the industrial production's structure, and the highest in Finland with a uniform rate of penetration in the five biggest Member States around 27%. In the tertiary-domestic sector the share of electricity increased on average from 20.1 to 25.6% over the same period, but the gap between the minimum share (17.1%) and the maximum one (45.4%) is more important for a number of specific reasons. In the South of Europe, as demand for heating is limited, the weight of electrical appliances increased and justified penetration rates of between 30 and 38%. In the middle of Europe, the very limited contribution of electric heating induced a contribution between 17 and 22%. On the other hand, the main contribution of electric heating in Sweden was responsible for the 45% share.

It is important for the expected evolution of electricity demand to underline the slowdown in the long term evolution observed for all countries except Luxembourg on account of the conversion of iron steel to electrical furnaces and Ireland where the demand was pushed by the very sustained economic activity.

ELECTRICITY SHARE IN FINAL CONSUMPTION

	Industry		Tertiary-Domestic	
	1985	1995	1985	1995
Austria	22.5%	27.5%	19.1%	22.6%
Belgium	21.0%	25.3%	14.9%	20.0%
Denmark	23.9%	29.0%	18.8%	24.7%
Finland	40.0%	41.9%	25.1%	30.7%
France	22.9%	28.6%	21.3%	30.1%
Germany	21.3%	29.3%	17.1%	20.7%
Greece	25.5%	25.7%	23.6%	32.1%
Ireland	17.4%	28.1%	19.3%	21.5%
Italy	25.4%	27.7%	18.0%	22.8%
Luxembourg	12.2%	23.0%	18.0%	22.7%
Netherland	17.7%	22.7%	13.7%	17.1%
Portugal	21.1%	26.4%	21.8%	29.4%
Spain	25.9%	25.5%	27.4%	38.7%
Sweden	35.1%	35.7%	40.6%	45.4%
United Kingdom	23.4%	26.3%	22.0%	26.6%
European Union	**23.2%**	**27.8%**	**20.1%**	**25.6%**

ELECTRICITY DEMAND GROWTH RATE

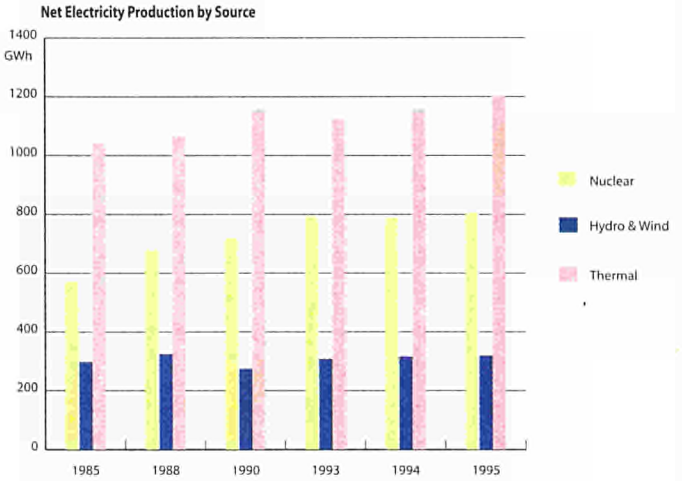
	1985-1990	1990-1995
Austria	3.1%	1.6%
Belgium	3.7%	3.4%
Denmark	2.9%	1.3%
Finland	4.0%	2.1%
France	3.6%	2.6%
Germany	1.0%	0.0%
Greece	3.6%	3.6%
Ireland	4.0%	4.6%
Italy	4.3%	2.1%
Luxembourg	1.7%	4.2%
Netherland	3.7%	2.5%
Portugal	6.2%	3.8%
Spain	4.1%	2.3%
Sweden	1.2%	0.7%
United Kingdom	2.5%	1.6%
European Union	**2.7%**	**1.6%**

Electricity production growth is mainly covered by incremental thermal production…

Electricity generation in the European Union reached 2333 TWh in 1995 showing an average increase of 2.0% since 1985. Despite a very limited increase in generating capacity since 1990, nuclear production showed the fastest growth (3.5% a year since 1985) reaching about 35% of the total electricity production in 1995 for only 30% in 1985. Hydroelectricity and wind together generated 14% during 1995, with an average growth of only 0.7% per year since 1985. Thermal electricity showed a slower annual growth of 1.4% over the same period but still represented 52% of the total (54% in 1985). But short term evolution demonstrated that nuclear and hydro contribution are quite stable, the increase of production was mainly covered by thermal production with all the energy and environmental implications that it implies.

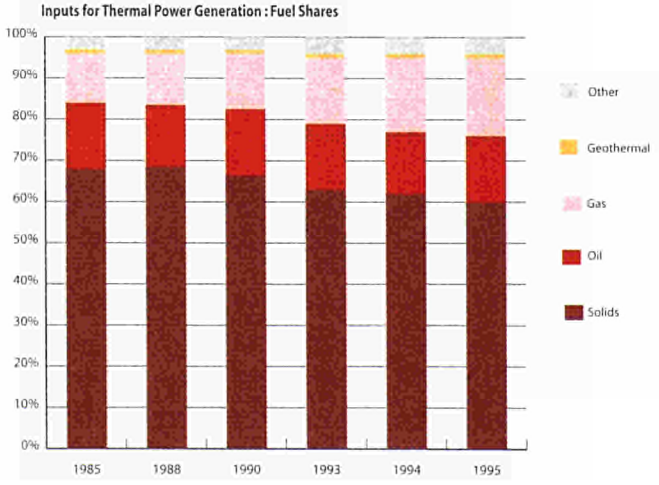
…essentially produced by new combined cycle units.

In 1995, the installed capacity for electricity generation ranges around 537 GWe of which 56% are of thermal nature, the complement being supported by nuclear power stations (22%) and hydro and wind based power stations (22%).The beginning of the 90's was marked by the development of combined cycle units which represented a total capacity of about 16 GWe in 1995 with more than 9 GWe for the United Kingdom. In addition, the increasing deregulation of electricity markets favoured the use of gas in power generation, especially in combined cycle units, as smaller companies entering the markets were looking for shorter lead times, lower capital costs and higher efficiency inducing lower fuel costs.



Increasing contribution of combined heat and power…

The last decade was also marked by the development of combined heat and power generation. In 1994, 9% of total electricity production was cogenerated. The major contributors in the European Union were Germany (48 TWh cogenerated), Netherlands (31 TWh), Italy (26 TWh) and Finland (21 TWh). If compared with the total electricity production, the leaders in the European Union are the Netherlands and Denmark (39% electricity cogenerated) followed by Finland (32%) and Austria (21%). Cogeneration was sustained by district heating networks and deliveries of heat to industry. The installed capacity in 1995 can be estimated at about 65 GWe or 22% of total thermal capacity in the European Union. The expected growth by 2000, 15 to 18 GWe, will be helpful in improving global efficiency of the electricity sector and to limit CO_2 emissions.



These last two years, incremental production in thermal stations covered only by gas…

Concerning the fuel mix in thermal power stations, solid fuels remain the most used (61% of total in 1995 from 68% in 1985) even if their share decreased slightly by 1.0% a year on average over the last decade. Oil and gas count for 16 and 19% respectively. If the share of oil was stable over the period 1985-1995, the one of gas increased from 12% in 1985 to 19% in 1995, it means a relative growth of more than 50% over the concerned period. The last two years demonstrated that all the incremental production in thermal stations was essentially covered only by gas. Although the participation of other sources (mainly urban and industrial waste) is small (3% of total inputs in 1995), their consumption, constant over the period 1985-1990, increased sharply after 1992 due to the development of incinerators in some Member States.

REFINERY SECTOR

Closure of crude oil distillation capacity increased utilisation rate to 87%…

Total crude oil distillation capacity as reported by Member States for 1994 was 637 million tonnes per annum. The same year, the utilisation rate reached 87% and followed the more or less steady rise in utilisation observed since 1985 when utilisation was only 63%. This increase reflects the programme of crude distillation capacity reductions undertaken by many refiners over the period, in part accounted for by the closures of complete refineries. Conversion capacity amounted to 199 million tonnes per year, in terms of catalytic cracking equivalent, up 35% compared to 1985. This strong growth in conversion capacity reflects the industry's expectations at the time concerning future gasoline demand growth and an increasingly heavy crude supply slate. These expectations were justified up until the early nineties when gasoline growth flattened and the crude slate started to lighten.

…but refining profitability remained insufficient to sustain the industrial development of the refinery sector.

The refining sector has suffered from poor profitability for some time. Margins on the most basic of the refining processes, the initial processing by distillation, are currently virtually nil whilst the margins on upgrading processes which improve the intermediate products, such as catalytic reforming and cracking, remained too low. Individual refineries may be able to cover operating costs, but to sustain industrial development in the sector it is not sufficient to merely cover cash costs. The principal reasons for this situation were the excess refining capacity both at the distillation and conversion levels, and a mix of products inadequate to the demand.

GROSS INLAND CONSUMPTION

Share of natural gas in gross inland consumption reached 20% in 1995…

The gross inland energy consumption of the European Union (1367 Mtoe in 1995) increased slightly by 1% over the period 1985-1995, notwithstanding a decline by 0.6% in 1992 and 0.2% in 1993. The figures show a decrease in use of solid fuel (17.4% of total in 1995 compared to 25.6% in 1985 and 22.9% in 1990), a slight increase in oil (42.1% in 1995 from 41.1% in 1985 and 1990) and recent growth of gas (20% in 1995 from 16% in 1985 and 16.8% in 1990). The other sources of energy, including nuclear, hydro, wind, net imports of electricity and other energy sources increased regularly from 17.3% of total gross inland consumption in 1985 to 20.4% in 1995.

Gross inland consumption grew more rapidly in southern European countries…

When looking at their energy consumption over the period 1985-1995 member States can be separated into different categories. The fast growers in primary energy demand with annual rates above 2% over the period : Portugal, Spain, Greece , and Ireland. Those with slow growth rates between 1% and 2%: Italy, Netherlands, France, Belgium, and Austria. Those with very modest growth, below 1%: Denmark, Sweden and Luxembourg, Finland and the United Kingdom. And finally, the special case of Germany where the gross inland consumption had been stable over the period 85-90 before a strong decrease by about -1.8% over the period 90-93 as a result of the reunification. Data also show that most of the growth was concentrated on southern European Member states, where economic growth has been faster than the European Union average, especially in the case of Portugal, Spain and Greece.

GROSS INLAND CONSUMPTION

Mtoe	1985	1990	1993	1995	90/85	93/90	95/93	95/85	1985	1990	1993	1995
					Annual % change				Share in %			
Austria	**23.7**	**25.7**	**25.6**	**26.7**	**1.7%**	**-0.1%**	**2.0%**	**1.2%**	**1.9%**	**1.9%**	**1.9%**	**2.0%**
Solids	4.0	4.2	2.9	3.2	1.0%	-11.3%	5.3%	-2.1%	1.2%	1.4%	1.2%	1.4%
Oil	9.6	10.5	10.8	10.9	1.8%	0.9%	0.3%	1.2%	1.9%	1.9%	1.9%	1.9%
Natural Gas	4.6	5.2	5.7	6.3	2.6%	2.7%	5.6%	3.2%	2.3%	2.4%	2.3%	2.3%
Belgium	**43.8**	**47.1**	**48.7**	**50.0**	**1.4%**	**1.1%**	**1.4%**	**1.3%**	**3.5%**	**3.6%**	**3.7%**	**3.7%**
Solids	9.9	10.2	8.7	8.3	0.7%	-5.1%	-2.5%	-1.7%	3.1%	3.4%	3.5%	3.5%
Oil	17.3	17.7	19.4	19.8	0.4%	3.1%	0.9%	1.3%	3.4%	3.3%	3.5%	3.4%
Natural Gas	7.3	8.2	9.4	10.6	2.2%	4.8%	6.2%	3.8%	3.7%	3.7%	3.7%	3.9%
Denmark	**19.6**	**18.2**	**19.6**	**20.6**	**-1.5%**	**2.5%**	**2.5%**	**0.5%**	**1.6%**	**1.4%**	**1.5%**	**1.5%**
Solids	7.4	6.1	7.2	6.4	-3.7%	5.6%	-5.3%	-1.4%	2.3%	2.0%	2.9%	2.7%
Oil	10.7	8.6	8.5	9.6	-4.3%	0.0%	5.8%	-1.1%	2.1%	1.6%	1.5%	1.7%
Natural Gas	0.6	1.8	2.4	3.1	25.8%	10.6%	13.7%	18.6%	0.3%	0.8%	1.0%	1.1%
Finland	**26.8**	**28.5**	**29.5**	**29.0**	**1.2%**	**1.2%**	**-0.9%**	**0.8%**	**2.2%**	**2.2%**	**2.2%**	**2.1%**
Solids	5.0	5.1	5.9	6.0	0.4%	5.1%	0.9%	1.9%	1.6%	1.7%	2.4%	2.5%
Oil	10.2	9.9	9.4	8.3	-0.6%	-1.8%	-5.9%	-2.0%	2.0%	1.8%	1.7%	1.4%
Natural Gas	0.8	2.3	2.6	2.9	23.1%	4.4%	6.9%	13.9%	0.4%	1.0%	1.0%	1.1%
France	202.5	221.9	234.0	234.8	1.8%	1.8%	0.2%	1.5%	16.3%	16.8%	17.6%	17.2%
Solids	24.4	20.0	14.9	15.3	-3.9%	-9.3%	1.4%	-4.6%	7.7%	6.6%	6.0%	6.4%
Oil	83.9	87.7	87.9	85.2	0.9%	0.1%	-1.5%	0.2%	16.4%	16.1%	15.7%	14.8%
Natural Gas	24.3	24.9	29.0	29.7	0.5%	5.2%	1.2%	2.0%	12.3%	11.2%	11.5%	10.8%
Germany	**359.4**	**354.7**	**335.6**	**338.6**	**-0.3%**	**-1.8%**	**0.5%**	**-0.6%**	**29.0%**	**26.9%**	**25.2%**	**24.8%**
Solids	149.7	132.7	99.3	92.2	-2.4%	-9.2%	-3.7%	-4.7%	47.1%	43.9%	40.1%	38.8%
Oil	119.7	123.6	133.0	133.6	0.6%	2.5%	0.2%	1.1%	23.4%	22.7%	23.7%	23.2%
Natural Gas	49.3	55.0	59.7	66.4	2.2%	2.8%	5.5%	3.0%	24.9%	24.7%	23.7%	24.2%
Greece	**18.9**	**22.8**	**23.1**	**24.7**	**3.8%**	**0.5%**	**3.3%**	**2.7%**	**1.5%**	**1.7%**	**1.7%**	**1.8%**
Solids	6.1	8.1	8.0	8.8	5.9%	-0.5%	5.0%	3.7%	1.9%	2.7%	3.2%	3.7%
Oil	11.0	12.8	13.3	14.0	3.1%	1.2%	2.4%	2.4%	2.2%	2.4%	2.4%	2.4%
Natural Gas	0.1	0.1	0.1	0.0	14.0%	-12.3%	-31.3%	-4.8%	0.0%	0.1%	0.0%	0.0%
Ireland	**8.8**	**10.2**	**10.3**	**10.9**	**2.9%**	**0.2%**	**3.3%**	**2.2%**	**0.7%**	**0.8%**	**0.8%**	**0.8%**
Solids	2.6	3.5	3.1	3.0	6.5%	-4.0%	-2.8%	1.3%	0.8%	1.2%	1.3%	1.2%
Oil	4.1	4.6	4.8	5.6	2.1%	1.6%	7.5%	3.0%	0.8%	0.8%	0.9%	1.0%
Natural Gas	1.9	1.9	2.2	2.2	-0.5%	4.4%	0.9%	1.2%	1.0%	0.9%	0.9%	0.8%
Italy	**136.1**	**154.8**	**156.2**	**162.7**	**2.6%**	**0.3%**	**2.0%**	**1.8%**	**11.0%**	**11.7%**	**11.7%**	**11.9%**
Solids	15.2	14.6	10.4	12.3	-0.7%	-10.6%	8.6%	-2.0%	4.8%	4.8%	4.2%	5.2%
Oil	81.0	89.8	90.9	93.4	2.1%	0.4%	1.4%	1.4%	15.9%	16.5%	16.2%	16.2%
Natural Gas	27.2	39.0	41.9	44.7	7.5%	2.4%	3.2%	5.1%	13.8%	17.6%	16.7%	16.3%
Luxembourg	**3.1**	**3.6**	**3.8**	**3.3**	**2.5%**	**2.7%**	**-6.8%**	**0.6%**	**0.3%**	**0.3%**	**0.3%**	**0.2%**
Solids	1.4	1.1	1.0	0.5	-4.5%	-2.7%	-29.7%	-9.7%	0.4%	0.4%	0.4%	0.2%
Oil	1.1	1.6	1.9	1.8	8.8%	6.1%	-3.6%	5.4%	0.2%	0.3%	0.3%	0.3%
Natural Gas	0.3	0.4	0.5	0.6	7.2%	4.0%	7.3%	6.3%	0.2%	0.2%	0.2%	0.2%
Netherlands	**61.5**	**66.9**	**70.9**	**73.4**	**1.7%**	**1.9%**	**1.8%**	**1.8%**	**5.0%**	**5.1%**	**5.3%**	**5.4%**
Solids	6.6	9.1	8.8	9.1	6.7%	-1.3%	1.7%	3.2%	2.1%	3.0%	3.5%	3.8%
Oil	20.4	24.4	25.0	27.2	3.7%	0.8%	4.2%	2.9%	4.0%	4.5%	4.5%	4.7%
Natural Gas	32.3	30.8	34.3	34.1	-1.0%	3.6%	-0.3%	0.5%	16.3%	13.9%	13.6%	12.4%
Portugal	**12.4**	**17.2**	**18.7**	**20.1**	**6.8%**	**2.8%**	**3.7%**	**5.0%**	**1.0%**	**1.3%**	**1.4%**	**1.5%**
Solids	0.7	2.6	3.1	3.5	31.2%	6.7%	5.6%	18.1%	0.2%	0.9%	1.3%	1.5%
Oil	8.4	11.6	12.3	13.4	6.7%	1.9%	4.3%	4.8%	1.6%	2.1%	2.2%	2.3%
Natural Gas	0.0	0.0	0.0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Spain	**73.9**	**89.1**	**91.7**	**102.3**	**3.8%**	**1.0%**	**5.6%**	**3.3%**	**6.0%**	**6.8%**	**6.9%**	**7.5%**
Solids	19.5	18.9	19.2	19.5	-0.6%	0.5%	0.8%	0.0%	6.1%	6.3%	7.8%	8.2%
Oil	38.3	45.5	46.6	54.6	3.5%	0.8%	8.2%	3.6%	7.5%	8.4%	8.3%	9.5%
Natural Gas	2.4	5.0	5.7	7.7	16.1%	4.9%	16.0%	12.6%	1.2%	2.2%	2.3%	2.8%
Sweden	**46.9**	**46.9**	**46.5**	**49.8**	**0.0%**	**-0.3%**	**3.5%**	**0.6%**	**3.8%**	**3.6%**	**3.5%**	**3.6%**
Solids	2.8	2.7	2.7	2.9	-0.5%	-0.2%	3.4%	0.4%	0.9%	0.9%	1.1%	1.2%
Oil	17.6	14.5	14.4	15.7	-3.8%	-0.1%	4.2%	-1.1%	3.4%	2.7%	2.6%	2.7%
Natural Gas	0.1	0.5	0.7	0.7	47.8%	9.9%	-1.9%	24.6%	0.0%	0.2%	0.3%	0.2%
United Kingdom	**203.7**	**210.8**	**218.0**	**220.0**	**0.7%**	**1.1%**	**0.4%**	**0.8%**	**16.4%**	**16.0%**	**16.4%**	**16.1%**
Solids	62.8	63.3	52.7	46.6	0.2%	-6.0%	-5.9%	-2.9%	19.8%	20.9%	21.2%	19.6%
Oil	77.4	81.7	82.9	82.6	1.1%	0.5%	-0.2%	0.7%	15.2%	15.0%	14.8%	14.4%
Natural Gas	46.6	47.2	57.7	65.0	0.2%	6.9%	6.1%	3.4%	23.6%	21.2%	22.9%	23.7%
European Union	**1241.2**	**1318.2**	**1332.2**	**1366.8**	**1.2%**	**0.4%**	**1.3%**	**1.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
Solids	317.8	302.3	248.0	237.6	-1.0%	-6.4%	-2.1%	-2.9%	100.0%	100.0%	100.0%	100.0%
Oil	510.6	544.6	561.3	575.5	1.3%	1.0%	1.3%	1.2%	100.0%	100.0%	100.0%	100.0%
Natural Gas	197.8	222.3	251.8	274.0	2.4%	4.2%	4.3%	3.3%	100.0%	100.0%	100.0%	100.0%

Short term evolution is in line with the long term with two exceptions: Denmark, where consumption was increasing annually by about 2% these last two years under the pressure of both increasing exportation of electricity and increasing final demand, and Luxembourg (-6.8% over the same period) whose benefit from the conversion of iron steel industry to electrical furnace.

The European oil market is becoming more and more captive...

Total oil demand steadily increased by 1.2% yearly from 1985 to 1995. In fact the consumption's increase for transport (37% over the period 1985-1995) and for non energy uses (40% over the same period) compensated largely for the drop in use of industry (-11% over the same period) and for domestic and tertiary applications (-16%) even though the power generation sector remained quite flat. The European oil market is becoming increasingly captive with specific markets (transport and petrochemistry) reaching 60% of total demand in 1995. After a sharp price reduction (60% in real terms) during 1986, the oil prices continued to decrease, mainly after the short rebound associated to the Gulf war.

Natural gas showed a continuous progression of its growth rate...

Primary consumption of natural gas increased by 3.3% per year over the period 1985-1995, demonstrating continuous growth : 2.4% annually between 1985 and 1990, 4.2% in the period 1991-1993 and 4.3% these last two years. The increase was very strong in the electricity sector (+92%), but also significant in the industry sector (+ 29%) and in the tertiary and domestic sector (+ 34%) where large substitution occurred for solid fuels and oil products. These last two years natural gas demand grew the fastest among primary fossil fuels and in general in all Member States with the exception of the Netherlands where the gas market was already saturated for a long time. At the opposite end, some mature markets in Austria, in Germany or in the United Kingdom demonstrated very sustained growth rates, largely above 5% per annum.

In-depth restructuring in producing countries reduced solid consumption over the past ten years by 25%...

The **use of solid fuels** decreased in most of the member states and sectors over the period 1985-1995. The slowdown was particularly noticed in France, Germany and United Kingdom, all three historically identified as mining countries and absorbing about 75% of total European consumption in 1985. The in-depth restructuring of the mining industry has suppressed protected markets in these countries and opened the door for competition with gas and oil products. As a consequence, the reduction of consumption reached 36% in these three countries over the past ten years. On the contrary, it slightly increased in Finland, Greece, Ireland, the Netherlands, Portugal and Sweden for power generation and industrial heat applications. The consumption of solid fuels is increasingly concentrated in power generation.

GROSS INLAND CONSUMPTION GROWTH IN 1996

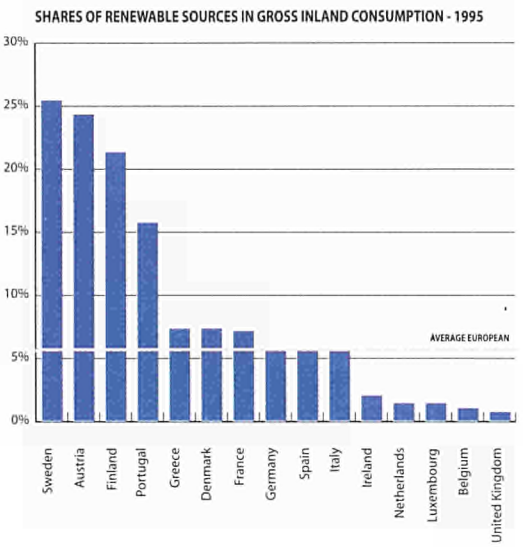
	Solids	Oil	Natural gas	Total
Austria	-2.2%	0.6%	10.0%	2.6%
Belgium	-13.9%	13.7%	11.1%	6.3%
Denmark	37.2%	9.5%	18.3%	13.8%
Finland	-0.8%	34.4%	2.1%	10.3%
France	18.2%	1.4%	7.0%	4.4%
Germany	-3.4%	2.5%	15.0%	3.6%
Greece	4.1%	5.1%	5.8%	5.0%
Ireland	0.2%	4.4%	9.2%	4.3%
Italy	-11.1%	-1.7%	3.3%	-0.7%
Luxembourg	-4.0%	3.7%	9.8%	3.1%
Netherlands	-1.2%	0.1%	10.1%	4.5%
Portugal	-10.6%	-5.9%	-	-3.6%
Spain	-15.9%	-5.5%	11.9%	-3.8%
Sweden	-2.5%	29.7%	26.1%	13.9%
United Kingdom	-8.3%	3.9%	17.1%	5.2%
European Union	**-3.7%**	**2.5%**	**11.6%**	**3.6%**

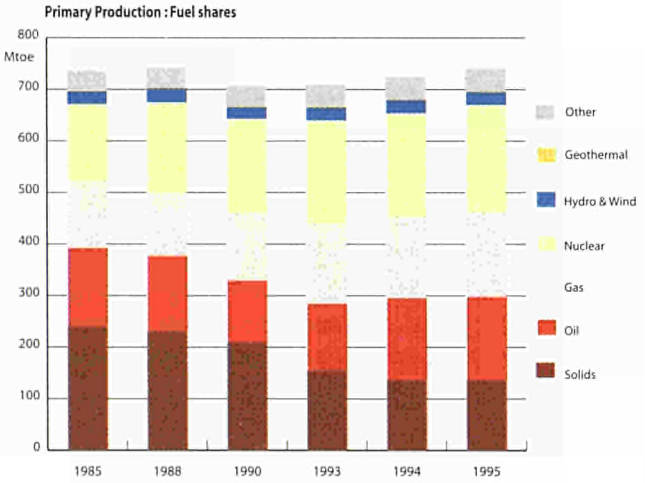
INDIGENOUS PRODUCTION

Progressive increase of indigenous production since 1992 led by crude oil...

Domestic production of primary energy in the European Union as a whole peaked at 754 Mtoe in 1986. It remained quite stable over the period 1985-1995, showing an average increase of 0.1%. After a continuous decrease up to 1992, the last three years saw a progressive increase in energy production by 1.2% in 1993, 2.1% in 1994 and 2.3% during 1995. Solid fuels that were declining faster and faster until 1994 with a reduction of about 35% since 1990, stabilised their level of production in 1995. Oil production, stable between 1985 and 1990, showed an annual increase by 4.5%, since then driven by the application of more efficient and economical methods for off-shore exploitation. Despite a period of low oil prices, reduced costs have made

small field development profitable. The use of floating platforms instead of fixed steel platform is one example of this cost reduction exercise. As a consequence satellite developments from existing fields have been a significant contributor to enlarged European production. At the same time declining size of reserves necessary for the field to be developed have been observed. Whereas fields once required at least 100 million barrels of reserve in order to be developed, now fields with reserves of as little as 10 million barrels are being developed. Natural gas and nuclear energy became the main energy sources in Europe (22.5% and 27.7% respectively), with a continuous increase of 2.4% and 3.4% per year respectively over the period 1985-1995. Hydroelectricity and wind energy remained quite stable and represented only 3.4% of the total in 1995; while geothermal energy globally remained marginal.





Contribution of renewable energy still limited to about 5% of gross inland consumption…

In 1995, the contribution of **renewable energy** sources represented 9.8% of the total primary energy production and 5.3% of gross inland consumption respectively. The situation varies deeply from Member State to Member State. It is mainly used in Sweden, Austria, Finland and Portugal with a national share of gross inland consumption ranging between 15 to 25%. It is also used significantly in France, Greece, Germany, Spain, Denmark and Italy, with a share of between 5% and 8%. Its use is almost negligible in the other Member States.

Renewable energy sources are mainly used for power generation and the heat market. The contribution from such sources will depend upon their degree of geographical dispersion, the mix of energy sources and the generation flexibility of the rest of the system. In particular the prospects for additional power generation from more intermittent renewable resources, especially wind power, have improved as costs have declined and technology improved.

Primary production dominated by the United Kingdom, Germany and France…

Globally, however, three major Member States covered the largest part of the domestic production: the United Kingdom (34%), Germany (19%) and France (16%), representing about 70% of the total contribution to European Union domestic production. Except for the United Kingdom, these figures vary quite substantially over the period 1985-1995. While in 1985 Germany accounted for 28% of the total, it only accounted for 17% in 1995 due to significant cuts in hard coal production. The continuation of French nuclear programmes allowed this country to reinforce its contribution despite cuts in coal production and drops in natural gas output. Amongst the other Member States, some were reinforcing their contribution: Spain and Sweden mainly due to the expansion of nuclear energy, Italy thanks to increase of natural gas production and Denmark in relation to oil and gas production growth.

RENEWABLE ENERGY SOURCES IN 1995

Ktoe	Hydro	Wind	Solar	Geoth	Biomass	Other	Total
Production = Gross Inland Consumption							
Austria	3070	0	0	0	3034	0	6104
Belgium	30	1	1	1	372	107	512
Denmark	3	98	4	1	1308	0	1414
Finland	1013	0	0	0	4898	0	5912
France	6822	0	14	129	9781	0	16746
Germany	1591	123	36	9	4375	0	6133
Greece	223	3	98	4	1398	0	1727
Ireland	79	2	0	0	162	0	243
Italy	3840	1	7	2312	3548	91	9798
Luxembourg	10	0	0	0	41	0	51
Netherlands	9	23	3	0	933	0	968
Portugal	916	1	14	37	2368	0	3338
Spain	2408	15	24	7	3876	0	6330
Sweden	5082	6	0	0	6564	0	11652
United Kingdom	438	29	6	1	934	0	1409
European Union	**25535**	**302**	**208**	**2500**	**43593**	**199**	**72337**
Inputs to Power Generation Production							
Austria	3070	0	0	0	373	0	3443
Belgium	30	1	0	0	135	107	273
Denmark	3	98	0	0	743	0	843
Finland	1013	0	0	0	1218	0	2231
France	6822	0	0	0	916	0	7738
Germany	1591	123	0	0	1710	0	3424
Greece	223	3	0	0	0	0	227
Ireland	79	2	0	0	0	0	81
Italy	3840	1	0	2099	320	91	6351
Luxembourg	10	0	0	0	25	0	35
Netherlands	9	23	0	0	556	0	588
Portugal	916	1	0	37	139	0	1095
Spain	2408	15	0	0	516	0	2939
Sweden	5082	6	0	0	1560	0	6647
United Kingdom	438	29	0	0	632	0	1100
European Union	**25535**	**302**	**0**	**2136**	**8844**	**199**	**37016**
Final Energy Consumption							
Austria	0	0	0	0	2661	0	2661
Belgium	0	0	1	1	237	0	239
Denmark	0	0	4	1	565	0	571
Finland	0	0	0	0	3681	0	3681
France	0	0	14	129	8865	0	9008
Germany	0	0	36	9	2664	0	2709
Greece	0	0	98	4	1398	0	1500
Ireland	0	0	0	0	162	0	163
Italy	0	0	7	213	3227	0	3448
Luxembourg	0	0	0	0	15	0	15
Netherlands	0	0	3	0	377	0	380
Portugal	0	0	14	0	2229	0	2243
Spain	0	0	24	7	3360	0	3391
Sweden	0	0	0	0	5005	0	5005
United Kingdom	0	0	6	1	302	0	309
European Union	**0**	**0**	**208**	**364**	**34748**	**0**	**35321**

COMPETITIVENESS: Recent evolution (1985-1995)

- Apparent slowdown of improvements of overall energy intensity since 1990…
- …corrected by taking account of climatic conditions
- Reduced discrepancies between Member States
- Consumption per capita increased on average by 6.4% during the last ten years
- Energy prices higher than in United States and non-OECD regions

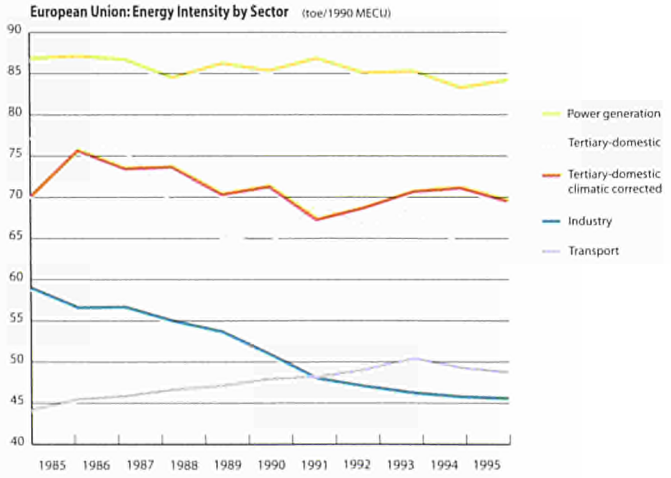
COMPETITIVENESS

Apparent slowdown of improvements of overall energy intensity since 1990…

The European Union continuously improved its overall energy intensity (as measured by the energy intensity of its economy) over the period 1985-1995 (-1.7% per year between 1985 and 1990 and -0.6% between 1990 and 1995), in spite of a slight increase by 0.8% in 1991 and by 0.4% in 1993. However, as we mentioned before, a word of caution is necessary when looking at energy intensity behaviour due to climatic condition effects. Also, this overall indicator is the result of different developments in the main consuming sectors, including power generation. Indeed, intensity improvements in industry and power generation were the main drivers in reducing the overall energy intensity. On the other hand, until now the transport sector has induced losses in overall energy efficiency.

…corrected by taking account of climatic conditions

This improvement was mainly sustained by the industrial sector (-2.5% per year) and by the tertiary-domestic sector (-1.8% per year) although the transport sector increased by about 1% per year. Short term evolutions indicated a flattening of industrial progress and, certainly more important for the future if confirmed, an inversion in transport behaviour. As described before, the domestic and tertiary sector energy intensity was relatively constant, if corrected energy consumption are considered to reflect variation of climatic conditions. If these corrections are reflected back to the gross inland consumption it appears that improvements of energy intensity are constant in the period 1987-1990 (0.6% in the period 1985-1990 and 0.7% in the period 1990-1995).



Reduced discrepancies between Member States…

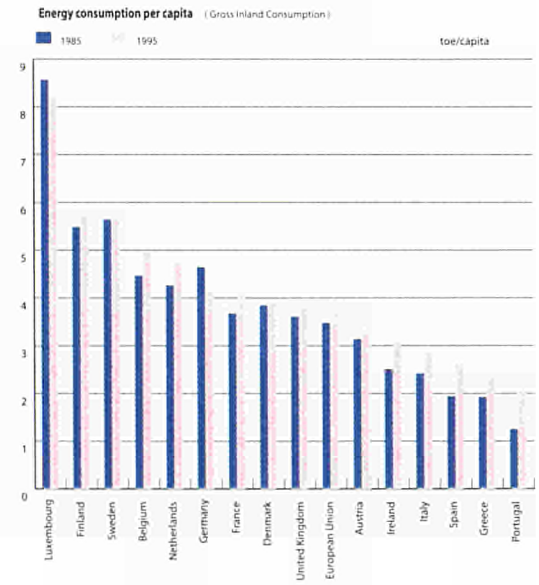
Throughout the period 1985-1995 two Member States increased their **energy intensity**: Portugal (+18%) and Spain (4%). As already stated, this evolution results from higher economic growth mainly based on a strong industrialisation and an improved way of life. Between 1990 and 1995 that have the advantage of offering comparable climatic conditions, three additional countries, all from the northern part of Europe, demonstrated an increase in energy intensity: Denmark (+2%), Sweden (+4%) and Finland (+6%) under the pressure of deep economic recession in these two last countries. Luxembourg helped by the reconversion of steel industry to arc furnaces, Ireland sustained by a strong industrial growth oriented through high added value industries, and Germany guided by the restructuration of new Landers are the best performers both for short and long term. The divergence between Member States decreased during the period 1985-1995. In 1985, Luxembourg which presented the lowest energy efficiency (465 toe/1990 MECU) penalised by a heavy iron-steel industry, was about 2.5 times higher than the most efficient, Italy. In 1995, Italy continued to have the lowest intensity while Portugal and Greece have the highest value, but only 2 times the Italian.

MAIN INDICATORS

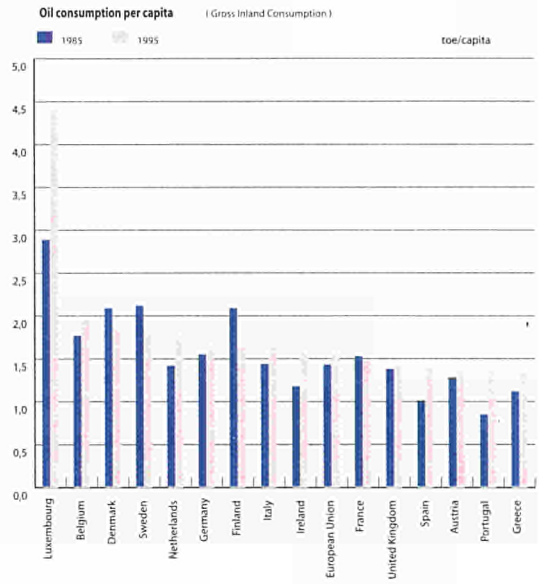
Mtoe	1985	1988	1990	1993	1994	1995	90/85	93/90	94/93	94/94	95/85	95/90
							Annual % Change					
Austria												
Gross inl. Cons./GDP (toe/1990 MECU)	223.8	213.0	207.8	196.9	195.1	197.6	-1.5%	-1.8%	-0.9%	1.3%	-1.2%	-1.0%
Gross Inl. Cons./Capita (Kgoe/inhabitant)	3122.8	3174.2	3324.2	3208.6	3235.7	3320.4	1.3%	-1.2%	0.8%	2.6%	0.6%	0.0%
Electricity Generated/Capita (kWh/inhabitant)	5913.9	6478.8	6576.6	6590.2	6637.8	7037.0	2.1%	0.1%	0.7%	6.0%	1.8%	1.4%
Belgium												
Gross inl. Cons./GDP (toe/1990 MECU)	335.6	320.6	308.5	313.2	310.2	308.4	-1.7%	0.5%	-1.0%	-0.6%	-0.8%	0.0%
Gross Inl. Cons./Capita (Kgoe/inhabitant)	4447.3	4607.5	4724.3	4829.1	4879.8	4938.6	1.2%	0.7%	1.1%	1.2%	1.1%	0.9%
Electricity Generated/Capita (kWh/inhabitant)	5813.5	6598.6	7106.5	7023.9	7139.7	7345.6	4.1%	-0.4%	1.6%	2.9%	2.4%	0.7%
Denmark												
Gross inl. Cons./GDP (toe/1990 MECU)	206.7	188.8	179.0	186.9	185.2	182.9	-2.8%	1.5%	-0.9%	-1.2%	-1.2%	0.4%
Gross Inl. Cons./Capita (Kgoe/inhabitant)	3833.8	3670.8	3541.7	3776.6	3894.2	3945.3	-1.6%	2.2%	3.1%	1.3%	0.3%	2.2%
Electricity Generated/Capita (kWh/inhabitant)	5679.6	5450.8	5010.4	6500.2	7702.0	7051.8	-2.5%	9.1%	18.5%	-8.4%	2.2%	7.1%
Finland												
Gross inl. Cons./GDP (toe/1990 MECU)	298.2	282.2	268.1	313.6	312.9	283.2	-2.1%	5.4%	-0.2%	-9.5%	-0.5%	1.1%
Gross Inl. Cons./Capita (Kgoe/inhabitant)	5465.4	5730.7	5708.2	5821.4	6036.9	5685.7	0.9%	0.7%	3.7%	-5.8%	0.4%	-0.1%
Electricity Generated/Capita (kWh/inhabitant)	10139.7	10893.9	10903.0	12052.4	12896.8	12527.3	1.5%	3.4%	7.0%	-2.9%	2.1%	2.8%
France												
Gross inl. Cons./GDP (toe/1990 MECU)	249.7	236.7	235.7	247.2	232.4	236.4	-1.1%	1.6%	-6.0%	1.7%	-0.5%	0.1%
Gross Inl. Cons./Capita (Kgoe/inhabitant)	3662.9	3732.5	3910.6	4058.1	3900.7	4047.2	1.3%	1.2%	-3.9%	3.8%	1.0%	0.7%
Electricity Generated/Capita (kWh/inhabitant)	6226.7	6982.7	7404.2	8205.6	8248.9	8524.9	3.5%	3.5%	0.5%	3.3%	3.2%	2.9%
Germany												
Gross inl. Cons./GDP (toe/1990 MECU)	308.9	295.3	273.4	248.1	240.0	238.8	-2.4%	-3.2%	-3.3%	-0.5%	-2.5%	-2.7%
Gross Inl. Cons./Capita (Kgoe/inhabitant)	4627.1	4659.9	4469.3	4133.5	4101.1	4152.5	-0.7%	-2.6%	-0.8%	1.3%	-1.1%	-1.5%
Electricity Generated/Capita (kWh/inhabitant)	6706.5	7015.5	6912.6	6474.9	6484.2	6575.4	0.6%	-2.2%	0.1%	1.4%	-0.2%	-1.0%
Greece												
Gross inl. Cons./GDP (toe/1990 MECU)	366.7	329.7	348.9	341.4	348.7	349.2	-1.0%	-0.7%	2.1%	0.2%	-0.5%	0.0%
Gross Inl. Cons./Capita (Kgoe/inhabitant)	1901.2	2063.8	2240.5	2227.7	2314.3	2361.2	3.3%	-0.2%	3.9%	2.0%	2.2%	1.1%
Electricity Generated/Capita (kWh/inhabitant)	2791.8	3327.6	3444.2	3698.6	3895.5	3978.2	4.3%	2.4%	5.3%	2.1%	3.6%	2.9%
Ireland												
Gross inl. Cons./GDP (toe/1990 MECU)	308.1	307.4	283.9	257.1	255.8	230.6	-1.6%	-3.3%	-0.5%	-9.9%	-2.9%	-4.1%
Gross Inl. Cons./Capita (Kgoe/inhabitant)	2494.6	2697.6	2907.4	2881.7	3071.7	3058.1	3.1%	-0.3%	6.6%	-0.4%	2.1%	1.0%
Electricity Generated/Capita (kWh/inhabitant)	3414.1	3745.9	4139.5	4600.5	4789.6	4988.2	3.9%	3.6%	4.1%	4.1%	3.9%	3.8%
Italy												
Gross inl. Cons./GDP (toe/1990 MECU)	182.9	179.5	179.7	180.5	174.3	178.7	-0.3%	0.1%	-3.4%	2.5%	-0.2%	-0.1%
Gross Inl. Cons./Capita (Kgoe/inhabitant)	2404.0	2596.4	2729.1	2738.6	2694.1	2840.2	2.6%	0.1%	-1.6%	5.4%	1.7%	0.8%
Electricity Generated/Capita (kWh/inhabitant)	3281.4	3594.0	3823.3	3904.5	4051.5	4215.9	3.1%	0.7%	3.8%	4.1%	2.5%	2.0%
Luxembourg												
Gross inl. Cons./GDP (toe/1990 MECU)	465.3	411.0	435.8	417.8	393.1	338.4	-1.3%	-1.4%	-5.9%	-13.9%	-3.1%	-4.9%
Gross Inl. Cons./Capita (Kgoe/inhabitant)	8548.5	8466.8	9300.5	9653.6	9300.2	8202.6	1.7%	1.2%	-3.7%	-11.8%	-0.4%	-2.5%
Electricity Generated/Capita (kWh/inhabitant)	2560.2	3572.9	3610.7	2680.1	2946.8	3051.6	7.1%	-9.5%	10.0%	3.6%	1.8%	-3.3%
Netherlands												
Gross inl. Cons./GDP (toe/1990 MECU)	321.0	316.4	299.4	301.7	291.1	295.8	-1.4%	0.3%	-3.5%	1.6%	-0.8%	-0.2%
Gross Inl. Cons./Capita (Kgoe/inhabitant)	4246.8	4393.9	4473.3	4634.6	4596.0	4757.4	1.0%	1.2%	-0.8%	3.5%	1.1%	1.2%
Electricity Generated/Capita (kWh/inhabitant)	4342.1	4715.3	4805.7	5034.4	5178.7	5255.6	2.0%	1.6%	2.9%	1.5%	1.9%	1.8%
Portugal												
Gross inl. Cons./GDP (toe/1990 MECU)	296.7	305.3	323.2	336.4	341.3	349.1	1.7%	1.3%	1.5%	2.3%	1.6%	1.6%
Gross Inl. Cons./Capita (Kgoe/inhabitant)	1234.2	1482.5	1735.0	1891.1	1935.2	2026.4	7.0%	2.9%	2.3%	4.7%	5.1%	3.2%
Electricity Generated/Capita (kWh/inhabitant)	1908.3	2255.7	2879.4	3159.1	3168.4	4008.7	8.6%	3.1%	0.3%	26.5%	7.7%	6.8%
Spain												
Gross inl. Cons./GDP (toe/1990 MECU)	237.4	233.3	229.7	232.4	241.8	247.0	-0.7%	0.4%	4.0%	2.2%	0.4%	1.5%
Gross Inl. Cons./Capita (Kgoe/inhabitant)	1924.4	2152.3	2293.6	2345.9	2487.9	2610.8	3.6%	0.8%	6.1%	4.9%	3.1%	2.6%
Electricity Generated/Capita (kWh/inhabitant)	3315.5	3607.5	3906.1	4004.0	4124.5	4253.0	3.3%	0.8%	3.0%	3.1%	2.5%	1.7%
Sweden												
Gross inl. Cons./GDP (toe/1990 MECU)	290.6	281.8	259.6	269.8	275.1	270.1	-2.2%	1.3%	2.0%	-1.8%	-0.7%	0.8%
Gross Inl. Cons./Capita (Kgoe/inhabitant)	5621.2	5821.1	5484.4	5333.3	5579.2	5650.6	-0.5%	-0.9%	4.6%	1.3%	0.1%	0.6%
Electricity Generated/Capita (kWh/inhabitant)	16421.4	17331.0	17114.7	16721.2	16287.1	16674.5	0.8%	-0.8%	-2.6%	2.4%	0.2%	-0.5%
United Kingdom												
Gross inl. Cons./GDP (toe/1990 MECU)	311.7	281.1	273.9	284.5	277.0	269.6	-2.6%	1.3%	-2.6%	-2.7%	-1.4%	-0.3%
Gross Inl. Cons./Capita (Kgoe/inhabitant)	3593.5	3689.4	3662.6	3746.6	3776.4	3760.2	0.4%	0.8%	0.8%	-0.4%	0.5%	0.5%
Electricity Generated/Capita (kWh/inhabitant)	5257.7	5389.9	5540.5	5547.3	5571.4	5715.8	1.1%	0.0%	0.4%	2.6%	0.8%	0.6%
European Union												
Gross inl. Cons./GDP (toe/1990 MECU)	270.6	257.2	248.3	247.2	240.9	240.6	-1.7%	-0.2%	-2.5%	-0.1%	-1.2%	-0.6%
Gross Inl. Cons./Capita (Kgoe/inhabitant)	3459.3	3579.8	3616.5	3603.2	3600.9	3678.5	0.9%	-0.1%	-0.1%	2.2%	0.6%	0.3%
Electricity Generated/Capita (kWh/inhabitant)	5343.0	5738.1	5914.1	6028.6	6114.5	6279.5	2.1%	0.6%	1.4%	2.7%	1.6%	1.2%

Consumption per capita increased on average by 6.4% during the last ten years…

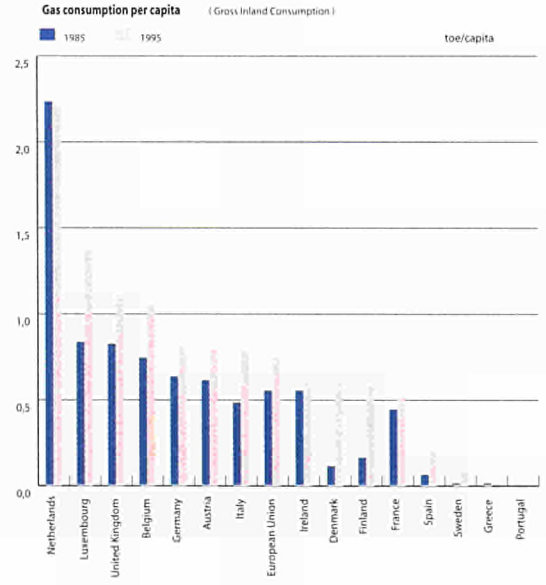
In terms of **energy consumption per capita,** given the differences in living standards and space heating requirements (where geography is the key element), Portugal had the lowest level with 2.02 toe/inhabitant in 1995 while Finland had the highest with 5.69 toe/inhabitant, or almost three times higher, if we exclude Luxembourg whose value is not representative due to the weight of iron steel industry in a small country and the importance of motor fuel purchases by drivers from neighbouring Member States. However, over the period 1985 to 1995, Portugal has been increasing its per capita consumption much faster than Finland. This illustrates the differences between an economy growing from a low level of development and an already stable economic system. Member States can be divided into four categories when looking at the per capita growth in energy demand. Those growing more than 2% per year: Portugal, Spain, Greece and Ireland. Those increasing between 1% and 2%: Italy, the Netherlands and Belgium and France. Those growing just below 1%: Austria, the United Kingdom, Finland, Denmark and Sweden. Those that slightly decreased: Luxembourg and Germany.



The oil consumption per capita is characterised by a convergence between all the Member States to the European average during the period 1985-1995. This is a result of the progressive concentration of oil consumption on its captive markets : motor fuels and petrochemistry.



With the exception of the Netherlands, per capita gas consumption has been increasing significantly in all countries where transport and distribution network are well developed on the impulse of power generation, industry and tertiary-domestic sectors.



Energy prices higher than in United States and non-OECD regions…

If energy efficiency is a main factor in competitiveness, energy prices are also of primary importance, limiting the analysis to the energy point of view, to the exclusion of any

considerations of labour costs, fiscal systems and regulation. As already mentioned the average prices of energy for industrial consumers (1990 ECU per toe) over the 1985-1995 period show an average yearly decrease of 3.4% for steam coal, 9.2% for heavy oil, 7.8% for natural gas and 2.5% for electricity using a weighted average at the European level. In addition very large discrepancies exist between Member States. Compared with the prices of the main competitors inside OECD, the United States and Japan, it is clear that the US prices are well below Europe's and the Japanese largely above. In 1995, for heavy fuel oil, if the European average equalled 100, the US value was 58 and the Japanese 96. For natural gas the respective ratios are 56 for United States and 271 for Japan. Finally, for electricity the ratios are 62 for United States and 245 for Japan. As a first approximation, it can be considered that US prices reflect low prices observed on liberalised and competitive markets, especially for gas and electricity. Additionally, tax levels are equally considerably lower in US.

But it is necessary to be very careful before coming to any conclusions for a specific industry due to the fact that statistics on international prices concerned only average prices for industry as a whole. In some areas, inside and outside European Union, large industrial consumers have the opportunity to negotiate adapted tariffs with their suppliers. For competitive reasons, access to this data is restricted only to the partners.

Finally, energy prices in the non-OECD regions are generally very low compared to the international markets for a number of specific reasons: abundant indigenous production, low incomes, absence of national structred markets, etc.... These differences explain the delocalisation of some high-energy intensive industries, especially for petrochemistry also consuming energy as a raw material.

INDUSTRIAL CONSUMERS - ENERGY PRICES COMPARISON (1)

	1985	1988	1990	1992	1993	1994	1995	90/85	93/90	94/93	95/94	95/85
Ecu90/toe								Annual % Change				
Heavy fuel oil												
France	288.2	98.7	110.2	89.4	81.8	107.9	107.7	-17.5%	-9.5%	32.0%	-0.2%	-9.4%
Germany	284.5	96.1	115.0	96.6	87.0	87.8	90.0	-16.6%	-8.9%	0.9%	2.5%	-10.9%
Italy	303.0	88.3	150.9	139.8	137.3	141.4	143.3	-13.0%	-3.1%	3.0%	1.4%	-7.2%
United Kingdom	293.4	109.6	108.1	84.2	84.1	94.6	107.2	-18.1%	-8.0%	12.6%	13.3%	-9.6%
European Union average	311.5	114.6	129.4	107.2	102.7	112.8	118.7	-16.1%	-7.4%	9.8%	5.2%	-9.2%
Natural gas												
France	271.1	123.2	122.2	110.7	108.6	103.8	104.2	-14.7%	-3.9%	-4.5%	0.4%	-9.1%
Germany	284.0	127.8	147.7	141.8	134.7	126.7	125.0	-12.3%	-3.0%	-5.9%	-1.3%	-7.9%
Italy	271.7	86.9	123.7	128.3	132.8	137.5	145.6	-14.6%	2.4%	3.6%	5.9%	-6.0%
United Kingdom	212.3	152.2	124.9	118.8	115.0	113.3	95.5	-10.1%	-2.7%	-1.5%	-15.7%	-7.7%
European Union average	263.0	121.4	128.0	122.8	120.4	117.6	117.0	-13.4%	-2.0%	-2.4%	-0.5%	-7.8%
Electricity												
France	599.3	517.2	516.5	481.5	483.1	452.0	452.5	-2.9%	-2.2%	-6.4%	0.1%	-2.8%
Germany	833.2	880.0	835.3	765.2	747.3	735.1	699.5	0.0%	-3.6%	-1.6%	-4.8%	-1.7%
Italy	1183.0	863.3	893.9	948.1	935.3	928.3	903.5	-5.4%	1.5%	-0.7%	-2.7%	-2.7%
United Kingdom	777.3	711.0	648.1	640.6	664.3	624.1	597.9	-3.6%	0.8%	-6.1%	-4.2%	-2.6%
European Union average	734.0	658.9	635.7	621.3	614.7	590.6	568.0	-2.8%	-1.1%	-3.9%	-3.8%	-2.5%

(1) Excluding Refundable VAT

ENVIRONMENT: Recent evolution (1985-1995)

- CO_2 emissions in the Member States remained constant over the last 10 years
- Considering standard climatic conditions, estimated CO_2 emissions grew a few over the past ten years…
- …but were quite stable between 1990 and 1995.
- The contribution of CO_2 emissions from transport increased from 19% in 1985 to 26% in 1995
- Varying power sector emissions in Member States
- SO_2 and NO_2 emissions are declining

ENVIRONMENT

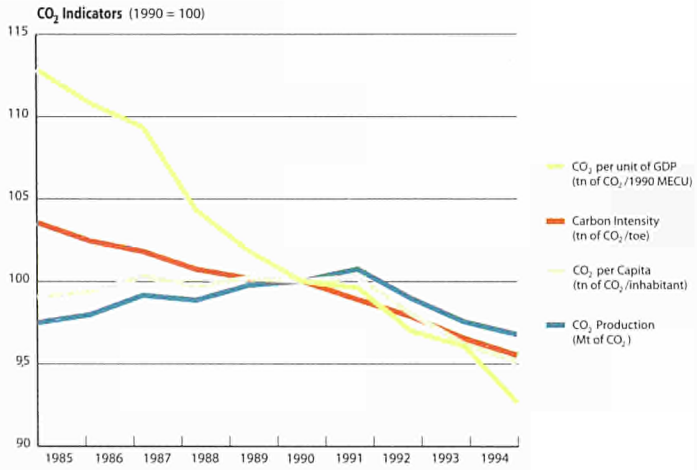
CO_2 emissions in the Member States global remained constant over the last 10 years…

CO_2 emissions indicators are of primordial importance in the current political debate. To facilitate international comparisons, the calculation of total emissions was done according to three different methods, all based on the energy balance and with a bottom-up approach. First, the traditional method where emissions from the transport sector include those produced by aircraft; a second approach, useful at the world level, where emissions from international maritime navigation (bunkers) are also included; and a third where emissions from both air and maritime navigation are excluded and thus only include those emissions produced in the territory of each member state.

CO_2 emissions are given on an indicative basis, being calculated using common emissions factors by energy aggregate. Value presented differ from last edition as SOEC adopted last May the IPPC emission factors in place of the precedent ones. The calculated emissions are to be compared to the last SOEC figures as presented below.

SOEC Old emission factors		SOEC IPCC emission factors	
1990	3200.1 Mtn CO_2	1990	3086.4 Mtn CO_2
1991	3222.4 Mtn CO_2	1991	3115.9 Mtn CO_2
1992	3164.9 Mtn CO_2	1992	3066.2 Mtn CO_2
1993	3118.3 Mtn CO_2	1993	3021.3 Mtn CO_2
1994	3093.2 Mtn CO_2	1994	2996.7 Mtn CO_2
1995	3143.2 Mtn CO_2	1995	3047.6 Mtn CO_2

In general terms, the CO_2 emissions in the Member States remained constant over the last 10 years (3041 million tonnes of CO_2 in 1995 compared with 3002 million tonnes in 1985, but 3085 million tonnes in 1990), while the per capita CO_2 emissions even showed a reduction of 0.2% a year over the last ten years (8.2 tons of CO_2 per capita in 1995 compared to 8.4 in 1985). In the three calculation methods Germany ranks first in spite of an average yearly slowdown of 3% between 1990 and 1995, with a share of around 28% of total European emissions (34% in 1985). The second Member State is the United Kingdom with a slowly declining share from 18% in 1985 to 17% in 1995. Italy comes third with about 13% (11% in 1985) and France fourth with 11% (12% in 1985). These four Member States together account for 70% of total European emissions.



Considering standard climatic conditions, estimated CO_2 emissions grew a few over the past ten years…

Comparing 1985 emission levels to 1995 it must be remembered that more favourable climatic conditions in 1995 reduced the requirements of heating by more than 20%. Estimating possible correction of the total energy consumption to take into account standard climatic conditions, it appears that the estimated CO_2 emissions increased smoothly in the last ten years. In the same period, estimated gross inland consumption increased about two times faster than CO_2 emissions.

CO_2 EMISSIONS (TRADITIONAL CALCULATION)

	1985	1988	1990	1993	1994	1995	88/85	90/88	93/90	94/93	95/94	95/90
	Million tonnes of CO_2						Annual % Change					
Austria	51.0	50.7	55.0	54.3	54.1	56.7	-0.1%	1.6%	-0.4%	-0.4%	4.9%	0.8%
Belgium	98.8	101.7	104.5	106.3	110.5	111.0	0.6%	0.5%	0.6%	3.9%	0.5%	1.5%
Denmark	60.9	56.3	52.7	58.5	62.6	59.9	-1.6%	-1.3%	3.5%	7.0%	-4.3%	3.2%
Finland	46.8	50.1	51.6	55.2	58.9	56.4	1.4%	0.6%	2.3%	6.7%	-4.2%	2.3%
France	360.0	338.5	352.4	348.8	334.0	345.7	-1.2%	0.8%	-0.3%	-4.3%	3.5%	-0.5%
Germany	1007.6	996.6	956.1	877.8	854.0	849.0	-0.2%	-0.8%	-2.8%	-2.7%	-0.6%	-2.9%
Greece	56.7	65.5	70.9	73.1	75.4	77.9	2.9%	1.6%	1.0%	3.2%	3.3%	2.4%
Ireland	26.1	29.2	30.4	30.8	32.2	32.2	2.3%	0.8%	0.4%	4.7%	0.0%	1.4%
Italy	337.6	367.4	388.6	384.1	380.4	403.2	1.7%	1.1%	-0.4%	-1.0%	6.0%	0.9%
Luxembourg	10.0	9.6	10.6	11.3	10.7	8.8	-0.8%	2.0%	1.9%	-4.7%	-18.4%	-4.7%
Netherlands	141.2	148.6	153.0	164.2	160.5	170.7	1.0%	0.6%	2.4%	-2.2%	6.3%	2.8%
Portugal	25.1	29.9	39.1	43.7	44.4	48.0	3.6%	5.5%	3.8%	1.6%	8.2%	5.3%
Spain	176.8	181.4	202.0	210.4	221.7	236.2	0.5%	2.2%	1.4%	5.4%	6.5%	4.0%
Sweden	58.0	55.3	50.0	51.1	54.1	53.6	-0.9%	-2.0%	0.7%	6.0%	-1.0%	1.8%
United Kingdom	544.2	563.0	566.9	546.7	537.0	531.3	0.7%	0.1%	-1.2%	-1.8%	-1.1%	-1.6%
European Union	**3000.7**	**3043.7**	**3083.8**	**3016.0**	**2990.3**	**3040.6**	**0.3%**	**0.3%**	**-0.7%**	**-0.9%**	**1.7%**	**-0.4%**

CO_2 EMISSIONS (TOTAL INCLUDING BUNKER)

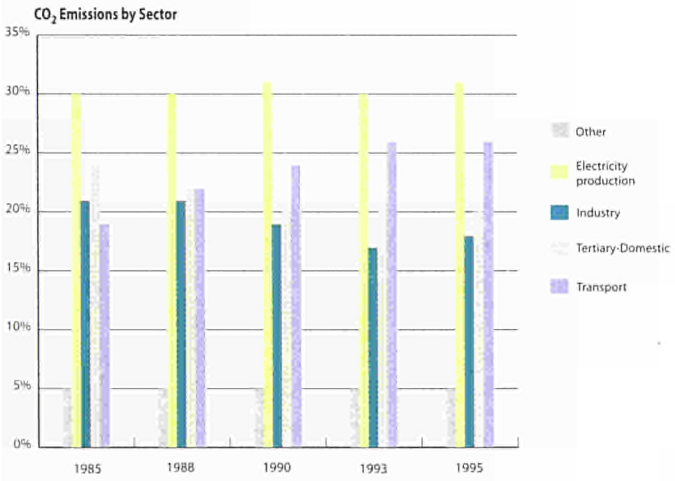
	1985	1988	1990	1993	1994	1995	88/85	90/88	93/90	94/93	95/94	95/90
	Million tonnes of CO_2						Annual % Change					
Austria	51.0	50.7	55.0	54.3	54.1	56.7	-0.1%	1.6%	-0.4%	-0.4%	4.9%	0.8%
Belgium	106.2	113.4	117.5	119.9	123.5	123.4	1.3%	0.7%	0.7%	3.0%	-0.1%	1.2%
Denmark	62.1	59.0	55.7	62.7	67.2	64.9	-1.0%	-1.2%	4.0%	7.3%	-3.5%	3.9%
Finland	48.2	51.6	53.4	56.8	60.2	57.4	1.4%	0.7%	2.1%	5.9%	-4.5%	1.9%
France	367.5	345.5	360.5	356.4	340.7	353.6	-1.2%	0.8%	-0.4%	-4.4%	3.8%	-0.5%
Germany	1018.5	1005.7	963.9	884.8	860.5	855.5	-0.3%	-0.8%	-2.8%	-2.7%	-0.6%	-2.9%
Greece	60.2	72.0	78.9	82.9	85.8	89.1	3.6%	1.9%	1.6%	3.5%	3.8%	3.1%
Ireland	26.2	29.3	30.5	30.9	32.3	32.3	2.3%	0.8%	0.5%	4.5%	0.0%	1.5%
Italy	348.4	377.1	397.0	391.8	387.8	410.9	1.6%	1.0%	-0.4%	-1.0%	6.0%	0.9%
Luxembourg	10.0	9.6	10.6	11.3	10.7	8.8	-0.8%	2.0%	1.9%	-4.7%	-18.4%	-4.7%
Netherlands	168.7	182.0	187.4	201.1	195.7	206.3	1.5%	0.6%	2.4%	-2.6%	5.4%	2.4%
Portugal	26.6	31.4	41.0	45.3	45.9	49.5	3.4%	5.5%	3.4%	1.3%	7.9%	4.9%
Spain	185.1	191.5	214.0	221.1	231.4	246.2	0.7%	2.3%	1.1%	4.7%	6.4%	3.6%
Sweden	59.7	57.4	52.1	53.9	57.5	56.9	-0.8%	-1.9%	1.1%	6.6%	-1.0%	2.2%
United Kingdom	550.8	568.6	574.7	554.3	544.1	538.9	0.6%	0.2%	-1.2%	-1.8%	-1.0%	-1.6%
European Union	**3089.3**	**3144.8**	**3192.2**	**3127.5**	**3097.4**	**3150.4**	**0.4%**	**0.3%**	**-0.7%**	**-1.0%**	**1.7%**	**-0.3%**

CO_2 EMISSIONS (EXCLUDING BUNKERS AND AIR TRANSPORT)

	1985	1988	1990	1993	1994	1995	88/85	90/88	93/90	94/93	95/94	95/90
	Million tonnes of CO_2						Annual % Change					
Austria	50.4	49.8	54.0	53.1	52.8	55.3	-0.2%	1.6%	-0.6%	-0.5%	4.8%	0.6%
Belgium	97.2	99.7	101.7	103.6	107.8	108.2	0.5%	0.4%	0.6%	4.0%	0.4%	1.6%
Denmark	59.2	54.2	50.6	56.3	60.3	57.6	-1.7%	-1.4%	3.6%	7.0%	-4.4%	3.3%
Finland	46.0	49.0	50.2	54.0	57.7	55.2	1.3%	0.5%	2.5%	6.8%	-4.3%	2.4%
France	352.0	328.2	341.0	335.8	320.5	331.7	-1.4%	0.8%	-0.5%	-4.6%	3.5%	-0.7%
Germany	996.3	982.6	939.9	861.2	836.3	831.3	-0.3%	-0.9%	-2.9%	-2.9%	-0.6%	-3.0%
Greece	53.2	62.2	67.1	68.7	71.3	74.2	3.2%	1.5%	0.8%	3.8%	4.0%	2.5%
Ireland	25.5	28.1	29.4	30.0	31.0	31.0	2.0%	0.9%	0.7%	3.4%	0.0%	1.4%
Italy	332.3	362.5	383.0	377.5	373.6	396.0	1.8%	1.1%	-0.5%	-1.0%	6.0%	0.8%
Luxembourg	9.8	9.3	10.2	10.9	10.2	8.2	-1.0%	1.9%	2.0%	-5.8%	-19.9%	-5.4%
Netherlands	137.5	144.1	148.2	157.8	153.9	163.0	0.9%	0.6%	2.1%	-2.5%	6.0%	2.4%
Portugal	23.7	28.4	37.3	41.9	42.6	46.2	3.6%	5.6%	3.9%	1.6%	8.4%	5.5%
Spain	171.0	174.2	194.7	202.4	213.2	227.0	0.4%	2.2%	1.3%	5.3%	6.5%	3.9%
Sweden	56.3	53.0	47.7	48.6	51.6	51.1	-1.2%	-2.1%	0.6%	6.2%	-1.1%	1.7%
United Kingdom	528.9	544.0	546.8	525.0	514.7	508.1	0.6%	0.1%	-1.3%	-2.0%	-1.3%	-1.8%
European Union	**2939.2**	**2969.3**	**3001.8**	**2927.0**	**2897.5**	**2944.0**	**0.2%**	**0.2%**	**-0.8%**	**-1.0%**	**1.6%**	**-0.5%**

... but were quite stable between 1990 and 1995.

Between 1990 and 1995, estimated CO_2 emissions were stable, although estimated gross inland energy consumption increased by about 1% per year. This resulted from two main factors: increasing contribution of non-fossil fuels, mainly nuclear, and larger penetration of natural gas both for power generation and on final markets in substitution of solid fuels and oil products. It is important to underline that the contribution of these two factors will decline in the near future as the potential for new nuclear power is very limited and as the substitution limits for natural gas on final markets will be progressively reached. This means that to reduce CO_2 emissions in the near future, it will be necessary to substantially increase the contribution of renewable energy and to promote rational use of energy to improve energy intensity in the European Union.



The contribution of CO_2 emissions from the transport increased from 19% in 1985 to 26% in 1995...

Looking at CO_2 emissions by sector at a European Union level, the first conclusion is that the largest sector in terms of emissions remained power generation. In spite of thermal production increases by 1.5% per year in the period 1985-1995, CO_2 emissions from the sector grew by only 0.3% per annum, in relation to the development of combined cycle which associated high conversion efficiency with the fossil fuel with the lowest CO_2 content per unit of energy. The total share of emissions from this sector appeared relatively stable since 1985 at around 30%. Within the final demand sectors, transport was the only one with steadily increasing emissions between 1985 and 1995 (3.2% per year in the period). Nevertheless, the short term evolution demonstrated an increase by less than 1% per year since 1993 in line with the evolution of the energy intensity of this sector. This is encouraging for the future. Nevertheless the contribution of this sector has increased from 19% in 1985 to 26% in 1995. The domestic and tertiary sectors showed a downward trend (-1.6% per year between 1985 and 1995, excluding any correction for climatic conditions) due to the progression of natural gas and distributed heat on the heating market in place of heating gasoil and solids. Industry presented the greatest fall in CO_2 emissions between 1985 and 1995 (-1.8% per year) but emissions rebounded by 2.3% in 1994 and by 0.9% in 1995 under the impulse of economic growth. Thus, part of the evolution in industry is linked to the evolution of both industrial production and energy intensity, with as its background a declining trend due to penetration of electricity and to fuel switching away from more CO_2-intensive fuels.

EUROPEAN UNION : CO2 EMISSIONS BY SECTORS

European Union	1985	1988	1990	1993	1994	1995	90/85	93/90	94/93	95/94	95/85
							Annual % Change				
Total	**3090.7**	**3146.1**	**3193.2**	**3127.8**	**3097.7**	**3150.6**	**0.7%**	**-0.7%**	**-1.0%**	**1.7%**	**0.2%**
Bunkers	88.6	101.1	108.4	111.4	107.1	109.9	4.1%	0.9%	-3.8%	2.5%	2.2%
Air Transport	61.5	74.3	82.0	89.1	92.8	96.5	5.9%	2.8%	4.2%	4.0%	4.6%
Transformation	1053.8	1063.2	1123.4	1062.8	1061.9	1086.8	1.3%	-1.8%	-0.1%	2.3%	0.3%
Power Generation	897.2	899.9	963.2	910.7	905.8	931.8	1.4%	-1.9%	-0.5%	2.9%	0.4%
Energy sector	156.6	163.4	160.2	152.0	156.1	155.0	0.4%	-1.7%	2.7%	-0.7%	-0.1%
Final Demand sectors	1886.8	1907.4	1879.4	1864.5	1835.9	1857.4	-0.1%	-0.3%	-1.5%	1.2%	-0.2%
Industry	624.9	610.9	578.2	506.0	515.1	518.7	-1.5%	-4.3%	1.8%	0.7%	-1.8%
Transport	523.8	604.6	655.8	699.3	699.9	707.0	4.6%	2.2%	0.1%	1.0%	3.0%
Domestic and Tertiary	738.2	691.9	645.4	659.2	620.9	631.7	-2.7%	0.7%	-5.8%	1.7%	-1.5%

CO_2 EMISSIONS

Millions tons of CO_2	1985	1988	1990	1993	1994	1995	90/85	93/90	94/93	95/94	95/85	95/90
									Annual % Change			
Austria												
Total CO2 emissions	51.04	50.69	54.96	54.26	54.05	56.70	1.5%	-0.4%	-0.4%	4.9%	1.1%	0.6%
of which power generation	7.00	8.16	12.13	8.88	9.82	11.26	11.6%	-9.9%	10.6%	14.6%	4.9%	-1.5%
of which final markets	40.38	38.93	39.49	41.16	40.09	41.58	-0.4%	1.4%	2.1%	7.4%	-0.2%	-0.2%
Belgium												
Total CO2 emissions	98.85	101.69	104.51	106.33	110.47	111.00	1.1%	0.6%	3.9%	0.5%	1.2%	1.2%
of which power generation	17.90	17.21	21.83	21.05	22.92	22.88	4.1%	-1.2%	8.8%	-0.2%	2.5%	0.9%
of which final markets	76.03	78.85	77.40	80.23	82.28	83.02	0.4%	1.2%	-0.6%	5.6%	0.2%	0.0%
Denmark												
Total CO2 emissions	60.86	56.27	52.67	58.45	62.56	59.86	-2.8%	3.5%	7.0%	-4.3%	-0.2%	2.6%
of which power generation	26.87	25.51	22.99	28.44	31.94	29.08	-3.1%	7.3%	12.3%	-9.0%	0.8%	4.8%
of which final markets	33.02	27.64	27.38	27.16	27.78	27.97	-3.7%	-0.3%	-3.5%	1.4%	-1.9%	-2.8%
Finland												
Total CO2 emissions	46.76	50.05	51.58	55.16	58.86	56.40	2.0%	2.3%	6.7%	-4.2%	1.9%	1.8%
of which power generation	12.81	14.83	15.65	17.97	22.85	20.40	4.1%	4.7%	27.1%	-10.7%	4.8%	5.4%
of which final markets	29.22	31.76	33.14	33.81	32.65	32.90	2.5%	0.7%	0.0%	-3.3%	1.3%	0.6%
France												
Total CO2 emissions	359.96	338.51	352.43	348.84	333.96	345.66	-0.4%	-0.3%	-4.3%	3.5%	-0.4%	-0.4%
of which power generation	47.29	31.50	40.02	26.29	24.97	27.82	-3.3%	-13.1%	-5.0%	11.4%	-5.2%	-7.0%
of which final markets	297.53	292.19	296.45	305.63	291.31	299.59	-0.1%	1.0%	0.3%	2.2%	0.0%	-0.1
Germany												
Total CO2 emissions	1007.62	996.59	956.09	877.78	854.00	849.03	-1.0%	-2.8%	-2.7%	-0.6%	-1.7%	-2.3%
of which power generation	347.97	344.97	344.23	328.74	320.84	315.14	-0.2%	-1.5%	-2.4%	-1.8%	-1.0%	-1.7%
of which final markets	605.21	597.18	559.77	512.13	495.14	497.57	-1.5%	-2.9%	-1.9%	-5.2%	-0.8%	-1.8%
Greece												
Total CO2 emissions	56.69	65.45	70.92	73.06	75.39	77.89	4.6%	1.0%	3.2%	3.3%	3.2%	1.9%
of which power generation	25.15	30.55	34.34	35.25	37.36	38.92	6.4%	0.9%	6.0%	4.2%	4.5%	2.5%
of which final markets	30.19	32.85	34.56	35.72	35.85	36.74	2.7%	1.1%	1.0%	1.8%	1.4%	1.8%
Ireland												
Total CO2 emissions	26.07	29.21	30.41	30.76	32.21	32.21	3.1%	0.4%	4.7%	0.0%	2.1%	1.2%
of which power generation	8.26	10.06	10.28	12.06	12.46	12.46	4.5%	5.5%	3.4%	0.0%	4.2%	3.9%
of which final markets	17.71	18.99	19.87	18.50	19.54	19.54	2.3%	-2.3%	2.5%	-3.2%	1.2%	0.9%
Italy												
Total CO2 emissions	337.57	367.37	388.56	384.11	380.36	403.22	2.9%	-0.4%	-1.0%	6.0%	1.8%	0.7%
of which power generation	90.16	105.93	118.64	111.44	114.68	125.86	5.6%	-2.1%	2.9%	9.7%	3.4%	1.2%
of which final markets	229.42	243.85	252.61	255.81	249.23	259.96	1.9%	0.4%	-0.1%	2.1%	1.0%	0.9%
Luxembourg												
Total CO2 emissions	10.02	9.64	10.62	11.25	10.72	8.75	1.2%	1.9%	-4.7%	-18.4%	-1.3%	-3.8%
of which power generation	0.53	0.61	0.72	0.75	0.62	0.41	6.4%	1.4%	-17.9%	-34.0%	-2.5%	-10.8%
of which final markets	9.49	9.03	9.90	10.50	10.10	8.34	0.8%	2.0%	1.9%	6.5%	0.4%	2.6%
Netherlands												
Total CO2 emissions	141.17	148.56	153.01	164.22	160.53	170.72	1.6%	2.4%	-2.2%	6.3%	1.9%	2.2%
of which power generation	35.38	41.33	43.30	46.11	46.40	48.90	4.1%	2.1%	0.6%	5.4%	3.3%	2.5%
of which final markets	96.89	94.82	96.07	103.11	98.90	106.07	-0.2%	2.4%	4.8%	4.3%	-0.1%	-0.5%
Portugal												
Total CO2 emissions	25.13	29.92	39.06	43.67	44.35	48.00	9.2%	3.8%	1.6%	8.2%	6.7%	4.2%
of which power generation	5.76	7.87	14.81	17.05	15.67	19.22	20.8%	4.8%	-8.1%	22.6%	12.8%	5.4%
of which final markets	18.44	20.77	22.74	25.11	26.63	26.55	4.3%	3.4%	5.3%	5.1%	2.1%	3.2%
Spain												
Total CO2 emissions	176.83	181.42	202.00	210.36	221.67	236.18	2.7%	1.4%	5.4%	6.5%	2.9%	3.2%
of which power generation	59.49	48.93	63.23	64.71	65.40	78.48	1.2%	0.8%	1.1%	20.0%	2.8%	4.4%
of which final markets	108.70	121.44	127.25	133.44	143.38	144.74	3.2%	1.6%	5.0%	7.5%	1.6%	2.8%
Sweden												
Total CO2 emissions	57.96	55.29	50.01	51.06	54.13	53.61	-2.9%	0.7%	6.0%	-1.0%	-0.8%	1.4%
of which power generation	7.71	5.79	3.54	6.15	6.68	6.09	-14.4%	20.2%	8.7%	-8.9%	-2.3%	11.4%
of which final markets	45.57	45.84	42.59	41.17	43.80	44.04	-1.3%	-1.1%	-4.3%	-3.8%	-0.7%	-1.5%
United Kingdom												
Total CO2 emissions	544.18	562.99	566.92	546.71	537.01	531.34	0.8%	-1.2%	-1.8%	-1.1%	-0.2%	-1.3%
of which power generation	203.85	205.57	216.43	184.99	172.37	174.20	1.2%	-5.1%	-6.8%	1.1%	-1.6%	-4.2%
of which final markets	310.17	327.39	322.24	330.51	332.34	325.72	0.8%	0.8%	0.8%	3.2%	0.4%	0.1%
European Union												
Total CO2 emissions	3002.15	3044.96	3084.79	3016.35	2990.58	3040.75	0.5%	-0.7%	-0.9%	1.7%	0.1%	-0.3%
of which power generation	897.19	899.85	963.21	910.73	905.76	931.81	1.4%	-1.9%	-0.5%	2.9%	0.4%	-0.7%
of which final markets	1948.32	1981.76	1961.38	1953.58	1928.67	1953.95	0.1%	-0.1%	-0.2%	0.7%	0.1%	-0.3%

Varying power sector emissions in Member States...

To a very large extent, the different behaviour of Member States in terms of total CO_2 emissions is a function of developments of the fuel mix for power generation. This can be measured by the CO_2 intensity of the power systems. Sweden and France appeared as the more efficient with less than 60 tonnes of CO_2 per GWh produced, owing to a production largely based on nuclear and hydro. At the opposite end Denmark and Greece have a performance above 800 tonnes of CO_2 per GWh produced, with a power sector mainly based on solid fuels. The global evolution of CO_2 emissions amongst Member States is very contrasted. The relative stability of CO_2 emissions since 1990 at a European level resulted from the reductions observed in the three main countries: Germany (-2.4% par year) that benefitted from the restructuring of new Landers, the United Kingdom (-1.3% per year) due mainly to the substitution of solid fuels by natural gas both for power production and final demand, and France (-0.5%) thanks to greater development of nuclear power. The evolution in these three countries accounting for 57% of total emissions was determinant.

Regarding other polluting emissions, SO_2 and NO_x in particular, it can be considered in the absence of complete statistical data, that the European situation is generally improving. SO_2 emissions are declining significantly as a result of different actions: improvement of fuel quality to reduce sulphur content in oil products, regulation in large industrial combustion installations, substitution of solid fuels by oil products and natural gas. NO_x emissions are also decreasing, but to a lesser extent than SO_2 emissions under the pressure of both regulation in large industrial combustion installations and regulations concerning catalytic converter for new cars.

SO2 AND NOX EMISSIONS

Kton/year	SO2 Emissions			NOx Emissions		
	1990	1994	% change	1990	1994	% change
Austria	92.5	54.9	-41%	226.7	170.8	-25%
Belgium	316.7	279.2	-12%	343.2	374.1	9%
Denmark	197.8	158.0	-20%	273.3	275.8	1%
Finland	226.9	110.6	-51%	268.5	287.9	7%
France	1300.4	1013.2	-22%	1590.1	1682.1	6%
Germany	5254.5	2998.4	-43%	2979.7	2266.5	-24%
Greece	641.2	556.3	-13%	548.9	356.8	-35%
Ireland	177.9	176.7	-1%	115.7	117.3	1%
Italy	2253.0	1436.6	-36%	2053.3	2157.3	5%
Luxembourg	14.3	12.8	-10%	23.1	22.6	-2%
Netherlands	201.2	146.0	-27%	576.0	529.8	-8%
Portugal	282.6	273.0	-3%	220.8	249.0	13%
Spain	2205.6	2060.9	-7%	1257.1	1223.3	-3%
Sweden	104.9	74.2	-29%	345.3	444.1	29%
United Kingdom	3786.8	2696.6	-29%	2773.2	2387.1	-14%
European Union	**17056.1**	**12047.2**	**-29%**	**13595.0**	**12544.4**	**-8%**

Source : Corinair

GLOBAL MARKETS: Recent evolution (1985-1995)

- Energy self-sufficiency stable since 1990
- Diversified and stable sources for solid fuels
- Technological improvements and cost reductions are limiting the share of external supplies on the European oil market
- Less concern about security of oil supply
- Reinforcement of European transport network

SELF-SUFFICIENCY

Energy self-sufficiency stable since 1990…

The degree of self-sufficiency of the European Union as a whole has fluctuated since a decade in parallel with local production. From 58.5% in 1985, it declined to 50.2% in 1992 to reach a level of 53.5 in 1995. Denmark, the Netherlands and the United Kingdom present the highest degrees of self-sufficiency, due to the massive exploitation of their gas and oil reserves. In the cases of Belgium, France and Spain the levels of self-sufficiency are mainly made up by use of nuclear energy.

The contribution of each Member State to European Union domestic production and the respective evolutions were quite varied, depending on reserves, implementation of a nuclear power plant programme, and acceptance and promotion of renewable energy sources, especially biomass.

EXTERNAL SUPPLIES

Closing the gap between domestic production and gross consumption, the European Union took about 46% of its total energy needs from third countries in 1995 (from 42% in 1985 and 50% in 1992). The **net import of energy** in the Union represented globally 634 Mtoe in 1995, and increased, in absolute figures, by 2.1% over the last 10 years.

Diversified and stable sources for solid fuels…

For solid fuels some 40% of total needs came from external suppliers in 1995 (24% in 1985 and 29% in 1990). Of this 40%, 28% came from United States, 22% from South Africa, 13% from Australia, 11% from Poland, 8% from Colombia, 3% from CIS and 15% from diverse sources. If the repartition varied a little from year to year between these main sources depending from market conditions and long term contracts engaged, these sources have the advantages of being well diversified and presenting political stability.

