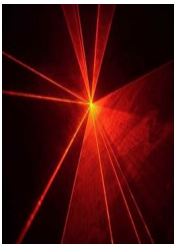




Italian National Agency for New Technologies,  
Energy and Sustainable Economic Development

## REFLECTIONS ON FP8 (non - paper)



July 2010

## ENEA

*ENEA is the name for the Italian National Agency for New Technologies, Energy and Sustainable Economic Development.*

*Pursuant to art. 37 of Law no. 99 of July 23rd, 2009, the Agency's activities are targeted to research, innovation technology and advanced services in the fields of energy - especially nuclear.*

*The Agency's main research issues are as follows:*

- **ENERGY:** Nuclear Fusion; Nuclear Fission; Renewable Energy Sources; Energy Efficiency; Advanced Energetics.
- **SUSTAINABLE ECONOMIC DEVELOPMENT:** Environmental Characterization, Prevention, and Recovery; Environmental Technologies; Seismic Engineering; Radiation Biology and Human Health; Sustainable Development and Agro industry Innovation.
- **NEW TECHNOLOGIES:** Radiation Applications; Material Technologies; Environmental Energy Modelling; ICT.

*ENEA also provides agency services in support to public administrations, public and private enterprises, and citizens: Energy efficiency (support to public administration, information and training); Technology dissemination and transfer; Component and system qualification; Radiation protection; Metrology of ionising radiation; Support to the national programme of research in Antarctica; Technical and scientific products and services.*

*The nine ENEA Research Centres and five Research Laboratories – located all over Italy – are endowed with a wide range of expertise, advanced facilities and instruments put at the disposal of both ENEA's research programmes and the Nation's scientific and productive world. ENEA also operates through:*

- a network of territorial offices providing information and consultancy services for local public administrations and enterprises
- an ENEA-EU Liaison Office in Brussels with the purpose of promoting and strengthening the image and participation of ENEA within the EU framework.

*ENEA Headquarter is located in Rome.*

### ENEA Research Centres and Labs



## Introduction

In the frame of the current debate on the European research policy and the forthcoming Research Framework Programme, ENEA wishes to contribute to the dialogue by providing some preliminary thoughts on the matter.

The following paper represents a first position of ENEA, the Italian National Agency for New Technologies, the Energy and the Sustainable Economic Development, which might be further developed once some other key documents such as the Research and Innovation Plan, the ERA action plan and the FP7 interim evaluation will be issued.

The main points tackled in this paper refers to:

- Analysis of the way towards FP8
- “Funding per programmes” model
- Creation of European Thematic Strategic Research Alliances
- Research and Innovation
- Harmonisation, consistency, transparency
- Communication of European R&D
- International cooperation dimension of the ERA

