II

(Acts whose publication is not obligatory)

COUNCIL

COUNCIL DECISION

of 26 April 1994

concerning a framework programme of Community activities in the field of research and training for the European Atomic Energy Community (1994 to 1998)

(94/268/Euratom)

THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Atomic Energy Community, and in particular Article 7 thereof,

Having regard to the proposal from the Commission (1),

Having regard to the opinion of the European Parliament (2),

Having regard to the opinion of the Economic and Social Committee (3),

Whereas Community activities in the field of nuclear research and training can be the subject of a multiannual framework programme and of specific programmes both determined in accordance with Article 7 of the Treaty;

Whereas by Decision 90/221/Euratom, EEC (4) the Council adopted a third framework programme for the period 1990 to 1994 in the field of research and technological development (RTD) which is in the process of being implemented; whereas on 9 April 1992 the Commission presented an assessment of progress in implementing the third framework programme; whereas by Decision 93/167/Euratom, EEC (5) the Council provided for supplementary financing for the last two years of implementation of the third framework programme;

Whereas it has been judged appropriate to adopt a new framework programme on nuclear research and training for the period 1994 to 1998 in order to ensure the continuity of multiannual Community activities in this field;

Whereas, Article 4 (1) of the Treaty provides for Community nuclear research and training activities designed to complement the activities carried out by the Member States; whereas Community action should therefore allow value to be added to efforts undertaken by the Member States; whereas, furthermore, the Community RTD effort should concentrate on activities which are carefully selected in accordance with well-defined criteria;

Whereas Community research only envisages peaceful purposes, in accordance with Article 2 of the Treaty;

Whereas Community research activities should continue to focus on generic and precompetitive research;

Whereas the Community shall only support research activities of high quality;

Whereas research activities in the fields of nuclear fission safety and controlled thermonuclear fusion should be pursued; whereas these activities are implemented by means of specific programmes based on cooperation with and between undertakings, research centres and universities;

Whereas cooperation in the field of Community research with third countries and international organizations should be promoted; whereas in this field of activity it is necessary that the Community continues to play an important international role in the area of nuclear fission safety, in particular, with the countries of central and eastern Europe and the States which have emerged from

(1) OJ No C 230, 26. 8. 1993, p. 35.
(2) OJ No C 329, 6. 12. 1993, p. 328.
(3) OJ No C 34, 2. 2. 1994, p. 90.
(4) OJ No L 117, 8. 5. 1990, p. 28.
(5) OJ No L 69, 20. 3. 1993, p. 43.

the former USSR; whereas it is also important to continue international cooperation activities with third countries in the field of controlled thermo-nuclear fusion where appropriate; whereas it is important systematically to reinforce complementarity and to improve links between Community activity and research activities undertaken in the framework of specialized international organizations; whereas synergy with other Community instruments (e.g Phare, Tacis) should be sought;

Whereas action should be taken to promote the dissemination and optimization of the results of Community research activities; whereas the Treaty contains precise provisions regarding the dissemination of know-how which apply principally to the nuclear research programmes;

Whereas action should also be taken to promote the stimulation of the training and mobility of researchers, particularly young researchers, in the Community;

Whereas the Joint Research Centre (JRC) contributes to the implementation of the framework programme, particularly in those fields where it has the appropriate competence to offer impartial and independent expertise for the benefit of Community policies; whereas the JRC will progressively compete for the funds available through indirect action;

Whereas the European Council of 12 December 1992 at Edinburgh stated that the development of expenditure on R&D should be consistent with the overall development of expenditure on internal policies under Category 3 of the Financial Perspective, remaining between one-half and two-thirds of the overall figure;

Whereas the framework programme is to be implemented through specific programmes;

Whereas assessment and monitoring operations should be intensified and expanded to maximize the effectiveness of RTD policy;

