MEMO/11/521

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Commission announces latest €7 billion of investment in research and innovation – frequently asked questions

The latest European Commission calls for proposals (invitations to bid for funding) for research and innovation projects under the Seventh Framework Programme for Research and Technological Development (FP7) are worth €7 billion. They focus on tackling the challenges that matter most to Europeans today and on creating sustainable growth and jobs. The Commission has adopted the 2012 work programme today (19 July), most of the calls will be formally launched tomorrow (20 July), deadlines for application are spread over the period leading up to the turn of the year and decisions on allocating the funding to individual projects will be taken in 2012. The work programme and full set of associated documents is available via:http://ec.europa.eu/research/fp7/index_en.cfm

What is different this time from previous calls?

Firstly, there are the biggest ever calls for proposals, up by 9 % from last year.

Secondly, this set of calls for proposals is the first that is tailored to fit the radical new policy framework that the Commission set out in October 2010 under the Innovation Union action plan.

There is therefore a much stronger focus on innovation and on tackling the toughest challenges of our era, in particular climate change, energy and food security, the need for greater resource efficiency, health and our ageing population.

The calls also focus more than ever before on SMEs and on building the European Research Area (a single market for knowledge, with free movement of ideas and researchers).

A substantial part of the funding under the health and information and communication technology themes will support the pilot European Innovation Partnership on active and healthy ageing, which aims to add two years of healthy life for the average European by 2020.

This set of calls for proposals also demonstrates the Commissioner's commitment to building research excellence across the whole of the European Union and not only in relatively few regions of a few Member States which are already world-class in this respect.

How will these calls boost innovation?

There will be more support for getting ideas to market by putting emphasis on better market take-up of the research findings. For example, demonstration and feasibility actions will showcase the potential of particular research projects to attract the interest of industry. By involving industry, and especially SMEs, in projects from the very beginning, there will be a greater chance that innovative ideas will be exploited.

How does the Commission justify this spending at a time of austerity?

It is precisely in tough economic times that support for research and innovation is especially crucial, because it is only by getting and keeping a lead in the technologies of the future that Europe can create sustainable jobs and ensure a lasting exit from crisis.

This principle of "smart fiscal consolidation", or boosting job-creating investments even when other spending is facing necessary cuts, was agreed by heads of state and government at the 4 February European Council. Indeed the majority of Member States themselves have either maintained or increased investment in research and innovation over the last few years, despite the crisis.

Further increases will be necessary if the EU is to meet its target of investing 3% (1% from public funding and 2% from business investment) of GDP in research and development by 2020. Reaching that target would create up to 3.7 million jobs and nearly € 800 billion in additional annual GDP.

What are the expected economic consequences?

These calls are expected to have an increased impact on the economy in comparison with former calls. This is due to the improved innovation angle which will attract more participation of the private sector. Following econometric calculations the expected additional investment could reach about €5.2 billion on top of the €7 billion from the European Union, generating a total effort on research and innovation of around €12.2 billion. This has its immediate effect on the labour market with around 174.000 jobs to be created in the short term. In the long run (up to 2025) and as a consequence of new economic opportunities and increased competitiveness, the number of new jobs will grow up to almost 450 000 jobs, with the investment in research and innovation having a multiplier effect of 6.5 and thus creating an additional growth of the economy of about € 79.4 billion.

The econometric model for this calculation is based on the NEMESIS model which was developed by Prof. Paul Zagamé (Ecole Centrale Paris Erasme) as part of the European research project DEMETER. The full article can be found here:

Why do we need EU funding? Why cannot all of this be done at national level?

The Commission is only proposing to support research that can best be done at EU level. For example, the costs and scale of some research cannot be borne by individual Member States. Furthermore collaboration at EU level avoids duplication and allows pooling of skills and existing knowledge, leading to greater added value than could be achieved by purely national spending.

