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** In 1972, CRUDE STEEL PRODUCTION IN THE COMMUNITY is expected to be 104.5-108.5 million tons, compared with 103.3 million in 1971 and 109.2 million in 1970. As the actual production potential will nevertheless increase very appreciably (some 7 million tons more in 1972), the utilization factor of steelworks will no doubt drop further, to 81-84% of the 1969 rate (compared with 85% in 1971 and 97% in 1970). These facts are included in the FORWARD PROGRAMME FOR STEEL, 1972 recently adopted by the Commission of the European Communities after consultations with the Consultative Committee of the European Coal and Steel Community. ANNEX 1 gives a brief summary of this programme.

** THE DEVELOPMENT OF THE NUCLEAR INDUSTRY IN 1971, the market situation, industrial structures and action by the Commission of the European Communities in this sector were examined by the Commission in the Fifth General Report on the activities of the Communities in 1971. Extracts from the Report will be found in ANNEX 2.

** The Commission of the European Communities has had a series of studies carried out on the LONG-TERM OUTLOOK FOR THE UTILIZATION OF STEEL PRODUCTS and competing or complementary materials in the Community, which will help provide background information to assist the Commission in its decisions, recommendations and opinions concerning the steel industry. Details are given in ANNEX 3.

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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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** A GENERAL PROGRAMME ON THE ENVIRONMENT, in which a number of initial practical measures are included, is to be forwarded this week by the Commission of the European Communities to the Council of Ministers. We shall return to this programme next week.

** In submitting the draft statute for a EUROPEAN COMPANY (see IRT No. 62), the Commission of the European Communities hopes to create an INSTRUMENT FOR THE TRANSNATIONAL INTEGRATION OF COMPANIES IN A EUROPEAN CONTEXT. This was in substance what Mr Spinelli stated at a Round Table of the European Studies and Information Centre (CESI). This statute should permit the elimination of legal obstacles and also certain impediments of a political and psychological nature standing in the way of the transnational reorganization which is essential if full advantage is to be taken of the Common Market. It should be particularly advantageous to medium-sized firms, which cannot afford to employ the specialists in legal matters, taxation, etc., whose expert assistance already enables large companies to cross economic frontiers.

** It would be possible to arrange for a CRUDE OIL STORAGE CAPACITY of 600-800 million m^3 on Community territory under economic conditions. This figure is far in excess of the storage capacity necessary for all the Community's compulsory reserves for 1981, which would equal 90 days' consumption (see IRT Nos. 109 and 119), or 174 million m^3. It is thus possible to choose the sites which are best from the economic point of view. These facts emerge from a study on the possibilities of storing crude oil on Community territory which the Commission of the European Communities has had carried out (see IRT No. 102).

** After the accession of the United Kingdom, the Community's CHEMICAL PRODUCTION will amount to more than 25% of the world output of chemicals, and Community exports will represent more than 50% of all world exports of chemical products.

To obtain an idea of the scale of the Community chemical industry in relation to other industrial sectors, it should be remembered that in the Community the chemical industry (including the manufacture of artificial and synthetic fibres and rubber goods) represents about 10% of the total turnover of the extracting and manufacturing industries. This percentage is still higher in the case of Britain.

** The possibilities of ensuring FLEXIBILITY OF ELECTRIC POWER PLANT CONSUMPTION in time of crisis are the subject of a study recently launched by the Commission of the European Communities. This study will include an analysis of the situation and of the obstacles preventing greater flexibility, together with an examination of ways and means of overcoming them.

** The creation of three new CONSULTATIVE COMMITTEES ON THE MANAGEMENT OF THE JOINT RESEARCH CENTRE PROGRAMME was recently proposed to the Council of Ministers by the Commission of the European Communities for the following purposes: nuclear standards and measurements (CBNM), reactor safety, information centres.

