

# **The energy situation in the Community**

**SITUATION 1982 □ OUTLOOK 1983**

*(Report from the Commission to the Council)*



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COMMISSION OF THE EUROPEAN COMMUNITIES

**This publication is also available in**

<b>DA</b>	<b>ISBN 92-825-3662-9</b>
<b>DE</b>	<b>ISBN 92-825-3663-7</b>
<b>GR</b>	<b>ISBN 92-825-3664-5</b>
<b>FR</b>	<b>ISBN 92-825-3666-1</b>
<b>IT</b>	<b>ISBN 92-825-3667-X</b>
<b>NL</b>	<b>ISBN 92-825-3668-8</b>

**Cataloguing data can be found at the end of this volume**

**Luxembourg: Office for Official Publications of the European Communities, 1983**

**ISBN 92-825-3665-3**

**Catalogue number: CB-35-83-336-EN-C**

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***Printed in Belgium***

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## INTRODUCTION

Provisional data shows that the Community's gross inland consumption of energy (excluding bunkers) declined by 2% in 1982 to reach about 891 million tonnes of oil equivalent (toe).

This is the third consecutive year in which the Community's energy consumption has fallen and represents the lowest level of demand since 1975.

This trend of falling consumption must be placed in the economic context of virtually zero growth in the Community's real gross domestic product in 1982, a fall in the index of industrial production and the spectre of an unemployment rate equivalent to about 10% of the total labour force.(1) Furthermore, graph 1 shows the persistence in 1982 of a trend noted since 1979 - namely a dissociation between energy consumption and real economic growth. For example, setting the energy consumption/GDP ratio to the value of 100 for the year 1979, it consequently falls to 94 in 1980, 91 in 1981 and 89 in 1982. The parallel index for oil consumption per unit of GDP (1979 = 100) moves to 91 in 1980, 83 in 1981 and 80 in 1982 - a much more rapid decrease than that for total energy - and evidence of important structural change in the market place. The share of oil, therefore, in the gross inland consumption of energy (Table 1, Annex 1) was 54,5% in 1979 but fell to 48,7% in 1982.

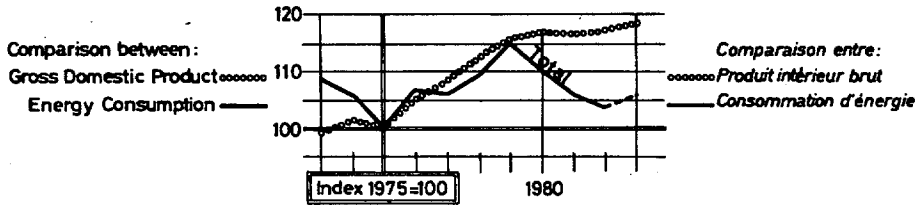
Consumption of other fuels in the period 1979-1982 (see Graph 1) shows a stagnation in coal demand, a slight fall in natural gas consumption and a 70% increase in nuclear energy production. Nuclear energy, however, still only represents 7% of total Community consumption in 1982.

(1) The macroeconomic forecasts referred to in this document were those established by Commission services in October 1982.

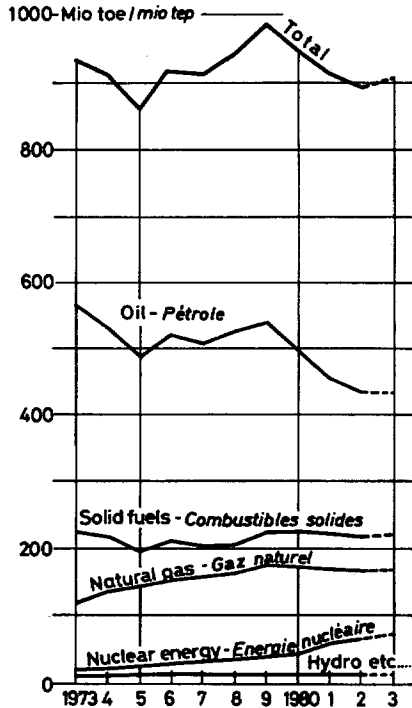
Graph.1

**EUR-10: Energy Consumption and Gross Domestic Product \***  
**Consommation d'énergie et produit intérieur brut \***

\* at 1975 prices and exchange rates  
 \* aux prix et taux de change de 1975



**Energy Consumption by type of Fuel**  
**Consommation d'énergie par source**



The supply of energy in the Community in 1982 continued the trends of the previous two years i.e. increasing domestic production and reduced net imports (see Graph 2). In 1982 - the Community produced 493 million toe of energy (worth 54% of total inland consumption) with resultant net imports at 419 million toe - a 46% dependence on external sources of supply. Net oil imports fell again to 331 million toe (some 265 mtoe<sub>a</sub> less than in the peak year of 1973) and a level equivalent to approximately 37% of total energy consumption. A 5 million toe decrease in stocks made up the balance of supply in 1982 (a slightly lower fall than in the previous year).

In 1983, forecasts from Commission services suggest a modest 1.1% increase in the Community's real gross domestic product which will give rise to a 1.3% increase in gross inland consumption of energy (Table 2, Annex 1). The energy/GDP ratio will remain unchanged at 89 (1975 = 100) with consumption of solid fuels and natural gas forecast to increase by 0.9% and 2.4% respectively.

