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DE ESPAÑA

MINISTERIO
DE ECONOMÍA
Y COMPETITIVIDAD

Spanish Position Paper on "Horizon 2020"

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Introduction

Spain's participation in EU Framework Programmes for Research, Technological Development and Innovation has increased considerably over the years, demonstrating the potential and interest of the Spanish scientific and technological community in those funding tools. Given this positive evolution, a strategy is being developed to further encourage the participation of all stakeholders in EU R&D and innovation programmes. This strategy will target companies, universities, R&D centres, public research organisations, technology centres or foundations operating in the field of R&D. It will include measures and incentives serving as a stimulus to significantly increase the involvement of Spanish individuals and teams with EU programmes while promoting greater integration of our system into the broader European R&D and innovation picture, now more necessary than ever. Success in the Framework Programme not only means transforming the most promising ideas into high-quality scientific and technical proposals, but also positioning them strategically, assuming leadership and taking the necessary qualitative leap to raise the number of public and private Spanish organisations among the promoters of initiatives of all sizes.

General Aspects

On 30 November 2011, the European Commission published its proposal for the next Framework Programme for Research and Innovation, "Horizon 2020".

Spain supports the EU's commitment to the goals of the **Europe 2020** strategy. These goals are clearly reflected in the structure and aims of the Horizon 2020 proposal, which has a budget of €80,000 million and is strongly committed to the development of a knowledge-based economy to overcome the financial crisis. This proposal has been presented to the European Parliament and the Council of the European Union by the Commission and has been discussed intensively during the Danish Presidency.

Spain also supports the Commission's new approach, in which the **three main European funding programmes for R&D and innovation are for the first time brought together** under a single programme covering the full cycle since the inception of the idea up to its commercialisation on the market. This approach covers the period known as "valley of death", when emerging companies are investing resources² and that investment is not yet yielding profits.

¹ Experts in science, technology and innovation were consulted to put together this Spanish Position Paper on "Horizon 2020", the next EU Framework Programme for Research and Innovation. Numerous stakeholders from the Spanish R&D and innovation system participated actively in the process. This included universities and the Conference of Rectors of Spanish Universities (CRUE), the various Public Research Organisations, Ministries with competences in the R&D and innovation field, other Administrations, the major scientific associations, technology centres, labour unions, public and private R&D centres, Foundations, Technology Platforms, business associations and companies from various sectors, which are regularly involved in European R&D and innovation funding programmes.

² Via e.g. the formalisation of their business plans, their legal establishment, the implementation of pilot projects, the development of proofs of concept or demonstration activities, or the search for potential customers.

Spain also supports Horizon 2020's moving beyond the idea of "**dissemination** and use", which has traditionally been part of the Framework Programmes.

Horizon 2020 also **assigns a central role to Small and Medium Enterprises (SMEs)** as generators of growth and employment. Spain welcomes the creation of the new "SBIR" model instrument for SMEs, provided that it finances projects of clear added value for the European Union. Public research centres could make an important contribution to the instrument, at least in Phase 1. We also support a binding target for SME participation with at least the same participation percentage reached as in the Seventh Framework Programme and in the Competitiveness and Innovation Framework Programme (CIP), that is, 20%. Moreover, we welcome the continuation of the "Eurostars" Programme. Lastly, Spain welcomes the inclusion of the two financial instruments in Horizon 2020 and clear links of those with the instrument for SMEs. In particular we support that participation in the new instrument for SMEs provides a hallmark of quality for successful companies taking part in the Horizon 2020 debt and equity financial instruments.

Spain is also in favour of including **pre-commercial procurement** and **public procurement of innovation** in the programme, as we consider them particularly positive tools given their consistency with the Europe 2020, Innovation Union and European Research Area (ERA) goals. These forms of procurement would require the development of effective links with the model "SBIR" instrument.

Horizon 2020 also has a number of important synergies with other EU policies, such as regional policy. We consider it particularly helpful that a project gets the **possibility of being supported by different funds** (such as Horizon 2020 and the regional funds) through unified and simplified application and justification procedures.

