

# The Energy Situation in the Community

Situation 1975

Outlook 1976

This report analyses the energy situation in the Community in 1975 and comments on the outlook for 1976.

An economic recession involving a fall of about 2½ per cent in Community gross domestic product in 1975 was associated with a drop in energy consumption of 4.7% as compared with 1974. The decline in energy consumption was the result of a combination of factors, - economic recession, high energy prices, mild climatic conditions, and energy savings measures. The energy supply industries faced major problems principally as a result of the fall in demand and rising costs.

With regard to the outlook for 1976, an economic recovery involving a growth in Community G.D.P. of 3% could lead to a rise in energy consumption of about 3%, reaching 900 M. toe (1973 = 936 M. toe). On the assumption of relatively balanced conditions in the oil market, crude oil should be readily available at prices stable until June and thereafter increased to compensate for inflation. Oil consumption is expected to rise by about 2%.

Estimates of Community coal output for 1976 are that it will be of the same order of magnitude as in 1975. The demand for natural gas is expected to rise by 7%, reflecting increased availability. Electricity demand could rise by 2.4%, with nuclear plant expected to provide nearly 9% of total gross electricity production in 1976.

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The Energy Situation in the Community

Situation 1975 - Outlook 1976

I. Summary

The following are principal points of this report:

- 1975
- (1) An economic recession involving a fall of about  $2\frac{1}{2}$  per cent in Community gross domestic product was associated with a drop in energy consumption of 4.7 per cent as compared with 1974.
- (2) The variations in consumption of the main energy sources were as follows:

1975/74  
Per cent

Oil	- 8.4
Coal	- 8.8
Natural Gas	+ 7.8 (reflecting increased availability)

- (3) The supply of primary electricity rose by  $16\frac{1}{2}$  per cent, reflecting principally the growth in nuclear power plant capacity.
- (4) The decline in energy consumption was the result of a combination of factors:
- economic recession
  - high energy prices
  - mild climatic conditions
  - energy savings measures
- (5) The energy supply industries faced major problems during the year:
- oil prices in the product markets remained generally depressed;
  - under-utilisation of plants - Community refineries operated on average at 60 per cent of capacity -

- resulted in increased unit costs;
- coal and coke stocks were built up giving rise to financial problems for the coal industry;
  - costs of coal production rose substantially;
  - electricity demand fell, for the first time in over 25 years, by nearly 2 per cent;
  - electricity supplies to industry were some 6 per cent below 1974.
  - the tightness which was apparent in the natural uranium market in 1974 continued to be a phenomenon of the market in 1975.

1976

- (1) An economic recovery involving a growth in Community gross domestic product of 3 per cent could lead to a rise in energy consumption of about 3 per cent, reaching 900 m.toe (1973 = 936 m.toe).
- (2) The rise in consumption of the main energy sources is estimated as follows:

1976/75  
Per cent

Oil	+ 1.8	
Coal	+ 2.3	
Natural Gas	+ 7.0	( reflecting increased availability)

- (3) The supply of primary electricity could rise by 5.2 per cent, representing a slower rate of growth than in 1974 and 1975 ( + 11.9 per cent and + 16.5 per cent respectively).
- (4) On the assumption of relatively balanced conditions in the oil market, crude oil should be readily available at prices stable until June.
- (5) Higher sales volume and stronger international markets may lead to a rise in domestic selling prices, but surplus capacity will continue to pose problems for the oil industry.
- (6) Estimates of Community coal output for 1976 are that it will be of the same order of magnitude as in 1975.
- (7) Coal and coke stocks are likely to continue to rise in 1976, although to a lesser degree than in 1975.

- (8) Imports from third countries are likely to fall to 35m. tonnes as compared with 40m. tonnes in 1975.
- (9) Electricity demand is expected to rise by 2.4 per cent.
- (10) Nuclear plant is expected to provide nearly 9 per cent of total gross electricity production as compared with 8.2 per cent in 1975.

## II. The Economic Situation

The worsening in the economic situation in the Community, which became evident in the spring of 1974, appears to have been checked since last summer. Indeed, in the course of the autumn of 1975, a recovery in demand took place, although as yet it seems to have been limited to certain sectors and countries. The improvement was particularly noticeable in the Federal Republic of Germany and in France. However in most Member States, the employment markets continued to worsen and by October, 1975, nearly five million people were out of work. The degree of utilisation of productive capacity continues to be very low. At the same time, the weakening of inflationary pressures, which had been in evidence for more than a year, appears to have been interrupted.

The uncertainty as to the full extent of the recovery, and as to its duration remains. Nevertheless, on the basis of the available information, it seems that the gross domestic product of the Community could rise by about 3 per cent in real terms in 1976, as compared with a fall of about  $2\frac{1}{2}$  per cent in 1975.

Industrial production in the Community in 1975 is estimated to have fallen by about 7 per cent. The iron and steel industry was severely affected by the recession and total production of crude steel was expected to reach about 125 m. tons, as compared with 155 m. tons in 1974. The chemical industry and the construction sector were also adversely affected to a marked degree.

