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WHITE PAPER

**AN ENERGY POLICY  
FOR THE EUROPEAN  
UNION**

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## **FOREWORD**

1. The conditions under which energy products are produced, transported, distributed and consumed, whether they enter into industrial-production systems, the generation of electricity or in the organization of social systems, determine the economic, social and political environment of both business and the man in the street. Moreover, the regulatory framework determines the conditions under which investments are made in energy-producing and consuming companies.
2. Whatever the level of intervention by the public authorities, those politically responsible in the Member States are interested in, and indeed influence, the options as a function of national, regional or local priorities. These options are dictated by the aims of economic competitiveness and security of supplies which take account of both the social and regional dimension and of environmental-protection policy. This intervention by the public authorities may depend upon Community instruments, whether financial or trade-policy, or may affect the operation of the market and the conditions of competition which form the core of the Community's powers. This intervention must therefore, comply with Community obligations.
3. The Commission thus feels that it is essential for the effectiveness of the policies conducted at national level, that the responsibilities deriving from energy policy should form part of common aims that have been defined at Community level. The Commission is thus prepared to use all of the provisions of the Treaties to that end in order to establish, first of all, a framework for the discussion of energy policy that involves all of the public and private operators concerned, secondly, a framework for consultation on energy policy guidelines and on activities in this area and, finally, a framework for cooperation with the Member States in order to achieve jointly-defined aims.
4. It is indeed important that all Community instruments should be activated by common aims. The central aim of the Green Paper had been to usher in a broad debate on what those aims must be. That debate brought reactions from all of the Community institutions, the Member States, national parliaments and more than 40 national or Community bodies representing all of the economic, industrial and social interests concerned. The Green Paper allowed Parliament, in particular, to debate openly energy policy options and to define action guidelines which have contributed to this White Paper. In parallel and in consultation with the Member States, the energy industry and academic circles, the Commission has developed an analysis of the energy outlook up to the year 2020, together with scenarios. The results of those debates and studies will be published alongside this White Paper.
5. Energy policy must form part of the general aims of the Community's economic policy based on market integration, deregulation, limiting public intervention to what is strictly necessary in order to safeguard the public interest and welfare, sustainable development, consumer protection and economic and social cohesion. However, beyond those general

aims energy policy must pursue aims that reconcile competitiveness, security of supplies and protection of the environment while bearing in mind that the Union's central concerns are, on the one hand job creation and the quest for greater efficiency in the general business environment that also includes the organisation of energy systems, and on the other hand the protection of the environment.

6. In pursuing these aims the Community cannot be unaware that its forecast energy dependence will increase and that the choices to be made as regards protection of the environment in particular may heighten that dependence. Nor may it disregard the fact that the integration of the Community involves greater solidarity in the energy choices made by each of the Member States. Finally, it cannot ignore the fact that the energy scene is marked by changes in outlook and crises which justify flexibility and adaptation in defining and implementing an energy policy.
7. In considering these various constraints the approaches put forward in this White Paper are based on the following factors:
  - Market integration is the central, determining factor in the Community's energy policy. Without such integration other activities lose their justification since their essential aim is to use Community support instruments, such as the Trans-European Networks, in order to help in providing production, transport and distribution infrastructures enabling the European market to respond to demand, or to make supplies to that same market dependable. A fragmented market refers all such activities back to national level, and could undermine efforts to improve the Community's competitiveness. Against this background the White Paper must, during the current process of integrating the electricity and gas markets, address, in particular, the concerns expressed with regard to the contributions which the Community may make towards safeguarding public service obligations, towards economic and social cohesion and towards security of supply;
  - The concerns regarding competitiveness and environmental protection require a balanced approach in the medium or long term that is based on internalisation of costs. Irrespective of fiscal harmonisation which is necessary for the proper working of the internal market, the fiscal instrument is clearly an efficient method of internalising these costs that affect every level of production. However, that method is difficult to implement owing to the need to take account of its impact on industrial competitiveness and of its effects on the energy policy choices that currently differ within the Community. If the Commission is to continue to work on fiscal instruments by helping the Member States to restructure their own taxation policies with a view towards convergence while taking account of the aim of reducing taxation pressure on business; this must not undermine efforts to meet environmental challenges by taking into account energy efficiency at consumer-product level, by promoting in the generation of electricity cleaner and more efficient technologies, particularly renewable energies, by developing voluntary agreements between enterprises and by exchanges

of experience and by cooperating on research and technological development and on demand-management projects;

- The external dimension is considered in general to be the most important vehicle for action, first of all because the Community's supplies mainly come from outside producers and, above all, because the growth of consumption in non-member countries will be the main cause for concern during the years ahead. Community funds, and the bilateral and multilateral agreements must be activated in order to provide a coherent approach to energy matters with our major partners. These fora for dialogue are already in place and must be used in order to implement that approach. It must, indeed, be borne in mind that the energy sector, in view of its strategic function, must aim at making investments secure, facilitating technology transfers and broadening consultation and cooperation;
- Security of supply must continue to be a constant concern of the public authorities; it also justifies a common approach at Community level in view of the level of integration of the consumer markets, of its external responsibilities and of the growing integration of the energy market itself. That approach must be based on bolstering the management of the oil crisis measures, by monitoring the operation of the energy market via more efficient use of existing tools and by an overall balance of fuels on the market, particularly for electricity generation and for transport, which takes account of the diversity of the national and regional situations.

8. This White Paper provides an indicative work programme for the Commission for the years ahead which takes account of the limits to Community action for reasons linked to either subsidiarity or to budgetary constraints. It does not go beyond the limits set out by the present treaties and stays within the framework of the budgetary forecasts. It therefore does not involve any transfer of powers or any new budget spending. Implementation of that programme will pass through the Community's normal decision-making process via proposals and communications or new management approaches towards existing machinery. However, since all action in the energy sector must adapt to changing conditions, on the basis of a common perception of the problems and their consequences, this work programme will be monitored and adjusted every two years as part of a report on energy which will enable the various institutions of the Community to provide an update on the aims pursued.

9. This White Paper provides a convincing case for a Community energy policy, but also identifies some limits to Community action in this area. The approach developed by the Commission in this White Paper in no way prejudices the action that it will be called upon to take in the framework of the Inter-governmental Conference which will be the subject of a report by the Commission in 1996 as foreseen in the declaration n°1 to the Treaty.

## I. INTRODUCTION

### 1.1 Why a White Paper on Energy Policy?

10. Energy is a key sector in the European Community which is becoming increasingly integrated both politically and economically and whose geopolitical responsibilities are widening. Although the Treaties already provide for an important Community role in the energy field, the Commission has come to the conclusion, on the basis of past experience and in light of energy trends, that it is only within a sound and coherent energy policy framework at Community level, that maximum benefits can be realised from actions at both Community and Member State levels and a full contribution made to other policy objectives.
11. The need for such a framework is due to a number of forces that will have important consequences on the future of the Community's energy sector. First and foremost, as the Community moves towards an integrated and more competitive energy market, it will need to have increased solidarity on energy matters. It is at the Community level that an effective and balanced approach to energy policy issues can be achieved, such as the external energy role of the Community or the social and regional dimension of energy or the necessity to ensure that the Community's energy supplies remain affordable, stable and diverse.
12. Energy is of considerable importance given its strategic relevance as a raw material for industry, particularly energy intensive industries, for the quality of life and for the creation of jobs. In the current economic and social situation the level of energy prices is a positive factor in lowering production costs and prices and an important element in the process of economic convergence and progress towards economic and monetary union. However, the present favourable energy situation cannot always be taken for granted and a framework is necessary to ensure that its stabilising benefits are not lost. The energy situations and energy policies of Member States are quite different and it is likely that a sharp shift away from the present favourable energy situation would lead to different reactions. A Community energy policy framework in which Member States are working towards agreed common objectives would enable the Community to respond effectively to the destabilising effects of changes in energy prices.
13. The need for consistency is particularly acute for complex problems such as the relation between energy and environmental protection. On this issue there is a growing commitment at all levels - industry, governments, international organisations and general public - to sustainable development. This was an objective endorsed by the Community in its Fifth Environmental Action Programme - Towards Sustainability<sup>(1)</sup>. Given the significance of energy in economic development, an important aim of a Community energy policy will be to ensure that measures in the energy sector do not conflict with and indeed enhance sustainable development. In general, the pursuit of competitiveness and

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<sup>(1)</sup> Com(92)93, Fifth Environmental Action Programme - "Towards Sustainability".

environmental protection should be complementary and should not create any major tensions, as mapped out in the Commission's White Paper - "Growth, Competitiveness and Employment - The Challenges and Ways Forward into the 21st Century."<sup>(2)</sup>

14. The need for a consistent approach is also justified by the responsibilities exercised at national or regional level on energy and environment choices. In full respect of the subsidiarity principle, a cooperation process between the Community level and the national level should ensure that these responsibilities are carried out in a coherent way on the basis of common objectives. Last but not least, clear energy objectives agreed between the Community institutions would facilitate the use of existing instruments and thereby contribute to achieving these energy objectives.
15. Faced with these challenges the Commission, with the full support of the European Parliament and the Council, and in close consultation with interested parties in the energy sector, felt that there was a pressing need to relaunch the debate on the future shape of a Community Energy Policy and to present in a White Paper a strategy within a political framework for achieving it.

## **1.2 The Debate on the Green Paper**

16. Energy policy guidelines based on the widest possible support have the best chance of succeeding. To this end, the Commission opened a broad debate in 1993 between all interested parties culminating in the adoption of a Green Paper<sup>(3)</sup> by the Commission on January 11, 1995 that sets out the challenges of and possible solutions to the development of a Community energy policy framework.
17. The Green Paper has produced many different reactions. The Community institutions have delivered detailed comments on the Green Paper as well as opinions on what should be the major guidelines for a future Community Energy Policy and the role of the Community in this process. The Council<sup>(4)</sup> is generally positive as regards the need to establish new energy policy guidelines. It wants a rapid completion of the internal energy market and takes the view that security of supply should be based on increased diversification and supply flexibility, rational use of energy in all sectors and research and technological development and that environmental policy and energy policy need to be considered in an integrated manner.

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<sup>(2)</sup> Growth, Competitiveness and Employment - The challenges and Ways Forward into the 21st Century.

<sup>(3)</sup> COM(94) 659 Final 11 January 1995 - European Commission Green Paper - "For a European Union Energy Policy".

<sup>(4)</sup> Council Resolution n° 7802/95 of 13 June 1995.

