



16 May 2011

Taking EU support for Research and Innovation into a new era

- Towards a common strategic framework

INTRODUCTION AND EXECUTIVE SUMMARY

This position paper presents BUSINESSEUROPE's views on EU support to research, development and innovation (RDI) during the next multiannual financial framework of the EU (MFF). It also constitutes BUSINESSEUROPE's contribution to the public consultation on the "Common Strategic Framework for EU Research and Innovation Funding" (CSFRI).

As pointed out in the Europe 2020 Strategy, RDI is a key tool to sustain economic growth and employment in Europe. The Communication on the Innovation Union flagship from October 2010 sets an appropriate basis for future EU action in the area, but it stops short of stressing the need for increased financial public support. As the Innovation Union Scoreboard 2010 points out, the EU is lagging behind other developed economies such as the US and Japan and risks being overtaken by emerging economies such as China in the medium term unless a new, holistic approach to RDI is forcefully applied. This approach must cover everything from improved regulation and market conditions to increased and more effective cooperation enabled by adequate public sector financial support. As emerging economies already have other advantages over the EU, the EU's competitiveness, prosperity and ultimately ability to provide decent living conditions for our citizens is at stake in ever increasing competition on globalising markets.

The role of the Common Strategic Framework for EU Research and Innovation Funding in the overall context of EU policy is therefore crucial. We call in particular in this paper for:

- More weight to RDI in the next multiannual financial framework of the EU and a substantial increase of RDI's share in the overall EU budget;
- A focus on societal challenges, considering that creating sustainable growth in Europe and thereby maintain competitiveness of European business and thus social progress and employment in essence is the greatest societal challenge;
- A broader approach to RDI including innovation that goes beyond the R&D phase;



- More business-involvement in setting the agenda for publicly funded or co-funded RDI and project selection and implementation;
- Strengthened capacity of all actors involved in managing the EU's RDI programmes;
- Radical simplification of governance and administration of the entire process from project selection to implementation;
- Better coordination of EU RDI efforts by agreeing on the overall direction to ensure complementarity across Member States, while allowing for national differences.

Section A presents some general considerations in a holistic manner, while section B presents our replies to the specific questions asked in the Green Paper on the Common Strategic Framework.



A. GENERAL CONSIDERATIONS

A.1 Budget

- Stronger focus on RDI in the next multiannual financial framework of the EU

To gear the focus of the EU budget towards Europe's future as a knowledge-based economy and to leverage private investment, we favour a general shift of financial resources to activities directly targeting Europe's competitiveness and economic growth. The leverage of EU resources should be enhanced by further development of adequate financial instruments and by encouraging and facilitating private investment. RDI is a key factor in this context and its share of the EU budget must therefore be substantially increased in the next multiannual financial framework of the EU.

We also strongly encourage a substantial shift towards RDI in the implementation of *other* EU policies as all EU funds must be used to enhance competitiveness. For example, a part of the Structural Funds could target procurement of innovative products and services. This would help to gear cohesion policy towards areas driving economic growth. Action on the regional level may be of particular importance for small and medium-sized enterprises (SMEs). Likewise, a shift towards supporting research, innovation and growth-driving projects must be part of the future Common Agriculture Policy (CAP).

However, measures must be put in place to ensure that increased EU support to RDI does not discourage Member States from strengthening their own efforts to reach their national RDI targets.

A.2 General focus

- Maintain competitiveness, wealth and employment in Europe by focusing on societal challenges

With the current economic situation and increased global competition, the overarching objective of the Common Strategic Framework must be to create sustainable growth in Europe and thereby maintain competitiveness, wealth and employment in Europe. This, in essence, is the greatest societal challenge that our society will face to the 2020 horizon and beyond. The ultimate goal of EU RDI policy must be to improve the lives and conditions of individuals, but a business-oriented RDI policy is needed to get there. A focus on a limited set of horizontal societal challenges such as climate change, health, mobility and environmental protection, communication, security and innovative manufacturing could be an effective means of simultaneously ensuring benefits for individuals, business and society at large, but only if there is a clear potential for added value in Europe and if Europe has the potential to develop the critical mass to be a world leader or at least significantly close the gap to international competition in a specific area.



If these conditions are respected, gearing EU support to RDI towards major societal challenges would be positive. Underpinning research and development activities regarding horizontal issues with relevance for a series of RDI and business areas and *several* societal challenges (such as key enabling technologies) must also be strengthened, always with the aim of creating added value for Europe.

The suggestion from the “FP7 Interim Assessment Expert Group” to structure future programmes around *science for science* (the researchers set the agenda), *science for competitiveness* (industry sets the agenda) and *science for society* (civil society actors set the agenda) must be compatible with the overarching objective of addressing societal challenges and must properly reflect the fact that the RDI agenda set by researchers and civil society *also* must consider growth potential and competitiveness in Europe.

As a matter of principle, EU funding should only be considered if there is a clear added value of EU intervention. Incentives for cross-border cooperation and mobility of researchers are clearly reasons to act on the EU level, but the emphasis on these elements may have to be loosened. Overcoming fragmentation of EU research efforts and achieving the needed critical mass can be rationales in their own rights even in the absence of a significant cross-border collaboration, provided that there is a clear added value for Europe. Current examples are the European Research Council (ERC) and the FP7 activities on research infrastructures. Overcoming fragmentation can be achieved by pooling different strengths of the member states for a common target. Priorities and areas for action must be coordinated by member states in an open and transparent process. In order to meet the grand societal challenges collaborative projects must contain the best possible partners irrespectively of geographic location. Nevertheless cross border collaborative research projects certainly have a major role to play also in the future as these have effectively promoted integration of European research efforts.

Moreover, EU funding must focus on areas where it is likely to be leveraged by other sources of funding. The current reimbursement levels of the Seventh Framework Programme for Research and Technological Development (FP7) are appropriate tools to ensure private involvement and commitment. Key in this context is to focus on areas with a clear potential for value added in Europe, which will improve the private sector’s willingness to complement EU funds with its own resources. Leverage from venture capital and national RDI programmes must also be considered.

A.2 Specific focus

- A broader approach to RDI

The scope of activities currently eligible for EU support under FP7 must be broadened to cover innovation in the broader sense, including demonstration projects, large-scale trials, test beds, proof of concept and measures to stimulate market uptake. The extended funding must, however, still stick to basic principles such as focusing on “pre-competitiveness” and no distortion of competition and subsidiarity. This can partly be achieved by expanding and improving some of the activities currently supported by the



Competitiveness and Innovation Framework Programme (CIP) into the Common Strategic Framework, although a more extensive change to innovation support is needed.

