

**research and technology**bulletin published by the press and information services  
of the commission of the european communities**REPRODUCTION AUTHORIZED**

Brussels, 23 February 1971

No. 87

\* ~~Low~~ The European Community's total energy requirements IN 1971 WILL BE OVER 1000 MILLION TONS HARD COAL EQUIVALENT; this emerges from the survey recently approved by the Commission, on the energy market situation in 1970 and its prospects for 1971. ANNEX 1 contains a brief summary of the survey.

\*\* In the course of comparing the member countries' research programmes, the Community's Committee on Scientific and Technical Policy (Aigrain Group) has been examining the SITUATION OF DATA-PROCESSING RESEARCH in the Community countries.

A brief note on data-processing research in France will be found in ANNEX 2.

\*\* Mr Haferkamp, Vice-President of the Commission of the European Communities with special responsibility for energy matters, has made the following statement:

"In regard to the AGREEMENT REACHED BETWEEN THE OIL-PRODUCING COUNTRIES OF THE PERSIAN GULF AND THE MAJOR OIL COMPANIES, the Commission has pleasure in

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*The information and articles published in this Bulletin concern European scientific cooperation. 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 circles concerned in European cooperation in science and technology.*

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announcing that the framework of a medium-term policy has been defined which should permit regular supplies to the Community.

"The crude oil price increases which have been or will be decided upon will not disturb the market if the price increase to the consumer is kept within the range of the cost increase and possibly gives rise later on to cost reductions which are passed on to the consumer; in this connection competition on the energy market plays an important part.

"The Commission hopes that a satisfactory agreement can now be reached for supplies from the Mediterranean basin; it should make due allowance for the specific situation of the producer countries and also for the major importance of the Mediterranean basin as a source of supply for the European Community countries."

\*\* In reply to a written question from Mr Vredeling, a Dutch member of the European Parliament, concerning DISCUSSIONS BETWEEN FRANCE AND ALGERIA ON OIL, the Commission of the European Communities has again stated that it has constantly increased its efforts to achieve a general regulating arrangement, based on the Treaty, of the relations between the Community and Algeria. The Council was notified of a communication on this problem in the spring of 1970, and active steps are being taken within the Council to define the conditions under which negotiations with Algeria can be opened.

In a general paper entitled "Initial Guidelines for a Community Energy Policy" (see "Research and Technology No. 5), which it submitted to the Council in December 1968, the Commission indicated a possible Community

policy for oil trading and supplies. To pave the way for the implementation of that policy, the Commission submitted to the Council in December 1969 a draft regulation providing for the communication of hydrocarbon imports programmes. This draft is being studied by the Council.

- \*\* The Commission of the European Communities has replied to a written question from Mr Oele and Mr Vredeling, Dutch members of the European Parliament, on tenders from non-Community countries concerning THE SUPPLY OF KNOWHOW AND HARDWARE IN THE FIELD OF URANIUM ENRICHMENT.

In its reply, the Commission restates the validity of its proposal, put forward on 22 May 1969, recommending joint action to provide the Community with its own enrichment capacity. It considers that, in this light, approaches by non-member countries concerning either knowhow or hardware supplies are factors which, whilst confirming the need for joint action, must be assessed by the Community in terms of the aims of such joint action. The Commission has taken steps to achieve a Community strategy as regards Community supplies of nuclear fuels. It is at present - with the aid of the Community producers of natural uranium, whom it called together to a Conference on 18-19 June 1970 - studying formulas (such as the Joint Enterprise formula provided by Chapter V of the Euratom Treaty) likely to promote and develop Community cooperation in the field of natural uranium. From a more general point of view, it is pursuing discussions with the Community's Council of Ministers with a view to revising Chapter V of the Euratom Treaty.

\*\* Addressing the Consultative Committee of the EUROPEAN COAL AND STEEL COMMUNITY (ECSC), which met in Luxembourg on 12 February 1971, Mr Coppé, member of the Commission of the European Communities, reported on the results obtained by the Community in the social field (and in particular on the reform of the European Social Fund and the creating of the Standing Committee on Employment), and on the transport policy. Mr Spinelli, member of the Commission of the European Communities, subsequently reported the main lines of the Community's industrial policy, stressing more particularly the consequences at the social and environmental levels. These two speeches were followed by a wide-ranging debate.

\*\* Interest in TECHNOLOGICAL FORECASTING, as both an aim and an instrument of scientific policy, in the context of the European Communities, manifested itself in the Committee on Scientific and Technical Policy (PREST Group), on whose initiative a partial survey of current research has already been completed and concerted action at Community level is envisaged.