Horizon 2020 focuses on **solving societal problems** by implementing an interdisciplinary approach, which provides innovative responses to the challenges confronting our societies. Spain supports this approach, which must avoid both duplications and the exclusion of relevant areas. We also consider it essential to maintain a broad definition of the challenges, allowing for bottom-up initiatives and providing room to address these challenges from the perspective of the social sciences and the humanities, which have an essential contribution to make. It is also important to establish concrete measures to ensure that we address effectively the **gender dimension** in R&D and innovation.

Spain considers that, given the scope of the proposed activities, a **greater budgetary effort** should be made for Marie Skłodowska-Curie activities, along with energy, advanced manufacturing, health and security, which are all key areas for economic growth and job creation in Europe.

Spain also supports the strengthening of the **Marie Skłodowska-Curie** training and mobility activities, which, in conjunction with the initiatives of the European Research Council (ERC), are key to increasing the European pool of well-trained scientists. Moreover, it considers it essential to promote the training and incorporation of specialized human resources in the business sector. Hence, we support the Marie Skłodowska-Curie actions' **industrial PhD** programme. Spain also backs the promotion of actions to co-finance programmes, inspired by the current Framework Programme's "COFUND" scheme, to promote the design and implementation of national and regional human resources programmes open to participation by other Member States.

In terms of **simplification**, Spain supports the effort to steer the programme towards a trust-based system. We welcome the emphasis the rules for participation place on simple evaluation criteria and the necessary streamlining of the audit procedures, which will

undoubtedly increase participation. It is also essential that Horizon 2020 stresses the maximisation of the allocation of funds through competitive calls, which is especially relevant in the context of the externalisation exercise the programme will require. For Spain, the application of the beneficiary's usual accounting practices is key for the calculation of actual indirect costs incurred. In this regard, and in relation to the proposed scheme for the reimbursement of costs, "100/20", it supports a more flexible handling of indirect costs provided it is not exclusive and therefore not harmful to organizations that have made an effort to incorporate analytical accounting systems in their management, primarily the large European public research organisations. Lastly, Spain agrees with the Commission that the strategic role of Programme Committees and their involvement in the preparation, approval and monitoring of the implementation of work programmes and in project approval must be strengthened.

As **Public Private Partnerships (PPPs)** and **Joint Technology Initiatives (JTIs)** are crucial vehicles for Horizon 2020 to achieve its objectives in terms of innovation, it is necessary to simplify the current situation, in which different JTI and PPP models co-exist. Industrial initiatives relevant to Europe's competitiveness should be conducted primarily through PPPs via competitive calls, ensuring the management of public funds by the Commission or its Agencies and following the rules for participation in Horizon 2020. Spain is in favour of conducting an analysis of the achievement of the objectives of existing JTIs' and it is also in favour of making the necessary modifications to align the JTIs' priorities with those of Horizon 2020.

Regarding the **Joint Programming Initiatives (JPIs)**, Spain supports the coordination of national and regional research, technological development and innovation programmes in order to continue strengthening the effectiveness of the ERA. Spain believes that it is a priority for Horizon 2020 to promote and support Public-Public (P2P) activities and strategies developed in the framework of the JPIs as well as their coordination with future European Innovation Partnerships (EIPs). The different JPIs must maximize their synergies with the various societal challenges addressed by Horizon 2020, which should be properly integrated, given their cross-cutting nature, with the topics of the JPIs. Spain also considers it of crucial relevance that contributions can be made in cash or in kind to implement the JPIs' strategic research agendas.

We support a well-defined **international cooperation strategy** within Horizon 2020, firmly coordinated with EU policies, such as neighbourhood policy, development aid or external action. We will coordinate our own strategy in this area with the European one.

PART I - Excellent Science

Spain acknowledges the valuable role played by the **European Research Council (ERC)** in successfully funding, right from the outset, important investigator-driven frontier research projects of the highest quality. In this context, Spain supports the priority assigned by Horizon 2020 to ERC programmes in support of young researchers ("Starting Grants").