18. The European Parliament<sup>(5)</sup>, while advocating the liberalisation of the energy markets also emphasised the need to guarantee security of supply, public services missions and environmental protection. It wants the Community to pursue a strong policy of diversification and sees the need to maintain a nuclear component. For environmental reasons, it wants the Community to define a programme with priority given to energy efficiency, energy savings and renewable energies and which could contribute to the fulfilment of the Community's international environmental commitments.
19. The Economic and Social Committee<sup>(6)</sup> and the Committee of Regions<sup>(7)</sup> focus on social and economic cohesion and policies that favour employment which must, in their view, be paramount in the development of a future energy policy. The major energy producing and consuming industries, a number of trade unions and some environmental associations have made substantial contributions to the debate and also provided, in many cases, detailed written comments<sup>(8)</sup>.
20. It would not be appropriate to summarise the complete debate on the Green Paper in this White Paper but it is worthwhile highlighting a few key points. Many contributors take the view that the Community energy dimension is important and that there is a need for Community policy guidelines. There is a recognition that the Community already possesses a large range of competences on energy matters based on the Treaties and that a Community dimension to energy policy, while respecting subsidiarity, can bring added value in some areas, particularly in the areas of Research and Technological Development (RTD), international relations and environmental protection. All participants welcomed the opportunity of continued dialogue on the many important energy issues raised by the Green Paper.
21. In conclusion, the debate on the Green Paper demonstrated that there is a wide range of views as regards the priority to be given to basic objectives, the desired degree of Community intervention in the energy market and in particular the instruments to be used but that it is not going to be possible to satisfy all interested parties on all their preferences and choices will have to be made. Overall, the debate on the Green Paper and the many contributions from all sides has provided a valuable input for the Commission in drafting this White Paper, in particular the energy policy guidelines and the measures that need to be implemented in order to give these guidelines effect.

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<sup>(5)</sup> European Parliament, Report n° A4-0212/95 and Resolution of 10 October 1995.

<sup>(6)</sup> CES 804/95 of 5 July 1995, Opinion of the Economic and Social Committee.

<sup>(7)</sup> CdR 241/95, Opinion of the Committee of the Regions.

<sup>(8)</sup> The contributions received are made available by the European Commission's Services (DGXVII).



## II. THE GENERAL FRAMEWORK

22. In defining energy policy objectives it is necessary to place them within the economic and political framework of the Community. The main actors in this framework are, of course, companies that need to operate in an efficient legal and fiscal framework which encourages investment and innovation and that are protected against undue public and regulatory intervention. This overall framework can be characterised by four key concepts:

- external dimension - globalisation of markets;
- increasing environmental concerns;
- technology developments;
- Community institutional responsibilities.

### 2.1 External Dimension - Globalisation of Markets

23. The most persistent trend in the world economy over the last few decades is that of globalisation of markets. Regional markets, with their specific characteristics as regards both consumer behaviour and needs are becoming less important. There are numerous driving forces behind globalisation; most importantly far reaching changes in communication, transport and technology. Similarly, there are numerous consequences of globalisation, of which intensified world-wide competition is one of the most important.

24. As the Community's economy becomes increasingly subject to globalisation so do the present unexposed sectors of the energy market. The global aspects of energy markets are reinforced by the significant strategic aspects related to energy policy, in particular as regards security of energy supplies, and the considerable international trade in energy products, due to resources often being located in one region and markets in another.

25. The trend towards globalisation of the energy sector has been reinforced by recent political change, particularly in the countries of Central and Eastern Europe and of the Community of Independent States (C.I.S.). At the economic level, the signature of the World Trade Organisation (W.T.O) Agreement signalled a strong commitment by the major economies to trade liberalisation and market-oriented policies. Also of major significance was the signature of the Energy Charter with its commitment to the liberalisation of trade and investments in the energy sector.

26. In establishing new energy policy guidelines, full account must be taken of globalisation and the "One World" concept. Better relations with third countries and the development of the international energy dialogue are central aspects, all the more so because some of these trading partners are not politically stable. But it is even more important to ensure that European industry, including the energy industry, is structurally and technologically well

adapted to face up to the increased competition and take advantage of the opportunities resulting in globalisation. The strong forecast economic growth in certain developing countries and even stronger growth in energy consumption will lead to profound changes and new opportunities. On the positive side Community energy enterprises whose competitive position is being strengthened by the integration of the Community's energy market, should be well placed to take advantage of this new environment.

## **2.2 Environmental Concerns**

27. The energy sector must be included in any environmental protection policy, since every energy action has some impact on the environment, be it at the local, regional or global level. In addition to honouring the series of international environment agreements to which the Community is a party, integrating environmental concerns has become one of the key objectives of energy policy. Such an integrated energy/environmental framework contributes to the achievement of sustainable development.
28. At the global level, the increase in emissions of man made CO<sub>2</sub> and other greenhouse gases creates concern because they have a global warming potential which could result in irreversible climate change. The problems related to spills, waste, noise, amenity damage and atmospheric pollution produced by local emissions, which have environmental and public health implications, are both more conspicuous and more manageable than the global environmental problems and so they tend to get more attention at the local level and are more effectively treated. However, all types of environmental problems, including those which have less perceptible impacts such as global warming, must be the subject of ever increasing efforts to find acceptable solutions. It must also be borne in mind that environmental problems are complex and actions have to be avoided that solve one specific environmental problem, aggravate or even create new environmental difficulties and lead to no net environmental benefit.
29. To meet these environmental challenges, a high degree of coordination and integration is required. Existing measures in the energy sector and in all energy consuming sectors at regional, national, Community and international levels must be properly implemented. Exploring the complementarities between energy and environment must be done in the framework of sustainable development; there is, in particular, scope for a closer interface between competitiveness, job creation and environment. However, the move towards liberalised energy markets within the Community adds to the need to ensure a high level of environmental protection in accordance with the Treaty. The creation of the single energy market can then be an important driving force in achieving environmental goals and responding to public concerns about the environment.

## **2.3 Technology**

30. Technology and in particular the development of new technologies will have an important impact on competitiveness and ultimately on the labour market. Furthermore, technology contributes to achieving other energy policy goals, in particular security of supply, by

improving access to indigenous energy resources, including renewable energies, by helping to improve the fuel mix and by achieving higher energy efficiency and further energy savings. Technology can also provide answers to some of the major environmental problems that face not only the Community, but also the world. Technological development is in the main market driven but a research and technology development base and the mechanisms for its' transfer to the market are vital. Companies do not always have the means, or are willing to take the risks to pursue advanced technologies. The conclusion is that public support for RTD is essential. In this context, and given the global competitive situation in which RTD plays a key role, the Community cannot afford to neglect its own research and development activities which are important in maintaining and strengthening its technological base and eventually its enterprises. In a nutshell, the Community's technological base which includes both energy and key enabling technologies, notably advanced information technologies, is fundamental to its industrial strength and ability to achieve competitiveness and growth and to meet environmental commitments and, thus, to the development and implementation of energy policy. Energy policy needs to take this into account.

#### **2.4 The Community Institutional Responsibilities**

31. A final point of importance is the definition of the roles of the Communities, the Member States, the regions and the local level. It has already been established that the principle of proportionality must prevail and that, in the light of the current trend of deregulation, regulation must be limited to a minimum and should not be proposed where the market itself can induce the necessary changes. These are general principles which apply at all levels, including, of course, the level of the Community. In a situation where it is a prime concern of the Community to open up markets and remove protectionist national policies, it would be unwise to propose interventionist policies at the Community level.
32. Some regulation is needed to correct market forces and to meet agreed regulatory objectives, if all energy policy objectives, in particular the construction of the internal energy market, are to be achieved. The pursuit of market based policies has resulted in strong political pressures to reduce or remove unnecessary regulations that could impose additional costs and reduce the overall competitiveness of industry. The underlying assumption of deregulation is that the market mechanism in many areas is the best tool to maximise effective use of resources. The Commission recognizes that a consistent and transparent approach is necessary when proposing legislation and that measures proposed should be sufficient only to solve the problems identified and go no further. Such were the main recommendations of an Independent Group of Experts established by the Commission to examine, with the aim of improving competitiveness and employment, how to simplify Community and national legislation and reduce its burden<sup>(9)</sup>.

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<sup>(9)</sup> COM(95) 288 final of 21 June 1995 - Group of Independent Experts for Administrative and Legislative Simplification.

33. In the energy sector the existing "acquis communautaire" is not extensive, even so there is some legislation which could be outdated and obsolete. The Commission has therefore recently submitted a report containing a review of legislation in the oil sector and on energy efficiency<sup>(10)</sup>. In addition, energy legislation has to comply with the guidelines which entail a cost-benefit analysis of all new legislative proposals and also their impact on business in general.
34. Within these legislative guidelines, the Community has a number of clearly defined responsibilities emanating from the Treaties, but these responsibilities have to be exercised on the basis of the different rules and procedures in each of the three Treaties. There is, however, a need to clarify the division of responsibilities in the other areas of energy policy between the various levels. It is the role of the Commission to ensure a full implementation of these responsibilities while fully respecting the principle of subsidiarity, contained in Article 3b of the TEU<sup>(11)</sup>. Community action must focus on those areas where real added value can be achieved, and where existing national policies in the energy sector create barriers to trade or other market distortions that prevent the achievement of agreed energy objectives.
35. In parallel to the integration of Member States' economies through the internal market, energy policy should facilitate a process of cooperation at Community level on agreed objectives. This process will start from existing national policies, not with the objective of imposing any kind of harmonisation in the fuel mix, but to ensure that developments are not detrimental to the functioning of the internal market. In order for this process to work effectively it is necessary to define both the goals and a common strategy on how to achieve these. Increased consultation and cooperation and a shared analysis of the energy situation are also required to ensure that the different national energy policies do not undermine common goals.

### **III. CURRENT ENERGY TRENDS AND POSSIBLE ENERGY FUTURES**

36. Energy decision making and guidelines need to be placed in the context of a shared analysis of the energy situation and future trends. Therefore, the preparation of the White Paper was accompanied by the development of such an analysis with national administrations, industry and academic experts. The analysis below assumes that energy policies are designed in a more integrated Community that is successful in achieving improved environmental quality and higher economic growth against a background of increased international cooperation and consensus.

#### **3.1 Emerging Energy Trends**

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<sup>(10)</sup> COM(95) 391 final of 26 July 1995 - Review of Community Energy Legislation.

<sup>(11)</sup> SEC(92)1990 of 27 October 1992 - The Principle of Subsidiarity.

37. The extensive studies<sup>(12)</sup> carried out by the Commission indicate a range of possible energy futures. Some of the key messages emerging which may have policy implications for the Community are as follows:

- Europe will significantly increase its dependence on imported energy;
- Gas will compete with oil as a leading component of the fuel mix;
- European consumers will become increasingly dependent on 'grid' supplied energy;
- There is considerable flexibility as to the final shape of the future fuel-mix. The weight given to climate change concerns, the effects of technology and the liberalisation of markets and the fact that some renewables are on the threshold of economic viability will be the major determining factors.

### **3.2 Global Context**

38. Energy developments in the Community are increasingly influenced by what happens in other parts of the world. World energy consumption continues to grow by 2% per year on average, double the Community rate, but with energy consumption in some of the emerging economies increasing yearly by 6% or more. In absolute terms however, the increase per capita is still higher in developed countries. This rise in non-OECD energy consumption is leading to important changes in energy markets in South East Asia and potentially around the world and to significant changes in the traditional patterns of energy flows from the energy exporting countries.