DEGREE OF SELF-SUFFICIENCY IN ENERGY SUPPLY (Total Domestic Production / Gross Consumption)

%	1985	1988	1990	1992	1993	1994	1995	90/85	93/90	94/93	95/94	95/85
								Annual % Change				
Austria	34.69	37.61	32.75	31.67	33.76	35.52	34.91	-1.1%	1.0%	5.2%	-1.7%	0.1%
Belgium	30.73	27.80	24.08	21.27	22.59	20.61	19.45	-4.8%	-2.1%	-8.8%	-5.6%	-4.5%
Denmark	22.40	43.31	52.62	61.22	70.96	71.33	64.26	18.6%	10.5%	0.5%	-9.9%	11.1%
Finland	40.93	44.88	37.88	45.67	45.13	34.31	47.09	-1.5%	6.0%	-24.0%	37.2%	1.4%
France	45.43	47.78	46.51	47.10	51.08	51.64	51.15	0.5%	3.2%	1.1%	-1.0%	1.2%
Germany	57.75	55.19	53.73	44.94	43.87	42.57	42.71	-1.4%	-6.5%	-3.0%	0.3%	-3.0%
Greece	40.93	40.15	39.22	32.34	34.28	42.38	35.43	-0.9%	-4.4%	23.6%	-16.4%	-1.4%
Ireland	39.93	34.43	30.62	34.28	34.04	35.95	35.84	-5.2%	3.6%	5.6%	-0.3%	-1.1%
Italy	17.96	19.88	16.19	16.69	19.83	19.58	18.41	-2.1%	7.0%	-1.3%	-6.0%	0.2%
Luxembourg	1.02	2.25	1.00	0.57	1.70	1.32	2.34	-0.5%	19.5%	-22.4%	77.3%	8.6%
Netherlands	94.28	73.05	77.67	82.59	83.82	79.01	80.70	-3.8%	2.6%	-5.7%	2.1%	-1.5%
Portugal	24.84	23.54	14.71	15.00	16.93	18.44	13.44	-10.0%	4.8%	8.9%	-27.1%	-6.0%
Spain	39.42	38.24	35.57	32.60	33.44	31.91	28.47	-2.0%	-2.0%	-4.6%	-10.8%	-3.2%
Sweden	57.82	63.05	62.56	63.12	61.60	60.69	62.41	1.6%	-0.5%	-1.5%	2.8%	0.8%
United Kingdom	115.38	109.59	96.56	96.11	99.53	113.09	116.24	-3.5%	1.0%	13.6%	2.8%	0.1%
European Union	**58.46**	**56.31**	**52.38**	**50.24**	**52.27**	**53.74**	**53.54**	**-2.2%**	**-0.1%**	**2.8%**	**-0.4%**	**-0.9%**

Technological improvements and cost reduction are limiting the share of external supplies on the European oil market…

In terms of crude oil, the European Union depended on external supplies for as much as 78% in 1995 (75% in 1985 and 85% in 1990), including requirements for maritime bunkers. It mainly concerned crude oil, as net import of oil products was quite marginal in 1995. Of these external supplies, 53% came from OPEC, 22% from Norway, 13% from CIS and 12% from diverse sources. From the mid-80's OPEC has regained some of the share lost to new non-OPEC producers following the oil price shocks of the 70s. However, in recent years, technology and cost reduction advances in oil exploration and production. notably in the North Sea, have resulted in OPEC taking a lower than expected share of the growing demand for oil.

Less concern about security of oil supply…

Presently, there is generally little concern on the outlook for security of supply. But more than three-quarters of world oil reserves are located in potentially unstable areas from political and/or economic points of view. Furthermore, these areas will remain the dominant source of European Union supplies in the future. For this reason, it is crucial for the European Union to reinforce good producer-consumer relations, fostered by a process of dialogue and alignment of interests via investment and operational arrangements. Upstream investment possibilities for European companies in producer countries are now opening up and the developments that producer country companies have been pursuing in the European Union's downstream sector in recent years are continuing. Such moves consolidate the mutual interest that both parties have in the successful performance of the oil sector as a whole.

Reinforcement of European transport network…

The external dependency of the European Union in terms of natural gas was 40% (35% in 1985 and 42% in 1990). In this case, the shares of the three major suppliers are: 52% for CIS, 25% for Algeria and 21% for Norway with only 2% from diverse sources (Libya, UAE and Australia). The extent of the growth in use and import volumes of gas into the European Union is a major discovery of these last years. To secure supply faced with a limited number of external suppliers, some of them presenting economical and/or political risks, it is vital to reinforce the European transport network. A lot of investment has been made since the beginning of the 90's to interconnect all Europe from Ireland to Germany, and from Denmark to Portugal.

EUROPEAN UNION : SUMMARY ENERGY BALANCE

Mtoe	1985	1988	1990	1993	1994	1995	90/85	93/90	94/93	95/94	95/85
							Annual % Change				
Primary Production	736.2	742.2	707.1	710.0	724.8	741.4	-0.8%	0.1%	2.1%	2.3%	0.1%
Solids	239.9	230.9	210.3	155.7	137.4	137.4	-2.6%	-9.5%	-11.7%	0.0%	-5.4%
Oil	151.0	144.7	117.5	127.3	156.6	159.2	-4.9%	2.7%	23.0%	1.7%	0.5%
Natural gas	131.7	124.5	132.7	157.9	159.6	166.5	0.1%	6.0%	1.1%	4.3%	2.4%
Nuclear	147.4	173.3	181.4	197.6	198.8	205.4	4.2%	2.9%	0.6%	3.3%	3.4%
Hydro & Wind	24.4	26.8	22.3	25.1	25.8	25.2	-1.8%	3.9%	3.0%	-2.3%	0.3%
Geothermal	1.8	2.0	2.2	2.6	2.5	2.5	4.4%	5.6%	-4.3%	0.4%	3.4%
Other	40.0	40.0	40.7	43.9	44.0	45.1	0.3%	2.5%	0.3%	2.6%	1.2%
Net Imports	527.2	579.2	644.0	652.5	633.5	651.1	4.1%	0.4%	-2.9%	2.8%	2.1%
Solids	75.3	73.8	88.2	87.6	87.1	93.9	3.2%	-0.2%	-0.6%	7.8%	2.2%
Oil	382.0	420.6	460.9	467.7	446.6	446.4	3.8%	0.5%	-4.5%	0.0%	1.6%
Crude oil	343.3	398.0	436.8	459.0	443.3	434.8	4.9%	1.7%	-3.4%	-1.9%	2.4%
Oil products	38.7	22.6	24.2	8.7	3.3	11.7	-9.0%	-28.9%	-62.0%	254.2%	-11.3%
Natural gas	68.6	82.7	92.5	95.3	98.4	109.3	6.2%	1.0%	3.2%	11.1%	4.8%
Electricity	1.3	2.1	2.3	1.9	1.5	1.5	12.0%	-6.9%	-22.7%	2.9%	1.2%
Gross Inland Consumption	1241.2	1293.7	1318.2	1332.2	1335.8	1366.8	1.2%	0.4%	0.3%	2.3%	1.0%
Solids	317.8	305.6	302.3	248.0	243.6	237.6	-1.0%	-6.4%	-1.8%	-2.5%	-2.9%
Oil	510.6	536.5	544.6	561.3	565.8	575.5	1.3%	1.0%	0.8%	1.7%	1.2%
natural gas	197.8	207.4	222.3	251.8	253.8	274.0	2.4%	4.2%	0.8%	8.0%	3.3%
Other (1)	214.9	244.2	249.0	271.0	272.6	279.7	3.0%	2.9%	0.6%	2.6%	2.7%
Electricity Generation in TWh	1917.0	2073.9	2155.6	2229.1	2268.3	2333.3	2.4%	1.1%	1.8%	2.9%	2.0%
Nuclear	574.9	681.9	720.1	794.1	791.8	810.1	4.6%	3.3%	-0.3%	2.3%	3.5%
Hydro & wind (including pumping)	299.2	325.8	276.4	309.3	317.2	319.8	-1.6%	3.8%	2.6%	0.8%	0.7%
Thermal	1042.9	1066.2	1159.2	1125.7	1159.3	1203.4	2.1%	-1.0%	3.0%	3.8%	1.4%
Generation Capacity in GWe	480.9	510.6	523.0	529.6	532.5	537.0	1.7%	0.4%	0.5%	0.9%	1.1%
Nuclear	87.0	110.0	116.7	118.9	118.7	119.7	6.0%	0.6%	-0.1%	0.8%	3.2%
Hydro & wind	103.5	108.7	111.7	115.7	116.4	116.4	1.5%	1.2%	0.6%	0.0%	1.2%
Thermal	290.4	291.8	294.6	295.0	297.3	300.9	0.3%	0.0%	0.8%	1.2%	0.4%
Average Load Factor in %	45.5	46.4	47.1	48.0	48.6	49.6	0.7%	0.7%	1.2%	2.0%	0.9%
Fuel Inputs for Thermal Power Generation	249.8	250.4	270.3	260.7	261.4	271.5	1.6%	-1.2%	0.3%	3.8%	0.8%
Solids	170.1	173.2	181.7	166.6	164.4	165.2	1.3%	-2.9%	-1.3%	0.4%	-0.3%
Oil	41.2	36.9	42.7	42.1	40.6	43.6	0.7%	-0.5%	-3.6%	7.6%	0.6%
Gas	30.9	32.7	37.7	42.2	46.2	52.0	4.1%	3.8%	9.6%	12.6%	5.4%
Geothermal	1.7	1.8	1.9	2.3	2.1	2.1	2.0%	6.4%	-5.3%	0.5%	2.4%
Other	5.8	5.8	6.3	7.7	8.1	8.5	1.6%	6.8%	5.9%	4.4%	3.8%
Average Thermal Efficiency in %	35.9	36.6	36.9	37.1	38.1	38.1	0.5%	0.2%	2.7%	0.0%	0.6%
Non-Energy Uses	75.2	83.4	84.1	85.0	91.5	92.7	2.3%	0.4%	7.7%	1.2%	2.1%
Total Final Energy Demand	825.5	858.5	865.4	887.8	881.8	899.1	0.9%	0.9%	-0.7%	2.0%	0.9%
Solids	102.7	90.4	81.5	55.2	52.2	49.1	-4.5%	-12.2%	-5.5%	-5.9%	-7.1%
Oil	373.7	395.9	396.4	416.8	416.1	420.9	1.2%	1.7%	-0.2%	1.1%	1.2%
Gas	164.0	173.3	181.3	200.1	194.9	204.8	2.0%	3.4%	-2.6%	5.1%	2.2%
Electricity	137.0	149.9	156.7	162.5	165.2	169.7	2.7%	1.2%	1.6%	2.7%	2.2%
Heat	14.2	15.1	15.3	17.4	18.0	18.5	1.5%	4.5%	3.6%	2.7%	2.7%
Other	33.9	33.9	34.3	35.8	35.3	36.0	0.2%	1.4%	-1.3%	2.1%	0.6%
CO_2 Emissions in Mt of CO_2 (2)	3002.1	3045.0	3084.8	3016.3	2990.6	3040.7	0.5%	-0.7%	-0.9%	1.7%	0.1%
Indicators											
Population (Million)	358.79	361.40	364.50	369.72	370.97	371.57	0.3%	0.5%	0.3%	0.2%	0.4%
GDP (bil. ECU 1990)	4586.0	5029.1	5308.2	5389.9	5544.9	5681.8	3.0%	0.5%	2.9%	2.5%	2.2%
Gross Inl Cons./GDP (toe/1990 MECU)	270.6	257.2	248.3	247.2	240.9	240.6	-1.7%	-0.2%	-2.5%	-0.1%	-1.2%
Gross Inl Cons./Capita (Kgoe/inhabitant)	3459.3	3579.8	3616.5	3603.2	3600.9	3678.5	0.9%	-0.1%	-0.1%	2.2%	0.6%
Electricity Generated/Capita (kWh/inhabitant)	5343.0	5738.1	5914.1	6028.6	6114.5	6279.5	2.1%	0.6%	1.4%	2.7%	1.6%
CO_2 Emissions/Capita (t of CO_2/inhabitant)	8.4	8.4	8.5	8.2	8.1	8.2	0.2%	-1.2%	-1.2%	1.5%	-0.2%
Import Dependency %	41.5	43.7	47.6	47.7	46.3	46.5	2.8%	0.1%	-3.1%	0.4%	1.1%

(1) Includes nuclear. hydro and wind. net imports of electricity. and other energy sources.
(2) Given on an indicative basis; calculated using common emission factors accross all countries in the world

EUROPEAN UNION : MAIN INDICATORS

	1985	1990	1993	1994	1995	90/85	93/90	94/93	95/94
						Annual % Change			
Gross Inland Consumption (Mtoe)	1241.1	1318.2	1332.2	1335.8	1366.8	1.2%	0.4%	0.3%	2.3%
Public Thermal Power Generation	364.0	418.4	421.0	424.7	438.9	2.8%	0.2%	0.9%	3.3%
Autoprod. Thermal Power Generation	33.1	33.2	37.3	35.5	37.9	0.1%	3.9%	-4.7%	6.6%
Energy Branch	59.9	63.5	65.6	67.1	67.4	1.2%	1.1%	2.2%	0.4%
Final Energy Consumption	825.4	865.1	887.4	881.4	898.7	0.9%	0.9%	-0.7%	2.0%
Industry	269.8	269.4	248.1	252.7	257.8	0.0%	-2.7%	1.8%	2.0%
Transport	201.8	253.6	270.8	272.2	275.8	4.7%	2.2%	0.5%	1.3%
Tertiary-Domestic	353.8	342.1	368.5	356.5	365.1	-0.7%	2.5%	-3.3%	2.4%
Energy Intensity (toe/1990 MECU)	270.6	248.3	247.2	240.9	240.6	-1.7%	-0.2%	-2.5%	-0.1%
Public Thermal Power Generation	79.4	78.8	78.1	76.6	77.3	-0.1%	-0.3%	-1.9%	0.8%
Autoprod. Thermal Power Generation	7.2	6.3	6.9	6.4	6.7	-2.8%	3.4%	-7.4%	4.1%
Industry	58.8	50.8	46.0	45.6	45.4	-2.9%	-3.2%	-1.0%	-0.4%
Transport	44.0	47.8	50.2	49.1	48.5	1.7%	1.7%	-2.3%	-1.1%
Tertiary-Domestic	77.2	64.4	68.4	64.3	64.3	-3.5%	2.0%	-6.0%	0.0%
Energy per Capita (Kgoe/inhabitant)	3459	3617	3603	3601	3679	0.9%	-0.1%	-0.1%	2.2%
Industry	752	739	671	681	694	-0.3%	-3.2%	1.5%	1.9%
Transport	563	696	733	734	742	4.3%	1.7%	0.2%	1.2%
Tertiary-Domestic	986	938	997	961	983	-1.0%	2.0%	-3.6%	2.3%
Electricity Share (%)									
Final Energy Consumption	16.6%	18.1%	18.3%	18.7%	18.9%	1.8%	0.4%	2.3%	0.7%
Industry	23.2%	26.0%	27.6%	27.5%	27.8%	2.3%	2.0%	-0.3%	1.1%
Transport	1.7%	1.6%	1.7%	1.7%	1.7%	-1.2%	1.5%	2.6%	0.7%
Tertiary-Domestic	20.1%	24.2%	24.3%	25.6%	25.6%	3.8%	0.2%	5.1%	5.1%
CO_2 Emissions (Mt of CO_2)	3002.1	3084.8	3016.3	2990.6	3040.7	0.5%	-0.7%	-0.9%	1.7%
Public Thermal Power Generation	789.6	860.8	797.7	801.0	822.7	1.7%	-2.5%	0.4%	2.7%
Autoprod. Thermal Power Generation	107.6	102.4	113.0	104.8	109.1	-1.0%	3.3%	-7.3%	4.1%
Energy Branch	123.7	129.1	136.4	140.8	140.2	0.9%	1.8%	3.2%	-0.5%
Industry	624.9	578.2	506.0	515.1	518.7	-1.5%	-4.3%	1.8%	0.7%
Transport	585.3	737.8	788.3	792.7	803.5	4.7%	2.2%	0.5%	1.4%
Tertiary-Domestic	738.2	645.4	659.2	620.9	631.7	-2.7%	0.7%	-5.8%	1.7%
Carbon Intensity (tn of CO_2/toe)	2.4	2.3	2.3	2.2	2.2	-0.7%	-1.1%	-1.1%	-0.6%
Public Thermal Power Generation	3.6	3.6	3.6	3.5	3.5	-0.1%	-0.6%	-0.7%	-0.7%
Autoprod. Thermal Power Generation	3.2	3.1	3.0	2.9	2.9	-1.0%	-0.6%	-2.7%	-2.3%
Energy Branch	2.1	2.0	2.1	2.1	2.1	-0.3%	0.7%	1.0%	-0.9%
Industry	2.3	2.1	2.0	2.0	2.0	-1.5%	-1.7%	0.0%	-1.3%
Transport	2.9	2.9	2.9	2.9	2.9	0.1%	0.0%	0.0%	0.0%
Tertiary-Domestic	2.1	1.9	1.8	1.7	1.7	-2.0%	-1.8%	-2.6%	-0.7%
CO_2 per Capita (kg of CO_2/inhabitant)	8367	8463	8159	8061	8183	0.2%	-1.2%	-1.2%	1.5%
Industry	1742	1586	1369	1389	1396	-1.9%	-4.8%	1.5%	0.5%
Transport	1631	2024	2132	2137	2162	4.4%	1.7%	0.2%	1.2%
Tertiary-Domestic	2057	1771	1783	1674	1700	-3.0%	0.2%	-6.1%	1.6%
CO_2 per unit of GDP (tn of CO_2/1990 MECU)	655	581	560	539	535	-2.4%	-1.2%	-3.6%	-0.8%
Public Thermal Power Generation	172	162	148	144	145	-1.2%	-3.0%	-2.4%	0.2%
Autoprod. Thermal Power Generation	23	19	21	19	19	-3.8%	2.8%	-9.9%	1.6%
Energy Branch	27	24	25	25	25	-2.0%	1.3%	0.3%	-2.9%
Industry	136	109	94	93	91	-4.4%	-4.8%	-1.0%	-1.7%
Transport	128	139	146	143	141	1.7%	1.7%	-2.3%	-1.1%
Tertiary-Domestic	161	122	122	112	111	-5.5%	0.2%	-8.4%	-0.7%

AUSTRIA : SUMMARY ENERGY BALANCE

Mtoe	1985	1988	1990	1993	1994	1995	90/85	93/90	94/93	95/94	95/85
							Annual % Change				
Primary Production	8.43	8.92	8.75	9.21	8.73	9.12	0.7%	1.7%	-5.2%	4.5%	0.8%
Solids	0.63	0.56	0.64	0.43	0.34	0.30	0.6%	-12.3%	-21.9%	-10.5%	-7.0%
Oil	1.15	1.21	1.19	1.18	1.13	1.06	0.5%	-0.2%	-3.7%	-6.6%	-0.9%
Natural gas	1.01	1.09	1.11	1.27	1.15	1.26	1.9%	4.6%	-8.9%	9.4%	2.3%
Nuclear	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Hydro & Wind	2.66	3.08	2.71	3.16	3.07	3.19	0.4%	5.2%	-2.7%	3.8%	1.8%
Geothermal	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Other	2.99	2.99	3.10	3.17	3.03	3.31	0.8%	0.8%	-4.4%	9.1%	1.0%
Net Imports	15.46	15.08	17.28	16.99	16.75	17.38	2.3%	-0.6%	-1.4%	3.7%	1.2%
Solids	3.57	3.35	3.12	2.61	2.49	2.52	-2.7%	-5.7%	-4.8%	1.1%	-3.4%
Oil	8.39	8.73	9.71	9.85	10.09	9.65	3.0%	0.5%	2.4%	-4.3%	1.4%
Crude oil	6.68	6.51	7.80	8.07	8.27	8.01	3.1%	1.1%	2.5%	-3.1%	1.8%
Oil products	1.71	2.22	1.91	1.79	1.82	1.64	2.2%	-2.2%	1.8%	-9.8%	-0.4%
Natural gas	3.64	3.24	4.49	4.58	4.24	5.42	4.3%	0.7%	-7.4%	27.7%	4.1%
Electricity	-0.15	-0.23	-0.04	-0.06	-0.07	-0.21	-23.2%	16.8%	12.3%	200.1%	3.7%
Gross Inland Consumption	23.67	24.17	25.69	25.64	25.98	26.70	1.7%	-0.1%	1.3%	2.7%	1.2%
Solids	3.96	3.72	4.16	2.90	2.94	3.22	1.0%	-11.3%	1.5%	9.3%	-2.1%
Oil	9.61	10.19	10.52	10.80	11.16	10.86	1.8%	0.9%	3.4%	-2.7%	1.2%
natural gas	4.60	4.43	5.24	5.68	5.84	6.33	2.6%	2.7%	2.9%	8.3%	3.2%
Other (1)	5.50	5.83	5.77	6.27	6.03	6.29	1.0%	2.8%	-3.7%	4.2%	1.3%
Electricity Generation in TWh	44.82	49.34	50.83	52.67	53.30	56.58	2.6%	1.2%	1.2%	6.1%	2.4%
Nuclear	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Hydro & wind (including pumping)	31.89	36.86	32.91	38.01	36.89	38.47	0.6%	4.9%	-3.0%	4.3%	1.9%
Thermal	12.93	12.48	17.92	14.65	16.41	18.11	6.7%	-6.5%	12.0%	10.3%	3.4%
Generation Capacity in GWe	15.25	16.74	16.69	17.35	16.03	16.04	1.8%	1.3%	-7.6%	0.1%	0.5%
Nuclear	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Hydro & wind	10.17	10.76	10.95	11.27	10.34	10.40	1.5%	1.0%	-8.3%	0.6%	0.2%
Thermal	5.08	5.98	5.74	6.08	5.69	5.64	2.5%	1.9%	-6.4%	-0.9%	1.1%
Average Load Factor in %	33.5	33.6	34.8	34.6	38.0	40.3	0.7%	-0.1%	9.5%	6.1%	1.8%
Fuel Inputs for Thermal Power Generation	2.57	2.92	4.17	3.30	3.68	4.08	10.2%	-7.5%	11.6%	10.7%	4.7%
Solids	0.66	0.84	1.46	0.72	0.75	1.04	17.2%	-21.0%	4.4%	38.4%	4.6%
Oil	0.33	0.41	0.45	0.55	0.55	0.58	6.1%	7.2%	-0.4%	6.1%	5.8%
Gas	1.31	1.41	1.97	1.73	2.05	2.11	8.5%	-4.3%	18.8%	3.0%	4.9%
Geothermal	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Other	0.26	0.26	0.29	0.30	0.33	0.34	1.8%	1.7%	9.3%	2.7%	2.6%
Average Thermal Efficiency in %	43.3	36.8	37.0	38.2	38.3	38.2	-3.1%	1.1%	0.4%	-0.3%	-1.2%
Non-Energy Uses	1.52	1.48	1.57	1.25	1.51	1.23	0.5%	-7.3%	21.0%	-18.7%	-2.2%
Total Final Energy Demand	19.15	19.19	19.96	21.10	20.61	21.56	0.8%	1.9%	-2.3%	4.6%	1.2%
Solids	2.43	1.92	1.75	1.41	1.40	1.39	-6.4%	-6.9%	-0.2%	-0.8%	-5.4%
Oil	7.43	7.83	8.12	8.83	8.57	8.82	1.8%	2.8%	-3.0%	2.9%	1.7%
Gas	2.98	2.81	3.03	3.47	3.38	3.65	0.3%	4.6%	-2.5%	7.9%	2.1%
Electricity	3.18	3.45	3.71	3.85	3.90	4.01	3.1%	1.2%	1.4%	2.9%	2.3%
Heat	0.44	0.48	0.57	0.72	0.69	0.77	5.3%	8.2%	-3.7%	10.9%	5.8%
Other	2.70	2.70	2.79	2.83	2.66	2.92	0.7%	0.4%	-5.8%	9.9%	0.8%
CO_2 Emissions in Mt of CO_2 (2)	51.0	50.7	55.0	54.3	54.1	56.7	1.5%	-0.4%	-0.4%	4.9%	1.1%
Indicators											
Population (Million)	7.58	7.62	7.73	7.99	8.03	8.04	0.4%	1.1%	0.5%	0.1%	0.6%
GDP (bil. ECU 1990)	105.7	113.5	123.6	130.3	133.2	135.1	3.2%	1.8%	2.3%	1.4%	2.5%
Gross Inl Cons./GDP (toe/1990 MECU)	223.8	213.0	207.8	196.9	195.1	197.6	-1.5%	-1.8%	-0.9%	1.3%	-1.2%
Gross Inl Cons./Capita (Kgoe/inhabitant)	3122.8	3174.2	3324.2	3208.6	3235.7	3320.4	1.3%	-1.2%	0.8%	2.6%	0.6%
Electricity Generated/Capita (kWh/inhabitant)	5913.9	6478.8	6576.6	6590.2	6637.8	7037.0	2.1%	0.1%	0.7%	6.0%	1.8%
CO_2 Emissions/Capita (t of CO_2/inhabitant)	6.7	6.7	7.1	6.8	6.7	7.1	1.1%	-1.5%	-0.9%	4.8%	0.5%
Import Dependency %	65.3	62.4	67.2	66.2	64.5	65.1	0.6%	-0.5%	-2.7%	0.9%	0.0%

(1) Includes nuclear. hydro and wind. net imports of electricity. and other energy sources.
(2) Given on an indicative basis; calculated using common emission factors accross all countries in the world

BELGIUM : SUMMARY ENERGY BALANCE

Mtoe	1985	1988	1990	1993	1994	1995	90/85	93/90	94/93	95/94	95/85
							Annual % Change				
Primary Production	13.69	13.23	12.36	11.42	11.03	11.24	-2.0%	-2.6%	-3.3%	1.9%	-2.0%
Solids	4.38	1.85	1.08	0.48	0.32	0.27	-24.4%	-23.7%	-33.9%	-15.4%	-24.4%
Oil	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Natural gas	0.03	0.01	0.01	0.00	0.00	0.00	-22.3%	-36.4%	-62.9%	-76.7%	-39.8%
Nuclear	8.70	10.80	10.71	10.42	10.20	10.34	4.2%	-0.9%	-2.1%	1.3%	1.7%
Hydro & Wind	0.02	0.03	0.02	0.02	0.03	0.03	-0.7%	-1.5%	35.5%	-2.3%	2.0%
Geothermal	0.00	0.00	0.00	0.00	0.00	0.00	24.6%	6.4%	1.9%	20.8%	16.1%
Other	0.55	0.53	0.53	0.49	0.48	0.60	-0.4%	-3.0%	-1.6%	24.8%	1.0%
Net Imports	31.97	35.59	38.86	41.00	42.44	43.44	4.0%	1.8%	3.5%	2.4%	3.1%
Solids	5.57	6.75	9.49	7.80	8.02	9.10	11.3%	-6.3%	2.8%	13.4%	5.0%
Oil	19.12	21.88	21.47	23.54	24.30	23.58	2.3%	3.1%	3.2%	-3.0%	2.1%
Crude oil	20.35	24.97	26.12	27.39	27.77	25.67	5.1%	1.6%	1.4%	-7.6%	2.4%
Oil products	-1.23	-3.08	-4.65	-3.85	-3.47	-2.10	30.5%	-6.1%	-9.8%	-39.6%	5.5%
Natural gas	7.29	7.15	8.22	9.47	9.78	10.42	2.4%	4.8%	3.3%	6.6%	3.6%
Electricity	0.00	-0.18	-0.32	0.19	0.34	0.35	140.8%	-	78.5%	2.2%	-
Gross Inland Consumption	43.84	45.62	47.09	48.70	49.36	50.03	1.4%	1.1%	1.4%	1.4%	1.3%
Solids	9.90	8.77	10.24	8.74	8.67	8.31	0.7%	-5.1%	-0.8%	-4.2%	-1.7%
Oil	17.34	18.46	17.73	19.43	19.96	19.79	0.4%	3.1%	2.7%	-0.8%	1.3%
natural gas	7.33	7.21	8.17	9.41	9.67	10.61	2.2%	4.8%	2.8%	9.7%	3.8%
Other (1)	9.27	11.18	10.95	11.12	11.06	11.32	3.4%	0.5%	-0.6%	2.4%	2.0%
Electricity Generation in TWh	57.31	65.34	70.83	70.83	72.22	74.42	4.3%	0.0%	2.0%	3.0%	2.6%
Nuclear	34.59	43.09	42.71	41.92	40.62	41.35	4.3%	-0.6%	-3.1%	1.8%	1.8%
Hydro & wind (including pumping)	1.35	1.17	0.90	1.03	1.19	1.24	-7.7%	4.3%	16.1%	3.9%	-0.9%
Thermal	21.37	21.07	27.21	27.88	30.41	31.83	5.0%	0.8%	9.1%	4.7%	4.1%
Generation Capacity in GWe	14.17	14.03	14.14	14.05	14.63	14.92	0.0%	-0.2%	4.1%	2.0%	0.5%
Nuclear	5.48	5.50	5.50	5.49	5.53	5.63	0.1%	-0.1%	0.8%	1.9%	0.3%
Hydro & wind	1.33	1.34	1.41	1.41	1.41	1.41	1.2%	0.0%	0.1%	0.0%	0.6%
Thermal	7.36	7.19	7.24	7.16	7.69	7.88	-0.3%	-0.3%	7.4%	2.4%	0.7%
Average Load Factor in %	46.2	53.2	57.2	57.5	56.4	57.0	4.4%	0.2%	-2.1%	1.1%	2.1%
Fuel Inputs for Thermal Power Generation	5.26	4.97	6.40	6.29	6.80	6.99	4.0%	-0.6%	8.2%	2.8%	2.9%
Solids	2.83	3.02	3.87	3.65	3.87	3.76	6.5%	-2.0%	6.1%	-2.9%	2.9%
Oil	0.96	0.31	0.32	0.17	0.36	0.18	-19.9%	-18.1%	103.6%	-49.9%	-15.5%
Gas	1.24	1.42	1.98	2.21	2.33	2.72	9.9%	3.6%	5.5%	16.9%	8.2%
Geothermal	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Other	0.23	0.22	0.23	0.25	0.24	0.32	-0.5%	3.6%	-4.1%	33.7%	3.3%
Average Thermal Efficiency in %	34.9	36.4	36.5	38.2	38.5	39.2	0.9%	1.4%	0.8%	1.8%	1.2%
Non-Energy Uses	2.90	3.21	3.16	3.45	3.96	3.63	1.7%	2.9%	14.8%	-8.3%	2.3%
Total Final Energy Demand	29.21	30.89	30.84	32.63	33.41	34.16	1.1%	1.9%	2.4%	2.3%	1.6%
Solids	4.46	3.74	3.79	3.28	3.69	3.31	-3.2%	-4.7%	12.6%	-10.4%	-3.0%
Oil	13.09	15.15	14.29	15.71	15.85	15.96	1.8%	3.2%	0.9%	0.7%	2.0%
Gas	6.96	6.82	7.25	7.74	7.71	8.52	0.8%	2.2%	-0.5%	10.5%	2.0%
Electricity	4.16	4.66	4.99	5.44	5.71	5.89	3.7%	3.0%	5.0%	3.0%	3.5%
Heat	0.22	0.21	0.21	0.22	0.21	0.22	-0.6%	0.2%	-1.4%	4.4%	0.0%
Other	0.31	0.31	0.31	0.24	0.24	0.28	-0.3%	-8.4%	1.0%	15.7%	-1.2%
CO_2 Emissions in Mt of CO_2 (2)	98.8	101.7	104.5	106.3	110.5	111.0	1.1%	0.6%	3.9%	0.5%	1.2%
Indicators											
Population (Million)	9.86	9.90	9.97	10.08	10.12	10.13	0.2%	0.4%	0.3%	0.1%	0.3%
GDP (bil. ECU 1990)	130.7	142.3	152.6	155.5	159.1	162.2	3.2%	0.6%	2.3%	1.9%	2.2%
Gross Inl Cons./GDP (toe/1990 MECU)	335.6	320.6	308.5	313.2	310.2	308.4	-1.7%	0.5%	-1.0%	-0.6%	-0.8%
Gross Inl Cons./Capita (Kgoe/inhabitant)	4447.3	4607.5	4724.3	4829.1	4879.8	4938.6	1.2%	0.7%	1.1%	1.2%	1.1%
Electricity Generated/Capita (kWh/inhabitant)	5813.5	6598.6	7106.5	7023.9	7139.7	7345.6	4.1%	-0.4%	1.6%	2.9%	2.4%
CO_2 Emissions/Capita (t of CO_2/inhabitant)	10.0	10.3	10.5	10.5	10.9	11.0	0.9%	0.2%	3.6%	0.3%	0.9%
Import Dependency %	69.3	72.2	75.9	77.4	79.4	80.6	1.9%	0.6%	2.6%	1.5%	1.5%

(1) Includes nuclear. hydro and wind. net imports of electricity. and other energy sources.
(2) Given on an indicative basis; calculated using common emission factors accross all countries in the world

DENMARK : SUMMARY ENERGY BALANCE

Mtoe	1985	1988	1990	1993	1994	1995	90/85	93/90	94/93	95/94	95/85
							Annual % Change				
Primary Production	4.85	7.88	9.94	13.65	14.94	15.46	15.4%	11.1%	9.4%	3.5%	12.3%
Solids	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Oil	2.92	4.78	6.06	8.35	9.23	9.31	15.7%	11.3%	10.5%	0.9%	12.3%
Natural gas	0.97	2.11	2.74	3.95	4.29	4.65	23.1%	13.1%	8.6%	8.3%	17.0%
Nuclear	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Hydro & Wind	0.01	0.03	0.05	0.09	0.10	0.10	51.1%	18.5%	10.3%	2.9%	31.0%
Geothermal	0.00	0.00	0.00	0.00	0.00	0.00	0.5%	-2.1%	0.0%	0.0%	-0.4%
Other	0.96	0.96	1.09	1.25	1.31	1.40	2.7%	4.6%	5.0%	6.7%	3.9%
Net Imports	15.53	11.17	9.08	6.08	6.23	7.92	-10.2%	-12.5%	2.6%	27.1%	-6.5%
Solids	7.70	6.26	6.23	6.31	6.88	7.65	-4.1%	0.4%	9.0%	11.2%	-0.1%
Oil	8.19	5.28	3.16	1.09	1.26	1.83	-17.3%	-29.8%	15.6%	44.7%	-13.9%
Crude oil	4.03	3.10	2.03	0.24	-0.36	0.80	-12.8%	-51.2%	-	-	-14.9%
Oil products	4.16	2.18	1.13	0.86	1.63	1.03	-23.0%	-8.8%	89.5%	-36.8%	-13.1%
Natural gas	-0.40	-0.74	-0.93	-1.43	-1.50	-1.49	18.5%	15.6%	4.6%	-0.4%	14.2%
Electricity	0.04	0.36	0.61	0.10	-0.42	-0.07	72.6%	-44.8%	-	-83.6%	-
Gross Inland Consumption	19.60	18.83	18.20	19.60	20.27	20.58	-1.5%	2.5%	3.4%	1.5%	0.5%
Solids	7.38	6.87	6.11	7.19	7.62	6.44	-3.7%	5.6%	6.0%	-15.4%	-1.4%
Oil	10.65	9.21	8.55	8.55	8.96	9.58	-4.3%	0.0%	4.8%	6.9%	-1.1%
natural gas	0.57	1.39	1.79	2.41	2.69	3.12	25.8%	10.6%	11.5%	16.0%	18.6%
Other (1)	1.00	1.35	1.76	1.44	1.00	1.44	11.8%	-6.3%	-31.0%	44.0%	3.6%
Electricity Generation in TWh	29.04	27.96	25.73	33.74	40.09	36.78	-2.4%	9.4%	18.8%	-8.3%	2.4%
Nuclear	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Hydro & wind (including pumping)	0.08	0.33	0.64	1.06	1.17	1.20	51.1%	18.5%	10.3%	2.9%	31.0%
Thermal	28.96	27.63	25.10	32.68	38.92	35.58	-2.8%	9.2%	19.1%	-8.6%	2.1%
Generation Capacity in GWe	8.57	8.44	9.14	10.35	10.46	10.89	1.3%	4.2%	1.0%	4.1%	2.4%
Nuclear	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Hydro & wind	0.06	0.21	0.35	0.50	0.54	0.59	43.5%	12.5%	7.8%	9.2%	26.1%
Thermal	8.52	8.24	8.79	9.85	9.92	10.30	0.6%	3.9%	0.7%	3.9%	1.9%
Average Load Factor in %	38.7	37.8	32.2	37.2	43.8	38.6	-3.6%	5.0%	17.6%	-11.9%	0.0%
Fuel Inputs for Thermal Power Generation	7.27	6.95	6.35	7.97	8.99	8.53	-2.7%	7.8%	12.8%	-5.0%	1.6%
Solids	6.49	6.13	5.55	6.71	7.28	6.05	-3.1%	6.6%	8.5%	-16.9%	-0.7%
Oil	0.35	0.32	0.25	0.32	0.57	0.97	-6.1%	8.3%	76.3%	71.2%	10.8%
Gas	0.08	0.14	0.14	0.42	0.62	0.91	12.5%	45.6%	47.0%	47.5%	28.3%
Geothermal	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Other	0.36	0.36	0.41	0.51	0.52	0.60	3.0%	7.3%	1.7%	15.5%	5.3%
Average Thermal Efficiency in %	34.3	34.2	34.0	35.3	37.2	35.9	-0.2%	1.3%	5.6%	-3.7%	0.5%
Non-Energy Uses	0.52	0.44	0.33	0.29	0.30	0.38	-8.7%	-4.2%	1.8%	29.5%	-3.0%
Total Final Energy Demand	14.49	13.87	14.54	14.52	14.76	15.05	0.1%	-0.1%	1.7%	1.9%	0.4%
Solids	0.77	0.42	0.46	0.38	0.42	0.39	-9.6%	-6.7%	10.6%	-5.4%	-6.5%
Oil	9.46	7.87	7.59	7.38	7.49	7.48	-4.3%	-0.9%	1.5%	-0.1%	-2.3%
Gas	0.51	0.94	1.13	1.48	1.54	1.67	17.5%	9.5%	4.0%	8.5%	12.7%
Electricity	2.18	2.41	2.52	2.63	2.67	2.69	2.9%	1.5%	1.2%	0.8%	2.1%
Heat	1.09	1.75	2.31	2.13	2.09	2.23	16.2%	-2.5%	-2.3%	6.8%	7.4%
Other	0.48	0.48	0.54	0.52	0.57	0.59	2.4%	-1.4%	9.7%	3.6%	2.1%
CO_2 Emissions in Mt of CO_2 (2)	60.9	56.3	52.7	58.5	62.6	59.9	-2.8%	3.5%	7.0%	-4.3%	-0.2%
Indicators											
Population (Million)	5.11	5.13	5.14	5.19	5.20	5.22	0.1%	0.3%	0.3%	0.2%	0.2%
GDP (bil. ECU 1990)	94.8	99.7	101.7	104.9	109.4	112.5	1.4%	1.0%	4.4%	2.8%	1.7%
Gross Inl Cons./GDP (toe/1990 MECU)	206.7	188.8	179.0	186.9	185.2	182.9	-2.8%	1.5%	-0.9%	-1.2%	-1.2%
Gross Inl Cons./Capita (Kgoe/inhabitant)	3833.8	3670.8	3541.7	3776.6	3894.2	3945.3	-1.6%	2.2%	3.1%	1.3%	0.3%
Electricity Generated/Capita (kWh/inhabitant)	5679.6	5450.8	5010.4	6500.2	7702.0	7051.8	-2.5%	9.1%	18.5%	-8.4%	2.2%
CO_2 Emissions/Capita (t of CO_2/inhabitant)	11.9	11.0	10.2	11.3	12.0	11.5	-2.9%	3.2%	6.7%	-4.5%	-0.4%
Import Dependency %	77.6	56.7	47.4	29.0	28.7	35.7	-9.4%	-15.1%	-1.3%	24.6%	-7.5%

(1) Includes nuclear. hydro and wind. net imports of electricity. and other energy sources.
(2) Given on an indicative basis; calculated using common emission factors accross all countries in the world

FINLAND : SUMMARY ENERGY BALANCE

Mtoe	1985	1988	1990	1993	1994	1995	90/85	93/90	94/93	95/94	95/85
							Annual % Change				
Primary Production	11.16	11.62	11.74	12.78	13.08	13.19	1.0%	2.9%	2.4%	0.8%	1.7%
Solids	0.76	1.01	1.46	1.79	2.16	2.06	13.8%	7.1%	20.4%	-4.6%	10.4%
Oil	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Natural gas	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Nuclear	4.97	5.09	5.01	5.18	5.01	4.96	0.2%	1.1%	-3.2%	-1.1%	0.0%
Hydro & Wind	1.06	1.15	0.93	1.16	1.01	1.11	-2.5%	7.5%	-12.5%	9.7%	0.5%
Geothermal	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Other	4.37	4.37	4.34	4.65	4.90	5.06	-0.2%	2.3%	5.4%	3.3%	1.5%
Net Imports	16.10	15.89	18.03	16.47	20.45	15.51	2.3%	-3.0%	24.1%	-24.1%	-0.4%
Solids	4.02	3.53	4.38	3.95	5.21	3.77	1.7%	-3.4%	31.9%	-27.6%	-0.7%
Oil	10.87	10.33	10.48	9.30	11.84	8.21	-0.7%	-3.9%	27.2%	-30.7%	-2.8%
Crude oil	9.99	9.11	8.89	8.71	10.44	8.55	-2.3%	-0.7%	19.8%	-18.1%	-1.6%
Oil products	0.88	1.21	1.59	0.59	1.40	-0.34	12.6%	-28.0%	136.1%	-	-
Natural gas	0.80	1.40	2.26	2.57	2.84	2.94	23.1%	4.4%	10.6%	3.4%	13.9%
Electricity	0.40	0.63	0.92	0.65	0.56	0.60	17.8%	-10.7%	-13.8%	6.6%	4.0%
Gross Inland Consumption	26.79	28.35	28.46	29.49	30.72	28.99	1.2%	1.2%	4.1%	-5.6%	0.8%
Solids	4.98	5.06	5.07	5.89	6.50	5.99	0.4%	5.1%	10.5%	-7.8%	1.9%
Oil	10.22	10.64	9.94	9.40	9.89	8.33	-0.6%	-1.8%	5.2%	-15.8%	-2.0%
natural gas	0.80	1.40	2.26	2.57	2.84	2.94	23.1%	4.4%	10.6%	3.4%	13.9%
Other (1)	10.80	11.25	11.19	11.64	11.49	11.73	0.7%	1.3%	-1.3%	2.1%	0.8%
Electricity Generation in TWh	49.71	53.89	54.37	61.06	65.62	63.87	1.8%	3.9%	7.5%	-2.7%	2.5%
Nuclear	19.06	19.55	19.21	19.92	19.42	19.21	0.2%	1.2%	-2.5%	-1.1%	0.1%
Hydro & wind (including pumping)	12.33	13.36	10.86	13.47	11.78	12.92	-2.5%	7.5%	-12.5%	9.7%	0.5%
Thermal	18.32	20.98	24.30	27.67	34.41	31.74	5.8%	4.4%	24.4%	-7.8%	5.6%
Generation Capacity in GWe	11.32	11.90	13.22	14.08	14.14	14.52	3.2%	2.1%	0.5%	2.6%	2.5%
Nuclear	2.30	2.35	2.36	2.36	2.36	2.36	0.5%	0.0%	0.0%	0.0%	0.3%
Hydro & wind	2.51	2.60	2.62	2.73	2.73	2.77	0.9%	1.4%	0.0%	1.5%	1.0%
Thermal	6.51	6.95	8.24	8.99	9.05	9.39	4.8%	2.9%	0.7%	3.7%	3.7%
Average Load Factor in %	50.1	51.7	46.9	49.5	53.0	50.2	-1.3%	1.8%	7.0%	-5.2%	0.0%
Fuel Inputs for Thermal Power Generation	4.41	5.06	5.42	5.99	7.36	6.82	4.2%	3.4%	22.9%	-7.4%	4.4%
Solids	2.76	3.01	3.01	3.46	4.54	3.88	1.8%	4.7%	31.4%	-14.5%	3.5%
Oil	0.17	0.34	0.29	0.24	0.29	0.26	11.6%	-6.9%	22.1%	-11.4%	4.2%
Gas	0.41	0.63	1.02	1.23	1.38	1.48	19.9%	6.6%	12.4%	7.1%	13.7%
Geothermal	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Other	1.07	1.07	1.11	1.06	1.15	1.20	0.6%	-1.3%	7.9%	4.7%	1.1%
Average Thermal Efficiency in %	35.7	35.7	38.5	39.7	40.2	40.0	1.5%	1.0%	1.2%	-0.5%	1.2%
Non-Energy Uses	1.32	1.93	1.80	1.40	2.29	0.91	6.4%	-8.0%	63.7%	-60.3%	-3.7%
Total final Energy Demand	18.50	20.06	20.90	21.79	22.08	22.21	2.5%	1.4%	1.3%	0.6%	1.8%
Solids	1.27	1.16	1.17	1.51	1.14	1.22	-1.7%	8.8%	-24.1%	7.1%	-0.4%
Oil	7.33	8.01	8.06	7.69	7.73	7.73	1.9%	-1.6%	0.6%	0.0%	0.5%
Gas	0.61	1.00	1.51	1.62	1.75	1.72	19.6%	2.4%	8.0%	-1.4%	10.9%
Electricity	4.17	4.74	5.07	5.35	5.59	5.62	4.0%	1.8%	4.5%	0.4%	3.0%
Heat	1.87	1.91	1.91	2.12	2.18	2.13	0.5%	3.4%	2.8%	-2.4%	1.3%
Other	3.25	3.25	3.18	3.51	3.68	3.79	-0.4%	3.4%	4.7%	2.9%	1.5%
CO_2 Emissions in Mt of CO_2 (2)	46.8	50.1	51.6	55.2	58.9	56.4	2.0%	2.3%	6.7%	-4.2%	1.9%
Indicators											
Population (Million)	4.90	4.95	4.99	5.07	5.09	5.10	0.3%	0.5%	0.4%	0.2%	0.4%
GDP (bil. ECU 1990)	89.9	100.5	106.2	94.0	98.2	102.4	3.4%	-4.0%	4.4%	4.2%	1.3%
Gross Inl Cons./GDP (toe/1990 MECU)	298.2	282.2	268.1	313.6	312.9	283.2	-2.1%	5.4%	-0.2%	-9.5%	-0.5%
Gross Inl Cons./Capita (Kgoe/inhabitant)	5465.4	5730.7	5708.2	5821.4	6036.9	5685.7	0.9%	0.7%	3.7%	-5.8%	0.4%
Electricity Generated/Capita (kWh/inhabitant)	10139.7	10893.9	10903.0	12052.4	12896.8	12527.3	1.5%	3.4%	7.0%	-2.9%	2.1%
CO_2 Emissions/Capita (t of CO_2/inhabitant)	9.5	10.1	10.3	10.9	11.6	11.1	1.6%	1.7%	6.3%	-4.4%	1.5%
Import Dependency %	59.1	55.1	62.1	54.9	65.7	52.9	1.0%	-4.1%	19.7%	-19.5%	-1.1%

(1) Includes nuclear. hydro and wind. net imports of electricity. and other energy sources.
(2) Given on an indicative basis; calculated using common emission factors accross all countries in the world

FRANCE : SUMMARY ENERGY BALANCE

Mtoe	1985	1988	1990	1993	1994	1995	90/85	93/90	94/93	95/94	95/85
							Annual % Change				
Primary Production	90.29	100.60	106.81	119.80	118.28	121.80	3.4%	3.9%	-1.3%	3.0%	3.0%
Solids	10.45	8.40	7.63	6.08	5.44	5.36	-6.1%	-7.3%	-10.6%	-1.5%	-6.5%
Oil	3.36	3.44	3.49	3.33	3.35	3.02	0.8%	-1.6%	0.7%	-9.8%	-1.0%
Natural gas	4.54	2.61	2.42	2.88	2.89	2.79	-11.8%	6.0%	0.2%	-3.3%	-4.7%
Nuclear	57.27	70.18	79.13	91.32	89.85	93.99	6.7%	4.9%	-1.6%	4.6%	5.1%
Hydro & Wind	5.38	6.64	4.64	5.63	6.82	6.32	-2.9%	6.7%	21.3%	-7.4%	1.6%
Geothermal	0.08	0.12	0.12	0.12	0.13	0.13	9.2%	-0.8%	5.9%	0.0%	4.8%
Other	9.21	9.21	9.38	10.44	9.79	10.19	0.4%	3.6%	-6.2%	4.1%	1.0%
Net Imports	111.81	110.53	120.02	115.62	110.23	115.92	1.4%	-1.2%	-4.7%	5.2%	0.4%
Solids	12.55	7.81	13.00	9.30	8.07	9.01	0.7%	-10.6%	-13.2%	11.6%	-3.3%
Oil	81.08	84.52	86.55	86.29	81.36	85.43	1.3%	-0.1%	-5.7%	5.0%	0.5%
Crude oil	75.98	74.73	76.00	77.87	76.59	78.83	0.0%	0.8%	-1.6%	2.9%	0.4%
Oil products	5.10	9.79	10.55	8.42	4.77	6.60	15.7%	-7.2%	-43.4%	38.4%	2.6%
Natural gas	20.18	21.38	24.37	25.31	26.23	27.49	3.8%	1.3%	3.6%	4.8%	3.1%
Electricity	-2.01	-3.18	-3.91	-5.28	-5.43	-6.01	14.2%	10.6%	2.8%	10.6%	11.6%
Gross Inland Consumption	202.50	209.46	221.87	233.97	225.85	234.82	1.8%	1.8%	-3.5%	4.0%	1.5%
Solids	24.40	18.27	19.96	14.88	14.36	15.29	-3.9%	-9.3%	-3.5%	6.4%	-4.6%
Oil	83.90	84.47	87.67	87.90	82.50	85.24	0.9%	0.1%	-6.1%	3.3%	0.2%
natural gas	24.27	23.74	24.88	28.96	27.82	29.66	0.5%	5.2%	-3.9%	6.6%	2.0%
Other (1)	69.93	82.98	89.37	102.23	101.16	104.62	5.0%	4.6%	-1.0%	3.4%	4.1%
Electricity Generation in TWh	344.24	391.86	420.08	473.09	477.61	494.62	4.1%	4.0%	1.0%	3.6%	3.7%
Nuclear	224.06	275.47	314.02	368.12	359.92	377.16	7.0%	5.4%	-2.2%	4.8%	5.3%
Hydro & wind (including pumping)	64.25	78.77	57.91	69.61	83.08	78.01	-2.1%	6.3%	19.3%	-6.1%	2.0%
Thermal	55.92	37.62	48.14	35.36	34.62	39.45	-3.0%	-9.8%	-2.1%	14.0%	-3.4%
Generation Capacity in GWe	86.56	100.62	103.41	107.65	107.23	107.61	3.6%	1.3%	-0.4%	0.4%	2.2%
Nuclear	37.49	52.43	55.75	59.02	58.52	58.52	8.3%	1.9%	-0.9%	0.0%	4.6%
Hydro & wind	21.83	24.65	24.99	25.17	25.23	25.23	2.7%	0.2%	0.3%	0.0%	1.5%
Thermal	27.24	23.54	22.67	23.46	23.48	23.87	-3.6%	1.1%	0.1%	1.6%	-1.3%
Average Load Factor in %	45.4	44.5	46.4	50.2	50.8	52.5	0.4%	2.7%	1.3%	3.2%	1.5%
Fuel Inputs for Thermal Power Generation	13.17	9.01	11.45	7.88	7.58	8.39	-2.8%	-11.7%	-3.7%	10.6%	-4.4%
Solids	9.32	5.85	7.37	4.95	4.76	5.43	-4.6%	-12.4%	-3.9%	14.2%	-5.3%
Oil	1.61	1.03	1.84	0.63	0.56	0.61	2.8%	-30.3%	-9.7%	7.3%	-9.3%
Gas	1.53	1.41	1.42	1.41	1.36	1.37	-1.5%	-0.3%	-4.1%	0.8%	-1.1%
Geothermal	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Other	0.72	0.72	0.81	0.89	0.91	0.98	2.6%	2.9%	2.2%	8.5%	3.2%
Average Thermal Efficiency in %	36.5	35.9	36.2	38.6	39.3	40.4	-0.2%	2.2%	1.7%	3.0%	1.0%
Non-Energy Uses	11.91	12.63	13.08	14.93	15.48	16.21	1.9%	4.5%	3.7%	4.7%	3.1%
Total Final Energy Demand	129.79	131.33	135.09	143.18	137.79	141.69	0.8%	2.0%	-3.8%	2.8%	0.9%
Solids	10.89	9.36	9.05	7.19	6.49	6.90	-3.6%	-7.4%	-9.8%	6.4%	-4.5%
Oil	65.80	66.63	67.57	70.35	67.30	68.78	0.5%	1.4%	-4.3%	2.2%	0.4%
Gas	22.70	22.51	23.69	27.28	26.17	27.10	0.9%	4.8%	-4.1%	3.6%	1.8%
Electricity	21.75	24.09	25.96	28.57	28.70	29.46	3.6%	3.2%	0.4%	2.6%	3.1%
Heat	0.08	0.12	0.12	0.12	0.13	0.13	9.2%	-0.8%	5.9%	0.0%	4.8%
Other	8.57	8.62	8.69	9.67	9.01	9.33	0.3%	3.6%	-6.8%	3.5%	0.8%
CO_2 Emissions in Mt of CO_2 (2)	360.0	338.5	352.4	348.8	334.0	345.7	-0.4%	-0.4%	-4.1%	3.2%	-0.5%
Indicators											
Population (Million)	55.28	56.12	56.74	57.65	57.90	58.02	0.5%	0.5%	0.4%	0.2%	0.5%
GDP (bil. ECU 1990)	811.0	885.0	941.5	946.4	971.8	993.2	3.0%	0.2%	2.7%	2.2%	2.0%
Gross Inl Cons./GDP (toe/1990 MECU)	249.7	236.7	235.7	247.2	232.4	236.4	-1.1%	1.6%	-6.0%	1.7%	-0.5%
Gross Inl Cons./Capita (Kgoe/inhabitant)	3662.9	3732.5	3910.6	4058.1	3900.7	4047.2	1.3%	1.2%	-3.9%	3.8%	1.0%
Electricity Generated/Capita (kWh/inhabitant)	6226.7	6982.7	7404.2	8205.6	8248.9	8524.9	3.5%	3.5%	0.5%	3.3%	3.2%
CO_2 Emissions/Capita (t of CO_2/inhabitant)	6.5	6.0	6.2	6.1	5.8	6.0	-1.0%	-1.0%	-4.5%	3.0%	-0.9%
Import Dependency %	54.6	52.2	53.5	48.9	48.4	48.9	-0.4%	-2.9%	-1.1%	1.0%	-1.1%

(1) Includes nuclear. hydro and wind. net imports of electricity. and other energy sources.
(2) Given on an indicative basis; calculated using common emission factors accross all countries in the world

GERMANY : SUMMARY ENERGY BALANCE

Mtoe	1985	1988	1990	1993	1994	1995	90/85	93/90	94/93	95/94	95/85
							Annual % Change				
Primary Production	209.84	204.08	186.65	148.22	141.36	142.84	-2.3%	-7.4%	-4.6%	1.0%	-3.8%
Solids	148.79	139.02	125.49	87.73	80.91	78.80	-3.3%	-11.2%	-7.8%	-2.6%	-6.2%
Oil	4.40	5.13	4.25	3.31	3.20	3.21	-0.7%	-8.0%	-3.3%	0.4%	-3.1%
Natural gas	16.12	15.13	13.53	13.75	14.27	14.81	-3.4%	0.5%	3.7%	3.8%	-0.8%
Nuclear	34.87	38.89	37.67	37.54	36.84	39.75	1.6%	-0.1%	-1.9%	7.9%	1.3%
Hydro & Wind	1.35	1.59	1.39	1.53	1.71	1.85	0.5%	3.4%	12.0%	7.7%	3.1%
Geothermal	0.01	0.01	0.01	0.01	0.01	0.01	0.2%	7.3%	0.0%	0.0%	2.3%
Other	4.30	4.31	4.31	4.35	4.41	4.41	0.0%	0.3%	1.5%	-0.1%	0.2%
Net Imports	153.29	164.37	165.26	189.57	192.95	195.15	1.5%	4.7%	1.8%	1.1%	2.4%
Solids	0.78	2.93	3.26	10.17	10.70	10.99	33.1%	46.2%	5.2%	2.7%	30.3%
Oil	117.93	123.56	120.19	131.95	132.42	130.81	0.4%	3.2%	0.4%	-1.2%	1.0%
Crude oil	83.68	91.08	88.53	100.44	106.19	101.17	1.1%	4.3%	5.7%	-4.7%	1.9%
Oil products	34.24	32.47	31.66	31.51	26.23	29.64	-1.6%	-0.2%	-16.8%	13.0%	-1.4%
Natural gas	34.36	37.71	41.75	47.38	49.63	52.93	4.0%	4.3%	4.7%	6.7%	4.4%
Electricity	0.23	0.18	0.07	0.07	0.20	0.41	-21.6%	3.3%	168.9%	106.4%	6.1%
Gross Inland Consumption	359.39	363.97	354.70	335.55	333.92	338.59	-0.3%	-1.8%	-0.5%	1.4%	-0.6%
Solids	149.66	141.05	132.71	99.35	96.48	92.17	-2.4%	-9.2%	-2.9%	-4.5%	-4.7%
Oil	119.66	124.74	123.58	133.01	133.08	133.57	0.6%	2.5%	0.0%	0.4%	1.1%
natural gas	49.31	53.21	54.97	59.69	61.19	66.42	2.2%	2.8%	2.5%	8.6%	3.0%
Other (1)	40.76	44.97	43.44	43.50	43.18	46.42	1.3%	0.0%	-0.8%	7.5%	1.3%
Electricity Generation in TWh	520.90	547.96	548.62	525.63	527.95	536.15	1.0%	-1.4%	0.4%	1.6%	0.3%
Nuclear	138.62	156.79	152.44	153.45	151.18	154.06	1.9%	0.2%	-1.5%	1.9%	1.1%
Hydro & wind (including pumping)	17.82	21.02	18.56	21.59	23.88	25.92	0.8%	5.2%	10.7%	8.5%	3.8%
Thermal	364.46	370.15	377.61	350.59	352.89	356.16	0.7%	-2.4%	0.7%	0.9%	-0.2%
Generation Capacity in GWe	114.67	119.41	121.17	114.63	114.78	115.20	1.1%	-1.8%	0.1%	0.4%	0.0%
Nuclear	17.92	23.32	24.24	22.66	22.71	22.84	6.2%	-2.2%	0.2%	0.5%	2.5%
Hydro & wind	8.54	8.70	8.76	9.14	9.45	9.77	0.5%	1.4%	3.4%	3.5%	1.4%
Thermal	88.21	87.39	88.18	82.83	82.62	82.59	0.0%	-2.1%	-0.3%	0.0%	-0.7%
Average Load Factor in %	51.9	52.4	51.7	52.3	52.5	53.1	-0.1%	0.4%	0.3%	1.2%	0.2%
Fuel Inputs for Thermal Power Generation	90.31	90.26	90.72	85.98	84.60	83.26	0.1%	-1.8%	-1.6%	-1.6%	-0.8%
Solids	77.36	75.60	75.16	74.25	71.51	70.31	-0.6%	-0.4%	-3.7%	-1.7%	-1.0%
Oil	3.39	3.55	3.07	2.13	2.46	2.07	-2.0%	-11.4%	15.5%	-15.8%	-4.8%
Gas	8.37	9.92	11.24	7.94	8.91	9.16	6.1%	-10.9%	12.3%	2.8%	0.9%
Geothermal	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Other	1.19	1.19	1.24	1.66	1.71	1.71	0.8%	10.2%	2.9%	0.2%	3.7%
Average Thermal Efficiency in %	34.7	35.3	35.8	35.1	35.9	36.8	0.6%	-0.7%	2.3%	2.5%	0.6%
Non-Energy Uses	20.40	20.71	21.72	20.68	22.24	22.58	1.3%	-1.6%	7.6%	1.5%	1.0%
Total Final Energy Demand	237.65	240.35	230.20	222.45	216.96	219.56	-0.6%	-1.1%	-2.5%	1.2%	-0.8%
Solids	49.90	44.28	38.39	17.48	16.26	14.98	-5.1%	-23.1%	-7.0%	-7.8%	-11.3%
Oil	95.58	99.64	96.36	106.58	104.00	104.23	0.2%	3.4%	-2.4%	0.2%	0.9%
Gas	44.15	46.15	45.76	49.77	47.74	50.72	0.7%	2.8%	-4.1%	6.2%	1.4%
Electricity	37.19	39.33	39.13	37.91	38.24	38.91	1.0%	-1.0%	0.9%	1.7%	0.5%
Heat	7.71	7.83	7.49	8.01	8.01	8.01	-0.6%	2.3%	0.0%	0.0%	0.4%
Other	3.12	3.12	3.07	2.69	2.71	2.70	-0.3%	-4.3%	0.6%	-0.2%	-1.4%
CO_2 Emissions in Mt of CO_2 (2)	1007.6	996.6	956.1	877.8	854.0	849.0	-1.0%	-2.8%	-2.7%	-0.6%	-1.7%
Indicators											
Population (Million)	77.67	78.11	79.36	81.18	81.42	81.54	0.4%	0.8%	0.3%	0.1%	0.5%
GDP (bil. ECU 1990)	1163.4	1232.6	1297.4	1352.6	1391.3	1418.1	2.2%	1.4%	2.9%	1.9%	2.0%
Gross Inl Cons./GDP (toe/1990 MECU)	308.9	295.3	273.4	248.1	240.0	238.8	-2.4%	-3.2%	-3.3%	-0.5%	-2.5%
Gross Inl Cons./Capita (Kgoe/inhabitant)	4627.1	4659.9	4469.3	4133.5	4101.1	4152.5	-0.7%	-2.6%	-0.8%	1.3%	-1.1%
Electricity Generated/Capita (kWh/inhabitant)	6706.5	7015.5	6912.6	6474.9	6484.2	6575.4	0.6%	-2.2%	0.1%	1.4%	-0.2%
CO_2 Emissions/Capita (t of CO_2/inhabitant)	13.0	12.8	12.0	10.8	10.5	10.4	-1.5%	-3.5%	-3.0%	-0.7%	-2.2%
Import Dependency %	42.2	44.8	46.3	56.1	57.4	57.3	1.8%	6.7%	2.3%	-0.2%	3.1%

(1) Includes nuclear, hydro and wind, net imports of electricity, and other energy sources.
(2) Given on an indicative basis; calculated using common emission factors accross all countries in the world

GREECE : SUMMARY ENERGY BALANCE

Mtoe	1985	1988	1990	1993	1994	1995	90/85	93/90	94/93	95/94	95/85
							Annual % Change				
Primary Production	7.89	9.17	9.67	9.31	9.67	10.22	4.2%	-1.2%	3.8%	5.7%	2.6%
Solids	4.84	6.29	7.08	6.96	7.36	7.91	7.9%	-0.5%	5.7%	7.5%	5.0%
Oil	1.32	1.12	0.83	0.56	0.53	0.46	-8.8%	-12.2%	-5.2%	-14.1%	-10.0%
Natural gas	0.07	0.13	0.14	0.09	0.05	0.04	14.0%	-12.3%	-48.8%	-7.8%	-4.8%
Nuclear	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Hydro & Wind	0.24	0.20	0.15	0.20	0.23	0.31	-8.8%	9.6%	13.2%	35.2%	2.4%
Geothermal	0.00	0.00	0.00	0.00	0.00	0.00	14.9%	6.3%	33.5%	-18.5%	10.1%
Other	1.41	1.43	1.47	1.49	1.50	1.50	0.8%	0.5%	0.2%	0.4%	0.6%
Net Imports	11.81	13.62	15.37	17.24	15.80	18.21	5.4%	3.9%	-8.3%	15.2%	4.4%
Solids	1.23	0.86	0.99	0.88	0.98	0.92	-4.3%	-3.7%	11.2%	-5.8%	-2.8%
Oil	10.52	12.74	14.32	16.28	14.78	17.21	6.4%	4.4%	-9.2%	16.4%	5.1%
Crude oil	10.54	14.39	14.71	13.56	14.45	16.95	6.9%	-2.7%	6.6%	17.3%	4.9%
Oil products	-0.02	-1.65	-0.39	2.72	0.33	0.26	83.4%	-	-87.8%	-21.8%	-
Natural gas	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Electricity	0.06	0.03	0.06	0.07	0.03	0.07	-0.7%	4.4%	-52.8%	108.6%	0.8%
Gross Inland Consumption	18.89	20.71	22.77	23.12	24.13	24.66	3.8%	0.5%	4.4%	2.2%	2.7%
Solids	6.08	7.42	8.09	7.96	8.48	8.78	5.9%	-0.5%	6.4%	3.6%	3.7%
Oil	11.01	11.50	12.85	13.30	13.85	13.95	3.1%	1.2%	4.1%	0.8%	2.4%
natural gas	0.07	0.13	0.14	0.09	0.05	0.04	14.0%	-12.3%	-48.8%	-7.8%	-4.8%
Other (1)	1.72	1.66	1.69	1.77	1.76	1.88	-0.4%	1.5%	-0.3%	6.8%	0.9%
Electricity Generation in TWh	27.74	33.40	34.99	38.39	40.62	41.54	4.8%	3.1%	5.8%	2.3%	4.1%
Nuclear	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Hydro & wind (including pumping)	2.80	2.60	2.00	2.59	2.88	3.82	-6.6%	9.0%	11.3%	32.5%	3.1%
Thermal	24.93	30.79	33.00	35.80	37.74	37.73	5.8%	2.8%	5.4%	0.0%	4.2%
Generation Capacity in GWe	7.13	8.12	8.51	8.79	8.92	8.94	3.6%	1.1%	1.5%	0.2%	2.3%
Nuclear	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Hydro & wind	2.03	2.15	2.41	2.55	2.55	2.55	3.5%	1.8%	0.1%	0.0%	2.3%
Thermal	5.10	5.97	6.10	6.24	6.37	6.39	3.6%	0.8%	2.1%	0.3%	2.3%
Average Load Factor in %	44.4	47.0	46.9	49.9	52.0	53.0	1.1%	2.0%	4.3%	2.1%	1.8%
Fuel Inputs for Thermal Power Generation	6.44	7.72	8.72	8.97	9.48	9.88	6.2%	1.0%	5.6%	4.2%	4.4%
Solids	4.81	6.23	6.89	6.96	7.48	7.79	7.5%	0.3%	7.4%	4.2%	4.9%
Oil	1.63	1.47	1.80	2.00	1.99	2.08	1.9%	3.6%	-0.6%	4.5%	2.4%
Gas	0.00	0.02	0.03	0.01	0.01	0.01	-	-22.0%	0.3%	-6.1%	-
Geothermal	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Other	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Average Thermal Efficiency in %	33.3	34.3	32.5	34.3	34.2	32.8	-0.4%	1.8%	-0.2%	-4.1%	-0.1%
Non-Energy Uses	0.54	0.52	0.64	0.47	0.36	0.44	3.2%	-9.3%	-24.7%	23.5%	-2.1%
Total Final Energy Demand	13.05	14.25	15.06	15.73	15.92	16.34	2.9%	1.5%	1.2%	2.6%	2.3%
Solids	1.28	1.20	1.07	1.10	1.09	1.08	-3.5%	1.0%	-0.8%	-0.8%	-1.6%
Oil	8.29	9.29	10.05	10.43	10.49	10.80	3.9%	1.3%	0.6%	2.9%	2.7%
Gas	0.01	0.01	0.01	0.01	0.01	0.01	11.2%	-0.1%	-9.5%	7.7%	5.2%
Electricity	2.05	2.31	2.45	2.68	2.81	2.93	3.6%	3.1%	4.9%	4.2%	3.6%
Heat	0.00	0.00	0.00	0.00	0.00	0.00	14.9%	6.3%	33.5%	-18.5%	10.1%
Other	1.41	1.43	1.47	1.50	1.50	1.50	0.8%	0.5%	0.2%	0.3%	0.6%
CO_2 Emissions in Mt of CO_2 (2)	56.7	65.5	70.9	73.1	75.4	77.9	4.6%	1.0%	3.2%	3.3%	3.2%
Indicators											
Population (Million)	9.93	10.04	10.16	10.38	10.43	10.44	0.5%	0.7%	0.5%	0.2%	0.5%
GDP (bil. ECU 1990)	51.5	62.8	65.3	67.7	69.2	70.6	4.8%	1.2%	2.2%	2.0%	3.2%
Gross Inl Cons./GDP (toe/1990 MECU)	366.7	329.7	348.9	341.4	348.7	349.2	-1.0%	-0.7%	2.1%	0.2%	-0.5%
Gross Inl Cons./Capita (Kgoe/inhabitant)	1901.2	2063.8	2240.5	2227.7	2314.3	2361.2	3.3%	-0.2%	3.9%	2.0%	2.2%
Electricity Generated/Capita (kWh/inhabitant)	2791.8	3327.6	3444.2	3698.6	3895.5	3978.2	4.3%	2.4%	5.3%	2.1%	3.6%
CO_2 Emissions/Capita (t of CO_2/inhabitant)	5.7	6.5	7.0	7.0	7.2	7.5	4.1%	0.3%	2.7%	3.2%	2.7%
Import Dependency %	59.1	59.8	60.8	65.7	57.6	64.6	0.6%	2.6%	-12.3%	12.1%	0.9%

(1) Includes nuclear. hydro and wind. net imports of electricity. and other energy sources.
(2) Given on an indicative basis; calculated using common emission factors accross all countries in the world

IRELAND : SUMMARY ENERGY BALANCE

Mtoe	1985	1988	1990	1993	1994	1995	90/85	93/90	94/93	95/94	95/85
							Annual % Change				
Primary Production	2.86	3.31	3.50	3.47	3.63	3.61	4.1%	-0.2%	4.6%	-0.5%	2.3%
Solids	0.76	1.53	1.43	1.15	1.19	1.19	13.4%	-7.0%	3.3%	-0.1%	4.5%
Oil	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Natural gas	1.94	1.63	1.89	2.16	2.19	2.19	-0.5%	4.4%	1.7%	0.0%	1.2%
Nuclear	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Hydro & Wind	0.07	0.07	0.06	0.07	0.08	0.06	-3.4%	3.8%	20.3%	-22.3%	-1.3%
Geothermal	0.00	0.00	0.00	0.00	0.00	0.00	-	-	0.0%	0.0%	-
Other	0.08	0.08	0.11	0.09	0.16	0.16	5.2%	-4.6%	73.9%	-0.8%	6.8%
Net Imports	5.32	6.26	7.08	6.81	7.05	7.05	5.9%	-1.3%	3.5%	0.0%	2.8%
Solids	1.26	2.29	2.08	1.87	1.54	1.54	10.5%	-3.4%	-17.8%	0.0%	2.0%
Oil	4.06	3.97	5.01	4.93	5.51	5.51	4.3%	-0.5%	11.7%	0.0%	3.1%
Crude oil	1.25	1.38	2.02	1.90	2.33	2.33	10.0%	-2.0%	22.7%	0.0%	6.4%
Oil products	2.81	2.59	2.99	3.03	3.18	3.18	1.2%	0.5%	4.8%	0.0%	1.2%
Natural gas	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-44.2%	0.0%	-
Electricity	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Gross Inland Consumption	8.83	9.52	10.19	10.27	10.97	10.95	2.9%	0.2%	6.8%	-0.2%	2.2%
Solids	2.58	3.69	3.53	3.13	2.95	2.95	6.5%	-4.0%	-5.6%	0.0%	1.3%
Oil	4.15	4.05	4.60	4.82	5.58	5.58	2.1%	1.6%	15.6%	0.0%	3.0%
Natural gas	1.95	1.63	1.89	2.16	2.19	2.19	-0.5%	4.4%	1.7%	0.0%	1.2%
Other (1)	0.15	0.16	0.17	0.16	0.24	0.22	1.6%	-1.4%	51.5%	-8.4%	3.7%
Electricity Generation in TWh	12.09	13.23	14.51	16.39	17.10	17.86	3.7%	4.1%	4.3%	4.4%	4.0%
Nuclear	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Hydro & wind (including pumping)	1.18	1.20	0.98	1.03	1.22	0.98	-3.6%	1.5%	18.4%	-19.1%	-1.8%
Thermal	10.91	12.02	13.53	15.37	15.89	16.87	4.4%	4.3%	3.4%	6.2%	4.5%
Generation Capacity in GWe	3.19	3.81	3.82	3.93	3.91	4.39	3.7%	1.0%	-0.6%	12.3%	3.3%
Nuclear	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Hydro & wind	0.51	0.51	0.52	0.52	0.52	0.52	0.4%	0.1%	0.4%	-0.2%	0.3%
Thermal	2.68	3.30	3.30	3.41	3.39	3.87	4.2%	1.1%	-0.7%	14.3%	3.7%
Average Load Factor in %	43.2	39.6	43.4	47.6	49.9	46.4	0.1%	3.1%	4.9%	-7.0%	0.7%
Fuel Inputs for Thermal Power Generation	2.63	2.82	2.95	3.51	3.63	3.63	2.4%	5.9%	3.4%	0.0%	3.3%
Solids	0.82	1.83	1.78	1.94	1.98	1.98	16.8%	3.0%	1.9%	0.0%	9.2%
Oil	0.54	0.25	0.34	0.56	0.64	0.64	-8.8%	18.2%	15.1%	0.0%	1.8%
Gas	1.27	0.75	0.84	1.01	1.01	1.01	-7.9%	6.2%	-0.2%	0.0%	-2.3%
Geothermal	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Other	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Average Thermal Efficiency in %	35.7	36.6	39.4	37.7	37.7	40.0	2.0%	-1.5%	0.0%	6.2%	1.1%
Non-Energy Uses	0.53	0.58	0.61	0.61	0.68	0.68	3.1%	-0.3%	10.7%	0.0%	2.5%
Total Final Energy Demand	6.22	6.71	7.22	7.11	7.63	7.69	3.0%	-0.5%	7.2%	0.8%	2.1%
Solids	1.77	1.87	1.68	1.12	0.96	0.96	-1.0%	-12.5%	-14.9%	0.0%	-6.0%
Oil	3.24	3.43	3.84	4.02	4.58	4.58	3.4%	1.6%	13.9%	0.0%	3.5%
Gas	0.29	0.41	0.57	0.71	0.71	0.71	14.9%	7.3%	0.0%	0.0%	9.5%
Electricity	0.84	0.92	1.02	1.17	1.22	1.28	4.0%	4.5%	4.4%	4.9%	4.3%
Heat	0.00	0.00	0.00	0.00	0.00	0.00	-	-	0.0%	0.0%	-
Other	0.08	0.08	0.11	0.09	0.16	0.16	5.2%	-5.0%	75.4%	-0.9%	6.7%
CO_2 Emissions in Mt of CO_2 (2)	26.1	29.2	30.4	30.8	32.2	32.2	3.1%	0.4%	4.7%	0.0%	2.1%
Indicators											
Population (Million)	3.54	3.53	3.51	3.56	3.57	3.58	-0.2%	0.5%	0.2%	0.2%	0.1%
GDP (bil. ECU 1990)	28.7	31.0	35.9	39.9	42.9	47.5	4.6%	3.6%	7.3%	10.7%	5.2%
Gross Inl Cons./GDP (toe/1990 MECU)	308.1	307.4	283.9	257.1	255.8	230.6	-1.6%	-3.3%	-0.5%	-9.9%	-2.9%
Gross Inl Cons./Capita (Kgoe/inhabitant)	2494.6	2697.6	2907.4	2881.7	3071.7	3058.1	3.1%	-0.3%	6.6%	-0.4%	2.1%
Electricity Generated/Capita (kWh/inhabitant)	3414.1	3745.9	4139.5	4600.5	4789.6	4988.2	3.9%	3.6%	4.1%	4.1%	3.9%
CO_2 Emissions/Capita (t of CO_2/inhabitant)	7.4	8.3	8.7	8.6	9.0	9.0	3.3%	-0.2%	4.5%	-0.2%	2.0%
Import Dependency %	60.1	65.6	69.4	66.0	64.0	64.2	2.9%	-1.7%	-2.9%	0.2%	0.7%

(1) Includes nuclear, hydro and wind, net imports of electricity, and other energy sources.
(2) Given on an indicative basis; calculated using common emission factors accross all countries in the world

ITALY : SUMMARY ENERGY BALANCE

Mtoe	1985	1988	1990	1993	1994	1995	90/85	93/90	94/93	95/94	95/85
							Annual % Change				
Primary Production	24.94	27.43	27.41	30.11	31.34	30.77	1.9%	3.2%	4.1%	-1.8%	2.1%
Solids	0.33	0.29	0.34	0.17	0.07	0.10	0.3%	-19.8%	-61.2%	42.3%	-11.7%
Oil	2.41	4.86	4.70	4.66	4.93	5.29	14.3%	-0.3%	5.6%	7.4%	8.2%
Natural gas	11.54	13.50	14.03	15.68	16.55	16.35	4.0%	3.8%	5.5%	-1.2%	3.5%
Nuclear	1.98	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Hydro & Wind	3.53	3.50	2.72	3.56	3.84	3.25	-5.1%	9.4%	7.8%	-15.4%	-0.8%
Geothermal	1.70	1.84	2.07	2.46	2.31	2.32	4.1%	5.9%	-6.2%	0.5%	3.2%
Other	3.44	3.44	3.55	3.57	3.65	3.46	0.6%	0.2%	2.3%	-5.1%	0.1%
Net Imports	114.41	120.25	131.96	127.19	125.82	134.69	2.9%	-1.2%	-1.1%	7.0%	1.6%
Solids	14.77	13.24	13.79	9.59	10.85	12.99	-1.4%	-11.4%	13.1%	19.7%	-1.3%
Oil	81.57	84.81	89.88	87.46	87.53	89.95	2.0%	-0.9%	0.1%	2.8%	1.0%
Crude oil	75.20	78.25	84.28	86.91	85.45	82.83	2.3%	1.0%	-1.7%	-3.1%	1.0%
Oil products	6.36	6.56	5.60	0.54	2.09	7.13	-2.5%	-54.1%	284.2%	241.4%	1.1%
Natural gas	16.04	19.51	25.31	26.75	24.20	28.53	9.6%	1.9%	-9.5%	17.9%	5.9%
Electricity	2.04	2.69	2.98	3.39	3.23	3.22	7.9%	4.4%	-4.6%	-0.5%	4.7%
Gross Inland Consumption	136.05	147.03	154.79	156.24	154.11	162.66	2.6%	0.3%	-1.4%	5.5%	1.8%
Solids	15.16	13.92	14.64	10.45	11.39	12.33	-0.7%	-10.6%	9.1%	8.2%	-2.0%
Oil	81.01	88.08	89.81	90.86	89.15	93.43	2.1%	0.4%	-1.9%	4.8%	1.4%
Natural gas	27.20	33.57	39.02	41.95	40.54	44.65	7.5%	2.4%	-3.4%	10.2%	5.1%
Other (1)	12.69	11.47	11.32	12.98	13.03	12.25	-2.3%	4.7%	0.4%	-6.0%	-0.4%
Electricity Generation in TWh	185.71	203.52	216.85	222.75	231.77	241.44	3.1%	0.9%	4.0%	4.2%	2.7%
Nuclear	7.02	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Hydro & wind (including pumping)	44.59	43.54	35.07	44.48	47.73	41.91	-4.7%	8.2%	7.3%	-12.2%	-0.6%
Thermal	134.10	159.99	181.78	178.27	184.04	199.53	6.3%	-0.6%	3.2%	8.4%	4.1%
Generation Capacity in GWe	55.51	55.62	56.56	63.49	64.14	65.89	0.4%	3.9%	1.0%	2.7%	1.7%
Nuclear	1.15	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Hydro & wind	17.82	17.94	18.77	19.67	19.75	19.85	1.0%	1.6%	0.4%	0.5%	1.1%
Thermal	36.54	37.68	37.79	43.82	44.40	46.04	0.7%	5.1%	1.3%	3.7%	2.3%
Average Load Factor in %	38.2	41.8	43.8	40.1	41.2	41.8	2.8%	-2.9%	3.0%	1.4%	0.9%
Fuel Inputs for Thermal Power Generation	30.07	35.38	39.77	38.68	39.36	42.86	5.8%	-0.9%	1.8%	8.9%	3.6%
Solids	5.94	6.68	7.07	3.65	4.37	5.34	3.6%	-19.8%	19.7%	22.3%	-1.1%
Oil	16.20	19.14	21.53	23.50	23.77	25.01	5.8%	3.0%	1.2%	5.2%	4.4%
Gas	5.92	7.41	8.90	8.89	8.72	10.16	8.5%	0.0%	-2.0%	16.5%	5.6%
Geothermal	1.70	1.84	1.87	2.25	2.10	2.11	2.0%	6.3%	-6.8%	0.5%	2.2%
Other	0.31	0.31	0.40	0.39	0.41	0.25	5.2%	-0.3%	3.2%	-39.3%	-2.2%
Average Thermal Efficiency in %	38.4	38.9	39.3	39.6	40.2	40.0	0.5%	0.3%	1.5%	-0.4%	0.4%
Non-Energy Uses	8.41	10.14	9.84	12.38	12.91	13.88	3.2%	8.0%	4.2%	7.5%	5.1%
Total Final Energy Demand	96.51	104.99	110.62	113.78	112.02	116.84	2.8%	0.9%	-1.5%	4.3%	1.9%
Solids	5.12	3.86	4.28	4.20	4.31	4.14	-3.6%	-0.6%	2.5%	-3.9%	-2.1%
Oil	52.58	55.37	54.69	53.93	52.36	54.12	0.8%	-0.5%	-2.9%	3.4%	0.3%
Gas	20.74	25.59	29.68	32.81	31.84	34.51	7.4%	3.4%	-2.9%	8.4%	5.2%
Electricity	14.93	17.03	18.41	19.24	19.86	20.44	4.3%	1.5%	3.2%	2.9%	3.2%
Heat	0.00	0.00	0.20	0.21	0.21	0.21	-	2.0%	0.0%	0.0%	-
Other	3.13	3.13	3.35	3.39	3.45	3.42	1.4%	0.3%	1.8%	-0.8%	0.9%
CO_2 Emissions in Mt of CO_2 (2)	337.6	367.4	388.6	384.1	380.4	403.2	2.9%	-0.4%	-1.0%	6.0%	1.8%
Indicators											
Population (Million)	56.59	56.63	56.72	57.05	57.20	57.27	0.0%	0.2%	0.3%	0.1%	0.1%
GDP (bil. ECU 1990)	744.0	819.3	861.2	865.8	884.2	910.4	3.0%	0.2%	2.1%	3.0%	2.0%
Gross Inl Cons./GDP (toe/1990 MECU)	182.9	179.5	179.7	180.5	174.3	178.7	-0.3%	0.1%	-3.4%	2.5%	-0.2%
Gross Inl Cons./Capita (Kgoe/inhabitant)	2404.0	2596.4	2729.1	2738.6	2694.1	2840.2	2.6%	0.1%	-1.6%	5.4%	1.7%
Electricity Generated/Capita (kWh/inhabitant)	3281.4	3594.0	3823.3	3904.5	4051.5	4215.9	3.1%	0.7%	3.8%	4.1%	2.5%
CO_2 Emissions/Capita (t of CO_2/inhabitant)	6.0	6.5	6.9	6.7	6.6	7.0	2.8%	-0.6%	-1.2%	5.9%	1.7%
Import Dependency %	82.0	80.1	83.8	80.2	80.4	81.6	0.4%	-1.5%	0.3%	1.5%	-0.1%

(1) Includes nuclear. hydro and wind. net imports of electricity. and other energy sources.
(2) Given on an indicative basis; calculated using common emission factors accross all countries in the world