In 1976 the expected economic growth in the Community, and more particularly the anticipated economic expansion of the other developed regions, including the U.S.A., Canada and Japan, where the gross national product overall could rise by about 5 per cent in real terms (as compared with a decline of  $1\frac{1}{2}$  per cent in 1975), could be associated with a growth in the volume of world trade of about  $5\frac{1}{2}$  per cent, in contrast to a fall of 4 per cent in 1975.

### III. The Demand for Energy

Total inland consumption of energy in the Community in 1975 is estimated at about 874 million tons of oil equivalent ( m.t.o.e.), that is 4.7 per cent below 1974, a year in which energy consumption fell by 2.1 per cent as compared with the "pre-crisis" year of 1973. The inland consumption of oil products dropped by 8.4 per cent in 1975, further to the decline in oil consumption of 6.4 per cent in 1974. The consumption of coal and lignite in 1975 fell by about 9 per cent and 3 per cent respectively. The decline in consumption of oil and solid fuels was partly offset by a growth of about 8 per cent in natural gas. The supply of primary electricity rose by  $16\frac{1}{2}$  per cent, reflecting principally the growth in nuclear power plant capacity.

The decline in energy consumption noted above was principally the result of the economic recession in 1975, but it was also a reflection of high energy prices, mild climatic conditions and to some extent of energy savings measures. It is difficult to assess the impact of conservation programmes on energy, and in particular, oil consumption, in a strong recessionary environment.

The expected modest economic recovery in the Community in 1976 suggests that the total inland demand for energy may rise by about 3 per cent reaching approximately 900m. toe in the year ahead. Oil consumption could rise by about 2 per cent and solid fuels by about  $2\frac{1}{2}$  per cent. The demand for natural gas, reflecting increased availability, may rise by about 7 per cent. The supply of primary electricity could rise by about 5 per cent.

Table 1

Inland Consumption of Primary Energy in the Community

	1973		1974		1975 (estim.)		1976 (forecast)	
	Mio toe	%	Mio toe	%	Mio toe	%	Mio toe	%
Coal	196,0	20,9	189,3	20,7	172,6	19,7	176,5	19,6
Lignite	26,1	2,8	27,7	3,0	26,8	3,1	27,5	3,1
Oil	554,8	59,3	519,2	56,6	475,8	54,5	484,4	53,8
Natural Gas	117,9	12,6	134,3	14,7	144,8	16,6	155,0	17,2
Primary Electricity ( & others)	41,2	4,4	46,1	5,0	53,7	6,1	56,6	6,3
Total	936,0	100	916,6	100	873,7	100	900,0	100



Table 1A

Percentage Variations in G.D.P. and Energy Consumption

	<u>1974/1973</u>	<u>1975/1974</u> (estim.)	<u>1976/1975</u> (forecast)
Gross Domestic Product	+ 2.0	- 2.4	+ 3.0
Inland Consumption:			
- Energy	- 2.1	- 4.7	+ 3.0
- Oil	- 6.4	- 8.4	+ 1.8
- Coal	- 3.4	- 8.8	+ 2.3
- Lignite	+ 6.1	- 3.2	+ 2.6
- Natural Gas	+13.9	+ 7.8	+ 7.0
- Primary Electricity*	+11.9	+16.5	+ 5.2

\* Production plus or minus imports and exports.

#### IV. The Market Situation and Outlook

##### A. Petroleum

##### 1. Crude Oil Supply

###### (a) Crude oil availability

Crude oil availability throughout 1975 remained more than sufficient to satisfy demand at ruling prices. Although several producers, including Libya and Abu Dhabi, placed new restrictions on output, abundant supplies were available from the major producing areas. (Annexe 1)

As a result if the 8% fall in Community consumption and the run-down of its stocks, the Community's imports in 1975 were estimated to be 19% below 1974. Little change is foreseen in the level of stocks during 1976, so that the expected rise of between 1,5% and 2% in consumption will be reflected directly in a rise in imports of similar order. The contribution from indigenous production is expected to increase from 250,000 b/d in 1975, to about 600,000 b/d or 6,5% of demand in 1976.

###### (b) North Sea oil

The Argyll and Forties fields came into production during the second half of 1975, when the actual amount of oil produced from the U.K. sector was 1½ million tons. Production from Auk, hoped for in late 1975, was delayed by bad weather and the start-up of production from Beryl has been delayed at least six months because the production platform carried away from its moorings. Piper, too, has suffered delay from problems with the production platform. Capital and operating costs continued to rise sharply during 1975 although there is some evidence that the rate of cost inflation is now easing and costs becoming more realistic. Continued uncertainty persists, however, over the companies' agreement to the voluntary scheme for 51% Government participation.

Taking all such factors into consideration, the current best estimate for 1976 production from 7 fields is 18½ million tons. For 1977, when 11 fields should be in production, the Brown Book estimate of 40 million tons, or 800 thousand b/d, looks eminently reasonable.