EU funded collaborative research also reduces risk and enables the adoption of pan-European standards for the benefit of Europe's citizens and not just individual commercial enterprises. For example, standards and technologies developed by EU-funded researchers are found today in over 600 million 3G mobile phones, generating more than €250 billion in revenues every year for EU companies in products and services. For more on the added value of EU research and innovation funding, see MEMO/11/521.

Do these calls for proposals cover the whole FP7 budget for 2012?

No, they cover around four-fifths of it. The overall 2012 budget for FP7 is around € 8.6 billion (excluding research done by the Commission's Joint Research Centre). Out of this total, around €7 billion is devoted to activities to be implemented through the calls for proposals announced today.

The remaining part of the budget covers among other things activities such as: Joint Technology Initiatives (long-term public-private partnerships in areas like clean air transport and innovative medicines); Article 185 initiatives (partnerships between national public institutions and the Commission); the Risk-Sharing Finance Facility (RSFF - a joint initiative of the European Commission and the European investment Bank to support higher risk and reward investment in research, development and innovation) and activities related to the functioning of the 7th Framework Programme - such as IT support, evaluation facilities or subsidies to the Executive Agencies that administer parts of the programme.

Is there any support for public private partnerships in these calls?

Yes, a budget of about €365 million has been earmarked for three "challenge-driven" public private partnerships (PPP) under the 2012 calls. These are the European Green Cars Initiative for developing new and sustainable forms of road transport, Factories of the Future, which address the challenge of producing more while consuming less and Energy Efficient Buildings, which aims to slash the energy consumption of the construction sector.

How is the Commission proposing to build on FP7 in the next multi-annual budget period from 2014-2020?

Already with these calls for proposals, there have been significant changes as described above, to bring the EU funding framework up to speed as a key instrument for creating an Innovation Union and delivering growth and jobs. That will continue in next year's calls.

For the subsequent 2014-2020 period, the Commission is proposing a 46% increase in funding to €80 billion at 2011 prices, compared to the total for 2007-13 of just under €55 billion.

The year-on-year progression has been measured and gradual over the 2007-13 period and this would continue: the share of research and innovation in the EU budget would increase to about 8.5% in 2020, compared to 6.7% in 2013.

To get the best value for every euro, the funding framework will be reformed, bringing together all EU research and innovation funding – not only the activities funded under the current FP7, but also the Competitiveness and Innovation Programme and the European Institute for Innovation and Technology.

The new programme will be renamed Horizon 2020, following an online vote based on a shortlist drawn up through a public competition to suggest the new name.

Does this mean basic research will be neglected?

No. Increasing the focus on innovation is not being done at the expense of basic research but in addition to it. Many of the inventions we now take for granted, and which have driven economic growth, are the result of research that originally had no apparent immediate commercial purpose. The internet is the outstanding example. A greener and smarter economy and many other societal challenges also require knowledge and significant research breakthroughs which cannot be predicted. The European Research Council (ERC), launched by the Commission in 2007, has been a resounding success and every year plays a more important role (see below).

How will basic frontier research benefit?

Under the 2012 calls more nearly €1.6 billion – up from €1.2 billion last year - has been allocated to the European Research Council (ERC) to fund both senior research leaders ('ERC Advanced Grants') and younger, early-career researchers ('ERC Starting Grants'). The new "Synergy Grant" will dedicate € 150 million to a very limited number of small research clusters. In addition, ERC grant holders can now apply for additional "Proof of Concept" funding to establish the innovation potential of ideas arising from their frontier research projects. This will help bridge the gap between frontier research results and commercialization.

How do the various parts of the calls link together and complement each other?

Tackling today's societal challenges such as energy security, food safety, climate change and an ageing population requires ground breaking research and innovation. Funding provided through FP7 aims to address these challenges by pooling the brains and skills of Europe's best scientists, research organizations and entrepreneurs across national borders, but also across traditional scientific disciplines.