Although a broader focus on innovation is justified, a strong link between the policy objectives and a thorough assessment of projects' potential to add value must however be maintained. Furthermore, a broader focus on innovation must not result in a reduced budget for the actions presently covered by FP7 (i.e. R&D). Although there is significant room for improvement, the four strands of FP7 (Ideas, Capacities, Cooperation and People) have all shown how the EU effectively can contribute to improving the conditions for European R&D efforts and their continuation in the Common Strategic Framework is certainly justified. A discussion on trade-offs between various support areas is only justified if the EU fails in ensuring a substantial increase of the overall budget for RDI. Moreover, the role of education in securing the supply of talented and skilled researchers and innovators must be fully acknowledged by the Common Strategic Framework. The lack of *STEM skills* (science, technology, engineering and mathematics) is especially problematic for European RDI efforts, not least within the private sector.

A.3 Work programmes, project selection and implementation

- Involve business more in setting the agenda

An important part of the European RDI efforts are presently carried out by the private sector and its contribution to and involvement in EU-funded projects will continue to be crucial for the overall success. Moreover, business is responsible for bridging the gap between RDI and the commercialisation of results that will foster growth. If the Common Strategic Framework is to help deliver this growth, early engagement of businesses in publicly funded or co-funded RDI can offer clear advantages in ensuring that the end results yield clear benefits. Business involvement in setting the agenda for publicly funded or co-funded RDI must therefore be extended to strengthen the focus upon economic growth across all phases of the research and innovation chain.¹ Industry roadmaps should be used to identify priority areas for public research. Likewise, experts in charge of evaluating proposals must better reflect the nature of projects. The need for more private sector experts will be accentuated by a stronger focus on innovation and growth-driving projects.

Moreover, a broader focus on innovation as a driver for growth and as a solution to societal challenges calls for a rebalanced weighting of *impact* and *excellence* when proposals are evaluated, depending on the support area. Award criteria must therefore be more flexible, without diverging from common principles and boundary conditions. The right balance between scientific excellence and impact of the results must be struck.

¹ "Publicly funded or co-funded RDI" refers here to EU and national public support to RDI carried out by the private sector and to R&D carried out by academia.





A.4 Management and administration

- Strengthen competence and flexibility among all actors involved

Grouping all research and innovation activities on the EU level into one common strategic framework would improve the overall coherence of the various actions. Stronger policy coordination on the highest level is desirable and a stronger role of DG Research and Innovation in this regard could be foreseen. However, other policy DGs must continue to be significantly involved in the overall steering and implementation of the future programmes, including DG Enterprise.

Ongoing externalisation of the implementation of the programmes should continue if it is demonstrated that this will bring tangible benefits for research and beneficiaries. The use of Commission agencies or external bodies to run public private partnerships (PPPs) has the potential to improve the effectiveness of the management and shorten time-to-grant and reduce the administrative costs. However, it must be ensured that these bodies develop and maintain competence not only in implementation of the programmes but also in the subject matter of the projects. Policy development and overall coordination and political guidance must stay within the Commission, although the European Research Council's role in policy aspects of future Ideas-like actions must continue. Furthermore, externalisation may actually *increase* the "transaction cost" of the system by adding yet another layer if these entities basically remain subject to the same regulations as the Commission services themselves. Therefore, adaptation of the Financial Regulation will be required to make externalisation effective and efficient. More extensive externalisation to PPPs (including the Joint Technology Initiatives) should also be considered where this is supported by industry.

A.5 Simplification of administrative rules

- Radical simplification of governance, processes and administration

The complexity and rigidity of rules applicable to current financial instruments make it less attractive for business to participate in EU-funded projects. The complexity of governance and "transaction costs" of participation in EU programmes have grown completely out of proportion, with marginal costs of controls and administrative compliance often exceeding the marginal benefits of participating. An overhaul of the administrative framework for EU support to RDI post 2013 is necessary. The Commission's Communication on simplification of the administrative framework from 2010 should serve as the basis for continued simplification. Significant progress has been made during the last year (in particular with respect to acceptance of methodologies for average personal cost calculations), but much more is needed. In particular, there must be a shift from a control-based system to a trust-based system. A reconsideration of the provisions on personal liability of EU officials would be an essential step in this direction.



A.6 Coordination with Member States and Third Countries

- Defragmentation of EU RDI efforts

The objectives of the Common Strategic Framework will not be met if European RDI efforts are not defragmented. Although national specificities certainly warrant a continuation of national RDI agendas in many fields, there must be agreement on the overall direction and rigid systems to ensure complementarity between different sources of funding. Options to consider include expanding and improving present possibilities for partners from a group of Member States to engage in closer cooperation in a certain RDI area. This would improve the coordination of RDI efforts and could be useful to the next generation of Joint Programming Initiatives as well as the emerging innovation partnerships. However, Joint Programming has proven very difficult to implement and current instruments for pooling national funding for transnational collaborative projects are not optimal. For this purpose, a smarter mechanism for pooling national resources will be needed than the currently available instruments. A key concern will be how to strike the balance between national and common interests.

Finally, current RDI cooperation with countries outside the EU is not functioning optimally as international cooperation activities are too much scattered over a plethora of actions, calls, instruments and countries. In the future Common Strategic Framework, international cooperation should be more strategic, aiming at global challenges for which international cooperation is essential. Further facilitation and encouragement of third-country participation in EU-funded RDI projects should be supported only as far as there is some degree of reciprocity, although individual projects in Europe typically profit from international cooperation even in the absence of reciprocity. More strategic and/or better balanced science and technology agreements with third countries should be concluded in this regard. Differences in Intellectual Property Rights must be given special attention in cooperation with third countries and inadequacies in foreign legislation must be counteracted.



B. REPLIES TO QUESTIONS IN THE GREEN PAPER ON THE CSFRI

B.1 Working together to deliver on Europe 2020

1. *How should the Common Strategic Framework make EU research and innovation funding more attractive and easy to access for participants? What is needed in addition to a single entry point with common IT tools, a one stop shop for support, a streamlined set of funding instruments covering the full innovation chain and further steps towards administrative simplification?*

A CSFRI covering and expanding on actions currently governed by FP7 (including the JTI), CIP and the European Institute of Innovation and Technology (EIT, including the KICs) would certainly contribute to improving the overall effectiveness of the EU innovation system, achieving the coherence between various actions, and facilitating beneficiaries' access to support of the various phases of innovation.

