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– RESEARCH –

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FIFTH FRAMEWORK PROGRAMME OF THE EUROPEAN COMMUNITY FOR RESEARCH, TECHNOLOGICAL DEVELOPMENT AND DEMONSTRATION ACTIVITIES AND FIFTH EURATOM FRAMEWORK PROGRAMME (1998-2002)

The Council reached agreement on all the decisions concerning the 5th RTD Framework Programmes.

The Council adopted the following decisions:

- **Decision concerning the Fifth RTD Framework Programme of the European Community (1998-2002) ***
 - adoption by unanimity
- **Decision concerning the Fifth Framework Programme in the field of research and training for the European Atomic Energy Community (EAEC) (1998-2002)**
 - adoption by unanimity
- **Decision concerning the rules for the participation of undertakings, research centres and universities and for the dissemination of research results for the implementation of the Fifth Framework Programme of the European Community (1998-2002) ***
 - adoption by a qualified majority, with the Portuguese delegation voting against and the German delegation abstaining
- **Decision concerning the rules for the participation of undertakings, research centres and universities for the implementation of the Fifth Framework Programme of the EAEC (1998-2002)**
 - adoption by unanimity

Decisions concerning the specific programmes implementing the Fifth Framework Programme of the European Community for research, technological development and demonstration activities (1998-2002)

The Council reached agreement on all the Decisions concerning specific programmes (the Decisions are indicated in bold below). After the finalization of the texts in all the Community languages, the Decisions will be adopted at a forthcoming Council meeting.

Indirect actions :

1st activity (thematic programmes)

Decisions on:

- **Quality of life and management of living resources**
- **User-friendly information society**
- **Competitive and sustainable growth**
- **Energy, environment and sustainable development**

2nd activity (horizontal programme)

Decision on confirming the international role of Community research

3rd activity (horizontal programme)

Decision on promotion of innovation and encouragement of participation of SMEs

4th activity (horizontal programme)

Improving human research potential and the socio-economic knowledge base

Direct actions :

Decision on Joint Research Centre (JRC) programme

Decisions concerning the specific programmes implementing the Fifth Framework Programme of the European Atomic Energy Community for research and training activities (1998-2002)

The Council reached agreement on the Decisions concerning the specific programmes. As soon as the texts have been finalized in all the Community languages, the decisions will be adopted at a forthcoming Council meeting.

Indirect actions :

Decision on nuclear energy research

Direct actions :

Decision on Joint Research Centre (JRC) programme

BREAKDOWN OF FUNDS FOR BOTH FRAMEWORK PROGRAMMES

Maximum overall amount	14 960 MECUs	
EC FP	13 700	91.6%
Euratom FP	1 260	8.4%

EC FP	13 700	91.6%
Indirect actions	12 961	
Direct actions	739	
Indirect actions	12 961	
Activity 1	10 843	
Activity 2	475	
Activity 3	363	
Activity 4	1 280	
Activity 1	10 843	
Quality of life	2 413	
Information society	3 600	
Competitive growth	2 705	
Environment & sustain. dev.	1 083	
Energy	1 042	

Euratom FP	1 260	8.4%
Indirect actions	979	
Direct actions	281	
Indirect actions	979	
Fusion	788	
Fission	142	

5TH EC FRAMEWORK PROGRAMME

The key principle of the Programme is to maximise the concentration of research efforts; the structure of the programme thus represents a break with the four preceding RTD programmes. It is divided into direct and indirect actions as follows :

- I. The **indirect actions** (12 961 MECUs) comprise four activities which relate to seven different topics.
- II. The **direct RTD actions** (739 MECUs) to be implemented by the Joint Research Centre (JRC) will comprise research and scientific and technical support activities of an institutional character. The JRC will carry out its activities in close cooperation with the scientific community and enterprises in Europe.

I. INDIRECT ACTIONS

- la. **1st activity** covering research on four programmes, each dealing with a specific theme; each programme is managed by a management committee with a representative from each Member State.

