



The
Federal Government

Opinion of the German Federal Government

on the Green Paper

***From Challenges to Opportunities: Towards a Common Strategic Framework for EU
Research and Innovation funding***

19 April 2011

1. Joint efforts for a successful Europe 2020 Strategy

The Federal Government welcomes the concept of a Common Strategic Framework for Research and Innovation (CSF) and the proposed integration of European research and innovation funding as an important step towards realising the Europe 2020 Strategy. It will enable an integrated funding approach along the entire value-added chain, from basic research to application-oriented research to demonstration projects, on the basis of the Lisbon Treaty. The Common Strategic Framework will contribute towards the development of the European Research Area in accordance with the Lisbon Treaty.

Basic elements of CSF:

The **envisaged common funding framework** should therefore include the following elements:

- Basic research via the European Research Council (ERC) following the principle of excellence
- Research and education activities of the European Institute of Technology (EIT) that need to be further developed
- Applied-oriented research that is more innovation- and market-oriented than in the past and focuses particularly on the needs of SMEs
- Funding instruments for innovative enterprises and networking activities

Mission orientation must become a priority of European research. To this end, the strategic framework should identify concrete aims and gear its funding approaches towards their realisation.

Basic principles of CSF:

- When it comes to funding instruments, the Common Strategic Framework should aim to strike a balance between much-needed innovations and tried-and-tested approaches. At the same time, **procedures need to be significantly simplified** to improve access for universities, other research institutions and companies and to facilitate implementation. European research funding instruments should be designed and presented in a transparent and user-friendly way in order to improve access and successful use. In addition, **flexible implementing regulations** are needed that take the different needs of small and large enterprises, research institutions, and universities into account. The procedures must be based on the principle of mutual trust and the acceptance of nationally tried and tested and recognised procedures far more than has been the case in the past.
- To ensure the efficient participation of companies, research institutions, and universities, the Member States need to adapt their **National Contact Point systems** to the new strategic framework. The National Contact Points should continue to be financed and run by the Member States.
- The research and innovation funds available from the EU and the Member States should work synergistically. **Subsidiarity** between national and EU measures needs to be ensured, and the **European added value** needs to be clear. The ERA-NETs, the ERA-Nets Plus and the measures based on Article 185 TFEU could be used as models. In only a few years, they have developed into an important instrument to network national research funding across Europe more effectively. Further developments in **joint**

programming should be also be viewed in this light. Joint programming must continue to be voluntary and driven by the Member States. Lean structures and minimum bureaucracy are equally important principles. In particular, **financial incentives from the EU** encouraging Member States to participate in the Joint Programming Initiatives could contribute significantly to success.

- To **measure** the success of European research and innovation funding, a **data base** that encompasses funding within the entire strategic framework must first be created. **On this basis**, performance indicators should include aspects of input (fund allocation), output (fund utilisation) and impact (results of funding) in equal measure.
- **Support for research and innovation under CSF must be based on the principle of excellence** and must not be changed or watered down in any way to achieve cohesion targets. It must consistently focus on the competition-based distribution of funding, transnational cooperation, and a clear European added value over regional and national R&I funding. **Application-oriented research** should focus more strongly on market needs, including **demonstration projects**.
- **More cohesion policy funds should be used in a complementary way for research and innovation**, for example to build up regional research and innovation centres and promote innovations in small and medium-sized enterprises. Cohesion policy, with its decentralised approach, and the integrated regional development strategies supported under the structural funds make it possible for the needs of SMEs and regional research and innovation centres to be taken into account effectively. Measures financed from the structural funds can complement SME instruments of central funding programmes in an ideal way at regional level, using tried-and-tested application procedures and administrative methods.

It should be possible – under competitive conditions and subject to quality assurance – to use resources from the structural funds to build and improve research infrastructures. “Intelligent specialisation” is an important basis for the development of regional strategies. In Germany, this is already a successful element of integrated development strategies, which are financed from the structural funds.

