



## **Re : CEA's response to the Green Paper "Towards a Common Strategic Framework for Research and Innovation".**

### **Working together to deliver on Europe 2020**

#### **1• How can a Common Strategic Framework make EU funding more attractive and easy to access?**

- Get and develop a shared vision of the innovation chain and processes and of specificities/sector (eg: Set-Plan)
- Get a clear view of existing organization of RDI through cartography of actors depending on country, sector...
- Give a clear description of tools (communication on tool mapping).
- Simplify administrative steps and harmonize funding tools, reduce time to contract
- Implement the European innovation partnerships as strategic federation of all actors and initiatives
- Support the open coordination method whenever possible

#### **2• How to cover the full innovation cycle: research to market?**

- Adapt instruments for each step of the value chain through tailor made integrated approaches for different stages of the Value Chain and make coordination between them
- Introduce "Value Chain Correctness" as a selection criterion of future EU projects. This means that both, upstream and downstream part of the value chain should be represented in project consortia.
- Get a better follow-up of successful outputs, efficiently support technology transfer
- Foster federation of actors along the innovation chain
- Implement well adapted intellectual properties rules ensuring the exploitation of European RD results firstly in Europe (Bay Dohl Act IPR model, applied in the US)



- Use the pre procurement mechanism for close to the market research
- Don't forget to include financing for immature technologies ( ex: hydrogen technologies)
- As proposed in the interim report from the HLG KET, if Europe wants to successfully cover the innovation cycle, it has to better support product development activities comprising testing, proof of concept, piloting, demonstration, and standard setting.
- This requires firstly putting in place pilot lines having the technologies and prototyping facilities to enable the fabrication of a significant quantity of innovative products. Secondly, the product validation in terms of its user performance requires deployment operations at a significant scale, on European sites protecting the technological advance achieved. In both cases, the objective is to make a demonstration at real scale of the relevance in terms of user value and the competitiveness of new products.

### **3• Where to act at EU level (and leverage other resources)?**

- where transnational collaborations get an actual added value (acceleration of work, exploring new routes, reach critical mass, regulations and standards)
- where European 'brand' may be attractive for international partners (ERC excellence)
- European funding should support in priority the mastering, developing and deploying of strategic technologies such as key enabling technologies (nanotechnologies, nanoelectronics, advanced materials, biotechnologies, photonics, advanced manufacturing systems) and applicative technologies (security, energy, transport...) to remain independent vis-à-vis world competitors.
- European funding should target in priority the segments of the value chain where Europe wants to remain present and independent from competitors (see failure of the European PV value chain, as a negative example)
- European funding should target in priority the segments of value chain having a more important leverage effect
- Develop technologies where Europe can undoubtedly get independence towards rest of world

### **4• How to support joint programming between Member States?**

- First give a clear and sensible delimitation of what JP is or should be.



- Support through involvement of effective and representative national players like RTOs in the implementation and management of those programs.
- Through funding of specific activities by EU funds, such as coordination activities, mobility, networking, common labs, R and I activities...
- Through European political support (such as Set Plan) addressing grand challenges for which a contribution from RDI is expected
- Carefully adapt rules to allow simultaneous and effective allocation of European funds and national funds on competitive bases. Devote European funds to very specific actions 100% funded (like joint European labs). Avoid actual common pots.

#### **5• What balance between large versus small projects?**

- Larger projects effectively integrating RDI, are expected to give more impact to European common research. Too many coordination actions were supported so far with few visible impacts.
- Large and strategic projects -with small consortia- should be prioritised for supporting close to market RDI activities such as demonstration activities through pilot lines.
- Strategic research (Grand Challenges) must be supported through large programs, so that the ratio large/small must be increased.

#### **6• What balance between standardisation versus flexibility in the rules?**

- Clear, light and simple rules don't need flexibility.
- Main problems are due to interpretation of rules.
- Consortium: possibility to join or leave the consortium during a project – see Austrian PPP model
- Duration of the project: project to be stopped if no result/prolongation to be considered if very successful
- Joint programming may help giving flexibility

#### **7• What measures of success?**

- One of the problems is the delay between the decision and implementation of an action and its impact: monitoring and evaluation must be run over long time periods.