Each thematic programme within this activity comprises

- key actions, which are regarded as a cluster of small and large, applied, generic and, as appropriate, basic research projects directed towards a common European challenge or problem not excluding global issues,
- research and technological development activities of a generic nature, which complement the key actions, and
- activities in support of research infrastructures, which are in line with the objectives of the thematic programmes, and which contribute to an optimum use of existing infrastructures and their cooperation at transnational level.

The *four thematic programmes* and the key actions therein are as follows:

THEME 1: Quality of life and management of living resources

INDICATIVE BREAKDOWN OF THE AMOUNT DEEMED NECESSARY

Type of activity	Total
(a) Key actions (i) Food, nutrition and health (ii) Control of infectious diseases (iii) The "cell factory" (iv) Environment and health (v) Sustainable agriculture, fisheries and forestry and integrated development of rural areas including mountain areas (vi) The ageing population and disabilities (b) Research and technological development activities of a generic nature (c) Support for research infrastructures	 290 300 400 160 520 190 483 70
TOTAL	2 413 MECU

KEY ACTIONS:

(i) Food, nutrition and health

The aim of this key action is to promote the development of knowledge, technologies and methods, including prenormative aspects, based on multidisciplinary approaches to produce a safe, healthy, balanced and varied food supply for consumers covering the whole food chain, thereby contributing to the fight against diseases related to food and to the reduction of the immense costs to health systems arising therefrom.

(ii) Control of infectious diseases

The priority objectives of this key action are the fight against and control of infectious diseases, both human and animal, including zoonoses, of increasing impact, whether established, newly emerging or in resurgence, based on research seeking a better understanding of the immune system.

(iii) The "cell factory"

This key action is aimed at helping the Community's enterprises to exploit the advances made in life sciences and technologies, particularly in the fields of health, environment, agriculture, agro-industries and high value-added products, such as chemicals. It is aimed at developing multidisciplinary technologies based on the exploitation of the properties of micro-organisms, plants and animals, in particular at the cellular and sub-cellular levels. The objective is to understand the functioning of cells in order to develop bio-molecules and bio-processes with high added-value capable of enhancing the quality of life and health.

(iv) Environment and health

The aim of this key action is to achieve a better understanding of the interactions between the genetic, physiological, environmental and social factors involved in sustaining good health and so to help reduce the adverse impact on health of changes in the environment and the workplace and the immense costs to health systems arising therefrom. It covers in particular issues such as prevention and the effects on health of air pollution, heavy metals and toxic substances, noise, climatic changes and electromagnetic radiation, as well as the effects of pollution at the workplace.

(v) Sustainable agriculture, fisheries and forestry and integrated development of rural areas, including mountain areas

The aim is to develop the knowledge and technologies needed for the production and exploitation of living resources, including forests, covering the whole production chain, adapted to recent adjustments in the common agricultural and fisheries policies, whilst also providing the scientific basis for Community regulations and standards. Similarly, the aim is to promote the multi-purpose role of forests and the sustainable management and utilization of forest resources as an integral factor of rural development.

(vi) The ageing population and disabilities

This key action aims to help Europe meet the challenge of the growing ageing population through RTD to underpin the development of policies and interventions to extend the quality of life and independence of older people, and to reduce the need for long-term care and its consequential costs. It gives priority to multidisciplinary RTD relating to processes leading to healthy ageing, including demographic, social and economic aspects, and to interventions leading to the postponement and improved management of disability. It aims to generate competitive advantage for a wide range of health related industries and sectors.

RESEARCH AND TECHNOLOGICAL DEVELOPMENT ACTIVITIES OF A GENERIC NATURE

The activities will be concentrated on the following areas :

- Chronic and degenerative diseases (in particular cancer and diabetes), cardiovascular diseases and rare diseases
- Research into genomes and diseases of genetic origin
- Neurosciences
- Public health and health services research
- Research relating to the disabled
- Study of problems relating to medical ethics and bioethics in the context of respect for fundamental human values
- Study of the socio-economic aspects of life sciences and technologies within the perspective of sustainable development (the impact on society, economy and employment)

SUPPORT FOR RESEARCH INFRASTRUCTURES

The objectives of this support are

- to broaden access, to make optimum use of and to improve the consistency of the existing European research fabric at Community level.
- to facilitate and to encourage transnational cooperation in the rational and cost-effective development of RTD facilities in response to emerging needs.