Consultative Committees on the Management of the JRC Programme, with instructions to maintain a constant link between the execution of the programmes at Community level and the corresponding R&D work in the Member States already exist in the fields of fast reactors, heavy-water reactors, high-temperature reactors, high-flux reactors, plutonium and transplutonium elements and condensed state physics. Similar committees also exist for fusion and plasma physics, biology and health protection, and information and documentation.

** The practical possibilities of the reformed European Social Fund stepping in to FACILITATE ADAPTATION AND PROGRESS IN THE COMMUNITY'S TEXTILE INDUSTRY, in accordance with the guidelines submitted by the Commission of the European Communities on

textile industry policy (see IRT No. 109), are to be put to the test by the Commission under its plan for the reorganization of the woollen industry region of Biella, in Italy. Out of a working population of 95,000, this region currently has 41,000 people employed in the spinning and weaving of combed wool, compared with 51,550 in 1962. When the present reorganization scheme is completed, it is planned that the industry will employ no more than 20,000.

The aim here is twofold: (a) to guarantee optimum conditions for the creation of the underlying economic structure, in this case the textile industry, by means of aid to both the industry as a whole and to individual companies, and (b) to plan other industrial activities capable of providing employment for the manpower released by this reorganization of the textile industry. The Social Fund is expected to help to pay the cost of organizing vocational training courses for workers with a view to their employment in a new plant which the Lancia group is to set up in the area.

** The Commission of the European Communities recently forwarded to the Council of Ministers seven memoranda on TECHNICAL RESEARCH ON IRON AND STEEL for which it proposes a grant in aid by the European Coal and Steel Community (ECSC). They cover:

- Research on high-strength steels for very thick pressure vessels.
- Community research on the use of electronic computers in the management of steelworks.
- Community research on the deep-drawability of sheet.
- Research on the automation of radiant-roof heating furnaces.
- Research on the application of the transfer of elements by electrochemical methods to steel production.
- Research on the prereduction of iron ores by the fluidized bed technique.
- Research on the camber of mill rolls and its use in the optimum control of rolling mills.

The total estimated cost of all this research is 3,371,939 units of account. The financial share of the Coal and Steel Community would be 2,083,858 u.a.

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

- Joint integral safeguards experiment (JEX 70) at the Eurochemic reprocessing plant, Mol, Belgium - January 1970 - July 1971
  (No. EUR 4576 e - 504 pages - 600 BF - available in English)

- Die Brennelementförderung mittels Schwerkraft und Pneumatik in der Beschickungsanlage eines Kugelhaufenreaktors, insbesondere die Bewegung von Einzelkugeln in Rohrleitungen (Transport of fuel balls by means of gravity and pneumatics in the fuel element circulating system of a pebble bed reactor, especially movement of single fuel balls in pipes)
  (No. EUR 4693 d - 100 pages - 150 BF available in German)

- Calcul statistique du calibrage des intensités des raies en spectrographie d'émission (Statistical calculation of the calibration of the radiation intensities in emission spectrography)
  (No. EUR 4716 f - 32 pages - 50 BF - available in French)

- 50 MWe kernenergiecentrale Dodewaard - Jaarverslag 1970 (50 MWe Dodewaard nuclear power plant - Annual Report 1970)
  (No. EUR 4717 n - 90 pages - 125 BF - available in Dutch)

- Gravimetric determination of the sum of uranium and plutonium in products of the uranium/plutonium carbide fabrication
  (No. EUR 4719 e - 14 pages - 40 BF - available in English)

- Erkennung und Behandlung von Strahlenschäden beim Menschen (Diagnosis and therapy of radiation injuries in man)
  (No. EUR 4732 d - 84 pages - 125 BF - available in German)

- BR-2 irradiation devices for HTGR fuel
  (No. EUR 4737 e - 60 pages - 85 BF - available in English)

- Détermination gravimétrique de la teneur en lithium dans le fluorure de lithium (Gravimetric determination of the lithium content of lithium fluoride)
  (No. EUR 4739 f - 18 pages - 40 BF - available in French)

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

The Provisional Steel Programme for the Community in 1972

A. The situation in 1971

The crude steel production of the Community's iron and steel industry amounted to 103.3 million metric tons in 1971, as against 109.2 million in 1970 and 107.3 tons in 1969. These figures show that the slowing down in the growth of steel output observed in 1970 has since developed into an absolute decline (-5.4% with respect to 1970).

