



COMMISSION OF THE EUROPEAN COMMUNITIES

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Proposal for a

DECISION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

concerning the seventh framework programme of the European Community for research, technological development and demonstration activities (2007 to 2013)

Proposal for a

COUNCIL DECISION

concerning the seventh framework programme of the European Atomic Energy Community (Euratom) for nuclear research and training activities (2007 to 2011)

BUILDING THE EUROPE OF KNOWLEDGE

(presented by the Commission)

{SEC(2005) 430}
{SEC(2005) 431}

Introduction plus Euratom Section only

EXPLANATORY MEMORANDUM

1. CONTEXT OF THE PROPOSAL

The political context and objectives for this proposal are set out in the communication “Building the ERA of knowledge for growth”¹ presented at the same time by the Commission.

Knowledge is at the core of the Lisbon agenda, and underpins all its elements. Research and technology are, together with education and innovation, the components of the “Triangle of knowledge”.

To become the “most dynamic and competitive knowledge-based economy in the world” while maintaining the “European Model”, Europe must increase its research effort to 3% of EU GDP and better exploit its capacities in this field, transforming scientific results into new products, processes and services.

Alongside the Member states and in close cooperation with them, the EU must mobilise its legal and financial tools towards this goal, starting with the research Framework Programme.

2. PRIOR CONSULTATION

In the preparation of the current proposals, the Commission has taken into account the views expressed by the other EU institutions, in particular the European Parliament and the Member States, as well as by many stakeholders in a broad consultation, including the scientific community and industry.

This proposal also relies on an in-depth impact assessment. This impact assessment was based upon inputs from stakeholders, internal and external evaluations and other studies, and contributions from recognised European evaluation and impact assessment experts. The assessment found that Europe faces many economic, social and environmental challenges that science and technology help address; that the European scientific and technological system has flaws, however; and that the EU successfully supported research through past Framework Programmes.

3. LEGAL ASPECTS

The proposal for the EC Framework Programme, which covers the period 2007-2013, is based on Chapter XVIII of the Treaty, articles 163 to 171, which provides for an EU research policy and its financial instruments, in particular the multi-annual Research Framework Programme.

In order to strengthen excellence and raise the average level of research in Europe, the basic principle is to stimulate, organise and exploit all forms of cooperation in research, from collaboration in joint projects and networks to the coordination of national research programmes, competition at the European level as well as the joint implementation of large technology initiatives and the common development of infrastructures of European dimension and interest.

¹ COM(2005) 118.

The size of the action is proportionate to the volume of needs in the EU-25, due to the rising costs of research, the need to put together critical masses of human and material resources, as well as to answer to emerging needs or needs best covered at the European level.

In order to maximize the impact of EU financial support, the links and complementarities with both national activities and policies and other EU actions and sources of funding will be strengthened under the 7th Framework programme.

4. BUDGETARY IMPLICATION

The “legislative financial statement” attached to this Decision sets out the budgetary implications and the human and administrative resources.

5. SIMPLIFICATION

A key feature of the 7th Framework Programme is a significant simplification of its operation compared with its predecessors. The measures envisaged in this respect are described in the Working Document on implementation accompanying the proposal. They will cover the entire funding cycle, including the simplification of funding schemes, administrative and financial rules and procedures, as well as the readability and user-friendliness of documents. The Commission intends to externalise, under its responsibility, activities which generate a large number of small operations. An executive agency will manage, in particular the Marie Curie actions, the support to SMEs, as well as administrative tasks related to other research projects, including collaborative research projects. This approach will also be taken for implementing the activities of the European Research Council (ERC).

6. CONTENT

The 7th Framework Programme will be organised in four specific programmes, corresponding to four major objectives of European research policy:

– Cooperation

Support will be given to the whole range of research activities carried out in trans-national cooperation, from collaborative projects and networks to the coordination of research programmes. International cooperation between the EU and third countries is an integral part of this action.

– Ideas

An autonomous European Research Council will be created to support investigator-driven “frontier research” carried out by individual teams competing at the European level, in all scientific and technological fields, including engineering, socio-economic sciences and the humanities.

– **People**

The activities supporting training and career development of researchers, referred to as “Marie Curie” actions, will be reinforced with a better focus on the key aspects of skills and career development and strengthened links with national systems.

– **Capacities**

Key aspects of European research and innovation capacities will be supported: research infrastructures; research for the benefit of SMEs; regional research driven clusters; unlocking the full research potential in the EU’s “convergence” regions; “Science in Society” issues; horizontal” activities of international co-operation.

Through these four specific programmes, the aim is to allow for the creation of European poles of excellence.

In addition, there will be a specific programme for the non-nuclear actions of the Joint Research Centre.

The programme on Cooperation will be organised into sub-programmes, each of which will be operationally autonomous as far as possible while at the same time demonstrating coherence and consistency and allowing for joint, cross-thematic approaches to research subjects of common interest.

The nine themes identified for the “Cooperation” part are:

- **Health;**
- **Food, Agriculture and Biotechnology;**
- **Information and Communication Technologies;**
- **Nanosciences, Nanotechnologies, Materials and new Production Technologies;**
- **Energy;**
- **Environment (including Climate Change);**
- **Transport (including Aeronautics);**
- **Socio-economic Sciences and the Humanities;**
- **Security and Space.**

EXPLANATORY MEMORANDUM

1. Context of the proposal

The political context and objectives for this proposal are set out in the communication “Building the ERA of knowledge for growth”⁴² presented by the Commission at the same time.

Knowledge is at the core of the Lisbon agenda and underpins all its elements. Research and technology are, together with education and innovation, the components of the “Triangle of knowledge”.

To become the “most dynamic and competitive knowledge-based economy in the world” while maintaining the “European Model”, Europe must increase its research effort to 3% of EU GDP and better exploit its capacities in this field, transforming scientific results into new products, processes and services.

Alongside the Member states and in close cooperation with them, the EU must mobilise its legal and financial tools towards this goal, starting with the research Framework Programme.

2. Prior consultation

In the preparation of the current proposals, the Commission has taken into account the views expressed by the other EU institutions, in particular the European Parliament and the Member States, as well as by many stakeholders in a broad consultation, including the scientific community and industry.

