

COMMISSION OF THE EUROPEAN COMMUNITIES

**The Energy Situation
in the Community**

Situation 1973

Forecasts 1974

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INTRODUCTION

The Outlook for 1974

The outlook for 1974 is clouded by uncertainties, amongst which the biggest doubts relate to the prolongation of the oil supply cuts, the severity of the reductions themselves and their impact upon the general level of economic activity. Moreover, the full significance of the recent gargantuan crude oil prices rises on the economies of the consumer countries has yet to be assessed.

In brief, the oil crisis could have serious effects on the economic, social and monetary life of the Community. In view of the considerable interdependence of the Member States, a serious shortfall in oil supplies, for whatever reason, which resulted in grave economic difficulties in any one or more of the member countries, could lead quite rapidly to an extension of the effects throughout the Community. It may be noted that more than 50% in value of the foreign trade of the Member States is intracommunity. In 1972 intracommunity trade represented about 10% of the gross product of the enlarged Community. For individual Member States income from abroad represented between 6 and 30% of Gross National Product.

In view of the uncertainties relating to 1974, this report deals principally with events and developments in 1973 which appear to have importance for the years ahead. However, in some cases, estimates of anticipated growth before the oil supply crisis are quoted to give an indication of expected developments under "normal circumstances". Nevertheless, any such indications provided for 1974 must obviously be treated with great reserve in the present vortex of energy shortages and economic perturbation.

THE ENERGY SITUATION IN THE COMMUNITY

Situation 1973 - Outlook 1974

I. The trend of economic activity

During most of 1973 economic activity developed at a very high rate within the Community. There was a marked degree of utilisation of available capacity and delays in the delivery of goods and equipment were often experienced. For the year as a whole, the gross national product of the Enlarged Community is estimated to have increased by 5.8 per cent over 1972

TABLE I

Evolution of Gross National Product

(Rate of growth in real terms in %)

Country	1973
Belgium	5.9
Denmark	5.0
France	6.2
Federal Republic of Germany	5.9
Ireland	6.5
Italy	5.3
Luxembourg	6.8
Netherlands	4.1
United Kingdom	5.8
Enlarged Community	5.8

The growth in exports of the Community towards non-member

countries showed a notable increase. The tendency of exports to the United States to be stabilised was more than offset by the marked growth of sales to other European countries and to the developing countries. Moreover, intra-Community trade, which was stimulated by the reduction of 20%, from 1st April, 1973, of customs tariffs between the six original members of the Community and the three new member countries, continued to provide a very pronounced stimulus to economic activity.

The acceleration in the rise in prices observed in the member countries in the second half of 1972 was intensified in most of them during 1973. Inflation has reached a disturbing rhythm in the whole of the Community, in spite of the efforts undertaken at both Community and national levels to deal with the problem. In the course of the last twelve months, the annual rate of inflation has reached between 6 to 11% among the member countries, as compared with 5.5 to 8% a year ago. External factors as much as internal ones have contributed to this alarming evolution.

After a year of exceptional growth in 1973, economic activity had been expected to remain buoyant in 1974, although some slowing down of the rate of growth was envisaged for most of the industrialised countries. However, in view of the current oil supply situation and the extreme uncertainties relating to the probable course of events in the forthcoming year, it is particularly difficult to estimate the pace of economic development in 1974. Clearly the tempo of economic activity in the year ahead will be significantly influenced by the duration and severity of the energy crisis.

II. The trend of demand

1) Situation in 1973

In 1973 the demand for energy is estimated to have increased by about 7%. Energy demand continued to rise under the stimulus of economic growth and despite rising prices of energy. However, the political crisis in the Middle East in October, resulting in cut-backs in oil production by the Arab producing states, the embargo on oil exports to the Netherlands and the U.S.A., and the unilateral increases in the posted prices of crude oils, were developments that soon made themselves felt in the consumer countries including the Community, and resulted in measures to curtail the consumption of oil products. It is too early to assess the impact of these developments on the total consumption of energy and on the relative shares of the different sources of energy within the Community in the year ahead.

Latest available estimates indicate that total requirements of energy in 1973 reached 1035 million toe* (1475 million tce**). Oil was again the largest component of Community energy supplies, providing 645 million toe (920 million tce) in 1973, or approximately 62% of total consumption. The balance of energy requirements was made up by the various other sources in a similar pattern to that of the previous year.

Again approximately two-thirds of total requirements were met by imported energy, oil representing 95% of these imports (about 635 million toe). The high rate of growth in energy demand in 1973 served to focus attention, quite apart from the effects of the oil supply crisis, on the imperative need of the Community to secure its energy supplies for the future to meet its growing requirements pari passu with the rising needs of other consumer countries such as the United States and Japan.

* toe = tons oil equivalent ** tce = tons coal equivalent

Moreover, the large rise in the cost of oil imports, with the likelihood of further price increases to come, indicate that the Community will have to be prepared to meet considerably higher costs for its imported energy requirements in the years ahead.