The aspects of such a framework the most likely to have a positive impact on private sector participation are streamlined and significantly simplified rules for participation, while streamlining per se will have a positive impact only if the joint rules will reduce the administrative burden of participating in EU programmes. The complexity and rigidity of rules applicable to current financial instruments make it less attractive for business to participate in EU-funded projects. The complexity of governance and the transaction costs of participation in EU programmes have grown completely out of proportion, with marginal costs of controls and administrative compliance often exceeding the marginal benefits of participating. An overhaul of the administrative rules in the preparations for EU support to RDI post 2013 is therefore warranted, but simplification measures that can be achieved without the involvement of Council and Parliament must be implemented immediately. The Commission's communication on simplification of the administrative framework from 2010 should serve as the basis for continued simplification. Significant progress has been made during the last year (in particular with respect to acceptance of methodologies for average personal cost calculations), but an overhaul of the entire administrative framework is warranted. In particular, there must be a shift from a control-based system to a trust-based system, including a reconsideration of the provisions on personal liability of EU officials.

Other much desired simplification measures include:

- Introduction of a separate category for associated partners, which would facilitate formation and management of consortia involving SMEs.
- More flexibility in cost accounting and reporting, allowing for use of standard practices already used by beneficiaries.
- Adaptation of the Financial Regulation to better serve the purposes of PPPs such as JTIs, for example by not requiring these to have the status of a community body.



- Reduce the time-to-grant.²

Wherever possible, the Commission should try to align the rules for the CSFRI with the rules for the Structural Funds and encourage Member States to align their rules, while fully acknowledging the need for differences in certain cases.

Another means of improving the attractiveness of participation for the private sector is to gear the focus of EU support towards areas of clear value-adding potential for European companies, while at the same time tackling societal challenges. The emerging European Innovation Partnerships could, if properly managed and supported by strong involvement from the private sector, contribute significantly to achieving a more strategic and coherent approach.

2. How should EU funding best cover the full innovation cycle from research to market uptake?

The scope of activities currently eligible for EU support under FP7 must be broadened to cover innovation in the broader sense including demonstration projects, large-scale trials, test beds, proof of concept and measures to stimulate market uptake.. This can partly be achieved by expanding and improving some of the activities currently supported by CIP into the CSFRI, complemented with an approach that brings together and stimulates innovation at key stages of the value chain simultaneously, in order to create competition and breakthrough for comprehensive solutions. Innovation all along the value chain can be key for ensuring relevant private investment and for speedier and breakthrough innovations. There must be more room for large-scale pilot projects and demonstration activities than in the current FP, CIP and EIT. Such a change must be accompanied by modified award criteria as scientific excellence is not a key criterion for such activities.

The role of universities and education is key to ensure a satisfactory supply of talented and skilled researchers and innovators. In this context, also universities must fully adopt the concepts of the knowledge triangle in reforming their approach. The interaction between education, research and innovation must also be fully acknowledged by the CSFRI and in particular by the EIT for it to become successful.

State Aid rules (which are explicitly stated to apply also for the current FP7) must be adapted to better reflect the need for public support to innovation in the broader sense. Moreover, different types of instruments must be made available for the various innovation stages (including fundamental research) and the various types of organisations involved. Grants will continue to be important tools to support R&D, while these have to be complemented by debt and equity for projects closer to the market, in

² The proceedings of the PPP “Factory of the future” has shortened the time-to-grant from more than 12 months to 8,5 months and thus can provide good suggestions.



particular for SMEs. Ongoing initiatives of the EIB and EIF to provide – e.g. – liquidity for venture capital and risk-sharing must be enhanced and expanded.

Finally, although a broader focus on innovation in the broader sense is justified, it is important not to use this as an excuse for financing all kinds of activities. A strong link between the policy objectives and a thorough assessment of projects' potential to add value must be maintained. The extended funding must, however, still stick to basic principles such as focusing on “pre-competitiveness” and no distortion of competition and subsidiarity.

3. *What are the characteristics of EU funding that maximise the benefit of acting at the EU level? Should there be a strong emphasis on leveraging other sources of funding?*

As a matter of principle EU funding shall only be considered if there is a clear European added value. Incentives for cross-border cooperation and mobility of researches are clearly reasons to act on the EU level, but the emphasis on these elements may have to be loosened. Overcoming fragmentation and achieving the needed critical mass can be rationales in their own rights even in the absence of a significant cross-border collaboration, provided that there is clear added value for Europe. Current examples are the ERC and the FP7 activities on Research Infrastructures. Overcoming fragmentation can be achieved by pooling different strengths of the member states for a common target. Priorities and areas for action must be coordinated by member states in an open and transparent process. In order to meet the grand societal challenges collaborative projects must contain the best possible partners, who sometimes are found in a limited number of Member States. Nevertheless cross border collaborative research projects certainly have a major role to play also in the future as these effectively have promoted integration of European research efforts. The resulting collaboration networks are unique assets for Europe. Such collaboration projects, large and small, must therefore continue.

EU funding should indeed focus on areas where it is likely to be leveraged by other sources of funding. The current reimbursement levels of FP7 are appropriate tools to ensure private involvement and commitment. Key in this context is to focus on areas with a clear potential for value-added in Europe, which will improve the private sector's willingness to complement EU funds with their own resources.

Measures must be put in place to ensure that increased EU support to RDI does not discourage Member States to strengthen their efforts to reach their own national RDI targets. Links between national and EU funding must be established to maximise leverage.

4. *How should EU research and innovation funding best be used to pool Member States resources? How should Joint Programming Initiatives between groups of Member States be supported?*

Options to consider include expanding and improving present possibilities for a group of Member States to engage in closer cooperation in a certain RDI area. This would



improve the coordination of RDI efforts and could be useful to the next generation of Joint Programming Initiatives (JPIs) and JTIs as well as the emerging innovation partnerships. Joint Programming is in principle a good idea but has proven very difficult to implement and current instruments for pooling national funding for transnational collaborative projects are not optimal. Joint Programming must not be imposed upon Member States and there should be no requirement to mobilise a certain number of Member States before the EU can provide incentives. A significant obstacle for such schemes will be to convince Member States to accept EU funding to initiatives where only some Member States participate. Moreover, the role of Member States in such initiatives would have to be strengthened without complicating procedures for project selection and implementation. For this purpose, a smarter mechanism for pooling national resources will be needed than the currently available instruments. A key concern will be how to strike the balance between national and common interests.

It has to be made clear that the aim is not to replace national policies but to pool the different and thus complementing strengths of member states for the sake of a joint RDI strategy at EU level. The best way to realise such an approach may be to provide transparency and a communication platform about the different innovation strategies of member states. In the case of European Technology Platforms and in PRO INNO Europe supported by the CIP programme, comparing challenges and priorities with other market players proved to be useful for setting common industrial R&D strategies. It may be worth exploring whether a similar approach could also be used more extensively in the cooperation between public funding agents.