2. Tackling societal challenges

- Research and the resulting innovations must make a significant contribution to **solving great societal challenges** such as climate change, monitoring the environment (atmosphere, land and sea), restructuring our energy supply, protecting resources (land, water, and raw materials), securing sustainable mobility, health, demographic change, and nutrition. To achieve the necessary transition towards mission orientation in EU funding, CSF must formulate **overarching goals and selected lead projects**, and it must gear its programme elements towards realising them. The technology platforms, with the involvement of all stakeholders, and joint programming, with the High-Level Group for Joint Programming (GPC), would be especially suited to coordinating this orientation process. Existing approaches at EU level can act as models.
- At the same time, the approaches towards achieving these aims need to be **open to all technologies and solutions**. There needs to be sufficient **scope for curiosity-driven research** and for unconventional, creative solutions. It is vital to achieve a good balance between large collaborative projects and networks, smaller open-outcome or applied research projects, Joint Programming Initiatives and ERA-Nets, basic research projects,

and projects for the **development, validation and integration of relevant technologies.**

- **Sufficient scope should be created for bottom-up activities** by formulating funding topics freely and making a point of not defining the expected impact.
- **Policy-oriented research and forward-looking research activities** (foresight) should form integral elements and should contribute to creating the scientific and technological basis for decisions in the policy areas that deal with great societal challenges. In this context, it is of utmost importance to achieve the highest possible level of transparency, involve all stakeholders, and minimise conflicts of interests among a broader European public.
- Societal challenges such as migration flows, the integration capacity of societies, the restructuring of societies, and forward-looking forms of mobility, housing and work require the development of new types of global arrangements to tackle economic, political, social and cultural problems. To overcome these challenges, Europe needs **independent research in the humanities, economics, and social sciences** to study societal and cultural change processes in an integrated way, taking into account global interdependencies. This requires reliable empirical data and prognoses as well as scenarios for the support of political decision-making processes. Such research needs to go beyond national borders and become more international. It is vital for achieving the goals of the 2020 Strategy. The aim is to take advantage of research potential in anticipation of future challenges that will face societies in Europe and beyond.
- The **Joint Research Centre (JRC)** needs to ensure that its thematic areas and programmes reflect the most important aspects of the Europe 2020 Strategy and its flagship initiatives. To **strengthen its visibility and integration in the European Research Area**, the JRC needs to boost its interdisciplinary networks and collaborations with science policy stakeholders at European level as well as with Member States and their national (research) institutions. This can also be achieved by giving external researchers easier access to its infrastructures and through scientist exchanges.

3. Strengthening competitiveness

Collaborative research

- Collaborative projects have proven to be a successful instrument of the European Research Framework Programmes. They are the backbone of European research funding and represent an important bridge between science and industry. They enable research-driven innovations as a basis for enhanced competitiveness. **For this reason, the role of collaborative research needs to be strengthened.** This will also provide continuity in the funding instruments of the 7th EU Research Framework Programme and CSF, which will benefit both European industry and science. The principle of excellence forms the basis for continued success in collaborative research and should be a guiding principle of CSF as a whole.

Role of key enabling technologies

- It is vital to continue the successful support of key enabling technologies in order to strengthen competitiveness. Europe's future economic success depends on achieving a leading position in these markets. The European high-level working group considers nanotechnology, micro- and nanoelectronics, biotechnology, photonics, new materials, and advanced manufacturing technologies and systems to be "Key Enabling Technologies" (KET). However, funding must also be provided for other key technologies, such as information and communication technologies, space and aviation technologies, and key technologies in the areas of transportation and construction. Strong support for key technologies is particularly important when it comes to successfully overcoming societal challenges.

The European Institute of Innovation and Technology (EIT)

- The Common Strategic Framework for Research and Innovation (CSF) needs to contribute to strengthening Europe's competitiveness based on the objectives of the Europe 2020 Strategy. This requires an **integrated funding approach** along the entire value added chain, from basic research to the implementation of research results to the development of lead markets. With a view to pursuing a European High-Tech Strategy, research and innovation should be combined with relevant aspects of education in order to reflect the entire **knowledge triangle**. The European Institute of Innovation and Technology (EIT) is the most important pilot attempt to build up new steering models and concepts for knowledge triangle clusters in areas relating to great societal challenges, and it should be integrated into the Common Strategic Framework for Research and Innovation.

Innovations

- The Common Strategic Framework should take into account the entire spectrum of innovation funding, including infrastructure development, standardisation, and entrepreneurship education. In many cases, success can only be achieved if technological and service innovations are combined. They are prerequisites for numerous applications in different sectors. A **broad innovation concept** also includes non-technological innovations, ecological innovations and social innovations. A horizontal, independent funding element that is based on **specific societal challenges** or key technologies should be defined for these aspects.