This proposal also relies on an in-depth impact assessment. This impact assessment was based upon inputs from stakeholders, internal and external evaluations and other studies, and contributions from recognised European evaluation and impact assessment experts.

The assessment found that Europe faces many economic, social and environmental challenges that science and technology help address; that the European scientific and technological system has flaws, however; and that the EU successfully supported research through past Framework Programmes.

3. Legal aspects

The proposal for the Euratom Framework Programme, which covers the period 2007-2011, is based on article 7 of the Euratom Treaty. In accordance with this Article, second paragraph, the research programmes are drawn up for a period of not more than five years. Hence, the Commission’s current proposal for the Euratom framework programme is not for the same duration as for the EC framework programme.

The Commission proposes that, unless extenuating circumstances arise, this framework programme can be renewed for the period 2012-2013, in accordance with the foreseen legislative procedure.

⁴² COM(2005) 118.

In order to strengthen excellence and raise the average level of research in Europe, the basic principle is to stimulate, organise and exploit all forms of cooperation in research, from collaboration in joint projects and networks to the coordination of national research programmes, competition at the European level as well as the joint implementation of large technology initiatives and the common development of infrastructures of European dimension and interest.

The actions implemented in the Euratom Framework Programme are complementary to those undertaken by the Member states in the field of nuclear energy.

As a matter of principle, all the provisions of the EC Framework Programme (for instance as regards funding schemes) are applicable in the Euratom Framework Programme, unless they depend on articles in the EC Treaty for which there is no equivalent in the Euratom Treaty. In addition, where appropriate, specific provisions of the Euratom Treaty will apply.

4. Budgetary implication

The “legislative financial statement” attached to this Decision sets out the budgetary implications and the human and administrative resources, covering also the period 2012-2013.

5. Simplification

A key feature of the 7th Framework Programme is a significant simplification of its operation compared with its predecessors. The measures envisaged in this respect are described in the Working Document on implementation accompanying the proposal. They will cover the entire funding cycle, including the simplification of funding schemes, administrative and financial rules and procedures, as well as the readability and user-friendliness of documents. The Commission intends to use the executive agency set up under the 7th EC Framework Programme for the execution of some tasks currently performed within the Commission, but identified as suitable for externalisation.

6. Content

The EURATOM Framework Programme is organised in two specific programmes.

One covers two areas:

- **Fusion energy research:** to develop the technology for a safe, sustainable, environmentally responsible and economically viable energy source.
- **Nuclear fission and radiation protection:** to promote the safe use and exploitation of nuclear fission and other uses of radiation in industry and medicine.

The other covers the activities of the Joint Research Centre in the field of nuclear energy. In this area, the objective is to provide scientific and technical support to the policy making process in the nuclear field, while ensuring stability of support to the implementation of existing policies and adapting to changing policy demands.

Proposal for a

COUNCIL DECISION

concerning the seventh framework programme of the European Atomic Energy Community (Euratom) for nuclear research and training activities (2007 to 2011)

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 Commission⁴³,

Having regard to the opinion of the European Parliament⁴⁴,

Having regard to the opinion of the European Economic and Social Committee⁴⁵,

Whereas:

- (1) Joint national and European efforts in the area of research and training are essential to promote and ensure economic growth and citizen's wellbeing in Europe.
- (2) The seventh framework programme complements other EU actions in the area of the research policy that are necessary for the implementation of the Lisbon strategy, alongside in particular those on education, training, competitiveness and innovation, industry, employment, and environment.
- (3) This framework programme builds on the achievements of its predecessor towards the creation of the European Research Area, and carries them further towards the development of the knowledge economy and society in Europe.
- (5) The Commission Green Paper 'Towards a European strategy for energy supply' highlights the contribution of nuclear power in reducing emissions of greenhouse gases and in reducing Europe's dependence on imported energy.
- (6) With reference to the Council Decision of 26 November 2004 amending the directives of negotiations on ITER⁴⁶, the realisation of ITER in Europe, in a broader approach to fusion energy, will be the central feature of the activities on fusion research carried out under the seventh framework programme

⁴³ OJ C , , p. .

⁴⁴ OJ C , , p. .

⁴⁵ OJ C , , p. .

⁴⁶ Not published in the OJ.

- (7) Implementation of the seventh framework programme may give rise to the setting up of joint undertakings within the meaning of Title II, Chapter 5 of the Treaty.
- (8) Research activities supported by this Framework Programme should respect fundamental ethical principles, including those reflected in the Charter of Fundamental Rights of the European Union. The opinions of the European Group on Ethics in Science and New Technologies are and will be taken into account.
- (9) This act establishes a financial framework for the entire duration of the programme which is to be the principal point of reference for the budgetary authority, within the meaning of point of the Interinstitutional Agreement of between the European Parliament, the Council and the Commission on budgetary discipline and improvement of the budgetary procedure.
- (10) On ... 2005 the Commission submitted the conclusions of the external assessment of the implementation and results of the Community activities carried out in the five years preceding that assessment, accompanied by its observations.
- (11) It is important to ensure sound financial management of the seventh framework programme and its implementation in the most effective and user-friendly manner possible, as well as ease of access for all participants.
- (12) Under the seventh Framework Programme due regard will be paid to the role of women and science and research with a view to further enhancing their active role in research.
- (13) The Joint Research Center should contribute to the attainment of the objectives set out above by carrying out direct activities and by providing customer-driven support for the implementation of EU policies.
- (14) The international and global dimension in European research activities is important in the interest of obtaining mutual benefits. The seventh Framework Programme is open to the participation of countries having concluded the necessary agreements to this effect, and is also open, on the project level and on the basis of mutual benefit, to the participation of entities from third countries and of international organisations for scientific cooperation.
- (15) The seventh Framework Programme should contribute to enlargement by bringing scientific and technological support to the candidate countries for the implementation of Community *acquis* and for their integration into the European Research Area.
- (16) Appropriate measures should also be taken to prevent irregularities and fraud and the necessary steps should be taken to recover funds lost, wrongly paid or incorrectly used in accordance with Council Regulations (EC, Euratom) No 2988/95 of 18 December 1995 on the protection of the European Communities financial interests⁴⁷, (EC, Euratom) No 2185/96 of 11 November 1996 concerning on-the-spot checks and inspections carried out by the Commission in order to protect the

⁴⁷ OJ L 312, 23.12.1995, p. 1.

