

# COMMISSION OF THE EUROPEAN COMMUNITIES

COM(94) 659 /final/2

CORRIGENDUM

Brussels, 23.02.1995

Annule et remplace le document  
du 11.01.95  
CONCERNE UNIQUEMENT LA VERSION EN.

**FOR A EUROPEAN UNION ENERGY POLICY**

**Green Paper**

(presented by the Commission)

# FOR A EUROPEAN UNION ENERGY POLICY

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## SUMMARY AND POLICY DIRECTIONS

Energy is central to economic and social activity in the industrialised world. Therefore the conditions of supply, transport, distribution and consumption of energy are of interest to all.

For countries in transition or in the process of industrialisation, energy is one of the driving forces of their economic development and can contribute indirectly to their political stability.

The establishment of an energy policy involves a complex set of factors, imperatives and interests. Every decision in that framework must be based on an evaluation of the relative priority of each of those factors, imperatives and interests.

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The preparation of a **Green paper on energy policy in the European Community** is the most appropriate method of launching the policy discussion, as it will allow all interested parties contribute to the debate.

Clearly the energy industry plays a central role in the operation of the energy market. It is the energy industry that has to assume the political, financial and technical risks associated with energy investments.

Just as energy prices play an important role in overall industrial competitiveness, members of the public, both at work or in their daily life, will also be affected by choices made regarding fuel type and conditions of energy use. Companies, workers and the general public must therefore be given the opportunity to contribute to the debate through their organizations and their representatives.

Whatever the energy resources of each Member State and whatever their respective energy balance, the Community as a whole has to respond to the challenges of industrial competitiveness, security of supply and environmental protection. The energy policy of the Community has to answer these challenges and optimise the diversity of national and regional energy portfolios for the overall benefit of the Community.

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## **OBJECTIVES OF THE GREEN PAPER**

The Green Paper aims to provide the European Institutions with the basis for evaluating whether or not the Community has a greater role to play in energy.

The principal challenges with which the Community will be confronted in future years are examined (Annex A). The geopolitical constraints are identified, as are the constraints that result from the pressures of economic and social cohesion and from the requirements of environmental protection. The impact of potential major developments such as technological changes is also assessed.

The current energy situation and future prospects forms the basis for the analysis (Annex B). A common vision is needed of the challenges which will affect the supply, production and consumption of energy over the next 20 years. This will define the main principles of Community energy policy and the logic for its implementation.

The Commission will exercise its responsibilities in the energy sector only on the basis of a consensual and widely debated analysis of the issues. This analysis and debate of the issues will be carried out by the Commission, as appropriate, and should make full use of existing European analytical capabilities.

Finally, the Green paper analyses the **current responsibilities** of the Community in the energy field (Annex C).

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## **THE ESSENTIALS OF ENERGY POLICY**

The energy policy objectives for the Community are appraised in terms of the challenges identified.

These objectives are readily apparent involving, as they do, the management of policy to ensure the satisfaction of all users needs at the least cost while meeting the requirements of security of supply and environmental protection.

But these objectives are contradictory. The difficulty will be to balance the different elements in such a way that the essential objectives can be satisfied. What the Green paper proposes for debate therefore is how to attain these objectives within the framework of an integrated European market.

In parallel the Green paper seeks to contribute to the definition of a new framework for the sector which would accommodate continuing changes and, at the same, time contribute towards the overall competitiveness of our economies.

By setting out a flexible and more effective environment for the energy sector and a tax structure which favours environmental protection and employment, this paper contributes positively to the debate opened by the **Commission's White Paper on competitiveness, growth and employment**.

## POLICY DIRECTIONS

In the preparation of the Green paper, gaps and deficiencies in the current position became apparent and policy directions were indicated which would, in time, improve the situation.

These policy directions point the following ways:

- (1) It is evident that **there is a clear need to reinforce the level of concerted action and cooperation** between the decision makers and the operators of energy policy within the Community.

