



House of Commons  
Science and Technology

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# **UK Science and Europe: Value for Money?**

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**Sixth Report of Session 2002–03**





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Sixth Report of Session 2002-03

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## The Science and Technology Committee

The Science and Technology Committee is appointed by the House of Commons to examine the expenditure, administration, and policy of the Office of Science and Technology and its associated public bodies

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# 1 Introduction

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1. In November 2002 we decided to conduct an inquiry to assess the extent to which the UK is taking advantage of the opportunities for the funding of science and technology research offered by the EU Framework Programmes; and the effectiveness of existing EU mechanisms for funding this research. The inquiry was announced on 21 November 2002 with the following terms of reference:

- To evaluate whether the UK is getting value for money from the Framework Programmes;
- To assess whether the Government is doing enough to promote the participation of UK research establishments and industry in the Sixth Framework Programme and the European Research Area;
- To assess whether the process for obtaining EU funds is sufficiently transparent and straightforward;
- To consider whether there is continuity between successive framework programmes;
- To establish what is the potential impact of EU enlargement, and what changes are needed for Framework Programme 7;
- To assess whether the process for the selection of priority areas and the awarding of funding to projects is fair and the balance between pure and applied research right; and whether the time frame for funding projects is adequate;
- To consider what the best role of EU research institutions such as the Joint Research Centre is; and whether they are cost effective;
- To establish what UK policy should be towards the proposals for a European Research Council; and
- To consider whether the allocation of funding through the EURATOM programme is right.

2. The purpose of this inquiry is to highlight relevant issues relating to the effectiveness and scope of Framework Programmes 5 and 6 and to analyse the UK Government's contribution to the preparation of Framework Programme 7. Our recommendations apply principally to the UK Government and the Research Councils.

3. We use the term "value for money" in a broader sense than the *juste retour* of the UK receiving back the same amount in funding to UK projects as it contributes to the Framework Programmes. It is not possible to attribute precise financial values to all the costs and benefits of the Framework Programmes—some are by their nature unquantifiable. The Committee's assessment of value for money includes:

- The scale of UK involvement in Framework Programme 6 (FP6) projects;
- The number of patents and papers published with UK involvement;

- The added value of the UK participating in FP6 projects—contacts made and networks developed; and
- The cost of the UK not getting anything from the Framework Programmes—financially and politically.

4. We have received over 30 written submissions. We held three oral evidence sessions between February and April 2003 with eight sets of witnesses, representing the Research Councils, Learned Societies, universities, industry (large and small), and the Government. We made one visit relating to the inquiry, to the European Commission in Brussels on 9–10 February 2003, where we met: representatives from UKREP; Commissioner Philippe Busquin, Mr Hugh Richardson, Mr Richard Escritt, Mr Peter Kind and staff of the Research Directorate-General; Mr David Wilkinson and Ms Geraldine Barry of the Joint Research Institute; and Dr Martin Penny of the UK Research Office.

5. The Committee notes that a French Parliamentary Committee, *Délégation pour les Affaires Européennes*, is holding an inquiry titled “Information Report on European Research Policy”. The inquiry aims to evaluate European Research Policy and examine the relevance of new instruments of FP6, e.g. Networks of Excellence and Integrated Projects, and to take into account the state of European research compared to its partners, namely the United States.<sup>1</sup> We heard in Brussels that the French Government was generally sceptical of the Commission’s competence and management ability. The Chairman met Daniel Garrigue (a Member of the *Assemblée Nationale* and the Delegation to the European Union) in June to discuss the two inquiries and mutual concerns over the process, and we look forward to receiving the Report of the French Committee in due course.

6. We are grateful to all those who have assisted in the inquiry, and in particular to our Specialist Advisers: Professor Derek Burke, CBE, DL, Member of the European Group on Life Sciences; Professor John Enderby, CBE, FRS, of Bristol University and Vice-President of the Royal Society; and Professor Ken Pounds, CBE, FRS, of the University of Leicester (formally Chief Executive of PPARC).