Apart from calls structured along thematic lines, large efforts have been made throughout FP7 to develop approaches which cut across scientific themes and increasingly take the societal challenge as its starting point. This means a stronger focus on linking up thematic areas and stimulating an interdisciplinary approach. This is sometimes implemented through joint calls between different themes, for example the 'Oceans of Tomorrow' call where funding will go to research to protect the marine environment.

More generally, many research themes are by definition cross-cutting. ICT research, for example, which gets more than €1.3 billion under the calls, has applications relevant to tackling each of the major challenges identified.

How will this research and innovation funding help the EU to tackle climate change?

These calls cover specific objectives for research to tackle climate change, biodiversity loss, land and sea management and resource efficiency. Innovation will be strengthened through knowledge transfer and sustainability.

The budget for environment research is about € 265 million from which a minimum of 15% - at least € 40 million – is reserved for SMEs.

The budget directly attributed to research on coping with the effects of climate change is €55 million. For example, numerous economic sectors, in particular agriculture, tourism, energy and transport, need reliable climate information for their short and medium-term planning. EU-funded research will also improve the reliability and accuracy of shorter-term climate predictions (seasons to decades) for local and regional levels.

Of course, calls in other areas – such as energy and ICT - will also contribute to climate change-related objectives.

How will the package help enhance energy security?

Under the 2012 calls the total energy research budget is about € 314 million of which €60 million are reserved for SMEs. It is expected that nearly 800 organisations including 160 SMEs will participate. The call topics have been developed in close cooperation with industry, which takes an active role in the European Strategic Energy Technology Plan (SET-Plan). The results of funded projects will help to develop and deploy cleaner and more competitive energy technologies. The €40 million "smart cities initiative" will lead to more efficient practices in energy and urban transport.

How will this money be used to boost food security and safety?

Worldwide there is a growing demand for safer, healthier, higher quality food and for sustainable use and production of renewable bio-resources. European research contributes to the sustainability and security of agricultural, aquaculture and fisheries production. Under the 2012 calls the budget for the bio-economy is about € 307 million. A minimum of 18.5% is reserved for SMEs.

What are the main ways in which research and innovation in the health sector will benefit?

Health has a higher priority than ever before. Under the 2012 calls a budget of € 656 million has been earmarked for research on health, including the realisation of the European Innovation Partnership on active and healthy ageing (see below). Research will also target medical technologies and rare diseases, complemented for example by other areas such as personalised medicines or improving the availability of organs for replacement. Half the budget is earmarked for supporting SMEs in the healthcare sector and for supporting industry participation and clinical trials.

How will the calls for proposals contribute to coping with the challenges created by Europe's ageing population?

The European Innovation Partnership (EIP) on active and healthy ageing aims to increase healthy life years for the average European by two.

This EIP will achieve this by bringing together key stakeholders from the demand and supply sides, and all actors in the innovation cycle, from research to adaptation, deployment and final users, along with those taking part in standardisation and regulation. The pilot partnership provides these actors with a forum where they can, united around the common goal, identify and overcome potential barriers to innovation.

In all, €220 million of the €656 million available for health research and €240 million of the €1.3 billion in funding for information and communication technology (ICT) will be allocated to work aimed at tackling the challenge of providing for an ageing population.

This EIP will foster competitiveness and business opportunities improving the sustainability and efficiency of social and health care systems. It will boost competitiveness in markets for innovative products and services, responding to the ageing challenge at both EU and global level, thus creating new opportunities for businesses. Three specific policy areas are covered: prevention and health promotion, integrated care, and independent living (i.e. in their own homes) of elderly people.

How will this FP7 funding help make Europe more resource efficient?

The calls take a coherent approach to accelerating the transition towards the green economy. There are many calls in particular under the environment and energy themes. The environment theme has a specific challenge on 'improving resource efficiency' for which the estimated budget is around € 62 million. The energy theme has an activity on 'energy efficiency and savings' and the calls cover areas such as photovoltaics (solar power), wind energy and biofuels. Under the energy efficiency activity, a call on energy efficient buildings of about €35 million, as part of a public private partnership will be launched. Other themes also devote significant parts of their activities to resource efficiency: for example, 'information and communication technologies for a low carbon economy' or, in the new materials theme, 'highly efficient chemical syntheses using alternative energy forms'.