### **3.3 World Energy Supply and Demand**

39. At the world level, energy use is forecast to grow from 8.5 billion tonnes of oil equivalent (btoe) at present to 13 btoe by 2020. Notwithstanding the overall growth in demand, the physical availability of energy is unlikely to pose a constraint in the foreseeable future. Past concerns regarding available oil reserves have been eased by the pace of technological developments in exploration and production. It is therefore expected that oil, and consequently all energy supplies, will remain affordable, even if prices are occasionally volatile. Much of the world's vast reserves of solid fuel can be brought to market at considerably lower cost than the other main sources of primary energy and so coal can be expected to maintain its share of global energy supply due to its inherent price advantage. Gas will be the fastest growing fuel in the medium term. In the developed world, its environmental advantages combined with the lower capital costs associated with its use will make it the first choice in non-transport sectors, particularly electricity generation. Nuclear's future share of world primary energy depends upon national programme decisions yet to be taken; however in Asia the prospects for growth in nuclear power are important.

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<sup>(12)</sup> 'European Energy to 2020: A Scenario Approach.' Issued by the European Commission ...1995/6.

### **3.4 Community Energy Supply and Demand**

40. In the Community there will be a steady growth in energy demand, compared to some other regions, with gross inland consumption increasing at slightly under 1% yearly. The demand in the industrial sector will stabilise at present levels while the tertiary-domestic sector will show a slight decline. Transport growth will continue and therefore will consume more energy in spite of gains in vehicle efficiency.
41. On the demand side, natural gas consumption will show the greatest volume increase. Demand will at least double, mainly for power generation. In fact, electricity generation by gas-fired plants could reach almost half of total thermal capacity, most of it combined-cycle plants. In contrast coal and nuclear are expected to lose market share. A degree of decentralisation emerges in power generation and the marginal cost of electricity production is predicted to be slightly lower than at present. To serve the power station demand, a doubling of gas pipeline and LNG capacity will be required. There is likely to be a limited increase in demand for heavy oil products, reflecting the fact that the opportunity for growth is confined to the transport sector.
42. In market share terms, the prevailing trend in Europe is of growing penetration of electricity and gas. Heat from decentralised cogeneration plants and renewables, in particular biomass, biofuels and wind, could make significant gains, squeezing the share of oil, although oil will still continue to hold the largest overall market share at around 42%. Solid fuels will remain significant in the thermal electricity market and could retain a share in excess of a one third of that market by 2020. Electricity generation from renewable sources and waste will considerably increase.

### **3.5 Environment and Technology**

43. A significant proportion of new technological development will be driven by environmental considerations. Renewable energies are expected to increase substantially by 2020. Energy intensity will continue to improve as new investments using more energy efficient technologies are made and other methods of managing demand are advanced. On the supply side, energy efficiency improvements could be particularly significant in electricity generation, while improved exploration and production technology will continue to release 'new' recoverable oil and gas reserves.
44. Without strong policy interventions, rising energy consumption will cause Community CO<sub>2</sub> emissions to increase substantially above 1990 levels over the next 25 years. All sectors of the economy would continue to emit CO<sub>2</sub> in substantial quantities. Typically the tertiary-domestic sector produces 22%, industry 18%, transport 28% and the electricity sector 32%. These trends in CO<sub>2</sub> emissions are incompatible with the Community's international commitments. It would take a strong switch to non-fossil fuel electricity, essentially nuclear and renewables generation, to reduce substantially CO<sub>2</sub> emissions from the electricity sector. Such a radical shift could achieve a one third cut in CO<sub>2</sub> emission below the 1990 levels, in which case electricity's share of CO<sub>2</sub> emissions would drop to 22%.

### **3.6 Indigenous Production and Import Dependency**

45. Community energy production seems set to decline, perhaps by one fifth by 2020. Although its onset could be considerably delayed by technological progress, the combination of increasing energy demand and an eventual decline in indigenous production would result in a growing trend in dependence on third countries. Import dependency, currently close to half of gross consumption, could move towards three-quarters by 2020. Dependency on imported natural gas increases most as a consequence of the rapid increase in demand. A significant share of the Community's gas will come from Norway, an EEA partner. Dependency on coal imports could also increase as a result of declining domestic production. The Community is already heavily dependent on imported oil.

## **IV. GUIDELINES FOR ENERGY POLICY IMPLEMENTATION**

### **4.1 Introduction**

46. Energy policy, like all Community actions, will ultimately be judged on the extent to which it contributes to the central objectives of the Treaties, in particular market integration, sustainable economic growth, job creation and prosperity for its citizens. In this context the following objectives:

- overall competitiveness;
- security of energy supply;
- environmental protection;

are considered as being most relevant to the energy sector. It is difficult to think of energy measures which do not have some effect on at least two and quite often all three of these objectives but these effects can be contradictory. Energy policy must aim wherever possible, to reconcile these objectives while being consistent. In this endeavour, the Community already has a sound base since many of its actions in the energy sector are consistent with all three objectives. A future priority will be to ensure that in a long-term perspective the consistency of Community energy actions is maintained and where possible strengthened.

47. However, sometimes a choice has to be made on the relative weight to be given to these respective policy objectives. Even if in the present situation urgent action is not needed as regards the security of physical energy supplies, growing energy dependence and the risk of at least economic shocks due to higher priced energy sources will require the Community to remain vigilant and to take a long view of this central energy objective. In the past, energy policy in Europe was based on one fuel first coal, and then subsequently oil. Experience has shown that dependency on one fuel can lead to serious problems if

there is a crisis situation. The Community is now in a much more comfortable situation, given the diversity of fuels but this situation could possibly change by the increasing use of imported fuels. The Community has the possibility of further improving this situation with nuclear and by a technological push in the development of renewables and clean solid fuel technologies in the long-term which could further increase diversification.

48. Greater competition and environmental protection in the Community can best be achieved if these two objectives are approached in a complementary manner. As the energy sector becomes fully exposed to competitive forces through further market integration, it could make a significant contribution to overall Community competitiveness. Given the present economic circumstances of the Community and the challenges it is facing on world markets this goal is of the utmost importance. In advanced economies the demand for public goods such as environmental protection is high and, if appropriate policies are pursued, this results in the development of energy technologies that are generally far less harmful to the environment than conventional technologies. In such a context, environmental goals should be achieved through measures that do not impact on industrial competitiveness and integrated energy and environmental technologies should be preferred to add-on ones. In a longer perspective, an optimum solution which took into account full costs and benefits could be developed within a Community framework and in cooperation with other industrialised countries.
49. While the three objectives referred to in para 46 above remain paramount, other dimensions, notably social and economic cohesion cannot be neglected. It is essential that in a more competitive market this social role is not undermined, in view of the importance of energy for the quality of life and for the creation of jobs. A further important objective of the Community is to promote solidarity and cohesion between regions which finds expression in a number of measures that seek to close the economic gap between the richer and poorer regions. A Community energy policy can make an important contribution to this objective through, on the supply side the development of energy infrastructures that would facilitate the access of energy products to the remote and less-developed regions of the Community, particularly the ultra-peripheral regions, and by helping these regions, where possible, to increase their energy production capacities. At the same time the Community needs to encourage energy consumers through their local authorities to develop a more active role.
50. The energy policy guidelines have to be based on all the existing powers of the Communities in order to achieve the energy objectives set out in this White Paper. The Treaty on European Union allows energy actions to be developed, even if it does not explicitly recognise the legitimacy of specific energy responsibilities, except through the reference to energy in Art.3 and in Art.129b. On the other hand both the ECSC and Euratom treaties provide for specific energy policy actions.

## **4.2 Integration of the Market**

### **4.2.1 *The general approach***



51. The setting of a general policy framework for the smooth functioning of the Community's internal energy market can give all market players stable and long-term signals for investments. These framework conditions need to take into account the diverse market structures as well as the supply and demand situations of the Member States with the objective of securing more compatible national situations which would ensure that obstacles do not arise to the smooth functioning of the market.

#### 4.2.2 *The internal energy market*

52. The prime objective will be to liberalise the internal market for electricity and natural gas. The completion of this objective is central to the development of general energy policy guidelines which should facilitate the working of the integrated market. Common objectives for energy supplies and the promotion of new and more efficient technologies in the market and their support through financial instruments are only justified if the results of these Community efforts are for the benefit of a large number of European consumers through an effective functioning of the European market. Once an adequate legislative framework for liberalisation is put in place, the Community will play a major role in ensuring obligations are effectively implemented in conformity with the Treaties.

53. The Treaties and secondary legislation provide a set of obligations for the freedom of establishment, the free circulation of goods, market transparency and energy efficiency standards. All these obligations have to be met and the Commission has the responsibility to ensure their fulfilment and to promote transparency. Several actions will be continued and developed, notably:

- the application of the Treaty and the efficient working of the internal market;
- the application of Community law will continue to be made transparent in the annual internal market reports;
- the Commission will make public all the national implementing measures in order to facilitate the use of Community laws;
- the codification, consolidation and recasting exercise started in 1995 with the Regulation 1056/72 and other energy Acts will be pursued at the same time as the re-evaluation of existing legislation.

54. Parallel to the above measures, energy products will have to meet quality and safety requirements. Although many of the problems arising from differences in national legislation and the application of different norms have already been identified by the Commission with the close cooperation of industry and public authorities, there still remains some residual problems. In order to pinpoint these remaining barriers, the Commission will closely consult with industry in order to identify where additional standards are required. Once this has been done, it will be necessary to ensure that, on the

basis of precise Commission mandates, the European Standardisation Bodies (CEN/CENELEC) speedily establish appropriate standards.

55. Technical regulations are appropriate instruments for the promotion of energy efficiency, particularly for domestic or industrial appliances. For the purpose of promoting national efficiency measures, Member States have adopted national technical rules which, when they did not apply the principle of mutual recognition, have had negative effects on the free movement of goods. The Community has the responsibility, by virtue of Article 7a, of taking steps to resolve this situation. The Community, in making its proposals, will also need to take into account the need to promote innovation. The Commission will make proposals in 1996 to ensure that energy efficiency becomes an essential requirement, as a basis for mandates to European Standardisation Bodies<sup>(13)</sup>, in new and existing harmonisation Directives on energy consuming equipment. This approach should reconcile legitimate energy efficiency objectives and the prevention of obstacles to trade with the necessary flexibility required for industrial innovation.
56. In order to identify the areas which need further standardisation action and to improve the consistency of the work done in the European bodies in charge of standardisation in the energy sector, the Commission will propose to the European Standardisation Bodies, the creation of an energy working group which would give an assessment on the contribution of European Standards in particular for the promotion of energy efficiency, renewable energies and energy transportation.