### **From FP7 to FP8: gradually, smoothly and in continuity**

1. The implementation of new funding schemes/initiatives has always characterised every FP change. The big novelty of a FP longer than in the past could represent an advantage as it could allow for a proper assessment of the potential new instruments that will be introduced in the FP8. It is in fact mandatory to avoid “shocking” effects like the one that happened with the appearing of Integrated Projects in the passage from FP5 to FP6 (causing an initial decrease in participation of key players like SMEs) and leading to the need to revise such instrument in the current FP. This could be achieved by exploiting the second part of the FP7 and by analysing all the mechanisms used so far to create “experimental calls” for the new instruments allowing to consider potential corrective measures, if necessary, before fully entering into the FP8. In any case, collaborative research instruments that proved to be successful need to be continued and improved so to guarantee an appropriate “known framework” to those stakeholders that do not have the necessary dimension or timely approach to face big changes. In addition, possible new instruments or funding mechanisms that might arise during the time frame of FP8 should be financially covered by supplementary budget avoiding the reduction of the FP8 budget once it will be defined
2. ERC should be continued and reinforced as it represents a source of future industrially exploitable results which are necessary to keep the European competitiveness on an appropriate level. IDEAS project’s evaluation procedure should be reconsidered as the simple application of the average of the scores of the evaluators gives too much weight on the side of the single one. Evaluation by consensus as for all the other evaluation processes of the EC would guarantee a better compromise even in view of an homogenised approach among all the funding schemes.
3. Moreover, it should be considered the transfer of promising schemes like the FET Flagships initiative from the ICT field to other relevant areas like Energy, Materials and others where multidisciplinary visionary high risk long lasting projects can pave the way to the future technological trends in such fields where Europe will then play a major role worldwide.
4. To improve the research effectiveness at EU level in the framework of collaborations like the ones presented before (Research Alliances, Joint Programming Initiatives), European Research Infrastructures support should be reinforced to accelerate the establishment of the ERA. Such infrastructures must be designed and realised in a sustainable way so to contribute to the achievement of the objectives of the Flagship Initiative “Resource efficient Europe” defined in the Europe 2020 strategy.
5. For the completion of the "knowledge triangle" where the research part is strongly covered by the FP calls and topics, an important pillar to create the link and give the right relevance to education and Transfer of results related to the strategical European research areas is represented by EIT. Even if in its early stage of creation, with the recent launch of the first three KICs in the Climate Change, Energy and Future ICT areas, the EIT has already shown a lot of potential. Given the limited budget at disposal, not all EU countries and not all the relevant key players in each of the fields concerned are currently represented or are having an active role into it. EIT support should be reinforced with the inclusion of all potential relevant stakeholders and countries so to guarantee an appropriate coverage at EU level both in terms of strategic educational programmes for the future generation as well as in terms of technology transfer of relevant research results. One of the reasons of a per country enlargement of involved stakeholders lies for example in the cultural differences that exists at single country level leading to the need to properly adapt the single educational programmes so to achieve the maximum potential impact.

6. One of the aims of EU2020 strategy is to reinforce economic, social and territorial cohesion "*to ensure that all energies and capacities are mobilised and focused on the pursuit of the strategy's priorities*". The link between cohesion policy and support to transnational R&D activities should be supported along two main lines: 1) by reinforcing the alignment and increasing the synergies between cohesion policy and R&D&I policy, thus addressing the present fragmentation of EU funding instruments on the matter, and 2) by foreseeing adequate measures which could combine the cohesion goals with scientific excellence ones. The goal of excellence is compatible with the cohesion goals and it can represent a booster to accelerate the bridging of the gap between least developed and more developed regions in the scientific field. The transnational component of the support offered by FPs is pivotal and will help actors to better compensate weaknesses and harness their potential.

### **Towards a “funding per programmes” model in a structured and progressive way**

7. New collaboration schemes to enhance European research are currently appearing. Such innovative approaches (Joint Programming Initiatives, Thematic Strategic Research Alliances) together with existing schemas (ERA-NET, Art. 185 – ex 169) are all pointing towards the establishment of joint pan-European programmes of research through harmonisation, optimisation and coordination of national activities/resources. This will imply the need for a creation of specific general organisational models to be applied at country level (mirroring initiatives, or other forms of organisation) so to maximise the potential involvement of all the relevant stakeholders in the above mentioned initiatives (with specific reference to the “new” ones).
8. It will be necessary to reinforce the role of the European Commission as facilitator/supervisor for the creation and the implementation of such models at country level. This will be of key importance in order to avoid to have a “two speeds” Europe in contributing to and taking advantage from the establishment of joint research programmes whatever the instrument for their implementation will be.

### **Supporting the creation of European Thematic Strategic Research Alliances to accelerate the achievement of results**

9. Every field of research has too many topics to be tackled by a single institute while on the other side there is a wide European number of research centres with considerable knowledge in all scientific fields. In order to accelerate the achievement of results, the creation of European Thematic Strategic Research Alliances could represent a potential solution as demonstrated by the successful example of the European Energy Research Alliance (EERA). In such alliances, the research centres create joint programmes of research in a specific field by aligning national programme’s resources and coordinating themselves to avoid duplication of effort and fragmentation.
10. Specific support for the creation of similar alliances in other key areas like Climate change, Materials, Food and many others should be considered as a part of the FP8. Moreover, specific actions to interlink such alliances with corresponding thematic Joint programming initiatives should be considered. This will probably have a great impact in the definition of national funding programmes and research policies especially if, as said in the previous paragraph, mirror national alliances will be created with the aim to maximise the contribution to EU alliances at the single county level.