###### (c) Price of the reference crude

In January 1975, OPEC decided to maintain the price of the reference crude, Arabian Light, at \$10,46 until the end of September. There was in fact a slight reduction in the EEC's average import cost as a result of reductions in the prices of African crudes and the continuing fall

in ocean freights. From October 1st, 1975, the price of Arabian Light was raised by 10% to \$11,51/bbl for the period until June 1976; the adjustment of the prices of other crudes was left to the discretion of individual OPEC members.

In the latter part of 1975, the demand for lighter crude, with low residue yield, such as Libyan and Nigerian crude oils, rose sharply while that for heavier material declined. Accordingly, the post October 1st price increases of the African crude oils were considerably greater than those of Kuwait and other heavier crudes.

## 2. Marine

During 1975 over-capacity in the tanker industry rose markedly, as completions continued to exceed scrapping of vessels. 40 million tons of shipping, or 13% of world capacity, was estimated to be laid up by the year-end and many more vessels were idle or under-utilized. The re-opening of the Suez Canal and the growing proportion in world trade of short-haul crudes, will inevitably add in 1976, and in subsequent years, to the surplus of very large crude carriers, the category of vessels worst affected by the fall in demand.

Table 2

WORLD TANKER CAPACITY ( Mio DWT)

	In service	Laid up	Total
December 1973	237,0	1,4	238,4
December 1974	259,3	5,3	264,6
December 1975 (est.)	263,3	40,0	303,3

The modest rise in world oil demand, and the growth in U.S. imports, should bring about some improvement in 1976, and concerted action by ship-builders and fleet owners to reduce the tonnage in service may follow from their joint Tokyo conference at end-1975.

The downward trend in freight rates during 1975 is illustrated in Annexe 2. The year-end spot rate for VLCC's for the Persian Gulf-North West Europe voyage of about World Scale 20 (\$0,39/bbl) compares with estimates

of WS 55 (\$1,05/bbl) needed to cover total costs, including interest on capital, and WS 40 (\$0,77/bbl) required to defray operating expenses only.

### 3. Prices of petroleum products

#### (a) International Markets

Throughout 1975 prices on the international produce markets remained depressed; even the 10% increases in crude prices on October 1st had no visible effect on product quotations. Markets were affected by the continuing decline in consumption, abundant crude supply and growing surpluses of capacity in refining and shipping. Of particular importance to international markets, was the decline in imports of finished products by the USA which amounted to no less than 23%, or 500,000 b/d, in the first half of 1975 compared with the same period in 1974. Fuel oil exports from Italy were especially affected by the contraction of American demand.

Although there were sharp fluctuations in the prices of individual products, average Rotterdam prices, related to the pattern of Community product demand, changed little in 1975 from the average in 1974, although crude oil prices rose by over \$20 per ton between September 1974 and October 1975.

Table 3

Average Monthly Rotterdam Quotations (Low) 1974/75

	1973	1974				1975			
	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept	Dec.
Gasoline									
Premium	177	181	146	112	114	119	140	124	136
Regular	167	171	136	103	104	111	130	119	129
Naphtha	136	156	125	97	92	101	108	110	128
Kerosine	217	107	96	96	104	104	106	121	124
Gasoil	176	99	86	92	91	81	105	114	104
Fuel Oil 1% S	122	70	67	67	76	79	64	62	65
3,5% S	112	64	63	62	69	70	60	56	56
Average*	149	100	88	83	86	86	92	92	91

\* Weighted according to EEC consumption

The underlying problems of surplus oil supply and plant capacity will persist through 1976. Average stock levels of crude and products are likely to be lower in 1976, following the run-down in 1975, and this will assist the strengthening of international and domestic prices. The higher level of industrial activity forecast for many countries will benefit particularly the prices of fuel oil and naphtha.

(b) Domestic Markets

Since prices in all the EEC countries are influenced directly or indirectly by the Rotterdam and Italian centres, ruling prices for most Member States remained low in relation to the landed cost of crude. In several cases average prices were, in dollar terms, little higher in November 1975 than in April 1974 ( see annexe 3). Even in countries where official prices were established at a comparatively high level, the glut of products on the market led to competitive price cutting. Consequently in very few places, and then only for short periods, were proceeds from oil sales sufficient to cover companies' average costs and to remunerate capital employed.

4. Demand

(a) Consumption of products

Consumption in the Community is estimated to have fallen by about 8% in 1975 following the decline of 6,4% in 1974. Fuel oil consumption was 11% down overall, its use for industrial processing/heating falling more than in electricity generation; naphtha deliveries showed the largest fall of all. Gasoil used for heating and industrial purposes fell about 4%; in automotive use, consumption remained about the same as in 1974. Gasoline consumption in 1975 rose about 5% and represented some 16% of total refined products demand, as compared with under 14% in 1973.