(See answer to question 15 for an elaboration on the role of JTIs and interaction with Member States.)

5. *What should be the balance between smaller, targeted projects and larger, strategic ones?*

All sizes of projects and beneficiaries must be properly catered for but the key action is to improve coordination and coherence between projects and the overall policy objectives of certain support areas. Smaller projects may be more efficient and better foster innovation depending on the circumstances, but they must all fit together with the overall objectives of EU support and the CSFRI as such.

However, there is clearly a need for more large-scale projects with strong and sustained industry participation. Such projects may be of particular relevance for meeting societal challenges such as the transition to a low-carbon economy.

Schemes with a strong competitive element between research teams in the first phases should be considered.

6. *How could the Commission ensure the balance between a unique set of rules allowing for radical simplification and the necessity to keep a certain degree of flexibility and diversity to achieve objectives of different instruments, and respond to the needs of different beneficiaries, in particular SMEs?*



All types of beneficiaries will profit from streamlined rules as far as these are drastically simplified. Derogations from the general framework must however be provided for to SMEs and in particular microenterprises. Other differences between programmes may continue to be warranted as there is no “one-size-fits-all”. A unique set of rules will be more beneficial for organisations participating in several projects, whereas an SME participating in only one project will not notice the effects of the streamlining and would benefit more from flexible and purpose-suited rules. However, as effective innovation often requires large firms, SMEs and academia to work together in one project, derogations for SMEs must not complicate the overall management of the consortia.

(On simplification, see answer to question 1; on SMEs, see answer to question 16)

7. What should be the measures of success for EU research and innovation funding? Which performance indicators could be used?

Performance indicators should in principle and as far as possible be output oriented, and should as far as possible be directly related to what is achieved by the EU intervention. However, output indicators have shortcomings such as a time lag between effort and result and the cause-effect relationship.

On the macro level, the ultimate measure of success is European growth and wellbeing, but intermediate measures include progress towards meeting the 3 % target (R&D expenditure as part of EU aggregate GDP), share of national RDI programmes coordinated at European level, and more generally the very relevant indicators in the Innovation Union barometer. The feasibility of agreeing on an appropriate new single innovation indicator requested by the European Council and currently under development by the European Commission is questionable but could in principle serve this purpose. All stakeholders including the business community must be involved in this process.

Factors that should not be considered performance indicators but tools to check coherence between outcome and policy objectives include private sector participation, SME participation and international cooperation. Geographic distribution of funds among Member States may be interesting reading and important to build political support for an enhanced financial envelope, but is in principle irrelevant and contra productive to the some of the basic objectives of EU support to RDI. By no means should there be a hidden agenda to give preference to a fair geographic distribution rather than excellence, impact and relevance.

8. How should EU research and innovation funding relate to regional and national funding? How should this funding complement funds from the future Cohesion policy, designed to help the less developed regions of the EU, and the rural development programmes?

As regards the relation with other EU support programmes, progress has been made during the current MFF, but a substantial shift towards RDI in the period post 2013 is needed as all EU funds must be used as to enhance competitiveness. For example, to gear cohesion policy more towards stimulating RDI and to support and speed-up the



take-up of innovation by regional and local public sector bodies, part of EU co-funding in the context of the Structural Funds (SF) could be used for procurement of innovative technologies and RDI. If in line with recommendation 17 of the Communication on the Innovation Union, Member States and regions would set aside at least 10 billion euro a year in dedicated budgets for pre-commercial procurement and public procurement of innovative products and services, it could make sense to use the large and partly underused SF budget for this purpose. Such a decision must however stay within the remit of the member states. As total public procurement in the EU amounts to more than 2 trillion euro per year, any actions within the CSFRI for providing incentives to public procurers for procuring innovative solutions instead of off-the-shelf products can only be expected to have relatively minor quantitative impact, due to budget limitations, as the future budget will be limited compared with the total value of EU public procurement. Most public procurement in the EU takes place by regional and local public authorities, exactly the target group of the SF. The SF could also be used for co-financing Research Infrastructures and national grants for above-threshold ERC applicants not retained for ERC funding due to lack of budget (see question 22), as well as for improving the conditions for RDI activities.

Likewise, a shift towards supporting research, innovation and growth-driving projects must be implemented in the future Common Agriculture Policy. Possibilities should be investigated to use Cohesion policy funds for the less developed regions and Agricultural policy funds for rural development to further develop, tailor and apply the leading-edge technologies supported by EU research and innovation funding for addressing societal challenges such as European production and competitiveness in the globalized economy, aging, improving the quality of life, mitigating the negative effects of agglomeration on the environment and ensuring a wide availability of services in less favoured and rural regions.

Nevertheless, it would be inappropriate and politically difficult to integrate innovation driving actions in the Cohesion Fund, CAP etc into the legal structure of the CSFRI. The fact that some FP7 states (i.e. the ones outside the EU) do not have access to the SF and CAP must also be considered.

B.2 Tackling societal challenges

9. *How should a stronger focus on societal challenges affect the balance between curiosity-driven research and agenda-driven activities?*

The ultimate objective of EU RDI policy must be to improve the lives and conditions of individuals. A focus on a limited set of horizontal societal challenges with a clear potential for value added in Europe such as climate change, health, mobility, environmental protection, communication, security and innovative manufacturing could be effective means of ensuring benefits for individuals, business and society. It is important to focus on areas where Europe has the potential to develop the critical mass (both in industry and science) to be a world leader in a specific area. From this perspective, one of the main societal challenges facing Europe is how to maintain and develop value chain creation in a globalised world.



Rather than necessarily shifting the balance between curiosity-driven research and agenda-driven activities, a stronger focus on societal challenges should primarily imply tilting the matrix of technologies and applications: at the moment most activities (FP7 themes, ETPs, JTIs, Eureka clusters) are primarily technology-oriented, but most of them are at the same time also addressing societal applications, albeit in an uncoordinated way. In the future CSFRI, we would favour tilting that matrix, giving the lead to the societal applications as “leitmotiv”, underpinned by a range of key enabling technologies and competences (e.g. eco, nano, bio and info) that will need to be maintained and nurtured to properly address the societal challenges.

A stronger focus on societal challenges can also guide curiosity driven research on important areas in cooperation with agenda driven activities. The ERC can intensify European competition for scientific excellence and in the same time support innovations to meet grand societal challenges in areas with high potential of value added.

