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THE EUROPEAN UNION**

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NOTE

From: Permanent Representatives Committee
To: Council

No. prev. doc.: 11787/11 RECH 243 ATO 70 COMPET 329
No. Cion prop.: 7421/11 RECH 56 ATO 11 COMPET 87 - COM(2011) 72 final

Subject: Draft Council decision concerning the Framework Programme of the European Atomic Energy Community for nuclear research and training activities (2012-2013)
- General approach

1. On 7 March 2011 the Commission submitted to the Council the following proposals:
 - a) Proposal for a Council Decision concerning the **Framework Programme** of the European Atomic Energy Community for nuclear research and training activities (2012-2013)¹

¹ 7421/11.

- b) Proposal for a Council Regulation (Euratom) laying down the **rules for the participation** of undertakings, research centres and universities in indirect actions under the Framework Programme of the European Atomic Energy Community and for the dissemination of research results (2012-2013)²
- c) Proposal for a Council Decision concerning the **specific programme**, to be carried out by means of **indirect actions**, implementing the Framework Programme of the European Atomic Energy Community for nuclear research and training activities (2012-2013)³
- d) Proposal for a Council Decision on the **specific programme**, to be carried out by means of **direct actions by the Joint Research Centre**, implementing the Framework Programme of the European Atomic Energy Community for nuclear research and training activities (2012 to 2013)⁴

2. It may be recalled that the Treaty establishing the European Atomic Energy Community (Euratom) limits the **duration** of research and training programmes in the nuclear field to a maximum of five years. The present legislation⁵ in force in this regard will expire at the end of 2011, whereas the "Seventh Framework Programme of the European Community for research, technological development and demonstration activities (2007-2013)"⁶ based on Article 182 of the Treaty on the Functioning of the European Union (TFEU) will remain in force until the end of 2013.

3. On 28 March 2011, the Permanent Representatives Committee decided to **consult**, on an optional basis, the European Parliament and the Economic and Social Committee on the proposals.

² 7418/11.

³ 7402/11.

⁴ 7404/11.

⁵ Notably, Council Decision of 18 December 2006 concerning the Seventh Framework Programme of the European Atomic Energy Community (Euratom) for nuclear research and training activities (2007 to 2011). OJ L 54, 22.2.2007, p. 21 - 29.

⁶ Notably, Decision 1982/2006/EC of the European Parliament and of the Council of 18 December 2006 concerning the Seventh Framework Programme of the European Community for research, technological development and demonstration activities (2007-2013). OJ L 412, 30.12.2006, p. 1 - 41.

4. As to the financial aspects of the Programme, on 20 April 2011 the Commission submitted to the European Parliament and the Council its Proposal for a Decision amending the Interinstitutional Agreement of 17 May 2006 on budgetary discipline and sound financial management as regards the multiannual financial framework, to address **additional financing needs of the ITER project**.⁷ The financial aspects will not be the subject of the examination by the Council at this point.
5. The Council ("Competitiveness") at its meeting of 30-31 May 2011 endorsed a **progress report**. The Presidency continued its efforts to facilitate the compromise. As a result of the negotiations, a compromise solution was reached. Its text was endorsed by the Permanent Representatives Committee on 22 June 2011. LU delegation indicated its intention to abstain and to put forward a statement. AT delegation will also provide a statement, and there is also a Council statement to the minutes.
6. Therefore the Council ("Agriculture") at its meeting of 28 June 2011 is called upon to adopt the general approach as annexed to this note.

⁷ 9419/11.