Independent of the institutional decision-making process within the Community, there is a need for collective prioritisation of political actions at both the Community and national level. This prioritisation must be based on cooperation and concerted action. However, the framework and mechanisms for it are missing.

The aim of this concerted action and cooperation should be to assist in the convergence of national and Community policies. But informal mechanisms cannot give the legal and political guarantees (especially on transparency) necessary for the expression of the Community dimension in national energy policies.

- (2) Secondly, **national and Community energy policies should be approached in a comprehensive way** because their effectiveness depends on their consistency and because numerous factors influencing these policies are, by their nature, trans-national.

This is a fact of the operation of the market, particularly so in the context of the requirements of the Community's internal market. Aiming at the strengthening of competitiveness by the introduction of competition in those sectors in which monopolies persist, the completion of the single market must therefore find a balance between the satisfaction of the common requirements of consumer protection, security of supply and environmental protection.

In this context, it will be necessary to draw conclusions from the clearer distinction that now exists in certain Member States between regulatory and management responsibilities for energy networks. This is required in order to organize cooperation between the regulatory authorities at the Community level and in order to ensure a common approach to the concept of general economic interest.

But this is equally valid if one considers the interdependence between fuels. Only a global approach to the imperatives of security of supply would allow an appropriate response at a reasonable political and economic cost.

The foreign policy of the Community needs to have security of energy supply as an objective. Questions of supplies form part of the general context of the external economic and commercial relations for which the Community has responsibility and

are also central to the strategy of all companies operating in the framework of a single internal market.

- (3) As far as the Community framework is concerned, the analysis reveals that the coherent development of policy instruments is hindered by the **absence of clear responsibilities for energy policy at Community level.**

These responsibilities for energy policy are recognized in the field of coal and nuclear power. By contrast the Treaty of Rome does not embrace a similar responsibility for the other sources of energy.

- (4) Finally, regarding the environment, the analysis stresses that there are two main challenges. One results from traditional forms of pollution. The other arises from the risk of climate change linked to the emission of greenhouse gases and for which the use of fossil fuels is largely to blame.

In relation to the traditional forms of pollution, the Community has already made considerable progress and new measures are being progressively adopted. Similar initiatives in the third world offer an important and increasing mutual benefit, in so far as the potential for energy efficiencies and savings is far greater than in the industrialised world, thus justifying an energy cooperation effort of mutual benefit.

The aims of any such cooperation cannot only be the implementation of agreements, the transfer of technological expertise or the financing of projects. It must also assist recipients in their pursuit of the objectives of increased competitiveness, greater security of supply and strengthened environmental protection. It has also to increase their capacity to cope with their energy problems without weakening the quality of the economic development of the countries concerned.

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## I. RECENT DEVELOPMENTS IN COMMUNITY ENERGY POLICY

### 1.1 Objectives and methodology of the Green paper

The Green Paper is being published in response to important changes in the legal, institutional and economic environment of the European Community:

- Since 1 January 1993, European companies have been operating in a single market in which the free movement of goods, services, capital and people is assured. This single market applies as much to the energy sector as any other. However, while implementing the rules of the Treaty to allow the completion of the single market for both the energy industry and energy consumers, the Community must take due note of public interest obligations;
- the Commission has committed itself to submitting to the 1996 Intergovernmental Conference on the amendment of the Treaties, a report on the possible inclusion in the amendments of specific requirements in relation to energy;
- the energy sector is entering a period of far-reaching changes marked by increasing dependence of the European Community on energy, by the constraints of environmental protection arising from rising energy consumption and by the geopolitical changes affecting both supplies to the Community and consumption patterns.
- Article 2 of the Treaty on European Union set an objective of *sustainable and non-inflationary growth while respecting the environment*, an objective which will most certainly have important consequences for energy policy.