The recovery in industrial activity forecast for 1976 is expected to raise oil consumption in the Community by  $1\frac{1}{2}$  - 2%, despite continuing displacement of oil by gas and electricity in the heating market.

Table 4

Petroleum products consumption, by end-use in the  
Community

	Millions of tons			%	
	<u>1974</u>	<u>1975(*)</u>	<u>1976 (**)</u>	<u>1975/74</u>	<u>1976/75</u>
Industry	155,7	129,3	132,6	- 17,0	+ 2,6
Transport	116,0	120,2	126,1	+ 3,6	+ 4,9
Domestic	130,5	124,7	119,9	- 4,4	- 3,8
Total	402,2	374,2	378,6	- 7,0	+ 1,2

(\*) approx. figures (\*\*) forecasts

(b) Refinery problem

The more than proportionate fall since October 1974 in the demand for heavy fuel oil has resulted in an imbalance between the refinery yield and the pattern of demand. In order to reduce fuel oil surpluses, refinery through-put was cut back in 1975 and gasoline production was supplemented from stocks and imports. Towards the year-end the proportion of lighter ( more expensive) crude oils processed was raised. In spite of these expedients, fuel oil prices began to fall steeply from mid 1975. However the seasonal increase in the demand for fuel oil from November onwards, and the expected rise in demand in 1976 should alleviate somewhat the problems of refiners. Meanwhile the under-utilisation of plants - Community refineries operated on average at 60% of capacity in 1975 - has resulted in increased unit costs.

Higher volume and stronger international markets may be expected to bring about a rise in domestic selling prices in 1976. Refining and distribution capacity will, however, remain greatly in excess of requirements and competitive discounting is likely to continue.

B. Natural Gas

1. Natural gas supply

(a) Production and reserves

In 1975 the actual level of Community production was 8% less than had been forecast in December 1974. On a country by country basis, the following table compares actual 1974 production with both 1975 estimates and 1976 forecasts.

Table 5

Natural Gas Production - 1974, 1975 and 1976

	in thousand Tcal (GCV)			%	
	1974	1975 (*)	1976 (**)	1975/74	1976/75
Germany	172.7	160	184	- 7.6	+ 15.0
France	69.6	66	69	- 4.7	+ 4.5
Italy	140.0	132	136	- 5.5	+ 3.0
Netherlands	709.2	766	869	+ 8.0	+ 13.4
U.K.	327.7	341	363	+ 4.0	+ 6.5
Community	1419.8	1465	1621	+ 3.2	+ 10.6

(\*) approx. figures    (\*\*) forecasts

From the above figures it is clear that consistent growth in indigenous production is limited to the Netherlands and the United Kingdom, although following a drop in 1975, the level of German production forecast for 1976 reestablishes an upward trend. In the case of Italy a stable level of production is anticipated for several years; it is probable that the downward trend illustrated is the relatively short term effect of supply balancing measures taken to accommodate the supplies from the Netherlands which first arrived on the Italian market towards the end of 1974, built up rapidly in 1975 and expected to increase by a further 30% in 1976.

During the past year exploration activity has continued at a significant level within the Community, especially in offshore areas. However, although a number of successful wildcat discoveries have been announced, no new information on reserves has yet become available.

(b) Imports

For the Community as a whole, 1975 imports from sources outside the Community were 2% below forecast due to 2% and 8% shortfalls in the cases of France and Italy respectively. Germany and the U.K. both imported more than had been forecast. For 1976 a 47% increase in overall Community imports is expected. A major factor in this increase is the start of Ekofisk deliveries from Norway which, for the first time, place the Netherlands and Belgium in the importing category. France, however, is the country with the largest forecast increase. The near doubling anticipated reflects not only Ekofisk supplies but assumes the solution of the Algerian LNG plant problems.

In 1976 imports were expected to account for 8.5% of Community natural gas supply.

2.

Demand

The reduction of both production and import volumes lowered 1975 availability to 93% of forecast made in January 1975. Most of this reduction was offset by lower than forecast industrial consumption (86% of forecast). Deliveries to power stations were 3% below forecast while the domestic market showed an upward movement of 1% to account for 33% of total consumption. It must be noted however that this analysis is based on 1975 figures compiled before the end of the year. Normally little change occurs during the last few months but the Commission has been advised that in Germany the Government started to implement a policy to increase the utilization of coal before end 1975. The main effect of this could be a reduction in the volume of gas used in power stations, probably offset by a corresponding reduction in indigenous production of natural gas.

When considering 1976 forecasts, the effects of this policy, not reflected in the present figures, could be even more significant.

It remains to be seen to what extent gas volumes displaced from power stations will be absorbed by increased consumption in other sectors or offset by reductions in production, imports from the Netherlands or imports from outside the Community. Throughout the last year gas tariffs have been revised upwards in all Community markets. Increases have ranged from 20% to near doubling. At the same time renewal of old contracts has allowed considerable price increases in the industrial contract sector of the market.