European Communities' financial interests against fraud and other irregularities⁴⁸ and Regulation (EC) No 1073/1999 of the European Parliament and of the Council concerning investigations conducted by the European Anti-Fraud Office (OLAF)⁴⁹.

- (17) The Scientific and Technical Committee has been consulted by the Commission and has delivered its opinion.

HAS DECIDED AS FOLLOWS:

Article 1

Establishment of the research and training framework programme

A multiannual framework programme for nuclear research and training activities, hereinafter referred to as the “seventh framework programme” is hereby established for the period from 1 January, 2007 to 31 December, 2011.

Article 2

Objectives

1. The seventh Framework programme shall pursue the general objectives set out in Article 1 and Article 2(a) of the Treaty, while contributing towards the creation of a knowledge-based society, building on a European Research Area.
2. The seventh framework programme shall comprise Community research, technological development, international cooperation, dissemination of technical information and exploitation activities as well as training, to be set out in two specific programmes:

The first programme shall cover the following:

- (a) **Fusion energy research**, with the objective of developing the technology for a safe, sustainable, environmentally responsible and economically viable energy source;
- (b) **Nuclear fission and radiation protection** with the objective of promoting the safe use and exploitation of nuclear fission and other uses of radiation in industry and medicine.

The second programme shall cover the activities of the Joint Research Centre in the field of nuclear energy.

3. The broad lines of the programmes are described in Annex I.

⁴⁸ OJ L 292, 15.11.1996, p. 2.

⁴⁹ OJ L 136, 31.5.1999, p. 1.

Article 3

Maximum overall amount and shares assigned to each programme

1. The overall amount for the implementation of the seventh framework programme for the period 2007 to 2011 shall be EUR 3092 million. That amount shall be distributed as follows (in EUR million):

(a)	Fusion energy research	2159
(b)	Nuclear Fission and radiation protection	394
(c)	Nuclear Activities of the Joint Research Centre	539
2. The detailed rules for Community financial participation in this Framework programme are set out in Annex II.

Article 4

Protection of the Communities' financial interests

For the Community actions financed under this Decision, Regulation (EC, Euratom) No 2988/95 and Regulation (EC, Euratom) No 2185/96 shall apply to any infringement of a provision of Community law, including infringement of a contractual obligation stipulated on the basis of the programme, resulting from an act or omission by an economic operator, which has, or would have, the effect of prejudicing the general budget of the European Communities or budgets managed by them, by an unjustified item of expenditure.

Article 5

All the research activities carried out under the seventh Framework Programme shall be carried out in compliance with fundamental ethical principles.

Article 6

Monitoring, assessment and review

1. Not later than 2010, the Commission shall carry out, with the assistance of external experts, an interim evaluation of this framework programme and its specific programmes on the quality of the research activities under way, progress towards the objectives set and the scientific and technical results achieved.
2. Following the completion of this framework programme, the Commission shall carry out an external evaluation by independent experts of its rationale, implementation and achievements.
The Commission shall communicate the conclusions thereof, accompanied by its observations, to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions.

Done at Brussels,

*For the Council
The President*

ANNEX I

SCIENTIFIC AND TECHNOLOGICAL OBJECTIVES, THEMES AND ACTIVITIES

INTRODUCTION

The 7th EURATOM Research Framework Programme is organised in two parts corresponding to the “indirect” actions on fusion energy research and nuclear fission and radiation protection, and the “direct” research activities of the Joint Research Centre.

FUSION ENERGY RESEARCH

Objective

Developing the knowledge base for, and realising ITER as the major step towards, the creation of prototype reactors for power stations which are safe, sustainable, environmentally responsible, and economically viable.

Rationale

There are serious shortcomings in Europe’s energy supply with respect to near, medium, and long-term considerations. In particular, measures are needed to address the issues of security of supply, climate change, and sustainable development, while ensuring that future economic growth is not threatened.

Fusion has the potential to make a major contribution to the realisation of a sustainable and secure supply for the EU in a few decades from now. Its successful development would provide energy which is safe, sustainable and environmentally friendly. The long-term goal of European fusion research, embracing all the fusion activities in the Member States and associated third countries, is the joint creation of prototype reactors for power stations which meet these requirements, and are economically viable.

The strategy to achieve the long-term goal entails, as its first priority, the construction of ITER (a major experimental facility which will demonstrate the scientific and technical feasibility of fusion power), followed by the construction of DEMO, a "demonstration" fusion power station. This will be accompanied by a dynamic programme of supporting R&D for ITER and for the developments in fusion materials, technologies and physics required for DEMO. This would involve European industry, the fusion Associations and third countries, in particular Parties to the ITER Agreement.

Activities

- **The realisation of ITER**

This includes activities for the joint realisation of ITER (as an international research infrastructure), in particular for site preparation, establishing the ITER Organisation and the European Joint Undertaking for ITER, management and staffing, general technical and administrative support, construction of equipment and installations and support to the project during construction.

- **R&D in preparation of ITER operation**

A focused physics and technology programme will exploit the facilities and resources in the fusion programme, including JET. It will assess specific key ITER technologies, consolidate ITER project choices, and prepare for ITER operation through experimental and theoretical activities.

- **Technology activities in preparation of DEMO**

This entails the vigorous development of fusion materials and key technologies for fusion, and the establishment of a dedicated project team to prepare for the construction of the International Fusion Materials Irradiation Facility (IFMIF) to qualify materials for DEMO. It will include irradiation testing and modelling of materials, studies of the DEMO conceptual design, and studies of the safety, environmental and socio-economic aspects of fusion energy.

- **R&D activities for the longer term**

The activities will include further development of improved concepts for magnetic confinement schemes with potential advantages for Fusion power stations (focussed on the completion of the construction of the W7-X stellarator device), theory and modelling aimed at a comprehensive understanding of the behaviour of fusion plasmas and co-ordination, in the context of a keep-in-touch activity, of Member States' civil research activities on inertial confinement.

