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European Union Committee

15th Report of Session 2012–13

The Effectiveness of EU Research and Innovation Proposals

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References in footnotes to the Report are as follows:

Q refers to a question in oral evidence.

Witness names without a question reference refer to written evidence.

SUMMARY

The European Union (EU) has traditionally been a leader in the area of research and innovation (R&I), second only to the US, and it is a crucial area for Member States to boost economic growth. However, in recent years, the EU's competitiveness has been increasingly threatened by R&I efforts in emerging economies. In 2010 the Commission and Member States moved to address this problem, unveiling Europe 2020 as a new strategy for growth and Horizon 2020, its flagship R&I programme. Consideration of the budget for Horizon 2020 by the European Council and Parliament is still underway, and we urge both institutions to increase it, or at the very least to maintain it at its current level, in order to ensure that the EU remains internationally competitive in R&I.

During 2012, the Committee examined a number of European Commission proposals for projects and strategies which contained a strong emphasis on R&I. These proposals were wide-ranging in subject matter, but the Committee's scrutiny of them identified a number of cross-cutting issues including; concerns about the effectiveness of impact assessments; a lack of information about monitoring and evaluation of projects; and the importance of stakeholder consultation and private sector participation. This report provides a more in-depth analysis of these issues and how they relate to the Commission's R&I strategy.

We note the importance of the Commission's consultations with stakeholders in ensuring that its R&I programmes are designed and carried out in a way that stimulates economic growth. We encourage the Commission to continue strengthening its efforts to consult the various learned societies, professional bodies and trade associations in developing R&I policy and projects, specifically those in 'niche' R&I sectors such as health.

Similarly, we agree with the Commission that a focus on 'excellence' in R&I proposals offers the best chance of growth through R&I. To this end, we support the Commission's commitment to carry out accurate and effective impact assessments, monitoring and evaluations for R&I policies and work programmes, but suggest that more work should be done to ensure consistency in this area, and realistic expectations for output of R&I projects.

We were particularly concerned about the low and declining level of private sector participation in EU R&I programmes, given the importance of the private sector in commercialising R&I and creating economic growth. While the Commission has made efforts to engage more effectively with the private sector, the gap between private sector participation and that of higher education institutions is still too large and must be addressed. The bureaucracy and complexity of EU R&I programmes acts as a barrier to private sector participation, especially for Small and Medium Sized Enterprises (SMEs) without the resources to navigate complicated and inflexible funding processes. The long 'time-to-grant' period presents a further obstacle.

We believe that EU R&I programmes represent an excellent financial and networking opportunity for UK businesses as well as higher education institutions. We call upon the Government to highlight these opportunities to UK businesses, and to continue strengthening their support structures for those businesses wishing to participate.

The Effectiveness of EU Research and Innovation Proposals

CHAPTER 1: INTRODUCTION

1. During 2012, the Committee examined a number of European Commission proposals for projects and strategies which contained a strong emphasis on research and innovation (R&I). These proposals have been wide-ranging. They include: the Smart Cities initiative, an industry-led project aiming to stimulate sustainable growth through innovation in European cities; the Commission's strategy on cloud computing, which proposes using the public sector role as the largest buyer of Information Technology (IT) services to kick-start the cloud computing market in Europe; and the Commission's Communication on *A Reinforced European Research Area Partnership for Excellence and Growth*, aiming to create a more open labour market for researchers, and to facilitate access to research and knowledge.¹
2. The Committee's scrutiny of these proposals identified a number of cross-cutting issues, including: concerns about the effectiveness of impact assessments; a lack of information about monitoring and evaluation of projects; and the importance of stakeholder consultation and private sector participation. This report provides a more in-depth analysis of these issues and how they relate to the Commission's R&I strategy, with its stated aim of using innovation as a means of remaining competitive in a world which is becoming increasingly interconnected.

Europe 2020 and the Innovation Union

3. In 2009 the EU institutions, the governments of EU Member States and stakeholders within the R&I sector signed the Lund Declaration to "focus on the grand challenges of our time, moving beyond current rigid thematic approaches".² 'Grand challenges' are concerned with important social and/or environmental problems, and dealing with them effectively is seen as key to realising future economic growth. The Declaration laid out a process for identifying these grand challenges and how they should be tackled. Since then, the EU has set up a number of programmes and funding instruments to tackle what it has identified as grand challenges, such as climate change, ageing, and energy and food supply.³
4. The Commission is understandably concerned that the EU is at risk of losing its position as a global leader in the field of R&I due to the unprecedented economic crisis and the growing 'competitive threat' from China and South Korea, in addition to the long standing competitive threat from the US. It

¹ COM(2012) 4701; COM (2012) 529; COM(2012) 392 final. Our correspondence with the Government on these documents is available on our website: <http://www.parliament.uk/hleub>

² The Lund Declaration (2009), p 1. Available at: http://www.se2009.eu/polopoly_fs/1.8460!menu/standard/file/lund_declaration_final_version_9_july.pdf

³ European Research Area website: http://ec.europa.eu/research/era/partnership/expert/eriab_en.htm

said in 2012 that the EU is facing an “innovation emergency”.⁴ It was as a result of this emergency, and to tackle these ‘grand challenges’, that the Europe 2020 strategy was launched in March 2010 by the EU and its Member States. The strategy identifies areas that have great potential to boost growth and jobs, and targets them through the strategy’s seven ‘flagship initiatives’: youth on the move; an agenda for new skills and jobs; a European platform against poverty; a resource efficient Europe; an industrial policy for the globalisation era; a digital agenda for Europe; and the Innovation Union.⁵ Underpinning these seven initiatives are the ‘grand challenges’, referred to above. Although there is an emphasis on R&I in the other six initiatives, the Innovation Union initiative is the most important in terms of R&I. This will aim to improve conditions in Europe for R&I, and thereby enable innovative ideas to be turned into high-growth products and services. The headline target of this strategy is to increase the amount of the EU’s Gross Domestic Product (GDP) spent on research and development from its current level of two per cent to three per cent by 2020.⁶ The European Council has proposed to spend approximately eight per cent of its total budget on R&I in the period 2014–2020.

Horizon 2020

5. Horizon 2020 is the financial instrument that will implement the strategies outlined in the Innovation Union initiative.⁷ It will replace the current Framework Programme 7 (FP7), which runs from 2007 to 2013, and is structured around three main priorities: excellent science; industrial leadership in innovation; and addressing societal challenges. It will incorporate the innovation component of the current Competitiveness and Innovation Programme (CIP), which aims to support the innovation activities of SMEs,⁸ facilitate better access to finance, and deliver business support services in the regions. It will also support the European Institute of Innovation and Technology (EIT, as outlined in Box 2 in Chapter 5).
6. The definition of R&I activities for the purposes of Horizon 2020 is “innovation that results from research and development (R&D) activities.”⁹ These activities encompass,

“the whole spectrum of activities of research technological development, demonstration and innovation, including the promotion of cooperation with third countries and international organisations, dissemination and optimisation of results and stimulation of the training and mobility of researchers in the Union.”¹⁰

⁴ Speech by Máire Geoghegan-Quinn, European Commissioner for Research, Innovation and Science, March 2012: http://europa.eu/rapid/press-release_SPEECH-12-226_en.htm?locale=en

⁵ COM(2010) 2020 final

⁶ Europe 2020 indicators listed on the Eurostat website: http://epp.eurostat.ec.europa.eu/portal/page/portal/europe_2020_indicators/headline_indicators

⁷ COM(2011) 809

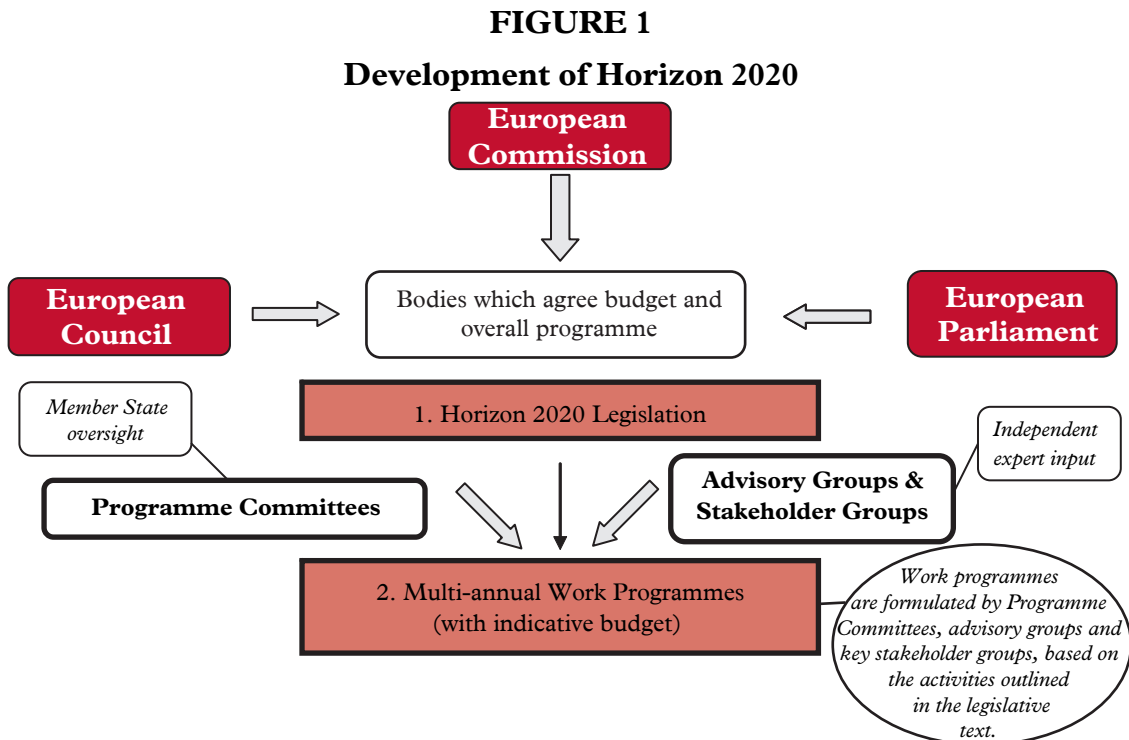
⁸ The EU defines SMEs as businesses with between 10 and 250 employees. Micro-enterprises are defined as those with fewer than 10 employees.

⁹ Horizon 2020 website: http://ec.europa.eu/research/horizon2020/index_en.cfm?lg=en&pg=faq&sub=results&printfaqs=all

¹⁰ COM(2011) 809 final

The Commission has elsewhere clarified that, “while innovation is generally understood as the commercial introduction of a new or significantly improved product or service, innovations can also be for non-commercial applications such as for better public services or for addressing social needs”.¹¹

7. The process leading to the development of Horizon 2020 is outlined in Figure 1.



Source: Department for Business, Innovation and Skills written evidence

8. This inquiry was conducted against the backdrop of ongoing Member State negotiations on the Multiannual Financial Framework (MFF) for the period 2014–2020. Horizon 2020 is inextricably linked to the MFF, and cannot be fully agreed until the MFF has been finalised. On 7–8 February 2013, the European Council agreed an overall budget of €908.4 billion for the MFF, reducing the Commission’s suggested budget for Horizon 2020 by 12 per cent from €80 billion to €70.96 billion. Despite this reduction, the February conclusions on the MFF still represent a significant increase in spending on R&I in comparison to previous financial frameworks.¹² The European Parliament is currently considering the Council’s conclusions on the MFF.
9. The Commission has included the multi-annual work programmes (represented in ‘2’ of Figure 1 above) in the legislative calendar to be adopted by the Parliament and the Council by the end of 2013. The Commission has already outlined these work programmes, some of which have come before the Committee for scrutiny in broad terms, but without full details of the costs involved—for example the draft Smart Cities

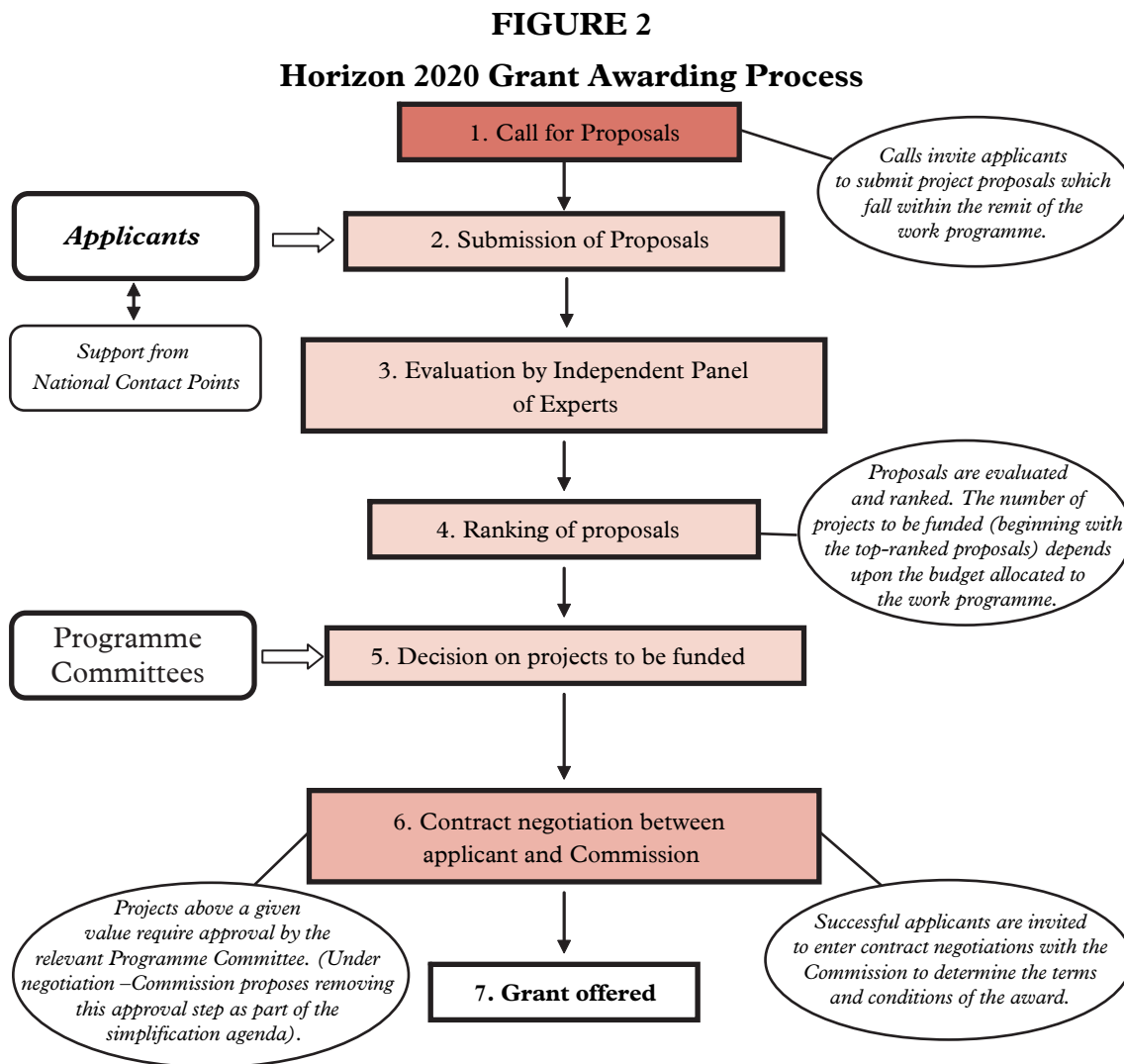
¹¹ Horizon 2020 website:

http://ec.europa.eu/research/horizon2020/index_en.cfm?lg=en&pg=faq&sub=details&idfaq=42705

¹² EU Council Conclusions 7–8 February 2013. Available at:

http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ec/135344.pdf

initiative. It is expected that calls for proposals will be launched in early 2014, inviting applicants to submit project proposals (represented in ‘1’ of Figure 2 below) which fall within the remit of the work programmes. Proposals will then be evaluated, ranked, and a decision made on which projects are to be funded.