European technology platforms and public-private partnerships such as the Joint Technology Initiatives (JTIs)

- The European technology platforms and public-private partnerships such as the Joint Technology Initiatives (JTIs) can contribute to effective, transnational and sustainable cooperation between industry, research institutions and universities in an innovation-oriented environment. Before further JTIs are introduced, however, a **critical external evaluation of the instrument** of JTIs should be undertaken, the **sustainability of the financing** secured, and the JTIs implemented using the rules for participation and the general legal framework of the Research Framework Programme in order to avoid further fragmentation. Efforts must be made to simplify the complex structures of the existing JTIs, for example through the broad application of private-public partnerships like those that emerged under the EU stimulus plan. In this context, it would make sense to draw on past experiences with the EUREKA clusters, in which European companies have been

working together successfully since the mid 1990s, particularly in the field of information technologies. JTIs and corresponding EUREKA clusters should complement each other and synergies should be taken advantage of.

Small and medium-sized enterprises

- Research and innovation funding needs to be geared more strongly towards the needs of SMEs. After all, SMEs are responsible for an integral part of research and innovation activities in Europe and make an important contribution to Europe's economic competitiveness. In future, the **thematic funding areas should take the specific needs of SMEs into account more effectively**. It is important to continue to enable SMEs to work together with other competent partners from science and industry and to benefit from their expertise and networks.
- There should continue to be **non-technology-specific funding instruments for SMEs**. To this end, a new programme module should support SMEs in achieving the application and market penetration of new technologies. Small consortia consisting of several SMEs or technology-oriented clusters that include SMEs should receive direct support for pilot projects aimed at further developing and disseminating new marketable technologies. The programme should be non-technology-specific and include the support of ecological innovations previously provided under the CIP. **Eurostars**, which has been running since 2008 as a EUREKA measure under Article 185 TFEU, is a successful example of non-technology-specific support. It pools the funding opportunities offered by the Member States and the European Union in a joint initiative, has already achieved success in very little time, and should be expanded. More attention should be paid to the interests of SMEs in measures and programmes that include both SMEs and large businesses (for example JTIs). In areas where large companies engage in pre-competitive activities, SMEs often already have to compete and therefore have very limited opportunities for equal participation.
- To strengthen their competitiveness, SMEs need financing instruments that are specifically tailored to their needs, for example a **guarantee facility of the EIB** towards commercial banks. In addition, the role of the **European Investment Fund** should continue to be strengthened with a special view to co-financing funds that invest in technology-oriented start-ups and young innovative enterprises. Such enterprises are usually dependent on venture capital.
- In addition, SMEs require special support to engage in international cooperation. The **Enterprise Europe Network (EEN)** has proved to be successful in this context. Anchored in the regions and with excellent ties to the world's largest management consultancy and innovation network, it offers excellent services, from information about European rules and the establishment of contacts with European partners to technology services and advice on European funding measures. This network has proved to be successful and should be maintained and strengthened. Parallel networks – for example under Europe Innova – should be integrated. **Other activities aimed at stimulating entrepreneurship**, such as the Europe-wide SME Week, should also be continued. The SME financing instruments, the Enterprise Europe Network, and other smaller SME-oriented measures include a series of funding elements that are geared towards innovation, but also towards competition in general. It is worth considering whether these instruments should be pooled in a separate SME programme. However, this should have close ties to the new research and innovation programme. In this context, we would like to refer to the Federal Government's opinion of January 2011 on the CIP successor programme.

Financing instruments

- The SME financing instruments of the CIP programme should be developed further, taking into account the importance of SMEs for innovation policy. They should be placed in a coherent framework with the other financing instruments of CSF, such as the RSFF. In addition to grant-based funding instruments, the EU financing instruments that are based on own or outside capital should be used more effectively. In this context, the **Risk Sharing Finance Facility (RSFF)** has proved to be an intelligent and innovative financing instrument. Research infrastructures also require a more targeted approach that takes the special time requirements and the support structures of the Member States into account more effectively.

Knowledge transfer

- Research results need to be developed into applications as quickly as possible to enhance Europe's innovative strength and competitiveness. The current rules under FP7 envisage the dissemination of research results. In order to sustainably strengthen the knowledge transfer and utilisation of results, those involved should, however, have to commit to disseminating research results by following a **utilisation plan**, and it should be possible to impel them to honour their commitments after the end of the project. The structural funds can also make an important contribution in this context. A further possibility would be to expand the open access pilot project in FP7 with the aim of generally enabling public access to research results from EU-funded projects after a certain waiting period, provided that there are no industrial property rights or substantiated confidentiality interests.

4. Strengthening Europe's science base and the European Research Area (ERA)

The European Research Council (ERC)

- The ability of the **European Research Council (ERC)** to **attract the world's best researchers to Europe** needs to be improved under CSF. For this reason, we are in favour of **increasing the ERC's budget in an adequate way**. Collaborations of interdisciplinary research teams could become eligible for support in order to further adapt to the working methods of modern science. This could be achieved by establishing an additional funding line or by opening existing funding lines. In future, ERC support should not be seen purely as research funding, but as the **most important award honouring of scientific excellence**. In this context, Germany is against all measures that directly or indirectly lead to a watering down of the principle of excellence.