LUXEMBOURG : SUMMARY ENERGY BALANCE

Mtoe	1985	1988	1990	1993	1994	1995	90/85	93/90	94/93	95/94	95/85
							Annual % Change				
Primary Production	0.05	0.05	0.05	0.05	0.05	0.05	-1.2%	0.1%	8.3%	-7.9%	-0.6%
Solids	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Oil	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Natural gas	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Nuclear	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Hydro & Wind	0.01	0.01	0.01	0.01	0.01	0.01	-2.2%	-0.5%	76.1%	-28.8%	1.0%
Geothermal	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Other	0.04	0.04	0.04	0.04	0.04	0.04	-1.0%	0.1%	-1.2%	-2.7%	-0.9%
Net Imports	3.10	3.09	3.52	3.78	3.71	3.26	2.5%	2.4%	-1.9%	-12.1%	0.5%
Solids	1.42	1.10	1.13	1.04	0.90	0.51	-4.5%	-2.7%	-13.0%	-43.2%	-9.7%
Oil	1.07	1.32	1.62	1.90	1.93	1.76	8.6%	5.5%	1.3%	-9.0%	5.0%
Crude oil	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Oil products	1.07	1.32	1.62	1.90	1.93	1.76	8.6%	5.5%	1.3%	-9.0%	5.0%
Natural gas	0.30	0.35	0.43	0.48	0.49	0.56	7.2%	4.0%	0.9%	14.1%	6.3%
Electricity	0.30	0.32	0.34	0.35	0.38	0.43	2.0%	1.2%	10.0%	12.3%	3.5%
Gross Inland Consumption	3.13	3.16	3.55	3.84	3.75	3.34	2.5%	2.7%	-2.3%	-11.2%	0.6%
Solids	1.42	1.10	1.13	1.04	0.90	0.51	-4.5%	-2.7%	-13.0%	-43.2%	-9.7%
Oil	1.06	1.34	1.61	1.92	1.93	1.79	8.8%	6.1%	0.3%	-7.3%	5.4%
Natural gas	0.30	0.35	0.43	0.48	0.49	0.56	7.2%	4.0%	0.9%	14.1%	6.3%
Other (1)	0.35	0.37	0.38	0.40	0.43	0.48	1.6%	1.1%	9.8%	9.9%	3.0%
Electricity Generation in TWh	0.94	1.33	1.38	1.07	1.19	1.24	8.0%	-8.2%	11.5%	4.3%	2.8%
Nuclear	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Hydro & wind (including pumping)	0.50	0.81	0.82	0.46	0.69	0.83	10.4%	-17.3%	48.6%	20.2%	5.2%
Thermal	0.44	0.52	0.56	0.60	0.50	0.41	5.0%	2.6%	-16.9%	-17.5%	-0.6%
Generation Capacity in GWe	1.24	1.24	1.24	1.24	1.24	1.26	0.0%	-0.1%	0.0%	1.5%	0.1%
Nuclear	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Hydro & wind	1.13	1.13	1.13	1.13	1.13	1.14	0.0%	0.1%	0.0%	0.7%	0.1%
Thermal	0.11	0.11	0.11	0.11	0.11	0.12	0.0%	-1.2%	0.0%	10.4%	0.6%
Average Load Factor in %	8.6	12.3	12.7	9.8	11.0	11.3	8.0%	-8.1%	11.5%	2.7%	2.7%
Fuel Inputs for Thermal Power Generation	0.15	0.17	0.20	0.20	0.18	0.14	5.4%	1.3%	-13.5%	-22.9%	-1.0%
Solids	0.01	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Oil	0.00	0.02	0.01	0.02	0.02	0.00	7.0%	37.0%	0.0%	-	-
Gas	0.10	0.13	0.16	0.16	0.13	0.11	9.3%	-0.6%	-16.8%	-16.4%	0.7%
Geothermal	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Other	0.03	0.03	0.03	0.03	0.03	0.02	-1.5%	0.2%	-2.1%	-4.3%	-1.3%
Average Thermal Efficiency in %	25.2	25.9	24.6	25.6	24.6	26.3	-0.4%	1.3%	-3.9%	6.9%	0.4%
Non-Energy Uses	0.02	0.02	0.02	0.01	0.01	0.02	2.9%	-16.7%	-7.0%	89.6%	1.6%
Total Final Energy Demand	2.97	2.99	3.32	3.61	3.56	3.15	2.2%	2.9%	-1.5%	-11.3%	0.6%
Solids	0.99	0.74	0.75	0.70	0.63	0.37	-5.4%	-2.4%	-10.2%	-41.2%	-9.4%
Oil	1.02	1.30	1.58	1.89	1.91	1.75	9.0%	6.2%	0.9%	-8.2%	5.5%
Gas	0.61	0.60	0.62	0.63	0.60	0.59	0.2%	0.4%	-4.1%	-2.6%	-0.4%
Electricity	0.33	0.34	0.35	0.38	0.40	0.43	1.7%	2.1%	6.4%	6.8%	2.8%
Heat	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Other	0.02	0.02	0.02	0.02	0.02	0.02	-0.2%	0.0%	0.0%	0.0%	-0.1%
CO_2 Emissions in Mt of CO_2 (2)	10.0	9.6	10.6	11.3	10.7	8.8	1.2%	1.9%	-4.7%	-18.4%	-1.3%
Indicators											
Population (Million)	0.37	0.37	0.38	0.40	0.40	0.41	0.8%	1.4%	1.4%	0.7%	1.0%
GDP (bil. ECU 1990)	6.7	7.7	8.1	9.2	9.6	9.9	3.9%	4.1%	3.8%	3.2%	3.9%
Gross Inl Cons./GDP (toe/1990 MECU)	465.3	411.0	435.8	417.8	393.1	338.4	-1.3%	-1.4%	-5.9%	-13.9%	-3.1%
Gross Inl Cons./Capita (Kgoe/inhabitant)	8548.5	8466.8	9300.5	9653.6	9300.2	8202.6	1.7%	1.2%	-3.7%	-11.8%	-0.4%
Electricity Generated/Capita (kWh/inhabitant)	2560.2	3572.9	3610.7	2680.1	2946.8	3051.6	7.1%	-9.5%	10.0%	3.6%	1.8%
CO_2 Emissions/Capita (t of CO_2/inhabitant)	27.3	25.8	27.8	28.3	26.6	21.5	0.4%	0.5%	-6.1%	-19.0%	-2.4%
Import Dependency %	99.0	97.8	99.0	98.3	98.7	97.7	0.0%	-0.2%	0.4%	-1.0%	-0.1%

(1) Includes nuclear. hydro and wind. net imports of electricity. and other energy sources.
(2) Given on an indicative basis; calculated using common emission factors accross all countries in the world

NETHERLANDS : SUMMARY ENERGY BALANCE

Mtoe	1985	1988	1990	1993	1994	1995	90/85	93/90	94/93	95/94	95/85
							Annual % Change				
Primary Production	65.47	55.58	60.39	68.35	66.25	66.02	-1.6%	4.2%	-3.1%	-0.3%	0.1%
Solids	0.07	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Oil	4.09	4.25	4.03	3.31	4.38	3.52	-0.3%	-6.3%	32.2%	-19.7%	-1.5%
Natural gas	59.52	49.59	54.61	63.12	59.88	60.46	-1.7%	4.9%	-5.1%	1.0%	0.2%
Nuclear	0.98	0.92	0.88	0.99	1.02	1.04	-2.1%	3.9%	3.7%	1.3%	0.6%
Hydro & Wind	0.00	0.00	0.01	0.02	0.03	0.03	114.7%	25.4%	37.0%	10.0%	63.4%
Geothermal	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Other	0.81	0.81	0.86	0.91	0.94	0.97	1.1%	1.9%	3.2%	3.9%	1.8%
Net Imports	4.02	20.31	17.35	13.34	17.17	16.33	34.0%	-8.4%	28.7%	-4.9%	15.1%
Solids	6.60	8.21	9.48	8.55	8.91	8.89	7.5%	-3.4%	4.2%	-0.3%	3.0%
Oil	24.19	30.72	30.88	32.74	33.85	32.83	5.0%	2.0%	3.4%	-3.0%	3.1%
Crude oil	38.30	50.79	47.96	54.93	55.60	59.27	4.6%	4.6%	1.2%	6.6%	4.5%
Oil products	-14.12	-20.07	-17.08	-22.19	-21.75	-26.44	3.9%	9.1%	-2.0%	21.6%	6.5%
Natural gas	-27.21	-19.12	-23.80	-28.84	-26.51	-26.37	-2.6%	6.6%	-8.1%	-0.5%	-0.3%
Electricity	0.44	0.50	0.79	0.89	0.91	0.98	12.4%	3.8%	2.5%	7.9%	8.3%
Gross Inland Consumption	61.54	64.85	66.88	70.86	70.70	73.37	1.7%	1.9%	-0.2%	3.8%	1.8%
Solids	6.59	8.18	9.12	8.76	8.85	9.06	6.7%	-1.3%	1.0%	2.5%	3.2%
Oil	20.40	23.98	24.41	25.03	25.59	27.20	3.7%	0.8%	2.2%	6.3%	2.9%
Natural gas	32.32	30.45	30.81	34.27	33.36	34.09	-1.0%	3.6%	-2.6%	2.2%	0.5%
Other (1)	2.23	2.24	2.54	2.80	2.90	3.02	2.6%	3.3%	3.5%	4.3%	3.1%
Electricity Generation in TWh	62.92	69.60	71.82	76.98	79.66	81.06	2.7%	2.3%	3.5%	1.7%	2.6%
Nuclear	3.90	3.67	3.50	3.95	3.97	4.02	-2.1%	4.1%	0.5%	1.3%	0.3%
Hydro & wind (including pumping)	0.00	0.02	0.14	0.27	0.37	0.41	114.7%	25.4%	37.0%	10.0%	63.4%
Thermal	59.02	65.91	68.18	72.76	75.33	76.63	2.9%	2.2%	3.5%	1.7%	2.6%
Generation Capacity in GWe	17.05	17.49	17.56	17.60	18.35	18.26	0.6%	0.1%	4.3%	-0.5%	0.7%
Nuclear	0.51	0.51	0.51	0.51	0.51	0.51	0.0%	-0.3%	0.0%	0.0%	-0.1%
Hydro & wind	0.00	0.02	0.09	0.17	0.19	0.22	#DIV/0!	24.1%	12.8%	15.5%	#DIV/0!
Thermal	16.54	16.96	16.96	16.92	17.65	17.53	0.5%	-0.1%	4.3%	-0.7%	0.6%
Average Load Factor in %	42.1	45.4	46.7	49.9	49.6	50.7	2.1%	2.2%	-0.7%	2.3%	1.9%
Fuel Inputs for Thermal Power Generation	12.85	14.08	14.53	15.92	16.03	16.78	2.5%	3.1%	0.7%	4.7%	2.7%
Solids	3.17	4.98	5.70	5.37	5.40	5.90	12.5%	-2.0%	0.5%	9.3%	6.4%
Oil	0.69	0.78	0.70	0.70	0.75	0.82	0.4%	-0.1%	7.6%	9.1%	1.8%
Gas	8.56	7.89	7.65	9.32	9.32	9.47	-2.2%	6.8%	0.0%	1.5%	1.0%
Geothermal	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Other	0.43	0.43	0.48	0.53	0.56	0.60	2.3%	3.0%	5.5%	7.1%	3.3%
Average Thermal Efficiency in %	39.5	40.3	40.3	39.3	40.4	39.3	0.4%	-0.9%	2.8%	-2.8%	-0.1%
Non-Energy Uses	7.65	8.76	9.26	8.06	8.67	8.06	3.9%	-4.5%	7.5%	-7.0%	0.5%
Total Final Energy Demand	42.58	42.15	43.08	46.53	45.83	48.74	0.2%	2.6%	-1.5%	6.3%	1.4%
Solids	2.03	1.71	1.68	1.51	1.17	1.40	-3.7%	-3.5%	-22.0%	19.2%	-3.6%
Oil	12.07	13.16	13.19	14.38	14.51	15.93	1.8%	2.9%	0.9%	9.8%	2.8%
Gas	22.57	20.74	21.24	23.12	21.78	22.52	-1.2%	2.9%	-5.8%	3.4%	0.0%
Electricity	5.28	5.88	6.32	6.77	6.99	7.14	3.7%	2.3%	3.3%	2.2%	3.1%
Heat	0.25	0.27	0.27	0.38	1.00	1.38	1.3%	12.3%	162.0%	37.6%	18.4%
Other	0.38	0.38	0.37	0.38	0.38	0.38	-0.4%	0.4%	0.1%	-0.7%	-0.1%
CO_2 Emissions in Mt of CO_2 (2)	141.2	148.6	153.0	164.2	160.5	170.7	1.6%	2.4%	-2.2%	6.3%	1.9%
Indicators											
Population (Million)	14.49	14.76	14.95	15.29	15.38	15.42	0.6%	0.7%	0.6%	0.3%	0.6%
GDP (bil. ECU 1990)	191.7	205.0	223.4	234.9	242.8	248.0	3.1%	1.7%	3.4%	2.1%	2.6%
Gross Inl Cons./GDP (toe/1990 MECU)	321.0	316.4	299.4	301.7	291.1	295.8	-1.4%	0.3%	-3.5%	1.6%	-0.8%
Gross Inl Cons./Capita (Kgoe/inhabitant)	4246.8	4393.9	4473.3	4634.6	4596.0	4757.4	1.0%	1.2%	-0.8%	3.5%	1.1%
Electricity Generated/Capita (kWh/inhabitant)	4342.1	4715.3	4805.7	5034.4	5178.7	5255.6	2.0%	1.6%	2.9%	1.5%	1.9%
CO_2 Emissions/Capita (t of CO_2/inhabitant)	9.7	10.1	10.2	10.7	10.4	11.1	1.0%	1.6%	-2.8%	6.1%	1.3%
Import Dependency %	5.7	26.9	22.3	16.2	21.0	19.3	31.3%	-10.2%	29.7%	-8.0%	12.9%

(1) Includes nuclear. hydro and wind. net imports of electricity. and other energy sources.
(2) Given on an indicative basis; calculated using common emission factors accross all countries in the world

PORTUGAL : SUMMARY ENERGY BALANCE

Mtoe	1985	1988	1990	1993	1994	1995	90/85	93/90	94/93	95/94	95/85
							Annual % Change				
Primary Production	3.20	3.32	3.09	3.32	3.40	3.15	-0.7%	2.4%	2.4%	-7.3%	-0.1%
Solids	0.10	0.09	0.12	0.08	0.06	0.00	3.4%	-11.2%	-25.4%	-	-
Oil	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Natural gas	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Nuclear	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Hydro & Wind	0.93	1.05	0.79	0.74	0.92	0.72	-3.2%	-2.3%	24.9%	-21.7%	-2.5%
Geothermal	0.00	0.00	0.00	0.00	0.04	0.04	-	11.3%	743.3%	0.4%	-
Other	2.17	2.18	2.18	2.50	2.38	2.39	0.1%	4.6%	-4.6%	0.5%	1,0%
Net Imports	9.64	11.65	15.16	15.94	16.02	17.80	9.5%	1.7%	0.5%	11.1%	6.3%
Solids	0.94	1.80	2.79	3.05	3.22	3.80	24.4%	3.0%	5.5%	17.9%	15.0%
Oil	8.51	9.65	12.37	12.87	12.73	13.93	7.8%	1.3%	-1.1%	9.4%	5.1%
Crude oil	7.19	8.60	11.36	11.55	13.91	13.55	9.6%	0.6%	20.4%	-2.6%	6.5%
Oil products	1.31	1.05	1.01	1.32	-1.18	0.38	-5.2%	9.3%	-	-	-11.7%
Natural gas	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Electricity	0.19	0.21	0.00	0.02	0.08	0.08	-56.0%	67.9%	407.4%	2.9%	-8.6%
Gross Inland Consumption	12.36	14.78	17.17	18.68	19.16	20.09	6.8%	2.8%	2.6%	4.8%	5.0%
Solids	0.66	1.97	2.58	3.13	3.31	3.49	31.2%	6.7%	5.8%	5.4%	18.1%
Oil	8.40	9.38	11.61	12.29	12.43	13.36	6.7%	1.9%	1.2%	7.5%	4.8%
Natural gas	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Other (1)	3.29	3.43	2.98	3.25	3.41	3.23	-2.0%	3.0%	5.0%	-5.4%	-0.2%
Electricity Generation in TWh	19.10	22.47	28.49	31.20	31.37	39.73	8.3%	3.1%	0.6%	26.6%	7.6%
Nuclear	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Hydro & wind (including pumping)	10.85	12.29	9.30	8.75	10.72	14.95	-3.0%	-2.0%	22.5%	39.5%	3.3%
Thermal	8.26	10.19	19.19	22.45	20.66	24.79	18.4%	5.4%	-8.0%	20.0%	11.6%
Generation Capacity in GWe	6.01	6.92	7.39	8.73	8.83	9.38	4.2%	5.7%	1.1%	6.2%	4.6%
Nuclear	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Hydro & wind	3.06	3.29	3.34	4.18	4.27	4.48	1.8%	7.8%	2.1%	4.9%	3.9%
Thermal	2.95	3.63	4.05	4.55	4.57	4.90	6.5%	4.0%	0.3%	7.4%	5.2%
Average Load Factor in %	36.3	37.1	44.0	40.8	40.5	48.4	3.9%	-2.5%	-0.6%	19.3%	2.9%
Fuel Inputs for Thermal Power Generation	1.86	2.26	4.27	4.91	4.47	5.50	18.1%	4.8%	-9.0%	23.0%	11.5%
Solids	0.22	1.32	2.03	2.44	2.58	2.94	56.0%	6.3%	5.7%	14.1%	29.6%
Oil	1.51	0.81	2.10	2.28	1.68	2.36	6.9%	2.7%	-26.3%	40.4%	4.6%
Gas	0.02	0.02	0.02	0.04	0.04	0.02	4.3%	27.2%	-1.2%	-54.3%	1.4%
Geothermal	0.00	0.00	0.00	0.00	0.04	0.04	-	11.3%	743.3%	0.4%	-
Other	0.11	0.11	0.11	0.15	0.14	0.15	0.0%	10.0%	-8.7%	5.9%	2.6%
Average Thermal Efficiency in %	38.2	38.7	38.7	39.3	39.7	38.7	0.2%	0.6%	1.0%	-2.4%	0.1%
Non-Energy Uses	1.01	1.92	2.10	1.77	1.86	1.87	15.8%	-5.6%	5.2%	0.6%	6.4%
Total Final Energy Demand	9.54	10.60	11.53	12.85	13.33	13.47	3.9%	3.7%	3.7%	1.0%	3.5%
Solids	0.43	0.64	0.62	0.60	0.62	0.55	7.5%	-0.8%	2.7%	-11.6%	2.4%
Oil	5.42	5.99	6.69	7.54	8.03	8.10	4.3%	4.1%	6.5%	0.8%	4.1%
Gas	0.09	0.10	0.10	0.10	0.09	0.10	1.7%	-2.4%	-10.2%	13.3%	0.3%
Electricity	1.50	1.79	2.02	2.23	2.32	2.44	6.2%	3.3%	3.7%	5.2%	5.0%
Heat	0.03	0.03	0.03	0.03	0.04	0.04	-4.9%	10.3%	2.8%	3.2%	1.1%
Other	2.06	2.06	2.07	2.35	2.24	2.25	0.1%	4.3%	-4.4%	0.1%	0.9%
CO_2 Emissions in Mt of CO_2 (2)	25.1	29.9	39.1	43.7	44.4	48.0	9.2%	3.8%	1.6%	8.2%	6.7%
Indicators											
Population (Million)	10.01	9.97	9.90	9.88	9.90	9.91	-0.2%	-0.1%	0.3%	0.1%	-0.1%
GDP (bil. ECU 1990)	41.6	48.4	53.1	55.5	56.1	57.5	5.0%	1.5%	1.1%	2.5%	3.3%
Gross Inl Cons./GDP (toe/1990 MECU)	296.7	305.3	323.2	336.4	341.3	349.1	1.7%	1.3%	1.5%	2.3%	1.6%
Gross Inl Cons./Capita (Kgoe/inhabitant)	1234.2	1482.5	1735.0	1891.1	1935.2	2026.4	7.0%	2.9%	2.3%	4.7%	5.1%
Electricity Generated/Capita (kWh/inhabitant)	1908.3	2255.7	2879.4	3159.1	3168.4	4008.7	8.6%	3.1%	0.3%	26.5%	7.7%
CO_2 Emissions/Capita (t of CO_2/inhabitant)	2.5	3.0	3.9	4.4	4.5	4.8	9.5%	3.9%	1.3%	8.1%	6.8%
Import Dependency %	75.2	76.5	85.3	83.1	81.6	86.6	2.6%	-0.9%	-1.8%	6.1%	1.4%

(1) Includes nuclear. hydro and wind. net imports of electricity. and other energy sources.
(2) Given on an indicative basis; calculated using common emission factors accross all countries in the world

SPAIN : SUMMARY ENERGY BALANCE

Mtoe	1985	1988	1990	1993	1994	1995	90/85	93/90	94/93	95/94	95/85
							Annual % Change				
Primary Production	30.24	33.39	33.41	32.52	32.27	31.44	2.0%	-0.9%	-0.8%	-2.6%	0.4%
Solids	13.94	11.20	11.68	11.06	10.55	10.17	-3.5%	-1.8%	-4.7%	-3.6%	-3.1%
Oil	2.17	1.47	0.79	0.87	0.94	0.78	-18.2%	3.0%	8.5%	-17.4%	-9.7%
Natural gas	0.23	0.81	1.27	0.60	0.18	0.38	40.9%	-22.4%	-69.7%	110.1%	5.2%
Nuclear	7.38	13.02	13.70	14.04	14.27	14.30	13.2%	0.8%	1.6%	0.3%	6.8%
Hydro & Wind	2.69	3.04	2.19	2.10	2.42	2.01	-4.1%	-1.4%	15.6%	-17.0%	-2.9%
Geothermal	0.00	0.00	0.00	0.01	0.01	0.01	22.9%	39.4%	0.0%	0.0%	22.5%
Other	3.84	3.84	3.77	3.85	3.90	3.79	-0.4%	0.7%	1.3%	-2.9%	-0.1%
Net Imports	46.37	53.40	59.85	63.28	68.40	75.41	5.2%	1.9%	8.1%	10.2%	5.0%
Solids	5.23	5.30	7.04	8.13	7.58	9.15	6.1%	4.9%	-6.8%	20.7%	5.8%
Oil	39.10	45.63	49.16	49.95	54.18	58.36	4.7%	0.5%	8.5%	7.7%	4.1%
Crude oil	43.95	49.88	53.25	52.16	54.45	55.36	3.9%	-0.7%	4.4%	1.7%	2.3%
Oil products	-4.85	-4.25	-4.09	-2.21	-0.27	3.00	-3.4%	-18.6%	-87.7%	-	-
Natural gas	2.14	2.59	3.69	5.09	6.49	7.52	11.5%	11.3%	27.5%	15.9%	13.4%
Electricity	-0.09	-0.11	-0.04	0.11	0.16	0.39	-17.1%	-	46.4%	141.8%	-
Gross Inland Consumption	73.91	83.28	89.08	91.69	97.40	102.28	3.8%	1.0%	6.2%	5.0%	3.3%
Solids	19.48	15.72	18.94	19.23	18.92	19.52	-0.6%	0.5%	-1.6%	3.2%	0.0%
Oil	38.27	44.41	45.54	46.62	51.43	54.55	3.5%	0.8%	10.3%	6.1%	3.6%
Natural gas	2.35	3.35	4.97	5.74	6.30	7.72	16.1%	4.9%	9.6%	22.6%	12.6%
Other (1)	13.81	19.79	19.63	20.10	20.76	20.49	7.3%	0.8%	3.3%	-1.3%	4.0%
Electricity Generation in TWh	127.34	139.68	151.71	156.50	161.47	166.62	3.6%	1.0%	3.2%	3.2%	2.7%
Nuclear	28.04	50.46	54.26	56.05	55.30	55.45	14.1%	1.1%	-1.3%	0.3%	7.1%
Hydro & wind (including pumping)	33.03	36.36	26.18	25.77	29.18	24.83	-4.5%	-0.5%	13.2%	-14.9%	-2.8%
Thermal	66.27	52.86	71.28	74.68	76.99	86.34	1.5%	1.6%	3.1%	12.1%	2.7%
Generation Capacity in GWe	39.61	42.79	43.42	43.91	44.49	45.81	1.9%	0.4%	1.3%	3.0%	1.5%
Nuclear	5.55	7.47	6.97	7.02	7.02	7.07	4.7%	0.2%	0.0%	0.7%	2.4%
Hydro & wind	14.53	15.32	16.24	16.45	16.53	16.86	2.2%	0.4%	0.5%	2.0%	1.5%
Thermal	19.53	20.00	20.21	20.45	20.94	21.88	0.7%	0.4%	2.4%	4.5%	1.1%
Average Load Factor in %	36.7	37.2	39.9	40.7	41.4	41.5	1.7%	0.7%	1.8%	0.2%	1.2%
Fuel Inputs for Thermal Power Generation	15.51	12.79	16.51	17.29	17.69	21.57	1.3%	1.5%	2.3%	22.0%	3.4%
Solids	12.72	10.44	13.76	14.11	14.05	15.88	1.6%	0.8%	-0.4%	13.0%	2.2%
Oil	1.97	1.87	2.17	2.32	2.39	3.65	1.9%	2.3%	3.0%	52.7%	6.4%
Gas	0.76	0.43	0.49	0.38	0.73	1.51	-8.5%	-7.5%	90.0%	106.9%	7.1%
Geothermal	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Other	0.06	0.06	0.09	0.48	0.52	0.53	9.5%	71.9%	8.4%	3.2%	24.5%
Average Thermal Efficiency in %	36.8	35.5	37.1	37.1	37.4	34.4	0.2%	0.0%	0.8%	-8.1%	-0.7%
Non-Energy Uses	4.87	5.94	5.85	5.51	6.03	6.98	3.7%	-2.0%	9.5%	15.8%	3.7%
Total Final Energy Demand	47.52	53.47	56.53	59.22	63.01	63.99	3.5%	1.6%	6.4%	1.6%	3.0%
Solids	4.25	3.45	3.52	2.64	2.59	2.23	-3.7%	-9.2%	-2.0%	-13.6%	-6.2%
Oil	28.10	32.67	33.60	36.07	39.65	40.00	3.6%	2.4%	9.9%	0.9%	3.6%
Gas	2.55	3.75	4.90	5.89	5.61	6.32	13.9%	6.3%	-4.8%	12.7%	9.5%
Electricity	8.84	9.82	10.82	11.24	11.78	12.14	4.1%	1.3%	4.8%	3.1%	3.2%
Heat	0.00	0.00	0.00	0.01	0.01	0.05	22.9%	39.4%	0.0%	592.3%	48.6%
Other	3.78	3.78	3.68	3.38	3.39	3.26	-0.5%	-2.8%	0.3%	-3.9%	-1.5%
CO_2 Emissions in Mt of CO_2 (2)	176.8	181.4	202.0	210.4	221.7	236.2	2.7%	1.4%	5.4%	6.5%	2.9%
Indicators											
Population (Million)	38.41	38.69	38.84	39.09	39.15	39.18	0.2%	0.2%	0.2%	0.1%	0.2%
GDP (bil. ECU 1990)	311.3	356.9	387.8	394.5	402.9	414.1	4.5%	0.6%	2.1%	2.8%	2.9%
Gross Inl Cons./GDP (toe/1990 MECU)	237.4	233.3	229.7	232.4	241.8	247.0	-0.7%	0.4%	4.0%	2.2%	0.4%
Gross Inl Cons./Capita (Kgoe/inhabitant)	1924.4	2152.3	2293.6	2345.9	2487.9	2610.8	3.6%	0.8%	6.1%	4.9%	3.1%
Electricity Generated/Capita (kWh/inhabitant)	3315.5	3607.5	3906.1	4004.0	4124.5	4253.0	3.3%	0.8%	3.0%	3.1%	2.5%
CO_2 Emissions/Capita (t of CO_2/inhabitant)	4.6	4.7	5.2	5.4	5.7	6.0	2.5%	1.1%	5.2%	6.5%	2.7%
Import Dependency %	60.6	61.8	64.4	66.6	68.1	71.5	1.2%	1.1%	2.3%	5.0%	1.7%

(1) Includes nuclear. hydro and wind. net imports of electricity. and other energy sources.
(2) Given on an indicative basis; calculated using common emission factors accross all countries in the world

SWEDEN : SUMMARY ENERGY BALANCE

Mtoe	1985	1988	1990	1993	1994	1995	90/85	93/90	94/93	95/94	95/85
							Annual % Change				
Primary Production	26.73	29.51	29.60	29.00	30.80	31.04	2.1%	-0.7%	6.2%	0.8%	1.5%
Solids	0.10	0.15	0.27	0.30	0.27	0.31	21.8%	4.1%	-11.8%	17.8%	12.1%
Oil	0.01	0.00	0.00	0.00	0.00	0.00	-17.8%	-	#DIV/0!	-19.8%	-6.6%
Natural gas	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Nuclear	15.26	18.09	17.76	15.98	18.87	18.04	3.1%	-3.5%	18.1%	-4.4%	1.7%
Hydro & Wind	6.11	6.01	6.23	6.42	5.09	5.77	0.4%	1.0%	-20.8%	13.3%	-0.6%
Geothermal	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Other	5.25	5.25	5.33	6.29	6.56	6.91	0.3%	5.7%	4.4%	5.3%	2,8%
Net Imports	20.03	18.39	17.82	18.20	19.67	19.11	-2.3%	0.7%	8.1%	-2.8%	-0.5%
Solids	3.08	2.48	2.33	2.22	2.47	2.66	-5.4%	-1.5%	11.3%	7.4%	-1.5%
Oil	17.01	15.81	15.11	15.33	16.53	15.93	-2.3%	0.5%	7.9%	-3.7%	-0.7%
Crude oil	14.06	14.65	16.93	17.85	17.84	17.81	3.8%	1.8%	-0.1%	-0.1%	2.4%
Oil products	2.95	1.16	-1.82	-2.52	-1.30	-1.89	-	11.5%	-48.3%	44.8%	-
Natural gas	0.07	0.32	0.53	0.70	0.64	0.68	47.8%	9.9%	-8.7%	5.5%	24.6%
Electricity	-0.13	-0.22	-0.15	-0.05	0.02	-0.14	3.2%	-30.8%	-	-	1.1%
Gross Inland Consumption	46.94	49.11	46.94	46.50	48.99	49.82	0.0%	-0.3%	5.4%	1.7%	0.6%
Solids	2.80	2.88	2.73	2.72	2.90	2.90	-0.5%	-0.2%	6.6%	0.2%	0.4%
Oil	17.58	16.79	14.50	14.43	14.91	15.67	-3.8%	-0.1%	3.3%	5.1%	-1.1%
Natural gas	0.07	0.32	0.53	0.70	0.64	0.68	47.8%	9.9%	-8.7%	5.5%	24.6%
Other (1)	26.49	29.13	29.18	28.65	30.55	30.57	2.0%	-0.6%	6.6%	0.1%	1.4%
Electricity Generation in TWh	137.13	146.21	146.48	145.78	143.01	147.01	1.3%	-0.2%	-1.9%	2.8%	0.7%
Nuclear	58.55	69.41	68.17	61.38	73.14	69.92	3.1%	-3.4%	19.2%	-4.4%	1.8%
Hydro & wind (including pumping)	71.59	70.47	73.03	75.25	59.51	67.12	0.4%	1.0%	-20.9%	12.8%	-0.6%
Thermal	6.98	6.33	5.28	9.15	10.36	9.97	-5.4%	20.1%	13.2%	-3.7%	3.6%
Generation Capacity in GWe	33.18	33.17	34.19	34.65	33.19	33.62	0.6%	0.4%	-4.2%	1.3%	0.1%
Nuclear	9.46	9.70	9.97	9.91	10.04	10.06	1.1%	-0.2%	1.3%	0.1%	0.6%
Hydro & wind	15.70	16.12	16.34	16.48	15.80	16.22	0.8%	0.3%	-4.1%	2.7%	0.3%
Thermal	8.02	7.35	7.88	8.26	7.35	7.35	-0.4%	1.6%	-11.1%	0.0%	-0.9%
Average Load Factor in %	47.2	50.3	48.9	48.0	49.2	49.9	0.7%	-0.6%	2.4%	1.5%	0.6%
Fuel Inputs for Thermal Power Generation	2.93	2.31	1.77	2.68	2.93	2.88	-9.5%	14.8%	9.2%	-1.6%	-0.1%
Solids	0.89	0.91	0.51	0.76	0.74	0.69	-10.5%	14.1%	-2.0%	-6.6%	-2.4%
Oil	1.15	0.48	0.23	0.60	0.78	0.67	-27.8%	38.1%	31.8%	-15.1%	-5.3%
Gas	0.13	0.16	0.25	0.41	0.41	0.39	14.9%	17.8%	-0.3%	-4.9%	12.0%
Geothermal	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Other	0.76	0.76	0.78	0.92	0.99	1.13	0.5%	5.4%	8.1%	14.3%	4.0%
Average Thermal Efficiency in %	20.5	23.5	25.6	29.3	30.4	29.7	4.6%	4.6%	3.6%	-2.2%	3.8%
Non-Energy Uses	1.51	1.90	1.87	1.60	1.61	1.96	4.4%	-5.0%	0.6%	21.8%	2.7%
Total Final Energy Demand	31.16	31.42	30.18	32.21	33.19	33.46	-0.6%	2.2%	3.0%	0.8%	0.7%
Solids	1.14	1.18	1.22	1.10	1.26	1.32	1.4%	-3.5%	15.2%	4.5%	1.5%
Oil	13.13	13.15	12.00	11.68	12.31	12.35	-1.8%	-0.9%	5.4%	0.3%	-0.6%
Gas	0.33	0.47	0.59	0.61	0.61	0.58	11.9%	1.3%	-0.4%	-4.4%	5.7%
Electricity	9.77	10.32	10.35	10.42	10.53	10.70	1.2%	0.2%	1.1%	1.6%	0.9%
Heat	2.51	2.02	1.71	3.45	3.47	3.37	-7.4%	26.5%	0.5%	-2.9%	3.0%
Other	4.28	4.28	4.33	4.97	5.00	5.14	0.2%	4.7%	0.8%	2.7%	1.9%
CO_2 Emissions in Mt of CO_2 (2)	58.0	55.3	50.0	51.1	54.1	53.6	-2.9%	0.7%	6.0%	-1.0%	-0.8%
Indicators											
Population (Million)	8.35	8.44	8.56	8.72	8.78	8.82	0.5%	0.6%	0.7%	0.4%	0.5%
GDP (bil. ECU 1990)	161.5	174.3	180.8	172.4	178.1	184.5	2.3%	-1.6%	3.3%	3.6%	1.3%
Gross Inl Cons./GDP (toe/1990 MECU)	290.6	281.8	259.6	269.8	275.1	270.1	-2.2%	1.3%	2.0%	-1.8%	-0.7%
Gross Inl Cons./Capita (Kgoe/inhabitant)	5621.2	5821.1	5484.4	5333.3	5579.2	5650.6	-0.5%	-0.9%	4.6%	1.3%	0.1%
Electricity Generated/Capita (kWh/inhabitant)	16421.4	17331.0	17114.7	16721.2	16287.1	16674.5	0.8%	-0.8%	-2.6%	2.4%	0.2%
CO_2 Emissions/Capita (t of CO_2/inhabitant)	6.9	6.6	5.8	5.9	6.2	6.1	-3.4%	0.1%	5.2%	-1.4%	-1.3%
Import Dependency %	42.2	37.0	37.4	38.4	39.3	37.6	-2.4%	0.9%	2.4%	-4.4%	-1.1%

(1) Includes nuclear. hydro and wind. net imports of electricity. and other energy sources.
(2) Given on an indicative basis; calculated using common emission factors accross all countries in the world

UNITED KINGDOM : SUMMARY ENERGY BALANCE

Mtoe	1985	1988	1990	1993	1994	1995	90/85	93/90	94/93	95/94	95/85
							Annual % Change				
Primary Production	236.57	234.12	203.77	218.82	240.00	251.49	-2.9%	2.4%	9.7%	4.8%	0.6%
Solids	54.74	60.51	53.11	39.43	28.78	30.96	-0.6%	-9.5%	-27.0%	7.6%	-5.5%
Oil	129.20	118.44	92.12	101.74	128.89	132.55	-6.5%	3.4%	26.7%	2.8%	0.3%
Natural gas	35.72	37.85	40.92	54.39	58.15	63.60	2.8%	10.0%	6.9%	9.4%	5.9%
Nuclear	15.98	16.34	16.57	22.09	22.77	22.95	0.7%	10.0%	3.1%	0.8%	3.7%
Hydro & Wind	0.35	0.40	0.44	0.39	0.47	0.48	4.4%	-4.0%	21.0%	3.7%	3.2%
Geothermal	0.00	0.00	0.00	0.00	0.00	0.00	0.0%	24.8%	-2.9%	0.0%	6.6%
Other	0.58	0.58	0.61	0.79	0.94	0.95	1.2%	8.7%	19.3%	1.0%	5.1%
Net Imports	-31.65	-20.39	7.34	1.03	-29.16	-36.11	-	-48.1%	-	23.8%	1.3%
Solids	6.59	7.90	9.12	12.16	9.24	10.38	6.7%	10.1%	-24.0%	12.3%	4.7%
Oil	-49.62	-38.33	-8.99	-15.80	-41.67	-48.53	-28.9%	20.7%	163.8%	16.5%	-0.2%
Crude oil	-47.91	-29.43	-3.11	-2.55	-29.58	-36.36	-42.1%	-6.4%	1060.9%	23.0%	-2.7%
Oil products	-1.71	-8.90	-5.88	-13.25	-12.10	-12.17	28.0%	31.1%	-8.7%	0.6%	21.7%
Natural gas	11.39	8.93	6.18	3.23	1.82	0.64	-11.5%	-19.5%	-43.7%	-65.0%	-25.1%
Electricity	0.00	1.10	1.03	1.44	1.45	1.40	-	11.9%	1.0%	-3.4%	-
Gross Inland Consumption	203.70	210.88	210.82	218.02	220.52	219.98	0.7%	1.1%	1.1%	-0.2%	0.8%
Solids	62.77	66.93	63.31	52.66	49.32	46.61	0.2%	-6.0%	-6.3%	-5.5%	-2.9%
Oil	77.38	79.32	81.66	82.92	85.36	82.59	1.1%	0.5%	2.9%	-3.2%	0.7%
Natural gas	46.64	46.21	47.20	57.73	60.21	65.00	0.2%	6.9%	4.3%	8.0%	3.4%
Other (1)	16.91	18.42	18.65	24.70	25.63	25.79	2.0%	9.8%	3.8%	0.6%	4.3%
Electricity Generation in TWh	298.04	308.08	318.92	323.02	325.34	334.39	1.4%	0.4%	0.7%	2.8%	1.2%
Nuclear	61.08	63.44	65.74	89.35	88.27	88.95	1.5%	10.8%	-1.2%	0.8%	3.8%
Hydro & wind (including pumping)	6.93	6.97	7.06	5.93	6.90	7.19	0.4%	-5.7%	16.3%	4.2%	0.4%
Thermal	230.03	237.67	246.12	227.74	230.18	238.26	1.4%	-2.6%	1.1%	3.5%	0.4%
Generation Capacity in GWe	67.43	69.63	73.02	69.19	69.02	70.28	1.6%	-1.8%	-0.3%	1.8%	0.4%
Nuclear	7.07	7.69	11.35	11.89	12.02	12.76	9.9%	1.6%	1.1%	6.2%	6.1%
Hydro & wind	4.19	4.16	4.18	4.35	4.40	4.38	0.0%	1.3%	1.2%	-0.4%	0.5%
Thermal	56.17	57.78	57.49	52.95	52.60	53.13	0.5%	-2.7%	-0.7%	1.0%	-0.6%
Average Load Factor in %	50.5	50.5	49.9	53.3	53.8	54.3	-0.2%	2.2%	1.0%	0.9%	0.7%
Fuel Inputs for Thermal Power Generation	54.33	53.72	57.05	51.15	48.66	50.14	1.0%	-3.6%	-4.9%	3.0%	-0.8%
Solids	42.13	46.40	47.58	37.59	35.11	34.15	2.5%	-7.6%	-6.6%	-2.7%	-2.1%
Oil	10.72	6.11	7.59	6.06	3.74	3.73	-6.7%	-7.2%	-38.3%	-0.3%	-10.0%
Gas	1.20	0.92	1.57	6.99	9.18	11.62	5.5%	64.6%	31.3%	26.6%	25.5%
Geothermal	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-
Other	0.29	0.29	0.31	0.50	0.63	0.64	1.5%	17.5%	25.9%	1.0%	8.3%
Average Thermal Efficiency in %	36.4	38.0	37.1	38.3	40.7	40.9	0.4%	1.1%	6.2%	0.5%	1.2%
Non-Energy Uses	12.14	13.22	12.26	12.62	13.65	13.85	0.2%	1.0%	8.1%	1.5%	1.3%
Total Final Energy Demand	127.20	136.25	136.34	141.06	141.66	141.20	1.4%	1.1%	0.4%	-0.3%	1.0%
Solids	15.99	14.89	12.04	11.01	10.18	8.90	-5.5%	-2.9%	-7.6%	-12.6%	-5.7%
Oil	51.17	56.46	58.78	60.27	61.35	60.28	2.8%	0.8%	1.8%	-1.7%	1.7%
Gas	38.92	41.35	41.17	44.89	45.38	46.10	1.1%	2.9%	1.1%	1.6%	1.7%
Electricity	20.81	22.82	23.60	24.60	24.44	25.60	2.5%	1.4%	-0.7%	4.8%	2.1%
Heat	0.01	0.44	0.45	0.00	0.00	0.00	104.0%	-87.7%	-2.9%	0.0%	-24.0%
Other	0.29	0.29	0.31	0.29	0.31	0.31	0.9%	-2.1%	7.7%	0.9%	0.7%
CO_2 Emissions in Mt of CO_2 (2)	544.2	563.0	566.9	546.7	537.0	531.3	0.8%	-1.2%	-1.8%	-1.1%	-0.2%
Indicators											
Population (Million)	56.69	57.16	57.56	58.19	58.39	58.50	0.3%	0.4%	0.3%	0.2%	0.3%
GDP (bil. ECU 1990)	653.4	750.2	769.6	766.3	796.1	815.9	3.3%	-0.1%	3.9%	2.5%	2.2%
Gross Inl Cons./GDP (toe/1990 MECU)	311.7	281.1	273.9	284.5	277.0	269.6	-2.6%	1.3%	-2.6%	-2.7%	-1.4%
Gross Inl Cons./Capita (Kgoe/inhabitant)	3593.5	3689.4	3662.6	3746.6	3776.4	3760.2	0.4%	0.8%	0.8%	-0.4%	0.5%
Electricity Generated/Capita (kWh/inhabitant)	5257.7	5389.9	5540.5	5547.3	5571.4	5715.8	1.1%	0.0%	0.4%	2.6%	0.8%
CO_2 Emissions/Capita (t of CO_2/inhabitant)	9.6	9.8	9.8	9.4	9.2	9.1	0.5%	-1.6%	-2.1%	-1.2%	-0.6%
Import Dependency %	-15.4	-9.6	3.4	0.5	-13.1	-16.2	-	-48.6%	-	24.0%	0.5%

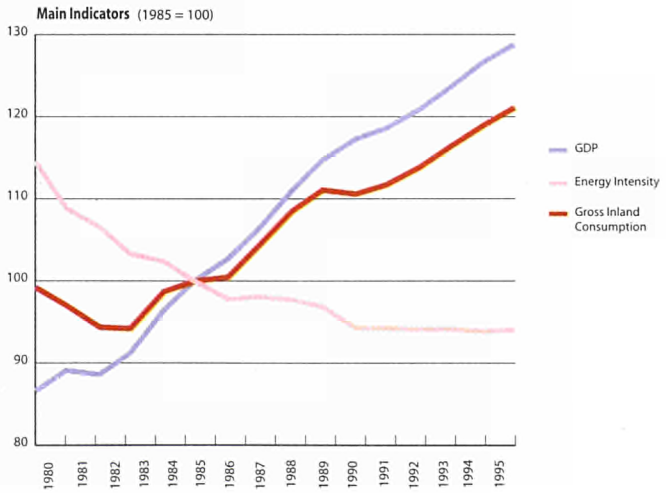
(1) Includes nuclear, hydro and wind. net imports of electricity, and other energy sources.
(2) Given on an indicative basis; calculated using common emission factors accross all countries in the world.

PART III OTHER OECD COUNTRIES

Other OECD countries: Major trends (1985-1995)

- The annual GDP growth above 3% during the 80's, slowed down to about 2% since 1990
- The final energy consumption has rebounded since 1994
- Oil, gas and electricity cover 92% of the final energy demand
- Transport contributed to 38% of final energy demand under the pressure of NAFTA region
- Pushed by very high living standards, electricity contribution continued to increase
- Gross inland energy consumption pulled by the OECD Pacific region
- Non-fossil fuels covered about 44% of incremental gross inland consumption since 1980
- Indigenous energy production increased more rapidly than gross inland consumption
- Solid fuels remain the main energy source for thermal power stations
- US refinery capacity well adapted to the regional markets, unlike the Japanese
- Energy intensity stable since 1990
- Gross energy consumption per capita peaked in the United States
- US presented the lowest energy prices in the OECD region as a whole
- CO_2 emissions increased by 1.4% per year since 1990
- Transport and power generation sectors were responsible for about 63% of CO_2 emissions
- The region was net importer of hydrocarbons and net exporter of solid fuels

"Other OECD countries" is a global heading for: the NAFTA region of the USA, Canada and Mexico; the EFTA region comprising Norway, Switzerland and Iceland; the OECD Pacific region covering Australia, Japan and New Zealand; and Turkey. Each of these groups is rather heterogeneous from a sociological, political and macro-economical point of view. Globally speaking, the **population** of the other OECD countries reached 607 million inhabitants in 1995, after a rather stable increase of 1.1% per year over the period 1980-95. Turkey, Mexico and Canada have the fastest growing populations, at about two times the average rate.



The annual GDP growth above 3% during the 80's, slowed down to about 2% per since 1990...

The global GDP increased by about 3% during the eighties, to fall under the 2% on average since 1990. The economic development of the NAFTA region is largely dominated by the United States which contributed up to 89% of GDP of the whole region in 1995, with only 9% by Canada and 4% by Mexico that experienced a drop in GDP by 8% in 1995 as a result of a severe financial crisis alarming most of the international financing organisations. Given the size of its economy, population and energy needs, Japan dominated the integrated economic and energy development of the OECD Pacific region. In 1995, Japan accounted for 85% of the population and contributed to 89% of the GDP of this region. Japanese GDP growth, historically above 4% on average during the 80's, was marked by a severe slowdown below 1% since 1994. The economic environment of the EFTA region is marked by a GDP growing by about 2% per year since 1980, under the leadership of Norway mainly influenced by the increasing production of hydrocarbons in the North Sea. Turkey, which had a remarkable GDP yearly increase by almost 5% between 1980 and 1993, had to face a recession during 1994 leading to a decrease by almost 5% mainly generated by internal political problems. The GDP increased again by 7% during 1995.

REGIONAL GDP EVOLUTION

Billions 1990 ECU	1980	1985	1990	1993	1994	1995	85/80	90/85	93/90	94/93	95/94
							Annual % Change				
EFTA	212.9	235.2	265.2	270.1	276.8	281.3	2.0%	2.4%	0.6%	2.5%	1.6%
NAFTA	3805.2	4326.7	4946.8	5203.6	5389.0	5479.2	2.6%	2.7%	1.7%	3.6%	1.7%
OECD Pacific	1740.4	2082.0	2568.3	2709.6	2736.7	2767.9	3.6%	4.3%	1.8%	1.0%	1.1%
Turkey	69.7	88.1	118.3	136.9	129.6	139.3	4.8%	6.1%	5.0%	-5.3%	7.5%
Total	5828.3	6732.1	7898.6	8320.2	8532.2	8667.8	2.9%	3.2%	1.7%	2.5%	1.6%

ENERGY OUTLOOK

The final energy consumption has rebounded since 1994...

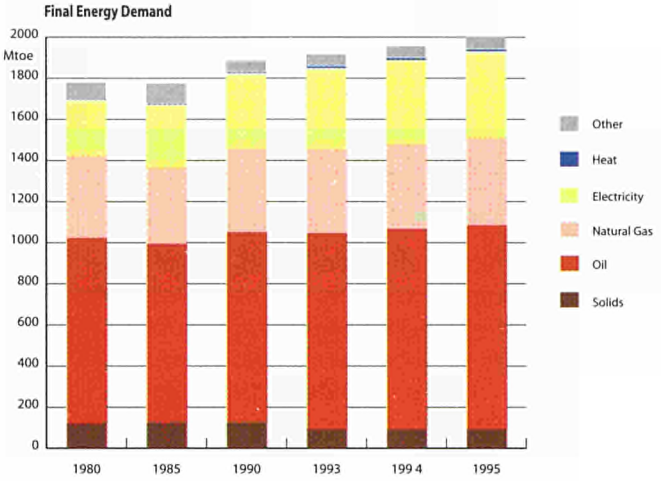
The **final energy consumption** fluctuated since 1980 with opposite regional variations but remained deeply influenced by the NAFTA region that absorbed 77% of final energy consumption in 1995 (81% in 1980). Between 1990 and 1993, a general slowdown was observed in all regions as a result of the weakness of the economy in the OECD region. The 1994 relaunch induced a growth of final energy consumption by 2.1% in 1994 and by 2.4% in 1995. Up to 1993 final consumption remained apparently stable in the United States but this is due only to the fact that until 1993 energy consumption by industrial electricity autoproducers was accounted as an industrial consumption. These consumption has been progressively identified and allocated to electricity production since 1988. This means that final energy consumption in the United States was largely (from 60 to 80 Mtoe) overestimated before 1993. Considering available statistics as they are, since 1980 incremental demand has come mainly from Japan (38% of incremental demand), United States (25%), Mexico (11%) and Turkey (8%).

Oil, gas and electricity cover 92% of the final energy demand...

This **final energy demand** is largely dominated by hydrocarbons. In 1995, oil products represented 50% of total demand as in 1980 and gas contributed 21% against 22.5% in 1980. Gas consumption remained stable in the NAFTA region despite liberalisation of the gas market in the United States. This contrasts with gas consumption in the OECD Pacific region where the market is still under development. Gas share in this region reached only 8% of total final demand in 1995 (5.5% in 1980). Electricity consumption grew by about 3% per year on average since 1980. Thus half of the incremental demand of energy was covered by electricity alone. This trend was common to all regions. Solid fuels and biomass covered the rest of the consumption. As they are mainly consumed in the United States by industrial electricity autoproducers, the modification of statistical allocations pushed their apparent consumption to lower levels after 1993.

FINAL ENERGY CONSUMPTION BY REGION

Mtoe	1980	1985	1990	1993	1994	1995	85/80	90/85	93/90	94/93	95/94
							Annual % Change				
EFTA	33.0	35.8	36.9	37.5	37.9	38.5	1.6%	0.6%	0.5%	1.0%	1.7%
NAFTA	1445.4	1415.6	1466.6	1479.6	1508.5	1541.0	-0.4%	0.7%	0.3%	2.0%	2.2%
OECD Pacific	271.9	288.8	338.6	353.1	365.3	375.4	1.2%	3.2%	1.4%	3.4%	2.8%
Turkey	26.3	30.4	38.5	42.4	40.5	44.8	3.0%	4.8%	3.3%	-4.4%	10.5%
Total	1776.6	1770.6	1880.6	1912.6	1952.1	1999.7	-0.1%	1.2%	0.6%	2.1%	2.4%



Transport contributed to 38% of final energy demand under the pressure of the NAFTA region...

Industry, including US electricity autoproducers, that made the major contribution to the final energy demand in 1980 with a 35% share, saw its contribution dropping progressively to 28% in 1995, a sign of mutation towards less energy consuming activities. In the same period, transport that contributed for 33% in 1980 climbed up to 38% in 1995, becoming the major contribution to final energy consumption. This was mainly under the pressure of the NAFTA region where transport represented 41% of total final demand in 1995 against 31% in OECD Pacific and only 28.5% in the EFTA region. This resulted from the very high level of motorization reached in the NAFTA region reinforced by more long-distance travel than in the other regions. As a consequence the contribution of transport to final consumption of oil was close to 75%. The tertiary & domestic sector contributed quite constantly between 32% and 34 % of the total over the whole period. Highest contribution occurred in EFTA region for climatic reasons (45% of final consumption in 1995) and the lowest in the OECD Pacific region (31% of final consumption) in relation with limited-size of households.

Pushed by very high living standards, electricity contribution continued to increase...

The electricity share in final consumption reached 21% in 1995 from 15% in 1980. Contribution by sectors are homogeneous in the two main regions: NAFTA and OECD Pacific and higher in the EFTA region that benefit from large low cost hydro power. Electricity share in industry increased from 19% in 1980 to 29% in 1995 as a result of automatization and large development of electrotechnologies. In the tertiary-domestic sector, pushed by very high living standards, electricity contribution increased from 27% to 38% to reach even 44% in the EFTA region where electrical heating for households was largely developed.

Gross inland energy consumption pulled by the OECD Pacific region...

Gross inland energy consumption showed a steady increase of about 2% since 1985 following the stagnation observed during the first part of the 80's. This growth, however, was not equally spread over all primary fuels and the regions. The lowest growth occurred in the NAFTA region, already well industrialised in 1980, that increased its gross inland consumption by only 17% over the period 1980-1995. The EFTA region followed with a gain of 24%. In the OECD Pacific, where industrial development continued to increase sharply during the 80's accompanied by improving living standards, the global increase reached 42% over the same period to finally absorb more than 30% of the incremental demand of the whole region. Finally Turkey, a country still under major development, doubled its consumption since 1980.

GROSS INLAND CONSUMPTION BY REGION

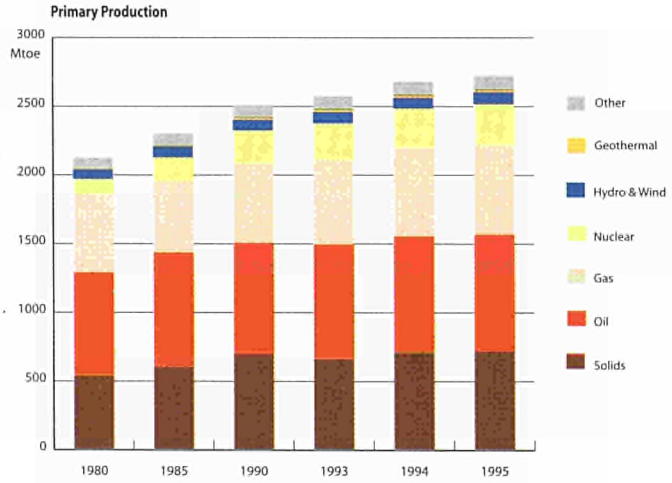
Mtoe	1980	1985	1990	1993	1994	1995	85/80	90/85	93/90	94/93	95/94
							Annual % Change				
EFTA	41.1	45.0	48.5	50.5	50.6	51.0	1.9%	1.5%	1.3%	0.3%	0.8%
NAFTA	2093.3	2076.7	2249.2	2364.8	2411.3	2445.0	-0.2%	1.6%	1.7%	2.0%	1.4%
OECD Pacific	426.1	452.3	539.8	568.0	590.8	606.8	1.2%	3.6%	1.7%	4.0%	2.7%
Turkey	31.3	38.9	52.5	58.1	56.8	62.2	4.4%	6.2%	3.4%	-2.2%	9.6%
Total	2591.8	2612.8	2890.0	3041.4	3109.4	3165.0	0.2%	2.0%	1.7%	2.2%	1.8%

Non-fossil fuels covered about 44% of incremental gross inland consumption since 1980...

Solid fuel demand increased by about 28% between 1980 and 1993 and by only 2% since then. Its consumption remained quite constant at 640Mtoe over the last three years, representing about 20% of total gross inland consumption since 1980. Although there was a drop in demand for oil and gas between 1980 and 1985, the use of both energy sources have increased steadily since then. Oil grew on average by 1.4% per year to contribute 42% of total consumption in 1995 (49% in 1980) under the pressure of OECD Pacific region (+2.8% per year on average) and Turkey (+4.7%). These last ten years annual growth of gas consumption reached on average 2.5% with a peak of 4% in the OECD Pacific where gas uses increased both for final and power generation sectors. Non-fossil fuels grew continuously to reach 16% of total consumption in 1995 against 10% in 1980. These fuels covered about 44% of incremental demand since 1980. Nuclear contributed most to this increase (296 Mtoe in 1995 versus 105 Mtoe in 1980), the other sources (hydro and biomass) showing moderate rates of increase.

Indigenous energy production increased more rapidly than gross inland consumption...

Indigenous **energy production,** showing significant improvement in the three main regions, increased more rapidly than gross inland consumption. Oil contributed 838 Mtoe for 31% of energy produced in the whole region. In absolute terms, the production of oil declined in the NAFTA region since 1985. In fact, the reduction of production in the United States (-115 Mtoe since 1985) was partly compensated by Canada (+27 Mtoe), the production of Mexico remaining stable. The major evolution occurred in the EFTA region where the Norwegian production grew by about 14% each year since 1985. Natural gas production was reduced between 1980 and 1985 by 1.3% per year on average and since then increased continuously to reach a peak of 651 Mtoe in 1995. 85% of the incremental production come from the NAFTA region, equally distributed between United States and Canada. Solid fuel production grew on average by 2% per year since 1980. Additional contribution came from the United States (+83 Mtoe since 1980) and Australia (+75 Mtoe). Nuclear energy accounted for 11% of total production in 1995 against 5% in 1980. Nuclear was mainly developed in the United States and Japan during the 80's showing an 8.5% annual increase of its contribution. Since 1990 its use has continued to increase at this rate in Japan but by only 3.5% per year in the NAFTA region sustained by Canadian growth. Renewable energy, 7.5% of the primary energy production in 1980, did not improve significantly its share, reaching only 8.1% in 1995. Hydro and wind grew very slowly since 1985. The contribution of geothermal energy was multiplied by three during the 80's and has remained rather constant since then. Other sources made a constant contribution of about 100 Mtoe since 1985.

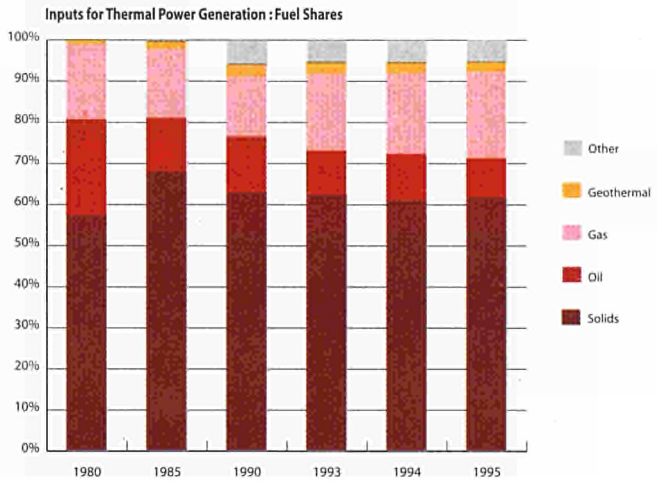


PRIMARY ENERGY PRODUCTION BY REGION

Mtoe	1980	1985	1990	1993	1994	1995	85/80	90/85	93/90	94/93	95/94
							Annual % Change				
EFTA	63.6	83.4	131.2	165.9	182.6	194.8	5.6%	9.5%	8.1%	10.1%	6.6%
NAFTA	1903.0	1998.3	2110.8	2111.5	2198.0	2208.2	1.0%	1.1%	0.0%	4.1%	0.5%
OECD Pacific	134.9	201.8	244.8	274.5	277.2	298.5	8.4%	3.9%	3.9%	1.0%	7.7%
Turkey	17.2	21.7	25.6	26.0	26.0	26.1	4.7%	3.4%	0.4%	0.0%	0.4%
Total	2118.7	2305.3	2512.4	2578.0	2683.8	2727.6	1.7%	1.7%	0.9%	4.1%	1.6%

Solid fuels remain the main energy source for thermal power stations...

Electricity generation grew at an annual average of 2.9% since 1980. Thermal power stations covered 63% of the production in 1995 (68% in 1980) with nuclear and hydro accounting respectively for 20% and 17% of total production. Nuclear became more important than hydro in the late 80's. Since 1980 thermal units have covered the incremental production for 53%, nuclear for 37% and hydro for only 10%. The installed capacity reached 1264 GWe in 1995 compared to 917 GWe in 1980. Since 1980 nuclear capacity was multiplied by about three. Hydro capacity continued its expansion by about 2% per year. Solid fuels remain the main energy source for thermal power stations (62% of thermal input in 1995 versus 57.4% in 1980). The contribution of oil (9% in 1995) that declined a first time during the oil crisis in 1983, to the advantage of alternative and geothermal energy, dropped again after some signs of recovery, due this time to environmental pressure. The development of gas use was indeed very important since 1990; consumption doubled in the NAFTA region to reach 136 Mtoe but increased by only 10% in the OECD Pacific region these last five years. The share of gas in firing thermal power stations reached 20% in 1995, making it the second energy source far from solid fuels.



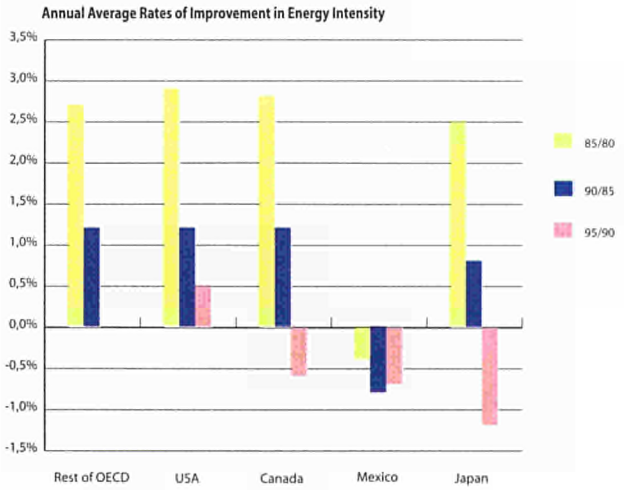
US refinery capacity well adapted to the regional markets, unlike the Japanese...

The **refinery capacity** remained globally stable in the whole region after 1985. About 25% of world capacity was located in the NAFTA region, principally in the United States, but this capacity was just sufficient to cover the needs of the region. Regional utilisation rates increased from 77% in 1985 to about 90% in 1995. This guaranteed the profitability of the refinery sector in this region necessary to permit the additional investment required to adapt the production of oil products to the structure of the demand mainly oriented to transport fuels and to improve the quality of the products. Japanese refinery capacity accounted for about 6% of world capacity but its utilisation rate remained limited to 80%. As a consequence the production capacity was not adapted to the demand and the region remained a net importer of oil products for about 15% of its global consumption of oil products.

COMPETITIVENESS

Energy intensity stable since 1990...

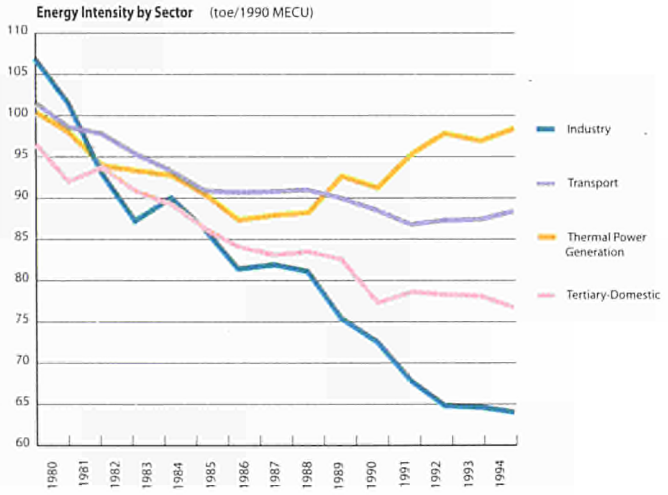
The **Energy intensity** of the region as a whole improved significantly during the 80's but has been stable since 1990. In fact the limited decrease observed in the United States was largely offset by the growth observed in the other main countries: Canada (+0.5% per year on average between 1990 and 1995), Mexico (+0.7%) and Japan (+1.2%). This trend is a consequence of the economic slowdown observed between 1990 and 1993. Lower utilisation rate of industrial capacities and limited gross fixed capital formation induced increasing specific energy consumption per unit of production and less investment in rational uses of energy. This evolution continued in Japan during 1994 and 1995 due to the weak economic climate.



ENERGY INTENSITY BY REGION

toe/1990 MECU	1980	1985	1990	1993	1994	1995	85/80	90/85	93/90	94/93	95/94
							Annual % Change				
EFTA	192.9	191.4	182.9	186.9	182.8	181.3	-0.2%	-0.9%	0.7%	-2.2%	-0.8%
NAFTA	550.1	480.0	454.7	454.5	447.5	446.2	-2.7%	-1.1%	0.0%	-1.5%	-0.3%
OECD Pacific	244.8	217.2	210.2	209.6	215.9	219.2	-2.4%	-0.7%	-0.1%	3.0%	1.6%
Turkey	449.2	441.4	443.5	424.2	438.0	446.4	-0.3%	0.1%	-1.5%	3.3%	1.9%
Total	444.7	388.1	365.9	365.5	364.4	365.1	-2.7%	-1.2%	0.0%	-0.3%	0.2%

By sector, energy intensity of industry has been continuously improving since 1980, gaining about 40%. Tertiary-domestic sector also improved its energy intensity by about 20% despite the improvement of living standards and the development of new appliances such as air conditioning. Even the transport sector gained about 12% during the 80's but since then energy intensity slightly increased. On the contrary, the energy intensity of power generation pushed by the increasing contribution of electricity to the final energy consumption, has grown since 1985 by about 7%.



Gross energy consumption per capita peaked in the United States...

The **gross inland consumption per capita**, increased slowly by 0.8% since 1985 to reach in 1995 an average value of 5.2 Toe/inhabitant but presented large discrepancies between regions and countries. In fact, absolute values varied from 2.5 Toe/inhabitant in Turkey, to 4.3 in the EFTA region, 5.2 in the OECD Pacific region and finally 7.9 toe/inhabitant in the United States, the highest per capita consumption in the world. Althought the consumption per capita remained stable in the NAFTA region, it increased in all the others since 1980: by 56% in Turkey, by 28% in the OECD Pacific region and by 10% in the EFTA region mainly in relation with increasing living standards and also with industrial development in Turkey.

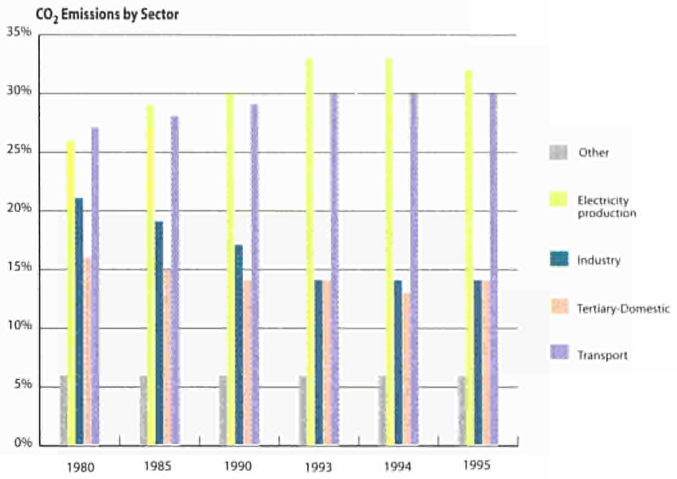
US presented the lowest energy prices in the OECD region as a whole...

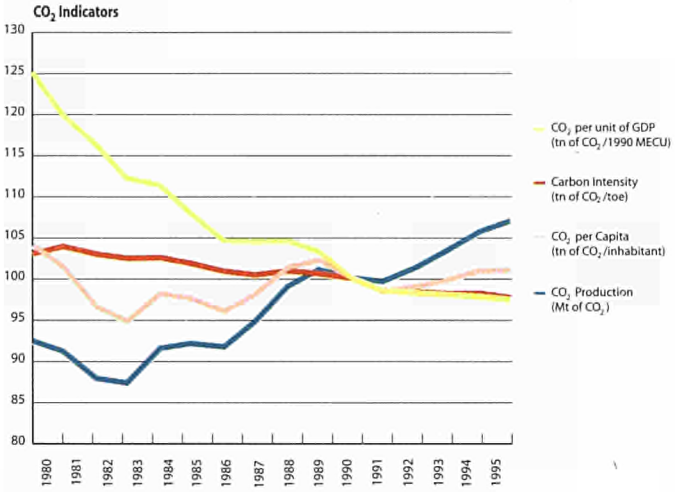
If energy efficiency is a main factor regarding competitiveness, energy prices are also of primary importance, limiting the analysis to the energy point of view, to the exclusion of any consideration of labour costs, fiscal system and regulation. Comparing the energy prices with the main competitors inside OECD, the United States, Japan and the European Union, it is clear that the US prices are the lowest, followed by the European and the Japanese. In 1995, for heavy fuel oil, if the European average equalled 100, the US value was 58 and the Japanese 96. For natural gas the respective ratios are 56 for United States and 271 for Japan. Finally, for electricity the ratios are 62 for United States and 245 for Japan. As a first approximation, it can be considered that US prices reflect low prices observed on liberalised and competitive markets, especially for gas and electricity. Additionally, tax levels are also considerably lower in US. But it is necessary to be very prudent before mating conclusions for a specific industrial sector due to the fact that statistics on international prices concerned only average prices for industry as a whole. In some areas large industrial consumers have the opportunity to negotiate adapted tariffs with their suppliers. For competitive reasons, access to this data is restricted only to the partners.

ENVIRONMENT

CO_2 emissions increased by 1.4% per year since 1990...

In general terms CO_2 emissions have been increasing continuously since 1985 under the main pressure of the OECD Pacific (+28% in ten years) and the NAFTA region (+13% in ten years). Since 1990 CO_2 emissions for the region as a whole have grown by 7% despite a continuous decline of the carbon intensity fuel mix due to the increasing contribution of non-fossil fuels and switching from solids fuels and oil products to natural gas. It must be stressed that CO_2 emissions by unit of GDP, generally slowing down in other parts of the world, were only declining by 0.5% per year in this region with even an increasing trend in Japan.





Transport and power generation were responsible for about 63% of CO_2 emissions...

Looking at CO_2 emissions by sector at a regional level, the first conclusion is that the largest sectors are transport and power generation. Both showed similar evolutions since 1980, gaining about a 5% share. Together these two sectors accounted for about 63% of total emissions in 1995. However the emissions from transport continued to increase strongly by about 3% per year since 1993, while the emissions from power stations started to decline in 1995. The emissions from the tertiary and domestic sector (13.5% of total emissions in 1995) remained almost constant after 1980; they showed however a 2.3% increase during 1995.

GLOBAL MARKETS

The region was a net importer of hydrocarbons and a net exporter of solid fuels...

The region is a net importer of energy. Although its import dependency index dropped down to 11% in 1985, it increased since then to reach 16% in 1994, with a slowdown in 1995 to 14.3%. The region imported mainly crude oil and oil products, covering almost the totality of their importation. Some gas was also imported. On the contrary the region was a net coal exporter, the main volume being exported outside the region by Australia, the United States and Canada. But the situation is quite different between regions and country. Inside NAFTA region, the United States were the only net importer of oil (418 Mtoe in 1995), the two others being net exporters (Mexico with 71 Mtoe and Canada with 36 Mtoe). NAFTA countries are self-sufficient in natural gas even if significant exports took place between Canada and the United States. The OECD Pacific region depended for 52% on energy imports in 1995 (70% in 1980) and Japan peaked at 80% being totally dependant on import for all fossil fuels consumed in the country. At the same time, Australia, one of the largest world solids producers, exported about 50% of its total primary energy production. Finally the EFTA region under the lead of Norway became a larger net exporter of energy. In 1995, about 85% of total crude produced in the region was exported and 82% of natural gas, both mainly to the European Union.

OTHER OECD COUNTRIES: SUMMARY ENERGY BALANCE

Mtoe	1980	1985	1990	1993	1994	1995	85/80	90/85	93/90	94/93	95/94
							Annual % Change				
Primary Production	2118.7	2305.3	2512.4	2578.0	2683.8	2727.6	1.7%	1.7%	0.9%	4.1%	1.6%
Solids	541.2	605.6	705.0	665.1	715.7	721.6	2.3%	3.1%	-1.9%	7.6%	0.8%
Oil	739.8	821.3	792.5	821.3	829.2	837.8	2.1%	-0.7%	1.2%	1.0%	1.0%
Natural gas	572.8	519.7	577.3	613.0	645.7	651.0	-1.9%	2.1%	2.0%	5.3%	0.8%
Nuclear	105.0	169.8	238.4	265.8	282.7	296.2	10.1%	7.0%	3.7%	6.4%	4.8%
Hydro & Wind	68.6	75.8	77.6	83.2	78.4	86.3	2.0%	0.5%	2.3%	-5.7%	10.1%
Geothermal	7.7	13.0	22.9	25.1	25.0	23.9	11.0%	11.9%	3.1%	-0.2%	-4.6%
Other	83.5	100.1	98.6	104.4	107.1	110.8	3.7%	-0.3%	1.9%	2.5%	3.5%
Net Imports	540.8	302.1	465.9	469.7	499.0	457.4	-11.0%	9.0%	0.3%	6.2%	-8.3%
Solids	-35.2	-53.5	-70.0	-61.5	-58.8	-69.7	8.7%	5.5%	-4.2%	-4.5%	18.6%
Oil	577.2	345.1	515.0	507.2	534.1	505.6	-9.8%	8.3%	-0.5%	5.3%	-5.3%
Crude oil	497.4	269.1	425.9	461.9	477.8	458.8	-11.6%	9.6%	2.7%	3.4%	-4.0%
Oil products	79.9	76.1	89.1	45.2	56.3	46.8	-1.0%	3.2%	-20.2%	24.5%	-16.9%
Natural gas	-0.6	11.0	22.5	25.4	24.8	22.7	-	15.3%	4.2%	-2.6%	-8.3%
Electricity	-0.6	-0.6	-1.6	-1.3	-1.1	-1.2	-1.8%	23.1%	-5.9%	-18.4%	14.9%
Gross Inland Consumption	2591.8	2612.8	2890.0	3041.4	3109.4	3165.0	0.2%	2.0%	1.7%	2.2%	1.8%
Solids	496.2	572.5	612.6	635.8	637.1	645.3	2.9%	1.4%	1.2%	0.2%	1.3%
Oil	1258.2	1145.2	1256.2	1283.9	1317.3	1317.6	-1.9%	1.9%	0.7%	2.6%	0.0%
Natural gas	573.1	537.0	585.2	644.4	662.8	686.0	-1.3%	1.7%	3.3%	2.9%	3.5%
Other (1)	264.3	358.1	436.0	477.3	492.2	516.0	6.3%	4.0%	3.1%	3.1%	4.8%
Electricity Generation in TWh	3715.8	4184.2	5061.2	5407.5	5573.0	5728.4	2.4%	3.9%	2.2%	3.1%	2.8%
Nuclear	401.2	649.4	913.3	1019.3	1084.5	1136.2	10.1%	7.1%	3.7%	6.4%	4.8%
Hydro & wind	797.8	880.3	901.5	966.2	910.4	1002.0	2.0%	0.5%	2.3%	-5.8%	10.1%
Thermal	2516.9	2654.6	3246.4	3422.0	3578.1	3590.1	1.1%	4.1%	1.8%	4.6%	0.3%
Generation Capacity in GWe	916.8	1083.2	1163.7	1221.1	1247.0	1263.7	3.4%	1.4%	1.6%	2.1%	1.3%
Nuclear	80.0	120.3	148.5	156.7	160.4	160.4	8.5%	4.3%	1.8%	2.4%	0.0%
Hydro & wind	204.3	232.7	255.4	271.5	277.1	280.8	2.6%	1.9%	2.0%	2.1%	1.4%
Thermal	632.6	730.2	759.8	792.9	809.5	822.4	2.9%	0.8%	1.4%	2.1%	1.6%
Average Load Factor in %	46.3	44.1	49.6	50.6	51.0	51.7	-1.0%	2.4%	0.6%	0.9%	1.4%
Fuel Inputs for Thermal Power Generation	591.7	620.3	741.4	829.3	861.6	860.6	0.9%	3.6%	3.8%	3.9%	-0.1%
Solids	339.7	422.6	468.9	518.3	526.3	532.7	4.5%	2.1%	3.4%	1.5%	1.2%
Oil	136.6	78.6	97.4	86.2	94.6	79.1	-10.5%	4.4%	-4.0%	9.7%	-16.4%
Gas	107.5	103.6	108.9	154.9	168.9	179.5	-0.7%	1.0%	12.5%	9.1%	6.2%
Geothermal	7.2	12.4	22.0	24.2	23.5	22.3	11.4%	12.2%	3.2%	-2.6%	-7.5%
Other	0.5	3.1	44.2	45.7	48.3	47.1	41.6%	70.2%	1.2%	5.7%	-2.6%
Average Thermal Efficiency in %	36.6	36.8	37.6	35.5	35.7	35.9	0.1%	0.5%	-2.0%	0.6%	0.5%
Non-Energy Uses	147.8	140.6	176.9	179.6	190.4	191.3	-1.0%	4.7%	0.5%	6.0%	0.4%
Total Final Energy Demand	1776.6	1770.6	1880.6	1912.6	1952.1	1999.7	-0.1%	1.2%	0.6%	2.1%	2.4%
Solids	123.6	125.2	125.3	94.9	92.3	93.2	0.3%	0.0%	-8.9%	-2.7%	1.0%
Oil	900.6	869.8	925.9	951.5	975.3	991.6	-0.7%	1.3%	0.9%	2.5%	1.7%
Gas	398.4	367.9	405.2	406.6	411.1	424.3	-1.6%	2.0%	0.1%	1.1%	3.2%
Electricity	269.2	307.5	366.0	394.0	407.4	419.5	2.7%	3.5%	2.5%	3.4%	3.0%
Heat	1.8	3.2	3.6	9.2	9.8	9.9	12.7%	2.5%	36.5%	6.3%	1.1%
Other	83.0	97.1	54.5	56.5	56.3	61.1	3.2%	-10.9%	1.2%	-0.4%	8.6%
CO_2 Emissions in Mt of CO_2	6657.0	6633.3	7207.6	7443.7	7612.6	7706.3	-0.1%	1.7%	1.1%	2.3%	1.2%
Indicators											
Population (Million)	508.97	540.93	573.44	593.41	600.14	606.97	1.2%	1.2%	1.1%	1.1%	1.1%
GDP (index 1985=100)	86.6	100.0	117.3	123.6	126.7	128.8	2.9%	3.2%	1.7%	2.5%	1.6%
Gross Inl Cons./GDP (toe/1990 MECU)	444.7	388.1	365.9	365.5	364.4	365.1	-2.7%	-1.2%	0.0%	-0.3%	0.2%
Gross Inl Cons./Capita (toe/inhabitant)	5.09	4.83	5.04	5.13	5.18	5.21	-1.1%	0.9%	0.6%	1.1%	0.6%
Electricity Generated/Capita (kWh/inhabitant)	7301	7735	8826	9113	9286	9438	1.2%	2.7%	1.1%	1.9%	1.6%
CO_2 Emissions/Capita (t of CO_2/inhabitant)	13.1	12.3	12.6	12.5	12.7	12.7	-1.3%	0.5%	-0.1%	1.1%	0.1%
Import Dependency %	20.5	11.4	15.9	15.3	15.9	14.3	-11.0%	6.8%	-1.4%	3.9%	-9.9%

(1) Includes nuclear, hydro and wind, net imports of electricity, and other energy sources.

