NTNU | Norwegian University of Science and Technology

Research and innovation in the next European Union Multiannual Financial Framework:

Collaborative research and innovation to strengthen European competitiveness and welfare

Taking the Letta-, Draghi- and Heitor-reports, the Warsaw Declaration and the European Parliament vote on the Ehlers-report, as well as the Competitive Compass and the Competitiveness Fund currently being under discussion as the point of departure, the Norwegian University of Science and Technology, NTNU, would like to strongly advocate for three significant issues concerning research and innovation in the next Multiannual Financial Framework:

1) **Substantial support of collaborative research and innovation to bridge the frontiers of science, industry and public sector to strengthen European innovation, competitiveness and welfare.**

2) **A continued central role of the European partnerships in the definition of research and innovation priorities, and their implementation.**

3) **Strengthened collaborative research and innovation in sensitive and emerging technologies to ensure and maintain European resilience and competitiveness.**

1) Substantial support of collaborative research and innovation to bridge the frontiers of science, industry and public sector to strengthen European innovation, competitiveness and welfare.

A research-based development of Europe and the world firmly founded on collaborative research and innovation efforts is of utmost importance to increase European competitiveness. Bringing European researchers and innovation environments together in collaborative projects to develop the knowledge and innovations needed and to ensure that the frontiers of research and cutting edge technologies are available to European industries and public sector, should be a principal priority.

The Draghi-report makes a strong case for a European plan for decarbonisation spanning industries that produce energy and industries that enable decarbonisation. Substantial funding for European collaborative research and innovation to facilitate and support such a plan is crucial for decarbonisation to become a reality and an opportunity for Europe. Draghi states that funding of collaborative projects will be key in reaching Europe's ambitious climate targets and in particular investments in breakthrough research and infrastructures.

Industry's access to competence, skills and new technologies is essential for the competitiveness of Europe. Research, innovation and competence requirements to build new industry, as well as for the development of existing industry should be taken into consideration. The existing business sector should evolve, redefine and reinvent based on new knowledge and skills. The research communities should together with industrial partners define the future knowledge needs through instruments like the EIT KICs ecosystems and by exploring new instruments. Disruptive innovation happens as a result of fundamental research. Instruments that span the entire TRL-scale and that bridge the European Research Council and the European Innovation Council should be further explored.

There is a demand for more powerful mechanisms that build efficient knowledge and technology transfer between fundamental research environments in universities and next generation industry. NTNU suggests that a new collaborative instrument is established in European R&I, namely *European centre of excellence for research-based innovation*, bringing academia and industries together in joint research and innovation centres in areas of significant for European competitiveness with the aim of bringing new knowledge to industry. The centres should be hotbeds for research talents and Ph.D. education and facilitate mobility and transfer of people, skills, knowledge and technology to speed up the innovation processes.

NTNU acknowledges the need for flexibility in European research and innovation but argues that the budget for collaborative research should not be subject to reallocation on a case-by-case basis. Funding should be increased to nurture the development of knowledge and technologies that Europe needs, and to ensure bridging impact from the research community to industry and public sector within the ERA.

NTNU asks the European Commission to:

- **Allocate substantial funding for collaborative research and innovation in the next Multiannual Financial Framework and to safeguard that the funding is stable and predictable**.
- **Ensure an appropriate balance between research that lays the foundation for both disruptive and incremental innovation, facilitating the establishment of new companies as well as supporting the development of existing ones.**
- **Consider establishing *European centres of excellence for research-based innovation* that build strong partnerships between fundamental research environments in universities and industry.**
- **Embrace multidimensionality in approaches and instruments for collaborative research and innovation to ensure that knowledge and competence are used to transform future European competitive and innovative industries, as the research and innovation process is seldom linear.**
- **Ensure that collaborative research spans all Technology Readiness Levels (TRL). Research that bridges blue-sky research with future industrial applications as well as research and innovation close to implementation or market, should be supported significantly.**

2) A continued central role of the European partnerships in the definition of research and innovation priorities, and their implementation

NTNU would like to commend the long-term investments on the part of the European Commission in establishing an inclusive and continuous dialogue with the research and innovation communities across Europe about research and innovation priorities and their implementation, the European partnerships being at the core of the interchange. The European partnerships have emerged as valuable instruments for fostering collaboration and driving innovation.

