

## EU Framework Programme Call for Evidence

Response to The Department for Business, Innovation and Skills

On behalf of Engineering the Future

## **Engineering the Future Response to BIS EU Framework Programme Call for Evidence**

- 1.1 This response has been prepared by The Royal Academy of Engineering in partnership with the Institution of Engineering and Technology, the Institution of Chemical Engineers and the Engineering Council, acting under the banner of Engineering the Future.
- 1.2 In addition to input from Fellows, this response also draws heavily upon views expressed at two recent Framework Programme stakeholder events hosted by the Academy for the UK business community. The first was held in January 2010 to solicit business views on UK priorities for FP8. In October 2010 a follow-up meeting was held focusing on reform of the UK's mechanisms for supporting business engagement with the Framework Programme.
- 1.3 For ease of reading, answers to the consultation questions have been grouped into two broad sections- a set of recommendations to the UK government on national objectives for Framework Programme 8, and a separate set of comments on the proposed structure of FP8.

### **2.0 UK objectives for Framework Programme 8**

- 2.1 The Framework Programme is an important source of funding and opportunity for UK science, engineering and research and a crucial tool to improve the innovation capacity of UK business. In the current constrained environment for government research and innovation spending, it will remain vital for the UK science and research base to fully exploit all other avenues for funding in the years ahead. This includes taking maximum advantage of the European research programmes, and in particular, Framework Programme 8.
- 2.2 In purely financial terms, the UK's performance to date in obtaining Framework Programme funding has been good. Academia, industry and research institutions in the UK together draw down roughly €500m annually in research funding from FP7, or about 14.4% of the total funding budget over the lifetime of the programme. However, these headline figures conceal major disparities between levels of academic and business participation, and across business sectors.
- 2.3 Business participation in Framework lags behind that of our main European partners; income from Framework drawn down by UK industry is roughly 62% of that achieved by German industry. 80% of research-active businesses in the UK do not participate in Framework. UK business participants tend to cluster in smaller, niche themes (including Space, Research for SMEs, Research Infrastructures), while far lower levels of UK business participation are to be found in larger, better funded themes (including Energy, Environment and ICT). In several key themes, including healthcare, the automotive sector and telecommunications, the UK is represented by a very few major companies; there is little sense that the benefits of participation are spread among the rest of the sector in the UK.
- 2.4 **The UK's most important high level objective for FP8 must be to maximise the economic benefits to the UK from Framework participation, with a particular focus on increasing the levels, strategic**

**focus and impact of business participation in the programme.** To achieve this goal within the current challenging resource environment will involve taking a strategic and joined up approach across the full complement of state and private sector actors in the UK in the negotiation of FP8 and its individual work programmes, the promotion of research opportunities and the exploitation of results. In doing this, the UK should focus on the following priority areas:

- **Promote reform of Framework Programme administration**
- **Maintain and exploit the synergies between national and EU R&D priorities**
- **Reform national business promotion and support networks**
- **Better leverage the influence, networks and expertise of leading UK companies and universities participating in the Framework Programme in key strategic sectors**
- **Promote the exploitation of Framework Programme results within the UK**

## **2.5 Promote reform of Framework Programme administration**

- 2.5.1 At an event hosted by The Royal Academy of Engineering in January 2010 to identify UK business priorities for FP8, a number of specific suggestions were made for administrative reform. The UK should lobby strongly for these business needs to be taken into account in the administrative arrangements for the new Framework Programme.
- 2.5.2 The current bidding process is cumbersome, time-consuming and expensive, especially for unsuccessful applicants. It should be replaced by a two stage process, in which all applicants would be asked to produce a short, two page submission, and only those with a realistic chance of success would be invited back to formally convene the consortium and submit a full proposal.
- 2.5.3 The application and assessment process involves submitting a highly detailed schedule for the entire project at its outset, which consortium members are compelled to adhere to in order to secure payment. It is felt that such a process is unrealistic and artificial for business, where it is impossible to forecast workloads and even staffing levels over such timescales. Business needs a more efficient assessment process based on outcomes rather than inputs. Ideally, several key outcomes would be agreed in advance, and payment would ensue once these milestones had been reached. The time between application and assessment should also be significantly reduced.
- 2.5.4 In the selection, assessment and evaluation of Framework projects, there should be a greater weighting given to potential exploitation of results rather than novelty. Currently there is a feeling in business that a bid which aims to develop a brand new product or process stands a much greater chance of success than one which looks at integrating existing technologies, even though the latter perhaps holds a greater likelihood of producing useful results for business. There is also concern that the assessment process for cross-disciplinary projects tends to favour one or other of the thematic areas.
- 2.5.5 Arrangements to maximise Commission oversight of Framework research projects often stand in the way of a more thorough exploitation of results. The strong confidentiality agreements required from consortia members make it difficult to promote the results of joint research. Over-specification of calls,