The reduction of steel stocks amounted to 4 million tons in 1971, whereas in 1970 these stocks had increased by 5.45 million tons. There was therefore an overall decrease of 9.45 million tons in demand, which was only partially offset by the rise in exports (+2.8 million tons) and the reduction in imports (-2 million tons). Real consumption did not contribute, as in 1969 and 1970, to maintaining the demand for iron and steel products, but instead fell by 1.3% with respect to 1970, i.e., from 94.8 million tons to 93.5 million.

Because of the fall in prices on the one hand and rising costs on the other, the revenue from the Community's iron and steel output has greatly diminished since 1970. In addition, the industry has to cope with a major increase in its capital costs because of investments already made or planned. The investment expenditure of the Community steel industry, which amounted to 802 million u.a. in 1968, 1,039 million u.a. in 1969 and 1,623 million u.a. in 1970, is evaluated at 2,500 million u.a. for 1971 and 2,130 million u.a. for 1972. The drop in the revenue from sales is likely to act as an appreciable brake on investment during the next few years.

B. Estimates for 1972

The trend of the steel market in 1972 will depend mainly on the Community's internal economic situation, which is at present decidedly slack. Recovery will depend on the adoption of measures of resuscitation, their scope and timing being also important. In 1972 Community exports to non-Community countries are expected to total between 18.5 and 20 million metric tons of crude steel equivalent.

Imports are expected to run to between 5.5 and 6 million tons of crude steel equivalent as against 6.5 millions in 1971.

Steel consumption within the Community in 1972 should not be much greater than in 1971, and could even fall slightly. The estimates are therefore based on a consumption of 92.5-94.5 million tons of crude steel, as against 93.5 million in 1971. The situation nonetheless differs considerably from country to country. In West Germany real consumption might drop by as much as 4-5% or more in the first half-year; in the Belgo-Luxembourg Economic Union there might be a fall of 2%. In the Netherlands, consumption might maintain the same level as in 1971 or increase very slightly. On the other hand, an increase of 2-4% is expected in Italy, and 3-4.5% in France.

Lastly, the Community's steel stocks are expected to fall by up to one million tons (700,000 tons at the most in West Germany, 200,000 tons in France and about 100,000 tons in Italy, with no major changes in the Netherlands and the Belgo-Luxembourg Economic Union).

According to the estimates, therefore, crude steel production within the Community in 1972 is likely to be 104.5-108.5 million tons, as against 103.3 million in 1971 and 109.2 million in 1970. However, since real production capacity will again increase appreciably in 1972 - by about seven million tons - the utilization factor would decline even further. If this factor is fixed at 100 for 1969, it would fall to 81-84% in 1972 (as against 85% in 1971 and 97% in 1970).

It would then be necessary for the iron and steel works to take appropriate measures to deal with these difficulties, in particular by matching output to declining demand, by closing obsolete plant prematurely and by avoiding abnormal competition.

Supplies to Member States from Community Plants in 1972

(Minimum and maximum estimates, in millions of tons of crude steel)

	West Germany		Belgo-Lux. Econ. Un.		France		Italy		Netherlands		Community	
Real consumption	40.00	40.90	5.20	5.30	24.40	24.80	18.70	19.20	4.20	4.30	92.5	94.5
Variation in stocks	-0.70	-0.10	±0	±0	-0.20	±0	-0.10	+0.10	±0	±0	-1.00	±0
Total requirements	39.30	40.80	5.20	5.30	24.20	24.80	18.60	19.30	4.20	4.30	91.50	94.50
Supplies from Community plants	36.65	37.90	4.75	4.80	23.50	24.05	17.20	17.80	3.90	3.95	85.00	88.50
Supplies from other countries	2.65	2.90	0.45	0.50	0.70	0.75	1.40	1.50	0.30	0.35	5.50	6.00
Total supplies	39.30	40.80	5.20	5.30	24.20	24.80	18.60	19.30	4.20	4.30	91.50	94.50

