

INFORMATION**ENERGY**

THE COMMUNITY ENERGY POLICY

1/72

A new step has just been taken towards the creation of a common energy supply policy : on 31 January 1972 (pending consultation with the countries who have signed the Treaty of Accession), the Council of Ministers adopted two regulations anticipating the communication to the Commission of the European Communities of details of capital investment projects of Community interest concerning oil, natural gas and electricity as well as hydrocarbon imports. These regulations, which the Commission had submitted to the Council in December 1969, are designed to provide information on the structure and development of the Community's supply arrangements, this being essential for the formulation of a Community energy policy. The need for such a policy stems both from the situation on the energy market and from the growing interdependence between the energy sector and other economic and social sectors throughout the Member States.

Energy consumption within the European Community has almost tripled during the last twenty years and its annual growth rate should remain at about 5% in the immediate future. The Community's energy-producing industry employs over a million workers and investments in this sector amount to about a quarter of the capital investment of industry as a whole.

The importance of the energy sector to the Community's economy is hardly surprising, since energy is the essential prerequisite for an advanced society. Although it plays a decisive part in the field of industrial production (which represents almost half of the energy demand), it also makes a significant contribution to domestic comfort (the domestic sector accounts for about one-third of the Community's total energy consumption) and is also essential for transport (approximately 12% of the Community's total energy consumption). Any obstacles to the supply of energy, even though only temporary, would have serious repercussions in all fields, so a secure and regular supply of energy is essential for the economic development of the Community.

It is also important to keep the different energy prices as low and as stable as possible, since energy accounts for 8% of production costs on average (although this percentage seems to vary according to the industry, the two extremes being approximately 2 and 25%). Energy costs thus exert a direct influence on selling prices and consequently also on the ability of the European economy to face competition on the world market. Furthermore, they affect overall economic expansion and regional development, for capital investment tends to favour areas offering cheaper energy supplies. The present differences between the Member States as regards energy policies, prices, taxation and capital investment in particular therefore cause distortions of competition which inhibit the complete establishment of the common market. Harmonization of national regulations on these matters is thus absolutely essential.

A sustained effort with respect to research and development in the energy sector is one condition for the progress of industrial societies, whose energy requirements are constantly growing. The need for research aimed at the conservation of the environment is most prominent in the nuclear field, but it is also felt in those sectors involving the production and use of coal; the petroleum industry and the conversion and use of all forms of energy in general. This research, and the exploitation of its results, calls for still greater financial support. If we wish to keep pace with world progress in the field of research, a pooling of intellectual and material resources on the European level is clearly essential. A regular supply of energy at the lowest and most stable price possible, a common energy market, a greater R&D effort - all these aims will be best served within the framework of a common energy policy. The growing interaction of the economies of the Six stresses this need.

The Community energy market

In any overall study of the growth of the energy market and its characteristics, consideration must be given to all primary energy sources available before conversion, namely :

- solid fuel (coal and lignite);
- liquid fuel (petroleum);
- natural gas, petroleum gas;
- Hydroelectric, geothermal and nuclear power (primary electricity).

A common measurement, the ton of coal equivalent (tce), is used for the different sources of energy. (This is the amount of energy required to obtain from any source of energy a calorific power equal to that obtained from one ton of coal, i.e., 7 million kilocalories).

a) Increase in consumption

The increase in primary energy consumption within the Community in the period 1950-70 for the different energy sources is shown below :

Total domestic consumption of primary energy within the Community								
	in millions of tce				% of total			
	1950	1960	1970	1971	1950	1960	1970	1971
Coal	210	243	189	177	70	52	22	20
Lignite	23	32	33	32	8	7	4	4
Oil	35	138	500	521	12	30	59	60
Natural gas	1	12	73	93	0	3	9	11
Primary electricity	31	39	49	48	10	8	6	5
Total	300	464	844	871	100	100	100	100

Between 1950 and 1970 there was an extremely rapid increase in total energy consumption, the mean annual growth rate in the demand for energy during the same period running to 5.3%. This increase is related to the overall development of the European economy, industrialization and technical progress, and general improvements in living standards.

In 1971, however, the Community's energy requirements reflected the slackening off of general economic development which was already noticeable at the end of 1970. The Community's domestic energy consumption is estimated at 871 million tce for 1971, which represents an increase of 3.1% over the figure for 1970.

During the last 21 years, however, the structure of demand has changed radically in favour of converted (or secondary) energy, the production of which has been constantly improved on account of technical progress, whilst consumption

has been stimulated by widespread car ownership and new heating methods. Today, over 92% of primary energy resources are converted into secondary energy in the form of electric current, coke, coking plant, refinery and town gas and automobile fuel.

b) Energy supply.

