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- ** The Stockholm Conference on MAN AND HIS ENVIRONMENT demonstrated once again the rapid development of environmental problems, their ever-increasing geographical range and their growing impact on economic, social and cultural affairs at all levels of human activity. Solutions which are acceptable from the economic and social standpoints and are suitable from the ecological and health angles should be found on a world scale, the entire field of human activities being taken into consideration. A short note on the consequences of the Stockholm Conference for the Community is given in ANNEX 1.
- ** Despite some positive results, the procedures followed in connection with the implementation of a COMMON POLICY FOR SCIENTIFIC AND TECHNICAL RESEARCH are marked by a general sluggish ineffectiveness. This is one of the conclusions drawn by the Aigrain Group in its review of its work during the period April 1965 to December 1971. A short summary of its findings is given in ANNEX 2.

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Commission of the European Communities
Directorate-General for Press and Information
Division for industrial and scientific information
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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.

PRESS AND INFORMATION OFFICES OF THE EUROPEAN COMMUNITIES

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** The percentage BREAKDOWN BY TYPE, OF THE NUCLEAR REACTOR CAPACITY in operation and under construction in the Community has been brought up to date to 30 June 1972, with the following results:

Gas/graphite	2565 MWe (17.5%)
BWR	3681 MWe (25.2%)
PLR	7574 MWe (51.8%)
Heavy water	221 MWe (1.5%)
High temperature	313 MWe (2.1%)
Other advanced reactors	41 MWe (0.3%)
Fast breeders	233 MWe (1.6%)

A list of the power plants in operation, under construction or at the design stage in the Community at that date is given in ANNEX 3.

** Far from being an indictment of the Community effort on TECHNICAL RESEARCH IN THE COAL SECTOR, the coal crisis makes it more imperative than ever, since experience has shown that this research is bringing about significant economic and social improvements in the coal sector, which continues to play a very considerable part in ensuring a dependable supply of energy for the Community. A brief note on the medium-term programme of aid to coal research in the Community, which has recently been revised, is given in ANNEX 4.

** THE CONSIDERABLE DELAY IN THE IMPLEMENTATION OF THE GENERAL PROGRAMME ON THE ELIMINATION OF TECHNICAL BARRIERS TO TRADE, one of the main factors in an economic policy for social ends, is a source of anxiety for the Economic and Social Committee, to which Mr Amey read a report on the subject at its meeting held in Brussels on 29 June 1972.

So far, the Council of Ministers has adopted only 22 directives out of a total of 47 proposals submitted to it by the Commission of the European Communities, whereas the General Programme adopted in 1969 stipulated the adoption of more than 150 directives by 1 January 1971 (see INT Nos. 127 and 139). One of the major causes of this delay is the way in which the Member States adopted their decisions in the Council of Ministers: if it is borne in mind that the Member States show particular concern with regard to certain purely national interests and that, since the Council of Ministers considers each proposed directives on its merits, it is not at present possible to arrive at a system of blanket reciprocal concessions to which the states could agree beforehand, the difficulties which prevent a speedy decision being taken by the Council of Ministers will be realized.

The lack of facilities at the Commission's disposal for ensuring the proper advancement of the work, says the report, certainly does not help to improve the situation. Moreover, the technical regulations fall within the competence of a number of different ministries, which further complicates the Commission's efforts at coordination.

The report urges the need to devise and put into practice immediately a more expedite procedure, in order to avoid subsequent delays in the implementation of the General Programme. This procedure might consist in a brief from the Council of Ministers to the Commission when certain conditions have been observed, in particular with regard to consultation of the representative bodies concerned. Certain decisions could thus be adopted directly by the Commission or, at any rate, the Council would be involved only in order to ratify the decision already adopted by the Commission.

** In 1971, the EUROPEAN INVESTMENT BANK granted 52 loans and guarantees totalling 502.5 million units of account, which represents an increase of 148.1 million, i.e., 42%, on the previous year (54 contracts totalling 354.4 million u.a. The total amount paid out by the Bank between 1958 and 1971 thus stands at 2,315.5 million u.a.