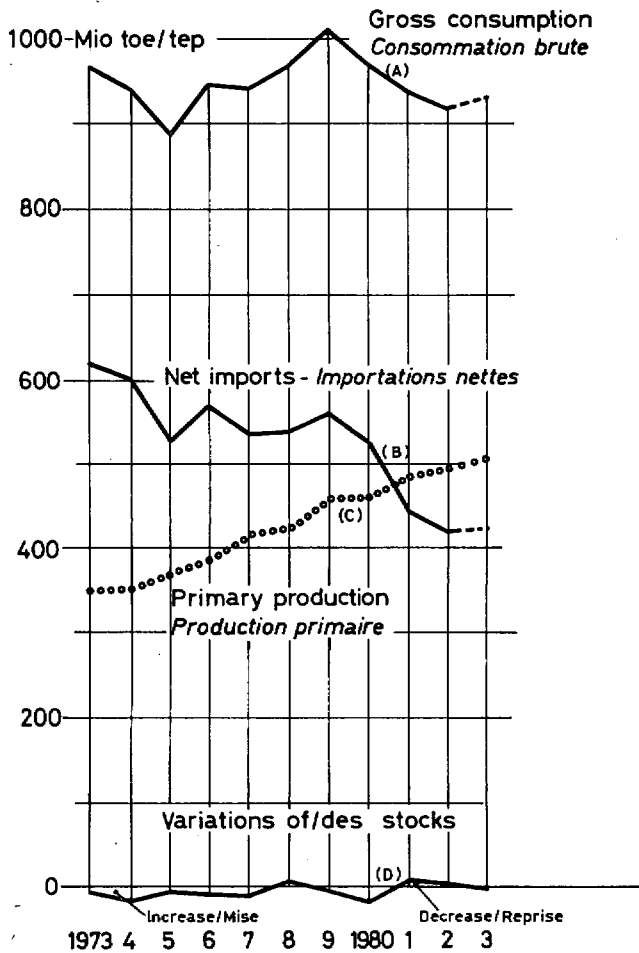
Oil consumption is expected to decline marginally whilst nuclear energy will increase to take 8.1% of the forecast 903 mtoe gross inland consumption of energy in 1983. The supply profile for 1983 is projected to show a widening absolute gap between increasing Community production (508 mtoe) and the net import requirement of 422 mtoe, leaving the overall percentage dependence on external sources of supply in 1983 close to the 1982 level of 46%.

The 1983 forecasts, however, are subject to an unusual degree of uncertainty because of the current weakness in the oil market. Falling crude oil prices would have important implications for oil and other energy markets in the Community. The overall impact would depend on many factors, such as the duration and extent of any price decrease, dollar exchange rates, changes in economic growth rates, the effect on consumer prices and expectations about future trends.

Graph.2

# EUR-10 : Gross Consumption of Energy Sources of Supply

*Consommation brute d'énergie*  
*Approvisionnements*



Note: (A) = (B) + (C) + (D)



