COMMISSION OF THE EUROPEAN COMMUNITIES

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THE ENERGY PROGRAMME OF THE EUROPEAN COMMUNITIES

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CONTENTS

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I. THE COMMUNITY'S ENERGY SITUATION

Short term: oil supplies

1. The Community's immediate problem in the energy sector is to overcome the recent difficulties in the oil market. There is an urgent need to tackle the problems of supplies, demand, and stock levels so that further pressure on oil prices may be moderated and that adequate supplies of all oil products should be available in the coming winter.

2. The difficulties which arose in the first half of 1979 were due to the unforeseen interruption in oil supplies from Iran, coupled with a severe winter and a high underlying energy demand due to relatively high economic growth. The shortages occurred in spite of total oil supplies to the Community in the first half of 1979 about 6% higher than in the same period in 1978. Net imports of crude and products together increased by about 1.5% (net imports of crude oil alone increased by 4.0%) and domestic crude production increased by 40%. Nevertheless, after allowing for climatic, seasonal and cyclical factors, total Community supplies in the first half of 1979 are calculated to have been 3.0% short of theoretical potential consumption. This shortfall was not evenly distributed between all member states, and mainly affected gasoline and domestic fuel oil. In the third quarter of this year, all member states except Italy are expected to show a surplus calculated on the same basis. At the end of September 1979, oil stocks in the Community are expected to be about the same as a year previously.

3. The world price of crude oil has increased dramatically since December 1978. With official prices now at $18-23.50 per barrel, there has been an average increase in the price of imported crude of 57%, in the first half of 1979, equivalent to 37.5% on an annual basis. By the end of August 1979, consumer prices (net of tax and duty) for oil products had on average increased by 52%, whereas average prices on the spot market had increased by 90%.

4. The short term prospects in mid 1979 are that if the recent increase in Saudi Arabian production is maintained, and owing to the gradual effect of demand restraint and to prudent stock management, it should be possible for supplies to meet demand for the rest of this year. Nevertheless, the situation remains vulnerable to sudden change; in spite of the present easing of pressure on the markets, supplies may continue to be tight or at least unpredictable over the next twelve months.

The longer term

5. Concern with these immediate difficulties should not obscure the more serious longer term problems. Current oil supply questions should be examined within this broader context; short and long term policies should form part of a coherent approach.

6. Conventional analysis before the events of last winter suggested that in the mid or later eighties oil demand would grow until incremental supplies could no longer keep pace with extra demand. According to this analysis the Community (and other consuming countries) had up to ten years in which to effect structural changes in the pattern of energy consumption, involving greater efficiency in energy use, and major investments to bring about a transition away from oil. Although oil will continue to play an important part in overall energy supplies, its share would decline and it would increasingly be confined to specialised uses. The essence of this analysis has not been altered by the events of this year but it is now clear that there will be much less time in which to bring about the necessary changes than was thought. It is now estimated that world demand for OPEC oil in 1985 could be some 3-4 mbd in excess of OPEC's production. In these circumstances, strong upwards pressure can be expected on prices. This pressure will be moderated by the success of consumer countries in limiting demand, but, since major new contributions from other oil sources or from other fuels cannot be expected before 1985, the ability or willingness of those countries with spare oil capacity to raise production above the level dictated by revenue requirements or by other considerations is of crucial importance.

The strategic importance of energy

7. It is because adequate and reasonably-priced energy supplies are so fundamental to the functioning of the economy and to the stability of society that energy questions in time of actual or threatened difficulty become charged with the highest political significance both domestically and in the field of foreign relations. As recent events have shown, the western public is extremely sensitive to the effects of even minor and temporary energy shortages. More fundamentally, the standards of public services and the level of business activity and hence employment can decline or remain at an unacceptably low level if the energy situation is such as to jeopardise world trade and economic growth. In these circumstances social tensions can appear or be exacerbated, and political and social norms can be challenged.

8. These dangers are reflected in the external field. Governments, whatever the virtues of international collaboration on energy matters, may tend in times of stress to consult their own immediate interests first. There is thus a danger of an aggressive and competitive scramble for scarce world energy supplies; the reduction of this danger must be a prime policy objective. Closer understanding and cooperation with the Community's OECD partners - particularly the USA and Japan - is important in this respect.

The Community's external vulnerability

9. From this description of the broader nature of the energy problem, it will be clear that the Community is in a vulnerable position. Despite the strategic significance of secure energy supplies, the Community allowed itself to become dependent on imports for 63% of total consumption by 1973; of that total consumption oil accounted for 61%, almost all of which was imported. A major effort is required to reduce this external dependence.

The economic burden of energy supplies

10. The Community's energy dependence also has a heavy economic significance. Whereas in 1973 oil imports of 580 tonnes cost about $ 15 billion, imports of 472 m. tonnes in 1978 cost about $ 50 billion, and imports at the same level in 1979 could cost about $70 billion. At the same time, energy investments are expected to run at up to $ 50 billion per year in the coming decade. Expenditure on energy imports and investments is expected to take about 5% of Community GDP over the same period. While diversion of resources on this scale to the energy sector is necessary, it nevertheless decreases the resources available for private consumption, other productive investment, or for social services. The need to minimise this economic burden is a prime motive for the reduction of energy demand through energy saving.

11. However heavy the burden of energy investment and import expenditure may be on the Community's economy, the effect is even more marked in many developing countries with few energy resources. An increasing share of their GNP is being pre-empted by the cost of energy imports and by the cost of servicing the loans which finance their deteriorating balance of payments.

II. COMMUNITY ENERGY GOALS AND ACHIEVEMENTS

The 1974/75 resolutions

12. The development and implementation of energy policy at Community and national level is a gradual process. The foundations for a common European energy policy have already been laid down in response to the initiatives taken at the European

Councils of October 1972 and December 1973. Three Council Resolutions were passed in late 1974 and early 1975[1] which together provided comprehensive guidelines for Community policy, and specified sectoral objectives for 1985.

13. The first Resolution defined the expression "Community energy policy" as meaning the preparation of joint target figures as guidelines for national policy and as indicators for Community energy producers and consumers; the close coordination of the positions of the member states to enable the Community to express a common viewpoint on external energy questions; Community participation in cooperation with other consumer countries, and between them and the producer countries. The Resolution went on to state that the reduction of the growth of energy demand and the improvement of the security of supply by development of domestic resources and by diversifying external sources of supply, should be the guidelines of Community energy policy.

14. The second resolution stated specific objectives for 1985. Dependence on imported energy was to be reduced to 50%, or 40% if possible; target shares and production objectives were set for each fuel in the total energy balance; energy consumption was to be reduced by 15% from the 1973 forecast for 1985 (i.e. 1450 m toe instead of 1700 m toe).

15. The third resolution, of February 1975, outlined particular policies and measures required to achieve the objectives already agreed. These included the use of Community financial aids, economic pricing policies to encourage investment, coal support measures, a common nuclear fuel supply policy, and greater transparency of the Community oil market.