The Nuclear Industry in the Community in 1971

(Extract from the General Report on the Activities of the Community in 1971)

1. The market

The market for nuclear power plants was very active in 1971 in two Community countries. The following power plants were ordered: Philippsburg-2 (864 MWe) by Badenwerke Energie and Energie-Versorgung Schwaben; Ohu (870 MWe) by Bayernwerke and Isar-Amperwerke; Neckarwestheim (770 MWe) by Neckarwerke and TWS-Technische Werke Stadt Stuttgart; Unterweser (1,230 MWe) by Nordwestdeutsche Kraftwerke and Preussenelektra; Bugey (2 x 900 MWe) by Electricité de France; Biblis B (1,150 MWe) by Rheinisch-Westfälische Elektricitätswerke. The number of light-water power plants in service, under construction or on order in the Community is thus now 28 units, representing 16,000 MWe.

The reactors which will be installed in these nuclear power plants will be constructed under the responsibility of Framatome in the case of the French plants and of Kraftwerk-Union AG in that of the German plants.

It has also been decided under an intergovernmental agreement between Germany, the Netherlands and Belgium to construct a 300 MWe prototype power plant with a fast-neutron reactor at Kalkar, Germany. This turn-key contract has been awarded to the SNR consortium, which consists of Interatom, Belgonucléaire and Neratoom.

Furthermore, the Italian Comitato Nazionale per l'Energia Nucleare decided to construct a reactor for testing fast-reactor fuel elements (PEC) at Brasimone, Italy; this is to be built by a consortium consisting of SNAM Progetti and the Società Italiana Impianti.

2. The industrial structures

(a) Nuclear power plant industries

In July 1971 an important series of cooperation agreements was concluded between the German group Kraftwerk-Union (KWU), the British group TNPG,

British Nuclear Fuel Ltd., the Italian company AGIP Nucleare and the Belgian company Belgonucléaire in order to present a common front to the export markets in international competition. These agreements cover the construction and marketing of proven-type and advanced reactors and the nuclear fuel cycle field, though each company will continue to offer its own models on the market. These agreements will also permit the exchange of technical information among the parties to them and the joint exploitation of certain licences. They appear to be a first step towards cooperation on a wider basis.

The creation of the KWU consortium led to a further regrouping in Germany; an agreement was concluded in May 1971 between Brown Boveri & Cie (BBC), Mannheim, Deutsche Babcock & Wilcox, Oberhausen, and Babcock & Wilcox, New York; this in turn led to the formation of a second international group in Germany for the construction of turn-key nuclear power plants, based initially on an American licence from Babcock & Wilcox, New York, who produce pressurized-water plants.

Finally, the group Babcock Atlantique, France, decided to enter into competition for the supply of pressurized-water plants by extending its licence agreements with the American company Babcock & Wilcox, New York, to the nuclear field.

In the field of high-temperature gas reactors, Brown Boveri & Cie (BBC), Mannheim, in association with Hochtemperatur-Kernkraftwerk GmbH, has started the construction of a 300 MWe prototype with a uranium/thorium fuel cycle. In August 1971 BBC's holding was increased to 90% after the withdrawal of the Friedrich Krupp company from the association. This step represents a milestone in Europe in the development of the range, which is paralleled by the continuation of the Dragon agreement.

(b) Fuel cycle industries

The following points should be noted with regard to the fuel cycle industry:

- For the reprocessing of irradiated oxide fuels from nuclear power plants, France, Britain and Germany set up a joint company in October 1971 under German law, called United Reprocessors GmbH and consisting of three shareholders with equal rights: Commissariat à l'énergie atomique (CEA), British Nuclear Fuel Ltd. (BNFL) and Kernbrennstoff-Wiederaufarbeitungs-Gesellschaft (KEWA). The aim of this cooperation agreement is to stagger the construction of reprocessing plants in order to avoid the risk of over-capacity.

