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Scientific and Technological Policy Programme

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EUROPEAN COMMUNITIES
Commission

summary

Part I

Introduction

This document is concerned with the draft scientific and technological programme which on the occasion of the Paris Summit Conference held on 19-20 October 1972, the Heads of State and Government recommended should be drawn up by the institutions of the Community.

This programme and the draft decision and draft resolution accompanying it incorporate the basic data contained in the Commission communication of 14 June 1972 entitled 'Objectives and resources of a common policy on scientific research and technological development'[1] In particular the programme, draft decision and draft resolution in question supersede (this being specifically stated) the draft resolution which was the subject of preliminary discussions in the Permanent Representatives Committee in the spring of 1973.

The Commission stresses, however, that the chief objective remains unchanged: progressively to implement a common policy on scientific research and technological development, notably as a means of helping to achieve the aims set out in Article 2 of the Treaty establishing the European Economic Community.[1]

Furthermore, this programme takes into account the outcome of the discussions which Mr Dahrendorf, Member of the Commission, held with the responsible authorities in the Member States on the basis of his memorandum 'Work programme in the field of research, science and education'.[2]

The implementation of a common scientific and technological policy consists in taking as its basis an evaluation of expressed or felt needs, and on this basis:

— jointly selecting and drawing up a coherent set of long-, medium- and short-term objectives and the priorities to be complied with in achieving them;

— ensuring the coordination of national policies;

— determining those projects of Community interest on which work should go ahead;

— setting up permanent consultative machinery, through which the Member States can, whenever the need arises, decide on the common attitudes to be adopted vis-à-vis third countries or within international organizations;

— determining the resources required in order to achieve the objectives decided upon and choosing the administrative or technical structures best suited to this purpose.

In order to ensure that these aims are fulfilled, the Commission has at its disposal a Joint Research Centre, which is an indispensable instrument for the execution of programmes financed and implemented by the Community. The Centre is to continue to fulfil this basic role. The Commission also has at its disposal a European Committee on Research and Development (CERD), which is a consultative body made up of independent persons. However, in order to be in a position to formulate and implement a common scientific and technological policy as defined above, the institutions of the Community should also be able to draw at all times on the assistance of experts and responsible government officials, to rely on a greater degree of participation by national research institutes in Community projects and to have access to long-term estimates. At present, such assistance and information is either lacking or only partial.

Prior to embarking on the first stage, the Commission has listed the relevant activities under six main headings:

1. *Coordination of national policies*

It is important in this connection to set up the structures and procedures necessary to ensure the gradual coordination of national policies in the scientific and technological field. In an initial stage (1974-75), the institutions of the

[1] Supplement 6/72 — Bull. EC.
[2] Bull. EC 5-1973, points 2237 to 2240.

Community, acting on a non-binding recommendation, will then have the task of examining and, where appropriate, adopting as from 1976 a phased plan relating to the degree of enforcement attaching to the coordinating measures in connection with the work plan in the field of 'research, science and education'.[1]

2. *Promotion of basic research*

The problem of promoting basic research must be tackled at Community level in a way which takes account of the special features of the problem. In this connection, the European Economic Community would do well to consider the possibility of participating in the 'European Science Foundation' project, which would have the task of encouraging cooperation among research committees and academic institutions in Western Europe.

3. *Measures in support of Community policies*

As regards the projects of Community interest referred to in the declaration of the Heads of State and Government, the Commission has adopted the following approach in drawing up its initial proposals:

On the basis of the Treaties, the European Communities have evolved policies covering agriculture, social welfare, energy (nuclear and coal), industry (steel), transport and aid to developing countries. The Heads of State and Government have recommended that, in addition to these policies, the Community institutions extend the scope of their industrial policy, notably to include regional and environmental policy.

This first experimental programme contains proposals on measures in support of the policies developed by the Community or specifically mentioned in the aforesaid declaration where the need for such action has been recognized.

The projects of Community interest are set out in the second part of this document, either in the form of a framework programme or in the form of concrete proposals.

The programme proposals will be implemented with the assistance of the competent national bodies working in committees which it has been proposed should be set up. Depending on the degree of progress made towards their completion, these proposals could be forwarded to the Council as from the beginning of 1974. The Commission has decided as a matter of principle to refrain altogether from proposing the creation of new institutes or centres and has taken the view instead that use should be made of existing national or Community laboratories. Furthermore, certain projects of Community interest could, if it were considered advisable, be carried out jointly by the Community in collaboration with non-member countries.

4. *Scientific and technical information*

Modern companies are dependent to an increasingly large extent on a broad range of information covering everything from original research know-how to simple facts which are nevertheless of inestimable importance where decision-making is concerned.

The European Community has considerable potential at its disposal, both in terms of scientific and technical information sources and in terms of users of this type of information. Thus there would appear to be every good reason for taking steps during the years ahead to ensure that appropriate information networks, drawing on the various Member States' capacities, are created within the Community.

5. *Tasks in connection with public service and scientific and technological services*

One area of activity where action at Community level could prove particularly effective as

[1] Bull. EC 5-1973, points 2237 to 2240.

compared with existing methods of uncoordinated activity concerns tasks in connection with public service and scientific and technological services. These tasks include standardization and the development of reference methods and substances—public services (networks and systems, etc.).

6. *Long-term research - outlook - methodology*

Prior to making a choice as to the major R & D objectives to be pursued in the future at Community level, the Community needs to have access to estimates, long-term data and models so far denied it in the fields concerned. In addition, it is clearly necessary to embark on a series of permanent studies concerned with the Europe of 30 years hence as well as methodological research on R & D policy (research and development).

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In the light of the work plan and the timetable proposed in the draft decision attached to this document, it would be highly desirable if the Council of Ministers responsible for research could meet regularly every six months.

As from 1974 there should be provision for a meeting of the Council to be held during the first six months of the year on Community priorities, objectives and projects. Within this framework, the guidelines for revision of the multiannual research and training programme will be proposed and examined.

1. Coordination of policies in the scientific and technological field

Explanatory memorandum

The declaration of the Heads of State and Government states explicitly that a common research and development policy 'will require the coordination of national policies'. This recommendation is clearly just as fundamental as the expressed determination to define objectives and to execute jointly projects of Community interest.

For the foreseeable future the bulk of the Community's R & D activities will be conducted by the Member States themselves on the basis of decisions taken at national level, even though in the case of the major priority R & D objectives and, as time goes on, some sectoral objectives, decisions may be arrived at jointly. This only serves to redouble the need for coordination of national policies.

Efforts in this direction should have as their aim:

— to eliminate unnecessary or unjustified duplication of work in the national programmes, while at the same time promoting the continuation of healthy competition;

— to obviate any divergent tendencies which would run counter to the interests of the Community Member States;

— to improve the efficiency, or reduce the cost, of the projects by the introduction of work-sharing or, where necessary, concentrating resources or research teams;

— to improve exchanges and use of know-how;

— gradually to harmonize procedures for the formulation and implementation of scientific policies in the Community.

The fact remains, however, that national policies in the scientific and technological field are determined and implemented according to

methods, timetables and procedures which differ in some degree from country. Traditions, customs and structures are other points of dissimilarity. In some cases there are even differences as regards the concept of scientific policy.

Despite all these factors of diversity, numerous common threads run through the various national policies and it is precisely because of the importance of these elements of similarity that practical efforts can now be initiated in the basic task of coordination.

Following the initial launching phase, the institutions of the Community will be called upon to examine the degree of enforcement, required in the coordinating measures. One of the preconditions for the coordination of national policies is the setting-up of a scientific and technical research committee to assist in achieving this task in the most efficient way possible.

Draft Council decision setting up a Scientific and Technical Research Committee

The council of the European Communities,

Having regard to the Treaty establishing the European Economic Community and in particular Article 145 thereof;

Having regard to the proposal from the Commission;

Having regard to the Opinion of the European Parliament;

Whereas by Article 6 of the Treaty the Member States have undertaken to coordinate their economic policies and whereas Article 145 lays down that the Council shall ensure coordination of the general economic policies of the Member States;

Whereas scientific research and technological development affect the economic and social progress of the Community to a large extent;

Whereas the Heads of State and Government meeting in Paris on 19 and 20 October 1972 affirmed their determination to promote the development of a common policy in the scientific and technological field and noted that such a policy will require the coordination, within the institutions of the Community, of national policies and the joint implementation of projects of interest to the Community;

Whereas to this end, it is desirable as a first step to establish a Committee capable of contributing, by its work and its opinions, to the effective coordination of national policies in this field and to the adoption of appropriate measures by the institutions of the Community.

Has decided as follows:

Article 1

In order to further the coordination of the policies of the Member States on scientific and technical research and the action of the Community, an advisory 'Scientitifc and Technical Research Committee' is hereby set up, whose task it shall be to:

(a) compare and examine possibilities, plans, programmes and budgets, both national and Community, and projects, measures and methods in the field of scientific and technological policy;

(b) identify, analyse and compare the objectives of the Member States with a view to determining gaps and deficiencies, thereby singling out the objectives likely to be adopted and the appropriate methods for attaining them;

bring to light original options and objectives of interest to the Community;

(c) assess the advantages of the options adopted and envisaged, particularly in relation to their effects on man and society;

(d) deliver to the Council and the Commission all opinions directed to:

— ensuring effective coordination of national policies, particularly with a view to preventing

duplication and to guiding the research into sectors insufficiently studied;

— determining ways and means calculated to increase the efficacy of national or Community plans and programmes;

— determining Community action for achieving objectives of interest to the Community;

— make it possible to define a common attitude of the Member States on scientific and technical cooperation with third states or international organizations.

Article 2

The Scientific and Technical Committee shall deliver opinions either at the request of the Council or the Commission or on its own initiative.

Article 3

As soon as it has been set up, the Committee shall examine the nature and the characteristics of the data which it is necessary to communicate in order that the tasks of the Community may be carried out. To this end the Committee shall place before the Commission all opinions relevant to the adoption of appropriate procedures.