In order to reinforce the European added value and the optimisation of the required efforts, Community support will be directed towards: transnational co-ordination, integrated

management of, specific aspects of operation of, access to and improvement of existing facilities; co-ordination and complementation of national or multinational initiatives to develop facilities needed at the European level; networking of communities of researchers and users through research projects and specific training activities centred on appropriate infrastructures, or cooperation of several partners, leading to an integrated service provider; increasing the compatibility of dispersed systems, aiming to provide rapid and effective integration of facilities and resources.

THEME 2: User-friendly information society**INDICATIVE BREAKDOWN OF THE AMOUNT DEEMED NECESSARY**

Type of activity	
(a) Key actions <ul style="list-style-type: none"> (i) Systems and services for the citizen (ii) New methods of work and electronic commerce (iii) Multimedia content and tools (iv) Essential technologies and infrastructures 	646 547 564 1 363
(b) Research and technological development activities of a generic nature: Future and emerging technologies	319
(c) Support for research infrastructures: Research networking	161
TOTAL	3 600 MECU

KEY ACTIONS:**(i) Systems and services for the citizen**

The aim of this key action is to meet policy and user needs and to ease access at the lowest cost to quality general-purpose services, boost the industry providing these services and pave the way to "digital communities" both in rural and urban areas.

(ii) New methods of work and electronic commerce

The aim of this key action is to develop technologies to help companies operate more efficiently and to make commerce in goods and services more efficient, and to facilitate improvements in working conditions and the quality of work.

(iii) Multimedia content and tools

The aim of this key action is to facilitate lifelong learning, to stimulate creativity, to enable linguistic and cultural diversity and to improve the functionality of future information products and services, taking account of user-friendliness and acceptability. The research emphasizes intelligent systems for education and training with innovative forms of multimedia content, including audiovisual content, and tools for structuring and processing them.

(iv) Essential technologies and infrastructures

The aim of this key action is to promote excellence in the technologies which are crucial to the Information Society, to speed up their introduction and broaden their field of application.

RESEARCH AND TECHNOLOGICAL DEVELOPMENT ACTIVITIES OF A GENERIC NATURE**Future and emerging technologies**

This specific activity on future and emerging technologies will cover research that is of a longer-term nature or involves particularly high risks – compensated by the promise of major advances and the potential for industrial and societal impact. Such research will typically be either transdisciplinary or in an emerging discipline. It will reinforce the link and flow of ideas, initiatives and people between academia and industry in the EU. This activity complements the domain-specific work integrated in each of the key actions.

SUPPORT FOR RESEARCH INFRASTRUCTURES**Research networking****Broadband interconnection of national research and education networks**

The objective is to facilitate the supply of trans-European broadband interconnections between national research, education and training networks at capacities and of a quality matching the aggregated need of Europe's academic and industrial researchers and to keep the resulting network at the forefront of the state of the art.

THEME 3: Competitive and sustainable growth**INDICATIVE BREAKDOWN OF THE AMOUNT DEEMED NECESSARY**

Type of activity	Total
<p>(a) Key actions</p> <p>(i) Innovative products, processes and organisation</p> <p>(ii) Sustainable mobility and intermodality</p> <p>(iii) Land transport and marine technologies</p> <p>(iv) New perspectives for aeronautics</p> <p>(b) Research and technological development activities of a generic nature</p> <p>(c) Support for research infrastructures</p>	<p>731</p> <p>371</p> <p>320</p> <p>700</p> <p>546</p> <p>37</p>
TOTAL	2 705 MECU

KEY ACTIONS:**(i) Innovative products, processes and organization**

The aim of this key action is to facilitate the development of high-quality innovative products and services which meet the needs of the citizen and the market and new methods of production and manufacture, including innovation in and modernization of traditional industries, which save resources and are environmentally safe, whatever the method of production.