10. Should there be more room for bottom-up activities?

Substantial investment in investigator-driven frontier research is essential for Europe’s long-term competitiveness. The support areas currently governed by the ERC must therefore be continued in the CSFRI. However, it is not realistic to expect that the societal challenges could drive future *Ideas*-like actions to the same extent as future *Cooperation*-like actions, as *Ideas*-like actions must continue to be investigator driven and not too much influenced by policy objectives. It would however be desirable if the link between future *Ideas*-like actions and societal challenges is strengthened. Fundamental research must continue to be investigator driven although the link between industry needs and economic potential must be strengthened.

The “bottom-up” approach has also an important role to play in collaborative research projects. Policy must give better orientation to the RDI efforts but must not dictate the specific focus of projects. Broader calls for proposals within a clear and specific policy context may therefore be warranted. It should however be kept in mind that too general calls will result in massive oversubscription and a correspondingly high waste of resources among failing applicants and the entities managing the selection process.

11. How should EU research and innovation funding best support policy making and forward-looking activities?

While rules and implementation practices must be streamlined across Commission DGs, the ERC and the JTIs the role of the policy DGs in formulating objectives of RDI support must be enhanced in order to better gear RDI support towards meeting the societal challenges and the objectives of other policy areas such as competitiveness, climate change, environment energy, mobility etc. A system where the policy DGs remain adequately involved in elaborating specific work programmes must be considered. Streamlining will only be successful if the overall coordination and supervision mechanisms are strengthened simultaneously.



The stronger focus on societal challenges in areas with high potential of value added needs more forward-looking activities. The Joint Research Center should support policy making by increasing its analytical competences in cooperation with business to identify future potentials of value added within the EU.

Although RDI results clearly will provide useful input to EU policy making, it is important to recall that *economic* feasibility and impacts often have to be better assessed before basing standards and regulation on RDI results. Research results must therefore only be considered as *input* to policy development. In this context, it is important to increase the private sector relevance of RDI funding to ensure a high level of interest and participation and thereby improve economic relevance of results. Means to achieve this include involving business more in priority setting, preparation of calls and evaluation of proposals.

12. How should the role of the Commission's Joint Research Centre be improved in supporting policy making and addressing societal challenges?

The JRC should play a role in supporting the policy development carried out at various levels. However, its agenda should be set by Commission DGs in charge of policy development as its primary role must be to support policy DGs in the preparation and adoption of initiatives of the European level, while the research and innovation needed to provide solutions to societal challenges primarily shall be conducted within the private sector in close cooperation with the public sector, academia and civil society.

The cooperation between the JRC and the private sector must be enhanced, and the JRC expertise should be more actively involved, also for IPR issues and technology transfer.

13. How could EU research and innovation activities attract greater interest and involvement of citizens and civil society?

The ultimate goal of any RDI policy must be to improve the life of individuals, but a business-oriented RDI policy is needed to get there. The citizen is the ultimate beneficiary whose concerns must guide the overall policy objectives of RDI. Public support and interest will be boosted by better linking EU RDI activities with societal challenges affecting the average citizen and with a greater focus on areas with a high potential for value-added in Europe, which would have a stronger impact on growth and employment.

Crucial for the success of innovations especially of large technological projects is that the citizen is informed early enough about his concrete benefits. This must be achieved by using all available communication tools including demonstration projects where citizens can participate. This needs concerted actions by politicians, industrialists and scientists.



B.3 Strengthening competitiveness

14. *How should EU funding best take account of the broad nature of innovation, including non technological innovation, eco-innovation and social innovation?*

The CSFRI must focus on RDI relating to product, process and service development in the broader sense. In particular a greater focus is needed on the interaction and synergies between technological and non-technological innovation.

Services and non-technological innovation are fundamental for Europe's economy, accounting for 75% of EU GDP and around 70% of total employment. But services not only comprise a large part of the economy, they are also a main engine for growth within advanced economies. Nine out of ten new jobs in Europe are created in the services sectors.

As services drive competitiveness and growth and offer wide scope for the creation of jobs, new sectors and markets, innovation in services is of great importance. Yet, policy formulation and in particular innovation in services is trailing compared with other parts of the economy. Commission documents such as the Communication on the Europe 2020 Flagship initiative "Innovation Union" show that policy making is still predominantly biased towards technological innovation. Products and services are mostly mentioned jointly, without underlining the specific considerations for fostering innovation in services.

Although specific considerations in Commission documents are lacking, it is encouraging to see that the interest towards services innovation has been increasing. The Commission - and DG Enterprise and Industry in particular - has shown an increased interest in the topic and several expert groups have been set up under the Europe INNOVA flag to point to the power of service innovation. Effective innovation policy and general measures that are made suitable to also stimulate service innovation will help to reach the overall targets of the EU 2020 Strategy and stimulate growth and job creation in Europe.

Because of the intangible nature of services it is difficult to reach the same research depth as other traditional technological disciplines. Therefore the Commission should take this into account in judging service RDI projects. Service projects might be more application-orientated and to a larger extent contain incremental improvements and a mix between technological and non-technological disciplines.

Specificities of service innovation that will have to be considered in the CSFRI include:

- Innovation in services is usually centred on non-technological, disembodied forms of innovation: not only in service concepts as such (new or improved service products) but also as service process, service infrastructure, customer process, business model, commercialisation (sales, marketing, and delivery), and service productivity innovation.



- A growing interaction can be observed between technological and non-technological innovation. For this reason it is wrong to assume that service innovation is merely non-technological. What matters is not only the technology but how it is used to better address customers' needs. In this respect, innovative service concepts most often make the decisive difference between "invention" and "innovation".
- Service innovation is cross-disciplinary and multidimensional. This kind of innovation is in deep synergies with other intangible assets (human capital, information system, clients, stakeholders, brand and reputation). Several surveys have clearly demonstrated that innovation is as important inside as outside the company: your clients and partners bring you as much innovation as the in-house staff. In this sense, service innovation can be considered as the most prominent "user-driven" innovation (instead of research-driven innovation).
- There is a shift away from pure technological and product innovation, which is largely dependent upon R&D, towards user-centric and network models of innovation. The future of service business points towards a more holistic view of the business itself. This means that we will see a shift from developing individual products and services towards providing solutions and experiences.
- There is in certain areas a shift away from pure technological and product innovation, which is largely dependent upon R&D, towards user-centric and network models of innovation. The future of service business points towards a more holistic view of the business itself. This means that we will see a shift from developing individual products and services towards providing solutions and experiences.
- Services are increasingly becoming part of tangible and intangible products and manufacturing industries are changing to include more and more services. This leads us to an economy where frontiers between industry and services are decreasing and, at a certain point, perhaps fading.