Article 4

The Member States and the Commission shall each appoint two members and two alternates to the Committee. The Committee members and alternates shall be selected from among the senior officials reponsible for scientific and technological policy. The term of office of such members and alternates shall be two years. Such appointments shall be renewable.

Article 5

The Committee shall elect its officers for a period of two years. It shall draw up its rules of procedure. The secretarial staff shall be provided by the Commission. The latter shall ensure that the preparatory work is carried out and shall be responsible for the necessary contact with existing committees or working parties in other fields of Community activities, and in particular with the Medium-Term Economic Policy Committee and the Budgetary Policy Committee.

Article 6

In order to promote by progressive stages the coordination of national policies in all the civil research sectors, the Committee shall provide itself with sectoral coordination committees. In the first stage it may call upon existing groups but shall secure all necessary harmonization of their statutes, terms of reference and duties, taking account of the special conditions in each sector and conforming with the work timetable adopted.

The Commission shall, as and when necessary, forward all appropriate proposals to the Council.

Article 7

The Committee shall replace the Committee on Scientific and Technical Research Policy appointed by the Medium-Term Economic Policy Committee and shall take over its subordinate sectoral committees.

Article 8

The Council shall approve as a working basis the programme and the timetable shown in the Annex hereto, which forms an integral part of this Decision.

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Annex

Work programme and timetable

Implementing Stages

First stage—1974-75 : An experimental stage as regards methods of comparison, consultation, formulation of suggestions and preparation of opinions and recommendations relating to national R & D policies from the Community institutions to the Member States.

Second stage—1976: This stage will be devoted to drawing conclusions from efforts which have been accomplished, assessing the effectiveness of the procedures tested, perfecting the mechanisms of these procedures and crystallizing the guidelines for a common R & D policy.

Stage 1

1974: — Setting-up of the 'Scientific and Technical Research Committee'.

— Simultaneous setting-up of an initial group of sectoral coordination committees using existing or embryonic committees.

— Designation by the Member States of the national bodies responsible for supplying appropriate information to the Commission and, through the latter, to the coordination committees (general data on national policies and sectoral information).

— Gradual introduction of systematic comparisons of programmes and consultations.

— First examination of national R & D Budgets prior to national decisions.[1]

— Examination of draft programmes of Community interest which embody the studies or preparatory work on programmes undertaken pursuant to Council decisions at the end of 1973.

1975: — Broadening of the procedures for comparing national plans, programmes, budgets and measures. Setting-up of a second group of sectoral coordination committees.

— Further examination of national R & D budgets prior to national decisions.

— Tests on the phasing of planning procedures at the national and the Community level.

— Study relating to the setting-up of an 'R & D policy' data bank forming the link with the correspondents in the Member States for the information system.

— Examination of new draft programmes of Community interest.

Stage 2

1976: — Completion of the setting-up of the sectoral coordination committees so as to cover all civil R & D.

— Systematic forwarding by the Member States (from the preparatory stage) of all national R & D plans, programmes, and projects to the Commission and, through the latter, to the coordination committees.

— First overall examination of the draft national and Community R & D budgets.

— Any desirable modifications to the national planning procedures in the light of the results of Community work on the coordination of national policies.

[1] During 1973, a start was made on an attempt to extend to all nine Member countries the methods used in the Six for comparing R & D budgets (operation still in progress).

2. Promotion of basic research

Explanatory notes

As a general rule, basic research forms the source of new knowledge as well as the theoretical basis for applied research, technological development projects and innovating processes. Basic research is an essential element in technical, social and cultural progress.

The level and volume of basic research and the vigour with which it is pursued have a decisive effect on the Community's capacity to master the tasks it will have to face in the future and to keep up its position in the world and in a rapidly changing society. Consequently, the promotion of basic research represents a recognized objective of the Member States scientific policies.

It is vital that the Community intensify cooperation among Member State research workers engaged in this sector if it is to derive the maximum benefits form the potential accruing from effective collaboration of this kind and rationalize the implementation of promotion methods wherever possible and generate optimum conditions for creative work in the Community.

The measures adopted by the Community are designed to afford material assistance in the operation of the planned European Science Foundation. The institution in question should be established in the near future by the various national research councils and by academic bodies in Western Europe. It would be a private body having legal personality and subject to the laws of the country in which it is to have its seat. Its aims will be to advance cooperation by the following means:

(a) promoting mobility of research workers;

(b) encouraging the free exchange of ideas and information;

(c) facilitating the harmonization of the national activities of the Member States in the field of basic research;

(d) providing financial aid in support of concerted activities and collaborative projects;

(e) facilitating cooperation in the utilization of existing large-scale equipment facilities;

(f) facilitating cooperation in the assessment and execution of major projects and in the provision of expensive specialized services.

Since these aims are similar to those originally adopted by the Commission for a Community policy in the field of basic research, the Commission proposes that Community support be given to this Foundation.

Such support could consist in financial participation in the running of the Foundation[1] and, where necessary, participation in the financing of projects of Community interest which the Foundation might be called upon to undertake.

The Commission reserves the right to review the situation in cooperation with the government and scientific circles concerned, should the Foundation project outlined above fail to develop along the desired lines.

Draft Council resolution on the participation of the European Communities in the European Science Foundation

The council of the European Communities,

Having regard to the Treaties establishing the European Communities;

Having regard to the proposal from the Commission;

Having regard to the Opinion of the European Parliament;

Whereas at the Conference in Paris on 19-20 October 1972 the Heads of State and Govern-

[1] This participation could be of the order of 30-35 %, i.e., about 200 000 u.a. per year.

ment expressed their resolve to define objectives and ensure the development of a common policy in the scientific field; whereas, to this end, it is necessary to coordinate the various national policies;

Convinced of the need to create a European Science Foundation in order to stimulate European cooperation and formulate solutions, at Community level, to the problems arising in connection with basic research;

Whereas a European Science Foundation is in the process of being set up by the research councils and academic bodies in the European countries, including the nine Member States of the Community;

Whereas the aims of this Foundation are similar to those previously envisaged by the European Communities in this field; whereas it will be possible to ensure cooperation among Member States within the framework of this Foundation and the Community ought, acordingly, to give its support to this Foundation;

Has adopted this Resolution

The Council takes note of the forthcoming creation of a European Science Foundation and hereby records its favourable opinion with regard to the financial participation of the European Communities in the running of this Foundation.

The Council takes note of the intention of the Commission to keep the work of the Foudation under review and to forward to the Council each year a report on such work.

The Council calls upon the Commission to forward to it proposals for such projects of interest to the Community as the Foundation might be required to undertake.

3. Joint execution of projects of Community interest: measures in support of Community policies

Explanatory notes

Although the machinery for formulating medium-term Community objectives still requires further elaboration, it is already possible, and indeed necessary, to initiate practical measures in the field of scientific research and technological development with the aim of supporting Community sectoral policies.

As regards these policies, a number of general views and ideas exist on the basis of which it is possible to identify and define the requirements to be met and the problems to be resolved, in view of the fact that the R & D projects have a role to play in helping to meet these requirements and resolve these problems.

The outline programme and the projects described in Part II of this document (devoted to social, energy, industrial and environmental policy and policy towards the developing countries) may serve to facilitate the immediate solution of the problems outstanding, the identification of medium-term objectives and, finally, the coordination of national policies.

The outline programme on 'Energy Research' is of special importance and for this reason the Commission is requesting that an ad hoc resolution, presented in Part II of this document, be adopted by the Council. Similarly, with regard to the proposed aero-engine projects and in view of its progress to date, a proposal for a decision is also included in Part II of the document.

As regards agricultural, transport and regional policy, the Commission will put forward appropriate proposals as and when specific research requirements become known. It also undertakes to put forward additional proposals, complementary to those already presented in Part II of this document, concerning research in the social sector.

Projects of Community interest will be executed by the JRC establishments or under contracts concluded with public or private research bodies in the Member States. In future the Community will endeavour to place the emphasis on the more thorough-going use of existing potential in the Member States, while ensuring continued JRC participation, geared mainly to tasks of a permanent nature.

Where projects of Community interest are to be executed under contracts, a varied range of formulas exist from which a choice can be made according to the specific requirements of each project (e.g., scientific and technological research contract, contract of association, industrial development contract, concerted-action project).[1]

Draft Council resolution on an initial outline programme of projects of interest to the Community in support of Community policies

The Council of the European Communities,

Having regard to the Treaties establishing the European Communities;

Having regard to the proposal from the Commission;

Having regard to the Opinion of the European Parliament;

Whereas the objectives and resources of a common scientific research and technological development policy are likely to contribute to social progress, to balanced economic expansion and to an improvement of the quality of life;

Whereas the development of this common policy presupposes that the institutions of the Community carry out a periodic examination of prospects, priorities and proposals put forward by the Commission in matters relating to research and development, and lay down objectives and programmes and allocate the necessary resources;

Whereas at the Summit Conference in Paris on 19-20 October 1972 the Heads of State and Government expressed their resolve to define objectives and ensure the development of a common policy in the scientific field; whereas, to this end, it is necessary to coordinate the various national policies within the institutions of the Community and to execute jointly projects of interest to the Community;

Whereas the initial stage should be devoted to projects in certain fields covered by Community policies the need for which has been recognized;

Has adopted this resolution:

The Council approves the priorities adopted by the Commission for the drawing-up of an initial programme of projects in support of Community policies:

— Social policy: medical research sector

— Energy policy[2]: outline programme covering: energy raw materials; energy conversion; production and transmission of directly consumable energy; environmental protection and rational use of energy

— Aid policy vis-à-vis the developing countries: scientific and technical cooperation

— Industrial policy: sectors: materials; aero-engines; data-processing

— Environmental policy[2]: sectors: reduction of pollution and environmental nuisance; improvement of the environment water supply

The Council takes note of the relevant programmes presented by the Commission and also of the fact that the latter will forward it practical proposals, formulated with the assistance of the Scientific and Technical Research

[1] Underlying the concerted action project are three basic principles: joint planning; financing and execution by the participants; pooling of the results by the participants.