- Monitoring and evaluation must allow stopping a dead-end project, which is not usual so far.

## **8• How to complement national, regional and Cohesion Policy funding?**

- Better use of structural funds on RDI projects becomes compulsory!
- On RDI projects requiring high level of investments (such as demonstration activities through pilot lines), mechanisms creating synergies between national, regional and Cohesion policy funding should prevail.
- A mechanism of labelling/brand to stimulate the flow of a project over the chain of innovation must be drawn up. On a specific project, develop a program/resources/impact engineering to leverage efforts from different sources (business plan). Identify structures to carry out this engineering (eg KIC are expected to play each a role in their ecosystem, education/innovation/entrepreneurship)
- The EFRE regulation (1083/2006) states under Article 54 (5) should be modified: An expenditure co-financed by the Funds shall not receive assistance from another Community financial instrument. Proposal: 54 (5) should be eliminated completely or amended to allow at least co-financing of KETs related Community programmes.
- Explore and implement smart specialisation strategies in future Cohesion policy and at regional level, in particular on key enabling technologies where spillover effects can feed downstream and upstream parts of the value chain throughout Europe.

## **Tackling societal challenges**

### **9• How to focus on societal challenges?**

- Grand challenges should be defined by consensus at political level. They should not be the resultant of different lobby forces acting for their immediate interest but of a global societal approach. EC texts must structure the global approach (eg Climate-energy package + Set-Plan)



- Of course a research focused on grand challenge solving is a result oriented research, less in favour of curiosity driven research. Both categories of researches have to be supported in different funding instruments.
- Anyway, grand challenge solving must not be a pillar but represents common objectives along the innovation chain.
- In fact a program on grand challenges will certainly be difficult to build because of transverse character of such challenges, which sub-programs can we expect?

#### **10• What scope for bottom up activities?**

- Bottom-up: So far we have 30% of FP funding dedicated to bottom-up activities.
- If the Commission intends to get a strategic impact on the common European research agenda, it needs quite a high percentage of the total budget devoted to top-down actions.

#### **11• What support for policy making and forward looking activities?**

- About 80 Eranet are running so far for this national policy coordination, do we actually need more?
- Launch few but relevant and targeted coordination actions dedicated to support policy making and forward looking
- Forward looking activities could be endorsed by JRC and future ex-ESF structure. They may be included in the framework program as well, like in FP7.

#### **12• Role of the Joint Research Centre?**

- A role of counsellor for European institutions, of expertise referent through coordination of expert group across Europe.
- Must keep scientific skills through high level of staff turnover

#### **13• How to involve citizens?**

- Societal appropriation is of utmost importance for future development of RDI activities (see public opinion negative on GMOs and nanos in some Member States). This aspect should be considered with major attention.



- Through debates and conferences involving citizens at regional, national and European levels, but also involving representatives from local regional and European (European Parliament, Committee of Regions, etc.) public authorities
- Support the appropriation of innovations and their impact on society by citizens
- Increasing the awareness of young people with concrete actions

#### 14• How to take account of non-technological innovation?

- The framework program is dealing with research and may tackle innovation issues when related to research, even non technological ones. But it is not supposed to deal with non technological innovations unrelated to research! Nevertheless societal acceptance of new technologies must be included somewhere, for instance in society and human science programs.
- EIT and CIP already address this global approach to innovation. Such activities should therefore be maintained.

### Strengthening competitiveness

#### 15• How to strengthen industry participation, including public private partnerships?

- Industrial participation to the CSF will be highly raised if CSF targets key strategic step in the innovation process comprising non-competitive RDI activities focused on product development (demonstration activities through pilot lines, large and real scale demonstrators). Industrial participation will therefore be improved if the scope of R&D is extended to demonstration activities in a higher percentage as it is in FP7.
- Industrial participation will improve if decision mechanisms (for the selection of project, grant agreement negotiations, State Aid evaluation, etc.) are speeded up.
- In particular, for the domain of KETs which includes nanoelectronics, it is suggest to optimize the JTI tool. In this regard, we support the proposal of Commissioner Kroes as outlined in her response to the interim review of JTIs, proposing "to extend the operational activities of potential PPPs to encompass accompanying measures such as infrastructure and large demonstration actions" and including the concept of "combined funding from different sources " (First interim evaluation of the ARTEMIS and ENIAC Joint Technology Initiatives, Communication from the Commission, 16.12.2010, Brussels, COM(2010) 752 final). In particular



we suggest the possibility of accelerating the implementation of mid-term HLG KET recommendations by elaborating a proposal for KET demonstration activities (pilot lines) utilizing the tri-partite ability of JTI tools and based on the following principles:

- Mutual commitments between Industry, regions (where appropriate), member state(s) & European Union;
- Call for proposals with detailed specification focused on demonstration activities / pilot lines;
- Utilization of objective based indicators (commitments of industry);
- d) Simultaneous signatures and disbursement of payments of EU and member state(s), region(s), (when appropriate);
- In addition, the activities addressed by the Competitiveness and Innovation Programme (CIP) dedicated to demonstration and non technological innovation should be maintained in future CSF.
- With the next FP, the Commission should give great incentive to advanced industries for massive reinvestment in European research. Projects addressing market demands must therefore be supported (eg drug safety), which the industry could be more interested in. For instance, in nuclear projects, electricity industries are looking for common safety solutions to strength them against safety regulations.
- Those large projects should involve a restricted number of partners and be framed with adapted property rules.
- European Union could give a more important role to the next FP including it as research component into an actual industrial European policy. But flexibility and reactivity will both be necessary for re attracting industries, specifically SMEs into European programs (reduce time to grant).

## 16• What support for SMEs?

- Importance of chosen models for intellectual property to increase efficient cooperation between partners and to ensure more regular transfer of technology to industry.
- In particular, the principle of intellectual property exclusivity by geographic area, business sector, market or technology for SMEs to gain a firm foothold in the market they have their sights on.
- Keep the principle of a specific program line for SMEs (capacities)
- Support SMEs local environment through support to regional clusters



## 17• Use of open, light and fast schemes to explore innovative ideas?

- The ERC initiative alone cannot solve all fundamental research issues.
- It is therefore vital to maintain and expand the 'Future and Emerging Technologies' (FET) scheme from ICT to the other areas of the Cooperation programme (particularly health, nanoscience, energy, the environment, etc.).
- Involvement of end-users, of designers (eg: Ideas lab in Grenoble)

## 18• Use of financial instruments (equity, debt)?

- The RSFF (Risk Finance Share Facility) co-financed by the Commission and EIB should target more strategic projects requiring higher levels of investment such as globally competitive manufacturing facilities, as proposed in HLG KET interim report.
- RSFF should also target not only key sectors but also key enabling technologies (nanotechnologies, nanoelectronics, advanced materials, biotechnologies, advanced manufacturing systems) for their high impact on growth in a full range of European applicative sectors (aeronautics, energy, health, transports, etc.).
- Getting equities and debts with favourable market conditions (like in China)

## 19• New types of support (public procurement, prizes)?

- The pre-procurement process: frequently applied in the United States, is referred to in the communication 'A Union for Innovation'.
- This extremely interesting system could encourage innovation and support the competitiveness of European companies, but if it is included in the FP, comes with the risk of consuming a large part of the resources.
- We therefore believe that this system should be supported but we recommend examining its funding in detail by coordinating the FP, structural or CIP funds, depending on the type of product to be developed.

## 20• Treatment of Intellectual Property Rights?

- Europe should implement a strong IP policy protecting the results of R&D projects financed by EU programmes, by imposing the compulsory a first exploitation of results in Europe (Bay DohI Act model implemented in the US). The High





Level Group on Key Enabling Technologies is currently proposing the same proposals.