OTHER OECD COUNTRIES : MAIN INDICATORS

	1980	1985	1990	1993	1994	1995	85/80	90/85	93/90	94/93	95/94
							Annual % Change				
Gross Inland Consumption (Mtoe)	2591.8	2612.8	2890.0	3041.4	3109.4	3165.0	0.2%	2.0%	1.7%	2.2%	1.8%
Public Thermal Power Generation	568.3	594.3	659.7	673.5	698.7	695.5	0.9%	2.1%	0.7%	3.7%	-0.5%
Autoprod. Thermal Power Generation	16.1	13.6	59.9	132.0	139.8	143.1	-3.3%	34.5%	30.1%	5.9%	2.4%
District Heating	0.0	0.2	0.4	2.4	2.5	2.6	0.6%	9.8%	83.2%	4.4%	4.3%
Energy Branch	154.8	159.2	185.7	190.1	192.4	194.0	0.6%	3.1%	0.8%	1.2%	0.9%
Final Energy Consumption	1776.6	1770.6	1880.6	1912.6	1952.1	1999.7	-0.1%	1.2%	0.6%	2.1%	2.4%
Industry	622.6	579.4	571.9	537.0	545.2	559.8	-1.4%	-0.3%	-2.1%	1.5%	2.7%
Transport	591.3	611.0	698.6	726.3	753.0	768.1	0.7%	2.7%	1.3%	3.7%	2.0%
Tertiary-Domestic	562.6	580.2	610.1	649.3	653.9	671.8	0.6%	1.0%	2.1%	0.7%	2.7%
Energy Intensity (toe/1990 MECU)	444.7	388.1	365.9	365.5	364.4	365.1	-2.7%	-1.2%	0.0%	-0.3%	0.2%
Public Thermal Power Generation	97.5	88.3	83.5	80.9	81.9	80.2	-2.0%	-1.1%	-1.0%	1.2%	-2.0%
Autoprod. Thermal Power Generation	2.8	2.0	7.6	15.9	16.4	16.5	-6.1%	30.2%	27.9%	3.3%	0.8%
District Heating	0.0	0.0	0.0	0.3	0.3	0.3	-	6.3%	80.1%	1.8%	na
Industry	106.8	86.1	72.4	64.5	63.9	64.6	-4.2%	-3.4%	-3.8%	-1.0%	1.1%
Transport	101.5	90.8	88.4	87.3	88.3	88.6	-2.2%	-0.5%	-0.4%	1.1%	0.4%
Tertiary-Domestic	96.5	86.2	77.2	78.0	76.6	77.5	-2.2%	-2.2%	0.3%	-1.8%	1.1%
Energy per capita (Kgoe/inhabitant)	5092	4830	5040	5125	5181	5214	-1.1%	0.9%	0.6%	1.1%	0.6%
Public Thermal Power Generation	1117	1099	1150	1135	1164	1146	-0.3%	0.9%	-0.5%	2.6%	na
Autoprod. Thermal Power Generation	32	25	104	222	233	236	-4.5%	32.9%	28.6%	4.7%	na
District Heating	0	0	1	4	4	4	-	8.5%	81.1%	3.2%	na
Industry	1223	1071	997	905	908	922	-2.6%	-1.4%	-3.2%	0.4%	1.5%
Transport	1162	1130	1218	1224	1255	1266	-0.6%	1.5%	0.2%	2.5%	0.9%
Tertiary-Domestic	1105	1073	1064	1094	1090	1107	-0.6%	-0.2%	0.9%	-0.4%	1.6%
Electricity Share (%)											
Final Energy Consumption	15.2%	17.4%	19.5%	20.6%	20.9%	21.0%	2.8%	2.3%	1.9%	1.3%	0.5%
Industry	18.6%	21.0%	24.5%	28.3%	28.9%	28.8%	2.5%	3.1%	4.9%	2.4%	-0.4%
Transport	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	1.7%	1.1%	0.8%	-2.5%	-0.8%
Tertiary-Domestic	26.9%	31.6%	36.6%	36.8%	37.7%	37.9%	3.3%	3.0%	0.2%	2.4%	3.0%
CO_2 Emissions (Mt of CO_2)	6657.0	6633.3	7207.6	7443.7	7612.6	7706.3	-0.1%	1.7%	1.1%	2.3%	1.2%
Public Thermal Power Generation	1707.7	1870.1	2092.8	2157.7	2208.0	2184.4	1.8%	2.3%	1.0%	2.3%	-1.1%
Autoprod. Thermal Power Generation	51.2	37.6	55.7	266.9	282.6	294.2	-6.0%	8.2%	68.6%	5.9%	4.1%
District Heating	0.0	0.6	0.9	6.9	7.4	7.7	0.2%!	6.8%	97.2%	7.4%	4.2%
Energy Branch	378.3	381.5	436.0	434.6	436.7	439.4	0.2%	2.7%	-0.1%	0.5%	0.6%
Industry	1413.4	1239.5	1248.3	1077.7	1081.7	1100.0	-2.6%	0.1%	-4.8%	0.4%	1.7%
Transport	1799.2	1860.3	2124.7	2208.9	2289.7	2335.5	0.7%	2.7%	1.3%	3.7%	2.0%
Tertiary-Domestic	1038.6	986.5	979.5	1028.0	1017.3	1040.4	-1.0%	-0.1%	1.6%	-1.0%	2.3%
Carbon Intensity (tn of CO_2/toe)	2.6	2.5	2.5	2.4	2.4	2.4	-0.2%	-0.4%	-0.6%	0.0%	-0.5%
Public Power Generation	2.3	2.2	2.1	2.1	2.1	2.0	-0.8%	-0.8%	-0.5%	-1.2%	-2.6%
Public Thermal Power Generation	3.0	3.1	3.2	3.2	3.2	3.1	0.9%	0.2%	0.3%	-1.4%	-0.6%
Autoprod. Power Generation	2.5	2.0	1.9	1.8	1.8	1.9	-3.8%	-1.3%	-1.5%	0.3%	1.9%
Autoprod. Thermal Power Generation	3.2	2.8	2.2	2.0	2.0	2.1	-2.8%	-4.4%	-2.8%	-0.1%	1.7%
Energy Branch	2.4	2.4	2.3	2.3	2.3	2.3	-0.4%	-0.4%	-0.9%	-0.7%	-0.2%
Industry	2.3	2.1	2.2	2.0	2.0	2.0	-1.2%	0.4%	-2.8%	-1.1%	-1.0%
Transport	3.0	3.0	3.0	3.0	3.0	3.0	0.0%	0.0%	0.0%	0.0%	0.0%
Tertiary-Domestic	1.8	1.7	1.6	1.6	1.6	1.5	-1.6%	-1.1%	-0.5%	-1.8%	-0.4%
CO_2 per capita (kg of CO_2/inhabitant)	13079	12263	12569	12544	12685	12696	-1.3%	0.5%	-0.1%	1.1%	0.1%
Industry	2777	2291	2177	1816	1802	1812	-3.8%	-1.0%	-5.9%	-0.8%	0.5%
Transport	3535	3439	3705	3722	3815	3848	-0.5%	1.5%	0.2%	2.5%	0.9%
Tertiary-Domestic	2041	1824	1708	1732	1695	1714	-2.2%	-1.3%	0.5%	-2.2%	1.1%
CO_2 per unit of GDP (tn of CO_2/1990 MECU)	1142	985	913	895	892	889	-2.9%	-1.5%	-0.7%	-0.3%	-0.4%
Public Thermal Power Generation	293	278	265	259	259	252	-1.1%	-0.9%	-0.7%	-0.2%	-2.6%
Autoprod. Thermal Power Generation	9	6	7	32	33	34	-8.7%	4.8%	65.7%	3.2%	2.5%
Energy Branch	65	57	55	52	51	51	-2.7%	-0.5%	-1.8%	-2.0%	-1.0%
Industry	243	184	158	130	127	127	-5.4%	-3.0%	-6.4%	-2.1%	0.1%
Transport	309	276	269	265	268	269	-2.2%	-0.5%	-0.4%	1.1%	0.4%
Tertiary-Domestic	178	147	124	124	119	120	-3.8%	-3.3%	-0.1%	-3.5%	0.7%

NAFTA : SUMMARY ENERGY BALANCE

Mtoe	1980	1985	1990	1993	1994	1995	85/80	90/85	93/90	94/93	95/94
								Annual % Change			
Primary Production	1903.0	1998.3	2110.8	2111.5	2198.0	2208.2	1.0%	1.1%	0.0%	4.1%	0.5%
Solids	470.2	502.5	580.2	528.5	579.2	576.2	1.3%	2.9%	-3.1%	9.6%	-0.5%
Oil	690.3	750.0	673.4	669.2	664.6	661.5	1.7%	-2.1%	-0.2%	-0.7%	-0.5%
Natural gas	539.7	480.0	530.1	560.5	589.8	591.7	-2.3%	2.0%	1.9%	5.2%	0.3%
Nuclear	79.8	122.3	179.5	194.8	206.2	213.8	8.9%	8.0%	2.8%	5.9%	3.7%
Hydro & Wind	47.0	52.8	51.3	54.8	52.9	58.4	2.3%	-0.6%	2.2%	-3.4%	10.5%
Geothermal	5.4	9.9	18.2	20.3	19.8	17.7	13.0%	12.9%	3.8%	-2.4%	-10.7%
Other	70.6	80.8	78.2	83.3	85.5	88.9	2.7%	-0.7%	2.2%	2.6%	3.9%
Net Imports	242.6	66.5	211.9	251.2	275.7	244.5	-22.8%	26.1%	5.8%	9.8%	-11.3%
Solids	-56.0	-64.9	-76.3	-54.7	-54.2	-64.9	3.0%	3.3%	-10.5%	-0.9%	19.7%
Oil	297.7	132.4	287.2	304.8	330.2	311.6	-15.0%	16.8%	2.0%	8.3%	-5.7%
Crude oil	261.9	105.8	265.3	303.6	319.3	313.4	-16.6%	20.2%	4.6%	5.2%	-1.8%
Oil products	35.9	26.5	21.9	1.2	11.0	-1.9	-5.9%	-3.7%	-61.6%	781.8%	-
Natural gas	0.9	-1.0	1.0	1.1	-0.3	-2.1	-	-	2.5%	-	558.2%
Electricity	0.0	0.0	0.0	0.0	0.0	0.0	41.3%	-19.7%	-	12.5%	-
Gross Inland Consumption	2093.3	2076.7	2249.2	2364.8	2411.3	2445.0	-0.2%	1.6%	1.7%	2.0%	1.4%
Solids	399.9	454.5	484.3	503.3	503.0	506.2	2.6%	1.3%	1.3%	-0.1%	0.6%
Oil	949.0	871.0	921.0	940.7	961.8	958.1	-1.7%	1.1%	0.7%	2.2%	-0.4%
Natural gas	541.5	485.2	516.8	567.6	582.0	601.9	-2.2%	1.3%	3.2%	2.5%	3.4%
Other (1)	202.8	265.9	327.2	353.3	364.5	378.9	5.6%	4.2%	2.6%	3.2%	3.9%
Electricity Generation in TWh	2867.6	3173.9	3786.2	4055.2	4153.4	4262.4	2.1%	3.6%	2.3%	2.4%	2.6%
Nuclear	304.2	467.2	687.4	746.7	791.0	820.1	9.0%	8.0%	2.8%	5.9%	3.7%
Hydro & wind	546.8	613.9	596.4	637.1	615.2	679.6	2.3%	-0.6%	2.2%	-3.4%	10.5%
Thermal	2016.5	2092.8	2502.3	2671.3	2747.1	2762.7	0.7%	3.6%	2.2%	2.8%	0.6%
Generation Capacity in GWe	701.6	823.3	866.0	898.4	914.1	923.5	3.3%	1.0%	1.2%	1.7%	1.0%
Nuclear	62.4	92.7	113.9	115.2	116.8	116.8	8.3%	4.2%	0.4%	1.5%	0.0%
Hydro & wind	130.5	147.3	159.6	169.0	172.1	173.9	2.5%	1.6%	1.9%	1.9%	1.0%
Thermal	508.7	583.3	592.5	614.3	625.1	632.8	2.8%	0.3%	1.2%	1.8%	1.2%
Average Load Factor in %	46.7	44.0	49.9	51.5	51.9	52.7	-1.2%	2.6%	1.1%	0.7%	1.6%
Fuel Inputs for Thermal Power Generation	476.1	498.0	584.2	670.4	687.9	688.1	0.9%	3.2%	4.7%	2.6%	0.0%
Solids	307.0	374.1	408.9	451.4	455.8	459.3	4.0%	1.8%	3.3%	1.0%	0.8%
Oil	73.5	39.3	46.9	42.8	43.3	34.1	-11.8%	3.6%	-3.0%	1.2%	-21.2%
Gas	89.9	74.1	70.3	114.8	125.8	135.6	-3.8%	-1.1%	17.8%	9.7%	7.7%
Geothermal	5.4	9.9	18.2	20.3	19.8	17.7	13.0%	12.9%	3.8%	-2.4%	-12.9%
Other	0.3	0.5	40.0	41.0	43.1	41.4	14.0%	136.3%	0.9%	5.1%	-4.0%
Average Thermal Efficiency in %	36.4	36.1	36.8	34.3	34.3	34.5	-0.2%	0.4%	-2.4%	0.2%	0.5%
Non-Energy Uses	112.6	105.3	130.5	130.6	139.4	136.3	-1.3%	4.4%	0.0%	6.8%	-2.3%
Total Final Energy Demand	1445.4	1415.6	1466.6	1479.6	1508.5	1541.0	-0.4%	0.7%	0.3%	2.0%	2.2%
Solids	74.8	73.1	70.2	42.6	40.6	40.5	-0.5%	-0.8%	-15.3%	-4.8%	-0.3%
Oil	711.5	680.8	706.0	720.6	740.1	747.6	-0.9%	0.7%	0.7%	2.7%	1.0%
Gas	382.5	347.4	379.0	375.4	379.0	390.2	-1.9%	1.8%	-0.3%	0.9%	3.0%
Electricity	205.2	232.0	270.9	293.3	301.5	310.5	2.5%	3.2%	2.7%	2.8%	3.0%
Heat	1.0	2.2	2.2	7.5	7.5	7.5	16.3%	-0.2%	51.0%	-0.2%	0.3%
Other	70.3	80.2	38.2	40.0	39.8	44.8	2.7%	-13.8%	1.6%	-0.5%	12.4%
CO_2 Emissions in Mt of CO_2	5414.3	5342.4	5685.9	5871.1	5978.4	6040.8	-0.3%	1.3%	1.1%	1.8%	1.0%
Indicators											
Population (Million)	319.41	339.93	362.23	376.65	381.51	386.44	1.3%	1.3%	1.3%	1.3%	1.3%
GDP (index 1985=100)	87.9	100.0	114.3	120.3	124.6	126.6	2.6%	2.7%	1.7%	3.6%	1.7%
Gross Inl Cons./GDP (toe/1990 MECU)	550.1	480.0	454.7	454.5	447.5	446.2	-2.7%	-1.1%	0.0%	-1.5%	-0.3%
Gross Inl Cons./Capita (toe/inhabitant)	6.55	6.11	6.21	6.28	6.32	6.33	-1.4%	0.3%	0.4%	0.7%	0.1%
Electricity Generated/Capita (kWh/inhabitant)	8978	9337	10453	10767	10887	11030	0.8%	2.3%	1.0%	1.1%	1.3%
CO_2 Emissions/Capita (t of CO_2/inhabitant)	17.0	15.7	15.7	15.6	15.7	15.6	-1.5%	0.0%	-0.2%	0.5%	-0.2%
Import Dependency %	11.4	3.2	9.3	10.5	11.3	9.9	-22.6%	24.0%	4.1%	7.7%	-12.5%

(1) Includes nuclear, hydro and wind, net imports of electricity, and other energy sources.

NAFTA : MAIN INDICATORS

	1980	1985	1990	1993	1994	1995	85/80	90/85	93/90	94/93	95/94
							Annual % Change				
Gross Inland Consumption (Mtoe)	2093.3	2076.7	2249.2	2364.8	2411.3	2445.0	-0.2%	1.6%	1.7%	2.0%	1.4%
Public Thermal Power Generation	469.8	486.9	525.7	539.7	551.6	551.7	0.7%	1.5%	0.9%	2.2%	0.0%
Autoprod. Thermal Power Generation	0.9	1.2	40.6	110.6	116.9	119.1	4.3%	103.6%	39.7%	5.7%	1.9%
Energy Branch	130.6	132.1	154.2	155.2	156.2	157.1	0.2%	3.1%	0.2%	0.6%	0.6%
Final Energy Consumption	1445.4	1415.6	1466.6	1479.6	1508.5	1541.0	-0.4%	0.7%	0.3%	2.0%	2.2%
Industry	478.4	433.2	412.1	378.4	383.7	395.0	-2.0%	-1.0%	-2.8%	1.4%	2.9%
Transport	502.2	515.5	577.8	596.6	618.7	628.5	0.5%	2.3%	1.1%	3.7%	1.6%
Tertiary-Domestic	464.7	467.0	476.7	504.6	506.1	517.5	0.1%	0.4%	1.9%	0.3%	2.3%
Energy Intensity (toe/1990 MECU)	550.1	480.0	454.7	454.5	447.5	446.2	-2.7%	-1.1%	0.0%	-1.5%	-0.3%
Public Thermal Power Generation	123.4	112.5	106.3	103.7	102.4	100.7	-1.8%	-1.1%	-0.8%	-1.3%	-1.6%
Autoprod. Thermal Power Generation	0.2	0.3	8.2	21.3	21.7	21.7	1.7%	98.2%	37.4%	2.0%	0.2%
Industry	125.7	100.1	83.3	72.7	71.2	72.1	-4.5%	-3.6%	-4.4%	-2.1%	1.2%
Transport	132.0	119.1	116.8	114.6	114.8	114.7	-2.0%	-0.4%	-0.6%	0.1%	-0.1%
Tertiary-Domestic	122.1	107.9	96.4	97.0	93.9	94.4	-2.4%	-2.2%	0.2%	-3.2%	0.6%
Energy per capita (Kgoe/inhabitant)	6554	6109	6209	6279	6321	6327	-1.4%	0.3%	0.4%	0.7%	0.1%
Industry	1498	1274	1138	1005	1006	1022	-3.2%	-2.2%	-4.1%	0.1%	1.6%
Transport	1572	1516	1595	1584	1622	1626	-0.7%	1.0%	-0.2%	2.4%	0.3%
Tertiary-Domestic	1455	1374	1316	1340	1326	1339	-1.1%	-0.9%	0.6%	-1.0%	1.0%
Electricity Share (%)											
Final Energy Consumption	14.2%	16.4%	18.5%	19.8%	20.0%	20.1%	2.9%	2.4%	2.4%	0.8%	0.8%
Industry	16.4%	19.3%	22.7%	27.7%	28.5%	28.3%	3.3%	3.3%	6.9%	2.8%	-0.6%
Transport	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	4.3%	-0.1%	-0.4%	-1.2%	0.8%
Tertiary-Domestic	27.2%	31.7%	37.1%	37.2%	37.8%	38.2%	3.1%	3.2%	0.1%	1.7%	2.8%
CO_2 Emissions (Mt of CO_2)	5414.3	5342.4	5685.9	5871.1	5978.4	6040.8	-0.3%	1.3%	1.1%	1.8%	1.0%
Public Thermal Power Generation	1432.9	1592.0	1752.6	1818.2	1833.1	1819.5	2.1%	1.9%	1.2%	0.8%	-0.7%
Autoprod. Thermal Power Generation	2.1	2.6	2.5	207.6	219.4	228.8	4.7%	-1.3%	338.0%	5.7%	4.3%
Energy Branch	315.8	313.9	360.8	352.5	352.8	354.0	-0.1%	2.8%	-0.8%	0.1%	0.4%
Industry	1058.0	889.3	879.5	717.0	717.7	730.1	-3.4%	-0.2%	-6.6%	0.1%	1.7%
Transport	1530.7	1572.4	1760.7	1818.1	1885.0	1914.4	0.5%	2.3%	1.1%	3.7%	1.6%
Tertiary-Domestic	850.2	787.8	755.1	787.3	780.1	789.2	-1.5%	-0.8%	1.4%	-0.9%	1.2%
Carbon Intensity (tn of CO_2/toe)	2.6	2.6	2.5	2.5	2.5	2.5	-0.1%	-0.3%	-0.6%	-0.1%	-0.3%
Public Power Generation	2.4	2.4	2.3	2.3	2.2	2.2	-0.1%	-0.8%	-0.1%	-1.7%	-2.1%
Public Thermal Power Generation	3.1	3.3	3.3	3.4	3.3	3.3	1.4%	0.4%	0.3%	-1.3%	-0.8%
Autoprod. Power Generation	0.6	0.7	1.3	1.7	1.7	1.7	3.8%	13.1%	9.1%	0.3%	2.7%
Autoprod. Thermal Power Generation	2.2	2.3	1.9	1.9	1.9	1.9	0.4%	-3.5%	-0.4%	0.0%	2.4%
Energy Branch	2.4	2.4	2.3	2.3	2.3	2.3	-0.4%	-0.3%	-1.0%	-0.5%	-0.2%
Industry	2.2	2.1	2.1	1.9	1.9	1.8	-1.5%	0.8%	-3.9%	-1.3%	-1.2%
Transport	3.0	3.1	3.0	3.0	3.0	3.0	0.0%	0.0%	0.0%	0.0%	0.0%
Tertiary-Domestic	1.8	1.7	1.6	1.6	1.5	1.5	-1.6%	-1.3%	-0.5%	-1.2%	-1.1%
CO_2 per capita (kg of CO_2/inhabitant)	16951	15716	15697	15588	15670	15632	-1.5%	0.0%	-0.2%	0.5%	-0.2%
Industry	3312	2616	2428	1904	1881	1889	-4.6%	-1.5%	-7.8%	-1.2%	0.4%
Transport	4792	4626	4861	4827	4941	4954	-0.7%	1.0%	-0.2%	2.4%	0.3%
Tertiary-Domestic	2662	2318	2085	2090	2045	2042	-2.7%	-2.1%	0.1%	-2.2%	-0.1%
CO_2 per unit of GDP (tn of CO_2/1990 MECU)	1423	1235	1149	1128	1109	1102	-2.8%	-1.4%	-0.6%	-1.7%	-0.6%
Public Thermal Power Generation	377	368	354	349	340	332	-0.5%	-0.8%	-0.5%	-2.6%	-2.4%
Autoprod. Thermal Power Generation	1	1	0	40	41	42	2.0%	-3.9%	330.7%	2.1%	2.6%
Energy Branch	83	73	73	68	65	65	-2.7%	0.1%	-2.4%	-3.4%	-1.3%
Industry	278	206	178	138	133	133	-5.9%	-2.9%	-8.1%	-3.3%	0.0%
Transport	402	363	356	349	350	349	-2.0%	-0.4%	-0.6%	0.1%	-0.1%
Tertiary-Domestic	223	182	153	151	145	144	-4.0%	-3.5%	-0.3%	-4.3%	-0.5%

UNITED STATES : SUMMARY ENERGY BALANCE

Mtoe	1980	1985	1990	1993	1994	1995	85/80	90/85	93/90	94/93	95/94
								Annual % Change			
Primary Production	1546.3	1563.1	1642.0	1591.7	1655.3	1655.6	0.2%	1.0%	-1.0%	4.0%	0.0%
Solids	447.9	465.9	539.1	487.9	535.6	531.5	0.8%	3.0%	-3.3%	9.8%	-0.8%
Oil	491.4	507.3	424.5	404.3	395.0	391.7	0.6%	-3.5%	-1.6%	-2.3%	-0.8%
Natural gas	454.6	385.9	419.2	424.1	441.3	435.7	-3.2%	1.7%	0.4%	4.0%	-1.3%
Nuclear	69.4	106.0	159.4	168.6	176.9	186.0	8.8%	8.5%	1.9%	4.9%	5.1%
Hydro & Wind	24.0	24.4	23.7	24.7	23.0	27.4	0.4%	-0.6%	1.3%	-7.0%	19.1%
Geothermal	4.6	8.5	13.8	15.3	15.0	12.8	13.1%	10.1%	3.5%	-1.7%	-14.5%
Other	54.5	65.1	62.3	66.8	68.4	70.5	3.6%	-0.9%	2.4%	2.4%	3.1%
Net Imports	303.9	199.3	340.9	417.4	448.8	433.4	-8.1%	11.3%	7.0%	7.5%	-3.4%
Solids	-57.0	-57.3	-64.8	-41.5	-39.1	-49.4	0.1%	2.5%	-13.9%	-5.6%	26.4%
Oil	336.9	232.8	372.4	405.3	427.0	418.4	-7.1%	9.9%	2.9%	5.4%	-2.0%
Crude oil	295.6	200.4	346.4	399.2	415.0	415.2	-7.5%	11.6%	4.8%	3.9%	0.0%
Oil products	41.3	32.4	26.0	6.1	12.0	3.2	-4.7%	-4.3%	-38.4%	97.5%	-73.4%
Natural gas	21.7	20.3	33.2	51.1	57.1	61.3	-1.3%	10.3%	15.5%	11.7%	7.4%
Electricity	2.3	3.5	0.2	2.4	3.8	3.2	8.9%	-45.4%	142.7%	57.0%	-17.0%
Gross Inland Consumption	1801.4	1772.2	1915.0	2012.0	2045.8	2078.3	-0.3%	1.6%	1.7%	1.7%	1.6%
Solids	376.2	425.7	456.7	475.2	473.4	475.4	2.5%	1.4%	1.3%	-0.4%	0.4%
Oil	793.7	727.3	759.7	777.1	793.5	795.2	-1.7%	0.9%	0.8%	2.1%	0.2%
Natural gas	476.8	411.7	439.3	481.8	491.7	507.7	-2.9%	1.3%	3.1%	2.0%	3.3%
Other (1)	154.7	207.5	259.3	277.9	287.2	300.0	6.0%	4.6%	2.3%	3.4%	4.5%
Electricity Generation in TWh	2427.3	2621.9	3181.5	3391.5	3451.8	3558.4	1.6%	3.9%	2.2%	1.8%	3.1%
Nuclear	266.2	406.7	611.6	647.0	678.9	713.8	8.8%	8.5%	1.9%	4.9%	5.1%
Hydro & wind	278.8	284.0	273.2	283.3	262.8	314.1	0.4%	-0.8%	1.2%	-7.2%	19.5%
Thermal	1882.4	1931.3	2296.8	2461.2	2510.1	2530.5	0.5%	3.5%	2.3%	2.0%	0.8%
Generation Capacity in GWe	603.1	701.9	733.3	755.5	764.8	771.4	3.1%	0.9%	1.0%	1.2%	0.9%
Nuclear	56.5	81.6	99.6	99.1	99.1	99.1	7.6%	4.1%	-0.2%	0.1%	0.0%
Hydro & wind	76.7	85.0	92.4	98.7	99.7	100.2	2.1%	1.7%	2.2%	1.1%	0.5%
Thermal	470.0	535.3	541.3	557.8	565.9	572.0	2.6%	0.2%	1.0%	1.5%	1.1%
Average Load Factor in %	45.9	42.6	49.5	51.2	51.5	52.7	-1.5%	3.0%	1.1%	0.5%	2.2%
Fuel Inputs for Thermal Power Generation	442.9	458.8	533.6	618.0	631.0	631.1	0.7%	3.1%	5.0%	2.1%	0.0%
Solids	292.0	353.7	387.6	429.4	432.4	434.8	3.9%	1.9%	3.5%	0.7%	0.6%
Oil	60.6	25.1	27.3	24.2	22.3	15.2	-16.2%	1.7%	-3.9%	-7.9%	-32.0%
Gas	85.6	71.2	65.3	108.4	118.5	127.2	-3.6%	-1.7%	18.4%	9.4%	7.3%
Geothermal	4.6	8.5	13.8	15.3	15.0	12.8	13.1%	10.1%	3.5%	-1.7%	-15.9%
Other	0.1	0.4	39.7	40.7	42.8	41.1	26.6%	157.0%	0.9%	5.0%	-4.0%
Average Thermal Efficiency in %	36.6	36.2	37.0	34.2	34.2	34.5	-0.2%	0.4%	-2.6%	-0.1%	0.8%
Non-Energy Uses	96.2	82.4	107.2	106.2	114.1	112.3	-3.0%	5.4%	-0.3%	7.4%	-1.6%
Total Final Energy Demand	1235.0	1204.7	1239.1	1241.1	1263.5	1290.9	-0.5%	0.6%	0.1%	1.8%	2.2%
Solids	67.5	65.8	64.6	37.1	35.1	34.7	-0.5%	-0.4%	-16.9%	-5.3%	-1.2%
Oil	601.5	582.4	596.3	607.7	624.1	632.5	-0.6%	0.5%	0.6%	2.7%	1.3%
Gas	337.4	296.6	327.4	318.2	319.7	328.1	-2.5%	2.0%	-0.9%	0.5%	2.6%
Electricity	174.2	193.8	226.5	247.1	254.2	261.6	2.2%	3.2%	2.9%	2.9%	2.9%
Heat	0.0	1.4	1.7	7.2	7.1	7.2	-	3.9%	62.9%	-1.5%	1.5%
Other	54.4	64.7	22.6	23.8	23.1	26.8	3.6%	-19.0%	1.8%	-2.8%	15.9%
CO_2 Emissions in Mt of CO_2	4765.3	4683.8	4961.6	5122.2	5196.7	5254.8	-0.3%	1.2%	1.1%	1.5%	1.1%
Indicators											
Population (Million)	227.76	238.47	249.92	257.84	260.53	263.25	0.9%	0.9%	1.0%	1.0%	1.0%
GDP (index 1985=100)	87.9	100.0	114.6	120.9	125.2	127.7	2.6%	2.8%	1.8%	3.5%	2.0%
Gross Inl Cons./GDP (toe/1990 MECU)	544.7	471.3	444.4	442.4	434.6	432.9	-2.9%	-1.2%	-0.1%	-1.8%	-0.4%
Gross Inl Cons./Capita (toe/inhabitant)	7.91	7.43	7.66	7.80	7.85	7.89	-1.2%	0.6%	0.6%	0.6%	0.5%
Electricity Generated/Capita (kWh/inhabitant)	10657	10995	12730	13154	13249	13517	0.6%	3.0%	1.1%	0.7%	2.0%
CO_2 Emissions/Capita (t of CO_2/inhabitant)	20.9	19.6	19.9	19.9	19.9	20.0	-1.3%	0.2%	0.0%	0.4%	0.1%
Import Dependency %	16.6	11.1	17.5	20.5	21.7	20.6	-7.7%	9.5%	5.3%	5.8%	-4.9%

(1) Includes nuclear, hydro and wind, net imports of electricity, and other energy sources.

OECD PACIFIC : SUMMARY ENERGY BALANCE

Mtoe	1980	1985	1990	1993	1994	1995	85/80	90/85	93/90	94/93	95/94
							Annual % Change				
Primary Production	134.9	201.8	244.8	274.5	277.2	298.5	8.4%	3.9%	3.9%	1.0%	7.7%
Solids	64.6	92.1	112.3	124.7	124.2	133.1	7.3%	4.0%	3.6%	-0.4%	7.2%
Oil	22.2	29.6	31.0	30.6	28.8	30.4	6.0%	0.9%	-0.5%	-5.8%	5.4%
Natural gas	10.3	16.2	22.8	27.2	28.6	30.9	9.5%	7.1%	6.0%	5.1%	7.9%
Nuclear	21.5	41.6	52.7	65.0	70.1	75.9	14.1%	4.9%	7.2%	8.0%	8.2%
Hydro & Wind	10.4	10.0	11.0	11.7	9.5	10.9	-0.6%	1.8%	2.3%	-19.1%	14.7%
Geothermal	1.8	2.3	3.7	3.7	4.1	5.0	4.8%	10.1%	0.4%	11.4%	21.8%
Other	4.2	10.0	11.3	11.7	11.8	12.3	19.3%	2.4%	1.1%	1.3%	4.5%
Net Imports	305.5	257.1	306.6	300.9	322.9	318.3	-3.4%	3.6%	-0.6%	7.3%	-1.4%
Solids	19.0	8.5	1.1	-11.7	-9.5	-10.3	-14.9%	-33.8%	-	-18.8%	8.4%
Oil	267.0	215.6	266.3	272.7	290.0	286.8	-4.2%	4.3%	0.8%	6.3%	-1.1%
Crude oil	236.2	174.5	205.3	232.7	247.8	243.1	-5.9%	3.3%	4.3%	6.5%	-1.9%
Oil products	30.8	41.2	60.9	40.0	42.2	43.8	6.0%	8.2%	-13.1%	5.5%	3.7%
Natural gas	19.5	33.0	39.3	39.9	42.4	41.8	11.0%	3.6%	0.5%	6.2%	-1.6%
Electricity	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-	-
Gross Inland Consumption	426.1	452.3	539.8	568.0	590.8	606.8	1.2%	3.6%	1.7%	4.0%	2.7%
Solids	87.9	104.2	110.1	115.5	116.9	121.3	3.5%	1.1%	1.6%	1.2%	3.7%
Oil	270.6	235.0	289.1	293.3	307.4	308.7	-2.8%	4.2%	0.5%	4.8%	0.4%
Natural gas	29.9	49.2	62.0	67.1	70.9	72.7	10.5%	4.7%	2.7%	5.6%	2.6%
Other (1)	37.8	63.9	78.6	92.1	95.6	104.2	11.1%	4.2%	5.4%	3.8%	9.0%
Electricity Generation in TWh	690.0	814.0	1036.8	1093.7	1158.8	1190.4	3.4%	5.0%	1.8%	6.0%	2.7%
Nuclear	82.6	159.6	202.3	249.3	269.1	291.3	14.1%	4.9%	7.2%	8.0%	8.2%
Hydro & wind	120.2	116.2	126.8	135.6	109.5	125.7	-0.7%	1.8%	2.3%	-19.3%	14.8%
Thermal	487.3	538.1	707.7	708.8	780.2	773.5	2.0%	5.6%	0.1%	10.1%	-0.9%
Generation Capacity in GWe	175.3	211.0	237.9	257.7	267.1	273.9	3.8%	2.4%	2.7%	3.7%	2.6%
Nuclear	15.7	24.7	31.6	38.5	40.5	40.5	9.5%	5.1%	6.8%	5.2%	0.0%
Hydro & wind	39.9	45.9	49.7	52.4	54.4	56.3	2.9%	1.6%	1.8%	3.9%	3.4%
Thermal	119.7	140.5	156.6	166.7	172.1	177.1	3.2%	2.2%	2.1%	3.2%	2.9%
Average Load Factor in %	44.9	44.0	49.7	48.5	49.5	49.6	-0.4%	2.5%	-0.9%	2.2%	0.2%
Fuel Inputs for Thermal Power Generation	111.8	115.4	147.0	147.1	159.9	158.1	0.6%	4.9%	0.0%	8.7%	-1.2%
Solids	30.8	44.3	54.2	60.2	62.6	65.6	7.5%	4.1%	3.6%	3.9%	4.7%
Oil	61.5	37.3	49.2	41.6	49.2	43.0	-9.5%	5.7%	-5.4%	18.3%	-12.6%
Gas	17.5	29.3	36.4	37.9	40.5	40.8	10.8%	4.4%	1.4%	7.0%	0.7%
Geothermal	1.8	2.3	3.4	3.4	3.2	4.1	4.8%	8.5%	-0.1%	-4.3%	21.9%
Other	0.1	2.2	3.7	4.0	4.3	4.6	82.1%	11.1%	2.4%	7.9%	5.3%
Average Thermal Efficiency in %	37.5	40.1	41.4	41.4	42.0	42.1	1.3%	0.7%	0.0%	1.3%	0.3%
Non-Energy Uses	32.1	31.4	41.1	42.9	45.4	48.6	-0.4%	5.5%	1.4%	5.9%	6.9%
Total Final Energy Demand	271.9	288.8	338.6	353.1	365.3	375.4	1.2%	3.2%	1.4%	3.4%	2.8%
Solids	42.7	43.6	45.2	43.4	43.9	44.1	0.4%	0.7%	-1.4%	1.2%	0.6%
Oil	157.3	156.6	182.7	191.0	196.3	202.3	-0.1%	3.1%	1.5%	2.8%	3.1%
Gas	15.1	19.3	24.1	27.8	28.7	29.9	5.0%	4.6%	4.9%	3.2%	4.2%
Electricity	52.6	61.3	78.6	82.6	87.6	89.9	3.1%	5.1%	1.7%	6.0%	2.7%
Heat	0.1	0.1	0.5	0.6	1.2	1.3	6.2%	28.0%	8.9%	103.4%	3.4%
Other	4.1	7.9	7.6	7.7	7.6	7.9	14.1%	-0.6%	0.4%	-2.1%	4.1%
CO_2 Emissions in Mt of CO_2	1098.9	1122.5	1318.2	1352.1	1413.9	1430.7	0.4%	3.3%	0.8%	4.6%	1.2%
Indicators											
Population (Million)	134.49	139.73	143.79	145.55	146.15	146.76	0.8%	0.6%	0.4%	0.4%	0.4%
GDP (index 1985=100)	83.6	100.0	123.4	130.1	131.4	132.9	3.6%	4.3%	1.8%	1.0%	1.1%
Gross Inl Cons./GDP (toe/1990 MECU)	244.8	217.2	210.2	209.6	215.9	219.2	-2.4%	-0.7%	-0.1%	3.0%	1.6%
Gross Inl Cons./Capita (toe/inhabitant)	3.17	3.24	3.75	3.90	4.04	4.13	0.4%	3.0%	1.3%	3.6%	2.3%
Electricity Generated/Capita (kWh/inhabitant)	5131	5825	7210	7514	7929	8111	2.6%	4.4%	1.4%	5.5%	2.3%
CO_2 Emissions/Capita (t of CO_2/inhabitant)	8.2	8.0	9.2	9.3	9.7	9.7	-0.3%	2.7%	0.4%	4.1%	0.8%
Import Dependency %	69.6	55.8	56.2	52.3	53.9	51.8	-4.3%	0.1%	-2.4%	3.1%	-3.9%

(1) Includes nuclear, hydro and wind, net imports of electricity, and other energy sources.

OECD PACIFIC : MAIN INDICATORS

	1980	1985	1990	1993	1994	1995	85/80	90/85	93/90	94/93	95/94
							Annual % Change				
Gross Inland Consumption (Mtoe)	426.1	452.3	539.8	568.0	590.8	606.8	1.2%	3.6%	1.7%	4.0%	2.7%
Public Thermal Power Generation	95.6	101.8	125.5	124.1	135.8	132.1	1.3%	4.3%	-0.4%	9.5%	-2.7%
Autoprod. Thermal Power Generation	14.4	11.4	18.1	19.7	20.9	21.9	-4.6%	9.7%	2.9%	6.1%	4.6%
Energy Branch	21.2	23.3	26.2	27.7	28.9	29.5	1.9%	2.4%	1.9%	4.2%	2.3%
Final Energy Consumption	271.9	288.8	338.6	353.1	365.3	375.4	1.2%	3.2%	1.4%	3.4%	2.8%
Industry	126.1	126.2	137.9	136.4	139.6	141.4	0.0%	1.8%	-0.4%	2.4%	1.3%
Transport	75.7	80.1	100.5	107.6	112.3	116.4	1.1%	4.6%	2.3%	4.3%	3.7%
Tertiary-Domestic	70.1	82.6	100.3	109.1	113.3	117.6	3.3%	4.0%	2.9%	3.8%	3.8%
Energy Intensity (toe/1990 MECU)	244.8	217.2	210.2	209.6	215.9	219.2	-2.4%	-0.7%	-0.1%	3.0%	1.6%
Public Thermal Power Generation	54.9	48.9	48.9	45.8	49.6	47.7	-2.3%	0.0%	-2.1%	8.4%	-3.8%
Autoprod. Thermal Power Generation	8.3	5.5	7.0	7.3	7.6	7.9	-7.9%	5.1%	1.1%	5.1%	3.4%
Industry	72.5	60.6	53.7	50.3	51.0	51.1	-3.5%	-2.4%	-2.1%	1.4%	0.1%
Transport	43.5	38.5	39.1	39.7	41.0	42.1	-2.4%	0.3%	0.5%	3.3%	2.5%
Tertiary-Domestic	40.3	39.6	39.0	40.3	41.4	42.5	-0.3%	-0.3%	1.0%	2.8%	2.6%
Energy per capita (Kgoe/inhabitant)	3168	3237	3754	3902	4042	4135	0.4%	3.0%	1.3%	3.6%	2.3%
Industry	938	903	959	937	955	963	-0.8%	1.2%	-0.8%	2.0%	0.9%
Transport	563	573	699	740	769	793	0.4%	4.1%	1.9%	3.9%	3.2%
Tertiary-Domestic	521	591	697	750	775	801	2.5%	3.4%	2.4%	3.4%	3.3%
Electricity Share (%)											
Final Energy Consumption	19.4%	21.2%	23.2%	23.4%	24.0%	24.0%	1.9%	1.8%	0.3%	2.5%	-0.1%
Industry	25.1%	24.6%	27.9%	28.2%	28.7%	28.8%	-0.4%	2.5%	0.4%	1.7%	0.4%
Transport	1.8%	1.9%	1.9%	1.8%	1.8%	1.7%	0.5%	-0.2%	-0.6%	-2.5%	-2.5%
Tertiary-Domestic	28.0%	34.8%	38.1%	38.6%	40.1%	40.1%	4.5%	1.8%	0.4%	3.9%	3.8%
CO_2 Emissions (Mt of CO_2)	1098.9	1122.5	1318.2	1352.1	1413.9	1430.7	0.4%	3.3%	0.8%	4.6%	1.2%
Public Thermal Power Generation	265.0	258.8	317.7	312.6	343.0	332.8	-0.5%	4.2%	-0.5%	9.7%	-3.0%
Autoprod. Thermal Power Generation	46.4	31.4	49.2	54.3	57.2	59.8	-7.5%	9.4%	3.3%	5.4%	4.5%
Energy Branch	54.9	58.5	62.1	64.5	66.1	67.5	1.3%	1.2%	1.3%	2.5%	2.0%
Industry	315.4	308.1	322.7	316.3	321.2	323.4	-0.5%	0.9%	-0.7%	1.5%	0.7%
Transport	228.0	241.1	302.7	324.3	338.5	351.1	1.1%	4.7%	2.3%	4.4%	3.7%
Tertiary-Domestic	145.5	151.4	173.6	186.1	187.5	195.2	0.8%	2.8%	2.4%	0.7%	4.1%
Carbon Intensity (tn of CO_2/toe)	2.6	2.5	2.4	2.4	2.4	2.4	-0.8%	-0.3%	-0.8%	0.5%	-1.5%
Public Power Generation	2.1	1.7	1.7	1.5	1.6	1.5	-4.1%	-0.2%	-2.4%	2.3%	-4.8%
Public Thermal Power Generation	2.8	2.5	2.5	2.5	2.5	2.5	-1.7%	-0.1%	-0.2%	0.2%	-0.2%
Autoprod. Power Generation	3.1	2.5	2.6	2.6	2.6	2.6	-3.6%	0.2%	0.4%	0.6%	-0.6%
Autoprod. Thermal Power Generation	3.2	2.7	2.7	2.8	2.7	2.7	-3.1%	-0.2%	0.4%	-0.7%	-0.1%
Energy Branch	2.6	2.5	2.4	2.3	2.3	2.3	-0.6%	-1.1%	-0.6%	-1.6%	-0.3%
Industry	2.5	2.4	2.3	2.3	2.3	2.3	-0.5%	-0.8%	-0.3%	-0.8%	-0.6%
Transport	3.0	3.0	3.0	3.0	3.0	3.0	0.0%	0.0%	0.0%	0.0%	0.0%
Tertiary-Domestic	2.1	1.8	1.7	1.7	1.7	1.7	-2.4%	-1.2%	-0.5%	-3.0%	0.3%
CO_2 per capita (kg of CO_2/inhabitant)	8171	8033	9168	9289	9674	9749	-0.3%	2.7%	0.4%	4.1%	0.8%
Industry	2345	2205	2244	2173	2198	2203	-1.2%	0.4%	-1.1%	1.1%	0.3%
Transport	1695	1726	2105	2228	2316	2392	0.4%	4.1%	1.9%	4.0%	3.3%
Tertiary-Domestic	1082	1084	1207	1279	1283	1330	0.0%	2.2%	1.9%	0.3%	3.7%
CO_2 per unit of GDP (tn of CO_2/1990 MECU)	631	539	513	499	517	517	-3.1%	-1.0%	-0.9%	3.5%	0.1%
Public Thermal Power Generation	152	124	124	115	125	120	-4.0%	-0.1%	-2.3%	8.6%	-4.1%
Autoprod. Thermal Power Generation	27	15	19	20	21	22	-10.8%	4.9%	1.5%	4.4%	3.3%
Energy Branch	32	28	24	24	24	24	-2.3%	-3.0%	-0.5%	1.5%	0.8%
Industry	181	148	126	117	117	117	-4.0%	-3.2%	-2.4%	0.5%	-0.5%
Transport	131	116	118	120	124	127	-2.4%	0.4%	0.5%	3.4%	2.5%
Tertiary-Domestic	84	73	68	69	69	71	-2.7%	-1.5%	0.5%	-0.3%	2.9%

JAPAN : SUMMARY ENERGY BALANCE

Mtoe	1980	1985	1990	1993	1994	1995	85/80	90/85	93/90	94/93	95/94
							Annual % Change				
Primary Production	43.2	67.7	75.6	88.1	91.5	99.5	9.4%	2.2%	5.2%	4.0%	8.7%
Solids	10.9	9.6	4.6	4.0	3.8	3.5	-2.5%	-13.8%	-4.5%	-3.9%	-9.7%
Oil	0.5	0.6	0.6	0.9	0.8	0.8	2.5%	0.8%	11.9%	-4.0%	-0.9%
Natural gas	1.9	2.0	1.8	1.9	2.0	1.9	0.3%	-1.7%	2.5%	3.1%	-2.8%
Nuclear	21.5	41.6	52.7	65.0	70.1	75.9	14.1%	4.9%	7.2%	8.0%	8.2%
Hydro & Wind	7.6	7.1	7.7	8.2	5.8	7.1	-1.3%	1.5%	2.3%	-29.6%	22.2%
Geothermal	0.8	1.3	1.5	1.5	2.4	3.3	10.7%	3.1%	0.7%	54.7%	40.4%
Other	0.0	5.5	6.7	6.6	6.6	7.0	-	4.1%	-0.7%	0.7%	5.3%
Net Imports	318.8	308.4	369.3	380.9	402.1	404.4	-0.7%	3.7%	1.0%	5.6%	0.6%
Solids	47.5	63.4	69.0	72.3	74.8	79.0	5.9%	1.7%	1.6%	3.4%	5.6%
Oil	251.7	212.1	258.7	262.7	278.1	275.4	-3.4%	4.1%	0.5%	5.8%	-1.0%
Crude oil	223.0	172.2	198.5	221.4	235.3	231.9	-5.0%	2.9%	3.7%	6.2%	-1.4%
Oil products	28.7	39.9	60.2	41.3	42.8	43.5	6.8%	8.6%	-11.8%	3.6%	1.6%
Natural gas	19.5	33.0	41.7	45.9	49.3	50.0	11.0%	4.8%	3.3%	7.5%	1.4%
Electricity	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-	-
Gross Inland Consumption	346.6	367.0	438.8	460.8	483.3	497.2	1.2%	3.6%	1.6%	4.9%	2.9%
Solids	59.6	73.0	74.0	76.8	78.8	82.6	4.1%	0.3%	1.3%	2.5%	4.9%
Oil	235.6	203.6	252.9	254.9	268.5	269.4	-2.9%	4.4%	0.3%	5.3%	0.3%
Natural gas	21.5	35.0	43.3	47.8	51.2	52.0	10.3%	4.3%	3.4%	7.1%	1.7%
Other (1)	29.9	55.5	68.6	81.3	84.9	93.3	13.2%	4.3%	5.8%	4.5%	9.8%
Electricity Generation in TWh	572.5	666.9	850.8	896.8	955.9	980.9	3.1%	5.0%	1.8%	6.6%	2.6%
Nuclear	82.6	159.6	202.3	249.3	269.1	291.3	14.1%	4.9%	7.2%	8.0%	8.2%
Hydro & wind	88.3	82.9	89.3	95.6	67.3	82.2	-1.3%	1.5%	2.3%	-29.6%	22.2%
Thermal	401.6	424.5	559.2	552.0	619.5	607.4	1.1%	5.7%	-0.4%	12.2%	-2.0%
Generation Capacity in GWe	143.7	169.4	194.7	212.9	220.7	226.5	3.3%	2.8%	3.0%	3.7%	2.6%
Nuclear	15.7	24.7	31.6	38.5	40.5	40.5	9.5%	5.1%	6.8%	5.2%	0.0%
Hydro & wind	29.8	34.3	37.8	40.0	41.9	43.8	2.9%	2.0%	1.8%	4.9%	4.3%
Thermal	98.3	110.3	125.3	134.4	138.3	142.3	2.3%	2.6%	2.4%	2.9%	2.9%
Average Load Factor in %	45.5	45.0	49.9	48.1	49.4	49.4	-0.2%	2.1%	-1.2%	2.8%	0.0%
Fuel Inputs for Thermal Power Generation	87.2	85.8	109.9	108.5	121.8	119.2	-0.3%	5.1%	-0.4%	12.3%	-2.2%
Solids	10.5	20.5	25.3	29.3	32.1	34.5	14.3%	4.3%	5.0%	9.4%	7.5%
Oil	60.3	36.4	48.4	41.0	48.6	42.3	-9.6%	5.9%	-5.4%	18.5%	-12.9%
Gas	15.6	25.6	31.7	33.5	36.1	36.1	10.5%	4.3%	1.8%	7.9%	0.1%
Geothermal	0.8	1.3	1.5	1.5	1.8	2.7	10.7%	3.1%	0.7%	16.2%	78.6%
Other	0.0	2.1	3.0	3.2	3.3	3.5	-	7.9%	1.8%	3.4%	7.1%
Average Thermal Efficiency in %	39.6	42.5	43.8	43.8	43.7	43.8	1.4%	0.6%	0.0%	0.0%	0.2%
Non-Energy Uses	29.1	28.0	36.8	38.1	40.1	42.8	-0.7%	5.6%	1.1%	5.4%	6.5%
Total Final Energy Demand	218.8	232.9	274.0	285.6	295.8	303.5	1.3%	3.3%	1.4%	3.6%	2.6%
Solids	36.2	37.4	38.8	36.8	37.2	37.5	0.7%	0.7%	-1.7%	0.8%	0.8%
Oil	128.6	129.3	151.5	158.9	163.2	167.7	0.1%	3.2%	1.6%	2.7%	2.8%
Gas	9.7	11.8	14.7	17.8	18.3	19.1	3.9%	4.6%	6.5%	3.1%	3.9%
Electricity	44.1	50.8	65.1	68.3	72.9	74.8	2.9%	5.1%	1.6%	6.7%	2.6%
Heat	0.1	0.1	0.2	0.3	0.9	1.0	6.2%	7.9%	12.0%	229.6%	3.3%
Other	0.0	3.4	3.7	3.4	3.3	3.4	-	1.5%	-2.8%	-1.9%	3.6%
CO_2 Emissions in Mt of CO_2	870.5	878.4	1030.8	1053.3	1111.1	1119.0	0.2%	3.3%	0.7%	5.5%	0.7%
Indicators											
Population (Million)	116.81	120.84	123.54	124.47	124.78	125.10	0.7%	0.4%	0.3%	0.3%	0.3%
GDP (index 1985=100)	83.3	100.0	124.6	131.1	131.7	132.9	3.7%	4.5%	1.7%	0.5%	0.9%
Gross Inl Cons./GDP (toe/1990 MECU)	225.3	198.6	190.6	190.2	198.5	202.4	-2.5%	-0.8%	-0.1%	4.4%	2.0%
Gross Inl Cons./Capita (toe/inhabitant)	2.97	3.04	3.55	3.70	3.87	3.97	0.5%	3.2%	1.4%	4.6%	2.6%
Electricity Generated/Capita (kWh/inhabitant)	4902	5519	6887	7205	7661	7841	2.4%	4.5%	1.5%	6.3%	2.4%
CO_2 Emissions/Capita (t of CO_2/inhabitant)	7.5	7.3	8.3	8.5	8.9	8.9	-0.5%	2.8%	0.5%	5.2%	0.5%
Import Dependency %	89.0	82.4	83.2	81.5	82.1	80.3	-1.5%	0.2%	-0.7%	0.7%	-2.1%

(1) Includes nuclear, hydro and wind, net imports of electricity, and other energy sources.

EFTA : SUMMARY ENERGY BALANCE

Mtoe	1980	1985	1990	1993	1994	1995	85/80	90/85	93/90	94/93	95/94
							Annual % Change				
Primary Production	63.6	83.4	131.2	165.9	182.6	194.8	5.6%	9.5%	8.1%	10.1%	6.6%
Solids	0.2	0.4	0.2	0.2	0.2	0.2	11.9%	-10.6%	-3.9%	12.2%	-3.0%
Oil	25.0	39.5	84.4	117.6	132.0	142.3	9.6%	16.4%	11.7%	12.3%	7.8%
Natural gas	22.8	23.4	24.1	25.1	27.1	28.3	0.6%	0.6%	1.3%	8.1%	4.3%
Nuclear	3.7	5.9	6.2	6.1	6.4	6.5	9.5%	1.0%	-0.4%	4.3%	2.2%
Hydro & Wind	10.3	11.9	13.3	13.7	13.4	13.9	2.9%	2.3%	0.9%	-2.6%	3.9%
Geothermal	0.5	0.8	1.0	0.9	0.9	1.0	9.4%	2.8%	-1.0%	-0.7%	5.2%
Other	1.1	1.6	2.0	2.3	2.6	2.6	7.7%	4.8%	5.1%	13.5%	-0.5%
Net Imports	-21.5	-38.6	-80.4	-114.9	-131.5	-142.8	12.4%	15.8%	12.6%	14.5%	8.6%
Solids	1.3	1.3	1.1	0.8	1.0	1.1	0.2%	-4.2%	-9.5%	20.9%	11.8%
Oil	-1.0	-18.1	-59.4	-94.7	-109.8	-120.1	78.1%	26.8%	16.8%	15.9%	9.4%
Crude oil	-11.4	-27.0	-65.3	-96.8	-111.5	-123.0	-	-	-	-	-
Oil products	10.4	8.9	5.8	2.1	1.7	2.8	-3.2%	-8.0%	-29.2%	-16.8%	64.9%
Natural gas	-21.0	-21.0	-20.5	-19.7	-21.6	-22.6	-0.1%	-0.4%	-1.4%	9.9%	4.4%
Electricity	-0.7	-0.8	-1.5	-1.3	-1.0	-1.2	1.4%	14.3%	-6.0%	-20.1%	17.3%
Gross Inland Consumption	41.1	45.0	48.5	50.5	50.6	51.0	1.9%	1.5%	1.3%	0.3%	0.8%
Solids	1.4	1.7	1.3	1.1	1.2	1.3	5.2%	-5.9%	-5.8%	15.1%	3.0%
Oil	23.1	21.4	22.7	22.2	21.6	21.3	-1.5%	1.1%	-0.7%	-2.6%	-1.7%
Natural gas	1.7	2.4	3.6	5.4	5.5	5.7	7.1%	8.1%	14.5%	1.6%	4.0%
Other (1)	14.9	19.4	20.9	21.8	22.2	22.8	5.4%	1.5%	1.3%	2.1%	2.3%
Electricity Generation in TWh	135.1	162.2	180.7	184.9	182.5	189.3	3.7%	2.2%	0.8%	-1.2%	3.7%
Nuclear	14.3	22.6	23.6	23.4	24.4	24.9	9.5%	0.9%	-0.4%	4.3%	2.2%
Hydro & wind	119.5	138.1	155.1	159.5	155.1	161.2	2.9%	2.3%	0.9%	-2.7%	3.9%
Thermal	1.3	1.5	2.0	2.0	3.1	3.2	3.2%	5.9%	1.4%	50.5%	4.8%
Generation Capacity in GWe	34.8	39.8	43.5	44.6	45.0	45.2	2.7%	1.8%	0.9%	0.8%	0.5%
Nuclear	1.9	2.9	3.0	3.0	3.1	3.1	8.5%	0.2%	0.4%	2.0%	0.0%
Hydro & wind	31.8	35.6	39.3	40.4	40.6	40.9	2.3%	2.0%	0.9%	0.7%	0.5%
Thermal	1.1	1.2	1.2	1.3	1.3	1.3	2.0%	0.7%	1.3%	0.8%	0.0%
Average Load Factor in %	44.3	46.6	47.4	47.3	46.3	47.8	1.0%	0.4%	-0.1%	-2.0%	3.2%
Fuel Inputs for Thermal Power Generation	0.5	0.9	1.1	1.2	1.4	1.5	13.1%	3.9%	5.0%	15.3%	4.3%
Solids	0.0	0.1	0.1	0.0	0.0	0.0	15.8%	0.0%	-9.5%	13.5%	-7.1%
Oil	0.2	0.2	0.1	0.1	0.1	0.1	2.8%	-10.7%	-7.7%	-32.1%	5.5%
Gas	0.1	0.1	0.1	0.1	0.1	0.2	-1.4%	1.0%	3.3%	18.3%	13.7%
Geothermal	0.0	0.2	0.4	0.4	0.4	0.4	38.2%	10.6%	1.7%	0.0%	11.1%
Other	0.2	0.3	0.5	0.6	0.8	0.8	17.7%	6.0%	11.3%	29.9%	0.1%
Average Thermal Efficiency in %	22.4	14.2	15.6	14.1	18.3	18.4	-8.7%	1.9%	-3.5%	30.5%	0.5%
Non-Energy Uses	2.2	2.5	2.5	2.3	2.2	2.5	2.0%	0.0%	-2.8%	-2.9%	14.8%
Total Final Energy Demand	33.0	35.8	36.9	37.5	37.9	38.5	1.6%	0.6%	0.5%	1.0%	1.7%
Solids	1.3	1.6	1.2	1.0	1.1	1.2	4.8%	-5.1%	-6.1%	12.4%	7.8%
Oil	19.7	19.3	19.0	18.7	18.9	18.9	-0.5%	-0.2%	-0.5%	0.6%	0.3%
Gas	0.7	1.1	1.5	1.9	1.9	2.1	9.4%	5.9%	7.8%	-1.8%	10.1%
Electricity	9.7	11.7	12.7	13.1	13.2	13.5	3.8%	1.6%	1.1%	0.8%	2.2%
Heat	0.6	0.9	1.0	1.1	1.0	1.0	6.6%	2.3%	3.6%	-5.1%	2.4%
Other	0.9	1.2	1.5	1.6	1.7	1.7	5.5%	3.9%	3.4%	6.3%	-0.9%
CO_2 Emissions in Mt of CO_2	72.5	74.3	75.9	78.9	80.1	80.9	0.5%	0.4%	1.3%	1.5%	1.0%
Indicators											
Population (Million)	10.63	10.93	11.33	11.61	11.71	11.81	0.6%	0.7%	0.8%	0.8%	0.8%
GDP (index 1985=100)	90.5	100.0	112.7	114.8	117.7	119.6	2.0%	2.4%	0.6%	2.5%	1.6%
Gross Inl Cons./GDP (toe/1990 MECU)	192.9	191.4	182.9	186.9	182.8	181.3	-0.2%	-0.9%	0.7%	-2.2%	-0.8%
Gross Inl Cons./Capita (toe/inhabitant)	3.86	4.12	4.28	4.35	4.32	4.32	1.3%	0.8%	0.5%	-0.6%	0.0%
Electricity Generated/Capita (kWh/inhabitant)	12707	14837	15952	15916	15588	16031	3.1%	1.5%	-0.1%	-2.1%	2.8%
CO_2 Emissions/Capita (t of CO_2/inhabitant)	6.8	6.8	6.7	6.8	6.8	6.8	0.0%	-0.3%	0.5%	0.7%	0.1%
Import Dependency %	-51.9	-85.1	-164.1	-225.1	-256.8	-275.9	10.4%	14.0%	11.1%	14.1%	7.5%

(1) Includes nuclear, hydro and wind, net imports of electricity, and other energy sources.

EFTA : MAIN INDICATORS

	1980	1985	1990	1993	1994	1995	85/80	90/85	93/90	94/93	95/94
							Annual % Change				
Gross Inland Consumption (Mtoe)	41.1	45.0	48.5	50.5	50.6	51.0	1.9%	1.5%	1.3%	0.3%	0.8%
Public Thermal Power Generation	0.4	0.6	0.6	0.8	0.9	0.9	8.8%	1.5%	6.5%	17.6%	0.2%
Autoprod. Thermal Power Generation	0.1	0.1	0.1	0.1	0.2	0.2	9.7%	-0.4%	6.9%	52.7%	10.7%
Energy Branch	1.8	2.2	3.4	4.8	5.0	5.0	4.4%	8.8%	13.0%	4.1%	-0.6%
Final Energy Consumption	33.0	35.8	36.9	37.5	37.9	38.5	1.6%	0.6%	0.5%	1.0%	1.7%
Industry	10.8	11.4	9.9	9.5	10.1	10.2	1.1%	-2.8%	-1.2%	6.0%	1.3%
Transport	7.8	8.9	10.8	10.9	11.1	11.0	2.5%	4.0%	0.2%	1.9%	-0.6%
Tertiary-Domestic	14.4	15.5	16.2	17.1	16.7	17.2	1.6%	0.9%	1.7%	-2.5%	3.5%
Energy Intensity (toe/1990 MECU)	192.9	191.4	182.9	186.9	182.8	181.3	-0.2%	-0.9%	0.7%	-2.2%	-0.8%
Public Thermal Power Generation	1.8	2.5	2.4	2.8	3.2	3.2	6.7%	-0.9%	5.9%	14.7%	-1.3%
Autoprod. Thermal Power Generation	0.3	0.4	0.3	0.4	0.6	0.7	7.5%	-2.8%	6.3%	49.0%	9.0%
Industry	50.8	48.5	37.3	35.3	36.5	36.4	-0.9%	-5.1%	-1.8%	3.5%	-0.3%
Transport	36.8	37.7	40.7	40.3	40.0	39.1	0.5%	1.6%	-0.4%	-0.6%	-2.2%
Tertiary-Domestic	67.4	66.0	61.2	63.3	60.2	61.3	-0.4%	-1.5%	1.1%	-4.9%	1.8%
Energy per capita (Kgoe/inhabitant)	3862	4118	4281	4345	4320	4319	1.3%	0.8%	0.5%	-0.6%	0.0%
Industry	1017	1043	872	821	864	868	0.5%	-3.5%	-2.0%	5.2%	0.4%
Transport	737	811	953	936	946	933	1.9%	3.3%	-0.6%	1.0%	-1.4%
Tertiary-Domestic	1350	1420	1432	1471	1423	1460	1.0%	0.2%	0.9%	-3.3%	2.6%
Electricity Share (%)											
Final Energy Consumption	29.4%	32.7%	34.4%	35.0%	34.9%	35.1%	2.1%	1.0%	0.6%	-0.2%	0.5%
Industry	42.8%	48.3%	57.1%	58.5%	55.2%	55.4%	2.5%	3.4%	0.8%	-5.7%	0.3%
Transport	3.0%	2.8%	2.7%	3.3%	3.1%	3.2%	-1.5%	-0.8%	7.2%	-6.5%	1.5%
Tertiary-Domestic	33.8%	38.3%	41.7%	42.0%	43.8%	43.5%	2.6%	1.7%	0.3%	4.2%	3.4%
CO_2 Emissions (Mt of CO_2)	72.5	74.3	75.9	78.9	80.1	80.9	0.5%	0.4%	1.3%	1.5%	1.0%
Public Thermal Power Generation	0.4	0.5	0.4	0.3	0.2	0.2	3.3%	-6.8%	-10.7%	-25.8%	1.6%
Autoprod. Thermal Power Generation	0.2	0.3	0.2	0.2	0.2	0.2	8.3%	-6.4%	2.4%	11.7%	2.0%
Energy Branch	4.2	5.1	8.2	11.9	12.3	12.0	3.8%	9.8%	13.4%	3.6%	-2.3%
Industry	18.6	17.3	11.7	9.9	11.8	11.9	-1.5%	-7.5%	-5.5%	18.9%	1.7%
Transport	23.3	26.4	32.2	32.3	32.9	32.7	2.5%	4.1%	0.0%	2.1%	-0.6%
Tertiary-Domestic	25.5	24.5	23.0	24.2	22.4	23.4	-0.8%	-1.2%	1.6%	-7.3%	4.6%
Carbon Intensity (tn of CO_2/toe)	1.8	1.7	1.6	1.6	1.6	1.6	-1.3%	-1.1%	0.0%	1.3%	0.2%
Public Power Generation	0.0	0.0	0.0	0.0	0.0	0.0	-2.1%	-8.8%	-11.3%	-25.5%	-2.0%
Public Thermal Power Generation	1.2	0.9	0.6	0.3	0.2	0.2	-5.0%	-8.2%	-16.2%	-36.9%	1.3%
Autoprod. Power Generation	0.1	0.2	0.1	0.1	0.1	0.1	6.9%	-6.4%	1.2%	1.9%	0.5%
Autoprod. Thermal Power Generation	3.0	2.8	2.1	1.8	1.3	1.2	-1.2%	-6.0%	-4.2%	-26.8%	-7.9%
Energy Branch	2.4	2.3	2.4	2.5	2.4	2.4	-0.5%	1.0%	0.4%	-0.5%	-1.7%
Industry	1.7	1.5	1.2	1.0	1.2	1.2	-2.5%	-4.8%	-4.4%	12.1%	0.4%
Transport	3.0	3.0	3.0	3.0	3.0	3.0	0.0%	0.0%	-0.2%	0.2%	0.0%
Tertiary-Domestic	1.8	1.6	1.4	1.4	1.3	1.4	-2.3%	-2.1%	-0.1%	-5.0%	1.1%
CO_2 per capita (kg of CO_2/inhabitant)	6815	6802	6702	6794	6840	6848	0.0%	-0.3%	0.5%	0.7%	0.1%
Industry	1749	1581	1033	851	1004	1012	-2.0%	-8.1%	-6.3%	17.9%	0.8%
Transport	2194	2418	2846	2777	2812	2771	2.0%	3.3%	-0.8%	1.3%	-1.5%
Tertiary-Domestic	2396	2244	2034	2082	1914	1985	-1.3%	-1.9%	0.8%	-8.1%	3.7%
CO_2 per unit of GDP (tn of CO_2/1990 MECU)	340	316	286	292	289	287	-1.5%	-2.0%	0.7%	-1.0%	-0.6%
Public Thermal Power Generation	2	2	1	1	1	1	1.3%	-9.0%	-11.2%	-27.6%	-0.1%
Autoprod. Thermal Power Generation	1	1	1	1	1	1	6.2%	-8.6%	1.8%	9.0%	0.4%
Energy Branch	20	22	31	44	45	43	1.8%	7.2%	12.8%	1.1%	-3.9%
Industry	87	73	44	37	42	42	-3.4%	-9.7%	-6.1%	16.0%	0.1%
Transport	110	112	122	119	119	116	0.5%	1.6%	-0.6%	-0.4%	-2.2%
Tertiary-Domestic	120	104	87	90	81	83	-2.7%	-3.6%	1.0%	-9.6%	2.9%

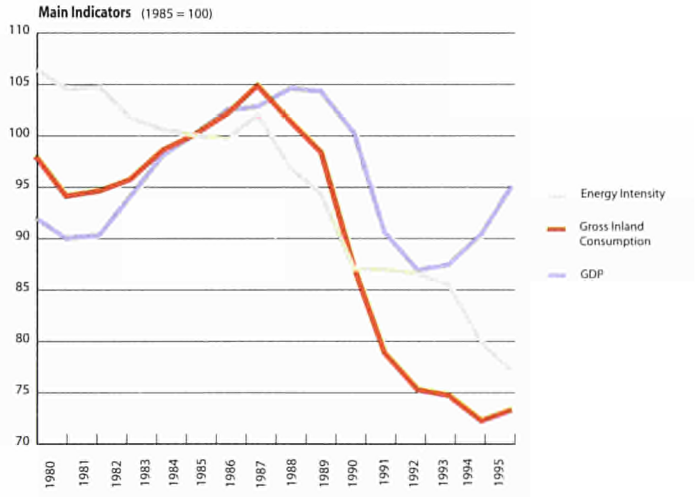
PART IV CENTRAL AND EASTERN EUROPE

The partition of Central and Eastern Countries into two groups does not reflect accurately the geographical and political situation and it originates purely from statistical conventions and practises. The geographical group -Baltic States- is introduced in order to complete the energy presentation to cover all regions of the world. Given the complexities and differences between national, OECD and SOEC statistical conventions, attemps to integrate Estonian, Latvian and Lithuanian energy statistics before 1991 into CEEC summary sheet had unsatisfactory results thus necessitating the current ad hoc solution.

Central and Eastern Europe: Major trends (1985-1995)

- Period marked by reforms and restructuring in many countries inducing a deep recession but GDP rebound after 1993
- General differences between countries
- Common downward trend (-27% since 1985) in both energy production and gross inland energy consumption
- Solid fuels, gas and distributed heat marked by the reduction of consumption
- Increased share of electricity in final energy consumption (14% in 1994)
- Predominance of solid fuels to cover electricity production
- Energy intensity improved by about 2.5% per annum on average since 1985
- $C0_2$ emissions reduced by 32% since the peak reached in 1987
- CO_2 intensity per unit of GDP declined regularly since the beginning of the 80's
- Energy import dependency reasonably stable on the whole period

This region includes the following countries: Albania, Bulgaria, the Czech Republic, Hungary, Poland, Romania, the Slovak Republic and the Republics of the former Yugoslavia which represents altogether a stable population of around 120 million inhabitants. Given the lack of sufficient accurate statistical data, the Czech and Slovak Republics will be shown together as "former Czechoslovakia"; while the "former Yugoslavia" includes all the republics emerging from the partition of that country. For the most recent years (period 1991-1995), when available, the data for the newly formed independent states has been given to complement the existing aggregate data, to reflect, as realistically as possible, the new geopolitical climate of the region.



Period marked by reforms in many countries that induced a deep recession but GDP rebounded after 1993

Eastern European countries are undergoing major political and economic structural reforms. Previously under strong central government control, they have begun to decentralise their economies, transforming them through various programs, consisting of industrial restructuring and privatisation. Former state-owned firms are being internally restructured, shifting from public ownership with state control to various types of private ownership. To address the needs of potential investors for clearly defined property rights, each country has attempted to develop viable legal structures, contract laws, regulatory systems, capital mar-

[1] Analysis excludes the former Yugoslavia for obvious statistical reasons.

CEEC : GDP (1985=100)

	1980	1985	1990	1993	1994	1995(1)
CEEC	91.98	100.00	100.19	87.38	90.44	95.15
Poland	100.22	100.00	103.32	107.38	113.28	120.65
Hungary	90.14	100.00	104.12	92.98	94.90	96.32
Czech Republic	na	100.00	108.18	86.40	88.66	92.92
Slovakia	na	100.00	107.12	82.38	86.38	92.77
Bulgaria	80.94	100.00	107.92	83.68	83.98	86.16
Romania	86.05	100.00	83.18	62.88	64.38	68.82

(1) estimates

kets, trade policies, and domestic bond and stock markets. However, while investment has not been as forthcoming as anticipated - due to the low pace of reform - many countries are proceeding with various degrees of privatisation, such as joint ventures. Foreign investment is higher in the countries where reforms have made the most progress, namely the Czech Republic, Hungary, and Poland.

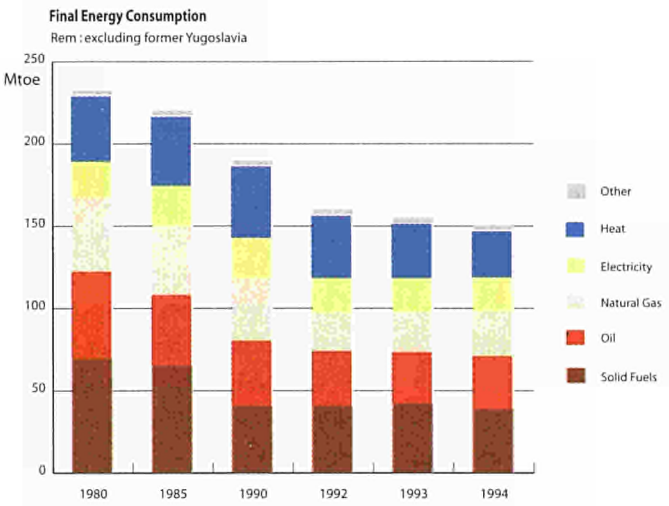
ENERGY OUTLOOK

Ongoing improvement of energy efficiency...

Given the economic crisis faced by the Central and Eastern European Countries since 1985, there is, in general, a common downward trend in both energy production (in 1995 down to 72% of its 1985 value), and gross inland consumption (in 1995 down to 73% of its 1985 value), over the last 10 years. Despite economic recovery since 1993, both final and gross inland energy consumption has stabilised, reflecting continuing improvement of energy intensity.

Solid fuels, gas and distributed heat marked by a reduction in consumption...

The **final energy demand** peaked in 1987 (241.7 Mtoe) and has declined since then. In 1990, total final energy demand was 22% below the 1987 level, and in 1994, 38% below it. The drop in demand was mainly at the expense of solid fuels (-49% between 1987 and 1994), gas (-41%) and distributed heat (-38%). Oil, sustained by the stable demand from the transport sector marked by a growing number of private cars, limits this decline to 27% and electricity, contributing largely to the modernisation of industry and improvements of standards of living to 22%. In this way, oil and electricity are reinforcing their share in the total final demand.



Transport sector marked by constrasting evolutions ...

The share of the transport sector in the final energy consumption increased from 10% in 1985 to 13% in 1994, to the detriment of industry (43% in 1994 vs. 46% in 1985). The share of tertiary-domestic remained stable. In relation to the restructuring period, the transport sector is marked by very contrasting evolution: motorization increased very rapidly from a very low level but, at the same time, the per capita consumption of energy in the transport sector declined from 255 kgoe per inhabitant in 1985 to only 197 kgoe in 1994. This represents only 25% of the average European level. The contribution of industry reflects the predominance of heavy industries based on old technologies inherited from the socialist regime. Despite the modernisation which is under way, the structure of the final consumption remains closer to the developing countries than to OECD region.

Increasing share of electricity in final energy demand...

The share of electricity in final consumption reached 13.9% in 1994, from 11.2% in 1985 and 9.5% in 1980. But the contribution of the transport sector is higher than in the OECD region for two reasons: a larger contribution by railways for long distance transport and the electrification of public transport (trams and trolley buses) in a number of large and medium sized cities. A major evolution was observed in the tertiary-domestic sector where the electricity share increased from 7.2% in 1980 to 15.2% in 1994, reflecting the improvement of living standards.

Gross Inland energy consumption dominated by solid fuels...

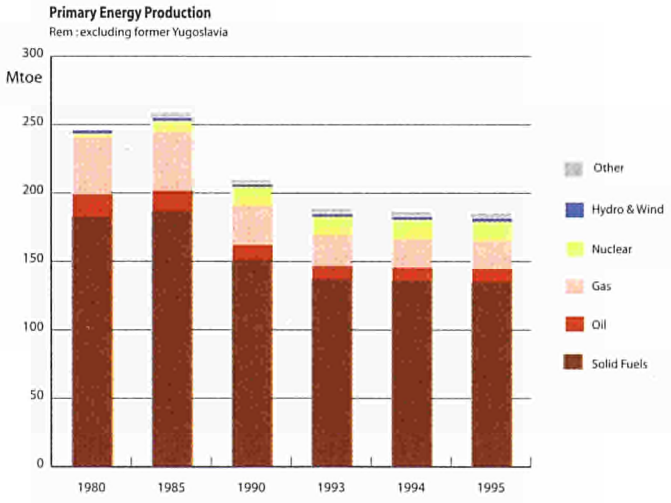
Gross inland energy consumption was dominated by solid fuels (48% in 1995 from 54% in 1980), followed by oil (23% in 1995 from 25% in 1980) and gas (21% in 1995 from 18% in 1980). The bulk of solid fuels consumption is to be found in Poland where the contribution of solid fuels in 1995 reached 73% of gross inland consumption. At the opposite end, in Romania, producer of both oil and gas, solid fuels represented only 23%. During the 80's the contribution of nuclear power increased significantly but has remained stable since 1990. Renewable sources, mainly biomass, have remained marginal. Since 1990, reduction of consumption of about 46 Mtoe has been covered respectively by solid fuels (59%), natural gas (22%) and oil (17%).

Common downward trend in both energy production and gross inland energy consumption...

Indigenous **energy production** has undergone an evolution adjusted to the gross inland energy consumption; the energy sector being also affected by the restructuring and closing of non-profitable sites. Since 1980 the reduction of fossil fuels (48 Mtoe for solid fuels, 21 Mtoe for gas and 7 Mtoe for oil) has been compensated only by a nuclear power increase (13 Mtoe). The main reduction occurred in Poland and the Czech republic for solid fuels and in Romania for oil and gas.

Predominance of solid fuels in covering electricity production...

Central and Eastern European countries have reinforced their self-sufficiency for **electricity supply** since 1900 to be almost totally auto-sufficient in 1995. Electricity is mainly produced by thermal power stations (77% in 1994 declining from 84% in 1985); followed by nuclear (16% in 1994 increasing from 9% in 1985) and hydro (7% in 1994 with an absolute production level identical to 1985). Thermal power stations are mainly fired with solid fuels (about 79% in 1994), oil and gas covering respectively 9% and 12% of the rest.



Reform of the power industry is under way...

The traditional electricity industries in this region are vertically integrated monopolies controlled by central governments. But reforms have started in some countries in respect to structure, ownership, and regulation. Examples of countries where reform has been initiated include Poland, Hungary, and the Czech Republic. Reforms are considered necessary by some nations to ensure the availability of foreign funds needed to upgrade and expand their power industries. For example, Poland has dismantled its power sector, and independent generation companies now compete, even though the power generation market is still subject to a variety of regulatory requirements. Independent transmission and distribution companies have also been created that operate separately from the generating companies. The Czech Republic is privatising its national generating and transmission company, and plans have been made to privatise regional distribution companies.

Refinery industry in need of restructuring and upgrading ...

Concerning the **refining industry,** the Communist regimes left Eastern European countries with bloated and inefficient hydrocarbon industries that suffered from decades of neglect, outdated technology, heavy debt, and environmental problems. All Eastern European countries have refinery industries. Most are badly in need of restructuring and upgrading. The petroleum marketing sector is the fastest growing sector in Eastern Europe's energy industry, partly due to the introduction of foreign competition. So far, most oil companies are still publicly-owned and government-run. However, to meet needs of the economies where privatisation efforts are strongest, private ownership is beginning to emerge. For example, Hungary has sold an 18.8% stake in its vertically integrated petroleum company, MOL. The Czech Republic merged its two largest refineries and sold 49 percent to IOC, a western consortium.

COMPETITIVENESS

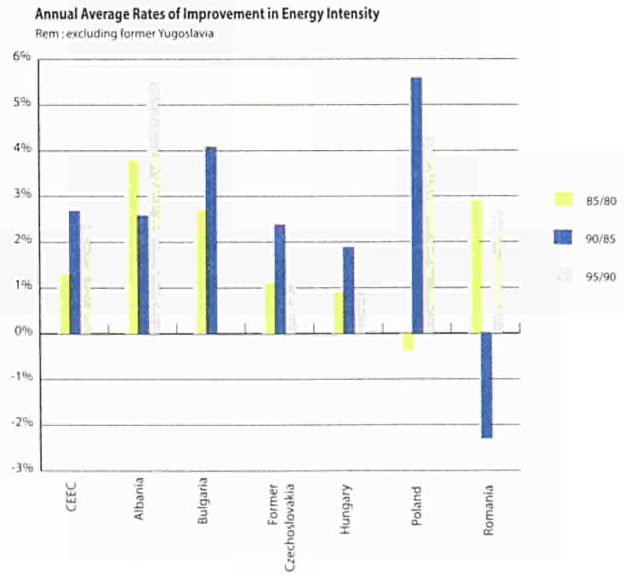
Energy intensity has improved by about 2.5% per year on average since 1985...

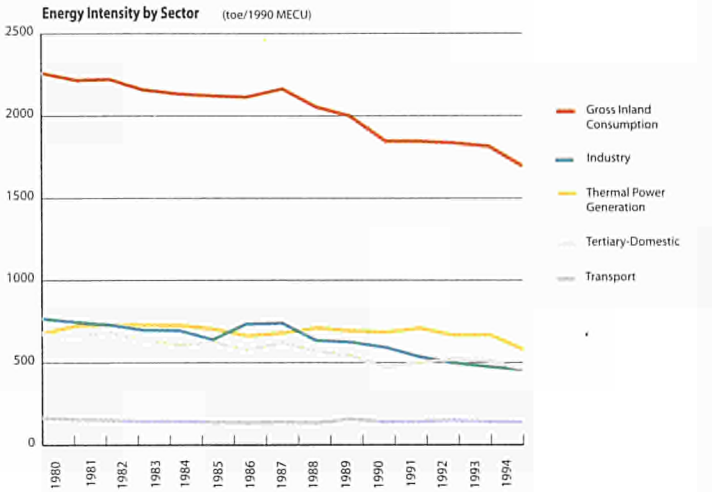
Energy intensity declined slowly between 1980 and 1988. But, from then, the reforms engaged to restructure the economy, and in particular the industrial sector, introduced a more dynamic improvement. The political changes that happened in most countries between 1990 and 1993 led to decreases in both GDP (-13% between 1990 and 1993, excluding former Yugoslavia), and gross inland energy consumption (-17%). From that moment, with the help of foreign aid, an industrial reconversion took place, leading to a further decrease in energy intensity (-6.5% in 1994 and –3.5% in 1995), while the GDP exhibited clear signs of recovering (+3.5% in 1994 and +5.2% in 1995).

A major improvement on the period 1985-1995 was seen in Poland (40%) and in the opposite case Romania was deeply affected by the economic crisis (GDP reduced by 31% between 1985 and 1995) with only a reduction of 2%. In the other countries the gain was in the range of 15%. It must be stressed that, excepting Hungary where energy intensity was 35% lower than the regional level, CEEC appeared as a quite homogeneous region from this point of view.

Improvement driven by industry and the tertiairy-domestic sector...

The continuing improvement of energy intensity has been mainly sustained by the industrial sector's widespread





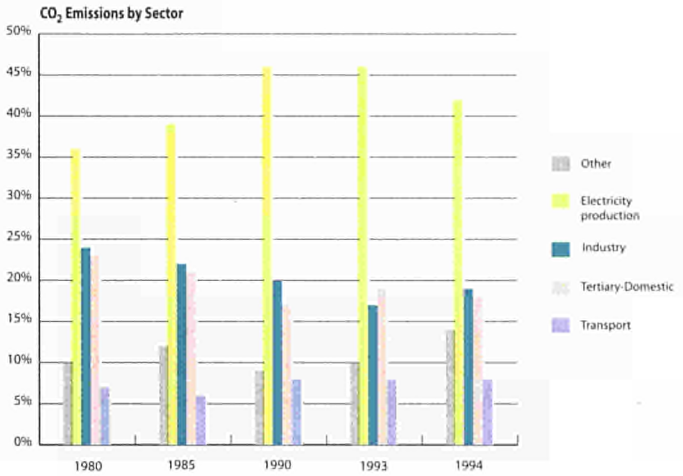
reconstruction and modernisation (-41% since 1980) and by the tertiary-domestic sector (-31% since 1980). This was made possible by a more rational use of energy, reduction of heat losses and a levelling out of living standards. This was at the exception of Poland (-21% since 1980) and Hungary (-16% since 1980) where economic reforms started in the beginning of the 80's pushing up living standards. The energy intensity of transport was declining by the beginning of the 80's but has been quite stable since 1985 under the pressure of increasing car numbers compensated by declining consumption per capita. Finally, the weight of power generation was also declining as the electricity intensity of the GDP had diminished since 1985.

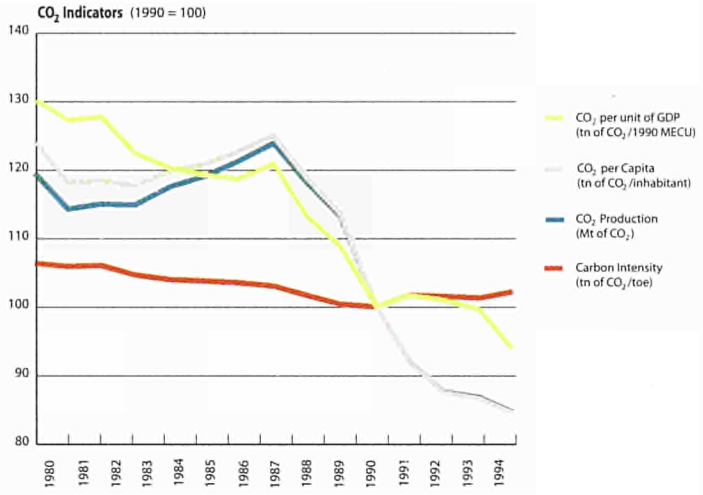
In terms of gross inland consumption per capita, there has been a clear negative trend since 1987 (from 3.24 toe per capita in 1987 to 2.92 toe in 1990 and 2.45 toe in 1995). This results from two main factors: first, economic and poli-tical reforms inducing in some countries energy shortages affecting mainly the domestic sector (heating) and individual transport, and secondly, the restructuring of industry and the modernisation of equipment (industrial processes, insulation and equipment in households, vehicles). Average consumption per capita in 1995 was 34% below the European Union average despite a higher energy intensity reflecting the present lower standards of life in these regions.

ENVIRONMENT

CO_2 emissions reduced by 32% since the peak reached in 1987...

The evolution of CO_2 emissions was deeply influenced by the profile of energy consumption: increasing continuously between 1980 and 1987 to peak at 1050 million tonnes and declining since then to reach 847 million tonnes in 1990 and 717 million tonnes in 1994. The per capita CO_2 emissions , which still represented 117% of the average EU level in 1985, accounted for only 86% of this level in 1994. This demonstrated a changing profile very close to that of CO_2 emissions. CO_2 emissions per unit of GDP have declined regularly since the beginning of the 80's. Finally, the carbon intensity has been reasonably stable since 1980.





In the period 1980-1994, emissions from industry and from tertiary-domestic sectors were both reduced by 45%, those from transport sector by only 22%. The largest sector in terms of emissions remained largely power generation (about 42% of total emissions in 1994 from 46% in 1990, 39% in 1985 and 36% in 1980). This included emissions related to heat produced in cogeneration units and explains the relatively low contribution of the tertiary-domestic sector (18% of total emissions in 1994 from 23% in 1980). Industrial emissions declined till 1992 to reach about 16% but was rebounding with the recent progress of production.

GLOBAL MARKETS

Energy import dependency is reasonably stable on the whole period...