[2] These projects are based on experience with projects already decided on or currently in progress and/or complementary to the former.

Committee, in accordance with the proposed timetables.

The Council takes note of the fact that the Commission will forward appropriate proposals as and when specific research requirements have been decided upon within the framework of the agricultural, regional and transport policies and, where applicable, in other sectors of social policy.

4. Scientific and technical information and information management

Explanatory notes

A faster flow of scientific and technical information and the importance attaching to such information as a public service to keep industry competitive from the point of view of society in general constitute a serious problem for Europe.

The institutions of the Community can make a considerable contribution to securing the best possible solution to this problem. In particular, the Commission plans to promote the creation of a European information and documentation network, using the Member States' potential as its fulcrum.

The European network of scientific and technical documentation and information will evolve gradually at different levels and will deal with both factual and mathematical data collected by information analysis centres.

The following phases are scheduled:

— Compilation of a list of documentation centres and available storage services and setting-up of a reference centre.

— Gradual determination and laying-down of practical rules and common procedures aimed at enabling input operations to be constantly improved and more rationally apportioned among documentation systems.

— Sharing of output services and cross-checking of enquiries.

— Improvement of the training and briefing of information and documentation specialists.

The Community has, of course, been engaged in activities in various sectors for a number of years pursuant to Articles 12 and 13 of the Euratom Treaty, Article 55 of the ECSC Treaty and Article 41 of the EEC Treaty and the Council Resolution of 24 June 1971. These

activities will be continued while a survey is being made of other sectors in which Community action is called for.

In the spheres which are already under serious consideration the Commission will:

— Continue to operate the European Nuclear Documentation System, but intends to slow down the system input effort as the IAEA's INIS system (with which there are close working links) develops.

— Continue to carry out the provisional processing of data regarding a Community documentation and information system in the metallurgical field, whilst stimulating research on and improvement of the system in order to meet the Member States' requirements.

— Collect and finally process data on the proposed documentation system for agricultural research projects (AGREP).

— Finalize its plans for the collecting of systematic documentation on the legal, economic and social aspects of agriculture which relate to the common agricultural policy.

In addition, ad hoc research and investigations will be continued and/or begun in the fields of the environment, patents, education, biology and medicine. When Community action is necessary the Commission will present appropriate proposals to the Council.

An important field which the Commission plans to study, in cooperation with the appropriate national organizations, is the whole problem of commercial and industrial exploitation of the results of research and development work financed from public funds. The Commission plans to make suitable proposals for creating a Community network of supply and demand as regards new techniques.

The Commission will consider with all the parties concerned whether it is necessary to create a permanent forum or guidance and surveillance service in the very sensitive field of information management. This body would make appropriate observations or recommendations for the attention of the Council and the Member States on the basis of the requisite surveys and studies.

Some of the operations listed above will require financial assistance from the Community. The Commission will present some specific proposals on this subject within the framework of the budget at the appropriate time.

5. Tasks in connection with public service and scientific and technologicial services

Explanatory notes

One sector in particular in which Community-level action could prove more effective than persistence with uncoordinated activities is that of tasks concerning public service and scientific and technical services.

The Central Bureau for Nuclear Measurements (CBNM) and the Community Bureau of References (CBR) constitute the first examples of work in this field within the Community.

In the near future the Commission will endeavour to present proposals aimed at:

— Standardization and harmonization in fields such as the assessment of undesirable side-effects of pharmaceutical and cosmetic products, additives and preservatives in foodstuffs and pesticides.

— Definition and utilization of Community networks and systems, e.g., telecommunications and transport.

In this connection the Commission intends to promote closer cooperation between the various existing standardization and calibration centres in the Community. In 1974 the Commission will convene a group of experts for the purpose of defining the conditions in which a Community network could be set up using existing national establishments as a basis. This network could take the form of a European association and develop into a genuine 'European Bureau of Standards', whose work would be based on sharing out tasks among existing national and Community establishments.

6. Long-term research - outlook - methodology: Action programme as regards forecasting, assessment and methodology

Explanatory notes

There is considerable interaction between scientific research and political decisions. Research has assumed such proportions that it is often bound up with priorities and budget appropriations which are decided at a political level and such political decisions depend, in a complex world, wholly or partially on data which can only be provided by scientific research. In the last decade this interaction has become even more apparent and the European Communities cannot ignore it.

At the level of Community policy in the scientific and technical field, this means that the Community should try to determine how its scientific capacity could best be used for the purpose of keeping the aims and instruments of its policy constantly under review. The problems involved are varied but they have certain points in common:

— Science enables forecasts to be made. The results of research show what the future may be; researchers can use their experience and imagination to predict future developments. These predictions may constitute an important factor in the political decision-making process.

— Research can itself be the subject of research. It is advisable to make a scientific study of both an inherent problem, i.e., to what extent research complies with targets, and a problem of a more general nature, i.e., whether priorities are justified.

— Research is aware of its own methods and is therefore self-critical. Decisions taken on matters of research policy require in particular a constant review of methods. This review extends to the organization of research and research policy.

The point which the various tasks have in common is the quality which they demand in those responsible for performing them, who must combine a high level of scientific competence with experience in political understanding of the various problems. If a rational policy is to be adopted it is essential that researchers fulfil these requirements, without allowing their knowledge of political needs to impair their objectivity.

Member States have undertaken tasks of this nature, using different types of organization.

The European Communities are in a particularly good position to fill such a role: the tasks involved are often of an international character, the juxtaposition of several national scientific communities makes the check more efficient, and the merging of the Member States' capacities as regards methods and forecasting may produce greater effects. The guidelines given by the Paris Summit Conference makes rational forecasting and 'check of research by research' particularly necessary.

Obviously these are tasks to be dealt with in the field which they concern. It is therefore necessary to enlist the services of top-level scientists with a clear understanding of the political problems involved. It is proposed that seven highly qualified persons be made responsible for compiling over a one-year period a report providing the analytical assistance necessary for future decisions in this field by Community institutions.

These experts should as far as possible have experience in forecasting, assessment and methodology and be given Community contract of a term not exceeding one year. It is to be desired that some of them continue to carry out their duties in their present establishments during this period. The cost of this preparatory phase is estimated at 500 000 u.a.

The team of experts will work in close liaison with the Commission, which will determine the questions to be dealt with and the general framework within which the work is to be carried out. Moreover, the Commission intends to make use of the experience of members of CERD by associating this Committee with the research.

Draft Council resolution on a programme of research as an instrument of forecasting assessment and methodology in the European Economic Community

The Council of the European Communities,

Having regard to the Treaty establishing the European Economic Community;

Having regard to the proposal from the Commission;

Having regard to the Opinion of the European Parliament;

Whereas Article 2 of the Treaty affirms as one of the tasks of the Community the promotion throughout the Community of a harmonious development of economic activities, a continuous and balanced expansion, an increase in stability and an accelerated raising of the standard of living;

Whereas at the Paris Conference on 19 and 20 October the Heads of State and Government reaffirmed their resolve to define the objectives and ensure the development of a policy in the field of science and technology;

Whereas the research projects forming the subject of this Resolution constitute important factors in these objectives and are therefore necessary to attain, within the framework of the common market certain objectives of the Commmunity;

Has adopted this resolution :

The Council hereby approves the programme as set out in the Annex hereto, which Annex forms an integral part of this Resolution, and records its favourable opinion with regard to

the financing of this programme, the duration of which shall be one year from the date of this Resolution.

The Council takes note of the intention of the Commission to forward to it after one year, on the basis of the results of this programme, proposals relating to these projects.

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Annex

Action programme

The problems raised by forecasting, assessment and methodology are no longer new. It is highly probable that in the long term they will have to be dealt with by the European Community. It seems advisable, however, to schedule a preparatory stage for examining the extent to which the Community will have to study these questions. The preparatory stage will have to be clearly defined; it will be without prejudice to future decisions.

It will include :

— a study of experience acquired in the various Member States on research as an instrument of forecasting, assessment and methodology;

— the definition of the problems facing the European Community in this field;

— the drawing-up of proposals concerning decisions which may be taken by the Comunity institutions in this field.

Two specific questions in particular will have to be answered :

— in the context of the common policy for science and technology, should the European Community undertake a major study on 'Europe plus 30'[1] concerning the tasks with which Europe will have to contend, taking account of foreseeable or possible developments over the next 30 years, and should this study make it possible in particular to develop a forecasting instrument which can be constantly updated ?

— should the European Community create its own Technology Assessment Office with the task of increasing the transparency of research and development and, if so, how should such an office stand in relation to European institutions?

Action

In order to carry out these tasks, it will be necessary to enlist the services of top-level scientists with a clear understanding of the political problems involved. It is proposed that seven highly-qualified persons be made responsible for compiling, over a one-year period, a report providing the basis for future decisions by Community institutions. As far as possible, these experts must have experience in the field of forecasting, assessment and methodology and be given Community contracts of a term not exceeding one year.

[1] The study of the relevant questions will be carried out in cooperation with the European Foundation for the Improvement of Life and Work which it is proposed to set up.