Source: Department for Business, Innovation and Skills written evidence

Objectives of the report

10. In this report we examine how the global economic crisis has impacted on R&I in the EU and its Member States, and the resulting effects on the EU's international competitiveness. We examine how the EU consults with stakeholders in developing proposals and strategies with a strong R&I dimension, and whether there is scope for improvement. We assess the EU's monitoring and evaluation procedures. Finally, we concentrate on the experience of businesses hoping to participate in EU R&I programmes, with particular reference to SMEs, and consider what improvements could be made.
11. This report does not deal in detail with the wider impact of R&I on social issues, or the role of non-scientific forms of innovation in EU R&I projects. We acknowledge briefly the issues of public procurement in innovation, and

open access to innovation, referring to the helpful reports by the House of Lords Science and Technology Committee on these issues.¹³

12. The members of the Internal Market, Infrastructure and Employment Sub-Committee, who conducted this inquiry, are listed in Appendix 1. The witnesses who gave evidence are listed in Appendix 2; we are grateful to them all; the evidence they provided is available online.¹⁴ The call for evidence we issued is listed in Appendix 3.
13. **We make this report to the House for debate.**

¹³ Science and Technology Committee, 1st Report (2010–12): *Public procurement as a tool to stimulate innovation* (HL Paper 148); Science and Technology Committee, 3rd Report (2012–13): *The implementation of open access* (HL Paper 122).

¹⁴ EU Sub-Committee B website:
<http://www.parliament.uk/business/committees/committees-a-z/lords-select/eu---internal-market-sub-committee-b/inquiries/parliament-2010/eu-research-and-innovation-proposals/>

CHAPTER 2: IMPACT OF THE ECONOMIC CRISIS

14. It is not surprising that the global economic crisis has had an adverse effect on the research environment in Europe. As one witness observed, R&I is very often one of the first things to suffer in commercial and national budget cutbacks.¹⁵
15. The crisis has affected Member States in different ways, and their reactions have differed as a result. The European Commission pointed out that most Member States have practised ‘smart fiscal consolidation’ and protected their education, research and innovation budgets while making cuts elsewhere. However, in 11 Member States the public budget for research and development has grown less than GDP since the beginning of the crisis and in a few countries, such as Spain and Portugal, it has decreased.¹⁶ In the UK, there remains a great deal of public support for R&I, and many witnesses praised the Government’s policy of ring-fencing the £4.6 billion science budget.¹⁷ There have, however, been financial constraints. One witness, Chemistry Innovation Limited, which operates the UK’s Chemistry Innovation Knowledge Transfer Network,¹⁸ pointed to a much stronger emphasis by the Government on science and technology with a clear potential for commercial impact as opposed to funding for ‘blue skies’ research.¹⁹
16. The economic crisis has also accentuated the different starting points of Member States and their outlook on how the EU can best support R&I. Dr Galsworthy and Professor McKee, scientists who have researched the nature and effectiveness of EU-funded research, identified a gap in participation in EU funded research programmes between the older Member States in Western Europe (the EU-12), and the newest Member States which joined in and after 2004 (the EU-15).²⁰ They suggested that salary differences are a major contributing factor and argued that researchers in the EU-15 should be paid the same salary as those in the EU-12 to reverse the competitive disadvantage they perceive is suffered by researchers in those countries.²¹
17. The Rt Hon David Willetts MP, Minister for Universities and Science, and Malcolm Harbour MEP, Chair of the European Parliament Internal Market and Consumer Protection Committee (IMCO), said that other sources of EU funding, for example structural funds, could be used to correct imbalances between Member State research capacity and competitiveness.

¹⁵ Alliance for European Diabetes Research (EURADIA)

¹⁶ European Commission

¹⁷ European Molecular Biology Laboratory-European Bioinformatics Institute (EMBL-EBI); Association of the British Pharmaceutical Industry (ABPI); The Russell Group of Universities

¹⁸ There are 15 Knowledge Transfer Networks in the UK designed to stimulate innovation in key technology sectors.

¹⁹ Blue skies research refers to flexible, curiosity driven research for which the real world applications are not immediately apparent; The Association for Independent Research and Technology Organisations (AIRTO); Chemistry Innovation Limited.

²⁰ This is evidenced by the list of winners of European Research Council (ERC) grants, the majority of whom are based in institutions in Western Europe.

²¹ Dr Galsworthy and Professor McKee

They suggested that this would reduce the impact on the EU's commitment to promoting "excellent science"²² as will be discussed in Chapter 4.²³

Private sector reaction

18. The economic crisis has impacted on the private sector in different ways. Chemistry Innovation Limited believed that the current financial climate has caused some small businesses to focus more on their existing operations and survival, rather than looking to new technologies requiring reinvestment. Despite cost-cutting and reorganisation, larger enterprises and high technology SMEs have continued to concentrate on innovation, and have the capacity to engage with EU-funded strategies.²⁴ On the other hand, Pfizer, a global pharmaceutical company, pointed out that it is revenue from sales which determines its ability to spend money on R&I, and the economic crisis is negatively affecting both.²⁵
19. ADS, a trade organisation for the UK aerospace, defence, security and space industries, stated that where larger companies do make cuts, these are felt by SMEs in the supply chains, who find it increasingly difficult to raise risk finance (typically through bank loans) which would be a source of research investment.²⁶

The EU's international competitiveness

20. Many witnesses emphasised that R&I is increasingly a global undertaking, and that individual Member States and the EU must be able to cooperate and compete in the global environment. Fast growing economies like China, Brazil or India are rapidly increasing their R&I capacities.²⁷ According to the Government report *Innovation and Research Strategy for Growth*,²⁸ published in December 2011, China is set to become the second largest recipient of foreign direct investment in the world and is already the second largest investor in research and development after the US. High-technology manufacturing now represents 30 per cent of the total manufacturing trade in BRIICS countries²⁹, compared to 25 per cent for the OECD³⁰ area. The Government also provided evidence that licensing and patent revenues from overseas investors are three times higher in the US than in Europe. Therefore, while remaining a top player in terms of knowledge production and scientific excellence, Europe is losing ground with regard to the exploitation of research results.³¹

²² COM(2011) 811 final

²³ QQ 12–13; Q 69

²⁴ Chemistry Innovation Limited

²⁵ Q 50 (Pfizer)

²⁶ ADS

²⁷ EADS UK; Airbus

²⁸ Department for Business, Innovation and Skills: (2011) *Innovation and Research Strategy for Growth*, December 2011, p 8. Available at: <http://www.bis.gov.uk/assets/BISCore/innovation/docs/I/11-1387-innovation-and-research-strategy-for-growth.pdf>

²⁹ Brazil, the Russian Federation, India, Indonesia, China, South Africa

³⁰ The Organisation for Economic Co-operation and Development (OECD) represents 34 countries primarily in the northern hemisphere.

³¹ BIS

21. In response to this apparent loss of competitiveness, the European Commission stated that the completion of the European Research Area³² would create a knowledge market comparable in size to the US and China. It added that in 2011, the total business expenditure on research and development at EU level amounted to 1.27 per cent of GDP, compared to 1.18 per cent in 2007. The EU Innovation Scoreboard in 2011 showed that the EU had closed almost half of the innovation gap between itself, the US and Japan, expanded its lead over Canada, and remained stable with Australia.³³ While this increase in total business expenditure is welcome, the Commission acknowledges that the EU needs to improve when it comes to using the outputs of research for generating economic growth. The Commission stated that there is too much fragmentation and duplication of effort, and that there are barriers which need to be overcome in order to remedy the situation.³⁴
22. The Alliance for European Diabetes Research (EURADIA) stated that reduced spending in research contributes to a 'brain drain', where researchers move to other regions and countries with superior funding prospects. They argued that this can result in a deficit of researchers and trained professionals when the economy recovers, which in turn can cause a time lag between the generation of research outputs and their translation into innovations and products.³⁵
23. The Commission said that, if reduced public spending on R&I in some Member States is not compensated for by increased levels of private investment, the innovation performance of these countries could be hollowed out, endangering their future competitiveness and resulting in lower economic growth and lower tax revenues in the long term.³⁶ Research Councils UK (RCUK) and EADS, the parent company of Airbus and Cassidian, said that care should be taken to ensure that EU activities are not seen as a way to replace decreasing national activities within Member States, but should provide clear 'EU added value'.³⁷ Large companies warned about neglecting emphasis on international levels of excellence and settling for an EU average when allocating research funding, as will be discussed in Chapter 4.³⁸
24. If the EU budget changes, R&I stakeholders have to prioritise their activities accordingly. However, the grand challenges facing Europe are long-term in nature and some of the EU targets for tackling the challenges mirror this, such as the Flightpath 2050 work programme.³⁹ Airbus believed that if the

³² The European Research Area (ERA) was first proposed in March 2000 as part of the Lisbon Strategy. It envisages the EU as being a unified research area open to the world based on the internal market, in which researchers, scientific knowledge and technology circulate freely.

³³ European Commission

³⁴ *ibid.*

³⁵ EURADIA; Dr Galsworthy and Professor McKee

³⁶ European Commission

³⁷ Research Councils UK; Q50 (EADS)

³⁸ EADS; Pfizer

³⁹ The Flightpath 2050 work programme addresses customer orientation and market needs as well as industrial competitiveness and the need to maintain an adequate skills and research infrastructure base in Europe. Available at: <http://www.acare4europe.org/>

R&I to tackle these grand challenges and reach these targets does not begin now, or is postponed or terminated, the targets will not be reached.⁴⁰

25. The Commission pointed out that, since the EU is a single market and trading bloc of 500 million citizens, improving the R&I environment goes hand in hand with making the internal market more innovation friendly. It gave the example of its Communication on the Single Market Act II in 2012,⁴¹ which included proposals for a unitary patent, modernised EU procurement rules and a European passport for venture capital funds—all of which are yet to be put into effect.⁴² The Association of Medical Research Charities (AMRC), a membership organisation of the leading medical and health charities funding research in the UK and overseas, said that it is not just R&I-specific legislation that has an impact on the EU's competitiveness in this area. Instead, they suggested that all legislation needs to be considered, such as the impact of data protection regulations on the UK's ability to access NHS patient data for medical research.⁴³

Horizon 2020 Budget

26. The evidence we received was almost unanimous that, if the budget for Horizon 2020 within the MFF is not increased, it should at least be maintained at the level agreed at the 7–8 February 2013 Council meeting.⁴⁴
27. Most Member States face budgetary constraints. Many areas of the private sector are also under pressure. This may well inhibit funding for the R&I that is needed for sustained economic growth. Although EU-level funding only accounts for a small proportion of overall spending on R&I across the EU, its effect can be multiplied if the EU-level funding programmes are effective at leveraging greater investment from the private sector. There is therefore a clear case for prioritising funding for Horizon 2020 to build a platform for economic growth and to put the EU in a strong position in a hypercompetitive globalised world.
28. **We urge the European Council and the European Parliament to increase the budget for the Horizon 2020 programme within the Multiannual Financial Framework (MFF) in order for the EU to remain internationally competitive in R&I. If this is not possible, the budget for Horizon 2020 should at least be maintained at the level agreed at the 7–8 February 2013 Council meeting.**

⁴⁰ Q 50 (Airbus)

⁴¹ COM(2012) 573 final

⁴² European Commission

⁴³ AMRC

⁴⁴ The Russell Group of Universities; Universities UK and the UK HE International Unit; BIS; SMMT; EADS and Airbus; Pfizer; British Academy; EMBL-EBI; Aberystwyth University

