

Brussels, 20 May 2011

Orgalime position on the future European R&D and Innovation Funding System and the setting up of a new Strategic Framework for R&D and Innovation - COM (2011) 48

INTRODUCTION

Orgalime wishes to thank the Commission for launching a consultation and we herewith would like to express our views on the EU's plans for creating a new framework for research and innovation in Europe, as outlined in the Commission Green Paper "From Challenges to Opportunities: Towards a Common Strategic Framework for EU Research and Innovation Funding". In general, we agree with the Commission's analysis of the shortcomings of the current funding framework and support many ideas expressed in the Green Paper for overcoming these deficiencies.

Manufacturing industry and industry related services are the main provider of growth and employment in Europe. Research, technological development and innovation are all essential to maintain and further develop the worldwide technological leadership that the European industry has acquired in many areas. European R&D and Innovation Policy plays a significant role in underpinning this position. EU funding can leverage a company's own R&D by means of external resources, and by offering a knowledge-based network across Europe. It therefore needs to be maintained, improved and enlarged.

A number of simplifications to the Framework Programme have already been introduced in recent years and some measures have clearly contributed to reducing the time-to-grant and the effort required to manage projects. We encourage policy makers to continue on this path. Despite a number of discouraging elements (such as overwhelming bureaucracy, slow procedures, fragmentation among programmes and departments in charge, limited industry relevance etc), we believe that it is worth investing in European R&D and innovation projects. However, if the ongoing decline in industry participation in FPs continues, the programme will lose its standing. The ongoing reform process is therefore of crucial importance and should aim at high industrial relevance and at strong industrial participation.

In general we welcome the idea that EU R&D and Innovation policy should cover the full innovation cycle: from strategic and applied research, demonstration, deployment and access to capital, to market take-up (as long as basic principles such as subsidiarity and competition policy are respected). EU funding programmes addressing the different steps of the innovation cycle should be managed in a common framework with standardised and simplified procedures. However

Orgalime, the European Engineering Industries Association, speaks for 33 trade federations representing some 130,000 companies in the mechanical, electrical, electronic, metalworking & metal articles industries of 22 European countries. The industry employs some 9.7 million people in the EU and in 2010 accounted for some €1,510 billion of annual output. The industry not only represents some 28% of the output of manufactured products but also a third of the manufactured exports of the European Union.

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achieving this will require not only increased funding, but especially better coordination and integration at several levels.

In this position paper, Orgalime would like to provide the European Commission with its opinion on these issues. Below, we first summarise our views with five recommendations and then reply to the questions posed in the Green Paper which are most relevant to us.

PART 1: RECOMMENDATIONS TO THE EUROPEAN COMMISSION

Recommendation 1:

R&D and Innovation should become in the long run the No1 budget line for the EU and a major one for Member States

Orgalime welcomes the increased commitment of Member States at both national and EU level to innovation and research. However we believe that this needs to be reflected in the EU and respective national budgets.

Under no circumstances should cuts be made in the area of R&D and innovation when consolidating Member States' budgets. On the contrary, any shifts within national budgets should be in favour of R&D and innovation and at EU level we should aim at R&D and innovation becoming the N°1 budget line in the long run. If one compares today's EU spending for agriculture and natural resources (413 bio EUR) and for cohesion policy dedicated to non-R&D related topics (334 bio EUR), with the spending for R&D and innovation (143,29 bio EUR)¹, it becomes evident that today's focus does not match the ambition laid down in the Europe 2020 strategy. Orgalime therefore suggests a substantial shift towards R&D and innovation.

Moreover, in the light of the lack of public finances, the Public-Private Partnerships (PPP) concept should be used more often, since it has the potential to generate additional sources of funding.

Recommendation 2:

Allow more industry-driven agenda setting

We have witnessed long enough the decline of industrial participation in framework programmes. This trend needs to be reversed and the best way of doing this is to actively involve industry in agenda and priority setting.

Industry is content with the launch of PPP as a new "joint" policy tool; this is a step in the right direction and the EU needs to build upon these positive experiences. PPP are attractive, not only because they work in a more flexible manner compared to traditional instruments, but also because such initiatives provide a long-term solution, with stable infrastructures that will hopefully outlive a framework programme cycle.

¹ FP7 + CIP + EU finances for the EIT + R&D related funds of the Cohesion and Structural Funds.

We welcome the promise of the European Commission to create a “competitiveness pillar” in which industry will be invited to set the agenda. However we would like to point out that for the topics which will be dealt with in the other two pillars– societal challenges and curiosity-driven research – industry involvement should also not decrease but rather increase.

Recommendation 3:

Continue with the simplification exercise

Today, many R&D managers in companies argue that the transaction costs associated with the Framework Programme have grown out of proportion, with checks & balances exceeding the benefits. It seems that the EU sacrifices potential innovation in the name of avoiding possible adverse publicity due to mismanagement. We have to rebalance this risk-averse culture and reduce controls to the necessary minimum and acceptable level: more flexibility in cost accounting and reporting should be provided, allowing for the standard practices already used by beneficiaries; there should be fewer rules and instruments; the same basic rules and procedures, application methods etc. should be used for all instruments.