Overall survey and timetable

1. Coordination of National R & D Policies	2. Basic Research
Bodies consulted: PREST Committee	*Bodies consulted:* CERD
1973 *Existing Coordination Committees:* 1. Committee on Information and Documentation for Science and Technology (CIDST) (set up by the Council in 1971) 2. Medical Research Committee (set up by PREST in 1973)	1973 *Current Projects:* 1. Joint Research Centre (JRC): Materials science (1973/1976) 5.1 mill. u.a./4y
1974 3. Setting-up of the Scientific and Technical Research Committee 4. Setting-up of the first group of sectoral R & D coordination committees 5. Designation by the Member States of national bodies responsible for supplying appropriate data to Community institutions 6. Comparison of national R & D programmes 7. Proposal to Member States of projects of Community interest (taking account of national budgetary timetables)	1974 1. Continued[1] 2. Participation in the running costs of the European Science Foundation (ESF) — token entry 3. Proposal that the ESF take part in projects of Community interest
1975 6. Continued 7. Follow-up 8. Examination of R & D policy data bank 9. Harmonization of national R & D budgets (trial)	1975 1. Continued[1] 2. Continued 3. Follow-up to EFS proposals
1976 4. Completion of setting-up process 5. Follow-up and systematic arrangement 7. Follow-up: proposals for projects of Community interest including the new JRC programme 9. Follow-up: examination of draft national and Community R & D budgets 10. Any modifications to national R & D planning procedures	1976 1. Continued 2. Continued 3. Follow-up to EFS proposals [1] Subject to revision of programme.

Overall survey and timetable (continued)

3. Sectoral policies 3/1. *Social policy:* Biology and Health Protection Medical research	3. Sectoral policies 3/2. *Energy:* Energy research
Bodies consulted: — Ad hoc Working Party on Biology/Health Protection of the CCNR — ACPM Biology/Health Protection — ECSC Consultative Committee — Committee on medical research and public health } PREST sub- — Committee on the Monitoring of Seriously Ill Persons } committees	*Bodies consulted:* — Liaison Group on Energy — Ad hoc committees of experts (recycling) — Coordinating Committee on Fast Reactors — ECSC Consultative Committee — Scientific and Technical Committee (STC) — General Advisory Committee (GAC) — Liaison Group on Fusion
1973 *Current projects:* 1. Biology/Health Protection: — Joint programme 17.3 mill. u.a. (1971/1975) + (enlargement) 1.5 mill. u.a. (1973/1975) — Application of nuclear techniques to medical research 1 mill. u.a. (1971/1975) 2. ECSC Social research: Industrial safety and medicine 3 mill. u.a./y	**1973** *Current projects:* 1. ECSC technical coal research 3-4 mill. u.a./y 2. JRC: Energy R & D 1973/1976 17 mill. u.a./y 3. Headquarters: DRAGON nuclear projects 2.6 mill. u.a./y 4. Thermonuclear fusion 1971/1975 by the Nine proposal for priority projects (second tranche 1974/1975) 56 mill. u.a./y
1974 1. and 2. continued 3. Medical research: — Organization of 1 summer course/year (training of research workers and clinicians) — Organization of 2 seminars/year — Drawing-up of priority pilot programmes — Allocation of study grants	**1974** 1. to 4. continued[1] 4. Proposal for Joint European Tokamak (JET) 5. Drawing-up of proposals for projects on: — underground fluidification of coal — utilization of plutonium — thermal waste 6. Drawing-up of proposals for studies (superconductors, utilization of residual heat, etc.) 7. Setting-up of Advisory Committee on Energy R & D
1975 1. to 3. continued 3. 2nd series of proposals for priority projects 1. Drawing-up of new multiannual programme proposals	**1975** 1. to 4. continued[1] 5. Proposals for projects 6. Will be further developed with a view to concrete project proposals
1976 2. continued	**1976** 1. to 5. continued[1] 6. Concrete project proposals

[1] Providing that the programme is reviewed.

Overall survey and timetable (continued)

3. Sectoral policies 3/3. *Development cooperation:* Scientific aid to developing countries (DC)	3. Sectoral policies 3/4. *Industrial policy:* R & D projects for industrial purposes
	Bodies consulted: 1. PREST Committee 2. PREST Data Processing Group 3. ECSC Consultative Committee 4. GAC 5. STC 6. UNICE (Union of Industries of the European Community) 7. Ad hoc Committee on Materials
1973 *Current projects:* 1. 'MILS' Programme 2nd European Development Fund (EDF) (1970/1974) 1.1 mill. u.a./4y	1973 *Current projects:* 1. ECSC Steel research 8 mill. u.a./y 2. JRC: Materials programme (1973/1976) 8.5 mill. u.a./4y token entry: Materials Science see under Basic Research 3. Headquarters Projects: Eurisotop
1974 1. continued 2. Setting-up of a Committee on Scientific Aid to Developing Countries	1974 1. to 3. continued[1] 4. Materials for aviation } proposals 5. Materials for chemical industry } for projects 6. Materials for electronics industry 7. Setting-up of an Advisory Committee on Materials R & D 8. Research project on aircraft engines 9. Drawing-up of a data-processing programme
1975 3. Proposals for projects on scientific aid to developing countries	1975 1. to 3. continued[1] 4. to 6. start of projects 8. continued 9. Proposal for a data-processing project
1976 4. Programme for 'Scientific Aid to Developing Countries' project	1976 1. to 9. continued[1] 10. Data-processing project 11. New proposal for a 'Multiannual Programme'

[1] Subject to revision of programme.

Overall survey and timetable (continued)

3. Sectoral policies 3/5. *Environment:* Environmental research	3. Sectoral policies 3/6. *Agricultural policy:* Agricultural research (token entry)
Bodies consulted: — Council Working Party on the Environment (for priorities) — General Advisory Committees (GAC)	*Bodies consulted:* — Committee of Experts for 1. — ACPM Biology/Health Protection for 2. — Committee of national representatives with responsibility for 3.
1973 *Current projects:* 1. JRC: Four-year programme on the Environment (1973/1976) 15.85 mill. u.a./4y 2. Indirect-action project on the Environment (1973/1975) 6.3 mill. u.a./3y 3. Token entry: 3 COST projects 4. Setting-up of an Advisory Committee on research into the Environment (ACRE)	1973 *Current projects:* 1. Community programme on Classical and African Swine Fever (1973/1976) 2 mill. u.a./4y 2. Application of nuclear techniques to agricultural research (Bio/Health Protection Programme) (1971/1975) 4.6 mill. u.a./5y unchanged 3. Setting-up of a Standing Committee on Agricultural Research
1974 1. and 2. continued[1] 5. New proposals for projects, in particular R & D projects on water management and planning models and on preliminary processing and purification of water	1974 1. and 2. continued 4. Drawing-up of proposals for agricultural research projects (stemming from 3.)
1975 1. and 2. continued[1] 5. continued 2. new 'Environment' proposals	1975 1. and 2. continued 2. new proposals 4. continued
1976 1. continued[1] and new proposals for a 'Multiannual Environment Programme' 5. continued	1976 1. continued 4. continued

[1] Subject to revision of programme.

Overall survey and timetable (continued)

4. Scientific and Technical Information and Documentation	5. Public Service and Scientific Services
Bodies consulted: CIDSTC and study groups	*Bodies consulted:* — General Advisory Committee (GAC) — BRC Advisory Committee for 1. — ACPM for 2., 3. and 4.
1973 token entry: COST Project No 11 (setting-up of a European data-processing network)	**1973** *Current projects:* 1. Community Bureau of References (CBR) (1973/1975) 1.8 mill. u.a./3y 2. JRC: Standards and reference materials programme (1973/1976) 6.2 mill. u.a./4y 3. Central Bureau for Nuclear Measurements (BCMN) (1973/1976) 20.35 mill. u.a./4y 4. European Scientific Data-Processing Centre (CETIS) (1973/1976) 6 mill. u.a./4y 5. Information and Documentation Centre (CID) 6. Information Analysis Office ESIS + INDAC/JRC 5.1 mill. u.a./4y 7. token entry: Meteorological Centre (COST) 8. Petten HFR Reactor (1973/1976) 9. Proposal for new tasks for the Petten establishment
1974 1. Continuation of work on a European information and documentation network using Member States' potential	**1974** 1. to 8. continued[1] 9. Start of new activities at Petten 10. Strengthening of links between standardization and calibration bodies
1975 1. continued	**1975** 1. to 9. continued[1]
1976 1. continued	**1976** 2. to 9. continued[1] 10. Proposals for a project on a New Multiannual Programme

[1] Subject in part to revision of programme.

Overall survey and timetable (continued)

6. Forecasting, Assessment and Methodology in R & D Policy	7. Projects not classified in a Sectoral Policy
Bodies consulted: CERD	*Bodies consulted:* — Scientific and Technical Committee (STC)[1] — General Advisory Committee (GAC)[2] [1] For all Euratom Treaty projects [2] For all JRC projects
1973	1973 *Current projects:* 1. JRC — Remote sensing of the earth's resources (1973/1976) 1.05 mill. u.a./4y 2. JRC — Recycling of raw materials (1973/1976) 3.05 mill. u.a./4y[1] [1] This sum also embraces the solar energy project
1974 1. Definition of the 'Europe + 30' project 2. Examination of the desirability of setting up a European Technology Assessment Office 3. Mapping-out of a programme on R & D Policy Methodology 1., 2. and 3. 0.5 mill. u.a./1y	1974 1. and 2. continued[1] 3. Revision of JRC programme
1975 1. and possibly 2. Proposal for a project 2. Implementation of a programme (continued) 1., 2. and 3. Concrete project proposals	1975 1. and 2. continued[1] 3. Revision of JRC programme
1976 1., 2. and 3. continued (start of projects)	1976 1. and 2. continued[1] 4. Proposals for a new multiannual research and training programme [1] Subject to revision of programme.

Part II

Projects in support of Community policies

A. **Outline programmes**

1. *Social policy: medical research sector*

Explanatory notes

Until recently the main differences between one man's condition and another's lay in material possessions. But today many of us enjoy material well-being, and as a result the inequalities due to other factors, particularly by that of state of health, have become much more important. Thus the right to good health is now claimed and recognized — the right for each of us to receive the best possible attention when ill. This right has led to the creation in industrial countries of health insurance schemes whose deficits account for a sizeable fraction of state budgets. Where up to about ten years ago this fraction was around 5 % of the GNF, it is now steadily increasing. It is therefore of importance to study how optimum use can be made of the funds devoted to public health.