The wide-ranging debate opened by the publication of this Green paper, the drafting of which has already benefited from detailed discussions with national administrations, industry players and social partners<sup>(1)</sup>, will enable the Community to set new energy policy goals which will serve as a frame of reference for the actions of the Community and of its Member States. Moreover, it will make it possible to evaluate the distribution of national, regional and Community responsibilities and to establish the respective role of public authorities and industry. The preparation of this Green paper has also benefited from the contribution of the

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<sup>(1)</sup> The green paper takes into account the views communicated by UNICE, IFIEC, CES, CEEP, EUROPIA, E&P FORUM, UPEI, the coal importers, CEPCEO, COGEN Europe, EUROGAS, EURELECTRIC, Electricity Association, as well as FORATOM.



Economic and Social Committee which organized a series of hearings in 1993-94 to establish an opinion based on the report submitted by Mr Gafo Fernandez<sup>(2)</sup>.

3. As a result of this debate the Commission will publish a White Paper in 1995 which will establish a working plan for energy in the Community. This working plan will aim to utilise existing policy instruments which can contribute to the implementation of energy policy goals and promote cooperation between Member States and the energy industry.

## 1.2 Energy policy to date

4. Community energy affairs were originally dealt with by the ECSC and EURATOM Treaties. It was not until 1974 that the need for an energy policy strategy arose<sup>(3)</sup>. Since then, energy policy has in general focused on reducing the consequences of oil supply crises.

In 1983, the Council considered that the Community need to define common energy objectives, stressing the need for Community coordination, the strengthening of national operations and the launching of specific Community actions.

In 1986, the Council adopted a strategy based on horizontal and sectoral objectives<sup>(4)</sup> for 1995; actions were to be carried out both at a Community level and by the Member States individually. Progress was made towards the achievement of the horizontal objectives. However, because of changing economic conditions, particularly the drop in oil prices in 1986, developments in energy market trends and the energy implications of growing environmental awareness, it has not proved possible to attain the sectoral objectives. For renewables, quantitative targets are set for the year 2005 by the ALTENER programme<sup>(5)</sup>.

## 1.3 The institutional framework

5. While the production and marketing of various energy forms are very interdependent, energy policy has to be developed within widely differing institutional frameworks. For example, electricity production is influenced by policy instruments developed under the ECSC and EAEC Treaties for coal and nuclear energy and by the instruments available in the EC Treaty for the renewable energy and hydrocarbons.

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(2) Opinions of the energy, nuclear questions and research Sections of the Economic and Social Committee on the Community energy policy document ESC 919/93 of 3 August 1994

(3) Council Resolution of 16 September 1986 concerning new energy policy goals and the convergence of the Member States policies - 86/C 241/01

(4) Council Resolution of 17 September 1974 concerning the new energy policy strategy for the Community. OJ C153 of 9 July 1975.

(5) Decision 93/500/EEC of 13 September 1993, OJ L235 of 19 September 1993, page 41

6. The ECSC Treaty created a common market for coal and steel with common objectives and common institutions; its objectives included ensuring that customers have equal access to sources of production; encouraging undertakings to improve their productive potential; and to promoting the growth of international trade. A number of practices were declared incompatible with the common market such as import and export duties or discriminative and restrictive measures. At present, state aids are authorised through Article 95 of the ECSC Treaty, only if they help to achieve further progress towards economic viability with the aim of subsequently reducing aid; solve the social and regional problems created by industry closures; or help the coal industry adjust to environmental protection standards.
7. The EAEC Treaty aims to consolidate individual efforts and facilitate the development of a powerful nuclear industry by encouraging investments in Member States, periodically publishing indicative programmes reflecting this objective, providing for research, disseminating knowledge for health protection, ensuring supplies come through the Supply Agency, setting safeguards (such as guaranteeing peaceful uses), and controlling safety and external relations. Recently the financial authority of EURATOM was increased to cover possible loans aimed at improving the safety and efficiency of the nuclear parc in East European countries.
3. The provisions of the Treaty of the European Union which impact on the energy sector essentially concern the operation of the internal market, including rules on competition, economic and social cohesion, the development of trans-European networks, commercial policy, cooperation with third countries, environmental protection and research and consumer policy.