#### **4.2.3 *The level playing field***

57. For economic operators to have full confidence in the internal energy market and to be assured that market principles prevail, it will be essential that there is a maximum of transparency and consistency in applying the competition provisions of the Treaties. The Commission has guidelines on state aids for environmental purposes which also cover state aids for energy efficiency and renewable energy. These guidelines include the possibility of more favourable thresholds for renewables. During the process of revision of the present guidelines, the Commission will consider whether appropriate adaptations are needed for renewables and their contribution to energy policy objectives.
58. Where specific aid schemes are authorised, such as state aid to the coal sector in a number of Member States (Decision 3692/93/ECSC), it is important that the Community objective of a phased reduction and transparency of such aid is achieved. For coal, the aim is to ensure that in the medium term Community coal production costs decrease, taking into account coal prices on the international markets, and thereby, enable the coal industry to make further progress towards economic viability.
59. In the internal energy market, competition rules need to be respected. Exemptions from this general rule need to be handled in a restrictive manner to avoid unnecessary distortions of

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<sup>(13)</sup> COM(95)412 ,Broader use of Standardisation in Community Policy

competition. In particular, in the energy sector where public service obligations have been imposed on undertakings to safeguard consumer interests, it will be of prime importance to ensure their full transparency. Without prejudice to the results of current negotiations on the internal market for electricity and gas, it will need to be considered in the future whether general criteria need to be established to judge those cases in which the application of the competition rules of the Treaty would obstruct the achievement of such public service obligations, in order to support the application of Treaty rules in a coherent and predictable manner.

60. The analysis of future demand and supply developments has shown that all energies, fossil or non-fossil, including nuclear, will be required to cover a growing energy consumption in the Community. Consequently, all forms of energy should have a fair chance to compete in the market. Energy prices, especially electricity prices, should not be used as parafiscal instruments to support specific forms of energy since this will create distortions of competition unless such measures reflect externalities. However, certain forms of energy like renewables may need to be supported initially through specific programmes or subsidies in order for them to find a place on the market. Such support should be given in a manner that is least harmful to competition and to this end, the possibility of further policy development in this area may need to be considered.
61. Excise duties on mineral oils, which are a major source of government revenue vary significantly between Member States. Comparable excise duties have not been introduced for other energy products, at a Community level, and the Commission will analyse whether it is necessary to extend the excise duties on mineral oils to cover competing energy products. This subject needs very careful analysis as the various forms of energy do not follow the same pricing philosophies (costs plus versus market value), and as there is inequality of treatment in some cases between fuels for similar use. It should be noted that some Member States, on their own initiative, and in accordance with present Community legislation, have introduced taxes on competing products such as natural gas and coal.
62. A revision mechanism exists that provides for the possibility of adjusting established minimum rates of oil excise duties with a view to improving the operation of the internal market. However, the difference between minimum rates and real rates set by governments is now so big, notably in respect of motor fuels, that any adjustment of the minimum rates in order to influence the market and improve convergence of excise duties will have to be of substantial nature. Seen from an energy viewpoint, the removal of distortions resulting from a lack of approximation of Member States' effective rates, particularly on motor fuels, will have to be taken into account when considering a future fiscal structure on energy products. In the household sector, oil products for heating purposes are usually subject to an excise tax which, in some cases, do not apply to alternative fuels.
63. In an open competitive energy market where fuels are substitutable, ideally competitive and transparent pricing should prevail. However, ideal conditions do not always prevail and a helping hand may be necessary to ensure that transparency of prices are assured without disturbing confidentiality. The Community's range of instruments that ensures that most

fuel prices are reported in a transparent manner and provides a point of reference for users and producers of energy in the Community will be further developed with a view to including taxation transparency.

#### **4.2.4 *Monitoring the internal energy market***

64. Less intervention in the energy market will require an efficient monitoring tool in order to analyse and to understand market developments in such a strategic sector and to ensure that structural and technical changes are not in conflict with energy policy goals.

65. The liberalisation of the markets for electricity and gas will start a process of structural change. Community legislation, which, in the spirit of subsidiarity, offers various options for the organisation of markets in Member states may need to be reviewed to ensure that the outcome is satisfactory. Therefore, the monitoring tool needs to be shaped in a manner to cover, inter alia, the following responsibilities:

- ensure the proper functioning of the internal market;
- verify that different network access systems result in comparable market openings and market access in Member States;
- verify that the envisaged procedures for new production capacities ensure the freedom of establishment, especially for independent electricity producers;
- ensure the business environment offers fair competition for independent electricity producers;
- establish under Commission auspices cooperation on interconnected systems between national regulatory authorities in both the gas and electricity sectors. This system could be later extended to pan-european networks as they are developed;
- verify that the envisaged regulatory and arbitration procedures are effective to settle disputes and to ensure fair competition and appropriate transit fees;
- examine the social and economic consequences of the new market rules and increased competition.

This monitoring will permit the identification of possible needs for further harmonisation.

66. The Community already has at its disposal, through the Treaties and the measures in force for ensuring the transparency of investments, prices and imports and exports, a large range of instruments. These instruments are currently considered unsatisfactory because the administrative burden is not offset by an operational usefulness. This arises first, because information is sent late and therefore published with a delay, and secondly, because the information is managed within each instrument and not centrally so as to take account of

the realities of the internal market where there is a diversity of fuels that can substitute for each other. These instruments could be made more efficient in order to allow policy makers a monitoring instrument covering the whole of the energy market.

67. The Commission will examine with the Member States and with the industrial sectors concerned all the instruments together in order to ensure their consistency and their usefulness. Following this examination, the Commission will propose the necessary adjustments and, where necessary, new instruments in order to provide national administrations with an information network that can rapidly process information, establish a data bank and provide for the rapid publication of reports required by current texts. Subject to the results of the above review, an informatic network project could be introduced in the IDA programme (Interchange of Data between Administrations).

#### **4.2.5 *Creating a favourable climate for investment***

68. In view of the size of investments in the energy area and the role of enterprises, a first priority for the Community will be to ensure that policy initiatives in the energy and other sectors are as neutral as possible as regards their impact on the energy market and ultimately investment decisions. The Commission will use and develop appropriate tools, such as notably energy impact analysis, to assess regulatory measures in the environmental, social and fiscal fields. The creation of a consultative body in the energy field could help in making this analysis more transparent and constructive. A particular concern will be to ensure that procurement procedures for infrastructure projects respect key criteria in terms of transparency and objectivity. It will also be particularly important to remove distortions in the fiscal system that penalise investment in the energy sector in as much as this is consistent with the prime objective for Community involvement in the harmonisation of indirect taxes, namely the proper functioning of the Internal Market and Member States' revenue needs. It will also be necessary to bear in mind other energy policy objectives, notably security of supply and environmental goals. In order that trends can be analysed and possible obstacles removed, there will also be a continuing need at Community level for transparency on major developments in the Community's energy production and transmission capacity.
69. Given the volume of the financial intervention of the Community, such as EIB loans, RTD funds, structural and cohesion funds and ECSC loans, in the energy sector the Commission has to make sure that, first, these investments are consistent with the integration of the market and trans-border competition and, secondly, they are in line with energy policy objectives, in particular concerning energy diversification and the environment. At the Community level, energy considerations need to be taken into account when approval is being given to specific investments. To that effect, clear guidelines should be established, taking into account the rules of each financial instrument as is done in the structural funds. The environmental objectives of the Cohesion Fund can also contribute to energy objectives such as energy efficiency, renewable energies, cogeneration and the promotion of clean coal technologies. As regards major infrastructure projects in the energy area that have a Community dimension, the achievement of an internal energy market will provide

a solid framework for rational investment decisions and new incentives for the development of energy networks at the European level.

70. However, without the Community acting as a catalyst and promoter of the networks, progress could be slow because of the obstacles to the realisation of trans-border infrastructures (networks and related projects such as storage) and because of the financial constraints in the less-developed regions. There are already proposals for guidelines that will identify objectives, priorities, for projects of common interest for a decision that will provide for administrative and technical support with a view to creating the right conditions for launching energy network projects and for a regulation governing the Community's financial participation. The adoption of these proposals in 1995 will enable the implementation of common interest projects already targeted. Although some of those networks will open up new markets, particularly in the gas sector, and thereby make an important contribution to social and economic cohesion and security of supply, the main objective is to strengthen the internal market. In this respect, an important task of the Commission will be the removal of bottlenecks, such as complex authorisation procedures, and producing guidelines that could facilitate the setting up of energy networks.
71. The increased possibilities of trade resulting from these new interconnections will reinforce security of supply throughout the Community. Given the growing external dependence of the Community on energy and in particular gas, Community actions to ensure the development and viability of trans-European networks beyond its borders to some of its major energy suppliers need to be pursued. Through existing cooperation mechanisms, notably with its partners in Eastern and Central Europe, the CIS, the Middle East and third countries in the Southern Mediterranean, guidelines for the extension of networks at the pan-European level which have a Community interest will be developed. The Energy Charter Treaty will provide the legal framework for the operation of these networks.
72. As regards the oil refining industry, there has been in recent years a trend towards overcapacity which threatens to undermine its viability and affect long-term investment in this sector. If the refinery sector were to contract considerably in response to this situation, there is a danger that in a crisis situation some oil products could be lacking. The Community needs to keep this situation under review and, wherever possible, ensure that the regulatory regime it imposes on this sector, does not further jeopardise its competitive position. The Community, on the basis of its responsibilities in the trade and competition fields, should ensure that unfair competition is addressed.

#### **4.3 Managing External Dependency**

73. The growing energy dependency of the Community should be a point of concern given the political risks in some important supplier countries and growing world energy consumption. However, although security of supply in all its aspects, both physical and economic, needs to be kept under review, it does not currently justify new crisis measures. On the other hand, there is scope for strengthening security of supply measures by effective internal policy corrections to market rules, by encouraging fuel diversification, by enlarging

choices with the promotion of energy efficiency, renewables and by putting in place a careful surveillance of the energy situation.

#### **4.3.1 *Secure energy supplies***

##### **4.3.1.1 *Oil crisis measures***

74. An important energy policy objective is to ensure continuity of supply. In a longer-term perspective, policy needs to ensure that for all fuels there is a reliable and economic supply, in a shorter-term perspective, instruments are necessary to meet sudden supply interruptions. The current Community oil crisis measures that were developed when oil dominated the energy market are still crucial and the Commission reaffirms the importance of these crisis measures. Even if increased diversification of fuels has limited the impact of oil disruptions, some sectors of activity, such as transport, still remain mainly dependent on oil. Moreover, given the link between oil prices and other fuel prices, the consequences of an oil crisis would be rapidly communicated to all other energy sectors.

75. The Community has, since the late 1960's, developed crisis measures and in addition, instruments for cooperation between the Member States under the Commission's responsibility. These measures, existing now for nearly 25 years, need to be adapted to the present situation of the oil market and to the reality of the Community's internal market within which there are no internal borders. In revising existing legislation on this subject, the Community should strive to achieve consistency with the rules and obligations of the International Energy Agency and to facilitate Community compliance with them. Moreover, in the framework of increasing Community solidarity, the updated measures need to ensure equitable treatment for all consumers.

76. The aim should be to ensure an appropriate Community coordination during crises, a reduction in the cost of security measures and an effective management of stocks. Two stages may be necessary: first, the updating of compulsory oil-stock obligations; second, the coordination of stocks management measures ensuring their compatibility with the internal market.