Table 6

Natural Gas Consumption by end use in the  
Community

	in thousand Tcal (GCV)			%	
	1974	1975 (*)	1976 (**)	1975/74	1976/75
Non energy use	71.3	614	730	+ 3.1	+18.9
Industry	524.2				
Transport	2.0				
Domestic	452.8	517	596	+14.2	+15.2
Total	1050.3	1133	1329	+ 7.8	+17.3

(\*) approx. figures      (\*\*) forecasts

C. Coal  
 1. Coal supply  
 (a) Production

Table 7  
Community Coal Production

	Million tce			%	
	1974	1975 *	1976 **	75/74	76/75
United Kingdom	98.8	115.8	117.2	+ 17.1	+ 1.2
Germany (FR)	96.0	94.6	94.1 $\phi$	- 1.5	- 0.5
France	20.8	20.5	21.0	- 1.8	+ 2.7
Belgium	7.4	6.8	6.8	- 7.8	-
Ireland	0.1	0.1	0.1	-	-
Netherlands	0.7	-	-	-100.0	-
TOTAL	223.8	237.8	239.2	+ 6.2	+ 0.6

\* approximate figures    \*\* forecasts  $\phi$  might be reduced by short-time working to 88 M.tce.

The increase in Community coal production in 1975 of some 6% over the previous year arises solely from the abnormally low U.K. production in 1974 due to the strike in the British coal industry that year.

Coal production in Germany and Belgium dropped; it was virtually stationary in France; and a further decrease is accounted for by the closure of the last pit in the Netherlands. Taking account of the fact that in spite of some recovery of U.K. output from its low level the year before, it had not reached its 1973 volume, the year 1975 must, in terms of output, be considered as one of stagnation in the coal industries of all member countries.

Current estimates of Community coal output for 1976 are

that this will be of the same order of magnitude as in 1975, with slight increases in the U.K. and France, a small decrease in Germany and no change in Belgium.

(b) Imports

Imports from third countries registered a slight rise to around 40m. tonnes in 1975 as against some 38m. tonnes the previous year. They are likely to drop back to about 35m. tonnes in 1976.

2. Production Costs, Receipts and Investment

(a) Production Costs and Receipts

Costs of production rose substantially in 1975, due to wage increases of the order of 7 - 15% and to rises in the cost of materials. The effects of these increases were magnified by a drop in productivity in all Community countries, ranging from 3.5% in France to 7.6% in Belgium and resulting partly from changes in production policies involving development work in excess of that previously planned.

On the other hand, receipts have been at levels which, for the bulk of Community output, covered costs of production at least during the earlier part of 1975. However, during the latter part of the year, there has been a deterioration in the financial position of the industry, aggravated by problems of cash flow and cost arising from growing stocks. 1976 is expected to see a rise in productivity of up to 3.5% in the U.K. and German coal industries. Combined with expected increases in coal prices, this should improve the industry's financial position again, provided other factors do not affect the situation too strongly in the opposite sense.

(b) Investment

Investment, largely concentrated in the Ruhr, in Lorraine and in the Midlands and Yorkshire coalfields in the U.K., is estimated to have been around 600 m.u.c. in 1975. This represents an increase of some 60% over the previous year at current prices. Investment for 1976 is planned to be around 650 m.u.c.

3. Prices

In spite of the recession in 1975, there have been further price rises for good quality coking coal on the world market. The average cif price ARA calculated by the Commission for October 1975 was \$63.80 per tonne,

an advance of 12% since October 1974 ( compared to about twice this increase during the previous 12 months). As a result, a large proportion of Community coking coal has remained competitive with imports in areas not too far from the point of production.

Steam-coal, on the other hand, has been under pressure from a surplus of heavy fuel oil and gas available on the market at low prices, but the adverse effect has tended to be primarily quantitative. In spite of a rise of 30% in 1975, U.K. steam coal prices have remained marginally competitive with other fuels, while German prices have been able to remain adjusted to costs of production largely through a subsidy system for Community coal-burn in power stations.

Annexe 4 shows price movements in U.S.\$ of selected comparable qualities of coal in various Community coal-fields from January 1975 to January 1976. It will be noted that these differ in some measure as between member countries and that most U.K. prices are by far the lowest in the Community.

4. Demand

(a) Coal demand

In terms of final energy usage, coal consumption in the Community fell by about 9 per cent in 1975, but treating coal transformed into coke ( subsequently partly put to stock) as coal consumption, this fell by about 6%, with an increase in production of about the same percentage. As a result, stocks have built up, giving rise to financial problems for the Community's coal industry during the latter part of the year.