Additional Community objectives

16. These resolutions remain the formal foundations of Community policy. Much detailed Community legislation and action has followed from them and these are mentioned in following paragraphs. Since 1973/74, however, several further objectives have been added. At the European Council in Bremen in 1978 it was decided to reduce the ratio of growth in energy demand to the growth in Community

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(1) Council Resolution of 17.9.74 concerning a new energy policy strategy for the Community; O.J. C153/1, 9.7.75.

Council Resolution of 17.12.74 concerning Community energy policy objectives for 1975; O.J. C153/2, 9.7.75.

Council Resolution of 13.2.75 concerning measures to be implemented to achieve the Community's energy policy objectives; O.J. C153/5, 9.7.75.

GDP to 0.8 by 1985, by the implementation of strong energy saving measures. The target of 50% dependence by 1985 was reaffirmed. The European Council in Paris in March 1979 agreed that oil consumption this year should be held at 500 m tonnes, implying a reduction from forecast consumption of slightly more than the 5% agreed to by IEA countries as a whole. At the European Council in Strasbourg in June 1979, it was further agreed that Community oil imports should be held at or below their 1978 level until 1985, provided that other industrialised countries made equivalent efforts. Satisfactory indications to this end were forthcoming at the Western Economic Summit at Tokyo later in June.

Progress towards 1985 objectives

17. Detailed commentary on progress towards the 1985 targets may be found in documents COM(77)395 final[1] and COM(78)613 final[2]. The results so far show a mixture of encouraging and disappointing features.

18. Forecasts of energy consumption in 1985 have declined steadily. Compared with the forecast of 1700 m toe made in 1973, and the target of 1450 m toe set in 1974, total consumption is now expected to be only 1237 m toe. Part of this decline has been due to the slowdown in economic growth. At the same time, however, it is calculated that energy saving has reduced consumption by 7-8% from what it would otherwise have been in each of the years between 1975 and 1977.

19. Fair progress is being made in reducing external dependence and the share of imported oil. Imports accounted for 63% of energy consumption in 1973; the Community's dependence on imports in 1978 was 55% and the 50% may well be achieved in 1985. The share of oil in total energy consumption has declined from 61% in 1973 to 55% in 1978. It should decrease further to 50% in 1985 and perhaps 47% in 1990. In absolute terms, between 1973 and 1978 Community oil consumption fell by 58 m tonnes, and oil imports fell by 109 m tonnes.

20. The picture on the production side has some encouraging and some disturbing features. Coal production and total consumption have continued to decline since 1973 although imports have increased. The latest forecasts are that the production and consumption levels set as 1985 objectives will not be achieved by then, although they may be by 1990. Oil production is likely to fall well short of the target of 180 m tons and if the import limit is to be assured, production may have to be towards the top end of the forecast range (115-165 m tonnes). The picture for natural gas is better - supplies seem assured well into the

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(1) Second report on the achievement of Community energy policy objectives for 1985.

(2) Energy objectives for 1990 and programmes of member states.

1990s for an increasing level of consumption, provided that contracts already signed are respected. As domestic production reaches a plateau and then declines, imports, already contracted, will take an increasing share. From their 1978 level, they are expected almost to treble by 1985 and to quadruple by 1990. The build up of nuclear capacity has been subject to considerable delay. It is now likely that there will be installed capacity in 1985 of only 70-80 GWe, compared with the objective of 160-200 GWe; there is uncertainty about capacity in 1990, but it could be as little as 127 GWe. This decline in the forecast nuclear contribution implies an extra call on fossil fuels for electricity generation. It is essential that coal rather than oil or gas should fill this gap.

21. Such are the current trends in the Community's energy demand and supply (see Annex I for detailed figures). The supply picture is marked by external uncertainties, and by internal difficulties or lack of margin to manoeuvre in the coal, nuclear and oil sectors. The evolution of demand can either exacerbate or moderate these supply problems and depends on future economic growth and on the effectiveness of our efforts to use energy more effectively.

22. A variation of 1% in the average annual growth rate of Community GDP between 1978-1990 could lead to up to 100 m toe per annum more or less energy demand by 1990, given the present relationship between economic growth and energy demand. The average Community economic growth rate of 3.8% assumed in the forecasts for the period 1978-1990, while insufficient from the point of view of tackling unemployment, is relatively high compared with growth recently achieved. Further uncertainty is inherent in the forecasts themselves. The Commission's own analysis of member states' forecasts shows that in 1985 there is a margin of uncertainty or flexibility of 80 m toe around the forecast demand, and in 1990 a margin of 212 m toe (see Annex II). However, the damage incurred from an energy supply constraint on economic growth would be much greater than the cost of making over-provision; it is prudent to assume that the situation will continue to be tight, and to insure, or over-insure, accordingly.

I. EXISTING AND PROPOSED MEASURES

Main elements in the Commission's work

23. The following paragraphs explain what policies and measures in each sector or area of activities the Community has already or is proposing to put in place to deal with the problems arising from the situation described in sections I and II above. It is important to remember, however, that many components of Community

energy policy are, as the 1975 resolution makes clear, executed at national rather than Community level.

24. The Commission's work consists of four main elements designed to promote the emergence of a common energy policy and the convergence of the energy policies and situations of the member states. It has a constant task of analysis and presentation of trends in the internal and external energy situation of the Community as a whole. The Commission is also engaged in a critical analysis of national energy programmes to identify strong and weak points and to help ensure that they are mutually consistent. The third main activity is the preparation of Community legislation where there are gaps in national programmes or where joint Community action is by its nature essential or clearly more effective than disparate national efforts. Finally, in several fields the Commission has responsibility for executive action by virtue either of the Treaties (the Euratom and ECSC Treaties in particular) or of specific Community legislation.

Forecasting; analysis; objectives

25. The Commission publishes regular statements of the short term energy situation showing results for the previous year and forecasts for the next. The Commission also carries out examinations of national programmes, with a view to monitoring progress towards the 1985 objectives, and latterly, establishing new objectives for 1990. These surveys, based on information from member states which is subjected to critical commentary by the Commission, also provide the basic data on Community energy trends and on the direction and convergence of member states' programmes. The results (and broad conclusions of the Commission) of the 1978 exercise are given in document COM(78)613 final[(1)], and more precise recommendations for new 1990 objectives, coupled with a study of the convergence of national programmes, is given in document COM(79)316 final[(2)]. Discussion of these proposals will form an important part of the Council's work in the latter part of 1979.

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(1) "Energy objectives for 1990 and programmes of the Member States".

(2) "Energy objectives of the Community for 1990 and convergence of policies of the Member States".