## 2 Background

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### The History of the Framework Programmes

7. The European Union has had a policy of supporting science and technology, via its Framework Programme, for the past twenty years—since 1984. The Framework Programme is now the European Union’s main instrument for research funding in Europe. The overall budget for the Sixth Framework Programme 6 (FP6) will be €17.5 billion (of which €16.27 billion is under the EC Treaty and €1.23 billion under the EURATOM treaty). Although a sizeable sum, it should be borne in mind that this comprises only 5% of EU public civil Science and Technology expenditure.<sup>2</sup> A programme is proposed by the European Commission and adopted by the European Council and Parliament following a co-decision procedure. Framework Programmes cover a period of

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1 <http://www.assemblee-nat.fr/english/8an.asp>.

2 Q 376

five years, with the last year of one programme overlapping with the first year of the following programme. FP6 was operational from January 1 2003 and will run until 2006. The first calls for proposals were in December 2002; the deadlines for submissions of proposals fell within March and April 2003, with the first contracts let in Summer 2003.

### **Participation in FP6**

8. Participation is open to all types of organisations engaged in research, including businesses, research institutes and academia.<sup>3</sup>

9. Once the European Council and the European Parliament adopt the Framework Programme, the European Commission is responsible for its implementation. There are no “national quotas” for Framework Programme funds. Other key principles as outlined by the Directorate General for Research are:

- the EU will only fund projects which involve several partners from different countries;
- Framework Programme funds are allocated following competitive “calls for proposals” published by the Commission on a regular basis;
- projects will only be eligible for Framework Programme funding if their scope and objectives reflect priorities as outlined in “calls for proposals”;
- quality and technological relevance of projects submitted for funding are assessed by external, independent experts: each proposal is evaluated, on average, by five experts;
- Framework Programme funds are not “subsidies” to research organisations or companies, and may only be used for carefully described work or research developments.<sup>4</sup>

### **Purpose of the Framework Programmes**

10. The Framework Programmes were originally aimed at encouraging co-operation between European research players. After Framework Programme Five (FP5), the Commission considered that, despite the effects of these programmes, European research efforts were still fragmented between countries and member states’ resources were not used efficiently.<sup>5</sup> The result was that FP6 represents a shift in approach to previous programmes. FP6 and its specific programmes have been designed to support the establishment of an European Research Area (ERA), with the Commission’s optimistic aim of “making Europe the most competitive and knowledge based economy in the world by 2010.”<sup>6</sup>

11. The Lisbon European Council adopted the European Research Area in March 2000, to lay “the foundation for a common science and technology policy across the European

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3 Ev 122

4 European Commission, *Sixth Framework Programme: Frequently Asked Questions*, [http://europa.eu.int/comm/research/fp6/pdf/faq\\_en.pdf](http://europa.eu.int/comm/research/fp6/pdf/faq_en.pdf)

5 European Commission, *The European Research Area: An internal knowledge market*, Office for Official Publications of the European Communities, Luxembourg, 2002, p 8.

6 Lisbon European Council, *Presidency Conclusions*, 23 and 24 March 2000.

Union.”<sup>7</sup> The ERA aims to coordinate national research policies in the direction of shared objectives, expertise and resources. In 2002 the Barcelona European Council agreed (subsequently confirmed by member states) the objective of increasing the European Union’s global expenditure on research to 3% of GDP (1.5 times its current level) by 2010 (2/3 of which should consist of private sector investment), in order to bridge the gap with the USA (2.7%) and Japan (3.1%). The Commission believes that Europe does not do so as well as the US and Japan due to insufficient financial and human resources, lack of innovation and dispersion of effort. For example, in 1999, when the US had roughly the same GDP as Europe today, it spent €75 billion more on R & D than the EU did.<sup>8</sup>

12. However, the Commission claims that despite the unfavourable comparisons to the US and Japan, Europe does produce almost one third of the world’s scientific knowledge. The Commission cites Airbus, Ariane and the high energy physics developed at CERN as examples of the results that can be achieved when European researchers join forces.<sup>9</sup> The Commission believes that with the introduction of the ERA as the central focus and FP6 as a “conduit” the future of Europe underpinned by scientific excellence, improved competitiveness and innovation, will be secured by encouraging greater co-operation and co-ordination.<sup>10</sup>

13. The evidence presented to us makes it clear that the Commission still has a long way to go to convince the UK research community that the creation of the ERA and the changes from FP5 to FP6 will achieve the Barcelona objective. It does not promote confidence that “previous programmes have been criticised for a lack of demonstrable economic impact and Commission management weakness.”<sup>11</sup> Nonetheless, the change in direction of FP6 shows the Commission’s has listened to the criticism and also demonstrates its continuing commitment to the framework programmes.