Building up excellent structures in Europe

- In addition to individual excellence in Europe, **outstanding institutional, infrastructural and regional conditions** are vital for the success of European research and innovation policy. Funding for such structures must continue to help strengthen the research capacities of the European regions and create the conditions needed to ensure that research results are developed into sustainable market success. The best way to achieve the strategic target system of intelligent specialisation, regional excellence and global excellence is to ensure that **structural and research funding complement each other**.

Marie Curie Measures: career development and mobility

- The **Marie Curie Measures must be continued** and greater emphasis should be placed on mobility between sectors. An efficient and open labour market for researchers promotes excellence, internationality, and knowledge transfer in research collaborations. Geographical and sectoral mobility, the attractiveness of research careers, and the reduction of obstacles to mobility, for example in the area of pension plans, are important prerequisites for **knowledge mobility and for the networking of institutions in Europe**. This is the context in which the Marie Curie Measures should be viewed. The **structured doctoral training** in networks (ITNs) should be continued, but it should be possible for companies to become more involved, and individual networks should be able to cover broader subject areas. Wherever **exchanges between industry and academia** make sense (intersectoral mobility and knowledge exchange), they should be developed further, particularly with a view to increasing content flexibility and simplifying project administration. The relevant recommendations of the Steering Group on Human Resources and Mobility (SGHRM) should be taken into account in this context. The **participation of third countries** in mobility measures should continue to be intensified.

Involvement of women researchers / gender dimension

- The EU Commission needs to take a **proactive role on the participation of women in research and development**, as it reiterated in its response to the interim evaluation of FP7. To this end, the Commission needs to pursue the 40 per cent target with the help of targeted measures, and it needs to be more consistent in its demands that the gender dimension be included in EU-funded calls, from the programme level to application modalities to project implementation. **Gender aspects are horizontal aspects** and should be taken into account in all areas of research and development. In particular, these issues need to be **addressed more effectively in the natural sciences and technology**. The urgently required integration of a solid gender perspective in scientific and technological research projects requires interdisciplinary and transdisciplinary cooperation among experts in all fields of research.

Research infrastructures

- The development of high-quality research infrastructures (RIs) at European level should be seen as a top priority. The **construction and establishment of new research infrastructures** and the **selection of RI locations** should **remain the responsibility of the Member States**. Within the individual priority areas related to societal challenges, project funding should in future be closely linked to research infrastructure measures. Commission-driven projects and activities driven by the Member States or by companies need to be coordinated closely, both in terms of content and structure, in order to avoid duplication and create synergies. In line with its horizontal character, funding for research infrastructures should continue to be carried out centrally in a separate area that addresses the following challenges:
 - Ensuring the utilisation of existing and new research infrastructures
 - Strengthening cooperation between research infrastructures and Joint Programming Initiatives
 - Strengthening evaluation and prioritisation processes of research infrastructures (a responsibility of ESFRI)
 - Promoting design studies
- European funding for research infrastructures should accompany, but not be limited to, the implementation of the ESFRI roadmap. Complementary funding from the structural

funds, particularly for the construction of infrastructures, should also be possible. The instrument of “Regional Partnership Facilities” should be expanded, as it helps the newer Member States acquire experience in the scientific and technological operation of RIs and in the area of management. The support of projects that deal with management issues of European facilities (legal matters, costs and financing, controlling, training) plays an important role in the area of research infrastructures.

International cooperation

- **Creating a programmatic framework for networking between the European Research Area and international top science** – through mobility, **top-quality collaborative research** and strategic partnerships for international research infrastructures – is necessary in order to promote successful **international cooperation** beyond Europe’s borders. The European added value expected from cooperation should form the basis of specific international collaborations beyond Europe. The international competitive situation should be taken into account so as to take advantage of innovation opportunities for Europe. Central aspects include the support of global partnerships that address great societal challenges, the establishment of international innovation alliances, particularly with partners in industrialised countries and in growth regions with emerging markets, and the support of international dialogue processes with strategic partners of the EU, in close cooperation with the Strategic Forum for International S&T Cooperation (SFIC). The Member States and the Union need to coordinate their actions in such a way as to take better advantage of the potential of synergies. Depending on the subject or societal challenge in question, a specific mix of instruments for the international dimension needs to be developed, also with a view to linking bilateral and European initiatives effectively.