While social innovation certainly has the potential to contribute to progress in Europe, a potential focus on social innovation, a concept that is yet to be properly defined and where the potential role of the EU is questionable and must be very carefully considered. The prime priority must be to focus on innovation with clear opportunities and where European business has a strong value-adding potential. Only with such a focus will the societal return on investment be maximised. Social innovation in this context could therefore be seen as business and academia's contribution to addressing societal challenges with a social aspect (such as health).

As regards eco-innovation, climate change and environmental protection certainly figure among the grand societal challenges and eco-innovation must therefore be supported at much higher levels on the EU level. Global resources will be increasingly scarce as a result of growing population and living standards. Eco-innovation in the form of developing new resource-efficient and green technologies contributes to global



sustainability, European competitiveness, and can ultimately help Europe in the transition to a low-carbon economy.

15. *How should industrial participation in EU research and innovation programmes be strengthened? How should Joint Technology Initiatives (such as those launched in the current Framework Programme) or different forms of 'public-private partnerships' be supported? What should be the role of European Technology Platforms?*

Private sector participation in the research framework programmes has been declining steadily for fifteen years, from 39% in FP4 to 31% in FP6 and only 25% so far in FP7. Industrial participation in EU RDI programmes depends strongly on the selection of themes on the one hand and on the ratio of costs and benefits of participation on the other. Complexity of rules, slow procedures, lack of flexibility, administrative burden, and an inadequate emphasis on projects of industrial relevance reduce the much needed business participation in FP7. An overhaul of the administrative framework and procedures (discussed under question 1) on the basis of Commission Communication from 2010 and thereafter largely endorsed by the European Parliament and Council, is therefore of highest priority. However, as pointed out in the reply to question 1, a real breakthrough can only be achieved by adopting a more risk-tolerant and trust-based approach.

Another measure would be to give more weight to impact and relevance when proposals are evaluated, especially for application- and market-oriented R&D and for innovation activities. The current imbalance between academic and non-academic evaluators needs to be corrected, as it often leads to an excessive emphasis on scientific excellence, rather than on problem solving, innovation and economic impact. The involvement of qualified evaluators from industry seems to be held back by excessive concerns about potential conflicts of interest although potential conflicts of interest of evaluators by definition is independent of the nature of his or her employer, whether public or private. To facilitate participation by experts from industry, more use should be made of remote evaluation procedures, where appropriate.

Finally, private sector participation would be boosted by adopting a more flexible approach to adaptation of project duration, consortium composition and scope modifications warranted by market developments; as well as by ensuring that the focus on grand societal challenges also reflect the areas where there is a strong potential for EU value added.

(For the role of IPR in ensuring private sector participation, see answer to question 20)

As regards PPPs (including the JTIs), the establishment of ARTEMIS and ENIAC pioneering innovative projects co-funded from EU and national budgets is a major achievement of all stakeholders involved and a key step towards creating a true European Research Area in the fields of embedded systems and nanoelectronics, respectively. As additional advantages, ARTEMIS and ENIAC are more industry-driven than the other EU funded R&D activities on those fields. However, there are also some disappointing experiences that need to be taken into account for future PPPs:



- The bureaucracy, complexity and rigidity stemming from the status of Community Body of the current Joint Undertakings (JUs) set up to implement the JTIs;
- Oversubscription levels are unbalanced between countries and budgets running out in one of more partner countries can cause entire consortia to collapse and require complicated repair attempts;
- In the selection process, the Community approach in pursuit of the common interest seems to clash with the intergovernmental approach in pursuit of national interests.

As regards European Technology Platforms (ETPs), this is an interesting concept from the industrial point of view. ETPs allow for an industry-led holistic approach to innovation, based on a shared vision of all stakeholders and with regulatory and demand-side aspects included right from the start. Through their Strategic Research Agendas (SRAs), ETPs can provide valuable inputs for work programmes and help align fragmented R&D efforts at Community, intergovernmental (e.g. EUREKA), national and regional levels within the ERA. Furthermore, participating in ETP activities can facilitate the formation of consortia for future projects.

ETPs should therefore be continued in the CSFRI, with the following improvements:

- better manage expectations regarding the chances of success for FP proposals from ETP participants (no preferential treatment);
- make more systematic use of Coordination and Support Actions for establishing ETPs and SRAs;
- stimulate ETPs to fully explore additional possibilities for funding outside the Cooperation-like actions.

16. How and what types of Small and Medium-sized Enterprises (SME) should be supported at EU level; how should this complement national and regional level schemes? What kind of measures should be taken to decisively facilitate the participation of SMEs in EU research and innovation programmes?

In its position paper of 3 March 2011 on the future EU budget, BUSINESSEUROPE has elaborated on the role to be played by the EU to support SMEs. BUSINESSEUROPE is pleased that the Commission and the European Investment Bank Group (EIB Group) have developed, over the past years, a broad spectrum of innovative financial instruments that are capable to help SMEs invest and grow, supporting both innovation-based companies and other growth based-companies. These two types of enterprises (covered in particular by the CIP) will continue to need to be taken care of as part of the set of Community policies, in particular to address market failures.

The Risk-Sharing Financial Facility (RSFF), and the CIP-connected horizontal instruments (the High Growth and Innovative SME Finance Facility –GIF, and the SME



Guarantee Facility -SMEG) have demonstrated clear benefits. They have offered effective solutions in cases where market failures occur with respect to the financing needs of some SME categories like i) small firms in the first expansion phase, having insufficient collateral, and ii) high growth SMEs in further expansion stages. These instruments will need to continue to occupy a prominent place in the future EU budget.

When an enhanced set of financial instruments is being designed, close attention will have to be paid to making them more accessible to SMEs in practical terms. This calls for action on three fronts:

- Ensure that financial instruments are presented in a manner that is as easy as possible for SMEs to understand.
- Disseminate information on these instruments as widely as possible in the direction of SMEs.
- Understand the reasons why some financial intermediaries give EU financial instruments only limited promotion in certain countries. More information and transparency is needed on the reaction of intermediaries to the EU financial products with a view to improving the situation.

Excessive time-to-grant is a major problem for SMEs in the present programmes. Open calls and smaller projects with, e.g., just one SME and one university could help in mitigating this problem. Radical simplification of governance, procedures and administration is at least as important for SMEs as for other beneficiaries (see also answer to question 5).

17. How should open, light and fast implementation schemes (e.g. building on the current FET actions and CIP eco-innovation market replication projects) be designed to allow flexible exploration and commercialisation of novel ideas, in particular by SMEs?