## The new instruments of FP6

14. Previous Framework Programmes were implemented through co-operative research projects. The Commission believed that the drawbacks to the structure were that in most cases the end of a given research project meant the end of the consortium as well; and that in many cases projects did not reach the critical mass necessary to have any real impact, either scientifically, industrially or economically.<sup>12</sup> The bulk of the funding in FP6 will be delivered in the priority thematic areas through two new larger-scale funding instruments: “Networks of Excellence” and “Integrated Projects” were designed to move FP6 from multiple project funding to the funding of coherent programmes of research activities, giving consortia flexibility and autonomy.

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7 Lisbon European Council, *Presidency Conclusions*, 23 and 24 March 2000.

8 *The European Research Area*, p 6

9 *The European Research Area*, p 5

10 European Commission, *Participating in European Research: Guide for applicants under the Sixth Framework Programme for European Research & Technological Development (2002-2006)*, October 2002, Office for Official Publications of the European Communities, Luxembourg, p 5

11 Ev 122

12 *Sixth Framework Programme*, FAQ, p 3

### **Networks of excellence**

15. The Commission states that Networks of Excellence (NoE) “aims at progressively integrating activities of network partners thereby creating ‘virtual’ centres of excellence.”<sup>13</sup> This instrument is aimed at addressing the perceived fragmentation of research across the EU.<sup>14</sup> The Government says that NoE’s objective is to apply lasting integration of the research capacity available in given fields, with an emphasis on longer-term basic research.<sup>15</sup> Each Network needs to have participants from a minimum of three countries (of which at least two must be Member States/associated candidate countries) networking on the basis of a “joint programme of activities” (this could include research, training, mobility, electronic networks, knowledge transfer activities etc). The programme of activities, representing several millions of euros per annum, will be defined on the basis of pre-defined research themes and topics, but not on the basis of pre-defined objectives or results.<sup>16</sup>

### **Integrated Projects**

16. The Integrated Projects are aimed at addressing key scientific, social and policy challenges facing EU states.<sup>17</sup> The Commission states that these will be projects of substantial size, designed to help build up the “critical mass” in objective-driven research with clearly defined scientific and technological ambitions and aims.<sup>18</sup> The Government explains:

“Integrated projects, representing up to several tens of millions of euros, will have clearly defined objectives in terms of scientific and technological knowledge or products, processes or services. They will involve a minimum of three partners from industry/academia and include collaborative activities relating to dissemination, transfer and exploitation of knowledge.”<sup>19</sup>

17. Both Networks of Excellence and Integrated Projects will be selected on the basis of calls for proposals and will be administered by the participants with a high degree of autonomy.

### **Article 169**

18. The Commission intends to start using an instrument which has been in principle available for quite some time, but has so far been unused: the EU’s participation in research programmes undertaken by several Member States. This is in Article 169 of the Amsterdam Treaty. The Government told the Committee:

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13 *The European Research Area*, p 16

14 Ev 89

15 Ev 129

16 Ev 129

17 Ev 89

18 *Sixth Framework Programme*, FAQ, p 3

19 Ev 129

“This involves a co-decision procedure between the Council and European Parliament. The Commission produced a first pilot proposal, ‘European and Developing Countries Clinical Trials Partnership’ (EDCTP) in August 2002. The lead UK body is the Medical Research Council. The Government supports the proposal in principle, while recognising that there are important points of detail which need to be settled (for example in relation to management and financial control).”<sup>20</sup>

