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## **COMMISSION STAFF WORKING PAPER**

### **IMPACT ASSESSMENT**

**Accompanying the**

**Communication from the Commission 'Horizon 2020 - The Framework Programme for Research and Innovation';**

**Proposal for a Regulation of the European Parliament and of the Council establishing Horizon 2020 – the Framework Programme for Research and Innovation (2014-2020);**

**Proposal for a Council Decision establishing the Specific Programme implementing Horizon 2020 – The Framework Programme for Research and Innovation (2014-2020);**

**Proposal for a Council Regulation on the Research and Training Programme of the European Atomic Energy Community (2014-2018) complementing the Horizon 2020 – The Framework Programme for Research and Innovation**

**Annexes**

**Annex 8: Glossary**

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## ANNEX 8: GLOSSARY

**Applied research:** Original investigation undertaken in order to acquire new knowledge. Contrary to *basic research*, it is directed primarily towards a specific practical aim. The results of applied research are intended to be valid for a single or limited number of products etc. The knowledge or information derived from it is often patented but may also be kept secret.

**Basic research:** Experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundations of phenomena and observable facts, without any particular application or use in view (contrary to *applied research*). The results of basic research are not generally sold but are usually published in scientific journals. Basic research can be split into two categories: 1) Pure basic research which is carried out for the advancement of knowledge, with no positive efforts being made to apply the results to practical problems. 2) Oriented basic research which is carried out with the expectation that it will produce a broad base of knowledge likely to form the background to the solution of recognised or expected current or future problems or possibilities.

**Business As Usual (BAU):** In this scenario, the main existing EU sources of funding for research and innovation – the FP, the innovation-related part of the CIP, and the EIT – are simply carried forward into the next Multi-annual Financial Framework as separate instruments, with separate objectives, and in their current formats. In the Business As Usual+ (BAU+) scenario, the FP, the innovation-related part of the CIP, and the EIT remain separate instruments and retain their current formats. However They are put together under a 'common roof', and loose coordination mechanisms are established between them and their objectives are loosely aligned. In addition, the implementing modalities of each individual programme and initiative are simplified. No single set of simplified rules applies across the three programmes.

**BRIC-countries:** Brazil, Russia, India and China.

**Collaborative Projects:** Support to Framework Programm funded research projects carried out by consortia with participants from different countries. 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 or resources for achieving a defined objective.

**Competitiveness and Innovation Framework Programme (CIP):** The Competitiveness and Innovation Framework Programme (CIP) supports innovation activities (including eco-innovation), provides better access to finance and delivers business support services in the regions, targetting mainly small and medium-sized enterprises (SMEs).

**Common Research Data Warehouse (CORDA):** CORDA and E-CORDA (External Common Research Data Warehouse – the analogue destined to external stakeholders) are databases containing data on applicants/proposals and signed grants/beneficiaries with regards to a specific Framework Programme for Research. CORDA is refreshed daily with data coming from a wide variety of systems and applications. It, therefore, contains almost up-to-date information on Framework Programme activities. E-CORDA is a 'snapshot' of CORDA extracted semi-annually, the data of which undergoes further quality controls and interpretation.

**CORDIS:** The Community Research and Development Information System (CORDIS) is a huge internet information system comprising information on past and on-going projects, calls for proposals, partner search facilities, an electronic proposal submission system (EPSS) and other features.

**COST:** An intergovernmental framework for European co-operation in the field of S&T, allowing the co-ordination of nationally funded research on a European level. COST actions cover basic and pre-competitive research as well as activities of public utility.

**CREST:** The Scientific and Technical Research Committee (CREST), composed of representatives of Member States, is a high level advisory board to the Commission and the Council in the field of RTD.

**Development of a European Multi-model ensemble system for seasonal to inter-annual prediction (DEMETER):** This EU-funded project entitled aims to develop a well-validated European coupled multi-model ensemble forecast system for reliable seasonal to interannual prediction. A fundamental aspect is to establish the practical utility of such a system, particularly to the agriculture and health sectors.

**Entrepreneurship and Innovation Programme (EIP):** The EIP is one of the specific programmes under the CIP, supporting innovation and SMEs in the EU. It focuses on access to finance for SMEs, business services (Entreprise Europe Network), support for improving innovation policy, eco-innovation, as well as support for innovation and SME policy-making through contracts and grants.