Whereas there should be continual and systematic monitoring of progress with the framework programme; whereas the Commission shall submit an annual report on the implementation of the activities carried out under this framework programme to the European Parliament and to the Council; whereas there should also be an independent assessment of management of the programme and of progress with the activities undertaken, before the presentation by the Commission of its proposal for the next framework programme;

Whereas, without prejudice to the entry of the amounts needed to implement the programmes under the annual budgetary procedure in accordance with the third paragraph of Article 7 of the Treaty, it is necessary to make an estimate of the Community financial means necessary for the realization of the activities envisaged;

Whereas, in order to ensure coherence between the research and training activities undertaken within this framework programme, and those undertaken by virtue of the Treaty establishing the European Community, the decision relating to the fourth framework programme of European Community activities in the field of RTD should be adopted simultaneously with this framework programme and for the same period;

Whereas the Scientific and Technical Committee has been consulted by the Commission and has delivered its opinion,

HAS DECIDED AS FOLLOWS:

Article 1

1. A multiannual framework programme for Community activities in the field of nuclear research and training is hereby adopted for the period 1994 to 1998.

2. The framework programme shall include all activities regarding research and technological development, including demonstration projects, international cooperation, dissemination and optimization of results, as well as training, in the fields of:

— nuclear fission safety,

— controlled thermonuclear fusion.

3. Without prejudice to the third paragraph of Article 7 of the Treaty, the amount deemed necessary for Community financial participation in this framework programme shall be ECU 1 254 million. Of this the indicative amount for the period 1994 to 1996 shall be ECU 617 million and the indicative amount for the period 1997 to 1998 shall be ECU 637 million. Not later than 30 June 1996, in the light of an assessment of the state of implementation of the framework programme, of its contribution to the competitiveness of Community industry at international level, of value for money and of the development of the financial perspectives of the European Union, the Council, acting in accordance with the procedure laid down in Article 7 of the Treaty, shall review the above amount, with the possibility of increasing it to ECU 1 359 million.

Annex I gives the indicative breakdown between the two fields mentioned above.

4. The selection criteria to be applied in the implementation of the framework programme are laid down in Annex II.

5. Annex III establishes the scientific and technological objectives to be achieved by the activities, in accordance with the abovementioned criteria, fixes the relevant priorities and indicates the broad lines of such activities.

Article 2

The framework programme shall be implemented through specific programmes. These programmes shall be adopted in accordance with Article 7 of the Treaty. Each specific programme shall specify its precise objectives on the lines of the scientific and technological objectives in Annex III, define the detailed rules for implementing it, fix its duration and provide for the means deemed necessary.

The implementation of this framework programme may also give rise to cooperation agreements with third countries or international organizations in accordance with Article 101 of the Treaty.

Article 3

The detailed rules for financial participation by the Community in this framework programme shall be those provided for by the specific provisions regarding RTD funding of the Financial Regulation applicable to the General Budget of the European Communities as supplemented by Annex IV to this Decision.

Article 4

1. The Commission shall continually and systematically monitor, with appropriate assistance from independent, external experts, the progress of the framework programme as regards the criteria and objectives set out in Annexes II and III. It shall examine in particular whether the objectives, priorities and financial resources are still appropriate to the changing situation. If necessary, it shall make proposals to adopt or supplement the framework programme according to the results of such monitoring.

The Commission shall submit an annual report on the implementation of the activities carried out under this framework programme to the European Parliament and to the Council.

2. The Commission shall have an external assessment conducted by independent qualified experts into the management of and progress with Community activities carried out during the five years preceding this assessment. It shall communicate this assessment and conclusions, accompanied by its comments, to the European Parliament, the Council and the Economic and Social Committee prior to submitting its proposal for the next framework programme.

3. In order to help ensure, *inter alia,* cost-effective implementation of the framework programme, each specific programme shall provide for systematic monitoring with appropriate assistance from independent, external experts, and, on completion of the programme, independent evaluation against the precise objectives referred to in Article 2; the procedures for such valuation shall be laid down in each specific programme decision.

Done at Luxembourg, 26 April 1994.