### **ERA-NET**

19. It is recognised that Framework Programmes comprise only 5% of EU public civil S&T expenditure and that the creation of a European Research Area must involve greater networking between Member States' national R&D programmes. A new scheme entitled “ERA-NET” is therefore an important addition to FP6. ERA-NET is aimed at research funding organisations (Research Councils and Government Departments) in the Member States and will provide financial support to cover the additional costs associated with joint activities. A broad spectrum of activities are covered by ERA-NET, from the simple exchange of information (lists of projects etc) and best practice through to complex jointly planned and funded R&D programmes.<sup>21</sup>

### **The UK Research Community's reaction to the changes from FP5**

20. Dr Oonagh Kinsman of GlaxoSmithKline was critical of the changes to FP6. She told the Committee:

“I feel that we were not consulted especially around the networks of excellence [and] the way in which they were described at the beginning was very woolly and then in effect the way that they are going to be carried out, to my view, excludes industry”.<sup>22</sup>

21. She cited difficulties faced by industry in committing a given number of researchers to the networks, as required by the process.<sup>23</sup>

22. Dr Kinsman continued:

“I would question the outcomes of the networks of excellence at this stage [...] With integrated projects, I see that we have a role, but I would question the amount of money that they want to dedicate to SMEs [...] why not encourage industry, at whatever level, but encourage SMEs to make sure there is participation?”<sup>24</sup>

23. Save British Science considered that Networks of Excellence would disappear once the funding ran out. It was felt that the quality of the networks could not be measured as it was unclear what these networks were meant to do.<sup>25</sup>

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20 Ev 129

21 Ev 130

22 Q 182

23 Q 182

24 Q 183

25 Qq 28 and 29

24. Some of the evidence expressed concern over the large scale of the programmes and projects likely under FP6. Dr Douglas Robertson of Newcastle University compared the likely size of a consortium to be the equivalent of managing a medium-sized company, with the consequent resource and effort implications.<sup>26</sup>

25. Professor Manfred Horvat, Chairman of the 2001 Framework Programme Monitoring Panel, considered that:

“Major changes in the approach have to be prepared with care and should be based on well prepared evidence. In that respect, it is a matter of concern that the preparation of FP6 as the main instrument for the creation of the European Research Area (ERA) and the change to the new instruments for implementation was not based on any analytic studies, be it evaluation and assessment or technology foresight, but just on the political will for a ‘radical change’. This looks like a rather risky approach.”<sup>27</sup>

**26. We are concerned that evidence suggests that large sections of the UK research community were not consulted in the formulation of the new instruments. Whilst the Commission is responsible for disseminating information about the Framework Programmes, it now falls to the UK Government to ensure that the research community is fully aware of the opportunities available and the new structure of FP6. This could be done through the National Contact Point network, which is discussed later in this Report. The Government and Research Councils should monitor the UK take up of FP6 carefully to carry forward suggestions for improvement in FP7.**

### ***Changes to the Marie Curie Fellowships***

27. A substantial amount of evidence submitted to the Committee has expressed concern over the changes to the Marie Curie Host Fellowship Scheme—described by BNFL as “the best thing since sliced bread”.<sup>28</sup> The CBI told the Committee that the Fellowship schemes were “perhaps the best regarded aspect of the Framework Programmes”.<sup>29</sup> Under FP5 this scheme was managed within the Human Resources and Mobility Programme and gave young researchers the opportunity to receive transnational research training in companies. They were aimed at researchers without industrial or commercial experience and sought to encourage technology transfer between industry and academia.<sup>30</sup> Professor Sir David King, the Government Chief Scientific Adviser, told the Committee that the UK received 32% of fellowships under FP5.<sup>31</sup> They provided a valuable opportunity for industry to access skills and knowledge from the academic base across Europe.