**ERA-NET:** The principal means for the FP to support the co-ordination of national and regional research programmes.

**EU-12:** The 12 countries that joined the EU since 2004 (Bulgaria, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia and Slovenia).

**EU-15:** Before 1 May 2004, the European Union consisted of 15 Member States (Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden, and United Kingdom).

**EURATOM:** The European Atomic Energy Community (EURATOM) is one of the building blocks of the EU. In relation to Community research policy, the EC Framework Programme is complemented by an EURATOM Framework Programme under the Euratom Treaty which covers training and research activities in the nuclear sector.

**EUREKA:** A pan-European network for market-oriented, industrial R&D. EUREKA supports the competitiveness of European companies through international collaboration, in creating links and networks of innovation. The objective is to bring high quality research and development efforts to the market and to use the multiplying effects of co-operation.

**European Added Value (EAV):** EU support to research and innovation is provided only when it can be more effective than national funding. It does this through measures to coordinate national funding, and through implementing collaborative research and mobility actions.

**European Higher Education Area (EHEA):** The EHEA was launched in March 2010, along with the Bologna Process' decade anniversary, during the Budapest-Vienna Ministerial Conference. As the main objective of the Bologna Process since its inception in 1999, the EHEA was created to ensure more comparable, compatible and coherent systems of higher education in Europe.

**European Institute for Innovation and Technology (EIT):** The EIT is an institute of the European Union established in March 2008, to increase European sustainable growth and competitiveness by reinforcing the innovation capacity of the Member States and the EU, by developing a new generation of innovators and entrepreneurs. The EIT has created integrated structures, Knowledge Innovation Communities (KICs), which link the higher education, research and business sectors to one another, boosting innovation and entrepreneurship. The KICs focus on priority topics with high societal impact.

**European Patent Office (EPO):** The European Patent Organisation is an intergovernmental organisation that was set up on 7 October 1977 on the basis of the European Patent Convention (EPC) signed in Munich in 1973. It has two bodies, the European Patent Office and the Administrative Council, which supervises the Office's activities.

**European Research Area (ERA):** A general concept proposed by the Commission and endorsed by the European Parliament and Council in 2001 to overcome the fragmentation of European research and innovation efforts. The concept comprises organising co-operation at different levels, co-ordinating national or European policies, networking teams and increasing the mobility of individuals and ideas.

**European Research Council (ERC):** Introduced in FP7, it will be the first pan-European funding agency for *frontier research*. Early stage as well as fully established investigators from across Europe will be able

to compete for grants with scientific excellence as the sole criterion for funding. The independent Scientific Council will direct the ERC's scientific operations and ensure that its support is in accordance with the highest standards of science and scholarship.

**European Space Agency (ESA):** Established in [1975](#), ESA is an [inter-governmental](#) organisation dedicated to the [exploration of space](#), with 17 Member States. Its mission is to shape the development of Europe's space capability. By coordinating the financial and intellectual resources of its members, it can undertake programmes and activities far beyond the scope of any single European country.

**European Strategy Forum on Research Infrastructures (ESFRI):** ESFRI is a strategic instrument to develop the scientific integration of Europe and to strengthen its international outreach. The competitive and open access to high quality Research Infrastructures supports and benchmarks the quality of the activities of European scientists, and attracts the best researchers from around the world. The mission of ESFRI is to support a coherent and strategy-led approach to policy-making on research infrastructures in Europe, and to facilitate multilateral initiatives leading to the better use and development of research infrastructures, at EU and international level.

**European Technology Platform (ETP):** ETPs are industry-led stakeholder fora charged with defining research priorities in a broad range of technological areas. They provide a framework for stakeholders, led by industry, to define research priorities and action plans on a number of technological areas where achieving EU growth, competitiveness and sustainability requires major research and technological advances in the medium to long term. Some ETPs are loose networks that come together in annual meetings, but others are establishing legal structures with membership fees.

**Framework Programme (FP):** Since 1984, research and innovation activities of the EU are grouped in one big multiannual programme, the Framework Programme for Research and Technical Development. While FP1 to FP6 were conceived for a period of 4 years, FP7 is synchronised with the duration of the EU's financial perspective and covers the period 2007-2013. The FPs are elaborated and proposed by the Commission and have to be adopted by the European Parliament and the Council in co-decision.