For the Council

The President

G. MORAITIS

ANNEX I

FRAMEWORK PROGRAMME (1994 to 1998): AMOUNT AND INDICATIVE BREAKDOWN

	Millions of ecus (current prices)
Nuclear fission safety	414
Controlled thermonuclear fusion	840
Amount deemed necessary	1 254 (1) (2)

(1) Of which ECU 300 million for the operational budget of the JRC allocated as follows: nuclear fission safety ECU 254 million and controlled thermonuclear fusion ECU 46 million.

(2) With the possibility of an increase to ECU 1 359 million, in accordance with Article 1 (3).

ANNEX II

SELECTION CRITERIA FOR COMMUNITY ACTIVITIES

Community nuclear research, training and demonstration activities should complement the activities undertaken in the Member States and focus on clearly defined objectives. The projects will be selected on the basis of their scientific and technical excellence. The activities should :

— strengthen the technological base of Community industry and provide it with the knowledge and know-how required to make it more competitive at international level,

and/or

— contribute to the implementation of the policies laid down in the Treaty.

The Community shall take action, in accordance with the principle of subsidiarity, only if and in so far as the objectives cannot be sufficiently achieved by the Member States and can therefore, by reason of the scale or effects of the proposed action, be better achieved by the Community.

Any action by the Community shall not go beyond what is necessary to achieve the objectives of the Treaty.

Activities should contribute to meeting the general objectives of the Community, thereby contributing to energy supply and to improving the quality of life of the Community's citizens.

Activities should be selected on the basis of thorough prior appraisal. They should also yield short-term, medium-term or long-term advantages (added value) and contribute to achieving maximum cost-efficiency, the means being commensurate with the objectives set. Research activities should continue to focus on generic and precompetitive research in the fields set out in Annex I to the Treaty.

The following criteria in particular should be used to justify Community action :

— research on a very large scale for which Member States could not, or could only with difficulty, provide the necessary finance and personnel,

— research, the joint execution of which would offer obvious benefits, even after taking account of the extra costs inherent in all international cooperation,

— research which, because of the complementary nature of work being done nationally in part of a given field, enables significant results to be obtained in the Community as a whole in the case of problems whose solution requires research on a large scale, particularly geographical,

— research which contributes to the completion of the internal market and research leading, where the need is felt, to the establishment of uniform norms and standards,

— research which contributes to the strengthening of the economic and social cohesion of the Community and the promotion of its overall harmonious development, while being consistent with the pursuit of scientific and technical quality,

— research actions which contribute to the mobilization or improvement of European scientific and technical potential and actions which improve coordination between national RTD programmes, between national and Community RTD programmes, and between Community programmes and work in other international fora.

ANNEX III

SCIENTIFIC AND TECHNOLOGICAL OBJECTIVES

Two main avenues will be used for the implementation of nuclear research and training supported by the Community : first, focusing financial resources on a limited number of subjects selected on the basis of the criteria detailed in Annex II (shared-cost activities), and secondly improving the coordination between national RTD programmes and between national and Community RTD programmes by appropriate means.

In particular, alongside the traditional networks established in the context of Community activities hitherto, the following means could be used :

— consortia for integrated projects along the lines, in previous framework programmes, of the fusion programme. The Member States will help the Commission in identifying the laboratories or institutes which will be associated in an integrated project supported through the pooling of financial resources within the Community. Other major European research bodies may be invited to take part,

— concertation networks organized by the Commission along the lines of what has already been carried out in the past, for instance in the biomedical programmes of the third framework programme,

— thematic networks bringing together for a given technological or industrial objective manufacturers, users, universities and research centres to facilitate the integration and transfer of knowledge and technologies and to ensure that fuller account is taken of the needs of the market. They would be organized with support from the Community. They will be 'bottom-up' in both initiative and management.

The JRC can make a contribution towards the implementation of this new approach. As it is itself actively engaged in nuclear research and is closely involved in the formulation and implementation of Community policy, it could play a role, in the scientific and technical areas which it covers, in the organization of networks or consortia bringing together public and private laboratories in the Member States.