Draft Council decision concerning the Framework Programme of the European Atomic Energy Community for nuclear research and training activities (2012-2013)

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 European Commission,

Having regard to the opinion of the European Parliament⁸,

Having regard to the opinion of the European Economic and Social Committee⁹,

Whereas:

1. Joint national and European efforts in the area of research and training are essential to promote and ensure economic growth and the well-being of citizens in Europe.
2. The Framework Programme of the European Atomic Energy Community for nuclear research and training activities (2012 - 2013), hereinafter 'the Framework Programme (2012 - 2013)', should complement other Union actions in the area of research policy that are necessary for implementing the Europe 2020 strategy adopted by the European Council of 17 June 2010¹⁰ following the Communication from the Commission of 3 March 2010 entitled Europe 2020 - A strategy for smart, sustainable and inclusive growth¹¹, in particular those on education, training, competitiveness and innovation, industry, employment, and the environment.

⁸ Opinion delivered on XXX

⁹ OJ C , , p..

¹⁰ Doc. EUCO 13/1/10.

¹¹ COM(2010) 2020 final.

3. The Framework Programme (2012-2013) should build on the achievements of the Seventh Framework Programme of the Community adopted by Council Decision 2006/970/Euratom of 18 December 2006 concerning the Seventh Framework Programme of the European Atomic Energy Community (Euratom) for nuclear research and training activities (2007 to 2011)¹², whilst including necessary reinforced emphasis on nuclear safety contributing to reorientation of nuclear research. It should also contribute to the creation of the European Research Area and towards the development of a knowledge economy and society in Europe.
4. The Framework Programme (2012-2013) should contribute to the implementation of the Innovation Union, one of the Europe 2020 flagship initiatives put forward by the Communication from the Commission of 6 October 2010 entitled Europe 2020 Flagship Initiative Innovation Union¹³, by enhancing competition for scientific excellence and accelerating the deployment of key innovations in the nuclear energy field, notably in fusion and nuclear safety, and contribute to tackling energy and climate change challenges.
5. In the context of the Energy Policy for Europe the European Council of 8/9 March 2007 confirmed that it is for each and every Member State to decide whether or not to rely on nuclear energy and stressed that this has to be done while further improving nuclear safety and the management of radioactive waste.¹⁴ It is also acknowledged that nuclear energy has, for the time being, the role of a "bridging technology" in certain Member States.

¹² OJ L 460, 30.12.2006. p. 60.

¹³ COM (2010) 546 final.

Council conclusions of 25-26 November 2010 on Europe 2020 Flagship Initiative: "Innovation Union": Accelerating the transformation of Europe through innovation in a fast changing world (17165/10).

¹⁴ Doc. 7224/1/07.

Council conclusions of 15 February 2007 on Energy policy for Europe (6453/07).

6. Notwithstanding the potential impact of nuclear energy on energy supply and economic development, severe nuclear accidents may have a potential to endanger human health. Therefore, under the Framework Programme (2012-2013), nuclear safety and, where appropriate, security aspects should be given greatest possible attention. The security aspects of the Framework Programme should be limited to the direct actions of the JRC.
7. The European Strategic Energy Technology Plan (SET-Plan)¹⁵ set up following the Communication from the Commission of 22 November 2007 entitled European Strategic Energy Technology Plan (SET-Plan) – Towards a low carbon future¹⁶ is accelerating the development of a portfolio of low carbon technologies. The European Council agreed, at the meeting on 4 February 2011, that the EU and its Member States will promote investment in renewables, safe and sustainable low carbon technologies and focus on implementing the technology priorities established in the European Strategic Energy Technology Plan (SET Plan).¹⁷
8. Euratom has created a single and fully integrated fusion research programme that has taken a leading international role in the development of fusion as a source of energy.

¹⁵ Council Conclusions of 28 February 2008 on the Commission Communication "A European Strategic Energy Technology Plan (SET Plan)" (6326/1/08).

¹⁶ COM (2007) 723 final.

¹⁷ Doc. EUCO 2/1/11.

Council conclusions of 28 February 2011 on Energy 2020: A strategy for competitive, sustainable and secure energy (6207/1/11).