26. The main recommendations for new 1990 objectives are:

(i) the reduction below 0.7 of the ratio between the growth of energy consumption and economic growth;

(ii) to limit the Community's dependence on energy imports to 50%;

(iii) to extend to 1990 the existing 1985 objective to limit oil imports to 470 m tonnes;

(iv) to increase the use of solid fuels and nuclear power so that together they cover 70-75% of electricity generation;

(v) to restore Community coal production to its 1973 level of 250 m toe (i.e. the original target for 1985); to increase coal imports; to increase correspondingly the Community's capacity to consume solid fuels;

(vi) the maximisation of Community oil and gas production within the forecast ranges;

(vii) the development of economic and transparent energy pricing policies.

27. In addition to the short term forecasting and medium term planning described above, the Commission is also engaged on the construction of energy scenarios, by means of mathematical modelling techniques, for the years 2000 and 2025. Preliminary results for the 2000 scenarios have been received, and work is continuing. A quantitative study up to the year 2025 ("Crucial choices for the energy transition") has just been completed by the Commission and will be published soon.

Prices and investment

28. Pricing policy is seen as a crucial factor affecting energy saving and the creation of satisfactory conditions for energy investment. Current and expected price levels are key signals to both consumers and producers of energy, and important determinants of a rational allocation of resources. Subject to the general provisions in the EEC Treaty concerning pricing practices as they affect competition, pricing policy - and related fiscal questions - are, in practice, largely matters for national governments. The Commission's present work is aimed at bringing together comparative information for the Community as a whole, and to indicate the basis on which national pricing policies may be brought into a closer alignment, consistent with the aims of energy policy. Particular attention has been given in recent Commission studies to gas and electricity tariffs. Clearly, a close alignment of prices and taxation on a Community basis must be linked with progress towards broader economic convergence within the Community.

29. Loan finance from Community sources is a useful supplement to national and commercial sources, since it is obtained and re-lent on terms reflecting the rating of the Community as a whole in international markets. It enables the Community to coordinate and to support projects of specific Community interest and also to reduce the effects of energy investment as a factor for divergence between the economies of member states. At present, Community sources play a relatively modest role providing only about 3% of the total annual requirement for investment finance, but in view of the success of recent schemes such as the Euratom loan scheme and the new Community investment facility, and the continuing pressure of demand on EIB and ECSC facilities, further growth in Community lending to the energy sector is probable. The Commission is considering the possibility of a new Community financial facility geared solely to meet energy investment requirements. Existing sources and applications of Community investment and other finance are shown in Annex III.

Energy saving

30. In the short and medium term greater energy saving can probably make a larger (and cheaper) contribution to the equilibrium of supply and demand than can action to increase supplies - since such action normally has a long lead time. There is also scope for further substantial savings through structural and behavioural change towards a more energy-efficient economy and society, although the adaptation will not be easy. "Energy saving" policies fall under three main heads:

(i) mandatory reductions in energy use achieved by the elimination or rationing of certain activities. Such measures are usually designed for the short term only and associated with an emergency;

(ii) reductions in energy consumption achieved by the use of more efficient plant and equipment or by the more efficient use of existing equipment. The aim here is to obtain the same quantity of useful energy at the point of final consumption with a smaller input of primary energy. This is the area in which most conventional energy saving efforts have been and are being made, and for which great scope remains. Initial capital expenditure by industry or the individual - which is sometimes an obstacle - is usually required;

(iii) the third category of energy saving policy is necessarily longer term and involves the restructuring of the economy on a less energy intensive basis, and the encouragement of modes of living which are less wasteful of resources in general, including energy. In 1978, the Commission asked

new relationship between economic growth and energy consumption. Their first report ("In favour of an energy efficient society") was published in July. It will be studied and discussed in the coming months, and should provide the basis for a comprehensive strategy for energy efficiency in the Community.

31. Member states have put in hand a variety of new short term oil saving measures designed to meet the Strasbourg commitment to limit oil consumption to 500 m tonnes this year. It is too early to say with precision what the effect of these measures will be, but the indications are that the limit may be exceeded. In any event, the measures will have to continue into next year.

32. Member states have in varying degrees introduced basic medium term energy saving measures of the type described in para. 30 (ii) above. In addition to these, measures have been introduced at Community level, and these are listed in Annex IV. In 1979, the Commission will be proposing further Community measures, including a draft directive on the performance, regulation and inspection of heat generators, and three more implementing directives on the energy labelling of domestic appliances.

33. The Commission will be working on a variety of other energy saving questions with a view to bringing forward proposals later. These are described in documents COM(79)312[1] and COM(79)313[2]. The Commission has also proposed that voluntary indicative targets for the reduction of fuel consumption by motor cars and light vans should be negotiated with the industry at Community level.

34. As a sound basis for action at national level which would ensure that equivalent (if not identical) efforts were being made by all member states, and which would help the Community to achieve its energy saving goals, the Commission proposes that member states should commit themselves to the introduction of a minimum basic programme. Such a programme should include the establishment of fully economic and transparent pricing systems, the use of taxation to ensure that energy prices at least reflect the long term scarcity of resources, tighter space heating and air conditioning standards in homes, offices and industry, better

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(1) "New lines of action by the European Community in the field of energy saving".

(2) "Third report on the Community's programme for energy saving".

performance and inspection standards for space heating equipment, energy audits and financial incentives for energy saving private investment by industry, information campaigns and instruction on energy matters in schools, and targets for increased fuel economy in motor cars. Some of these are in existence in some member states already; all, adapted to local conditions, are capable of introduction now, and none involves any new technology.

35. As stated in para. 18 above, it is calculated that the total effect of Community and national energy saving measures in each of the last three years has been to reduce energy consumption by about 7-8%, equivalent to about 70 m tonnes of oil per year worth about $10 billion in 1979 prices. In 1978, total energy consumption was roughly equal to that in 1973 - yet the Community's GDP had increased by 12% in real terms.

36. Valuable as these achievements are, they are only a beginning. If today's best practice and cost effective technologies and designs were generalised throughout the Community, it would be possible to save, in the longer term, 15-30% of energy use in industry, 20-35% in transport and up to 50% in the domestic and tertiary sectors, compared to present practice. More immediately, it is realistic to aim for a ratio of 0.8 between energy and economic growth by 1985, in which case there would be a saving of 190 m toe per annum by 1985, of which 20 m toe would be in addition to the savings presently forecast by the member states. With the accelerated diffusion of best practice in energy saving equipment and in design, the target ratio of 0.7 could be achieved by 1990 bringing an additional annual saving of 100 mtoe by that date.

Energy research and development; new sources of energy

37. The Community energy research programme has three main objectives: improved knowledge of nuclear technology and improved techniques and standards for safe operations in the nuclear field (reactors, the fuel cycle); improvements in energy saving techniques; and improved knowledge of new energy sources (particularly solar, geothermal, and nuclear fusion).