2) Outlook for 1974

In view of the great uncertainties relating to the level of oil imports in 1974, earlier estimates for the Community's energy requirements in the year ahead must be regarded as tentative and liable to change depending on how circumstances develop. Nevertheless, on the assumption of some slowing down in economic growth in 1974 to about $4\frac{1}{2}\%$ in Gross National Product in real terms as compared with 6% in 1973, energy demand might be expected also to expand at a somewhat similar rate. It must be emphasised that this is a highly tenuous estimate, the actual rate of growth in demand obviously being governed by the development of the oil supply situation and the high level of oil prices and their likely impact on the level of economic activity in general.

III. The market situation in 1973 and its consequences

A. Petroleum

1. Oil market before the Arab/Israeli conflict

The year 1973 was dominated by an exceptionally favourable international market situation for sellers; this situation developed progressively in the course of the year to reach its culminating point in the Arab/Israeli conflict in October, 1973.

In the course of the first eight months of 1973, conditions in the petroleum market were modified under the influence of the following factors:

- (i) a tightening in the supply conditions which were already in existence in December, 1972;
- (ii) an increase in demand greater than was foreseen for certain oil products;
- (iii) by fluctuations in exchange rates and by the general inflation in industrialised countries.

Supply

The following features may be distinguished:

- 1) Elements of a character which are more or less permanent and which have led to a levelling, reduction and orientation towards new markets, of the production of certain producing countries:
 - (i) a voluntary limitation of production by Kuwait and a reduction in Libya in order to conserve resources, whether for economic, technical or political reasons
 - (ii) an absence from the European market of a part of the nationalised production of Iraq and of "participation

crude" used by the producer countries for bilateral deals with the countries of Eastern Europe, Japan, India and Brazil.

2) Various factors of a technical character which have resulted in delays in the development of the theoretical capacity of production installations, of coastal transport and of crude oil loading facilities in certain producer countries:

- (i) a relative insufficiency, in 1972 and at the beginning of 1973, of investment for the development of production, arising from delayed investment decisions by the oil companies owing to, on the one hand, the uncertainty which existed in 1970 and 1971 as to the evolution of production conditions resulting from the enforcement of the "participation" agreements and, on the other hand, the disproportionate production effort required in Saudi Arabia and Iran to compensate for the loss of production capacity which took place elsewhere. It is thus that, relative to the first half of 1972, the production of crude oil in the course of the first six months of 1973 increased by more than 32% in Saudi Arabia and 20% in Iran to compensate not only for the reductions of 7.4% in Kuwait, 0.4% in Libya, and 2.1% in the United States, but also for the insufficient growth of production in certain other countries, in particular Nigeria.
- (ii) the delays of some months in the realisation of investments foreseen for the end of 1972 and the beginning of

1973, as a result of delays in the manufacture and delivery of exploitation equipment.

Demand

- 1) In the course of the first half of 1973, world requirements in total increased more rapidly than was foreseen, in particular in Japan and the United States. Faced with the serious shortfall in internal resources and an insufficiency of refinery capacity, the Government of the United States authorised a significant increase in imports of crude oil and of refined products, at a time when the supply situation in the world market was relatively weak.
- 2) As a result of the constraints imposed by regulations designed to protect the environment, this supplementary demand was focalised almost exclusively on a small part of the market, namely, the low sulphur crude oil from Africa (Algeria, Libya and Nigeria) and on the light products and middle distillates. In the European market, a certain tightness had meanwhile been apparent in the motor gasoline and gas oil markets.

General Market Situation

In brief, a number of unfavourable circumstances developed and resulted in delays in respect of certain deliveries, and created tightness in the market for certain qualities of crude oil and refined products.

- 1) If the balance between global demand and supply for the first half of the year seemed to indicate a theoretical surplus of supply estimated at only 1.5%, as compared with 15 to 20% in the past, market conditions were also subject to the influence of local

disequilibria in respect of the production of low sulphur crude oils and light refined products, with the growth of demand being concentrated in this particular part of the market:

- (i) the rate of growth in the production of free world crude oil increased by about 9.5% in the course of the first half year, clearly surpassing the rate of development recorded in recent years and confirming the strength of demand which, without doubt, was stimulated by the build up of petroleum stocks, notably in Japan. Production in the United States declined slightly. Western Hemisphere production accounted for rather more than 30% of the world total, whilst the Near East alone produced more crude oil than the whole of the Western Hemisphere with a rate of growth above 20% in relation to 1972.
 - (ii) at the same time, total free world demand increased by 8% over 1972. The rate of growth in demand was approximately 15% in Japan and 4.5% in the U.S.A. - where the consumption of gas oil and of motor gasoline was, however, held back owing to the insufficiency of refinery capacity and the weakness in the availability of world supplies in relation to needs. For the Enlarged Community of Nine, total demand increased by about 6%; ~~the~~ growth in demand for gas oil was more than 12% over 1972.
- 2) To these quantitative elements were added the impact of fluctuations in the dollar exchange rate and the influence of the phenomenon of world inflation which, coinciding with the weakness in the supply/demand relationship, led to some very significant rises in the prices of petroleum products and the cost of crude oil:

- (i) a large increase in petroleum product prices took place in the "spot markets". At Rotterdam particularly, the price of motor gasoline sold by cargo lots was progressively increased as from the fourth quarter of 1972 to reach \$102 MT in July, 1973, representing an increase of 150% as compared with the same period a year ago. The price of gas oil increased by almost 200%, and the difference between the prices of low sulphur and high sulphur heavy fuels rose from less than \$2 in January, 1972, to more than \$8 in July, 1973.
- (ii) as from August 1973, a certain slackening took place in the spot market of Rotterdam, particularly with regard to motor gasolines and to a lesser extent for fuel oils, whilst gas oil, for which demand remained strong, continued to be sold at very high prices.