This dialogue cannot be safeguarded by councils for industrial competitiveness and technology and societal challenges comprised of a limited number of practitioners and experts alone, as has been suggested by the Commission Expert Group on the Interim Evaluation of Horizon Europe. We believe that translating the successes of the European Research Council (ERC) into research and innovation in complex and multifaceted industrial and societal areas involving a wide range of stakeholders is not applicable.

Disentangling European industry from the exploratory and definition processes is detrimental to the crucial need of mobilising the businesses community for participation in collaborative European research and innovation initiatives in critical technologies and key societal areas. Active involvement of industrial and public sector actors together with the research community, and the opportunity to influence priorities and implementation, is crucial for the long-term investments and engagement of the business sector.

NTNU asks the European Commission to:

- **Continue the partnerships as arenas for open dialogue in the next research and innovation funding period. Transparent European discussions are much needed to secure resource allocations and investments based on in-depth knowledge, needs analyses and profound understanding of industrial, societal and research needs to reinforce European competitiveness.**
- **Consider a redefinition and rationalization of the partnerships by reducing the number of partnerships and revising the partnership model to make them more attractive and easily accessible to a wide spectrum of stakeholders.**
- **Guarantee the implementation of complementary collaborative R&I actions for those thematic sectors not covered by specific partnerships but of strategic importance for Europe. In line with a more flexible approach, such targeted calls could be identified according to emerging trends or specific industrial interests.**

3) Strengthened collaborative research and innovation in sensitive and emerging technologies to ensure and maintain European resilience and competitiveness.

Research and innovation in sensitive and emerging technologies, including technologies with a dual use potential of high importance to European resilience and competitiveness should be prioritized substantially in the next funding period.

An area for action in the Draghi-report is increasing security and reducing dependencies. Draghi highlights important areas critical to sustainable growth in Europe, including critical raw materials and digital technology. The report states that industrial partnerships to secure the supply chain of key technologies are of key importance. We would argue that industrial partnerships are not sufficient. The partnerships must involve research environments and be firmly based in frontier research and cutting edge technology development.

As a university with national responsibility for research, innovation and higher education in technology, NTNU acknowledges that the divide between research for civilian and military purposes will never be clear-cut, and this should neither be the ambition. Dual use will occur naturally given the ubiquitous nature of modern technology.

Avoiding fragmentation in European funding of research and innovation, funding of the same projects multiple times and building up parallel infrastructures must be an obvious goal. The main argument is however that new and important insights and discoveries do not happen following sectors or application. There is an unexploited potential for spinout from civil R&D to the military sector, and from military or defence R&D to the civil sector, as the modern military sector spans most societal areas.

We would also like to point to the fact that a disproportionately high share of European research and innovation funds for defence related topics are allocated for narrowly defined high-TRL research with the risk of prioritizing incremental and short-term solutions at the expense of building long-term competitiveness and resilience within important knowledge and technology areas.

NTNU asks the European Commission to:

- **In line with the recommendations of the Commission Expert Group on the Interim Evaluation of Horizon Europe, to increase and optimise research and innovation investments in sensitive and emerging technologies of high important to European competitiveness on all TRLs.**
- **Due to the dual use potential of these technologies, explore various funding mechanisms for sensitive and emerging technologies, including funding from the European Defence Fund for fundamental research performed by civil research environments.**
- **Establish a holistic system and a unified approach that foster strong synergies between civilian and defence research and innovation, including clear roles and responsibilities, as well as seamless transfer of knowledge following a unified value chain logic. Clear and well-established participation rules and funding schemes for dual use research, innovation and technology is a prerequisite.**
- **Safeguard academic freedom as a core principle in support for research and innovation involving sensitive and emerging technologies with dual-use potential.**