9. Following the Council Decision of 20 December 2005 concerning the approval of the accession of the European Atomic Energy Community to a Framework Agreement for International Collaboration on Research and Development of Generation IV Nuclear Energy Systems¹⁸, the Community acceded to the Framework Agreement of the Generation-IV International Forum (GIF) on 11 May 2006. The GIF coordinates multilateral cooperation in pre-conceptual design research on a number of advanced nuclear systems also aiming at satisfactorily addressing nuclear safety, waste, proliferation and public perception concerns, relevant for the Framework Programme (2012-2013).
10. The Council Conclusions on the need for skills in the nuclear field, adopted at its meeting held on 1 and 2 December 2008, recognise that it is essential to maintain within the Community a high level of training in the nuclear field.¹⁹
11. In 2010, the Commission received the final reports on an external assessment of implementation and results of the Community activities in nuclear research over the period 2007-2009, covering both direct and indirect actions.
12. The realisation of ITER in Europe, in accordance with the Agreement of 21 November 2006 on the establishment of the ITER International Fusion Energy Organisation for the joint implementation of the ITER project²⁰, should be the central feature of fusion research activities under the Framework Programme (2012-2013).

¹⁸ Doc. 14929/05.

¹⁹ Doc. 15406/08.

²⁰ OJ L 358, 16.12.2006, p 62.

13. The Community activities to help realise ITER, in particular to construct ITER at Cadarache and carry out the ITER Technology R&D during the Framework Programme (2012-2013) are to be steered by the European Joint Undertaking for ITER and the Development of Fusion Energy (Fusion for Energy), following the Council Decision 2007/198/Euratom of 27 March 2007 establishing the European Joint Undertaking for ITER and the Development of Fusion Energy and conferring advantages upon it²¹.
14. 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.
15. This Decision should establish, for the entire duration of the Framework Programme (2012-2013), a financial envelope that constitutes the prime reference, within the meaning of point 37 of the Interinstitutional Agreement between the European Parliament, the Council and the Commission of 17 May 2006 on budgetary discipline and sound financial management²², for the budgetary authority during the annual budgetary procedure.
16. The Joint Research Centre (JRC) should contribute to providing customer-driven scientific and technological support for the formulation, development, implementation and monitoring of the Union's policies with an enhanced focus on safety and security research. In this regard, the JRC should continue to function as an independent reference centre of science and technology in the Union in the areas of its specific competence. The JRC should notably have the necessary capacity to provide independent scientific and technical expertise in the field of nuclear incidents and accidents.

²¹ OJ L 90, 30.3.2007, p. 58.

²² OJ C 139, 14.6.2006, p. 1. [COMMENTS:] to be updated if and when the new framework agreement is adopted.

17. The international and global dimension of European research activities is important with a view to obtain mutual benefits. The Framework Programme (2012-2013) should be open to the participation of countries that have concluded the necessary agreements to this effect, and should also be open, at project level and on the basis of mutual benefit, to the participation of entities from third countries and of international organisations for scientific cooperation.
18. The Framework Programme (2012-2013) should contribute to the enlargement of the Union by providing scientific and technological support to the candidate countries for their implementation of the Union *acquis* and for their integration within the European Research Area.
19. The Communication from the Commission of 26 March 2009 on nuclear non-proliferation²³, recognises the role of the JRC in the field of nuclear security research and training.
20. Appropriate measures should also be taken to prevent irregularities and fraud and to recover funds lost, wrongly paid or incorrectly used, in accordance with Council Regulation (EC, Euratom) No 2988/95 of 18 December 1995 on the protection of the European Communities financial interests²⁴, Council Regulation (Euratom, EC) No. 2185/96 of 11 November 1996 concerning on-the-spot checks and inspections carried out by the Commission in order to protect the European Communities' financial interests against fraud and other irregularities²⁵ and Council Regulation (Euratom) No. 1074/1999 of 25 May 1999 concerning investigations conducted by the European Anti-Fraud Office (OLAF).²⁶
21. The Commission has consulted the Euratom Scientific and Technical Committee.