As the above table shows, the energy market has changed radically during the last 21 years, being characterized by the following features :

1. A significant drop in the demand for coal (which fell from 70% to 20% for meeting requirements) :

During the 1950s, the Community energy economy was still based chiefly on coal, and in 1955 this still represented 64% of the total internal consumption. By arousing fears that the Community's oil supplies might be jeopardized at some time in the future, the Suez Crisis of 1956 prompted the Member States to take a number of steps the repercussions of which stimulated and hastened the coal crisis. After 1958, the abrupt drop in the price of oil and imported coal forced the Community's coal industry to take vigorous action (some pits being closed down and the output of others stepped up). Since then, the importance of coal in the Community energy supply has constantly decreased.

2. A significant improvement in the demand for oil (which rose from 12% to 60%) :

After 1958, the penetration of the market by oil rapidly increased, the growth and diversification of output, together with new modes of transport (giant oil tankers, pipelines, etc.) leading to increased supplies and lower prices. As it is consuming more and more oil, the Community is gradually becoming dependent upon imports for the greater part of its energy supply. Net imports expressed as a percentage of total requirements rose from 16% in 1950 to 67% in 1970. With a total of 412 million tons in 1970, the Community is the world's principal oil importer. This excessive dependence of Europe on foreign producers, together with its possible harmful effect upon the security of supply and stability of energy prices, became one of the main preoccupations after the oil crisis which marked the winter of 1970-71.

The following table shows, in millions of tons, crude oil imports and their main producers :

Producers	1970	1971
North Africa	157.4	115.8
Western Hemisphere	12.5	10.3
Equatorial Africa	24.3	35.8
Middle East	194.6	234.8

3. An appreciable increase in the demand for natural gas (from 0 to 11%) :

Alongside oil, there has recently been a boom in natural gas. It is obtained from deposits within the Community, chiefly from the Netherlands, but also increasingly from non-member countries.

4. A slight increase in the production of nuclear electricity (from 0 to 1%) :

Contrary to the expectations raised in 1956 and 1957, there has been no rapid development in the field of nuclear energy, which would have reduced the energy dependence of the Community. The main reason for this is the strong competition from the liquid fuels used in conventional power plants which have recently flooded the market in relatively low prices.

Nuclear reactors in operation in the Community on 1 January 1972 represented a net power of 4,323 MWe, whereas plants under construction ran to 9,122 MWe.

c) Future Prospects

- increased demand

If the next fifteen years are marked by an average rate of economic development, then the increase in energy requirements seems likely to remain within the region of 5% a year. The Community's internal energy consumption would then rise from 850 million tce in 1970 to 1,810 million in 1985.

The breakdown of the energy demand between the different consumer sectors will not vary greatly during the next fifteen years. In 1985, the domestic sector will absorb

570 million tce (almost one-third of the Community's energy supply), and the transport sector approximately 230 million tce (13% of requirements). This will leave about 1,000 million tce for the industrial sector as a whole. Within the latter, the energy consumed by the iron and steel industry would increase by approximately 3% a year to reach 135 million tce in 1985, whilst the chemical industry's consumption would triple in the same period, rising to 220 million tce in 1985 (one-third of which would be used for purposes other than power production).

- predominance of petroleum products ...

If the pattern of the Community's energy supply follows present trends, 1985 will see the predominance of petroleum products. Their 1,100 million tce will cover more than 60% of the Community's primary energy requirements; natural gas will account for 15% of the market (280 million tce), whilst nuclear energy could reach 10% (175 million tce), solid fuel accounting for no more than 11% (207 million tce).

... or joint efforts to diversify sources of energy

There is also another possible line of development, the main feature of which would be to restrict the part played by oil in the Community's supplies. This could not be achieved without joint action aimed at stepping up coal imports (which would increase the amount of coal available for the production of electricity), raising investments in nuclear power and boosting the amount of natural gas available (by the discovery of new Community deposits or by increasing imports). All in all, these measures should lead to a 50% reduction in the part played by oil in meeting the Community's energy requirements. Solid fuel should then run to 14%, natural gas 20% and nuclear power 12%. In directing the Community towards a diversification of its energy sources, a project such as this would have the advantage of reducing some of the adverse effects which new tensions in the oil market would have on the economy as a whole.

d) The major problem for 1985 : a stable and regular supply on terms which are socially and economically acceptable

The prospects we have just examined point up the main problems regarding energy policy that the Commission will have to face during the next fifteen years.

To meet a demand in 1985 which will be almost double that existing at present, the oil industry will have to be able to guarantee sizeable and sufficiently stable resources.

The gradual rundown of coal production in the Community must take place under socially and economically acceptable conditions, and coal imports from non-member countries must be increased. It will be necessary to discover and exploit new deposits of natural gas within the Community or in other countries likely to contribute to its supply. Lastly, nuclear power will have to be stepped up, and this might entail major investments.