In relation to **future and emerging technologies (FET)**, Spain considers it essential to ensure the complementarity of the activities included under FET with other Horizon 2020 initiatives. This way, any unnecessary duplications and overlaps will be avoided and the scope of FET will be expanded beyond information society technologies. Spain also considers that "FET Flagships" have a high potential for science, technology and innovation and that their selection and weight in Horizon 2020 must be subject to a careful analysis, which takes into account their expected impact.

Human capital and job creation are key to our competitiveness. Spain thus supports the Horizon 2020 scheme that promotes **Marie Skłodowska-Curie** actions in skills, training and career development, with emphasis on career promotion and mobility of researchers. Spain considers that these actions should be reinforced in Horizon 2020 to strengthen and increase the European pool of well-trained, dynamic and creative researchers and technologists. Hence, we support the promotion of inter-sectoral mobility and industrial PhDs. In order to make these programmes more attractive to businesses, Spain advocates for the inclusion of “senior” researchers in the Training Networks. Spain also supports the co-financing initiatives based on the current Framework Programme’s “COFUND” scheme, to provide training programmes also in industrial environments.

In relation to **European research infrastructures**, including “e-infrastructures”, Spain supports the extension and promotion of transnational access to national and pan-European scientific infrastructures as well as the implementation of mechanisms to promote the harmonisation of national roadmaps for scientific infrastructures. In particular, Spain supports activities related to the development, deployment and operation of “e-infrastructures” and considers it essential to develop the “GEANT” network, grid and cloud infrastructures, high-performance computing, infrastructure for environmental monitoring and data acquisition, data repositories and virtual research communities. Furthermore, it supports the creation of networks of national and regional infrastructures as well as the continuous improvement and updating of these infrastructures in order to maintain the very highest levels of scientific and technological competitiveness. Spain also considers the promotion of innovation through R&D infrastructures to be particularly relevant, especially in high impact areas related to societal challenges such as energy and the environment. Finally, Spain considers that support for the completion of detailed design studies, beyond conceptual design studies and preparatory activities, can be important for the creation of new large international infrastructures.

PART II - Industrial Leadership

Spain welcomes the proposed lines of action and considers **internet technologies** to be particularly relevant, and it supports the PPP “Internet of the Future”. On the other hand, we regret the absence of information and communication technologies (ICT) applications as an activity line. For this reason, we support clear synergies between activities in the field of ICT and those to be funded via FET so as not to create difficulties which prevent smooth participation in the two areas.

With regard to **nanotechnology, advanced materials and advanced manufacturing and processing**, Spain agrees with the Commission on the lines of action proposed and considers the work done in the PPPs “Factories of the Future” and “Energy-efficient Buildings” to be particularly relevant given the high leverage effect of the resources which will get allocated to them.

Spain supports the approach contained in Horizon 2020 on **biotechnology** applied to the design and generation of products and processes in various sectors, such as the food industry, energy (including renewable sources), environment and health.

In the area of **space**, Spain considers it essential to support innovative services based on remote sensing and satellite navigation given their contribution to the objectives of the Innovation Union. In relation to the technologies critical for non-dependence, we believe that the Framework Programme is not the most appropriate instrument for funding the

maintenance of existing capacities and for the continuation of ongoing activities. Spain also supports a better use of the complementarities between the data obtained from spatial missions and those provided by ground infrastructure, with a view to the combined exploitation of both sources.

Part III – Societal Challenges

Health, demographic change and well-being. In order to address this challenge, it is essential that R&D and innovation activities in Europe count on the involvement of all stakeholders (workers in the health sector, researchers, patients and users). Spain considers that the concept of demographic change, health and well-being must move beyond the mere relationship between health and ageing to a holistic and multidisciplinary approach. This should involve human and social sciences in order to deepen social innovations as the basis for technological changes linked to ageing. Spain supports focusing the activities on the socio-economic challenges posed by diseases, including common or endemic diseases of the highest incidence and vector-borne diseases, as well as rare diseases. The development of nanomedicine is also a priority for Spain.