and, particularly, a perception that individual units within the Commission 'own' particular calls, often results in an excess of 'stovepipe' projects, which fail to link up with each other. While business welcomes the proposed move towards broader and better linked Grand Challenge style calls in FP8, it warns that these goals should not be undermined by inappropriate arrangements for administrative oversight.

- 2.5.6 The Commission needs to realise that business responds positively to a light touch approach to oversight of projects, and should consider operating on a "trust" basis, and only punishing transgressors. Business feedback indicates that the increasing frequency and intensity of audits in FP7 has been a strong disincentive to participation.
- 2.5.7 In order to ensure a continued high quality engagement from the UK's science and research base, it is important to encourage movement to funding Framework Programme projects on a full economic cost basis.
- 2.5.8 Any reform to organisational arrangements needs to be well communicated, and to take into account business stakeholders' needs for predictability and stability. The hurried and poorly-communicated implementation of otherwise positive administrative fixes, such as the introduction of the LEAR database partway through FP7, has caused unnecessary confusion and additional expense to Framework Programme participants.
- 2.5.9 Changes to administrative arrangements need to take into account potential impact at other stages of the project pipeline. An increased emphasis on audits as a means of controlling project expenditure is now causing logjams at the early stages of consortium forming, as certification bodies become more reluctant to supply certificates.

## **2.6 Maintain and leverage the synergies between national and EU R&D priorities**

- 2.6.1 The UK should better exploit the growing convergence of national and EU research and development priorities and funding mechanisms to use FP8 to bootstrap national research funding programmes and vice versa. This could include more extensive use of 'pump priming' funding to seed collaborative networks prior to expected Framework Programme calls, as recently trialed by the Technology Strategy Board in the area of photonics.

## **2.7 Reform business promotion and support networks**

- 2.7.1 The UK's networks for promotion and support of business participation in Framework Programmes are seen as fragmented, unwieldy and lacking in coherence, with resources very thinly spread thematically and geographically. The imminent closure of the Regional Development Agencies will remove one important mechanism for Framework programme support, and put increased pressure on the UK's already over-strained network of National Contact Points.
- 2.7.2 The service provided by the National Contact Points is found, with one or two exceptions, to be overwhelmingly reactive, focused on the dissemination of information from the Commission. Businesses who sought guidance in preparing bids and assistance in finding projects and partners saw little real engagement with their needs.

- 2.7.3 There is a pressing need for an industry focused body with a broader European perspective to support administration of Framework Programme projects, provide assistance in writing proposals, and especially to support finding European projects and partners. The appetite for the creation of a UK Research Office (UKRO) equivalent for industry, funded, in the first instance, by subscriptions from major business Framework players and Framework-focused research consultancies, should be investigated by BIS and the TSB as a matter of priority.
- 2.7.4 There is a lack of data on the drivers which motivate companies to participate in Framework Programme research projects, or the relative value of the tangible and intangible benefits received. More in-depth research should be commissioned into the drivers and rewards for different types of business and industrial sectors, and the results used to target Framework promotion activities, particularly among the 80% of research-active UK businesses who do not participate in Framework.
- 2.7.5 In reforming the National Contact Points network, the first priority should be to focus on those themes where there is most to gain and greatest alignment with national priorities, and reduce resources for niche areas or themes where UK business has already achieved critical mass. Targets should be created for drawing down Framework Programme funding in areas complementary to UK priorities- for example, in the key technology areas identified by the TSB (high value manufacturing, advanced materials, nanotechnology, bioscience, electronics, photonics and electrical systems, ICT).

