



Ministry of Science, Innovation
and Higher Education



Presidency paper
Ministerial conference on Horizon 2020
Copenhagen Wednesday 1 February 2012

Europe is in the middle of a serious economic crisis. It is of paramount importance that Europe emerges strongly from this crisis and ensures a sustainable knowledge-based economy and growth. A strong and consistent effort is needed to strengthen the European research and innovation system and create an internationally competitive knowledge base. The next EU framework programme for research and innovation, Horizon 2020, will be one of the largest collaborative research programmes in the world. It will be the most important funding instrument to strengthen cross-border cooperation on research and innovation in Europe and towards third countries.

Horizon 2020 presents a new approach to research and innovation funding at European level through one common framework for financing research and innovation. The three pillars in the programme “Societal Challenges”, “Industrial Leadership” and “Excellent Science” entails a closer connection between research and innovation activities, as well as stimulating partnerships across sectors, disciplines and regions. The grand societal challenges are not only of European concern, but of global interest. World class science is the foundation of competitive research and innovation and strengthening the excellent European science base remains a core mission of EU research funding.

The Danish Presidency will do its utmost to progress the negotiations and has set the ambitious goal to reach a partial general approach on the overall structure of Horizon 2020 at the Competitiveness Council on 30-31 May 2012. A precondition for this is to ensure an early political debate on Horizon 2020 involving stakeholders and the European Parliament.

The Ministerial Conference on 1 February 2012 is therefore dedicated to political discussions between European research ministers and key global and European stakeholders within research and innovation. The key note speeches and the round table discussion will be followed by brief parallel workshops focusing on each of the three pillars of Horizon 2020.

The purpose of the workshops is to facilitate a direct dialogue between research ministers and the key stakeholders. Each workshop will be kicked-off by brief presentations from key stakeholders.

The Informal Competitiveness Council meeting on 2 February 2012 will focus on three very important recurring concerns appearing in the discussions on Horizon 2020, most recently in connection with the presentation of Horizon 2020 at the Competitiveness Council meeting on 6 December 2011. Namely the



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complementarities with other EU programmes, simplification and the importance of bridging research and innovation.

At the Competitiveness Council meeting on 21 February 2012 the Presidency will report back on the discussions and conclusions. In March or April 2012 an informal policy seminar on Horizon 2020 will take place in the European Parliament organised jointly by the Danish Presidency, the European Parliament and with Commission participation. The last discussion during the Danish Presidency on Horizon 2020 will take place at the Competitiveness Council meeting on 30-31 May 2012.



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Workshop 1: Excellent Science

Europe needs to raise and spread the levels of excellent science in order to generate future competitiveness. The pillar of Horizon 2020 addressing Excellent Science builds on the developments of FP7, where the European Research Council (ERC) was introduced as a novel way of supporting Europe's most excellent researchers. The Future and Emerging Technology (FET) activities aim to identify important new technologies from the science base. Moreover, the Marie Curie actions have during FP7 supported research talent and talent mobility within Europe. Research infrastructure is a key factor ensuring a strong science base in Europe.

According to the Commission's proposal, bringing together the above four elements into a single priority on Excellent Science will enable them to operate with greater coherence, in a rationalised, simplified and more focused way.

The Excellent Science pillar is largely bottom-up and investigator-driven, with funding arrangements designed to meet the needs of the scientific community. It aims at raising the level of excellence in Europe's science base and to ensure a steady stream of world-class research to secure Europe's long-term competitiveness. It will support the best ideas, extend Europe's capacity for advanced and paradigm-changing innovation, develop talent within Europe, provide researchers with access to research infrastructure and make Europe an attractive location for the world's best researchers.

It will do so by:

1. Funding the most talented and creative individuals and their teams to carry out frontier research of the highest quality by building on the success of the ERC and with scientific excellence as the sole assessment criterion for funding.
2. Funding collaborative research to open up new and promising fields of research and innovation through the Future and Emerging Technologies (FET) activities.
3. Providing researchers with excellent training and career development opportunities through the Marie Curie actions.
4. Ensuring Europe has world-class research infrastructures accessible for researchers in Europe. A particular need, highlighted in Innovation Union, is to accelerate the priority-setting of infrastructures identified by the European Strategic Forum on Research Infrastructures (ESFRI).



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Questions for discussion

- The ERC has proven to be a success. How can it strike the right balance between developing the excellence of young researchers and consolidating the excellence of more experienced ones?
- The support of Future and Emerging Technologies (FET) is a new part of Excellent Science. How can we ensure that FET complements the other parts within Excellent Science and provides a bridge to industrial leadership and addressing societal challenges?
- What is the most efficient role for Horizon 2020 to ensure that the priority of European infrastructures, e.g. those identified for ESFRI, is brought forward?