- **Human resources, education and training**

In view of the immediate and medium term needs of ITER, and for the further development of fusion, initiatives aimed at ensuring that adequate human resources will be available, in terms of numbers, range of skills and high level training and experience will be pursued.

- **Infrastructures**

The construction of the international fusion energy research project ITER will be an element of the new research infrastructures with a strong European dimension.

NUCLEAR FISSION AND RADIATION PROTECTION

Objective

Establishing a sound scientific and technical basis in order to accelerate practical developments for the safer management of long-lived radioactive waste, promoting safer, more resource-efficient and competitive exploitation of nuclear energy and ensuring a robust and socially acceptable system of protection of man and the environment against the effects of ionising radiation.

Rationale

Nuclear power currently generates one third of all electricity consumed in the EU and is the most significant source of carbon-free base-load electricity presently available. The European nuclear sector as a whole is typified by cutting-edge technology and provides highly skilled employment for several hundred thousand people. As an indigenous and dependable source of energy, nuclear power contributes to the EU's independence and security of supply, with

more advanced nuclear technology offering the prospect of significant improvements in efficiency and use of resources, at the same time ensuring even higher safety standards and producing less waste than current designs.

There are, however, important concerns that affect the continued use of this energy source in the EU. The key issues are operational reactor safety and management of long-lived waste, both of which are being addressed through continued work at the technical level, though allied political and societal inputs are also required. In all uses of radiation, throughout industry and medicine alike, the overriding principle is the protection of man and the environment. All thematic domains to be addressed here are characterised by an overriding concern to ensure high levels of safety. Similarly there are clearly identifiable needs throughout nuclear science and engineering relating to availability of research infrastructures and expertise. In addition, the individual technical areas are linked by key cross-cutting topics such as the nuclear fuel cycle, actinide chemistry, risk analysis and safety assessment and even societal and governance issues.

Research will also be needed to explore new scientific and technological opportunities and to respond in a flexible way to new policy needs that arise during the course of the Framework Programme.

Activities

- **Management of radioactive waste**

Implementation oriented research and development activities on deep geological disposal of spent fuel and long-lived radioactive waste and, as appropriate, demonstration on the technologies and safety, and to underpin the development of a common European view on the main issues related to the management and disposal of waste. Research on partitioning and transmutation and/or other concepts aimed at reducing the amount and/or hazard of the waste for disposal.

- **Reactor systems**

Research to underpin the continued safe operation of existing reactor systems (including fuel cycle facilities), taking into account new challenges such as life-time extension and development of new advanced safety assessment methodologies (both the technical and human element), and to assess the potential and safety aspects of future reactor systems in the short and medium term, thereby maintaining the high safety standards already achieved within the EU.

- **Radiation protection**

Research, in particular on the risks from low doses, on medical uses and on the management of accidents, to provide the scientific basis for a robust, equitable and socially acceptable system of protection that will not unduly limit the beneficial and widespread uses of radiation in medicine and industry (including the generation of nuclear energy). Research to minimise the threat posed by nuclear and radiological terrorism and mitigate its impact.

- **Infrastructures**

To support the availability of research infrastructures such as material test reactors, underground research laboratories and radiobiology facilities and tissue banks, necessary to maintain high standards of technical achievement, innovation and safety in the European nuclear sector.

- **Human resources and training**

To support the retention and further development of scientific competence and human capacity in order to guarantee the availability of suitably qualified researchers and employees in the nuclear sector over the longer term.

NUCLEAR ACTIVITIES OF THE JOINT RESEARCH CENTRE

Objective

To provide customer driven scientific and technical support to the EU policy making process in the nuclear field, ensuring support to the implementation and monitoring of existing policies while flexibly responding to new policy demands.

Rationale

The Joint Research Centre supports the objectives of the European strategy for energy supply, particularly to help matching the Kyoto objectives. The EU has a recognised competence in many aspects of nuclear technology, and this is built on a solid basis of past successes in the domain. The usefulness of the JRC in its support to EU policies and in its contribution to the new trends in nuclear research are based on its scientific expertise and its integration in the international scientific community. On the one hand the JRC has competent staff and state-of-the-art facilities to carry out recognized scientific/technical work; and on the other hand it supports the policy of the EU to maintain basic competencies and expertise for the future by training young scientists and fostering their mobility. New demand has emerged in particular in the external relations and security related policies. In these cases, in-house and secure information/analyses/systems are needed which cannot always be obtained on the market.

The nuclear activities of the JRC aim to satisfy the R&D requirements to support both Commission and Member States. The objective of this programme is to develop and assemble knowledge, to provide input to the debate on nuclear energy production, its safety and reliability, its sustainability and control, its threats and challenges, including innovative/future reactor systems.

Activities

The JRC activities will focus on:

Nuclear Waste Management and Environmental Impact aiming to understand the nuclear fuel processes from production of energy to waste storage and to develop effective solutions for the management of high level nuclear waste following the two major options (direct storage or partitioning and transmutation);

Nuclear Safety, in implementing research on existing as well as on new fuel cycles and on reactor safety of both Western and Russian reactor types as well as on new reactor design. In addition the JRC will contribute and co-ordinate the European contribution to the Generation IV International Forum R&D initiative, in which the best research organisations in the world are involved;

Nuclear Security, in supporting the accomplishment of Community commitments, in particular the control of the fuel cycle facilities emphasising the back-end of the fuel cycle, the monitoring of the radioactivity in the environment, or the implementation of the additional protocol and the integrated safeguards, and the prevention of the diversion of nuclear and radioactive material associated with illicit trafficking of such material.

ANNEX II

FUNDING SCHEMES

Subject to the rules for participation established for the implementation of the seventh Framework Programme, the EU will support research and technological development activities, including demonstration activities in the specific programmes through a range of funding schemes. These schemes will be used, either alone or in combination, to fund different categories of actions implemented throughout the Framework Programme.