##### **4.3.1.2 *Supply situation of other fuels***

77. The increased use of gas and growing import dependence, resulting from declining EC internal production, justified a Commission Communication on EC Gas Supply and Prospects<sup>(14)</sup> as a first evaluation of the Community added value in dealing with the subject of gas security of supply. On the basis of this Communication, the Commission intends to open a cooperative process to analyse the development of the present and future situation in the gas sector. The Community should also be ready to react to supply problems. The

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<sup>(14)</sup> COM(95)478 - EC Gas Supply and Prospects.

availability of accurate information on the gas sector should be part of the review of the existing instruments for transparency and exchange of information.

78. A regular supply of solid fuels to the electricity sector is necessary to ensure a sufficiently diverse fuel mix for the generation of electricity. The Community's level of coal import dependency is forecast to increase in future but the characteristics of the world-coal market and the large diversity of suppliers mean that the risk of a persistent interruption of supply, even in the long term, is minimal. The Community can contribute to the maintenance of these conditions by keeping and reinforcing present levels of international cooperation in the sector and ensuring that the greatest possible share of Community solid fuels production is competitive at world prices.
79. As far as the nuclear sector is concerned, assuring security of supply of nuclear fuels is one of the fundamental objectives of the Euratom Treaty. Although there are very large global inventories in various forms, due mainly to dismantlement of nuclear weapons, the present low level of world uranium production might be of potential concern, because these inventories are beyond the control of both operators and public authorities in the Community; in addition it is not yet clear how they will be released onto the world markets. Equally, as far as the Community's uranium enrichment industry is concerned, its viability is essential for the security of supply of enriched uranium. With these factors in mind, the Euratom Supply Agency and the Commission are applying a policy which aims at diversification of sources. This policy has been endorsed in a recent judgement of the Court of First Instance. The Supply Agency has to ensure that the Community's trading partners respect agreed trade obligations<sup>(15)</sup>, and normal trade practices, thus avoiding for example the recent considerable influx of nuclear materials from CIS countries at low prices.

#### 4.3.1.3 *Diversification*

80. Secure energy supplies for the consumer, both industrial and domestic, are a major concern of energy policy makers. On this issue there is also a sound case for making the public aware that energy choices and energy diversity within the Community have an important bearing on achieving sustainable economic development, jobs and security. Equally, a Community energy policy must take into account the diverse approaches to energy developed by the Member States.
81. At the sectoral level an important contribution to diversification can be made by ensuring that there is a diverse domestic fuel base, particularly for electricity production. In the light of increasing import dependency of the Community over the medium to long term, there is a need to ensure that Community domestic energy sectors which can supply energy at economic cost are fully exploited and that opportunities for improved energy technology are not missed. In the interest of security of supply there is a strong case for keeping open

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<sup>(15)</sup> Agreement on Trade and Economic Cooperation between the Communities and the USSR - Art. 14.



all possible economic energy options. If fuel options are reduced then the opportunities for switching fuels in the future are restricted.

82. The opening up of the internal market will play an important role in fuel diversification since it will lead to a multiplicity of actors. Electricity producers should be able to choose the most appropriate and cost-effective fuel within a competitive framework as long as it does not undermine diversification. In this context, it is difficult to justify the continued application of Council Directive 75 (405)EEC which prevents the use of fuel oil under certain conditions for electricity production. Its abolition would give electricity producers increased flexibility. The adjustment of indirect taxation to ensure equality of opportunity between substitutable fuels would also favour future flexibility in power generation.

*1 Solid Fuels (Coal, Lignite, Peat)*

83. The changes implemented by the Community's solid fuels sector have enabled an important part of production to improve its overall competitive position. If this progress is sustained, there is a real possibility that in the next decade, an important share of the domestic production of solid fuels will be fully competitive at world market prices. But in parallel, action has to be pursued to develop and implement even more efficient combustion technologies if solid fuels are to maintain or even increase their share in the long-term. These improvements in technology will need to focus on limiting CO<sub>2</sub> emissions since other emissions can already be effectively controlled. The Community will make an important contribution to the development and dissemination of such technologies through its R&D and technology programmes. These technologies, while favouring foreign supplies, given the importance of imported coal on the Community market, will also ensure that domestic solid fuels, which can be produced at close to international market prices, would have a more secure future. The Commission will establish a Communication on the role of solid fuels in energy policy that will take into account the above elements. In this context, the Commission will address the issue of how the position of solid fuels can be maintained in the light of the expiry of the ECSC Treaty 2002. An examination will be carried out on how to maintain the most relevant provisions of the Treaty following its expiry.

*1 Nuclear*

84. Given the contribution of nuclear energy to all the Communities' energy objectives, this option has to be kept open but its future depends to a large extent on its acceptability by society and political leaders. This acceptability problem derives particularly from concerns on nuclear safety, on transport and disposals of nuclear waste and on nuclear non-proliferation. The imperative of diversification, the external competitiveness of the nuclear industry and the integration of the electricity market in several Member States underline the role nuclear energy plays in electricity generation. However, the reality is, that a number of Member States depend to a large extent on nuclear energy, whilst others prefer

to pursue a non-nuclear energy policy, and a third group have decided to reduce dependency on nuclear-based sources of energy or to terminate the existing nuclear-plants altogether. The European institutions have responsibilities under the Euratom Treaty which permit the development of nuclear energy in conformity with the rules and policies at national level. The choice between energy technologies or fuels is always a matter where policy appreciation intervenes but nuclear should remain part of this choice.

85. The European Communities have to use their own instruments and responsibilities in order to respond to these above concerns by:

- ensuring that all Member States which have a nuclear programme continue to apply standards and procedures that give adequate guarantees;
- linking the development of external relations to the accession of third countries to the implementation of the International Convention on Nuclear Safety;
- conducting programmes for research and development for concepts of reactors with enhanced safety, as well as for establishing a Scientific/Technical (S/T) basis for the safe disposal of nuclear waste;
- supporting the development of nuclear fusion science and technology, particularly through international cooperation, such as on the International Thermonuclear Experimental Reactor (ITER) programme;
- pursuing the improvement of the safety of nuclear facilities in Central and Eastern Europe and the CIS through technical assistance and S/T cooperation;
- keeping open the option of reprocessing of nuclear fuel;
- promoting progress in the management of radioactive waste, by favouring, inter alia, a rapid conclusion of the International Convention on the safe management and disposal of nuclear waste and by implementing an action plan covering the whole question of nuclear waste including research activities to support the harmonisation of the relevant regulatory requirements and standards;
- improving the safety of the transport of radioactive materials through the Community's participation in the IAEA's work on international regulations and by ensuring that these regulations are properly applied within the Community;
- promoting an international action programme aimed at preventing the illegal traffic in nuclear materials notably by establishing cooperation and training programmes with the CIS;
- pursuing its statutory activities in the field of safeguards and supplies;

- assuring the best management of existing Nuclear Trade Agreements with third countries and international organisations and concluding new trade agreements as well as Nuclear R&D cooperation agreements.

86. The European Commission has also the responsibility, under the Euratom Treaty (Art. 40) to give guidance to the investors in the nuclear field through the publication of illustrative nuclear programmes (PINC). In view of the importance of the present period for the future of the nuclear option, the Commission will exercise this responsibility and will publish in 1996, after appropriate consultations, a new version of such a programme.

#### *Renewables*

87. The Community will make every effort to realise the potential of renewables by supporting research projects, by stimulating cooperation in the development and the dissemination of new and competitive technologies, by introducing appropriate standards for the various equipment and by establishing a Community framework for national fiscal and other incentives in order to translate technological advances into marketable products. These concerns will be at the centre of the Community's future strategy for renewables and of the ALTENER II programme. However, in the present energy market situation, these actions will only change substantially the contribution of renewables to security of supply, due to the size of the investments needed, if both national and Community authorities adopt policies that are able to mobilise effectively significant resources.

#### *4.3.1.4 Transport*

88. As regards transport, fuel diversification is essential for both environmental reasons and security of supply. A comprehensive transport policy strategy can make a vital contribution to bolstering the security of energy supplies by increasing the energy efficiency of the transport system as a whole. Investments in intermodal infrastructure networks, the completion of the internal transport market in rail and inland waterways and enhanced R&D are major ingredients. More progress towards fair and efficient pricing - by internalising the external costs of transport - has a vital role to play in this respect. This approach holds out the prospect of reducing energy, transport and environmental problems in a cost-effective manner and is likely to generate significant benefits in terms of reduced congestion, accidents and pollution.

89. A Green Paper on the external costs of transport, including those arising from energy consumption, will be published shortly. It will examine possible policy responses, including those at the Community level. Limiting CO<sub>2</sub> emissions from cars will also reduce fuel consumption. The Commission will publish a Communication on this matter, outlining different fiscal options, the possibility to arrive at an agreement on a CO<sub>2</sub> emission target with the European auto industry and the importers of cars as well as increased R&D efforts in the context of the 'Task Force on the Car of Tomorrow'. Moreover, the Commission will - within the framework of its Green Paper on the "Citizens Network" (Public Passenger

Transport in Europe)<sup>(16)</sup> - promote the adoption of best practice in the planning of urban transport (i.e. exchange of experience through existing organisations). Finally, present activities under various Community programmes need to be strengthened: that it is why the Commission has taken the initiative to create R&D Task Forces on the 'Car of Tomorrow, Trains and Railway systems of the Future, Aeronautics, the Ship of the Future and Intermodality'. These Task Forces will involve industry, transport users and other stakeholders.

#### 4.3.2 *International energy relations*

90. The international responsibilities of the Community cover, among others, the conditions of access of energy products into the EC market on the basis of its trade competences, the access of energy companies to third countries' markets, the organisation of dialogue and assistance, cooperation and emergency aid. The expanding range of these responsibilities as well as the promotion of international cooperation contribute to the strengthening of the Community's role in managing energy security. Cooperation in the energy area as a contribution to the peace process in the Middle East is a good example of this. There is already a broad range of Community instruments and cooperation agreements. New initiatives on energy matters may need to be taken to respond to major international political developments.

##### 4.3.2.1 *Trade and Investment*

91. The Community has set up non-discriminatory conditions for access to its market. Under the Government Procurement Agreement, and subject to the condition and schedule laid down therein, public procurement is open to the contracting parties. Subject to reciprocity, foreign companies have the same access to the Community's territory for exploration, prospection and exploitation of hydrocarbons as Community companies. The Commission needs to monitor the fair application of these rules and ensure that the Community's own companies have equal access to third countries' markets. Also on the basis of our agreements on nuclear energy products and materials, it is necessary to ensure that agreed trade and investment rules are applied. Present negotiations on a Multilateral Agreement on Investment in the OECD, and future discussions on investment in the context of WTO and the Energy Charter Treaty should cover all sectors including energy, and therefore should contribute to greater liberalisation and protection of international investments in energy.