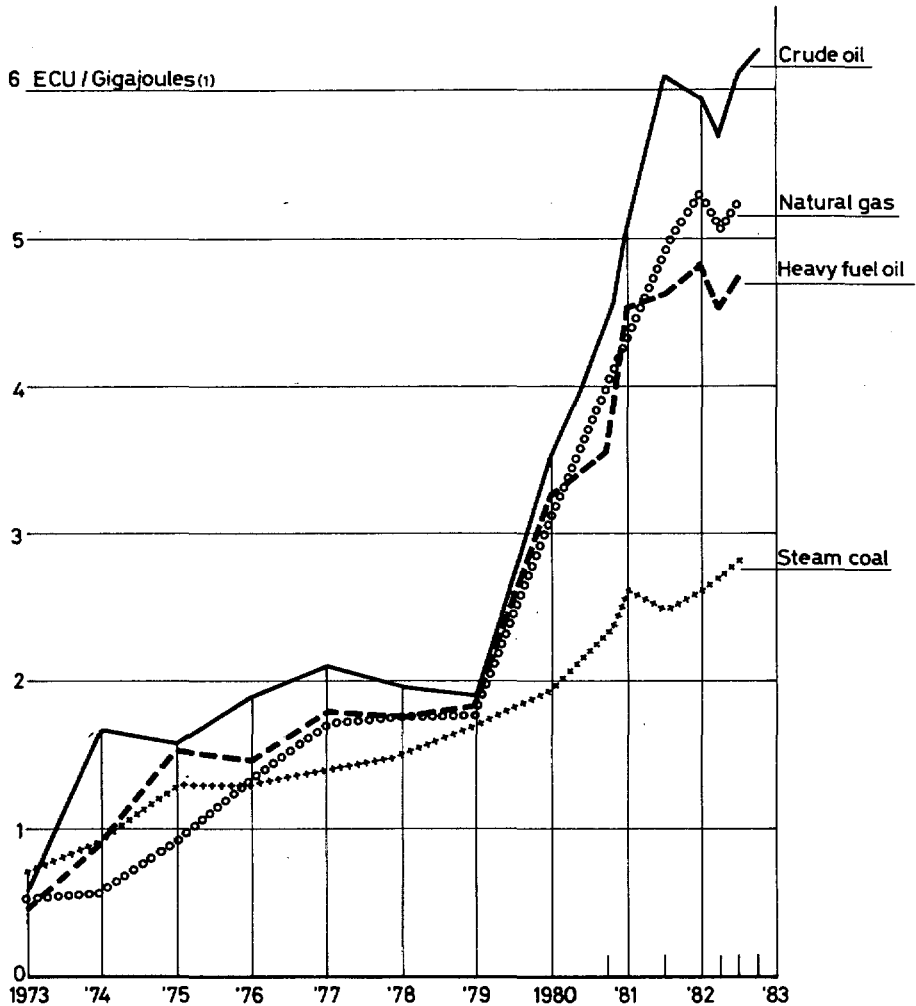
## ENERGY PRICES

There have been major changes in the price structure in the Community's energy markets in the period 1979-82. The 'second oil price shock' following the revolution in Iran in 1979, falling demand for energy products and substitution for oil within the context of an economic recession have resulted in the continual adjustment of relative prices to rapidly changing events. As an example of this, Graph 3 illustrates in summary form the changing price structure in the Community for the industrial fuel market. (Data for the graphs is highly aggregated and therefore the results should be interpreted with some caution).

As can be seen from the graph, the year 1979 can be interpreted a critical year for the determination of current pricing structure. In the six previous years, despite the 'first oil price shock' of 1973 prices of oil, coal and gas followed a similar upward moving trend. However in the period 1980-1981, the increase in oil prices was twice as sharp as for coal. Indeed coal prices seem increasingly likely to retain their price advantage over oil. For natural gas, the graph shows that the prices of this fuel lagged the 1973 and 1979 surge in oil prices and hence has for long periods enjoyed a significant premium over oil. Recent trends, however, suggest that as the Community increases its net imports of natural gas, net imports whose prices are more and more frequently linked to crude oil prices, that this long-term price advantage may be coming to an end.

In many Member States it now appears that residual fuel oil prices are less in real terms than those for natural gas (particularly uninterruptible supply) even taking into account the different useful energy yields of the fuels for industrial use. Real electricity prices (not shown in the graph) rose at rates comparable to those for coal in the period 1978-1982, but at lower rates than for all other forms of energy for the period 1973-1978.

# Ruling Prices Industrial Market excluding VAT



(1) Assuming 7.39 Barrels/tonne at 42.229 GJ  
 1973-1976, Commissions best estimates; 1977-1979, based on quarterly returns, January 1980: onwards based on monthly registration of crude oil imports

## NATURAL GAS

### (i) Consumption

Preliminary estimates for 1982 show that natural gas consumption declined for the third year in succession to reach 163 million tonnes of oil equivalent. For the Community as a whole the fall in consumption was about 2%, although the picture varies between Member States. Since the peak reached in 1979, natural gas consumption in the Community has fallen by about 5%.

Belgium showed the sharpest fall in consumption for 1982 with a reduction on the previous year of about 19%. This fall was mainly in the industrial market and reflects, in part, changes, in the current relative price for natural gas.

In the Netherlands, where natural gas meets half of the country's energy needs, there was a fall in consumption of almost 3% whilst Luxembourg, a relatively small user of natural gas, showed a fall in consumption of about 15% on top of the 20% fall in the previous year. The Federal Republic of Germany and the United Kingdom also recorded falls in consumption in 1982, of about 5% and 3% respectively.

These falls in consumption were partially offset by increased demand in other Member States based on increased supplies, either from import projects or indigenous production. In France consumption grew slightly, partly as a result of new supplies under recently settled contracts for imports of natural gas from Algeria. In the case of Italy, increased consumption, mostly accounted for by an increase in the use of natural gas for electricity generation, was based on both increased imports and an 11% increase in production. Ireland showed an increase of about 40% in natural gas consumption - from a

relatively low level - as it continues to develop its offshore Kinsale field. Denmark became a natural consumer in October 1982, with initial supplies via a new pipeline connection to the Federal Republic of Germany. Natural gas will be imported from Germany under a three year agreement ; thereafter supplies will be taken from the fields in the Danish sector of the North Sea, which are currently under development. Greece has also begun to produce relatively very small quantities of natural gas which are used for the production of fertiliser. The overall picture of the fall in natural gas consumption is due to the continuing economic recession together with a degree of substitution by alternative energies and the impact of energy saving measures. These last two trends have been accelerated by substantial increases in the level of natural gas prices and general energy prices respectively, over the last couple of years.

The shares of the main consumption sectors in total natural gas consumption, however, continues to change slowly. The share of natural gas consumed by the domestic sector, for example, shows another slight increase in 1982 for the Community as a whole, mainly reflecting the sharp fall of natural gas consumption in the industrial sector. There has also been a welcome decline in natural gas usage for electricity generation in some Member States, although in others more gas is being used for this purpose as a short-term expedient. Overall there is a slight decrease in the use of gas for electricity generation in 1982.

Forecasts for 1983 suggest that there may be a slight upturn in natural gas consumption, mainly due to increases in France and Italy as new supplies build up towards their full contract volumes, together with forecast increases in consumption in the Netherlands and the Federal Republic of Germany, based on corresponding increases in domestic production. Consumption in

Denmark and Ireland is also forecast to increase as these countries further develop their use of natural gas. In the United Kingdom consumption is forecast to remain at about the same level whilst in Belgium the situation is less clear, much depending on the evolution of relative prices in the energy market.