Food security, sustainable agriculture, marine and maritime research and the bio-economy. Spain welcomes the objectives and lines of action proposed for this challenge. The activities relating to fishing, aquaculture and marine biotechnology as well as those related to continental water, seas and oceans are of particular interest to Spain. These activities should form the basis for tackling cross-cutting issues and key technologies for the development of science and industry as well as for the protection of the marine environment, the adaptation to climate change and risk prediction, including in the marine geology realm. It is considered that terrestrial and aquatic animal health and efficient and sustainable agricultural production and healthy food should also have a prominent role in the line of action on production systems. Furthermore, preservation of the natural environment as a reservoir of species for future use in food, energy, healthcare and industry is also a key objective.

Secure, clean and efficient energy. Spain welcomes the lines of activity proposed, seeing the European Industrial Initiatives for Wind and Solar Energy, Bio-energy, Marine Energy and Smart Grids as particularly important for the future. From Spain's point of view, geological capture and storage infrastructure should also be part of the proposed package. We consider it important to aim at achieving clean and efficient energy for all maritime, land and air transport via the development of new bio-fuels through integrated processes not only from biomass resources but also from waste. In addition, it is necessary to ensure the proper coordination of the strategies and various EU funds intended for the Strategic Energy Technology Plan ("SET Plan"), as well as a better alignment between national and European funds and the EURATOM programme.

Smart, green and integrated transport. In this challenge, Spain supports the efforts centred on reducing energy consumption, especially of fossil fuels. It also supports the efforts to create the next generation of maritime, air and land transport means by developing new technologies, systems and equipment, including fuel cells and hydrogen generation. It is also important to seek innovative solutions to achieve safe and affordable mobility.

Climate action, resource efficiency and raw materials. Spain welcomes the inclusion of eco-innovation as an activity and believes that the challenge should extend to cultural heritage in relation to climate change. Spain highlights the importance of research, technological development and innovation in water, including its use in rural, urban and

industrial settings. The protection of aquatic ecosystems, oceans and seas and the study of the impacts of climate on biodiversity are also relevant. We also see raw materials as an important issue. At the same time, an effort should be made to encourage industrial participation through specific implementation mechanisms.

Inclusive, innovative and secure societies. Spain supports the split of this challenge into a part that contains the security aspects and agrees with the content included in the proposal for this area. The other part would thus focus on inclusive and innovative societies, cultural heritage and European identity, in which the contribution of social sciences and humanities is considered essential. We support the PPP on security technologies for maritime surveillance.

Joint Research Centre (JRC). Spain supports the work of the JRC's Institutes in producing scientific and technological output as well as solid and reliable tools for the formulation of policies, the evaluation of the socio-economic impact of R&D and innovation policy, and scientific, technological and social foresight activities. All of those are basic elements for the proper management of science and technology policies, based on well-defined objectives and compliance indicators. It is worth highlighting and maintaining support for JRC projects in the field of social sciences and the humanities.

The European Institute of Technology and Innovation (EIT). Spain supports the activity of the EIT, emphasising its key role in integrating the three sides of the knowledge triangle: education, research and innovation. Spain supports the growth of existing KICs and the enhancement of their impact as well as their openness to new partners. Spain also supports the reinforcement of training activities and of the quality of the "EIT" degrees. We also value attention to be given to innovative activities and those linked to the development of professional skills. Spain also supports that for the six themes of the new Knowledge and Innovation Communities (KICs) announced in Horizon 2020, the Governing Board of the EIT establishes the procedure for their robust assessment and for the selection of the KICs to be launched in 2014 on basis of the available budget. The selected KICs should have reached the required maturity level, have demonstrable and quantifiable support from the private sector, have a high socio-economic potential and maximise synergies with other initiatives within Horizon 2020. Spain also feels that the EIT's support for KICs should not exceed 25% of its total budget, with the minimum industrial contribution in each KIC set at 50% of the total.