- Every player in the innovation chain, from basic research to demonstration studies, is faced with the need to protect the results they obtain.
- We must also emphasize the fact that “open innovation” must not be confused with “free access”. Intellectual property is recognized as a tool to structure and regulate Open Innovation. Conversely, “free access” results in low incentive to trace and protect intellectual property, in turn reducing impact in terms of cooperation and transfer of technology.
- Define a first mandatory period for patent and licence exploitation in Europe

### **Strengthening the science base and the European Research Area**

#### **21• Stronger role for the European Research Council?**

- CEA maintains its support for the ERC programme, provided that it keeps the same single goal of excellence in scientific and technological research. Hope that the gaps between the flexibility and streamlined management promised to researchers and the reality on the ground will quickly be closed. Removing the obligation to have interest-bearing accounts.
- We do not consider it appropriate to introduce a third intermediate category between the two current ones: it would weigh down the system and remove the instrument's current incentive to progress towards excellence.
- So that certain countries can benefit under the ERC programme, one solution could consist in offering grants with two host entities, one of which would “sponsor” the fellow by allowing him to take advantage of its facilities and skills, which would then enable him to develop his project in his home country.
- We must also raise a point about the portability of intellectual property (IP) in the event that the grant-holder researcher leaves his employer: in this situation, negotiations must have regard for the specific rules of employer structures.

#### **22• EU support to improve Member State policies?**

**Comment l'UE peut-elle aider les États membres à progresser vers l'excellence?**

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#### **23• Greater support to mobility and research careers (Marie Curie actions)?**



- Major issue: too long time-to-grant induces cancellation of numerous excellent applications
- All the tools that foster such mobility must be maintained and optimised to remove the obstacles that still hinder free movement of research staff: health insurance and pension contributions...
- As regards mobility tools, the Marie Curie ITNs are extremely beneficial for research teams and for young researchers. The benefits are reflected in the low success rates recorded and justify significantly increasing the sums allocated.
- Alongside the individual Marie Curie fellowships that must be maintained, the Co-fund programme for mobility of experienced researchers should be scaled up. An extension of this type of programme to PhD students would be greatly appreciated.
- An initiative in favour of the mobility of researchers employed in the EU and related states could be put in place for short stays along the same lines as the IR-SES (*International Research Staff Exchange Scheme*).

#### **24• Actions to strengthen the role of women?**

- Let us be inspired by experiences such as that of Women in Nuclear (WIN), association implementing a lot of measures to increase women participation in nuclear field.
- Our organization supports EC for follow-up of gender issue indicators

#### **25• EU level support to research infrastructures?**

- ESFRI process: positive contribution FP7 made to the question of European research infrastructures. As a result, the question of new infrastructures has been formally taken to the political level. The infrastructures and particularly those that will enjoy ERIC status, will be eligible in the ERA for co-funding at EU level. They will offer equitable access to research facilities and to modern technological demonstrators of international dimension.
- However, the ESFRI process should endeavour to clearly redefine the term 'research infrastructure' by including technological research infrastructures:
- technology integration platforms: driven by public research and technology drivers (such as RTOs) with strong industrial (end-users) guidance. TRPs integrate academic engagement with technology transfer initiatives to create prototyping capacity. Research technology platforms will be regionally based service infra-



structures that can provide the capacity to test and prototype under real production-world conditions/scenarios. They will make available existing production facilities and provide open access to partners from other regions of Europe .

- compulsory criterion of centralised governance.
- Furthermore, the European Commission should focus its financial contribution on real world-class research and technology infrastructures. The ESFRI demands greater involvement of the management of major research organisations very early on in the process to avoid making decisions that are not based on realities on the ground.
- As regards major international infrastructures, the CEA recommends reserving specific budgets outside the FP and creating the capacity to meet European commitments through managerial margin control.
- The pre-procurement system combined with design and pre-construction studies of infrastructures to compare and qualify alternative technologies deserves to be developed. It could particularly be developed for research into generic technologies like instrumentation.

## 26• Priorities for international cooperation?

- The existence of the recently created 'Strategy Forum for International Cooperation' (SFIC) confirms the Commission's intention to better coordinate international cooperation initiatives in its programmes. We believe it would be appropriate to include its recommendations in the FP8 work programmes.
- All the new instruments (EIT, Alliances, JTI, etc.) also develop an international component to convey their image abroad and to take advantage of input from competent players outside Europe. The international policy developed under FP8 must take the international strategy of existing structures into account.
- better link to do between inter countries bilateral agreements and topics for international scientific cooperation in WP
- Regular check of definitions and classification under categories of countries (emerging countries)
- EC must be aware of China capacities to develop technologies on its own.

## 27• Addressing obstacles to the European Research Area?

- Simplification again and again