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** The COMMUNITY'S CRUDE PETROLEUM REQUIREMENTS for 1985 can be estimated at 880 million tons. These needs, which totalled 415 million tons in 1970, will thus double in fifteen years. The Community will continue to depend on imports of hydrocarbons for about 65% of its energy supplies.

The European Commission has repeatedly stressed the need to map out a common petroleum policy in order to guarantee the security of supplies. In this context, it has compiled a document on the MEDIUM-TERM FORECASTS AND GUIDELINES FOR THE COMMUNITY PETROLEUM SECTOR, which should enable a Community course of action to be planned for the future. A brief summary of this document can be seen in ANNEX 1.

** Addressing the British Nuclear Energy Society, Mr Spinelli, Member of the European Commission with special responsibility for industrial affairs and research, recapitulated the AIMS OF THE EUROPEAN COMMISSION IN THE FIELD OF NUCLEAR ENERGY:

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The information and articles published in this Bulletin concern European scientific cooperation and industrial development in Europe. Hence they are not simply confined to reports on the decisions or views of the Commission of the European Communities, but cover the whole field of questions discussed in the different circles concerned.

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MEDIUM-TERM FORECASTS AND GUIDELINES FOR THE COMMUNITY PETROLEUM SECTOR

Community crude requirements in 1985 can be estimated at 880 million tons. These needs, which in 1970 amounted to 415 million tons, will thus double in fifteen years, and during this period petroleum will continue to account for almost 65% of the total energy consumption in the Community. To all intents and purposes, there will be no possible substitute because of the inadequacy of alternative resources or the lack of flexibility in the production of other forms of energy.

Nevertheless, by acting in time, it would be possible to reduce the Community's dependence on oil slightly by means of increased imports of coal or natural gas and by speeding up the development of nuclear energy. The margin thus available would be 40 million tons in 1980, and 95 million tons in 1985. In order to achieve this, however, the Member States would have to set precise policy guidelines and an effort would have to be made by the other energy industries.

The European Commission has repeatedly stressed the need to map out a common petroleum policy. With this end in view and in accordance with what it foreshadowed in its memorandum on "First Guidelines for a Community Energy Policy" (see IRT No. 109), it has compiled a document dealing with the medium-term forecasts and guidelines for the petroleum sector in the Community. A future course of action for the Community should emerge from this analysis of the petroleum market facts and trends - a course aimed at protecting the interests of the consumers.

Movements on the world market

Like the Community's oil requirements, those of all the great economic powers will increase and there is a general expectation that world consumption will double over the present decade. World needs, which

amounted to an estimated 2,300 million tons in 1970, could reach 5,500 million tons in 1985. The proportion of this accounted for by the Community of the Six would drop from 17.6% in 1970 to 14.5 - 16% in 1985. The policy developed by the other large consumer nations could therefore also affect the conditions on the European market, so that efforts would have to be made to secure a better coordination of the supply policies of the large consumer nations.

In 1971, the world's proven reserves were estimated at 84,000 million tons, which represents 36 years' consumption at present levels and 20 years' supplies allowing for the growth of demand. Large-scale exploration for and exploitation of new resources will thus be necessary. In terms of investments, this effort will be out of all proportion to those of the last few years (notably as a result of the higher cost of the operating techniques to be employed). It is estimated that between now and 1980 the oil industry will require more than 500,000 million dollars in order to develop these activities, of which 350,000 million will be absorbed by investment alone.

A supply policy

The Community will be able to improve the security of its energy supplies by greater diversification and flexibility, additional stockpiling, the development of production in new areas and increased use of alternative forms of energy or the rationalization of energy consumption. The solution to supply problems will also depend upon the future relations between the petroleum exporting countries, the oil companies and the importing countries.