(ii) Supply

Production of natural gas in the Community fell in 1982 with respect to the previous year. The fall was about 6% for the Community as a whole and was mainly accounted for by a 13% fall in the Netherlands, which nevertheless still accounts for about half of total Community production. The other major Community producer, the United Kingdom, which accounts for just over a quarter of Community production, reported virtually no change from the output levels of the previous years.

The fall in Netherlands production was mainly reflected by a decline in supplies to other Community Member States of about 18%, with reductions above this average figure in supplies to France, Italy and Belgium being compensated by a fall of 7 % in supplies to the Federal Republic of Germany.

In 1982 imports of natural gas from third countries were very slightly above imports for the previous year. The increase in imports by Italy and France was largely offset by a fall in imports to the Federal Republic of Germany, the United Kingdom, the Netherlands and Belgium. The share of total supplies accounted for by imports outside the Community remains at about 27%.

Norway continues to be the major source of imports to the Community, supplying natural gas to all major gas consuming Member States except Italy. Currently the second largest third country supplier of natural gas to the Community is the USSR, with

exports to the Federal Republic of Germany, Italy and France. The other major Community supplier is Algeria, which has contracts for supplies of natural gas to France, Italy and Belgium (the latter via the Liquefied Natural Gas (LNG) terminal at Montoir in France, pending completion of the Belgian Zeebrugge LNG terminal). The contract for Algerian gas supplies to the United Kingdom, however, was not renewed. There is also a contract for supplies from Libya, to Italy although the quantities are relatively small.

In 1983 production is forecast to be marginally lower than in 1982, whilst imports for third countries are expected to increase from 46 mtoe in 1982 to 53 mtoe in 1983 (see Table 1, Annex 2).

## OIL

### (1) Consumption

From the data available, the consumption of oil in 1982 confirms the trend, evident for the last three years, towards a major drop in oil consumption (see Graph 1). Gross inland consumption of crude oil and equivalents (excluding bunkers) was 537 mtoe in 1979. Provisional data for 1982 suggests that consumption will level at about 434 mtoe - a fall of approximately 100 mtoe (or 19%) in three years and about 4% less than in 1981 (see Table 2, Annex 2). The rate of decrease in oil consumption in 1982 (-4%) however, is less than in the previous two years where rates of decrease of about (-8%) were recorded for 1980/79 and 1981/80).

The main reduction in demand concerns fuels for domestic and industrial use. For example residual fuel oil deliveries were 10% lower in the January-September period of 1982 than in 1981 with consumption in power stations in 1982 lower than in 1981. Motor spirit consumption remains almost unchanged whilst there is a slight increase in demand for diesel fuels. The overall fall in oil demand is due to many factors among which are the recession in economic activity, the substitution of other forms of energy for oil, end consumers achieving substantial energy savings, and the possibility that consumers have maintained stocks at fairly low levels in the hope that prices of oil products would drop.

If the economic activity remains as weak in 1983 as at present and if the energy savings effort continues, the trend towards falling oil demand could harden. However, the shrinking savings and substitution potential might make it difficult to maintain



the rate of reduction in consumption. Motor spirit consumption will remain more or less the same as in 1982. Energy savings in the household sector are mainly the result of changes in consumer behaviour. There are clearly limits beyond which there is an unacceptable drop in the level of comfort. Measures already taken in industry have already led to appreciable savings but the propensity for further energy savings in the sector is difficult to forecast. Taking these points into account it is therefore estimated that in 1983 the Community's gross inland consumption of oil could be about 1% lower than in 1982.

(ii) Foreign trade in oil products

The Community's foreign trade balance in oil products deteriorated in 1982. In the first seven months of the year imports of oil products increased by almost 20% whilst exports remained more or less unchanged. Net imports of petroleum products for the full year 1982 will probably be around 30 million tonnes compared with 17.7 million in 1981.

This deterioration is due to a major increase in the amount of low-cost products imported from state-trading countries and from North Africa. These imports caused a major disturbance in market conditions and were a factor in the difficulties encountered by the refining industry in covering development costs (see refinery production). It is not likely that this foreign trade balance will improve in 1983.

(iii) Refinery production

In the first three quarters of 1982 refinery production fell by 5% from the already depressed levels of 1981. The increase in net imports of products and withdrawals from product stocks resulted in a fall in the proportion of the market supplied

by Community refineries to 88% compared with 95% in 1981. The fall in domestic output was most marked in France (12%) and Belgium (10%), whose net imports rose steeply ; the Netherlands was the only Member State to maintain production at about the 1981 level.

Production in Community refineries in 1983 is expected to show little change from 1982 but may rise slightly as the run-down of product stocks comes to an end.

(iv) Refining capacity

Primary distillation capacity was sharply reduced in most Member States during 1982. The imperative need to reduce costs in a falling market, in which most companies foresee little prospect of growth or profit, has caused companies to decide upon the permanent closure of 16 refineries during 1982 and 1983, totalling nearly 100 million tons/year, or 12%. Averaging the capacity estimated to be in service at 1.1.1982 and 31.12.1982 suggests that utilisation was of the order of 60% over the year compared with 55% in 1981. The ratio was particularly low, at barely 50%, in Italy and the Netherlands, which, as the Community's main exporters have been hard hit by the fall in the demand from their traditional customers. Most of the other Member States were in the range of 65-75%.