Recommendation 4:

Introduce a “reality check”: we need to ensure that the overall end results are good

Today, a lot of money and manpower are invested in inspecting and rechecking European R&D projects: costs and bills are closely monitored and declared man-days verified. This is legitimate since the intention is to exclude mismanagement. However, in comparison, much less attention is paid to evaluating ex-post whether EU R&D policy and funding has achieved its objectives. Orgalime would like to see more attention paid to critical analysis that could provide answers to questions such as: was this project worth the money spent? What was the project’s real-life impact on society, competitiveness or the environment? Such information could determine the criteria for future calls and influence whether, in the next set of calls, similar or totally different topics and technologies should be addressed.

Recommendation 5:

When integrating different programmes and policies into one new single framework, identify synergies and ensure a good coordination between the ETPs and industrial policy initiatives

Orgalime welcomes the European Commission’s decision to focus on Innovation Policy at EU level more than in the past. Linking “Innovation” to “R&D” in a structured way will help make those involved in public money spending – policy makers, Commission officials, evaluators, project participants - finally ask themselves whether and in which way research results can be exploited commercially, how the results can be demonstrated, how a prototype can be built and what pilot manufacturing will look like.

However, we should not delude ourselves. Achieving the objectives proposed in the Green paper will require a coordinated and ambitious approach within the policy areas of research, education and innovation. Beside the obvious need of respecting legal restraints - for example competition policy and the principle of subsidiarity - it will be an organisational challenge to change and merge

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structures and programmes that took decades to mature. It will take time and many constructive “compromises” by all players involved to coordinate what has been done so far, to identify potential synergies between different EU funding programmes and between programmes at national level and to finally re-shape them. This can only be done as a joint effort which needs to engage all stakeholders involved.

More specifically, better coordination and integration will be necessary at the following levels:

- At institutional level, better exploitation of the potential synergies between the Framework Programme, the Competitiveness Innovation Framework Programme, structural funds and activities of capital providers such as the European Investment Bank.
- At stakeholder level, better cooperation between European Technology Platforms (whose focus and expertise lie in R&D) and Sectoral Industrial Policy Initiatives and High Level Groups, such as EnginEurope², Electra³, the review of the Metalworking and Metal Articles Industry⁴, etc (whose focus and expertise lie in the industrial value chain and framework conditions).

² Please see here the EngineEurope Report
<http://www.orgalime.org/Pdf/FINAL%20EnginEurope%20report.pdf>.

³ Please see here the Electra report with its three annexes
http://ec.europa.eu/enterprise/sectors/electrical/competitiveness/electra/index_en.htm and a illustrative video
<http://www.youtube.com/user/mredgrove#p/a/f/0/MASyKhQEngs>

⁴ Please see here the report on the competitiveness of the EU metalworking and metal articles industries and a video aimed at secondary school graduates and students,
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PART 2: ORGALIME ANSWERS TO THE QUESTIONS RAISED IN THE COMMISSION GREEN PAPER

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?

If all suggestions mentioned above in the second question are implemented, this would represent a major step towards simplifying and improving the current system at EU level:

Creating common IT tools and a one-stop shop:

- Common IT tools would be welcomed and would in our view attract more companies to EU funding

Creating a one-stop shop:

- Today companies clearly face a challenge in understanding the EU funding structure (many different programmes, presented on different websites, managed by different DGs) and taking full advantage of the possibilities that EU funding offers. We therefore welcome the Commission proposal to improve the presentation of information and to ease an applicant's first contact with the Commission. The idea of a "one-stop shop" is valid if the following points are taken into account:
- The one-stop shop must be equipped with sufficient manpower and experts who understand all funding structures. We fear that a fully cross-sectoral one-stop shop which employs "generalists", who would provide only basic information with regard to the funding procedure, will not be of sufficient help to companies.
- We suggest that within the one-stop shop there are "sectoral" entry points with experts who can help companies from specific sectors with specific requirements.

Introducing a streamlined set of funding instruments covering the full innovation chain:

- This would make projects more efficient. Today, companies need to work with several Directorate-Generals with different rules, and there are again different rules when working within joint undertakings; this fragmentation makes it difficult for industry associations to promote EU Research policy among companies.
- In our view it is essential to explore whether and to what degree the involvement of different Commission Directorate Generals leads to fragmentation; in any case, proper coordination should be ensured, with no discrepancies regarding interpretation of rules, communication etc.
- Multidisciplinary research should be encouraged. At the moment a project is less likely to obtain approval if its scope crosses certain borders (funding programme or Directorate in charge). Proper coordination should also be developed to increase the number of these multifaceted projects.

Further steps towards administrative simplification:

- Further simplification would also help to improve the image of EU funding and would both attract more companies and reduce time-to-grant.
- More flexibility in cost accounting and reporting should be provided, allowing for the standard practices already used by beneficiaries.
- There should be fewer rules and instruments.

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- The same basic rules and procedures, application methods etc. should be used for all instruments. Also in most Joint Undertakings the procedures need simplification.