** An information seminar on the FIGHT AGAINST DUST IN MINES, organized by the Commission of the European Communities, will be held in Luxembourg on 11-13 October. The papers submitted will for the most part be based on the work sponsored by the ECSC as part of Community research programmes. During this seminar various techniques the use of which has helped to reduce the incidence of dust in mines will be reviewed. Large sections will also be devoted to the measurement of dust, the study of its characteristics, the epidemiology of pneumoconiosis and the special problems relating to hygiene in iron mines. The likely participants are from widely differing walks of life, since the problems of industrial hygiene, and in particular the fight against dust, constitute a major preoccupation in the industrial world. Among the items of which notice has been given is collaboration on a broad basis with the British mining industry.

** SCIENTIFIC AND TECHNICAL REPORTS recently published by the Commission of the European Communities include the following:

- Results of environmental radioactivity measurements in the Community countries in 1970 - air - fallout - water.
  (No. EUR 4767 d/f/i/n - 76 pages - 100 BF - available in French, German, Dutch and Italian)

- Critical study of the choice of the maximum permissible concentration of radium-226 in water, in the presence of sulphate ions.
  (No. EUR 4768 f - 60 pages 85 BF - available in French)

- Environmental radioactivity - Ispra 1970.
  (No. EUR 4805 e - 46 pages - 60 BF - available in English)

These reports can be obtained from the Sales Office for Official Publications of the European Communities, PO Box 1003, Luxembourg 1.

resolution calls upon the European Commission to use its influence with the governments of the Member States to obtain the adoption of a COMMON ENERGY POLICY which would ensure the maintenance of coal production at as high a level as possible in order to lessen the political risk inherent in the Community's dependence on fuel oils imported from non-member countries.

** The Commission has made several bilateral contacts with the Member States in order to gain a consensus on what the ACTIVITIES OF THE JOINT RESEARCH CENTRE (JRC) should be under a multiannual programme. Following these contacts, a proposal for a programme may be submitted to the General Advisory Committee of the JRC for an opinion before 10 October. This should enable the Commission to put definitive programme proposals to the Council of Ministers of the Community before 10 November 1972. The Commission will then pass on to the Council and the European Parliament the budgetary data relating to these proposals: the necessary decisions can thus be taken, with due regard for the budgetary powers of the European Parliament, before the end of the year and the JRC will thus be able to have a multiannual programme as of 1 January 1973.

** The decision to create a EUROPEAN MEDIUM-TERM WEATHER FORECASTING CENTRE could perhaps be taken at the next meeting of the Committee of Senior Officials on Scientific and Technical Research (COST) due to be held on 17-18 October 1972. There are still some problems to be settled, particularly as regards the financial regulation and the draft service regulations for this centre's personnel. A fact-finding committee will examine on the spot the places put forward as a possible site for this centre (in Belgium: Brussels; in Denmark: Horsholm; in Germany: Wiesbaden; in the Netherlands: Maastricht-Heerlen; in the UK: Reading). The Commission of the European Communities, for its part, proposes Ispra.

condition that they can be released, with due regard to the budgetary prerogatives of the European Parliament, as soon as the Council of Ministers reaches a decision on the multiannual research programme and its expression in budgetary terms.

** A proposal for a directive on the extension of the range of application of the REDUCED RATE OF TAX ON CAPITAL FORMATION in favour of company mergers has been laid before the Council of Ministers by the European Commission. An initial directive on the harmonization of the laws relating to the tax on capital formation as adopted on 17 July 1969 provides with regard to the indirect taxes affecting capital accretions, that the rate of the tax on capital formation is to lie between 1 and 2%, this rate being lowered by 50% or more in the case of such operations as company mergers. The aim of the new proposal is to afford the same reduced rate of tax on capital formation for certain company reorganization operations which can, at an economic level, be treated in the same way as the merger operations referred to in the initial directive. These operations involve the subscription to a company in the process of formation or in a company already in existence of all or not less than 75% of the share capital of another company, payment for such subscription being made by the transfer of shares from the capital of the company acquiring the share capital. Nevertheless, these operations should only benefit from the reduced rate of tax on capital formation if they are carried out with the aim of reorganizing two or more companies.