CHAPTER 3: CONSULTATION WITH STAKEHOLDERS

The challenge of consultation

29. A large number of regional, national, and European organisations are involved in economic and social activities which are linked to R&I.⁴⁵ The British Academy argued that it was almost too much to ask, for the European Commission to be aware of all the relevant stakeholders in each area and for them all to be consulted. Despite this obvious difficulty, the majority of evidence we received indicated that the EU does a good job consulting with stakeholders in the development of EU strategies and projects on R&I.⁴⁶ The Government, large businesses, and organisations with a history of engagement with the EU were the most positive in their responses to this question, while SMEs, some trade associations and professional bodies raised concerns.
30. The British Academy emphasised that consultation on R&I does not just involve stakeholders in science, technology, engineering and mathematics (STEM) areas. They argued that research in social sciences and humanities was crucial if societal challenges such as multilingualism, demographic change, migration, poverty and cultural diversity are to be understood. They said that social scientists also had a key contribution to make in defining and understanding the conditions for fostering innovative change.⁴⁷

Large businesses

31. Large businesses appeared broadly happy with the EU's consultation.⁴⁸ They shared the same concerns as other stakeholders about the complexity of trying to engage with the EU, but Rolls Royce acknowledged that it "does actually lend itself to larger institutions to participate in ... [consultations], because you need resources to do that".⁴⁹ ADS pointed to the Commission's success in bringing together senior figures from industry, Member States, higher education institutions and regulatory authorities to define future EU research priorities in aeronautics research.⁵⁰ The Association for Independent Research and Technology Organisations (AIRTO), a UK membership body for intermediate research and technology organisations, suggested that this positive response may be due to the scope for large businesses to define the agenda and influence the content of EU programmes.⁵¹
32. Large businesses also appeared to be particularly engaged in EU consultations around the 'grand challenges' set out in the Introduction, such as climate change and ageing. They identified positive and negative aspects to this. The positives were that the programmes tackling grand challenges recognise that outputs and impact may not be available for quite some time,

⁴⁵ Q 69

⁴⁶ British Academy

⁴⁷ *ibid.*

⁴⁸ Microsoft; EADS; Rolls Royce

⁴⁹ Q 42 (Rolls Royce)

⁵⁰ ADS

⁵¹ Q 22 (AIRTO)

and are structured in a way that reflects this. This removes some of the pressure for businesses to deliver results in the short-term, and can also rally industrial sectors around the kind of research that necessitates a longer term view in tackling these grand challenges. The downside is that establishing these programmes in the first place often requires a great deal of time and therefore expenditure, which large companies find difficult to justify in fast moving markets.⁵² One witness said it would be helpful if agreements reached on intellectual property or reimbursement rates for participation were not reopened by the Commission as regularly as they are now.⁵³ If this constraint is generally experienced by private sector stakeholders, this could inhibit their willingness to participate.

Trade associations, professional bodies, other representative groups and SMEs

33. The very nature of SMEs means it can be difficult for them to find the time to engage with issues that do not have a day-to-day or otherwise immediate impact. As AIRTO observed, “If you are growing a small company and cash and customers are your primary consideration, as it is through most of the stages of growth, it is very hard to find the time to engage in policy and strategy for research and innovation programmes.”⁵⁴ SMEs’ common perceptions were that the timescales for EU projects were too long, the bureaucracy involved too burdensome and the chances of success too low.⁵⁵ It is perhaps unclear to most businesses, not just SMEs, how much the EU influences the environment in which they operate, and therefore responding to EU consultations and calls for proposals therefore seems both distant and irrelevant.
34. Much of the evidence suggested that trade associations already play an important role in representing stakeholder interests in national and European settings, but that there is scope for this to be expanded, particularly in the case of SMEs.⁵⁶ The Open University said that individuals and SMEs are often familiar with their representative organisations and are comfortable in approaching them, but they are perhaps less comfortable approaching official government or EU-designated contact points for SMEs. Consultation with existing research networks at a regional level would help to reflect regional variations in terms of opportunities for and requirements arising from the outcomes of R&I.⁵⁷ AMRC said there is a role for umbrella organisations such as theirs in “demystifying the system”.⁵⁸
35. Large organisations also emphasised the potential for membership organisations to play an intermediary role. EADS said that they had had a positive experience of working with the business membership organisations West of England Aerospace Forum and the Midlands Aerospace Alliance, and that these organisations had been able to support SMEs. University

⁵² Q 41 (EADS and Pfizer)

⁵³ Q 41 (Pfizer)

⁵⁴ Q 22 (AIRTO)

⁵⁵ AIRTO

⁵⁶ Q 22 (AIRTO); AMRC; EADS; Institute of Physics; SMMT

⁵⁷ Open University

⁵⁸ AMRC

College London (UCL) said that pan-European responses through representative organisations, such as the European University Association, were more effective than individual institute or Member State responses.⁵⁹ Professor Mary Ritter, CEO of Climate Knowledge and Innovation Community (Climate-KIC), said that the large business communities within the Knowledge and Innovation Communities (KICs) give SMEs good opportunities for making contact with big business and participating in EU programmes.⁶⁰

Failure of consultation

36. We received some evidence from stakeholders who felt the EU's consultation processes were not effective enough. These witnesses said that the language used in consultation documents was chosen to achieve certain responses; the Commission's websites did not contain sufficient information about programmes and projects;⁶¹ and that there was a general failure to reach down to practitioner level. The European Molecular Biology Laboratory-European Bioinformatics Institute (EMBL-EBI) added that EU websites contain little information about how programmes and policies are formulated and about the bodies which are involved in developing them. This helped fuel the perception that there is a lack of transparency. They suggested that the Commission should hold more workshops throughout the EU, rather than just in Brussels, seeking the views of experts on a specific consultation topic.
37. Some stakeholders in the health sector in particular expressed their dissatisfaction with EU consultation. Professor Bernabei, Professor Carpenter and Bridget Carpenter, all previous participants in an FP7 project, said that EU funded research does not explicitly require researchers to consult with patients and the public about the design of research projects. They argued that involving patients and members of the public in research can result in better research, clearer outcomes and faster uptake of new evidence.⁶² The Alliance for European Diabetes Research EURADIA felt that the process for selecting topics for future calls for proposals did not rely on input from groups of experts, but on the input of national representatives in Programme Committees (represented in Figure 2, Chapter 1), who are not necessarily well informed.⁶³ The Wellcome Trust argued that, in the worst cases, the lack of appropriate scientific consultation has resulted in damaging legislation, such as the Clinical Trials Directive (and the associated decline in clinical trials in the EU), which can take considerable time and effort to redress.⁶⁴
38. The Government considered that, while the EU's current consultation arrangements are generally fit for purpose, the number of EU-funded stakeholder groups has increased substantially in recent years, for example, the European Research Area Committee, European Innovation Partnerships,

⁵⁹ UCL

⁶⁰ Q 25 (Professor Ritter)

⁶¹ EMBL-EBI; Dr Michael Lloyd

⁶² Professor Bernabei, Professor Carpenter and Bridget Carpenter

⁶³ EURADIA

⁶⁴ Wellcome Trust

and European Research Area Networks (ERA-Nets).⁶⁵ They stressed the importance of avoiding unnecessary overlap and duplication in the consultation process, at a time of constraint on Member State resources.⁶⁶

39. The evidence did not attribute all failures of consultation to the EU. The British Academy said that there is an onus on the research community to organise itself properly and simply, and to make it more ‘consultable’.⁶⁷ EMBL-EBI also claimed that because the stakeholder community is so large, not all the input from every single organisation will be visible in the resulting product of the consultation.⁶⁸

EU efforts to improve consultation

40. The Commission highlighted that, in January 2012, it extended its standard period of consultation from eight to 12 weeks to allow citizens, businesses and non-governmental organisations more time to comment on plans for new policies and legislation. The Commission also carried out an internal review of its consultation policy in 2012, which concluded that its consultation policies and tools conformed with international standards and guidelines.⁶⁹ However, following a number of recommendations from the internal review, the Commission announced a set of measures it plans to adopt in order to strengthen consultations, such as: extending the reach of consultations; updating and clarifying minimum standards by including clearer operational criteria; and strengthening internal control and support mechanisms.
41. **National learned societies, professional bodies and trade associations already play an important role for businesses in representing their concerns in Brussels and influencing EU policy-making. We therefore encourage the European Commission to continue strengthening its efforts to consult representative organisations in the future development of R&I strategies and projects.**
42. **We share the European Commission’s wish to ensure that consultation is thorough and welcome their efforts in this area, through extending the standard period of consultation from eight to 12 weeks. However, the programme development process as a whole should reflect that R&I is a fast moving sector.**
43. **Stakeholders in the health sector have reported that there is insufficient consultation on the development of EU funded health projects. We recognise that the European Commission takes seriously its responsibility to consult R&I stakeholders, and we encourage it to**

⁶⁵ The European Research Area Committee provides strategic policy advice in the framework of the governance of the European Research Area. European Innovation Partnerships bring together public and private stakeholders to accelerate the deployment of major innovations by committing them to undertaking supply and demand side measures (funding, regulation, standards, procurements etc) across sectors and the entire innovation system. ERA-Nets provide a means of coordinating national research policies and activities in terms of objectives, expertise and resources, with funding from the European Commission.

⁶⁶ BIS

⁶⁷ British Academy; Institute of Physics

⁶⁸ EMBL-EBI

⁶⁹ Commission Staff Working Document, SWD(2012) 422 final, Review of the Commission Consultation Policy. Available at:
http://ec.europa.eu/governance/better_regulation/documents/document_travail_service_part1_en.pdf

advertise its health related consultations more widely through medical practitioner networks. Improved consultation should help to resolve instances of EU legislation actually curtailing the ability of stakeholders to pursue the EU's objectives.

Issues for the UK to address

44. A number of stakeholders expressed concern that the UK is not as good as other European countries at consulting its own R&I communities and then feeding those opinions into the programmes as they take shape.⁷⁰ The Society of Motor Manufacturers and Traders (SMMT) said that greater transparency is required in how the UK is seeking to influence and maximise its opportunities at EU level. They added that the Government should engage with a broader group of stakeholders and that more direct contact with companies would be mutually beneficial.⁷¹ John Hill, Director of Growth Accelerator, an organisation which works with the Government to support high growth UK SMEs, said he felt that the British Chambers of Commerce and the Federation of Small Businesses had disengaged from lobbying the UK's interests in Brussels, and this was reflected in their withdrawal and lack of participation in pan-European membership organisations such as Eurochambres.⁷² AIRTO said the UK is “probably not putting enough resource as a nation in walking the corridors in Brussels and having people out there”.⁷³
45. The Institute of Physics stated that national agencies such as UK Trade and Investment (UKTI), the Technology Strategy Board (TSB) and the Department for Business, Innovation and Skills (BIS) have shown increasing leadership in recent years in terms of engaging UK stakeholders. Professor Ritter praised BIS for its consultation with the Climate-KIC on the development of the Horizon 2020 budget and the allocation for the EIT.⁷⁴ Contrary to John Hill's comments, the Federation of Small Businesses highlighted its role as a founding member of the European Small Business Alliance and its joint lobbying work on lowering the regulatory burden for SMEs in Europe. Their evidence did not, however, address the issue of facilitating the UK engagement in EU R&I programmes specifically.⁷⁵
46. The evidence suggested a disconnect between the EU's efforts to increase the scope of its consultations; the desire of UK professional bodies, trade associations and other representative groups to have their members' interests heard in Brussels; and the Government's efforts to increase awareness of EU programmes and opportunities in the UK. As is further discussed in Chapter 5, this apparent disconnect must be resolved if the UK is to benefit from EU programmes.
47. **We believe that EU R&I programmes represent an excellent opportunity for UK businesses, higher education institutions and research organisations. The UK Government, professional bodies,**

⁷⁰ AIRTO; Professor Chapple and Professor MacNeil

⁷¹ SMMT

⁷² Q 22 (John Hill)

⁷³ Q 22 (AIRTO); Q 54 (RAND Europe)

⁷⁴ Q 22 (Professor Ritter)

⁷⁵ Federation of Small Businesses

trade associations and other groups representing UK businesses, higher education institutions and research organisations must continue to engage with and lobby pan-European organisations if the UK's interests are to be achieved in Europe. We encourage the Government to reiterate this point to UK businesses using all of its channels such as the Technology Strategy Board, UK Trade and Investment and the Department for Business, Innovation and Skills.