TABLE II

Quotations of prices for petroleum products on the spot
market in Northern Europe in \$/MT

	<u>Jan.72</u>	<u>July 72</u>	<u>Jan.73</u>	<u>July 73</u>	<u>Sept.73</u>
Motor gasoline super	32,19	40,87	50,90	102,47	83,88
Motor gasoline regular	23,25	31,13	42,55	93,06	75,40
Gas Oil	26,98	24,13	37,63	72,43	71,39
Fuel Oils					
- max. 1% S.	14,14	17,58	22,76	26,82	22,87
- bunker C	12,67	14,12	15,94	18,42	16,73

(iii) Various price increases were also recorded in the world market for crude oil. These have exceeded the rise in royalties paid to the producer countries in line with the agreements concluded at Teheran, Tripoli and Geneva. The prices of crude oil have reflected not only the increases in line with the terms of these agreements, but they have also incorporated the cost of "participation" and an increase in the margins of the oil companies:

- for Saudi Arabia the sale price rose from \$13.78/per ton f.o.b. Ras Tanura in January, 1972, to \$16.85/per ton in April, 1973.

- for Libya, prices have very largely covered the effects of the devaluation in the dollar; quotations were recorded of more than \$26/per ton f.o.b. Es Sider in April, 1973 against \$20.33/per ton in December, 1972.

- (iv) Although the price rises recorded on the spot market for motor gasolines and the increases in the cost of crude oil were only weakly reflected in internal market prices for liquid fuels, prices to consumers of gas oil for central heating and for fuel oils increased in the course of the first eight months of 1973, following a reduction in the rebates traditionally provided by the oil companies.
- 3) The market situation in the course of the first eight months of the year confirmed the change from a buyers' market to a sellers' market. If the U.S. consumer has, as a result of the protection of the domestic market, paid more in the past for his oil than in the world market, he has contributed towards the rise in supply prices in recent months through direct competition. Although the very considerable rise in prices of petroleum products in the spot markets was reflected only weakly in prices to the consumer, the independent European distributors have found difficulties to ensure their supplies at high price levels in a situation in which the great international companies have reduced their customary rebates to consumers of gas oils and fuel oils.

There is no doubt that the tightness of supply which was accompanied by a rise in prices, linked as it was to successive

devaluations of the dollar and to inflation, provided the Arab producers of oil with the opportunity to change the conditions of the world petroleum market at the time of the Middle East conflict.

2. Situation in the petroleum market since the Arab/Israeli conflict

Since the Arab/Israeli conflict the international petroleum market has been in a chaotic state. The contractual arrangements resulting from the Teheran and Tripoli Agreement have been shattered. The international oil companies are no longer assured of their supplies nor of the prices which they are obliged to pay. The structure of crude oil prices, which was dependent on the quality of the product and its geographical location, has been profoundly changed; the different producing countries tend to impose their own regulations which give rise to abnormal price disparities. The situation appears even more difficult for the independent companies without their own resources or no longer having direct access to oilfields, and who are now obliged to purchase their crude oil at the highest price levels.

The decisions taken by the Arab producing countries at the time of the Arab/Israeli conflict have had profound repercussions, which at first had an impact on the price of crude oils and subsequently on the quantities available.

3. Effects on crude oil prices

Further to the decisions taken in Resolution 90 of the OPEC countries, meeting in Vienna on the 12th October, 1973, the producing countries of the Persian Gulf met again at Kuwait on the 16th October, 1973 and decided, in a unilateral fashion, to

fix new conditions governing the price of crude oil:

- (i) The new posted prices which will serve as a basis for the calculation of royalties, are fixed in the ratio of 1.4 times the market prices which are themselves fixed on the basis of \$3.65 per barrel for Saudi Arabian light crude oil.
- (ii) On the assumption that the oil companies might refuse to produce crude oil under these new conditions, the producing countries would dispose of the oil on the open market at a price of \$3.65 per barrel f.o.b. Ras Tanura.
- (iii) The f.o.b. costs of crude oil extracted by the major international companies, on this basis, increased by \$1.273 per barrel or more than \$9.5 per metric ton, which corresponds to a rise of about 70% in relation to the level of costs before 16th October, 1973.