** Although their production capacity has declined by a third since 1957, the COAL MINES still represent an important element in security of energy supplies, with an output of over 150 million tons in the Community and about 140 million tons in the UK. This point was raised by the ECSC Consultative Committee, which in a

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1. To promote the creation of a viable European nuclear industry;
2. To help the electricity authorities to open up the market and harmonize their orders and purchases in order to enable the European nuclear industry to have access to a market as wide as that of the United States;
3. To afford the reactor constructors the support of a European fuel industry which is sufficiently independent and strong to guarantee secure, low-cost supplies of fuel and also a competitive position;
4. To back up this policy with research projects and help the Member States to cooperate in order to rationalize their research efforts in such a way as to put the limited public appropriations to economic use.

The United Kingdom has an important part to play in the achievement of these aims, concluded Mr Spinelli. The gist of his address will be found in ANNEX 2.

** The text of the agreement between the Commission of the European Communities and the IAEA on the VERIFICATION OF THE EURATOM SAFEGUARDS SYSTEM FOR FISSILE MATERIALS under the Nuclear Non-Proliferation Treaty has just been approved by the Council of Ministers of the Community. For further details see ANNEX 3.

** THE RESEARCH AND INVESTMENT BUDGET of the European Community (former Euratom budget) was examined by the Council of Ministers of the Community on 26 September as part of the European Community budget. A total of 22.3 million u.a. has been allotted in respect of programmes already decided upon, notably under the multiannual programmes on "Fusion" and "Biology" (see IRT No. 104). In addition, 63 million u.a. have been provisionally entered, on

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THE AIMS OF THE COMMUNITY IN THE FIELD OF NUCLEAR ENERGY

(as set out in a speech delivered to the British Nuclear Energy Society by Mr Spinelli, Member of the European Commission with special responsibility for industrial affairs and research)

The development of the nuclear industry

The prime objective of the European nuclear policy must be the development of viable transnational nuclear undertakings which are capable of coping successfully with competition from non-member countries on the reactor and nuclear fuel markets.

Britain has been one of the pioneers of the nuclear industry in Europe and the enlargement of the Community now offers the opportunity for pooling British skills and experience with those acquired on the Continent in order that this may lead to industrial success.

In recent years a large number of joint projects have been launched in Europe with the aim of building up an effective industrial potential. However, if the Community really wants to concentrate the enormous sums of public money devoted to the nuclear industry in order to attain the competitive scale and capacity needed not only for the development of reactors but also for their construction and introduction on to the market, it must set up a very small number of transnational, industrial consortia.

The European Commission tended towards the idea of forming at least two large European nuclear companies, both including an important British stake. It felt that in this way the customers would have

the choice between competing European technologies, while the industry would benefit from economies of scale. Since these companies would not be identified with nation states, competition on the European market would not be subject to distortions deriving from political motivations and it would be easier to liberalize public contracts.

Although these considerations still hold good, the European Commission appreciates the reasons which have prompted the British Government to encourage the formation of a single industrial grouping in the United Kingdom. Nevertheless, it is important to bear in mind the necessity of going further and setting up at least one powerful European group, based on existing cooperative ties.

A great step forward has already been taken in the field of fast reactors. At the time when the European States entered this extremely important and expensive new area of development, the Commission deeply regretted the fact that there were three competing and partly overlapping programmes. Nevertheless, the budding relations between The Nuclear Power Group, the Kraftwerk Union and their partners are of crucial importance for the future and could form the nucleus of a truly European grouping. It is desirable that the new British nuclear concern should consolidate these relations so that when the fast reactor becomes a commercial proposition it will benefit from the impact of Europe's entire technical and industrial potential, both inside and outside Europe.