38. The Community has an important role in the promotion, the commissioning and the carrying out of research into new energy techniques and systems. The high cost of some large projects (e.g. JET), the necessity for economies of scale, the need to avoid overlap or duplication by separate national programmes, the common interest of member states in solutions to certain problems, and the inherently transnational nature of others, mean that the Community must initiate

39. In 1978 about 8% of total public expenditure of over 2000 million EUA on energy research in the Community was provided from Community funds. Of a Community R&D budget for 1978 of 254 million EUA, 175 million EUA was devoted to energy.

40. Community R&D is carried out through:

(i) Direct action, consisting of work commissioned by the Community and carried out entirely in the four establishments making up the Community's Joint Research Centre. The JRCs total budget for 1977-80 was 390 million EUA, of which some 250 million EUA (64%) was devoted to energy including 84 million EUA on reactor safety.

(ii) Indirect and concerted action, consisting of work decided by the Community but carried out in national, academic, industrial or other institutions. The main elements of indirect actions are (a) coal research, (b) the new four-year programme on solar and geothermal energy, the hydrogen energy sector, energy saving, and systems analysis, (c) several nuclear energy programmes, the largest of which being that on controlled fusion, which includes a Joint Undertaking, under the Euratom Treaty, for the construction and operation of the Joint European Torus ("JET").

The Community also collaborates with the IEA in a broad range of energy R&D projects, including nuclear fusion and solar energy.

41. Coal research deals with safety in mines, new mining techniques, and the upgrading of products; the budgeted amount for this work is about 20 million EUA p.a.

42. The second four year programme for new sources and energy conservation has been allocated 105 million EUA for the period 1979-83, roughly double the allocation of 59 million EUA for 1976-79. The first programme involved about 650 research contracts for a variety of small and large scale laboratory and industrial projects. The second programme concentrates particularly on solar energy and energy conservation. Earlier this year, the Commission mounted a large international conference on photovoltaic solar energy, and will stage two more international conferences in 1979, one on energy systems analysis and the other on new energy saving techniques.

43. Much nuclear research through indirect action concerns the fuel cycle and the safety of design and operations. Programmes under way have received budgetary allocations of 35 million EUA in the period 1976-1984; the Commission is proposing further programmes, to run to 1983/84, which will cost 80 million EUA. The main areas covered or to be covered are plutonium recycling, the management and storage of radioactive waste, the safety of light water reactors, codes and standards for fast breeder reactors, and the decommissioning of nuclear power

stations. The Community's work on nuclear fusion consists of the fourth programme on controlled thermo-nuclear fusion (124 million EUA, 1976-1980) and the JET project (to which some non-Community countries have also adhered) for which 148 million EUA has been allocated for the period 1978-83. The Commission has proposed a further programme on controlled thermo-nuclear fusion, costing 217 million EUA between 1979-1983. These programmes embrace all work on fusion carried out in the member states, and the Community expects to remain abreast of the USA and Japan, particularly in the field of electromagnetic confinement. Considerable international cooperation takes place; the Community is participating under IAEA auspices in the definition of a post-JET Tokamak, possibly for construction on a world scale.

44. The advancement of technology for the exploitation of new sources is a matter of urgency; but owing to the lengthy work which must be done before any technology may be commercially applied, and to the scale of substitution which must take place thereafter, the growth in the contribution of new energy supplies is bound to be relatively slow. The Commission calculates that new sources of energy could be providing 4-7% of total Community energy supplies by 2000. This would be equivalent to 70-120 million tonnes of oil per year - a considerable amount in absolute terms.

Demonstration projects

45. The Commission, recognising that the gap between a technique's success on a laboratory scale and its full commercial application was often partly due to difficulty in obtaining financial credit during the launching period, proposed a Community scheme of grants for demonstration projects in the field of new energy sources and of energy saving technology. A scheme was agreed by the Council in 1978, providing 95 m EUA over five years for new energy sources, and 55 m EUA over four years for energy saving. The response to the first calls for tender was very strong and generally of a high quality. It indicated the need for this sort of aid, and the way the Community could play a useful role in an area not fully covered by the banks or by national Governments. Over 500 applications were received, and it has been possible to support 83 projects so far.

46. The first round of solar, coal and geothermal energy projects has already been chosen. Further solar energy projects will be decided this year. 50 m EUA has been allocated to coal gasification and liquefaction; four projects have so far been selected, representing a total investment of 107 m EUA, and further decisions will be made later. The Commission is consulting member states on its intention to support a round of wave energy projects in 1980 or 1981.

47. Contracts are also being concluded for the first round of energy saving projects - including 13 projects for combined heat and power schemes. A call for tenders for a second round of energy saving projects will be made in September 1979.

Electricity and nuclear power

48. The flexibility of the means of electricity generation is important when the Community is trying to reduce its dependence on imported oil. To the extent that new capacity is based on coal, nuclear or new sources, the Commission sees advantage in promoting the use of electricity for suitable purposes. The average cost of electricity generated from oil is about 20% higher than in the case of coal and 30-40% higher than in the case of nuclear, including construction of power stations, fuel cycle, operating and decommissioning costs.

49. Ever since 1973, the rate of growth in electricity demand has been considerably higher than the rate of growth in energy demand as a whole. But whereas electricity demand had been growing at over 7% per annum before 1973, member states forecast that it will grow at about 5% per annum between now and 1990, compared with a forecast rate of growth in energy demand of 3% per annum for the same period. It is expected that electricity demand in 1990 will be about 480 m toe (2096 TWh or 35% of total energy demand) compared with 264 m toe (1150 TWh or 29% of total demand) in 1977. The Community will therefore need as much electricity from nuclear and coal as it can get; but it is unlikely that the desirable maximum will be available from either source. The Commission is proposing that by 1990 70-75% of electricity should be generated from coal or nuclear power, compared with 52% in 1977. Paras. 50-53 and 65-66 below deal with these aspects.

50. In 1975, two Community regulations were passed prohibiting the construction of new oil or gas-fired power stations, except in exceptional and specified circumstances. However, considerable oil and gas fired capacity had been ordered before this date, and is still coming onstream; since then, orders for coal fired power stations have increased, but the capacity will not come onstream until later in the 1980s. Much capacity now under construction or in planning is designed to be dual fired. As much as 34.5 GWe could be oil burning and 19.2 GWe of this will burn only oil ; 27.2 GWe coule be coal burning, of which 10.7 GWe will burn only coal.

51. The risk remains, however, that limitations on oil supply, insufficient coal burn and delays in nuclear programmes will significantly constrain electricity production in the 1980s. The Commission thinks that the national forecasts for nuclear are optimistic and that it is unlikely that more than 127 GWe will be in place by 1990. Installed capacity in August 1979 was 29 GWe with 40 GWe under construction. Therefore, to achieve even the Commission's expectation of 127 GWe by 1990, 15 GWe per annum of construction starts between 1979 and 1982 would be required. Construction starts have been much lower than this in recent years, and the achievement of a higher rate, which in the Commission's view is feasible, would nevertheless be a major challenge.