Medical research is the best way of achieving this end, and forms an integral part of any health policy. Its human and economic value are inestimable. Its true end is the enhancement of life.

The development of medical research would, of course, be inconceivable without parallel advances in the training of research workers and of those who will be called upon to utilize the research results and to translate theoretical progress into practice at the patient's bedside.

Advances in medical research are becoming increasingly dependent on the adoption of a multidisciplinary approach. The doctor must aid and be aided by the biologist, the chemist, the physicist and the documentalist. The history of all the great medical discoveries of the last 15 years makes this clear. The number of specialists having the necessary competence, time and equipment to deal with any one of the biomedical problems which now confront us is very small. When an attempt is made to bring together the skills required to tackle a research subject, it is invariably necessary to look far beyond national frontiers. In other words, the critical mass for the study of a large number of problems can only be attained at international level.

In conformity with the findings of the Planning Group on 'Medical and Public Health Research', the main objectives of the proposed research are the prevention and early diagnosis of disease and rehabilitation.

1. In the light of these objectives, the proposed programme comprises the following tasks :

1.1 The organization of one summer course per year for the training of research workers and clinicians in new medical research techniques and methodologies.

1.2 The organization of two seminars per year for the training of students and young clinicians in new medical techniques.

1.3 The award of study grants for the training of clinicians and research workers in the 'Monitoring of Seriously Ill Persons'.

2. The preparation, in collaboration with specialist Comunity research organizations and laboratories, of research projects of joint interest in the following fields:

2.1 Psychological and toxix factors in traffic accidents.

2.2 Deafness, including the harmful effects of noise, and with particular regard to the effects of congenital disorder.

2.3 Embryotoxic and genetic factors in congenital diseases.

2.4 Research on infectious diseases, particularly virus diseases and hospital infections.

2.5 Psychological, physiological and metabolic aspects of the ageing process.

2.6 Psychosomatic and metabolic factors in digestive diseases.

3. Researches on the continuous and real-time monitoring of seriously ill persons with the aid of computers.

Community action on medical research and the coordination of the projects proposed above with national activities would be implemented with the assistance of the Committee on Medical Research and Public Health set up by the PREST Committee, or its successor.

This Committee would thus help in both the preparation of courses and seminars and in the formulation of Community medical research projects.

Timetable

The first research proposals in fields 2.1, 2.2 and 3 should be ready by 31 March 1974, and those in fields 2.3 — 2.6 by 31 December 1975.

The drafting of the research projects would necessitate the engagement of experts and the performance of studies.

2. *Energy policy: 'Outline' programme*

Explanatory Notes

In its own territory, the Community possesses only a small proportion of the energy which it consumes, and it plays only a small part in the exploitation of other world resources. It therefore depends very largely on external supplies.

This high degree of dependence, which in the normal course is liable to persist for a long time, calls for a Community energy policy with the prior aim of improving security of primary energy supply.

Along with this major objective (security of supply), two other objectives underlie all Community measures, namely, to ensure the quality of the energy produced and to maintain a competitive price.

These aims necessitate research on environmental protection (elimination of limitation of pollution involved in the production, transport, storage and consumption of energy) and on the more rational use of energy, so as to reduce the scale of supply problems and mitigate the effects of the foreseeable increase in energy costs.

These various energy policy projects, which are set in the context of the Community's general social, economic and external relations policies, will improve the conditions forming the background to Community energy supply problems.

At the same time, the long term technological solution of these problems will depend essentially on innovation, in which scientific and technological research play a leading part.

The Commission therefore thinks that a successful joint energy policy will call for a concerted Community effort in the field of scientific research.

It accordingly proposes the following action :

1. Compilation of a list of current energy research projects in the Community, and permanent examination on this basis of :

(a) the adequacy of national and Community research programmes as regards attaining the energy policy objectives;

(b) the possibilities of cooperation with non-member countries in the light of their programmes.

2. Initiation in a Community context of priority projects presented in an outline programme, covering various subjects relevant to the energy policy objectives and the criteria for Community research action.

Priority objectives and criteria for Community research decisions

The aim of the priority research projects will be to develop techniques for achieving the aims already stated, namely:

(a) to discover new sources and resources;

(b) to develop new methods of upgrading known resources;

(c) to make rational use of primary energy by increasing yields;

(d) to ensure respect for the environment.

The proposed Community research projects must relate to:

1. Techniques which if successful would have a substantial impact on the energy situation in the Community.

2. Work on a scale such as to require a Community setting.

3. Work which is not sufficiently advanced in the Community, or the performance of which is at present fragmented.

The first aim of work under point 3 would, of course, be to study the causes of this stagnation and dispersion of the research effort.

On the basis of the priority objectives and criteria defined above, the Commission has selected 22 research topics which are considered as meriting priority in a Community programme; they relate to the following fields:

(a) Energy raw materials;

(b) Conversion of energy;

(c) Production and transport of directly consumable energy;

(d) Environmental protection;

(e) Rational utilization of energy.

These subjects are summarized in Table I and are classified according to the degree of maturity of the research proposals.

This first outline programme may be supplemented in the new few years by new proposals as these mature.

The links between the priority topics and the research objectives are shown in Table I. The energy impact of each of these research topics is also indicated and is accorded a weighting as to time.

Outline programme

Outline programme projects already under way

The following specially important energy topics are already partly or totally covered under a Community programme:

(a) Controlled thermonuclear fusion

This form of technology could, if successful, alone make an appreciable contribution to covering Community energy needs after the year 2000.

(b) Solar energy

This is an energy source which is intrinsically benevolent to the environment. In Europe it can probably cover only a small percentage of energy needs (particularly domestic heating and air conditioning). In developing tropical coun-

tries, on the other hand, it could be of great importance.

(c) Production of hydrogen by dissociation of water

The energy obtained by dissociation of water with nuclear heat could be viewed as the complementary vector to electrical energy and, in conjunction with the latter, could take the place of the gaseous and liquid hydrocarbons, reserves of which are limited.

(d) Problems connected with radioactive waste

A Community solution of these problems, particularly that of final storage, could stimulate long-term development of nuclear energy.

New projects in course of preparation under the outline programme

Basic and technical research project proposals in three fields which have a substantial impact on the energy situation are in course of preparation. They will be presented to the Council after discussion with experts from the circles concerned and with the responsible officials in the Member States.

The topics are as follows :

1. Basic research on underground 'fluidification' of coal

2. Utilization of plutonium.

3. Problems connected with thermal discharges.

Studies on the subjects covered by the outline programme

Certain subjects of the energy outline programme will necessitate pilot studies before project proposals can be prepared.

The aim of these studies would be as follows:

(a) To list existing research projects and the techniques currently in use in the Community and the wold at large;

(b) To assess their importance from the angle of energy supplies;

(c) To lay down guidelines for research and development in the Community.

The topics on which studies should be carried out are shown in Table I.

Coordination of R & D projects

On the topics listed below, which have been given priority rating by the Commission, and are already the subject of major efforts at the national level, there should be Community-wide coordination calculated to lead to better management of the available resources and speedier completion of the projects in question. The Commission proposes that either Coordinating Committees or Working Parties be set up for this purpose, or that the activities of the existing committees be continued and intensified.

The projects in question are the following:

1. Breeder reactors (Coordinating Committee on Fast Reactors).

2. Reactor safety.

3. Utilization of thorium.

4. Direct cycle (gas turbines).

5. Nuclear heat for industrial purposes.

6. Superconductivity (Consultative Committee on 'Cryogenic').

The Coordinating Committee on Fast Reactors is already at work. In the field of reactor safety, the Commission recently set up a working party on the LWR safety programme, and is represented on the SNEC Committee; in the field of fast reactors, a study group of the Coordinating Committee is also operating. The Commission's research activities on the utilization of thorium, the direct cycle and nuclear heat are being carried out mainly under the Dragon Project, which keeps in touch with the circles concerned. The Commis-

sion will in due course make practical proposals for coordinating these subjects.

In the field of superconductivity, the Commission proposes to set up a Consultative Committee on 'Cryogenic Electrical Engineering' which would begin work in 1974.

Draft Council resolution on the gradual implementation of scientific research and development projects in the Community energy policy sector

The Council of the European Communities,

Having regard to the Treaties establishing the European Communities;

Having regard to the proposal from the Commission;

Whereas the formulation of a common energy policy calls for research efforts directed in particular at ensuring long-term security of supply;

Whereas the objectives and resources of a common scientific research and technological development policy are likely to promote throughout the Community a harmonious development of economic activities, a continued and balanced expansion, an increase in stability and an accelerated raising of the standard of living;

Whereas, moreover, at the Paris Summit Conference held on 19 and 21 October 1972, the Heads of State and Government expressed the resolve to formulate a Community energy policy guaranteeing the Community certain and lasting supplies and to define objectives and ensure the development of a common policy in the field of science and technology.

Has adopted this resolution:

Approves the outline research programme for the energy sector, as defined in the Annex hereto, this Annex forming an integral part of this resolution;

Notes the intention of the Commission to draw up a list of a permanent nature in respect of the energy sector with a view to:

— identifying the fields of research which are the subject of major efforts by the Community;

— determining those fields in which cooperation with third countries could prove useful.

Notes the setting-up of a 'Consultative Committee on Energy R & D', this being a sectoral committee of the Scientific and Technical Research Committee.

Without prejudice to the provisions of Article 55 of the ECSC Treaty and Article 7 of the Euratom Treaty, the tasks of this Committee shall be:

— to determine general guidelines and draw up general strategies for the purpose of harmonizing efforts in the scientific field by the Member States in support of the R & D policy of the Community and the Member States in the energy field;

— to define priority sectors in which it would appear desirable for the Commission to put forward proposals for practical Community measures suited to energy policy needs;

— to keep under review developments in respect of programmes in course of implementation and the activities of the coordinating committees for R & D projects (Coordinating Committee on Fast Reactors, SNEC, etc.).