1. FUNDING SCHEMES IN FUSION ENERGY

In the field of fusion energy research, the particular nature of the activities in the area necessitates the implementation of specific arrangements. Financial support will be given to activities carried out on the basis of procedures set out in:

- 1.1. The Contracts of Association, between the Commission and Member States or fully Associated Third States or entities within Member States or fully Associated Third States which provide for the execution of part of the EU fusion energy research programme according to Article 10 of the Treaty;
- 1.2. The European Fusion Development Agreement (EFDA), a multilateral agreement concluded between the Commission and organisations in, or acting for, Member States and Associated States providing *inter alia* the framework for further research on fusion technology in associated organisations and in industry, use of the JET facilities and the European contribution to international cooperation;
- 1.3. The European Joint Undertaking for ITER, based on the provisions of Article 45-51, Chapter 5, Title II of the Treaty;
- 1.4. International agreements between Euratom and third countries covering activities in the field of fusion energy research and development, in particular the ITER Agreement;
- 1.5. Any other multilateral agreement concluded between the Community and associated organisations, in particular the Agreement on Staff Mobility;
- 1.6. Cost-sharing actions to promote and contribute to fusion energy research with bodies in the Member States or the States associated with the Euratom framework programme in which there is no Contract of Association.

In addition to the above activities, actions to promote and develop human resources, fellowships, integrated infrastructures initiatives as well as specific support actions may be undertaken in particular to coordinate fusion energy research, to undertake studies in support of these activities, to support publications, information exchange; and training in order to promote technology transfer.

2. FUNDING SCHEMES IN OTHER FIELDS

The activities in other fields than fusion energy by the Euratom Framework Programme will be funded through a range of funding schemes. These schemes will be used, either alone or in combination, to fund different categories of actions implemented throughout this Framework Programme.

The decisions for specific programmes, work programmes and calls for proposals will mention, as and when appropriate:

- The type(s) of scheme(s) used to fund different categories of actions;
- The categories of participants (such as research organisations, universities, industry, public authorities) which can benefit from it;
- The types of activities (research, development, demonstration, training, dissemination, transfer of knowledge and other related activities) which can be funded through each of them.

Where different funding schemes can be used, the work programmes may specify the funding scheme to be used for the topic on which proposals are invited.

The funding schemes are the following:

- a) To support actions which are primarily implemented on the basis of calls for proposals:

1. Collaborative projects

Support to research projects carried out by consortia with participants from different countries, aiming at developing new knowledge, new technology, products or common resources for research. The size, scope and internal organisation of projects can vary from field to field and from topic to topic. Projects can range from small or medium-scale focused research actions to larger integrating projects which mobilise a significant volume of resources for achieving a defined objective.

2. Networks of Excellence

Support to joint research programmes implemented by a number of research organisations integrating their activities in a given field, carried out by research teams in the framework of longer term co-operation. The implementation of these joint programmes will require a formal commitment from the organisations integrating part of their resources and their activities.

3. Coordination and support actions

Support to activities aimed at coordinating or supporting research (networking, exchanges, studies, conferences, etc). These actions may also be implemented by means other than calls for proposals.

4. Actions to promote and develop human resources and mobility

Support for training and career development of researchers.

- b) to support actions implemented on the basis of decisions by the Council, based on a proposal from the Commission, the Community will provide financial support to multi-financed large-scale initiatives:
- A financial contribution from the Community to the implementation of Joint Undertakings carried out on the basis of the procedures and provisions set out in articles 45 -51, Chapter 5 of Title II of the Euratom Treaty.
 - A financial contribution from the Community to the development of new infrastructures of European interest.

The Community will implement the funding schemes in compliance with the provisions of the regulation adopted in the rules for participation of undertakings, research centres and universities, the relevant State aid instruments, in particular the Community framework for state aid to research and development, as well as international rules in this area. In compliance with this international framework, it will be necessary to be able to adjust the scale and form of financial participation on a case-by-case basis, in particular if funding from other public sector sources is available, including other sources of Community financing such as the European Investment Bank (EIB).

In the case of participants to an indirect action established in a region lagging in development (convergence regions and outermost regions⁵⁰) complementary funding from the Structural Funds will be mobilised wherever possible and appropriate.

3. DIRECT ACTIONS - JOINT RESEARCH CENTRE

The Community will undertake activities implemented by the Joint Research Centre, which are referred to as direct actions.

⁵⁰ Convergence regions are those set out in Article 5 of the proposal for a Council Regulation laying down general provisions on the European Regional Development Fund, the European Social Fund and the Cohesion Fund - COM(2004) 492. This includes “convergence” objective regions, regions eligible for funding from the Cohesion fund, and outermost regions.

LEGISLATIVE FINANCIAL STATEMENT

1. NAME OF THE PROPOSAL :

Proposal for a Council Decision concerning the seventh framework programme of the European Atomic Energy Community (Euratom) for nuclear research and training activities (2007 to 2011) – Building the Europe of Knowledge

2. ABM / ABB FRAMEWORK

Policy Area(s) concerned and associated Activity/Activities: RESEARCH and DIRECT RESEARCH

3. BUDGET LINES

3.1. Budget lines (operational lines and related technical and administrative assistance lines) including headings :

Titles: 08 and 10

3.2. Duration of the action and of the financial impact:

2007-2013 subject to the approval of new financial perspectives framework

3.3. Budgetary characteristics (*add rows if necessary*) :

Budget line	Type of expenditure		New	EFTA contribution	Contributions from applicant countries	Heading in financial perspective
08 and 10	Non-comp	Diff ^{51/}	NO	NO	YES	No [1a]
XX.01	Comp/	Non-diff ⁵²	NO	NO	NO	No [1a...]
XX.01.05	Non-comp	Non-diff	NO	NO	YES	No [1a...]

⁵¹ Differentiated appropriations

⁵² Non-differentiated appropriations hereafter referred to as NDA.