In 1971, a total amount of 469.3 million u.a. (or 93% of the funds allocated by the Bank in that year) was granted to projects in the Community and 33.2 million to projects in the associated countries. As regards the geographical breakdown of the loan guarantee operations in the Community, the Bank further stepped up its activity in Italy, granting a total of 274.9 million (27 operations), compared with 205.2 million (26 operations) in 1970. Next come France, with 124.5 million (61.4 million in 1970), Germany with 61.9 million (46.1 million in 1970) and lastly the Netherlands, with 8 million (2.8 million in 1970).

** The protection of the environment concerns not merely the pollution of nature; it also involves an effort to MASTER THE PROBLEMS RAISED BY THE DEVELOPMENT OF SOCIETY. The Commission of the European Communities is aware of the importance of these problems, in particular those connected with population growth, expansion of investment and industry, the increased consumption of raw materials and food production. It recently reiterated this awareness in its reply to a written question by Mr Engwirds, a member of the European Parliament, concerning the attention devoted to these problems in the Commission's annual programme for 1972.

As early as July 1971, in its first Memorandum on the Community's environment policy, the Commission had thought it necessary, in view of the scope and future importance of these problems, for them to be dealt with on an interdisciplinary and collective basis in a European Institute of the Environment which it suggested should be set up. The Commission also repeated this suggestion in its Memorandum on the European Community programme on the environment which it forwarded to the Council in March 1972 (see IRT Nos. 109 and 138).

The Commission considers that, in the context of problems connected with economic and monetary union, these problems should be discussed at the next SUMMIT CONFERENCE OF HEADS OF STATE OR GOVERNMENT. However, in the Commission's view, this Conference should first of all, at the present stage, concentrate its attention on the problems arising with regard to the strengthening of the institutions, economic and monetary union and social progress, the enlarged Community's external relations and political union. Only genuine progress at this level will enable the enlarged Community to accomplish effectively its mission in the fields indicated by Mr Engwirda.

** THE GENERAL CONSULTATIVE COMMITTEE OF THE JRC is holding its next meeting in Brussels on 5 July. Following the definition by the Commission of the European Communities of the part which the JRC is to play in the future (see IRT No. 148), a preliminary draft multiannual research programme will be put before the Consultative Committee and it is expected that during preliminary discussions the Committee will be able to identify certain fundamental options.

** THE USE OF COMPUTERS FOR THE CONTINUOUS AUTOMATIC MONITORING OF THE VITAL FUNCTIONS OF THE SERIOUSLY ILL would enable doctors to forestall the grave disorders which may occur in the cardiovascular, pulmonary and metabolic systems of such patients (see IRT No. 90). The Community's Working Party on Scientific and Technical Research Policy (PREST) has taken up the problem of the monitoring of the seriously ill in connection with a multiannual programme adopted in 1971, the aim of which is to create a certain cohesion between the various teams in the Community carrying out national research projects in this field. Meetings on the present state of work and research on ELECTROCARDIOGRAM MONITORING in the Community are to be held in Brussels on 5-6 October 1972 by the Standing Committee on the Monitoring of the Seriously Ill, set up under the PREST Group. Some 40 research workers - doctors, mathematicians, engineers and data processing experts - will attend.

** THE ORIGINS AND QUANTITIES OF HEAVY-METAL WASTES AND EFFLUENTS DISCHARGED INTO THE ENVIRONMENT in Italy will be the subject of a study which the Commission of the European Communities has decided to have carried out. Of the many types of pollutant, heavy metals, in particular mercury, cadmium and chromium, together with their compounds, require speedy action because of their particularly noxious effects, their diffusion into the environment and their effects on man and nature. The Commission therefore considers it necessary to collect more specific information on the heavy metals used in industrial processes and on the nature and scale of their use and to have an evaluation made of the possible cost of changes in production or the application of ultra-efficient methods of processing or eliminating

wastes and effluents. Similar studies are currently in progress on the situation in France, Germany and the Netherlands (see IRT No. 135).