(ii) Sustainable mobility and intermodality

The aim is to ensure the development of fully integrated policy and operational options for an integrated interoperable European rail and road, air and waterborne transport system on a broadly intermodal basis to ensure the mobility of people and goods, whilst at the same time improving transport efficiency, safety and reliability and reducing congestion and other environmental disbenefits.

(iii) Land transport and marine technologies

The aim is to encourage, whilst preserving the environment and improving safety, the development and integration of knowledge and technologies specific to land transport and sea-based activities. It will enable the Community to develop technologies to maintain and consolidate the competitive position of the European automotive and rail industry by developing innovative technologies and new materials, modes and systems for sustainable and efficient land transport means and to fully exploit the sea's potential and improve the competitiveness of marine industry. This action will be complementary to the key actions on sustainable mobility and intermodality and sustainable marine ecosystems.

(iv) New perspectives in aeronautics

The aim of this key action is to help the Community consolidate its position in this sector by developing its mastery, in an environmentally friendly manner, of the most advanced aeronautical technologies.

RESEARCH AND TECHNOLOGICAL DEVELOPMENT ACTIVITIES OF A GENERIC NATURE

These activities, with potential multi-sectoral applications, will help the development of European technological capacity and stimulate the flow of ideas, knowledge and applications to complement and support the key actions in the following areas:

- New and improved materials and their production and transformation
- New and improved materials and production technologies in the steel field
- Measurements and testing

SUPPORT FOR RESEARCH INFRASTRUCTURES

The support activities for research infrastructures are aimed at improving the information flow towards European researchers and at facilitating transnational access to facilities to which researchers would not normally have access.

THEME 4: Energy, environment and sustainable development**INDICATIVE BREAKDOWN OF THE AMOUNT DEEMED NECESSARY**

Type of activity	Total
A. Environment and sustainable development	
(a) Key actions	
(i) Sustainable management and quality of water	254
(ii) Global change, climate and biodiversity	301
(iii) Sustainable marine ecosystems	170
(iv) The city of tomorrow and cultural heritage	170
(b) Research and technological development activities of a generic nature	119
(c) Support for research infrastructures	69
<u>SUB-TOTAL</u>	1 083 MECU
B. Energy	
(a) Key actions	
(i) Cleaner energy systems, including renewables	479
(ii) Economic and efficient energy for a competitive Europe	547
(b) Research and technological development activities of a generic nature	16
<u>SUB-TOTAL</u>	1 042 MECU
TOTAL	2 125 MECU

1. *Environment and sustainable development***KEY ACTIONS:****(i) Sustainable management and quality of water**

The aim of this key action is to produce the knowledge and technologies needed for the rational management of water resources for domestic needs and those of industry and agriculture.

(ii) Global change, climate and biodiversity

The aim of this key action is to develop the scientific and technological basis and tools necessary to underpin implementation of Community policies, notably the EC Environmental Action Programmes and the Biodiversity Strategy, and to support the research obligations stemming from international treaties and conventions signed by the European Community and its Member States. Overall, the key action seeks to increase understanding in these areas in order to help deliver the Community goal of sustainable development, where possible in interaction with industry.

(iii) Sustainable marine ecosystems

The aim of this key action is to promote sustainable integrated management of marine resources and to contribute to the marine aspects of the Fifth Action Plan on the Environment. Synergy with other relevant activities of the framework programme will be ensured through a specific coordinating mechanism.

(iv) The city of tomorrow and cultural heritage

The aim of this key action is the harmonious development of the citizens' urban environment from a global, innovative and resource-saving viewpoint in an environmentally sound manner, using advanced models of organization bringing together in particular the improvement of the quality of life, the restoration of social equilibria and the protection, conservation and enhancement of the cultural heritage for the sustainable exploitation of its socio-economic potential for employment and tourism.

RESEARCH AND TECHNOLOGICAL DEVELOPMENT ACTIVITIES OF A GENERIC NATURE

- The fight against major natural and technological hazards
- Development of earth observation satellite technologies
- Socio-economic aspects of environmental change in the perspective of sustainable development (the impact on society, the economy and employment)

SUPPORT FOR RESEARCH INFRASTRUCTURE

The objective of this support is to encourage the transnational use of public or private facilities which address critical needs in order to further improve their exploitation while avoiding unnecessary duplication, and to cover emerging priority needs.