92. In the Energy Charter Treaty, there is already a framework for energy cooperation and trade between the participating countries. The Community must ensure that existing provisions are fully implemented in order that consumers and producers have effective access to resources and to markets respectively. The new round of negotiations that would strengthen the Treaty provisions by extending the principle of national treatment to the pre-investment

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<sup>(16)</sup> The Citizens Network. Fulfilling the Potential of Public Passenger Transport in Europe. EC November 1995.

stage will be vigorously pursued. In this context, the Community will also encourage its partners in the Charter conference to rapidly implement the already signed Energy Efficiency Protocol and to negotiate and implement additional protocols that cover fields such as coal or electric power in order to expand European trade and investment in all energy sectors. Given the importance of technology transfer to third country markets the possibility of developing another protocol on cooperation in RTD and technology transfer deserves to be examined.

93. In the European Economic Area (EEA) the Community's partners already apply most of the "acquis communautaire" relating to the internal market; internal trade and investment flows in the energy sector are subject to the same rules. EEA members already participate in Community Programmes such as JOULE- THERMIE, and intend to participate in future programmes such as SAVE II and ALTENER II. Efforts must be made to ensure that important energy partners, such as Norway, are closely associated with the energy developments in the Community given the importance of energy relations to this country and its importance as a supplier to the Community.
94. In line with Article 129d of the Treaty the Community will take steps to cooperate with third countries that are important suppliers of energy to its market with the aim of strengthening their links with the European networks and to ensure the inter-operability of these reinforced networks.

#### 4.3.2.2 *Energy Dialogue*

95. In international energy fora, such as the IEA or the IAEA, the Community needs to speak with one voice when its responsibilities are at stake in order to make an effective input. In the IEA the main question is the need to guarantee the cohesion of the EC on matters of its competence and, more generally, of common interest. These matters relate to the crisis measures because of their link with trade policy, competition rules and the working of the Community own crisis measures and more generally to activities involving Community rules or instruments. That is why the Commission will issue a Communication in 1996 with the necessary proposals to strengthen and enhance Community positions in the IEA on the basis of Community mechanisms to develop common positions on energy issues when Community competences or agreed common objectives are at stake.
96. On a wider plane, the Community has an important role to play in developing dialogue between energy producers and consumers. The Community is well placed to take a leadership role in developing this dialogue, as for example in its co-sponsorship of the last International Energy Conference in Venezuela. At a more regional level, the Community must continue the effort to strengthen relations with the countries of the Gulf Cooperation Council where the worlds most important oil reserves and also significant gas resources are located. In the framework of the Cooperation Agreement with the Gulf countries the Community needs to relaunch negotiations for a Free Trade Agreement and to develop dialogue not only at the political level but also between economic operators in the Community and the Gulf. The aim is to create stable long-term economic interdependence,

for example through facilitating joint ventures, allowing for cross fertilisation in the exploitation, production and refining of oil and the development of other energy resources as well as oil related downstream activities.

#### 4.3.2.3 *Energy cooperation and assistance*

97. The Community has established major financial instruments for cooperation and assistance. Given the role played by energy investments for the economic development, social framework and political stability of beneficiary countries in Central and Eastern Europe, the CIS, Mediterranean countries, in Asia and Latin America and ACP countries the relevant financial instruments should be used to promote joint economic interests, such as strengthening of energy transport networks, of energy efficiency, of renewable energies and the transfer of clean and efficient technologies.
98. Even if the priorities change from country to country, with particular emphasis on nuclear safety in European third countries, the working methods should follow the same principles:
- assistance in the implementation of the Energy Charter Treaty will be provided to the European signatory countries;
  - a structural dialogue will be organised with all these signatory countries in order to identify jointly priorities, objectives and projects guiding investors; the creation of the Euro-Mediterranean Forum with third countries in the Mediterranean basin will also pursue similar objectives;
  - an energy dimension will be inserted into the financial instruments to adjust the modalities of interventions to the energy needs (support to investments, energy efficiency incentives);
  - the studies financed within the framework of TACIS and PHARE programmes will be made available, where this is possible and where there is an interest to European industry;
  - the creation of an instrument for the security of investments will be studied with the financial institutions, the Member States and industry;
  - the implementation of the INCO programme under the IV Framework RTD programme for cooperation on energy and environment with the developing countries;
  - the definition of an energy strategy for cooperation with Asia and a energy cooperation programme with Latin America.
99. The Commission has initiated with the PHARE, TACIS, THERMIE and SYNERGY programmes the creation of several energy centres with different objectives and different

structures. The main motivation for these energy centres is to provide the Community and European industry with contact points for the development of cooperation. These centres in Central and Eastern European countries, due to the pre-accession process, will follow similar methods of intervention in these countries as in the Community. In other countries, as far as possible, energy centres should be set up to assist the national energy authorities. Energy should also become a tool for regional cooperation which is why the Commission will favour this regional dimension in the creation of new energy centres such as the Black Sea Energy Centre and with the expected development of the Palestinian Energy Centre.

100. Over the long term the implementation of the trans-European energy networks will forge energy links not only between the Community Member States but also with their immediate neighbours. In this context, cooperation with the next tier of countries such as in the Black sea area and even further afield so as to ensure security of transit would also be justified. Consideration also needs to be given to cooperation concerning the gas sector with countries in the Barents Sea area. While looking further South, a specific interest could be developed in Africa by way of regional cooperation with neighbouring countries, some of the principal energy producers and within the ACP-EC Lomé Convention with a view to developing indigenous and sustainable energy resources with this group of countries.
101. The development of international dialogue and cooperation in all energy fields is of major importance for the Community's security of supply. This cooperation justifies instruments permitting the development of actions beyond the geographical coverage of the major financial programmes and beyond the capacities of action of these programmes. That is the objective of the present SYNERGY programme proposal which provides, in its pilot phase, support for the Energy Charter process with the aim of developing regional cooperation in the Black Sea area and which paves the way for cooperation in the Mediterranean basin.
102. The THERMIE programme with its actions to promote European energy technologies in third countries also has an important role to play. In developing cooperation programmes with third countries which focus on the dissemination of new technologies, particularly for energy efficiency and of renewable energies through demonstration projects, benefits would be optimised by targeting such projects on countries such as China and India that have large and growing markets and an economic and legal framework in which both Community and domestic industries can work constructively together. Efforts should, however, not be limited to new technologies. For well-established proven technologies market penetration is often low and meaningful results can be reached sometimes at lower cost through their promotion.

#### 4.3.2.4 *Pre-accession strategy*

103. The Community has decided at the European Council in Essen on a pre-accession strategy for the Central and Eastern European Countries<sup>(17)</sup> which gives the direction for the preparation of these countries for membership of the European Union. In this context, specific actions such as promoting internal energy market principles, harmonisation of energy legislation and standards, networks, energy efficiency etc. will be actively promoted. In order to prepare further for accession of these countries, additional finance may need to be foreseen for the energy sector particularly to change energy structures. The opening-up of the SAVE and ALTENER programmes have already been proposed. As foreseen in the pre-accession strategy, a structural dialogue needs to be organised at the political level with potential candidate countries to discuss transeuropean issues including energy. Better use of this structure will be made to discuss energy problems of common concern related to future accession.

#### **4.4 Sustainable Development**

##### **4.4.1 *Environmental protection***

104. Improving competitiveness and protecting the environment are not necessarily in conflict. Any negative effects of environmental measures on competitiveness will only affect industries which are in direct competition with entities located in areas where no similar measures have been introduced, be it inside or outside the Community. This would be an argument for measures to be introduced at Community level in order to ensure even competitive conditions. The effects of environmental measures on competitiveness are likely to be short term and will largely depend on how well industry is able to adapt to the new situation. For instance, as a result of environmental measures, the need for industry to invest in new less energy intensive technologies and develop new management skills may, in the medium term, provide an advantage instead of a penalty for competitiveness.
105. The Community's Fifth Action Programme for Sustainable Development takes the view that internalisation of external costs and benefits could offer the best and most efficient way of integrating environmental concerns since it has the clear advantage that it is working with the market rather than against it. In many respects, external costs have been progressively reduced through emission limits, voluntary agreements, civil liability, etc. which charge the polluting activities with some parts of the cost to society. However, where necessary, further consideration should be given to the introduction of economic instruments. Such measures are compatible with a market based approach, as the decisions are left with the participants in the markets, while the framework is set to reflect environmental requirements. Which instruments or combinations of instruments to choose is primarily a question of economic efficiency in achieving energy and environmental policy objectives.

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<sup>(17)</sup> COM(95) 163 of 10 May 1995 - White Paper on preparation of the Associated countries of Central and Eastern Europe for integration into the internal market of the Union.



106. Assessing specific environmental actions with a cost-benefit analysis is an essential instrument to implement a strategy for the internalisation of external costs. Such an evaluation instrument will ensure balanced decisions. This cost-benefit analysis should integrate not only the impact on companies but also the impact on energy policy such as on the balance of fuels and energy supplies.
107. The concept of internalisation of external costs and benefits was highlighted in the Commission's White Paper on Growth, Competitiveness and Employment. The major focus was on changing the balance of taxation from labour to scarce natural resources. For the energy sector, this could result in an increase in relative prices compensated by a parallel change in indirect taxes on labour. The taxation levels and other technicalities would have to be decided by Member States possibly in a Community framework. Member States could consider whether some of the revenue could be rechannelled in the form of incentives for energy efficiency improvements, investments in cleaner technologies and complementary measures providing favourable investment conditions to energy users to provide maximum incentives for them to improve energy efficiency, etc.
108. The adoption of a CO<sub>2</sub>/energy tax, as proposed by the Commission, would contribute to the goal of sustainable development by ensuring that the Community respects its international obligations on CO<sub>2</sub> limitation, as well as offering Member States one form of budgetary compensation for reducing the non-wage element of labour costs. Internalisation of external costs through fiscal measures would be the preferred option but all the technical, practical and political problems involved in rebalancing the tax system will have to be taken into account in devising an efficient policy strategy in this area.
109. A policy based on fiscal measures would also need to address their possible effects on the Community's global competitiveness, especially for energy-intensive industries. Measures that provide certain tax breaks or incentives as well as other policy changes, such as using the tax revenues to reduce employers' non-wage labour costs and thus improve industrial competitiveness and employment prospects, would be needed to offset these adverse effects. But it may also be difficult for the Member States to shift their fiscal systems in this direction if other major industrial competitors are not prepared to follow suit. The Community, together with the Member States, needs to play a major role to persuade other energy consuming countries to follow the Community's policies in this area.
110. Given these factors, both economic and other instruments need to be considered. An increasing role for standardisation bodies, codes of conduct, voluntary Community systems of environmental management and audit and voluntary agreements with manufacturers need to be pursued. The voluntary agreement may constitute, in some cases, an interesting measure to achieve environmental goals. Obtaining the active involvement of all relevant economic agents in such a strategy would also make them more responsible and provide motivation for achieving substantive results. The Community can play a valuable coordinating role in this exercise. The voluntary agreement approach can only be implemented if there is mutual trust between the participating industry and public authorities. To be acceptable at the Community level, voluntary agreements must be fair,

give an economic advantage to participating firms, reliable, representative of the entire sector involved, compatible with competition rules and it must be possible to monitor their results. Therefore, it is necessary to set up a clear framework for these voluntary agreements guaranteeing their control and a fair application. The Commission will issue a Communication based on a cooperation framework with industry on the development of such agreements. Preparatory work will be launched with Eurelectric and other interested parties in order to identify ways and means of arriving at voluntary agreements.