Table 8

Coal Consumption in the Community by Sectors

	million tce.			%	
	1974	1975*	1976**	1975/74	1976/75
Coke-ovens	107.6	104.7	104.4	- 2.8	- 0.3
Thermal power stations	102.9	100.0	106.9	- 2.8	+ 6.9
Iron and Steel industry (non-coke)	4.1	3.1	3.4	-22.7	+ 8.5
Other industries	16.8	13.0	14.2	-22.5	+ 9.1
Domestic heating	27.0	22.6	22.4	-16.3	- 1.1
Briquettes	6.7	6.2	5.8	- 7.1	- 6.6
Gasworks	2.2	2.0	1.8	-11.1	- 6.4
Consumption for pro- duction	2.1	1.9	1.9	-12.8	+ 2.7
Others	2.1	1.4	1.5	-32.5	+ 5.7
<b>Total</b>	<b>271.5</b>	<b>254.9</b>	<b>262.3</b>	<b>- 6.2</b>	<b>+ 2.9</b>

\* approx. figures

\*\* forecasts

(b) Coke demand

1975 witnessed the sharpest recession in the steel industry in 30 years, both in the Community and worldwide. Averaged across the Community, pig iron production was some 20% below the level of the previous year, and some 30% below that level in the strongly export-orientated steel industry of Belgium and Luxembourg. A further factor contributing to the fall in demand for coke has been a drop in specific coke consumption in nearly all Community countries, favoured by easy fuel oil supplies.

However, the above table shows that reduced coke requirements were reflected to only a minor extent in coal consumption. The major effect has been the build-up of stocks of coke in Germany.

In the other main market for coal, that of electricity generation, consumption fell by about 3 million tce in

1975 compared to the previous year. Account must be taken, however, of the fact that the U.K. coal strike in 1974 caused British power station coal-burn to be abnormally low that year.

Steel industry prospects for 1976 suggest a rise in coke consumption of some 10% over last year but this is more likely to be reflected in coke stock movements than in deliveries to coke ovens. Sales to the electricity generating industry are expected to rise by close on 7 million tce. but some of this increase is likely to be for larger stocks instead of consumption.

(c) Lignite demand

In 1975, lignite consumption by power stations, mostly in the Cologne-Aachen area of Germany, was nearly 31 million tce., a slight rise over 1974. The situation is expected to be similar in 1976, but if a revival in electricity demand should warrant it, lignite production for power stations could be raised to between 34 and 35 million tce.

5. Coal and Coke Stocks

In view of the Community coal industry's lack of production flexibility, coal and coke stock movements play an important role in adjustments to short-term fluctuations in demand.

Table 9  
Producers' Stock at End of Year

mt = t

	Coal*			Furnace Coke			Total **		
	1974	1975	1976 fore- cast	1974	1975	1976	1974	1975	1976 fore- cast
Community	11.9	26.2	34.5	4.0	12.8	18.1	17.1	42.8	58.0
of this: U.K.	6.0	10.7	18.4	0.1	2.4	2.8	6.1	13.8	22.0
Germany	2.4	9.2	9.0	1.7	7.9	12.9	4.6	19.5	25.8

\* Pithead Stocks

\*\* Coke converted to Coal at approx. 1.3

After reaching a low point at the end of 1974, stocks were rising throughout 1975 and are likely to continue to do so in 1976, although to a lesser degree. This increase in stocks has been particularly marked in respect of coke produced by the German coal producers for the steel industries of Germany and neighbouring Community countries, all of which have witnessed a sharp recession. Total producer's coal and coke stocks at the end of 1975 represented approx. 17% of annual coal production (calculated on t = t basis).

A number of measures or arrangements have been or are about to be introduced to alleviate problems of physical storage or finance associated with rising stocks. In the U.K., the electricity generating industry has been accepting supplies in excess of requirements to be paid for when used, while German electricity producers have agreed to take 2 million t. over requirements into stock in 1976, and the Government has decided to take financial steps towards the establishment of a national reserve of 10 million t. These measures are reflected in the figures in the above table.

D. Electricity

1. Electricity supply

The year 1975 was unique for the electricity sector in the Community, with electricity production falling by comparison with 1974. Electricity demand in 1975 reached 973.3 TWh, which represents a decline of 1.8% from the total for 1974 of 991.6 TWh. Denmark was the only Member State to record a growth in electricity demand and production in 1975.

(a) Hydro-electricity

In 1975 production of electricity from hydro-electric (including pumped storage) power stations is estimated to have increased by 4.6%. Hydrological conditions were more favourable than in 1974. In the first half of 1975 conditions were 1% above average, whereas for the same period in 1974, they had been 4% below average. An increase in hydro-electric generation of 1.8% is forecast for 1976, provided hydrological conditions are fairly normal.

(b) Nuclear power

The significant development of nuclear plant generation in the electricity sector is reflected in the

following figures for Community gross production:

Table 10

	<u>TWh</u>	Share of total gross electricity production
1973 actual	58.8	5.7%
1974 actual	67.3	6.4%
1975 estimated	84.4	8.2%
1976 forecast	93.6	8.9%

In 1975 nuclear energy production reached some 84 TWh, almost 25% more than in the course of the preceding year and equivalent to 8% of the total net electricity production in the Community.