2. EnergyKEY ACTIONS:**(i) Cleaner energy systems, including renewables**

The aim of this key action is to minimize the environmental impact of the production and use of energy in Europe. Action will be taken to investigate cleaner, most notably renewable, energy sources, as well as to help reduce the environmental impact of existing fossil fuel use.

(ii) Economic and efficient energy for a competitive Europe

The aim of this key action is to provide Europe with a reliable, efficient, safe and economic energy supply for the benefit of its citizens, the functioning of society and the competitiveness of its industry. Action will need to be taken at every stage of the energy cycle – production, distribution and final use – to improve efficiency and reduce costs.

RESEARCH AND TECHNOLOGICAL DEVELOPMENT ACTIVITIES OF A GENERIC NATURE

- Socio-economic aspects of energy within the perspective of sustainable development (the impact on society, the economy and employment)

I b. Activities covering three "horizontal" programmes:

2nd activity : *Confirming the international role of Community research*

INDICATIVE BREAKDOWN OF THE AMOUNT DEEMED NECESSARY

TYPE OF ACTIVITY	TOTAL
Cooperation with third countries	
Pre-accession states	26
NIS and other CEECs	112 *
Mediterranean partners	55
Developing countries	210
Emerging economy countries and industrialised countries	5
Training of researchers	15
Coordination	52
TOTAL	475 MECU

* of which 70 MECU for INTAS (International Association for the Promotion of Cooperation with Scientists from the Independent States of the Former Soviet Union)

The general objectives of international scientific cooperation are:

- to promote scientific and technological cooperation between undertakings, organizations and researchers from third countries and from the Community, which is likely to produce significant, mutual and balanced benefits, taking into account the different needs and circumstances of individual groups of countries and regions whilst respecting the protection of intellectual property;
- to facilitate access for research centres and undertakings established in the Community to scientific and technological knowledge available outside the Community which serves the Community's interests;

- to enhance the position and role of Community research in the international scientific and technological arena and promote a European scientific and technological culture;
- to prepare for the accession of new Member States e.g. by encouraging their full association with the framework programme; to contribute to the stabilization of the RTD potential of the CEECs in general and of the Newly Independent States of the former Soviet Union (NIS), to support and develop the Euro-Mediterranean partnership and to contribute to the sustainable economic, social and scientific development of developing countries;
- to help European research players acquire information and gain experience of research capacity, activity and priorities of industrialized third countries and "emerging economy" countries, so as to make Community industry more competitive and enhance its presence on new markets.

International scientific and technological cooperation will be implemented on the basis of cooperation agreements, where these exist, and through this horizontal international cooperation programme, as well as through activities undertaken within the other programmes of this Framework Programme.

3rd activity : *Promotion of innovation and encouragement of SME participation***INDICATIVE BREAKDOWN OF THE AMOUNT DEEMED NECESSARY**

Promotion of innovation	119
Encouraging SME participation	44
Joint innovation/SME activities	200
TOTAL	363 MECU

Promotion of innovation and SME participation, although not synonymous, are closely linked. As far as possible, this theme will therefore be implemented by means of joint action covering both areas. Furthermore, the activities carried out in this programme will be complementary to activities undertaken within Member States and to activities to promote innovation and encourage SME participation carried out elsewhere in the framework programme, and will therefore support, supplement and, as appropriate, give direction to these various efforts. In this context, support shall also be given, in the framework of cooperative research activities and exploratory awards, to projects which fall within the overall objectives of the thematic programmes if these projects show great potential as regards innovation and employment.

General objectives**(a) Promotion of innovation**

- to help implement innovation policies in the European Union, in particular by contributing to the creation of an environment conducive to innovation;
- to enhance public awareness of the benefits of innovation;

- to improve the economic and social impact of framework programme research activities by ensuring better dissemination and exploitation of their results, as well as the transfer and dissemination of technology from various sources, taking account of the needs of customers and users;
- to facilitate access of programme participants (particularly SMEs), through provision of information and advice, to instruments which support innovation.