ANNEX 1 p.1IMPLICATIONS FOR THE COMMUNITY OF THE STOCKHOLM CONFERENCE
ON MAN AND HIS ENVIRONMENT

The Community Member States and the four acceding countries were represented at the Stockholm Conference on Man and His Environment by sizeable delegations. The Council and Commission of the Communities, for their part, took an active part both in the preparation and in the actual work of the Conference; the concerting of the positions of the Community on the one hand and the Member States and acceding countries on the other, which had begun in April in an ad hoc group under the Council, was kept up from day to day in Stockholm.

The President of the Commission of the European Communities, Mr Mansholt, urged the delegates to draw the correct political conclusions from the technical and scientific arguments. He pleaded that the protection of the environment should form the subject of a truly collective policy: the atmosphere, water and the balance of nature could not be dealt with in a national context because they constituted the collective wealth of humanity. Would it not therefore be logical, he asked, to set up in this field an organization for the adoption of decisions at a higher level than that of the national authorities?

Finally, Mr Mansholt recalled all the proposals on the environment which the Commission had forwarded to the Council last March (see IRT Nos. 109 and 138). He stressed that the action proposed by the Commission did not seek to duplicate that undertaken by the Member States or by international organizations, but on the contrary, to supplement and support them.

ANNEX 1 p.2

Speaking in his capacity as chairman in office of the Community's Council of Ministers, Mr Krieps, Secretary of State at the Luxembourg Ministry of the Interior, reviewed the problems of the environment in the Community, which stemmed from its high population density, its high level of industrialization and its geographical situation.

Mr Krieps then mentioned the activities of the Community Member States in connection with these problems and indicated the possibilities of joint action on a Community basis.

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The Stockholm Conference demonstrated once again the rapid development of environmental problems, their ever-increasing geographical range and their intensifying involvement in economic, social and cultural affairs at all levels of human activity.

Accordingly, solutions acceptable from the economic and social standpoints and suitable from the ecological and health angles can no longer be found merely at local and national level. Agreements have become necessary at continental and world level. Similarly, solutions to environmental problems can no longer be found in isolation in the field of a particular economic or social activity, but must be sought with reference to the entire field of human activities.

ANNEX 1 p.3

These two fundamental conclusions are entirely in the spirit of the Commission's proposals on the environment. There is no doubt that, after its enlargement, its intensification and the strengthening of its structures, the homogeneity of the developed countries of the Community can make a considerable original contribution of its own to environmental problems in the Community itself and in the rest of the world.

The Stockholm Conference also showed that environmental requirements called for a reorientation of policy at national level and also at Community level. This reorientation will have repercussions throughout the policies for individual industries of the Community Member States and the Community would be fulfilling its true function if the Member States decided to act together.

The Conference should also give rise to a certain caution. On the one hand, it was found that numerous environmental problems were still insufficiently known or explored, either as to their consequences or as to the remedies to be applied to them. At the same time, at the political level, the decision-making and organizational structures for safeguarding the environment are still inadequate. Thus it is necessary to improve both knowledge of problems and remedies and the decision-making and organizational structures.

One general remark is called for: never before have politicians and senior officials the world over been so intimately concerned with problems of the environment on such a massive scale - in fact, with the problems of civilization. This in itself augurs well for the task ahead.

ANNEX 2 p.1

DELAYS IN THE PROCEDURES FOLLOWED IN THE IMPLEMENTATION OF
THE COMMUNITY'S SCIENTIFIC AND TECHNICAL RESEARCH POLICY
(The Aigrain Group reviews its activities)

Despite some positive results, the procedures followed in connection with the implementation of a common policy for scientific and technical research are marked by a general sluggish ineffectiveness. This is one of the conclusions drawn by the Aigrain Group in its review of its work during the period April 1965 to December 1971.