Another vital sector demanding a further step forwards along the road towards industrial cooperation is that of the high-temperature gas reactor (HTR). It is clearly time to plan the construction of

Organization of the market

At market level, the Community must secure gradual integration of the national markets in order to ensure more efficient use of refining and distribution capacity in a wider economic framework, together with greater stability of consumer supply conditions. In particular, it will be necessary to aim at coordinating the measures taken by the Member States as regards prices, taxation, research incentives, port infrastructures, stockpiling, investments and refining and environmental protection standards for the petroleum sector.

The industrial structure

Finally, the Community will have to ensure that the oil industry is in a sound position to achieve the necessary expansion of its investments in the face of competition and under the new conditions imposed upon it at the exploration, production and marketing stages.

Oil surpluses and deficits
in the various regions of the world (assumed) during 1970-80

millions of tons

	1970 Surplus (+) or deficit (-)	1980 Surplus (+) or deficit (-)
Western Europe	-647	-1,055
of which: Community,	-401	-625
Other regions	-243	-430
North America	-181	-390
Japan	-191	-435
Latin America	+151	+100
Africa	+215	+400
Eastern countries	+60	-50
Other regions	—	-100
Middle East	+590	+1,530

one or more 1000 MWe reactors. However, a long-term European view must be taken of this. The Commission in no way seeks to deprive European industry of the advantages of American knowhow, especially if the major customers wish to avail themselves of it. Here, however, as in other fields, it would be a disaster if special bilateral agreements with American groups were to preclude European companies from cooperating among themselves, thus reducing their chances of finding markets outside Europe, and if, for reasons of short-term expediency, the technological capacity of the United Kingdom and Europe (in large measure due to the success of the Dragon project) was thus underestimated.

The time is thus ripe for setting up a powerful industrial group linking the major companies which have acquired knowhow in the HTR field, to tender to the electricity utilities (including the CEGB), to respond to the initiative taken by Euro-HKG and to form a single European industrial partner for the United States.

It is not for the Commission to decide alone on the setting-up of such a group. If required it can, however, offer its services as a mediator. Furthermore, the Commission feels that its proposal concerning the granting of financial aid to the Community for pre-commercial reactors would prove particularly suited to the construction of a 1000 MWe HTR.

The Joint Research Centre

After its early years of hope and success, Euratom experienced hard times. Its very existence was threatened at the political level. The Euratom programme acted less and less as a link between the various nuclear programmes undertaken by the Member States as

these went their own way, and thus it became more and more of a frail competitor. In recent years the Member States have not even been able to agree on any kind of programme, whether long or medium-term.

However, if the depressing consequences of this situation can be blotted out, a reconstituted Euratom will be able to contribute effectively towards the success of the nuclear industry in the enlarged Community. Britain will soon be joining the Euratom thermonuclear fusion programme which has proved fruitful and has made possible effective coordination of the research activities of the Member States in this area. Over the next ten years, the integration of these research activities will become more important as costs rise and fusion-reactor technology advances.

The JRC, like all the national research centres, has suffered from the decline in nuclear research requirements and the take-over by industry of reactor development. The Commission has proposed a shake-out at the JRC (see IRT Nos. 79 and 148), a stop to reactor development and the adoption of new programmes in certain fields, such as the environment and materials research.

The JRC will not abandon all research in the nuclear field, but "services rendered" will become more important, e.g., the work on reactor safety for the electricity utilities and on drawing up Community standards. It will also be necessary to adopt a common stance on new requirements in the environmental field, especially with regard to the control and elimination of radioactive waste, or again, to the siting and design of nuclear power plants which do not harm the environment of an overpopulated Europe.

AGREEMENT ON THE VERIFICATION OF THE EURATOM SAFEGUARDS SYSTEM FOR FISSILE MATERIALS UNDER THE NUCLEAR NON-PROLIFERATION TREATY

The text of the agreement between the Commission of the European Communities and the IAEA on the verification of the Euratom safeguards system for fissile materials under the Nuclear Non-Proliferation Treaty has been approved by the Council of Ministers of the Community.