**Future and Emerging Technologies (FET):** FET are the incubator and pathfinder for new ideas and themes for long-term research in the area of information and communication technologies, to promote high risk research, offset by potential breakthrough with high technological or societal impact.

**Government Budget Appropriations or Outlays on R&D (GBAORD):** All appropriations allocated to R&D in central government budgets. Data on government R&D appropriations therefore refer to budget provisions, not to actual expenditure, i.e. GBAORD measures government support for R&D using data collected from budgets.

**Gross domestic expenditure on R&D (GERD):** Total intramural expenditure on R&D performed on the national territory during a given period. GERD includes R&D performed within a country and funded from abroad but excludes payments made abroad for R&D.

**Gross Domestic Product (GDP):** This aggregate represents the result of the production activity of resident producer units. It corresponds to the economy's output of goods and services, less intermediate consumption, plus taxes linked to imports. The sum of the regional values of the GDP at market prices might differ from the national values for some countries.

**Information and Communication Technologies (ICT):** Information and Communication Technologies are critical to improve the competitiveness of European industry and to meet the demands of its society and economy.

**Innovation (Oslo Manual):** Both OECD and Eurostat refer to the Oslo Manual for measuring innovation, which identifies four types of innovation: product innovation, process innovation, marketing innovation and organisational innovation.

**Institute for Prospective Technological Studies (IPTS):** The Institute for Prospective Technological Studies is one of the seven scientific institutes of the European Commission's Joint Research Centre (JRC). It promotes and enables a better understanding of the links between technology, economy and society. Its mission is to provide customer-driven support to the EU policy-making process by developing science-based responses to policy challenges that have both a socio-economic as well as a scientific/ technological dimension.

**Intellectual Property Rights (IPR):** They cover all aspects of owning, protecting and giving access to knowledge and pre-existing know how.

**Intelligent Energy Europe Programme (IEE):** The Intelligent Energy - Europe programme is the EU's tool for funding action to save energy and encourage the use of renewable energy sources in Europe.

**Intergovernmental Panel on Climate Change (IPCC):** The IPCC is the leading international scientific body for the assessment of climate change. It was established by the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO) to provide the world with a clear scientific view on the current state of knowledge in climate change and its potential environmental and socio-economic impacts.

**International Thermonuclear Experimental Reactor (ITER):** ITER is an international research and engineering project which is currently building the world's largest and most advanced experimental tokamak nuclear fusion reactor. The ITER project aims to make the transition from experimental studies of plasma physics to full-scale electricity-producing fusion power plants. The project is funded and run by seven members – the EU (which shares 45% of the cost), India, Japan, China, Russia, South Korea and the US (each sharing 9% of the cost).

**Joint Research Centre (JRC):** As a service of the [European Commission](#), the mission of the JRC is to provide customer-driven scientific and technical support for the conception, development, implementation and monitoring of EU policies. It functions as a reference centre of science and technology for the Union. The JRC has a network of research institutes in different member countries (Belgium, Germany, Italy, Netherlands, Spain). Its activities are financed by the Framework Programme via the direct actions.

**Joint Technology Initiative (JTI):** JTIs are a means to implement the Strategic Research Agendas (SRAs) of a limited number of European Technology Platforms (ETPs). In these few ETPs, the scale and scope of the objectives is such that loose co-ordination through ETPs and support through the regular instruments of the Framework Programme for Research and Development are not sufficient. Instead, effective implementation requires a dedicated mechanism that enables the necessary leadership and coordination to achieve the research objectives. To meet the needs of this small number of ETPs, the concept of Joint Technology Initiatives has been developed.

**Key Emerging Technologies (KET):** KETs are knowledge intensive and associated with high R&D intensity, rapid innovation cycles, high capital expenditure and highly-skilled employment. They enable process, goods and service innovation throughout the economy and are of systemic relevance. They are multidisciplinary, cutting across many technology areas with a trend towards convergence and integration. KETs can assist technology leaders in other fields to capitalise on their research efforts.

**Marie-Curie Actions:** The main objective of the FP's Marie Curie Actions is to strengthen training, the career prospects and mobility of European researchers in order to provide support for the development of world-class human resources.

**Multi-annual Financial Framework (MFF):** In order to improve the budgetary procedure, the European Parliament, the Council and the Commission conclude, since 1988, interinstitutional agreements covering the budget process and the distribution of the budget. These agreements are established for several years, and are also known as EU "Financial Perspective".