²³ COM(2009)143.

²⁴ OJ L 312, 23.12.1995, p. 1.

²⁵ OJ L 292, 15.11.1996, p. 2.

²⁶ OJ L 136, 31.5.1999, p. 8.

HAS ADOPTED THIS DECISION:

Article 1

Adoption of the Framework Programme

A multiannual framework programme for nuclear research and training activities, hereinafter the 'Framework Programme (2012-2013)', is adopted for the period from 1 January 2012 to 31 December 2013.

Article 2

Objectives

1. The Framework Programme (2012-2013) shall pursue the general objectives set out in Article 1 and Article 2(a) of the Treaty with special consideration of nuclear safety, security and radiation protection, while contributing towards the creation of the Innovation Union and building on the European Research Area.
2. The Framework Programme (2012-2013) shall cover Community research, technological development, international cooperation, dissemination of technical information, exploitation activities and training, to be set out in two specific programmes.
3. The first specific programme shall cover the following indirect actions:
 - 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, safety and radiation protection, with the objective of enhancing the safety of nuclear fission and other uses of radiation in industry, in medicine and in improving the management of radioactive waste.
4. The second specific programme shall cover the direct research activities of the Joint Research Centre (JRC) in the field of nuclear waste management, environmental impact, safety and security.
5. The objectives and broad lines of the specific programmes are set out in Annex I.

Article 3

Maximum amount and shares assigned to each specific programme²⁷

The maximum amount for the implementation of the Framework Programme (2012-2013) shall be EUR [2 560 270 000]. This amount shall be distributed as follows (in EUR):

- a) for the specific programme, to be carried out by means of indirect actions:
 - fusion energy research [2 208 809 000],²⁸
 - nuclear fission, safety, and radiation protection [118 245 000];
- b) for the specific programme, to be carried out by means of direct actions:
 - nuclear activities of the JRC [233 216 000].

²⁷ *Subject to agreement on additional funding for ITER; figures presented are those of the Commission proposal.*

²⁸ Within this total amount, sufficient funding will be reserved for activities other than the construction of ITER listed in Annex I.

The detailed rules for Community financial participation in the Framework Programme (2012-2013) are set out in Annex II.

Article 4

Protection of the Union's financial interests

For Community actions financed under this Decision, Regulations (EC, Euratom) No 2988/95 and (Euratom, EC) No 2185/96 shall apply to any infringement of a provision of Union law, including the infringement of a contractual obligation under the Framework Programme (2012-2013), 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 Union or budgets managed by it as a result of an unjustified item of expenditure.

Article 5

Fundamental ethical principles

All the research activities carried out under the Framework Programme (2012-2013) shall be carried out in compliance with fundamental ethical principles.

Article 6

Monitoring, assessment and review

1. The Commission shall continually and systematically monitor the implementation of the Framework Programme (2012-2013) and its specific programmes and regularly report and disseminate the results of this monitoring. In early 2013, a specific monitoring report will be presented to the Council, dedicated to the implementation of nuclear safety and security activities of the Framework Programme.

2. Following the completion of the Framework Programme (2012-2013), the Commission shall, by 31 December 2015, have an external evaluation carried out 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.

Article 7

Entry into force

This Decision shall enter into force on the third day following its publication in the *Official Journal of the European Union*.

Done at Brussels,

For the Council

The President

SCIENTIFIC AND TECHNOLOGICAL OBJECTIVES, THEMES AND ACTIVITIES

INTRODUCTION

The Framework Programme (2012-2013) 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 JRC.

I.A. FUSION ENERGY RESEARCH

Objective

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

Rationale

Fusion has the potential to make a major contribution to the realisation of a sustainable and secure energy supply for the Union 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 first priority of the strategy to achieve the long-term goal is the construction of ITER (a major experimental facility which will demonstrate the scientific and technical feasibility of fusion power), followed by the construction of a demonstration fusion power plant (DEMO). ITER construction will be accompanied by a focussed programme of supporting R&D for ITER and limited activities on the technologies and physics required for DEMO.