- For the fabrication of fuel elements for light-water power plants, the Italian company Fabricazioni Nucleari and the German company Reaktorbrennelemente Gesellschaft have each decided to construct a production facility to be commissioned in 1972; the production capacities will be 120 and 300 tons/year respectively.

- For the production of enriched uranium by ultracentrifugation, the tripartite agreement between Britain, the Netherlands and Germany came into force in July 1971. As a result of this agreement the engineering company Centec, Germany, and the enrichment company Urenco, Britain, were formed.

- Under the Euratom-CNEN (Comitato Nazionale per l'Energia Nucleare) agreement on the operation of the Eurex (Enriched Uranium Extraction) plant for industrial research purposes, it has been possible, now that the entire plant has been commissioned, to reprocess about a hundred HTR (High Temperature Reactor) fuel elements under a temporary operating licence. The application for a permanent licence is under examination by the safety authorities.

3. Activities of the Commission of the European Communities

(a) Investment declarations (Euratom Treaty, Articles 41-44)

In opinions issued on the nuclear investments of the Community, the Commission reiterated its industrial policy objectives both to electricity producers who build and operate nuclear power plants and to industrial companies making new investments in the nuclear field.

In 1971 the Commission issued twelve opinions on investments totalling about 1,200 million u.a.

These related to the following investments:

(a) the nuclear power plants: Fessenheim (850 KWe), France, Philippsburg-1 (864 MWe), Germany, Unterweser (1,230 MWe), Germany;

(b) the prototype nuclear reactors: Schmehausen/Uentrop HKG (about 300 MWe), Germany, a high-temperature reactor, Kalkar SNR (about 300 MWe), Germany, a fast-neutron reactor, Brasimone, PEC, Italy, a reactor for the testing of fast reactor fuel elements;

(c) a pilot plant for the production of plutonium-containing fuel elements at Wolfgang/Hanau, Germany;

(d) two pilot plants for the production of enriched uranium by the gas centrifuge process at Almelo, Netherlands;

(e) two plants for the production of uranium-oxide fuel elements for light-water power plants at Busalla, Italy, and Wolfgang/Hanau, Germany;

(f) a plant for the production of fuel-element cans at Sprendlinger, Germany.

(b) Safety techniques in nuclear installations

Efforts to harmonize safety methods and techniques in industrial nuclear installations continued. At the practical level, Community working parties had the opportunity of comparing their views and abilities in the course of safety investigations carried out under the auspices of the Commission, at the request of the competent authorities of certain Member States, on power plants of the light-water type under construction. At the same time, the Union of Industries of the European Communities (UNICE) and also the International Union of Producers and Distributors of Electrical Energy (UNIPEDE) confirmed during the past year their interest in a more vigorous stimulation of activities aimed at more uniform safety criteria and the gradual standardization of safety requirements for certain items of equipment (components). This interest is inspired largely by the need for

an opening up of the markets and the removal of the various barriers to trade. The inventory work begun last year continued. These activities also made it possible to throw into sharper relief the priority nature of certain research programmes in the field of safety.

(c) Promotion of industrial uses of radiation and isotopes

One of the main activities of the Eurisotop Office with a view to the introduction of new techniques in industry is the organization of Community projects in which industry and the public authorities take part, together with experts in widely differing subjects, in order to arrive at results which cannot easily be obtained at the national level.

Community projects have accordingly been initiated by the Commission in the field of food preservation. Certain subjects of major public interest, such as the flameproofing of textile fibres and the inspection of bridges, are under study. Various projects are in hand in the non-ferrous and precious metals sector.

Concurrently with these activities, the Commission is laying the foundations for the automatic coordination of research and development services by organizing exchanges of experience and by drawing up a number of schedules (in 1971, for example, on ceramics research). It also studied the obstacles to a wider industrial use of radiometry, gamma-radiography and the radiation preservation of foodstuffs.