Moreover, the JRC will progressively compete for the funds available under the activities of the framework programme other than direct action.

With respect to demonstration projects, the objective is to prove the technical viability of a new technology, together with, as appropriate, its possible economic advantages. The projects will be pre-competitive, and should as such focus on the application of new technologies and involve participation by both producers and users.

The following paragraphs set out the scientific and technological content of the activities to be conducted and the reasons for including them in the framework programme for 1994 to 1998.

Nuclear fission safety

The objective is to ensure the safety of all nuclear activities whatever they are, the production of electricity from fission, the use of radioactivity or ionizing radiation, or the presence of natural radioactivity. In spite of the progress achieved by the electricity industry, the accident at Chernobyl has highlighted the need for research on specific topics in collaboration with the nuclear safety Community in central and eastern Europe. It is necessary to consolidate the nuclear option by showing our ability to control it in all areas of application. This demonstration of a full nuclear safety capability will be made through four priority routes :

— the development of a dynamic approach to nuclear safety contributing to the consolidation of a 'safety culture' on a world scale,

— the joint use of the large European facilities to arrive at a better understanding of the crucial phenomena linked to the nuclear fuel cycle and waste,

— pursuing the development of nuclear safeguard techniques,

— the integration of radiological protection into a global system for the protection of man and the environment.

As far as the first priority is concerned, and in close cooperation with the competent international organizations, the areas of activities will concern the study of new systems of control and monitoring, aspects related to severe accidents, with their incidence on man and the environment, and work on new safety features for innovative reactors. The ageing of installations and their prolonged operation will require complementary studies in the framework of research networks. Research and concerted actions, in coordination with national authorities, on specific aspects of the decommissioning of installations in the Community as well as the restoration of sites are envisaged.

As far as the second priority is concerned, work in the field of the nuclear fuel cycle and radioactive waste, carried out, *inter alia*, by the JRC, will focus on the problems of safety related to nuclear fuel, on final disposal and on actinides. Prenormative approaches will be developed. The joint use of experimental underground installations by research workers of all the Member States will have to be increased.

The research activities at the JRC in the field of control of safeguards, in particular in the framework of networks of national laboratories, will be aimed at obtaining results, or the developments of new techniques necessary to continue to assure the respect of the obligations concerning safeguards relevant to treaties and to contribute to the respect of obligations following from the Treaty on non-proliferation. Moreover, the JRC will pursue its activities in supporting the fulfilment of the tasks which are the responsibility of the Commission in this field, as well as with its participation in establishing a coherent and reliable international system of control of safeguards through its cooperation with the International Atomic Energy Agency (IAEA) and its cooperation with the countries wishing to contribute to such a system.

In the field of radioprotection, the thorough understanding of the biological mechanisms arising from radiation exposure remains the key to achieving a better quantification of the effects of low doses, parallel to epidemiological studies in contaminated regions. The reduction of exposure from all sources, taking into account social and economic constraints, remains the objective of the protection of man and his environment. Studies of the environmental transfer of radioactivity, and development of better methods of exposure assessment will in particular have to be made in order to improve the assessment and management of risks associated with ionizing radiation, with a view to further reducing or preventing adverse health effects.

The problems of radioactive pollution originating from accidents or inappropriate operational procedures in the central and eastern European countries, in particular Chernobyl, require cooperation with these countries. The setting up of a network of international centres will stimulate international collaboration and contribute to a better coordination of bilateral and international initiatives.

As regards aspects of nuclear fission safety which are of particular interest to the central and eastern European countries and the independent States of the former USSR, the participation of laboratories and research institutes of these countries will be considered. Community funding can be made available to facilitate such participation. The appropriate modalities for such participation will be set out in the specific programme decision.