### **Research and Innovation**

11. According to the Europe 2020 strategy, research and innovation activities should be better linked and new instruments to strengthen the innovation dimension should be pursued. Being

SMEs important drivers of innovation, their involvement in research and development must be increased with the urgent need for translational research, to shorten the time taken to move forwards research into practical application.

12. A critical stage in the innovation lies in the transformation of academic research results into industrial innovation. Progress has been accomplished by the specific SME programmes and measures at EU level, but this remains an issue on which Europe is lagging behind the US. There is gap between the end of research activities and the stage at which not only industry but also banks and even business angels are ready to invest. This gap is often referred as "proof-of-concept", i.e. this small bit of development necessary to demonstrate that a technology can be applied industrially. It is then essential to attract investors. As public funding often stops at the pre-competitive level, there is the need to fill the gap between pre-competitive research and commercialisation of the end-product or process. SME should be able to benefit from specific grants (i.e. new funding instruments) to foster the Transfer of Technology from Research to Industrial Application. In line with the EU2020 goal of developing "*the potential of innovative financial instruments*", the Commission should establish mechanisms to support those who are ready to make substantial effort in marketing their technology and carrying out a proof of concept. Concretely, this funding mechanism would be different from the demonstration activities covered in FP collaborative projects because it should have a bottom-up approach (like ERC, COST, or SMEs actions), it should fund individuals, university research teams, universities spin off, SMEs which are not (necessarily) involved in well structured consortia which already combine universities and industrial partners, and it should foresee several application dates every year with proposals evaluated within a short deadline by a panel of experts.
13. In parallel with the goal of conceiving new instruments for innovation support, the Commission needs to promote a more effective management and use of the results and IPR originated by the international R&D collaboration, with the aim of increasing the impact of the projects on competitiveness and business innovation. To this aim, the establishment (at project level) of a structure in charge of knowledge transfer activities should be considered and warmly encouraged. In particular, a possible idea is to foresee the establishment, at the project consortium level, of an "IP&KT Board", which should have the task of addressing and monitoring all type of Intellectual Property and Knowledge Transfer issues that may arise (e.g. results disclosure, licensing, dissemination, protection, definition of background, definition of exploitation strategy etc). This Board would bring together the representatives of each consortium participant (and, possibly - external experts, whose cost could be covered through part of the co-funding).
14. Apart from maximising the use of existing schemes and instruments, including the coordination of national initiatives, the FP should expand the scope of frontier research (European Research Council - ERC) by giving the possibility to both research-performing and research-acquiring SMEs to participate to the mentioned initiative, which is currently limited to research organisations. In this way, both SMEs and research centres will profit from their enhanced collaboration, and the bilateral flow of scientists/technicians among the hosting public and/or private institutions will increase the exchange and transfer of innovation to and from the private sector, a fact that ultimately will increase the effectiveness and impact of market driven R&D.
15. The CIP has demonstrated to be an important new instrument aiming at promoting the innovative potential of European enterprises. However, major concerns related to its effectiveness regard the establishment of adequate synergies with the other funding programmes (especially those R&D supporting) and the lack of critical mass, which affect the perceived

impact of such programme. In order to maximize the benefits stemming from such an innovative instrument, we suggest to increase the link between measures generating R&D results and CIP, in order to favour and adequate dissemination and the valorisation and uptake of those results. In addition, the scope of the CIP should be widened in order to make it possible to fund initiatives for the demonstration and the uptake of solutions in any strategic EU sectors. In order to achieve a sufficient critical mass capable of generating impact, the CIP budget for the next programming period should be increased.