52. The low rate of ordering, completing and commissioning in recent years has been due to delays in finding suitable sites, in getting the necessary authorizations and planning consents, in resolving technical problems, in making design changes and over finance. In this last respect, the Euratom loan scheme to help the construction of nuclear power stations was launched in 1977, with a first tranche of 500 million EUA. A second tranche of 1000 million EUA has just been proposed.

53. Another factor is the body of opinion which on a variety of grounds is opposed to the use of nuclear power, and which has acted to delay existing programmes. While decisions on nuclear programmes are for national governments and local planning authorities, the Commission has sought to meet this public disquiet by providing information and encouraging rational discussion of the issues. In 1977 and 1978, the Commission held a useful series of open debates on nuclear questions. The Commission considers that the necessity of nuclear power is such that political leaders have a duty, in the public interest, to explain the facts of the case, including the good safety record of the nuclear industry compared with other industries and to minimize the emotive and subjective elements of the arguments. The Commission endorsed the

(1) 1 gigawatt of electrical capacity is assumed to be equal on average to 1.316 mtoe per year.

declarations of the Bonn and Tokyo Western Economic Summits of 1978 and 1979 that "the further development of nuclear energy is indispensable and the slippage in the execution of nuclear power programmes must be reversed", and that "without the expansion of nuclear power generating capacity in the coming decades, economic growth and higher employment will be hard to achieve. This will be done under conditions guaranteeing people's safety". The Commission also endorsed the Tokyo Summit's declaration on the importance of coal in the electricity sector.

Policies and measures

(a) Electricity generation and power stations

54. The Commission is anxious to promote greater grid interconnexion between electricity utilities and a higher level of electricity imports and exports, to ensure the optimum use of generating plant, and the best use of available fuels. The Commission will be proposing a recommendation on electricity tariff structures later this year. The Commission's plan for a Community consultative group on the siting of power stations has now been accepted, and the Commission has asked the Council to resume discussion on its proposal on procedures to be followed in planning power stations in frontier areas.

(b) Fuel cycle questions

55. Nuclear energy offers the prospect of greatly reduced dependence on imported energy. In this context it is important to reduce the Community's dependence on imported nuclear fuel and to diversify the sources of supply. The Community's uranium reserves are 3-5% of world reserves and 80% of the Community's present supplies of natural uranium are imported, from only a few countries. For enriched uranium also, the Community is still dependent on imports. Currently, a large part of enrichment services are provided by the USA and USSR. This dependence which enables suppliers to impose conditions on the Community, will decline as the two enrichment plants in the Community (Urenco and Eurodif) increase their capacity rapidly in the next few years.

56. In order to build up domestic supplies, the Commission has been issuing grants for uranium exploration within the Community under Article 70 of the Euratom Treaty. A budget of 16 million EUA was available in the period 1977-1979 and a new budget is being prepared. The scheme has been successful in identifying new reserves, particularly in Greenland and Italy. Promising results have also been obtained in Ireland. A proposal for a Community aid scheme for uranium exploration overseas is being prepared. The Commission is also considering proposing the establishment of uranium stocks on a Community basis, managed by the Euratom Supply Agency.

57. Nuclear fuel cycle questions, particularly those relating to reprocessing and waste management, must be discussed and settled internationally so that common solutions may be found. For example, the Commission has participated actively in the International Fuel Cycle Evaluation (INFCE), the conclusions of which should be available in the first half of 1980.

58. In view of the international implications of action in all stages of the fuel cycle, of the need for a coherent Community policy and of the benefits of common action and pooled resources in these complex fields, the Commission has made proposals for a Community policy on the reprocessing of nuclear fuel(1), the fast breeder reactor(2) and the management and disposal of nuclear waste(3). The Council has so far been unable to accept these proposals, which date from 1977, even though Parliament had given a favourable opinion. Discussion on these three papers will resume later this year. The Commission's view is that the development of reprocessing could in the later 1980s substantially reduce the Community's uranium import requirements and the enrichment workload. In the longer term, the fast breeder reactor in wide-scale use in conjunction with reprocessing could make the Community almost entirely free from dependence on external uranium supplies, and reduce the quantity of dangerous substances to be disposed of permanently as waste. The Commission therefore wants work to continue so that the fast breeder reactor is available as a commercial option in the future when the need arises. The Commission's research work on nuclear safety, which is parallel to its policy proposals for nuclear development, is described in para. 43 above.

(c) Euratom questions

59. The Euratom Treaty lays important responsibilities on the Community in the nuclear field, including:

(i) the duty of the Commission (through the Euratom Safeguards Inspectorate) to satisfy itself that in the territories of member states nuclear materials are not diverted from their declared uses, and that the conditions relating to supply and international safeguard obligations are complied with;

(ii) the task of ensuring, through the Euratom Supply Agency, that all users in the Community receive a regular and equitable supply of ores and nuclear fuels by means of a common supply policy on the principle of equal access to sources of supply, as laid down in chapter VI of the Euratom Treaty;

(iii) the conclusion on behalf of the Community of agreements with nuclear fuel suppliers concerning supply and safeguards.

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(1) COM(77)331 final, 2.7.1977.
(2) COM(77)361 final, 28.7.1977.
(3) COM(77)397 final, 24.8.1977.

60. In practice the inability in some instances to agree on how Euratom should carry out its responsibilities has meant that the Community has not always been able fully to carry out its proper or effective role in international nuclear affairs. For example, the Supply Agency has not completely played the part accorded to it under the Treaty. Successive attempts have been made to clarify the application of Chapter VI; a new attempt is now under way and the Council will discuss the matter further this autumn. It is essential that the Community is fully able to perform its functions in international nuclear negotiations. Disunity on an internal question of institutional competence has already delayed the negotiation of a full EEC-Australia agreement on nuclear fuel supplies and has obliged the Community to delay the work of the International Convention on Physical Protection. It is important that the imminent re-negotiation of the EEC-Canada agreement on nuclear fuel supplies and the opening of discussions about the EEC-USA agreement be launched on time and brought to a successful conclusion.

61. The Euratom Safeguards Inspectorate, now in existence for over twenty years, was the world's first multinational nuclear safeguards system. It operates independently in all Member States and has wide powers, including the right to send Inspectors to establishments on the territories of member states. It has an experienced and highly qualified team of about eighty Inspectors, which works in close collaboration with the Inspectorate of the International Atomic Energy Authority.

Coal

62. Coal is the Community's most abundant energy resource, and will become increasingly important as oil becomes scarcer. Yet the Community industry finds it difficult to maintain production, let alone increase it, and the necessary capacity to consume coal, whether imported or exported, is not being built.