111. The case of a good cooperative approach between the Commission and industry can be illustrated by the Auto-oil programme which involves, on the industry side, both the automobile (ACEA) and oil (Europia) sectors. Under this project the objective was to identify least-cost package of measures to achieve air quality targets. The Commission will publish the results of this programme in the form of a Communication with accompanying proposals in the near future. The Commission is also examining the possibility of adopting a similar approach for oil-platform decommissioning.

#### **4.4.2 *Energy efficiency***

112. Energy efficient technologies and practice and energy conservation need to be fully exploited if Community environmental goals and some reduction in the Community's growing dependence on imported energy are to be realised. The analysis in section III would indicate that with plentiful energy supplies and weaker prices, the trend towards greater energy efficiency measured by energy intensity has weakened. Energy efficiency can be a win-win situation for all energy actors; for industry energy efficiency can increase profits, productivity, competitiveness and reduce waste while for consumers it can cut costs without sacrificing comfort or convenience<sup>(18)</sup>. For the Community, a more efficient use of energy reduces energy dependency and improves security while at the same time having the desirable side effect of reducing the environmental impact of energy use. The evidence suggests that there remains a substantial potential for improvement.
113. In order to realise this potential the European Communities will have to mobilise all their instruments to contribute to energy efficiency and to ensure that these instruments are consistent with the competitiveness objective. In the present energy situation, tremendous efforts will be needed either at fiscal or at budgetary levels to reverse the present trends. These efforts could assist in the development of new industrial and services activities but they would not guarantee the investment capacities in the domestic and industrial sectors. There is also scope for action by the European Communities through greater international cooperation, given the rhythm of increased energy intensity in developing countries and the benefits European industry could draw from an aggressive technology export strategy.
114. It does not mean that the European Communities should not continue their actions with the existing instruments, and indeed new approaches need to be further developed such as

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<sup>(18)</sup> The term "consumers" or "citizens" used in the present paper mean consumer as defined in Article 129a of the Treaty.

Integrated Resource Planning and Demand-Side Management that focus on utilities and providers of services rather than a commodity, need to be further developed. Among the first are the internal market rules which should provide incentives for energy technologies: the prevention of distortions of competition in the technical rules and state aids should assist this action through standardisation, technical regulations and the framework for state aids. Initiatives will be taken to that respect. In the fiscal field, Member States already have the possibility to apply exemptions or reduced rates of excise duty in the field of pilot projects for the technological development of more environmentally-friendly products and may, moreover, seek authorisation from the Council to introduce further exemptions or reductions for specific policy considerations (Articles 8(2)(d) and 8(4) of Council Directive 92/81/EEC). The Commission is required to review the situation with regard to these exemptions or reductions before 31 December 1996 and intends, during this review, to analyse whether the existing provisions provide a sufficient framework for incentive rates for energy efficient and renewable energy appliances or equipments. The Commission will also issue a Communication which will analyse the contribution that the use of fiscal instruments can make to the promotion of energy efficiency and renewables taking into account general policy in the fiscal field.

115. In addition, the Community still needs to identify the opportunities for energy efficiency and conservation in the Community and the barriers that currently exist to prevent both industrial and other consumers from realising the full conservation potential. As regards the major barriers, an important factor, particularly for small and medium-size firms, is lack of access to capital and know-how. The Community through its existing instruments should further stimulate the development of technologies that promote energy saving and conservation.
116. Technology dissemination schemes, such as THERMIE and JOULE should be intensified to convince industrial and commercial users that they will be able to pay for the introduction of new and more efficient technologies through the reduction of energy costs which they produce after a short period of time. The Community should also ensure that through existing instruments such as SAVE, smaller firms, individual consumers and regional and local authorities have access to information on efficiency opportunities, particularly as regards buildings which are of increasing importance, given the increasing size of the tertiary sector, as well as information on the possibilities for financing such actions. A Community strategy to promote cogeneration and district heating will be established to ensure the necessary cooperation between the Community, its Member States, utilities and consumers of electricity and heat to assist in dismantling barriers to the development of that technology. In addition a strategy to promote Third Party Financing will be developed in order to improve energy efficiency, particularly at regional and local level and to encourage the market penetration of innovative technologies, products and services.
117. Particular attention needs to be paid to the transportation sector since cars and commercial vehicles account for nearly 50% of Community oil use, and are a substantial cause of air pollution. Efforts should be taken to develop certain incentives that are tax neutral, i.e.

measures that penalise fuel inefficient vehicles but which provide rebates for buyers of efficient models. However, it is important to ensure that when incentives are provided or disincentives removed in order to promote energy efficiency and energy saving goals these measures do not negatively affect the competitiveness of European companies.

#### **4.4.3 *Renewables***

118. Given that renewable energy suppliers have few hidden costs (they produce little or no pollution) and are in many cases readily available, an increased share of renewables in the Community's energy balance would make a contribution to both its security of supply and environmental protection. In the long-term, they will constitute the main sustainable energy source. In this area, the local level, notably regions and cities, have an important role to play in exchanging experience, know-how and technology transfer, since for many renewable technologies, it is necessary to have an in-depth knowledge of local situations. There is a need, therefore, to exploit the opportunities offered in the Community's RTD programmes and future ALTENER II programme, and to focus on technologies where cost reductions can be substantial and where improvements in energy conversion devices can easily be secured by dissemination of technology in the market place and in the developing world.
119. The promotion of renewables, in particular in the present situation of the energy market, needs supportive market regulation permitting these investments to compete with others. It is then important that this energy source benefits from fiscal regulations, from the regimes governing the creation of new electricity capacities and from access to networks. There is scope for action to promote the penetration of renewables; solar, wind, biomass, biofuels, geothermal. The development of renewable energies will contribute to job creation especially in the regions and the resulting economic benefits are likely to remain in those regions. The Commission will come forward, therefore, with a strategy in the form of a Communication.

#### **4.4.4 *The role of regions, urban and rural areas***

120. Energy is important and even fundamental for local activities and local life. Consequently, the role of local authorities in the field of energy - as representative of the energy consumers - should be given more recognition in both national and community energy policies. An energy policy should give the consumers the possibility to contribute - by their own decisions - to energy conservation and a cleaner use of energy, in this context, renewables may play an appropriate role, given that energy production from renewables are usually consumed in or near their production area. In this context, renewables could then play a role in reinforcing economic and social cohesion in the Community. The energy services concepts - delivery of heat, light, etc. -at affordable prices should then emerge from a Community energy policy. Rural areas could also play an important role in the

production of energy based on biofuels and could thereby make an important contribution, not only to the achievement of energy objectives, but also to their own economic viability.

121. At the European level, the exchanges between the different regions or cities can be a powerful catalyst not only for technology transfer but mainly for the exchange of know-how and good practice given the diversity of the European regions and cities. It is necessary for the Community to facilitate these exchanges, in line with the subsidiarity process, on the basis of the SAVE programme, with the main focus being on the developed regions and cities not covered by the regional funds.

## **4.5 Energy Technology and Research**

### **4.5.1 *The Role of Research and Technological Development***

122. The Treaties identify Research and Technological Development as an important action for improving scientific knowledge and advancing technological programmes. They also identify Research and Technological Development as an important instrument for supporting other Community policies, such as energy. This stems from the importance of technology in the supply, conversion, and utilisation of energy, and also through its potential contribution to competitiveness, diversification of energy supply and sustainable development. For these reasons the Community continues to support major Research and Technological Development programmes for non-nuclear energy (JOULE/THERMIE) and in nuclear fission and fusion. It also means establishing close collaboration and understanding between the different stages of technology development (JOULE/THERMIE) and measures to improve their market application (SAVE, ALTENER) and for providing an opportunity for improved synergy between energy technologies and key enabling technologies, notably information technologies that are being developed in the ESPRIT programme. Among the Task Forces set up in order to launch common projects of industrial interest, is the "Car for Tomorrow " Task Force is mainly related to the Energy Research and Technological Development Programme. Other Task Forces could be considered.
123. The JOULE/THERMIE programme covers the areas of rational use of energy, renewable energies and advanced technologies for fossil fuels; it is supported and advised by action on the analysis of strategies and of dissemination. The programme is specified with the primary objectives of promoting the efficient use of indigenous resources of energy and reduce environmental emissions, in particular CO<sub>2</sub>; it also aims to strengthen industrial competitiveness. A complementary Research and Technological Development action of cooperation with third countries, INCO, aims to take into account specific technological needs of developing countries or countries in economic transition.
124. The research activity under the Euratom Treaty covers both nuclear fission and thermonuclear fusion. The first is focused on a dynamic approach to nuclear security and safety in order to consolidate the nuclear option and to increase its public acceptability. The nuclear fusion programme covers all the activity undertaken by the Community in the area

of controlled fusion by magnetic confinement. The long term objective is the joint construction of safe and environmentally sound prototype reactors, leading to the construction of economically viable power station. The priority is to establish the engineering design of the first experimental reactor, ITER.

#### **4.5.2 *Energy Research and Technological Development Strategy***

125. The growing international dimension of the energy sector and the global scale of many of the problems confronting it means that additional actions are needed. The Commission plans to take a leading role in meeting this challenge by developing and disseminating a vision of the issues and changes affecting the energy sector at a global level. From this starting point it will identify issues which are best tackled at a Community level and will specify programmes to address these needs. In this context, a major study will be undertaken relating to a climate change technology strategy within a competitive energy market. This will help to establish the technologies which will make it possible to achieve the long-term objective of reducing the emission of greenhouse gases, taking into account the competitive energy market and the objective of sustainable development. Such a study should establish future technological needs of the rest of the world, giving indications to European industries of the most promising markets for new technologies; both nuclear and non-nuclear options will be considered, including fossil fuels, renewable technologies, rational use of energy and nuclear energy. These will be examined region by region to assemble a coherent global perspective.

126. Furthermore, the Commission in collaboration with Member States, will work to develop a global Research and Technological Development strategy which ensures an integrated approach to applied to the research, development, demonstration, dissemination and implementation of energy technology. Accordingly the Commission will undertake initiatives, with the help of the energy agencies in all Member States, to compile a database and atlas of energy technologies, and an information base of the key factors determining Research and Technological Development priorities and programmes. This will cover the perspectives of government, industry and the research community. For energy technologies approaching commercial deployment the focus will be on further demonstration and implementation requirements, taking account of market and socio-economic barriers to deployment. Through this approach, a balance between "technology push" and "market pull" will be attained establishing Community needs and identifying priorities for future Community activities in Research and Technological Development.