TABLE III

Posted Prices and F.O.B. costs for the major international production companies

a) Posted Prices and F.O.B. costs for the major companies in \$/barrel

	<u>Posted Prices (1)</u> \$/barrel			<u>Costs for major companies</u> \$/barrel (2)		
	16 Oct.	1st Oct.	Inc.	16 Oct.	1st Oct.	Inc.
Arabian light 34°	5,119	3,011	2,099	3,149	1,876	1,273
Iranian light 34°	5,091	2,995	2,096	3,140	1,869	1,271
Kuwait 31°	4,903	2,884	2,019	2,999	1,775	1,224
Iraq Basrah 35°	5,061	2,977	2,034	3,122	1,859	1,263
Libya	8,925	4,605	4,320	"	"	"

(1) "Posted prices" serve as a basis of calculation for production royalties. Since 16th October, 1973, posted prices have been tied

to the market price fixed for light Arabian Crude oil at \$3.65 per barrel.

- (2) "Tax Paid Cost" is equivalent to technical costs plus taxes and royalties paid to the producing countries. These costs do not include the costs of "participation" which were approximately \$0.15 per barrel at 16th October, 1973

TABLE IV

b) F.O.B. Costs Persian Gulf in \$/MT for the major international production companies (1)

	<u>16 October</u>	<u>1st October</u>	<u>Increase</u>	
	<u>\$/MT</u>	<u>\$/MT</u>	<u>\$/MT</u>	<u>%</u>
Arabian light 34°	23,58	14,05	+ 9,53	+ 67,8
Iranian light 34°	23,57	14,03	+ 9,54	+ 68,-
Kuwait 31°	22,11	13,08	+ 9,03	+ 69,-
Iraq Basrah 35°	23,38	13,30	+ 10,08	+ 75,7

(1) "Tax Paid Costs"

- 2) The independent companies should, in principle since 16th October, 1973, buy their crude oil at the market price, which in the case of Arabian light was fixed at \$3.65 per barrel or \$27.33 per metric ton
- (i) Whilst before the 16th October marginal quantities of crude oil delivered to the spot market were quoted at between \$3.25 and \$3.80 per barrel f.o.b. Persian Gulf, the major part of the deliveries actually supplied by the large international companies

to the independents were concluded at about \$2.80 per barrel or \$20.97 per ton.

With regard to this selling price of \$2.80 per barrel, the independent companies since 16th October, 1973, have had to meet a minimal increase in the price of their crude oil of \$0.85 per barrel (\$3.65 - \$2.80) or \$6.36 per metric ton.

(ii) Since the 16th October, 1973, sales of crude oil by the large companies to the spot market have ceased, not only because of the reduction in the availability of crude oil, but equally because of the production companies' expectation to reflect the increased costs of crude oil in their selling prices to the independents. With posted prices, which serve as a basis of calculation for royalties, depending upon a fixed market price since the 16th October, 1973, it is clear that any level surpassing the reference price (\$3.65 per barrel) would be followed by new decisions to increase this base price which in turn would give rise to general increases in the price of crude oil.

(iii) On the other hand, sales of "participation" crude oil seem to have been realised in certain markets in relatively small quantities but at higher prices.

(iv) On the 22nd and 23rd December, 1973, the Middle East producing countries, meeting in Teheran, decided to raise posted prices to \$11.651 per barrel as from the 1st January, 1974, for Saudi Arabian light crude oil. The market price related to this posted price is equivalent to \$8.32 per barrel. The f.o.b. costs of crude oil of the large international oil companies which had increased by \$9.53 per metric ton on 16th October, 1973, was thus due to increase by a further \$30.09 per ton on the 1st January, 1974. The

total increase in the f.o.b. cost at the 1st January was thus equivalent to \$39.62 per metric ton as compared with the situation at the beginning of October, 1973.

TABLE V

Posted prices and f.o.b. costs for the large international companies

Saudi Arabian Light Crude Oil 34° API

	Posted Prices in \$/bbl(1)	Costs for the large international companies (2)		}	}	}
		\$/bbl	\$/MT			
1st October 1973	3.011	1.876	14.05	+ 9.53	+ 39.62	}
16th October 1973	5.119	3.149	23.58			
1st January 1974	11.651	7.165	53.67			

(1) Posted prices: See Table III for definition

(2) Tax paid costs: See Table III for definition

Further increases in the posted prices of crude oil to take effect from 1st January, 1974, were introduced by Libya, Nigeria and Venezuela. Libya set its new posted price at \$15.76 per barrel as compared with \$8.925 per barrel at 16th October, 1973. Nigeria raised its posted price from \$8.3 to \$14.69 per barrel and Venezuela increased its posted price from \$7.74 to \$14.08 per barrel. Other nations also increased their posted prices for crude oil at the same time. The outlook for the consumer countries at the beginning of 1974, as a result of these huge increases in the price of crude oil, appeared to pose very serious economic problems.

4. Effects on the quantities of crude oil

The Arab oil producing countries - Kuwait, Iraq, Syria, Egypt, Libya, Algeria, Saudi Arabia, Abu Dhabi, Qatar and Bahrein - decided to reduce the level of their production and to place an embargo on exports

to the United States and the Netherlands. Great uncertainties exist as to the precise significance of the shortfall in supply in relation to requirements, but already these measures have had important repercussions on the availability of petroleum products in the world and in particular in Japan and the Community.