In 1983 further closures are scheduled and average plant utilisation should rise significantly.

The expansion of Community conversion capacity, required to adapt refinery yield to the rising relative demand for distillate products, continued in 1982 with the commissioning of several major projects, notably in the United Kingdom. Some upgrading capacity was lost, however, as a result of refining closures in Germany and the United Kingdom.

(v) Crude oil production

Community production of crude oil and condensate is expected to be about 114 mtoe in 1982 - some 12% higher than in 1981. The United Kingdom, the dominant producer with approximately 90% of total Community production is expected to have increased its production in 1982 by a similar amount. Production has gradually built up during the year in Denmark and Greece, but declined by 3% and 2% in the Federal Republic of Germany and France respectively. In 1983 Community production is forecast to reach 125 Mtoe, about 10% higher than in 1982.

In global terms, world oil production in 1982 will be about 7% lower than last year in the production range of 41 to 42.5 million barrels/day compared to 44.5 million barrels per day in 1981. This drop is partly due to a decrease in world oil requirements and partly to the fact that oil companies drew down their stocks to limit the effect of surplus supplies on company earnings. The OPEC production rate has dropped sharply and consequently the OPEC share of the world market has declined from 65% in 1974 to less than 45% of requirements in 1982. Production in the United States has increased little, but a major increase in Mexican production is noted.

Production in non-OPEC countries, particularly in the Community will continue to increase in 1983 whilst the oil extraction rate in OPEC areas will be similar to that in 1982.

(vi) Crude oil imports

Because of the drop in consumption, the increase in Community production and the rundown in stocks, it is estimated that in 1982 the Community's net imports of petroleum (crude and products) were 7% less than in 1981. The larger decline in the

net imports of crude oil and feedstocks being partially offset by increased net imports of petroleum products.

As is well known, there have been major changes in the importance to the Community of various sources of supplies of crude oil :

- intra-Community trade, particularly supplies from the United Kingdom, for example increased by 15% in the first three quarters of the year ;
- imports from non-Community countries decreased by more than 12%. In particular, there was a drop of 20% in imports from OPEC countries as compared with 1981. Leaving aside supplies from Iran, there has been a major decrease in deliveries of oil extracted in the Middle East. Imports from Africa seem to be similar to 1981 levels.

(vii) Oil prices

As in 1981, the balance between world production and consumption of oil and the resulting price trends continues to cause a number of problems in 1982. Although OPEC was able to maintain its official market prices for crude oil, it nevertheless had difficulties in asserting its ability to direct the markets and impose strict price and production quota discipline on the members of the organization. Oil producers found it difficult to regularize the differences between production and consumption.

In 1981 there were several successive increases and decreases in official prices of crude oil in different producer countries. At the beginning of 1982 there were decreases, particularly in crude oils, and this trend spread to light qualities, at least in some areas such as Iran and the North Sea. In June some producers, particularly those in the North Sea in the USSR, increased their prices. The surplus of crude oil forced some

producer countries to sell their cargoes on the spot market at prices lower than the official levels in order to balance their budgets.

These movements affected the Community. The average cost of imported crude oil which was \$ 35.62 per barrel in the fourth quarter of 1981, decreased to \$ 32.97 in the second quarter of 1982 and then rose again slightly in the third quarter. For the full year 1982 the average cost of imported crude oil, expressed in dollars, will be about \$ 3 per barrel less than in 1981 (see Table 3, Annex 2). During the same period the Community's currencies depreciated vis-à-vis du dollar (\*) by more than the drop in the cost of imported crudes. The general public and the dealers suffered the consequences in the prices they paid and the earnings they made.

The drop in the price of some crudes resulted in more competition in the marketing of oil products on the Community's markets where imports of low-cost refined products, particularly from state-trading countries, had already forced refiners to give major discounts in order to make sure that as much of their capacity as possible was used. The concern to limit losses at the refining stage explains why stocks were drawn down to such an extent as to reach their lowest level since 1969.

In the first quarter of 1982 prices for oil products, expressed in national currencies, decreased in all Member States, particularly those where there are no price formation rules.

In the second and third quarters, prices for oil products gener-

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(\*) Fluctuations in Community currencies vis-à-vis du dollar :  
15 December 1981/end November 1982.  
Bfrs - 26% ; DM - 11% ; FF - 23% ; Lit - 20% ; HFL - 10% ;  
£ - 17%.

ally increased but prices fell in the fourth quarter of 1982 to follow the downward trend of the world markets for crude oil and oil products.

It is difficult to forecast oil price trends for 1983. Against a background of hesitant changes in economic activity the effect on prices of the disparity between oil supply and demand is compounded by the uncertainty over exchange rates between the Community currencies and the dollar. Even if OPEC manages to maintain its official reference prices for crude oils, prices charged on the free markets may fluctuate although there will be a tendency for them to decrease if certain producer countries find themselves short of foreign currency.

There is the possibility that oil prices will stagnate or decrease in dollar terms (and maybe also in national currencies) on Community markets in 1983. Oil companies, therefore, may again suffer the consequences of earnings too low to cover the rising costs of their transport capacities and surplus refining capacity.