63. During the 1960s when oil was cheap, Community coal production of solid fuels was deliberately run down, reaching a level of 200 m toe[1] in 1973. Since then, in spite of the oil price increases and the policy commitments to coal, Community

(1) 1 m toe = 1.43 tonnes coal equivalent.

production has declined to 173 m toe (1978) and consumption from 222m toe (1973) to 204 m toe. Only coal imports have remained buoyant - increasing from 19 m in 1973 to 26 m toe in 1978.

64. There are several reasons for this unsatisfactory evolution. Most coal in the Community is in relatively deep and thin seams and is therefore expensive to mine. The cost of European steam coal, except for some in the UK, is about twice that of competing imports from third countries. In addition, the recession in the European steel industry has seriously reduced the demand for coking coal.

65. It is likely that the levels of production of and demand for lignite and peat will remain constant at their 1977 levels of about 25 m toe up to 1990, as forecast by member states. Some uncertainty surrounds the prospects for hard coal. National forecasts of production and imports totalling 222 m toe in 1990 depend crucially on demand reaching those levels. It is doubtful, however, whether new investments and the applications of new technology for coal use will occur on the scale required. The Commission foresees demand for steam coal of 104 m toe in 1990, compared with the member states' forecast of 117 mtoe. Taking account also of the likelihood of stable demand for coal in coke ovens and of a decline in demand for other uses, the Commission foresees a total demand for hard coal of 185 m toe in 1990 - 37 m toe less than in member states' forecasts.

66. This shortfall of demand could be reduced by up to 16 m toe by a strong and urgent policy to increase coal use. Fewer problems surround the physical possibility of supplies on the scale suggested by Member States; production of 176 m toe of hard coal should be possible in 1990, as should the increased level of imports (55 m toe). But this potential of supply is at present likely to be restricted by inadequate demand.

Coal policies

67. The policies for coal set out in the 1974 and 1975 resolutions remain valid. The Community's aims were reiterated by the European Council at Strasbourg in June 1979 as follows: "In view of the necessary change in oil imports, the use of coal in power stations must be stepped up without delay; its use in industry must also be encouraged. Special attention will be given to technological programmes to devise new processes for the extraction, transport and processing of coal".

68. In practice, the main objective now is to increase coal burning capacity of all kinds, so that as the need for extra coal becomes greater, the Community will be able to exploit this abundant energy source.

Coal measures

69. Agreement on specific Community measures to support the coal industry has been difficult; only two member states produce 88% of the Community's coal, and the same member states account for 71% of the Community's coal consumption. Much financial support is therefore given on a national basis. In 1978, total operating aid of 2.7 billion EUA was given by four member states.

70. The Community provides finance out of the ECSC budget for capital investment and other expenditure programmes by national coal undertakings. The total of interest relief, coking coal aid, research aids, and social payments from this source in 1978 was 46 million EUA. ECSC loans of about 300 million EUA, on commercial terms, were made available for capital investments. The only support scheme in operation at Community level is for Community production of coking coal. A proposal(1) has already been made for a new scheme to replace the present one. The scope would be enlarged, and the financial burden reallocated.

71. The Commission has proposed a series of measures to encourage coal use and production, and to create solidarity, through equal advantage, amongst the Community's coal producers and coal consumers. The measures cover aid for the construction of new coal-burning power stations(2), subsidies for intra-Community coal trade(3) to provide new outlets for otherwise uncompetitive Community coal and Community aid for the financing of cyclical coal stocks(4). None of these proposals has yet been accepted by the Council.

72. The Community's aid to demonstration projects for coal gasification and liquefaction is described in para. 46. Work now for the longer term on these two technologies is essential if their great potential is to be fully realised when it is needed.

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(1) COM(78)516 final: "Draft decision concerning coal and coke for the iron and steel industry in the Community".
(2) COM(76)648 final/2: "Proposal on Community financial measures to promote the use of coal for electricity generation".
(3) COM(78)364 final: "Proposal for a Community aid system for intra-Community trade in power station coal".
(4) COM(77)77 final: "Proposal concerning Community aid for financing cyclical stocks of hard coal, coke and patent fuel".

Oil

73. The Commission's view of the short and medium term oil situation is given in paragraphs 1-6 above. The stability of world oil supplies depends on a variety of external political and economic factors. From now on, there is so little flexibility in the Community's oil supply pattern that a significant and unfavourable development of production policy in any of the major producer countries would rapidly bring supply and demand into imbalance.

74. However, the Community is not without its own resources of oil; production in the Community was 63 m tonnes in 1978, or 12% of demand. 85% of this production was by the UK, which estimates its total possible reserves at up to 4,500 million tonnes. UK production could peak at between 100-150 million tonnes in the 1980s; even at this level it will cover only 20-25% of Community demand. Hydrocarbon production in the territory of member states or in waters under their jurisdiction comes under regulation of the coastal state concerned, to whom the fiscal benefits from production accrue. Matters such as the rate and destination of production are therefore not subject to Community control, except in so far as general provisions of the Treaty apply. In the case of the UK, 46% of its oil production in 1978 was exported, of which about half came to other EEC countries.

Policies and measures

75. For the longer term, the main aims of policy must be: (i) to diversify the Community's sources of crude oil imports and to improve security by building good relations with existing suppliers; (ii) to increase exploration and production in the Community - so that the decline in Community production by 1990 now forecast may be avoided; (iii) to encourage exploration and production in new oil areas of the world; and (iv) to confine the growth in oil use and to substitute other fuels, as described in earlier paragraphs.

76. The Community's general policy of 1974 to reduce its dependence on imported oil has been given greater urgency and precision by the commitment at the Strasbourg meeting of the European Council in June to limit oil imports between 1980 and 1985 at or below their 1978 level. This was endorsed by parallel action by the other participants in the Tokyo Summit to limit their oil imports. The Commission is now working on detailed proposals for the allocation of the import target amongst all member States, including those who were not present at Tokyo.

77. Much Community legislation has already been enacted for the oil sector. A directive of July 1973 requires all member states to ensure that they are able and have the necessary powers to draw on and manage oil stocks (with Community coordination) to restrict oil consumption, to allocate supplies and to regulate oil prices. Community legislation also obliges member states to maintain a minimum of 90 days' stock of oil or oil products, and provides for the mandatory reduction of consumption in an oil supply crisis and for the reallocation of available supplies on a Community basis. The administrative machinery for these contingencies has been set up in such a way as to be compatible with the parallel IEA machinery.

78. Much of the Commission's work in response to the oil crisis has been to increase knowledge of the nature of oil transactions in the EEC. This problem of market transparency is not new; member states are already required to report on the prices and quantities of crude oil imports and of oil products in the Community. There has been long-standing concern with the sometimes misleadingly high or low price quotations on the Rotterdam spot market. The Commission carried out a first "check run" on Rotterdam quotations in 1978; it has now started a second "check run", this time including the Genoan quotations for the Mediterranean trade.