5. Consequences and Perspectives

- 1) A certain number of consuming countries have already incorporated the price increases at the production level into their market prices. In Germany and Belgium in particular, market prices have tended to reflect the new price levels; France and the Netherlands, which apply particular formulae in respect of the allocation of costs, have opted for higher supplementary charges for motor gasolines and distillates. Residual fuel oil, which seems to be available in most markets, has remained at a very advantageous price in relation to other products.
- 2) At the present time, with the world supply and demand situation for crude oil reflecting the degree of dependence on the industrialised countries on external sources for their supply of energy, the producing countries have arbitrarily raised crude oil prices to exceedingly high levels. The future level of crude oil prices is of critical importance to the economic well-being of the consumer countries. As to future availability, the production strategy which the producing countries intend to follow, whether they choose to conserve their oil resources for whatever reasons, will also have significant implications for the industrialised world.

6. Naphtha

In the course of 1973, naphtha has been in short supply; spot prices of naphtha have doubled in the course of the last 2 or 3 years and,

in view of the continuing increases in crude oil prices, may be expected to rise in the future. The shortage of naphtha has created particular problems for the chemical industry. Naphtha requirements for the production of ethylene within the Community were estimated to rise to about 39.65 million tons in 1974 and 43.10 million tons in 1975. However, if the shortfall in crude oil supplies to the industrialised countries persists, it is difficult to envisage an easing in the naphtha supply situation in the near future.

B. Coal

1. Production and situation in the collieries

In 1973 the production of coal within the Community is estimated to have reached approximately 260 million tce. (Estimate made prior to the industrial trouble and resulting decline of production in the coal industry in November/December in the U.K.) This figure represents a marginal increase on the previous year's production, which however reflected the production losses due to the strike in the United Kingdom in 1972. It is quite conceivable that coal production in 1974 may show some increase in the new energy situation arising out of the oil supply crisis, depending upon its severity and duration; however, the effect on production of the industrial trouble in the U.K. is difficult to assess at the current time.

TABLE VI
Production M tce (1)

Country	1972	1973 (estimates)
Belgium	9.847	8.225
France	27.142	24.900
Federal Republic of Germany	103.549	96.900
Ireland	75	60
Netherlands	2.761	1,800
United Kingdom	109.383 ⁽²⁾	127.600 ⁽³⁾
Community	252.491	259.485

(1) Figures may be slightly different from national figures due to conversion in tce.

- (2) Loss of production due to strike estimated at 21 M tce.
- (3) Estimate made prior to industrial trouble in November/December.

At the end of October 1973, stocks at the mines in Germany amounted to 10 million tons of coal and 8 million tons of coke-oven-coke, and in the U.K. were 13.5 million tons of coal. In the other producing countries coal stocks at the pithead do not exceed the technical level necessary for efficient use.

Average output per miner (working below ground) rose by 4% in 1973, a larger increase than in 1972. This growth of productivity reflected essentially developments within the U.K. In 1972, as a result of the strike, there was only a very weak improvement in productivity of the order of 0.2% in the U.K.

TABLE VII

Average output per miner and per shift
and production cost

	In kg.per shift 1973	1973/72	1972/71	Production Cost 1973/72
West German Republic	4.400	+ 3,6%	+ 5,2%	+ 6,5%
Belgium	2.540	-3,7%	+ 0,6%	+17,0%
France	2.780	+2,6%	+ 3,2%	+13,5%
Netherlands	3.480	+6,2%	-2,2%	+14,0%
Great Britain	3.600	+4,0%	+ 0,2%	N.A. (1)
Total	3.720	+3,9%	+ 2,6%	..

(1) Not available.

With regard to developments in the wages sector in the Member States in 1973, information is still not complete. However, from what is known about wage agreements it appears that wages increased significantly more than productivity. The rise in the cost of production accelerated as compared with previous years. Revenues in the coal industry did not increase in any Member Country of the Community as rapidly as did the costs of production. In the U.K. and Germany there were price increases following the summer of 1973 of the order of 7.5% and 5% respectively.

Viewing the year 1973 as a whole, there was a deterioration in the financial situation of the coal industry within the Community as compared with 1972. This was reflected by the increase in aid for the coal industry. In 1973 average aid to the industry in the original Community of Six increased from 4,81 ua per ton (1972) to 5,75 ua per ton. The fact that the British coal industry was joined in 1973 to the industry in the Community of Six, and that it received aid of only 2 ua per ton, accounts for the situation that average aid per ton in the enlarged Community was only 3,90 ua per ton. This figure is below the average aid of the Community of Six in 1972.

2. Imports

Imports of coal into the Community from third countries were maintained at a level of about 32 million tons in 1972/73, equivalent to 12% of internal requirements. The level of imports for 1974 had been estimated at 35 million tons but in the light of the present energy crisis could reach a higher figure. Additional requirements from external sources may arise from coking-coal needed for the manufacture of metallurgical coke, and for steam coal used in the industrial sector and in particular in the power stations. However, the growth in imports may be limited by the increased requirements of coal of third countries.

Imports of coal coming from the United States already show a decline and have been surpassed in quantity by imports from Poland, a country from which increased purchases are being made and which supplies more than one-third of the total coal imports of the Community.