The Commission of the European Communities recently decided that a study should be carried out to analyse, on the basis of practical experience, the general direction and practical procedures to be envisaged for the preparation of technological forecasts to meet firms' requirements. Technological forecasts will be regarded more specifically as a long-term management instrument in typical Community enterprises, which, unlike big firms, do not have a pool of technological information at their disposal. The study is to be based on concrete experience, in the sectors of new technologies and in

those where the main concern is to ensure competitiveness on existing markets, with the object of finding out from those sectors about the requirements that need to be met, the factors to be taken into account, and the validity of certain methods.

- \*\* Representatives of a number of research institutes in Community countries met at The Hague and at Delft, at the Instituut voor Gezondheidstechniek (TNO), to work on the harmonization of a series of research projects, encouraged by the European Coal and Steel Community (ECSC), concerning AIR POLLUTION MEASUREMENTS INSIDE AND NEAR VARIOUS STEELWORKS.
  
- \*\* On 11 February 1971 European Community experts met at the Central Rescue Station for the Lorraine coalmines at Merlebach to study the progress of the RESEARCH ON THE RESCUE OF TRAPPED MINERS. Trials of a complete rescue operation (locating, contacting, evacuating) were carried out at the pit bottom. These operations, which demand very thorough coordination of the rescue teams, were filmed for further study and to serve as a basis for the training of rescuers.

Community's energy requirements expected to  
exceed 1000 million tons coal equivalent  
for the first time in 1971

The European Community's total energy requirements will rise in 1971 to over 1000 million tons coal equivalent, according to the Commission's annual report on the energy position in the Common Market.

The movement of the energy market in 1970 highlighted certain factors making for rigidity. Steeply mounting internal demand (9% up on 1969), in conjunction with tightness in supply, resulted in a rise in prices.

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Oil takes pride of place in covering the Community's internal consumption of energy. It is oil that has to meet most of the increase in demand, and also to bear the brunt of short-term upturns and downturns, which the other energy sources cannot do by reason of their much smaller flexibility of supply. It is estimated that in 1971 petroleum products will cover 65% of the Community's energy requirements.

Various factors combined to render the oil market somewhat tight in 1970. With world demand rising, the supply, though ample as regards the actual tonnages of crude produced, was adversely affected by shortage of transport when unforeseen developments - the Tapline and

Libyan incidents - reduced the availabilities from two Mediterranean sources. It is probable that the tightness will persist for some time and, in addition, that the cost of crude will go up in consequence of the new demands being made by the producer countries. There is therefore no prospect of a return to the very low prices of 1969.

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By and large, natural gas prices, unlike the prices of coal and petroleum products, remained remarkably steady.

Broadly speaking, this was because, for one thing, sales to the big consumers are usually by long-term contract. For another, the sellers are out to charge rates calculated to encourage rapid growth of consumption. And lastly, the natural gas market, being supplied almost entirely from within the Community, was less influenced than the rest by the events which affected the world market for energy generally.

In all the Community countries, natural gas will continue in 1971 to show a higher rate of increase than any other form of energy. The production of the Netherlands will be over 41,000 million m<sup>3</sup>, more than half the Community total.

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The earlier tightness in the coking coal market gradually eased in 1970, partly owing to a certain falling-off in the level of activity in the steel industry.

As regards house coal, the price increases in 1970 will pretty certainly have hastened the switch away from coal.

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Electricity production in the Community continues to rise, and in 1970 totalled 587 TWh. Fuel oil accounted for 33% of the energy input of the conventional power stations; their consumption of this, though varying from country to country, showed a substantial increase (in Germany in particular), which contributed to the higher demand, and consequent tightness, in the fuel oil market as a whole.

At the end of the year a net 3,150 MWe of nuclear capacity was in service in the Community and 8,700 MWe under construction. Although there were no additions in 1970 to the number of reactors in service, new capacity building was up by 2,000 MWe.

No further plants are scheduled to be connected to the grid in 1971, but production should be somewhere about 21,000 million kWh, thanks to the restarting of plant currently out of operation.

If energy prices continue at their present high level, there is likely to be renewed activity as regards plans for capital spending on nuclear power stations. However, it is evident that installed nuclear capacity in 1975 will

total only 12,000 MWe instead of the 17,000 envisaged; the delay is due to electricity producers' reluctance to go ahead with the projects adumbrated in the last few years, partly by reason of the comparative cheapness of conventional fuels up to the beginning of 1970.

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The state of the market in 1969 and 1970 caused the share of coal in the internal Community market to contract rather more slowly over this two-year period than it had previously been doing; in parallel, larger tonnages were imported, and stocks fell practically to nil. However, since coal production is undergoing a long-term contraction process, it is today less capable than ever of responding to short-term fluctuations in demand.