To this Committee the Commission and each of the Member States shall appoint two members and one alternate from among the senior officials responsible for the scientific aspects of energy policy. The term of office of the members of the Committee shall be two years. Such appointments shall be renewable. The secretarial staff of the Committee shall be provided by the departments of the Commission. The Committee shall meet at the request of its Chairman who may, where necessary, call upon any qualified experts, depending on the fields to be examined.

Invites the Commission to draw up proposals for practical measures in the context of this

outline programme with the assistance of this committee of experts.

Annex

The outline programme shall consist of:

— *Projects currently being carried out in a Community context*

- Controlled thermonuclear fusion
- Use of solar energy
- Production of hydrogen by the decomposition of water on the basis of chemical cycles
- Problems in connection with the treatment of storage of radioactive waste.

These projects may be the subject of proposals for revision or extension.

— *Proposals for projects in course of preparation*

- Basic research on the underground utilization of coal
- Utilization of plutonium
- Problems connected with thermal discharges

These proposals will be presented, as appropriate, during the first half of 1974.

— *Subjects on which preliminary studies are being carried out prior to the formulation of project proposals*

- Underground coal distillation
- Remote sensing
- Deep-sea drilling
- Extraction of uranium from water
- Geothermal energy
- Offshore power plants
- Electricity storage
- Superconductors
- Motor vehicles powered by means other than hydrocarbon fuels
- Utilization of residual heat

Proposals in these fields may be put forward during the last quarter of 1974 or the first half of 1975.

— *Subjects requiring coordination in the context of work currently in progress at national level*

- Breeders
- Reactor safety
- Use of thorium
- Nuclear heat for industrial purposes
- Direct cycle (gas turbines)
- Superconductors

List of priority R & D subjects in the 'energy' sector

New sources and resources	New methods for upgrading of resources	Rational utilization of primary energy and stepping-up of yields	Environment	Research subjects	Activities currently being undertaken in a Community context	Proposed projects in course of preparation	Studies	Coordination of national efforts	Estimates as to the impact of the energy situation on long-term supplies		Provisional timetable (for information purposes) showing dates for the possible submission of proposals
									1985	2000	
	+			1. a) Underground coal distillation			+		> 10 %		late 1974
				b) Basic research on underground coal fluidification						> 10 %	mid-1974
+				2. Remote sensing			+		~ 10 %		late 1974
+				3. Deep-sea drilling			+		> 10 %		late 1974
	+			4. Extraction of uranium from water			+			~ 10 %	late 1975
				5. Uranium enrichment			token				
							+		> 10 %		—
	+			6. Utilization of plutonium		+	entry		~ 10 %		early 1974
	+			7. Utilization of thorium				+		> 10 %	—
	+			8. Breeder reactors				+		> 10 %	—
			+	9. Reactor safety	+			+	> 10 %		—
+				10. Thermonuclear fusion	+					> 10 %	late 1973
	+			11. Nuclear heat for industrial purposes				+	~ 10 %		—
		+		12. Cycle direct (gas turbines)				+	< 10 %		late 1974
	+			13. Geothermal energy			+		< 10 %		mid-1975
	+			14. Solar energy						~ 10 %	—
		+	+	15. Offshore power plants			+		~ 10 %		mid-1975
		+		16. Electricity storage			+		< 10 %		mid-1975
		+	+	17. Supraconductors			+		~ 10 %		late 1974
		+	+	18. Motor vehicles powered by means other than hydrocarbon fuels			+		< 10 %		mid-1975
	+		+	19. Production of hydrogen by H_2O decomposition	+		+			> 10 %	—
			+	20. Thermal discharges		+			< 10 %		mid-1974
			+	21. Radioactive waste	+		+			> 10 %	early 1974
		+		22. Use of residual heat			+		< 10 %		mid-1975

3. *Policy of aid to developing countries: scientific and technological cooperation*

Explanatory notes

Scientific and technological development are usually regarded as being catalysts to economic and social development.

At the present time, the majority of developing countries are still very largely dependent on imported scientific and technological potential, which is often far from being suited to the solution of their specific problems.

Such a situation cannot last indefinitely and it is in the interest of every party, including the industrial countries of the West, to assist the developing countries to acquire a certain degree of autonomy in this field as soon as possible.

It has now come to be recognized that, during the first ten years of development, far too little consideration was given to the role that scientific research and technological development should play in this respect in the developing countries, more particularly in a range of sectors, from fundamental research and the training of skilled scientists to the very specific problems posed by the industrialization and rationalization of these countries' agriculture.

The analysis of the problem and a list of reasons for possible actions have been given in 'The World Plan of Action for the Application of Science and Technology to Development', prepared by the United Nations Economic and Social Council.

In its 'Memorandum on a Community policy for development cooperation',[1] the Commission has taken account of the necessity of including scientific research and technological development among the instruments of development aid, and it has indicated that it will propose the formulation of guidelines aiming at:

— strengthening the scientific and technical structures of the developing countries;

— harmonizing Member States' research efforts on the basis of the specific needs of the developing countries or groups of developing countries.

The October 1972 Conference of Heads of State and Government called upon the Institutions of the Community and the Member States to draw up and progressively adopt an overall policy of development cooperation on a worldwide scale. It is an undisputed fact that scientific research and technological development are essential instruments for implementing this overall cooperation policy.

Many bilateral agreements already cover certain aspects of scientific and technological cooperation but frequently, by the very fact of their being dispersed, the efforts undertaken in this field by Member States lack the essential coherence.

This being so, the effectiveness of technological and scientific cooperation will depend, as in the other fields on the Community's overall cooperation policy, on what success the Community and the Member States will have in harmonizing their own policies and measures in this field.

The fundamental aim of Community cooperation should be to amplify and extend the bilateral forms of scientific aid, keeping in mind the capabilities and the characteristics of the Community.

Three lines of action suggest themselves:

1. Coordination of the R & D projects benefiting the developing countries, performed by the Member States either in Europe or in the developing countries themselves.

2. Direct support of research programmes having a greater significance for regions than for countries, and for which the pooling of the existing resources in the various Member States would prove beneficial.

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[1] Supplement 5/71 — Bull. EC.

3. Assistance towards the strengthening in the developing countries of technological and scientific research infrastructures tailored to their particular needs.

Under the head of harmonizing Community and national development cooperation policies and in order to give effect to the guidelines sketched out above, the Commission proposes that a Committee for technological and scientific cooperation with the developing countries should be set up with instructions to:

— formulate the guidelines;

— identify the priority sectors;

— ascertain the appropriate mechanisms for achieving the prescribed objectives.

At the same time, studies aimed at providing the proposed Committee with the necessary working documents to initiate its activities will be carried out by or on behalf of the competent departments of the Commission.

It is self-evident that these measures of preparation and, later on, of drafting the execution have to be carried out in close collaboration with the developing countries themselves.

It would be possible, in due course, to incorporate the Committee and its functions into a future Scientific and Technical Research Committee and its other specialized committees.

Timetable

In 1974, the Committee will devote itself to working out the methods of coordinating the Member States' efforts and to determining the priority sectors and fields for Community action. In 1975, the Committee will prepare draft Community projects of a practical nature.

4. *Industrial policy: Materials - Data processing*

Materials

All industrialized countries, the Community countries in particular, have a research activity in the materials field supported by public funds from the stage of basic research up to the stage of industrial development.

The reason for this fact lies in the often decisive role that materials play in the development of both traditional and advanced technologies. In countries such as France, Germany and the United Kingdom, it is estimated that over 10 % of all R & D expenditure is allocated to materials research[1].

National programmes are divised and decided on quite independently and without consideration of the activities planned in neighbouring countries, even though the need for collaboration in the materials field is unanimously felt and acknowledged. It would be unreasonable to maintain the fragmentation of research and development by purely national action, the final outcome of which would be to open the European market to outside competitors.

The Commission is aware that in order to cover the materials field and its main aspects, it is necessary to examine ways and means of collaboration in the fields of:

(a) stategic research;

(b) applied research and development of improved materials;

(c) production and manufacturing techniques.

The Commission has been prompted by the information available and by the contacts made to study first of all the field of applied research and development of improved materials. This field has been subdivided according to the industrial applications of the materials

[1] Materials: Studies of Scientific Policies OECD (1972).

(e.g., materials for industrial chemical plant, materials for electrical engineering, etc.). The purpose of proceeding in this manner has been to define the problems seen by the specialists most concerned, i.e., the users, and to direct collaboration towards subjects of indisputable practical importance.

Seven fields have been envisaged initially: industrial chemical plant; conventional electricity generating stations; electrical engineering; mechanical engineering industry; electronics; aeronautics; and cryogenics.

As regards materials for the mechanical engineering industry, it has emerged that those in use are basically steels in large-scale production and that the problems posed are covered, or can be covered, in the Coal and Steel Community's research programme.

Cryogenics no longer poses any materials problems that call for a special effort apart from the particular case of applications of superconductivity, which are covered by a collaboration project that is under discussion in the COST Working Party.

The Commission has prepared programme projects which lend themselves perfectly to collaboration within the Community. These projects are reproduced in summary form in the Annex.

They cover:

— aeronautics materials;

— industrial chemical plant materials;

— electronics materials.

The Commission intends to examine further the possibilities of collaboration in the field of materials for electrical engineering and conventional electricity generating stations.

The programme projects set forth in the Annex have still to be submitted to all Member States for their approval. It would be feasible to carry out the programmes in the form of harmonized actions the machinery of which, although already described in detail, should be again discussed by the Member States and clarified, particularly in regard to the contributions each of them would make to the fulfilment of the programmes.

With this in view, an Advisory Committee will be set up for materials research and development, which will be a Sectoral Committee of the Technical and Scientific Research Committee, whose secretarial staff will be provided by the departments of the Commission. Each Member State will appoint from its senior officials in charge of materials research programmes a member and an alternate. According to the field under study, it will be possible for the Representatives to have any qualified expert accompany them.