Role of other EU institutions

48. The Commission is the primary initiator of legislation in the EU, and—through its Directorate-General for Research and Innovation—the source of many of the proposals and strategies on R&I. There are, however, other EU institutions which play an important role. Malcolm Harbour MEP pointed to the fact that the European Parliament are “effectively co-legislators with the whole legal framework that puts in place the structure, terms, conditions and, indeed, the broad strategies for European research”.⁷⁶ He added that the European Parliament spends a higher proportion of its time on science and technology subjects than most national parliaments, because they constitute a larger proportion of its work.
49. The Wellcome Trust and the Government welcomed the appointment in 2012 of Dr Anne Glover as the first Chief Scientific Adviser to the European Commission.⁷⁷ The Government believe the role of EU Chief Scientific Adviser has the potential to develop over time and become a source of valuable, politically impartial advice to the European Commission, and to ensure that robust scientific evidence increasingly underpins EU policy and legislation.
50. The Government also welcomed the appointment on 27 February 2013 of an independent and informal Science and Technology Advisory Council to support Dr Glover's work.⁷⁸ Under the chairmanship of the Chief Scientific Adviser, the main aim of the Science and Technology Advisory Council is to provide advice directly to the President of the Commission on how to create the proper environment for innovation by shaping a European society that embraces science, technology and engineering. In particular, this Council will advise on the opportunities and risks stemming from scientific and technological progress. It will also advise on how to communicate these in order to foster an informed societal debate to ensure that Europe does not “miss the boat”⁷⁹ but remains a global leader in cutting-edge technologies.⁸⁰
51. **We consider that the role of Chief Scientific Adviser to the European Commission should be developed over time to become a source of objective scientific advice. We welcome the appointment on 27 February 2013 of a broader Science and Technology Advisory Council to the EU to support the work of the Chief Scientific Adviser.**

⁷⁶ Q 4

⁷⁷ Wellcome Trust; QQ 73–74

⁷⁸ QQ 73–74

⁷⁹ *ibid.*

⁸⁰ President Barroso announces creation of a Science and Technology Advisory Council, 27 February 2013. See: http://europa.eu/rapid/press-release_IP-13-168_en.htm?locale=EN

CHAPTER 4: IDENTIFICATION, MONITORING AND EVALUATION

BOX 1

Commission Criteria for an Effective Proposal

The Commission stated that proposals for effective policies to support R&I should:

- contribute to the EU's objectives;
- be based on sound analysis supported by the best data available;
- draw lesson from evaluations of any previous initiatives;
- make use of forward looking studies;
- have a clear intervention logic;
- take account of the needs of stakeholders, and as far as possible have their support;
- have a clear EU added value;
- be effective and efficient in achieving the objectives;
- involve the simplest possible administrative procedures; and
- make concrete provisions for future monitoring and evaluation.⁸¹

Excellence

52. The criteria identified by the Commission as necessary for an effective R&I proposal are set out in Box 1 above. Witnesses broadly agreed with these criteria. However, they also made very clear that a key consideration in deciding on the efficacy of a research proposal should be whether it is founded on excellence. For UCL this was the sole criterion for an effective proposal,⁸² and for others it was a non-negotiable aspect of a successful proposal.⁸³ The aim of “excellent science” is one of the three key conceptual pillars underpinning the Horizon 2020 framework.⁸⁴ In the Communication on Horizon 2020 the Commission pledged to raise the level of excellence in Europe's science base in order to ensure long term competitiveness. It aims to make Europe an attractive location for the best researchers to carry out “frontier research”.⁸⁵ The Commission issued a call for experts in January 2013 to evaluate the Horizon 2020 project proposals, which should promote excellence by broadening the pool of potential evaluators.⁸⁶

⁸¹ European Commission

⁸² UCL

⁸³ UCL; Malcolm Harbour MEP; Microsoft; Universities UK and the UK HE International Unit

⁸⁴ COM(2011) 808; COM(2011) 809; COM(2011) 810

⁸⁵ *ibid.*

⁸⁶ Horizon 2020 website: http://ec.europa.eu/research/horizon2020/index_en.cfm?pg=h2020-experts

53. Despite the Commission's stated commitment to promoting excellence, some witnesses questioned whether this works in practice.⁸⁷ Witnesses referred to the EU regulatory environment as an indicator that non-scientific political considerations sometimes influence policy decisions in the R&I area. The Agricultural Biotechnology Council (ABC), the umbrella organisation for the agricultural biotechnology industry in the UK, expressed concern at the EU's evaluation processes, arguing that the existing EU regulatory system in the field of agricultural biotechnologies is somewhat dysfunctional, and "beset by political interference by those ideologically opposed to the use of technology, and decision making has not been based on scientific evidence".⁸⁸ The regulatory process in the biotech industry works through developers of biotech crops, such as ABC's members, submitting biotech crop applications to the European Food Standards Agency (EFSA), which should then make a science-based independent recommendation for approval or rejection to the Commission. However, citing this process as an example of political considerations obstructing innovation, the ABC noted that only two genetically modified (GM) products from over 25 waiting for assessment had been approved for cultivation in the European Union over the past 14 years.⁸⁹
54. The Minister seemed to share these concerns. He observed that, while it may be an inadvertent consequence, the current regulations assume a given way of doing things which inhibits the development of new technologies. He cited the example of the EU banning the use of Bisphenol A in making babies' bottles in 2010, as one of many examples of the EU instituting restrictions on a technology to address a risk which is unproven by any reliable scientific evidence.⁹⁰ In line with the views put forward by the ABC, he argued that such delays mean that researchers in Europe develop potentially 'winning' technologies at a much slower rate than competitor countries.⁹¹
55. Certainly, delays and obstructions in these areas are of particular concern, given the importance of biotechnology and advanced materials, as demonstrated by the list of "eight great technologies" in a publication written by the Minister in collaboration with the think tank Policy Exchange.⁹²
56. **We agree with the European Commission's criteria for an effective R&I proposal, but emphasise that in order for the EU to compete with emerging economies which have a significantly higher spend on R&I as a proportion of GDP, it should prioritise excellence. We also urge the Commission to ensure that analysis of R&I policy and proposals is based on scientific evidence, rather than political considerations.**

⁸⁷ Vicky Ford MEP, Agricultural Biotechnology Council (ABC)

⁸⁸ ABC

⁸⁹ ABC

⁹⁰ The Telegraph, *The EU is now getting in the way of scientific progress*, 18 October 2012. Available at: <http://www.telegraph.co.uk/news/worldnews/europe/eu/9617756/EU-red-tape-is-now-getting-in-the-way-of-scientific-progress.html>

⁹¹ *ibid.*

⁹² David Willetts MP, Policy Exchange, (2013): *Eight Great Technologies*: <http://www.policyexchange.org.uk/images/publications/eight%20great%20technologies.pdf>

Impact Assessments in the field of R&I

57. In order to ensure that the criteria for an effective proposal are adhered to, the Commission stated that it carries out impact assessments on proposals with the most significant economic, social and environmental impacts, or those that are politically sensitive.⁹³ However, the Commission's Impact Assessment Guidelines⁹⁴ do not set out precisely when an impact assessment is, or is not, required. This decision is made annually, by the Directorate of the Secretariat General responsible for each specific policy area, on a case-by-case basis. The guidelines do state that an impact assessment will, in general, be necessary for all legislative proposals. If it is decided that an impact assessment is not to be undertaken, reasons will be given, unless the programme or proposal is outside of the Commission's legislative work programme.⁹⁵
58. Commission impact assessments are carried out at different levels. With reference to Figure 1, an impact assessment is carried out for an overarching framework programme, such as Horizon 2020, or the Digital Agenda framework. A second impact assessment can then be carried out for a specific initiative within the framework, such as for the Commission's strategy on cloud computing.⁹⁶ In its written evidence, the Commission said that impact assessments are an important means of ensuring that its political decision making in this area meets the requirements it outlines for a successful proposal.
59. In 2006, the Commission set up an Impact Assessment Board, to examine and issue opinions on all the Commission's impact assessments, independently of the policy making departments. It is chaired by the Deputy Secretary General responsible for better regulation, and is independent of the policy departments. As well as issuing opinions on the quality of individual draft impact assessments, the Impact Assessment Board provides advice to the Commission departments on the necessity of an impact assessment for a particular proposal, and the appropriate methodology to be used in the early stages of preparing an impact assessment. The opinions of the Board are not binding on the Commission, but they do accompany the draft initiative together with the impact assessment report throughout the Commission's political decision-making.⁹⁷
60. The Commission described its impact assessment system as a transparent way of comparing policy options, citing a study by the European Parliament, which compared the impact assessment systems of eight Member States and the Commission. It found that the Commission's impact assessment system is comparatively well-developed with both internal and external checks and

⁹³ European Commission

⁹⁴ European Commission Impact Assessment Guidelines. See: http://ec.europa.eu/governance/impact/commission_guidelines/docs/iag_2009_en.pdf

⁹⁵ The Commission's legislative work programme is the yearly programme published by the Commission, outlining intended legislation.

⁹⁶ Document No. 14411/12, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions—Unleashing the Potential of Cloud Computing in Europe.

⁹⁷ European Commission Website: http://ec.europa.eu/governance/impact/iab/iab_en.htm

balances.⁹⁸ The Commission also highlighted that the 2010 report by the European Court of Auditors concluded that the impact assessment system has been effective in supporting decision-making within the EU institutions and that the Commission's Impact Assessment Board was found to contribute to the quality of the impact assessments.⁹⁹

61. This view was broadly reflected in our evidence.¹⁰⁰ The Government stated that Commission R&I proposals are routinely accompanied by impact assessments, and also noted that scrutiny of impact assessments by the Impact Assessment Board is "rigorous and challenging".¹⁰¹ They cited the impact assessment which accompanied the Horizon 2020 Communication as an example of the interaction between the Impact Assessment Board and the Commission working well, noting the "robust"¹⁰² detail on economic impacts.¹⁰³
62. Similarly, in response to the question in our call for evidence on whether EU proposals clearly state their desired impacts, ADS observed that the feedback from their member companies was positive.¹⁰⁴
63. However, witnesses including the Government, indicated that a stronger role for the Impact Assessment Board would be beneficial. Both UCL, Universities UK and the UK HE International Unit regretted that despite its ability to provide useful data on impact assessments, to date, the Impact Assessment Board has only been used for piloted initiatives and FP7 research programmes. On the impact assessments themselves, one witness observed that, while they have the positive effect of encouraging policy makers to think carefully about what they intend to achieve, they could potentially become a formality or "box ticking exercise".¹⁰⁵ RAND Europe, a not-for-profit public policy research institute that the Commission has contracted to conduct research used in impact assessments, argued that researchers subcontracted by the Commission are not empowered to go beyond the Commission's "prescribed specification" of possible impact.¹⁰⁶
64. Witnesses mentioned the particular difficulties in carrying out an impact assessment in the field of R&I, in that the objective of much R&I is to find something new, which in itself is difficult to predict and measure.¹⁰⁷ The Government stated that the nature of research makes it difficult to quantify economic and societal impacts with certainty, especially in cases where these would take considerably longer to materialise than the relatively short timescales for evaluation that EU R&I allows for. As the Minister remarked,

⁹⁸ CEPS/University of Exeter, Special Report No.3, (2010) *Regulatory quality in the EU institutions: do they support decision making?*

⁹⁹ *ibid.*

¹⁰⁰ EADS; UCL, Universities UK and the UK HE International Unit; Research Councils UK (although they also state that impact assessments are sometimes inaccessible to the wider research community),

¹⁰¹ BIS

¹⁰² BIS

¹⁰³ BIS

¹⁰⁴ ADS

¹⁰⁵ AIRTO; Q 30 (AIRTO)

¹⁰⁶ Q 66 (RAND Europe)

¹⁰⁷ Q 31 (EADS; AIRTO); BIS; Q 71; EURADIA

“[The Commission] are dealing inevitably with uncertainties and sometimes ... the figures are suspiciously precise.”¹⁰⁸

65. The Government, and other witnesses, also noted that many positive outcomes cannot easily be encompassed in an impact assessment; such as the cross-fertilisation of different approaches and skills, and the development of networks of collaboration.¹⁰⁹ The Institute of Physics and Professor Ritter observed the importance of participation in networks.¹¹⁰ Similarly, EADS suggested that it is “difficult to make a realistic, useful and accurate assessment of the actual impact achieved, especially if this would ... have its main effects in an unexpected way”.¹¹¹
66. This Committee conducted a report on impact assessments in 2010, agreeing in part with the Commission’s assessment that its impact assessment system was effective.¹¹² We acknowledged that there would be value in further work to determine if the process for deciding whether a proposal requires an impact assessment is appropriate. Indeed, when scrutinising some of the Commission’s work programmes, we considered that an impact assessment would clearly have been helpful. For example, an impact assessment was not carried out for the Smart Cities programme, despite its potential economic and social impact.
67. Our 2010 report also welcomed the actions of European Parliament committees in commissioning impact assessments where they considered that the Commission assessment was inadequate. As part of the current inquiry, we heard from Malcolm Harbour MEP on the role of the European Parliament’s European Added Value Unit set up in 2010. He described its role as a form of ‘critique’ on the Commission’s Impact Assessment Board, a function which this Committee welcomed in our 2010 report.¹¹³ However, in his evidence the Minister observed the potential for duplication by the European Parliament in this area, saying, “I think I would encourage them [the European Parliament] to try to improve and press the Commission for better quality in their own impact assessments rather than have Parliament doing a rival one”.¹¹⁴
68. **We reiterate the view expressed in our 2010 report, *Impact Assessments in the EU: Room for Improvement?*, that impact assessments should be performed wherever a significant proposal is made. We also continue to call for further work to determine which measures are, and are not, to be accompanied by an impact assessment and whether in practice the selection is appropriate.**
69. **We agree with the Minister that the relationship between the European Commission and the European Parliament in the area of impact assessments warrants further study. We suggest that there is a**

¹⁰⁸ Q 71

¹⁰⁹ EADS; Institute of Physics; QQ25–26 (Professor Ritter); BIS

¹¹⁰ QQ 25–26 (Professor Ritter); Institute of Physics; LCA Europe; Growth Accelerator

¹¹¹ EADS; EURADIA

¹¹² European Union Committee, 4th Report (2009–10): *Impact Assessments in the EU: room for improvement?* (HL Paper 61)

¹¹³ Q 10

¹¹⁴ Q 71

risk of overlap between the two, and that there should be a focus on improving the Commission’s impact assessments, perhaps through a stronger role for the Impact Assessment Board, rather than running a parallel process in the European Parliament.