28. Marie Curie Fellowships as they were under FP5 have been replaced with a scheme that focuses on the mutual exchange of researchers between organisations. The CBI believes this is unlikely to facilitate the subsequent movement of fellows into employment with

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26 Q 76

27 Ev 162

28 Q 279

29 Ev 43

30 Ev 51

31 Q 349

business.<sup>32</sup> Marie Curie Fellowships are now open to researchers at the beginning of their research career with less than four years' active research experience (e.g. researchers undertaking a doctoral degree); and to experienced researchers with more than four years of active research experience or those with a doctorate degree. For some actions, researchers with more than ten years of experience will not be eligible.<sup>33</sup>

29. Dr Kinsman of GlaxoSmithKline told the Committee:

“There are alternative measures to bring academia and industry together, but specifically the early stage training scheme which we had hoped would be the equivalent of a young post-doctoral training where industry could put in proposals alongside research institutes or academic institutes to provide a training environment, they have now excluded applications from people with PhDs, so it has now turned into a European PhD programme [therefore] we will probably not be involved so much in the early training because it has not what we had hoped it would be”.<sup>34</sup>

30. Dr Robert Leslie (Chair of the 1998/99 Evaluation Panel for the Marie Curie Industry Host Scheme) told the Committee “It has been brilliantly successful [...] Frankly why that scheme has been dropped I just do not know, I regret it very much.”<sup>35</sup>

**31. The Marie Curie Fellowship Scheme under FP5 seems to have been well regarded by the research community and it is unclear to us why change was necessary. The Government should monitor their take up under FP6 and consult industry for its views of the success of the new fellowships. If necessary the Government should negotiate with the Commission for improvement or reinstatement of the previous scheme.**

## Monitoring of the Framework Programmes

32. The Commission publishes the following reports on the Framework Programmes.<sup>36</sup>

- Annual monitoring reports are published each year for each FP, and each specific programme, giving independent feedback on the progress and quality of the measures taken to implement the programmes;
- Five-year assessment Reports published every fourth year, for each FP and each specific programme, which give an independent valuation of the “relevance, efficiency, results and impact of the EU RTD programmes”;
- Research and development: annual statistics, published every year, statistics on expenditure, patents, and personnel for R & D in the member states;
- R & D and Innovation Statistics, on candidate countries and the Russian Federation;
- Statistics on Science and Technology in Europe; and

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32 Ev 43

33 [http://europa.eu.int/comm/research/fp6/mariecurie-actions/action/level\\_en.html#2](http://europa.eu.int/comm/research/fp6/mariecurie-actions/action/level_en.html#2)

34 Q 181

35 Q 219

36 European Commission, *Report from the Commission, Research and Technological development activities of the European Union 2002 Annual Report*, COM(2003) 124, Brussels, 20 March 2003, p 3.

- The Commission's annual budgetary documents.

## Measuring the success of European research

33. Traditionally, the indicators reflecting the dynamism of knowledge creation have been the number of scientific research publications, the number of occasions on which these papers have been cited and the number of international patent registrations. 36% of the patents registered in Europe originate from within the EU, 36% from the US and 21% from Japan. However, patents registered by European organisations amount to only 9% of patents registered in the USA and 2% of patents registered in Japan.<sup>37</sup> The Commission claims that the low number of patents registered and originating in the EU, from within the EU, is due to the lack of a Community Patent.<sup>38</sup>

### The Community Patent

34. The European Union currently suffers from the high cost and complexity of the requirement to register a patent in each Member State to gain Europe-wide protection of a product. Discussions in the past for European legislation to remedy this problem had failed to agree (on language matters in particular) on a single "community patent". The European Patent Office (EPO), based in Munich, currently provides some limited, *de facto* protection for intellectual property rights and inventions. The EPO grants European patents for the states which have contracted into the European Patent Convention (EPC) (the UK is a member), which was signed in Munich on 5 October 1973 and entered into force on 7 October 1977. The EPO processes 150,000 patent applications a year, and has recently developed an online registered patent database. The EPO's task is to grant European patents for inventions, on the basis of a centralised procedure. By filing a single application in one of the three official languages (English, French and German) it is possible to obtain patent protection in some of the EPC contracting states.<sup>39</sup>

35. However, the current situation will soon change. The Council of the European Union approved a common political approach to a Community Patent on 7 March 2003.<sup>40</sup> The proposals include a central court to rule on disputes, language regimes, costs, the role of national patent offices and the distribution of fees. The Commission claimed that the Community Patent would give inventors the option of obtaining a single patent legally valid throughout the EU at a fraction of the existing cost of doing so. At the moment, patent protection in just eight European countries costs some €50,000 per product—around five times as much as in the USA or Japan. The Community Patent, on the basis of the current compromise, would halve these costs for 25 Member States rather than just eight—and while that cost would still be more than in the USA or Japan, it will be an improvement on the current situation.<sup>41</sup>

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37 Eurostat.