The two nuclear plants brought into operation in Belgium (1260 MWe net) were the only additions to the network recorded in 1975. One of these plants (Tihange 870 MWe) is a Franco-Belgian project and provides one-half of its production to the French network.

Nuclear plants contributing to electricity production thus reached a capacity of 14,450 MWe net at the end of the year, with 30,000 MWe being under construction (of which two-thirds are in Germany and France) and some 35,000 to 40,000 MWe being authorised or planned.

The nuclear power park of the Community could increase significantly in 1976. Three or four units are expected in Germany ( 2800/4000 MWe), one in Italy (800 MWe), and one in France (900 MWe), whilst the two first AGR plants ( 2500 MWe in four units) which are being constructed in the United Kingdom are near to completion. At the end of 1976, the nuclear reactors linked to the Community network could thus reach 20,000 MWe and produce about 94 TWh in the course of the year. The relatively poor growth anticipated for nuclear power production (11%) in relation to that of available capacity (38%) is due to the fact that certain units will not come into operation until the end of the year.

(c) Conventional power plants:

In 1976 the following levels of fuel consumption by conventional power stations ( industrial producing units



included) can be expected in the Community under normal weather and hydrological conditions, the figures for 1974 and 1975 being provided for reference.

Table 11

Total Fuel Consumption of Conventional  
Power Stations for Generation of Electricity and  
of Commercial Heat  
1974 - 1976:Community

	Million t.o.e.			Per cent		
	1974	1975	1976	1974	1975	1976
Petroleum products (non-gaseous)	69.9	58.3	58.4	34.3	30.7	30.3
Hard coal	72.0	68.3	70.2	35.3	35.9	36.3
Lignite and peat	22.4	22.8	23.3	11.0	12.0	12.1
Natural gas	30.3	32.0	32.3	14.8	16.8	16.7
Derivative gases (and sundry)	9.5	8.7	8.8	4.6	4.6	4.6
All fuels	204.1	190.1	193.0	100.0	100.0	100.0

Fuel consumption by these power stations in 1976 should remain broadly similar to the pattern established in 1975, although kWh production will generally be somewhat higher because of the bringing into operation of new more efficient generating plant, ordered before the current energy supply position developed.

In 1975 the expected cut-back in fuel-oil consumption by power stations was achieved in all Member States, whereas natural gas consumption in power stations was higher in 1975 than 1974, owing to significant increases in Germany, France and Italy, which more than counterbalanced a marked reduction in the United Kingdom.

2. Demand

In line with the fall in industrial production for the year as a whole, electricity supplies to industry were

some 6% below that for 1974. Only in the United Kingdom was an increase likely to be achieved, and this was chiefly because of the specially low figure recorded in 1974, as a result of the industrial unrest in the coal industry in the early part of that year. The increase in Community domestic electricity consumption in 1975 is estimated at 3.8%, which is much below the historical levels that have been achieved in this sector; in seven Member States demand rose and only in Ireland and the United Kingdom were reductions in domestic demand recorded.

The expected improvement in the economic situation in 1976 is reflected in the anticipated pattern of electricity demand and production, with an estimated increase in internal demand of about 2.4%; improvement in demand levels is anticipated in all Member States, thereby leading to a small increase over the demand established in 1974. Industrial consumption of electricity should increase in 1976 by some 2% and domestic consumption by 4.2%, from the levels attained in 1975.

Table 12  
Electricity Consumption by end use  
in the Community

	Twh			%	
	1974	1975*	1976**	1975/74	1976/75
Industry	453.9	426.8	435.5	-6.0	+ 2.0
Transport	23.9	23.7	24.0	-0.5	+ 0.9
Domestic	416.4	426.1	439.5	+ 2.3	+ 3.1
Total	894.2	876.6	899.0	- 2.0	+ 2.6

(\*) approx. figures    (\*\*) forecasts

E. Nuclear Fuels

1. Natural uranium

The tightness which was apparent in the natural uranium market in 1974 continued to be a phenomenon of the market in the course of 1975. This tightness was a result principally of:

- the commercial policy followed by the principal external producing countries, seeking to maximise the value of their natural resources.
- the reticence on the part of users to enter into long term supply contracts in view of the uncertainty relating to the rate of development of nuclear power programmes.

During 1975 the price of natural uranium showed a tendency to rise and has reached about \$30 per lb./U<sub>3</sub>O<sub>8</sub>.

2. Uranium enrichment

In the field of supply of separation work units (SWU's) the year 1975 was marked by:

- the U.S. Administration's programme for expanding uranium enrichment capacity through the involvement of private enterprise in the ownership and operation of future enrichment facilities;
- the willingness expressed by South Africa to develop an enrichment plant using its own technology and which should come into operation about 1986.
- the pursuit of studies relating to the realisation of Eurodif II.

With regard to the Eurodif I and Urenco plants, the construction work is being pursued.