70. **While the accuracy of impact assessments is important, the European Commission should avoid an overly rigid approach, and develop indicators in collaboration with the private sector. These should take into account the extent of uncertainty involved in ‘blue sky’ innovative products, and the potential for projects to produce positive outcomes which take time to develop, are less tangible and may be difficult to quantify accurately at the outset of a project.**

Monitoring and Evaluation

71. The principles of monitoring and evaluation have been well established in project management following decades of academic research and practical use. Essentially, proper monitoring will help to ensure a project is delivered in an efficient manner, while proper evaluation will assess whether it has produced the desired effects. Monitoring and evaluation allow actors to learn from each other’s experiences, building on expertise and knowledge; they promote transparency and accountability, allow for lessons to be shared more easily; and provide a way to assess the crucial links between project implementers, beneficiaries on the ground and decision-makers.¹¹⁵
72. Some witnesses agreed with the Commission’s assertion that its evaluation processes were well-established and transparent.¹¹⁶ However, others contested this. UCL, Universities UK and the HE International Unit stated that there is currently no requirement to ensure that the impacts set out in an impact assessment have been achieved.¹¹⁷ EADS described EU monitoring as administratively cumbersome and expensive.¹¹⁸ The Government also acknowledged this, observing the tension between the Commission’s stated aim of simplifying the process, and the desire to maintain the availability of monitoring information.¹¹⁹ The Open University and RCUK noted that there is little access to discussions with the Commission on preferred monitoring and evaluation processes.¹²⁰
73. Some witnesses were concerned about the background and quality of the evaluators.¹²¹ Dr Urban *et al* observed that in some instances, evaluators were not experts in their field, but inexperienced post-doctoral researchers. EADS viewed the process in a largely positive light, but described it as “dominated

¹¹⁵ International development organisations such as the World Bank and the United Nations Development Programme have been at the forefront of developing monitoring and evaluation frameworks over the last fifty years. See:

<http://web.worldbank.org/WBSITE/EXTERNAL/EXTOED/EXTEVACAPDEV/0,,contentMDK:22293310~enableDHL:True~menuPK:4585753~pagePK:64829573~piPK:64829550~theSitePK:4585673,00.html>

¹¹⁶ EADS; NETSCC; Open University

¹¹⁷ UCL; Universities UK and the UK HE International Unit

¹¹⁸ EADS

¹¹⁹ BIS

¹²⁰ Open University; RCUK

¹²¹ Dr Urban *et al*; Professor Bernabei (industry should be involved in the design of proposals)

by academic experts, whose priorities while valid are focused on novel research, not industrial innovation". They noted that industry experts are often rejected through claims of conflict of interest.¹²²

74. The evidence we received suggested that, apart from the general criticism of complexity and bureaucracy that runs through the evidence, the major weakness in the Commission's monitoring and evaluation process is the evaluation of outputs.¹²³ Both the Institute of Physics and the National Institute for Health Research Evaluation, Trials and Studies Coordinating Centre (NETSCC) acknowledged the challenge of balancing the desired programme outputs with the practical realities of technology development and the legislative environment.¹²⁴ NETSCC cited the example of the European network for Health Technology Assessment (EUnetHTA) programme in which they were involved, where one of the desired outputs was the establishment of a permanent EU network for health technology assessment by the end of 2012. They said that the project was launched on the premise of achieving this aim, in spite of the Commission's awareness that the EU legislation needed to facilitate the project would not come into effect until after 2012.¹²⁵
75. Reflecting on their research into the nature and effectiveness of EU funded research, Dr Galsworthy and Professor McKee observed that in their analysis of all health-related research funded by the EU under Framework Programmes 5 and 6 (FP5 and FP6), 50 per cent had no detectable academic output. They suggested that this was a result of the EU's lack of a technologically effective system to track its own projects and outputs.
76. One of the key problems with EU monitoring and evaluation is the long timescales involved. As part of the monitoring and evaluation process, the EU recommends that at the end of a project, a policy brief is developed and sent to stakeholders and policy makers. The policy brief should be developed from the findings of the study, and then be published in peer reviewed journals. However, Professor Bernabei *et al* suggested that the call for these academic papers often comes up to six years after the project is concluded, at a stage where the EU funding has finished, and the team has disbanded, leaving no one to write the brief.¹²⁶
77. **We welcome the European Commission's efforts to simplify the monitoring and evaluation process, but share the Government's view that this should not be done at the expense of the transparent evaluation of projects.**
78. **We consider it of paramount importance that monitoring and evaluation are carried out by experts in the relevant sector, in order to ensure that evaluators are able to assess and promote innovative excellence. A cohort of the experts in a particular sector should by definition consist of both academic and industry experts, bringing different strengths to bear on the evaluation process.**

¹²² EADS

¹²³ Dr Galsworthy *et al*; NETSCC; Research Councils UK

¹²⁴ Institute of Physics; NETSCC

¹²⁵ NETSCC

¹²⁶ Professor Bernabei *et al*

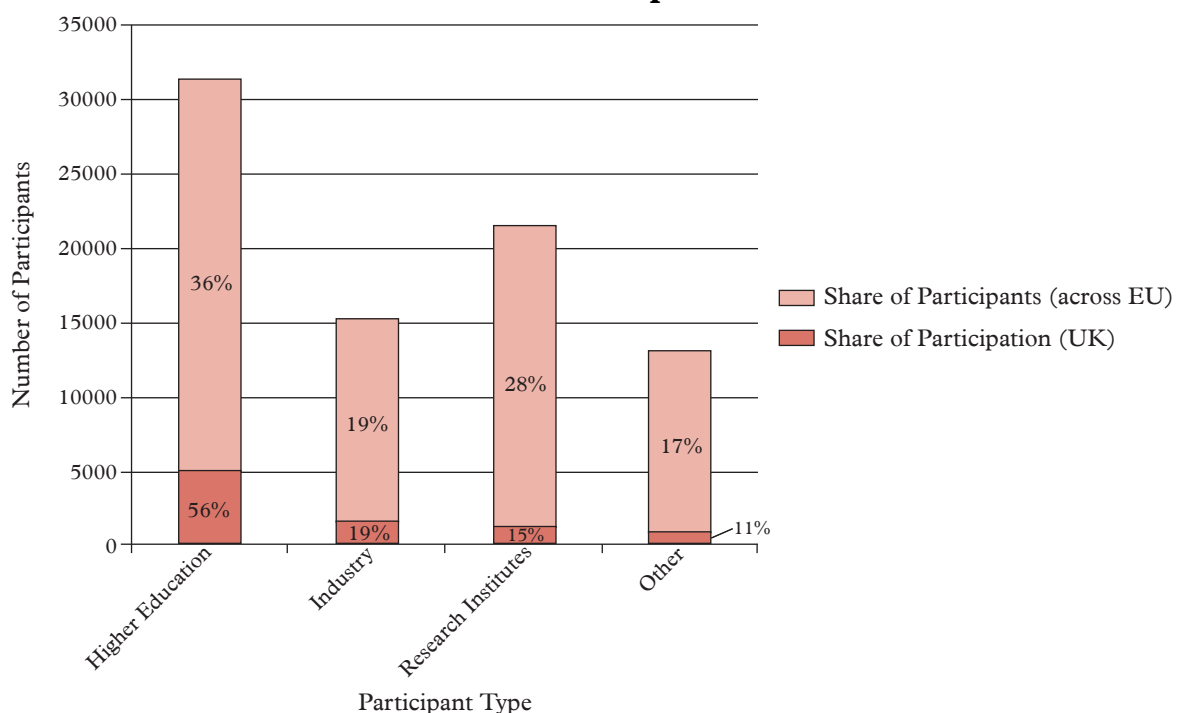
79. **We also recommend that more work could be done to ensure that monitoring and evaluation of outputs are efficient and realistic, taking into account the relatively short timescales of EU R&I projects. This could be better achieved in part through clarifying at the outset of a project, the requirement for project participants to produce materials at the end of a project which explain the outputs and outcomes.**

CHAPTER 5: PRIVATE SECTOR PARTICIPATION

80. The private sector plays a vital role in creating economic growth through R&I. The European Commission described businesses as “the engine of innovation”.¹²⁷ The private sector is therefore one of the most important stakeholders in the EU’s proposals and strategies for R&I in Europe.
81. Since the creation of the first Framework Programme for Research and Development in 1984 the Commission has repeatedly moved to stimulate R&I in the private sector. It has set up various mechanisms, such as the industry-led European Technology Platforms, which provide formal and informal frameworks for stakeholders to shape and define EU research priorities. The Commission highlighted the success of initiatives such as this, and argued that “the EU has been successful in engaging the private sector in research and innovation projects. Private sector participation in the EU Framework Programme for Research and Technological Development (FP) has steadily increased in recent years”.¹²⁸
82. Figures 3 and 4 below demonstrate the degree of private sector participation in the last two framework programmes.

FIGURE 3

Private Sector Participation in FP6

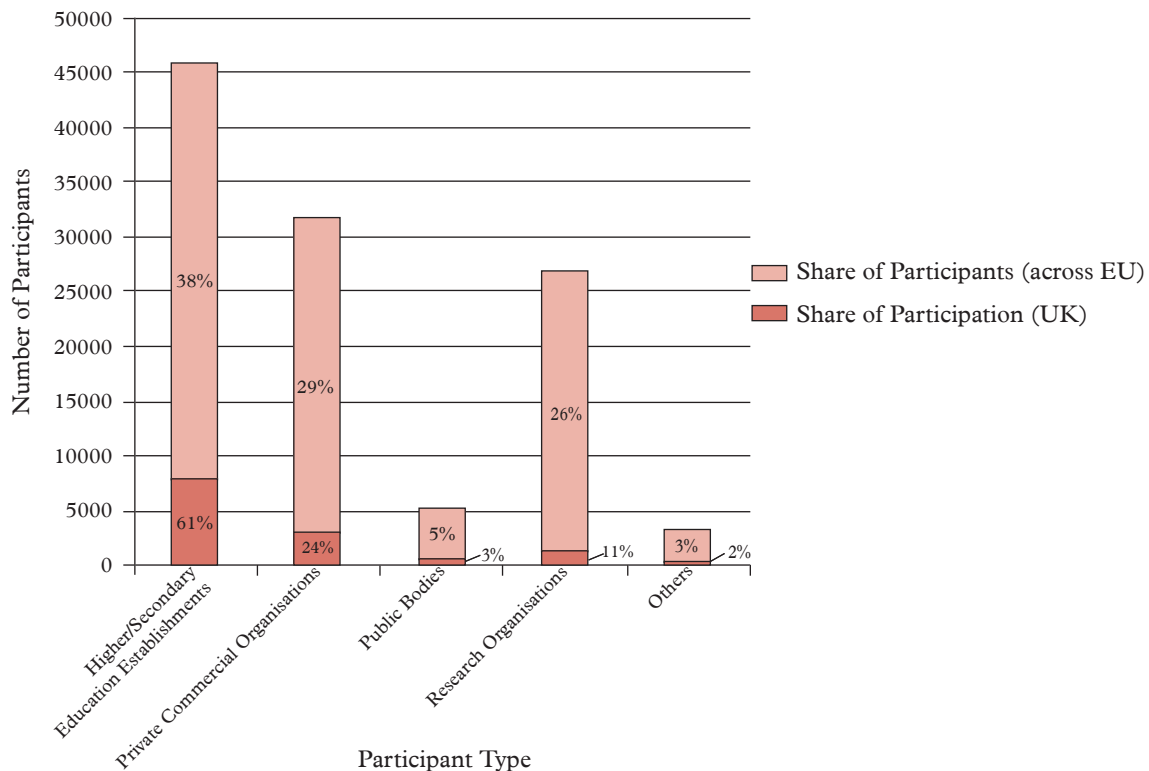


Source: FP6 participation data (E-CORDIA 2009)

¹²⁷ European Commission

¹²⁸ *ibid.*

FIGURE 4
Private Sector Participation in FP7



Source: FP7 participation data (E-CORDIA March 2013)¹²⁹

83. These figures show that, throughout FP6 and FP7, the overall participation of higher education institutions across Member States has remained at a high and increasing level. This trend is accentuated in the UK, where higher education institutions had a 61 per cent share of participation in FP7. The overall figures for private commercial organisations are considerably lower, standing at 19 per cent in FP6 and 29 per cent for FP7. UK business participation in FP7 is 5 per cent lower than business participation across the EU.¹³⁰ Although the Commission is right to observe an increase in the overall number of business participants, there is still a noticeable lack of business participation, given its importance in stimulating growth and to complement the innovation carried out by the education sector. The decline in private sector participation over consecutive FPs was acknowledged by a number of witnesses, from large corporations such as Microsoft, through to SMEs and the UK Government.¹³¹
84. Boosting private sector participation in EU funded R&I projects is vital if the funding is to succeed in its aim of stimulating economic growth. While we welcome the efforts made by the Commission to engage the private sector, there is still a notable gap between private sector participation and that of higher education institutions.

¹²⁹ Note that the classification of organisation type in the FP7 data differs to that in the FP6 data.

¹³⁰ A breakdown of UK participation in different economic sectors and in different framework programmes is available on the CORDIS website: http://cordis.europa.eu/united_kingdom/home_en.html

¹³¹ Microsoft; Growth Accelerator; BIS

Bureaucracy and Complexity

85. The problem of bureaucracy as a barrier to private sector participation was echoed throughout the evidence. This perception has already been clearly demonstrated in earlier research, such as the 2010 report undertaken for BIS by Technopolis, a policy advisory firm.¹³² A key theme of the responses from FP6 and FP7 participants cited in their report was the excessive bureaucracy of EU R&I projects, requiring a great deal of time and effort to participate. In keeping with this concern, Microsoft commented that, “There is a general perception that access to EU level programmes is both complicated and time consuming. This could be one major reason for the decreasing [private sector] participation in programmes over the last 10–15 years.”¹³³
86. The Commission has taken note of the concerns about bureaucracy and complexity, and has made clear efforts to cut red tape in R&I programmes in recent years, work which it states will continue to be central to Horizon 2020. One of the key elements of the Commission’s simplification agenda has been the Administrative Burden Reduction programme. The Commission reported that the target to reduce the administrative burden stemming from EU legislation by 25 per cent by 2012 has been fully achieved.¹³⁴ Similarly, the Commission committed in November 2011 to exempt micro-businesses from new legislation unless their inclusion can be justified, and to seek lighter regimes for SMEs.
87. In spite of efforts on the part of the Commission, it is clear that there is still dissatisfaction with the bureaucratic process. ADS concurred with Microsoft’s analysis of the bureaucracy as a barrier to participation, suggesting that it can result in a waste of resources as companies feel the need to engage consultancies to assist with their proposals. They noted that this provides a barrier to SMEs in particular.¹³⁵ This point was followed up by other companies such as Rolls Royce, who described EU R&I application processes as “extremely complex”,¹³⁶ a situation which in their opinion lends itself to participation from larger institutions with the resources to address the complexities, rather than smaller institutions without these capabilities.
88. While there is a strong case that bureaucracy and complexity at EU level pose a barrier to private sector participation, the fact that UK business participation in FP7 is lower than that across Member States as a whole indicates that there is also a scope for action at national level.
89. The Government have sought to make business participation in EU R&I programmes more straightforward by establishing a network of National Contact Points.¹³⁷ National Contact Points provide support to potential applicants, and are funded through the Technology Strategy Board. While, in principle, this help at national level is to be applauded, the review of such