38 *European Research Area*, p 7

39 For further information see the EPO website: <http://www.european-patent-office.org>

40 Competitiveness Council Memo, DN MEMO//03/47.

41 European Commission Press Notice, 22 April, 2003, [http://europa.eu.int/comm/research/industrial\\_technologies/16-04-03\\_patent\\_en.html](http://europa.eu.int/comm/research/industrial_technologies/16-04-03_patent_en.html)

36. The Commission reported at the end of April that the Council was now due to agree and adopt the text of the proposed Regulation on the Community Patent. In the meantime, the Commission would present proposals for Council Decisions to confer jurisdiction on the European Court of Justice to rule on issues arising from Community Patents and to establish a specialised court. For its part, the Council was due to propose to the European Patent Organisation (EPO) to convene a diplomatic conference to revise the 1973 Munich Convention to allow the European Patent Office in Munich to issue Community Patents. This would then have to be ratified by the EPO member countries.<sup>42</sup>

**37. We welcome the development of a European Patent as a step towards encouraging the registering of patents in the EU, and recommend that the Government monitor the situation carefully to ensure that the resulting patent is favourable to UK interests and not unduly delayed by the enlargement of the EU. As a tool for measuring the success of FP6, the number of patents registered in Europe may be misleading, as a community patent would no doubt produce a larger number of patents registered in Europe as a consequence of its creation.**

### *The Brain Drain*

38. The European Commission states that half of the 8,760 European students completing doctorates in the USA between 1988 and 1995 opted to continue their careers in that country. The Commission believes that although the increasing complexity and interdependence of modern science and scientists means that they need a strong international component as part of their scientific pedigree, there is no good reason to believe that such a high level scientific pedigree can only be obtained in the United States. There is also a perception of higher quality research facilities in the USA. Investing in the development of human resources in science and for science by promoting mobility is an essential contribution to the ERA objectives.

39. Mobility programmes have been among the very successful activities of past FPs. The future scheme will not be limited to doctoral students or postdocs; it will be open to applicants from third countries; it will actively promote the return to Europe of European scientists working in a third country so as to counteract the “brain drain”; institutions will be able to apply for funds to host researchers from abroad as much as the individual scientist who wants to work in a laboratory outside his or her own country. The Commission considers that under the new scheme all structural problems which have been obstacles to researchers’ mobility will be addressed. The Commission believes this will be true for social security and taxation as much as for career patterns and perspectives, where the respective national systems are essentially closed to applicants from other countries—including from other Member States.<sup>43</sup>

40. We welcome these measures but they are unlikely to be satisfactory on their own. As a recent Report pointed out: “European companies are increasingly spending their research budgets in the US with ‘dire’ consequences for the European economy and its

<sup>42</sup> See also European Scrutiny Committee, Twenty Second Report of Session 2002–03, HC 63–xxi, para 5.

<sup>43</sup> *Sixth Framework Programme, FAQ*, p 5

universities”.<sup>44</sup> The report also comments on the fact that “In the 1990s Europe managed to catch up and overtake the US in terms of the number of new science graduates.” The Government has recognised the problem in the UK, as outlined in its White Paper, *Excellence and Opportunity: a science and innovation policy for the 21<sup>st</sup> century*, and is taking steps to remedy this. The Government needs to monitor the impact of these measures closely.<sup>45</sup>

### **How to measure the success of FP6**

41. Professor Mike Beveridge of Plymouth University told the Committee that “there are definite benefits, but until we have got some kind of taxonomy of what those benefits might be in research terms it is very hard to make much progress. We need a policy which looks at what the research benefits are in different research areas requiring different kinds of investment and infrastructure and seeing where European funding can benefit”.<sup>46</sup>