From an engineering industry point of view, the major point missing above is that the future Common Strategic Framework programme needs to have industrial relevance. In our view, the following suggestions would help make EU funding programmes more attractive and accessible to industry:

- Make the calls more industry-relevant by letting industry decide on the topics. The attitude should be: involve stakeholders as partners, regard them as clients and deliver solutions together in order to satisfy their needs,
- More bottom-up instead of top-down priority setting,
- Collaborative projects should continue to be the backbone,
- Demonstration in projects needs to be strengthened,
- Projects should not be led in isolation; clustering industrial pilots and demonstration activities from similar/complementary projects should be introduced, with the aim of rapidly transferring project results to industrial applications,
- Simplify the thematic structure,
- Simpler proposal submission processes,
- Improve the “image” of EU R&D funding,
- Faster project selection,
- Reduce time-to-grant: the aim should be of 6 months from the proposal submission to the signature of the framework grant agreement,
- Present information more clearly to “non-professionals” who have no knowledge of EU affairs,
- Gear the focus of EU support towards areas of clear added value for European companies, instead of only focusing on societal challenges,
- More experts and evaluators coming from industry.

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

Orgalime welcomes the ambition of the European Commission to cover in future the full innovation cycle from research to market uptake in a single framework. We think the idea of having a cascade of projects that can be linked to each other would be an improvement compared to the status quo.

Research funds, both from EU and national sources, are especially weak in supporting new technology when the demonstration phase approaches, whereas it is important to link integrated research with demonstration within the same project. Orgalime would therefore welcome the launch of call topics where demonstration represents a relevant share of the project’s activities.

Public funding should aim to shoulder part of the risk associated with research and innovation investments. Typically, the level of risk increases proportionally to the distance from the market:

- very high state funding is justified for R&D,
- the rate of funding diminishes for demonstration activities, pilots etc.

However, one has to be aware that the “freedom” for state intervention also decreases the closer to the market one gets. The new approach especially with regard to innovation funding, will therefore have certain limits, namely:

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- first, it has to stay pre-competitive funding,
- second, no distortion of competition should result from public funding.

“Living lab” type demonstrations of technology and market relevance should be encouraged.

There should also be a flexible and easy procedure to transpose a successful national R&D&I or demonstration project to the European level, in order to deepen and widen its scientific significance and/or examine pilot markets and ensure its influence on European industry.

From a policy point of view, the challenge will be to “build bridges” between the work of different DGs and different stakeholders active in various topics and industries from different perspectives

- At Commission level, better exploitation of the potential synergies between the Framework Programme, the Competitiveness Innovation Framework Programme, structural funds and activities of capital providers such as the European Investment Bank.
- At stakeholder level, better cooperation between European Technology Platforms (whose focus and expertise lie in R&D) and Sectoral Industrial Policy Initiatives and High Level Groups, such as EnginEurope⁵, Electra⁶, the review of the Metalworking and Metal Articles Industry⁷, etc (whose focus and expertise lie in the industrial value chain and framework conditions).

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?

The following characteristics maximise the benefit of acting at EU level:

- **Economies of scale:** for many industries and technology, achieving the necessary critical mass can be better achieved at the EU rather than at the national level.
- **Creating an international network:** this is important especially for companies from the engineering industries, which are highly export-oriented and have a vested interest in keeping a strong customer and supplier base in other Member States; developing new machinery, equipment and IT for manufacturing processes along the European supply chain is a powerful tool to strengthen partnerships with other companies and EU funding often plays a critical role in making such technology partnerships happen; the resulting collaboration networks are a unique asset for Europe. Such collaboration projects, large and small, must therefore continue.
- **Availability of excellence:** collaborative projects must contain the best possible partners, who sometimes are found in a limited number of Member States.
- **Added value:** EU funding should only be considered if there is a clear European added value; for example in many areas of production research this is the case.

⁵ Please see here the EngineEurope Report
<http://www.orgalime.org/Pdf/FINAL%20EnginEurope%20report.pdf>.

⁶ Please see here the Electra report with its three annexes
http://ec.europa.eu/enterprise/sectors/electrical/competitiveness/electra/index_en.htm and a illustrative video
<http://www.youtube.com/user/mredgrove#p/a/f/0/MASyKhQEngs>

⁷ Please see here the report on the competitiveness of the EU metalworking and metal articles industries and a video aimed at secondary school graduates and students,
http://ec.europa.eu/enterprise/sectors/mechanical/metalworking/index_en.htm#h2-2.

- **Market incentives:** The greatest motivation for companies (esp. SMEs) to get involved in European projects is the possibility to integrate in the value networks covering the whole European market, i.e. the R&D&I is performed in the market context.
- **Mobility of researches:** This is clearly a field where EU action is justified and where added-value can be achieved.

On the second question, yes, Orgalime believes that EU funds should be used to leverage other sources of funding;

In this context, the following points should be considered:

- The current reimbursement levels of FP7 present appropriate tools to ensure private financing and commitment. The key in this context is to focus on areas with a clear added value potential for Europe, which will improve the private sector's willingness to complement EU funds with their own resources.
- The leverage effect of public funding on industrial expenditure should rise proportionally to the involvement of industry in the priority setting and implementation of programmes and projects.
- The combination of EU funding and national funding often tend to become an administratively complicated concept; but there are also some positive examples.