¹³² Technopolis Group (2012), *Getting the Balance Right: Basic Research, Missions and Governance for Horizon 2020*

¹³³ Microsoft

¹³⁴ European Commission website:

http://ec.europa.eu/dgs/secretariat_general/admin_burden/index_en.htm

¹³⁵ ADS

¹³⁶ Q 42 (Rolls Royce)

¹³⁷ BIS

mechanisms undertaken by the Government in 2012 revealed some problems. The Minister noted that National Contact Points were felt to be “under resourced and fragmented and there were criticisms of the national website”.¹³⁸

90. These deficiencies were pinpointed by the Institute of Physics in their written evidence, which attributed problems with the National Contact Points to mismatches between the focus of European programmes and the science and innovation priorities of national governments. They called for greater strategic cooperation between national and European SME programmes, suggesting that the current state of play disadvantages companies who may be eligible for European funding, but lack the appropriate domestic support.¹³⁹ A similar recommendation to integrate national and European SME programmes was made by John Hill of Growth Accelerator.¹⁴⁰
91. The Minister advised the Committee that BIS are currently working on a new strategy to improve resources for the National Contact Points and make them more accessible to businesses.¹⁴¹ While this is to be welcomed, it would seem that the Government should also look at the improved linking of National Contact Points with R&I programmes at EU level.
92. **We welcome the efforts made by the UK Government at a national level through reform of the National Contact Points. We urge the Government to build on their work in this area, to ensure that the National Contact Points are focused on the priorities at EU level. This would improve support to UK companies in accessing EU R&I funding more effectively.**
93. Getting involved in these projects necessitates time and resources, which may act as a deterrent to new players, who are not familiar with the workings of the system and the advisory networks. Indeed, RAND Europe highlighted the deterrent effect of having to become familiar with a unique and somewhat idiosyncratic system. It argued that, in order to succeed, a company had to “learn the system, how to write successful proposals and collaborate successfully”.¹⁴² Chemistry Innovation Limited argued that the guidance available to help applicants address the question of what impact they expect projects to achieve is largely contained in documents which are not written in plain language and are therefore difficult to digest.¹⁴³
94. **The concerns over bureaucracy and complexity creating barriers to private sector participation are not new. The European Commission has taken note of these concerns, and we support the changes made towards simplification and urge them to make the simplicity of procedures and language a criterion for every new undertaking.**
95. In addition to the more general concerns about bureaucracy, witnesses raised the specific issue of the so-called ‘time-to-grant’ problem in relation to

¹³⁸ Q 78

¹³⁹ Institute of Physics

¹⁴⁰ Growth Accelerator

¹⁴¹ Q 78

¹⁴² Q 58 (RAND Europe); Institute of Physics

¹⁴³ Chemistry Innovation Limited

Framework Programmes.¹⁴⁴ Time-to-grant is expressed as the period from the close of the call for proposals, to the date the Commission signs a grant agreement (see Figure 2, in Chapter 1). The Minister noted this as a serious problem, in that the average time-to-grant currently stands at 340 days. The average figure varies across thematic areas, and is as high as 499 days¹⁴⁵ (over 16 months) in the area of security.¹⁴⁶ When compared with the time-to-grant for the US Defense Advanced Research Projects Agency (DARPA), which also funds a range of R&I projects, the length of time-to-grant for EU R&I projects is even more apparent. The average time from proposal receipt to contract award at DARPA is between 150 and 180 days.¹⁴⁷

96. The Minister accepted that the current length of time-to-grant is too long for many organisations operating in fast moving technology areas. He also implied that it is particularly problematic for SMEs with limited resources; as in the case he described concerning a company which had been advised that it had been awarded an EU R&I grant, and “was so excited by being told that it has got a grant that it recruited extra staff. But the money was so slow to arrive that they had gone bust”.¹⁴⁸
97. For Horizon 2020, Máire Geoghegan-Quinn, the EU Commissioner for Research, Innovation and Science, has committed the Commission to reducing average time-to-grant by 100 days (as a non-binding target). This would result in an average of around 240 days. The Government suggested that this target is achievable, given that the time-to-grant in the current FP7 ICT thematic programme stands at 263, just 23 days more than this. However, the Minister conceded that a reduction of 100 days still seems far too slow. He suggested some means of speeding the process up, such as a simpler funding model with a flat-rate-only approach to certain costs, better IT systems, and assessments undertaken in parallel rather than sequentially.¹⁴⁹
98. From a company’s viewpoint, the time needed to make an application for EU funding is more than the time-to-grant. An applicant would have already devoted time to completing the application, and if successful, would spend additional time negotiating with the Commission on the grant agreement, before signing it. Furthermore, the common problem of late payments, caused by the need to check reports and accounts, extends further the time that companies have to wait before receiving the funds.¹⁵⁰ Indeed, Eurochambres has suggested a substantially bolder course of action, by way of a binding agreement that a decision should be made within 100 days of the submission. They also advocated that there should be several deadlines per year for submitting the application.¹⁵¹

¹⁴⁴ Vicky Ford MEP; Research Councils UK; BIS

¹⁴⁵ The average time to grant period has declined, with the latest recorded average (as at June 2012) being 331 days

¹⁴⁶ BIS, supplementary evidence

¹⁴⁷ DARPA

¹⁴⁸ Q 72

¹⁴⁹ Q 72

¹⁵⁰ BIS, supplementary evidence

¹⁵¹ Eurochambres, Position paper, (May 2012): *Horizon 2020 package*. Available at:

http://www.eurochambres.eu/objects/1/Files/EUROCHAMBRES_Position_Paper_on_Horizon_2020.pdf

99. While it is clear that the reduction of 100 days advocated by the Commission is not enough, Eurochambres' recommendation is perhaps unrealistic. The introduction of multiple deadlines could risk the pursuit of 'scientific excellence' through selection of the best proposals, since it would remove the Commission's ability to evaluate all the proposals collectively. The fact that the evaluation phase is only 150 days out of the 340 suggests that there is potential for cuts to the additional negotiating periods. This could be done through the methods the Government suggest.
100. **The current length of the time-to-grant is of great concern, given the fast paced and dynamic nature of the R&I sector. We commend the European Commission's undertaking to reduce this by 100 days, but this is not enough. We urge the Commission to carry out further work in this area, through simplifying the negotiation stage, the funding instruments and improving IT systems.**
101. **We consider that late payments to successful applicants exacerbate the problem of time-to grant and must not be tolerated.**

SME participation

102. SMEs, totalling 20.7 million businesses in the EU, amount to more than 98 per cent of Europe's businesses. More than one fifth of these firms operate in sectors such as high-tech manufacturing, and knowledge intensive services such as pharmaceuticals, electronics, and scientific R&I.¹⁵² As well as being crucial to economic growth because of their sheer number, they are also crucial to wider prosperity through job creation. This is highlighted in the report by NESTA, *The vital 6 per cent: How high growth innovative businesses generate prosperity and jobs*, which used the UK as a case study (where SMEs represent 99.9 per cent of businesses), and noted that six per cent of high-growth, innovative SMEs generated 50 per cent of the new jobs created by existing businesses between 2002 and 2008.¹⁵³ From an EU wide perspective, SMEs accounted for 67 per cent of total employment in 2012.¹⁵⁴
103. It is therefore crucial for the Commission to break down the barriers to SME participation in the area of R&I to enable growth. The Commission acknowledged the importance of SMEs and has set up specific schemes to encourage greater SME participation. It cited the European Institute of Innovation and Technology (EIT), as having been particularly successful in this respect.¹⁵⁵ The workings of the EIT are outlined in Box 2.

¹⁵² ECORYS (2012), *EU SMEs in 2012: at the crossroads*. Available at: http://ec.europa.eu/enterprise/policies/sme/facts-figures-analysis/performance-review/files/supporting-documents/2012/annual-report_en.pdf

¹⁵³ NESTA, Research Summary (2009): *The vital 6 per cent: How high growth innovative businesses generate prosperity and jobs*. Available at: <http://www.nesta.org.uk/library/documents/Vital-six-per-cent-Nov2010-v3.pdf>

¹⁵⁴ ECORYS (2012), *EU SMEs in 2012: at the crossroads*. Available at: http://ec.europa.eu/enterprise/policies/sme/facts-figures-analysis/performance-review/files/supporting-documents/2012/annual-report_en.pdf

¹⁵⁵ European Commission

BOX 2

The European Institute of Innovation and Technology (EIT)

- The EIT was established in 2008 as a body of the European Union, to “increase European sustainable growth and competitiveness by reinforcing the innovating capacity of the EU”.
- Its main activities are implemented through a distributed network of Knowledge and Innovation Communities (KICs).
- The EIT has been given an important role in Horizon 2020, with the objectives of addressing societal challenges and assisting the EU to gain leadership in enabling and industrial technologies.
- The three current KICs are:
 - (i) KIC Inno-Energy: sustainable energy;
 - (ii) EIT ICT labs: future information and communication society; and
 - (iii) Climate-KIC: climate change mitigation and adaptation.
- Each KIC is run in a similar way to a conventional business, headed by a CEO and an Executive Board, operating with a business plan containing key performance indicators.
- 25 per cent of the funding is from the EIT, while the remaining 75 per cent is raised from private sources.
- The KICs create seven year partnerships made up of higher education institutions, research organisations, business entities and sometimes local authorities.

*Source: Catalysing Innovation in the Knowledge Triangle: Practices from the EIT Knowledge and Innovation Communities*¹⁵⁶

104. A 2011 independent review of the KICs indicated that they have been successful overall, especially in the context of supporting the creation of start-ups, spin-offs and SMEs.¹⁵⁷
105. Despite the success of projects like the KICs in engaging SMEs, many of the witnesses pointed to the need for a more ‘bottom-up’ approach, allowing flexibility in relation to the topic to be considered. They suggested that this would enable SMEs and other small-scale stakeholders to innovate creatively.¹⁵⁸ Writing as members of a current FP7 health consortium on back pain, Dr Urban *et al* raised the point that, “the only way to submit a proposal is in answer to a very prescriptive call”. They noted that broader calls for proposals would be more beneficial.¹⁵⁹ Both Chemistry Innovation

¹⁵⁶ European Institute of Technology, by Technopolis group, (2012): *Catalysing Innovation in the Knowledge Triangle: Practices from the EIT Knowledge and Innovation Communities*. Available at: http://eit.europa.eu/fileadmin/Content/Downloads/PDF/Key_documents/EIT_publication_Final.pdf

¹⁵⁷ External Evaluation of the European Institute of Innovation and Technology, May 2011. See: http://ec.europa.eu/dgs/education_culture/evalreports/education/2011/eitreport_en.pdf

¹⁵⁸ UCL and Microsoft also criticised the top down approach.

¹⁵⁹ Dr Urban *et al*

Limited and Growth Accelerator suggested that an approach allowing greater flexibility over the topic to be addressed would be most valuable.¹⁶⁰

106. John Hill said that increasing SME involvement in EU funded research and innovation programmes would also help to address the issue of “technology push and ... market pull”. This refers to the need for EU R&I projects to respond to the needs of the market (technology pull) as well as pushing technology onto the market (technology push).¹⁶¹ Commission projects such as the EIT, and the themes within Horizon 2020, focus on societal concerns such as environmental sustainability and climate change which may fail to address key market gaps and therefore overlook opportunities for growth. Microsoft suggested that a ‘bottom-up’ approach where SMEs and individual researchers are supported in identifying market gaps in any area, and addressing them in any form, may serve to foster growth more effectively and ensure that “game changing”¹⁶² technological advances occur within and not outside Europe.¹⁶³
107. John Hill seemed hopeful that the new ‘Dedicated SME instrument’ would serve to provide an effective mechanism for a bottom-up approach.¹⁶⁴ Only SMEs will be allowed to apply for funding under the instrument and SME-specific support will be provided. The instrument will be aligned with the different Horizon 2020 pillars and will support SMEs involved in all types of innovation. Through this instrument, the Commission purports to take a “bottom-up approach within a given societal challenge or enabling industrial technology so as to leave sufficient room for all kinds of promising ideas.”¹⁶⁵
108. Eurochambres, UEAPME, TAFTIE, EVCA, EARTO¹⁶⁶, and Eban¹⁶⁷ were concerned that the ‘Dedicated SME Instrument’ would not work unless it was detached from the overarching societal themes set out for Horizon 2020. They expressed these concerns in a letter to the Commission in March 2013 which drew attention to the problems SMEs had in engaging with the thematic areas of the current FP7.¹⁶⁸
109. **We are concerned that the pre-defined topics in many of the EU funding programmes for R&I will deter the involvement of high-growth SMEs. We recommend that the European Commission should consult with representatives from SMEs in the development of calls for proposals under the ‘Dedicated SME Instrument’.**
110. Flexibility in terms of funding was also a key theme throughout the evidence. Using the life sciences sector as a case study, the Association of the British

¹⁶⁰ Growth Accelerator; Chemistry Innovation Limited

¹⁶¹ Q 21 (John Hill)

¹⁶² Microsoft

¹⁶³ *ibid.*

¹⁶⁴ Growth Accelerator

¹⁶⁵ Network Enterprise Europe Brussels, see:

<http://www.brusselsnetwork.be/eu-funding-m/1338-the-new-dedicated-sme-instrument-under-horizon-2020.html>

¹⁶⁶ See Appendix 4 Glossary of Terms and Abbreviations.