As a whole, the energy needs of this region depended on **external supplies** for 23% in 1995; the same percentage as 1980 after a peak to 27% in 1990. The Central and Eastern Countries together have been net importers of crude oil and natural gas, mainly from the former USSR. On the other hand, this region remains a net oil product exporter. But in this case the volumes concerned remained very limited. Total oil imports represented 82% of total oil requirements in 1995; increasing slightly since 1985 (80%). Over the same period oil production of Romania, the main producer of the group, dropped in 1994 to reach only 65% of its 1985 value (from 10.4 Mtoe to 6.8 Mtoe). As regional resources remain quite limited, any increase of oil consumption in the future will be covered by additional imports.

Furthermore, the Central and Eastern Countries together have been net exporters of coal over the last ten years (7.7 Mtoe in 1985 up to 19.1 Mtoe in 1995, or 14.0% of the global coal production of these countries). Solid fuels are mainly produced in Poland (91 Mtoe in 1995 versus 119 Mtoe in 1985) and in the Czech Republic (27 Mtoe in 1995 versus 44 Mtoe in 1985). Production follows a declining trend in the Czech Republic, but Polish production has been stable since 1992.

CENTRAL AND EASTERN EUROPEAN COUNTRIES (Former Yugoslavia excluded) : Summary Energy Balance

Mtoe	1980	1985	1990	1993	1994	1995(2)	85/80	90/85	93/90	94/93	95/94
							Annual % Change				
Primary Production	246.6	258.9	209.7	188.6	186.5	185.5	1.0%	-4.1%	-3.5%	-1.1%	-0.5%
Solid fuels	182.6	187.0	151.1	137.3	136.2	135.4	0.5%	-4.2%	-3.1%	-0.8%	-0.6%
Oil	16.7	15.0	11.4	9.8	9.8	9.6	-2.2%	-5.3%	-5.0%	0.6%	-2.2%
Natural gas	41.8	43.1	28.8	22.7	20.9	20.5	0.6%	-7.8%	-7.6%	-8.0%	-1.8%
Nuclear	2.8	8.2	13.8	13.6	14.2	14.2	24.0%	11.1%	-0.4%	4.1%	0.2%
Hydro & Wind	2.4	2.3	2.0	2.1	2.3	2.6	-0.9%	-2.5%	2.5%	5.2%	14.5%
Geothermal	0.0	0.0	0.0	0.0	0.0	0.0	-	-100.0%	-	-	-
Other	0.3	3.4	2.7	3.1	3.1	3.2	59.2%	-4.5%	4.5%	1.7%	2.0%
Net Imports	76.2	71.9	78.1	57.0	51.4	56.9	-1.1%	1.7%	-10.0%	-9.8%	10.6%
Solid fuels	-8.2	-7.6	-9.5	-11.8	-15.2	-19.1	-1.5%	4.5%	7.8%	28.3%	25.4%
Oil	65.6	56.7	53.1	43.1	40.4	45.8	-2.9%	-1.3%	-6.7%	-6.1%	13.4%
Crude oil	71.6	63.8	56.5	42.8	44.2	na	-2.3%	-2.4%	-8.8%	3.1%	na
Oil products	-6.0	-7.1	-3.4	0.2	-3.8	na	3.5%	-13.5%	-	-	na
Natural gas	17.7	21.2	32.0	25.6	26.1	30.0	3.7%	8.6%	-7.2%	1.7%	14.9%
Electricity	1.1	1.6	2.4	0.2	0.1	0.1	8.5%	8.1%	-59.9%	-22.8%	0.0%
Gross Inland Consumption	324.3	331.0	288.5	247.2	239.0	242.5	0.4%	-2.7%	-5.0%	-3.3%	1.5%
Solid fuels	175.0	181.5	143.5	128.0	120.5	116.3	0.7%	-4.6%	-3.7%	-5.9%	-3.5%
Oil	81.1	70.9	63.4	51.4	51.6	55.6	-2.6%	-2.2%	-6.7%	0.4%	7.6%
Natural gas	59.1	63.1	60.6	48.7	47.1	50.5	1.3%	-0.8%	-7.0%	-3.4%	7.2%
Other (1)	9.1	15.5	21.0	19.0	19.7	20.1	11.2%	6.2%	-3.3%	3.7%	2.2%
Electricity Generation in TWh	324.5	361.7	361.0	345.1	347.1	na	2.2%	0.0%	-1.5%	0.6%	na
Nuclear	10.7	31.4	53.0	52.3	54.5	na	24.0%	11.1%	-0.4%	4.1%	na
Hydro & wind	27.5	26.3	23.2	24.9	26.2	na	-0.9%	-2.5%	2.5%	5.2%	na
Thermal	286.4	304.0	284.8	267.8	266.3	na	1.2%	-1.3%	-2.0%	-0.6%	na
Generation Capacity in GWe	70.7	86.1	94.6	93.6	98.4	na	4.0%	1.9%	-0.4%	5.2%	na
Nuclear	1.7	4.6	7.9	8.8	8.8	na	21.7%	11.4%	3.4%	0.0%	na
Hydro & wind	9.9	13.0	14.2	14.4	19.2	na	5.6%	1.9%	0.3%	33.8%	na
Thermal	59.1	68.5	72.4	70.4	70.4	na	3.0%	1.1%	-0.9%	0.0%	na
Average Load Factor in %	52.4	48.0	43.6	42.1	40.3	na	-1.7%	-1.9%	-1.1%	-4.4%	na
Fuel Inputs for Thermal Power Generation	97.7	109.9	106.9	91.0	81.6	na	2.4%	-0.6%	-5.2%	-10.3%	na
Solid fuels	76.1	81.1	82.2	72.6	64.4	na	1.3%	0.3%	-4.1%	-11.2%	na
Oil	11.9	12.7	10.9	7.6	7.0	na	1.4%	-3.2%	-11.3%	-7.3%	na
Gas	9.6	15.9	13.8	10.7	10.1	na	10.6%	-2.9%	-8.2%	-5.5%	na
Geothermal	0.0	0.0	0.0	0.0	0.0	na	-	-	-	-	na
Other	0.1	0.1	0.1	0.1	0.1	na	-1.0%	-2.8%	9.2%	-17.8%	na
Average Thermal Efficiency in %	25.2	23.8	22.9	25.3	28.1	na	-1.2%	-0.8%	3.4%	10.8%	na
Non-Energy Uses	8.3	6.7	9.1	7.6	7.6	na	-4.2%	6.3%	-5.9%	0.5%	na
Total Final Energy Demand	231.9	220.0	189.2	154.6	150.1	na	-1.1%	-3.0%	-6.5%	-2.9%	na
Solid fuels	69.4	65.3	40.8	42.1	38.8	na	-1.2%	-9.0%	1.1%	-8.0%	na
Oil	52.9	42.8	39.5	31.2	32.2	na	-4.2%	-1.6%	-7.5%	3.2%	na
Gas	45.2	42.0	37.6	24.5	27.2	na	-1.4%	-2.2%	-13.3%	11.3%	na
Electricity	22.0	24.6	25.1	20.8	20.8	na	2.2%	0.4%	-6.2%	0.3%	na
Heat	39.7	42.0	43.6	33.1	28.1	na	1.1%	0.8%	-8.7%	-15.3%	na
Other	2.7	3.2	2.6	2.9	3.0	na	3.4%	-4.1%	3.4%	2.9%	na
CO_2 Emissions in Mt of CO_2	1012.6	1008.8	847.1	735.4	717.2	na	-0.1%	-3.4%	-4.6%	-2.5%	na
Indicators											
Population (Million)	95.27	97.56	98.96	99.14	99.10	99.05	0.5%	0.3%	0.1%	0.0%	0.0%
GDP (index 1985=100)	92.0	100.0	100.2	87.4	90.4	95.1	1.7%	0.0%	-4.5%	3.5%	5.2%
Gross Inl Cons./GDP (toe/1990 MECU)	2260.9	2122.6	1846.4	1814.3	1694.5	1634.4	-1.3%	-2.7%	-0.6%	-6.6%	0
Gross Inl Cons./Capita (toe/inhabitant)	3.40	3.39	2.92	2.49	2.41	2.45	-0.1%	-3.0%	-5.1%	-3.3%	1.5%
Electricity Generated/Capita (kWh/inhabitant)	3406	3708	3648	3481	3502	na	1.7%	-0.3%	-1.6%	0.6%	na
CO_2 Emissions/Capita (t of CO_2/inhabitant)	10.6	10.3	8.6	7.4	7.2	na	-0.5%	-3.7%	-4.7%	-2.4%	na
Import Dependency %	23.4	21.7	27.0	23.0	21.5	23.4	-1.5%	4.5%	-5.2%	-6.7%	9.0%

(1) Includes nuclear, hydro and wind, net imports of electricity, and other energy sources.
(2) Estimates

CENTRAL AND EASTERN EUROPEAN COUNTRIES (Former Yugoslavia excluded) : Main Indicators

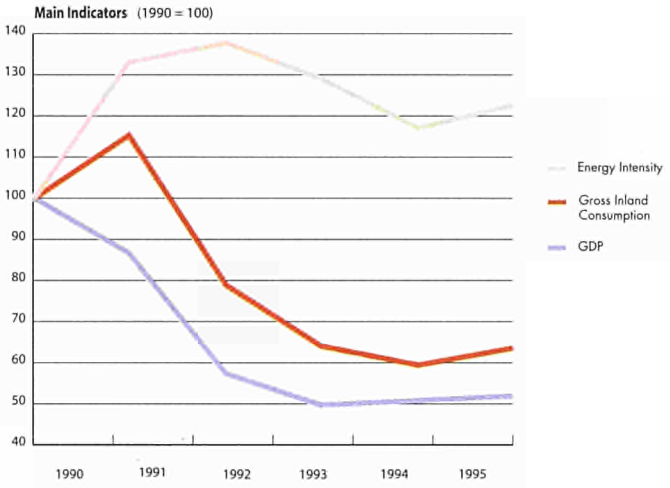
Mtoe	1980	1985	1990	1993	1994	85/80	90/85	93/90	94/93
						Annual % Change			
Gross Inland Consumption (Mtoe)	324.3	331.0	288.5	247.2	239.0	0.4%	-2.7%	-5.0%	-3.3%
Public Thermal Power Generation	94.4	105.5	92.3	74.2	73.9	2.2%	-2.6%	-7.0%	-0.4%
Autoprod. Thermal Power Generation	3.3	4.4	14.7	16.8	7.8	6.0%	27.1%	4.6%	-53.7%
Energy Branch	8.9	9.5	10.9	13.3	13.7	1.4%	2.8%	6.9%	2.4%
Final Energy Consumption	231.5	219.5	188.8	154.2	149.7	-1.1%	-3.0%	-6.5%	-3.0%
Industry	110.5	100.1	92.9	65.0	64.5	-1.9%	-1.5%	-11.2%	-0.7%
Transport	24.3	21.8	22.4	19.5	19.6	-2.1%	0.5%	-4.5%	0.2%
Tertiary-Domestic	96.8	97.5	73.5	69.7	65.5	0.2%	-5.5%	-1.8%	-6.0%
Energy Intensity (toe/1990 MECU)	2260.9	2122.6	1846.4	1814.3	1694.5	-1.3%	-2.7%	-0.6%	-6.6%
Public Thermal Power Generation	658.2	676.4	590.7	544.6	523.9	0.5%	-2.7%	-2.7%	-3.8%
Autoprod. Thermal Power Generation	23.0	28.4	93.8	123.0	55.0	4.2%	27.0%	9.5%	-55.3%
Industry	770.2	642.2	594.3	476.8	457.7	-3.6%	-1.5%	-7.1%	-4.0%
Transport	169.3	140.0	143.3	143.3	138.7	-3.7%	0.5%	0.0%	-3.2%
Tertiary-Domestic	674.7	625.3	470.6	511.7	464.8	-1.5%	-5.5%	2.8%	-9.2%
Energy per Capita (Kgoe/inhabitant)	3404	3393	2915	2493	2411	-0.1%	-3.0%	-5.1%	-3.3%
Industry	1160	1026	938	655	651	-2.4%	-1.8%	-11.3%	-0.6%
Transport	255	224	226	197	197	-2.6%	0.2%	-4.5%	0.2%
Tertiary-Domestic	1016	999	743	703	661	-0.3%	-5.8%	-1.8%	-5.9%
Electricity Share (%)									
Final Energy Consumption	9.5%	11.2%	13.3%	13.5%	13.9%	3.3%	3.5%	0.4%	3.4%
Industry	12.6%	14.5%	14.9%	14.9%	15.2%	2.8%	0.5%	-0.1%	2.3%
Transport	4.6%	5.9%	6.1%	5.4%	5.2%	5.0%	0.6%	-3.6%	-3.8%
Tertiary-Domestic	7.2%	9.0%	13.5%	14.4%	15.2%	4.6%	8.4%	2.2%	5.8%
CO_2 Emissions (Mt of CO_2)	1012.6	1008.8	847.1	735.4	717.2	-0.1%	-3.4%	-4.6%	-2.5%
Public Thermal Power Generation	347.8	381.6	337.7	276.1	275.7	1.9%	-2.4%	-6.5%	-0.1%
Autoprod. Thermal Power Generation	12.2	16.7	53.7	59.6	24.7	6.4%	26.3%	3.5%	-58.6%
Energy Branch	10.8	9.7	12.4	13.7	19.0	-2.1%	4.9%	3.4%	38.8%
Industry	246.9	217.8	166.8	127.3	136.2	-2.5%	-5.2%	-8.6%	6.9%
Transport	73.2	64.2	64.5	56.6	57.0	-2.6%	0.1%	-4.2%	0.7%
Tertiary-Domestic	228.6	212.0	144.8	139.1	126.7	-1.5%	-7.3%	-1.3%	-8.9%
Carbon Intensity (tn of CO_2/toe)	3.1	3.0	2.9	3.0	3.0	-0.5%	-0.7%	0.4%	0.9%
Public Power Generation	3.5	3.3	3.1	3.1	3.1	-1.2%	-1.0%	-0.6%	-0.5%
Public Thermal Power Generation	3.7	3.6	3.7	3.7	3.7	-0.4%	0.2%	0.6%	0.3%
Autoprod. Power Generation	3.7	3.7	3.7	3.6	3.2	0.2%	-0.3%	-1.0%	-10.7%
Autoprod. Thermal Power Generation	3.7	3.8	3.7	3.6	3.2	0.4%	-0.6%	-1.0%	-10.5%
Energy Branch	1.2	1.0	1.1	1.0	1.4	-3.5%	2.1%	-3.2%	35.4%
Industry	2.2	2.2	1.8	2.0	2.1	-0.5%	-3.8%	3.0%	7.7%
Transport	3.0	2.9	2.9	2.9	2.9	-0.5%	-0.4%	0.2%	0.5%
Tertiary-Domestic	2.4	2.2	2.0	2.0	1.9	-1.6%	-2.0%	0.4%	-3.1%
CO_2 per Capita (kg of CO_2/inhabitant)	10628	10339	8561	7418	7237	-0.5%	-3.7%	-4.7%	-2.4%
Industry	2592	2233	1685	1284	1374	-2.9%	-5.5%	-8.7%	7.0%
Transport	769	658	652	571	575	-3.1%	-0.2%	-4.3%	0.7%
Tertiary-Domestic	2399	2173	1463	1403	1278	-2.0%	-7.6%	-1.4%	-8.9%
CO_2 per unit of GDP (tn of CO_2/1990 MECU)	7060	6469	5422	5397	5086	-1.7%	-3.5%	-0.2%	-5.8%
Public Thermal Power Generation	2425	2447	2161	2026	1955	0.2%	-2.5%	-2.1%	-3.5%
Autoprod. Thermal Power Generation	85	107	344	437	175	4.7%	26.3%	8.4%	-60.0%
Energy Branch	76	62	79	101	135	-3.7%	4.9%	8.3%	34.1%
Industry	1722	1397	1067	934	966	-4.1%	-5.2%	-4.3%	3.3%
Transport	511	412	413	416	404	-4.2%	0.0%	0.2%	-2.7%
Tertiary-Domestic	1594	1360	927	1021	898	-3.1%	-7.4%	3.3%	-12.0%

PART IV

The Baltic states: Major trends (1985-1995)

- Separation from the former USSR was followed by a severe economic crisis
- Both energy production and demand have decreased strongly
- Thermal power stations are mainly fed by solid fuels
- Energy intensity increased by about 30% between 1990 and 1993
- CO_2 emissions dropped by 40% over four years
- Energy import dependency remained in the range of 60%

The Baltic Countries comprise Estonia, Latvia and Lithuania, previously part of the former USSR. Any reliable economic and energy indicator seems almost impossible to gather for these countries. This situation prevailed before independence, as generally observed elsewhere in the former USSR, due to some aggregation of figures for several Republics and to non standardised methods of computing economic and energy data. As a consequence, energy data and indicators described below must be interpreted very carefully, in particular data related to the year 1990 and to the biomass.



Separation from the former USSR was followed by a severe economic crisis...

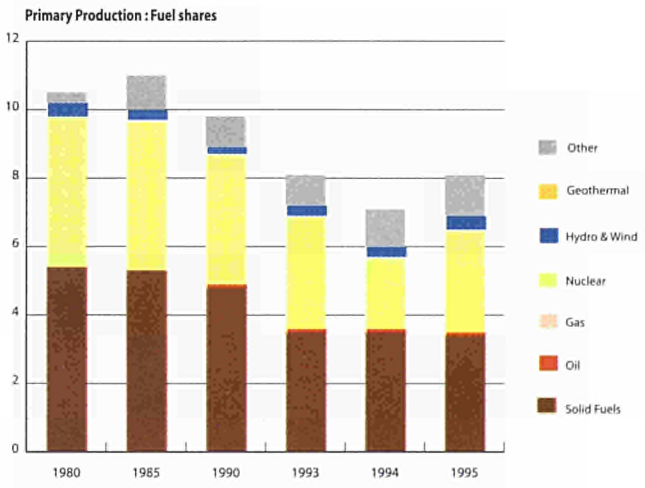
The separation from the former USSR has induced a severe economic crisis in the Baltic countries . The GDP dropped between 1991 and 1993 by about 40% of its value but has stabilised since then. This evolution was due to several factors, including the disruption of trading links with other former Soviet republics, the increase of relative energy prices, the transformation of the centrally-planned economy to a market one and the reorientation of trade towards the West.

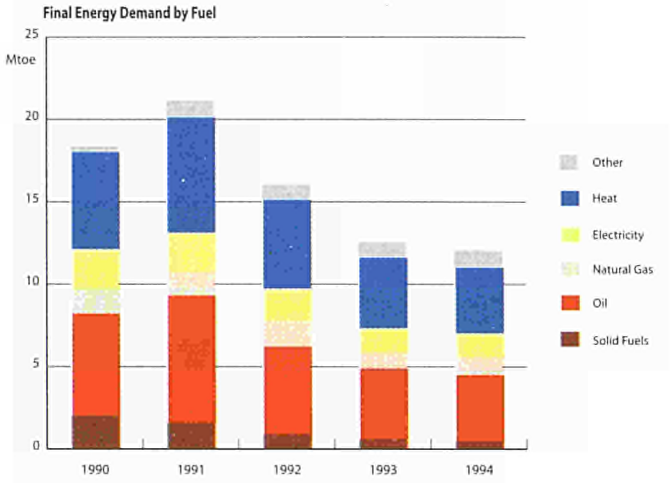
ENERGY OUTLOOK

Both energy production and demand decreased strongly...

As a direct consequence of economic restructuring, both the **energy production and demand** decreased dramatically over the same period. The production of energy declined from 10.5 Mtoe in 1991 to 7.2 Mtoe in 1994 and rebounded to 8.1 in 1995, whereas the final energy demand decreased from 18.2 Mtoe in 1990 to 12.0 Mtoe in 1994.

The **total final energy demand** consists mainly of oil and heat each being one third. The demand for oil, gas and heat fell in absolute terms between 1990 and 1994 by about 30-35% like global demand, while at the same time demand for electricity decreased by 42% and for solid fuels by 75%. Only demand for biomass increased from 0..3 Mtoe in 1990 to 1.0 Mtoe in 1994.





The structure by sector of final energy consumption demonstrates the importance of transport in the new market economies. Its share grew from 11.5% in 1990 to 17.5% in 1994 to the detriment of industry (from 32% to 26%) whereas tertiary-domestic remained stable.

The electricity share in the final consumption remained stable in each sector at about 16% in industry and 12% in tertiary-domestic. These levels are well below the European average and demonstrate the large potential for electricity increases in the future.

The Baltic countries are **producers** of coal, mainly shale oil, and of nuclear energy. Both productions have significantly dropped between 1990 and 1995, by 37% and 32% respectively. On the other hand biomass valorisation, ranging at around 0.3 Mtoe in 1990 climbed to reach in 1995, 1.2 Mtoe.

Thermal power stations are mainly fired by solid fuels...

The **electricity generation capacity** has remained constant over the last four years at about 11 GWe. Thermal power stations represented 63% of the capacity, the complement was covered by nuclear energy (22%) and by hydro (15%). The load factor dropped dramatically from 55% to 25% over the period. Thermal power stations are mainly fired by solid fuels (52% in 1990), oil (15% in 1990) and gas (33% in 1990). More recent figures need to be considered before deeper analysis but clearly the contribution of natural gas has been drastically reduced in relation to the difficulties for Baltic countries to secure their imports by Gazprom.

COMPETITIVENESS

Energy intensity increased by about 30% between 1990 and 1993...

In terms of **energy intensity**, as energy consumption declined more slowly than economic activities between 1990 and 1993, an increase by about 30% was observed during this period. Baltic countries are gaining in energy intensity since the transition to the free market began. But this region is relatively small and rapid shifts in energy intensity could be brought about by simply closing or opening one large plant.

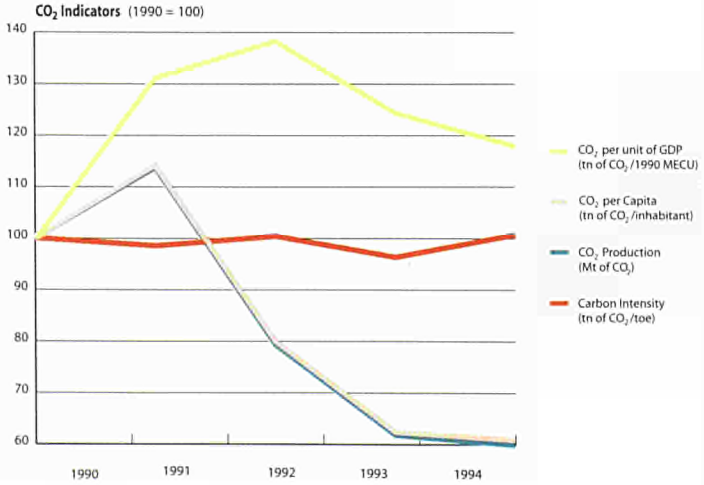
The evolution of energy intensity by sector illustrates the stability of industry confronted with restructuring and modernisation, and the significant increase in tertiary-domestic (25% between 1990 and 1994) and in transport (81% since 1990), in relation to increasing living standards and car use.

The **gross inland energy consumption per capita** dropped from 3.8.4 to 2.3 Kgoe/inhabitant, over the period 1990-1994, but rebounded to 2.5 Kgoe/inhabitant in 1995.

ENVIRONMENT

CO_2 emissions dropped by 40% over four years...

As the final energy consumption dropped over the period, the **CO_2 emissions** followed the same trend: from 75.0 Mt. CO_2 in 1990 to 44.9 Mt. CO_2 in 1994 (40% drop over four years). As the population of the Baltic countries remained



almost stable over the period, the **per capita CO_2 emissions** follow the same trend, and dropped from 9.4 to 5.7 tonnes of CO_2/inhabitant over the period, compared to a European average value of 8.4 over the same period.

Looking at CO_2 emissions by sector at the regional level, it appears that the largest sector in terms of emissions is power generation with about 40% of total emissions since 1990. The tertiary-domestic accounted for about 16% in 1994 against 25% in 1990. The transport sector increased from 8% in 1990 to 14% in 1994 whereas industry remained stable at about 8%.

GLOBAL MARKETS

Energy import dependency remained in the range of 60%...

The Baltic Countries are **importers** of coal, but mainly of oil and of gas, coming from the CIS. These imports dropped significantly by almost 46% between 1990 and 1993 and have been quite stable since then; the increasing gas imports being compensated by oil reduction. Historically, Baltic countries were net exporters of electricity with a large capacity based on nuclear power and shale oil. But since 1994 they became also net importer. As at the same time the gross energy consumption dropped by 37%, the **energy import dependency** that was 63% in 1991 fell to 57% in 1995.

BALTIC COUNTRIES : SUMMARY ENERGY BALANCE

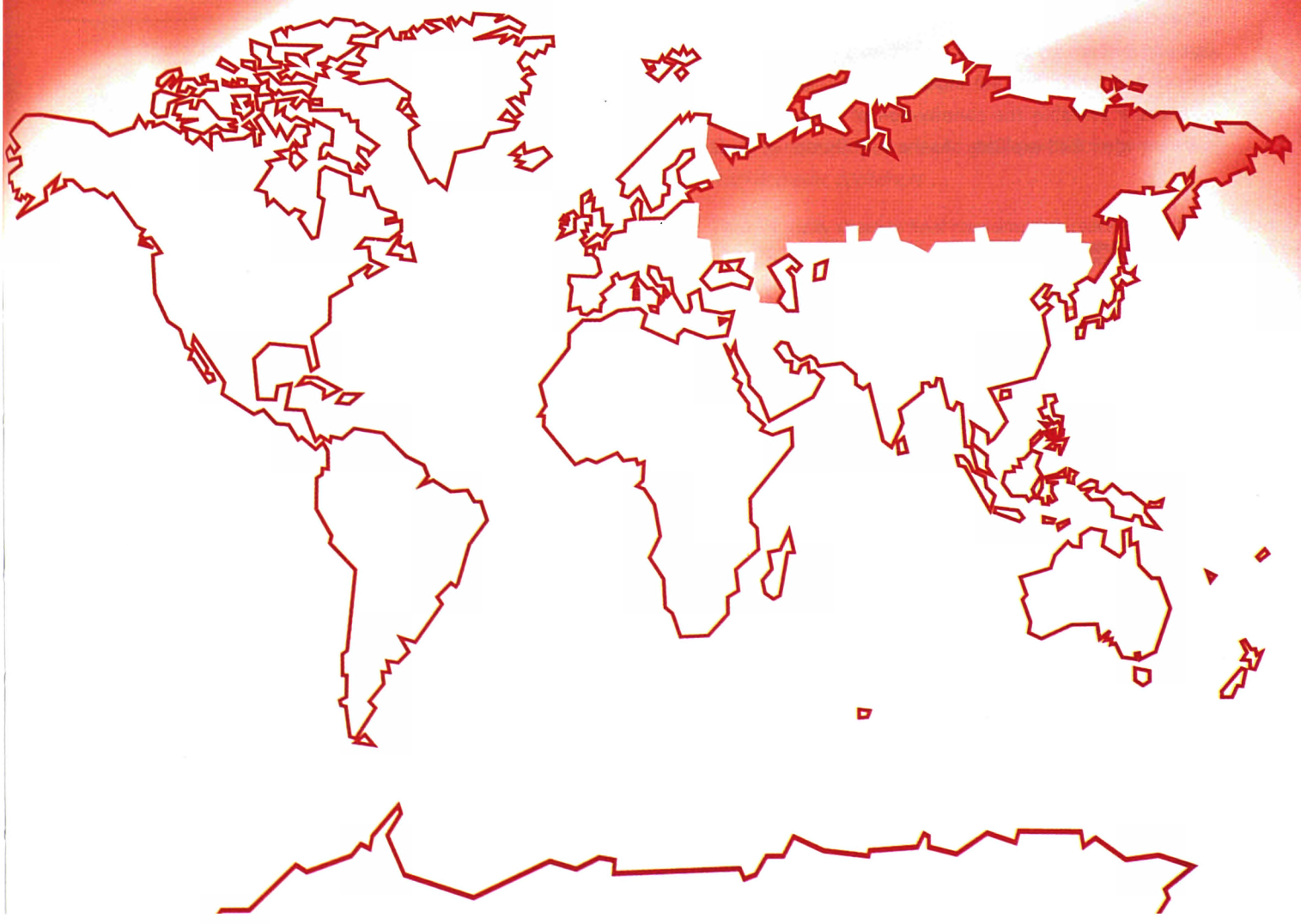
	1990	1993	1994	1995(2)	93/90	94/93	95/94
					Annual % Change		
Primary Production	10.6	8.1	7.2	8.1	-8.8%	-10.7%	12.1%
Solids	5.4	3.5	3.5	3.4	-13.4%	0.5%	-3.3%
Oil	0.0	0.1	0.1	0.1	-	27.4%	9.3%
Natural gas	0.0	0.0	0.0	0.0	-	-	-
Nuclear	4.4	3.3	2.1	3.0	-9.6%	-36.5%	45.4%
Hydro & Wind	0.4	0.3	0.3	0.4	-12.7%	23.1%	4.0%
Geothermal	0.0	0.0	0.0	0.0	-	-	-
Other	0.3	0.9	1.1	1.2	38.4%	25.2%	2.0%
Net Imports	19.4	10.9	11.0	11.1	-17.5%	0.6%	1.6%
Solids	1.9	0.8	0.8	0.6	-26.6%	3.6%	-24.8%
Oil	10.7	7.7	7.0	6.7	-10.2%	-9.1%	-4.7%
Crude oil	9.6	5.2	3.6	na	-18.4%	-30.5%	na
Oil products	1.1	2.5	3.4	na	31.4%	34.7%	na
Natural gas	8.1	2.6	3.0	3.7	-31.9%	16.9%	23.3%
Electricity	-1.3	-0.2	0.2	0.2	-50.9%	-	0.0%
Gross Inland Consumption	30.6	19.6	18.2	19.5	-13.8%	-7.2%	7.0%
Solids	7.7	4.5	4.3	4.0	-16.3%	-4.1%	-6.7%
Oil	11.1	7.9	7.2	7.1	-10.7%	-8.6%	-2.2%
Natural gas	7.9	2.9	3.0	3.7	-28.5%	3.6%	22.8%
Other (1)	3.9	4.3	3.7	4.7	3.6%	-15.3%	28.3%
Electricity Generation in TWh	52.2	27.2	23.6	na	-19.6%	-13.0%	na
Nuclear	17.0	12.3	7.7	na	-10.4%	-37.1%	na
Hydro & wind	4.9	3.3	4.0	na	-12.7%	23.1%	na
Thermal	30.3	11.6	11.9	na	-27.3%	2.4%	na
Generation Capacity in GWe	10.8	10.8	10.8	na	0.0%	-0.3%	na
Nuclear	2.5	2.4	2.4	na	-1.8%	0.0%	na
Hydro & wind	1.6	1.6	1.6	na	0.4%	0.0%	na
Thermal	6.7	6.8	6.8	na	0.6%	-0.5%	na
Average Load Factor in %	55.2	28.7	25.0	na	-19.6%	-12.7%	na
Fuel Inputs for Thermal Power Generation	9.1	4.6	5.1	na	-20.5%	11.1%	na
Solids	4.8	2.7	2.8	na	-17.0%	1.7%	na
Oil	1.4	1.7	2.1	na	6.0%	26.4%	na
Gas	3.0	0.2	0.2	na	-60.2%	-13.1%	na
Geothermal	0.0	0.0	0.0	na	-	-	na
Other	0.0	0.0	0.1	na	-	216.1%	na
Average Thermal Efficiency in %	28.6	21.8	20.1	na	-8.6%	-7.8%	na
Non-Energy Uses	1.9	0.2	0.3	na	-50.4%	8.5%	na
Total Final Energy Demand	18.2	12.4	12.0	na	-12.0%	-3.5%	na
Solids	2.0	0.6	0.5	na	-34.1%	-8.6%	na
Oil	6.2	4.3	4.0	na	-11.7%	-7.9%	na
Gas	1.5	1.0	1.1	na	-12.0%	15.3%	na
Electricity	2.4	1.4	1.4	na	-16.9%	-0.7%	na
Heat	5.9	4.3	4.0	na	-9.8%	-7.1%	na
Other	0.3	0.9	1.0	na	37.9%	12.2%	na
CO_2 Emissions in Mt of CO_2	75.0	46.3	44.9	na	-14.8%	-3.0%	na
Indicators							
Population (Million)	7.96	7.88	7.83	7.77	-0.3%	-0.6%	-0.8%
GDP (index 1985=100)	117.2	58.2	59.5	60.8	-20.8%	2.3%	2.1%
Gross Inl Cons./GDP (toe/1990 MECU)	1207.8	1559.6	1414.4	1481.7	8.9%	-9.3%	4.8%
Gross Inl Cons./Capita (toe/inhabitant)	3.84	2.49	2.32	2.50	-13.5%	-6.7%	7.8%
Electricity Generated/Capita (kWh/inhabitant)	6564	3449	3020	na	-19.3%	-12.5%	na
CO_2 Emissions/Capita (t of CO_2/inhabitant)	9.4	5.9	5.7	na	-14.5%	-2.5%	na
Import Dependency %	63.3	55.5	59.9	57.1	-4.3%	7.9%	-4.7%

(1) Includes nuclear, hydro and wind, net imports of electricity, and other energy sources.
(2) Estimates

BALTIC COUNTRIES : MAIN INDICATORS

Mtoe	1990	1993	1994	93/90	94/93
Gross Inland Consumption (Mtoe)	30.6	19.6	18.2	-13.8%	-7.2%
Public Thermal Power Generation	9.0	4.6	5.0	-20.2%	10.1%
Autoprod. Thermal Power Generation	0.1	0.0	0.1	-67.6%	1327.0%
Energy Branch	0.8	1.0	1.0	7.6%	0.9%
Final Energy Consumption	19.1	12.4	12.0	-13.4%	-3.7%
Industry	6.2	3.3	3.1	-18.9%	-5.3%
Transport	2.2	2.2	2.1	-1.1%	-4.9%
Tertiary-Domestic	10.7	7.0	6.8	-13.3%	-2.5%
Energy Intensity (toe/1990 MECU)	1207.8	1559.6	1414.4	8.9%	-9.3%
Public Thermal Power Generation	355.4	364.0	391.7	0.8%	7.6%
Autoprod. Thermal Power Generation	4.2	0.3	4.0	-59.1%	1295.0%
Industry	243.7	261.8	242.2	2.4%	-7.5%
Transport	88.1	171.8	159.8	24.9%	-7.0%
Tertiary-Domestic	422.1	553.6	527.8	9.5%	-4.7%
Energy per Capita (Kgoe/inhabitant)	3843	2490	2323	-13.5%	-6.7%
Industry	775	418	398	-18.6%	-4.8%
Transport	280	274	262	-0.7%	-4.3%
Tertiary-Domestic	1343	884	867	-13.0%	-1.9%
Electricity Share (%)					
Final Energy Consumption	12.4%	11.0%	11.3%	-4.0%	3.1%
Industry	16.2%	15.5%	16.7%	-1.4%	7.6%
Transport	3.0%	1.8%	2.1%	-15.2%	14.4%
Tertiary-Domestic	12.2%	11.7%	11.6%	-1.5%	-0.3%
CO_2 Emissions (Mt of CO_2)	75.0	46.3	44.9	-14.8%	-3.0%
Public Thermal Power Generation	30.1	16.2	17.5	-18.6%	8.1%
Autoprod. Thermal Power Generation	0.4	0.0	0.2	-66.3%	1063.6%
Energy Branch	0.4	1.1	1.1	38.5%	-3.2%
Industry	5.3	3.1	3.8	-16.4%	22.0%
Transport	6.4	6.5	6.1	0.4%	-6.5%
Tertiary-Domestic	18.7	8.2	7.1	-23.9%	-13.4%
Carbon Intensity (tn of CO_2/toe)	2.5	2.4	2.5	-1.2%	4.5%
Public Power Generation	2.2	2.0	2.3	-2.8%	17.8%
Public Thermal Power Generation	3.3	3.5	3.5	2.0%	-1.8%
Autoprod. Power Generation	3.3	3.7	3.0	3.8%	-18.5%
Autoprod. Thermal Power Generation	3.3	3.7	3.0	3.8%	-18.5%
Energy Branch	0.5	1.1	1.1	28.7%	-4.1%
Industry	0.9	0.9	1.2	3.1%	28.9%
Transport	2.9	3.0	3.0	1.5%	-1.7%
Tertiary-Domestic	1.7	1.2	1.1	-12.2%	-11.2%
CO_2 per Capita (kg of CO_2/inhabitant)	9423	5879	5735	-14.5%	-2.5%
Industry	669	395	485	-16.1%	22.7%
Transport	806	825	776	0.7%	-5.9%
Tertiary-Domestic	2350	1046	911	-23.7%	-12.9%
CO_2 per unit of GDP (tn of CO_2/1990 MECU)	2961	3683	3492	7.5%	-5.2%
Public Thermal Power Generation	1187	1290	1364	2.8%	5.7%
Autoprod. Thermal Power Generation	14	1	12	-57.5%	1037.5%
Energy Branch	17	88	84	74.9%	-5.4%
Industry	210	247	295	5.6%	19.3%
Transport	253	517	472	26.8%	-8.6%
Tertiary-Domestic	739	655	554	-3.9%	-15.4%

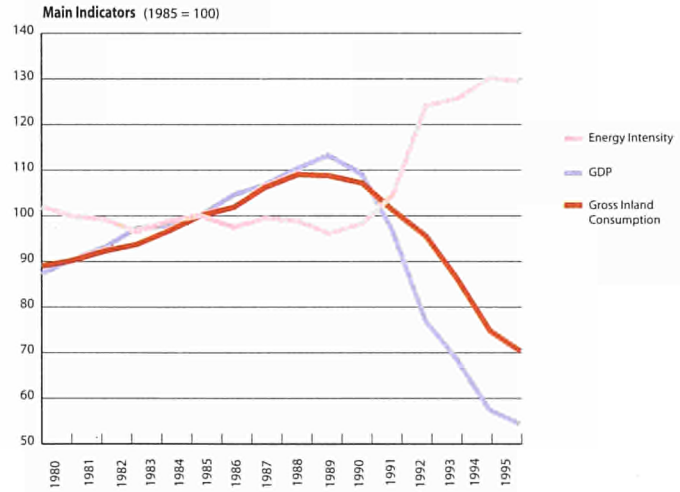
PART V CIS



CIS: Major trends (1985-1995)

- Dubious quality of both energy and macroeconomic data
- Total decline of GDP by about 46% between 1990 and 1995 but rebound is expected soon
- Final energy consumption fell by about 34% between 1990 and 1994
- Share of electricity was quite stable with a large potential for domestic appliances but constrained by the network development
- Gross inland energy consumption dominated by natural gas
- CIS remained the second biggest energy producer in the world
- Coal industry as a whole remained relatively inefficient
- Crude oil is expected to rebound in the near future
- CIS remained the world's largest gas producer and exporter
- Electricity generation dominated by thermal power and more specifically by gas
- Refining industry was calling for restructuration and rationalisation
- Energy intensity increased by 32% since 1990 in the absence of any pricing incentives
- CO_2 emissions reduced by 31% since 1990
- Energy exports were dominated by oil but the contribution of gas was booming in 1995

The Community of Independent States (CIS) includes the following twelve republics: Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine and Uzbekistan. In addition, as consolidated energy balances do not exist for Baltic countries before 1992, they are included in the total energy balances; if available, the contribution of these countries has been identified explicitly. As the contribution of these countries was limited to only 2% of the total gross inland consumption of former USSR, the impact of this aggregation remains limited.



Dubious quality of both energy and macroeconomic data…

Energy and macroeconomic data for all these republics are sometimes of dubious quality, and we will comment on significant trends rather than on absolute values for drawing analytical conclusions. In particular, the statistical systems of the republics are ill-equipped at present to identify activity in the private sector. This has two effects: firstly, to underestimate the level of aggregate economic activity and, secondly, to understate the share of activity taken up by the service sector.

Total decline of GDP by about 46% between 1990 and 1995…

With the rapid changes in political, social and economic structures however it is clear that the present economic situation in CIS as a whole is very depressed, with a total decline of GDP by about 46% between 1990 and 1995 without until now any sign of retrieval. In 1995, however, there were signs of growth in some countries. It is generally assumed that GDP is at its lowest point in 1995 and growth will normally occur from 1996 onwards.

ENERGY OUTLOOK

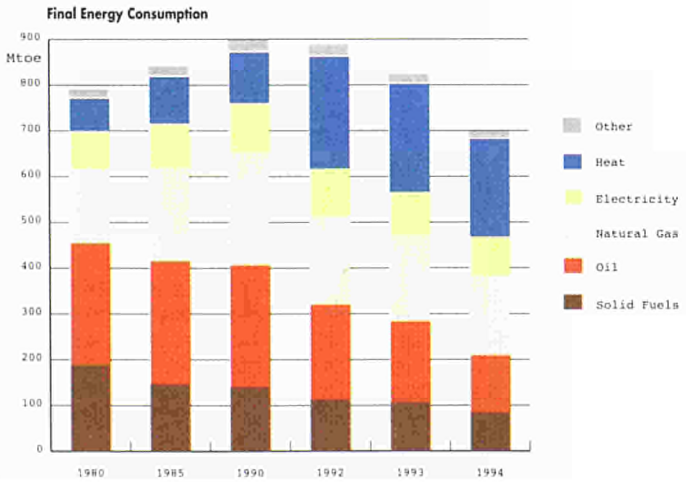
Final energy consumption fell by about 34% between 1990 and 1994…

Final Energy demand peaked in 1989 with a level of 905 Mtoe, and since then pursued an accelerated decline down to 697 Mtoe in 1994, a fall by more than 23% over 5 years. But this observation needs to be nuanced. In fact statistical series presented some disruption as the accounting of heat generation by power sector and heating plants was improved since 1990. As a result of this, an additional consumption of heat of about 150 Mtoe was observed in 1990. In addition, as the structure of consumption by sector was unstable until 1992, only 1993 and 1994 data from the new series has been considered in the final tables. Considering the new series about heat consumption, final energy demand demonstrated a decline by 34% between 1990 and 1994.

COMPARISON OF STATISTICAL SERIES FOR HEAT CONSUMPTION

Mtoe	1989	1990	1991	1992	1993	1994
Old series	112.1	110.8	114.9	112.3	114.4	n.a.
New series	n.a.	260.2	263.5	244.3	236.5	213.7

The reduction of consumption was mainly concentrated on oil products (152 Mtoe or 55% of the 1989 level), followed by solids (66 Mtoe or 44%), gas (64 Mtoe or 27%) and electricity (22 Mtoe or 20%). These trends were in line with the internal energy policies, which conduced to export as large a volume of oil as possible and to concentrate internal consumption on gas.



Share of industry reduced from 48% in 1990 to 39% in 1994…

In 1990, the last year of Soviet energy data system, industry represented about 48% of total final consumption, buildings 24%, transport 15% and agriculture and other uses 13%. Since then, considering lack of coherent data, it can be considered that industry and transport contributions have been reduced by about 50% approximately whereas residential declined by only 15%. Demand in the residential sector tends to be unresponsive to price change partly due to the absence of monitoring and control equipment and the lack of debt enforcement. Furthermore, residential energy demand appears to be quite unresponsive to falls in income. As a consequence, in 1994, the tertiary-domestic sector largely dominated the final demand of energy with about 51% of total consumption, compared to 39% for industry and only 10% for transport.

Average distance reduction compensates expansion of car fleet…

In 1993, it was estimated that there were less than 18 million private cars in the CIS, or about 60 cars per 1000 inhabitants. There has been a rapid expansion of the car fleet over the past few years but passenger car ownership remained considerably less than in the OECD countries. In addition, data on kilometres driven per vehicle in this region suggested that the average distance travelled per vehicle has fallen over recent years.

Share of electricity was quite stable with a large potential from domestic appliances….

The electricity share in final consumption reached 12.3% in 1994, increasing very slowly from 11.6% in 1990 and 10.3% in 1980. It must be noted that the penetration in the residential remained limited. Household appliances such as televisions and refrigerators are already in wide use. Other devices such as video recorders and freezers are more rare, while appliances such as fully automated washing machines, dryers and dish washers are virtually unknown. There is great scope for the introduction of these products, subject to space constraints in the households.

… but constrained by the network development.

Another constraint on the penetration of larger electricity using appliances is the low level of maximum demand permitted in some apartments. About 85% of electric networks require modernisation to accommodate larger electricity consuming items such as washing machines. Much

of the housing stock is limited to a maximum demand of 1.3 kW per apartment. To overcome this will take considerable investment and time.

Gross inland energy consumption dominated by gas…

Gross inland energy consumption, after a peak of 1389 Mtoe in 1988, fell to reach only 894.5 Mtoe in 1995 or a 36% total drop over 7 years. The movement has been accelerating these last years with a decline of 9.6% in 1993, 13.4% in 1994 and still 6.0% in 1995. The reduction however was not the same for all primary fuels as illustrated by the level of final consumption. While solids and oil demand decreased systematically since 1980, and very rapidly after the reforms of 1990 (-8.8% on average per year for solid fuels and –12.3% for oil), natural gas consumption has steadily increased from 1980 until 1990 (6% per year on average). But since then it also dropped by 6.0% per year on average. Other forms of energy consumption recovered, mainly nuclear energy with limited contribution of both hydro and renewable energy. Nuclear energy had a significant increase in consumption up to 1988, stagnated until 1993 but fell by 13.4% in 1994. Contribution of hydro is stable since 1985 at about 20 Mtoe although a large potential for expansion does exist. Regarding the 1995 situation, it was clear that natural gas largely dominated the energy scene, covering about 47% of gross inland energy consumption.

CIS remained the second biggest energy producer in the world …

CIS as a whole remains the second biggest **energy producer** in the world after the United States, and the world's leading produces and exporter of natural gas. CIS republics produce all forms of primary fossil fuels, but not equally distributed amongst them. For solid fuels, CIS (188.5 Mtoe in 1995) is now the third largest producer in the world after China (655 Mtoe) and the United States (548 Mtoe). **Solid fuel** output has decreased since 1980, where the annual production was of 339 Mtoe, down to 188 Mtoe in 1995, losing more than 10% in each of the two last years. The production is mainly concentrated in Russia (52% in 1995), Ukraine (23%) and Kazakhstan (23%).

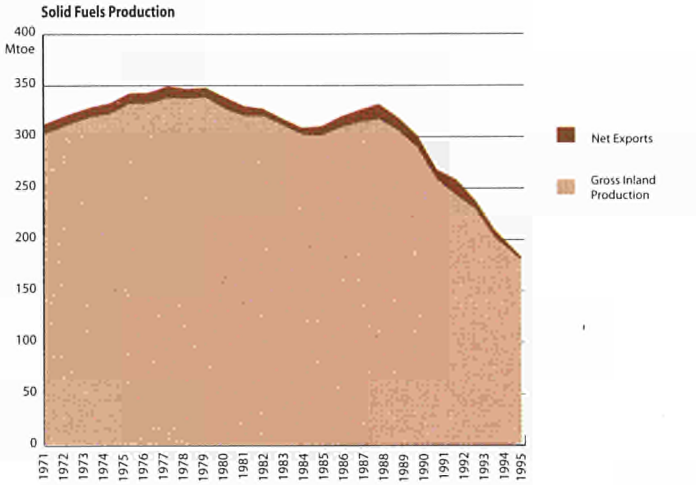
FORMER URSS : TOTAL ENERGY

Mtoe	1980	1985	1990	1993	1994	1995	85/80	90/85	92/90	94/93	95/94
							Annual % Change				
Total Production	**1357.8**	**1512.9**	**1629.8**	**1288.5**	**1176.8**	**1140.1**	**2.2%**	**1.5%**	**-7.5%**	**-8.7%**	**-3.1%**
Armenia	1.1	1.4	0.0	0.0	0.0	0.0	4.0%	-100.0%	-	-	-
Azerbaijan	26.0	24.5	20.5	15.8	14.8	14.5	-1.2%	-3.5%	-8.4%	-6.6%	-1.5%
Belarus	0.3	2.2	2.3	2.2	2.2	2.2	49.4%	0.9%	-0.8%	0.1%	-3.8%
Georgia	4.0	1.2	0.6	0.2	0.2	0.1	-21.8%	-13.9%	-27.0%	-23.5%	-67.0%
Kazakhstan	81.7	94.7	99.5	86.2	77.8	67.5	3.0%	1.0%	-4.7%	-9.7%	-13.3%
Kyrgyzstan	1.6	1.5	1.4	0.6	0.6	0.6	-1.7%	-1.8%	-22.6%	-1.9%	-1.0%
Moldova	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-	-
Russia	979.7	1102.9	1227.5	955.6	884.2	874.5	2.4%	2.2%	-8.0%	-7.5%	-1.1%
Tajikistan	0.9	1.0	0.4	0.1	0.1	0.1	1.5%	-16.1%	-29.7%	-41.4%	59.7%
Turkmenistan	65.1	73.4	76.7	57.2	33.1	30.8	2.4%	0.9%	-9.3%	-42.1%	-6.9%
Ukraine	158.0	151.2	132.3	98.7	87.9	79.1	-0.9%	-2.6%	-9.3%	-10.9%	-10.0%
Uzbekistan	31.4	31.6	38.0	41.7	45.0	47.6	0.2%	3.7%	3.2%	7.9%	5.7%
Baltics	8.0	9.9	10.0	7.1	5.8	6.8	4.3%	0.4%	-10.9%	-18.3%	17.2%
Total Net Import	**-212.2**	**-219.18**	**-249.49**	**-185.24**	**-210.73**	**-241.12**	**0.6%**	**2.6%**	**-9.4%**	**13.8%**	**14.4%**
Total Gross Inland Consumption	**1131.9**	**1272.4**	**1363.4**	**1098.5**	**951.1**	**894.5**	**2.4%**	**1.4%**	**-6.9%**	**-13.4%**	**-6.0%**
Armenia	5.7	8.0	7.4	1.4	0.9	0.9	6.9%	-1.5%	-43.2%	-30.0%	-4.5%
Azerbaijan	19.2	21.4	23.7	18.7	17.3	16.1	2.2%	2.1%	-7.6%	-7.7%	-7.2%
Belarus	18.9	38.3	43.3	29.2	25.6	20.8	15.2%	2.5%	-12.3%	-12.2%	-18.7%
Georgia	10.3	11.5	10.5	4.1	2.6	3.5	2.2%	-1.7%	-26.9%	-37.1%	36.4%
Kazakhstan	61.4	71.8	80.3	66.8	62.7	51.0	3.2%	2.3%	-6.0%	-6.1%	-18.7%
Kyrgyzstan	5.3	6.9	6.5	4.0	3.6	2.6	5.2%	-1.1%	-15.3%	-9.1%	-27.2%
Moldova	10.0	10.0	10.8	6.1	4.8	4.8	0.2%	1.5%	-17.6%	-20.5%	-0.6%
Russia	748.0	760.8	831.2	704.3	597.0	570.4	0.3%	1.8%	-5.4%	-15.2%	-4.5%
Tajikistan	3.5	4.8	4.3	2.1	1.2	1.0	6.5%	-2.1%	-20.6%	-45.3%	-10.6%
Turkmenistan	8.7	14.2	15.1	10.3	10.1	9.5	10.4%	1.3%	-12.1%	-1.6%	-6.3%
Ukraine	191.8	253.7	247.3	187.1	162.9	150.8	5.8%	-0.5%	-8.9%	-13.0%	-7.4%
Uzbekistan	26.5	38.6	47.1	45.9	45.8	45.0	7.8%	4.1%	-0.9%	-0.1%	-1.9%
Baltics(1)	22.8	32.5	35.8	18.5	16.5	18.1	7.4%	1.9%	-19.7%	-10.9%	9.9%

(1) Including Baltics only for statistical reasons

Coal industry as a whole remained relatively inefficient…

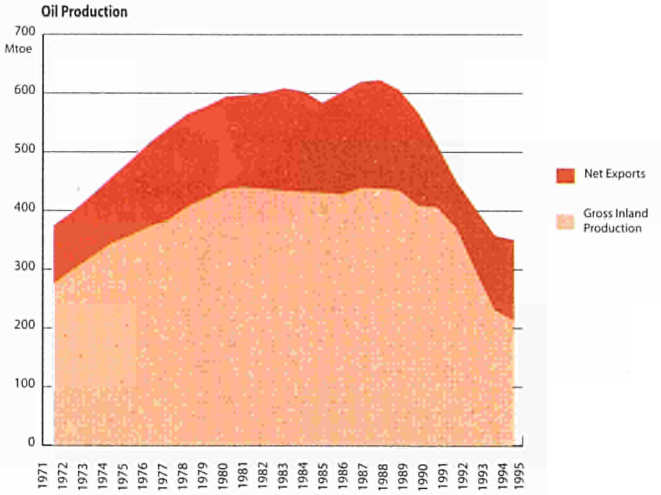
In general the **coal industry** is markedly inefficient. In addition, as most of the working mine capacity in Russia is in Siberia (about 80%), most of the coal has to be moved over long distances to reach the consuming areas in the west of the State or to ports for export, and freight rates are amongst the most crucial elements in estimating export prices for Russian coal and in the outlook for export volumes. The main production in the Ukraine takes place at depths over 1000 metres. Due to the age and cost structure of installations, and especially due to geological conditions, most of the mines are economically inefficient. In Kazakhstan, the majority of coal was extracted by open cast mining but, due to infrastructure problems, the potential market is limited to local demand.



CIS : SOLID FUELS

Mtoe	1980	1985	1990	1993	1994	1995	85/80	90/85	93/90	94/93	95/94
							Annual % Change				
Total Production	**338.7**	**312.5**	**300.5**	**237.8**	**208.3**	**188.5**	**-1.6%**	**-0.8%**	**-7.5%**	**-12.4%**	**-9.5%**
Armenia	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-	-
Azerbaijan	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-	-
Belarus	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-	-
Georgia	0.6	0.6	0.3	0.1	0.1	0.1	-2.2%	-10.1%	-33.1%	-33.3%	-18.4%
Kazakhstan	59.5	67.5	67.9	57.8	53.9	42.9	2.5%	0.1%	-5.2%	-6.8%	-20.3%
Kyrgyzstan	1.3	1.3	1.2	0.6	0.3	0.2	0.0%	-1.5%	-22.8%	-52.9%	-18.4%
Moldova	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-	-
Russia	166.1	137.5	138.8	114.9	98.1	97.3	-3.7%	0.2%	-6.1%	-14.7%	-0.8%
Tajikistan	0.3	0.3	0.2	0.1	0.0	0.0	0.0%	-12.9%	-26.3%	-50.0%	-100.0%
Turkmenistan	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-	-
Ukraine	100.9	96.8	84.4	59.2	50.9	43.2	-0.8%	-2.7%	-11.1%	-14.1%	-15.1%
Uzbekistan	1.9	1.7	2.1	1.3	1.3	1.0	-2.6%	5.4%	-16.4%	0.0%	-19.6%
Baltics (1) (2)	8.0	6.8	5.6	3.8	3.8	3.8	-3.2%	-3.8%	-12.1%	0.0%	0.0%
Total Net Import	**-11.05**	**-8.80**	**-11.72**	**-8.64**	**-7.88**	**-5.90**	**-4.5%**	**5.9%**	**-9.7%**	**-8.8%**	**-25.1%**
Total Gross Inland Consumption	**326.8**	**301.1**	**288.8**	**228.7**	**200.9**	**182.6**	**-1.6%**	**-0.8%**	**-7.5%**	**-12.2%**	**-9.1%**
Armenia	0.2	0.3	0.3	0.0	0.0	0.0	7.5%	4.6%	-100.0%	-	-
Azerbaijan	0.1	0.1	0.1	0.0	0.0	0.0	2.3%	0.0%	-100.0%	-	-
Belarus	0.8	1.5	1.8	1.0	0.5	0.3	14.6%	3.3%	-16.0%	-50.0%	-38.2%
Georgia	1.3	1.4	1.0	0.3	0.1	0.1	1.7%	-6.5%	-35.6%	-50.0%	3.5%
Kazakhstan	38.0	44.5	46.5	41.1	38.3	29.7	3.2%	0.9%	-4.0%	-6.8%	-22.4%
Kyrgyzstan	2.5	3.1	3.0	1.7	1.4	1.1	4.9%	-0.9%	-16.7%	-19.2%	-17.8%
Moldova	3.6	3.6	3.1	1.7	1.5	1.5	0.0%	-3.2%	-18.4%	-8.0%	-3.8%
Russia	192.1	136.2	137.5	115.6	101.3	98.2	-6.6%	0.2%	-5.6%	-12.4%	-3.0%
Tajikistan	0.7	1.0	1.0	0.1	0.1	0.0	6.4%	0.0%	-48.9%	-50.0%	-56.5%
Turkmenistan	0.3	0.4	0.5	0.1	0.0	0.0	10.7%	2.7%	-50.0%	-100.0%	-
Ukraine	75.8	96.7	79.8	60.0	50.9	45.2	5.0%	-3.8%	-9.1%	-15.1%	-11.1%
Uzbekistan	2.8	4.0	5.5	2.3	2.2	1.7	8.0%	6.2%	-24.7%	-7.3%	-20.6%
Baltics (1) (2)	8.8	8.3	8.8	4.8	4.6	4.6	-1.2%	1.2%	-18.3%	-4.2%	0.0%

(1) Including Baltics only for statistical reasons
(2) Including oil shal



Crude oil production was expected to rebound...

Crude oil production has decreased since 1980 (606 Mtoe) to reach only 365 Mtoe in 1995, with an accelerating trend (more than -10% per year) between 1990 and 1994. Production stabilised in 1995. Russia represented more than 86 % of the total production, remaining the third world producer after Saudi Arabia (426 Mtoe) and the United States (382 Mtoe). Activity by foreign companies is currently restricted to a number of joint ventures which, however, will have some impact on total oil production. However, negotiations are under way for larger projects which will support the expected rebound of oil production in the near future.

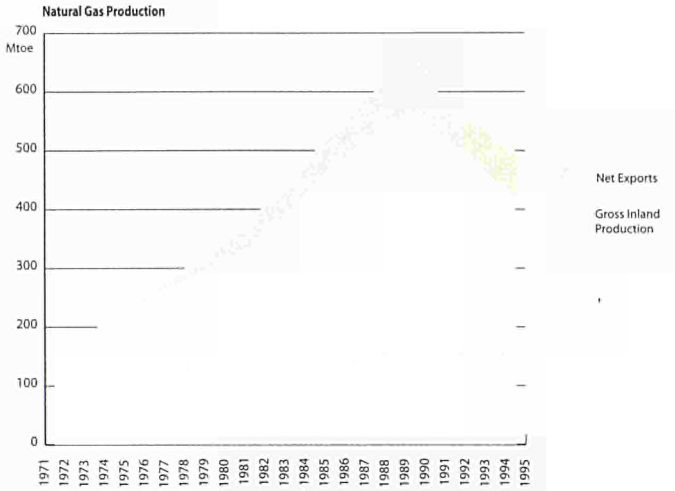
CIS : OIL

Mtoe	1980	1985	1990	1993	1994	1995	85/80	90/85	93/90	94/93	95/94
							Annual % Change				
Total Production	**606.2**	**598.2**	**573.5**	**402.4**	**363.8**	**365.5**	**-0.3%**	**-0.8%**	**-11.1%**	**-9.6%**	**0.5%**
Armenia	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-	-
Azerbaijan	14.7	13.1	12.5	10.3	9.6	9.2	-2.3%	-0.9%	-6.2%	-6.8%	-4.6%
Belarus	0.0	2.0	2.1	2.0	2.0	1.9	-	0.5%	-0.9%	0.0%	-2.8%
Georgia	3.2	0.6	0.2	0.1	0.1	0.0	-29.7%	-20.0%	-17.8%	-2.0%	-100.0%
Kazakhstan	18.7	22.8	25.8	23.0	20.3	20.6	4.0%	2.5%	-3.8%	-11.7%	1.6%
Kyrgyzstan	0.2	0.1	0.1	0.0	0.3	0.4	-20.6%	-4.0%	-13.6%	860.0%	23.5%
Moldova	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-	-
Russia	552.2	545.5	519.1	354.2	317.1	316.5	-0.2%	-1.0%	-12.0%	-10.5%	-0.2%
Tajikistan	0.4	0.4	0.1	0.0	0.0	0.1	-0.7%	-17.9%	-34.8%	0.0%	225.0%
Turkmenistan	8.0	6.0	5.6	4.4	4.3	4.7	-5.5%	-1.4%	-7.7%	-2.3%	8.9%
Ukraine	7.5	5.8	5.3	4.3	4.2	4.1	-5.0%	-1.8%	-6.7%	-2.3%	-2.4%
Uzbekistan	1.3	2.0	2.8	4.0	5.5	7.7	8.7%	7.3%	12.6%	37.5%	39.6%
Baltics(1)	0.0	0.0	0.0	0.1	0.3	0.3	-	-	-	200.0%	0.0%
Total Net Import	**-156.9**	**-153.1**	**-158.1**	**-105.4**	**-126.8**	**-135.5**	**-0.5%**	**0.6%**	**-12.6%**	**20.3%**	**6.9%**
Total Gross Inland Consumption	**437.5**	**430.7**	**408.5**	**298.4**	**230.9**	**223.0**	**-0.3%**	**-1.1%**	**-9.9%**	**-22.6%**	**-3.4%**
Armenia	2.2	3.1	3.5	0.7	0.3	0.2	7.5%	2.4%	-41.1%	-60.7%	-29.2%
Azerbaijan	7.6	8.5	8.8	8.9	7.8	7.0	2.3%	0.6%	0.2%	-12.3%	-9.7%
Belarus	14.7	29.0	28.6	14.0	12.8	9.4	14.6%	-0.3%	-21.1%	-8.6%	-27.0%
Georgia	5.4	5.9	4.9	0.7	0.3	0.4	1.7%	-3.9%	-46.5%	-62.4%	31.6%
Kazakhstan	16.1	18.9	20.3	14.2	15.0	13.2	3.2%	1.5%	-11.3%	5.7%	-11.8%
Kyrgyzstan	2.2	2.9	2.4	0.9	0.3	0.4	4.9%	-3.1%	-28.8%	-63.9%	18.3%
Moldova	6.2	6.2	4.9	2.1	1.0	1.0	0.0%	-4.6%	-25.0%	-50.2%	2.7%
Russia	310.3	259.4	248.1	211.5	153.8	154.0	-3.5%	-0.9%	-5.2%	-27.3%	0.2%
Tajikistan	1.9	2.6	2.0	0.8	0.2	0.2	6.4%	-5.1%	-27.9%	-68.9%	-11.9%
Turkmenistan	1.3	2.1	2.2	2.6	2.8	3.0	10.7%	1.1%	5.2%	7.9%	7.4%
Ukraine	52.1	66.4	56.7	26.6	22.0	19.5	5.0%	-3.1%	-22.3%	-17.2%	-11.6%
Uzbekistan	7.0	10.3	11.2	7.6	7.4	7.6	8.0%	1.6%	-11.9%	-3.4%	3.2%
Baltics(1)	10.4	15.3	14.9	7.8	7.2	7.1	8.0%	-0.6%	-19.5%	-7.5%	-1.4%

(1) Including Baltics only for statistical reasons

CIS remained the world's largest gas producer…

Production of **natural gas** increased steadily until 1990 (from 360 Mtoe in 1980 to 656 Mtoe in 1990) but lost about 22% of its value since then. Russia was the largest gas producer (82 % of the total CIS production), and it is worth noting that non-associated gas accounted for most of the gas production, which means that gas production is largely independent of oil production. Current production is concentrated in West Siberia. Given sufficient investment, production of the major fields could be increased to nominal capacity and kept there for 7 to 10 years by drilling new wells and installing new compressor facilities. Historically, Turkmenistan is the second largest gas producer, although more recently the level of gas production has fallen below that of Uzbekistan. The country depends, however, on a transit route though Russia for its gas for exportation. Depending on statistical sources, Russia is disputing with the United States the role of first world producer but in any case it remains the primary exporter with about 40% of the world exchanges.



CIS : NATURAL GAS

Mtoe	1980	1985	1990	1993	1994	1995	85/80	90/85	93/90	94/93	95/94
							Annual % Change				
Total Production	**359.6**	**520.1**	**656.3**	**554.6**	**523.4**	**513.6**	**7.7%**	**4.8%**	**-5.5%**	**-5.6%**	**-1.9%**
Armenia	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-	-
Azerbaijan	11.3	11.4	8.0	5.5	5.2	5.4	0.1%	-6.7%	-11.8%	-6.3%	4.3%
Belarus	0.3	0.2	0.2	0.2	0.2	0.2	-7.8%	4.1%	0.0%	1.0%	-11.9%
Georgia	0.2	0.1	0.0	0.0	0.0	0.0	-19.7%	-6.5%	-27.6%	-100.0%	-
Kazakhstan	3.5	4.4	5.8	5.4	3.6	3.9	5.0%	5.5%	-2.0%	-32.8%	6.8%
Kyrgyzstan	0.1	0.1	0.1	0.0	0.0	0.0	0.0%	-3.5%	-26.6%	5.3%	-100.0%
Moldova	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-	-
Russia	212.9	373.5	515.2	438.5	432.5	424.3	11.9%	6.6%	-5.2%	-1.4%	-1.9%
Tajikistan	0.2	0.2	0.1	0.0	0.0	0.0	8.4%	-18.2%	-28.8%	-75.0%	-100.0%
Turkmenistan	57.1	67.4	71.1	52.8	28.8	26.2	3.4%	1.1%	-9.4%	-45.4%	-9.3%
Ukraine	45.9	34.7	22.7	15.6	14.8	14.7	-5.4%	-8.1%	-11.9%	-4.7%	-0.6%
Uzbekistan	28.2	28.0	33.0	36.5	38.2	38.9	-0.1%	3.3%	3.4%	4.9%	1.7%
Baltics(1)	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-	-
Total Net Import	**-42.59**	**-54.80**	**-76.69**	**-69.95**	**-74.86**	**-83.5**	**5.2%**	**7.0%**	**-3.0%**	**7.0%**	**11.5%**
Total Gross Inland Consumption	**315.9**	**460.9**	**569.6**	**479.0**	**439.0**	**420.9**	**7.8%**	**4.3%**	**-5.6%**	**-8.4%**	**-4.1%**
Armenia	2.4	3.5	3.6	0.7	0.7	0.7	7.5%	0.5%	-43.2%	7.3%	0.0%
Azerbaijan	11.3	12.7	14.8	9.9	9.5	9.0	2.3%	3.2%	-12.7%	-3.9%	-5.1%
Belarus	3.7	7.2	12.1	13.5	11.8	10.7	14.6%	10.7%	3.9%	-12.6%	-9.6%
Georgia	3.6	3.9	4.4	2.9	2.1	2.9	1.7%	2.3%	-12.8%	-28.8%	40.6%
Kazakhstan	6.4	7.5	11.7	11.2	8.9	7.5	3.2%	9.3%	-1.5%	-20.2%	-15.5%
Kyrgyzstan	0.9	1.1	1.5	1.5	2.0	1.2	4.9%	6.0%	-1.0%	36.0%	-38.9%
Moldova	0.8	0.8	3.2	2.5	2.4	2.4	0.0%	31.3%	-7.4%	-4.8%	0.0%
Russia	196.0	301.3	371.8	308.3	283.5	272.2	9.0%	4.3%	-6.1%	-8.1%	-4.0%
Tajikistan	0.9	1.2	1.4	1.3	0.9	0.9	6.4%	2.6%	-1.4%	-28.7%	-6.2%
Turkmenistan	7.2	12.0	12.9	7.7	7.4	6.5	10.7%	1.4%	-15.7%	-4.0%	-11.5%
Ukraine	61.7	78.7	93.4	80.6	70.7	67.7	5.0%	3.5%	-4.8%	-12.2%	-4.2%
Uzbekistan	16.5	24.3	30.7	36.0	35.9	35.2	8.0%	4.8%	5.5%	-0.2%	-1.8%
Baltics(1)	4.5	6.6	8.3	2.9	3.1	3.8	8.0%	4.7%	-29.5%	6.4%	23.7%

(1) Including Baltics only for statistical reasons

Electricity generation dominated by thermal power…

Electricity generation in CIS also peaked in 1990, and has decreased continuously since then to the production level of the early eighties. Although it shows a continuous decrease since 1990, thermal generation remains the most important source of electricity, with about two thirds of the total generation in 1994. Hydropower output increased regularly since 1980 but represented only 18% of electricity production in 1994 in spite of the very large existing potential. Nuclear production, which tripled its contribution from 1980 to 1990, stagnated in 1993 and dropped by 13.4% in 1994. This trend is mainly due to the progressive decommissioning of obsolete and unsafe nuclear power plants.

… and more specifically by natural gas

Most electricity is generated by gas. There are, however, considerable local differences where coal is abundant and where gas is not supplied. The use of solid fuels remained rather stable over the eighties but declined significantly since then; its share dropping progressively from 40% in 1980 to only 24% in 1994. The use of coal was limited to units close to coal fields where it remained the most economic means of generating electricity. Gas became the most important fuel for power generation since 1985 (41% of total) and continued to grow in volume until 1990 (52% of total). Its contribution has remained constant since 1990 at a level of about 220 Mtoe/year, corresponding to a share of 57% in 1994.

Gas is projected to remain the dominant means of generating electricity due mainly to the more favourable economics of gas-fired generation based on combined cycle in gas-importing states and classical boilers in producing regions. The consumption of oil for electricity production has been decreasing between 1980 and 1990, as a result of the penetration of natural gas in this market. Since 1990, the contribution of oil remained constant at about 70 Mtoe.

Refining industry in need of restructuring and rationalisation…

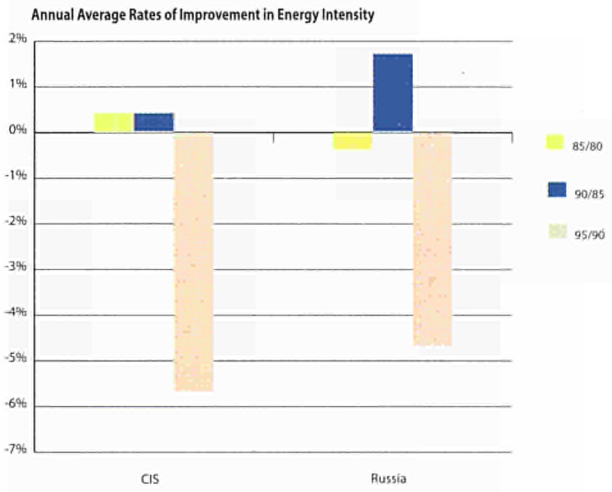
In 1995, the refinery capacity (10.3 millions barrels day) represented 13% of the world capacity (16% in 1985). Since 1985, the capacity declined by 1.5% per year under Russia leadership. The most important recent trend for the petroleum industry in Russia was vertical integration. In a departure from past practice, where the oil industry was administered by different branch ministries, reorganisation has given birth to a few large vertically integrated companies which combine crude production, refining, distribution and retailing in one integrated structure.

The utilisation rate of refineries decreased sharply from 79% in 1985 to only 47% in 1995. A shake-out in refining capacity is inevitable. CIS has about twice the refining capacity it needs, with much of the capacity concentrated in only a few regions whose markets will simply prove unable to support them.

COMPETITIVENESS

Energy intensity increased by 32% since 1990…

The **energy intensity** of CIS (bearing in mind all the necessary precautions when determining GDP) is among the highest in the world. From 1980 to 1990, this energy intensity decreased by about 0.4% per year. However, the energy intensity increased sharply by 8.5% between 1990 and 1993, by 3.5% in 1994 and seems to have stabilised in 1995. The high energy intensity is due to a combination of factors. In general the economy has been weighted heavily towards industry, with a relatively small service sector. In industry, the rise has occurred as many inefficient industrial enterprises have not closed but remained operational at lower level of activity. Fixed energy requirements have thus risen compared with variable energy requirements and total output. Once industrial activity recovers, this is likely to be reversed fairly quickly.



... in the absence of any pricing incentives

The historical absence of pricing incentives has also contributed. With low energy prices and a limited payment infrastructure, there has been no incentive to invest in efficient technologies. The result is an energy economy that uses out of date equipment in industries. One of the key uncertainties in the ongoing reforms is the effect of the price reform. Prices will only truly reflect their costs once a fully functioning competitive economy is established. Once prices do reflect their true costs and mechanisms for recording consumption and enforcing payment are running, there will be an effect upon energy consumption. History, however, offers no guide as to the magnitude of this effect.

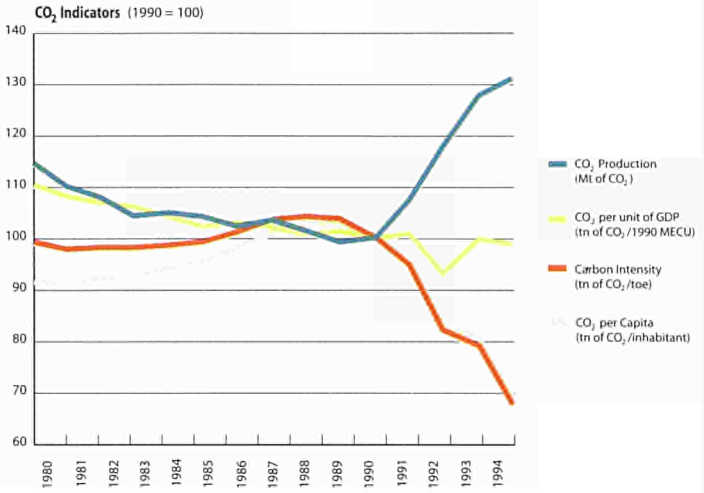
The gross inland consumption per capita that culminated at 4.8 toe/capita in 1988, slowed down to only 3.0 toe/capita in 1195, below the European level. Large discrepancies exist between republics with higher consumption per capita in Russia (3.9 toe/capita in 1995) and quite lower levels in the Central Asian Republics.

ENVIRONMENT

CO_2 emissions reduced by 31% since 1990...

The CO_2 emissions in CIS increased from 3190 Mtoe in 1980 to 3486 in 1990 and then dropped down to 2403 Mtoe in 1994 in line with the evolution of gross inland consumption. CIS as a whole benefited substantially from the increasing contribution of natural gas to reduce CO_2 emissions. But it must be expected that, with the forthcoming rebound of the economy, coal and mainly oil will increase their contribution to gross inland consumption, especially in relation with the expected growth of consumption for transportation. This means that the carbon intensity of fossil fuels can increase by about 10% over the next ten years and as a consequence accelerate the growth of CO_2 emissions. The global evolution must be nuanced. Although CO_2 emission per capita closely followed the evolution of total emissions since 1980, CO_2 intensity per unit of GDP was increasing substantially since 1990 in relation to the increasing energy intensity of the economy.

But energy also impacts environment in relation due to losses. It is estimated that 5 to 7% of CIS's oil production is lost due to accidental leakage, mainly shipping oil lost



through weak and over-used segments of Russian pipelines. At the same time, Gazprom currently is undergoing an extensive rehabilitation of its gas trunkline system, including pipelines and compressor stations. About half of Gazprom's pipeline network is more than 30 years old and has exceeded its original design life. Gas losses are not statistically accounted for, but it is generally considered that they represent a fair percentage of the total transported. These CH4 emissions are also to be considered in the greenhouse effect as their impact is considerably more important than CO_2.

GLOBAL MARKETS

Energy exports were dominated by oil...

Export of energy has always been very important for the economy of the former USSR until 1990 and for Russia since then, being a source of hard currency, mainly from Western Europe. Exports of energy represented about 21% of energy production in 1995. Total exported volumes increased until 1990 (250 Mtoe from 212 Mtoe in 1980). They dropped by 22% between 1990 and 1992, but they recovered this 1990 level in 1995. This evolution is mainly due to oil exports, the main exported energy form, which dropped by 50% between 1990 and 1992 but recovered about 75 % of its losses since then. The main markets for oil export are respectively Western Europe (80 Mtoe in 1995) and Central Europe (26 Mtoe in 1995)

... but the contribution of natural gas was booming in 1995

Exports of natural gas also reached a peak in 1990 (77 Mtoe) and then decreased by about 5% per year between 1990 and 1992. The slowing trend was stopped in 1993, while figures revealed an increase in gas export by about 7% in 1994 and 28% in 1995 to reach a new absolute peak of about 96 Mtoe. These variations are connected to the export policy of Russia. Russia currently exports about 30% of its natural gas production. Of this amount, about two-thirds are destined for European markets and the remainder for CIS countries. Western Europe relies on Russian gas to meet about a quarter of its needs. The volume of solid fuels exports remained stable at around 10 Mtoe during the 80's but have been declining slowly since then.