(b) Encouraging SME participation

- to stimulate effective SME participation in the research programmes and technology transfer to SMEs – both SMEs active in research and high technology and those with little or no research capability but with substantial technological needs and a capacity to absorb new technologies; to help SMEs throughout the European Union to develop their technological capabilities, taking into account also specific problems of SMEs in less-favoured regions;
- to assist SMEs in setting up transnational networks and partnerships for the absorption and diffusion of new technologies;
- to encourage the development of transnational links between SMEs, large companies, research centres and universities.

(c) Joint Innovation/SME activities

- actions at Community level for the rationalization and coordination of networks providing information and assistance on the Community's research and innovation activities; management, in concert with the other programmes of the framework programme, of the support network for innovation and technology transfer, making best use of the innovation relay centres and the CRAFT focal points; consolidation of mechanisms for gathering and disseminating information, such as the CORDIS information service;
- provision of information and advice, as well as pilot activities, in the areas of:
 - = intellectual property rights;
 - = access to private finance, notably venture capital funds;
 - = the creation of innovative start-ups, principally via European organizations and funds (European Investment Fund, European Investment Bank, and the Eurotech Capital scheme);

The objective of the pilot activities will be to improve the existing capacities for information, advice and analysis and to facilitate access to existing public and private instruments at national or Community level without providing financial subsidies to enterprises or creating a competing financial instrument;

- identification and promotion, in concert with the other programmes of the Framework Programmes, of best practices in innovation.

4th activity : *Improving human research potential and the socio-economic knowledge base*

INDICATIVE BREAKDOWN OF THE AMOUNT

Type of activity	Total
• Supporting training and mobility of researchers	858
• Enhancing access to research infrastructures	182
• Promoting scientific and technological excellence	50
• Key action: Improving the socio-economic knowledge base	165
• Support for the development of scientific and technology policies in Europe	25
Total	1 280 MECU

1. General objectives

The general objectives of this activity, to be realized in concert with related actions elsewhere in the framework programme, are centred on two main areas of activity, namely improving the human research potential and strengthening the socio-economic knowledge base. To this end, actions will be undertaken:

- to develop the Community's human research potential, making special efforts to ensure equality of access and a better balance between men and women, notably through the training and mobility of researchers so as to contribute, inter alia, to efforts for creating new jobs;
- to enhance access to research infrastructures;
- to help make the Community an attractive location for researchers and to promote European research in the international arena and to promote a European scientific and technological culture;
- to strengthen, through a specific key action, the socio-economic knowledge base for a better understanding of key problems facing European society;
- to help develop scientific and technological policies and other Community policies.

2. Actions specific to the horizontal programme

(a) Improving human research potential

- Supporting training and mobility of researchers
- Enhancing access to research infrastructures
- Promoting scientific and technological excellence

(b) Key action: Improving the socio-economic knowledge base

The aim of this key action is to define the base for employment-generating social, economic and cultural development and for building a European knowledge society. It covers a number of subjects linked to the general objectives of the framework programme.

II. DIRECT ACTIONS**INDICATIVE BREAKDOWN OF THE AMOUNT DEEMED NECESSARY**

TYPE OF ACTIVITY	ECU million
SERVING THE CITIZEN	292
ENHANCING SUSTAINABILITY	321
UNDERPINNING EUROPEAN COMPETITIVENESS	126
TOTAL	739 MECU

JRC's programme has been divided into three main themes:

- I. Serving the citizen
- II. Enhancing sustainability
- III. Underpinning European competitiveness

The objective of the first theme is to provide support to policy that protects individual citizens. This includes measures to give the consumer confidence that the food he or she eats or buys is identified and labelled correctly, that he or she is protected against fraud, that he or she can fully utilise the benefits of modern medicine, that the information that he or she receives is dependable and that he or she is protected against natural and man-made hazards:

The second main theme is sustainability; achieving growth whilst protecting the environment, conserving natural resources, maintaining biodiversity and ensuring that the Community can continue funding the relevant policies and avoiding that efforts in these regards are not undermined by fraud.