What are the strategic goals for Information and Communication technologies (ICT) and how much will be invested?

The budget for ICT is over €1.3 billion - about 17 % of the total - and this will be invested in a wide range of areas which will contribute directly to Europe's economic growth and to tackling the grand challenges on which FP7 now focuses. For example, the ICT calls will support key developments in network and service infrastructures, in nano- and micro-systems, photonics and robotics, in digital content and language technologies, and in deploying ICT to improve energy-efficiency. The support of ICT for health research is a significant contribution to the European Innovation Partnership on active and healthy ageing. With the help of information systems more patient-oriented information can be generated and analyzed making possible truly personalized treatments as well as tailored medication, therapy and prevention. The ICT parts of the calls also cover Future and Emerging Technologies (FET), which is the pathfinder for new ideas and themes for long-term research in ICT. FET goes beyond the conventional boundaries of ICT and ventures into uncharted areas, increasingly relying on collaboration with different scientific disciplines (like biology, chemistry, nanoscience, neuro-and cognitive science, social science, economics, the arts and humanities).

How much funding is reserved in these calls for building up research infrastructure? What will it be used for?

Under the European road map for research infrastructure, known as the ESFRI road map, the Commission provides funding to help get projects or networks off the ground and to coordinate efforts, while the majority of the construction and operation funding comes from national sources. The budget for research infrastructure in these calls is €90 million of which about half is reserved for contributing to the development of new research infrastructures or major upgrades, such as €20 million for the High Performance Computing PRACE (Partnership for Advanced Computing in Europe) project. The development of a consistent world-class eco-system of research infrastructures, including other ICT based e-Infrastructures, such as GÉANT, will enable researchers to generate knowledge which can lead to new and more innovative products, processes and services, and can help address societal challenges. Beside that six new research infrastructures will start their preparatory phase. This includes for example two major energy projects: the infrastructure for Concentrating Solar Power (EU-SOLARIS) managed from Spain and the European Wind Scanner Facility, with coordination from Denmark.

What are the most important goals in transport research?

A budget of €313 million (not including the Clean Sky Joint Technology Initiative) has been allocated to transport, focusing on decarbonising and improving the efficiency and safety of the transport system. Examples of how the innovation cycle will be addressed are vehicle energy management or the demonstration of safe flying operations under extreme conditions. Specific research actions will help SMEs to enhance their role in the supply chain of the transport industry.

What is in the calls for proposals for space research?

The European space industry requires coordination between the EU, Member States and the European Space Agency. The EU's main objective is to establish a European capacity for earth observation through GMES (Global Monitoring for Environment and Security). Within the new calls, the focus is in particular on the security component of GMES and on the coordinated provision of observation data. A substantial part of the work programme is devoted to pre-operational validation of GMES services and products, moving research closer to innovation. The budget is about €84 million.

What is in the calls for proposals for security research?

The work programme includes some security-related topics, for example to improve citizens' security, to detect terrorist attacks before they happen and to help rescue teams in crisis situations. This programme includes a large-scale demonstration programme for CBRN (chemical, biological, radioactive and nuclear material) and two innovative topics, one targeting SMEs and another one for border authorities, on pre-operation validation of maritime border surveillance tools. The security call budget this year is around €242 million.

What are the topics for Social Sciences and Humanities?

The high priority for social science and humanities (SSH) research will be maintained. It has a crucial role in identifying societal challenges and how they can be resolved. This year the calls, with a budget of €89 million, focus on various topics such as education systems in the 21st century, managing diversity in urban areas and family issues, among others.

What is done to develop skills and careers for researchers?