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

Orgalime is in favour of Joint Programming Initiatives (JPIs), however today, industry is not sufficiently integrated in the process. Industry should play a bigger role in the consultative process and in the implementation of specific Joint Programming Initiatives. Originally this was also the intention in the Commission Communication (*Towards Joint Programming in research, COM(2008) 468 final*), but unfortunately in practice consultation with industry has been very limited so far.

Policy makers should avoid pushing all European regions to excel in each and every technology domain. EIT is one way of pooling the competences in certain fields in countries where these are already present.

In the case of European Technology Platforms, comparing challenges and priorities with other market players and setting common industrial R&D strategies proved to be useful. So, it may be worth exploring whether a similar approach could also be successful in the cooperation between public funding agents. Beside the creation of JPI, more initiatives could be identified.

There are unfortunately many instruments for pooling national funding for transnational collaborative projects that are not optimal. Options to consider include an improvement of the present possibilities for a group of Member States to engage in closer cooperation in a certain RDI area. This would allow them to develop a sub-programme with complementary funding commitments. Thus the coordination of RDI efforts would be improved and it could be useful to the next generation of JPIs and JTIs, as well as at the emerging European Innovation Partnerships.

Joint Programming must not be imposed and there should be no requirement to mobilise a certain number of Member States before the EU can provide incentives. A significant obstacle, however, for such schemes would be the provision of EU funding, since those Member States, which do not participate in the specific Joint Programming, would argue that neither the EU should finance it.

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Therefore a fair procedure needs to be developed to make decision-making possible. The role of Member States in such initiatives would have to be strengthened without complicating procedures for project selection and implementation. A key concern will be how to strike the balance between national and common interests.

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

Most sub-sectors of the engineering industries request smaller, targeted projects. Having said this, one cannot apply a strict general rule on how to balance different project sizes. The balance between different project sizes should rather be tailor-made to the structure of industry sectors, research landscapes, technological topics and the type of activity (more RTD, more demonstration, take-up measures etc.) in question. The engineering sector is very heterogeneous in terms of company sizes. The sector therefore requires both: many small projects and large strategic projects. Possibilities for different project sizes must be ensured but the balance cannot be defined beforehand. Possibly the experience based on success rates of applications can be considered here.

The Commission should be aware that small targeted projects are very important to attract SMEs to EU programmes – although from an administrative point of view they are very demanding in terms of work and human resources.

In many industrial sectors, and for a range of different reasons, most SMEs are not able to take part in EU-funded research and innovation projects. Thus, it would be helpful to proactively transfer those results that are not protected by IPR (not only as a dissemination work package within a project) through distinct initiatives – the so-called transfer platforms. Good experience has been made with the transfer platforms at national level, as they serve large parts or even an entire industrial sector.

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?

From an industrial point of view, the aim must be to create a system that is as transparent and as simple as possible and at the same time flexible and adaptable. Complexity should be reduced as far as possible and, where different instruments exist, they should be complementary. We suggest having the same administrative procedures and basic principles for all instruments, but with flexibility in the “implementation”, i.e. in the targets, R&D domains, and rules concerning for example funding percentages for SMEs. In this way, “simplicity” would allow for different ways of conducting projects, while adhering to general rules. Maybe a “modular” funding approach could be effective: for example a basic module “A” for all projects, additional requests with a module “A1, A2 etc” if the project reaches a certain budget or specificity that applies to one sector or addressed size of companies (i.e. the SME specific programme).

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

As explained above, Orgalime feels that too little attention is dedicated to evaluating ex-post the results of EU R&D policy and funding and whether the targets have been achieved. At the end of each programme, it should be evaluated: Was this project worth the money spent? What will be the project’s real-life impact on society, competitiveness or environment?

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On the performance indicators:

- One can only describe ex-post the “performance” of a funding programme (macro-economic evaluation) or of single projects (micro-economic evaluation).
- The macro-economic selection of performance indicator needs to reflect the goals of the EU 2020 agenda (e.g. raising the combined public and private investment levels in research and development to 3% of GDP) and the concrete objectives of the programmes.

The following indicators could be used to evaluate ex-post if the programme or projects have led to success:

- patents filed due to the project work,
- productivity gains through the project work,
- successfully commercialised products and services (only visible after some years),
- turnover increase due to the specific new product/process/service that came out of the project,
- cooperation going beyond the initial project period,
- leveraging of other capital sources and subsequent investments by private or public investors,
- articles ready for publication.

Besides “choosing” adequate performance criteria, Orgalime suggests doing an ex-post study aiming at identifying the “common patterns” of past successful projects. The study should identify and analyse only those R&D projects of FP4, 5 and 6 which later led to successful market take-up/commercialisation of a technology/process/product. This “successful group” of projects should then be analysed in detail: what did they have in common? What was the difference of these projects with the average FP project? The aim would be to identify certain common patterns (without judging them and maybe without even understanding or questioning why these patterns exist). Such information could then: set the criteria for future calls; influence the decision whether in the next set of calls similar or totally different instruments, topics and technologies should be addressed, influence the proposal evaluation process, etc.