Many larger industrial groups have to date not shown an interest in participating in projects co-funded by the CIP due to a strong SME focus, complex application process and no substantive funding. As a more general remark for the future CSFRI, individual projects must be granted more flexibility during the implementation phase to adapt focus and consortia composition to market developments.

The bottom-up approach of “FET Open” for breakthroughs and new directions in applied research in the ICT theme of FP7 deserves extension to other thematic areas

(For issues related to SMEs, see answer to question 16)

18. How should EU level financial instruments (equity and debt based) be used more extensively?

Access to finance remains a major obstacle to expansion of innovative companies – especially SMEs – and existing structures and financing mechanisms on the EU level



most therefore be enhanced and expanded. This need is accentuated by uncertainties of the impact on availability of finance due to the strengthened regulation of the financial market. Grants, debt and equity all have roles to play in the various phases of innovation and development. A stronger role for the EIB and EIF, in close cooperation with other capital providers and intermediaries would be welcome, while underlining that such a role must not distort the financial markets. A European venture capital fund building on the EIF and co-financed by the EU budget, the EIB and private institutional investors could be set up.

The functioning of the internal market for private sector venture capital must also be addressed, but outside the context of the CSFRI. However, the currently discussed development of cross-border capital markets in order to assist the creation of a genuine European venture capital market will have to reflect the fact that geographical proximity between the provider and receiver of capital is an important factor for success. The provision of external capital for enterprises oriented to growth and innovation could therefore be more likely to succeed if such a Europe-wide scheme were complemented by funds established and managed in the countries where the beneficiaries are based.

(For issues related to SMEs, see answer to question 16.)

19. Should new approaches to supporting research and innovation be introduced, in particular through public procurement, including through rules on pre-commercial procurement, and/or inducement prizes?

One of the main policy challenges for RDI is to exploit the huge, largely untapped potential of the public sector purchasing power to drive innovation and stimulate private R&D, while at the same time providing public sector bodies with innovative solutions to perform their public tasks and to better address societal challenges. Public procurement of goods and services in the EU amounts to some 17% of EU GDP. Devoting only a tiny fraction on procuring innovative solutions would make a major difference.

In this context, soft measures should be taken, including guidance, sharing of best practice and enhanced dialogue between the public and private sector. Initiatives among Member States aiming at joint procurement of innovative products and services must be supported. However, technical specifications must not be too prescriptive, recalling that innovation and research results cannot be dictated. Instead, functional specifications are more appropriate, as these are technology-neutral and leave more room for innovative solutions. Moreover, the EU itself must make similar commitments.

Derived from best practices in the US, pre-commercial procurement (PCP) of R&D services from the private sector is a very promising novel scheme that deserves wide deployment. To simplify the use of PCP and avoid complicated calculations of compensations for retaining IPR, it should be clarified that PCP constitutes no State Aid if the ownership and rights to the resulting IPR are clearly defined in the tender and the tendering process ensures adequate competition, transparency, openness, fairness and pricing conditions.



What is particularly important for the promotion of the procurement of innovative products and services is that future procurement should be guided more firmly than hitherto by the economically most favourable bid, whereby economic efficiency should be consistently determined by taking the whole life cycle into consideration. It is precisely this procedure which leads to opportunities for innovative products being enhanced.

BUSINESSEUROPE does have some concerns with regard to the frequent lack of legal protection for innovative solutions. They could be exposed to a third party in the course of a procurement activity, e.g. a competitive dialogue, to the detriment of the originator. This is particularly detrimental for SMEs.

Although BUSINESSEUROPE believes that the current public procurement legal framework is generally adequate, providing public authorities with sufficient freedom and options to be innovative in their public procurement procedures, it is conceivable that the rules be extended to include strict liability for the public authority who during competitive dialogue (or any other procurement activity) divulges the solution of one party to a third party. The precise form of such a liability must however be left to national legislation.

The relevance of prizes would be very limited for the vast majority of European businesses although they could play a role in specific cases.

20. How should intellectual property rules governing EU funding strike the right balance between competitiveness aspects and the need for access to and dissemination of scientific results?

Keeping in mind that private sector beneficiaries typically finance their participation to 50 or 25 percent themselves it should be acknowledged that softer Intellectual Property (IP) protection would seriously obstruct the participation of European business in the EU research and innovation programmes. By and large, the current principles regarding IP in FP7 are adequate. A suitable starting point for IP rules in the future CSFRI is the Responsible Partnering Handbook³ with guidelines for collaborative research and knowledge transfer between science and industry. One of the key principles underpinning Responsible Partnering is acknowledging the need to achieve maximum beneficial use of the knowledge and skills generated through public sponsorship. A general principle for collaborations, in line with IP laws, is that each party owns its own results, in other words the results or foreground that it (or its employees) generate.

To ensure proper commercial exploitation of the results from EU-funded research, it is essential for multiple-entity global companies that their access rights as participants in EU-funded projects extend to their associated companies, also outside the EU. A fixed “one size fits all” set of IP rules doesn’t work. Therefore, the future CSFRI should

³ See <http://www.responsible-partnering.org/news.php?id=18>



merely define clear boundary conditions and basic principles and leave it to project participants to define the details in the consortium agreements.

As regards *open access*, Communication on the Innovation Union flagship initiative of 6 October 2010 states that “[t]he Commission will promote open access to the results of publicly funded research. It will aim to make open access to publications the general principle for projects funded by the EU research Framework Programmes”.⁴

Although BUSINESSEUROPE welcomes the concept of open access *in principle*, it is not clear whether the Commission’s ambition is to give open access only to published versions or final manuscripts accepted for publication (interpretation 1 below), or also to *any other results* from publicly funded research (interpretation 2 below). To avoid misunderstandings, the Commission’s intentions should be clarified.

BUSINESSEUROPE’s position on these two interpretations can be summarized as follows:

Interpretation 1:

If the Commission’s intention is to extend the obligations in the current open access pilot in part of the Seventh Framework Programme for Research and Technological Development (FP7) to the entire current or future research programmes, this can only be welcomed, provided that such an extension has the same boundary conditions⁵ as the present pilot, i.e:

- the scope must be limited to published versions or final manuscripts accepted for publication resulting from EU-funded or co-funded research projects;
- there must be no obligation to publish;
- there must be no interference with commercial exploitation of research results or the possibility to protect results by intellectual property rights such as patents.

Interpretation 2:

If the Commission’s intention to the contrary is to promote open access not only to published versions or final manuscripts accepted for publication, but also to data, images and any other results not covered by the FP7 pilot, this would make participation unattractive by limiting possibilities to effectively protect the competitive edge of research results by means of intellectual property rights or confidentiality. If others can freely use research results and imitate innovations based on those results,

⁴ Point 20 on page 19 of the Communication.