As regards oil, it became clear in 1970 that, while the external supply situation may be satisfactory from the production angle, bottlenecks are liable to develop on the transport side. Although these affect only a comparatively small proportion of the Community's oil supplies, they do have an appreciable impact on prices.

As a rule investment projects in the energy sector are a very expensive and serious business, involving large capital sums and taking a long time to complete. In the present economic situation, with inflationary cost increases and high interest rates, it looks rather as though some programmes for the installation of new plant might be delayed.

Moreover, the disparities in consumer price levels in the Community, caused by the differences in the price policies and tax systems in the individual countries, suggest that some compartmentalization between the markets of the Member States is likely to persist.

Lastly, the tightness which has developed in the oil transport market has underscored the need for Community action to improve security of supply. It is with this end in view that the Commission has proposed to the Council regulations on investment programmes in the energy sector and oil import programmes, and is conducting studies on arrangements for the stockpiling of petroleum products and on the diversification of sources of energy supply.

French Policy on Data-Processing Research

Whereas data-processing was a purely marginal industry in France in 1965, by the end of the Sixth Plan it will represent 36% of the total production of the electronics sector, with a turnover of 13,000 million French francs. In relation to French industrial output, which between 1965 and 1970 showed an average growth rate of 7% a year, the electronics sector grew at the remarkable rate of 14% a year; but within that sector itself, the data-processing industry grew at an explosive rate, expanding by 35% a year.

These figures emerge from a study of research on data-processing in the Community countries, being carried out by the Community's Committee on Scientific and Technical Research Policy as part of its brief, which includes the general comparison of the Community countries' research programmes.

1. The French data-processing industry is at once a key industry, a mass-production industry and a heavy equipment industry. These three features, rarely combined in a single industry, will grow more pronounced in the future.

The French data-processing industry is among the world's second largest, coming far behind the United States and roughly level with Germany, the United Kingdom and Japan; but unlike the British and Japanese, French production is almost wholly controlled by two American firms - IBM and Honeywell.

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The data-processing industry throughout  
the world on 1 January 1970  
(in FF x 10<sup>9</sup>, taxes excluded)

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Country	Turnover (hardware)	Value of installed capacity
France	3.3	7.7
Germany	2.1	8.5
UK	1.9	6.6
Japan	2.9	9
USA	26	90

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As can be seen, the USA have a crushing superiority in this field, with a single firm accounting for 70% of the total American output, which amounted to 30,000 million francs in 1968 (50,000 in 1970), or 0.58% of the United States' GNP. This dominant position has enabled American exports to expand very rapidly (30% a year between 1958 and 1968), whereas production only increased by 27% a year during the same period - this growth being all the more remarkable in that at the same time the American industry (mainly IBM) was setting up subsidiaries in all the main European countries, either directly or by taking over European firms.

As the Eastern Bloc countries are virtually non-existent in the market, the result is that over 90% of the world's manufacture of computers are of American origin.

2. French data-processing research policy is bound up with the Computer Plan policy, and consists in:

- (a) enabling local data-processing decision centres to be set up and developed on French territory (in particular, for large and medium-sized computers, efforts are centred exclusively on the Compagnie Internationale pour l'Informatique);
- (b) seeking mastery of all the key points in the data-processing sector (components, computer architecture, software, peripherals, systems).

To implement its policy, France has a certain number of national research centres. The policy followed by the French government consists in encouraging each of these laboratories and at the same time seeking better interchanges of information and a certain degree of coordination of work.

Financially, all these laboratories enjoy funds for running costs and certain research funds provided by the organization or company to which they belong. The government has research appropriations intended to cover research contracts awarded to these various laboratories; applied research projects can obtain loans which are repayable in the event of success.

A Data-Processing Research Committee has been set up, under the authority of the Delegate for Data-Processing. Its object is:

- to coordinate the efforts of the various administrative bodies financing data-processing research;

- to define the privileged research subjects;
- to award certain research contracts;
- to award study grants to students who wish to extend their knowledge of data-processing.

Although the situation of data-processing research in France appears to be satisfactory as regards both the number and the level of the laboratories and the results achieved, difficulties have been encountered in the matter of innovation. Research findings cannot be exploited as quickly as they should be by the French industry because, in practice, it is only when several computer manufacturers smell a bargain and show interest that the new invention can be developed profitably.

In view of this it may easily be concluded, in the light of France's experience, that in order to be economically viable a data-processing research policy cannot be confined to the one-country level; European cooperation is manifestly a necessity.

It does seem that Europe has a significant research potential in the data-processing field; but in order to develop the findings, it is essential to set up industrial structures on a Europe-wide scale.