**New Econometric Model for Environmental and Sustainable Development and Implementation Strategies (NEMESIS):** The NEMESIS-model is a large-scale econometric model at the macro- and sectoral levels, which has been built by a Community funded *consortium* of European research institutes. It

comprises roughly 70 000 equations. The model can be used for several purposes, which include the assessment of structural (mainly R&D and environmental) policies, the study of the short- and medium-term consequences of a wide range of economic policies, short- and medium-term forecasting (up to 8 years) at the macro- and sectoral levels, and building long-term baseline scenarios (up to 30 years).

**Open method of coordination (OMC):** A relatively new and [intergovernmental](#) means of governance in the [EU](#), based on the voluntary cooperation of [Member States](#). It rests on [soft law](#) mechanisms such as guidelines and indicators, [benchmarking](#) and sharing of [best practice](#), not on official sanctions for laggards. Rather, the method's effectiveness relies on a form of peer pressure and naming and shaming, as no Member States wants to be seen as the worst in a given policy area.

**Organisation for Economic Development and Cooperation (OECD):** The OECD is an international economic organisation of 34 countries founded in 1961 to stimulate economic progress and world trade. It is a forum of countries committed to democracy and the market economy, providing a platform to compare policy experiences, seek answers to common problems, identify good practices, and co-ordinate domestic and international policies of its members.

**Patent Cooperation Treaty (PCT):** The Patent Cooperation Treaty makes it possible to seek patent protection for an invention simultaneously in each of a large number of countries by filing an international patent application. Such an application may be filed by anyone who is a national or resident of a PCT contracting State. It may generally be filed with the national patent office of the contracting State of which the applicant is a national or resident or, at the applicant's option, with the International Bureau of the World Intellectual Property Organisation in Geneva.

**Peer review:** The *evaluation* of proposals with the help of independent external experts (peers). For FP6, the procedures for the evaluation of proposals are described in detail in a Commission decision on 'Guidelines on proposal evaluation and selection procedures'.

**Public Private Partnership (PPP):** Public-private partnerships are forms of cooperation between public authorities and businesses, in general with the aim of carrying out infrastructure projects or providing services for the public. These arrangements have been developed in several areas of the public sector and within the EU are used in particular in the areas of transport, public buildings or environment.

**Research and experimental development (R&D):** R&D comprise creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society and the use of this stock of knowledge to devise new applications. This term covers three activities: *basic research*, *applied research* and experimental development.

**R&D intensity:** Gross Domestic Expenditure on R&D (GERD) expressed as a percentage of Gross Domestic Product (GDP).

**Risk-Sharing Finance Facility (RSFF):** RSFF is an innovative scheme set up by the European Commission and the European Investment Bank to improve access to debt financing for private companies or public institutions promoting activities in the field of research and innovation.

**Rules of Participation** for the Framework Programme: They set out the framework that governs the relationship between the Commission and the institutions that participate in the programme, covering aspects such as procedures for calls for proposals, types of grants, levels of financing, consortia composition, the evaluation process, financial management of projects, and dissemination of project results. The Rules of Participation are adopted by the European Parliament and the Council in co-decision upon a proposal from the Commission (art. 167 TEC).

**Small and medium-sized enterprises (SMEs):** Enterprises having fewer than 250 employees and with either an annual turnover of no more than ECU 40 million or a balance sheet total of no more than ECU 27 million.

**Stakeholder:** Any person or organisation with an interest in or affected by EU legislation and policymaking is a 'stakeholder' in that process. The European Commission makes a point of consulting as wide a range of stakeholders as possible before proposing new legislation or new policy initiatives.

**Strategic Energy Technology Plan (SET Plan):** The SET plan, presented by the Commission, aims to help achieve European objectives and face up to the energy challenges, by increasing research to reduce costs and improve performance of existing technologies, and by encouraging the commercial implementation of these technologies in the short term, and in the longer term by supporting development of a new generation of low carbon technologies.

**Technology Platforms:** Introduced in FP7, they bring together companies, research institutions, the financial world and regulatory authorities at European level to define a common research agenda to mobilise a critical mass of - national and European – public and private resources.

**Valley Of Death:** The gap between basic knowledge generation and the subsequent commercialisation of knowledge in marketable products, is known in broad terms as the "valley of death" issue.