## COAL

### (i) Consumption

In 1982 coal consumption in the Community is estimated to have been 303 million tonnes (183 Mtoe) and is expected to increase in 1983 to about 305 million tonnes (see Table 1, Annex 3). In addition, lignite and peat consumption reached 169 million tonnes (33,5 Mtoe) in 1982 - similar to that of 1981.

The consumption of coal in power stations increased again in 1982 to 182 million tonnes - or 60% of total demand. The main reason for this increase was the dry summer of 1982.

In 1983, coal consumption in this market should be maintained at about the same level as 1982.

Coke consumption in the iron and steel industry recorded a large fall in 1982 due to the effects of the recession in the steel industry. In 1981 consumption of coke in this sector was 53 million tonnes but is expected to have dipped to 45 million tonnes in 1982 and is forecast to be 43 million tonnes in 1983.

In other consumption sectors, there has been a slight upturn in demand - the result of efforts to convert to coal in varying industries and demand for district heating purposes.

### (ii) Supply

In 1982 Community production of coal (including recovered products) was 248 million tonnes, about 2% less than in 1981.

The percentage fall in production should be higher in 1983.

Imports of coal from third countries were 70 million tonnes in 1982, compared to 71 million tonnes in 1981. These imports are forecast to remain stable in 1983.

Production of coke, heavily affected by the recession in the steel industry, reached 60 million tonnes in 1982. This represents a fall of 7% (4,6 mt) compared to 1981. In 1983 production of coke will be about 57 million tonnes. Again it is noteworthy that even with the fall in the production in 1982, stocks have again risen during the year (by 3 mt in 1982) and the forecast is for a stock movement of about the same amount in 1983.

Community stocks of coal and coke will be the equivalent of 132 mt of coal at year end 1982 - compared to 118 mt at the beginning of the year. Stocks should increase again in 1983, this time by about 6 million tonnes - except if there is an upturn in the steel industry.

#### (iii) Import prices

Table 2 in Annex 3 shows the trend in prices of imported coal from third countries arriving in Community ports in 1981 and 1982. The annual average prices in 1982 for coking coal and steam coal (76 and 70 \$ US/tce respectively, reflects stable although relatively high quarterly prices. These prices were nevertheless slightly less than the record quarterly prices noted in 1981 (82 and 73 \$ US respectively). Supplementary charges arising from the delays of ships in ports have now almost disappeared. At the price levels currently pertaining, imported coal, in spite of the appreciation of the dollar in the foreign exchange market, nevertheless maintains a substantial cost advantage over domestically produced Community coal. For 1983, the coupling of the projection of more or less stable demand with oversupply, suggests a slight decrease in import prices in the year ahead.



## ELECTRICITY

### (i) Electricity consumption

In 1982 the electricity demand in the Community is expected to have marginally decreased compared with 1981, reflecting the sluggish state of the economy. The net electricity consumption is estimated to be some 1210 TWh, a fall of 0,6% on last year (see Table 1, Annex 4).

In general, there was a decrease in electricity consumption in the industrial sector whilst consumption in the tertiary and domestic sector held up. This pattern is similar to that of the previous year.

In the event that economic conditions show some improvement in 1983, as predicted, the expectations are that this will be reflected in improved growth rates in all countries, resulting in an increase of some 1.5% in net Community electricity consumption.

### (ii) Electricity production

Net electricity production in the Community is expected to have decreased by some 0.4% in 1982 as compared with 1981. There were, as in 1981, significant changes in the contribution of the various energy sources to electricity production. These include an expected increase in the contribution of nuclear of some 12%, a decrease in that of petroleum products of about 9%, and a slight increase in that of coal.

The effect of the above changes is expected to be that, for 1982, 19% of electricity production was from nuclear, 43% from solid fuels, 7% from natural gas, and 12% from hydro (see Table 2, Annex 4).

In 1983 a further significant increase in the contribution of nuclear to electricity production is expected. If the electricity production requirements increase as expected, the contribution from coal in 1983 might increase slightly whilst that from petroleum products should decline.

(iii) Nuclear energy

During 1982, four pressurized water reactors (PWR) were linked to the grid in the Community. There were two in Belgium : DOEL 3 (900 MWe) and TIHANGE 2 (900 MWe) and two in France : LE BLAYAIS 2 (920 MWe) and CHINON B1 (880 MWe). This brought total net operating capacity of nuclear power plants in the Community from 41.3 GWe (\*) at the end of 1981 to 44.9 GWe at the end of 1982.

According to current plans a total of 13 nuclear units will be connected to the grid during 1983. They are :

- five PWR reactors in France : CHINON B2 (880 MWe), LE BLAYAIS 3 (920 MWe), LE BLAYAIS 4 (920 MWe), PALUEL 1 (1285 MWe) and PALUEL 2 (1285 MWe).
- two boiling water reactors (BWR) in Germany : GUNDREMMINGEN B (1244 MWe) and KRUMMEL (1260 MWe)
- six advanced gas cooled reactors (AGR) in the United Kingdom : DUNGENESS B1 and B2 (1173 MWe), HARTLEPOOL 1 and 2 (1250 MWe) and HEYSHAM A1 and A2 (1244 MWe).