The Working Party on Scientific and Technical Research Policy (PREST), otherwise known as the Aigrain Group, was set up in April 1965 by the Community's Medium-Term Economic Policy Committee for the purpose of studying the problems involved in the framing of a coordinated or common policy on scientific and technical research and proposing measures for embarking on such a policy, due account being taken of the possibilities of cooperation with other countries. The Group had its terms of reference confirmed in October 1967 and these were renewed in December 1968 by the Member States. Its brief was:

- (a) to make a general comparison of national methods, plans, programmes and budgets relating to research and development;
- (b) to determine the possibilities of European cooperation, extended, if appropriate, to countries other than the Community Member States, beginning with seven sectors of activity, namely, data processing, telecommunications, new means of transport, oceanography, meteorology, metallurgy and pollution;

- (c) to examine ways and means of setting up a Community scientific and technical information and documentation system;
- (d) to step up the training and exchange of scientific workers.

These various major objectives gave rise to the provisional creation of 35 working parties and the organization of a great many meetings. Some of the objectives laid down have been achieved, and others - perhaps the most important ones - only partly.

(a) Comparison of national methods, plans, programmes and budgets

A first attempt at comparison based on a general approach to national plans and programmes came up against problems arising in particular from the differences in methods and even conception of plans and programmes in the various countries. The general approach was therefore temporarily abandoned and an approach by individual industry was chosen which is to be gradually extended to cover the whole field of civil scientific and technical activities. This more pragmatic method has now been finalized, apart from a few details; the basic nomenclature and the analysis of public R&D funding by objectives have been adopted by experts of the Member States and were tried out with success during the period 1967-71. The procedures of information and consultation on national plans and projects for individual industries have been defined. The only reservations in this respect concern the programmes being worked on in industry. Experimentation should, however, permit the rules to be observed by the Member States to be adopted on a practical basis.

ANNEX 2 p.3

Moreover, new experimental machinery for the examination of the long-term requirements of programmes have been defined and established at Community level. Thus two "conception groups" were set up in 1971 in the fields of urban development and public health.

(b) Definition of the possibilities of cooperation in the seven sectors selected by the Council of Ministers

Of the tasks assigned to the PREST Group, this called for the greatest effort in terms of volume: about 12,500 man/days and a total expenditure of the order of two million dollars. Of the 47 projects initially defined in 1969 by the PREST Group, about 12 have been retained so far; seven of them have already formed the subject of an implementation decision at the Ministerial Conference on 22-23 November 1971 (see IRT Nos. 120 and 122), while the others are still at the study stage. New methods of European cooperation on research and development have been worked out, in particular concerted projects which are based on a threefold principle: common planning, national financing and pooling of results.

(c) Scientific and technical information and documentation (STID)

The gradual creation among the six Member States of a European documentation and information network and the immediate implementation of an experimental project on metallurgy was approved in June 1971 by the Council of Ministers (see IRT No. 105).

ANNEX 2 p.4(d) Training and exchange of scientific workers

Work on this subject culminated in 1970 in two reports presenting a set of practical suggestions. These reports were sent with certain special recommendations to the Ministers of national education of the Member States, who in November 1971 held a meeting at which some of the subjects in the reports were tackled.

Conclusions: procedures must be changed

While the work of the PREST Group has demonstrated the possibility of gradually defining a common research and development policy in conjunction with the other Community policies, the results of the PREST Group's work are generally meagre, apart from some partial achievements. Delays, excessive costs, incoherence and inadequate procedures have rendered it difficult, if not impossible, to fulfil the mission assigned by the Council of Ministers.

In order that the machinery for the preparation of decisions on research and development can function quickly and efficiently, there is a need to set up a single research and development committee at Community level to replace the various existing groups. It would consist of senior national officials and representatives of the Commission of the European Communities and would be responsible for submitting suggestions and draft decisions on research and development to the Council of Ministers and the Commission of the European Communities.