#### 1.4 Energy policy in the context of other relevant policies

Energy policy cannot be developed independently from other policies and activities of the Community:

- The implementation of the Commission's White Paper on a common transport policy<sup>(6)</sup> will influence oil consumption by improving infrastructures and their use.
- The White Paper on growth, competitiveness and employment aims to give the energy sector a more flexible and more effective regulatory environment<sup>(7)</sup>.
- By establishing priorities for actions to improve operation of the market and for infrastructure investments, the Communication on industrial competitiveness<sup>(8)</sup> will impact equally on energy providers and consumers, particularly encouraging research and development initiatives and broadening competition.

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<sup>(6)</sup> COM (92) 494 final of 2 December 1992

<sup>(7)</sup> COM (93) 700 final of 5 December 1993

<sup>(8)</sup> COM (94) 319 final of 14 September 1994

## 1.5 The shaping forces for energy

10. The many influences which shape the energy sector are documented in annex A. The geopolitical context is particularly important. The production and trade of energy is largely conducted on an international scale either because the participants are multinational corporations and governments, or because the resources are mostly located in one region and the markets in another.
11. The specific characteristics of the separate energy markets are determined by the nature of the different fuels, by the technology employed and by the constraints particular to each sector. For example, Community coal is uncompetitive compared with imported coal, the gas sector mostly operates on a closed monopolistic market basis, and there is a lack of consensus regarding the future of nuclear energy. Renewable energy makes a positive contribution to the double problems of growing energy imports and energy related environmental damage; however, given the relative immaturity of this sector, the scale of the benefits achieved to date is limited.

Further economic and technical development will be enhanced by greater integration of the energy markets of the Community, which is why it is necessary to ensure that these markets operate in conformity with the provisions of the Treaties.

12. Individual Member States energy policies are closely linked to, and influenced by, their specific resource endowment. As a result there are major disparities between the energy balances of the different Member States. From a Community perspective this divergence may not be a bad thing. At the same time there is broad agreement between the Member States on the overall policy objectives; diversification of energy sources, a greater role for market forces and the reinforcement of energy efficiency efforts. The net result is the provision of a varied energy balance relying on many different sources of energy when viewed on a Community level.
13. Technology developments play a significant role in the energy sector. The influence on security of supply was demonstrated by an often quoted example from the North Sea. When the price of oil halved in 1986 it proved possible, contrary to all predictions, to continue to produce oil and gas profitably from the North Sea. This was because technological progress, in terms of increased automation and improved production systems, allowed a much lower production cost than originally forecast when the North Sea fields were first developed. Technology also is a key to greater environmental protection and better energy efficiency. The dissemination of new energy technology in the developing regions of the world can have a major impact given the prospects for growth of energy consumption in these countries. Finally the technological sophistication of the Community's energy sector is an important determinant of market share, both in the Community and outside, and contributes towards the development of a coherent industrial policy.
14. The use of any energy resource poses, almost inevitably, environmental impact problems at every phase of the operation, be it production, transport or consumption. Difficulties can be

specific to the type of energy, for example radioactive waste or sulphur emissions, or they can be common to many energy forms, as are CO<sub>2</sub> emissions. It is therefore accepted that the technical and economic development of the energy sector cannot be properly progressed without integrating environmental protection into an overall strategic approach. Only such a strategy can guarantee an effective result while taking into account the well known concerns of the ordinary citizen which have been documented via numerous opinion polls.

15. The different regions of the Community are not equally endowed in terms of energy supplies. In particular the disadvantaged regions are more dependent on imports than the Community average. The strengthening of infrastructures, progress in energy efficiency and the use of renewable energy would make it possible to correct regional imbalances by favouring economic development and contributing to regional planning.