It will be remembered that the Non-Proliferation Treaty (NPT) drawn up under the aegis of the United Nations on the initiative of the United States, the United Kingdom and the USSR is aimed at avoiding the proliferation of nuclear weapons.

Under the NPT, those States which exploded an atomic bomb before 1 January 1967 are considered as "nuclear-weapon States". The Treaty provides in particular that the nuclear-weapon States must undertake not to transfer nuclear weapons to any other State, either directly or indirectly. In addition, each State signing the NPT undertakes not to supply any non-nuclear-weapon State with special fissile source materials if these are not subject to a system of safeguards. These safeguards are exercised by the IAEA. Pursuant to the Treaty, the non-nuclear-weapon States must thus conclude a safeguards agreement with the Agency for supervision of the obligations undertaken.

The European Community is currently the only institution which has an international body for inspection and control of fissile materials the effectiveness of which is universally recognized. It would have been illogical for the Community countries to be subject to a

double set of safeguards. When they signed the NPT, therefore, the five Member States which are non-nuclear-weapon States (France - an atomic power - has not signed the NPT) subjected on a proposal from the European Commission, the ratification of the Treaty to a satisfactory agreement on the verification by the IAEA of the safeguards practised by the Community.

The European Commission, on the authority of the Council of Ministers, entered into negotiations with the IAEA on this subject in November 1971. These negotiations were completed in July 1972 and led to the agreement on the verification of the Euratom safeguards, the text of which has recently been approved by the Council of Ministers.

The agreement states that the Community on the one hand and the IAEA on the other, being organizations with safeguarding powers (and not, as in the case of the agreement concluded between the IAEA and the individual States, a party exercising and a party subjected to safeguards) will apply their safeguards on the agreed conditions in order to ensure that source materials and special fissile substances are not diverted to the manufacture of nuclear weapons or other explosive nuclear devices.

The agreement is basically angled towards enabling the Community and the IAEA to carry out their inherent responsibilities to the full while avoiding, through suitable cooperative machinery, any duplication of the Community's safeguarding activities by the IAEA, thus reducing to a minimum the constraints imposed upon the operators of nuclear installations.

Nuclear fuel supplies

A further important task of the Community will be to assist and support the activities performed in the field of nuclear fuels. With regard to fuel enrichment, the Commission has proposed the formation of a joint undertaking, through which the industry and the producers would be prompted to compare the advantages and drawbacks of existing processes from economic, technological and political points of view, and then to build a joint enrichment facility to satisfy the needs of the Community.

TO SUM UP: the aims of the European Commission with regard to nuclear energy are as follows:

- To sponsor the setting-up of a viable European nuclear industry;
- To help the appropriate electricity authorities to open up the market and coordinate their orders and purchases in such a way as to afford the European nuclear industry access to a market as large as that in the United States;
- To back up the reactor constructors with the support of a European fuel industry sufficiently independent and strong so as to ensure secure and economic fuel supplies and a competitive position;
- To underpin this policy with research projects and help the Member States to cooperate and rationalize their research activities in order to save limited public funds.

These aims must be achieved within the broader scope of the energy, technology and environmental policies, which it is hoped will receive a fresh impetus from the enlarged Community.

In practice, the Community will collect information on the technical features of the installations, pass it on to the IAEA and proceed to examine it in cooperation with the Agency.

In order to take account of the forthcoming accession of new States to the Community an "accession clause" has been stipulated, which makes the agreements also applicable to these new Member States as soon as the Community is ready to assume its safeguarding responsibilities towards them.

The signing of the agreement will take place when the technical annexes (facility attachment), the fundamental purpose of which is to determine the particular safeguarding procedures for each concrete case, have been amended to cover the major installations which are subject to the agreement.