79. Since early in 1979, the Commission has been receiving information on consumer prices for oil products on a weekly basis. An abstract of this is now being published weekly. Following the decision of the Strasbourg European Council the Community has already agreed a framework regulation setting up a register of all oil transactions with the Community. The register will detail (with safeguards for commercial confidentiality) types of oil, quantity, price, special conditions of purchase, etc. This initiative was backed up by other participants at the Tokyo summit, and they will enact similar measures. Detailed Community legislation implementing this system will be introduced as soon as possible. The Commission is also studying proposals for a system of quotations for long-term contracts for oil product supplies, for a system for the reporting of the details of unloading documents for oil cargoes, and for the establishment of an oil exchange.

80. As part of the attempt to open up the Community's own hydrocarbon resources, the Commission administers a scheme of Community financial aid for the development of new technology for hydrocarbon production. This started in 1974 and has been very successful; the fifth round has been concluded and the sixth will open soon. Budget requirements between 1974 and 1979 have totalled 183m. EUA. In addition, the Community has just agreed to give financial aid to preliminary exploration for hydrocarbons in offshore Greenland; it is possible that the scheme may be extended.

Gas

81. The Community has commercially recoverable reserves of gas estimated at 3.2 10^{12} m^3 (4.5% of the world total). 53% of these are in the Netherlands, and 27% in the UK part of the Continental shelf. Production in 1978 was 135 m toe, 14% of the Community's energy consumption. However, production in the Netherlands will reach a peak next year, and UK production is expected to peak in 1985 or shortly afterwards. If gas is to hold its present share of energy consumption (17%) large increases in gas imports are necessary; by 1985, imports are expected to have about trebled from their 1978 level, and almost quadrupled by 1990. Contracts for these quantities have already been concluded; the Community's gas supplies therefore seem assured until 1990 at least, provided that existing contracts are implemented.

82. Even larger supplies could be available if additional commercial reserves are found in Europe, if import contracts under negotiation are successfully concluded, if conditions of supply and price bring more natural gas outside Europe on to the market for export, and if recovery from small reserves in the North Sea is made economically possible. In the longer term, the gasification of coal could make a significant contribution to supplies. In all, the Commission considers that Community supplies in 1990 could be 30 m toe more than forecast by member states.

83. Gas production, distribution and marketing is the concern of a large number of companies throughout the Community, some large, some small, in both the private and public sectors. While the industry's record has been good, and the prospects up to 1990 seem satisfactory, the Community wants to promote a longer-term attitude towards the role of the industry based on expansion, rationalization and coordination between grids and the maximization of economically and politically sound import opportunities. To avoid the decline in domestic production after 1985, it is essential that exploration be increased now, that existing reserves be recovered wherever economically and technically possible, and that gas prices be put on a realistic footing.

84. The Commission will be presenting early next year a paper on the natural gas situation in the Community, with policy recommendations. A separate paper with proposals on gas pricing policy will go to the Council at the end of 1979.

International relations

85. The threat to world peace posed by competition for energy supplies can only be removed by united efforts to overcome difficulties affecting all countries. For the Community, the establishment of good relations with overseas suppliers is also an important way of increasing the security of supplies. But international relations also include cooperation and consultation with other industrialised countries on common energy problems, and attempts to work with the developing countries so that their growing energy problems may be solved to mutual advantage.

Cooperation with non-oil developing countries

86. The non-oil developing countries have been hard hit by rising oil costs, which have added to their already large debt burden and have retarded their development plans. Yet their energy demands will grow disproportionately fast, and it is important that they exploit their own resources to the full and use energy efficiently.

87. The Commission proposed in 1978 a programme for helping developing countries, consisting of specialist advice in drawing up inventories of energy resources and requirements, technical and financial assistance on projects and training facilities. Any Community initiative which is made must complement rather than duplicate existing measures and institutions, such as the FED, the European Investment Bank, the World Bank and the United Nations. The Commission spent 110 million EUA on energy

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projects in the ACP countries, under the Lomé Convention, and expenditure will continue under the new Convention which will take its place. The Commission supports the moves being made by the United Nations to promote the use of new energy sources in developing countries. The Commission held a successful conference earlier this year on "Solar energy for development". Eighty countries, most developing countries, were represented. The Community is engaged in bilatera energy assistance (training, aid for exploration and new energy sources) in Ecuador with OLADE (the Latin American Organization for Energy Development), and in Turkey and Tunisia.

Relations with energy producers

88. Paragraph 60 above refers to the negotiations and discussions in hand or anticipated with the Community's main suppliers of nuclear fuel. Relations with the oil producers exist at many levels. Recently the Community has established contacts with OPEC and OAPEC. The Commission wants to increase inderstanding of the consumers' and producers' oil and related economic problems so that policy making on both sides can be better informed and more constructive. Contacts which have taken place have been informal and confined to technical and longer-term economic and energy prospects; they have not touched on questions of oil price and production levels. The Commission hopes that these useful beginnings will be developed to the benefit of all concerned. Talks between the Community countries and the Arab Gulf States have also been proposed.

Cooperation with industrialised countries

89. The main forum for cooperation with other industrialised consumer countries on energy matters is the International Energy Agency, in whose work the Commission participates. The focus on energy at the Tokyo Summit and the commitments made there by all countries to work out parallel and equivalent policies in certain fields, and to monitor progress, has made this cooperation all the more important. Unfortunately, the process is complicated by the fact that one Member State does not belong to the IEA and the Commission hopes that this institutional difficulty may be solved - it also necessitated special arrangements for emergency measures in an oil crisis.

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Other initiatives

90. The Commission is considering with interest the proposal to broaden discussions on energy with the Eastern European Countries within the ECE.

IV. CONCLUSIONS

91. The Community remains dangerously dependent on external energy supplies, particularly oil. Energy supply difficulties could become a permanent constraint on economic growth unless greater efforts are made to increase domestic production from all conventional and new sources, to improve the efficiency of energy use and as far as possible to replace oil by alternative fuels. The likely limitations on oil supplies mean that the Community must increase the capacity to consume coal, especially in power stations, and the availability of nuclear power and the collaboration and mutual understanding between the Community, its overseas energy suppliers, the non-oil developing countries and the other industrialised nations are essential to a solution of the world energy problem.

92. More specifically, the following should be seen as the Community's main policy objectives:

(i) Short-term

The stabilization and increased transparency of the European oil market, the minimization of oil consumption beyond the 500 m tonne limit for 1979 by means of the necessary oil saving measures.

(ii) Longer-term

Oil

Improved relations with producer countries; diversification of external supplies; increased exploration in the Community to prevent a production decline after 1990; continued oil saving and substitution; restriction of oil to specialised uses; limitation of imports to 470 m tonnes up to 1990.

Coal

Increased coal consumption and production ; commercialization of coal gasification and liquefaction techniques.

