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- ** Energy plays a central part in the developed societies and, in particular, in the Community, where energy consumption has practically trebled in the last twenty years. Hence the implementation of a COMMON ENERGY POLICY is CLOSELY LINKED WITH COMMUNITY ACTION IN OTHER SECTORS. A short memorandum on the relationship of the common energy policy to the Community's policy in other sectors will be found in ANNEX 1.
- ** In spite of the efforts made by the Community to reduce the fundamental differences between its regional structures, little progress has been made towards a harmonious regional balance: this is the conclusion that emerges from the 1971 "Analytical Survey of REGIONAL DEVELOPMENT IN THE COMMUNITY" recently published by the Commission of the European Communities. This survey gives a detailed view of the regional situation and trends in the Community countries. ANNEX 2 contains a short review of the GENERAL TREND OF EMPLOYMENT in the Community from 1950 to 1968.

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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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** The Commission of the European Communities has sent a first report to the Council of Ministers on the exploratory talks it has been conducting since July last with the US government with a view to improving the terms of SUPPLY OF ENRICHED URANIUM FROM THE US (see "Industry, Research and Technology" No. 99). One outcome of the discussions with the US authorities is that the latter, subject to the final approval of the US Congress, would be prepared to accept the principle of non-discrimination between Community users and other (including American) users as regards access to toll enrichment services. Furthermore, the prices and delivery dates set in the toll enrichment contracts would be the same for both European and American users.

The other major improvements to the present agreement might include:

- (a) removal of the obligation to specify the research of power projects for which the materials are intended, and inclusion of the right to stockpile;
- (b) the right for both parties, and for any duly empowered person, to enter into contracts for the supply of materials or of fuel processing and fabrication services;
- (c) greater flexibility in the procedures for prior authorization by the US of Community exports of materials of US origin;
- (d) greater flexibility in US procedures for the export of materials of European origin temporarily imported into the United States.

** The Commission of the European Communities recently published the findings of a survey which it had carried out (see "Industry, Research and Technology" Nos. 46, 81 and 90) on the AEROSPACE INDUSTRY IN THE COMMUNITY compared with those of the United Kingdom and the United States. This survey, published in the "Industry" series (1971, No. 4), comprises five volumes:

1. Aerospace research and development activities
2. The aerospace industry
3. Space activities
4. The aircraft market
5. The technological balance of payments. The aerospace industry's role in the economy. Critical summary of the survey findings.

This survey is on sale at the European Communities Official Publications Office (PO Box 1003, Luxembourg 2).

** Now that negotiations are in progress between the European Community and the International Atomic Energy Agency (IAEA) with the object of concluding an AGREEMENT ON THE EXAMINATION OF THE EURATOM FISSILE MATERIALS SAFEGUARDS SYSTEM, in the context of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), it is timely to remember that although France, a nuclear power, is not subject to the inspection provisions laid down by the NPT, the five other Community countries, with an installed capacity of about 1,680 MWe, form the biggest partner of the IAEA throughout the world. Moreover, the outcome of the negotiations will not apply merely to the five Community countries that have no nuclear weapons; the agreement, when concluded, will be equally implemented by Denmark, Ireland and Norway after they join the Community (but not by the United Kingdom, which is a "nuclear power").

** As a result of the favourable opinion expressed by the EUROPEAN DEVELOPMENT FUND Committee, the Commission of the European Communities has taken six new financing decisions, covering over 36 million u.a., for the benefit of projects in hand in the Associated African States and Madagascar.

The projects supported by the European Development Fund relate largely to infrastructure work. But the new Yaounde Convention particularly stressed the need for economic diversification and

industrialization in the developing countries, and the Commission has expressed its willingness to engage in a policy of cooperation that takes these needs into account. For this reason it has recently formed a department responsible for HARMONIZING THE INDUSTRIAL POLICY WITH THE POLICY OF COOPERATION IN DEVELOPMENT.

One of the department's more important tasks will be to encourage the placing of European industrial capital in the Associated African States and Madagascar, by providing potential investors with the necessary information on the opportunities offered by these countries. The system of generalized tariff preferences set up by the Community last July in favour of the developing countries (see "Industry, Research and Technology" No. 103) should likewise prompt Community firms to consider making certain technology transfers into these countries, and for this purpose some adjustment of the Community's production structures ought to be envisaged.

** At its last meeting THE COMMITTEE ON REACTOR SAFETY TECHNIQUES (CREST-ENEA), comprising experts from 13 countries and from the Commission of the European Communities, reviewed the present status of the research programme in hand or planned in the Member States. In particular it examined the compilation of an initial safety research index containing the work sheets sent in by the various countries and the Joint Research Centre's Ispra establishment. The Committee plans to hold three specialized conferences in 1972, on sodium/fuel interaction, emergency cooling for water reactors and antiseismic measures in nuclear power plant design.