The global dimension of fusion R&D is embodied in the agreement establishing the International Fusion Energy Organisation for the ITER Project and the Agreement between the Government of Japan and the Community for the Joint Implementation of the Broader Approach Activities in the Field of Fusion Energy Research²⁹.

International cooperation is also pursued within eight bilateral fusion Cooperation Agreements in force between the Community and third countries.

Activities

1. The realisation of ITER

This includes activities for the joint realisation of ITER, in particular governance of the ITER International Organisation and the European Joint Undertaking for ITER, management and staffing, general technical and administrative support, construction of equipment and installations and support for the project during construction.

2. R&D in preparation of ITER operation

A focused physics and technology programme will exploit the Joint European Torus (JET) and other ITER-relevant magnetic confinement devices. It will assess specific key ITER technologies, consolidate ITER project choices, and prepare for ITER operation.

3. Limited technology activities in preparation of DEMO

Fusion materials and key technologies for fusion will be further developed, and the work of the team preparing for the construction of the International Fusion Materials Irradiation Facility (IFMIF) will continue.

²⁹ OJ L 246, 21.9.2007, p. 34–46.

4. R&D activities for the longer term

There will be limited activities on improved concepts for magnetic confinement schemes (focussed on the preparation for operation of the W7-X stellarator device), and theory and modelling aimed at a comprehensive understanding of fusion plasmas.

5. 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 training the "ITER Generation", in terms of numbers, range of skills and high-level training and experience will be pursued.

6. Infrastructures

ITER will be a new research infrastructure with a strong European dimension.

7. Industry and technology transfer processes

New organisational structures are needed for swift transfer of innovations deriving from ITER to European industry. This will be a task of the Fusion Industry Innovation Forum which will develop a fusion technology roadmap and human resource development initiatives, with an emphasis on innovation and potential for providing new products and services.

I.B. NUCLEAR FISSION, SAFETY, 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, enhancing in particular the safety³⁰, while contributing to resource efficiency and cost-effectiveness 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 constitutes an element in the debate on combating climate change and reducing Europe's dependence on imported energy. In the broader context of finding a sustainable energy-mix for the future, the Framework Programme will also contribute through its research activities to the debate on the benefits and the limitations of nuclear fission energy for a low-carbon economy. Through ensuring even higher safety levels, more advanced nuclear technologies could also offer the prospect of significant improvements in efficiency and use of resources and producing less waste than current designs. Nuclear safety aspects will receive the greatest possible attention.

³⁰ Any nuclear security research activities are covered under heading II "Nuclear activities of the Joint Research Centre (JRC)".

Efforts are still required to ensure a continuation of the Community's outstanding safety record and the improvement of radiation protection continues to be a priority area. 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.³¹

Three major European cooperative initiatives in nuclear science and technology have been launched since the start of the Seventh Euratom Framework Programme. They are the Sustainable Nuclear Energy Technology Platform (SNETP), the Implementing Geological Disposal Technology Platform (IGDTP) and the Multidisciplinary European Low-Dose Initiative (MELODI). The activities of both SNETP and IGDTP correspond very closely with strategic energy technology plan priorities, and a core group of SNETP organisations are responsible for implementing ESNII, the European Sustainable Nuclear Industrial Initiative. They encompass activities within the scope of the Framework Programme (2012-2013), notably in so far as nuclear safety is concerned.

There is increasing interaction between SNETP, IGDTP and MELODI and other stakeholder forums at the Union level, such as the European Nuclear Energy Forum (ENEF) and the European Nuclear Safety Regulators Group (ENSREG), and further synergies will be sought as appropriate through Framework Programme activities whilst recalling that the development of industrial products and services should be funded by the industry itself.