The Role of Iron and Steel Products in the Community's Long-Term Economic Development

What qualities will the user industries be requiring steel to offer around 1985, as technological development continues? Is it possible to discern the economic and technical factors which will then determine the nature and scope of the demand for iron and steel products? The replies to such questions are very pertinent to the formulation of a long-term policy for the iron and steel industry. The Commission of the European Communities has therefore arranged a series of studies on the long-term outlook for iron and steel products and rival or complementary materials. These studies will constitute a first step towards the establishment of "guidelines for 1985" for the Community steel industry. Since the length of the period enables short-term trends to be to some extent discounted, they will help to clarify the Commission's decisions, recommendations and opinions concerning the definition of the General Objectives for Steel under the Community's industrial policy and the planning of Community iron and steel research programmes.

The earliest of these studies were directed primarily to devising better methods of forecasting future developments in the use of iron and steel products and to comparing their prospects with those materials likely to compete with them or to be replaced by them. The economic importance of these uses was assessed on the basis of the share of the steel market taken up by two major industrial sectors, namely, land transport and construction. These two sectors consume almost half the total output of iron and steel products, these being assumed to include those which pass through the "primary steel transformation" industries.

A. Steel and the development of means of land transport

A long-term estimate of the steel requirements of the land transport sector must be based first of all on a forecast of new types of equipment and probable technical developments and at the same time on the grades of steel which will therefore be in demand. The second step will be to determine the size of the markets.

Three of these reports - one on guided transport equipment in France by the Bureau d'Information et de Prévision Economique (BIPE), another on automobile construction in Germany by the Institut für Wirtschaftsforschung (IFO) and a third on automobile construction in Italy by Breda Research Institute - have already formed the basis of a collective report presenting the general statements which can now be made concerning the whole equipment manufacturing process.

The aim is to determine the following matters:

1. The law correlating the performance of manufactured equipment with the characteristics of the materials used.
2. The form and direction of development.
3. Forecasts of the size of markets and the characteristics of new materials (these will be the subject of later studies).

As regards some of these points, this research will to some extent benefit from the conclusions of another study ordered by the Commission on the inventory, balance-sheet and future prospects of R&D work on land and sea transport. These conclusions will indicate how well the lines of research are adapted to the foreseeable requirements of the main modes of transport.

B. Steel in construction: building and civil engineering

The construction industry is the largest final user of iron and steel products. A study on the prospects for steel and other constructional materials in the various types of work and building has been awarded to the Adviesbureau voor Kwaliteitsbeleid en Besliskunde at Rotterdam. The aim is to determine (again over a period of 15 years, and as a function of a certain output in the construction industry) the changes in the use of materials, the requirements imposed on components and the properties and costs of materials. Here too, the long-term steel study will be able to draw on certain results derived from two other studies at present being discussed with the competent quarters, one relating to research and development in the building industry and the other being an inventory of possible Community projects in support of construction.

Yet other researches are planned in connection with the guidelines for steel up to 1985. Their aim would be to establish a link between the construction and land transport sectors by way of the general problems of town planning, with particular reference to the place of steel in the infrastructures.

Initially, the estimation of the volume of the market has been deferred, both as regards the land transport and the construction sectors. Further studies should make it possible at least to assess the impact of some of the factors governing the development of this market, particularly those which depend upon the public authorities.

C. Study of the competitive situation of steel: method applicable to all uses

The aim of this study is fairly rapidly to provide an overall picture of the competitive position of steel. The first stage of the work, which has been carried out by the BIPE, has centred on a comparison of the respective potentialities of steel and possible substitutes. It appears that, from a strictly technical standpoint, steel is still capable of great improvements in performance and, subject to reservations from other standpoints, it can be considered a promising material as far as the next 15 years are concerned. At the same time, these researches suggest that over a longer period a wide range of composites will be developed, making it much more difficult to estimate the strength of technical competition.

The second stage of this study will deal with economic aspects, with reference to specific market conditions.