### **Harmonisation, consistency, transparency**

16. ENEA welcomes a number of documents put forward by the Commission during the last months addressing the need of simplification in the rules and procedures of participation to the Framework Programme. At the same time, the set up from the EC of a FP8 Preparation Committee as well as of the Framework Programme Steering Group to facilitate discussion within and between the DGs, is really appreciated.
17. The issue of a common system with common eligibility rules that will allow simplification and a better management of the several initiatives and programmes launched at European level is of major importance. Unfortunately, till now, harmonization of participation rules between different programmes is lacking. Furthermore, within some new initiative (e.g. JTI, Article 185 – ex 169, PPP) rules for beneficiaries are different and not user-friendly creating some misunderstanding and demotivation in the scientific community. ENEA strongly encourages the harmonisation of easy-to-use funding measures, at least within the same initiative or scheme, and the utilisation whenever possible of FP-like rules and procedures of participation in order to avoid any misinterpretation rules and/or mismanagement of projects.
18. In order to obtain acceptance from the research community and to increase competitiveness, the regulatory framework should support risk-taking and should also be trust-based. Research is based on risk, so the regulatory framework must be established on the basis of a widely shared definition of “tolerable risk”. The balance between costs and benefits of controls must take into account also the margin of risk that's necessary to help scientific research.
19. Coordination among several DGs and Commission’s Agencies must be ensured. It has become evident that due to the complexity of portfolio and intervention mechanisms there is a lack of coherence and consistency among DGs with regard to the interpretation and application of some rules and procedures. A common approach by all DGs and Agencies is required including the support by the EU project officer in facilitating the guidance along the different mechanisms and throughout the lifetime of the project. This will certainly facilitate the participation to the next research Framework Programme.
20. A more structured approach to the timing of the call publication is required. Apart from the need to avoid deadlines directly after common break periods (e.g. after summer, beginning of the year), the possibility to have fixed launches and deadlines as well as permanently open calls (with cut-off dates), as it is already occurring with some EU funding instruments, should be envisaged.
21. Transparency in the definition of work programmes is more and more needed. While the role of Programme Committee, Advisory Groups and other similar bodies to individual parts of the Work Programmes should be maintained if not reinforced, the evolution of the annual Work Programmes and priorities that will be probably object of future EU funding should be at earlier disposal of the scientific community. Because of fairness and transparency, earlier access to draft Work Programmes should be ensured in such a way that all parties have equal access to

the same set of information at the same time across Europe and worldwide. This openness and disclosure does not prevent the Commission, the PC and similar bodies to change part or all of the specific work programme.

### **Communication of European R&D**

22. Excellence and high quality in transnational research is an aspect strongly supported by the European Commission through the Framework Programme. Outstanding results are often achieved through projects and initiatives, overtaking and competing with the results developed by extra European actors. Nevertheless, communication among and beyond scientists, lacks sometimes of proper sharing of scientific outcomes, impeding broad dissemination, understanding for the general public and access from business. Too often, the technical language or the lack of exploitation of existing instruments fail in reaching the proper audience. The establishment of a targeted strategy through specific models for communicating research results under the FP8 should be set up, in order to share the value and the potential of European research flagship scientific achievements. Scientists should be brought closer to communicators, fostering the potentialities and exploitation of the best cases of the European research. As a natural effect of a proper communication, the general welfare, the economy and the sustainability of the European territories would benefit from the application of the research results into reality. In doing so, the trends and instruments provided by current information and communication society should be exploited, so as to make research more comprehensible, attractive and accessible to European citizens.

### **International cooperation dimension of the ERA**

23. The relations with external actors play a key role for the positioning of the European research into the international scientific arena. Through exchange, comparison and collaboration, the European Research Area can benefit of external inputs and put into practice own research potential into new fields of application and demonstration. In this perspective, relations with competing countries and emerging economies may lead to better addressing the opportunities given by an interconnected world. It is not a matter of basic cooperation, but also of developing the attractiveness of Europe as a research partner, strengthening current links with external actors and making the most from those synergies with countries which are better positioned or lead novel technologies in a given scientific field.

24. With regard to cooperation with developing countries, technical assistance, S&T capacity building and scientific cooperation should continue to be encouraged. This type of cooperation, nevertheless, should not be confined to mere research cooperation, but also to technological and innovation transfer into local economic/social domains, thus flourishing local business tissues and establishing useful relations beyond the research field between Europe and these countries.

25. The implementation of the already mentioned Thematic Strategic Research Alliances can increase the attractiveness of Europe as a research partner. These alliances, by allowing to present a European critical mass of research centres, competences and workforce in any area of relevance could help to increase the image of Europe as a “single referential actor” which is certainly of value in the potential relationships with countries like USA and Japan.