³¹ *Reproduced from FP7 Euratom, Annex I, Chapter I.B.*

The Euratom Framework Programme (2012-2013) is characterised by an overriding concern to promote high levels of safety, taking also into consideration the international context. It will also continue to support initiatives to ensure that facilities, training and training opportunities in Europe remain appropriate in view of current orientations of national programmes and in the best interests of the Union as a whole, in particular as regards nuclear safety and radiation protection. This, more than anything else, will ensure that an appropriate safety culture is maintained.

Activities

1. Management of ultimate radioactive waste

Implementation-oriented research activities on remaining key aspects of deep geological disposal of spent fuel and long-lived radioactive waste with, as appropriate, demonstration of the technologies and safety, and to underpin development of a common European view on the main issues related to waste management from discharge to disposal.

2. Reactor systems

Research to underpin the safe operation of all relevant reactor systems (including fuel cycle facilities) in use in Europe or, to the extent necessary in order to maintain broad nuclear safety expertise in Europe, those reactor types which may be used in the future, focusing exclusively on safety aspects, including all aspects of the fuel cycle such as partitioning and transmutation. Accompanying measures to contribute to the debate on a sustainable energy mix in Europe.

3. Radiation protection

Research, in particular on the risks from low doses, medical uses and the management of accidents, to provide a scientific basis for a robust, equitable and socially acceptable system of protection, taking also into consideration the benefits of the uses of radiation in medicine and industry.

4. Infrastructures

Support for the use and continued availability of, and cooperation between, key research infrastructures in the priority thematic areas above.

5. Human resources and training

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

II. NUCLEAR ACTIVITIES OF THE JOINT RESEARCH CENTRE (JRC)

Objective

The JRC Nuclear Specific Programme aims at satisfying the R&D obligations of the Treaty, with special emphasis on nuclear safety and radiation protection, and supporting both Commission and Member States in the fields of safeguards and non-proliferation, waste management, safety of nuclear installations and fuel cycle, radioactivity in the environment and radiation protection. The JRC shall further strengthen its role of a European reference for the dissemination of information, training and education for professionals and young scientists, notably in the areas of nuclear safety and security, and radiation protection.

Rationale

There is a clear need for developing knowledge, skills and competence to provide the required scientific state of the art independent and reliable expertise in support to the Union's policies in the domains of nuclear reactor and fuel cycles safety, nuclear safeguards and security. The customer driven support to the Union's policy underlined in the JRC's mission will be complemented with a proactive role within the European Research Area in undertaking high quality research activities in close contact with industry and other bodies and developing networks with public and private institutions in the Member States.

Activities

1. **Nuclear waste management and environmental impact**, will focus on reducing uncertainties and solving open issues in waste disposal, in order to develop effective solutions for the management of high level nuclear waste following the two major options (direct disposal or partitioning and transmutation). Activities will also be developed to enhance the understanding and modelling of the physics, chemistry and fundamental properties of actinide materials, and the database of high accuracy nuclear reference data, for nuclear energy and non-nuclear applications (e.g. medical). To extend the radiological protection effort, further development of environmental models of radioisotope dispersion coupled with monitoring tests in environmental radioactivity in support to the harmonisation of the national monitoring process and systems will be carried out.
2. **Nuclear safety** will contribute to the implementation of research on safety of fuel cycles, focussing predominantly on reactor safety of present reactors in the Union. Research will also address reactor safety of new innovative designs, safety and safeguard aspects of innovative fuel cycles, extended burn-up or of new types of fuels. It will also pursue the development of safety requirements and advanced evaluation methods for reactor systems of relevance to nuclear safety in Europe. In addition the JRC will coordinate the European contribution to the Generation IV International Forum R&D initiative, by acting as integrator and disseminating research in this area. Furthermore, it will provide scientific expertise regarding nuclear incidents and accidents.