Thus, during 1983, total net operating capacity of nuclear power will increase by 11.5 GWe to attain 56.4 GWe by the end of the year.

The production of electricity from nuclear power plants totalled 225 TWh in 1982 up 11.5% from last year. This brings nuclear's share in overall electricity generation to 19.0%. As growth in total electricity production has been less than growth in

(\*) 1 GWe = 1000 MWe

nuclear electricity production, nuclear power has been able to displace economically some oil based electricity production.

For 1983 this trend is expected to continue. Nuclear electricity production could increase by 15% to reach 259 TWh bringing nuclear's share in total electricity production to 21.3%. If growth in demand for electricity remains low, nuclear capacity will continue to displace some oil (and gas) based electricity generation.

#### NUCLEAR FUELS

- a) The trends already observed during previous years have again been confirmed : as far as the availability of nuclear fuels is concerned, the conditions of the market in natural uranium and slightly enriched uranium (including enrichment services) enable - for the time being at least - adequate supplies to be secured and sources to be diversified.
- b) When account is taken of contractual commitments for enrichment services entered into by Community users, the demand for natural uranium in the Community will be amply covered by contracts until the middle of the decade, so that on the whole users have considerable reserves of natural and enriched uranium at their disposal.

Deliveries of natural uranium made in pursuance of purchasing contracts known to the Agency and on behalf of companies established within the Community amounted to approximately 13000 tonnes in 1981, while those made under spot contracts represented less than 10% of the total.

Since supply continues to exceed demand, the average price paid for natural uranium under forward contracts - US \$ 33.25 per pound of  $U_3O_8$  in 1981 - should, in view of routine annual negotiations, work out slightly lower in 1982. As was to be expected, spot-market prices showed a much more marked downward trend, falling from US \$ 23.5 to US \$ 17 per pound of  $U_3O_8$  between December 1981 and October 1982.

- c) Surplus capacity is also the main feature of the enrichment market. There is therefore no problem regarding the security of supplies, especially since Community industrialists, who possess the technology are in a position to bring the capacities required in future on stream in good time. The capacity installed in the Community has already enabled the latter to become a net exporter of enrichment services.

Low-enrichment uranium requirements are being met increasingly from the Community's isotope separation plants (EURODIF and URENCO). On the other hand, the Community's need for the highly enriched uranium used in research reactors continues to be met exclusively by deliveries from the United States, which consequently enjoys a de facto monopoly.

The plutonium intended for fast breeder reactors is produced during the reprocessing of fuel elements within the Community.

Table 1

Gross inland consumption of energy in the Community

	1980 (Eurostat)		1981 (Eurostat)		1982 <sup>(*)</sup> Estimates		1983 Forecasts	
	M toe	%	M toe	%	M toe	%	M toe	%
Hard coal and equivalents	189,8	20,1	186,4	20,5	183	20,5	184	20,4
Lignite and equivalents	32,9	3,5	33,5	3,7	33	3,7	34	3,8
Crude oil and equivalents	493,8	52,3	451,7	49,7	434	48,7	430	47,6
Natural gas	169,3	18,0	165,8	18,2	163	18,3	167	18,5
Nuclear energy	42,7	4,5	56,6	6,2	63	7,1	73	8,1
Hydro and others	15,4	1,6	15,8	1,7	15	1,7	15	1,6
<b>T O T A L<sup>(**)</sup></b>	<b>943,9</b>	<b>100,0</b>	<b>909,8</b>	<b>100,0</b>	<b>891</b>	<b>100,0</b>	<b>903</b>	<b>100,0</b>

(\*) provisional data

(\*\*) including other fuels

Table 2

Percentage change in GDP and in energy consumption

	1981-1980	1982-1981 (estimates)	1983-1982 (forecasts)
Gross domestic product	-0,6	+0,3	+1,1
Energy inland consumption, of which :	-3,6	-2,1	+1,3
- Oil	-8,5	-3,9	-0,9
- Solid fuels	-1,3	-1,8	+0,9
- Natural gas	-2,1	-1,7	+2,4
- Nuclear energy	+32,5	+11,3	+15,9
- Hydro, geothermal and others	+2,6	-5,1	-

Table 3

Energy supply in the Community

(M toe)

	1980 (1)		1981 (1)		1982 (2)		1983 (3)	
	Pro- duction	Net(*) imports	Pro- duction	Net imports	Pro- duction	Net(*) imports	Pro- duction	Net(*) imports
Solid fuels	185,1	47,3	186,5	42,2	184	41	181	42
Oil	91,1	437,9	101,6	357,8	114	331	125	325
Natural gas	129,2	40,6	125,2	42,6	118	45	116	53
Primary electricity, etc.	56,7	1,4	70,5	1,9	77	2	86	2
T O T A L	462,1	527,2	483,8	444,5	493	419	508	422

(1) Eurostat.

(2) Provisional data.

(3) Forecasts.

(\*) Imports minus exports.

Annex 1  
(continued)

Table 1

Annex 2

## EUR-10 - Natural gas consumption, production and imports

(Mtoe)

	1981 <sup>(1)</sup>	1982/81 %	1982 estimates	1983/82 %	1983 forecasts
Production	125	-5,6	118	- 1,7	116
Imports from third countries	45	+2,2	46	+15,2	53
Consumption (*)	166	-1,8	163	+ 2,4	167

(1) Eurostat

(\*) Not always equal to the sum of production and imports because of stock changes and exports of gas to third countries.