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 funds?

- Synergies need to be sought between the EU and these different programmes.
- EU R&D funding must not crowd-out national funding.
- It is crucial that the objectives of the different EU-programmes remain clearly defined.
- There should be a flexible and easy procedure to bring a successful national RDI project to the European level, to deepen and widen the scientific significance and/or examine the pilot markets and ensure the influence on European industry.
- The Cohesion Policy and related funds should support Innovation Policy and concentrate on funding projects having permanent, positive effects on the regions and regional industry.

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Tackling Societal Challenges

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

The known societal challenges and trends will certainly affect both curiosity-driven and agenda-driven activities. However, solving the challenges, especially with short term goals, will give extra weight to agenda-driven activities, as the societal challenges are among Europe's top priorities. A stronger focus on societal challenges should 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 CSF, we would favour tilting that matrix, giving the lead to the societal applications as "leitmotif", underpinned by a range of key enabling technologies and competences (e.g. eco, nano, bio, info, manufacturing/production) that will need to be maintained and nurtured to properly address the societal challenges. This is why the stronger focus on societal challenges will result in agenda-driven research, with societal challenges receiving a higher priority than curiosity-driven research; thus the much bigger share of the available budget should go to agenda-driven activities.

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

Orgalime believes that more attention and more financial resources should be given to bottom-up activities, provided they are industry driven.

Calls that are thematically rather general and open are specifically interesting for SMEs and mid-range companies, which lack the resources to participate in a year long process of generating ideas, agreeing on common research and innovation priorities in road-mapping and fine-tuning call topics. It may even be the case that specific call topics are interpreted too strictly and that SMEs therefore prefer open calls.

In collaborative research projects, policy should be orientated towards innovation driven research, but must not dictate the specific focus of projects. Broader calls for proposals within a clear and specific policy context may therefore be warranted.

However it should be kept in mind that too general calls across the board will result in massive oversubscription and a correspondingly high waste of resources among failing applicants and the entities managing the selection process. Other selective parameters should be sought, like for example industrial application, which could restrict submissions in those domains which in the past suffered from oversubscription.

Especially from the SME point-of-view, it is important to have more general and open programmes. The process cannot be based entirely on the possibility of promoting the programme themes shortly beforehand.

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

The JRC should be developed further and work more closely with industry.

The programmes should fund foresight and roadmap projects in all relevant themes. The PPPs and JTIs should also be encouraged to do foresight work in their areas.

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12. How should the role of the Commission's Joint Research Centre be improved in supporting policy-making and forward-looking activities?

A further development of the JRC in the direction of the key RDI topics of the European Commission would be desirable; this would mean that the Joint Research Centre would integrate industrial expertise and market thinking as well.

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

It is important to get citizen's acceptance to funding of activities and support for targets. In order to achieve that, the EU should support activities that promote the acceptance of „technology“ within civil society. Its promotion should start in the early years of school. In this context, an important aim would be to improve the image of technical careers and jobs and thus encourage and attract more young Europeans to choose such career pathways and get enrolled in technical jobs. Therefore, „human“ factors, such as skills and technology acceptance, should be more addressed in research. Through the early promotion of technology, it should become common sense, that without technological products most daily problems can not be mastered. The EU's Life-long-learning Programme could also provide assistance to this endeavour.

Overall, connecting the EU's research and innovation activities with societal challenges, and hence citizens' everyday life, will make communicating targets and results easier.

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?

Joint projects should not only focus on scientific advances and technological development, but also include non-technological activities in order to foster innovation. It would moreover be useful to test whether non-technological projects could accompany project clusters and facilitate the uptake of their research results.

Orgalime for example suggests associating „innovating business models“ with innovating technologies.

Eco-innovation, including climate change and environmental protection, certainly figure among the grand societal challenges. They should therefore be supported to their utmost at EU level, especially as regards projects aiming at developing green technologies, which are ultimately helping Europe in the transition to a low-carbon economy.

Social innovation must be seen as the business' and academia's contribution to addressing societal challenges. At EU level, we should focus on innovation with clear opportunities, where European business has a strong potential to bring added value. Only with such a focus will the societal return on investment be maximised.

Broadening the scope of innovation can be achieved by formulating programme calls and also including non-technological innovations and social innovations as fundable research topics and possible outcomes. This would again stress the importance of multi-scientific and cross-unit projects.

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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 Programmes) or different forms of 'public private partnership' be supported? What should be the role of European Technology Platforms?

To strengthen *the industrial participation*, the current well-known weaknesses of the EU research and innovation programmes need to be eliminated, mainly the overwhelming bureaucracy and the long grant application procedures. Higher success rates are necessary since the very low success rates are discouraging for companies (while for example Research organisations are in a way used to them). The goal should be to integrate industry in program setting across the board; it would not be wise to limit the industrial participation to JTI and ETP.

Moreover, more PPPs should be created (see below). The successful features and “the lessons learned” from JTIs and PPPs should be widened to the whole Framework Programme. Overall, private sector participation would be boosted by adopting a more flexible approach to the 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 reflects areas where there is a strong potential for EU added value.