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Workshop 2: Industrial Leadership

Europe is facing an innovation emergency. The challenges facing Europe include a rising high technology trade deficit and an insufficient number of high growth innovative companies.

Many stakeholders have highlighted that on a global scale of excellent research, Europe performs well, but fails to turn this position into products and market shares on the global market. In spite of Europe's high global share of excellent research and some fields of patenting, Europe has a low share in many of the same sectors when it comes to global market shares. This disparity is often explained by Europe's lack of venture capital and support for test and demonstration facilities. This has often been termed the 'valley of death'.

Horizon 2020 presents a new approach to research and innovation funding at European level through one common framework for financing research and innovation. This entails a closer connection between research and innovation activities, as well as stimulating partnerships across sectors, disciplines and regions.

Furthermore in the Commission's proposal for programmes within the pillar Societal Challenges and Industrial Leadership, emphasis is placed on supporting large-scale pilots and demonstration activities, test beds and living labs, prototyping and product validation in pilot lines.

In particular the Commission has proposed the following three programmes within Industrial Leadership:

1. *Leadership in enabling and industrial technologies* (LEIT) shall provide dedicated support for research, development and demonstration of ICT, nanotechnology, advanced materials, biotechnology, advanced manufacturing and processing and space. Emphasis will be placed on interactions and convergence across and between the different technologies.
2. *Access to risk finance* shall aim to overcome deficits in the availability of debt and equity finance for R&D and innovation-driven companies and projects at all stages of development. Together with the equity instrument of the Programme for the Competitiveness of Enterprises and SMEs (COSME), it shall support the development of Union-level venture capital.
3. *Innovation in SMEs* inspired by the successful Small Business Innovation Research (SBIR) scheme in the United States shall stimulate all forms of innovation in SMEs, targeting those with the potential to grow and internationalise across the single market and beyond.



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Questions for discussion

- Horizon 2020 suggests a stronger partnership approach between the Commission, Member States and businesses to push the industrial leadership in Europe. How do we ensure strong public private partnerships with industry in times of financial constraint?
- Horizon 2020 introduces a closer connection between research and innovation. Will the proposed new measures strengthen the capability in Europe to turn excellent research into services, products and market shares?
- Will the proposed measures for innovation in SMEs address the need to support more high growth enterprises that successfully expand into EU and international markets; if not what accompanying measures are needed?



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Workshop 3: Societal Challenges

Tackling the grand societal challenges is a cross-cutting issue for Horizon 2020. The specific programme 'Societal Challenges' targets policy priorities and challenges identified in the Europe 2020 strategy. In the FP7 interim evaluation and several public consultations the need for a more simple structure has been highlighted, minimising the number of themes, initiatives and instruments opening for more interdisciplinarity. The proposed structure represents a major change from the Cooperation part of FP7, moving away from a narrow theme specific structure to broader and fewer societal challenges leaving more freedom for researchers.

The proposed challenges have a strong European added-value and they target concerns relevant for European as well as global citizens and societies:

- Health, demographic change and well-being
- Food security, sustainable agriculture, marine and maritime research, and the bioeconomy
- Secure, clean and efficient energy
- Smart, green and integrated transport
- Climate action, resource efficiency and raw materials
- Inclusive, innovative and secure societies

At the outset a challenge-based approach should be taken, avoiding picking specific technologies or solutions to reach the goals. An interdisciplinary approach is inherent in the idea of broad societal challenges. The scientific community has stressed the importance of an interdisciplinary approach on several occasions. It is important that new research results and technological progress are well anchored in the public as well as among legislators – social sciences and humanities have an important role in this respect.

The challenges are not only of European concern, but are issues of global interest. As in earlier framework programmes, strategic cooperation with international partner countries will be an integral part of each challenge.

A strong emphasis is put on innovation related activities, to help bridge the gap from research to market. These activities include piloting, test-beds and social innovation allowing for a broad understanding of the concept of innovation. Specific focus is directed at the participation of SMEs and it is expected that 15 % of the budget from the priorities 'Societal challenges' and specific objective on 'Leadership in enabling and industrial technologies' will be allocated to SME activities.



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Questions for discussion

- Are the proposed six societal challenges in Horizon 2020 identified and outlined in a way that will provide answers and solutions to Europe's challenges?
- Break-through solutions often come from interdisciplinary approaches. Is such an approach sufficiently inherent in the description provided for the societal challenges? How could such an approach best be implemented?
- In addressing the societal challenges, how can activities within Member State and Union initiatives be supportive of each other in the most efficient way?