The Advisory Committee will be required in particular to:

— formulate the guidelines and the general strategy for harmonizing and coordinating the scientific efforts of the Member States in support of the Community's and Member States' R&D policies;

— identify the priority fields where it would seem desirable for the Commission to put forward proposals for specific Community action;

— keep under review the development of the activities in the current harmonized R&D actions and to deliver opinions on them.

It would thus be possible for the three projects mentioned to be put into their final form during 1974.

For their part, the competent departments of the Commission will undertake, in liaison with the Advisory Committee, the studies required to establish the usefulness, in respect of strategic research and production and manufacturing techniques, of collaborative projects at Community level in the materials field. These studies will be complemented during 1975.

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Annex 1

Draft concerted action programme on materials for the aircraft industry

— Study of the influence of surface state and coatings on the laws governing the occurrence and propagation of fatigue cracks in aluminium and titanium alloys and high-strength steels (influence of surface roughness, machining process, finishing treatments or surface cold-work, measurement of residual surface stresses).

— Study of the influence of surface state on stress corrosion of the materials in question.

— Improvement of corrosion and fatigue resistance of titanium or high-strength steel fastenings by means of aluminium coatings.

— Adaptation of welding processes to titanium/titanium and titanium/other metal assemblies; determination of the best conditions for obtaining good welds, followed if necessary in a second phase by the study of the mechanical properties of welded joints.

— Studies on the harm done by defects in welded joints,

— Studies on the possibilities of using powder metallurgy for the fabrication of small components from titanium (bolts, tube joints). The quality of the components will be evaluated on the basis of the breaking stress and ductility. The properties to be studied next are fatigue, corrosion and crack propagation resistance.

— Studies on the mechanical properties, and their development in time, of carbonfibre-reinforced resins (parallel-fibre and crossed-fibre composites).

— Study of the phenomena responsible for behaviour under tension, fatigue and creep.

— Study of the best testing methods.

— Studies on the preparation and application of boron-fibre-reinforced resins with a view to their use as reinforcements for metal components. Residual stresses, mechanical properties, ageing phenomena, corrosion resistance.

— Study on the conditions of production of boron-fibre-reinforced compounds with an aluminium matrix (examination of the merits of the various fibres and coatings available). Evaluation of the compounds obtained; studies on the possibilities of assembling these compounds by welding, brazing, adhesion, etc. In a second phase, detailed study of mechanical properties and of resistance to fatigue, thermal cycling, creep and corrosion.

— Study of the performance and application of new adhesives for use at high temperature, sealing putties, rigid expanded plastic panels. Study of test methods.

Annex 2

Draft concerted action programme on materials for the chemical engineering industry

— Studies on stress corrosion:

(a) Establishment of precise data necessary for the calculation of projects and the behaviour of austenitic steel equipment when subjected to operating conditions likely to cause stress corrosion.

To this end tests will be carried out on large specimens subjected to a constant and fully controlled tensile stress. The test conditions will be chosen in such a way that the results can be matched with the actual behaviour in service, taking into account high temperatures and pressures. Part played by water treatment in stress corrosion. Influence of welding and other processes in the course of production.

(b) Study on the conditions of utilization of thermal insulations with a view to preventing stress corrosion phenomena.

— Comparison and interpretation of data supplied by different electrochemical methods in order to establish correlations between these methods and the behaviour of stainless steels under various corrosion conditions.

— Studies on glass-fibre-reinforced resins for plant items, in particular pressure vessels. Mechanical properties under constant stresses, fatigue and creep. Influence of water and moist air. Non-destructive methods of periodic in-service inspection of the quality of reinforced resins.

Method of testing resistance to heat and fire.

— Studies of corrosion-erosion phenomena in ordinary steel in liquids moving at high speeds. Detection of the fundamental phenomena.

Analysis of the influence of the principal parameters. Tests in conditions such as to give results of practical value.

— Studies on corrosion fatigue so as to arrive at a precise definition of phenomena, their mechanism and their characteristics, in particular rupture aspects. The orientation tests will include the influence of the level of stress and frequency, rate of spread of corrosion, temperature. A detailed study will then be made of various important parameters.

— Studies on combined effects of wear and corrosion.

— Study of selective corrosion of brasses (dezincification) by electromechanical methods.

Annex 3

Draft concerted action programme on materials for the electronics industry

— Large silicon single crystals.

Study of the influence of defects and impurities, inspection methods, improvement of the quality of 70-100 mm diameter crystals.

— Photosensitive materials for integrated circuits.

Study of new materials having better performance and reliability.

— Materials for casings and encapsulations

Study and evaluation of new materials able to withstand a higher temperature than that tolerated at present (over 120 °C).

— Glass Optical fibres for telecommunications.

Study of the optimum compositions of types of glass for optical fibre as such and for sheathing.

— Semiconductor compounds of type III-V.

Orientation studies on some important new compounds.

— Garnet single crystals for magnetic bubbles.

Study of the improvement of quality in large garnet crystals; study of the influence of the interface between the substrate and the epitaxial film on performance.

— Materials for storing optical signals.

Orientation study on the properties and behaviour of the most promising materials.

— Diamond spar and spinel single crystals.

Improvement of the quality of large-diameter single crystals used as epitaxy substractes.

— Ferro-electric materials.

Orientation studies for electro-optical applications (computer stores) and possibly for display purposes.

— Electrochromic materials.

Orientation studies aimed at the use of these materials for display purposes.

Data processing

Specific proposals are being made by the Commission to the Council concerning the general lines of industrial and technological policy-action at Community level in the data processing sector. An overall approach has been adopted, with two main objectives:

— *The promotion of data processing applications* considered as a powerful lever for raising economic and social standards.

— The resources to be deployed in order to increase the *ability of European* firms to hold their own in particularly keen conditions of competition.

The evidence is that, the effective achievement of these objectives, while undoubtedly covering important research and development aspects connected with the improvement of technological standards in the sector, requires a close link between those aspects and policy in general, in view of the speed at which techniques are developing and the high proportion of methodological know-how which they involve; this situation therefore precludes the separation of the industrial policy aspect and the research and development aspect.

The present document accordingly contains only general pointers to the action programme and for further details the reader is referred to the abovementioned specific Commission proposals to the Council.

The complexity and scale of the sector and the importance of its impact on the structures of the society of the future call for the adoption of the following method of work:

— during the years 1974-75, to undertake a Community planning effort covering the entire sector;

— during the years 1976-80, to carry out projects arising from the programme previously drawn up.

A Committee of Senior Officials concerned with the sector in question would supervise the operations as a whole.

Though the main objective for the period 1974-75 is to define, with a view to the execution of the 1976-80 plan, all the projects to be carried out, their priority and the budgetary commitments necessary, the desirability of two types of practical action should also be noted:

(1) coordination, mainly for the purpose of exchanging information on a Community scale in a specific field of activity (e.g., data banks) and, at a later stage, evolving proposals for rationalizing activities or launching Community projects;

(2) launching pilot projects judged to merit priority (e.g., a data bank network).

Needless to say, the two types of action can be continued and extended while the 1976-80 plan is being carried out.

The following R&D subjects come within this context of methodology, their choice being based on surveys among users and on the opinions of the experts in the PREST Working Party on Data Processing; if not Community action, these merit at least thorough examination in order to determine the conditions under which such projects should be launched:

(a) Basic software

Apart from the interest inherent in the standardization, portability and compatibility aspects arising from considerations of industrial policy, the creation of a *Software Engineering Institute* in a decentralized form is judged to be worth while and to merit immediate thorough examination by a group of high-ranking experts. The project could be launched, if the interest is sustained, in the period 1974-75.

(b) Application software

It is now felt to be desirable that priority coordinating action should be initiated in the fields of data banks, teleprocessing and biomedical data processing. This could result in proposals for pilot projects beginning in the period 1974-75.

There are a large number of possible fields of cooperation (information on economic matters; air, road, sea and rail transport; pollution problems; urban development; etc.) but during the planning period the most promising fields should be determined and action should be chosen within the permissible overall budget.

Finally, the Commission will need to organize a comparison, by broad sectors of the economy in which a Community policy is emerging, in order to frame computer-based projects which will increase the competitiveness or the efficiency of the sectors under consideration (aircraft industry, agriculture, shipbuilding, energy, environment, machine tools).

(c) Theoretical data processing

Coordinating action could be launched immediately in this area, on the basis of the recently set up Association for theoretical data processing and in conjunction with activities concerning the creation of the Software Engineering Institute, in order to map out the programme of activities eligible for Community support.

It should be noted that one of the dominant criteria of choice for these activities should be improvement of technological standards in the data-processing sector.

(d) Training

It is recommended that the PREST training courses be continued, subject to periodic revision of their aims, in view of their contribution to the training of high-level specialists. In addition, the establishment of Community machinery for the exchange of research workers, teachers or experts would help to raise the level of competence and to disseminate knowledge. The study of such machinery could be undertaken without delay.

5. *Environment policy*

1. The aim of Community research activities in connection with the environment is to provide scientific and technical knowledge necessary or useful for implementing a Community environment policy as described in the Action Programme submitted by the Commission.[1] The primary aim is to support action to reduce the pollution to which that programme refers. More particularly, the tasks consist in the evaluation of hazards from pollution, to human health and the environment, the measurement of pollution, the establishment of standards, the definition of environmental quality objectives, and projects specific to certain products, certain industrial sectors, energy production and pollution of the sea.

If necessary, research will also have to be undertaken on the safeguarding of the environment, the depletion of certain natural resources, urban development and open spaces, and the improvement of working conditions.

2. This research needs to be carried out at Community level, since pollution knows no frontiers and its dispersion must be studied in vast homogeneous geographical areas (e.g., hydrographic basins). Moreover, the problems involved can in certain cases only be solved with the aid of combinations of highly specialized laboratories, which cannot usually be found in a single Member State. Joint execution of this research should, moreover, help to eliminate duplication and at the same time fill gaps in knowledge.