Table 2

## Eur-10 - Oil consumption, production and imports

(Mt)

	1981 <sup>(1)</sup>	1982/81 %	1982 estimates	1983/82 %	1983 forecasts
<u>Consumption</u>					
- Inland	449,9	- 4,0	432	-0,9	428
- Bunkers	26,7	- 2,6	26	-	26
<u>Total</u>	476,6	- 3,9	458	-0,9	454
<u>Production</u> (*)	100,8	+12,1	113	+9,7	124
<u>Stock change</u> (**)	+18,0		+14		+5
<u>Net imports</u>	357,8	- 7,5	331	-1,8	325

(1) Eurostat

(\*) Including recovered and regenerated products

(\*\*) (+) decrease of stocks ; (-) increase of stocks

Table 3

Average EEC consumer prices (before tax) and crude oil costs <sup>(1)</sup>

\$/tonne		12/80	6/81	12/81	6/82	12/82
Premium gasoline		450	427	475	410	418
Regular gasoline		442	424	465	383	403
Heating gasoil		355	327	373	342	352
Residual fuel	1 % s	212	209	204	183	182
Average	\$/ t	330	313	341	303	309
Proceeds	Index	100	95	103	92	94
Crude oil	Index	100	103	102	95	94
CIF cost	\$/ t	260	268	265	246	245

- (1) Prices are derived from data provided by Member States under the Community information and Consultation Procedure (Council Directive 76/491/EEC).
- (2) "Average proceeds" : Individual product prices are weighted according to the 1981 consumption of each main product.



Table 1

Annex 3

Solid fuel supply situation (EUR-10)

(Mt)

	Production (1)	Imports	Exports	Stock change(2)	Gross inland consumption
<u>1981</u>					
Coal	252	71	-4	-16	303
Coke	65	-	-4	+2	63
Lignite+turf	167	3	-	-1	169
<u>1982</u> <sup>(3)</sup>					
Coal	248	70	-3	-12	303
Coke	60	1	-3	-4	54
Lignite+turf	167	2	-	-	169
<u>1983</u> <sup>(4)</sup>					
Coal	241	70	-3	-3	305
Coke	57	1	-3	-3	52
Lignite+turf	171	2	-	-	173

(1) Including recovered products.

(2) (+) decreased stocks ; (-) increase of stocks.

(3) Provisional data. (4) Estimates.

Table 2

CIF Price of Community coal imports

Year	Quarter	Coking coal			Steam coal		Relation (a)/(b) %
		Standard quality \$/t (1)	Tce(2)		Tce(2)		
			%	\$/Tce (a)	%	\$/Tce (b)	
1981	I	76	100	72	100	69	104
	II	80	104	75	106	73	103
	III	84	110	79	101	70	113
	IV	87	114	82	104	72	114
1982	I	82	107	77	103	71	108
	II	82	107	77	103	71	108
	III	81	106	76	100	69	110
	IV	80	105	75			

(1) Standard quality : A = 6% ; M = 5% ; VM = 24% .  
calorific value = 31.1 kJ/kg

(2) Tonnes of coal equivalent (calorific value = 29.3 kJ/kg)

E L E C T R I C I T Y

Table 1

Net consumption - EUR-10

Year	TWh	% change
1981	1217.1	
1982	1210	1982/81 : -0.6%
1983	1228	1983/82 : +1.5 %

Table 2

Net production - EUR-10

(TWh)

	TOTAL	of which : by energy source								
		Hydro	Geothermal	Nuclear	Conventional thermal	Coal	Lignite	Petroleum products	Natural gas	Others
Net production :										
1981	1204.8	149.4	2.6	201.8	851.1	408.8	102.6	222.5	90.3	26.8
TWh 1982	1200	142.3	2.7	225.0	830.0	419.0	100.0	202.0	88.0	21.0
1983	1218.0	135.9	2.7	259.1	820.3	424.0	100.5	190.8	86.0	19.0
% change										
1982/81	-0.4	-4.7	+3.8	+11.5	-2.5	+2.5	-2.5	-9.2	-2.5	-21.6
1983/82	+1.5	-4.5	0	+15.2	-1.2	+1.2	+0.5	-5.5	-2.3	-9.5
Share in total :										
1981	100	12.4	0.2	16.8	70.6	33.9	8.5	18.5	7.5	2.2
% 1982	100	11.9	0.2	18.7	69.2	34.9	8.3	16.8	7.4	1.8
1983	100	11.2	0.2	21.3	67.3	34.8	8.2	15.7	7.1	1.6

Annex 4

European Communities — Commission

**The energy situation in the Community  
Situation 1982 - Outlook 1983 (Report from the Commission to the Council)**

Luxembourg: Office for Official Publications of the European Communities

1983 — 35 p. — 16,2 x 22,9 cm

DA, DE, GR, EN, FR, IT, NL

ISBN 92-825-3665-3

Catalogue number: CB-35-83-336-EN-C

Price (excluding VAT) in Luxembourg

ECU 1,12 — BFR 50 — IRL 0.80 — UKL 0.70 — USD 1,50

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ISBN 92-825-3665-3



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