ANNEX 2 p.5

With regard to working methods, rather than setting up large groups of international experts, use should be made of national institutions, study bureaus and independent experts or small groups consisting of a few leading experts chosen irrespective of considerations of national prestige. Experiments of this kind already undertaken have proved successful and could usefully be made the rule.

ANNEX 3 p.1

NET ELECTRICAL CAPACITY OF NUCLEAR POWER PLANTS IN OPERATION,
UNDER CONSTRUCTION OR AT THE DESIGN STAGE IN THE COMMUNITY
at 30 June 1972

Net electrical capacity of nuclear power plants in operation,
under construction or at the design stage: 28,324 MWe net, or:

	Country	In operation	Under Const- ruction	Orders and projects	Total MWe
(a) <u>PROVEN-TYPE REACTORS</u>					
<u>Gas-graphite</u>					
Chinon 1 / Loire (EDF)	F	70	-	-	70
Chinon 2 / Loire (EDF)	F	200	-	-	200
Chinon 3 / Loire (EDF)	F	480	-	-	480
St. Laurent 1 / Loire (EDF)	F	480	-	-	480
St. Laurent 2 / Loire (EDF)	F	515	-	-	515
Bugey 1 / Rhône (EDF)	F	540	-	-	540
G 2 Marcoule / Rhône	F	40	-	-	40
G 3 Marcoule / Rhône	F	40	-	-	40
ENEL (Latina) ¹	I	200	-	-	200
		2565	-	-	2565
<u>Boiling Water</u>					
KRB (Gundremmingen)	D	237	-	-	237
KWL (Lingen) ²	D	174	-	-	174
V&K (Kahl)	D	15	-	-	15
ENEL (Garigliano)	I	150	-	-	150
GKN (Doodewaard)	N	52	-	-	52
KWW (Procag) Wurgassen Weser	D	640	-	-	640
KKB (HEW/NWK) Brunsbüttel	D	-	770	-	770
ENEL 4 (Caorso)	I	-	783	-	783
KKP I (Badenw/EVS) Philippsburg	D	-	860	-	860
KKP II (Badenw/EVS) Philippsburg	D	-	-	860	860
KKI (Bayernw/Isar&perW) Ohu Isar	D	-	-	870	870
KKW (HLW/NWK) Krummel, Elbe	D	-	-	1260	1260
		1268	2413	2990	6671

¹Owing to a permanent outage, operates in practice at 153 MWe.

²Excluding super-heat (with fuel oil, natural gas is planned).

ANNEX 3 p.2

	Country	In operation	Under Construction	Orders and Projects	Total MWe
<u>Pressurized water</u>					
KWO (Obrigheim)	D	328	-	-	328
SENA (Chooz) ¹	F	270	-	-	270
ENEL (Trino Vercellese)	I	247	-	-	247
BR 3 (Mol)	B	10	-	-	10
KKS (Stadersand/Elbe) NWK + HEW	D	630	-	-	630
SEMO (Tihange/Meuse) ²	B	-	870	-	870
Centr Nucl de Doel (Doel/Escaut)	D	-	780	-	780
PZEM (Borssele)	N	-	450	-	450
Biblis/Rhine- I (RWE)	D	-	1146	-	1146
Biblis/Rhine - II (RWE)	D	-	1178	-	1178
Fessenheim I (Rhine) EDF ³	F	-	890	-	890
Fessenheim II (Rhine) EDF	F	-	-	890	890
Esenstamm (Preag/NWK)	D	-	-	1230	1230
GKN Neckarwestheim /Neckar	D	-	775	-	775
Bugey 2 (EDF)	F	-	-	925	925
Bugey 3 (EDF)	F	-	-	925	925
		1485	6089	3970	11544
<u>(b) ADVANCED REACTORS</u>					
<u>Heavy water</u>					
MZFR (Karlsruhe)	D	51	-	-	51
KKN (Niederaichbach)	D	-	100	-	100
EL 4 (Monts d'Arrée)	F	70	-	-	70
CIRENE (Latina)	I	-	-	32	32
<u>High temperature</u>					
HKG (Schmehausen)	D	-	300	-	300
AVR (Jülich)	D	13	-	-	13
KWSH Kerndr.Schleswig-Holstein	D	-	-	22	22
<u>Sodium/zirconium hydride</u>					
KNK (Karlsruhe)	D	19	-	-	19
<u>Nuclear superheat</u>					
HDR (Grosswelzheim)	D	22	-	-	22
		175	400	54	629
<u>(c) FAST BREEDERS</u>					
Phenix (Marcoule)	F	-	233	-	233
SNR (Kalkar) ⁴	D	-	-	282	282
		-	233	282	515