3. Community research on the environment is already in progress on the basis of Council Decisions adopted in 1973. The activities in question are being carried out at the JRC (a four-year 15.85 million u.a. programme) and under contract with the national research institutes (a three-year 6.3 million u.a. programme) and incorporate the following subjects:

[1] Supplement 3/73 — Bull. EC.

(a) pollutant analysis and measurement

(b) path and effects of pollutants

(c) models and systems analysis

(d) harmful effects of lead

(e) effects of pollutants on man

(f) epidemiological surveys

(g) ecological effects of water pollutants

(h) remote sensing of air pollution

(k) establishment of a data bank on chemical pollutants.

The Commission provides the secretarial staff for three COST cooperative projects concerning the physicochemistry of sulphur oxides in the atmosphere, the analysis of organic micropollutants in water and sludge characterization and is carrying out research on these projects at the JCR.

Further action should be put in hand to meet the research requirements which may arise during the environmental action programme. The following are cases in point: marine pollution; noise and vibrations; thermal pollution; diffusion of pollutants in the atmosphere; solid waste; depletion of natural resources (water).

As regards the last point, in particular, the Commission considers following consultations with experts of the Member States, that it will be able in the course of 1974 to submit practical proposals for R&D on water management and planning models and on the pretreatment and purification of water.

The projects decided on and the projects which may be carried out are shown in the table pages 44 and 45.

B. Proposal for action: aero-engines

Explanatory notes

1. The Council is currently discussing a policy document for the aircraft industry. In this connection the Commission is examining the possibilities of collaboration in the field of basic research. This programme represents a first activity in a field of public interest.

2. Reduction of noise and pollutant emissions of aero-engines is a fundamental objective of the Community's environment protection policy.

3. The very strict standards set in the USA on permissible tolerances for noise and emissions of pollutants for the ideal aircraft in 1980 will prevent all further penetration of the world market by aero-engines which do not conform to these standards.

4. The development of the necessary techniques for the reduction of pollution (noise and emissions) from aero-engines is therefore of capital importance if the European aero-engine industry wishes to meet the environmental protection needs of our society while maintaining its competitive position on the world market.

5. The Commission also considers that the research and development programme below, to be carried out by the European aero-engine manufacturers, should be backed by the Community because the encouragement of technological development activities directly linked with research in order to arrive at silent, non-polluting engines constitutes an objective of both the industrial policy and the environmental protection policy.

The programme as proposed does not deal with the technological development of specific engines (for which industrial and government financing is already operative); this is a basic research programme to supplement specific

Programme of environmental action of the European Communities and Community research programme

Action programme	A — Research already begun or decided on[1]	B — Other research which may be undertaken
1. *Projects on pollution reduction*		
I.1. Objective evaluation of the hazards to human health and to the environment as a result of pollution and I.2. Laying-down of standards	1. Data bank on chemical pollutants 2. Harmful effects of lead 3. Epidemiological surveys 4. Effects of micropollutants on man, including biochemical toxicology and biotelemetry of toxic effects 5. Ecological effects of pollutants, including bioindicators of water pollution 6. Remote sensing of air pollution 7. Mathematical models of diffusion of air pollutants 8. Analysis of organic micropollutants in water (COST 64b) 9. Multidetection unit (contribution to COST 64b) 10. Physico-chemistry of SO_2 (COST 61a) 11. Absorbtion of SO_2 by soil and vegetation (contribution to COST 61a)	1. Thermal pollution 2. Noise pollution 3. Problem of unpleasant odours 4. Marine pollution originating on land 5. Physical model for studies of diffusion of air pollutants
I.3. Specific projects to combat pollution of the environment		
I.3.1. Exchange of information between surveillance and monitoring networks	1. Data bank on chemical pollutants 6. Remote sensing of air pollution	6. Improvement of methods of pollutant analysis and measurement
I.3.2. Methods for defining quality objectives for the environment and for establishing rules to enable the objectives to be achieved	see I.1. and I.2.	see I.1. and I.2.
I.4. Specific measures relating to products	1. Data bank on pollutants 2. Harmful effects of lead 5. Ecological effects of pollutants	7. Improvement and harmonization of techniques for determining pollutants in certain products 8. Long-term toxicity studies and standardization of toxicity tests
I.5. Action specific to certain sectors of industry and to energy production	7. Mathematical models of air pollutant diffusion 10. Physico-chemistry of SO_2 11. Fixation of SO_2 by soil and vegetation 12. Sludges (COST 68)	1. Thermal discharges 5. Physical model for studies of air pollutant diffusion 9. Desulphurization 10. Anti-pollution technology. Treatment of industrial effluents 11. Treatment and utilization of effluents, e.g., intensive farming effluents

[1] Under the Multiannual research and training programme and COST projects.

Programme of environmental action of the European Communities and Community research programme (continued)

Action programme	A — Research already begun or decided on[1]	B — Other research which may be undertaken
I.6. Action specific to certain areas of common interest	1. Data bank on industrial chemicals	4. Marine pollution originating on land
I.6.1. Marine pollution	1. Data bank on industrial chemicals	
I.6.2. Protection of the waters of the Rhine Basin against pollution	6. Remote sensing of air pollution	
I.6.3. Projects concerning environmental protection in frontier areas		
I.7. Action concerning wastes and residues	12. Sludges	12. Solid waste (processing, storage, etc.) 10. Anti-pollution technology 11. Treatment and utilization of effluents, e.g., intensive farming effluents
I.8. Measures aimed at ensuring compliance with the limits imposed for the protection of the environment (for the record)		
I.9. Action to be taken with regard to the economic aspects of anti-pollution measures	1. Data bank on chemical pollutants	
I.10. Research projects (for the record)		
I.11. Dissemination of knowledge relating to environmental protection	1. Data bank on chemical pollutants	
II. *Projects aimed at improving of the environment*		
II.1. Protection of the natural environment		13. Structure and function of ecosystems 14. Ecological effects of modern production techniques used in agriculture 15. Integrated control of harmful insects 16. Improvement of quality of agricultural
II.2. Depletion of certain natural resources		17. Utilization of waste water for irrigation
II.3. Urban development and improvement of amenities (for the record)		18. Water supply and management of water resources
II.4. Improvement of the working environment (for the record)		
II.5. European Foundation to improve living and working conditions		19. Long-term research on the quality of life and working conditions
II.6. Promotion of environmental awareness through education		20. Organization of teaching on the environment at various educational levels

[1] Under the Multiannual research and training programme and COST projects.

programmes which will be carried out by the aero-engine manufacturers combining in a 'groupement d'intérêt économique'. The results of the proposed research would in future be applied to all new aero-engine projects.

It is therefore a programme of a general nature which could be developed within the European industry, which is able to supply resources and manpower, installations and some of the costs of conducting methodological studies, basic research and applied research.

6. Work on the development of the programme will be carried out by a 'groupement d'intérêt économique' consisting of the following firms:

Rolls-Royce Ltd., UK
SNECMA, France
MTU, Germany
Fiat and Alfa Romeo, Italy
Volvo Flygmotoren, Sweden

which have grouped together in order to cope with the high risks and considerable investment which such activities involve.

7. Sweden's participation, represented by the research activities of Volvo Flygmotoren to be carried out in accordance with the scheduled programme, would amount to 0.409 million u.a., which would be additional to the total Community-provided sum of 8.29 million u.a.

Proposal for a Council decision adopting a research and development programme for the European Economic Community in the aero-engine sector

The Council of the European Communities,

Having regard to the Treaty establishing the European Economic Community,

and in particular Article 235 thereof;

Having regard to the proposal from the Commission;

Having regard to the Opinion of the European Parliament;

Whereas Article 3 of the Treaty establishing the EEC requires that Community action shall include in particular the elimination, as between Member States, of customs duties and of quantitative restrictions on the import and export of goods, and of all other measures having equivalent effect, the institution of a system ensuring that competition in the Common Market is not distorted, and the approximation of laws to the extent necessary for the proper functioning of the Common Market; and whereas the projects described in the Annex to this Decision are necessary, among other things, in order to carry out these objectives and, in accordance with Article 2 of the said Treaty, to promote throughout the Community a harmonious development of economic activities, a continuous and balanced expansion, an increase in stability, an accelerated raising of the standard of living and closer relations between the States belonging to it;

Whereas accordingly the research projects which form the subject of this Decision are seen to be necessary in order to attain within the framework of the Common Market, certain Community objectives;

Whereas the Treaty establishing the European Economic Community has not provided the necessary powers;

Has adopted this decision:

Article 1

A research programme for the European Economic Community in the field of aero-engines shall be adopted as shown in the Annex hereto for a three-year period from 1 January 1974. The Annex shall form an integral part of this Decision.

Article 2

The upper limit for expenditure commitments and for staff necessary for the implementation

of this programme shall be 8.29 million u.a. and two Community servants, the unit of account being defined in Article 10 of the Financial Regulation of 25 April 1973 applicable to the General Budget of the Communities.

Article 3

The Commission shall ensure the execution of this programme by research contracts with one or more particularly well-qualified organizations. It shall submit a report to the Council on this subject each year.

Article 4

The information resulting from the execution of the parts of the programme described in the Annex hereto shall be disseminated in accordance with conditions and limits to be laid down at a later stage.

*

Annex

Joint programme

A maximum amount of 8.29 million u.a. shall be allocated to this objective and the staff shall be two Community servants.

The objective shall comprise:

— Elimination of noise

1. Research on fan, compressor and turbine noise

2. Research on noise reduction in ducts

3. Research on reduction of noise from combustion chamber and exhaust duct

4. Research on jet noise reduction

— Elimination of pollutant emissions

1. Development of methods of measuring pollutant emissions

2. Research on the process of pollutant formation

3. Research on the technical possibilities of obtaining optimum combustion, with reduction of pollutant emissions

The experimental work shall be done within the industry.