¹⁶⁷ *ibid.*

¹⁶⁸ Eurochambres, UEAPME, TAFTIE, EVCA, EARTO and Eban letter to Commissioner Máire Geoghegan-Quinn, March 2013, available at:

http://www.ueapme.com/IMG/pdf/130304_H2020-Letter_Triologue.pdf

Pharmaceutical Industry (ABPI) argued that this flexibility should extend to a variation in terms of partnership structures and funding, to reflect the different business models and innovation cycles of stakeholders. Witnesses cited the Clean Sky initiative as an example of this flexibility in funding. The Clean Sky initiative is one of five Joint Technology initiatives which are long term public-private partnerships.¹⁶⁹ Rolls Royce heralded the initiative as a way of breaking down barriers to SME participation through allowing flexibility in terms of contracting rules.¹⁷⁰ ADS agreed with this, arguing that one of the reasons for the strong SME engagement with the programme has been the ‘mono-beneficiary’¹⁷¹ funding option, which allows the programme to award calls for funding to a single company. They argued that this removes from SMEs the onerous task of forming a multinational consortium before bidding for a proposal under the programme. ADS were concerned that the European Parliament’s Industry, Research and Energy (ITRE) Committee is looking at removing this flexible funding option.¹⁷²

111. There are arguments against this flexibility. RCUK highlighted that problems can arise from the different funding rates and rules for participation in these schemes, which can create extra burdens of administrative complexity, and have a counter-effect of dissuading SMEs from participation.¹⁷³ Nonetheless, the figures indicate that some flexibility is positive. Given that SME participation in the Clean Sky programme is as high as 42 per cent of participants,¹⁷⁴ it would seem sensible for the European Parliament Committee to consider seriously retaining the option.
112. **Allowing greater flexibility over the rules of participation for different proposals carries a risk of greater complexity for stakeholders, against which it is important to guard. However such flexibility is necessary in order to take into account the varying needs of the wide spectrum of R&I stakeholders in Europe (see Chapter 3). Therefore, we urge the European Commission to maintain and develop flexible funding options, such as that offered by the different contracting rules under the Clean Sky initiative.**

Public procurement

113. A number of witnesses spoke about the potential for using public procurement to stimulate R&I in the EU. The EU on its own does not carry out large-scale public procurement, it is Member States that do so. However, AIRTO suggested that where the Commission does procure goods and services it can play a role as an “anchor tenant”¹⁷⁵ in the same way the US

¹⁶⁹ Council Regulation (Ec) No 71/2007

¹⁷⁰ Q 43 (Rolls Royce)

¹⁷¹ In the context of the Clean Sky initiative, the mono-beneficiary funding option allows a single company or consortium partner to take responsibility for all the financial and legal requirements of the project, thereby reducing the burden on other partners, such as SMEs.

¹⁷² ADS

¹⁷³ RCUK; Vicky Ford MEP; Microsoft

¹⁷⁴ European Commission (December 2010) *Clean Sky 1st Interim Evaluation*. See: http://ec.europa.eu/research/jti/pdf/clean_sky_interim_evaluation_15-12-2010.pdf#view=fit&pagemode=none

¹⁷⁵ AIRTO

Government does, even if on a much smaller scale. That is to say, the Commission can procure in a way that encourages innovation and new business models.¹⁷⁶ Malcolm Harbour MEP said the recommendations of the House of Lords Science and Technology Committee report *Public procurement as a tool to stimulate innovation*¹⁷⁷ have been helpful in bringing the idea of public procurement forward in the context of innovation.¹⁷⁸ The House of Commons Science and Technology report *Bridging the valley of death: improving the commercialisation of research* also called for public procurement to be used to nurture technological innovation in the UK, particularly amongst SMEs.¹⁷⁹

114. **We endorse the recommendations of the Science and Technology Committees in both Houses of Parliament, on using public procurement as a means of nurturing innovation in the UK and supporting SMEs. We encourage the European Commission to consider the application of the Committees' recommendations to Europe. In the light of the length of time it can take to bring innovative 'blue sky' products to the market, the Committee considers that there is room for expanding the role of public procurement in this area.**

Follow-on Funding

115. Various witnesses raised a concern about the lack of flexibility in funding arrangements at the end of a project.¹⁸⁰ Design Wales observed that, although there is a requirement in most R&I programmes to demonstrate how a project might be sustainable after the programme period, it is difficult to do so when the objective of receiving the fund in the first place is to find a way to solve a problem which may not be straightforward to solve.¹⁸¹
116. Chemistry Innovation Limited raised concerns about the barriers to commercialisation of research due to projects with further commercial potential being deemed completed. They pointed out that there is currently little consideration by the Commission of the 'follow-on funding' needs of completed projects and how commercial impact can be maximised through this, a view which was also held by other witnesses.¹⁸² Professor Ritter stated that the first 18 months of the seven year KIC project were spent building the community and getting to know each other, after which the project really began to take off.¹⁸³ Since some EU R&I projects only last for a period of three years, there is a risk that projects disband when at their most productive, as acknowledged by Dr Urban *et al.*¹⁸⁴

¹⁷⁶ *ibid*

¹⁷⁷ Science and Technology Committee, 1st Report (2010–2012): *Public procurement as a tool to stimulate innovation* (HL Paper 148)

¹⁷⁸ Q 6

¹⁷⁹ Science and Technology Committee, 8th Report (2012–2013): *Bridging the valley of death: improving the commercialisation of research* (HC 348)

¹⁸⁰ Chemical Innovations Limited; LCA Europe Limited; Dr Urban *et al*

¹⁸¹ Q 63 (Design Wales)

¹⁸² LCA Europe Limited; Dr Urban *et al* noted that follow-up funding could increase output significantly.

¹⁸³ Q 17 (Professor Ritter)

¹⁸⁴ Dr Urban *et al*

117. RAND Europe stated that it did not believe that there was a lack of a mechanism for follow-on funding. Rather, it argued that the lack of ‘follow-on’ contracts pointed to a deeper problem, related to the overall lack of empowerment of decision-makers within the Commission, to take the decision to continue to work with successful groups which are meeting the objectives of a proposal.¹⁸⁵
118. The lack of transfer from research to commercialisation is a key problem with European R&I programmes, which makes the lack of ‘follow-on funding’ particularly serious.¹⁸⁶ The idea of a ‘valley of death’ between technological research and commercialisation has often been expressed.¹⁸⁷ ‘Follow-on funding’ could serve as a means of dealing with this problem through furthering the impact of a successful project that reaches ‘completion’.
119. While acknowledging this problem, the Minister observed the limitations of ‘follow-on funding’, raising the perception by some stakeholders that funding goes repeatedly to the same bidders, “and that ... [EU research funding] has become a closed shop rather than being open for the new bidder”.¹⁸⁸ Research by the Commission’s Joint Research Centre, the Commission’s in-house science service, confirms that in FP6 49.4 per cent of organisations had previously taken part in at least one other framework programme, a figure which has steadily risen since FP2.¹⁸⁹
120. **If R&I is to drive future economic growth within Europe it is particularly important to ensure R&I efforts are commercialised. While unnecessary repeat funding for its own sake should be avoided, decision makers should be empowered to make use of follow-on funding mechanisms to enable commercialisation of R&I. Enabling ‘repeat players’ to expand and commercialise research which is at the point of commercial success would be a better investment than funding the same stakeholders for a different project.**

Open Access to Innovation *versus* Intellectual Property

121. It has been argued within and outside this inquiry that there are clear benefits to open access to innovation, given that it provides a framework for the sharing of innovative ideas across and outside of Europe, speeding up the process of innovation.¹⁹⁰ The EU has responded to this, adopting the Open Access initiative as an EU policy, and in 2008, implementing an Open Access Pilot, as part of FP7.
122. While it is not within the remit of this report to comment fully on the interaction between intellectual property and open access, it is an issue which

¹⁸⁵ Q58 (RAND Europe)

¹⁸⁶ Institute of Physics

¹⁸⁷ Speech by David Willetts MP, January 2013, on the ‘eight great technologies’, available at: <https://www.gov.uk/government/speeches/eight-great-technologies>

¹⁸⁸ Q 75; House of Commons Science and Technology Committee, 8th Report (2012–2013): *Bridging the valley of death: improving the commercialisation of research* (HC 348)

¹⁸⁹ Joint Research Centre, (2011) *Analysis of Networks in European Framework Programmes 1984–2006*, p 34, Table 6. Available at: <http://ipts.jrc.ec.europa.eu/publications/pub.cfm?id=4299>

¹⁹⁰ Dr Galsworthy *et al*

potentially affects the participation of the private sector in EU R&I programmes, which we wish to acknowledge.

123. Despite accepting the benefits of open access, many of the witnesses from the private sector (particularly representatives from large companies) highlighted a tension between the benefits provided by open access to results, and the threat to private companies concerned about losing intellectual property rights (IPR) through participation in EU R&I programmes.¹⁹¹
124. Evidence from ABPI and Pfizer suggested that the Innovative Medicines initiative model of handling IPR has been particularly successful in striking a balance between the protection of IPR and open access. The structure of the programme enables for-profit companies looking to generate commercial sales by the development of medicines to participate in EU R&I. This is done through enabling companies to maintain IPR in the main, while allowing open access to pre-competitive research undertaken in the programme.¹⁹² While Pfizer argued that its experience with these types of partnership has been positive, it conceded that negotiating with academic centres on how to apportion IPR can sometimes introduce complexity. It highlighted that the tension lies in the pressure on universities to generate revenues from their “prior art”¹⁹³ through attaining IPR royalties, while companies like Pfizer consider their work at this stage to be pre-competitive, and are therefore content to allow free access to it.¹⁹⁴
125. Pfizer also noted the global nature of the pharmaceutical industry, and the need for a globally consistent IP regime.¹⁹⁵ The House of Lords Science and Technology Committee published its report *The implementation of open access*, on 22 February 2013.¹⁹⁶ The report focuses on open access in relation to academic publication, rather than a wider open access to research findings. It recommends that the UK Government should be careful in embracing an open access policy, suggesting that the effects on stakeholders of such a broad open access policy should be monitored, and the Government should take into consideration whether the UK, in stating a preference for a broader open access policy, is moving in the same direction as other countries.
126. **We suggest that the Commission, the Council and the European Parliament note the recommendations in the recent House of Lords Science and Technology Committee report and take a cautious approach to open access, so as not to disadvantage EU R&I participants. We recommend that in considering this issue, the Commission consults with stakeholders, particularly those in the private sector who have expressed concern about protecting their IPR, in order to find workable solutions for balancing the benefits of open access to innovation.**

¹⁹¹ Microsoft ; ADS; EADS; Institute of Physics

¹⁹² ABPI; Pfizer

¹⁹³ Prior art refers to early stage research which does not appear to be patentable

¹⁹⁴ Pfizer

¹⁹⁵ *ibid.*

¹⁹⁶ House of Lords Science and Technology Committee, 1st Report (2010–12): *Public procurement as a tool to stimulate innovation* (HL Paper 148); House of Lords Science and Technology Committee, 3rd Report (2012–13): *The implementation of open access* (HL Paper 122).

CHAPTER 6: SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

Impact of the Economic Crisis

127. We urge the European Council and the European Parliament to increase the budget for the Horizon 2020 programme within the Multiannual Financial Framework (MFF) in order for the EU to remain internationally competitive in R&I. If this is not possible, the budget for Horizon 2020 should at least be maintained at the level agreed at the 7–8 February 2013 Council meeting (paragraph 28).

Consultation with Stakeholders

128. National learned societies, professional bodies and trade associations already play an important role for businesses in representing their concerns in Brussels and influencing EU policy-making. We therefore encourage the European Commission to continue strengthening its efforts to consult representative organisations in the future development of R&I strategies and projects (paragraph 41).
129. We share the European Commission's wish to ensure that consultation is thorough and welcome their efforts in this area, through extending the standard period of consultation from eight to 12 weeks. However, the programme development process as a whole should reflect that R&I is a fast moving sector (paragraph 42).
130. Stakeholders in the health sector have reported that there is insufficient consultation on the development of EU funded health projects. We recognise that the European Commission takes seriously its responsibility to consult R&I stakeholders, and we encourage it to advertise its health related consultations more widely through medical practitioner networks. Improved consultation should help to resolve instances of EU legislation actually curtailing the ability of stakeholders to pursue the EU's objectives (paragraph 43).
131. We believe that EU R&I programmes represent an excellent opportunity for UK businesses, higher education institutions and research organisations. The UK Government, professional bodies, trade associations and other groups representing UK businesses, higher education institutions and research organisations must continue to engage with and lobby pan-European organisations if the UK's interests are to be achieved in Europe. We encourage the Government to reiterate this point to UK businesses using all of its channels such as the Technology Strategy Board, UK Trade and Investment and the Department for Business, Innovation and Skills (paragraph 47).
132. We consider that the role of Chief Scientific Adviser to the European Commission should be developed over time to become a source of objective scientific advice. We welcome the appointment on 27 February 2013 of a broader Science and Technology Advisory Council to the EU to support the work of the Chief Scientific Adviser (paragraph 51).

Identification, Monitoring and Evaluation

133. We agree with the European Commission's criteria for an effective R&I proposal, but emphasise that in order for the EU to compete with emerging economies which have a significantly higher spend on R&I as a proportion of GDP, it should prioritise excellence. We also urge the Commission to ensure that analysis of R&I policy and proposals is based on scientific evidence, rather than political considerations (paragraph 56).
134. We reiterate the view expressed in our 2010 report, *Impact Assessments in the EU: Room for Improvement?*, that impact assessments should be performed wherever a significant proposal is made. We also continue to call for further work to determine which measures are, and are not, to be accompanied by an impact assessment and whether in practice the selection is appropriate (paragraph 68).
135. We agree with the Minister that the relationship between the European Commission and the European Parliament in the area of impact assessments warrants further study. We suggest that there is a risk of overlap between the two, and that there should be a focus on improving the Commission's impact assessments, perhaps through a stronger role for the Impact Assessment Board, rather than running a parallel process in the European Parliament (paragraph 69).
136. While the accuracy of impact assessments is important, the European Commission should avoid an overly rigid approach, and develop indicators in collaboration with the private sector. These should take into account the extent of uncertainty involved in 'blue sky' innovative products, and the potential for projects to produce positive outcomes which take time to develop, are less tangible and may be difficult to quantify accurately at the outset of a project (paragraph 70).
137. We welcome the European Commission's efforts to simplify the monitoring and evaluation process, but share the Government's view that this should not be done at the expense of the transparent evaluation of projects (paragraph 77).
138. We consider it of paramount importance that monitoring and evaluation are carried out by experts in the relevant sector, in order to ensure that evaluators are able to assess and promote innovative excellence. A cohort of the experts in a particular sector should by definition consist of both academic and industry experts, bringing different strengths to bear on the evaluation process (paragraph 78).
139. We also recommend that more work could be done to ensure that monitoring and evaluation of outputs are efficient and realistic, taking into account the relatively short timescales of EU R&I projects. This could be better achieved in part through clarifying at the outset of a project, the requirement for project participants to produce materials at the end of a project which explain the outputs and outcomes (paragraph 79).