## **2.8 Better leverage the influence, networks and expertise of leading UK companies and universities participating in Framework in key strategic sectors**

- 2.8.1 Better use should be made of the networks, expertise and influence of large UK companies taking leading roles within Framework, with the goal of increasing the range and depth of UK business participation in their sectors. Mentoring and buddying systems might be considered; individuals with long experience of leading Framework Programme projects could be asked to serve as Framework Ambassadors within their sector. There should be better dissemination within governmental and non-governmental business support agencies of the intelligence on future FP themes and work programmes gleaned from leading FP performers and the large number of UK representatives on FP boards and committees. Expertise within the university system should be drawn upon in a similar fashion, with universities encouraged to provide assistance to local companies, for instance, in the writing of Framework Project proposals.

## **2.9 Incentivise the exploitation of Framework Programme results within the UK**

- 2.9.1 Businesses who participate in Framework projects note that there is no funding available within the projects themselves for development of new products and processes arising from the project results; perhaps one of the first roles for the new Technology and Innovation Centres might be to help businesses fill this gap. Funding or equity finance could be also made available for this purpose. Currently the results of FP projects are disseminated solely within the rather narrow group of FP performers- if the

UK is serious about using Framework as a tool to improve its innovation capacity, distribution must be broadened across the full range of UK research-active business.

### **3 Structural Changes to Framework Programme 8**

#### **3.1 Objectives and Themes**

- 3.1.1 In general, the balance between the four principal objectives in Framework Programme 7 remains appropriate for FP8. Within the People objective, there is some opportunity for refocusing funding. The Marie Curie Research Fellowships are very successful vehicles for long term mobility focused on fundamental research and should remain intact, but some of the shorter term mobility schemes provide a low return on investment and are not worth continuing. The money saved could be used within the same objective to improve funding for training networks for both academic and business personnel.
- 3.1.2 There is a need for more industry led horizontal activities, either under the Capacities (Research for SMEs) or Co-operation objectives. Within the Co-operation envelope, there should be increased funding for research in services, including social services and innovation in government. There should also be a mechanism to promote better integration of research and innovation strands across EU funding programmes (Framework, Competitiveness and Innovation Framework Programme, the Cohesion Fund). The introduction of the FET concept (integration of applied and fundamental research) within the ICT theme in FP7 is welcomed, and its use should be extended to other thematic areas.
- 3.1.3 There should be a greater emphasis on downstream innovation, either as a horizontal activity under the co-operation objective, or as a separate objective in its own right. Consideration should be given to an additional instrument supporting the development of products and processes arising from the results of FP project research, providing specific pump-priming funding for business. The pilot programme for a European Small Business Research Initiative currently being undertaken by the TSB and several other European national research organisations should also be supported by the Commission on a co-funding basis to procure innovative products and services from SME Framework participants.

#### **3.2 Instruments and Grand Challenges**

- 3.2.1 There should be a significant streamlining of funding instruments, with fewer niche topics in the thematic areas, and more and larger demand led programmes, focused on grand challenges and linked by horizontal cross-cutting programmes. There is very little appetite for a return to smaller projects administered by the Commission, which tended to produce stove-pipe projects which failed to link up. Grand challenges should however be chosen carefully, with a clear focus on research areas where Europe can be genuinely competitive over the next twenty years. Countries outside the EU should be widely engaged in the scoping of grand challenges, as many of the most pressing challenges, particularly in relation to resources, may manifest themselves most strongly outside Europe. In cases where synergy with a broader global effort is required, such international engagement should be retained and strengthened as the Grand Challenge matures.

### **3.3 The European Research Council**

- 3.3.1 The ERC works well because it offers a simple scheme. The Single Investigator funding for long-term curiosity-driven research is good and should not be altered. The most critical aspect of this scheme is its reliance on research excellence as the sole criterion for funding; any attempts to better link ERC activities with the private sector could risk diluting the quality of the research produced.

**Engineering the Future:**

*Engineering the Future* is a broad alliance of the engineering institutions and bodies which represent the UK's 450,000 professional engineers.

We provide independent expert advice and promote understanding of the contribution that engineering makes to the economy, society and to the development and delivery of national policy.

This response has been led by The Royal Academy of Engineering and is endorsed by:

Institution of Engineering and Technology  
The Institution of Chemical Engineers  
The Engineering Council