3. **Nuclear security**, will further support the accomplishment of Community commitments, in particular development of methods for the control of the fuel cycle facilities, the implementation of the additional protocol including environmental sampling and integrated safeguards, and the prevention of the diversion of nuclear and radioactive materials associated with illicit trafficking of such materials including the nuclear forensics.
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FUNDING SCHEMES

Subject to the rules for participation established for the implementation of the Framework Programme (2012-2013), the Community 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 (2012-2013).

1. FUNDING SCHEMES IN FUSION ENERGY

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

- 1.1. Contracts of Association, between the Commission and Member States or fully associated third countries or between the Commission and entities within Member States or fully associated third countries for the execution of part of the Community fusion energy research programme in accordance to Article 10 of the Treaty;
- 1.2. the European Fusion Development Agreement, a multilateral agreement concluded between the Commission and organisations in, or acting for, Member States and associated third countries to provide, among other things, a framework for further research on fusion technology in associated organisations and in industry, the use of JET facilities and the European contribution to international cooperation;
- 1.3. the European Joint Undertaking for ITER, based on Articles 45 to 51 of the Treaty;
- 1.4. international agreements between the Community and third countries covering activities in the field of fusion energy research and development, in particular the ITER and the Broader Approach Agreements;

- 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 Member States or third countries associated with the Framework Programme (2012-2013) where there is no Contract of Association.

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

2. FUNDING SCHEMES IN OTHER FIELDS

The activities in fields other than fusion energy under the Framework Programme (2012-2013) 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 the Framework Programme (2012-2013).

The decisions on 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) that can benefit from them;
- the types of activities (research, development, demonstration, training, dissemination, transfer of knowledge and other related activities) that can be funded.

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 as follows:

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

1. Collaborative projects

Support for research projects carried out by consortia with participants from different countries, aiming to develop 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 that mobilise a significant volume of resources for achieving a defined objective. Support for the training and career development of researchers will be included in project work plans.

2. Networks of excellence

Support for joint research programmes implemented by a number of research organisations integrating their activities in a given field and carried out by research teams under longer-term cooperation. The implementation of these joint research programmes will require the formal commitment of such organisations. Support for training and career development of researchers will be included in project work plans.

3. Coordination and support actions

Support for activities to coordinate coordinating or supporting research (networking, exchanges, trans-national access to research infrastructures, studies, conferences, contributions during construction of new infrastructure, etc.) or to promote the development of human resources (e.g. networking and setting up training schemes). These actions may also be implemented by means other than calls for proposals.

b) To support actions implemented on the basis of decisions by the Council, following a proposal from the Commission, the Community will provide financial support to multi-financed large-scale initiatives as follows:

- a financial contribution to the implementation of joint undertakings on the basis of the procedures and provisions set out in Articles 45 to 51 of the Treaty;
- a financial contribution to the development of new infrastructures of European interest.

The Community will implement the funding schemes in compliance with the provisions of Regulation (Euratom) No XXXX/2011 for the rules for the participation of undertakings, research centres and universities, the relevant state aid instruments, in particular the framework for state aid to research and development, as well as international rules in this area. In compliance with this international framework, the scale and form of financial participation will need to be considered on a case-by-case basis, in particular if funding from other public sector sources is available, including other sources of EU financing such as the European Investment Bank.

For participants in an indirect action pursued in a region lagging in development (convergence regions as defined in Article 5 of Council Regulation (EC) No 1083/2006³², including regions eligible for funding from the Structural Funds under the Convergence objective and regions eligible for funding from the Cohesion Fund, and outermost regions), complementary funding from the Structural Funds will be mobilised wherever possible and appropriate.

3. DIRECT ACTIONS — JOINT RESEARCH CENTRE

The Community will have activities implemented by the JRC, which are referred to as direct actions, in accordance with Council Decision concerning the specific programme, to be carried out by means of direct actions by the Joint Research Centre, implementing the Framework Programme of the European Atomic Energy Community for nuclear research and training activities (2012 to 2013).

³² OJ L 210, 31.7.2006, p. 25.