On a more general level, further technological research and development should be carried out to ensure a more efficient use of energy resources.

The implementation of a Community energy policy

a) Principles

Since the foundation of the European Communities, the High Authority of the Coal and Steel Community and the EEC and Euratom Commissions have taken various steps to formulate a Community energy policy.

In a communication to the Council of Ministers, regarding initial plans for a Community energy policy forwarded in December 1968, the Commission of the European Communities defined the aims and provisions of a common policy.

According to this communication a Community energy policy must be essentially oriented towards the interest of the consumer and should seek to provide a regular energy supply at relatively low and stable prices. In general terms, it involves :

1. The definition of a general programme framework by analysing the present market situation and drawing up medium-term forecasts and guidelines.
2. The establishment of a common energy market by eliminating those factors which directly or indirectly hinder exchanges between member countries and by

dismantling those barriers which are the result of technical regulations governing both energy itself and the facilities employed in its production, transport and utilization; freedom of establishment; unimpeded access to supply sources; the removal of restrictions on competition; the harmonization of national rulings on taxes and prices.

3. A policy based on low-cost and regular supplies, involving in particular the coordination of import programmes, methods of aid and work in the field of investment and research and also the harmonization of the structure of the power industries and the promotion of new ventures to improve the Community's energy supply.

In July 1971, the Commission sent the Council of Ministers a communication regarding the implementation of this first phase. In it the Commission stated that, while the present situation reflects the success of measures already instituted or proposed, it also implies the need for new moves towards a common energy policy.

Action and lines of development

1. Framework

In order to formulate the guiding principles for a common policy and to take the appropriate measures for its implementation, we must first have detailed knowledge of the structure and trends of the energy market and also of the general orientations to be aimed at. This is the reason why the Commission regularly draws up and publishes annual reports on the energy situation which contain analyses of present trends and forecasts for the following year. It is at present preparing an additional report on long-term energy prospects as a whole.

The Commission's departments are also studying the likely development of the different energy sectors over the next fifteen years and the steps to be taken to keep this development in line with the common policy principles. They will shortly be publishing their medium-term guidelines for the oil and gas sectors as well as an illustrative programme for the nuclear sector.

2. Integration of the market

One essential condition for a common energy policy is the creation of an internal market covering all the member countries and functioning along the same lines. The Commission's proposals for the establishing of a common energy market contains provisions concerning the free movement of goods, freedom of establishment and the rules of competition and indirect taxation. A number of these provisions are particularly directed at the energy sector. An important example of the proposals aimed at bringing into line existing legislation and regulations in the Member States regarding the energy sector is in the proposal for a directive* aimed at approximating the taxes on liquid hydrocarbons used as fuel, which was put before the Council of Ministers in December 1970. This was a particularly important proposal since the differing methods of taxation in use in the various Member States are at present causing a distortion of industrial competition.

The harmonization of regulations governing the construction and utilization of refineries, pipelines and service stations, as well as pricing regulations in member countries, constitutes another objective, and to this end a record of the relevant national legislation is to be drawn up by the Commission in conjunction with government experts.

In addition, the Commission is shortly to set up a system for the periodical collection of information regarding prices charged for the different forms of energy. This should enable the Commission to evaluate the repercussions of price movements and to exchange views with the governments and interested parties (It will be recalled that energy prices have a marked influence on industrial costs).

3. A common supply policy.

The Community is dependent upon outside producers for roughly two thirds of its energy supply, so a common supply policy is the essential prerequisite for an energy policy based on dependability of supplies at stable prices.

The supply policy has the following aims in particular :

* A directive obliges Member States to achieve the objectives embodied in it but leaves them free to choose their own methods of doing so.

a) to take the necessary action to cope with possible interruption of energy imports :

- oil stocks

It is important to ensure that emergency supplies are available which, in case of supply difficulties, are sufficient to cover requirements until the necessary steps are taken. A directive adopted by the Council of Ministers in December 1968 requires Member States to maintain supplies of the major petroleum products (petrol, diesel and fuel oil) to cover a minimum of 65 days consumption. The Commission of the European Communities suggested to the Council that this compulsory stockpile should be increased to 90 days' supplies. A group of geologists were also asked to study the possibility of stockpiling underground, which would be less expensive than the use of surface tanks. The results of this study will be available soon.

- reserve transport capacity

The Commission is also giving attention to the problem inherent in the transport of oil by sea, and proposes to avoid this by setting up a reserve capacity immediately available in an emergency.

- consultation at Community level

Standard procedures for consultation between national administrations and the Commission of the European should also be set up in order to ensure the coordination at Community level of steps to be taken in any emergency concerning energy supplies.

b) to enable the Community to meet its requirements on the best possible terms as regards price and security of supply :

- national import programmes within a common policy framework

Since a significant proportion of energy products is obtained from non-member countries, the import programmes of member countries will have to be geared to the common energy policy. To ensure such coordination, the Commission has been carrying out exchanges of information since 1970 on the programmes for the importation of coal from non-member countries. The import programme for hydrocarbons will also be communicated to the Commission to comply with the regulation it has proposed.

