

# POSITION FOR INTERIM EVALUATION OF HORIZON 2020

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## EuroTech Universities Alliance – what the Framework Programme means for us

### Mission

The EuroTech Universities Alliance is a strategic partnership of leading European Universities of Science & Technology committed to excellence in research and developing solutions to the grand challenges of society. The members are **Technical University of Denmark (DTU)**, **École Polytechnique Fédérale de Lausanne (EPFL)**, **Eindhoven University of Technology (TU/e)** and **Technical University of Munich (TUM)**.

As part of their mission to address the major societal challenges, the EuroTech Universities have close ties with industrial partners and operate in strong eco-systems of start-ups, SMEs and large multinational companies. They **seek to inspire society about the opportunities offered by science and technology** – raising awareness among policy makers, industry and the next generation of students.

### Our participation in the Framework Programme

Leading Universities of Science and Technology provide the key institutional settings to **translate scientific knowledge and technological progress into innovative solutions for the benefit of society**. Based on this mission to bridge research and the market, we **welcome the approach of HORIZON 2020 to embrace research and innovation under one programme**.

	FP7 <sup>1</sup>	HORIZON 2020 <sup>2</sup>
<b>Participations</b>	1477	363
<b>Overall Funding</b>	€755m	€220m
<b>ERC Grants</b>	145 <sup>3</sup>	48 <sup>4</sup>
<b>Coordinated collaborative projects</b>	126	35 <sup>5</sup>

This position paper is based on this holistic view and expertise on the research and innovation cycle. Committed to cutting-edge fundamental and applied research with significant societal impact and close collaboration with industry, we believe it is vital to ensure **sufficient long-term financial commitment for the models of research that will prepare the ground for the innovations of tomorrow**.

<sup>1</sup> eCorda October 2014

<sup>2</sup> Open Data Portal, August 2016

<sup>3</sup> ERC funding activities 2007-2013 report & internal sources

<sup>4</sup> Open Data Portal, October 2016

<sup>5</sup> Open Data Portal, October 2016

## Ensuring financial commitment to deliver Europe's policy goals

Over the past years, we have been increasingly **concerned about the budget cuts affecting research and innovation funding in Europe**. If Europe's ambition is to retain its global leadership in excellent science, in solving grand societal challenges and in industrial competitiveness this ambition should be reflected in the future budgets allocated to HORIZON 2020 and future Framework Programmes. Even during times of uncertain political climates and difficult budget negotiations, the Framework Programme budget should be protected from further cuts.

It is vital that **Framework Programme funding is wholly grant-based for basic research and for research and innovation projects that have a strong focus on societal challenges** – activities with the double dividend of directly serving European society while promoting economic growth. We regret that a significant amount of resources has been transferred from HORIZON 2020 to the European Fund for Strategic Investment (EFSI). **Financial instruments cannot and should not replace grants**. The recent EUA Report "One year of EFSI, what's in it for universities?"<sup>6</sup> suggests that universities have not benefited at all from the financial instruments. It is therefore vital that the HORIZON 2020 budget should be restored to the pre-EFSI level and financial instruments should focus purely on leveraging more private funds for innovation at Technology Readiness Level (TRL) 7 and higher.

## Priorities and objectives – HORIZON 2020 contribution to EU policy priorities

### Driving competitiveness

The EU framework programme plays a key role in **raising the level of excellence in Europe's science base to secure Europe's long-term competitiveness**. Adequate investment in research and innovation is vital to deliver Europe's overarching goals of growth and jobs.

With its focus on excellence, HORIZON 2020 plays a key role in **attracting talent and in the development of the best ideas**. We understand the importance of raising the level of scientific excellence across the Union and therefore support the continuation and optimization of instruments under Widening participation. However, in the interests of retaining Europe's leading global position in research and technology, **the drive for excellence must prevail as the key criterion for all mainstream instruments** of the Framework Programme.

### Solving global societal challenges

We very much **welcome the emphasis of HORIZON 2020 on solutions for the grand societal challenges**. Addressing such complex challenges cannot be solved by one country alone, let alone one institution, one discipline or one scientist. **Europe and its policies to promote Open Science and Open Innovation provides an excellent framework to bring together the best international and interdisciplinary teams of scientific experts and other societal actors**.

### Europe as a stronger global actor

Linked to this, **science itself is a strong force in international diplomacy** both within Europe and with the rest of the world. In the context of recent political developments, the EU should seek to further strengthen collaboration through science and technology.