4. SUMMARY OF RESOURCES

4.1. Financial Resources

4.1.1. Summary of commitment appropriations (CA) and payment appropriations (PA)

EUR million (to 3 decimal places) cash prices

Expenditure type	Section no.	2007	2008	2009	2010	2011	2012	2013	Total
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Operational expenditure⁵³

Commitment Appropriations (CA)	8.1	a	280,916	358,377	477,708	493,220	527,103	619,115	643,550	3.399,989
Payment Appropriations (PA)		b								

Administrative expenditure within reference amount⁵⁴

Technical & administrative assistance (NDA)	8.2.4	c	177,503	190,795	197,945	203,300	184,645	188,338	192,105	1.334,631
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TOTAL REFERENCE AMOUNT

Commitment Appropriations		a+c	458,419	549,172	675,653	696,520	711,748	807,453	835,655	4.734,621
Payment Appropriations		b+c								

Administrative expenditure not included in reference amount⁵⁵

Human resources and associated expenditure (NDA)	8.2.5 d		4,986	5,085	5,187	5,291	5,397	5,504	5,615	37,064
Administrative costs, other than human resources and associated costs, not included in reference amount (NDA)	8.2.6 e		0,148	0,151	0,154	0,157	0,160	0,163	0,167	1,101

⁵³ Expenditure that does not fall under Chapter xx 01 of the Title xx concerned.

⁵⁴ Expenditure within article xx 01 05 of Title xx.

⁵⁵ Expenditure within chapter xx 01 other than articles xx 01 04 or xx 01 05.

Total indicative financial cost of intervention

TOTAL CA including cost of Human Resources	a+c +d +e	463,553	554,408	680,994	701,968	717,305	813,121	841,437	4.772,785
TOTAL PA including cost of Human Resources	b+c +d +e								

Co-financing details

If the proposal involves co-financing by Member States, or other bodies (please specify which), an estimate of the level of this co-financing should be indicated in the table below (additional lines may be added if different bodies are foreseen for the provision of the co-financing):

EUR million (to 3 decimal places)

Co-financing body		Year n	n + 1	n + 2	n + 3	n + 4	n + 5 and later	Total
.....	f							
TOTAL CA including co-financing	a+c +d+ e+f							

4.1.2. Compatibility with Financial Programming

- Proposal is compatible with next financial programming (Commission's February 2004 Communication on the financial perspectives 2007-2013 COM (2004) 101).
- Proposal will entail reprogramming of the relevant heading in the financial perspective.
- Proposal may require application of the provisions of the Interinstitutional Agreement⁵⁶ (i.e. flexibility instrument or revision of the financial perspective).

4.1.3. Financial impact on Revenue

- Proposal has no financial implications on revenue
- Proposal has financial impact – the effect on revenue is as follows:

⁵⁶ See points 19 and 24 of the Interinstitutional agreement.

Certain Associated States may contribute to the funding of the framework programmes.

In accordance with Article 161 of the Financial Regulation, the Joint Research Centre may benefit from revenue from various types of competitive activities and from other services provided for outside bodies.

In accordance with Article 18 of the Financial Regulation, certain revenue may be used to finance specific items.

NB: All details and observations relating to the method of calculating the effect on revenue should be shown in a separate annex.

EUR million (to one decimal place)

Budget line	Revenue	Prior to action [Year n-1]	Situation following action						
			[Year n]	[n+1]	[n+2]	[n+3]	[n+4]	[n+5] ⁵⁷	
	<i>a) Revenue in absolute terms</i>								
	<i>b) Change in revenue</i>	Δ							

(Please specify each revenue budget line involved, adding the appropriate number of rows to the table if there is an effect on more than one budget line.)

4.2. Human Resources FTE (including officials, temporary and external staff) – see detail under point 8.2.1.

Annual requirements	Year n	n + 1	n + 2	n + 3	n + 4	n + 5 and later
Total number of human resources						

5. CHARACTERISTICS AND OBJECTIVES

Details of the context of the proposal are required in the Explanatory Memorandum. This section of the Legislative Financial Statement should include the following specific complementary information:

⁵⁷ Additional columns should be added if necessary i.e. if the duration of the action exceeds 6 years.

5.1. Need to be met in the short or long term

The 7th Framework Programme will be an integral part of the EU efforts towards the knowledge economy and society in Europe, together with other specific endeavours on education, training and innovation. The elaboration of the objectives, as illustrated in the Communication COM (2004) 353 of 16.6.2004 on the future European research policy and very favourably viewed by the stakeholders and the other European institutions, is at the basis of the Commission proposal for the 7th Framework Programme.

The 7th Framework Programme is characterised both by continuity with the current 6th Framework Programme (e.g. in the context of the cooperative research) and the introduction of novel elements at the level of content and instruments to address the arising needs at EU level (e.g. support to new infrastructures, co-ordination of national research programmes on a large scale).

The main instruments to be used will be the known ones, with important efforts already undertaken and more envisaged to simplify all procedures of the Framework Programme and make them friendlier for the proposers.

These elements are lucidly presented in the Explanatory Memorandum and in the Communication “Building the ERA of Knowledge for Growth” that is put forward at the same moment as the Commission proposals for the 7th Framework Programme.

5.2. Value-added of Community involvement and coherence of the proposal with other financial instruments and possible synergy

Intervention at EU level is justified in the field of R&D policy. There are a number of cases where it can be more effective to provide support for research at EU level than at national level. Some research activities are of such a scale that no single Member State can provide the necessary resources and expertise. In these cases, EU projects can allow research to achieve the required “critical mass”, while lowering commercial risk and producing a leverage effect on private investment. EU-scale actions also play an important role in transferring skills and knowledge across frontiers. This helps to foster excellence in research and development through enhancing capability, quality and EU-wide competition, as well as improving human capacity in S&T through training, mobility and European career development. EU support can also contribute to a better integration of European R&D, by encouraging the coordination of national policies, by the EU-wide dissemination of results, and by funding research for pan-European policy challenges.

An in-depth analysis is provided for in the “Impact Assessment and Ex Ante Evaluation Report for the Commission proposals for the Council and European Parliament decisions on the 7th Framework Programme (EC and Euratom)”. This document represents a technical annex to the legislative proposal in the form of a staff working document. A whole chapter of the report is dedicated to this question (see its Annex 1, chapter 3). The report also addresses alternative options for Community intervention and the impacts likely to result from each policy option.