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

- Meßbare Veränderungen in Bestrahlten Lebensmitteln (Measurable changes in irradiated foodstuffs)
(EUR 4617 d - 44 pages - 60 BF - available in German)
- Radioactive contamination of foodstuffs in the countries of the Community in 1969
(EUR 4667 d, f, i, n, - 66 pages - 100 BF - available in Dutch, French, German and Italian)

- HTRCP, High temperature reactor for chemical purposes (an application for the steel-making industry)

(EUR 4684 e - 76 pages - 100 BF - available in English)

- The behaviour of steels in atmospheres containing CO and H₂ and the effect of pretreatment and gaseous additives

(EUR 4691 e - 26 pages - 40 BF - available in English).

These reports can be obtained from the Sales Office for Official Publications of the European Communities, PO Box 1003, Luxembourg 2..

The Common Energy Policy and its Links
with the Community's Policies in Other Sectors

Energy plays a central part in the developed societies and particularly in the Community, where the energy consumption has virtually trebled in the last twenty years. It is of decisive importance in industrial development, both as an essential basis and as a cost factor (energy accounts on average for 8% of production costs); it requires heavy capital investment at the generating, transport, storage and transformer levels; it provides direct employment for over a million workers in the Community; it necessitates a constant research and development effort owing to the continual rise in demand and the emergence of new consumer requirements; and lastly and unfortunately, it is one of the leading sources of pollution.

Obviously, therefore, the implementation of a common energy policy (see "Industry, Research and Technology" No. 119) is directly related to the work of the Commission of the European Communities in the social, regional and industrial fields and in R&D and environmental protection.

1. Energy policy and social policy

Although the general level of employment should not fluctuate sharply in the energy field, marked changes are taking place in the relative importance of the various sectors (retrenchment in coal, preponderance of oil, progress of natural gas, growth of nuclear power) and the trend is typically towards jobs requiring higher qualifications.

The cutbacks in coal and the closing of many pits have necessitated far-reaching action to ensure the retraining of workers and redevelopment. The Community began wrestling with these problems long ago, and with the renovated Social Fund (see "Industry, Research and Technology" No. 122) it recently acquired an efficient tool with which to continue its efforts towards readaptation and redevelopment in the coal sector.

The Commission of the European Communities also intends to step up its efforts to promote the social advancement of the workers in firms in the different energy sectors, occupational training and refresher courses, and health and safety at work. It will also see to it that preventive health and safety rules are applied, not only in the mining or exploiting of energy sources, but also in the transport and utilization of the products (in this respect the solid experience acquired in the Euratom context can be turned to good account by the other sectors).

2. Energy policy and industrial policy

Energy and industry are intimately linked. Industry needs a steady supply of power at the lowest, most stable prices possible; power generation calls for substantial industrial infrastructures. This is particularly true of nuclear power, which as well as demanding the construction of new plants, which must be large to be profitable, also needs industrial firms with very special technological know-how to build and operate these plants. According to the Commission of the European Communities, these developments ought to be the business of a truly Community-scale industry, which would be best capable of providing the high technological resources and big investment capital needed in this field. Failing such a Community industry, the increasing recourse to nuclear power would not allow the member countries to reduce their dependence on others for energy, since they would then cut down their imports of petroleum products only at the cost of increasing their imports of technology and hardware.

3. Energy policy and regional policy

In time past coal was the mainstay of the prosperity of certain regions, and its rapid decline in the Community's fuel-supply arrangements has endangered their economic growth. Regional consideration (redevelopment and readaptation) have guided the Community coal policy to a large extent. It is well known that the availability of a cheap energy supply influences the siting of industrial plants. Hence the preponderance of new forms of

energy that can be carried easily by sea, river or pipeline (oil and natural gas), or which enjoy considerable latitude as regards siting (nuclear power plants), will encourage the decentralization of industry and help to level out regional inequalities if the necessary effort is made to set up the essential infrastructures. The energy policy must do its part by endeavouring to achieve a better-balanced regional distribution of energy.

4. Energy policy and research policy

The continuing growth of industrial firms, whose energy requirements are perpetually increasing, depends on a sustained research and development effort in the energy sector. The need for research is most clearly evident in the nuclear field, but it is also apparent in the sectors dealing with coal production and utilization, the oil industry (witness anti-pollution requirements) and, generally speaking, the processing and utilization of all types of energy.