<sup>6</sup> E.g. [EUA report: One Year of EFSI, what's in it for universities?](#) 16 June 2016



**Examples:**

The HORIZON 2020 project “Multimodal, Functional Bio-Photonic Imaging” (FBI) builds collaboration between companies such as NKT Photonics, Philips and Zeiss and the four EuroTech Universities, a hospital and selected international research centres. The project seeks to foster a new generation of young researchers working on an emerging imaging platform and its translation into clinical and biological applications.

Photo Credit: Fotolia



The HORIZON 2020 project REACH is developing technologies to prevent health problems for elderly people. This project is built on a core team from the four EuroTech Universities together with industry and health care partners from across Europe. Seeking to harmonise 17 different areas of knowledge, REACH is a prime example of how the Framework Programme is instrumental in connecting expertise in data and digital technologies with other disciplines and sectors to bring solutions to European society.

Photo Credit: REACH

## Relevance and implementation

### Drive for excellence

In the interest of retaining Europe's leading global position in science and technology, **excellence must remain the key criterion for the Framework Programme**. Excellence is not only vital to maintain the EU's global position in science, but also to ensure maximum economic and societal impact from the EU's investments. We strongly advocate that this **criterion of excellence is applied across the Framework Programme instruments**, from basic and applied research to innovation and close-to-the-market actions.

Highly prestigious, the **European Research Council (ERC) is arguably the single most successful research funding instrument designed at European level** due to its strong weight behind bottom-up excellent science and should be further strengthened. The ERC plays a very important role in strengthening the quality, branding and capacity of European research, and as such it should remain a flagship in the future framework programmes. However, the ERC cannot support the European research environments on its own. There is a need for **greater synergy between activities and projects across the three pillars of the Framework Programme**.

### From excellent research to excellent innovation

While we welcome the Commission's approach in HORIZON 2020 to address research and innovation under one programme, we have **major concerns as regards a potential movement towards a two-tier approach - one for basic research and the other for innovation – rather than a holistic approach**. This undermines the potential of engaging in innovative collaborative research models which are vital for adequately addressing the grand societal challenges. Further, in the Societal Challenges Work Programmes, there has been a strong trend towards focusing increasingly on High Technology Readiness Levels (e.g. TRLs of five and above).

HORIZON 2020 is still missing the glue that connects fundamental research to the rest of the knowledge chain. Leading Universities of Science and Technology play a **crucial role in bridging this gap between the lower levels of TRLs and the higher ones**. In our view, such a narrow focus on later stage innovation runs the risk of obstructing the creation of research-driven game-changing innovations.

With a view to maximising the economic and societal impact of the ERC grants, we strongly **welcome the ERC PoC grants and the recent re-introduction of ERC Synergy grants** as a step in the right direction. Successful HORIZON 2020 projects with high innovation potential in the Excellent Science and Societal Challenges pillars should also be given the opportunity to apply for Proof of Concept funding, in order to turn the research results into new opportunities for commercial and societal applications.

The oversubscription of the MSCA and FET actions further illustrate the opportunities that our scientists could bring to the market and society, if there were a **more balanced distribution of TRLs across the Framework Programme**, particularly for societal challenge-driven research. More funds should therefore be allocated to collaborative solution-oriented academic research at lower TRLs in order to ensure synergy between activities in the ERC and the topics in societal challenges and to promote more transnational and intersectoral research collaboration.

We welcome the European Commission's initiative to develop a European Innovation Council (EIC), in order to promote more disruptive innovation and scaling of start-ups in Europe. Leading Universities of Science and Technology play a central role as co-creators in their respective innovation eco-systems, which in turn are central to Europe's future success in disruptive innovations. We believe that the **EIC can support these innovation eco-systems through the implementation of a pan-European Proof of Concept scheme, complemented by adequate growth funds targeted at scalability of successful ventures.**

### Impact of increase in volume of applications

**The relative increase in the number of applications has a large impact on the success rates of submitted proposals.** In some of the sub-programmes of Horizon 2020, notably in the Health Sciences and in Future and Emerging Technologies, or FET Open, the success rate for applications was as low as 2% or 3%. This constitutes a major challenge for the remaining programme period due to the fact that many excellent scientists may choose not to invest time in submitting proposals with very low chance of success. The resources required to apply for HORIZON 2020 funding are out of proportion with the chance of success and potential applicants are likely to be turned away. Not attracting the brightest minds to apply for HORIZON 2020 will have huge implications for the future leadership of Europe's research and innovation on a global level. With a view to address this serious issue of oversubscription we welcome the introduction of a broader approach to calls for proposal with impact described at mission level, allowing for a Societal Challenges topic to be addressed at various Technology Readiness Levels.