3. Prices

The entry of the United Kingdom into the Community led to National Coal Board prices taking effect as from 1st January, 1973 within the enlarged Community. These prices were at a level below those of continental producers, a difference which was accentuated in the course of the year by the evolution of exchange parities between the respective currencies. However, there have been no significant consequences as yet in the coal market of the Community.

In the Community as a whole, the evolution of prices in 1973 has been marked by rises, the greater part having taken place at end-Spring and early-Summer. This rise in prices which reflected rising costs, was generally within a range of 5 to 10%; several price increases, however, were outside of this range.

The rise in prices did not of itself lead to a corresponding improvement in earnings. Until the Autumn, the level of prices of competing energy (fuel oil, Polish coal, and notably U.S. coal) had continued to result in price alignments in the different sectors of consumption. As from November 1973, the new situation in the energy market should lead to an improvement in earnings of the coal producers. For certain products, which had not reflected previous price increases, price rises were announced in November.

With regard to coking-coal and coke, they reflected increases in coal prices of third countries which had taken place since the end of 1972 (about 10%). The devaluation of the dollar in relation to European

currencies also worked in favour of Community producers. Moreover, the evolution of oil product prices is again stimulating the consumption of coal, the increase of which so far has been relatively slow owing to production and quality constraints.

In the course of the year 1973, the rise in maritime charter rates, which had begun in the second half of 1972, continued. As far as Europe is concerned, the very high rates reached in 1970 have been largely surpassed. These extreme rates, relating solely to spot charters, affected only a limited part of the transport of coal. Nevertheless, the rise in charter rates and in transport costs have both contributed to the general rise in coal prices.

C. Gas

1. Natural gas reserves

At 31st December, 1972, proven and probable recoverable reserves of natural gas of the enlarged Community were estimated at 4.870 milliard m³ representing an increase of 670 milliard m³ in relation to end 1971, and despite output which reached some 128 milliard m³ during the period. This improvement resulted from a fuller appreciation of previous discoveries and of new discoveries in the northern part of the North Sea and in the Adriatic. For the first time Denmark has contributed to the increase in the reserves, to the extent of 14 milliard m³.

In the course of 1973 discoveries were developed in the North Sea, particularly in the Norwegian zone, thus contributing to a strengthening in the security of supply of Europe.

2. Trend of the market for natural gas

(a) Production, intra-Community trade, imports

In 1974 the production of natural gas in the Community could exceed 175 milliard m³, equivalent to an increase of 25 milliard m³ over 1973. The annual rate of growth could thus rise from 15 to more than 13%. This acceleration is attributable to the Netherlands and the United Kingdom where production should increase by about 25%, whilst in the other member countries the rate of growth is inferior to the Community average; in France production continues at a high level.

The exports of the Netherlands will represent 49% of the production of the country as compared with 47% in 1973 and 43% in 1972. The Netherlands contributes 55% of the combined natural gas requirements of the German Federal Republic, France and Belgium.

These exports amounted to 44 milliard m^3 or 85% of the maximum amount envisaged by the Netherlands Government to cover the external contractual arrangements of Gasunie.

Imports from third countries in 1974 should represent about 103,000 Tcal, or 6.5% of the resources of the Community as compared with 5.4% in 1973. This element is expected to grow considerably in the future, the end of 1972 and the year 1973 having been marked by the conclusion of new very important contracts; 13 milliard m^3 /year of Algerian gas for a consortium covering the German Federal Republic, France and Belgium; 15 milliard m^3 /year of gas from the Frigg field (Anglo-Norwegian zone of the North Sea) for Great Britain; 12 milliard m^3 /year of gas from the Ekofisk field (Norwegian zone of the North Sea) for a consortium made up by the German Federal Republic, Belgium, France and the Netherlands. These two last contracts could be substantially increased because of extensions which have been discovered to the Frigg and Ekofisk fields. In line with an agreement signed with the Soviet Union, France will receive 2,5 milliard m^3 a year of Soviet gas as from 1976.

Two agreements were signed in October, 1973 for the supply of 10 milliard m^3 of Algerian gas to the German Federal Republic with an option for a supplementary amount of 2 milliard m^3 , and for the supply of 11 milliard m^3 /year of Algerian gas to Italy. These agreements will come into force over a period of three years, from 1976 to 1979. A Belgian requirement from the Soviet Union should be taken into consideration for 1980; until then, available reserves for exports of Soviet gas have already been taken up by other countries.

The totality of contracts concluded so far by the member states from third countries amounts to 91.5 milliards m^3 * divided as follows according to sources; U.S.S.R., 20.5 milliard m^3 /year during 20 years, including an option of 5 milliard m^3 ; Algeria, 41 milliard m^3 /year, including an option of 2 milliard m^3 , Anglo-Norwegian North Sea, 27 milliard m^3 /year; Libya, 3 milliard m^3 /year. This amount is almost equivalent in calorific value to estimated Netherlands production in 1980 and represents one-third of the available gas to the Community in that year.

Mention must be made of the offer from Iran to guarantee a supply of 40 milliard m^3 /year to the countries of Western Europe.