Private Sector Participation

140. We welcome the efforts made by the UK Government at a national level through reform of the National Contact Points. We urge the Government to build on their work in this area, to ensure that the National Contact Points are focused on the priorities at EU level. This would improve support to UK companies in accessing EU R&I funding more effectively (paragraph 92).

141. The concerns over bureaucracy and complexity creating barriers to private sector participation are not new. The European Commission has taken note of these concerns, and we support the changes made towards simplification and urge them to make the simplicity of procedures and language a criterion for every new undertaking (paragraph 94).
142. The current length of the time-to-grant is of great concern, given the fast paced and dynamic nature of the R&I sector. We commend the European Commission's undertaking to reduce this by 100 days, but this is not enough. We urge the Commission to carry out further work in this area, through simplifying the negotiation stage, the funding instruments and improving IT systems (paragraph 100).
143. We consider that late payments to successful applicants exacerbate the problem of time-to grant and must not be tolerated (paragraph 101).
144. We are concerned that the pre-defined topics in many of the EU funding programmes for R&I will deter the involvement of high-growth SMEs. We recommend that the European Commission should consult with representatives from SMEs in the development of calls for proposals under the 'Dedicated SME Instrument' (paragraph 109).
145. Allowing greater flexibility over the rules of participation for different proposals carries a risk of greater complexity for stakeholders, against which it is important to guard. However such flexibility is necessary in order to take into account the varying needs of the wide spectrum of R&I stakeholders in Europe (see Chapter 3). Therefore, we urge the European Commission to maintain and develop flexible funding options, such as that offered by the different contracting rules under the Clean Sky initiative (paragraph 112).
146. We endorse the recommendations of the Science and Technology Committees in both Houses of Parliament, on using public procurement as a means of nurturing innovation in the UK and supporting SMEs. We encourage the European Commission to consider the application of the Committees' recommendations to Europe. In the light of the length of time it can take to bring innovative 'blue sky' products to the market, the Committee considers that there is room for expanding the role of public procurement in this area (paragraph 114).
147. If R&I is to drive future economic growth within Europe it is particularly important to ensure R&I efforts are commercialised. While unnecessary repeat funding for its own sake should be avoided, decision makers should be empowered to make use of follow-on funding mechanisms to enable commercialisation of R&I. Enabling 'repeat players' to expand and commercialise research which is at the point of commercial success would be a better investment than funding the same stakeholders for a different project (paragraph 120).
148. We suggest that the Commission, the Council and the European Parliament note the recommendations in the recent House of Lords Science and Technology Committee report and take a cautious approach to open access, so as not to disadvantage EU R&I participants. We recommend that in considering this issue, the Commission consults with stakeholders, particularly those in the private sector who have expressed concern about protecting their IPR, in order to find workable solutions for balancing the benefits of open access to innovation (paragraph 126).

APPENDIX 1: LIST OF MEMBERS AND DECLARATIONS OF INTEREST

The Members of the Sub-Committee which conducted this inquiry were:

Lord Brooke of Alverthorpe
 Baroness Buscombe
 Lord Clinton-Davis
 Lord Elton
 Lord Fearn
 Lord Haskel
 Lord Kakkar
 The Earl of Liverpool
 Baroness O’Cathain (Chairman)
 Baroness Scott of Needham Market
 Baroness Valentine
 Lord Wilson of Tillyorn

Declaration of Interests

Lord Brooke of Alverthorpe
No relevant interests

Baroness Buscombe
No relevant interests

Lord Clinton-Davis
Solicitor (non-practising and unremunerated)

Lord Elton
No relevant interests

Lord Fearn
No relevant interests

Lord Haskel
Perrotts Group Ltd (a small company remaining after business interests were sold)
Trustee, Haskel Family Foundation

Lord Kakkar
Professor of Surgery, University College London
Consultant Surgeon, University College London Hospital Trust
Chairman for Quality, University College London Partners
Director, Thrombosis Research Institute, London
(All organisations eligible to compete for EU Research Funding)
Chair, Associate Parliamentary group on surgical services
Vice-Chair, All Party Parliamentary Group on Medical Research
Active Biomedical researcher (entitled to apply for EU Research Funding through the above organisations)

The Earl of Liverpool
No relevant interests

Baroness O’Cathain
No relevant interests

Baroness Scott of Needham Market
No relevant interests

Baroness Valentine

CEO of London First, a business membership organisation which includes higher education institutions, some of which may apply for EU research funding

Lord Wilson of Tillyorn

Trustee of the Carnegie Trust for the Universities of Scotland

The following Members of the European Union Select Committee attended the meeting at which the report was approved:

Lord Bowness
Lord Cameron of Dillington
Lord Carter of Coles
Lord Dear
Baroness Eccles of Moulton
Lord Foulkes of Cumnock
Lord Hannay of Chiswick
Lord Harrison
Lord Maclennan of Rogart
Lord Marlesford
Baroness O’Cathain
Lord Richard
The Earl of Sandwich
Baroness Scott of Needham Market
Lord Teverson (Acting Chairman)
Lord Trimble

During consideration of the report Lord Cameron of Dillington declared the following interests:

Farmer
Chair of Strategic Advisory Board of the Government’s research programme into global food security
Lawes Trustee at Rothamsted Research Institute

A full list of Members’ interests can be found in the Register of Lords Interests:

<http://www.parliament.uk/mps-lords-and-offices/standards-and-interests/register-of-lords-interests/>

APPENDIX 2: LIST OF WITNESSES

Evidence is published online at <http://www.parliament.uk/hleub> and available for inspection at the Parliamentary Archives (020 7219 5314).

Evidence received by the Committee is listed below in chronological order of oral evidence session and in alphabetical order. Those witnesses marked with * gave both oral evidence and written evidence. Those marked with ** gave oral evidence and did not submit any written evidence. All other witnesses submitted written evidence only.

Oral evidence in chronological order

**	QQ 1–14	Malcolm Harbour CBE MEP, Chair, Committee on the Internal Market and Consumer Protection, European Parliament
**	QQ 15–35	Professor Mary Ritter, Emeritus Professor of immunology, Imperial College London; CEO, Climate-Knowledge and Innovation Community (KIC)
*		The Association of Independent Research and Technology Organisations (AIRTO)
*		John Hill, Director, Growth Accelerator; Executive Chairman, Pera
*	QQ 36–53	Airbus
*		European Aeronautic Defense and Space Company (EADS)
**		Rolls-Royce
**		Pfizer
**	QQ 54–67	RAND Europe
*		National Centre for Product Design + Development Research (PDR) and Design Wales
*	QQ 68–82	Rt Hon David Willetts MP, Minister for Universities and Science, Department for Business, Innovation and Skills (BIS)

Alphabetical list of all witnesses

	Aberystwyth University
	Aerospace, Defence, Security and Space (ADS)
	Agricultural Biotechnology Council (ABC)
*	Airbus (QQ 36–53)
	Alliance for European Diabetes Research (EURADIA)
	Association of the British Pharmaceutical Industry (ABPI)
*	Association of Independent Research and Technology Organisations (AIRTO) (QQ 15–35)

- Association of Medical Research Charities (AMRC)
 Professor Roberto Bernabei
 British Academy
- * Department for Business, Innovation and Skills (BIS) (QQ 68–82)
 Bridget Carpenter
 Professor Iain Carpenter
 Professor Christopher Chapple
 Chemistry Innovation Limited
 Defense Advanced Research Projects Agency (DARPA)
- * European Aeronautic Defense and Space Company (EADS) (QQ 36–53)
 European Commission
 European Molecular Biology Laboratory-European Bioinformatics
 Institute (EMBL-EBI)
 Professor JCT Fairbank
 Federation of Small Businesses
 Vicky Ford MEP
 Dr Michael Galsworthy
- * Growth Accelerator (QQ 15–35)
 Malcolm Harbour CBE, Chair, Committee on the Internal Market
 and Consumer Protection, European Parliament
 Institute of Physics
 LCA Europe Limited
 Professor Sheila MacNeil
 Professor Martin McKee CBE
 Microsoft
- * National Centre for Product Design + Development Research (PDR) and
 Design Wales (QQ 54–67)
 National Institute for Health Research Evaluation, Trials and Studies
 Coordinating Centre (NETSCC)
 Open University
- * Pfizer
- ** RAND Europe (QQ 54–67)
 Research Councils UK (RCUK)
- ** Professor Mary Ritter, Emeritus Professor of immunology, Imperial College
 London; CEO, Climate Knowledge and Innovation Community (Climate-
 KIC) (QQ 15–35)
 Professor Sally Roberts
- ** Rolls Royce (QQ 36–53)
 Royal Society of Chemistry (RSC)

The Russell Group of Universities
Society of Motor Manufacturers and Traders (SMMT)
University College London (UCL)
Universities UK and the UK HE International Unit
Dr Jill Urban
The Wellcome Trust

APPENDIX 3: CALL FOR EVIDENCE

Effectiveness of EU research and innovation proposals

The Internal Market, Infrastructure and Employment Sub-Committee of the House of Lords European Union Committee, chaired by Baroness O’Cathain, is conducting an inquiry into the effectiveness of EU proposals relating to research and innovation. Written evidence is sought by 11 February 2013. Public hearings will be held in February and March 2013.

Background

During 2012, the Committee examined a number of European Commission proposals for projects and strategies containing a strong emphasis on research and innovation, including the EU ‘smart cities’ innovation partnership, the development of an EU transport technology strategy, the economic potential of cloud computing, and the completion of the European Research Area. The Commission is issuing these proposals against the background of the Europe 2020 Strategy, which emphasises supporting growth and jobs, and the ongoing negotiations on the Multiannual Financial Framework 2014–2020 where the UK Government, and this Committee, support an increase in the budget devoted to investment in education, research and innovation. The Commission’s Work Programme for 2013 also foresees legislative proposals later this year to renew and create public-private partnerships to leverage investment in research and innovation.

In its scrutiny of the above proposals, the Committee identified a number of cross-cutting issues which will form the basis of this inquiry. The Committee is particularly interested in contributions from those working in research and innovation in sectors where those disciplines play a particularly vital role, for example, transport, medicine, agriculture, creative industries, etc. Respondents need only reply to those questions which they consider relevant to them, and are welcome to address matters which are relevant to the inquiry but are not covered by these questions.

Questions

- (1) What are the essential elements of an effective proposal relating to research and innovation?
- (2) Do you feel that stakeholders at all levels are properly consulted in the development of EU proposals on research and innovation? Are stakeholder concerns properly taken into consideration; how could consultation be improved; and to what extent does consultation affect policy formulation?
- (3) The EU facilitates Member State cooperation on research and innovation through the open method of coordination, the creation of high level groups, associations, networks, and councils? Are these modes of cooperation effective, and could other methods be used?
- (4) Has the EU been successful in engaging private sector support for projects with a strong research and innovation dimension? Are there ways in which this could be improved?

- (5) Do EU proposals clearly state their desired outputs, outcomes, impacts, and 'European added-value'? Do you think the European Commission's Impact Assessment Board helps to ensure the production of useful and accurate impact assessments?
- (6) Do the EU and its institutions provide sufficient information about the monitoring and evaluation of their projects and strategies?
- (7) In terms of informing public policy and generating economic growth, does the EU use the outputs of research and innovation effectively in comparison with other countries, for example, USA, Australia, Singapore, etc?
- (8) How have the economic crisis and the atmosphere of austerity in many EU Member States impacted the research and innovation environment at the national and EU levels? Are the proposed levels of spending in EU projects appropriate in the current situation?
- (9) What suggestions could the UK make to the EU institutions to maximise the effectiveness of legislative and project proposals with a strong research and innovation dimension?

APPENDIX 4: GLOSSARY OF TERMS AND ABBREVIATIONS

BIS	Department for Business, Innovation and Skills
BRIICS countries	Brazil, the Russian Federation, India, Indonesia, China, South Africa
CIP	Competitiveness and Innovation Framework Programme
EARTO	European Association of Research and Technology Organisations
Eban	The European Trade Association for Business Angels, Seed funds and other Early Stage Market Players
EFSA	European Food Standards Agency
EIT	European Institute of Innovation and Technology
ERA-Nets	European Research Area Networks
ERC	European Research Council
EU	European Union
EUnetHRA	European Network for Health Technology Assessment Programme
EVCA	European Private Equity and Venture Capital Association
FP6	The Sixth Framework Programme of the European Union for the funding of research and technological development in Europe
FP7	The Seventh Framework Programme of the European Union for the funding of research and technological development in Europe
GDP	Gross Domestic Product
Horizon 2020	The financial instrument which will implement the strategies outlined in the Innovation Union initiative (COM (2011) 809)
ICT	Information and Communications Technology
IMCO	European Parliament Internal Market and Consumer Protection Committee
IP regime	Intellectual Property regime
IPR	Intellectual Property Rights
ITRE	European Parliament's Industry, Research and Energy Committee
JTIs	Joint Technology Initiatives
KICs	Knowledge and Innovation Communities
MFF	Multi-Annual Financial Framework
NESTA	National Endowment for Science, Technology and the Arts

NHS	National Health Service
OECD	Organisation for Economic Co-operation and Development
R&D	Research and Development
R&I	Research and Innovation
SMEs	Small and Medium Enterprises
STEM	Science, Technology, Engineering and Mathematics
TAFTIE	The European Network of Innovation Agencies
TSB	Technology Strategy Board
UEAPME	European Association of Craft, Small and Medium-sized enterprises
UKTI	UK Trade and Investment