⁵ See the European Commission’s publication “Open Access Pilot in FP7”

(http://ec.europa.eu/research/science-society/document_library/pdf_06/open-access-pilot_en.pdf

and Frequently Asked Questions on the matter

(<http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/08/548>).



there is no point in investing in research and its subsequent application and commercialization. As a consequence, full and unconditional open access may very well lead to less innovation and less economic impact of the EU's research programmes. The same reasoning is applicable to national funding of research.

Therefore, policies for promoting open access to results from publicly funded research other than scientific publications or their final manuscripts accepted for publication should only apply on a voluntary basis and provided that the legitimate interests of *all* partners in the consortia are not adversely affected.

B.4 Strengthening Europe's science base and the European Research Area

21. How should the role of the European Research Council be strengthened in supporting world class excellence?

Establishing the ERC to support "investigator-driven" research at the frontier of knowledge as part of FP7 was a good idea. In addition to stimulating scientific excellence and providing peer recognition at European level, new opportunities have been created to be engaged in top-level research in Europe. This is improving career perspectives for researchers and helps prevent a further brain drain of European talent to other parts of the world. In addition, frontier research plays a valuable role in the training of researchers, also for those pursuing a career in industry. Although the ERC is only of indirect benefit to the business sector, substantial investments in frontier research are essential for Europe's future and the ERC has to be continued in the CSFRI.

22. How should EU support assist Member States in building up excellence?

The major part of frontier research in Europe is currently being funded through national science councils, rather than through the ERC. To increase the performance and efficiency of national research funding systems, Member States should consider awarding grants to their national ERC applicants that have submitted proposals meeting the ERC quality threshold without being retained for ERC funding. Currently this is already the case in France, Italy, Spain, Sweden, Hungary, Norway and Flanders. This raises the quality of national frontier research to the European level and saves costs on national evaluation processes, as national funding will be based on the ERC evaluation.

Using the Structural Funds for co-funding such national grants for above-threshold ERC applicants could even be an interesting mechanism for simultaneously boosting excellence and cohesion.

23. How should the role of Marie Curie Actions be strengthened in promoting researcher mobility and developing attractive careers?

The Marie Curie actions should be continued to foster mobility and temporary exchanges between academia and industry in the future CSFRI as they are useful tools



to give young researchers – particularly those without previous research experience in business – the opportunity to receive international industrial research training in companies. “Industry Host Fellowships” used under the 5th Framework Programme should be re-introduced and an Industrial PhD scheme allowing doctoral researchers to undertake a PhD in which they spend time at both academic and private sector partners would be very welcome.

A very interesting example from the UK worth EU-wide deployment as part of future Marie Curie actions are the Knowledge Transfer Partnerships⁶, allowing academic researchers to apply their knowledge on the spot during temporary postings in industry, while helping businesses to improve their competitiveness and productivity through the better use of knowledge, technology and skills that reside within the public knowledge base.

As part of life-long learning, also brief academic sabbaticals for industrial researchers should be stimulated.

24. What actions should be taken at EU level to further strengthen the role of women in science and innovation?

BUSINESSEUROPE strongly favours more active participation of women in European RDI activities as far as this would promote excellence and societal relevance and economic impact of the results. Programmes supporting female role models and mentoring programmes could be considered. However, Member States are best placed to consider policies to achieve this. BUSINESSEUROPE opposes any formal positive discrimination on the sole grounds of gender.

On a more general level, it must be recalled that Europe’s society is ageing and forecasts underline the need to respond to the demographic development. European industry and science could suffer from structurally low birth rates and the potential future lack of highly qualified personnel. Furthermore, young people, and especially young women, do not show enough interest for subjects such as engineering, informatics, mathematics, and the natural sciences. It is essential for the future innovative potential of Europe that all governmental, industrial and scientific actors, including the EU, promote these subjects and highlight the opportunities for an international and exciting career they offer, not the least for women. The decision on future professions are often made already during adolescence and the early teens are formative in this respect. The EU could support national and regional governments to adapt their school curricular and to support interests in these subjects also at outside school activities, with a special emphasis on girls and women as appropriate.

⁶ See <http://www.ktponline.org.uk/what-is-a-knowledge-transfer-partnership>



25. How should research infrastructures (including EU-wide e-Infrastructures) be supported at EU level?

There are certainly a series of research infrastructures of relevance for the EU as such, which in principle warrant increased support to ensure the long-term sustainability and survivability of such infrastructures. As many of these research infrastructures are very costly, a balance has to be struck between adequate support to research infrastructures on the one hand and secured funds to RDI projects on the other. The issue is largely related to the overall financial envelope allocated to RDI during the next MFF of the EU.

Industry involvement in research infrastructures of European relevance should be enhanced, both from a user and supplier perspective.

A regular update and timely implementation of the European Strategy Forum for Research Infrastructures (ESFRI) roadmap have to be aligned with the actions and objectives defined within the new CSFRI to tackle the grand societal challenges. Member States must be encouraged to take the ESFRI roadmap as guidance for defining their own national Research Infrastructure roadmaps, where possible making use of Structural Funds and by earmarking national budgets for large research infrastructures. A good example for this are the three new pan-European research infrastructures in the field of energy, put forward by Member States and Commission: a wind research facility to be built in Denmark, a concentrated solar power installation to be realised in Spain, and a nuclear research reactor to be constructed in Belgium.

26. How should international cooperation with non-EU countries be supported e.g. in terms of priority areas of strategic interest, instruments, reciprocity (including on IPR aspects) or cooperation with Member States?

Current FP7 activities regarding international cooperation with countries outside the EU are not functioning optimally as international cooperation activities are too much scattered over a plethora of actions, calls, instruments and countries. In the future CSFRI, international cooperation should be more strategic, aiming at global challenges for which international cooperation is essential.

Reciprocity aspects deserve more attention. Further facilitation and encouragement of third-country participation in EU-funded RDI projects should be supported only as far as there is some degree of reciprocity, although individual projects in Europe typically profit from international cooperation even in the absence of reciprocity. More strategic and better balanced science and technology agreements with third countries should be concluded in this regard.

27. Which key issues and obstacles concerning the ERA should EU funding instruments seek to overcome, and which should be addressed by other (e.g. legislative) measures?

Key issues include achieving an overarching governance structure, progressive alignment of national programmes, streamlining of administrative rules, enhanced



cross-border mobility of researchers, and more coordination and where appropriate pooling of Member State RDI support (see answer to question 4).

* * *