The 7th Framework Programme will involve modes of support for research activities from EU, international, national and regional sources. These will be complementary to the support to be provided by the European Investment Bank and the Structural Funds. More information is included in the Communication “Building the ERA of Knowledge for Growth” (see above) and in the Explanatory Memorandum.

5.3. Objectives, expected results and related indicators of the proposal in the context of the ABM framework

“Reinvigorating” the Lisbon agenda is a key goal of the EU and the European Commission for the coming years. This implies, as a first priority, the full realisation of the knowledge society. In the same direction, the strategic objectives of the College, COM (2005) 12 final, have highlighted the importance of research and development as one of the key drivers of prosperity and growth. In particular this will mean the Union committing to invest 3% of GDP in research, with one third coming from the public sector. This message is reinforced by the Communication on ‘A new start for the Lisbon Strategy’ COM (2005)24.

The objectives set out here are therefore aimed precisely at supporting the aims of the Lisbon agenda through Community funded research activities. It has been demonstrated that such research plays a critically important role in promoting growth and prosperity, building the European knowledge base including research capacities and developing an integrated and strengthened European Research Area.

Objectives are in the following areas:

- 1. Fusion Energy Research:** Developing the knowledge base for, and realising ITER as the major step towards, the creation of prototype reactors for power stations which are safe, sustainable, environmentally responsible, and economically viable.
- 2. Nuclear Fission and Radiation Protection:** Establishing a sound scientific and technical basis in order to accelerate practical developments for the safer management of long-lived radioactive waste, promoting safer, more resource-efficient and competitive exploitation of nuclear energy and ensuring a robust and socially acceptable system of protection of man and the environment against the effects of ionising radiation.
- 3. Nuclear Activities of the Joint Research Centre:** To provide customer driven scientific and technical support to the EU policy making process in the nuclear field, ensuring support to the implementation and monitoring of existing policies while flexibly responding to new policy demands.

Performance indicators will be developed at three levels. Quantitative and qualitative indicators will be developed to show the path or direction of scientific and technical progress, such as new standards and tools, scientific techniques, patent applications and licence agreements new products, process and services.

Management indicators will be developed to monitor performance internally and support senior management decision making. These could include level of budget execution, time to contract and time to payment.

Outcome (impact) indicators will be used to assess the overall effectiveness of the research against high level objectives. These could include assessment at the aggregate the Framework Programme Level (e.g. impact on the achievement of the Lisbon, Goeteborg, Barcelona and other objectives) and assessment at the SP level (e.g. contribution made to the EU S&T and economic performance).

More information on this point is included in the Annex of the “Impact Assessment and Ex Ante Evaluation Report for the Commission proposals for the Council and European Parliament decisions on the 7th Framework Programme (EC and Euratom)”, Chapter 6: Towards an effective, user-friendly management and outcome-oriented new 7th Framework Programme , Section 3: New programme evaluation and monitoring system.

5.4 Method of Implementation (indicative)

Show below the method(s)⁵⁸ chosen for the implementation of the action.

Centralised Management

- Directly by the Commission
- Indirectly by delegation to:
 - Executive Agencies
 - Bodies set up by the Communities as referred to in art. 185 of the Financial Regulation
 - National public-sector bodies/bodies with public-service mission

Shared or decentralised management

- With Member states
- With Third countries

Joint management with international organisations (please specify)

Relevant comments:

As a general principle when deciding on the most appropriate management structures, there must be clear lines of responsibility within the Commission and clean interfaces between the Commission and any separate management structures. In addition, where the link between the detailed follow-up of the actual projects funded and the development of S&T policy is clear, any shift of management away from the Commission services cannot go beyond “upstream” tasks supporting the submission and evaluation of proposals. Where this link between the individual project follow-up and the definition of scientific priorities is not direct or does not exist, management of the “downstream” tasks of making contracts and running the projects could be given to an executive agency.

With this principle in mind, the following is proposed for the management of the various parts of the Euratom Framework Programme:

⁵⁸ If more than one method is indicated please provide additional details in the "Relevant comments" section of this point.

(1) For all **RTD projects, including collaborative research projects**, the hypothesis used is that it will not be possible to manage with the status quo (i.e. full internal direct management with limited use of outsourcing through commercial contracts). In this case, the executive agency set up for “upstream” implementation tasks under the 7th EC Framework Programme will be used. Tasks of this agency would include the reception and administrative management of proposals submitted, inviting and paying expert evaluators (chosen by the Commission), providing logistical support to proposal evaluation and possible further tasks, such as financial viability checking and provision of statistics. The continued possibility to sub-contract specific tasks to private companies (e.g. for the development of IT tools) will not be ruled out.

The evaluation, contracting and project management of RTD projects would be carried out by the Commission services, in order to maintain the close link between such activities and policy formulation.

Flexibility should be maintained to allow the possibility of adapting these management arrangements depending on experience acquired during the first years of the 7th Framework Programme.

(2) The European Joint Undertaking, based on the provisions of Articles 45-51, Title II of Chapter V of the Euratom Treaty, will be used for the creation of **ITER** (International Thermonuclear Experimental Reactor).

6. MONITORING AND EVALUATION

6.1. Monitoring system

Monitoring of implementation management would be ensured by operational senior management within the Commission on a continuous basis with annual check points and using a common set of management performance indicators. Adequate resource would be given to this process. The annual results of this exercise will be used to inform senior management and as an input to the multi-annual assessment exercise.

The requirements and systems for data collection regarding proposal evaluation and contract preparation are currently under review given the needs of providing a robust and simplified data set while imposing minimum burden on research programme participants.

6.2. Evaluation

6.2.1. Ex-ante evaluation

In line with the Commission requirements, an ex ante evaluation of the 7th Framework Programme legislative proposals has been undertaken. This evaluation is incorporated in the overall Impact Assessment report of the European Commission's proposals for the European parliament and Council decisions on the 7th Framework Programme (EC and EURATOM).

The 7th Framework Programme Impact Assessment exercise was based upon inputs from stakeholders, internal and external evaluation and other studies, and contributions from recognised European evaluation and impact assessment experts. The Impact Assessment exercise covered the period from April 2004 to April 2005. It was conducted and monitored by the Commission services with the help of a number of external experts.