European Technology Platforms can connect successfully the EU administration with industry experts, if they are closely linked up with existing organisations (such as trade associations) that are in charge of generating a consensus among industry. The strengths of many ETPs is the existence of national and regional technology platforms around Europe that operate close to industry and exchange experiences at regular intervals. European Technology Platforms should act as think tanks and analyse long-term megatrends in order to define a strategic research and innovation agenda (SIA) covering the next twenty years.

Joint Technology Initiatives are quasi-autonomous organisations that manage industry-focused research programmes at arm's-length from the European Commission and put industry in the driving seat. When supporting these bodies it is useful to distinguish between teething problems and structural challenges: As other European research programme agencies that have been established in recent years (ERCEA, REA), the existing five Joint Technology Initiatives have experienced some teething troubles in the first years of operation. Much of this is attributed to the fact that they need to apply the Commission's standard financial regulation for executive agencies (1653/2004) in terms of budgeting, accounting, auditing, reporting and staffing. This standard financial regulation has been originally designed for large public funding agencies, such as the European Investment Bank, which distributes around €50 billion per year to 60,000 projects and directly employs 1,500 staff members. The much smaller Joint Technology Initiatives, however, require rules that are much less complex and more flexible.

The European Commission has reacted to this problem by proposing the possibility of creating a financial framework regulation for Joint Technology Initiatives that is lighter and fit for purpose. It is now up to the European Parliament and the Council to endorse the Commission's proposal and to allow the Joint Technology Initiatives to operate within an adequate framework. Anglo-Saxon governments have made much use of quasi-autonomous non-governmental organisations in an effort to exercise public functions in a more economic way and more independent from changeable government priorities, and to cut bureaucracy. The fact that they are firmly established in the machinery of governance proves their value.

Three structural challenges, however, remain. Firstly, there is the need to guarantee democratic accountability. If the European Commission is to delegate the management of EU taxpayers' money to a certain number of Joint Technology Initiatives it will become challenging for the

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European Parliament to adequately control them and to ensure sound financial management. Secondly, there is the danger of duplicating existing structures. With more than 10,000 individual projects supported under FP7, the size of EU programmes for research and innovation allows economies of scale. Many back-office functions such as departments for human resources, IT (e.g. the central online registration portal EPSS), accounting and auditing may be more cost-effective if provided centrally rather than scattered around many independent small-scale entities. Thirdly, a too extensive proliferation of independent agencies could increase the complexity of the funding landscape.

Since the launch of the recovery plan in 2008 and the associated Private Public Partnerships, (“Factories of the Future”, “European Green Car Initiative”, “Energy Efficient buildings”) a big step forward has been achieved. The public-private partnerships established for research collaboration are formed with a clearer aim of reaching the market. Given the overwhelming positive feedback from industry, Orgalime proposes to extend the three PPPs of the recovery plan after 2013 and to institutionalise the public-private partnerships. For the further development of the PPPs the roles between the private and public partners should be clearly defined. The objectives should be decided together and the industry should be responsible for developing a strategic research agenda and setting short-term priorities on an annual basis. The public side should take the responsibility concerning the administration of the budget, including programme management and calls. The evaluation should remain a responsibility for the Commission. Monitoring of projects and dissemination of programmes and project information could be tasks carried out by the private side. Also the clustering of projects could be facilitated by the industrial groups of the PPPs.

Thanks to the creation of European Technology Platforms (ETPs), industrial involvement has increased in all road mapping and priority-setting activities. European business has invested greatly in the conceptual development of the ETPs and these platforms have defined R&D priorities, timeframes, and action plans on issues where growth, competitiveness and sustainability objectives require major medium- to long- term research and technological advances. They are an important source of insight, when used explicitly to provide strategic guidance and for establishing research agendas, relevant to the whole spectra of research. ETPs should therefore also in future provide advice on long-term research strategies for multi-annual manufacturing research work-programmes.

JTIs/PPP's are the way to go when strengthening the cooperation between companies and the EU. ETPs have a role as road-mapping fora, pooling and developing ideas and agendas for programme contents. National PPPs, platforms and programmes should seek cooperation with EU-level JTIs/PPP's.

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?

SME participation would increase if there were smaller, bottom-up projects. Complicated procedures, long delays in approval of projects and long funding delays still pose problems for SMEs. We should try and set a clear target for the evaluation and contracting time to achieve a clear improvement in the “from-an-idea-into-a-running-project” throughput (for example halving the contracting time).

Clear, numeric targets work better than rounded-off, descriptive goals, for example having a target of 15 % funding for SMEs in FP7 has proven to be a very effective guideline providing clear results for the funders. We propose to examine whether setting higher targets for funding of SMEs is

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desired by stakeholders and we also propose to keep the funding level at 75 %.

SMEs with less than 250 employees should get more own calls for collaborative research, and open calls as well. This should be extended to the group of mid- range companies with up to 1000 employees, namely with respect to certain calls, not necessarily with respect to special SME funding conditions.

As mentioned above, EU R&D funding must not crowd out national R&D funding.