The main objective of the third theme is to contribute to the Community's industrial competitiveness policy by supporting the transfer of knowledge and research results from the scientific community to industrial users.

5TH EURATOM FRAMEWORK PROGRAMME

The European Atomic Energy Community's research policy in the field of nuclear energy is directed towards strengthening the scientific and technological bases of the civil nuclear industry in the Community and encouraging it to become more competitive at international level, while promoting all the research and training activities deemed necessary for the implementation of the policies laid down in the EAEC Treaty. Its implementation is based on the twin principles of scientific and technological excellence and relevance to the above-mentioned objectives.

The aim of this programme is to help exploit the full potential of nuclear energy, both fusion and fission, in a sustainable manner, by making current technologies even safer and more economical, and by exploring promising new concepts. It has three distinct components:

- a key action on controlled thermonuclear fusion, the aim of which is to further develop the necessary basis for a decision on and the possible construction of an experimental reactor, as well as basic concepts and technologies required in the longer term;
- a key action on nuclear fission, the aims of which are to enhance the safety of Europe's nuclear installations, to improve the competitiveness of Europe's industry, to ensure the protection of workers and the public from radiation and to help solve waste management and disposal problems, and;
- research and technological development activities of a generic nature, the aim of which is to consolidate and advance European knowledge and competence in several areas concerning radiological protection and health;

While nuclear fusion research is already fully integrated at a European level, greater and more effective integration of research will be pursued in the area of nuclear fission.

The direct actions consist of the activities of JRC.

INDICATIVE BREAKDOWN OF THE AMOUNT DEEMED NECESSARY

NUCLEAR FISSION SAFETY	122
NUCLEAR SAFEGUARDS	138
DECOMMISSIONING AND WASTE MANAGEMENT	21
TOTAL	281 MECU

Nuclear energy continues to supply about a third of Europe's electricity and vigilance is still required to ensure a continuation of Europe's outstanding safety record; to maintain efforts to avoid proliferation and to efficiently manage the processing and long-term storage of waste. New challenges include a reactor park whose average age is increasing, an enlargement of the Union to include countries with a different safety culture and the coming into safeguards of material arising from the disarmament process.

JRC's specific programme for the Fifth Framework Programme is shaped in a view to focus activities in areas where they have a high European added value or which correspond to tasks entrusted to the Commission by the Euratom Treaty. These activities aim to optimise, in a European, or even international framework, the use of JRC's special facilities and core competencies, in particular in areas where the JRC has acquired a level of excellence and is the unique holder of European knowledge.

Activities will concentrate on the following areas:

- nuclear fission safety,
- nuclear safeguards and
- decommissioning and waste management

The indirect actions**INDICATIVE BREAKDOWN OF THE AMOUNT DEEMED NECESSARY**

Type of activity	Total
a) Key actions	
i) Controlled thermonuclear fusion	788
ii) Nuclear fission	142
b) Research and technological development activities of a generic nature	39
c) Support for research infrastructures	10
TOTAL	979 MECU

The **indirect actions** are composed of two key actions :

- **Controlled thermonuclear fusion**

The aim of this key action is to further develop the necessary basis for the possible construction of an experimental reactor. This should take place preferably within the framework of international cooperation, such as ITER (International Thermonuclear Experimental Reactor).

- **Nuclear fission**

The aim of this action is to focus on the safety of Europe's nuclear installations, to help solve waste management problems and to improve the competitiveness of Europe's nuclear industry.

as well as generic activities in the field of radiological protection.

RESEARCH AND TECHNOLOGICAL DEVELOPMENT ACTIVITIES OF A GENERIC NATURE

The objective is to consolidate and advance European knowledge and competence in the radiological sciences in order to: improve the safety and efficacy of industrial and medical uses of radiation; better assess and manage exposure from natural sources of radiation; support the development and practical application of radiation protection standards.

SUPPORT FOR RESEARCH INFRASTRUCTURES

The objective is to enhance access to and improve the consistency of the nuclear research fabric within the Community so that optimal use can be made of the available resources to the competitive advantage of European industry, and to continue ensuring the safe and acceptable exploitation of nuclear technologies.