### 1.6. Energy prospects

16. Energy policy must be framed in the context of the longer term outlook in order to influence the pattern of energy related investments, particularly for production and transport. Such major energy investment decisions do not produce results for many years and are therefore required to anticipate developments in the energy sector. Consequently, companies and public authorities should consider the study of energy prospects to be an integral component of energy policy itself.

Building on studies carried out in 1992, the Commission services developed an evaluation of energy prospects in consultation with industry organizations, university research centres and national administrations. A broad outline is presented in annex B.

The analysis confirms that the driving forces of the future for energy are demographics, changes in user behaviour, the level of economic activity, structural changes and technological developments.

17. This work focuses mainly on the European twelve but is only little changed by the accession of the new Member States, is attached. The main results can be summarized as follows:
  - the highest energy consumption growth rates will be in the developing countries - so much so that by 2020, these countries could account for more than half of total world demand and CO<sub>2</sub> emissions;
  - technological changes could limit the increase in consumption in the developed countries thanks to greater energy efficiency, although the potential for greater energy efficiency gains will remain;
  - the physical availability of energy does not seem to be likely to create constraints between now and 2020; however, the fuel mix could be strongly influenced by environmental, technological and geopolitical uncertainties;

- energy consumption in the European Community will grow slowly (1% a year) but the structure of demand could change in favour of oil and gas. However, environmental constraints could encourage increasing gas consumption which could grow by 60% between now and 2020;
- the energy dependence of the European Community could increase from around 50% at present to 70% by 2020. Dependence on gas imports will increase most rapidly.
- While the development of the energy supply mix is uncertain because it can be affected by so many variables, it is clear that the nature of the demand for energy services will change. Increasingly it will be private individuals, either at home, in their cars, or at work in the office or small and medium-sized industries who will determine the pattern of demand. Traditional, high energy-consuming, heavy industry will play a less prominent role.
- The effective operation of the internal energy market will pass low cost advantages through to end users and present the widest possible energy choice to all involved.
- There will be increasing interdependence between Europe, as a large energy user, and its near neighbours Russia, the Middle East and North Africa, as large energy exporters. The energy dimension of the geopolitics and geoeconomics of the region will be of increasing importance, offering opportunities for energy investments in both directions.

## 1.7 Community policy

18. The Community has responsibilities concerning energy. These responsibilities are exercised by the implementation of the instruments provided for in the Treaty. Although these instruments are not integrated within a distinct energy policy set out in the Treaty, they nevertheless have to be used with the intention of achieving effectiveness and coherence. Annex C highlights in detail the application of these various policies and their effects to date on energy.
19. It is evident that two Community policies are of particular importance for the energy sector. Of prime importance is the establishment of the internal energy market, by the setting of common rules and by the removal of barriers, whether of public or private origin. This policy is consistent with the objective for the single market as fixed by the Single European Act, which aims to ensure that energy is made available in the most economic manner to end-users, whether high energy-consuming industries or private individuals. The anticipated economic advantages of the internal market will therefore be an important factor in improving the competitiveness of the economy of the European Community. The internal energy market particularly needs to be established in the gas and electricity sectors while the process of harmonisation and standardisation must be actively pursued to ensure free competition.

20. Secondly, foreign policy is of key importance because it is likely to influence the availability of energy from external sources on which the Community depends for approximately 50% of its supplies. The various cooperation agreements available and the growing role of commercial policy accompanying the internationalisation of markets, will remain important in this context.
21. Moreover, existing financial contribution policy instruments are at the disposal of energy policy. In particular there are the support programmes for research and technology development such as the framework programme or the promotion programmes for non-nuclear energy technologies. There are also various financial instruments for regional policy and for the economic and social dimension.
22. Finally, Community policies allow various regulatory interventions. Examples include environmental policy (such as the large combustion plant directive), standardization or specific energy instruments envisaged under the SAVE and ALTENER programmes.