The **high standards and procedures for evaluation**, which are hallmarks of the framework programmes, must be maintained in HORIZON 2020, taking into account the increased interdisciplinarity of projects, the complexity of the evaluation process and the increase in applications.

In order to overcome the major challenges in relation to the increased volume of applications, we would propose **a wider use of the two-stage evaluation procedure, taking into account following remarks:**

- Writing a first-stage proposal should take considerably less time and effort during the first stage proposals, in order to avoid that the best minds spend too much time on proposals with very low success rates.
- The first stage for two-stage calls for proposals should be more rigorous, in order to avoid the repetition of proposals being evaluated as "out of scope" at second stage.
- Clear and adequately detailed feedback should be provided in evaluation summary reports after the first stage evaluation, which gives the researchers the opportunity to improve their future applications.
- To the extent possible, the panel of evaluators should be the same for first and second stage.
- The second stage in two-stage calls should deliver a more appropriate success rate of at least 30 to 40 percent.
- Proposal idea check should be offered by the European Commission and/or National Contact Points before submission.
- A new model of project pitching (including online) could replace first stage evaluations/ proposals: pilots for pitches could run in FET Open as of 2019.
- A consensus meeting is an important part of a high quality evaluation process. All evaluations under HORIZON 2020 should include a consensus phase, preferably in the form of a physical meeting. Written communication is not sufficient for high level exchange of opinions and arguments between evaluators. Consensus meetings would also help prevent disparate evaluations.

## Efficiency and EU Added Value

### Benefits of participating

Beyond the funding, the Framework Programme is vital for our universities to reach out to other institutions, ideas, people and knowledge. Only by **pooling scientific expertise and infrastructure at European level** and through the development of the European Research Area, can we pursue best ground-breaking research that improves people's lives and builds a strong knowledge economy. It is vital that this type of collaboration continues to receive adequate funding. In addition – with its highly competitive approach and its overarching criterion to drive excellence – participation in the Framework Programme brings prestige to our institutions. The **ERC has been particularly successful in raising the global reputation of our institutions and in attracting talent** from all over the world.

HORIZON 2020 clearly addresses the requirements of the research and innovation community at large - with on the one hand a focus on basic research and on the other hand calls addressing the societal challenges, often aiming at stakeholders going beyond those applying to EU programmes in the past. The set of simplification measures introduced make the calls more accessible than ever.

## Synergy with other EU programmes

The European Union already has a strong regional policy to address the diverse economic development needs of regions lagging behind and we welcome the European Commission's approach to promote minimum targets for the European Structural and Investment Funds' (ESIF) investment in R&D in these regions. The Framework Programme should not seek to duplicate the role of regional policy in supporting those that are lagging behind, it should rather solely focus on its main target of raising the excellence in Europe's science base.

We welcome the introduction of the Widening participation policy as a small initiative to provide stairways to excellence for low-performing Member States in terms of research and innovation. It should be recognised that the stairway to excellence is a long-term endeavour. In the future, we believe that there should be better synergies and complementarity with the ESIF from these Member States. We welcome the European Commission's proposal to extend the Seal of Excellence initiative to ERC and Teaming instruments in this regard. Finally, the Widening participation initiative could be further optimized to raise the attractiveness for top researchers to participate.

In order to optimize the Widening Participation instruments, we would propose:

- **Networking between researchers from EU15 and EU13 should be promoted during European conferences.** For instance, focus could be on those conferences already organized at European-level, such as ESOF or thematic conferences (Health, ICT...) e.g. with side events to promote opportunities through the “widening” related actions.
- **Exploration of the potential for follow-up funding for Twinning projects for successful HORIZON 2020 projects,** including the possibility of tapping into the Structural Funds for cross-border research projects.
- **Extending the target group of ERA Chairs to early stage researchers.** This would provide the opportunity for the EU to stimulate the development of a “Tenure Track” system to recruit and retain the best young researchers to EU13.
- **Opening up Teaming actions to also fund ‘programme-related’ activities.** In addition to setting up new centres of excellence, Teaming actions could be opened up to also fund ‘programme-related’ activities (e.g. how to run Innovative Doctoral Training, policies for attractive research careers, how to promote successful tech transfer programmes etc.). The sharing of best practices is vital to ensure the further development of the European Research Area policies across the whole of the EU. It would be favourable to explore the possibility of funding bigger projects with larger consortia in this regard.