With reference to the price of separation work units supplied from the United States, the Energy Research and Development Agency (ERDA) announced on 20th August, 1975 a price increase for separation work units from \$42,10 to \$53,35 for "fixed commitment contracts": the price for "requirements type contracts" was raised on the 18th December, 1975 from \$47,80 to \$60,95 per SWU. Moreover, ERDA has proposed to the competent American authorities the re-examination of the structure of costs of separation work, which could have the effect of raising the price of an SWU to about \$76.

Crude Oil Production 1973, 1974 and January/October 1975

Thousands of barrels/day	1973	1974	% + -	1975 Jan./Oct	% + -
Saudi Arabia	7600	8480	+ 11,6	7038	- 17,0
Iran	5895	6020	+ 2,1	5438	- 9,7
Kuwait	3020	2530	- 16,2	2113	- 16,5
Iraq	1965	1870	- 4,8	2275	+ 21,6
Other M.E.	2092	2195	+ 4,9	2052	- 6,5
M. East	20575	21115	+ 2,6	18916	- 10,4
Algeria	1090	1005	- 7,8	905	- 9,5
Libya	2185	1520	- 30,5	1440	- 5,3
Nigeria	2055	2255	+ 9,7	1750	- 22,4
Main EEC Suppliers	25905	25895	-	23011	- 11,9
OPEC	30965	30645	- 1,0	27091	- 11,6
EEC Consumption	10620	9925	- 6,6	9140	- 8,0

VLCC's SPOT FREIGHT RATES 1974 - 1975  
for the Persian Gulf - North West Europe route (dirty)

<u>1 9 7 4</u>	(Worldscale 100: 10.28 \$/T = 1.41 \$/bl)		
January	WS 80	8.22 \$/T	1.13 \$/bl
June	WS 52	5.35 "	0.73 "
<u>1 9 7 5</u>	(Worldscale 100: 14,43 \$/T = 1.95 \$/bl)		
January	WS 23	3.32 \$/T	0.45 \$/bl
June	WS 23	3.32	0.45
September	WS 24	3.46	0.47
October	WS 15	2.16	0.29
November	WS 16	2.31	0.32
December	WS 20	2.86	0.39

## Annexe 3

National Prices, exclusive of tax, of main petroleum products in  
certain Member States ( April 1974 - April 1975 - November 1975)  
(in US \$ /MT)

Products		April 1974	April 1975	November 1975
Motor Gasoline Super	G	211.76	198.33	212.69
	F	214.25	257.43	248.53
	I	203.63	203.27	191.88
	UK	190.45	245.25	215.16
Motor Gasoline Normal	G	191.18	170.72	183.10
	F	200.15	241.47	233.13
	I	196.74	199.0	187.86
	UK	183.93	242.15	212.44
Gasoil	G	190.01	176.62	171.33
	F	120.12	149.49	151.02
	I	132.58	132.54	135.79
	UK	166.93	178.29	151.52
Domestic Fuel Oil	G	143.80	105.39	133.98
	F	103.15	131.05	132.95
	I	106.54	121.14	116.54
	UK	123.86	133.52	117.13
Heavy Fuel Oil	G	70.59	79.17	62.01
	F	53.50	89.20	73.70
	I	53.69	75.64	75.11
	UK	80.44	94.67	83.05

(Average densities: Super 0.750, Normal 0.720, Gasoil 0.84, Domestic Fuel Oil 0.85, Heavy Fuel Oil 0.94)

LIST PRICES OF SELECTED COMMUNITY COALS U.S.  
DOLLARS PER TON AT PITHEAD - EXCLUDING TAX

Grade	Screen Size	Dates	Ruhr	Belgium	North France	South Wales	North Yorkshire	
Anthracites	Nuts 3	15.1.75	85.50	86.04	66.55	59.21	-	
	20/20	1.7.75	87.94	88.65	86.88	65.43	-	
	m/m	15.1.76	83.52	79.05	78.37	60.23	-	
High Volatile	Nuts 5	15.1.75	60.10	67.46	43.59	-	31.27	
	6/10m/m	1.7.75	61.80	69.50	-	-	38.51	
	m/m	15.1.76	60.07	61.98	-	-	35.45	
Medium Volatile	Coking	15.1.75	65.26	68.83	80.68	46.91	37.48	
	Coal	1.7.75	67.12	70.92	89.11	59.72	46.73	
		15.1.76	63.12	63.24	80.38	54.97	43.02	
Cokes	Coke	15.1.75	101.61	118.39	118.78	85.42	81.97	
	HF 40m/m	1.7.75	104.50	121.99	131.19	107.42	104.16	
	Blast furnace coke	15.1.76	98.40	93.60	118.33	98.88	95.88	
<u>U.S. Dollar Exchange Rate</u>								
Date	D.M.	Index	F.B.	Index	F.F.	Index	£	Index
2.1.75	2.42	100	36.32	100	4.46	100	0.43	100
30.6.75	2.35	97	35.25	97	4.04	91	0.45	105
2.1.76	2.62	108	39.53	109	4.48	100	0.49	114

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