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Electricity and nuclear

Avoidance of further slippage in nuclear construction programmes so that capacity in 1990 be as near national forecasts as possible; maximization of share of coal and nuclear in electricity generation; agreement on Community policy for reprocessing, the fast breeder reactor and waste disposal; agreement on policy concerning Chapter VI of the Euratom Treaty; satisfactory outcomes of negotiations with Australia and Canada and of discussions with USA on nuclear fuel supplies; reduction of external dependence for nuclear fuels.

General

Agreement on new 1990 objectives; progress towards an economic and transparent energy pricing system throughout the Community; availability of adequate commercial, corporate, governmental and Community finance for energy investment, including demonstration projects.

Energy saving

Achievement of 0.8 and 0.7 energy growth/economic growth ratios by 1985 and 1990 respectively; implementation throughout the Community of all economic best-practice techniques for energy saving; research into and application of new energy saving technology.

Research and new sources

Pursuit of research, development and demonstration of new sources so that they contribute on an increasingly significant scale.

External

Improvement of relations and cooperation with overseas energy suppliers, other industrialised oil consuming countries and the non-oil developing countries.

COMMUNITY ENERGY BALANCES 1973 - 1990

	1973		1978		1985				1990	
					Objectives (1974)		Member States' forecasts (1978)			
	Mtoe	%	Mtoe	%	Mtoe	%	Mtoe	%	Mtoe	%
Coal										
Production	200	21	174	18	210	14	187	15	194	14
Net imports	19	2	26	3	40	3	43	3	57	4
Consumption	222	23	204	21	250	17	228	18	251	18
Oil										
Production	12	1	63	4	180	12	115-165	11	87-147	8
Net imports	589	61	472	44	515	36	462-522	41	497-572	38
Consumption	593	61	535	55	695	44	625-635	51	644-659	44
Gas										
Production	114	12	135	14	175	12	138-148	12	115-130	9
Net imports	3	-	31	3	95	7	82	7	121	9
Consumption	118	12	164	15	270	18	220-230	18	236-251	19
Nuclear										
Production	14	2	29	3	190	13	111	9	204	15
Net imports	-		-		-		-		-	
Consumption	14	2	29	3	190	13	111	9	204	15
Others										
Production	25	3	32	3	45	3	35	3	39	3
Net imports	2	-	3	-	-	-	-	-	4	-
Consumption	27	3	35	4	45	3	38	3	43	3
TOTAL CONSUMPTION	973	100	967	100	1450	100	1232	100	1393	100

Source : Statistics of the Commission of the EEC (provisional for 1978), programmes of the Member States

MARGINS OF UNCERTAINTY AND FLEXIBILITY

The table below shows the Commission's assessments of the possible variations in outturn from the forecasts for 1985 and 1990 made by member States in 1978 : an outturn better than forecast is shown as '+', an outturn worse as '-'. The total area of uncertainty is the range between the total of negative and the total of positive outturns.

mtoe

	1985	1990
Possible additional (+) or reduced (-) supplies :		
Solid fuels	-18/+2	-17/-37
Oil	0	+15
Natural gas	+30	+30
Nuclear energy	-10	-30
Additional energy saving	+20	+100
Total negative outturns	-28	-47/-67
Total positive outturns	+52	+145
Total area of uncertainty	80	212

ENERGY INVESTMENT AIDS BY COMMUNITY INSTITUTIONS

Source of finance	Type of finance	Amount m.EUA Total	p.a.	Duration or limit
Art.70 (Euratom	Grants	16	c.5	1977-1979
Euratom	Loans	1500	-	First tranche of 500 m. almost exhausted; second tranche of 1000 m.EUA now proposed.
ECSC	Loans	-	c.300	open
EIB	Loans and guarantees	-	c.400	open
New Community financial facility	Loans and guarantees	300	-	Overall limit -including non-energy prospects) of 1000 m.EUA
Hydrocarbon exploration	Grants	3.5	-	Greenland project only
Hydrocarbon technology	Grants*	163	(20-50)	Since 1974 reviewed annually
Demonstration Projects	Grants* a)new sources	95	-	1978-1983
	b)conservation	55	-	1978-1982
LOME I	Grants	110	-	to be replaced by LOME II
ERDF	Grants	37	-	open

* Grants repayable in specified circumstances

Annex IV

List of Community Guidelines and Specific Measures already adopted in the field of Energy Saving

A. GUIDELINES

Conclusions of the meeting of Heads of State and of Government of the European Community, Paris 12-13 March 1979 and Strasbourg 21 and 22 June 1979

Conclusions of the meeting of Heads of State and of Government of the European Community, Bremen 6 and 7 July 1978

O.J. C 289/1 9.12.1975
Council Resolution concerning the fixing of a short-term objective for energy savings in 1976/7

O.J. C 153/9 9.7.1975
Council Resolution concerning the fixing of a short-term objective for reducing oil consumption

O.J. C 153/5 9.7.1975
Council Resolution of 17 December 1974 on a Community action programme on the rational utilization of energy

B. SPECIFIC MEASURES

O.J. L 145 13.6.1979
Council Directive of 14 May 1979 on the indication by labelling of the energy consumption of household appliances

O.J. L 145 13.6.1979
Council Directive of 14 May 1979 applying to electric ovens directive 79/430/EEC on the indication by labelling of the energy consumption of household appliances

O.J. L 37, 79/167/ECSC, EEC, Euratom
Council Recommendation of 5 February 1979, on the reduction of energy requirements for buildings in the Community

O.J. L 158
Council Regulation (EEC) No 1303/78 of June 1978 on the granting of financial support for demonstration projects in the field of energy saving

O.J. L 52, 78/170/EEC
Council Directive of 13 February 1978 on the performance of heat generators for space heating and the production of hot water in new or existing non-industrial buildings and on the insulation of heat and domestic hot water distribution in new non-industrial buildings

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O.J. L 295, 77/712/EEC
Council Recommendation of 25 October 1977 on the regulating of space heating, the production of domestic hot water and the metering of heat in new buildings

O.J. L 295, 77/713/EEC
Council Recommendation of 25 October 1977 on the rational use of energy in industrial undertakings

O.J. L 295, 77/714/EEC
Council Recommendation of 25 October 1977 on the creation in the Member States of advisory bodies or committees to promote combined heat and power production and the exploitation of residual heat

O.J. L 140, 76/492/EEC
Council Recommendation of May 1976 on the rational use of energy by promoting the thermal insulation of buildings

O.J. L 140, 76/493/EEC
Council Recommendation of 4 May 1976 on the rational use of energy in the heating systems of existing buildings

O.J. L 140, 76/494/EEC
Council Recommendation of May 1976 on the rational use, through better habits, of energy consumed by road vehicles

O.J. L 140, 76/495/EEC
Council Recommendation of 4 May 1976 on the rational use of energy in urban passenger transport

O.J. L 140, 76/496/EEC
Council Recommendation of 4 May 1976 on the rational use of energy for electrical household appliances

O.J. L 231/1, 75/510/EEC
Council Decision of 22 August 1975 adopting an energy research and development programme