Norwegian University of Science and Technology - NTNU

NTNU is Norway’s second largest university with 20,000 students and 4,800 staff. The university’s main profile is in technology and the natural sciences and it has a national responsibility for graduate engineering education. NTNU is a university with a broad academic scope covering also the humanities, social sciences, medicine, psychology, architecture, fine art, music and teacher education. NTNU’s research is at the leading edge in specific areas and based on its broad disciplinary scope emphasis is laid on an interdisciplinary approach. NTNU has selected six thematic interdisciplinary strategic areas that address key societal challenges where it is especially qualified to make a contribution: (1) Energy and petroleum, resources and environment; (2) Globalization; (3) Information and communication technology; (4) Medical technology; (5) Marine and maritime research; (6) Materials technology. NTNU currently participates in 70 projects funded by the 7th Framework programme.

NTNU’s comments on the European Commission Green Paper
From Challenges to Opportunities: A Common Strategic Framework for future EU Research and Innovation Funding, Com (2011) 48

NTNU has read the Commission Green Paper on a common strategic framework programme next framework programme for research and innovation with interest. The European Research Area with the next framework programme as the key instruments is in a dynamic and thriving development. The coming few years seem to be one of the most exciting periods in the shaping of the future European research and innovation policies, not least through a strongly expressed belief in research driven solutions to the global challenges.

This is an extraordinary starting point for European universities and research institutions. It is also a challenge to adapt to new instruments and new perspectives. It is decisive that mechanisms are developed which sets the European research community in a position where it can be the key contributor it is expected to be and as described in Europe 2020, Innovation Union and the Green Paper From Challenges to Opportunities: A Common Strategic Framework for EU Research and innovation funding.

NTNU’s comments on the Green paper falls within 7 points:

1. A broad understanding of the concept of innovation
2. Cooperation in the knowledge triangle
3. Support for basic and investigator-driven research
4. Excellence as criteria
5. Instruments and simplification
6. International cooperation
7. Joint Programming Initiatives
1. **A broad understanding of the concept of innovation**

The next framework programme will be given a strong focus on innovation. We have over the last couple of years already seen a strengthened emphasis on innovation in the current framework programme, t. ex. through the importance in the evaluation of proposals given to the impact of projects in the thematic programmes under the Cooperation specific programme.

To NTNU innovation is an integrated part of research activities and we have a longstanding tradition in managing projects which runs through the whole innovation chain from idea to market and in close cooperation with industry and public partners. Based on our experiences we find it imperative that a wide understanding of the concept of innovation is employed.

Traditionally innovation has been perceived as the last phase in the knowledge development chain where research results are patented or commercialized. Such an understanding of the knowledge development process is much too narrow and will not put European universities in a position where they are able to contribute in the way they could and should to the strengthening of Europe’s knowledge base and innovation capabilities.

Some of the most excellent research groups in Europe with strong fundamental research activities are also often the most innovative and active when it comes to cooperation with industrial partners and in making research results available to societal needs. The scientific breakthroughs which t. ex. comes out of groundbreaking fundamental research projects funded by the ERC are the blocks Europe’s future innovation should build on.

The time aspect is important. The European Commission must continue to support projects which not necessarily will have an impact on Europe’s innovation abilities in a short term, but which will contribute to the long-term development of the knowledge base important to innovation maybe in 10 – 20 years’ time. We need a clear understanding of the relationship between the close-to-market knowledge and innovation which leads to spin-off companies and patents and the long-term research which supports the establishment of these companies and new innovations.

The universities’ role in the innovation process must be made clear and the long-term basic research must be perceived as a fundament and the starting point for innovation. We find it especially important to support the research which finds itself between the frontier research which is enthusiastically supported and the research close to the market which can be used commercially. There is emphasis on and support for both of these ends in the knowledge development chain, which is good. In addition resources must be made available to the intermediate research projects which link the two ends together.

Traditionally knowledge and innovation for the development of new technological solutions has been stressed. In addition it is important to contribute to the innovation needs in the public sector, t. ex. in the health sector and in the education system. Also, the innovation aspects are growing in importance in the culture sector and this should be taken into account when programmes and instruments are developed to support innovation.

Another very important aspect when it comes to the use of results from research developed in universities in innovation processes is that research competence is built in industry and the public sector itself. Private and public actors who are the receivers of research results and who are the ones
to translate these into innovations must themselves have research competences in order to fully make use of the results and convert them into innovations. Thus competence should be built in these institutions to ensure the full exploitation as well as the continuing demand for and appreciation of research and knowledge.