CIS : SUMMARY ENERGY BALANCE

Mtoe	1980	1985	1990	1993	1994	1995(3)	85/80	90/85	93/90	94/93	95/94
							Annual % Change				
Primary Production	1357.8	1512.9	1629.8	1288.5	1176.8	1140.1	2.2%	1.5%	-7.5%	-8.7%	-3.1%
Solids	338.7	312.5	300.5	237.8	208.3	188.5	-1.6%	-0.8%	-7.5%	-12.4%	-9.5%
Oil	606.2	598.2	573.5	402.4	363.8	355.4	-0.3%	-0.8%	-11.1%	-9.6%	-2.3%
Natural gas	359.6	520.1	656.3	554.6	523.4	514.5	7.7%	4.8%	-5.5%	-5.6%	-1.7%
Nuclear	19.0	43.5	55.1	54.3	46.0	46.5	18.0%	4.8%	-0.5%	-15.3%	1.2%
Hydro & Wind	15.9	18.4	20.0	20.9	21.2	21.3	3.0%	1.7%	1.3%	1.8%	0.5%
Geothermal	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	0.0%	0.0%
Other	18.4	20.2	24.3	18.5	14.1	13.8	1.9%	3.7%	-8.6%	-23.9%	-2.2%
Net Imports	-212.2	-219.2	-249.5	-185.2	-210.7	-241.1	0.6%	2.6%	-9.4%	13.8%	14.4%
Solids	-11.1	-8.8	-11.7	-8.6	-7.9	-5.9	-4.5%	5.9%	-9.7%	-8.8%	-25.1%
Oil	-156.9	-153.1	-158.1	-105.4	-126.8	-137.8	-	-	-12.6%	20.3%	8.7%
Crude oil	-116.1	-105.1	-108.5	-84.0	-96.6	na	-2.0%	0.6%	-8.2%	15.1%	na
Oil products	-40.9	-48.0	-49.5	-21.4	-30.2	na	3.3%	0.6%	-24.4%	40.9%	na
Natural gas	-42.6	-54.8	-76.7	-70.0	-74.9	-96.2	5.2%	7.0%	-3.0%	7.0%	28.5%
Electricity	-1.6	-2.5	-3.0	-1.3	-1.2	-1.2	8.6%	3.9%	-25.1%	-6.3%	0.0%
Gross Inland Consumption	1131.9	1272.4	1363.4	1098.5	951.1	894.5	2.4%	1.4%	-6.9%	-13.4%	-6.0%
Solids	326.8	301.1	288.8	228.7	200.9	182.6	-1.6%	-0.8%	-7.5%	-12.2%	-9.1%
Oil	437.5	430.7	408.5	298.4	230.9	213.1	-0.3%	-1.1%	-9.9%	-22.6%	-7.7%
Natural gas	315.9	460.9	569.6	479.0	439.0	418.3	7.8%	4.3%	-5.6%	-8.4%	-4.7%
Other (2)	51.7	79.8	96.5	92.5	80.4	80.5	9.1%	3.9%	-1.4%	-13.1%	0.1%
Electricity Generation in TWh	1297.4	1554.3	1746.2	1437.9	1305.6	na	3.7%	2.4%	-6.3%	-9.2%	na
Nuclear	73.0	167.0	211.5	206.7	174.4	na	18.0%	4.8%	-0.8%	-15.6%	na
Hydro & wind	184.7	214.4	233.0	242.5	247.0	na	3.0%	1.7%	1.3%	1.8%	na
Thermal	1039.7	1172.9	1301.7	988.7	884.2	na	2.4%	2.1%	-8.8%	-10.6%	na
Generation Capacity in GWe	266.8	319.3	343.7	342.6	344.5	na	3.7%	1.5%	-0.1%	0.5%	na
Nuclear	14.0	28.1	37.9	36.5	36.5	na	15.0%	6.2%	-1.2%	0.0%	na
Hydro & wind	52.5	61.3	65.0	65.0	65.4	na	3.1%	1.2%	0.0%	0.6%	na
Thermal	200.2	229.9	240.8	241.1	242.5	na	2.8%	0.9%	0.0%	0.6%	na
Average Load Factor in %	55.5	55.6	58.0	47.9	43.3	na	0.0%	0.9%	-6.2%	-9.7%	na
Fuel Inputs for Thermal Power Generation	342.6	397.9	439.3	402.5	373.4	na	3.0%	2.0%	-2.9%	-7.2%	na
Solids	138.4	129.6	142.7	89.2	89.1	na	-1.3%	1.9%	-14.5%	-0.1%	na
Oil	107.2	104.6	67.8	80.7	71.7	na	-0.5%	-8.3%	6.0%	-11.1%	na
Gas	97.0	163.7	228.8	232.6	212.5	na	11.0%	6.9%	0.6%	-8.6%	na
Geothermal	0.0	0.0	0.0	0.0	0.0	na	-	-	-	0.0%	na
Other	0.0	0.0	0.0	0.0	0.0	na	-	-	-	-	na
Average Thermal Efficiency in %	26.1	25.3	25.5	21.1	20.4	na	-0.6%	0.1%	na	na	na
Non-Energy Uses	63.9	67.4	73.5	36.3	28.1	na	1.1%	1.7%	-20.9%	-22.5%	na
Total Final Energy Demand	789.8	839.0	896.8	821.8	696.9	na	1.2%	1.3%	-2.9%	-15.2%	na
Solids	189.2	148.6	141.3	107.1	85.3	na	-4.7%	-1.0%	-8.8%	-20.3%	na
Oil	265.7	266.9	265.0	175.8	123.8	na	0.1%	-0.1%	-12.8%	-29.6%	na
Gas	162.6	203.9	248.0	188.5	174.3	na	4.6%	4.0%	-8.7%	-7.6%	na
Electricity	82.9	97.5	107.3	95.4	85.4	na	3.3%	1.9%	-3.9%	-10.5%	na
Heat (4)	71.0	101.9	110.8	236.5	213.7	na	7.5%	1.7%	28.8%	-9.6%	na
Other	18.4	20.3	24.4	18.6	14.4	na	1.9%	3.7%	-8.6%	-22.7%	na
CO_2 Emissions in Mt of CO_2	3193.4	3325.7	3486.0	2804.8	2403.2	na	0.8%	0.9%	-7.0%	-14.3%	na
Indicators											
Population (Million)	265.08	276.03	286.92	292.35	292.93	293.46	0.8%	0.8%	0.6%	0.2%	0.2%
GDP (index 1985=100)	87.2	100.0	109.1	68.7	57.4	54.3	2.8%	1.8%	-14.3%	-16.5%	-5.4%
Gross Inl Cons./GDP (toe/1990 MECU)	1922.8	1885.3	1851.6	2367.6	2454.2	2439.3	-0.4%	-0.4%	8.5%	3.7%	-0.6%
Gross Inl Cons./Capita (toe/inhabitant)	4.27	4.61	4.75	3.76	3.25	3.05	1.5%	0.6%	-7.5%	-13.6%	-6.1%
Electricity Generated/Capita (kWh/inhabitant)	4894	5631	6086	4919	4457	na	2.8%	1.6%	-6.9%	-9.4%	na
CO2 Emissions/Capita (t of CO_2/inhabitant)	12.0	12.0	12.1	9.6	8.2	na	0.0%	0.2%	-7.6%	-14.5%	na
Import Dependency %	-18.7	-17.2	-18.2	-16.8	-22.1	-26.9	-1.7%	1.2%	-2.7%	31.3%	21.9%

(1) Includes Baltic countries for statistical coherence reasons
(2) Includes nuclear, hydro and wind, net imports of electricity, and other energy sources
(3) Estimates
(4) Disruption in the statistical series in 1993

CIS (1) : MAIN INDICATORS

	1980	1985	1990	1993	1994	85/80	90/85	93/90	94/93
						Annual % Change			
Gross Inland Consumption (Mtoe)	1131.9	1272.4	1363.4	1098.5	951.1	2.4%	1.4%	-6.9%	-13.4%
Public Thermal Power Generation	325.4	380.5	422.5	392.2	365.9	3.2%	2.1%	-2.5%	-6.7%
Autoprod. Thermal Power Generation	17.2	17.4	16.8	10.3	7.4	0.2%	-0.7%	-15.0%	-28.0%
District Heating	4.2	4.6	5.6	52.9	42.0	1.9%	3.7%	111.8%	-20.6%
Energy Branch	50.4	77.0	76.0	43.1	39.7	8.8%	-0.2%	-17.2%	-7.8%
Final Energy Consumption	805.2	859.6	921.1	819.0	693.8	1.3%	1.4%	-3.8%	-15.3%
Industry	427.6	420.4	454.3	340.7	268.1	-0.3%	1.6%	-9.1%	-21.3%
Transport	123.8	134.1	139.5	92.6	69.1	1.6%	0.8%	-12.8%	-25.3%
Tertiary-Domestic	253.7	305.1	327.3	385.8	356.6	3.8%	1.4%	5.6%	-7.6%
Energy Intensity (toe/1990 MECU)	1922.8	1885.3	1851.6	2367.6	2454.2	-0.4%	-0.4%	8.5%	3.7%
Public Thermal Power Generation	552.7	563.7	573.8	845.2	944.2	0.4%	0.4%	13.8%	11.7%
Autoprod. Thermal Power Generation	29.2	25.8	22.8	22.3	19.2	-2.5%	-2.4%	-0.8%	-13.8%
District Heating	7.2	6.9	7.6	114.0	108.5	-0.8%	1.9%	147.0%	-4.9%
Industry	726.4	622.8	616.9	734.2	691.7	-3.0%	-0.2%	6.0%	-5.8%
Transport	210.3	198.7	189.4	199.5	178.4	-1.1%	-0.9%	1.7%	-10.6%
Tertiary-Domestic	431.0	452.1	444.5	831.4	920.1	1.0%	-0.3%	23.2%	10.7%
Energy per Capita (Kgoe/inhabitant)	4270	4610	4752	3758	3247	1.5%	0.6%	-7.5%	-13.6%
Public Thermal Power Generation	1228	1378	1473	1341	1249	2.3%	1.3%	-3.1%	-6.9%
Autoprod. Thermal Power Generation	65	63	59	35	25	-0.6%	-1.5%	-15.5%	-28.2%
District Heating	16	17	19	181	144	1.1%	2.9%	110.5%	-20.7%
Industry	1613	1523	1583	1165	915	-1.1%	0.8%	-9.7%	-21.5%
Transport	467	486	486	317	236	0.8%	0.0%	-13.3%	-25.5%
Tertiary-Domestic	957	1105	1141	1320	1217	2.9%	0.6%	5.0%	-7.7%
Electricity Share (%)									
Final Energy Consumption	10.3%	11.3%	11.6%	11.6%	12.3%	2.0%	0.5%	0.0%	5.6%
Industry	13.0%	15.2%	15.0%	15.2%	16.1%	3.1%	-0.2%	0.4%	6.0%
Transport	5.3%	5.3%	5.4%	9.2%	11.1%	-0.1%	0.4%	19.7%	20.2%
Tertiary-Domestic	8.1%	8.7%	9.7%	9.1%	9.7%	1.4%	2.1%	-2.0%	6.4%
CO_2 Emissions (Mt of CO_2)	3193.4	3325.7	3486.0	2804.8	2403.2	0.8%	0.9%	-7.0%	-14.3%
Public Thermal Power Generation	1061.9	1187.8	1291.4	1153.5	1081.6	2.3%	1.7%	-3.7%	-6.2%
Autoprod. Thermal Power Generation	55.4	54.6	53.1	30.0	23.1	-0.3%	-0.5%	-17.4%	-22.8%
District Heating	0.0	0.0	0.0	156.9	122.0	-	-	-	-22.2%
Energy Branch	106.9	166.6	147.7	29.9	22.9	9.3%	-2.4%	-41.3%	-23.5%
Industry	987.1	866.1	919.3	531.4	407.7	-2.6%	1.2%	-16.7%	-23.3%
Transport	364.6	392.6	405.3	237.2	167.4	1.5%	0.6%	-16.3%	-29.4%
Tertiary-Domestic	617.4	658.1	669.1	665.8	578.6	1.3%	0.3%	-0.2%	-13.1%
Carbon Intensity (tn of CO_2/toe)	2.8	2.6	2.6	2.6	2.5	-1.5%	-0.4%	0.0%	-1.0%
Public Power Generation	2.9	2.7	2.6	2.5	2.5	-1.9%	-0.7%	-1.7%	1.2%
Public Thermal Power Generation	3.3	3.1	3.1	2.9	3.0	-0.9%	-0.4%	-1.3%	0.5%
Autoprod. Power Generation	3.2	3.1	3.2	2.9	3.1	-0.5%	0.2%	-2.9%	6.8%
Autoprod. Thermal Power Generation	3.2	3.1	3.2	2.9	3.1	-0.5%	0.2%	-2.9%	7.2%
District Heating	0.0	0.0	0.0	3.0	2.9	-	-	-	-2.1%
Energy Branch	2.1	2.2	1.9	0.7	0.6	0.4%	-2.1%	-29.0%	-17.0%
Industry	2.3	2.1	2.0	1.6	1.5	-2.2%	-0.4%	-8.3%	-2.5%
Transport	2.9	2.9	2.9	2.6	2.4	-0.1%	-0.2%	-4.1%	-5.5%
Tertiary-Domestic	2.4	2.2	2.0	1.7	1.6	-2.4%	-1.1%	-5.5%	-6.0%
CO_2 per Capita (tn of CO_2/inhabitant)	12047	12049	12150	9594	8204	0.0%	0.2%	-7.6%	-14.5%
Industry	3724	3138	3204	1818	1392	-3.4%	0.4%	-17.2%	-23.4%
Transport	1375	1422	1413	812	572	0.7%	-0.1%	-16.9%	-29.6%
Tertiary-Domestic	2329	2384	2332	2277	1975	0.5%	-0.4%	-0.8%	-13.3%
CO_2 per unit of GDP (tn of CO_2/1990 MECU)	5425	4927	4734	6045	6201	-1.9%	-0.8%	8.5%	2.6%
Public Thermal Power Generation	1804	1760	1754	2486	2791	-0.5%	-0.1%	12.3%	12.3%
Autoprod. Thermal Power Generation	94	81	72	65	60	-3.0%	-2.3%	-3.6%	-7.6%
District Heating	0	0	0	338	315	-	-	-	-6.9%
Energy Branch	182	247	201	65	59	6.3%	-4.1%	-31.5%	-8.4%
Industry	1677	1283	1248	1145	1052	-5.2%	-0.5%	-2.8%	-8.2%
Transport	619	582	550	511	432	-1.2%	-1.1%	-2.4%	-15.5%
Tertiary-Domestic	1049	975	909	1435	1493	-1.4%	-1.4%	16.4%	4.0%

(1) Includes baltic Countries for statistical reasons

RUSSIA : SUMMARY ENERGY BALANCE

Mtoe	1990	1993	1994	1995(2)	93/90	94/93	95/94
					Annual % Change		
Primary Production	1269.3	992.8	924.7	901.4	-7.9%	-6.9%	-2.5%
Solids	164.9	126.7	112.4	108.3	-8.4%	-11.3%	-3.6%
Oil	518.8	353.3	317.3	306.2	-12.0%	-10.2%	-3.5%
Natural gas	516.1	447.9	439.8	431.4	-4.6%	-1.8%	-1.9%
Nuclear	30.8	31.4	25.9	26.4	0.6%	-17.4%	1.6%
Hydro & Wind	14.3	14.9	15.1	15.2	1.4%	1.2%	0.7%
Geothermal	0.0	0.0	0.0	0.0	-1.2%	0.0%	-100.0%
Other	24.3	18.5	14.1	13.8	-8.6%	-23.9%	-2.5%
Net Imports	-363.9	-281.2	-299.8	-317.6	-8.2%	6.6%	6.0%
Solids	-0.6	0.4	1.0	-0.9	-	183.7%	-
Oil	-262.0	-158.5	-165.6	-161.3	-15.4%	4.5%	2.6%
Crude oil	-204.3	-117.8	-122.5	na	-16.8%	4.0%	na
Oil products	-57.7	-40.6	-43.0	na	-11.0%	5.9%	na
Natural gas	-100.9	-121.5	-133.4	-153.6	6.4%	9.9%	15.1%
Electricity	-0.4	-1.6	-1.8	-1.8	60.7%	9.4%	0.0%
Gross Inland Consumption	911.8	705.7	609.8	585.1	-8.2%	-13.6%	-4.1%
Solids	167.0	125.0	113.8	107.4	-9.2%	-9.0%	-5.6%
Oil	264.6	200.1	149.6	146.3	-8.9%	-25.3%	-2.2%
Natural gas	411.0	317.2	292.7	277.8	-8.3%	-7.7%	-5.1%
Other (1)	69.2	63.3	53.7	53.6	-2.9%	-15.2%	-0.2%
Electricity Generation in TWh	1122.3	955.7	874.9	na	-5.2%	-8.5%	na
Nuclear	118.3	119.2	97.8	na	0.2%	-17.9%	na
Hydro & wind	166.8	173.8	175.9	na	1.4%	1.2%	na
Thermal	837.2	662.7	601.1	na	-7.5%	-9.3%	na
Generation Capacity in GWe	0.0	213.4	214.7	na	-	0.6%	na
Nuclear	0.0	21.2	21.2	na	-	0.0%	na
Hydro & wind	0.0	43.4	43.8	na	-	0.8%	na
Thermal	0.0	148.7	149.7	na	-	0.6%	na
Average Load Factor in %	0.0	51.1	46.5	na	-	-9.0%	na
Fuel Inputs for Thermal Power Generation	266.7	294.9	275.8	na	3.4%	-6.5%	na
Solids	65.2	43.3	46.7	na	-12.7%	7.8%	na
Oil	47.1	63.2	57.5	na	10.3%	-9.0%	na
Gas	154.4	188.4	171.5	na	6.9%	-8.9%	na
Geothermal	0.0	0.0	0.0	na	-1.2%	0.0%	na
Other	0.0	0.0	0.0	na	-	-	na
Average Thermal Efficiency in %	27.0	19.3	18.7	na	na	na	na
Non-Energy Uses	10.7	29.4	22.7	na	40.0%	-22.9%	na
Total Final Energy Demand	619.1	547.9	462.7	na	-4.0%	-15.5%	na
Solids	67.5	54.3	44.8	na	-7.0%	-17.6%	na
Oil	176.8	109.3	70.0	na	-14.8%	-35.9%	na
Gas	71.8	99.9	93.8	na	11.6%	-6.1%	na
Electricity	74.2	61.4	54.6	na	-6.1%	-11.0%	na
Heat	204.3	204.5	185.1	na	0.0%	-9.5%	na
Other	24.4	18.6	14.4	na	-8.6%	-22.7%	na
CO_2 Emissions in Mt of CO2	2392.4	1737.9	1487.2	na	-10.1%	-14.4%	na
Indicators							
Population (Million)	146.26	148.67	148.37	148.54	0.5%	-0.2%	0.1%
GDP (index 1985=100)	109.2	68.3	58.1	55.7	-14.5%	-15.0%	-4.0%
Gross Inl Cons./GDP (toe/1990 MECU)	1910.0	2364.3	2403.5	2402.2	7.4%	1.7%	-0.1%
Gross Inl Cons./Capita (toe/inhabitant)	6.23	4.75	4.11	3.94	-8.7%	-13.4%	-4.2%
Electricity Generated/Capita (kWh/inhabitant)	7673	6428	5897	na	-5.7%	-8.3%	na
CO_2 Emissions/Capita (t of CO_2/inhabitant)	16.4	11.7	10.0	na	-10.6%	-14.2%	na
Import Dependency %	-39.8	-39.8	-49.2	-54.3	0.0%	23.4%	10.4%

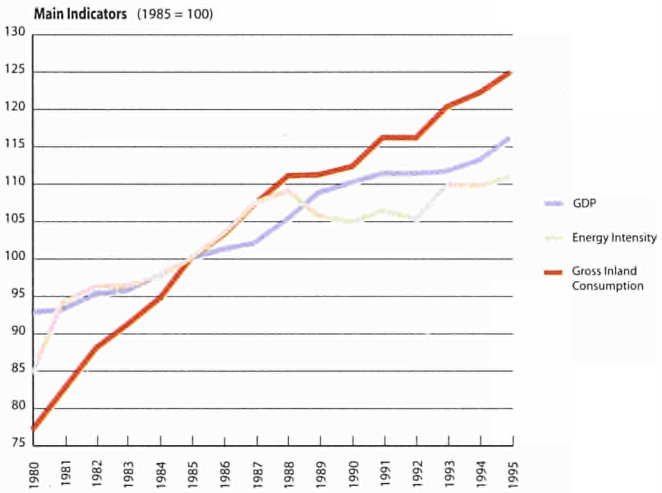
(1) Includes nuclear, hydro and wind, net imports of electricity, and other energy sources.
(2) Estimates

PART VI AFRICA

AFRICA: Recent trends (1985-1995)

- A strong demographic push in a stagnant economic environment, especially in sub-Saharan Africa
- Final energy consumption largely dominated by the tertiary-domestic sector
- Biomass covers the greatest parts of the final demand except in North Africa where oil dominates
- Structure of gross inland consumption well differentiated by regions
- Sub-Saharan countries produce about as much oil as the North African countries
- Energy intensity increased on average by about 2% per year since 1980
- Gross inland consumption per capita equivalent to only 12% of EU average
- The major increase in CO_2 emissions came from power stations that almost doubled their emissions since 1980
- The volume of energy exported is globally comparable to the gross inland consumption…

Africa is a vast continent with a natural geographic separation, the Sahara desert, between the North along the Mediterranean Sea, and all other countries. Special links exist between North African countries and the European Union, particularly concerning oil and gas supplies. For the analysis, two regions are explicitly considered: North Africa including Algeria, Egypt, Libya, Morocco and Tunisia, and, on the other hand, sub-Saharan Africa that includes all other countries.



A strong demographic push in a stagnant economic environment, especially in sub-Saharan Africa…

Between 1980 and 1995 the African population grew by 52%, with a major increase in sub-Saharan Africa. However, a global GDP growth of only 16% has been observed over the same period. As a consequence, the per capita GDP dropped by about 18% since 1980 with a limited decrease by only 12% in North Africa. Africa still hosts some of the poorest and least developed countries in the world. But it must be stressed that GDP is underestimated as a large fraction of the population lives in autarky.

ENERGY OUTLOOK

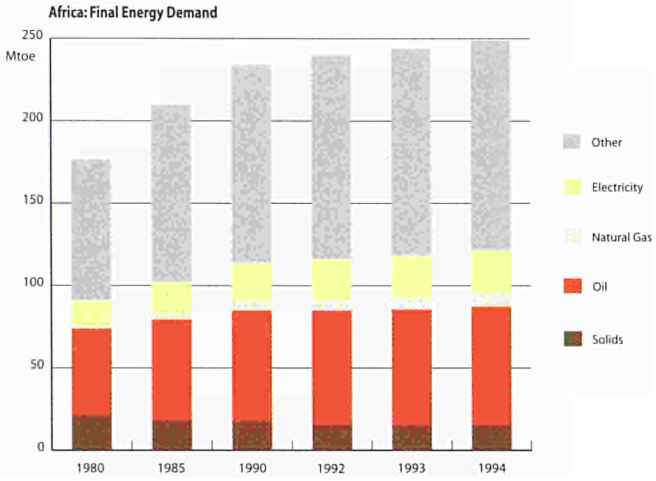
Final energy consumption largely dominated by the tertiary-domestic sector…

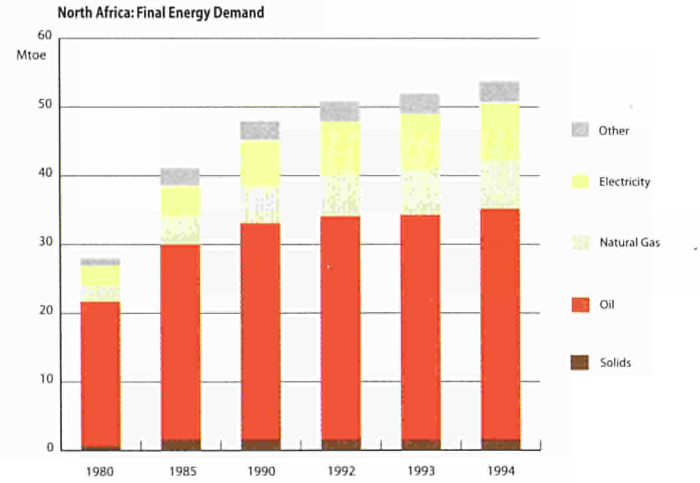
The **Final Energy Consumption** in Africa increased continuously from 170 Mtoe in 1980 to 240 Mtoe in 1994. Globally, for the whole continent, the domestic and tertiary share in the final energy consumption is from far the most important, and this trend is accentuated with time, going from 57% in 1980 to 63% in 1994. The share of industry fell from 24 to 20% over the same period, while the contribution of transport decreased from 18 to 16%, corresponding to a slight erosion of industrial and utility infrastructures. Looking more specifically at North Africa, a final energy consumption increasing from 27.9 to 53.6 Mtoe over the period 1980 to 95 was noted, but the structure of consumption was closer to industrialised countries with 37% for industry, 23% for transport and 40% for tertiary-domestic sector.

Biomass covers the greatest parts of the final demand except in North Africa where oil dominated….

The major energy vectors used to cover the final energy demand are biomass, satisfying constantly over the period 50% of the needs, and oil covering 30%. The electricity share increased from 8 to 10% over the period, while the share for solid fuels dropped from 12 to 6%. In must be stressed that the electricity share remained globally very low. It revealed the fact that a large part of Central Africa

was not yet electrified. For North Africa, the final energy demand is mainly focused on oil (62.5%), electricity (15.7%) and gas (13.3%). While for the sub-Saharan region biomass covers 63.7% of the needs. Oil (19.7%), and to a lesser extend electricity (8.8%) and solid fuels (6.9%) almost cover the remaining demand.



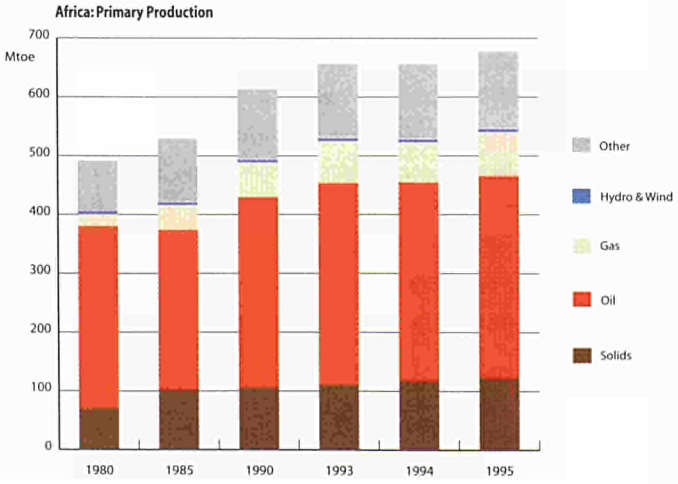


Structure of gross inland consumption well differentiated by regions…

Gross inland energy consumption closely followed the evolution of final demand, with an average annual increase of almost 3.3% since 1980. As for final demand, however, the highest growth rate occurred in the first half of the 80's with more than 5.4% per year. There was a general increase for all primary fuels, with large regional discrepancies. Gas, mainly consumed in North Africa where the production is located, grew on average by 8% per year since 1980 but these last two years the increase was limited to only 2%. On the contrary, solids that increased by about 3.3% on average since 1980, are mainly consumed in South Africa, the major producer in Africa. Oil for its part grew on average by about 3.8% per year in North Africa and by only 1.1% in sub-Saharan Africa. Finally, Biomass, the major energy source for sub-Saharan Africa grew 2.8% per year. In 1995, renewable energy accounted for 39% of total gross inland consumption for Africa as a whole. The shares of the other fossil fuels in gross consumption were solids with 26%, solids with 24% and gas with 11%.

Sub-Saharan countries produce about as much oil as the North African countries…

Indigenous **energy production** in Africa increased by almost 50% over the period 1980 to 1995. Over the period oil remained the most exploited energy source, although its share in primary production decreased from 75% to about 50%. Although the major producers are located in North Africa it must be stressed that Sub-Saharan countries produce about as much oil as the North African countries. An important effort in promoting the energy from biomass took place during the 80's, helping biomass to remain the second energy source, covering 19% of the primary production in 1995. Solid fuels doubled their absolute contribution since 1980, 95% of the production being located in South Africa. Natural gas, mainly produced in North Africa, saw its production multiplied by 3.7. Nuclear, hydro and wind, as well as geothermal, remain marginal and show no significant evolution since 1990. North Africa is, as known, mainly a producer of oil (180.6 Mtoe in 1995) and gas (69.6 Mtoe). Both productions remained quite stable after 1993.

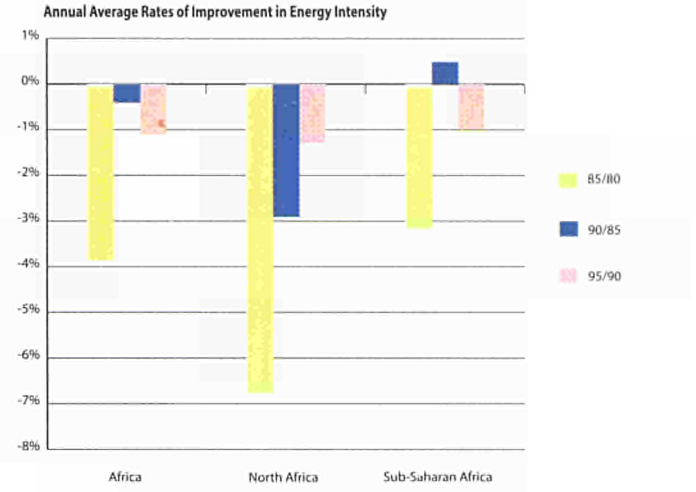


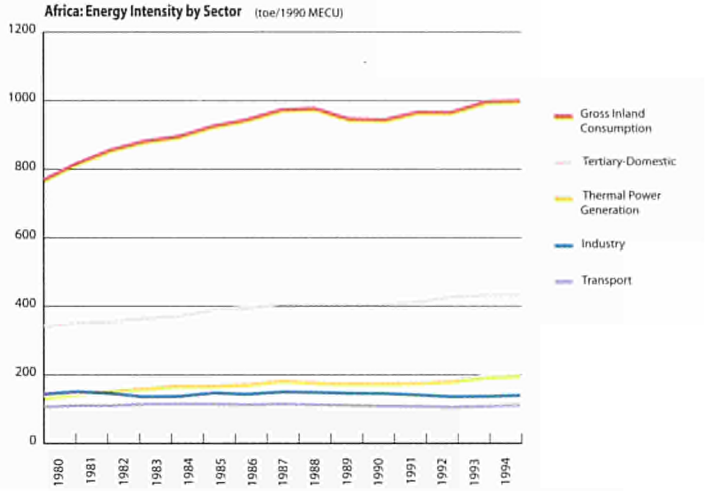
Electricity mainly generated in thermal power stations….

Electricity generation on the whole continent grew by almost 5% per year during the 80's. After a relative slow down at 2.5% between 1990 and 1993, the growth raised again by 5.6% per year during 1994. But electricity consumption per capita, only about 525 kWh /inhabitant, remained the lowest in the world, 20% below the average consumption in Asia. This demonstrated the large potential for development in the future. With the exception of some nuclear in South Africa, all the incremental production has been covered by thermal units. They saw their output almost doubled since 1980. Thermal power units are mainly fed with oil and gas in North Africa and by fossil fuels in sub-Saharan Africa. Despite an increase of 50% in hydro power since 1980, hydro production remained relatively flat due to climatic conditions and political and economic situation in some countries in the sub-Saharan region.

The refinery capacity represented only 3.7% of world capacity…

In 1995, the refinery capacity (2.9 millions barrels day) represented only 3.7% of world capacity (3.5% in 1985). Since 1985, the capacity grew by 1.1% per year. At the same time, the utilisation rate of the refineries increased from 72% to 81%, remaining during all the period below the world average. This rate of utilisation remained too low to guarantee sufficient rates of return on investment. As a consequence, foreign investments are not attracted to this region, in particular the sub-Saharan region.





COMPETITIVENESS

Energy intensity increased on average by about 2% per year since 1980….

Energy intensity for the continent as a whole has increased by roughly 1.9% per year on average since 1980. The major increases occurred in North Africa with a growth of about 3.6% per year on average while sub-Saharan Africa grew by only 1.2% on average. As in the Middle East, the evolution of the GDP in North Africa has been deeply marked by the conditions on the oil market, resulting in a limited GDP growth of only 1.4% per year on average since 1980.

The contribution of the various sectors to the energy intensity indicator is also changing dramatically from region to region. The domestic and tertiary sector plays a key role. While the contribution of domestic applications, industry and public thermal power generation is evenly distributed in north Africa, the contribution of domestic and tertiary applications climbs to 50% in the sub-Saharan countries and even to 85% in some of the smaller countries.

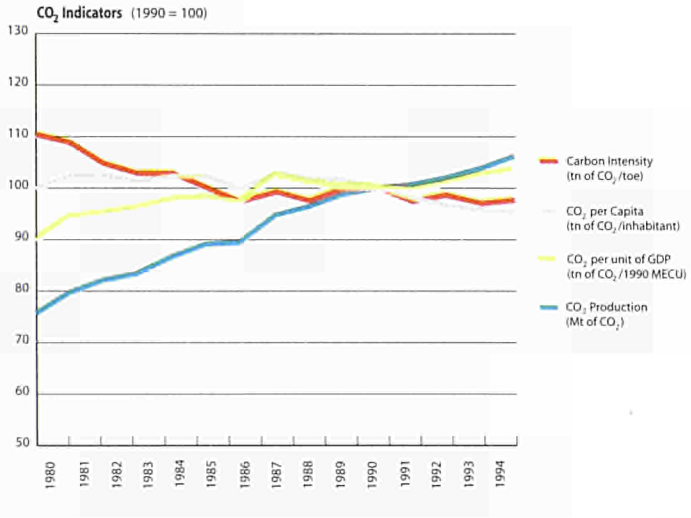
Gross inland consumption per capita equivalent to only 12% of EU average…

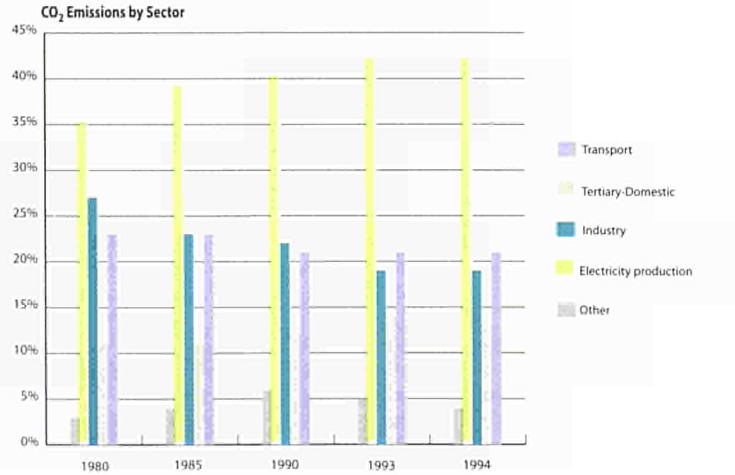
The **gross inland consumption per capita** remained low in Africa, fluctuating between 0.47 and 0.53 Toe/inhabitant between 1980 and 1995, about 12% of the average EU level. The figures show a slight but continuous decrease since 1985. The main contribution comes from domestic and tertiary applications that increased slightly with time to reach 43% in 1995. The contributions of industry and transport have declined continuously since 1980 and represented in 1995 14 and 11% respectively.

ENVIRONMENT

The major increase in CO_2 emissions came from power stations that almost doubled their emissions since 1980…

Greenhouse gas emissions in Africa increased by 40% since 1980 to reach 571 Mt of CO_2 in 1995. The fastest growing sources are public thermal power generation and, to a lesser extent, tertiary-domestic sector (80 and 63% growth respectively over the period). However most of the increase for power stations happened during the period 1980 to 85, while for tertiary-domestic sector the increase happened mainly after 1990. Contribution from industry remained stable and emissions from transport sector grew by only 26% since 1980.





North Africa contributed to 38% of the total emissions from Africa, with public power stations producing 30%, industry 22%, the domestic sector 19% and the transport sector 17%. In the sub-Saharan region the structure of emission is quite different with power generation responsible for 47%, transport for 23%, industry for 17% and tertiary-domestic sector for only 10%.

CO_2 emissions per capita decreased over the period by 5%. While the contribution of industry and transport decreased even faster, the contribution of the tertiary sector increased slightly between 1980 and 1990 but was stagnant if not slightly decreasing since that time.

GLOBAL MARKETS

The volume of energy exported is globally comparable to the gross inland consumption…

Africa is a **net exporter of energy**. Between 1980 and 1993, the energy exports grew from 260 Mtoe to 312 Mtoe. It collapsed to 302 in 1994, but increased again sharply during 1995 to reach with 321 Mtoe - an historical maximum. Crude oil is by far the major component of this energy export, representing, 77% of the total exportations of energy in 1995. Solid fuel and natural gas with comparable volumes represent the complement of energy exportation.

The volume of energy exported is globally comparable to the gross inland consumption. Exports are mainly based on crude oil products (72% of the production) and gas (48%). North Africa exports about two thirds of its oil and gas production, mainly to the European market. Sub-Saharan Africa exports almost as much oil as North Africa, more than 70% of its production. Coal was exported almost exclusively from South Africa (33% of its production).

AFRICA : SUMMARY ENERGY BALANCE

Mtoe	1980	1985	1990	1993	1994	1995(2)	85/80	90/85	93/90	94/93	95/94
							Annual % Change				
Primary Production	491.6	530.1	616.6	658.5	658.8	680.3	1.5%	3.1%	2.2%	0.0%	3.3%
Solids	69.8	103.8	105.6	110.2	118.2	123.2	8.3%	0.4%	1.4%	7.3%	4.2%
Oil	310.8	270.5	323.9	343.4	336.6	342.9	-2.7%	3.7%	2.0%	-2.0%	1.9%
Natural gas	20.4	42.5	60.0	72.2	69.1	75.5	15.8%	7.1%	6.3%	-4.3%	9.4%
Nuclear	0.0	1.4	2.2	1.9	2.5	2.9	-	9.7%	-5.0%	33.8%	16.5%
Hydro & Wind	5.3	4.2	4.5	4.7	4.8	4.9	-4.3%	1.5%	0.8%	3.1%	1.0%
Geothermal	0.0	0.0	0.3	0.3	0.3	0.3	30.6%	47.1%	-4.6%	-3.2%	1.0%
Other	85.4	107.6	120.0	125.8	127.3	130.4	4.7%	2.2%	1.6%	1.1%	2.5%
Net Imports	-260.1	-241.6	-294.6	-311.7	-302.1	-1.5%	-1.5%	4.0%	1.9%	-3.1%	6.2%
Solids	-18.4	-30.0	-31.1	-33.5	-34.7	-38.3	10.4%	0.7%	2.5%	3.7%	10.2%
Oil	-233.6	-190.8	-233.8	-243.9	-237.0	-4.0%	-4.0%	4.2%	1.4%	-2.9%	3.9%
Crude oil	*-231.3*	*-178.5*	*-212.9*	*-225.8*	*-218.4*	*na*	*-5.1%*	*3.6%*	*2.0%*	*-3.3%*	*na*
Oil products	*-2.3*	*-12.3*	*-20.9*	*-18.2*	*-18.6*	*na*	*39.9%*	*11.2%*	*-4.6%*	*2.2%*	*na*
Natural gas	-8.2	-20.8	-29.6	-34.3	-30.4	-36.2	20.6%	7.3%	5.0%	-11.4%	19.3%
Electricity	0.0	0.0	-0.1	0.0	0.0	0.0	26.1%	-	-	-	0.0%
Gross Inland Consumption	219.5	285.1	320.1	342.9	348.3	356.2	5.4%	2.3%	2.3%	1.6%	2.2%
Solids	51.6	73.5	74.7	76.6	83.7	85.0	7.4%	0.3%	0.9%	9.2%	1.5%
Oil	65.1	76.5	88.0	95.9	91.1	93.3	3.3%	2.8%	2.9%	-5.0%	2.5%
Natural gas	12.3	21.7	30.4	37.9	38.7	39.3	12.0%	7.0%	7.6%	2.2%	1.6%
Other (1)	90.6	113.3	127.1	132.5	134.9	138.5	4.6%	2.3%	1.4%	1.8%	2.7%
Electricity Generation in TWh	197.8	262.8	319.7	344.4	363.7	na	5.8%	4.0%	2.5%	5.6%	na
Nuclear	0.0	5.3	8.4	7.3	9.7	na	-	9.7%	-5.0%	33.8%	na
Hydro & wind	61.1	49.1	52.9	54.2	55.9	na	-4.3%	1.5%	0.8%	3.1%	na
Thermal	136.8	208.5	258.4	282.9	298.1	na	8.8%	4.4%	3.1%	5.4%	na
Generation Capacity in GWe	45.4	62.9	80.6	86.8	89.1	na	6.8%	5.1%	2.5%	2.6%	na
Nuclear	0.0	1.0	1.8	1.8	1.8	na	-	13.8%	0.0%	0.0%	na
Hydro & wind	14.5	17.6	20.4	20.8	21.0	na	4.0%	3.0%	0.6%	1.2%	na
Thermal	30.9	44.4	58.4	64.2	66.2	na	7.5%	5.7%	3.2%	3.1%	na
Average Load Factor in %	49.8	47.7	45.3	45.3	46.6	na	-0.9%	-1.0%	0.0%	3.0%	na
Fuel Inputs for Thermal Power Generation	39.2	53.0	61.2	68.0	70.3	na	6.2%	2.9%	3.6%	3.4%	na
Solids	27.6	34.1	38.9	41.5	42.1	na	4.3%	2.7%	2.2%	1.4%	na
Oil	7.4	10.6	11.8	12.4	12.9	na	7.3%	2.3%	1.6%	4.1%	na
Gas	4.1	8.3	10.1	13.8	15.0	na	15.1%	4.1%	10.8%	8.8%	na
Geothermal	0.0	0.0	0.3	0.3	0.3	na	30.6%	47.1%	-4.6%	-3.2%	na
Other	0.0	0.0	0.0	0.0	0.0	na	-	-	-	-	na
							-	-	-	-	-
Average Thermal Efficiency in %	30.0	33.8	36.3	35.8	36.5	na	2.4%	1.4%	-0.5%	2.0%	na
Non-Energy Uses	4.3	6.8	8.2	10.9	10.0	na	9.4%	3.9%	9.7%	-8.4%	na
Total Final Energy Demand	176.4	209.9	234.1	243.9	248.9	na	3.5%	2.2%	1.4%	2.0%	na
Solids	21.0	18.0	17.5	15.2	15.3	na	-3.0%	-0.6%	-4.6%	0.7%	na
Oil	52.9	61.5	67.5	70.5	72.1	na	3.1%	1.9%	1.5%	2.2%	na
Gas	3.0	5.1	6.8	8.2	8.7	na	11.2%	6.2%	6.1%	6.4%	na
Electricity	14.2	17.7	22.2	24.4	25.5	na	4.5%	4.7%	3.1%	4.9%	na
Heat	0.0	0.0	0.0	0.0	0.0	na	-	-	-	-	na
Other	85.4	107.6	120.0	125.6	127.3	na	4.8%	2.2%	1.5%	1.3%	na
CO_2 Emissions in Mt of CO_2	407.3	479.8	538.7	559.1	571.8	na	3.3%	2.3%	1.2%	2.3%	na
Indicators											
Population (Million)	471.41	542.22	622.10	675.45	694.51	713.80	2.8%	2.8%	2.8%	2.8%	2.8%
GDP (index 1985=100)	92.7	100.0	110.1	111.6	113.1	116.1	1.5%	1.9%	0.5%	1.3%	2.7%
Gross Inl Cons./GDP (toe/1990 MECU)	769.6	926.6	945.2	998.3	1001.3	997.1	3.8%	0.4%	1.8%	0.3%	-0.4%
Gross Inl Cons./Capita (toe/inhabitant)	0.47	0.53	0.51	0.51	0.50	0.50	2.5%	-0.4%	-0.5%	-1.2%	-0.5%
Electricity Generated/Capita (kWh/inhabitant)	420	485	514	510	524	na	2.9%	1.2%	-0.3%	2.7%	na
CO_2 Emissions/Capita (t of CO_2/inhabitant)	0.9	0.9	0.9	0.8	0.8	na	0.5%	-0.4%	-1.5%	-0.6%	na
Import Dependency %	-115.7	-83.3	-90.3	-89.4	-85.2	-88.4	-6.4%	1.6%	-0.3%	-4.7%	3.7%

(1) Includes nuclear. hydro and wind. net imports of electricity. and other energy sources.
(2) Estimates

NORTH AFRICA : MAIN INDICATORS

	1980	1985	1990	1993	1994	85/80	90/85	93/90	94/93
						Annual % Change			
Gross Inland Consumption (Mtoe)	219.5	285.1	320.1	342.9	348.3	5.4%	2.3%	2.3%	1.6%
Public Thermal Power Generation	35.4	49.7	58.1	64.8	66.9	7.0%	3.2%	3.7%	3.3%
Autoprod. Thermal Power Generation	3.7	3.3	2.8	3.0	3.1	-2.4%	-2.9%	1.3%	4.2%
Energy Branch	6.2	9.5	14.0	12.1	11.9	8.9%	8.0%	-4.7%	-1.7%
Final Energy Consumption	170.3	202.0	225.9	235.1	240.1	3.5%	2.3%	1.3%	2.1%
Industry	41.8	46.0	50.1	48.0	49.5	1.9%	1.7%	-1.4%	3.2%
Transport	30.9	35.6	37.4	37.8	39.3	2.9%	1.0%	0.3%	3.9%
Tertiary-Domestic	97.6	120.3	138.4	149.3	151.3	4.3%	2.8%	2.6%	1.3%
Energy Intensity (toe/1990 MECU)	769.6	926.6	945.2	998.3	1001.3	3.8%	0.4%	1.8%	0.3%
Public Thermal Power Generation	124.2	161.4	171.4	188.5	192.3	5.4%	1.2%	3.2%	2.0%
Autoprod. Thermal Power Generation	13.1	10.7	8.4	8.6	8.9	-3.8%	-4.8%	0.9%	2.9%
District Heating	0.0	0.2	0.2	0.2	0.2	-	-6.9%	0.6%	-1.3%
Industry	146.7	149.5	147.9	139.7	142.3	0.4%	-0.2%	-1.9%	1.9%
Transport	108.2	115.8	110.5	110.0	112.8	1.4%	-0.9%	-0.1%	2.6%
Tertiary-Domestic	342.1	391.2	408.6	434.8	435.0	2.7%	0.9%	2.1%	0.0%
Energy per Capita (Kgoe/inhabitant)	466	526	515	508	502	2.5%	-0.4%	-0.5%	-1.2%
Public Thermal Power Generation	75	92	93	96	96	4.0%	0.4%	0.9%	0.5%
Transport	66	66	60	56	57	0.1%	-1.8%	-2.4%	1.1%
Tertiary-Domestic	207	222	222	221	218	1.4%	0.0%	-0.2%	-1.4%
Electricity Share (%)									
Final Energy Consumption	8.3%	8.8%	9.8%	10.4%	10.6%	1.0%	2.4%	1.7%	2.7%
Industry	20.3%	22.0%	23.7%	27.1%	27.4%	1.6%	1.5%	4.5%	1.2%
Transport	1.2%	1.2%	1.0%	0.9%	0.9%	-1.0%	-2.6%	-3.8%	-0.2%
Tertiary-Domestic	5.4%	5.9%	7.2%	7.4%	7.7%	1.8%	3.9%	0.9%	4.1%
CO_2 Production (Mt of CO_2)	407.3	479.8	538.7	559.1	571.8	3.3%	2.3%	1.2%	2.3%
Public Thermal Power Generation	127.8	175.3	204.6	225.2	231.6	6.5%	3.1%	3.2%	2.9%
Autoprod. Thermal Power Generation	14.0	12.2	10.3	10.9	11.3	-2.7%	-3.3%	1.8%	3.7%
Energy Branch	13.1	19.7	30.4	26.0	25.3	8.5%	9.1%	-5.1%	-2.7%
Industry	111.3	110.1	116.9	105.6	107.9	-0.2%	1.2%	-3.3%	2.2%
Transport	94.7	108.6	113.8	115.0	119.5	2.8%	0.9%	0.4%	3.9%
Tertiary-Domestic	46.4	53.6	62.5	76.2	75.9	2.9%	3.1%	6.8%	-0.4%
Carbon Intensity (tn of CO_2/toe)	1.9	1.7	1.7	1.6	1.6	-1.9%	0.0%	-1.0%	0.6%
Public Power Generation	3.2	3.2	3.2	3.2	3.1	0.2%	-0.2%	0.0%	-1.2%
Public Thermal Power Generation	3.6	3.5	3.5	3.5	3.5	-0.4%	0.0%	-0.5%	-0.5%
Autoprod. Power Generation	3.4	3.2	3.2	3.2	3.2	-1.0%	-0.3%	0.3%	0.2%
Autoprod. Thermal Power Generation	3.8	3.7	3.6	3.7	3.7	-0.4%	-0.4%	0.5%	-0.5%
Energy Branch	2.1	2.1	2.2	2.1	2.1	-0.4%	0.9%	-0.4%	-1.0%
Industry	2.7	2.4	2.3	2.2	2.2	-2.1%	-0.5%	-1.9%	-1.0%
Transport	3.1	3.0	3.0	3.0	3.0	-0.1%	-0.1%	0.0%	0.0%
Tertiary-Domestic	0.5	0.4	0.5	0.5	0.5	-1.3%	0.3%	4.2%	-1.7%
CO_2 per Capita (kg of CO_2/inhabitant)	864	885	866	828	823	0.5%	-0.4%	-1.5%	-0.6%
Industry	236	203	188	156	155	-3.0%	-1.5%	-5.9%	-0.6%
Transport	201	200	183	170	172	0.0%	-1.8%	-2.4%	1.0%
Tertiary-Domestic	98	99	100	113	109	0.1%	0.3%	3.9%	-3.1%
CO_2 per unit of GDP (tn of CO_2/1990 MECU)	1428	1560	1591	1628	1644	1.8%	0.4%	0.8%	0.9%
Public Thermal Power Generation	448	570	604	656	666	4.9%	1.2%	2.8%	1.5%
Autoprod. Thermal Power Generation	49	40	31	32	33	-4.2%	-5.1%	1.3%	2.4%
Energy Branch	46	64	90	76	73	6.9%	7.0%	-5.5%	-3.9%
Industry	390	358	345	308	310	-1.7%	-0.7%	-3.8%	0.8%
Transport	332	353	336	335	343	1.2%	-1.0%	-0.1%	2.6%
Tertiary-Domestic	163	174	185	222	218	1.4%	1.1%	6.3%	-1.6%

NORTH AFRICA : SUMMARY ENERGY BALANCE

Mtoe	1980	1985	1990	1993	1994	1995(2)	85/80	90/85	93/90	94/93	95/94
							Annual % Change				
Primary Production	204.5	199.2	238.0	250.4	247.6	254.6	-0.5%	3.6%	1.7%	-1.1%	2.8%
Solids	0.4	0.4	0.3	0.3	0.4	0.4	1.3%	-7.8%	4.2%	7.6%	0.5%
Oil	182.9	156.0	177.5	180.5	180.6	180.6	-3.1%	2.6%	0.6%	0.1%	0.0%
Natural gas	19.1	39.4	56.6	65.7	62.7	69.6	15.6%	7.5%	5.1%	-4.5%	11.0%
Nuclear	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-	-
Hydro & Wind	1.0	0.9	1.0	0.9	0.9	0.9	-3.1%	2.7%	-2.4%	4.8%	0.0%
Geothermal	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-	-
Other	1.1	2.5	2.8	2.9	3.0	3.0	19.0%	1.8%	2.1%	1.1%	2.3%
Net Imports	-157.0	-131.3	-158.1	-161.0	-159.6	-164.5	-3.5%	3.8%	0.6%	-0.9%	3.1%
Solids	0.6	1.9	2.3	2.3	2.5	2.6	27.6%	3.7%	0.5%	6.2%	5.4%
Oil	-149.4	-112.4	-130.8	-129.1	-131.7	-130.5	-5.5%	3.1%	-0.4%	2.0%	-0.9%
Crude oil	*-140.8*	*-93.6*	*-105.5*	*-103.8*	*-105.5*	*na*	*-7.8%*	*2.4%*	*-0.5%*	*1.6%*	*na*
Oil products	*-8.6*	*-18.8*	*-25.3*	*-25.3*	*-26.2*	*na*	*16.8%*	*6.1%*	*0.0%*	*3.6%*	*na*
Natural gas	-8.2	-20.8	-29.6	-34.3	-30.4	-36.6	20.6%	7.3%	5.0%	-11.4%	20.5%
Electricity	0.0	0.0	0.0	0.0	0.0	0.0	84.6%	-11.1%	-61.3%	-	0.0%
Gross Inland Consumption	43.0	65.3	80.5	89.9	88.7	90.4	8.7%	4.3%	3.7%	-1.4%	2.0%
Solids	1.1	2.2	2.7	2.7	2.9	3.0	14.7%	4.2%	-0.6%	8.9%	1.7%
Oil	28.9	41.1	47.1	52.0	49.5	50.5	7.3%	2.8%	3.3%	-4.8%	2.0%
Natural gas	10.9	18.6	26.9	31.4	32.3	33.0	11.2%	7.7%	5.3%	3.0%	2.1%
Other (1)	2.1	3.4	3.7	3.8	3.9	4.0	10.5%	2.0%	1.0%	1.7%	1.7%
Electricity Generation in TWh	39.1	66.9	91.4	102.0	107.4	na	11.4%	6.4%	3.7%	5.3%	na
Nuclear	0.0	0.0	0.0	0.0	0.0	na	-	-	-	-	na
Hydro & wind	11.6	9.9	11.3	10.5	11.0	na	-3.1%	2.7%	-2.4%	4.8%	na
Thermal	27.5	57.0	80.1	91.5	96.4	na	15.7%	7.0%	4.5%	5.4%	na
Generation Capacity in GWe	10.9	17.8	23.9	26.7	28.8	na	10.2%	6.2%	3.6%	8.2%	na
Nuclear	0.0	0.0	0.0	0.0	0.0	na	-	-	-	-	na
Hydro & wind	3.4	3.4	3.7	3.7	4.0	na	0.2%	1.6%	0.5%	6.4%	na
Thermal	7.6	14.4	20.3	22.9	24.9	na	13.7%	7.1%	4.2%	8.5%	na
Average Load Factor in %	40.8	43.0	43.6	43.7	42.5	na	1.0%	0.3%	0.1%	-2.7%	na
Fuel Inputs for Thermal Power Generation	9.0	15.0	18.6	22.6	24.6	na	10.8%	4.3%	6.8%	8.9%	na
Solids	0.4	0.3	0.7	0.7	0.8	na	-1.0%	15.3%	0.4%	11.3%	na
Oil	5.5	8.2	9.6	10.1	10.6	na	8.4%	3.0%	1.7%	5.1%	na
Gas	3.1	6.4	8.3	11.8	13.3	na	15.5%	5.2%	12.6%	12.1%	na
Geothermal	0.0	0.0	0.0	0.0	0.0	na	-	-	-	-	na
Other	0.0	0.0	0.0	0.0	0.0	na	-	-	-	-	na
Average Thermal Efficiency in %	26.2	32.6	37.1	34.8	33.6	na	4.5%	2.6%	-2.1%	-3.3%	na
Non-Energy Uses	1.7	2.8	3.0	4.8	4.5	na	10.1%	1.5%	16.4%	-5.9%	na
Total Final Energy Demand	27.9	41.2	47.9	52.0	53.6	na	8.1%	3.1%	2.7%	3.2%	na
Solids	0.7	1.6	1.7	1.6	1.7	na	18.9%	0.7%	-0.6%	4.0%	na
Oil	21.0	28.4	31.4	32.7	33.5	na	6.2%	2.0%	1.3%	2.3%	na
Gas	2.4	4.1	5.5	6.7	7.1	na	11.6%	5.7%	7.2%	5.9%	na
Electricity	2.8	4.5	6.6	8.0	8.4	na	10.3%	8.0%	6.2%	5.2%	na
Heat	0.0	0.0	0.0	0.0	0.0	na	-	-	-	-	na
Other	1.1	2.5	2.8	2.9	3.0	na	19.0%	1.8%	2.2%	0.8%	na
CO_2 Emissions in Mt of CO_2	111.7	164.0	198.8	208.8	217.1	na	8.0%	3.9%	1.6%	4.0%	na
Indicators											
Population (Million)	91.30	102.92	115.10	122.80	125.41	128.07	2.4%	2.3%	2.2%	2.1%	2.1%
GDP (index 1985=100)	91.0	100.0	107.1	109.5	111.4	112.6	1.9%	1.4%	0.7%	1.7%	1.1%
Gross Inl Cons./GDP (toe/1990 MECU)	409.2	565.7	651.9	712.1	690.4	696.4	6.7%	2.9%	3.0%	-3.0%	0.9%
Gross Inl Cons./Capita (toe/inhabitant)	0.47	0.63	0.70	0.73	0.71	0.71	6.1%	2.0%	1.5%	-3.4%	-0.1%
Electricity Generated/Capita (kWh/inhabitant)	428	650	794	831	857	na	8.7%	4.1%	1.5%	3.1%	na
CO_2 Emissions/Capita (t of CO_2/inhabitant)	1.2	1.6	1.7	1.7	1.7	na	5.4%	1.6%	-0.5%	1.8%	na
Import Dependency %	-353.3	-195.5	-191.1	-175.5	-176.3	-177.6	-11.2%	-0.5%	-2.8%	0.4%	0.7%

(1) Includes nuclear. hydro and wind. net imports of electricity. and other energy sources.
(2) Estimates

NORTH AFRICA : MAIN INDICATORS

	1980	1985	1990	1993	1994	85/80	90/85	93/90	94/93
						Annual % Change			
Gross Inland Consumption (Mtoe)	43.0	65.3	80.5	89.9	88.7	8.7%	4.3%	3.7%	-1.4%
Public Thermal Power Generation	8.4	14.3	17.7	21.9	23.8	11.1%	4.4%	7.4%	8.9%
Autoprod. Thermal Power Generation	0.6	0.7	0.9	0.7	0.8	5.0%	3.5%	-6.3%	10.5%
Energy Branch	5.1	7.2	12.0	9.0	8.7	7.1%	10.8%	-9.3%	-2.8%
Final Energy Consumption	27.9	41.2	47.9	52.0	53.6	8.1%	3.1%	2.7%	3.2%
Industry	10.7	14.8	18.1	18.7	19.7	6.7%	4.1%	1.1%	5.4%
Transport	8.9	12.8	12.7	11.5	12.1	7.7%	-0.2%	-3.3%	5.8%
Tertiary-Domestic	8.3	13.5	17.2	21.8	21.8	10.3%	4.9%	8.3%	0.0%
Energy Intensity (toe/1990 MECU)	409.2	565.7	651.9	712.1	690.4	6.7%	2.9%	3.0%	-3.0%
Public Thermal Power Generation	80.3	123.8	143.1	173.3	185.5	9.0%	2.9%	6.6%	7.0%
Autoprod. Thermal Power Generation	5.6	6.5	7.2	5.8	6.3	3.1%	2.1%	-7.0%	8.6%
Industry	102.2	128.4	146.4	148.1	153.5	4.7%	2.7%	0.4%	3.7%
Transport	84.4	111.3	102.7	90.9	94.6	5.7%	-1.6%	-4.0%	4.0%
Tertiary-Domestic	78.9	117.1	138.9	172.4	169.5	8.2%	3.5%	7.5%	-1.7%
Energy per Capita (Kgoe/inhabitant)	471	634	700	732	707	6.1%	2.0%	1.5%	-3.4%
Public Thermal Power Generation	92	139	154	178	190	8.5%	2.1%	5.1%	6.6%
Autoprod. Thermal Power Generation	6	7	8	6	6	2.5%	1.2%	-8.3%	8.2%
Industry	118	144	157	152	157	4.1%	1.8%	-1.0%	3.3%
Transport	97	125	110	94	97	5.1%	-2.4%	-5.3%	3.6%
Tertiary-Domestic	91	131	149	177	174	7.7%	2.6%	6.0%	-2.1%
Electricity Share (%)									
Final Energy Consumption	9.9%	11.0%	13.8%	15.3%	15.6%	2.1%	4.8%	3.4%	1.9%
Industry	13.3%	12.5%	13.8%	17.4%	17.2%	-1.2%	1.9%	8.2%	-1.0%
Transport	0.1%	0.2%	0.3%	0.5%	0.5%	8.5%	13.1%	12.8%	-2.9%
Tertiary-Domestic	16.0%	19.5%	23.9%	21.3%	22.5%	4.1%	4.2%	-3.7%	5.8%
CO_2 Production (Mt of CO_2)	111.7	164.0	198.8	208.8	217.1	8.0%	3.9%	1.6%	4.0%
Public Thermal Power Generation	24.4	40.5	50.3	61.2	66.4	10.6%	4.4%	6.8%	8.5%
Autoprod. Thermal Power Generation	1.8	2.3	2.7	2.3	2.5	5.0%	3.5%	-6.3%	10.5%
Energy Branch	12.3	17.3	29.1	21.6	20.9	7.0%	11.0%	-9.5%	-3.3%
Industry	28.0	39.2	47.0	46.1	48.7	7.0%	3.7%	-0.6%	5.6%
Transport	27.2	39.3	38.8	35.1	37.1	7.7%	-0.3%	-3.3%	5.8%
Tertiary-Domestic	17.9	25.3	30.9	42.5	41.5	7.1%	4.1%	11.2%	-2.4%
Carbon Intensity (tn of CO_2/toe)	2.6	2.5	2.5	2.3	2.4	-0.7%	-0.3%	-2.0%	5.5%
Public Power Generation	2.6	2.7	2.7	2.7	2.7	0.7%	0.1%	-0.1%	-0.1%
Public Thermal Power Generation	2.9	2.8	2.8	2.8	2.8	-0.4%	0.0%	-0.5%	-0.3%
Autoprod. Power Generation	3.1	3.1	3.1	3.1	3.1	0.0%	0.0%	0.0%	0.0%
Autoprod. Thermal Power Generation	3.1	3.1	3.1	3.1	3.1	0.0%	0.0%	0.0%	0.0%
Energy Branch	2.4	2.4	2.4	2.4	2.4	-0.1%	0.2%	-0.3%	-0.5%
Industry	2.6	2.6	2.6	2.5	2.5	0.3%	-0.4%	-1.7%	0.2%
Transport	3.1	3.1	3.1	3.1	3.1	0.0%	0.0%	0.0%	0.0%
Tertiary-Domestic	2.2	1.9	1.8	2.0	1.9	-2.9%	-0.8%	2.7%	-2.4%
CO_2 per Capita (kg of CO_2/inhabitant)	1223	1593	1727	1700	1731	5.4%	1.6%	-0.5%	1.8%
Industry	307	381	408	376	388	4.4%	1.4%	-2.7%	3.4%
Transport	298	382	337	286	296	5.1%	-2.5%	-5.4%	3.6%
Tertiary-Domestic	197	246	268	346	331	4.6%	1.8%	8.8%	-4.4%
CO_2 per unit of GDP (tn of CO_2/1990 MECU)	1064	1421	1609	1653	1690	6.0%	2.5%	0.9%	2.3%
Public Thermal Power Generation	233	351	407	485	517	8.6%	3.0%	6.0%	6.7%
Autoprod. Thermal Power Generation	17	20	22	18	19	3.1%	2.1%	-7.0%	8.6%
Energy Branch	117	150	236	171	163	5.0%	9.5%	-10.2%	-4.9%
Industry	267	340	380	365	379	5.0%	2.3%	-1.3%	3.8%
Transport	259	341	314	278	289	5.7%	-1.6%	-4.0%	4.0%
Tertiary-Domestic	171	219	250	337	323	5.1%	2.7%	10.4%	-4.0%

SUB-SAHARAN AFRICA : SUMMARY ENERGY BALANCE

Mtoe	1980	1985	1990	1993	1994	1995(2)	85/80	90/85	93/90	94/93	95/94
							Annual % Change				
Primary Production	287.2	330.9	378.6	408.1	411.2	425.7	2.9%	2.7%	2.5%	0.7%	3.5%
Solids	69.4	103.3	105.3	109.9	117.9	122.9	8.3%	0.4%	1.4%	7.3%	4.2%
Oil	127.9	114.5	146.4	162.9	156.0	162.3	-2.2%	5.0%	3.6%	-4.3%	4.1%
Natural gas	1.4	3.1	3.5	6.5	6.4	5.9	18.0%	2.2%	22.9%	-1.5%	-6.7%
Nuclear	0.0	1.4	2.2	1.9	2.5	2.9	-	9.7%	-5.0%	33.8%	16.5%
Hydro & Wind	4.3	3.4	3.6	3.8	3.9	3.9	-4.6%	1.2%	1.7%	2.6%	1.2%
Geothermal	0.0	0.0	0.3	0.3	0.3	0.3	30.6%	47.1%	-4.6%	-3.2%	1.0%
Other	84.3	105.1	117.3	122.9	124.3	127.4	4.5%	2.2%	1.6%	1.1%	2.5%
Net Imports	-103.1	-110.4	-136.5	-150.7	-142.5	-156.3	1.4%	4.3%	3.3%	-5.4%	9.7%
Solids	-18.9	-32.0	-33.4	-35.8	-37.2	-40.9	11.1%	0.9%	2.4%	3.9%	9.9%
Oil	-84.2	-78.4	-103.1	-114.9	-105.3	-115.8	-1.4%	5.6%	3.7%	-8.3%	10.0%
Crude oil	*-90.5*	*-84.9*	*-107.4*	*-122.0*	*-112.9*	*na*	*-1.3%*	*4.8%*	*4.3%*	*-7.4%*	*na*
Oil products	*6.3*	*6.5*	*4.3*	*7.1*	*7.6*	*na*	*0.5%*	*-7.8%*	*17.9%*	*7.2%*	*na*
Natural gas	0.0	0.0	0.0	0.0	0.0	0.4	-	-	-	-	-
Electricity	0.0	0.0	-0.1	0.0	0.0	0.0	22.2%	-	-	-	-
Gross Inland Consumption	176.6	219.8	239.6	252.9	259.6	265.7	4.5%	1.7%	1.8%	2.7%	2.3%
Solids	50.4	71.3	71.9	73.9	80.7	82.0	7.2%	0.2%	0.9%	9.2%	1.5%
Oil	36.2	35.4	40.8	43.9	41.6	42.9	-0.4%	2.9%	2.4%	-5.3%	3.1%
Natural gas	1.4	3.1	3.5	6.5	6.4	6.3	18.0%	2.2%	22.9%	-1.5%	-0.9%
Other (1)	88.6	110.0	123.3	128.6	130.9	134.5	4.4%	2.3%	1.4%	1.8%	2.7%
Electricity Generation in TWh	158.8	195.9	228.3	242.3	256.3	na	4.3%	3.1%	2.0%	5.7%	na
Nuclear	0.0	5.3	8.4	7.3	9.7	na	-	9.7%	-5.0%	33.8%	na
Hydro & wind	49.5	39.2	41.6	43.7	44.8	na	-4.6%	1.2%	1.7%	2.6%	na
Thermal	109.3	151.4	178.3	191.4	201.7	na	6.7%	3.3%	2.4%	5.4%	na
Generation Capacity in GWe	34.4	45.2	56.7	60.2	60.2	na	5.6%	4.6%	2.0%	0.1%	na
Nuclear	0.0	1.0	1.8	1.8	1.8	na	-	13.8%	0.0%	0.0%	na
Hydro & wind	11.1	14.2	16.7	17.1	17.1	na	5.0%	3.3%	0.7%	0.0%	na
Thermal	23.3	30.0	38.1	41.3	41.3	na	5.2%	4.9%	2.7%	0.1%	na
Average Load Factor in %	52.6	49.5	46.0	46.0	48.6	na	-1.2%	-1.5%	0.0%	5.7%	na
Fuel Inputs for Thermal Power Generation	30.2	38.0	42.7	45.4	45.6	na	4.7%	2.3%	2.1%	0.6%	na
Solids	27.3	33.8	38.2	40.8	41.3	na	4.4%	2.5%	2.2%	1.2%	na
Oil	1.9	2.3	2.3	2.3	2.3	na	3.9%	-0.5%	1.1%	-0.1%	na
Gas	1.0	1.9	1.8	2.0	1.7	na	13.8%	0.0%	2.0%	-10.9%	na
Geothermal	0.0	0.0	0.3	0.3	0.3	na	30.6%	47.1%	-4.6%	-3.2%	na
Other	0.0	0.0	0.0	0.0	0.0	na	-	-	-	-	na
							-	-	-	-	-
Average Thermal Efficiency in %	31.2	34.3	35.9	36.3	38.0	na	1.9%	1.0%	0.3%	4.8%	na
Non-Energy Uses	2.6	4.0	5.2	6.1	5.5	na	9.0%	5.5%	5.4%	-10.3%	na
Total Final Energy Demand	148.5	168.7	186.1	191.9	195.2	na	2.6%	2.0%	1.0%	1.7%	na
Solids	20.3	16.4	15.8	13.6	13.6	na	-4.2%	-0.7%	-5.0%	0.3%	na
Oil	31.9	33.1	36.1	37.8	38.6	na	0.8%	1.8%	1.6%	2.1%	na
Gas	0.6	0.9	1.4	1.4	1.5	na	9.6%	8.0%	1.6%	9.1%	na
Electricity	11.4	13.2	15.6	16.4	17.2	na	2.9%	3.4%	1.7%	4.7%	na
Heat	0.0	0.0	0.0	0.0	0.0	na	-	-	-	-	na
Other	84.3	105.1	117.3	122.7	124.3	na	4.5%	2.2%	1.5%	1.3%	na
CO_2 Emissions in Mt of CO_2	295.7	315.8	339.9	350.4	354.6	na	1.3%	1.5%	1.0%	1.2%	na
Indicators											
Population (Million)	380.11	439.31	507.01	552.65	569.10	585.73	2.9%	2.9%	2.9%	3.0%	2.9%
GDP (index 1985=100)	93.8	100.0	111.9	112.9	114.1	118.2	1.3%	2.3%	0.3%	1.1%	3.6%
Gross Inl Cons./GDP (toe/1990 MECU)	979.4	1143.1	1113.6	1164.9	1183.3	1168.9	3.1%	-0.5%	1.5%	1.6%	-1.2%
Gross Inl Cons./Capita (toe/inhabitant)	0.46	0.50	0.47	0.46	0.46	0.45	1.5%	-1.1%	-1.1%	-0.3%	-0.6%
Electricity Generated/Capita (kWh/inhabitant)	418	446	450	438	450	na	1.3%	0.2%	-0.9%	2.7%	na
CO_2 Emissions/Capita (t of CO_2/inhabitant)	0.8	0.7	0.7	0.6	0.6	na	-1.6%	-1.4%	-1.8%	-1.7%	na
Import Dependency %	-57.2	-49.5	-56.0	-58.7	-54.0	-57.9	-2.8%	2.5%	1.6%	-8.0%	7.2%

(1) Includes nuclear. hydro and wind. net imports of electricity. and other energy sources.
(2) Estimates

SUB-SAHARAN AFRICA : MAIN INDICATORS

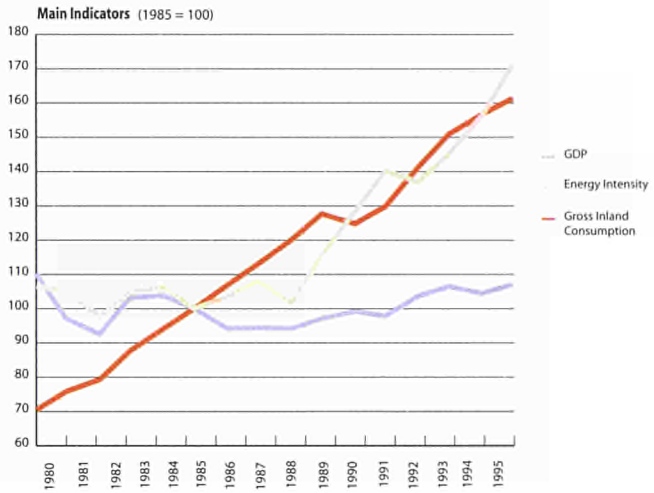
	1980	1985	1990	1993	1994	85/80	90/85	93/90	94/93
						Annual % Change			
Gross Inland Consumption (Mtoe)	176.6	219.8	239.6	252.9	259.6	4.5%	1.7%	1.8%	2.7%
Public Thermal Power Generation	27.0	35.4	40.4	42.9	43.1	5.6%	2.7%	2.0%	0.5%
Autoprod. Thermal Power Generation	3.1	2.6	2.0	2.2	2.3	-4.0%	-5.2%	4.5%	2.2%
Energy Branch	1.1	2.3	2.0	3.2	3.2	16.2%	-3.0%	16.6%	1.5%
Final Energy Consumption	142.4	160.8	178.0	183.1	186.4	2.5%	2.1%	0.9%	1.8%
Industry	31.1	31.2	32.0	29.3	29.8	0.0%	0.5%	-3.0%	1.7%
Transport	22.0	22.8	24.7	26.3	27.1	0.7%	1.6%	2.1%	3.1%
Tertiary-Domestic	89.3	106.8	121.2	127.5	129.5	3.7%	2.6%	1.7%	1.6%
Energy Intensity (toe/1990 MECU)	979.4	1143.1	1113.6	1164.9	1183.3	3.1%	-0.5%	1.5%	1.6%
Public Thermal Power Generation	149.8	184.0	187.7	197.4	196.3	4.2%	0.4%	1.7%	-0.5%
Autoprod. Thermal Power Generation	17.4	13.3	9.1	10.3	10.4	-5.2%	-7.3%	4.1%	1.1%
Industry	172.6	162.1	148.8	134.7	135.7	-1.2%	-1.7%	-3.3%	0.7%
Transport	122.1	118.5	114.9	121.1	123.6	-0.6%	-0.6%	1.8%	2.0%
Tertiary-Domestic	495.3	555.5	563.5	587.4	590.3	2.3%	0.3%	1.4%	0.5%
Energy per Capita (Kgoe/inhabitant)	465	500	473	458	456	1.5%	-1.1%	-1.1%	-0.3%
Industry	82	71	63	53	52	-2.8%	-2.3%	-5.7%	-1.2%
Transport	58	52	49	48	48	-2.2%	-1.2%	-0.8%	0.1%
Tertiary-Domestic	235	243	239	231	228	0.7%	-0.3%	-1.2%	-1.4%
Electricity Share (%)									
Final Energy Consumption	8.0%	8.2%	8.8%	9.0%	9.2%	0.4%	1.3%	0.8%	2.8%
Industry	22.8%	26.5%	29.4%	33.3%	34.1%	3.1%	2.1%	4.3%	2.6%
Transport	1.7%	1.7%	1.4%	1.1%	1.1%	0.6%	-4.3%	-7.2%	0.8%
Tertiary-Domestic	4.5%	4.2%	4.8%	5.0%	5.2%	-1.1%	2.7%	1.2%	3.6%
CO_2 Production (Mt of CO_2)	295.7	315.8	339.9	350.4	354.6	1.3%	1.5%	1.0%	1.2%
Public Thermal Power Generation	103.3	134.8	154.4	164.0	165.2	5.5%	2.8%	2.0%	0.7%
Autoprod. Thermal Power Generation	12.2	9.9	7.6	8.7	8.8	-4.1%	-5.2%	4.4%	1.9%
Energy Branch	0.8	2.4	1.2	4.4	4.4	24.8%	-12.4%	52.5%	0.2%
Industry	83.3	70.9	69.9	59.5	59.2	-3.2%	-0.3%	-5.2%	-0.5%
Transport	67.5	69.3	75.0	79.9	82.4	0.5%	1.6%	2.2%	3.1%
Tertiary-Domestic	28.5	28.3	31.6	33.7	34.4	-0.1%	2.2%	2.2%	2.1%
Carbon Intensity (tn of CO_2/toe)	1.7	1.4	1.4	1.4	1.4	-3.0%	-0.3%	-0.8%	-1.4%
Public Power Generation	3.4	3.4	3.4	3.4	3.4	0.3%	-0.3%	0.4%	-1.2%
Public Thermal Power Generation	3.8	3.8	3.8	3.8	3.8	-0.1%	0.1%	0.0%	0.2%
Autoprod. Power Generation	3.4	3.2	3.2	3.2	3.2	-1.1%	-0.2%	0.2%	0.4%
Autoprod. Thermal Power Generation	3.9	3.9	3.9	3.9	3.9	-0.1%	0.0%	0.0%	-0.2%
Energy Branch	0.7	1.0	0.6	1.4	1.4	7.4%	-9.7%	30.8%	-1.3%
Industry	2.7	2.3	2.2	2.0	2.0	-3.2%	-0.8%	-2.3%	-2.2%
Transport	3.1	3.0	3.0	3.0	3.0	-0.2%	-0.1%	0.1%	-0.1%
Tertiary-Domestic	0.3	0.3	0.3	0.3	0.3	-3.6%	-0.4%	0.5%	0.6%
CO_2 per Capita (kg of CO_2/inhabitant)	778	719	670	634	623	-1.6%	-1.4%	-1.8%	-1.7%
Industry	219	161	138	108	104	-6.0%	-3.1%	-7.9%	-3.4%
Transport	178	158	148	145	145	-2.3%	-1.3%	-0.7%	0.1%
Tertiary-Domestic	75	65	62	61	60	-2.9%	-0.7%	-0.7%	-0.8%
CO_2 per unit of GDP (tn of CO_2/1990 MECU)	1640	1642	1580	1614	1616	0.0%	-0.8%	0.7%	0.1%
Public Thermal Power Generation	573	701	718	755	753	4.1%	0.5%	1.7%	-0.3%
Autoprod. Thermal Power Generation	68	52	35	40	40	-5.3%	-7.3%	4.1%	0.9%
Energy Branch	4	13	6	20	20	23.2%	-14.4%	52.1%	-0.9%
Industry	462	368	325	274	270	-4.4%	-2.5%	-5.5%	-1.6%
Transport	374	360	348	368	375	-0.8%	-0.7%	1.8%	2.0%
Tertiary-Domestic	158	147	147	155	157	-1.4%	-0.1%	1.9%	1.1%

PART VII MIDDLE EAST

MIDDLE EAST: Major trends (1985-1995)

- Economic development mainly influenced by oil market
- Despite weak GDP final energy consumption increased on average by 5.6% per year since 1980
- Tertiary-domestic consumption has quadrupled since 1980
- Electricity contribution in the domestic sector varies tremendously from region to region
- Oil products dominated the energy market even if their contribution diminished in favour of natural gas
- Oil production is on its way to reaching the 70's peak
- Electricity production, equally based on oil and gas, has been increasing sharply since 1980
- Oil refineries sharply increased their exports
- Energy intensity increased continuously
- Relatively energy prices are low
- CO_2 emissions are increasing by more than 6.5% per year since 1990
- The Middle East is the world's primary net exporter of energy based almost exclusively on crude oil

This region includes 13 different countries: Bahrain, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syria, United Arab Emirates and Yemen. These countries represent together a population of 157 million inhabitants, growing by more than 3.2% per year over the last 5 years. Over the period of interest, the region has undergone several wars, implicating two or more countries (Lebanon, Iran-Iraq, Gulf war, ...) with severe hits on basic industrial or energy infrastructure targets. The situation has become progressively more peaceful and clear progress in welfare and industrial activity is noticeable. The region is also a region of contrast, including some developing countries and some others that exhibit characteristics of highly-industrialised countries. Some very small states, having a few hundred thousand inhabitants are neighbours of very large and powerful countries.



Economic development mainly influenced by oil market...

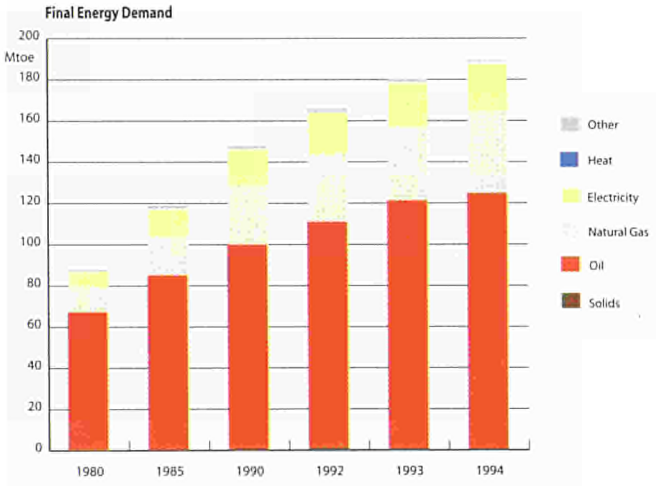
Economic development in this region continues to be mainly influenced by crude oil prices and production as many of these economies rely effectively on production and exportation of a single commodity. In other words, oil price fluctuations do not translate only into rate of inflation but rather into significant changes in the terms of trade and export incomes. Between 1980 and 1985, GDP fell some 10% together with declining oil production. The rapid slowdown of oil prices in 1986 by more than 50% was coupled with a GDP declined by about 5.5%. After three years of stagnation, the GDP started to increase regularly in 1989 at an average yearly rate of 1.6% until 1995 while oil prices remained quite low even during the Gulf War but production increased regularly.

ENERGY OUTLOOK

Despite weak GDP final energy consumption has increased by 5.6% per year on average since 1980...

Despite weak GDP final energy consumption has increased by 5.6% per year on average since 1980. With the exception of the Gulf War period, this growth appears quite regular with even some acceleration since 1991. However, this evolution is not uniform over the whole region. Progressively,

the growth of final energy consumption is slowing down in Saudi Arabia with even a net regression in 1994 while it continued to increase by more than 11% per year on average in Iran since 1990. These two countries represented 63% of total final demand in the region in 1994 (58% in 1980). Consumption per fuels showed the major contribution of hydrocarbons and electricity, the share of both solid fuels and biomass being limited to less than 1% of total final demand. Since1980, the incremental energy demand, about 100 Mtoe, was covered first by oil products for 57%, second by natural gas for 27% and finally by electricity for 16%. During the same period, the consumption of oil products doubled, those of natural gas tripled and those of electricity increased fourfold approximately. This means that the weight of oil products in final consumption was declining slowly. In 1994, oil accounted for 66%, gas for 21% and electricity for 12%.



Tertiary-domestic consumption has quadrupled since 1980...

The evolution of final consumption by sectors was largely dominated by the tertiary-domestic sector that quadrupled its consumption since 1980. As a consequence its share increased from 26% in 1980 to about 45% in 1994. If this results from a general phenomena of increasing living standards in a region where some countries presented the highest world income per capita, the case of Saudi Arabia where the consumption was decupled since 1980 must be underlined. To some extent, this evolution also resulted from increasing population, as the consumption per capita of this sector was stable since 1990. Consumption of the transport sector has doubled since 1980 driven by Iranian demand that grew from 4.6Mtoe in 1980 (15% of regional consumption) to 18.6 Mtoe in 1994 (32%). Finally demand issued from industrial sectors deeply marked by the Gulf War that reduced in 1990 energy demand to only 76% of the 1980 level, grew by 14% on average since 1991, sustained by economic activities in the region.

The contribution of electricity in the domestic sector varies tremendously from region to region...

The electricity share in final consumption reached 12% in 1994 from 7.6% in 1980. Both in industrial and domestic sectors, the share's evolution demonstrated wide fluctuation. In the tertiary-domestic sector, electricity share increased from 23% in 1980 to reach a peak of 27% in 1986 under the pressure of increasing demand in the richest countries around the Gulf. After 1996, increasing welfare in other countries was mainly oriented to the satisfaction of heating demand, reducing the contribution of electricity to only 17.5% in 1991. Since then share of electricity in tertiary-domestic increased again to reach 22.5% in 1994. In addition the contribution of electricity in the tertiary-domestic sector varied widely. It is very high in some prosperous regions: Bahrain (84%), Kuwait (93%), Qatar (95%), Emirates (76%); while in others the penetration of electricity is on the contrary very low: Iran (11%), Syria (6.9%). In industry, electricity share increased rapidly from a very low level of 4.2% in 1980 to reach 11% in 1991 before a decline to 8% in 1994.

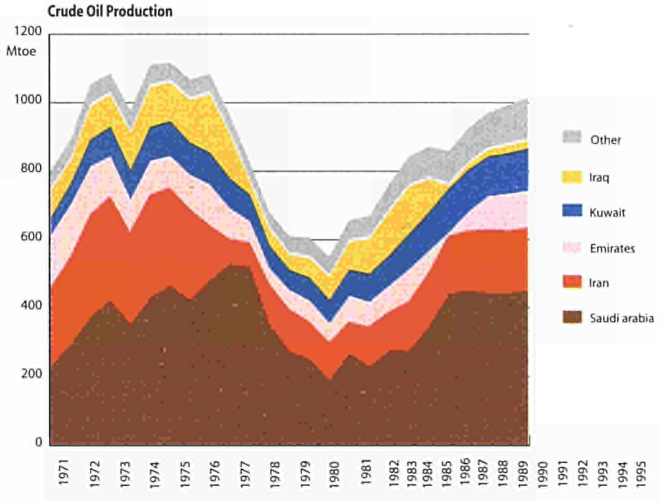
Oil products dominated the energy market even if their contribution diminished in favour of natural gas…

Gross inland energy consumption has been growing in the period 1980-1995 by about 5.7% on average since 1980 with only oil products and natural gas contributing. Oil products dominated the energy market even if their contribution diminished in favour of natural gas. Hydrocarbons together covered about 98% of all energy requirement in 1995. Solids contributed a little less than 2% and renewable energy, limited to hydro, represented less than 0.5%.

Oil production is on its way to reaching the 70's peak…

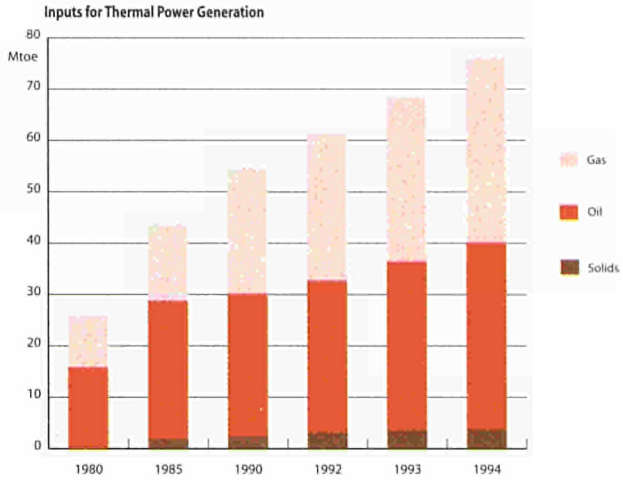
Indigenous energy production is dominated by oil with 89% of total production in 1995 (96% in 1980). The evolution of crude oil production was characterised by: a peak

level of 1106 Mtoe in 1974; a drop to 548 Mtoe by 1985, or 51% below the peak; a sustained increase to 1990 of about 10 % per year; a drop of 1.5% in 1991 (losses in Iraq and Kuwait not totally compensated by strong increases in Iran and Saudi Arabia); and finally a continuous increase since then to reach in 1995 a production level above one thousand Mtoe. It must be underlined that since 1980 Saudi Arabia assumed the role of swing producer, thus showing significantly more important fluctuations than those observed at the regional level. But since 1991 the output from the three main producers, Saudi Arabia, Iran and Emirates remained stable, all the increase coming from Kuwait and the more marginal producers. Besides oil, there is some production of natural gas. Iran and Saudi Arabia together accounted for 61% of total gas production in 1995 with 72 Mtoe. There is no nuclear energy, and renewable energy sources (hydro power and biomass) are totally marginal.



Electricity production, equally based on oil and gas, has been increasing sharply since 1980...

Electricity generation in the region grew on average by about 9% per year since 1980. Thermal generation dominated electricity production (95% in 1994) along with hydro, of which about 50% are produced in Iran, contributing the rest. Since 1990, thermal production was equally based on oil products and natural gas with solids contributing for about 5%. The increasing share of gas in electricity generation, opens the door to the future implementation of high efficiency combine cycle power stations in the Middle East. Transborder exchanges of electricity remained non-existent due to a lack of international infrastructure for electricity transport.



Oil refineries sharply increased their exports...

In 1995, the refinery capacity (5.3 millions barrels day) represented 7% of the world capacity (5% in 1985). Since 1985, the capacity grew by 3.46% per year under Iranian (7.8% per year) and Saudi Arabian (3.9% per year) leadership. At the same time, the utilisation rate of the refineries remained largely above 96%, the highest world level. Regional refineries are largely dedicated to product exports.

COMPETITIVENESS

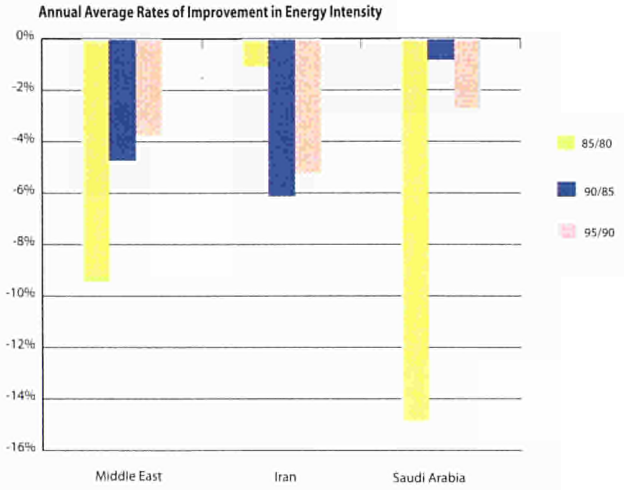
Energy intensity increased continuously...

As a result of flat GDP and increasing gross inland consumption energy intensity increased significantly since 1980, by about 10% per year during the first part of the 80's and by about 4% since then. In Saudi Arabia the degradation of this indicator occurred principally in the beginning of the 80's.

On the contrary, Iran showed an acceleration since 1985 as a result of fast industrialisation and improving living standards. In addition very large discrepancies exist from country to country.

All sectors participated to the energy intensity growth but the major increase occurred in the tertiary-domestic sector where it was multiplied by four during the 80's. Since 1990, energy intensity in this sector stabilised confirming the global stagnation of local living condition. At the same time, energy intensity of industry, pushed by rapid industrialisation of the whole region, started to increase very rapid-

ly with an average yearly growth of about 12.5%. Since 1980, the energy intensity of transport increased regularly and finally doubled over the period 1980-1994.