All this research, and the exploitation of the results obtained, calls for ever greater funds. If the Community countries are to keep pace with the progress achieved in research elsewhere in the world, it is absolutely imperative that they coordinate their efforts and their intellectual and material resources at the European level.

Under the Coal and Steel Community (ECSC) and Euratom treaties it is, in fact, the duty of the Commission of the European Communities (a) to encourage scientific and technical research on coal and (b) to coordinate the member countries' nuclear energy research projects and supplement them with work of its own.

As to coal, the programmes aimed at the promotion of research pursue two objectives (a) improvement of mining techniques (coal-getting and road-driving, transport and automation techniques) to increase mine safety and efficiency, and (b) processing of the products (coking, sintering, new processes) to improve the coke supply situation. The Commission regularly publishes the results of research done with its assistance, and a review of the results obtained so far was published in 1970.

As regards nuclear power, in spite of the vicissitudes that beset the Community research programmes it must be noted that the level of technological development attained by the member countries' nuclear industries is the joint product of the national and Community efforts. Taken as a whole, the Community research effort in the nuclear field relates essentially to energy (reactor technology, safety).

5. Energy policy and environment policy

Energy is one of the chief sources of pollution; it is estimated that the use of fossil fuels accounts for 60-80% of atmospheric pollution. Nuclear power plants for their part are responsible, far more than conventional plants, for another harmful effect, thermal pollution, by returning hot cooling-water into the rivers and lakes where it endangers the flora and fauna. The harm done to the environment by the conversion, transportation and storage of energy must also be borne in mind.

Thus, unless efficacious measures are taken promptly, the rapid growth in the consumption of the various forms of energy, which seems likely to continue for a long time, will cause further damage to the environment.

Concern about environmental considerations may well slow down the rise in energy consumption, however. The measures and processes designed to save the natural surroundings will result in dearer energy production, conversion, transportation, storage and utilization, and this ultimately means a higher production cost, which is bound to reduce consumption, whether the increased charge be borne by the consumer or the taxpayer.

Furthermore, insofar as the environmental problem is different for the various energy sources, its solution will alter the present relationship between the characteristics of their use and will influence the structural development already mentioned.

The Commission of the European Communities is particularly aware of the environmental problem, which directly concerns the wellbeing and health of the general public. Last July it approved a document setting out the initial elements of a Community policy on the environment (see "Industry, Research and Technology" No. 109). In this document it defines a number of priority projects to which special effort must be devoted immediately, because of their urgent nature. A certain number of these projects directly concern the energy sector; they relate to:

- (a) exhaust from motor vehicles;
- (b) emissions of sulphur compounds from power stations, refineries and other plants that burn sulphur-containing fuels;
- (c) the thermal effect due to the discharge of power station cooling-water into surface waters.

The Commission of the European Communities will, in the first place, endeavour to collate the national regulations in this field, with a view to harmonizing them later on throughout the Community at the most appropriate level.

The General Trend of Employment in the European Community

Between 1950 and 1969 the number of jobs available fell in 45 out of the 100 regions of the Community, i.e., in 14 of the 38 German regions, 16 of the 20 Italian regions, nine of the 21 French regions, five of the nine Belgian regions and in Luxembourg.

These 45 regions comprise:

- (a) 31 regions where the number of non-agricultural jobs was not high enough to offset the drop in agricultural employment. The regions lie in three zones on the borders of the Community - in Western France (eight regions); in Southern and Eastern Italy (14 regions); and in the North and East of West Germany (five regions);
- (b) another group, formed by the Grand Duchy of Luxembourg, Belgian Luxembourg, Trier and Coblenz, lies in the geographical centre of the Community but away from the big industrial and commercial centres;
- (c) 14 regions where a cutback in secondary and/or tertiary employment has accompanied the decline in the primary sector. Most of these fall into two geographical groups, the first situated in the north-east of Germany, and the second centred on the coal basin of Northern France and Southern Belgium.

On the other hand, a study of the total Community job distribution among the 20 large geographical zones, at the reference dates 1950, 1960 and 1968, shows that some zones substantially increased their share of Community employment:

Paris region, from 5.16 to 5.44 to 5.83%
Netherlands east, from 0.98 to 0.99 to 1.08%
Netherlands west, from 2.50 to 2.63 to 2.88%
Germany west, from 8.29 to 9.72 to 9.33%

Other regions have seen their share dwindle:

West Berlin, from 1.45 to 1.44 to 1.32%

France west, from 10.62 to 9.48 to 9.78%

Italy north-east, from 5.84 to 5.53 to 5.31%

Italy south, from 9.36 to 8.64 to 8.22%

Italy centre, from 5.50 to 5.41 to 4.98%

Walloon region, from 1.71 to 1.44 to 1.50%