¹ Franco-Belgian (50/50) plant² 50% French share (EDF)³ 30% Swiss share⁴ 70% German share + Benelux

ANNEX 3 p.3

	Country	Orders and Projects	Total MWe
<u>TYPE NOT YET DETERMINED</u>			
BLSF 1 (Ludwigshafen)	D	400	400
Grafenhainfeld (BayernW/..)		p.m.	p.m.
Grosswelzheim/Gundremm. (RWE)	D	1200	1200
Badbreisig/Mulh.Kärlich (RWE)	D	1200	1200
Biblis III (RWE)	D	1200	1200
KBR -1 Breisach/Rhine (BW/EVS)	D	1200	1200
Schmehausen/Lingen (VEW)	D	p.m.	p.m.
Sleichen Rosenheim (BW/IAW)	D	p.m.	p.m.
GKN (Borsele/Maasvlakte)	N	600	600
Encl 5	I	600	600
		6400	6400

(p.m. = pro memoria)

Breakdown by degree of completion and country of location

MWe

	Germany	France	Italy	Netherlands	Belgium	Community
Reactors installed	2129	2705	597	52	10	5493
Reactors under construction	5129	1123	783	450	1650	9135
	7258	3828	1380	502	1660	14628
Reactors on order and at the design stage	9724	2740	632	600	-	13696
	16982	6568	2012	1102	1660	28324

ANNEX 4 p.1

THE MEDIUM-TERM PROGRAMME OF AID FOR COAL RESEARCH IN THE
COMMUNITY (1970-74)
Recently revised

Far from being an indictment of the Community effort on technical research in the coal sector, the coal crisis makes it more imperative than ever, since experience has shown that this research is bringing about significant economic and social improvements in the coal sector, which continues to play a very considerable part in ensuring a dependable supply of energy for the Community.

Cheaper coal, in particular through greater productivity, an improved valorization of coal products and better working and safety conditions are the fundamental objectives of coal research. The medium-term programme of aid to coal technology research, framed after consultation with the representatives of coal producers, research institutes, universities and trade unions in the Community, is intended to ensure a concentration of effort in the fields most likely lead to concrete results, to harmonize research work and, on the basis of criteria aimed at making this research as effective as possible at Community level, select priority fields in which the Community would provide the financial wherewithal for research projects (see IRT No. 61).

Seven priority fields are covered by the medium-term programme. They concern operations below ground (layout work; coal-winning methods; general underground activities; transmission; remote monitoring, remote control and automation), economics of coal mining (planning and structure) and the valorization of products (coking and briquetting; new physical and chemical processes).

ANNEX 4 p.2

The revision of the medium-term programme submitted by the Commission of the European Communities in 1970 aims basically at placing greater emphasis on the technical problems of safety and working conditions in the fields chosen, in particular those which relate to operations below ground, and on the problems relating to protection of the environment, which arise in all the fields under consideration, particularly those of valorization of products.

Emphasis is also placed on the need to dovetail this effort with other research which receives financial backing from the Community in the field of industrial safety, health and medicine. This research mainly covers fields connected with pollution and industrial protection, health and safety.