To make the Innovation Union a reality and to achieve the EU-level target of investing 3% of GDP in R&D, more than one million additional researchers are needed. Support for researchers' mobility and careers will be provided through 'Marie Curie Actions' for thousands of highly qualified researchers. This allows them to gain experience abroad, in Europe and beyond, working with the best research teams established at universities and research organizations. The programme also attracts the best young researchers from outside the EU so that Europe can benefit from their talents. With a total budget of nearly €900 million in 2012, around 10 000 new research jobs will be created.

The new European Industrial Doctorates will involve enterprises directly in doctoral training so that skills better match public and private sector needs. With a starting budget of €20 million, about 100 researchers are expected to benefit. In addition to this pilot, innovative doctoral programmes will also be funded to provide training for about 2 400 new doctoral candidates, to help them better exploit their research results.

Is there anything in these calls to help reverse the brain drain and make Europe more attractive for researchers from abroad?

In general the calls aim to boost Europe's research and innovation facilities and performance, and that in itself is an investment in attracting talent from elsewhere. More specifically, the research career portal EURAXESS, for example, will help researchers find attractive careers in Europe. EURAXESS allows researchers to post their CVs for jobs and get useful information. The portal announces vacancies in universities and companies. The EURAXESS Services, a network of more than 300 public and private centres with over 500 staff assists researchers and their families in 38 countries to plan and organise a stay in a foreign country. EURAXESS also provides interactive web services to European researchers working abroad and information about trans-national career opportunities. Furthermore, in 2012 €1 million will be available to support the Innovation Union in helping more qualified personnel gain access to key career positions.

The European Research Council will also redouble its efforts to attract top research talent from outside Europe, reversing the "brain drain". There is evidence that the ERC is already helping to retain and attract leading researchers who might otherwise have pursued their careers in the US. For example, two-thirds of the ERC's grant-holders in neurosciences have had post-doctoral experience in the US; and, half of the ERC's economics grant-holders completed their PhD in the US. In 2010, a young ERC grant-holder, Professor Novoselov, received the Nobel Prize for Physics for his work on graphene. In 2011 the ERC was able to attract US Nobel prize winner James Heckman University College Dublin to do pioneering research on health throughout the lifecycle.

The Marie-Curie Actions described above also help Europe to benefit from contributions to research by non-European researchers.

How will the calls contribute to international cooperation?

The European Union has developed international scientific cooperation over the last 25 years to address the needs and opportunities of an interconnected world, and to contribute to peace and prosperity for European citizens. Europe wants to play a leading role in the world’s research arena and help build a safe future.

To maximise impact, funding for international research activities is spread throughout FP7. Organisations and researchers from more than 100 countries all over the world are already involved in EU research programmes. The international dimension inherent to all EU research activities supports European competitiveness through strategic partnerships and engages the best third country scientists to work in and with Europe. This cooperation also facilitates access for European researchers to research facilities and knowledge outside Europe and promotes synergies on a global scale.

In addition to the general integration of international activities right across FP7, there are specific calls to promote bi-regional cooperation and bilateral partnerships between EU-based organisations and others, to tackle jointly societal challenges and create a more level-playing field in research and innovation. The budget available for this is about €33 million.

What is being done to help researchers in those Member States which have in the past tended not to receive a large share of FP7 funding?

Within FP7, two specific actions – Regions of Knowledge and Research Potential – address specifically the needs of regions that have tended to receive less funding than others.

The Regions of Knowledge programme aims at boosting cooperation between "regional research-driven clusters" involving researchers, business partners and the public authorities.

The Research Potential programme helps improve the research capacities of high quality or promising research entities by reinforcing their scientific potential and developing strategic partnerships with excellent research teams in other countries. The calls in the area of Research Potential target economically weak and geographically remote regions. For the period 2012-2013 a single call for some €140 million is foreseen, merging 2012 and 2013 annual budgets.

Apart from special support for such regions, several topics from the general calls are of particular interest to the 12 "new" EU Member States (EU-12). For example, under the bio-economy theme several calls are designed to address the needs of the EU-12 countries: one such is a €6 million call dedicated to innovative forestry in rural areas.