6.2.2. Measures taken following an intermediate/ex-post evaluation (lessons learned from similar experiences in the past)

A Five Year Assessment of the implementation and achievements of Community research over the five preceding years was carried out between June-December 2004 by a panel of independent high level experts. The assessment was based on analysis of an extensive database of evaluation and policy reports concerning Community research, 8 separate studies and analyses prepared specifically as inputs to the assessment exercise; interviews with and presentations by Commission staff; and discussion by panel members within their own constituencies.

The results of the Five Year Assessment were made available on 10 February 2005 and on XX/XX/2005, the Commission communicated the conclusions of the assessment, accompanied by its observations, to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions.

A synthesis of the key findings of the Five Year Assessment report and how these have been integrated into the proposal (*in italics*) are as follows:

- It was noted that the Framework Programmes have provided a major contribution to Europe's knowledge base and the restructuring of Europe's research system to be more innovative and that the Commission's proposal to substantially increase the European research budget in the future is a welcome step in the right direction. *The proposal is for a substantial increase in funding of the Framework.*
- It was recommended that a clearer vision or articulation of what EU research aims to achieve is needed to help set clear objectives, define precisely the Added Value for Europe, reinforce the impetus given by the European Research Area and get the necessary support from the public for these activities. *The proposal is accompanied by a specific Communication to describe the relationship between knowledge creation and growth and has been developed in parallel with, the ex ante Impact Assessment which gives a clear and detailed statement on the expected benefits from the proposed research activities.*
- It was recommended that the industrial orientation and participation in the Framework Programme must be enhanced to help strengthen European competitiveness. Links to other EU policies are needed such as intellectual property rights (IPR), state aid rules and also encouragement of public-private collaboration such as through joint technology initiatives. *The proposal reflects the need for a strengthened and simplified approach to Community research funding with detailed attention to the needs of the industrial sector, including different types of industrial participant such as large firms and SMEs. The promotion of joint technology initiatives is one of the innovative features to promote industrial participation in the programme.*
- It was recommended that excelling in science and developing human resources for research will be crucial for further development of the knowledge-based society. This will require the extension in scale and scope of human resources and mobility programmes. *The proposal reflects this need through the enhanced measures for human resources development with the commitment for more flexibility and greater articulation between the public and private sectors. It is also proposed to create a European Research Council to promote riskier research and excellence in science.*
- It was recommended that enhancing citizens trust in science, technology and innovation and better understanding of the legitimacy of research policies are necessary to tackle society's concerns appropriately by science and research policy objectives. Impacts and actual results should be communicated to the public at large in a meaningful manner. *The proposal reflects these needs through a specific approach to Science in Society as one of the activities under 'Capacities'.*
- Simplifying the access and participation to the Framework Programme, notably through the streamlining of its administration, is essential to reinforce its positive role in the EU research landscape. This is not least true for the new Member States which face particular problems that are to be addressed. For reasons of continuity, it was recommended to maintain the current implementation instruments. *Extensive efforts are ongoing towards a major simplification of Framework Programme procedures, the proposed results of which are incorporated throughout the proposal.*

6.2.3. Terms and frequency of future evaluation

Not later than 2010, the Commission shall carry out with the assistance of external experts, an interim evaluation of the seventh framework programme and its specific programmes on the quality of the research activities under way and progress towards the objectives set.

A coordinated programme of studies for: *horizontal assessments* of such topics as the impact of research on issues such as productivity, competitiveness and employment; structuring effects of the Framework Programme on the ERA (fragmentation, excellence, coordination) through the formation and development of commercial and knowledge networks, and the creation and support to infrastructures; and the impact of Community research on strategic decision making in companies and research organisations and national, European and regional authorities; *assessment of impact and achievements at portfolio, programme and higher levels* against the strategic objectives and indicators that are set within a clearly defined programme logic.

Two years following the completion of this framework programme, the Commission shall have carried out an external evaluation by independent experts of its rationale, implementation and achievements. This would be supported by a coherent set of independent studies, the interim evaluation and other evaluation activities carried out over the life-time of the Framework Programme, as listed above. The report of this exercise would be presented to all interested stakeholders, including the Parliament and Council. Furthermore, this report could feed into future ex ante evaluation and impact assessments by the Commission.

An independent ex post programme evaluation would be undertaken 2 years after the end of the 6th Framework Programme.

Evaluation methods to include: expert panels; sampled analyses, case studies and surveys; longitudinal studies; studies coordinated with Members States; where appropriate, cost-benefit analysis or follow-on macroeconomic impact analysis.

7. ANTI-FRAUD MEASURES

Measures will be taken to ensure that the same anti-fraud measures taken in the sixth framework programmes' rules for participation and contracts will be brought forward and reinforced in the seventh framework programmes. These include measures such a financial collective responsibility, sanctions against overcharging, measures to ensure the effective recovery of amounts due to the Commission, and administrative and legal measures taken to ensure full compliance with the Financial Regulation and its provisions regarding procedures for selecting and financing grants and services rendered to the Commission.

8. DETAILS OF RESOURCES

8.1. Objectives of the proposal in terms of their financial cost

Commitment appropriations in EUR million (to 3 decimal places) Cash prices⁵⁹

(Headings of Objectives, actions and outputs should be provided)	Year 2007		Year 2008		Year 2009		Year 2010		Year 2011		Year 2012		Year 2013		TOTAL	
	No. outputs	Total cost														
OPERATIONAL OBJECTIVE No.1 ⁶⁰ (Fission and Fusion) EURATOM INDIRECT ACTIONS		356,886		444,591		567,903		585,572		597,483		689,751		713,569		3.955,754
OPERATIONAL OBJECTIVE No.2 ¹ EURATOM DIRECT ACTIONS-JRC		101,533		104,581		107,750		110,948		114,265		117,703		122,087		778,867
TOTAL COST		458,419		549,172		675,653		696,520		711,748		807,453		835,655		4.734,621

⁵⁹ The Euratom programme covers the period 2007-2011. The figures for 2012 and 2013 are only for information.

⁶⁰ As described under Section 5.3.