The **energy consumption per capita** (1.97 Toe/inhabitant) increased much slower, due to the demographic pressure prevailing in the Middle East (3 to 3.7% of yearly increase in the total population since 1990). The domestic and tertiary contribution for 1995 (0.56 Toe/inhabitant) is even lower than the one of 1990 (0.58 Toe/inhabitant).

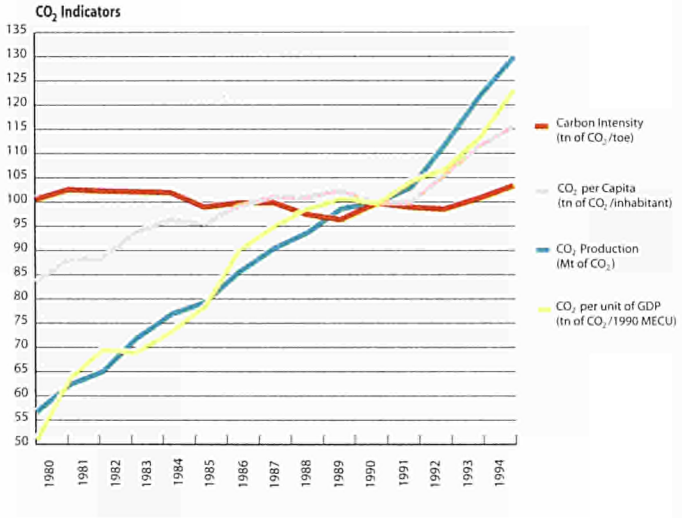
Relatively energy prices are low….

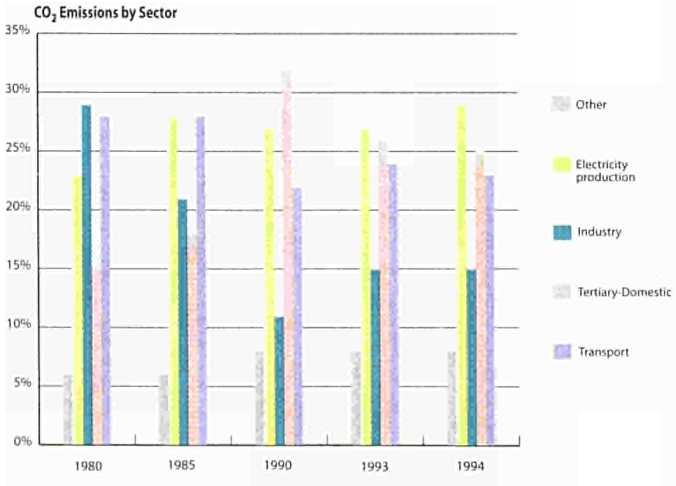
The governments of the main oil producing countries often subsidise domestic energy consumption by setting prices below cost. Although, even without these price subsidies, the low production and transport costs of this region would probably still result in relatively low energy prices. In the case of chemicals, low prices have provided several countries with a new and expending industry. To the extent that this has helped to diversify some of the economies in this region, low domestic energy prices have been a bonus. Low crude oil prices and high domestic energy subsidies are an unsustainable combination as government deficits have steadily increased and are now reaching the level where government action is required to reduce them. Saudi Arabia, UAE and Iran have recently implemented domestic energy pricing reforms designed to reduce the size of these subsidies.

ENVIRONMENT

CO_2 emissions have been increasing by more than 6.5% per year since 1990…

The CO_2 emissions of the Middle East countries have increased regularly by about 6.5% per year since 1980 with even an acceleration since 1990. Saudi Arabia and Iran together contributed 60% of the total CO_2 emissions of the region. Power generation, the major contributor with 28% of the emissions in 1995, and Industry, 15% of the total emissions in 1995, showed the sharpest increase since 1990. The emissions from the domestic and tertiary sector after a considerable increase by more than 10% per year during the eighties, are now almost globally stabilised since 1990.





The carbon intensity (tn CO_2/ toe) remains rather stable, confirming the global stability of the fuel mix over the period 1980 to 1995 in the Middle-East region, with an exception for the auto-producers. Their contribution was reduced between 1980 and 1985, after a fuel switch from oil to gas. CO_2 emissions per capita that grew by 1.8% per year during the 80's, increased on an average by 3.7 % per year since 1990, mainly due to industry and power generation. The contribution of transport remained mainly relatively constant since 1980, corresponding to a stagnation in the access to motorization in the region. The CO_2 emissions per unit of GDP globally increased on average by 6.5% per year since 1980 but a slowdown of the growth has been registered after 1985 corresponding to the new spell of GDP growth.

GLOBAL MARKETS

The Middle East is the world's primary exporter of energy based almost exclusively on crude oil ...

The Middle East is the most important net exporter of energy in the world. However, this results mainly from exports of crude oil products, and oil products to a lesser extent. Globally speaking, 80% of the 995 Mtoe oil produced during 1995 have been exported, 90% as crude oil. The volume of oil products exported has increased regularly during the 80's but is relatively stable since 1990. In 1995 Asia, excluding Japan, was the foremost importer of oil from the Middle East (31% of oil export from this region) followed by Japan (25%) and Western Europe (22%). The United States absorbed only 10% of Middle East oil exports. Some GNL was also exported by UAE to Japan and to Western Europe. Finally, the region is a net importer of solid fuels but only limited volumes are concerned.

MIDDLE EAST : SUMMARY ENERGY BALANCE

Mtoe	1980	1985	1990	1993	1994	1995(2)	85/80	90/85	93/90	94/93	95/94
							Annual % Change				
Primary Production	999.2	605.1	954.5	1072.4	1102.9	1116.4	-9.5%	9.5%	4.0%	2.8%	1.2%
Solids	0.6	0.8	0.8	1.0	1.0	1.0	6.8%	1.5%	5.6%	-0.6%	0.0%
Oil	961.2	547.4	867.4	967.4	988.2	995.1	-10.7%	9.6%	3.7%	2.1%	0.7%
Natural gas	36.2	54.9	83.9	101.1	111.8	118.2	8.7%	8.8%	6.4%	10.6%	5.7%
Nuclear	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-	-
Hydro & Wind	0.8	1.1	1.6	2.1	1.8	1.9	4.8%	9.1%	8.1%	-13.3%	7.8%
Geothermal	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-	-
Other	0.3	1.0	0.8	0.9	0.2	0.2	25.0%	-3.6%	2.3%	-79.7%	2.0%
Net Imports	-854.6	-401.8	-705.1	-772.5	-791.7	-797.3	-14.0%	11.9%	3.1%	2.5%	0.7%
Solids	0.0	2.0	2.8	3.4	3.8	4.2	113.9%	6.9%	6.5%	13.7%	9.3%
Oil	-852.4	-401.3	-703.4	-773.2	-792.1	-795.8	-	-	3.2%	2.4%	0.5%
Crude oil	-812.8	-348.0	-622.4	-705.0	-708.5	na	-15.6%	12.3%	4.2%	0.5%	na
Oil products	-39.6	-53.3	-81.0	-68.2	-83.6	na	6.1%	8.7%	-5.6%	22.6%	na
Natural gas	-2.3	-2.5	-4.5	-2.7	-3.4	-5.6	1.9%	12.3%	-15.9%	26.9%	62.8%
Electricity	0.0	0.0	0.0	-0.1	-0.1	-0.1	20.6%	1.6%	14.0%	8.7%	0.0%
Gross Inland Consumption	133.6	189.9	237.1	286.7	297.7	306.6	7.3%	4.5%	6.5%	3.8%	3.0%
Solids	0.6	2.7	3.4	4.5	4.7	5.2	35.0%	5.1%	9.2%	5.0%	9.8%
Oil	97.4	132.8	151.8	181.0	182.7	186.7	6.4%	2.7%	6.0%	1.0%	2.2%
Natural gas	33.9	52.4	79.3	98.4	108.4	112.6	9.1%	8.7%	7.4%	10.2%	3.9%
Other (1)	1.7	2.0	2.4	2.9	1.9	2.1	3.3%	3.7%	6.1%	-34.3%	7.5%
Electricity Generation in Twh	95.6	175.1	241.8	287.5	315.8	na	12.9%	6.7%	5.9%	9.8%	na
Nuclear	0.0	0.0	0.0	0.0	0.0	na	-	-	-	-	na
Hydro & wind	9.7	9.6	14.8	19.1	15.7	na	-0.2%	9.1%	8.8%	-17.9%	na
Thermal	85.9	165.5	227.0	268.4	300.1	na	14.0%	6.5%	5.8%	11.8%	na
Generation Capacity in GWe	25.5	52.2	70.3	77.3	83.2	na	15.4%	6.1%	3.2%	7.6%	na
Nuclear	0.0	0.0	0.0	0.0	0.0	na	-	-	-	-	na
Hydro & wind	1.6	3.0	3.1	4.0	4.0	na	13.1%	1.1%	8.9%	0.0%	na
Thermal	23.9	49.2	67.2	73.3	79.2	na	15.5%	6.4%	3.0%	8.0%	na
Average Load Factor in %	42.8	38.3	39.3	42.4	43.3	na	-2.2%	0.5%	2.6%	2.1%	na
Fuel Inputs for Thermal Power Generation	26.2	43.9	54.8	68.7	76.3	na	10.9%	4.5%	7.9%	11.1%	na
Solids	0.0	1.8	2.4	3.6	3.8	na	-	5.2%	14.5%	5.2%	na
Oil	16.0	27.1	27.9	33.0	36.5	na	11.1%	0.6%	5.7%	10.6%	na
Gas	10.2	15.0	24.4	32.1	36.0	na	8.0%	10.3%	9.5%	12.2%	na
Geothermal	0.0	0.0	0.0	0.0	0.0	na	-	-	-	-	na
Other	0.0	0.0	0.0	0.0	0.0	na	0.0%	2.9%	4.6%	-6.7%	na
Average Thermal Efficiency in %	28.2	32.2	35.4	33.4	33.6	na	2.7%	1.9%	-1.9%	0.7%	na
Non-Energy Uses	4.9	9.9	10.2	11.2	11.5	na	14.8%	0.6%	3.4%	2.6%	na
Total Final Energy Demand	87.5	118.7	147.5	179.8	188.9	na	6.3%	4.4%	6.8%	5.0%	na
Solids	0.6	0.8	1.0	0.9	0.9	na	6.9%	4.6%	-5.6%	3.8%	na
Oil	66.4	84.0	98.7	120.1	123.7	na	4.8%	3.3%	6.8%	3.0%	na
Gas	12.9	19.6	29.3	36.2	40.4	na	8.6%	8.4%	7.4%	11.5%	na
Electricity	6.7	12.8	17.0	21.0	22.9	na	13.9%	5.8%	7.3%	9.3%	na
Heat	0.0	0.0	0.0	0.0	0.0	na	-	-	-	-	na
Other	0.9	1.4	1.5	1.7	1.0	na	10.4%	1.1%	3.7%	-39.5%	na
CO_2 Emissions in Mt of CO_2	332.6	465.5	585.8	716.0	762.1	na	7.0%	4.7%	6.9%	6.4%	na
Indicators											
Population (Million)	91.58	112.05	134.75	147.42	151.48	157.13	4.1%	3.8%	3.0%	2.8%	3.7%
GDP (index 1985=100)	110.3	100.0	99.1	106.4	104.4	107.0	-1.9%	-0.2%	2.4%	-1.9%	2.5%
Gross Inl Cons./GDP (toe/1990 MECU)	352.6	552.5	695.6	783.7	829.5	833.3	9.4%	4.7%	4.1%	5.8%	0.5%
Gross Inl Cons./Capita (toe/inhabitant)	1.46	1.70	1.76	1.95	1.97	1.95	3.0%	0.7%	3.4%	1.0%	-0.7%
Electricity Generated/Capita (kWh/inhabitant)	1044	1562	1794	1950	2085	na	8.4%	2.8%	2.8%	6.9%	na
CO_2 Emissions/Capita (t of CO_2/inhabitant)	3.6	4.2	4.3	4.9	5.0	na	2.7%	0.9%	3.8%	3.6%	na
Import Dependency %	-591.3	-196.0	-283.4	-256.8	-254.3	-246.4	-19.8%	7.6%	-3.2%	-1.0%	-3.1%

(1) Includes nuclear, hydro and wind, net imports of electricity, and other energy sources.
(2) Estimates

MIDDLE EAST : MAIN INDICATORS

	1980	1985	1990	1993	1994	85/80	90/85	93/90	94/93
						Annual % Change			
Gross Inland Consumption (Mtoe)	133.6	189.9	237.1	286.7	297.7	7.3%	4.5%	6.5%	3.8%
Public Thermal Power Generation	25.0	42.7	53.5	67.4	75.0	11.3%	4.6%	8.0%	11.3%
Autoprod. Thermal Power Generation	1.2	1.5	1.7	1.8	1.8	3.8%	1.9%	2.2%	2.1%
Energy Branch	7.8	11.1	19.9	23.4	24.9	7.3%	12.3%	5.6%	6.4%
Final Energy Consumption	87.5	118.2	146.8	179.0	188.0	6.2%	4.4%	6.8%	5.0%
Industry	34.8	38.1	26.5	41.5	44.8	1.8%	-7.0%	16.1%	8.0%
Transport	30.0	42.0	41.8	55.8	58.4	7.0%	-0.1%	10.1%	4.6%
Tertiary-Domestic	22.7	38.1	78.4	81.7	84.8	10.9%	15.5%	1.4%	3.8%
Energy Intensity (toe/1990 MECU)	352.6	552.5	695.6	783.7	829.5	9.4%	4.7%	4.1%	5.8%
Public Thermal Power Generation	65.9	124.1	156.9	184.2	208.9	13.5%	4.8%	5.5%	13.4%
Autoprod. Thermal Power Generation	3.3	4.4	4.9	4.8	5.0	5.9%	2.1%	-0.2%	4.0%
Industry	91.9	110.8	77.9	113.4	124.8	3.8%	-6.8%	13.3%	10.0%
Transport	79.1	122.2	122.7	152.6	162.7	9.1%	0.1%	7.5%	6.7%
Tertiary-Domestic	59.8	110.8	230.2	223.3	236.3	13.1%	15.8%	-1.0%	5.8%
Energy per Capita (Kgoe/inhabitant)	1459	1695	1759	1945	1965	3.0%	0.7%	3.4%	1.0%
Industry	380	340	197	281	296	-2.2%	-10.4%	12.6%	5.1%
Transport	327	375	310	379	386	2.8%	-3.7%	6.9%	1.8%
Tertiary-Domestic	247	340	582	554	560	6.6%	11.4%	-1.6%	1.0%
Electricity Share (%)									
Final Energy Consumption	7.6%	10.8%	11.6%	11.7%	12.2%	7.3%	1.3%	0.4%	4.1%
Industry	4.2%	8.3%	10.1%	8.0%	8.2%	14.4%	3.9%	-7.5%	2.7%
Transport	0.0%	0.0%	0.1%	0.1%	0.1%	-	-	-1.6%	4.3%
Tertiary-Domestic	22.9%	25.3%	18.2%	21.5%	22.6%	2.0%	-6.4%	5.8%	5.0%
CO_2 Emissions (Mt of CO_2)	332.6	465.5	585.8	716.0	762.1	7.0%	4.7%	6.9%	6.4%
Public Thermal Power Generation	71.1	124.5	152.9	192.6	213.9	11.8%	4.2%	8.0%	11.1%
Autoprod. Thermal Power Generation	3.8	3.8	3.9	4.1	4.1	0.4%	0.3%	1.5%	1.2%
Energy Branch	19.1	26.8	48.5	56.3	59.5	7.0%	12.6%	5.1%	5.7%
Industry	95.9	97.3	65.7	107.3	114.9	0.3%	-7.6%	17.8%	7.1%
Transport	92.0	128.9	128.2	171.1	179.1	7.0%	-0.1%	10.1%	4.6%
Tertiary-Domestic	50.8	84.1	186.6	184.6	190.6	10.6%	17.3%	-0.4%	3.2%
Carbon Intensity (tn of CO_2/toe)	2.5	2.5	2.5	2.5	2.6	-0.3%	0.2%	0.3%	2.5%
Public Power Generation	2.8	2.9	2.8	2.8	2.8	0.8%	-0.5%	0.0%	0.5%
Public Thermal Power Generation	2.8	2.9	2.9	2.9	2.9	0.5%	-0.4%	0.0%	-0.2%
Autoprod. Power Generation	3.0	2.5	2.4	2.3	2.3	-3.3%	-1.5%	-0.7%	-0.8%
Autoprod. Thermal Power Generation	3.0	2.6	2.4	2.3	2.3	-3.3%	-1.6%	-0.7%	-0.8%
Energy Branch	2.4	2.4	2.4	2.4	2.4	-0.3%	0.2%	-0.5%	-0.6%
Industry	2.8	2.6	2.5	2.6	2.6	-1.5%	-0.6%	1.5%	-0.8%
Transport	3.1	3.1	3.1	3.1	3.1	0.0%	0.0%	0.0%	0.0%
Tertiary-Domestic	2.2	2.2	2.4	2.3	2.2	-0.3%	1.5%	-1.7%	-0.6%
CO_2 per Capita (kg of CO_2/inhabitant)	3632	4154	4348	4857	5031	2.7%	0.9%	3.8%	3.6%
Industry	1047	869	488	728	758	-3.7%	-10.9%	14.3%	4.2%
Transport	1004	1151	951	1161	1182	2.8%	-3.7%	6.9%	1.8%
Tertiary-Domestic	554	750	1385	1253	1258	6.2%	13.0%	-3.3%	0.4%
CO_2 per unit of GDP (tn of CO_2/1990 MECU)	878	1354	1719	1957	2123	9.1%	4.9%	4.4%	8.5%
Public Thermal Power Generation	188	362	449	526	596	14.0%	4.4%	5.5%	13.2%
Autoprod. Thermal Power Generation	10	11	11	11	12	2.3%	0.5%	-0.8%	3.2%
Energy Branch	50	78	142	154	166	9.2%	12.8%	2.7%	7.8%
Industry	253	283	193	293	320	2.3%	-7.4%	15.0%	9.1%
Transport	243	375	376	468	499	9.1%	0.1%	7.5%	6.7%
Tertiary-Domestic	134	245	548	505	531	12.8%	17.5%	-2.7%	5.2%

SAUDI ARABIA : SUMMARY ENERGY BALANCE

Mtoe	1980	1985	1990	1993	1994	1995(2)	85/80	90/85	93/90	94/93	95/94
							Annual % Change				
Primary Production	533.4	200.8	368.8	470.1	471.3	482.6	-17.7%	12.9%	8.4%	0.3%	2.4%
Solids	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-	-
Oil	524.6	185.0	343.4	440.8	440.6	450.3	-18.8%	13.2%	8.7%	0.0%	2.2%
Natural gas	8.5	15.8	25.4	29.3	30.8	32.3	13.1%	10.0%	5.0%	5.0%	5.0%
Nuclear	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-	-
Hydro & Wind	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-	-
Geothermal	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-	-
Other	0.3	0.0	0.0	0.0	0.0	0.0	-	-	-	-	-
Net Imports	-493.7	-139.8	-301.5	-386.1	-385.6	-397.1	-22.3%	16.6%	8.6%	-0.1%	3.0%
Solids	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-	-
Oil	-493.7	-139.8	-301.5	-386.1	-385.6	-397.1	-	-	8.6%	-0.1%	3.0%
Crude oil	-484.6	-124.0	-253.7	-341.9	-343.3	na	-23.9%	15.4%	10.5%	0.4%	na
Oil products	-9.1	-15.8	-47.8	-44.3	-42.3	na	11.7%	24.8%	-2.5%	-4.5%	na
Natural gas	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-	-
Electricity	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-	-
Gross Inland Consumption	35.4	52.2	65.5	81.7	83.8	83.5	8.1%	4.6%	7.6%	2.5%	-0.4%
Solids	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-	-
Oil	26.8	36.5	40.2	52.4	53.0	51.1	6.3%	2.0%	9.3%	1.1%	-3.5%
Natural gas	8.5	15.8	25.4	29.3	30.8	32.3	13.1%	10.0%	5.0%	5.0%	5.0%
Other (1)	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-	-
Electricity Generation in Twh	20.5	44.3	64.9	82.2	91.0	na	16.7%	7.9%	8.2%	10.8%	na
Nuclear	0.0	0.0	0.0	0.0	0.0	na	-	-	-	-	na
Hydro & wind	0.0	0.0	0.0	0.0	0.0	na	-	-	-	-	na
Thermal	20.5	44.3	64.9	82.2	91.0	na	16.7%	7.9%	8.2%	10.8%	na
Generation Capacity in GWe	5.9	13.7	17.3	18.4	20.9	na	18.4%	4.7%	2.2%	13.4%	na
Nuclear	0.0	0.0	0.0	0.0	0.0	na	-	-	-	-	na
Hydro & wind	0.0	0.0	0.0	0.0	0.0	na	-	-	-	-	na
Thermal	5.9	13.7	17.3	18.4	20.9	na	18.4%	4.7%	2.2%	13.4%	na
Average Load Factor in %	39.5	36.9	42.9	50.9	49.7	na	-1.4%	3.1%	5.8%	-2.3%	na
Fuel Inputs for Thermal Power Generation	5.6	12.7	13.0	18.1	20.7	na	17.8%	0.4%	11.8%	14.3%	na
Solids	0.0	0.0	0.0	0.0	0.0	na	-	-	-	-	na
Oil	3.4	7.3	8.7	11.5	13.4	na	16.4%	3.6%	9.5%	16.5%	na
Gas	2.2	5.4	4.2	6.6	7.3	na	19.9%	-4.7%	16.2%	10.4%	na
Geothermal	0.0	0.0	0.0	0.0	0.0	na	-	-	-	-	na
Other	0.0	0.0	0.0	0.0	0.0	na	-	-	-	-	na
Average Thermal Efficiency in %	31.5	30.0	43.0	39.0	37.8	na	-0.9%	7.5%	-3.2%	-3.1%	na
Non-Energy Uses	0.9	4.8	4.3	5.1	5.4	na	38.2%	-2.2%	6.2%	4.9%	na
Total Final Energy Demand	22.3	26.5	38.4	43.0	42.7	na	3.5%	7.7%	3.8%	-0.6%	na
Solids	0.0	0.0	0.0	0.0	0.0	na	-	-	-	-	na
Oil	21.0	22.3	25.1	29.1	28.1	na	1.2%	2.4%	5.0%	-3.2%	na
Gas	0.3	1.1	9.0	8.4	8.5	na	33.5%	52.9%	-2.1%	0.9%	na
Electricity	1.1	3.1	4.3	5.5	6.1	na	23.5%	6.6%	8.3%	11.0%	na
Heat	0.0	0.0	0.0	0.0	0.0	na	-	-	-	-	na
Other	0.0	0.0	0.0	0.0	0.0	na	-	-	-	-	na
CO_2 Emissions in Mt of CO_2	93.9	123.1	163.0	192.6	198.9	na	5.5%	5.8%	5.7%	3.3%	na
Indicators											
Population (Million)	9.60	12.65	16.05	17.12	17.50	18.09	5.7%	4.9%	2.2%	2.2%	3.4%
GDP (index 1985=100)	134.8	100.0	120.8	135.9	135.9	134.8	-5.8%	3.8%	4.0%	0.0%	-0.8%
Gross Inl Cons./GDP (toe/1990 MECU)	385.6	767.3	797.5	883.9	906.0	909.9	14.8%	0.8%	3.5%	2.5%	0.4%
Gross Inl Cons./Capita (toe/inhabitant)	3.68	4.13	4.08	4.77	4.79	4.61	2.3%	-0.2%	5.3%	0.3%	-3.6%
Electricity Generated/Capita (kWh/inhabitant)	2130	3503	4044	4799	5202	na	10.5%	2.9%	5.9%	8.4%	na
CO_2 Emissions/Capita (t of CO_2/inhabitant)	9.8	9.7	10.2	11.2	11.4	na	-0.1%	0.9%	3.5%	1.1%	na
Import Dependency %	-1246.7	-229.4	-447.9	-458.9	-449.5	-462.2	-28.7%	14.3%	0.8%	-2.0%	2.8%

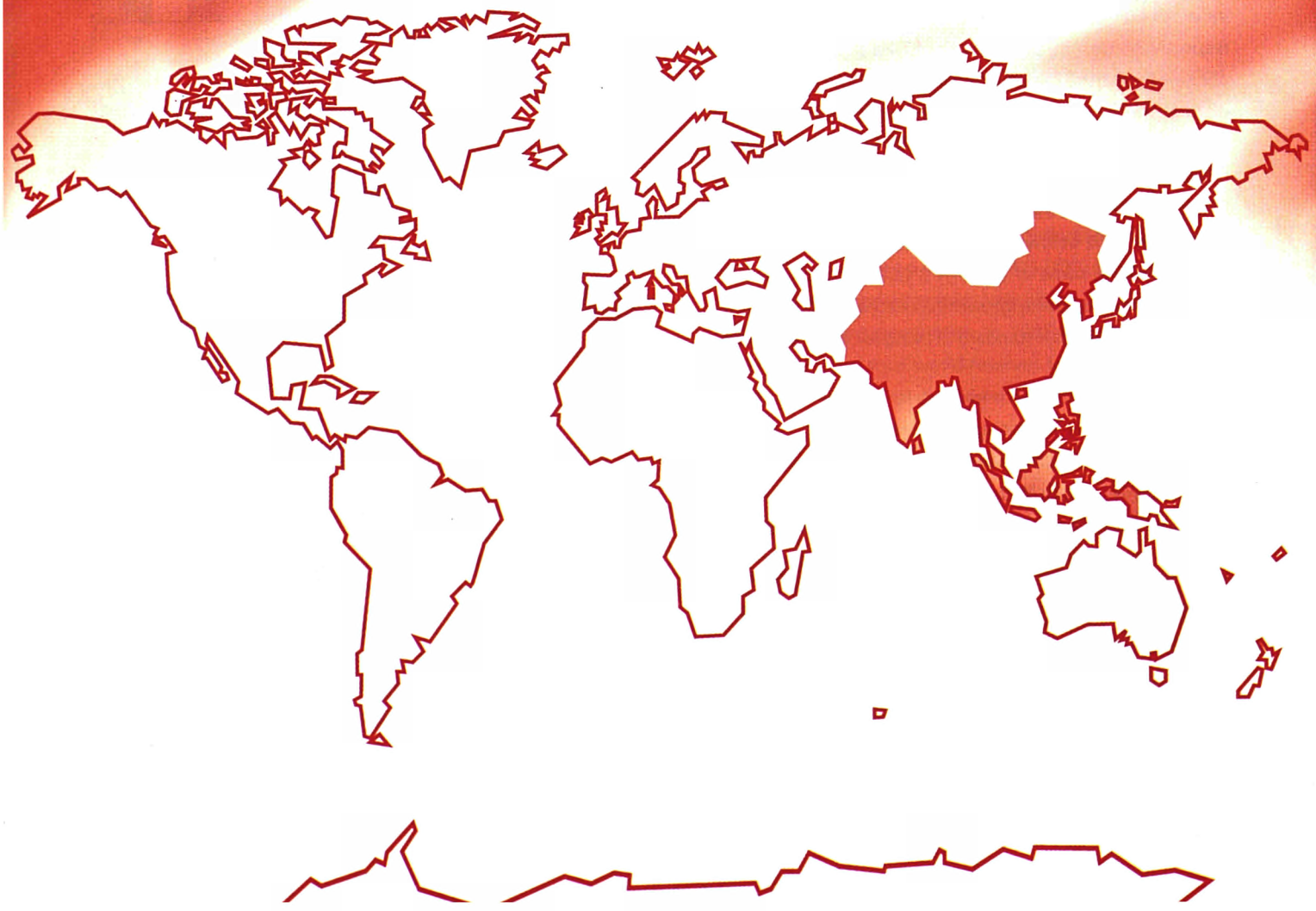
(1) Includes nuclear, hydro and wind, net imports of electricity, and other energy sources.
(2) Estimates

IRAN : SUMMARY ENERGY BALANCE

Mtoe	1980	1985	1990	1993	1994	1995(2)	85/80	90/85	93/90	94/93	95/94
							Annual % Change				
Primary Production	83.8	127.8	179.8	219.1	222.0	225.8	8.8%	7.1%	6.8%	1.3%	1.7%
Solids	0.6	0.8	0.8	0.9	0.9	0.9	6.8%	0.8%	5.4%	-0.4%	0.0%
Oil	75.9	113.9	158.9	186.3	184.4	184.1	8.5%	6.9%	5.5%	-1.1%	-0.2%
Natural gas	6.5	11.9	18.9	30.1	36.1	40.1	12.8%	9.7%	16.8%	19.7%	11.2%
Nuclear	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-	-
Hydro & Wind	0.5	0.5	0.5	0.9	0.6	0.7	-0.2%	1.9%	21.8%	-32.3%	9.6%
Geothermal	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-	-
Other	0.3	0.7	0.7	0.7	0.0	0.0	16.9%	-1.3%	2.1%	-100.0%	-
Net Imports	-44.0	-72.0	-106.9	-122.5	-127.4	-124.3	10.4%	8.2%	4.6%	4.1%	-2.4%
Solids	0.0	0.1	0.2	0.0	0.0	0.0	10.8%	32.0%	-100.0%	-	-
Oil	-43.9	-72.1	-105.2	-122.5	-127.4	-124.3	-	-	5.2%	4.1%	-2.4%
Crude oil	-38.2	-77.0	-112.1	-131.6	-134.1	na	15.1%	7.8%	5.5%	1.9%	na
Oil products	-5.7	4.9	6.9	9.1	6.7	na	-	6.9%	9.7%	-26.7%	na
Natural gas	-0.2	0.0	-1.9	0.0	0.0	0.0	-100.0%	-	-100.0%	-	-
Electricity	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-	-
Gross Inland Consumption	39.0	54.1	70.3	94.9	92.9	99.8	6.8%	5.4%	10.5%	-2.1%	7.4%
Solids	0.6	0.8	1.0	0.9	0.9	1.0	7.1%	4.7%	-5.0%	4.1%	3.8%
Oil	30.9	40.2	51.1	62.2	55.3	58.0	5.4%	4.9%	6.8%	-11.1%	4.9%
Natural gas	6.4	11.9	17.0	30.1	36.1	40.1	13.4%	7.3%	21.0%	19.7%	11.2%
Other (1)	1.1	1.2	1.2	1.7	0.6	0.7	1.6%	0.0%	11.6%	-61.5%	9.6%
Electricity Generation in Twh	22.4	39.2	59.1	71.3	79.1	na	11.9%	8.5%	6.5%	10.9%	na
Nuclear	0.0	0.0	0.0	0.0	0.0	na	-	-	-	-	na
Hydro & wind	5.6	5.6	6.1	11.0	7.4	na	-0.2%	1.9%	21.8%	-32.3%	na
Thermal	16.8	33.7	53.0	60.3	71.7	na	15.0%	9.5%	4.4%	18.8%	na
Generation Capacity in GWe	5.3	13.4	17.6	22.7	25.1	na	20.4%	5.5%	8.9%	10.7%	na
Nuclear	0.0	0.0	0.0	0.0	0.0	na	-	-	-	-	na
Hydro & wind	0.9	1.8	1.8	2.0	2.0	na	16.2%	0.0%	2.7%	0.0%	na
Thermal	4.5	11.6	15.8	20.7	23.2	na	21.1%	6.3%	9.6%	11.7%	na
Average Load Factor in %	48.2	33.4	38.4	35.9	36.0	na	-7.1%	2.8%	-2.3%	0.2%	na
Fuel Inputs for Thermal Power Generation	4.5	8.9	14.2	17.3	19.8	na	14.9%	9.8%	6.8%	14.6%	na
Solids	0.0	0.0	0.0	0.0	0.0	na	-	-	-	-	na
Oil	3.0	7.0	6.3	6.9	7.3	na	18.3%	-2.2%	3.2%	6.9%	na
Gas	1.4	1.9	7.9	10.4	12.5	na	5.9%	32.6%	9.5%	19.7%	na
Geothermal	0.0	0.0	0.0	0.0	0.0	na	-	-	-	-	na
Other	0.0	0.0	0.0	0.0	0.0	na	-	-	-	-	na
Average Thermal Efficiency in %	32.4	32.5	32.1	30.0	31.1	na	0.1%	-0.2%	-2.3%	3.6%	na
Non-Energy Uses	1.3	1.4	2.9	3.6	3.5	na	2.1%	15.2%	7.7%	-4.0%	na
Total Final Energy Demand	28.5	43.2	50.4	72.3	77.0	na	8.6%	3.1%	12.8%	6.5%	na
Solids	0.6	0.8	1.0	0.9	0.9	na	7.1%	4.4%	-5.5%	4.0%	na
Oil	20.8	28.8	36.3	47.2	48.4	na	6.8%	4.7%	9.2%	2.5%	na
Gas	4.9	10.0	8.5	18.6	22.2	na	15.3%	-3.1%	29.6%	19.7%	na
Electricity	1.7	2.8	3.9	5.0	5.5	na	11.0%	6.8%	8.8%	10.9%	na
Heat	0.0	0.0	0.0	0.0	0.0	na	-	-	-	-	na
Other	0.6	0.7	0.7	0.7	0.0	na	2.9%	-1.3%	2.1%	-100.0%	na
CO_2 Emissions in Mt of CO_2	91.3	143.1	176.0	242.2	261.8	na	9.4%	4.2%	11.2%	8.1%	na
Indicators											
Population (Million)	39.25	48.92	58.95	64.17	65.76	67.62	4.5%	3.8%	2.9%	2.5%	2.8%
GDP (index 1985=100)	75.6	100.0	96.4	116.2	103.1	106.0	5.8%	-0.7%	6.4%	-11.2%	2.8%
Gross Inl Cons./GDP (toe/1990 MECU)	526.0	552.3	743.8	833.1	919.2	959.9	1.0%	6.1%	3.8%	10.3%	4.4%
Gross Inl Cons./Capita (toe/inhabitant)	0.99	1.11	1.19	1.48	1.41	1.48	2.2%	1.5%	7.4%	-4.4%	4.4%
Electricity Generated/Capita (kWh/inhabitant)	570	802	1003	1112	1203	na	7.1%	4.6%	3.5%	8.2%	na
CO_2 Emissions/Capita (t of CO_2/inhabitant)	2.3	2.9	3.0	3.8	4.0	na	4.7%	0.4%	8.1%	5.5%	na
Import Dependency %	-108.6	-129.2	-146.6	-126.8	-134.7	-121.2	3.5%	2.6%	-4.7%	6.2%	-10.1%

(1) Includes nuclear, hydro and wind, net imports of electricity, and other energy sources.
(2) Estimates

PART VIII ASIA

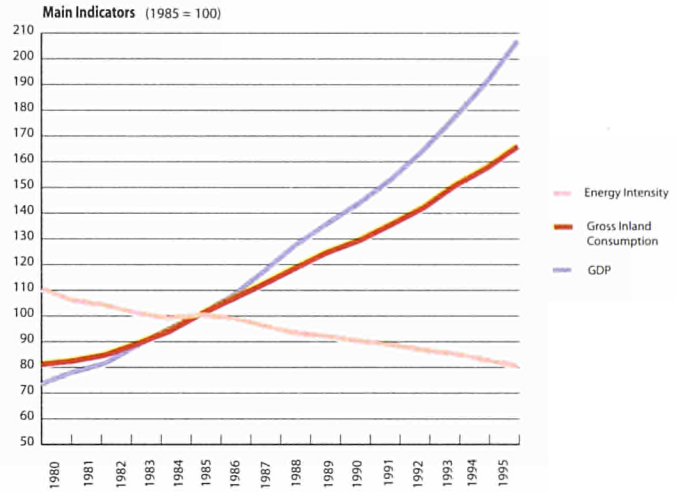


ASIA : Major trends (1980-1995)

- GDP grew by 7.5% per year since 1990, but gross inland energy consumption increases remained at 5% per year
- Renewable sources are the second contributor to primary energy requirements after solids
- Additional requirements mainly covered by solid fuels and oil
- Natural gas contribution has multiplied by 2.5 since 1985
- Increased energy dependency. Major developments related to fossil fuels. Rapid expansion of the electricity generation capacity (20 GWe per year), challenging the future
- Inputs for thermal generation of electricity dominated by solid fuels
- Energy intensity improved by about 2.1% on average per year since 1980
- The energy consumption per inhabitant equivalent to 16% of the European Union level
- CO_2 emissions have more than doubled since 1980, but CO_2 intensity per unit of GDP declined by 1.7% per year

GDP grew by 7.5% per year since 1990...

This is the largest world region, including all Asian countries and the Pacific islands, except those belonging to the OECD region, Iran and the Asian Republics of the former USSR. The Asian population has grown by 1.8% per year on average between 1980 and 1995, conducted by India (2.0% on average and China 1.4% on average). This population represented in 1995 almost 53% of the world's total; China and India accounted for 21% and 16% of world population respectively. Despite GDP growth of 7.2% per year on average since 1980, the region is still in a rather low level of one word economic development (GDP per capita in 1995 was 25 times lower than the European Union average). However, there are the four NICs (Hong-Kong, Singapore, South Korea and Taiwan) which in 1995 enjoyed, a GDP per capita only 45% below the European average. China and India both have some of the lowest GDP per capita in the world. Recent economic growth has exceeded population growth, improving the standard of living for the population as a whole.



ASIA : GDP PER CAPITA (Thousand 1990 ECU/inhabitant)

	1980	1985	1990	1993	1994	1995(1)
Asia	0.28	0.35	0.46	0.54	0.57	0.61
China	0.12	0.18	0.25	0.33	0.37	0.40
India	0.19	0.23	0.28	0.28	0.29	0.31
NICs	3.26	4.26	6.31	7.44	7.90	8.47
Other	0.32	0.36	0.43	0.48	0.50	0.53
European Union	11.81	12.78	14.56	14.58	14.95	15.29

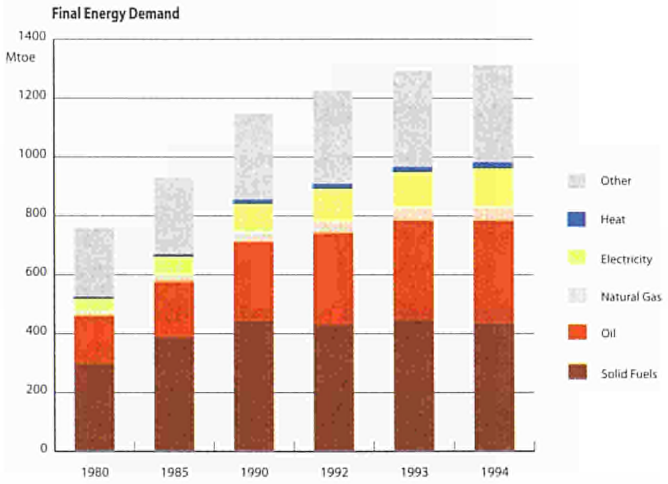
(1) estimates

ENERGY OUTLOOK

Additional requirements mainly covered by solid fuels and oil...

Sustained by the strong economic growth, **final energy consumption** increased steadily by almost 4.0% per year between 1980 and 1994. The increase was satisfied by oil products (34% of the overall increment), solid fuels (24%), biomass (18%), electricity (16%), gas (6%) and derived heat (2%). China accounted in 1994 for about 54% of the total

regional final demand, followed by India with 15% and the NICs with only 11%. But China between 1980 and 1994 absorbed 60% of incremental oil demand and NICs 29%. About 50% of the increase in oil demand has been allocated to the transport sector, which grew by about 6.0% per year since 1980. In China there was a growing use of solid fuels (81% of the total increase); most of these developments occurred during the first part of the 80's and has virtually stopped since 1990. The growth in electricity consumption (8.0% per year on an average) has been reported to be at the very low level of 520 kWh per inhabitant (compared to 5310 kWh in the European Union).



Declining share of the tertiary-domestic sector...

The share of the tertiary-domestic sector in the final energy consumption declined from 50% in 1980 to 44% in 1994 for the benefit of both the transport sector (from 10% to 14%) and industry (from 40% to 42%). This region is characterised by very low levels of car use. The energy consumption per capita for transport uses represented only 60 Kgoe per inhabitant in 1994, compared to 742 Kgoe in the European Union. As a consequence, the contribution of transport to the final consumption of oil is close to about 45%, compared to 60% in OECD.

Increasing contribution of electricity...

The electricity share in final consumption reached 10% in 1994 from 8.6% in 1990 and 6% in 1980. The level of electrification varies largely through Asia with a minimum of 1% in Nepal and a maximum of 27% in Singapore. The long term elasticity of electricity demand to GDP reached only 1.1 on the period 1980-1994, and was even close to 1 in the period 1990-94. If we except the NICs, this indicator reflects both the low level of industrialisation and poor living standards, mainly in the two largest countries: China and India.

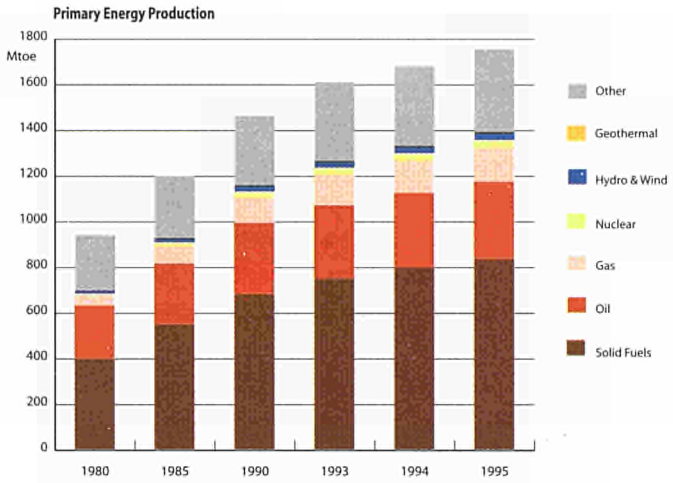
Solid fuels have been doubling their contribution since 1980...

Gross inland energy consumption has been growing in the period 1980-1995 by about 5% per year on average since 1980 with all primary fuels contributing. Solid fuels dominated the energy market, doubling their contribution since 1980. Since 1985, oil and gas are growing more rapidly than the other fuels to cover increasing consumption of the final consumers, solid fuels and nuclear power being devoted to power production. Nuclear energy developed rapidly in the 1980's (growing over 20% per year on average) but stabilised in 1991 and 1992 before new sites were developed in China in 1993 and 1994. Renewable energy sources (mainly biomass) has had a steady increase since 1980 of over 3% per year. The major contributing countries were China (48%), India (19%) and Indonesia (10%). In 1995, the share of each primary fuel in total consumption were: solid fuels with 45% (43% in 1980); Oil with 27% (26% in 1980); Biomass with 19% (26% in 1980); Natural gas with 6% (3% in 1980); Hydro with 2% (as in 1980) and nuclear with 2% (almost nil in 1980).

Renewable sources are the second contributing source after solid fuels...

Indigenous **energy production** in Asia works in function with its own energy needs and is relatively independent from the changing prices of internationally traded coal, oil and natural gas. So, total energy production has increased in line with gross inland consumption by about 4.2% per year since 1980. Production was dominated by solid fuels with 48% of total production in 1995 (43% in 1980). China and India represented respectively about 77% and 16% of the total region's production in 1995 in relation to their reserves (11% of total world reserves for China and 7% for India). The share of oil decreased from 24% in 1980 to 19% in 1995. China was the biggest oil producer in 1995 (149 Mtoe mainly concentrated onshore on a single field) followed by Indonesia (77 Mtoe), Malaysia (40 Mtoe) and India (32 Mtoe). To increase domestic oil production, efforts are being made to promote foreign investment. Natural gas production increased continuously in the period by 8.3% per year on average. Indonesia with 54 Mtoe and Malaysia with 23 Mtoe were mainly responsible for this increase. It must be noted that the Asian hydrocarbon reserves are quite limited, with only 4.2% of world oil reserves in 1995 and 6.6% of gas reserves. Nuclear energy production was dominated by the NICs: 93% of total

nuclear energy in 1992 but only 68% in 1995 due to the first commissioning of nuclear units in China in 1993-94. Hydropower grew slower than most other fuels, despite the very large existing potential, and in 1995 it accounted for approximately the same level as nuclear power. Biomass production increased by 2.6% per year between 1980 and 1995 over the whole region.



Electricity generation dominated by solid fuels...

Electricity generation in the region grew steadily by 8.4% per year in the period 1980-1994. Thermal generation dominated electricity production (77% in 1994) with nuclear and hydro accounting respectively for 6% and 17% of total generation. This structure of production has been quite stable since 1980, except for the NIC's where nuclear accounted for 29% of gene-ration in 1994 (down from 36% in 1990), while thermal and hydropower represented 67% and 4% respectively. Solid fuels dominated the increment of input for thermal generation of electricity. In 1994, solid fuels accounted for 78% of thermal generation (61% in 1980); oil and gas represented 12% and 8% respectively (37% and 2% in 1980). But it must be noted that the contribution of natural gas is increasing by about 16% per annum since 1990. The average Thermal Efficiency remained quite stable at about 30% since 1985 at regional level. The NIC countries were the more efficient in 1994 with 39.2% compared to 29.1% in China and 27% in India respectively.

Rapid expansion of generation capacity challenging the future...

The total generation capacity reached 440 Gwe in 1994, or about 83% of the European Union generation capacity. But the rate of expansion was very rapid with a total of 209 GWe between 1985 and 1995 (about 20 GWe per year) compared with only 52 GWe in the European Union during the same period. Thermal units dominate this market, mainly steam coal power units (the bulk of Chinese generation capacity) but combined cycles units started to be developed where indigenous gas resources are available. In 1994, thermal units accounted for 73% of total generation capacity (68.5% in 1980), hydro and wind for 23% (29.5% in 1980) and nuclear for 4% (2% in 1980). The most challenging growth projections are in the power sector. In the next ten years, at a modest estimate, while China would need to add about 15 GWe every year, India would need to add about 10 GWe annually to keep in line with the projections. On a global scenario, these two countries together would mean adding 40 to 50% of the total capacity planned on an international level. To keep in phase with this challenge, these two regions and some other relatively smaller economies have undergone significant attemps at electricity privatisation.

Utilisation rate of refining capacity largely above world average...

In 1995, **the refinery capacity** (10.9 millions barrels day) represented 14% of the world capacity (9.5% in 1985). Since 1985, the capacity grew by 4.6% per year under China's leadership (6.4% per year). At the same time, the utilisation rate of the refineries increased from 79% to 88%, remaining during all the period above the world average. In order to meet increasing domestic oil demand the region has embarked on an aggressive refinery expansion program, partially based on joint ventures with foreign investors.

COMPETITIVENESS

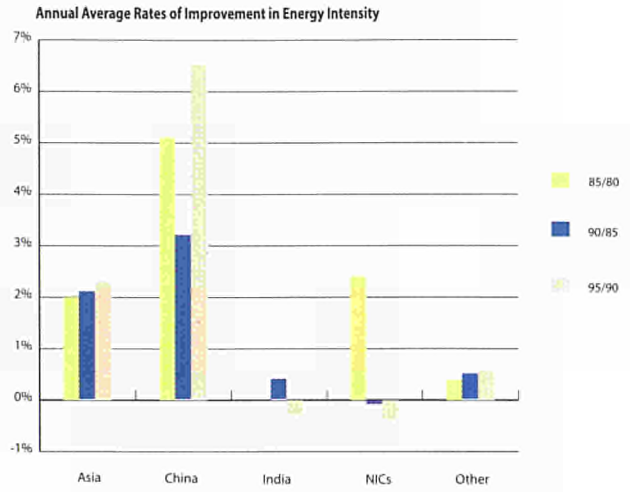
Energy intensity has improved by 2.1% per year since 1980...

The **energy intensity** indicator for the region has been improving significantly (by about –2.1% per year) since 1980. This evolution was due mainly to China (-4% per year

ASIA : ENERGY INTENSITY

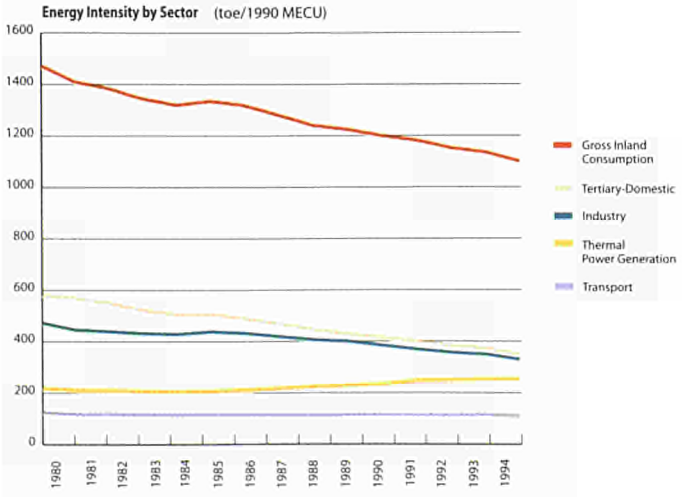
toe/1990 MECU	1980	1985	1990	1993	1994	1995(1)
Asia	1469.2	1330.4	1194.9	1130.8	1096.7	1065.8
China	4411.7	3395.6	2881.6	2343.9	2178.5	2058.4
India	1083.2	1084.7	1065.7	1097.3	1103.1	1081.0
NICs	405.1	359.6	361.0	393.2	392.9	367.9
Other	1037.9	1017.6	989.9	952.9	925.6	959.2
European Union	285.5	270.4	248.2	247.0	240.9	240.4

(1) estimates



during the 80's and -7% per year since 1990). In 1995, China remained the most intensive country (93% higher than the Asian average down from 105% in 1980) while the NICs presented the lowest ratio (65% below Asian average). Compared to the European Union, China was more than 8 times more intensive and the NICs only 53% higher.

It must be stressed that the continual improvement of energy intensity has been mainly sustained by the industrial sector (-31% since 1980) notwithstanding the rapid industrialisation of the region, and by the tertiary-domestic sector (-40% since 1980) in spite of improving standards of living both in cities and rural zones. The contribution of transport remains stable whereas the weight of power generation was increasing as the share of electricity in the final demand rose continuously.



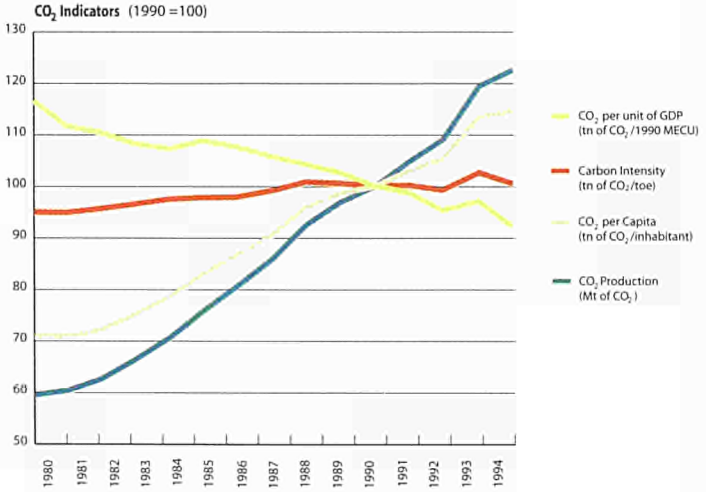
Energy consumption per capita reached only 16% of the European level...

The gross inland consumption per capita was rather low with 0.65 toe/capita compared to Europe (only 16% of the European Union level). The lowest level occurred in India with 0.33 toe/capita, much lower than the African average, while the NICs had the highest ratio at only 15% below the European Union.

ENVIRONMENT

Co_2 emissions have more than doubled since 1980...

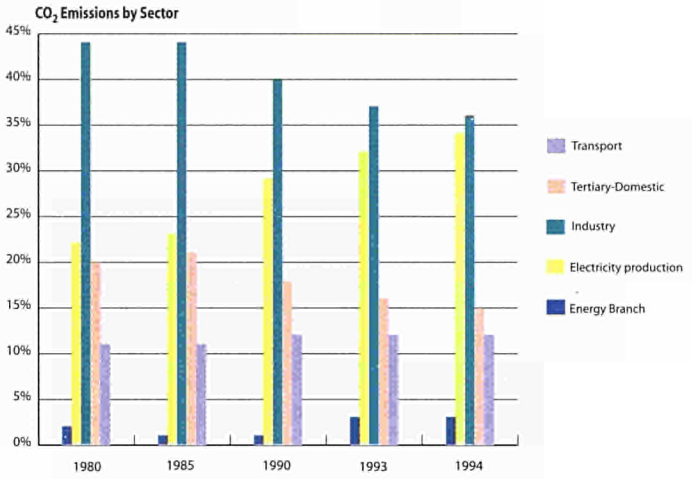
China and India are presently the world's highest and second fastest growing sources of greenhouse gases respectively. The air quality deterioration and the pollution from the growing use of coal as a fuel is expected to worsen, as the higher capacity generation is put on stream, unless adequate regulatory measures must be built-in from the design stage.



In general terms, CO_2 emissions have been increasing continuously over the last fifteen years (4601 million tonnes of CO_2 in 1994, compared to 3758 million tonnes in 1990 and 2230 million tonnes in 1980). As the dominant position of solid fuels induces an increase in the carbon intensity of fuels, emissions are increasing more rapidly than gross inland energy consumption. This global evolution must be kept in check. If CO_2 emissions per capita sustained by increasing standards of living were increasing by 3.5% since 1980, CO_2 intensity per unit of GDP will decline by 1.7% per year.

Increasing contribution of power sector...

Looking at CO_2 emissions by sector at the regional level, the first conclusion is that the largest sector in terms of emission is industry which by far occupies the first place with about 36% of total emissions (44% in 1980). The power sector, mainly based on solids, increased continuously to be almost the equivalent to industry in 1994. The tertiary-domestic sector, where renewable energy continued to make a significant contribution, saw its contribution reduced from 20% in 1980 to only 15% in 1994.



GLOBAL MARKETS

Increasing energy dependency...

With a dependency in 1995 of about 11%, Asia is increasingly a net **importer of energy.** This is true for oil (net import of 228 Mtoe supplied mainly by the Middle East) and solid fuels (net import of 31 Mtoe). It is a net exporter of natural gas (7% per year growth between 1980 and 1990, and stable since then). In 1990, gas exports accounted for 32% of indigenous production, but this share was reduced to 24% in 1995 in line with the increasing indigenous consumption. Exports concerned mainly LNG to Japan. At country level, this picture is quite different. China with a global dependency near zero, is a net exporter of solid fuels but has become a net importer of oil since 1993. India, however, is a net importer of all commercial energy sources except natural gas. The NICs, without significant fossil fuel reserves, are an important net energy importer. Indeed, they depended on foreign supplies for 87% of their consumption in 1995. From 1985 to 1995, their net energy imports increased by an annual average of 10.5%.

ASIA : SUMMARY ENERGY BALANCE

Mtoe	1980	1985	1990	1993	1994	1995(2	85/80	90/85	93/90	94/93	95/94
							Annual % Change				
Primary Production	940.8	1203.4	1465.8	1611.4	1683.0	1758.4	5.0%	4.0%	3.2%	4.4%	4.5%
Solids	402.6	550.8	684.8	752.4	800.9	840.6	6.5%	4.5%	3.2%	6.4%	5.0%
Oil	226.8	261.3	305.3	314.8	320.4	329.9	2.9%	3.2%	1.0%	1.8%	3.0%
Natural gas	44.8	77.0	111.2	136.2	141.9	148.1	11.4%	7.6%	7.0%	4.2%	4.4%
Nuclear	3.8	13.2	24.0	26.1	29.6	32.2	28.2%	12.7%	2.8%	13.3%	8.9%
Hydro & Wind	13.3	18.8	25.4	27.5	29.8	33.0	7.2%	6.2%	2.7%	8.7%	10.4%
Geothermal	1.8	4.4	5.7	5.9	6.6	6.7	20.0%	5.0%	1.4%	11.2%	1.9%
Other	247.6	277.8	309.6	348.4	353.9	368.0	2.3%	2.2%	4.0%	1.6%	4.0%
Net Imports	19.4	1.2	88.0	190.1	202.4	224.8	-42.6%	135.6%	29.3%	6.5%	11.1%
Solids	7.0	23.7	30.6	32.7	30.2	31.2	27.8%	5.2%	2.3%	-7.6%	3.2%
Oil	30.6	8.0	92.5	195.9	207.6	228.2	-23.6%	63.2%	28.4%	6.0%	9.9%
Crude oil	23.1	14.3	69.3	146.9	150.8	na	-9.1%	37.1%	28.5%	2.7%	na
Oil products	7.5	-6.3	23.2	49.1	56.8	na	-	-	28.3%	15.8%	na
Natural gas	-18.2	-30.5	-35.1	-38.6	-35.9	-34.7	10.9%	2.8%	3.2%	-7.0%	-3.6%
Electricity	0.0	0.1	0.1	0.0	0.5	0.0	10.8%	-3.2%	-13.3%	1220.6%	-100.0%
Gross Inland Consumption	951.9	1178.7	1520.9	1769.1	1854.2	1952.1	4.4%	5.2%	5.2%	4.8%	5.3%
Solids	411.2	552.9	707.9	790.2	836.7	871.8	6.1%	5.1%	3.7%	5.9%	4.2%
Oil	247.6	265.0	372.3	473.6	491.3	527.0	1.4%	7.0%	8.4%	3.7%	7.3%
Natural gas	26.6	46.5	76.0	97.4	105.9	113.5	11.8%	10.3%	8.6%	8.7%	7.2%
Other (1)	266.5	314.4	364.7	407.9	420.3	439.9	3.4%	3.0%	3.8%	3.0%	4.7%
Electricity Generation in TWh	637.1	908.9	1408.2	1808.3	1968.5	na	7.4%	9.2%	8.7%	8.9%	na
Nuclear	14.7	50.8	92.2	100.1	113.4	na	28.2%	12.7%	2.8%	13.3%	na
Hydro & wind	154.3	218.2	294.9	319.2	347.0	na	7.2%	6.2%	2.7%	8.7%	na
Thermal	468.1	639.9	1021.1	1389.0	1508.1	na	6.5%	9.8%	10.8%	8.6%	na
Generation Capacity in GWe	151.4	230.8	325.8	415.1	439.6	na	8.8%	7.1%	8.4%	5.9%	na
Nuclear	2.9	9.5	14.5	16.1	17.0	na	27.1%	8.8%	3.6%	5.6%	na
Hydro & wind	44.6	61.7	79.0	94.8	99.3	na	6.7%	5.1%	6.3%	4.8%	na
Thermal	103.9	159.6	232.3	304.3	323.2	na	9.0%	7.8%	9.4%	6.2%	na
Average Load Factor in %	48.0	45.0	49.3	49.7	51.1	na	-1.3%	1.9%	0.3%	2.8%	na
Fuel Inputs for Thermal Power Generation	140.4	183.4	297.5	395.3	428.1	na	5.5%	10.2%	9.9%	8.3%	na
Solids	84.2	132.2	224.4	305.4	333.6	na	9.4%	11.2%	10.8%	9.2%	na
Oil	51.6	39.2	47.9	55.3	52.6	na	-5.4%	4.1%	4.9%	-4.8%	na
Gas	2.8	7.6	19.6	28.7	35.3	na	21.7%	20.9%	13.6%	23.2%	na
Geothermal	1.8	4.4	5.7	5.9	6.6	na	20.0%	5.0%	1.4%	11.2%	na
Other	0.0	0.0	0.0	0.0	0.0	na	-	-	-	-	-
Average Thermal Efficiency in %	28.7	30.0	29.5	30.2	30.3	na	0.9%	-0.3%	0.8%	0.3%	na
Non-Energy Uses	21.9	25.9	34.9	42.5	71.5	na	3.4%	6.1%	6.8%	68.4%	na
Total Final Energy Demand	755.7	929.1	1145.5	1290.6	1311.4	na	4.2%	4.3%	4.1%	1.6%	na
Solids	299.7	390.0	443.7	448.1	436.8	na	5.4%	2.6%	0.3%	-2.5%	na
Oil	157.0	182.9	263.6	332.7	344.1	na	3.1%	7.6%	8.1%	3.4%	na
Gas	13.4	21.7	32.5	44.4	44.8	na	10.1%	8.5%	10.9%	0.8%	na
Electricity	44.9	63.8	98.1	120.4	132.8	na	7.3%	9.0%	7.1%	10.2%	na
Heat	7.4	9.1	14.8	18.2	21.6	na	4.3%	10.1%	7.2%	18.5%	na
Other	233.4	261.6	292.8	326.8	331.3	na	2.3%	2.3%	3.7%	1.4%	na
CO_2 Emissions in Mt of CO_2	2230.5	2845.4	3757.6	4482.5	4601.2	na	5.0%	5.7%	6.1%	2.6%	na
Indicators											
Population (Million)	2322.9	2533.8	2772.0	2918.6	2963.6	3018.8	1.8%	1.8%	1.7%	1.5%	1.9%
GDP (index 1985=100)	73.1	100.0	143.7	176.6	190.8	206.7	6.5%	7.5%	7.1%	8.1%	8.3%
Gross Inl Cons./GDP (toe/1990 MECU)	1469.2	1330.4	1194.9	1130.8	1096.7	1065.8	-2.0%	-2.1%	-1.8%	-3.0%	-2.8%
Gross Inl Cons./Capita (toe/inhabitant)	0.41	0.47	0.55	0.61	0.63	0.65	2.6%	3.4%	3.4%	3.2%	3.4%
Electricity Generated/Capita (kWh/inhabitant)	274	359	508	620	664	na	5.5%	7.2%	6.8%	7.2%	na
CO_2 Emissions/Capita (t of CO_2/inhabitant)	1.0	1.1	1.4	1.5	1.6	na	3.2%	3.8%	4.3%	1.1%	na
Import Dependency %	2.0	0.1	5.7	10.6	10.8	11.4	-44.7%	122.5%	22.8%	1.5%	6.0%

(1) Includes nuclear, hydro and wind, net imports of electricity, and other energy sources.
(2) Estimates

ASIA : MAIN INDICATORS

Mtoe	1980	1985	1990	1993	1994	85/80	90/85	93/90	94/93
						Annual % Change			
Gross Inland Consumption (Mtoe)	951.9	1178.7	1520.9	1769.1	1854.2	4.4%	5.2%	5.2%	4.8%
Public Thermal Power Generation	134.9	173.7	286.5	383.1	414.7	5.2%	10.5%	10.2%	8.2%
Autoprod. Thermal Power Generation	3.7	5.2	5.4	6.3	6.8	6.9%	0.8%	5.0%	8.3%
Energy Branch	15.8	17.3	22.4	52.5	54.2	1.8%	5.3%	32.8%	3.1%
Final Energy Consumption	755.7	929.1	1145.5	1290.6	1311.4	4.2%	4.3%	4.1%	1.6%
Industry	304.3	385.2	482.9	539.8	550.9	4.8%	4.6%	3.8%	2.0%
Transport	78.2	99.7	140.8	175.2	177.7	5.0%	7.1%	7.5%	1.4%
Tertiary-Domestic	373.3	444.2	521.8	575.6	582.8	3.5%	3.3%	3.3%	1.2%
Energy Intensity (toe/1990 MECU)	1469.2	1330.4	1194.9	1130.8	1096.7	-2.0%	-2.1%	-1.8%	-3.0%
Public Thermal Power Generation	208.2	196.1	225.1	244.9	245.3	-1.2%	2.8%	2.9%	0.2%
Autoprod. Thermal Power Generation	5.7	5.9	4.3	4.0	4.0	0.5%	-6.2%	-1.9%	0.2%
Industry	469.6	434.8	379.4	345.1	325.8	-1.5%	-2.7%	-3.1%	-5.6%
Transport	120.7	112.6	110.6	112.0	105.1	-1.4%	-0.3%	0.4%	-6.1%
Tertiary-Domestic	576.1	501.4	409.9	367.9	344.7	-2.7%	-3.9%	-3.5%	-6.3%
Energy per Capita (Kgoe/inhabitant)	410	465	549	606	626	2.6%	3.4%	3.4%	3.2%
Industry	131	152	174	185	186	3.0%	2.8%	2.0%	0.5%
Transport	34	39	51	60	60	3.2%	5.2%	5.7%	-0.1%
Tertiary-Domestic	161	175	188	197	197	1.8%	1.4%	1.6%	-0.3%
Electricity Share (%)									
Final Energy Consumption	5.9%	6.9%	8.6%	9.3%	10.1%	3.0%	4.5%	2.9%	8.5%
Industry	9.8%	10.7%	12.5%	12.9%	13.9%	1.8%	3.2%	1.0%	7.5%
Transport	0.6%	0.9%	1.0%	1.1%	1.2%	7.9%	1.6%	2.4%	9.7%
Tertiary-Domestic	3.9%	4.9%	6.9%	8.5%	9.3%	4.6%	7.3%	6.9%	9.6%
CO_2 Emissions (Mt of CO_2)	2230.5	2845.4	3757.6	4482.5	4601.2	5.0%	5.7%	6.1%	2.6%
Public Thermal Power Generation	483.6	640.2	1058.8	1420.0	1537.2	5.8%	10.6%	10.3%	8.3%
Autoprod. Thermal Power Generation	13.7	19.5	20.7	23.8	25.8	7.3%	1.1%	4.9%	8.4%
Energy Branch	37.9	34.9	41.0	125.6	128.9	-1.6%	3.3%	45.3%	2.6%
Industry	988.0	1244.6	1510.6	1659.6	1660.6	4.7%	3.9%	3.2%	0.1%
Transport	251.8	317.1	439.1	540.1	545.7	4.7%	6.7%	7.1%	1.0%
Tertiary-Domestic	455.5	589.1	687.5	696.3	681.6	5.3%	3.1%	0.4%	-2.1%
Carbon Intensity (tn of CO_2/toe)	2.3	2.4	2.5	2.5	2.5	0.6%	0.5%	0.8%	-2.1%
Public Power Generation	3.1	3.0	3.1	3.2	3.2	-0.6%	0.4%	1.2%	-0.3%
Public Thermal Power Generation	3.6	3.7	3.7	3.7	3.7	0.6%	0.1%	0.1%	0.0%
Autoprod. Power Generation	3.7	3.7	3.8	3.8	3.8	0.3%	0.3%	-0.2%	0.1%
Autoprod. Thermal Power Generation	3.7	3.8	3.8	3.8	3.8	0.3%	0.3%	-0.2%	0.1%
Energy Branch	2.4	2.0	1.8	2.4	2.4	-3.4%	-1.9%	9.4%	-0.5%
Industry	3.2	3.2	3.1	3.1	3.0	-0.1%	-0.6%	-0.6%	-1.9%
Transport	3.2	3.2	3.1	3.1	3.1	-0.3%	-0.4%	-0.4%	-0.4%
Tertiary-Domestic	1.2	1.3	1.3	1.2	1.2	1.7%	-0.1%	-2.8%	-3.3%
CO_2 per Capita (kg of CO_2/inhabitant)	960	1123	1356	1536	1553	3.2%	3.8%	4.3%	1.1%
Industry	425	491	545	569	560	2.9%	2.1%	1.4%	-1.6%
Transport	108	125	158	185	184	3.0%	4.8%	5.4%	-0.5%
Tertiary-Domestic	196	232	248	239	230	3.4%	1.3%	-1.2%	-3.6%
CO_2 per unit of GDP (tn of CO_2/1990 MECU)	3442	3212	2952	2865	2721	-1.4%	-1.7%	-1.0%	-5.0%
Public Thermal Power Generation	746	723	832	908	909	-0.6%	2.9%	3.0%	0.2%
Autoprod. Thermal Power Generation	21	22	16	15	15	0.8%	-5.9%	-2.1%	0.3%
Energy Branch	58	39	32	80	76	-7.6%	-3.9%	35.6%	-5.0%
Industry	1525	1405	1187	1061	982	-1.6%	-3.3%	-3.7%	-7.4%
Transport	389	358	345	345	323	-1.6%	-0.7%	0.0%	-6.5%
Tertiary-Domestic	703	665	540	445	403	-1.1%	-4.1%	-6.2%	-9.4%

CHINA : SUMMARY ENERGY BALANCE

Mtoe	1980	1985	1990	1993	1994	1995(2)	85/80	90/85	93/90	94/93	95/94
							Annual % Change				
Primary Production	543.9	707.8	840.8	920.8	972.2	1009.0	5.4%	3.5%	3.1%	5.6%	3.8%
Solids	303.9	27.4	529.1	575.3	620.0	649.6	7.1%	4.4%	2.8%	7.8%	4.8%
Oil	107.9	127.1	140.8	145.2	146.1	149.0	3.3%	2.1%	1.0%	0.6%	2.0%
Natural gas	12.0	10.8	12.8	14.1	14.7	15.6	-2.0%	3.4%	3.2%	4.7%	6.0%
Nuclear	0.0	0.0	0.0	0.4	3.6	3.3	-	-	-	767.0%	-8.9%
Hydro & Wind	5.0	7.9	10.9	13.1	14.5	16.4	9.7%	6.5%	6.4%	10.1%	13.3%
Geothermal	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-	-
Other	115.2	134.5	147.2	172.7	173.4	175.1	3.1%	1.8%	5.5%	0.4%	1.0%
Net Imports	-19.8	-39.2	-32.1	0.3	-9.8	-1.0	14.6%	-3.9%	-	-	-89.7%
Solids	-2.3	-2.9	-8.4	-11.5	-14.9	-9.6	4.8%	23.5%	11.3%	29.4%	-35.4%
Oil	-17.5	-36.3	-23.9	11.4	5.3	8.6	15.8%	-8.1%	-	-54.1%	63.9%
Crude oil	-13.2	-30.3	-21.4	-3.8	-6.1	na	18.1%	-6.7%	-44.0%	63.3%	na
Oil products	-4.3	-6.0	-2.4	15.2	11.4	na	6.9%	-16.7%	-	-25.0%	na
Natural gas	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-	-
Electricity	0.0	0.1	0.2	0.4	-0.2	0.0	-	11.5%	33.6%	-	-100.0%
Gross Inland Consumption	528.3	651.4	802.9	923.5	964.4	1004.2	4.3%	4.3%	4.8%	4.4%	4.1%
Solids	306.6	404.8	515.4	573.8	612.3	639.9	5.7%	4.9%	3.6%	6.7%	4.5%
Oil	89.6	93.3	116.5	149.1	146.1	153.9	0.8%	4.6%	8.6%	-2.0%	5.3%
Natural gas	12.0	10.8	12.8	14.1	14.7	15.6	-2.0%	3.4%	3.2%	4.7%	6.0%
Other (1)	120.2	142.5	158.2	186.6	191.3	194.8	3.5%	2.1%	5.7%	2.5%	1.8%
Electricity Generation in TWh	300.6	410.7	621.2	838.3	928.1	na	6.4%	8.6%	10.5%	10.7%	na
Nuclear	0.0	0.0	0.0	1.6	13.9	na	-	-	-	767.0%	na
Hydro & wind	58.2	92.4	126.7	152.8	168.3	na	9.7%	6.5%	6.4%	10.1%	na
Thermal	242.4	318.3	494.5	683.9	745.9	na	5.6%	9.2%	11.4%	9.1%	na
Generation Capacity in GWe	65.8	87.0	137.9	184.1	194.1	na	5.7%	9.6%	10.1%	5.4%	na
Nuclear	0.0	0.0	0.0	1.2	2.1	na	-	-	-	75.9%	na
Hydro & wind	20.3	26.4	36.0	44.9	46.0	na	5.4%	6.4%	7.6%	2.5%	na
Thermal	45.6	60.6	101.8	138.0	146.0	na	5.9%	10.9%	10.7%	5.8%	na
Average Load Factor in %	52.1	53.9	51.4	52.0	54.6	na	0.7%	-0.9%	0.4%	5.0%	na
Fuel Inputs for Thermal Power Generation	78.3	99.1	154.2	205.5	220.3	na	4.8%	9.2%	10.1%	7.2%	na
Solids	57.9	81.8	138.0	189.1	207.8	na	7.2%	11.0%	11.1%	9.9%	na
Oil	20.2	16.9	15.2	15.7	11.5	na	-3.5%	-2.1%	0.9%	-26.3%	na
Gas	0.2	0.3	0.9	0.8	1.0	na	11.7%	23.8%	-5.2%	29.4%	na
Geothermal	0.0	0.0	0.0	0.0	0.0	na	-	-	-	-	na
Other	0.0	0.0	0.0	0.0	0.0	na	-	-	-	-	na
Average Thermal Efficiency in %	26.6	27.6	27.6	28.6	29.1	na	0.7%	0.0%	1.2%	1.7%	na
Non-Energy Uses	8.5	7.3	7.5	7.2	34.0	na	-3.0%	0.5%	-1.0%	368.7%	na
Total Final Energy Demand	433.0	540.7	641.2	718.0	709.5	na	4.5%	3.5%	3.8%	-1.2%	na
Solids	230.5	299.2	345.0	354.8	343.4	na	5.4%	2.9%	0.9%	-3.2%	na
Oil	51.8	60.1	79.5	104.2	100.0	na	3.0%	5.8%	9.4%	-4.0%	na
Gas	6.8	7.9	10.8	12.9	9.3	na	3.2%	6.4%	6.1%	-27.7%	na
Electricity	21.3	29.9	44.0	55.1	61.7	na	7.0%	8.0%	7.9%	11.9%	na
Heat	7.4	9.1	14.8	18.2	21.6	na	4.3%	10.1%	7.2%	18.5%	na
Other	115.2	134.5	147.2	172.7	173.4	na	3.1%	1.8%	5.5%	0.4%	na
CO_2 Emissions in Mt of CO_2	1400.7	1778.0	2248.5	2670.1	2671.7	na	4.9%	4.8%	5.9%	0.1%	na
Population (Million)	981.23	1051.01	1135.16	1178.40	1190.92	1215.93	1.4%	1.6%	1.3%	1.1%	2.1%
GDP (index 1985=100)	62.4	100.0	145.3	205.4	230.8	254.3	9.9%	7.8%	12.2%	12.4%	10.2%
Gross Inl Cons./GDP (toe/1990 MECU)	4411.7	3395.9	2881.6	2343.9	2178.5	2058.4	-5.1%	-3.2%	-6.7%	-7.1%	-5.5%
Gross Inl Cons./Capita (toe/inhabitant)	0.54	0.62	0.71	0.78	0.81	0.83	2.9%	2.7%	3.5%	3.3%	2.0%
Electricity Generated/Capita (kWh/inhabitant)	306	391	547	711	779	na	5.0%	7.0%	9.1%	9.6%	na
CO_2 Emissions/Capita (t of CO_2/inhabitant)	1.4	1.7	2.0	2.3	2.2	na	3.5%	3.2%	4.6%	-1.0%	na
Import Dependency %	-3.7	-6.0	-4.0	0.0	-1.0	-0.1	9.9%	-7.9%	-	-	-90.1%

(1) Includes nuclear, hydro and wind, net imports of electricity, and other energy sources.
(2) Estimates

INDIA : SUMMARY ENERGY BALANCE

Mtoe	1980	1985	1990	1993	1994	1995(2)	85/80	90/85	93/90	94/93	95/94
							Annual % Change				
Primary Production	123.6	172.8	222.8	238.9	249.2	262.7	6.9%	5.2%	2.3%	4.3%	5.4%
Solids	58.1	75.5	104.4	121.7	126.0	132.5	5.4%	6.7%	5.3%	3.6%	5.1%
Oil	9.6	30.9	34.9	28.5	30.6	34.2	26.3%	2.5%	-6.6%	7.4%	11.7%
Natural gas	1.2	4.0	10.2	13.3	14.9	16.1	26.3%	20.7%	9.3%	11.6%	8.1%
Nuclear	0.8	1.3	1.6	1.4	1.4	2.0	10.7%	4.3%	-4.2%	1.9%	39.5%
Hydro & Wind	4.0	4.4	6.2	6.1	7.1	7.7	1.9%	7.0%	-0.6%	17.1%	8.7%
Geothermal	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-	-
Other	49.8	56.8	65.6	67.9	69.2	70.2	2.7%	2.9%	1.2%	1.8%	1.5%
Net Imports	23.5	16.8	29.7	43.7	47.6	49.5	-6.5%	12.1%	13.7%	9.0%	3.9%
Solids	0.3	1.1	3.5	4.3	5.4	6.2	32.3%	24.7%	7.6%	24.1%	16.0%
Oil	23.3	15.7	26.1	39.3	42.2	43.1	-7.6%	10.8%	14.6%	7.4%	2.3%
Crude oil	16.3	13.0	21.3	31.0	33.3	na	-4.4%	10.2%	13.4%	7.4%	na
Oil products	6.9	2.6	4.9	8.3	8.9	na	-17.7%	13.2%	19.5%	7.4%	na
Natural gas	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-	-
Electricity	0.0	0.0	0.1	0.1	0.1	0.1	19.7%	-	-3.4%	4.8%	0.0%
Gross Inland Consumption	143.7	186.8	249.6	279.8	295.8	309.6	5.4%	6.0%	3.9%	5.7%	4.7%
Solids	56.3	76.3	106.0	126.3	133.6	138.7	6.3%	6.8%	6.0%	5.8%	3.8%
Oil	31.5	44.0	59.9	64.7	69.5	74.7	6.9%	6.4%	2.6%	7.4%	7.6%
Natural gas	1.2	4.0	10.2	13.3	14.9	16.1	26.3%	20.7%	9.3%	11.6%	8.3%
Other (1)	54.6	62.5	73.5	75.5	77.8	80.0	2.7%	3.3%	0.9%	3.1%	2.9%
Electricity Generation in TWh	119.3	183.4	289.4	356.3	386.5	na	9.0%	9.6%	7.2%	8.5%	na
Nuclear	3.0	5.0	6.1	5.4	5.5	na	10.7%	4.3%	-4.2%	1.9%	na
Hydro & wind	46.6	51.0	71.7	70.4	82.5	na	1.9%	7.0%	-0.6%	17.1%	na
Thermal	69.7	127.4	211.6	280.4	298.5	na	12.8%	10.7%	9.8%	6.4%	na
Generation Capacity in GWe	33.3	52.3	73.7	87.4	91.5	na	9.4%	7.1%	5.9%	4.7%	na
Nuclear	0.9	1.3	1.6	2.0	2.0	na	9.1%	3.3%	8.6%	0.0%	na
Hydro & wind	11.8	15.5	18.8	20.4	20.9	na	5.6%	3.9%	2.8%	2.6%	na
Thermal	20.6	35.5	53.3	65.0	68.6	na	11.4%	8.5%	6.8%	5.5%	na
Average Load Factor in %	40.9	40.0	44.9	46.5	48.2	na	-0.4%	2.3%	1.2%	3.7%	na
Fuel Inputs for Thermal Power Generation	22.2	34.0	62.5	87.5	94.9	na	8.8%	13.0%	11.8%	8.4%	na
Solids	19.0	30.2	56.7	81.2	88.0	na	9.7%	13.4%	12.7%	8.3%	na
Oil	2.8	2.7	2.9	2.4	2.6	na	-0.6%	1.3%	-6.2%	7.4%	na
Gas	0.4	1.1	3.0	3.9	4.4	na	21.4%	22.8%	9.6%	11.6%	na
Geothermal	0.0	0.0	0.0	0.0	0.0	na	-	-	-	-	na
Other	0.0	0.0	0.0	0.0	0.0	na	-	-	-	-	na
Average Thermal Efficiency in %	27.0	32.2	29.1	27.6	27.0	na	3.6%	-2.0%	-1.8%	-1.8%	na
Total Final Energy Demand	112.0	146.1	181.2	192.1	200.3	na	5.4%	4.4%	2.0%	4.3%	na
Solids	30.6	43.0	45.5	42.2	42.2	na	7.0%	1.1%	-2.5%	0.0%	na
Oil	23.2	32.5	45.8	51.5	55.8	na	7.0%	7.1%	4.0%	8.2%	na
Gas	0.7	2.3	5.7	7.2	8.0	na	27.3%	19.5%	8.1%	11.6%	na
Electricity	7.7	11.4	18.5	23.2	25.2	na	8.3%	10.2%	7.8%	8.5%	na
Heat	0.0	0.0	0.0	0.0	0.0	na	-	-	-	-	na
Other	49.8	56.8	65.6	67.9	69.2	na	2.7%	2.9%	1.2%	1.8%	na
CO_2 Emissions in Mt of CO_2	286.4	414.0	583.0	688.1	731.8	na	7.6%	7.1%	5.7%	6.4%	na
Indicators											
Population (Million)	688.86	762.87	844.85	898.20	913.60	927.30	2.1%	2.1%	2.1%	1.7%	1.5%
GDP (index 1985=100)	77.0	100.0	136.0	148.0	155.7	166.3	5.4%	6.3%	2.9%	5.2%	6.8%
Gross Inl Cons./GDP (toe/1990 MECU)	1083.2	1084.7	1065.7	1097.3	1103.1	1081.0	0.0%	-0.4%	1.0%	0.5%	-2.0%
Gross Inl Cons./Capita (toe/inhabitant)	0.21	0.24	0.30	0.31	0.32	0.33	3.3%	3.8%	1.8%	3.9%	3.1%
Electricity Generated/Capita (kWwh/inhabitant)	173	240	343	397	423	na	6.8%	7.3%	5.0%	6.7%	na
CO_2 Emissions/Capita (t of CO_2/inhabitant)	0.4	0.5	0.7	0.8	0.8	na	5.5%	4.9%	3.5%	4.6%	na
Import Dependency %	16.4	9.0	11.9	15.6	16.1	16.0	-11.3%	5.7%	9.5%	3.1%	-0.7%

(1) Includes nuclear. hydro and wind, net imports of electricity, and other energy sources.
(2) Estimates

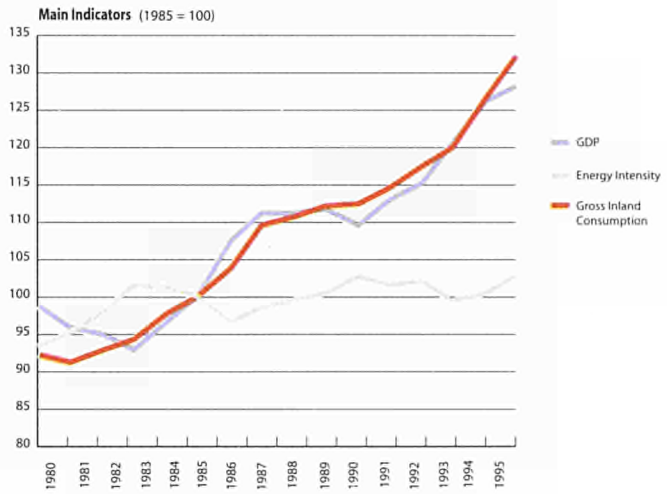
PART IX LATIN AMERICA

LATIN AMERICA: Recent evolution (1985-1995)

- Sustained by the economic growth, gross inland energy consumption boomed in 1994 and 1995
- Renewable sources are the second contributor to primary energy requirements
- Natural gas contribution doubled since 1980
- Hydrocarbon production boosted by drastic restructuring and privatisation
- The structure of final consumption by sector remains stable
- Long term elasticity of electricity demand to GDP limited to only 1.5
- Energy intensity revived in 1995 to the peak reached in 1990
- The energy consumption per inhabitant, stable between 1980-1993, increased by 3.5 % in 1994 and 1995
- CO_2 emission indicators, stable during the 80's, are increasing since 1990

Sustained economic activity in the 90's...