All SME activities which do not touch upon problems better solved at an EU scale should be supported nationally or regionally (principle of subsidiarity). Further development and strengthening of EUROSTARS and ERA-NET (PLUS) would provide a good funding connection to the national and regional levels. Moreover, the engineering industry has a good experience with projects of an innovative type that allow for the launching of a series of small-scale research projects within a European project. The ECHORD project for example, European Clearing House for Open Robotics Development, is very SME-friendly, as it supports research and development activities of an appropriate task and size. Orgalime would suggest to the European Commission to further simplify this project type and apply it to more sectors in the field of production technologies.

The Commission should note that SMEs are reluctant to participate under the following conditions:

- If the projects become too big and if the consortia become too large; joining a large group and sharing knowledge is not straightforward, especially for newcomers,
- If in the different work programmes the topics address exclusively breakthrough innovation issues,
- If the time span between approval of the project and the receipt of money is too long,
- If the documentation and amount of information required to participate in the projects is too demanding.

The Commission should recognise that different SME groups have different needs and that therefore different measures for different types of SMEs should be offered (research-intensive versus non-research-intensive SMEs). Consistent and better alignment of the different SME policy tools will improve their visibility for SMEs. Various SME policy tools exist today (FP-Capacity, Structural fund, Competitiveness and Innovation Programme (CIP), EUROSTARS-Art 169, SME related Eranets) with some overlaps.

When addressing non-research-intensive SMEs, the role of the SMEs could be primarily focused later stages of R&D-projects. During the research part, the SME could follow and observe the research, but its interaction with the project could mostly take place during the implementation/demonstration phase.

It should also be allowable for an SME to participate only in a certain work package or for a definite time. Furthermore, small regional informal teams (smaller than clusters) should be able to participate as actors in the FPs. Although today there are possibilities for this, e.g. via EEIG, it is not used often enough.

We also encourage the testing of new methods. For example, technological development and demonstration activities in the field of production technologies for sustainable and competitive European factories could be integrated in the Factories of the Future (FoF) programme. A new instrument could be developed based on a bottom-up approach for industrial research needs and 10% to 20% of the funding dedicated to FoF calls (open calls) could be dedicated to it. This

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additional opportunity should help to integrate the specific research needs of SMEs within FoF.

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?

Open Calls for collaborative research with simpler procedures in which SMEs but also the mid-range companies with up to 1,000 employees can participate would be appreciated. At the same time, it is important to elaborate a common framework, especially for SMEs, that makes the access to different programmes easier (as long as funded activities remain precompetitive and do not distort competition). The bottom-up approach of “FET Open” for breakthroughs and new directions in applied research in the ICT theme of FP7 deserves an extension to other thematic areas

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

The various types of EU financial instruments (credit guarantee schemes, RSFF, equity funds, etc) are complex and to a certain extent still unknown to companies. Information should be presented in a manner that is easy to understand

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?

On **public procurement** different types of instruments must be made available for the various innovation stages and 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 during the commercialisation process.

Pre-commercial procurement should be used more often. Early-commercialisation procurement can be a benevolent demand-side measure for introducing research results to the market, but this depends vastly on the kind of industry, the product and the technology.

In the future, the procurement of innovative products and services must be guided more firmly than hitherto not by the criterion of the lowest price but of the economically most favourable bid, whereby economic efficiency must 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.

As regards **standardisation**, Orgalime agrees that standardisation can play a supporting role to innovation and that it can help to bring innovation to market. When starting research on a topic, it is indeed welcome that project partners do a “mapping the state-of-art”, which includes standards. Orgalime however would like to express some concerns in the current discussion on the role of standardisation in support of research and innovation. Standards, as a peer-assessed codification of best engineering practices, establish a basis for the interoperability of products. In this sense, they facilitate innovation as they allow new solutions to be functional with given products or services.

It should be clear to all involved that “imposing” standards at the early stages of innovation may be counterproductive: a key element of innovation is thinking beyond the current status-quo. Given the fact that standards are there to express the state of the art, fostering new ideas to be fit for

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current standards may lead to rigidities in the European research. What is more, connecting funding with the possibility of standardising the deliverables of research can only act in detriment of breakthrough ideas.

In any case, we have to keep in mind that standards are –and should remain- voluntary. If a product or service cannot fit to standards, then their producers are free to choose not to follow any, as long as they respect the requirements of legislation.

In order to facilitate the market access of innovative products, the Commission should not focus on adapting them to current standards. On the contrary, it is essential to ensure that the European standardisation system is efficient in producing standards whenever new conditions on the market require them. Hence, the deployment of innovative products would be faster in the internal market, if their interoperability were facilitated.

Moreover, the internationalisation of innovation should also be taken into account. The European Standardisation Organisations should keep in mind that the international standards alignment can only be beneficial for innovation.

Overall, standardisation does not drive innovation, but it provides a quicker response to market needs while also respecting societal needs (protection of health, safety, the environment, energy efficiency, etc).

Standardisation also provides benefits to the dissemination of innovation. Therefore standards play an important role for innovation, insofar as a key requirement for successful innovation is that it is conducted in a flexible and unregulated environment.

With increasing requirements of interoperability of all sorts of devices, standardisation becomes all the more relevant.