The year 1973 would thus appear to have been a decisive one for the future of natural gas within the Community; the totality of supplies foreseen for the next decade should permit a doubling of demand by 1980 and the contracts concluded during the year defer beyond 1990 the shortage which will result from the exhaustion of the fields currently being exploited within the Community.

(* about 100 milliard m^3 /year in Groningen equivalent).

3. Consumption

An increase in consumption of 19% is estimated for 1974 as compared with 1973. The rate of growth of consumption is weak in France, Belgium and Luxembourg; in other countries it is above the Community average; the U.K. heads the list with a growth rate of 25%. The development of the domestic market is very different among the consuming countries (+ 39% in the German Federal Republic as compared with + 5% in Italy.) In the power station sector, the growth in demand for natural gas is expected to accelerate (+ 15%

in 1974 as compared with + 12% in 1973). In the German Federal Republic the power station sector represents 29% of internal consumption, as compared with 27% in the Netherlands and 25.5% in Belgium. By contrast, it is 16% of total consumption in Luxembourg, 11% in France, 7% in Italy and below 5% in the United Kingdom.

In the industrial sector, the impossibility of equating supply to demand has obliged companies to adopt restrictive measures; the duration of contracts has been restored to one year or more, the greater part of supplies having been placed under interruptibility clauses; new agreements have been averted and in the United Kingdom important contracts have not been renewed on expiration.

4. Prices of Natural Gas

In the international market there have been significant and general price increases. All contracts recently concluded incorporate price escalation clauses, the object of which is to protect producers from the effects of the erosion of currencies and the inflation of costs, and they tend to align the price of natural gas to that of competing forms of energy.

In the market of final consumers, there were moderate price increases in 1973 (about 5% in the German Federal Republic and in France, and 2.5% in Belgium) whilst in Great Britain prices have remained stable. In the Netherlands, where natural gas prices are closely linked to the price of fuel oil, there has been a large increase in prices to industry (+ 20%), except for companies consuming more than 10 million m³ per year and which undertake to enter into interruptible contracts. At constant prices, the price of natural gas in 1973 has made it the most competitive product in the energy market in the whole of the

Community. With regard to 1974, too many imponderables affect the outlook. It may be noted that the Netherlands has already announced a rise in prices of 20% in industrial tariffs from the 1st January, 1974.

D. Electricity

Electricity supply in the Community had to meet an overall demand of about 1000 TWh in 1973, equivalent to an increase of 8.5% as compared with 1972 and notably above the long-term average rate of growth.

In recent years domestic and tertiary demand, almost without exception, showed considerably higher increases than consumption by industry. It may be noted, however, that in Belgium and Ireland, industrial consumption of electricity has recently been increasing at 10% and more per annum. In 1973 the same was true for the United Kingdom, but only because of the exceptionally low demand early in the preceding year as a consequence of the miners' strike.

Electricity demand was estimated to increase by 7.4% in 1974 but the oil supply crisis could lead to increased demand for electricity. However, the extent to which oil supply difficulties may influence the demand for electricity is subject to so many imponderables as to make any forecast extremely tenuous.

Generation of primary electricity showed little progress in 1973 for the Community as a whole. Hydrological conditions were even more unfavourable during the first half of 1973 than in 1972 (14 and 8% respectively below average level). Commissioning of new nuclear plant promises production increases in 1974 but these will make themselves felt too late in the year to push the nuclear part of total Community generation above the 6% mark already approached in 1972.

The Community's primary electricity generation plus net imports amounted to 176 TWh in 1973 as compared with 171 TWh in 1972, covering about 16% of gross consumption, the remainder having to be supplied

by conventional thermal plants and to a very small degree (not exceeding 1%) by pumped-storage power stations.

Conventional thermal generation will still have to keep pace with the rate of increase of electricity demand in general, so long as the expansion of nuclear generation does not compensate for the relative decline of hydro-electricity. The 83% share of conventional thermal plants in total generation will remain almost unchanged in 1974, raising the volume of electricity thus generated from 868 TWh in 1973 to 926 TWh in 1974. The corresponding input of solid, liquid and gaseous fuels should increase by 24.3 million tce in 1973 and by 17.2 million tce in 1974, provided that hydraulic conditions and temperatures during the forthcoming year are normal and no restrictions are imposed on demand. Total power station annual fuel demand would then reach 325 million tce per year. These indications for 1974 assume "normal development" and do not take into account the possible effects of the oil supply crisis on the economic situation and general industrial activity. On the assumption that the supply of liquid petroleum products is likely to fall short in 1974 and assuming that alternative fuels are available throughout the year, the maximum switch in the electricity generating sector in favour of coal could be 12% and in favour of natural gas 6.4%.

The reduction in fuel oil needs could reach a maximum of 30 million tons in the current year. This reduction could result, not only from recourse to alternative fuels in the dual-fired power stations, but also from the reduction - temporarily - in the utilisation during the year of certain single-fired power plants, compensated for by a growth in the production of the power stations burning other fuels.