Latin America includes all the countries of Central and South America (excluding Mexico) and the Caribbean islands. It is a mix of large and medium countries, such as Brazil or Venezuela, located in South America and a multitude of smaller ones with different economic structures and energy resources, mainly located in Central America. In general, the level of economic development is intermediate, between the OECD members and the less developed countries of Africa and Asia. In 1995, the average GDP per capita in Latin America was 2.1 thousand 1990 ECU per inhabitant, or five times less than the European average, but nearly the triple of Asia. Since the beginning of the 90's the GDP growth rate is more sustained than during the 80's with an average of almost 3.2% per year compared to only 1% per year during the 80's.



ENERGY OUTLOOK

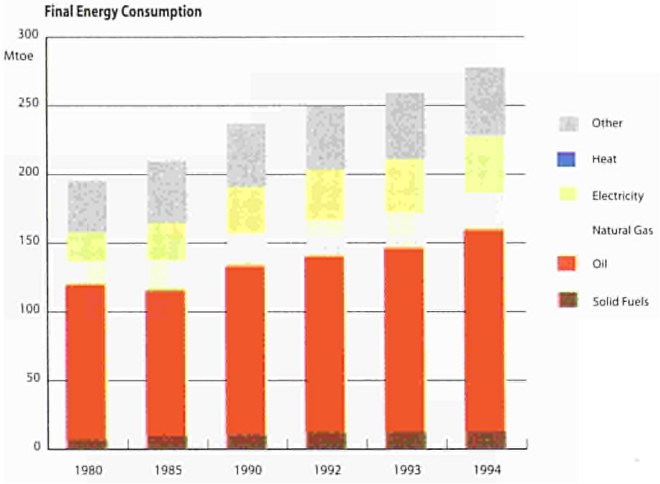
Final energy consumption jumped by 7% in 1994....

Final energy consumption has increased steadily by about 2.5% during the 80's. Sustained by economic growth, the increase has reached 4.0% per year since 1990, marked by a 7.0% jump in 1994. This growth was satisfied by oil (42% of the overall increment), electricity (24%), biomass (14%), gas (13%) and solid fuels (7% of the overall increment). It must be noted that, since the 80's, the alcohol program developed in Brazil has favourably influenced the contribution of biomass. The share of Brazil in total final demand in Latin America is stable since 1980 at about 42%. Therefore, developments in the final energy demand in Latin America were dominated by the evolution of demand in Brazil, except in the case of natural gas whose development was determined by Argentina and Venezuela which are also the main gas producers.

1 Excluding Mexico

The structure by sector of final energy consumption remains stable...

The structure by sector of final energy consumption remained to very stable since 1980 with about 39% of total consumption for the industrial sector, 33% for transportation and only 28% for tertiary-domestic sector. This stability reflects the share of industrial sectors in the gross domestic production and the increasing share of high- intense energy industries in relation to the transfer of heavy industries from the industrialised countries. As in the OECD, the contribution of transport to the final consumption of oil is close to 60%, reflecting the traffic saturation of major cities (Mexico, Sao Paulo, Rio de Janeiro, ...).



The long term elasticity of electricity demand versus GDP reached 1.5...

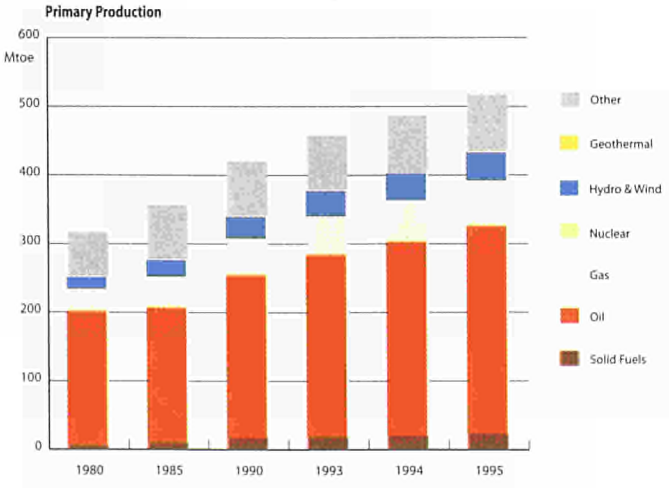
The share of electricity in final consumption reached 15% in 1994 from 13% in 1985 and 11% in 1980. The level of electrification varies largely through Latin America, as the electricity share comprised between 5.2% in Guatemala and 18.8% in Salvador. The long-term elasticity of electricity demand to GDP reached 1.5 in the period 1980-1994, a relatively low level for developing countries where living standards are improving.

Gross Inland Consumption was booming in 1994 and 1995...

Gross inland energy consumption was dominated by oil (48% of total in 1995 from 53% in 1980). After oil, renewable energy sources, mainly biomass (83 Mtoe in 1995) and hydro (41 Mtoe in 1995), came second in satisfying 32% of total demand in 1994 as in 1980. Natural gas contributions doubled in these last fifteen years and represented 16% of the total in 1995 (11% in 1980). Solid fuels remained marginal with only 5% of the 1995 total, the bulk of consumption being located in Brazil. There is also some participation of nuclear energy but it represents less than 1% of the total in 1994. Since 1990, additional consumption of about 61 Mtoe has been covered respectively by oil (52 %), natural gas (21%), hydro (15%), biomass (6%) and solid fuels (4%).

Hydrocarbon production boosted by drastic restructuring and privatisation...

Indigenous **energy production** has grown since 1980 on average by more than 3.3% per year, with an even more noticeable acceleration in 1994 (6.2%) and 1995 (6.5%). Production was dominated by oil (58% of total in 1995) followed by biomass (16%), natural gas (12%), hydro and wind (8%), solid fuels (5%) and nuclear (less than 1%). In 1995, Venezuela dominated largely oil (50%) and natural gas production (37%), Brazil being mainly responsible for hydro and biomass (54% and 66% respectively). Hydrocarbon production was boosted in a lot of countries since the beginning of the 90's as a result of two developments: the drastic restructuring and privatisation of former state oil and gas companies and increased private foreign investment encouraged by changes in investment law and more favourable tax regimes.



Hydro dominated electricity generation...

Electricity generation in the region grew steadily by 5% per year in the period 1980-1995. Hydro electricity production dominated total generation with 77% in 1995 (66% in 1980). Thermal generation satisfying 21% of total generation in 1995 has grown by 2 % on average since 1980. Input needs are covered equally by oil and gas (38% in 1995) followed by solid fuels (12%) and biomass (8%). But the picture differs at country level. In the case of Brazil where the contribution of thermal power is represented by only 7% of total production, solid fuels, oil, and biomass shared inputs for thermal generation in 1993 almost equally. In Venezuela and Argentina, gas dominated the fuel inputs with 79% and 70% respectively in 1994.

The total generation capacity reached 148 GWe in 1994, of which 64% is hydro (53% in 1980), 35% thermal units (47% in 1980) and 1% nuclear. Since 1980, new commissioning has been shared between hydro for 52 GWe (79% of the total), thermal for 13 GWe and nuclear for 1 GWe. Two of the biggest hydro power stations in the world are in service, Itaipu (12.6 GWe) shared by Brazil and Paraguay and Guri (10.3 GWe) in Venezuela. The hydro potential remains, with Asia, the largest in the world.

Refining capacity increasing slowly...

In 1995, the **refinery capacity** (6.23 million barrels day) represented 8.5% of world capacity (7.8% in 1985). Since 1985, the increasing growth rate reached 1% per year. But the utilisation rate of the refineries (77% in 1995 from 75% in 1985) remained largely under the world average (82% in 1995 from 75% in 1985).

COMPETITIVENESS

Energy intensity returned in 1995 to the peak reached in 1980...

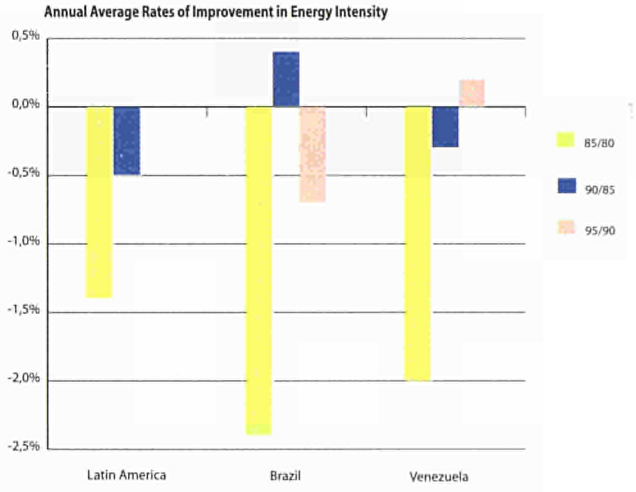
The **energy intensity** indicator for the region had a contrasting evolution in the period 1980-1995. It increased by 1.4% per year over the period 1980-1985, by 0.5% over the period 1986-1990, decreased by 1% on an average 1990-1993 but was rebounding in 1994 by 0.9% and in 1995 by 2.5% to return in 1995 to the 1990 level. This reflects contrasting economic conditions in the region since 1990. Compared to the European Union, the energy intensity of Brazil and Venezuela was, in 1995, 70% and 356% higher respectively, being 112% higher for the region as a whole.

LATIN AMERICA : ENERGY INTENSITY

toe/1990 MECU	1980	1985	1990	1993	1994	1995(1)
Latin America	463.5	496.5	509.7	494.0	498.4	510.7
Argentina	337.8	371.2	287.5	350.9	353.3	387.6
Brazil	358.6	403.5	396.5	398.2	403.7	410.7
Colombia	807.7	842.8	825.4	768.0	769.2	770.9
Venezuela	996.1	1097.8	1112.3	1021.8	1082.8	1100.8

(1) estimates

It must be stressed that, in spite of industrial development and improving standards of living, the energy intensity by sector has been very stable during these last fifteen years, with improvements in power generation compensating for the increasing intensity of the transport sector.



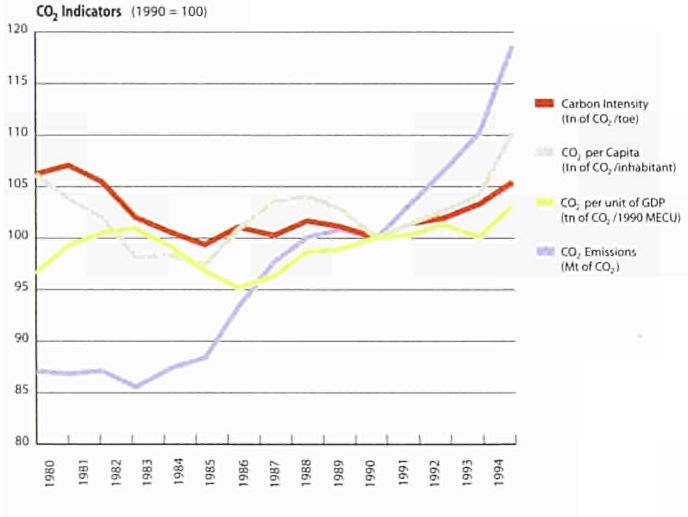
Energy consumption per capita, stable between 1980-1993, increased by 3,5% in 1994 and 1995...

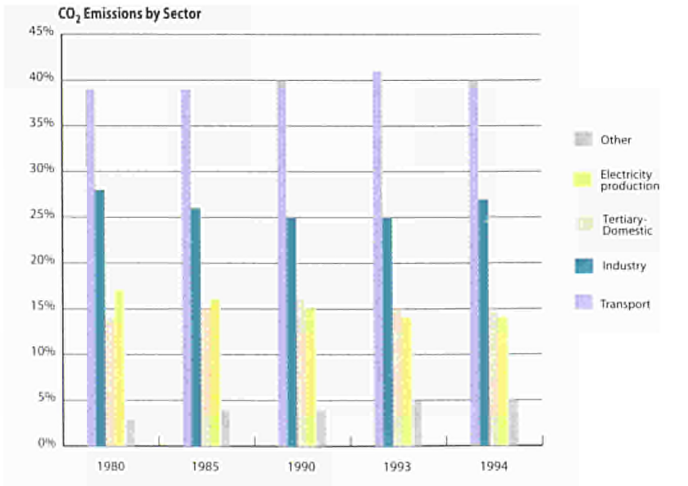
If we exclude the jump by 3.7% in 1994, the energy consumption per capita has also been quite stable since 1980. But by sector, increasing trends appeared clearly in the transport and the domestic sectors in connection with improving standards of living. Nevertheless, the per capita consumption remains well below the European level with only 43% for industry, 33% for transport and only 22% for tertiary and domestic sectors.

ENVIRONMENT

CO_2 emissions indicators, stable during the 80's, have been increasing since 1990...

In general terms, the CO_2 emissions are increasing continuously over the past fifteen years (697 million tonnes of CO_2 in 1994, compared to 587 million tonnes in 1990, 519 million tonnes in 1985 and 511 million tonnes in 1980). Whereas CO_2 emissions increased annually by 1.4% on average during the 80's, the growth has accelerated significantly by more than 4% per year since 1990. This global change must be kept under control. CO_2 emissions per capita decreased by 0.6% per year during the 80's but increased by 2.5% since 1990. CO_2 intensity per unit of GDP grew by 0.4% per year during the 80's and by only 0.8% these last four years. Finally, the carbon intensity has been stable since 1980.





Looking at CO_2 emissions by sector at a regional level, the first conclusion is that the largest sector in terms of emission is the transport sector which largely occupied the first place with about 40% of total emissions since 1980. The industrial sector accounted for about 27%, increasing slowly since 1990. The tertiary-domestic sector was quite stable at about 15% the same level as the electricity generation sector, the share of which was continually declining since 1980.

GLOBAL MARKETS

The region was a net exporter of oil...

Over the whole period, this region was a net **exporter of energy**. This picture is dominated by oil which accounts for 97% of total exports in 1995 (101 Mtoe in 1995 from 30 Mtoe in 1980), of which two thirds consisted of crude oil and one third in refined products. In 1995, net oil exports of Venezuela, one of the founders of OPEC, represented more than the net total oil exports of the region, with Argentina and Colombia also increasing their contribution since the beginning of the 90's. Oil exports are mainly oriented towards the United States (82% of the market), Western Europe being the second market with only 11% in 1995. Brazil remains a large net oil importer with oil accounting for 76% of its total imports. Despite the limited production of solid fuels, the region became a net exporter in 1990, in relation to the efforts made by Columbia to valorise its reserves.

LATIN AMERICA : NET IMPORTS

Mtoe	1980	1985	1990	1993	1994	1995(1)
Latin America	-29.5	-44.1	-63.7	-79.2	-93.3	-101.4
Argentina	1.3	-3.8	-4.9	-7.0	-11.9	-13.1
Brazil	44.6	23.3	28.5	33.9	33.5	38.3
Colombia	1.3	-0.7	-11.5	-11.6	-11.5	-17.5
Venezuela	-98.2	-71.7	-96.1	-114.2	-122.0	-131.3

(1) estimates

LATIN AMERICA : SUMMARY ENERGY BALANCE

Mtoe	1980	1985	1990	1993	1994	1995(2)	85/80	90/85	93/90	94/93	95/94
							Annual % Change				
Primary Production	317.0	357.3	420.7	458.6	486.9	518.5	2.4%	3.3%	2.9%	6.2%	6.5%
Solid fuels	6.2	10.5	18.4	19.3	20.9	23.6	11.2%	11.8%	1.5%	8.7%	12.9%
Oil	195.1	196.1	235.7	264.8	282.0	302.1	0.1%	3.7%	4.0%	6.5%	7.1%
Natural gas	32.5	43.4	51.8	54.3	58.7	64.1	5.9%	3.6%	1.6%	8.1%	9.2%
Nuclear	0.6	2.4	2.5	2.1	2.2	2.6	31.3%	0.8%	-5.1%	1.4%	20.9%
Hydro & Wind	17.3	24.6	31.7	37.3	39.3	41.0	7.3%	5.2%	5.6%	5.2%	4.4%
Geothermal	0.7	1.0	1.1	1.1	1.6	1.6	8.7%	1.0%	2.4%	41.7%	-0.1%
Other	64.7	79.4	79.6	79.7	82.2	83.4	4.2%	0.1%	0.0%	3.2%	1.5%
Net Imports	-24.4	-39.5	-64.7	-83.0	-95.2	-104.7	10.1%	10.4%	8.6%	14.7%	10.1%
Solid fuels	5.1	5.0	-0.7	-3.0	-1.8	-3.8	-0.4%	-	65.8%	-39.9%	107.0%
Oil	-29.5	-44.1	-63.7	-79.2	-93.3	-101.4	8.4%	7.6%	7.5%	17.8%	8.6%
Crude oil	30.3	-6.5	-26.0	-49.8	-65.1	na	-	32.0%	24.2%	30.6%	na
Oil products	-59.8	-37.6	-37.7	-29.4	-28.2	na	-8.9%	0.0%	-7.9%	-3.9%	na
Natural gas	0.0	-0.1	-0.2	-0.3	0.1	0.4	30.5%	34.8%	10.8%	-	277.2%
Electricity	0.0	-0.4	-0.1	-0.4	-0.1	0.0	88.9%	-20.9%	49.1%	-67.6%	-100.0%
Gross Inland Consumption	284.1	308.3	346.5	369.7	390.2	407.4	1.6%	2.4%	2.2%	5.5%	4.4%
Solid fuels	11.0	15.7	17.4	17.3	19.3	19.8	7.5%	2.0%	-0.2%	11.5%	2.9%
Oil	157.4	142.2	162.8	178.6	186.9	194.3	-2.0%	2.7%	3.1%	4.7%	4.0%
Natural gas	32.5	43.3	51.5	54.0	58.8	64.5	5.9%	3.5%	1.5%	9.0%	9.7%
Other (1)	83.2	107.0	114.7	119.9	125.1	128.7	5.2%	1.4%	1.5%	4.4%	2.8%
Electricity Generation in TWh	299.6	397.2	492.4	562.4	589.9	618.2	5.8%	4.4%	4.5%	4.9%	4.8%
Nuclear	2.3	9.1	9.5	8.1	8.3	10.0	31.3%	0.8%	-5.1%	1.4%	21.3%
Hydro & wind	200.8	286.0	368.4	434.1	456.9	478.4	7.3%	5.2%	5.6%	5.2%	4.7%
Thermal	96.5	102.0	114.5	120.2	124.8	129.8	1.1%	2.3%	1.6%	3.8%	4.0%
Generation Capacity in GWe	82.4	105.5	134.2	143.3	147.9	na	5.1%	4.9%	2.2%	3.2%	na
Nuclear	0.4	1.7	1.7	1.7	1.7	na	35.3%	0.0%	0.0%	0.0%	na
Hydro & wind	43.6	60.3	85.1	92.3	95.1	na	6.7%	7.1%	2.8%	3.0%	na
Thermal	38.4	43.5	47.4	49.3	51.2	na	2.5%	1.7%	1.3%	3.8%	na
Average Load Factor in %	41.5	43.0	41.9	44.8	45.5	na	0.7%	-0.5%	2.3%	1.6%	na
Fuel Inputs for Thermal Power Generation	30.7	31.6	34.9	36.1	37.5	na	0.6%	2.0%	1.2%	3.9%	na
Solid fuels	2.3	3.1	4.2	3.5	4.5	na	5.9%	6.4%	-6.6%	29.9%	na
Oil	17.7	13.2	12.8	14.2	14.3	na	-5.8%	-0.6%	3.6%	0.5%	na
Gas	8.3	12.1	13.5	14.5	14.1	na	7.7%	2.2%	2.3%	-2.8%	na
Geothermal	0.7	1.0	1.1	1.1	1.6	na	8.7%	1.0%	2.4%	41.7%	na
Other	1.7	2.3	3.3	2.8	3.1	na	6.2%	7.8%	-4.9%	7.9%	na
Average Thermal Efficiency in %	27.0	27.7	28.3	28.6	28.6	na	0.5%	0.4%	0.5%	-0.1%	na
Non-Energy Uses	10.4	14.2	15.7	17.4	14.3	na	6.3%	2.0%	3.6%	-18.2%	na
Total Final Energy Demand	195.2	209.4	236.8	259.0	277.1	na	1.4%	2.5%	3.0%	7.0%	na
Solid fuels	7.0	10.4	10.7	12.5	13.0	na	8.3%	0.7%	5.3%	3.5%	na
Oil	112.7	105.2	122.6	133.6	146.6	na	-1.4%	3.1%	2.9%	9.7%	na
Gas	15.9	20.6	22.5	24.9	26.4	na	5.3%	1.8%	3.5%	6.0%	na
Electricity	21.5	28.0	34.4	39.4	41.2	na	5.4%	4.2%	4.6%	4.7%	na
Heat	0.0	0.0	0.0	0.0	0.0	na	-	-	-	-	na
Other	38.0	45.3	46.7	48.5	49.8	na	3.6%	0.6%	1.3%	2.7%	na
CO_2 Emissions in Mt of CO_2	510.9	518.7	586.9	646.7	696.6	na	0.3%	2.5%	3.3%	7.7%	na
Population (Million)	285.63	316.29	348.42	368.42	374.96	378.71	2.1%	2.0%	1.9%	1.8%	1.0%
GDP (index 1985=100)	98.7	100.0	109.5	120.5	126.1	128.4	0.3%	1.8%	3.3%	4.6%	1.9%
Gross Inl Cons./GDP (toe/1990 MECU)	463.5	496.5	509.7	494.0	498.4	510.7	1.4%	0.5%	-1.0%	0.9%	2.5%
Gross Inl Cons./Capita (toe/inhabitant)	0.99	0.97	0.99	1.00	1.04	1.08	-0.4%	0.4%	0.3%	3.7%	3.4%
Electricity Generated/Capita (kWh/inhabitant)	1049	1256	1413	1527	1573	na	3.7%	2.4%	2.6%	3.0%	na
CO_2 Emissions/Capita (t of CO_2/inhabitant)	1.8	1.6	1.7	1.8	1.9	na	-1.7%	0.5%	1.4%	5.8%	na
Import Dependency %	-8.3	-12.5	-18.3	-22.0	-23.9	-25.3	8.4%	8.0%	6.3%	8.8%	5.7%

(1) Includes nuclear, hydro and wind, net imports of electricity, and other energy sources.
(2) Estimates

LATIN AMERICA : MAIN INDICATORS

Mtoe	1980	1985	1990	1993	1994	85/80	90/85	93/90	94/93
						Annual % Change			
Gross Inland Consumption (Mtoe)	284.1	308.3	346.5	369.7	390.2	1.6%	2.4%	2.2%	5.5%
Public Thermal Power Generation	22.1	22.0	24.8	25.2	25.6	-0.1%	2.4%	0.5%	1.8%
Autoprod. Thermal Power Generation	8.0	8.7	9.0	9.8	10.3	1.7%	0.8%	2.8%	5.0%
Energy Branch	12.1	17.0	17.4	20.6	21.9	7.1%	0.5%	5.7%	6.3%
Final Energy Consumption	195.2	209.4	236.8	259.0	277.1	1.4%	2.5%	3.0%	7.0%
Industry	76.1	79.9	88.5	94.1	105.0	1.0%	2.1%	2.0%	11.6%
Transport	65.0	66.6	76.6	85.7	90.7	0.5%	2.8%	3.8%	5.8%
Tertiary-Domestic	54.1	62.9	71.7	79.1	81.4	3.1%	2.7%	3.3%	2.9%
Energy Intensity (toe/1990 MECU)	463.5	496.5	509.7	494.0	498.4	1.4%	0.5%	-1.0%	0.9%
Public Thermal Power Generation	36.1	35.4	36.5	33.6	32.7	-0.4%	0.6%	-2.7%	-2.7%
Autoprod. Thermal Power Generation	13.0	13.9	13.3	13.1	13.1	1.5%	-1.0%	-0.4%	0.4%
Industry	124.1	128.7	130.2	125.7	134.1	0.7%	0.2%	-1.2%	6.7%
Transport	106.0	107.3	112.6	114.6	115.8	0.2%	1.0%	0.6%	1.1%
Tertiary-Domestic	88.3	101.3	105.5	105.7	104.0	2.8%	0.8%	0.1%	-1.7%
Energy per capita (Kgoe/inhabitant)	995	975	995	1004	1041	-0.4%	0.4%	0.3%	3.7%
Industry	266	253	254	255	280	-1.0%	0.1%	0.2%	9.6%
Transport	228	211	220	233	242	-1.5%	0.9%	1.9%	3.9%
Tertiary-Domestic	189	199	206	215	217	1.0%	0.7%	1.4%	1.1%
Electricity Share (%)									
Final Energy Consumption	11.0%	13.4%	14.5%	15.2%	14.9%	3.9%	1.7%	1.5%	-2.2%
Industry	14.7%	18.3%	19.6%	20.6%	19.4%	4.4%	1.4%	1.5%	-5.6%
Transport	0.2%	0.2%	0.2%	0.2%	0.2%	5.4%	-0.1%	2.2%	-5.9%
Tertiary-Domestic	18.9%	21.0%	23.5%	25.1%	25.4%	2.2%	2.2%	2.2%	1.2%
CO_2 Emissions (Mt of CO_2)	510.9	518.7	586.9	646.7	696.6	0.3%	2.5%	3.3%	7.7%
Public Thermal Power Generation	65.4	63.3	70.4	72.2	74.4	-0.6%	2.1%	0.9%	3.0%
Autoprod. Thermal Power Generation	19.0	19.7	19.3	21.3	22.4	0.6%	-0.3%	3.2%	5.2%
Energy Branch	12.9	20.2	21.9	30.7	31.8	9.3%	1.6%	12.0%	3.7%
Industry	141.6	132.3	147.8	160.2	186.3	-1.3%	2.2%	2.7%	16.3%
Transport	199.3	204.2	234.8	262.5	277.6	0.5%	2.8%	3.8%	5.7%
Tertiary-Domestic	72.6	79.0	92.7	99.8	104.0	1.7%	3.2%	2.5%	4.3%
Carbon Intensity (tn of CO_2/toe)	1.8	1.7	1.7	1.7	1.8	-1.3%	0.1%	1.1%	2.1%
Public Power Generation	1.6	1.3	1.2	1.1	1.1	-4.7%	-1.6%	-2.2%	-1.3%
Public Thermal Power Generation	3.0	2.9	2.8	2.9	2.9	-0.5%	-0.3%	0.4%	1.3%
Autoprod. Power Generation	2.2	2.1	2.0	2.0	2.0	-1.1%	-1.1%	0.6%	0.1%
Autoprod. Thermal Power Generation	2.4	2.3	2.1	2.2	2.2	-1.0%	-1.1%	0.4%	0.2%
Energy Branch	1.1	1.2	1.3	1.5	1.5	2.0%	1.1%	5.9%	-2.4%
Industry	1.9	1.7	1.7	1.7	1.8	-2.3%	0.2%	0.7%	4.2%
Transport	3.1	3.1	3.1	3.1	3.1	0.0%	0.0%	0.0%	0.0%
Tertiary-Domestic	1.3	1.3	1.3	1.3	1.3	-1.3%	0.6%	-0.8%	1.4%
CO_2 per Capita (kg of CO_2/inhabitant)	1789	1640	1685	1755	1858	-1.7%	0.5%	1.4%	5.8%
Industry	496	418	424	435	497	-3.4%	0.3%	0.9%	14.3%
Transport	698	646	674	713	740	-1.5%	0.9%	1.9%	3.8%
Tertiary-Domestic	254	250	266	271	277	-0.3%	1.2%	0.6%	2.2%
CO_2 per unit of GDP (tn of CO_2/1990 MECU)	833	835	863	864	890	0.0%	0.7%	0.0%	3.0%
Public Thermal Power Generation	107	102	104	97	95	-0.9%	0.3%	-2.3%	-1.5%
Autoprod. Thermal Power Generation	31	32	28	28	29	0.4%	-2.1%	0.0%	0.5%
Energy Branch	21	32	32	41	41	9.0%	-0.2%	8.4%	-0.8%
Industry	231	213	217	214	238	-1.6%	0.4%	-0.5%	11.2%
Transport	325	329	345	351	355	0.2%	1.0%	0.5%	1.1%
Tertiary-Domestic	118	127	136	133	133	1.4%	1.4%	-0.7%	-0.3%

BRAZIL : SUMMARY ENERGY BALANCE

Mtoe	1980	1985	1990	1993	1994	1995(2)	85/80	90/85	93/90	94/93	95/94
							Annual % Change				
Primary Production	68.5	111.0	114.2	115.7	120.7	127.0	10.1%	0.6%	0.4%	4.3%	5.2%
Solid fuels	2.5	3.5	2.0	2.0	2.3	2.4	7.1%	-10.2%	0.0%	13.0%	6.9%
Oil	10.7	32.7	38.4	39.6	41.1	42.4	25.1%	3.3%	1.1%	3.6%	3.2%
Natural gas	1.0	2.2	3.3	3.8	4.0	4.2	17.4%	8.3%	4.7%	3.6%	4.8%
Nuclear	0.0	0.9	0.6	0.1	0.0	0.7	-	-7.9%	-41.8%	-87.6%	4784.9%
Hydro & Wind	11.1	15.3	7.8	20.2	20.9	22.3	6.7%	3.0%	4.3%	3.5%	6.7%
Geothermal	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-	-
Other	43.2	56.4	52.1	49.9	52.5	55.0	5.5%	-1.6%	-1.4%	5.1%	4.8%
Net Imports	48.2	29.5	38.6	45.1	45.6	50.5	-9.4%	5.5%	5.4%	1.1%	10.9%
Solid fuels	3.7	5.9	7.8	8.8	9.3	9.4	10.2%	5.6%	4.1%	6.2%	0.3%
Oil	44.6	23.3	28.5	33.9	33.5	38.3	-12.1%	4.1%	6.0%	-1.2%	14.5%
Crude oil	43.4	27.4	28.9	25.9	28.1	na	-8.8%	1.0%	-3.6%	8.6%	na
Oil products	1.2	-4.1	-0.4	8.0	5.4	na	-	-37.0%	-	-32.9%	na
Natural gas	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-	-
Electricity	0.0	0.2	2.3	2.4	2.7	2.8	-	69.2%	1.3%	14.9%	2.8%
Gross Inland Consumption	116.0	137.9	149.1	156.6	165.3	175.2	3.5%	1.6%	1.6%	5.5%	6.0%
Solid fuels	5.8	9.9	9.7	11.0	11.5	11.8	11.1%	-0.4%	4.3%	4.6%	2.9%
Oil	54.9	53.0	63.4	69.2	73.7	78.4	-0.7%	3.6%	3.0%	6.5%	6.4%
Natural gas	1.0	2.2	3.3	3.8	4.0	4.2	17.4%	8.3%	4.7%	3.6%	4.8%
Other (1)	54.3	72.8	72.8	72.6	76.1	80.8	6.0%	0.0%	-0.1%	4.8%	6.2%
Electricity Generation in TWh	139.4	193.7	222.8	251.5	260.7	na	6.8%	2.8%	4.1%	3.7%	na
Nuclear	0.0	3.4	2.2	0.4	0.1	na	-	-7.9%	-41.8%	-87.6%	na
Hydro & wind	128.9	178.4	206.7	234.8	242.9	na	6.7%	3.0%	4.3%	3.5%	na
Thermal	10.5	11.9	13.9	16.3	17.7	na	2.6%	3.1%	5.5%	8.8%	na
Generation Capacity in GWe	33.3	44.1	53.1	56.2	57.6	na	5.8%	3.8%	2.0%	2.5%	na
Nuclear	0.0	0.7	0.7	0.7	0.7	na	-	0.0%	0.0%	0.0%	na
Hydro & wind	27.5	37.1	45.6	48.6	49.9	na	6.1%	4.2%	2.2%	2.7%	na
Thermal	5.8	6.4	6.8	7.0	7.1	na	2.0%	1.4%	0.7%	1.2%	na
Average Load Factor in %	47.8	50.1	47.9	51.1	51.6	na	1.0%	-0.9%	2.1%	1.1%	na
Fuel Inputs for Thermal Power Generation	2.6	3.1	3.7	4.5	4.8	na	3.5%	3.2%	6.6%	7.3%	na
Solid fuels	0.8	1.2	1.2	1.3	1.4	na	8.8%	0.3%	2.9%	9.1%	na
Oil	1.3	1.0	1.2	1.6	1.7	na	-4.7%	3.4%	9.3%	5.4%	na
Gas	0.0	0.0	0.1	0.2	0.1	na	-	-	27.7%	-9.8%	na
Geothermal	0.0	0.0	0.0	0.0	0.0	na	-	-	-	-	-
Other	0.6	0.9	1.2	1.4	1.6	na	10.4%	5.3%	6.0%	9.7%	na
Average Thermal Efficiency in %	34.0	32.6	32.3	31.3	31.7	na	-0.9%	-0.2%	-1.1%	1.3%	na
Non-Energy Uses	5.3	8.2	9.1	9.3	4.3	na	9.2%	2.2%	0.6%	-54.2%	na
Total Final Energy Demand	80.4	88.8	100.2	107.4	118.4	na	2.0%	2.5%	2.3%	10.2%	na
Solid fuels	4.1	7.0	6.9	8.4	8.6	na	11.3%	-0.5%	7.1%	2.3%	na
Oil	45.6	40.2	49.7	54.1	62.6	na	-2.5%	4.3%	2.9%	15.7%	na
Gas	0.6	1.2	1.6	1.9	2.0	na	16.0%	5.4%	6.1%	3.2%	na
Electricity	10.2	14.4	18.1	20.0	20.8	na	7.1%	4.7%	3.4%	4.1%	na
Heat	0.0	0.0	0.0	0.0	0.0	na	-	-	-	-	-
Other	19.9	25.9	23.9	22.9	24.4	na	5.5%	-1.6%	-1.4%	6.3%	na
CO_2 Emissions in Mt of CO_2	166.0	166.1	195.9	218.9	246.5	na	0.0%	3.4%	3.8%	12.6%	na
Indicators											
Population (Million)	121.29	135.04	148.48	156.49	159.14	161.85	2.2%	1.9%	1.8%	1.7%	1.7%
GDP (index 1985=100)	94.7	100.0	110.1	115.1	119.8	124.8	1.1%	1.9%	1.5%	4.1%	4.2%
Gross Inl Cons./GDP (toe/1990 MECU)	358.6	403.5	396.5	398.2	403.7	410.7	2.4%	-0.4%	0.1%	1.4%	1.7%
Gross Inl Cons./Capita (toe/inhabitant)	0.96	1.02	1.00	1.00	1.04	1.08	1.3%	-0.3%	-0.1%	3.8%	4.2%
Electricity Generated/Capita (kWh/inhabitant)	1149	1434	1501	1607	1638	na	4.5%	0.9%	2.3%	1.9%	na
CO_2 Emissions/Capita (t of CO_2/inhabitant)	1.4	1.2	1.3	1.4	1.5	na	-2.1%	1.4%	2.0%	10.7%	na
Import Dependency %	41.0	20.9	25.6	28.4	27.2	28.5	-12.6%	4.1%	3.6%	-4.2%	4.8%

(1) Includes nuclear, hydro and wind, net imports of electricity, and other energy sources.
(2) Estimates

PART X SHORT-TERM ENERGY OUTLOOK FOR THE EUROPEAN UNION

SUMMARY

Total primary energy demand in the European Union increased in 1996 by 3.1%[1], sluggish economic growth being largely compensated by weather conditions resulting in degree-day about 16% above the 1995 level. Consumption of oil increased 1.3%, even under the downward pressure of higher crude prices, and consumption of natural gas rose by 12% with the main part of the growth being located in the tertiary and domestic sector to cover increasing heating demand. Demand for solid fuels was down 4% on account of lower demand in energy branch as well as in industry. The production of nuclear energy increased by 4% and renewable energy by 3.7%, mainly hydropower. Annual CO_2 emissions increased 2.2%, reaching the 90 level.

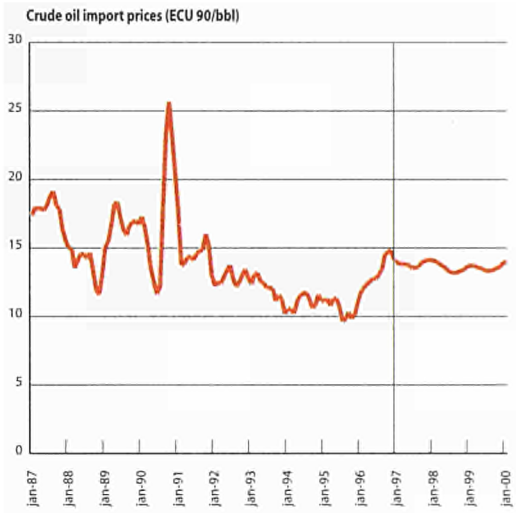
Combining the forecast growth of the European economy and the return to long-term average temperatures result in a total primary energy demand growth of 1.8% on average between 1998 and 2000, 1997 being stable. Results show solid fuels steadily losing their market share with consumption declining by 10% between 1997 and 2000. Oil consumption increases by 5% up to the turn of the century, stabilising its share during the 90's. Natural gas reinforces its position as the second most important fuel with a jump in consumption of 19% between 1997 and 2000. CO_2 emissions increase by about 3% over the forecast period.

WORKING ASSUMPTIONS FOR THE PERIOD 1997-2000

The short-term energy forecasts are related to the short- and medium-term economic forecasts provided by the European Commission's Directorate General for Economic Affairs (DG II). The main predetermined variables and their values are:

- GDP growth rates of 2.8% on average on the period 1997-2000, demonstrating an acceleration from 2.4% in 1997 to 3.2% in 2000.
- Private consumption is foreseen to grow by 2.4% on average, from 1.9% in 1997 to 2.8% in 2000.
- Gross fixed capital formation should be sustained with an average growth by 5.1% peaking at 6.6% in 2000.
- Industrial production is foreseen to follow GDP.
- Normal weather conditions, defined as the average of past observations, are assumed to prevail from 1997 to 2000.
- The average price of European Union crude import, including freight and insurances charges, is presumed to be 20.6$/bbl in 1997 and to remain stable for the period considered.

The scenario of a gradual recovery progressively gaining momentum during 1996 has materialised. Acceleration in output is forecast to continue until 2000, benefiting, in addition to the still improving supply side fundamentals, from brightening demand prospects and the recent appreciation of the US dollar. **GDP growth** is forecast to rise from 2.4% in 1997 to 3.2% in 2000. In tandem with strengthening growth, economic and financial convergence among Member States improved in 1996, and is forecast to continue improving in the final run-up to EMU. Inflation rates are converging towards 2% and long-term interest rate differentials are decreasing. Several Member States only just achieve the 3% threshold on the basis of these forecasts.

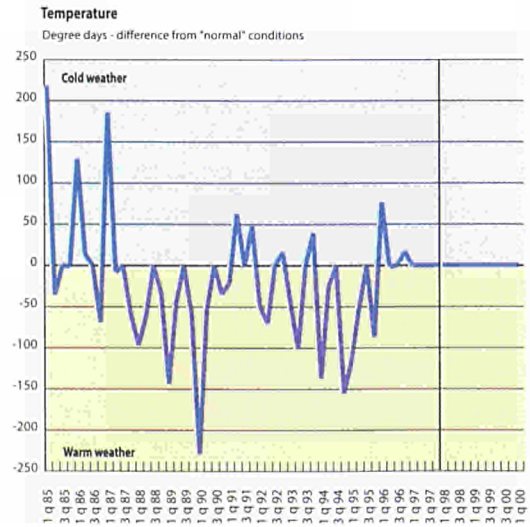


1 based on preliminary monthly statistics for EUR-12, excluding biomass. Preliminary 1996 energy balance from SOEC demonstrated a 3.6% increase at EUR-15 level.

MACROECONOMIC, ENERGY PRICES AND WEATHER ASSUMPTIONS

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
A. MACROECONOMIC INDICES (1990=100)											
A.1. Gross Domestic Product	100.0	103.9	104.9	104.4	107.4	110.0	111.8	114.5	117.7	121.2	125.1
% change from prior year		*3.9*	*1.1*	*-0.5*	*2.9*	*2.4*	*1.6*	*2.4*	*2.8*	*3.0*	*3.2*
A.2. Private Consumption	100.0	105.9	108.0	107.7	109.4	111.3	113.6	115.7	118.5	121.5	124.9
% change from prior year		*5.9*	*2.0*	*-0.3*	*1.6*	*1.8*	*2.0*	*1.9*	*2.4*	*2.5*	*2.8*
A.3. Gross Fixed Capital Formation	100.0	104.9	104.4	97.5	99.8	102.9	104.5	107.7	112.7	119.8	127.7
% change from prior year		*4.9*	*-0.5*	*-6.5*	*2.3*	*3.2*	*1.5*	*3.0*	*4.7*	*6.3*	*6.6*
A.4. Industrial Production	99.9	98.8	97.5	94.5	99.2	103.1	103.2	105.6	108.5	111.1	114.4
% change from prior year		*-1.1*	*-1.3*	*-3.1*	*5.0*	*3.9*	*0.1*	*2.3*	*2.7*	*2.4*	*3.0*
A.5. Iron&Steel Production	100.0	99.0	97.8	94.6	98.5	101.4	102.6	103.3	104.4	104.8	105.5
% change from prior year		*-1.0*	*-1.2*	*-3.4*	*4.2*	*2.9*	*1.2*	*0.7*	*0.7*	*0.7*	*0.7*
A.6. Chemical Production	100.0	100.1	102.8	102.3	109.0	113.4	115.5	118.6	120.8	122.7	125.5
% change from prior year		*0.0*	*2.7*	*-0.5*	*6.6*	*4.0*	*1.8*	*2.8*	*1.8*	*1.6*	*2.3*
B. EXCHANGE RATE											
1 ECU = xx US$	1.3	1.24	1.30	1.17	1.19	1.31	1.27	1.16	1.15	1.15	1.16
% change from prior year		-2.6	4.6	-9.6	1.4	10.1	-2.9	-9.0	-0.9	0.6	0.4
C. INTERNATIONAL ENERGY PRICES											
Imported Crude Oil (EU90/toe)	132.7	111.0	95.3	89.0	82.7	79.3	95.9	101.9	100.0	99.7	100.5
Imported natural Gas (EU90/toe)	91.3	100.5	78.7	77.1	68.1	62.6	64.9	75.6	73.3	71.4	71.0
Imported Steam Coal (EU90/toe)	77.9	71.6	66.0	56.6	52.1	58.0	57.4	56.4	54.7	54.2	53.9
D. WEATHER											
Degree Days	2141	2549	2357	2354	2142	2207	2552	2460	2460	2460	2460
% change from prior year		19.0	-7.5	-0.1	-9.0	3.1	15.6	-3.6	0.0	0.0	0.0

Following a surprisingly good growth rate of 1.9% in 1996, **private consumption** in the EU is forecast to continue growing at a steady 1.9% rate in 1997 and to accelerate to 2.8% in 2000. This relatively favourable outlook should materialise owing to a further fall in the household saving ratio, an increase (albeit moderate) in disposable income, and a progressive increase in employment. The performance of private consumption varies across Member States, but becomes more homogenous over the forecast horizon.



Supported by the high level of profitability and low interest rates and in the perspective of higher demand, overall **investment** is also expected to recover in 1997 (+3.0%) and 1998 (+4.7%) and to accelerate at the turn of the century from its slow growth rate of 1996 (+1.1%). Construction investment is forecast to remain relatively weak initially, but should pick-up later. The need to replace obsolete machinery and the increased demand (both external and internal) for capital goods will lead to a strong outlook for investment in equipment.

The weather effect is measured using so-called degree-days, which is a function of temperature. After one cold year in 1996 the temperature is assumed to return to the long-term average causing a change of –3.6% in this coldness indicator for the year 1997.

METHODOLOGICAL NOTE

The forecasts are made with a neural network system. The system was constructed to estimate and forecast final demand of energy by fuel (13 aggregates) on a monthly basis. The energy balance is produced based on technical data (e.g. electricity generation capacity) and information from Member States about their primary energy production.

This work has been completed with the assistance of Pavilion Technologies NV/SA (Zaventem) using their "Process Insights" computer programme.

The data used are monthly deliveries to final consumers as provided by Eurostat. There may be some notable differences compared to annual energy balances. To quantify them, total annual energy consumption computed from monthly data is on average 1% below the final yearly data, excluding biomass. But, for some fuel or some year, differences can be more significant. All historical data before 1990 was revised in order to merge all official data now available for ex-GDR by the SOEC.

RESULTS

1. Energy prices

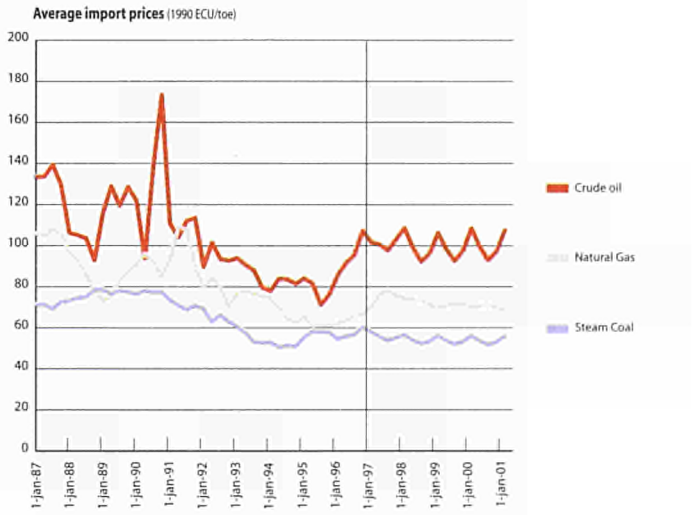
Different forms of energy can often act as substitutes for each other consequently their prices also affect one another. Oil has a long history of being the price leader in the world energy markets causing quick changes in all energy prices and on the other hand being affected by prices and demand other forms of energy varied much more slowly. In the forecast it is expected that steam coal import prices remain relatively constant while the price of natural gas will mostly follow the evolution of crude oil price with a six months delay

Energy **prices in final consumer markets** (including excise and VAT) are influenced by the changes in corresponding international markets. Since 1992 prices for oil products and natural gas are declining in line with crude prices on international market. Increasing crude oil prices in 1996, reinforced in the first months of 1997 by higher US$ exchange rates, reverse this trend. For the forecast period, average excise taxes are assumed to increase slowly in real terms.

• The changes in gasoline and diesel prices are different. Despite declining crude oil prices between 1992 and 1995 gasoline and diesel prices have increased slowly since 1992 under the pressure of fiscal measures. This trend is forecast to continue until 2000.

• For **industrial consumers**, the downward trend of natural gas and coal prices is likely to continue after the 1997 hike. Electricity prices would be constant. On the other hand, oil products prices that were relatively constant since 1992, are expected to increase moderately reflecting events in the international markets and a tightening of environmental requirements.

• The rise of heating oil prices for the **domestic sector** will increase the competitiveness of natural gas and electricity.

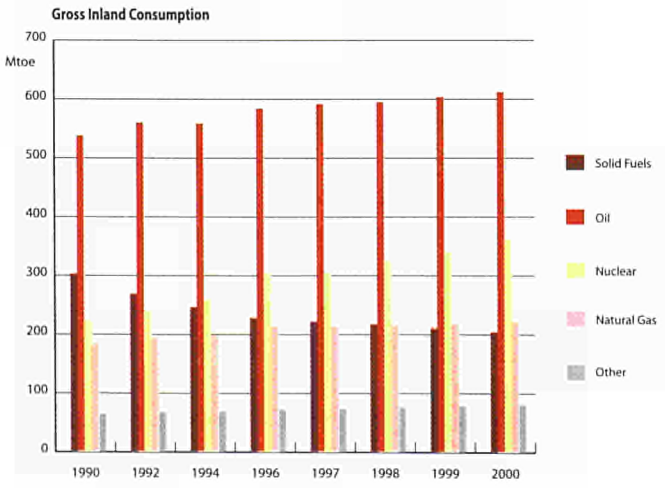


FINAL CONSUMER ENERGY PRICES IN REAL TERMS

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
A. Oil Products											
Prices (90ECU/toe)											
Gasoline	981	1034	1013	1019	1049	1053	1069	1126	1129	1150	1170
Diesel	552	567	544	562	562	555	592	646	629	631	635
Domestic Heating Oil	385	394	347	346	316	305	331	355	345	346	348
Industrial Heating Oil	282	287	236	240	218	209	234	259	249	251	252
Residual Fuel Oil	123	110	102	99	110	116	122	138	131	132	133
Growth rate from previous period in %											
Gasoline		5.4	-2.1	0.7	2.9	0.3	1.5	5.4	0.3	1.9	1.8
Diesel		2.6	-3.9	3.2	0.0	-1.3	6.8	9.1	-2.6	0.3	0.7
Domestic Heating Oil		2.4	-13.3	-0.2	-9.4	-4.1	9.6	7.9	-3.0	0.3	0.6
Industrial Heating Oil		1.7	-17.9	2.0	-9.5	-3.8	11.8	10.8	-3.9	0.4	0.5
Residual Fuel Oil		-10.5	-7.2	-3.2	11.2	5.3	5.6	12.5	-4.6	0.6	0.5
B. Natural Gas											
Prices (90ECU/toe)											
Household	269	294	287	268	275	266	277	324	314	307	306
Industry	140	125	119	114	112	112	114	133	129	126	125
Growth rate from previous period in %											
Household		9.4	-2.3	-6.5	2.3	-3.2	4.2	16.8	-3.0	-2.2	-0.4
Industry		-11.0	-5.0	-4.3	-1.3	0.1	1.2	17.2	-3.1	-2.5	-0.5
C. Coal											
Prices (90ECU/toe)											
Household	331	354	327	328	320	307	299	290	281	279	278
Industry	140	125	119	114	112	112	118	116	113	113	113
Growth rate from previous period in %											
Household		6.9	-7.8	0.4	-2.3	-4.1	-2.5	-3.1	-3.1	-0.8	-0.5
Industry		-11.0	-5.0	-4.3	-1.3	0.1	5.1	-1.4	-2.8	-0.4	0.0
D. Electricity											
Prices (90ECU/100 kWH)											
Household	11.13	11.66	11.56	11.25	11.41	11.28	11.36	11.45	11.55	11.65	11.75
Industry	6.80	6.83	6.75	6.50	6.35	6.06	5.95	6.00	5.98	5.98	5.99
Growth rate from previous period in %											
Household		4.7	-0.8	-2.7	1.5	-1.1	0.7	0.8	0.8	0.9	0.9
Industry		0.4	-1.1	-3.6	-2.4	-4.4	-1.8	0.8	-0.3	0.0	0.1

2. Energy Demand

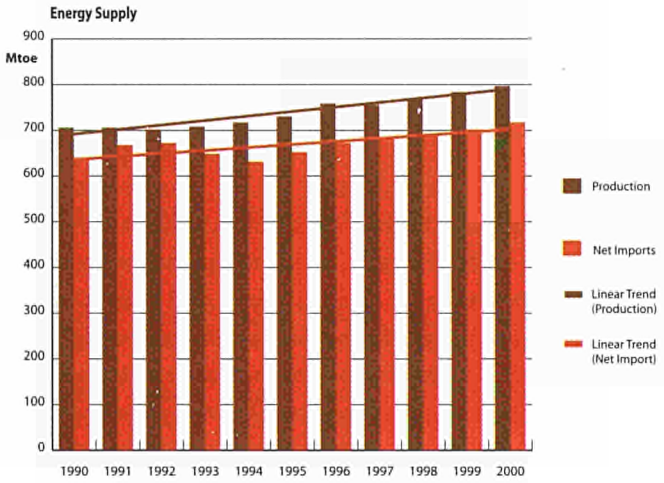
Total energy demand grew by about 3%[1] in 1996, sluggish economic growth being largely compensated by weather conditions resulting in degree-day about 16% above the 1995 level. Total energy demand is expected to be stable in 1997 and to increase on average by 1.8% annually between 1997 and 2000. The stabilisation in 1997 is the combined effect of assumed warmer weather and sustained economic activity. After 1997, assuming constant weather conditions, increasing consumption will be driven both by GDP as a whole and by industrial production in particular. Results show solid fuels steadily losing their share of total energy demand from 23% in 1992 to 14% in 2000. The oil share, which increased slowly between 1990 (41%) and 1995 (42.5%), will retreat in 2000 to the 1990 share. Natural



1 based on monthly statistics, excluding biomass. Preliminary 1996 energy balance from OSCE demonstrated a 3.6% increase.

gas became the second most important fuel in 1993 and it is the only fuel whose share of total consumption has steadily increased, rising from 17% in 1990 to 24% in 2000. The contribution of nuclear increased from 14% in 1990 to 15% in 1996, and it is expected to stay around this figure.

Total domestic energy **production** is on an upward trend due to significant increase in both natural gas and crude production. On the other hand, solid fuel production is expected to continue its decline. Other primary sources, with the exception of hydropower production, are expected to continue to grow in the near future. Altogether, the share of net imports in total energy supply has declined slightly between 1990 and 1996 so that the energy import dependency of the European Union is likely to be stable until 2000 at about 48.5%.



Solid Fuels

Total demand for hard coal has decreased steadily since 1990. The economic recession of 1993 accelerated this downward trend and solid fuel demand dropped drastically (10%) during that year. The downward trend is expected to continue in the near future displaying an average annual decline of 3.4% between 1996 and 2000. The power generation sector is the driving force for solid fuel demand. In competition with natural gas both for economic and environmental reasons, hard coal will lose market share in the electricity market, mainly in the United Kingdom and Italy. Industry and the domestic and tertiary sectors are also expected to further switch away from coal, but to a lesser extent, due to its inconvenience of use.

In 1995, for the first time net imports of hard coal exceeded domestic production, and this trend will be maintained in the medium term but it must be underlined that facing a progressive stabilisation of indigenous production, imports will also start to decline in 1997.

Production and consumption of coke is closely connected to the activity level of the iron and steel industry and some domestic and tertiary consumers. In both these sectors, demand for coke is decreasing. In the iron and steel sector the switch away is driven by the conversion to electrical furnaces.

Lignite consumption, after a 40% reduction between 1990 and 1995, will stabilise and have only a 5% decrease in the next four years. Consumption will be more and more concentrated on public power generation.

Oil

Gross inland oil consumption is expected to grow slowly by 1.2% per year on average between 1997 and 2000. Domestic production of crude oil is expected to continue to grow, although slowly, and to meet 25% of domestic refining input compared to only 20% in 1990. Since 1993 refinery output has exceeded total domestic demand, with an excess of about 5% for export, including bunkers. This figure is expected to increase a little until 2000.

Transport demand dominates the oil sector. Its share peaked in 1994 with 45% of total oil consumption and decreased to 43.4% in 1996. The forecast period expects the transport share of the total oil demand to recover its 1990 level of about 42%. Gasoline consumption is foreseen to decline by 1.5% annually during the forecast period and automotive diesel demand to stabilise. Aviation kerosene use increases steadily.

Oil use for power generation, stable between 1993 and 1996, will decline by 12% between 1997 and 2000. Despite its attractive price, it seems that heavy fuel oil is going to be replaced by natural gas, mainly for environmental considerations.

Crude oil production in the European Union is expected to grow faster than gross inland consumption. Taking into account the stock expansion, oil import dependency will remain stable after the decline which occurred between 1990 and 1995.

SUMMARY ENERGY BALANCE (MTOE)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Production											
Solid Fuels	210.4	189.8	176.5	155.9	136.5	135.3	131.1	127.0	125.2	123.0	120.9
Hard Coal	121.1	117.7	111.8	95.8	79.4	81.7	78.4	74.8	73.6	72.3	71.1
Lignite	89.4	72.1	64.8	60.1	57.1	53.6	52.7	52.2	51.6	50.7	49.9
Oil	116.6	116.1	119.6	124.6	153.4	156.5	158.1	162.5	166.8	169.2	171.8
Natural Gas	132.5	144.8	146.6	157.4	158.7	164.5	185.0	181.2	188.4	195.9	203.2
Heat	184.4	190.6	194.2	203.1	202.1	206.6	215.0	214.4	217.3	221.7	224.8
Nuclear	182.1	188.3	191.7	200.5	199.7	204.2	212.3	211.3	213.8	217.1	219.8
Geothermy	2.3	2.3	2.5	2.6	2.5	2.5	2.7	3.1	3.5	4.6	5.0
Primary Electricity	23.5	24.5	26.1	26.6	26.8	26.6	28.0	27.2	27.5	27.5	27.6
Other	38.9	40.6	39.4	40.7	40.2	41.2	42.2	43.5	45.1	46.9	49.0
Electricity	5.1	5.4	5.3	5.4	5.5	5.8	5.9	6.3	7.0	7.8	8.9
Final uses	33.8	35.2	34.1	35.3	34.7	35.4	36.3	37.2	38.1	39.1	40.1
Total	706.4	706.4	702.4	708.4	717.7	730.8	759.5	755.8	770.3	784.2	797.3
Net Imports											
Solid Fuels	88.4	97.8	98.7	84.8	88.9	94.3	92.6	91.0	88.1	83.7	79.4
Hard Coal	85.5	94.3	95.7	81.2	84.3	89.0	89.0	87.2	84.2	79.6	75.1
Lignite	1.1	1.2	1.4	1.2	1.0	1.1	0.4	0.5	0.4	0.4	0.4
Coke	1.8	2.2	1.6	2.4	3.6	4.2	3.2	3.3	3.5	3.7	3.9
Oil	454.1	475.2	478.0	468.3	443.8	449.0	462.2	466.2	464.9	472.4	479.1
Natural Gas	92.4	94.4	95.2	94.3	98.4	108.8	119.1	123.1	137.6	145.3	158.5
Electricity	2.2	1.3	1.6	2.2	1.6	1.5	-0.5	1.5	1.4	1.3	1.2
Total	637.1	668.7	673.5	649.6	632.7	653.6	673.4	681.9	692.0	702.7	718.3
Bunkers											
Petroleum Products	35.2	35.1	35.8	36.7	35.5	35.2	38.0	38.6	39.4	40.2	41.1
Gross Inland Consumption											
Solid Fuels	301.5	286.5	267.8	243.0	245.4	236.2	227.0	221.0	216.3	209.5	203.0
Hard Coal	209.2	211.2	200.8	179.1	182.2	176.5	170.7	165.0	160.7	154.7	148.9
Coke	1.9	2.0	0.9	2.6	5.1	5.0	3.1	3.4	3.6	3.7	3.8
Lignite	90.5	73.3	66.1	61.3	58.1	54.7	53.1	52.7	52.1	51.2	50.3
Oil	536.2	553.8	558.6	557.2	556.9	575.0	582.5	590.3	593.5	602.0	610.6
Natural Gas	221.9	239.1	238.4	251.3	257.3	270.9	303.1	303.3	324.7	340.0	360.5
Heat	184.4	190.6	194.2	203.1	202.1	206.6	215.0	214.4	217.3	221.7	224.8
Nuclear	182.1	188.3	191.7	200.5	199.7	204.2	212.3	211.3	213.8	217.1	219.8
Geothermy	2.3	2.3	2.5	2.6	2.5	2.5	2.7	3.1	3.5	4.6	5.0
Primary Electricity	23.5	24.5	26.1	26.6	26.8	26.6	28.0	27.2	27.5	27.5	27.6
Other	38.9	40.6	39.4	40.7	40.2	41.2	42.2	43.5	45.1	46.9	49.0
Total	1306.6	1335.1	1324.4	1322.0	1328.7	1356.5	1397.8	1399.8	1424.3	1447.6	1475.4
Import Dependency (%)											
Hard Coal	40.2	41.1	41.7	39.4	32.3	34.6	34.5	33.8	34.0	34.5	35.0
Oil	84.7	85.8	85.6	84.0	79.7	78.1	79.3	79.0	78.3	78.5	78.5
Natural Gas	41.6	39.5	39.9	37.5	38.2	40.2	39.3	40.6	42.4	42.7	44.0
Total	48.8	50.1	50.9	49.1	47.6	48.2	48.2	48.7	48.6	48.5	48.7
Deliveries to Final Consumers (*)											
Solid Fuels	91.8	81.1	69.9	62.3	58.0	51.9	47.8	45.4	44.3	42.1	40.2
Oil	468.4	476.7	481.4	482.9	484.5	498.9	501.3	513.9	517.3	525.7	535.7
Natural Gas	191.4	209.8	208.9	216.5	218.8	229.0	255.2	249.0	263.6	272.3	287.1
Derived Gases	12	12.7	11.1	10.5	10.8	10.7	10.1	8.9	8.6	8.0	7.6
Electricity	158.4	161.7	162.5	164.1	165.7	170.5	175.3	177.5	180.2	183.0	185.4
Biomass	33.8	35.2	34.1	35.3	34.7	35.4	36.3	37.2	38.1	39.1	40.1
Total	955.8	977.2	967.9	971.5	972.4	996.4	1026.1	1031.9	1052.1	1070.2	1096.1

(*) includes some deliveries to electricity autoproducers and non-energy consumption
N.B.: Differences between the numbers in the table and EU energy balances presented elsewhere in the publication originate from the discrepancies between annual and monthly-based statistics.

SOLID FUELS : SUPPLY AND DISPOSAL (MTOE)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
A. HARD COAL											
Production	121.1	117.7	111.8	95.8	79.4	81.7	78.4	74.8	73.6	72.3	71.1
Growth rate from previous period in %		*-2.8*	*-5.0*	*-14.3*	*-17.1*	*3.0*	*-4.1*	*-4.6*	*-1.6*	*-1.8*	*-1.7*
Net imports	85.5	94.3	95.7	81.2	84.3	89.0	89.0	87.2	84.2	79.6	75.1
Growth rate from previous period in %		*10.4*	*1.5*	*-15.1*	*3.8*	*5.6*	*0.1*	*-2.0*	*-3.5*	*-5.5*	*-5.6*
supply	206.5	212.0	207.5	177.0	163.7	170.7	170.7	165.0	160.7	154.7	148.9
stock var	2.6	-0.8	-6.7	2.1	18.5	5.8	3.3	2.9	2.9	2.8	2.7
Gross Inland Consumption	209.2	211.2	200.8	179.1	182.2	176.5	170.7	165.0	160.7	154.7	148.9
Growth rate from previous period in %		*1.0*	*-4.9*	*-10.8*	*1.7*	*-3.1*	*-3.3*	*-3.4*	*-2.6*	*-3.8*	*-3.8*
Transformation input	181.6	177.6	169.7	151.3	155.9	154.6	149.9	144.8	141.1	135.5	130.1
of which :											
Thermal Power generation	123.7	123.6	118.0	107.9	110.1	109.5	111.3	108.2	104.7	100.9	96.8
Growth rate from previous period in %		*0.0*	*-4.6*	*-8.5*	*2.0*	*-0.5*	*1.7*	*-2.8*	*-3.2*	*-3.7*	*-4.1*
Cokeries	38.6	44.6	40.8	37.8	35.9	37.7	35.5	33.8	33.6	32.0	30.8
Growth rate from previous period in %		*15.4*	*-8.5*	*-7.4*	*-4.9*	*4.9*	*-5.8*	*-4.8*	*-0.6*	*-4.7*	*-3.7*
Deliveries to final consumers	27.6	33.6	31.0	27.9	26.3	21.9	20.8	20.1	19.6	19.1	18.8
Growth rate from previous period in %		*21.6*	*-7.6*	*-10.2*	*-5.7*	*-16.7*	*-4.8*	*-3.4*	*-2.5*	*-2.6*	*-1.8*
B. COKE											
Net Imports	1.8	2.2	1.6	2.4	3.6	4.2	3.2	3.3	3.5	3.7	3.9
Gross Inland Consumption	1.9	2.0	0.9	2.6	5.1	5.0	3.1	3.4	3.6	3.7	3.8
Coking Plants Production	21.5	20.3	19.3	16.6	14.6	15.0	15.7	14.2	14.1	13.4	12.9
Deliveries to Final Consumers	23.4	22.3	20.2	19.2	19.7	20.0	18.8	17.6	17.6	17.1	16.8
Growth rate from previous period in %		*-4.7*	*-9.3*	*-4.8*	*2.6*	*1.1*	*-5.9*	*-6.3*	*0.3*	*-3.0*	*-2.0*
C. LIGNITE											
Production	89.4	72.1	64.8	60.1	57.1	53.6	52.7	52.2	51.6	50.7	49.9
Gross Inland Consumption	90.5	73.3	66.1	61.3	58.1	54.7	53.1	52.7	52.1	51.2	50.3
Growth rate from previous period in %		*-19.0*	*-9.8*	*-7.3*	*-5.2*	*-5.8*	*-2.9*	*-0.9*	*-1.1*	*-1.8*	*-1.7*
Transformation Input	49.8	48.1	47.3	46.1	46.1	44.7	44.9	45.0	45.1	45.3	45.6
Public Power Generation	48.1	47.3	46.5	45.4	45.5	44.2	44.5	44.6	44.7	45.0	45.3
Growth rate from previous period in %		*-1.7*	*-1.6*	*-2.5*	*0.3*	*-3.0*	*0.8*	*0.2*	*0.2*	*0.7*	*0.7*
Briquettes Plants	1.6	0.8	0.6	0.5	0.4	0.3	0.3	0.3	0.3	0.2	0.2
Growth rate from previous period in %		*-51.8*	*-21.0*	*-16.3*	*-21.0*	*-20.6*	*-5.0*	*-7.5*	*-10.0*	*-12.5*	*-15.0*
Deliveries to Final Consumers	40.8	25.2	18.6	15.2	12.0	10.0	8.2	7.7	7.0	5.8	4.7
Growth rate from previous period in %		*-38.1*	*-26.1*	*-18.4*	*-21.2*	*-16.6*	*-17.8*	*-6.6*	*-8.3*	*-17.0*	*-19.8*
Of which electricity autoproduction	6.0	5.8	4.8	4.0	3.4	3.1	3.1	2.8	2.5	2.1	1.6

N.B.: Differences between the numbers in the table and EU energy balances presented elsewhere in the publication originate from the discrepancies between annual and monthly-based statistics.

Natural Gas

Natural gas demand has increased by 5.3% since 1990, with a jump of 12% in 1996 due to climatic conditions. Between 1990 and 1996, more about 90% of the total increase in gross inland consumption was met by gas. The main reasons were higher consumption in power generation (+19 Mtoe) and final consumption sectors (+59 Mtoe). Over the forecast period, natural gas demand is anticipated to increase by 4.4% annually.

The stabilisation in 1997 result from lower gas use in final demand sectors (-4%) assuming normal weather conditions and from 20% growth in the power sector with 5.5 GW of new combined cycle units to be commissioned. After 1997, assuming average weather conditions, gas consumption is expected to increased by 3.8% annually in final demand sectors, but to continue its growth in power generation by some 14% annually in relation with combine cycle commissioning and expansion of combined heat and power production by individual producers.

Domestic production of natural gas is expected to increase by 10% until the turn of the century, with imports increasing by 33% over the same period. As a consequence import dependency for natural gas is predicted to continue increasing from 39% in 1996 to 44% in 2000.

OIL: SUPPLY AND DISPOSAL (MTOE)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Supply											
Primary Production	116.6	116.1	119.6	124.6	153.4	156.5	158.1	162.5	166.8	169.2	171.8
Crude	113.8	112.6	115.3	119.8	152.7	155.8	157.6	162.0	166.3	168.7	171.3
Oil Products	2.8	3.5	4.3	4.9	0.7	0.7	0.5	0.5	0.5	0.5	0.5
Net Imports	454.1	475.2	478.0	468.3	443.8	449.0	462.2	466.2	464.9	472.4	479.1
Bunkers	35.2	35.1	35.8	36.7	35.5	35.2	38.0	38.6	39.4	40.2	41.1
stock var & other	0.9	-2.5	-3.2	1.6	-4.9	4.7	0.3	0.3	1.3	0.6	0.7
Gross Inland Consumption	536.2	553.8	558.6	557.2	556.9	575.0	582.5	590.3	593.5	602.0	610.6
Growth rate from previous period in %		*3.3*	*0.6*	*-2.0*	*-5.2*	*1.2*	*2.9*	*1.4*	*0.5*	*1.4*	*1.4*
Transformation Energy Consumption	67.9	77.0	77.2	75.0	72.4	76.0	81.1	76.4	76.2	76.3	74.9
Refineries Input	555.6	572.6	590.5	612.3	630.4	627.0	643.7	659.8	664.2	675.0	687.8
Refineries Net Output	531.7	542.3	560.2	579.9	599.1	594.9	610.7	626.0	630.4	640.5	652.6
Refineries Efficiency in %	95.7%	94.7%	94.9%	94.7%	95.0%	94.9%	94.9%	94.9%	94.9%	94.9%	94.9%
Power Generation input	44.0	46.8	46.9	42.7	41.2	43.8	42.1	40.5	39.4	37.9	36.7
of which thermal Power	37.7	39.1	40.8	36.2	35.4	37.5	36.1	34.7	33.8	32.4	31.4
of which autoproducer	6.3	7.7	6.1	6.5	5.7	6.3	6.0	5.8	5.7	5.4	5.3
Final Consumers											
Total	468.4	476.7	481.4	482.9	484.5	498.9	501.3	513.9	517.3	525.7	535.7
Growth rate from previous period in %		*1.8*	*1.0*	*0.3*	*0.3*	*3.0*	*0.5*	*2.5*	*0.7*	*1.6*	*1.9*
Motor Gasoline	123.3	125.1	127.7	125.4	123.3	122.0	121.9	121.5	119.1	115.8	114.5
Growth rate from previous period in %		*1.5*	*2.1*	*-1.8*	*-1.7*	*-1.1*	*0.0*	*-0.4*	*-2.0*	*-2.8*	*-1.1*
Kerosene	30.0	29.8	32.1	33.6	35.7	37.2	39.2	41.2	42.6	44.1	45.4
Growth rate from previous period in %		*-0.7*	*7.7*	*4.6*	*6.2*	*4.2*	*5.4*	*5.0*	*3.6*	*3.4*	*3.0*
Gasoil (total)	186.5	197.7	197.5	207.8	206.3	210.8	220.7	224.6	228.6	237.4	244.7
Growth rate from previous period in %		*6.0*	*-0.1*	*5.2*	*-0.7*	*2.2*	*4.7*	*1.8*	*1.8*	*3.9*	*3.1*
Automotive Diesel	92.8	97.2	101.7	101.0	109.5	111.0	110.1	109.6	109.9	111.7	111.9
Growth rate from previous period in %		*4.7*	*4.6*	*-0.7*	*8.4*	*1.4*	*-0.8*	*-0.4*	*0.2*	*1.6*	*0.1*
Heating gas oil	93.7	100.5	95.8	106.8	96.8	99.8	110.6	115.0	118.7	125.7	132.9
Growth rate from previous period in %		*7.3*	*-4.7*	*11.4*	*-9.3*	*3.1*	*10.8*	*3.9*	*3.2*	*5.9*	*5.7*
Heavy fuel oil	35.3	35.6	34.4	35.9	35.8	34.3	29.6	34.7	32.1	30.4	29.4
Growth rate from previous period in %		*0.8*	*-3.2*	*4.2*	*-0.4*	*-4.1*	*-13.7*	*17.3*	*-7.5*	*-5.3*	*-3.1*
Other Products	93.2	88.5	89.7	80.1	83.4	94.7	89.9	92.0	94.9	98.1	101.7
Growth rate from previous period in %		*-5.1*	*1.3*	*-10.6*	*4.0*	*13.6*	*-5.1*	*2.3*	*3.2*	*3.3*	*3.7*

N.B.: Differences between the numbers in the table and EU energy balances presented elsewhere in the publication originate from the discrepancies between annual and monthly-based statistics.

NATURAL GAS : SUPPLY AND DISPOSAL (MTOE)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Primary Production	132.5	144.8	146.6	157.4	158.7	164.5	185.0	181.2	188.4	195.9	203.2
Net Imports	92.4	94.4	95.2	94.3	98.4	108.8	119.1	123.1	137.6	145.3	158.5
Stock var	-3.0	-0.1	-3.4	-0.4	0.2	-2.4	-1.0	-1.1	-1.4	-1.2	-1.2
Gross Inland Consumption	221.9	239.1	238.4	251.3	257.3	270.9	303.1	303.3	324.7	340.0	360.5
Transf. Input & Own Consump.	30.5	29.4	29.5	34.8	38.5	41.9	47.5	53.9	60.7	67.3	73.0
Public Power Generation	23.8	22.5	22.4	27.1	30.0	32.9	37.6	44.2	50.5	56.8	62.1
Available for Final Consumption	191.4	209.8	208.9	216.5	218.8	229.0	255.2	249.0	263.6	272.3	287.1
of which electricity autoproduction	7.8	7.6	8.2	8.8	9.6	11.6	12.9	16.5	19.6	23.3	27.3

N.B.: Differences between the numbers in the table and EU energy balances presented elsewhere in the publication originate from the discrepancies between annual and monthly-based statistics.

Electricity

Demand for electricity has increased steadily for many years driven by the tertiary-domestic sector and to a lesser extent the industry. In 1995 and 1996 a growth of about 2.8% was attained in line with the GDP growth. Final electricity demand is expected to continue to grow by 1.4% annually on average untill 2000, demonstrating an elasticity of about 0.5 versus GDP.

Nuclear electricity production is likely to increase slowly over the next four years in relation with new commissioning (2.9 GWe) and upgrading of existing units. Hydropower production is assumed to stay around its 1996 level. Geothermal production, being rather insignificant in the total picture, is expected to increase as some new units will be commissioned. These three sources are expected to account together for 47% of total generation in 2000 compared to 48.5% in 1996.

As a consequence conventional thermal generation of electricity play a major role in covering additional requirements on the forecast period. Lignite supported by indigenous production will stabilise its contribution. Hard coal and oil based production, penalised by economic and environmental consideration will see their contribution declining by 13% each between 1997 and 2000. In 1996 gas becomes the second most important fuel in thermal power generation ahead of lignite and oil and is predicted to reinforce sharply this position by 2000.

Energy Indicators

The energy intensity in the European Union improved by 0.7% p.a. between 1990 and 1995 but rebounded in 1996 due to climatic variation. During the forecast period, energy intensity is forecast to improve by 1.5% per annum, profiting from warmer weather in 1997 and sustained economic activity over the whole period. The energy system benefits in particular from strong replacement equipment investment and improved general performance in all sectors. On the other hand energy consumption per capita will increase by 5% between 1997 and 2000 as it did between 1990 and 1996.

CO_2 emissions after a decline by about 4% between 1990 and 1994 reach in 1996 their 1990 level. Over the forecast period they will increase by about 3% to give in 2000 a level 3% higher than in 1990. Emissions from power generation will stabilise despite increasing consumption of fossil fuels due to the shift from solid fuels to natural gas and improvements in efficiency. Thus carbon intensity is expected to continue to decline in line with previous trend. CO_2 content per unit of GDP will decline by 8% between 1997 and 2000 as they did during the first part of the decade. Finally, CO_2 emissions per capita remain stable.

SHORT TERM FORECAST - MAIN INDICATORS (1990=100)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
CO_2 emissions (million tn of CO_2)	100.0	100.4	98.2	96.2	96.3	97.8	100.0	99.8	100.8	101.6	102.8
energy intensity (toe/1990 MECU)	100.0	101.0	99.3	99.6	97.4	97.0	98.4	96.2	95.2	94.0	92.8
Energy per capita (toe/inhabitant)	100.0	101.7	100.4	99.8	99.9	101.8	104.9	104.8	106.6	108.1	110.1
Carbon Intensity (tn of CO_2/toe)	100.0	98.3	96.9	95.1	94.7	94.2	93.5	93.2	92.5	91.7	91.1
CO_2 per unit of GDP (tn of CO_2/1990MECU)	100.0	99.3	96.2	94.8	92.2	91.3	91.9	89.6	88.1	86.2	84.5
CO_2 per capita (tn of CO_2/inhibitant)	100.0	99.9	97.3	94.9	94.7	95.9	98.0	97.6	98.6	99.2	100.3

N.B.: Differences between the numbers in the table and EU energy balances presented elsewhere in the publication originate from the discrepancies between annual and monthly-based statistics.

ELECTRICITY : SUMMARY BALANCE

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
A.1. Generation (Twh)											
Total Gross Generation	2162.6	2230.9	2229.3	2240.4	2270.3	2334.1	2416.7	2427.4	2466.8	2508.0	2543.0
Growth rate from previous period in %		*3.2*	*-0.1*	*0.5*	*1.3*	*2.8*	*3.5*	*0.4*	*1.6*	*1.7*	*1.4*
Produced by Pumping	13.8	14.9	16.2	13.9	13.1	16.2	17.9	15.3	15.6	16.2	16.3
Primary production (Hydro)	273.5	284.7	303.2	309.1	311.7	309.7	325.7	316.2	319.4	319.3	321.2
Growth rate from previous period in %		*4.1*	*6.5*	*2.0*	*0.8*	*-0.6*	*5.2*	*-2.9*	*1.0*	*0.0*	*0.6*
Derived production :	1875.3	1931.3	1909.9	1917.3	1945.5	2008.2	2073.1	2095.9	2131.8	2172.5	2205.6
Nuclear	719.9	744.4	757.8	792.7	789.4	807.3	839.4	835.3	845.1	858.5	868.9
Growth rate from previous period in %		*3.4*	*1.8*	*4.6*	*-0.4*	*2.3*	*4.0*	*-0.5*	*1.2*	*1.6*	*1.2*
Conventional Thermal	1152.1	1183.7	1148.6	1121.0	1152.7	1197.5	1229.9	1256.3	1281.8	1307.6	1329.7
Growth rate from previous period in %		*2.7*	*-3.0*	*-2.4*	*2.8*	*3.9*	*2.7*	*2.1*	*2.0*	*2.0*	*1.7*
Geothermal	3.2	3.2	3.5	3.7	3.4	3.4	3.8	4.3	4.9	6.4	6.9
Absorbed by Pumping	19.4	21.1	23.2	19.5	18.5	22.6	25.2	21.4	21.9	22.8	22.8
Own consumption	114.3	125.2	121.0	117.0	120.3	125.8	120.3	128.1	130.5	132.8	133.9
Total Net Generation	2044.7	2105.7	2108.2	2121.9	2150.2	2211.6	2296.5	2299.2	2336.3	2375.2	2409.0
Growth rate from previous period in %		*3.0*	*0.1*	*0.6*	*1.3*	*2.9*	*3.8*	*0.1*	*1.6*	*1.7*	*1.4*
A.2. Disposal (Twh)											
Total Net Generation	2025.3	2084.6	2085.0	2102.4	2131.7	2189.0	2271.3	2277.7	2314.4	2352.4	2386.2
Net Imports	25.4	15.5	18.2	25.1	18.0	17.4	-5.4	17.2	16.0	15.4	14.2
Total Available	2050.7	2100.1	2103.2	2127.5	2149.8	2206.4	2265.9	2295.0	2330.4	2367.8	2400.4
Growth rate from previous period in %		*2.4*	*0.1*	*1.2*	*1.0*	*2.6*	*2.7*	*1.3*	*1.5*	*1.6*	*1.4*
Distribution losses	134.9	140.7	135.0	139.1	142.7	141.5	148.5	149.6	152.4	154.7	156.2
Consumption Internal Market	1915.9	1959.4	1968.3	1988.4	2007.1	2064.8	2117.4	2145.3	2178.1	2213.1	2244.2
Energy Branch Consumption	73.9	78.8	78.8	80.8	80.8	82.6	79.0	81.0	83.2	85.6	88.3
Available for Final Consumption	1841.9	1880.7	1889.5	1907.6	1926.2	1982.3	2038.4	2064.4	2094.9	2127.5	2155.9
Growth rate from previous period in %		*2.1*	*0.5*	*1.0*	*1.0*	*2.9*	*2.8*	*1.3*	*1.5*	*1.6*	*1.3*
B. Input to Conventional Thermal Power Stations (Mtoe)											
Solids											
Hard coal	123.7	123.6	118.0	107.9	110.1	109.5	111.3	108.2	104.7	100.9	96.8
Growth rate from previous period in %		*0.0*	*-4.6*	*-8.5*	*2.0*	*-0.5*	*1.7*	*-2.8*	*-3.2*	*-3.7*	*-4.1*
Lignite	54.1	53.1	51.4	49.3	49.0	47.2	47.6	47.4	47.2	47.1	46.9
of which Public Power	48.1	47.3	46.5	45.4	45.5	44.2	44.5	44.6	44.7	45.0	45.3
Growth rate from previous period in %		*-1.8*	*-3.2*	*-3.9*	*-0.8*	*-3.5*	*0.8*	*-0.5*	*-0.4*	*-0.1*	*-0.4*
Oil	44.0	46.8	46.9	42.3	41.2	43.8	42.1	40.5	39.4	37.9	36.7
Growth rate from previous period in %		*6.2*	*0.2*	*-9.9*	*-2.6*	*6.5*	*-4.0*	*-3.7*	*-2.7*	*-4.0*	*-3.2*
Gas											
Natural gas	31.6	30.1	30.6	35.9	39.5	44.5	50.5	57.8	65.0	72.3	78.7
of which Public Power	23.8	22.5	22.4	27.1	30.0	32.9	37.6	44.2	50.5	56.8	62.1
Growth rate from previous period in %		*-4.8*	*1.6*	*17.4*	*10.2*	*12.5*	*13.4*	*14.6*	*12.4*	*11.2*	*8.9*
Derived gas	2.4	2.2	2.1	2.2	2.4	2.5	2.7	2.5	2.3	2.1	2.0
Growth rate from previous period in %		*-8.2*	*-4.7*	*6.7*	*6.7*	*6.5*	*8.8*	*-7.9*	*-8.1*	*-7.9*	*-7.7*
Other	5.1	5.4	5.3	5.4	5.5	5.8	5.9	6.3	7.0	7.8	8.9
Growth rate from previous period in %		*4.9*	*-2.2*	*2.8*	*1.5*	*5.0*	*2.6*	*6.6*	*10.5*	*12.0*	*13.8*
TOTAL	260.9	261.1	254.1	243.1	247.6	253.3	260.1	262.8	265.7	268.1	270.0
Growth rate from previous period in %		*0.1*	*-2.7*	*-4.4*	*1.9*	*2.3*	*2.7*	*1.0*	*1.1*	*0.9*	*0.7*
Average efficiency	38.0%	39.0%	38.9%	39.7%	40.1%	40.7%	40.7%	41.1%	41.5%	42.0%	42.4%

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CIS	Community of Independant States
DG II	Directorate-General for Economic Affairs of the European Commission
DG XVII	Directorate-General for Energy of the European Commission
EFTA	European Free Trade Agreement
Energy Intensity	Ratio of GIC to GDP
EU	European Union
GCC	Gulf Co-operation Council
GDP	Gross Domestic Product
GIC	Gross Inland Consumption
GDR	German Democratic Republic
GW	GigaWatt, or 10^9 Watt
IAEA	International Atomic Energy Agency
IEA	International Energy Agency
IMF	International Monetary Fund
kgoe	Kilogram oil equivalent
kl	Thousand litre
kWh	Thousand Watt.hour
l	Litre
MECU	Million ECU
Mt	Million metric tonne
Mtoe	Million toe
NAFTA	North American Free Trade Agreement
OECD	Organisation for Economic Co-operation and Development (excluding Hungary, Czech Republic and Poland)
OLADE	Organizacion Latinoamericana de Energia
S	Sulphur
SOEC	Statistical Office of the European Commission
STEO	Short-Term Energy Outlook for the European Union
t	Metric tonne, or 1000 kilograms
toe	Tonne of oil equivalent, or 10^7 kilocalories, or 41.86 GJ
TWh	Tera Watt.hour, or 10^{12} Watt.hour
UN	United Nations
UN-ECE	UN's Economic Commission for Europe
WB	World Bank

DIRECTORATE - GENERAL FOR ENERGY (DG XVII)

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