Controlled thermonuclear fusion

The long-term objective of the Community action, embracing all activities undertaken in Member States (plus Sweden and Switzerland) in the field of controlled thermonuclear fusion by magnetic confinement, is the joint creation of safe, environmentally sound prototype reactors which should result in the construction of economically viable power stations, which will meet the needs of potential users. In this context, particular attention will be given to the constraints imposed by the requirements of power utilities. The long time span and the large efforts required before reaching this objective make necessary the total cohesion of the network of organizations associated in the Community action, as well as the full exploitation of the cooperation with the large fusion programmes outside the Community.

Safety and environmental issues will play a central role in the realization of the large devices included in the strategy which is envisaged for moving towards a prototype reactor. During the period 1994 to 1998, the simultaneous development of three themes of activity is necessary for implementing this strategy; the Next Step activities, on the first experimental reactor; the improvement of concepts, in plasma physics and engineering, for the subsequent step, the demonstration reactor; the long term technology, essential for progressing towards the exploitation of fusion as an energy source.

For the period 1994 to 1998, the objective of the Next Step activites will be to establish the engineering design of an experimental reactor, in the frame of the quadripartite international agreement ITER, between Euratom, Japan, the Russian Federation and the United States of America. For Euratom, the activities, other than the participation in the 'Joint Central Team', will be coordinated by the NET team and carried out by the Associations, industry (with increasing involvement), JET and the JRC.

A European candidate site for the construction of the Next Step will be identified. The JET Joint Undertaking will end after a phase of operation with tritium; expertise will be transferred, in particular to ITER; available equipment will be utilized in organizational frames to be defined.

Before a firm decision is taken to commit the amount of funds needed for the construction of a Next Step device, and in principle not later than 1996, a rigorous, independent assessment of the prospects of fusion should be undertaken and finalized in the light of available evidence of real progress achieved towards the programme's ultimate goal.

The optimization of concepts, on which tokamaks and similar configurations are based, will be continued by the Associations ; the upgrading of existing devices, as well as the construction of new ones, such as a stellarator, could be necessary. The possibility of using other fusion reactions will be studied. The technologies developed for the long term will concern tritium breeding blankets, materials, safety and the need for highly reliable remote handling in particular reactor environments ; the specialized laboratories, in particular at the JRC, will contribute in demonstrating the safe handling of tritium.

The research will continue to focus on controlled thermo-nuclear fusion by magnetic confinement. The present keep-in-touch activity with other approaches to controlled thermo-nuclear fusion, and particularly inertial confinement, will be continued.

The synergy between research and training will be developed. The mobility of scientists will be increased, in particular in the framework of consortia for integrated actions, grouping several Associations on joint projects. The decentralized management of the programme will be maintained.

ANNEX IV

RULES FOR FINANCIAL PARTICIPATION BY THE COMMUNITY

1. The financial participation by the Community in RTD activities undertaken within the specific programmes shall be :

   (a) **Indirect action**

   — Shared cost actions with third parties (1) :

   — for RTD projects, including consortia for integrated projects : not more than 50 % of the costs of the project and progressively lower participation the nearer the project is to the market place. Those universities, higher education establishments and other research centres which do not use analytical budget accountancy will be reimbursed on the basis of 100 % of the additional costs,

   — for thematic networks and training and mobility of researchers : 100 % of the additional costs,

   — for preparatory, accompanying and support measures : up to 100 % of the costs of the measure.

   — Concerted action :

   For concerted actions consisting of the coordination of RTD projects, such as concertation networks : up to 100 % of the costs of the concertation.

   (b) **Direct action**

   For direct action carried out by the JRC consisting of RTD programmes or parts of programmes and scientific and technical activities necessary for the implementation of the EAEC Treaty and which require the JRC's neutrality : normally 100 % of the costs of the research.

   There may be no derogation from these general rules, except under the conditions set out in each specific programme.

2. The rules for the participation of the Community in the JET Joint Undertaking and ITER activities are specified in the specific programme relating to controlled thermonuclear fusion.

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(1) The JRC, in association with partners established in the Member States, can participate in shared-cost actions on the same basis as third parties.