- details of the development of the Community's internal supply structure

The Commission has also proposed another regulation requiring that it be informed of details of investment projects of Community interest in the oil, natural gas and electricity sectors. The Commission would then have at its disposal more detailed information on the Community's internal supply structure and its development.

- conferment of Joint Undertaking Status on companies in the hydrocarbon sector

In the interest of the Community's energy supply, certain operations conducted by the hydrocarbon industry must also be promoted, notably the exploration and development of resources, as well as transport and storage, which require a considerable amount of investment and entail certain risks. The Commission recently suggested that Joint Undertaking Status should be applied to these operations. The companies engaged in this field would then have at their disposal a cooperative structure enabling them to pool their resources and possibly benefit from some advantages (e.g., guaranteed loans, low-interest loans and tax advantages).

- strengthening of the cooperation between the Community and those developing countries which are the main hydrocarbon producers

This kind of cooperation would encourage the industrial, economic and social development of these countries, increase exchanges between them and the Community and improve mutual relations.

- nuclear power plant development

The growth of nuclear power plants must also be encouraged, since this would reduce the Community's excessive dependence on non-member countries for its energy supply. The problem here is financial for, while nuclear energy is a viable source of power as regards production costs, the construction of a nuclear power plant costs much more than a conventional installation. In order to facilitate the financing of these additional investments, the Commission could, if the Council accepts the proposal it submitted last July under the terms of the Euratom Treaty, raise loans, the proceeds from which would be used to grant repayable loans to electricity utilities of market conditions.

- nuclear fuel supplies

The basic fuel of the nuclear industry is uranium. Natural uranium consists of two isotopes - 99.3% uranium-238 and 0.7% uranium-235, the latter being fissile.

Although some types of reactor use natural uranium, the majority today are fuelled on enriched uranium, which is uranium in which the proportion of U235 has been increased (2-3% instead of 0.7%) in an isotope separation facility. Such a plant is an extremely expensive undertaking and would not be financially viable for a small or medium-sized country. At present, the Community possesses no enrichment facilities (apart from France, which enriches uranium for military purposes) and it is dependent on the United States for its principal requirements in enriched uranium. Negotiations are underway with the American authorities in an effort to improve the terms on which the United States supplies uranium. Nevertheless, the construction of an enrichment capability within the Community would key in well with a common energy policy and would also solve the problem of the need for a regular supply at stable prices. The Commission put such a proposal before the Council of Ministers in May 1969 and has also had a technical and economic file drawn up on the subject.

Finally, the Commission is giving attention to increasing present efforts in the field of uranium prospecting being made by Community firms in non-member countries, and also to strengthening collaboration between these firms, possibly within the framework of Joint Undertaking status.

4. A joint R&D effort

The energy sector is characterized by a high degree of technological innovation, which tends to affect the overall economy. The energy policy must take into account the development which stems from scientific and technical progress, for it is this which conditions future prospects. It must also encourage and fashion this development, which will thus help it to achieve its aims.

The Commission of the European Communities is also responsible, under the ECSC and Euratom Treaties, (a) for stimulating scientific and technical research on coal and (b) for coordinating national research programmes in the nuclear energy field and for backing them up by an effort of its own.

- The programmes to assist coal research are directed at two objectives : the improvement of mining techniques (winning and drivage techniques, transportation and automation) in order to increase output and safety in coal mining; and the processing of products (coking, briquetting, new processes) in order to improve the coke supply. The Commission regularly publishes the results of research carried out with its assistance, and a rundown of the results obtained to date was published in 1970.

- As regards nuclear power, and in spite of the difficulties encountered by Community research programmes, it must be stressed that the technological advances achieved by the nuclear industries of member countries are the result of combined efforts on the national and Community level. On the whole, the Community research effort in the nuclear field is mainly directed at energy requirements (reactor technology, safety, etc.).

This reveals the complexity of the problems arising from the increasing demand for energy within the Community and the importance of ensuring a regular and stable supply in a sector which is in fact the powerhouse of an industrial society.

The interdependence between the solutions to be found to the economic, industrial, regional and social problems on the one hand, and decisions concerning energy supplies on the other, mean that these latter require to be arrived at in the framework of an overall policy which, on account of the growing intermingling of the economies of member countries, must be defined on a Community scale.

Only a common energy policy, answering both to economic and social requirements (and particularly the overriding need to protect the environment) and the problems arising from an energy supply largely dependent on imports from non-member countries, can ensure the balanced satisfaction of the Community's energy requirements over the long haul.