The structure of the production park could mean that France, Italy, and the Netherlands especially, should be able to take advantage of the flexibility of a "multi-fired" park, whilst the U.K. could turn towards a different load factor modulation of the power stations. The production of electricity from coal could thus increase notably in Denmark, Germany, France, Italy and the U.K., whilst the contribution from natural gas could increase above all in the Netherlands, and to a lesser extent in Germany and Belgium.

With regard to nuclear power, there was only a minor additional contribution to the electricity grid of the Community in 1973. The nuclear plant at Borsele (Netherlands), a light-water pressurised reactor of 390 MWe, is gradually reaching its nominal power. On the other hand, the first Belgian plant at Doel, also a light-water pressurised reactor of 390 MWe, did not come into operation during the year, contrary to forecasts. The development of two prototypes of fast breeder sodium-cooled reactors of 250 MWe each will be completed within a few months of each other; the Phoenix plant (France) having reached criticality at the end of August was due to be linked to the grid by the end of 1973, and the P.F.R. at Dounreay (U.K.) is, on the other hand, at the point of criticality. These two developments are of considerable importance. In effect, on their performance depends the coming into operation in France and in the United Kingdom - and indirectly in Germany - the first commercial fast breeder of such a size, and consequently the entire programme for fast breeders in the countries concerned.

For the Community as a whole (and including Dounreay), the nuclear park thus reached 12,000 MWe at the end of 1973, as compared with

11,000 MWe in the preceding year. Production exceeded 57,000GWh, corresponding to an input of 11.5 million tons of fuel oil.

The year 1974 could witness, if there are no serious delays in the development of projects, a marked increase in the nuclear park of the Community. Some 4000 MWe are in the course of development, including the first plant to exceed one thousand megawatts (Biblis A - 1146 MWe). If all plants are in operation by the end of 1974, the nuclear park should reach 16,000 MWe, and production should amount to some 66,000 GWh, equivalent to an input of more than 13 million tons of fuel oil.

E. Nuclear Fuels

1. Natural uranium

According to the O.E.C.D.(AEN) and A.I.E.A. Report of August 1973, the reasonably assured world resources of natural uranium were estimated at 1st January, 1973, at 866,000 tons in the range of prices below \$10 per lb. of U_3O_8 , and 680,000 tons in the price range of \$10 to \$15 per lb. of U_3O_8 . For the Community the respective estimates are 43,000 and 20,000 tons.

At present the market for natural uranium is giving some indications of supply difficulties; in the long-term, the security and continuity of supply cannot be assured, since on the one hand the present level of prices is unlikely to encourage producers to invest in the search for new resources and, on the other hand, relatively long delays transpire between the start of prospection and the development of production (about 8 years).

Contracts concluded in the course of 1973 show that prices expressed in constant money terms have not risen to any marked degree.

Moreover, it should be noted that the U.S. embargo on imports of natural uranium from other countries, is still in force.

2. Enriched Uranium

The year 1973 was marked by various developments, representing a continuation of trends over preceding years, with a view to providing the Community with its own enrichment capacity. Thus, following the proposals presented by the Commission in 1972, and 20th March, 1973, the Council of Energy on the 22nd May, 1973, created a "Permanent Committee for the Enrichment of Uranium", composed of representatives of public authorities and interested companies in the different Member States; this Committee has the

task of undertaking studies of the market for enriched uranium, of analysing the fundamental characteristics of the various technologies, of examining ways of promoting the development of the necessary industrial capacity in the Community and of facilitating the co-ordination of initiatives between the interested parties. The Committee transmitted its report to the Commission at the end of October, and the Commission presented, on this basis, its proposals to the Council on the 14th November, 1973.

Moreover, the study group for the construction of a multi-national enrichment plant by gas diffusion (EURODIF), created in February 1972, witnessed the withdrawal of three members (Germany, Netherlands and the U.K.) at the beginning of 1973. Its work has nevertheless continued and the group was transformed into a company in the course of October and reached a decision in principle by the end of 1973.

It may be recalled that the two pilot plants for the enrichment of uranium by ultracentrifugation (at Capenhurst in Great Britain and Almelo in the Netherlands) continue with their production. An increase in production is foreseen and it should reach 400 tons UTS per year by the end of 1976.

With regard to supplies from the United States, the American Government has established new criteria for access to the available capacity of the USAEC. These criteria envisage two types of contract - long term (maximum duration of 30 years) and short term (maximum duration of 3 years). The conclusion of contracts for the long term should be realised eight years before the first delivery of the first core of a specified plant and carries a firm commitment

for a period of at least 10 years. Moreover, the ceiling of 215 tons of U_{235} contained in the agreement linking the Community to the USAEC has been raised and fixed at a quantity of uranium corresponding to the needs of the 35,000 MWe installed in the Community.

Another important factor in the evolution of the market for enriched uranium, which is not unconnected with the new American conditions, has been the conclusion of enrichment contracts to order with the Soviet Government for the benefit of various consumers within the Community.

3. Plutonium

The activity which manifested itself in the plutonium sector in the course of 1972 was followed up in 1973, although it is premature to speak in terms of a true market; nevertheless, some important transactions have been concluded between producers and consumers within the Community.

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