#### **4.5.3 *Energy technology dissemination***

127. There continues to be a need for special efforts to make recently developed energy technology better known among industry and consumers. Reviews of Community activities in this area to date conclude that more could be done to emulate the achievements of successful energy technology projects. Therefore, the Commission will seek ways to exploit the new instruments offered by the Fourth Framework Programme for RTD (1994-1998) to reform and to improve energy technology dissemination activities. This will be

achieved in particular through a newly conceived network of agencies which will have the task of bringing the latest in energy technology products and expertise closer to its potential market. Consideration will also be given to ways of improving the market awareness of best available technologies, in particular those which have medium to long-term benefits but which face specific market barriers.

## V. INSTRUMENTS FOR ENERGY POLICY

128. The guiding principle for energy policy at the Community level should be that actions should be taken only if they bring added value. There are many examples of this, for instance, in the interaction of energy and environmental protection. Developments in recent years have shown that energy and the environment can no longer be viewed in isolation and the protection of the environment is already taken into account in the evaluation of future energy policies and their associated actions. Many environmental problems arising from the production and consumption of energy, such as emissions, transcend national boundaries and can only be effectively tackled at the Community level. The development of appropriate technologies and long term RTD efforts and improved energy infrastructures that pool Member States capabilities and realise benefits on a European scale can be best promoted at Community levels.
129. Energy policy issues will also need to be evaluated in a global context. Increasing energy import dependency and changing geopolitics underline the advantage of the Community and Member States speaking with one voice at the international level. This is particularly the case where the Community needs to improve its security of supply, to react to crisis situations and to take common actions to solve global environmental problems. Given the importance of overseas markets to the Community's well being, coordinated energy cooperation can also be vital in maximising the benefits to European industry of their technologies, services and investment on such markets.
130. The Community has a large range of instruments in the energy sector and even Community competencies, for instance in research and development, harmonisation of legislation, competition, external energy relations, trans-european networks, environment, etc. that can address these challenges. Even if most of these instruments do not specifically target energy they have important effects on this sector. In this context the question arises whether all these instruments taken together are adequate to develop a fully fledged energy policy.
131. Experience shows that there are considerable gaps. Energy policy must lead to changes in behaviour. It is necessary to have actions that promote efficient technologies and a mechanism for disseminating information, as was the case with THERMIE on best practices and technological developments in the energy field. The role of the Commission is to manage the budgetary side, organise cooperation between various operators and to promote exchanges of experience and to ensure that the less developed regions benefit

from the efforts of others. Experience shows that when action is taken to develop programmes legal problems arise. For instance, Article 235 was imposed as the legal base by the Council in the programmes SAVE I and jointly with 130s for ALTENER and, is the only legal base possible for the programme SYNERGY.

132. The range of instruments and programmes and Member States' responsibilities make it necessary, therefore, to establish a framework for cooperation based on the definition of common objectives and working methods that ensure dialogue and transparency. These common objectives must take account of economic and structural realities and start a process towards compatible national policies and a coherent Community policy. In that respect, it is recognised that the Commission should have at its disposal a complete, reliable and harmonised statistical system at the Community level. It is therefore necessary that Member States maintain such a system at national level and collaborate closely with the Commission in support of this coherent Community policy. The last attempt to define common energy objectives towards which national energy policies should converge was in 1986 in the form of a Resolution by the Council and this was found to be unsatisfactory. Such a method does not involve the Parliament and the ESC in its decision making process and commits neither the Commission nor the Member States. The necessity to put political action within an agreed framework is recognised in the ECSC which provides "General Objectives" and in the Euratom Treaty which mandates the Commission to define an investment programme (PINC) as a guideline for political action, financial investments and strategies for industry. Given the fuel diversification within the Community, these sectoral instruments have a limited impact and provide weak incentives (contrary to the normal practice in the steel sector). It is clear that energy policy is a constituent part of economic policy as demonstrated by the use of Art 103a in the case of supply disruption; this article therefore could be used for energy policy if it were not for the fact that its use is tailored to monetary union and it would not be appropriate for the promotion of convergence between energy policies.
133. A further weakness of the existing situation is that no framework for dialogue on the energy policy issues exists with the parties directly concerned outside the ESC and ECSC Consultative Committee. The Commission needs to establish a framework for this dialogue but one that is supported by a working method recognised by all participants in the energy sector. Such a framework is essential if the necessary level of transparency is to be achieved that will permit all views to be taken into account in the formulation of Community energy policy.
134. In terms of immediate action the Commission intends to take the following initiatives in 1996 without prejudging the results of the forthcoming Inter-Governmental Conference.
- the establishment of a programme to monitor energy trends, in cooperation with Member States, industry and other bodies, in order that political decisions related to energy can be made on the basis of a shared analysis;



- setting up of an Energy Consultative Committee, under Commission auspices, consisting of representatives of the principal economic and social actors in the energy sector. They would be able to make their views known in this Committee on Commission proposals related to the energy policy. The aim would be to ensure as much transparency as possible on the development of Community initiatives on energy policy;
- organising cooperation between Member States on agreed energy objectives.

These proposals are necessary in order to meet the needs for a more co-operative and transparent policy process and will be presented on the basis of the existing Treaties.

135. The White Paper places energy policy within the existing institutional framework. The Commission will make proposals on the question of whether a modification of the Treaty in the 1996 Inter-Governmental Conference is necessary. As foreseen in the declaration N°1 to the Treaty, this question will be the subject of a report which will be released by the Commission in 1996.

<b>INDICATIVE WORK PROGRAMME</b>
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On the basis of this White Paper the Commission will, within the various fields of action covered, follow a work programme over a five year period in order to use, on a long-term basis, Community instruments for drawing up an energy policy that meets the aims of competitiveness, security of supplies and protection of the environment. This programme would thus contribute to achieving economic and social cohesion, the operation of the Community's internal market and the convergence of economic policies.

Independently of the management of current actions and of the organisation of the activities currently in progress, this indicative work programme, listed below, includes new actions, whose launching will depend upon Commission initiatives, new approaches to the management of existing instruments, and initiatives already in progress. Each of these proposals will be examined on their merits when they are presented, taking into account the financial guidelines and the importance of subsidiarity when choosing instruments.

**a. Operation of the market**

internal market for gas and electricity	proposals	Com(91)548 Com(93)643	para 52
establishing conciliation procedures (for natural-gas transit)	Commission decision	1996	para 52
efficiency requirements for refrigerators	proposals	Com(94)521	para 55
requirements for energy efficiency	proposals	1996	para 55
organisation of new procedures for cooperation with standardization bodies	communication	1997	para 56

review of environmental guidelines	Commission decision	1996	para 57
implementation of Decision 3692/93 ECSC	communication	1997	para 58
possible examination of criteria for public-service obligations	Commission decision	1997	para 59
harmonisation of excise duties on mineral oils	communication and possible proposals	1996	para 62

**b. Organisation of energy cooperation**

programme for analyses and forecasts	proposal	1996	para 134
setting up of an advisory committee	Commission decision	1996	para 134
organisation of cooperation centring on common aims	proposal	1996	para 134

**c. Organisation of transparency**

1. Transparency of energy policy			
report on energy policy		biennial	para 35
publication of measures implementing and transposing Community law		at regular intervals	para 53

2. Transparency of the operation of the internal market			
simplification of Regulation 1056/72	proposal	Com(95)118	para 53
reassessment of information machinery	communication and proposals	1996	para 53
recording of oil imports	proposal for a regulation	Com(95)89	para 66

setting up of a data base and network between administrations	implementation of the IDA programme	1997	para 67
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**d. Incentives for investment**

trans-European networks	proposals	Com(93)685 Com(94)62	para 49
approaches to the implementation of the cohesion fund	Commission decision	1996	para 69
framework for assessing Community financial operations in the energy sector	Commission decision	1996	para 69

**e. Management of security of supplies**

1. Crisis measures			
adaptation of the crisis measures, in particular oil stocks, and coordination of management	communication and possible proposals	1997	para 75
development of Community instruments in the gas sector, promoting solidarity and monitoring of the gas market	communication	1997	para 77
improvements to the implementation of the rules concerning nuclear supply	Commission decision	1996	para 79

2. Diversification			
repeal of Directive 75/405/EEC	proposal	1996	para 82

part played by solid fuels (coal, lignite, peat) in an energy policy	communication	1997	para 83
development of clean solid fuel technology	proposal	1996	para 83
consequence of expiry of ECSC Treaty	proposal	1996	para 83
signing of the international convention on the safe management of radioactive wastes	proposal	-	para 85
nuclear standardisation	communication	1997	para 85
harmonisation of the conditions under which radioactive substances are transported	communication and possible proposal	1997	para 85
illustrative nuclear programme	Commission decision	1996	para 86
lower excise duty on biofuels	proposal	Com(92)36	para 119

3. Development of international relations			
signing of nuclear trade agreements	proposals	1996-99	para 85
ratification of the Energy Charter Treaty	proposal	Com(95)440	para 92
signing of supplementary Energy Charter Treaty	proposal	1997	para 92
strategy for cooperation with international organisations	communication and possible proposals	1996	para 95
programme ALURE - energy cooperation with Latin America	proposal	1996	para 98
strategy for energy cooperation with Asia	communication	1996	para 98
creation of the Euro-Mediterranean Forum	Commission decision	1996	para 98

provision of an "energy" section within the external financial instruments	proposal	1997	para 98
security of investments	proposal	1998	para 98
SYNERGY programme	proposal	Com(95)197	para 99

**f. Energy efficiency and improvements**

CO <sub>2</sub> energy tax	proposal	Com(92)226 Com(95)172	para 108
voluntary agreements	communication	1996	para 110
auto-oil programme	communication and possible proposals	1996	para 111
Directive on fuels (auto oil programme)	proposal	1996	para 111
Directive on motor and vehicle emissions (auto-oil programme)	proposal	1996	para 111
Community strategy for the reduction of CO <sub>2</sub> emissions from cars	proposal	1996	para 111
framework Directive on air quality and secondary Directive on specific pollutants	proposals	1996	para 111
emission standards and specifications for liquid fuels	communications and possible proposals	1996/7	para 111
integrated management of resources	proposal	Com(95)369	para 114
taxation policy and energy efficiency	communication and possible proposals	1998	para 114
international agreements for harmonisation of energy consumption	proposals	1996	para 114

programme SAVE II	proposal	Com(95)225	para 116
strategy for the promotion of cogeneration	communication	1997	para 116
energy management in the cities and regions and on the islands	communication	1997	para 120

**g. Renewable energies**

ALTENER II programme	proposal	1996	para 118
strategy to promote renewable energy sources on the market	communication	1997	para 119

**h. Technology**

new RTD framework programme (nuclear and non-nuclear)	proposal	1996	para 122
setting-up of new Task Forces	proposal	1996	para 122
part played by technology and strategy for energy RTD	communication	1997	para 126
setting-up of new network for the dissemination of energy technology	Commission decision	1996	para 127