What is the new EU Prize for Women Innovators all about?

Simultaneously with the first calls of the Work Programme 2012, the European Commission is launching a new contest to reward women innovators who have achieved outstanding innovations and brought them to market. The EU Prize for Women Innovators aims to raise public awareness of the need for more innovation and more women entrepreneurs. The contest is open for all women who have at some stage participated in the EU Framework Programmes. The aim is to help inspire other women to follow in their footsteps. An independent panel of judges from business and academia will examine and select the three winners. The first prize is €100.000, second prize €50.000 and the third prize is €25.000. The deadline for application is 20 September 2011. The award ceremony will take place on 5 December 2011 at the Innovation Convention organised by the European Commission in Brussels. More information and participation forms at www.ec.europa.eu/women-innovators

How are SMEs going to be supported?

Close to €1 billion will be made available for SMEs. One objective of FP7 is for SMEs to get at least 15% of available funding under the parts of FP7 open to SMEs. Across FP7, in order to encourage SME participation, there are ring-fenced budgets totalling €718 million and it is expected that over 3,000 SMEs will participate. Furthermore, specifically under the 'research for the benefit of SMEs' work programme, a budget of €220 million is dedicated to SMEs, including support for demonstration activities.

In addition, innovative SMEs will be eligible for support through a new pilot scheme entitled 'Risk-Sharing Finance Facility for SMEs.' administered by the European Investment Bank in collaboration with the European Commission. The budget is about €120 million and will encourage banks and other financial intermediaries to extend loans and similar debt financing of up to €1 billion to innovative SMEs.

Furthermore, in direct response to the European Council's request in February to explore the feasibility of a "Small Business Innovation Research Scheme", a pilot action has been included under the health theme, aiming to remove barriers to innovation in this area.

What is the Commission doing to respond to criticisms of excessive red tape?

The significant simplification measures decided by the Commission in January 2011 (IP/11/57) are fully applied in these calls. There are now flat-rate payments that open up FP7 to many more young and dynamic SMEs.

Additionally, rules requiring many participants to set up parallel accounting systems to claim back the costs for staff working on FP7 projects have been removed. Participants are now able to use their usual accounting practices and systems and make simpler claims.

A steering group of Directors-general of Commission departments which manage research funding is helping to ensure consistency in the interpretation of the rules

In parallel, the efforts to improve guidance and services – for example, online application and reporting tools - for FP7 participants are continuing. More services are now available though the Participant Portal.

Commissioner Geoghegan-Quinn has made clear that the proposals that she will bring forward towards the end of this year for the future Horizon 2020 programme will include extensive further simplification measures, which will then need to be agreed by the European Parliament and Member States.

What are the deadlines and how can researchers and innovators apply for funding?

53 calls are expected to be published in all, of which 39 would be published on 20 July 2011. Participants can find all information needed to prepare a proposal on http://cordis.europa.eu/fp7/dc/index.cfm and on http://ec.europa.eu/fp7calls Assistance will also be provided by the individual national contact points to be found on: http://cordis.europa.eu/fp7/ncp_en.html The deadlines are spread out, with the final one being the 31 of December 2012 for the Future and Emerging Technologies call.

FP7 Work Programme 2012 - calls for proposals as announced in July 2011	
	Calls (millions of euro)
Health	656,00
Bio-based economy	307,57
Information and Communication Technology	1.325,00
New Materials	488,00
Energy	314,00
Environment	265,00
Transport	313,07
Social Sciences and Humanities	89,00
Space	84,00
Security	241,70
ERA-NET horizontal action	1,00
TOTAL for COOPERATION	**4.084,34**
IDEAS (European Research Council)	**1.569,96**
PEOPLE including Marie Curie	**888,23**
CAPACITIES Infrastructures SME, 'Regions of Knowledge', 'Research Potential', 'Science in Society', 'Support to the Coherent Development of Research Policies' and 'International Cooperation'	**465,06**
TOTAL calls for proposals	**7.007,59**