2. Cooperation in the knowledge triangle

An important matter for Europe’s future innovation capacities and capabilities is to make cooperation in the knowledge triangle possible where research, education and innovation are integrated and where universities, research institutions and industry work together to find solution to societal challenges. The European Institute of Innovation and Technology (EIT) which has been established especially to support cooperation in the knowledge triangle, but also other instruments throughout the framework programme should be developed to stimulate integrated approaches. We find it especially important to integrate education components in research and innovation programmes and projects to make sure that the future entrepreneurs of Europe in all sectors of society have the necessary competences to be drivers in the innovation processes and that their efforts are research based.

We are pleased about the integrated way the next framework programme is being planned and structured integrating the different programmes into a common framework. European educational programmes are however not included in the holistic approach. We would like to request the European Commission to elaborate on ways that higher education cooperation within Europe could be coordinated with or even included in the next framework programme.

3. Support for basic and investigator-driven research

In line with what has already been argued for when it comes to a wide understanding of innovation and basic research as part of the innovation chain, NTNU would like to emphasis the importance of a continued strengthening of basic research at the European level and specifically within the European Research Council (ERC). An open and competitive programme for basic research projects at the European level stimulates the best European researchers to continuously challenge the scientific and technological frontiers. A further strengthening of the ERC is important for the knowledge base of Europe and as a result the long-term ability to innovate. Keeping scientific quality alone as a selection criterion for the ERC grants and supporting high-risk proposals is crucial to optimize the innovation potential. We look forward to the evaluation of the new ERC Proof of Concept instrument which brings the long-term basic research closer to the market innovation.

In addition to a strengthened ERC, we would appreciate instruments supporting basic research projects within thematic programmes. In FP7 some of the thematic programmes have support for Future and Emerging Technologies-projects. FET as an instrument should be considered used to a larger extent and in a wide range of thematic programmes.

NTNU also supports a strengthening of the Marie Curie Actions in the next framework programme as an open competitive arena with a bottom-up approach where scientific quality is a key selection criteria. Training of researchers and knowledge transfer through mobility within Europe and between
Europe and the rest of the world is an important aspect of making researcher careers more attractive and contributing to the recruitment of young researchers.

Marie Curie instruments supporting industry-academia cooperation and cooperation in doctoral education is of specific interest. Increased budgets for Industry-Academia Pathways and Partnerships (IAPP) and Initial Training Networks (ITN) would contribute to closer ties, better understanding and long term cooperation between sectors.

4. Excellence as criteria
Scientific excellence must be the decisive criteria when research and innovation projects are being selected for funding regardless if it is a fundamental research projects or a demonstration project. Without excellence in the research base we believe that it will be difficult to obtain success in innovation. When applications are otherwise equally evaluated, scientific quality should be the decisive criteria.

5. Instruments and simplification
NTNU appreciates the European Commission’s continuous work to simplify the administrative routines for the framework programmes and we are pleased about the fact that this is put explicitly on the agenda for the next framework programme when it comes to issues such as IT, support systems and administration in general.

We would however like to underline that it is important that instruments are developed which are especially designed for specific purposes and that too much streamlining when it comes to how instruments are set up should not come at the expense of tailor-made solutions. In the innovation chain of research projects at different stages in the chain will require different kinds of support and projects types. Projects close to commercialization and the market would call for other means than fundamental research projects. This is also the case for evaluation criteria for the different instruments. We believe that it is important in the development of instruments that these considerations are taken into account throughout the new common framework programme. The demand for simplification must not come at the cost of specially designed instruments to achieve specific goals.

6. International cooperation
NTNU finds that the next framework programme must continue to put emphasis on and support cooperation with partners outside of Europe as an integrated part of the programme. The European framework programme for research and innovation should be a driving force and a key instrument also for cooperation with partner institutions outside Europe. This applies to cooperation with leading knowledge driver such as the USA and Japan with world leading basic research as well as
cutting edge innovation. It also applies to growing research and innovation nations such as China and India where enormous resources are being invested in the research and innovation system.

Cooperation with third parties should be stimulated not only through the bilateral agreements between the EC and these countries, but also through targeted instruments and clear rules for participation and funding. The People specific programme could be given the responsibility for a strengthened emphasis on international cooperation in the next framework programme especially when it comes to mobility. But an international dimension should be integrated in all programmes throughout the new framework programme.

6. Joint Programming Initiatives

NTNU fully supports cooperation across Europe to find research based solution to the grand challenges the global community faces. The global challenges strengthen and revitalize the role of research and innovation as key contributors, and make the societal assignment of the universities vibrant. In order for the JPIs to succeed cooperation across sectors are needed where universities, research institutes, industry and public bodies work closely together. In order for the JPIs to succeed, coordination with national research priorities is important and the relationship and the interdependence between national programmes and funding and JPIs must be handled. The balance between fundamental research and close-to-market-research and innovation is also an important theme for the JPIs. The JPIs must include both long-term basic research as well as innovation activities and basic research projects should be set up in all JPIs.