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?

Competitiveness should not be restricted. Dissemination should be subordinated. The introduction of the unitary patent protection in the EU is overdue and should happen as soon as possible.

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?

European frontline research should focus on powerful initiatives within a number of strategic areas with potential to become world-leading. These areas should be identified according to academic excellence and, where possible, to industry's needs and strengths as well. European research should be of highest international class and built on synergies. Strong environments should be built by involving participation of actors from different areas (private and public). Strong research centres within strategic areas are important and need to be prioritized and focused. The European Research Council, ERC, is an important tool to achieve this and in this perspective securing the competitiveness of the European universities and thereby in the long-term also the industry's.

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

To build up excellence in Member States the EU should:

- set benchmarks
- pursue coherence between educational and research strategic agendas
- overall coordinate the investment in setting up centres of 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 in Belgium in the Flemish region. 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 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 CSF, as they are useful tools to hand to 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 (FP5) should be re-introduced.

Orgalime encourages the Commission to further promote “Industrial Doctorates” or “Industry PhDs”. A recent evaluation of the Danish industrial PhD scheme shows very positive results from participating companies. The fairly new Norwegian industrial PhD scheme seems also very promising.

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

Europe’s society is ageing and forecasts underline the need to respond to the demographic development. The engineering sector 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 success of our industry that all governmental actors, including the EU, promote these subjects and highlight the opportunities for an international and exciting career they offer.

The choice of a future profession is often already made during adolescence and the early teen years 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 outside of school activities.

We invite the Commission to study and evaluate the ongoing activities of single member states

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and draw suggestions for future instruments/benchmarks; (for example Austria developed an innovation concept for “Laura Bassi laboratories”; these centres are predominantly staffed by women and headed by a female researcher).

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

Possibly money from the cohesion funds could be used to enhance the infrastructure funding budgets; there should be a tight linkage and coordination between different sources of infrastructure funding.

The overall coordination of investment in setting up centres of excellence is required. There are certainly a series of research infrastructures of relevance for the European Union as such, which in principle warrants increased support to ensure the long-term sustainability and survivability of such infrastructure. 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 ESFRI (European Strategy Forum for Research Infrastructures) roadmap have to be aligned with the actions and objectives defined within the new CSF to tackle the grand societal challenges. Member States must be encouraged to take the ESFRI roadmap as guidance for defining an own national Research Infrastructure roadmap, where possible making use of structural funds and by earmarking national budgets for large research infrastructures.

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?

There must be a global benefit for all participants. Reciprocity of information and knowledge exchange are also important. Some countries such as the BRICs are important for economy and addressed by several third country programmes of the EU.

With regards to intellectual property rights, it is important to avoid the drain of know-how from Europe to other world regions. As a general rule, cooperation in basic research is less sensitive than cooperation in industry-oriented research. As national laws are quite different in non-European countries IPR aspects should be paid attention to, especially in the cooperation with third countries.

For third country cooperation, too, the principle of subsidiarity should be taken seriously. This means that national-third country cooperation should have preference and EU-third country cooperation should be initiated only whenever the national framework does not suffice. To support national-third country cooperation and EU-third country cooperation, a European overview on third country cooperation activities would help to coordinate all intended national and EU activities when needed.

For the engineering industries a global perspective of the Research Policy is of crucial importance, in particular because:

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- Global enterprises have a pronounced strategy to focus geographically and to place activities where they are best situated. A concentration of R&D activities to one or a few places in the world creates a very competitive situation between individual groups within the same global company. The Companies identifies the best groups in a certain technology area. The availability of world leading competence in strategic areas is a major factor to attract and retain R&D- intensive companies in Europe.
- The engineering industries have a high level of exports, which implies that companies are already adopting their own internationalisation strategies, with which new research internationalisation initiatives should be aligned.
- The companies' R&D requires multidisciplinary orientation, which can be found on the global arena, since industrial technologies progress is the result of the synergic integration of several discipline research results (ICT, mechanics, automation, new materials, energy, production management, etc).

Consequently, the Commission should continue to extend the global reach of the Framework Programme, in order to respond to the globalisation of R&D and to make best use of potential global partnerships. On the other hand, it is a fact that the internationalisation experiences so far in the area of the Framework Programme research have been more the result of individual initiatives and industries than a deliberated strategy of internationalisation of European research. This should also remain the case in future and international cooperation should be an option and not an obligation or even a selection criteria. A more nuanced strategy should be developed which takes into account different needs of sectors and also the differing characteristics and capabilities of various parts of the world.

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?

In the current situation, the expenditure for patent application and maintaining the patent in different EU countries is much higher than for example for a US patent. For this reason, many European companies avoid these costs and do not apply for a patent in all relevant European countries – or at times not at all. The consequence is a deficiency in the protection of intellectual property. To overcome this situation a strong protection of intellectual property rights is only guaranteed by an EU-wide patent system. This would lead to an effective protection against counterfeiting and to a unified litigation system.

We would like to include higher education much more into the discussions on research and innovation. The higher education system has a crucial role in the spreading of innovation and providing the skills and competencies needed for competitiveness.

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