42. Professor Martyn Thomas of the Institution of Electrical Engineers believed that the success of collaborations produced by the framework programmes could be measured by the length of time they endure. He told the Committee that some collaborations between French and British Universities in the field of IT had already been running for twenty years and could be measured also in terms of scientific peer review output.<sup>47</sup>

**43. Due to the scale of the changes from FP5 to FP6, the assessment of the success of the new instruments in FP6 will be an important undertaking. The Government must make it clear to the UK research community how it, and the Commission, will be assessing the performance of FP6. The Framework Programmes will have gone a long way if, by the end of FP6, the UK research community accept the Framework Programmes as equally important as those funded by the research councils.**

### **The UK’s performance in Framework Programme 5**

44. The Office of Science and Technology (OST) told the Committee that the UK’s performance in FP5 was strong, with the UK obtaining about 15% of the available funding—the joint highest return alongside that of Germany.

45. Information on success rates of proposals for individual calls for proposals are provided to Programme Committee members on a confidential basis. The annual reports and technological development activities of the European Union provide information on the number of proposals received each year and the number of proposals selected for funding each year. It is not, however, possible to calculate “success rates” as proposals selected in one year may have been received in the previous year.<sup>48</sup>

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44 European Round Table of Industrialists, *The European Challenges*, March 2003

45 Department for Trade and Industry, *Excellence and Opportunity: a science and innovation policy for the 21<sup>st</sup> Century*, Cm 4814, July 2000

46 Q 97

47 Q 123

48 The 2002 report is available at <http://europa.eu.int/comm/research/report2002.html>

46. According to OST statistics, the UK continually wins more funding through competitive bids to Framework Programmes than it pays through UK membership of the EU (OST statistics).<sup>49</sup> RCUK told the Committee that, under the FP5 Quality of Life Programme, the UK was involved in around 75% of proposals submitted, around 80% of which were awarded. This provided a significant financial return (above the UK *juste retour*—that is above the UK contribution to Framework Programmes as a Member State). Statistics collated by OST show that during the first three years of FP5, the UK’s total return from EU R&D expenditure was €1457.7 million.<sup>50</sup>

47. RCUK also gave details of the UK’s success in the Framework mobility programmes, with approximately 30% of all EU fellowships held in the UK (whilst only 6% of fellowships are held by UK nationals going to other European countries).<sup>51</sup> This can be explained in part by the fact that more continental Europeans speak English than the reverse.

48. The Office of Science and Technology provided information to the Committee on the scale of participation by UK organisations and individuals in FP5.<sup>52</sup> Up to 2001, there had been 8,319 participants in FP5. 1,437 were from Higher Education Institutes (at 43%, the highest percentage of participation from this category in the EU); 980 participants were from industry (29% of UK participants, second highest in the EU behind Germany); 635 were from small and medium enterprises (SMEs) (19% of UK participants, second highest in the EU behind Germany); and 25, 490 co-operation links were formed between UK organisations and those in other Framework Programme participating countries.<sup>53</sup>

49. In Brussels the Committee was told by the Research Directorate General that of all the European Countries, the UK had shown the most interest in the Framework Programmes and got the biggest share of project funding. Countries such as the UK, France, Germany and Belgium, with stronger, more competitive national research programmes, had done better than others from the programmes.

50. The Government told the Committee that, according to an independent survey, 88% of researchers attained or exceeded their goals for forming European partnerships or networks and 94% enhanced their knowledge bases.<sup>54</sup>

51. The Government told the Committee that it was hard to quantify the wider benefits which industry and research obtain from participation in Framework Programme: increasing research skills, accessing international markets, sharing risk or developing key industry standards. Professor Sir David King, the Chief Scientific Adviser told the Committee “a big plus arising from all the of the activity funded by the Framework Programmes is learning about good practice from other countries in the EU [...] it terms of producing value for money for research I think that is where we have the benchmark”.<sup>55</sup> He continued, “the measures of success are whether we raise our level of activity by

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49 Ev 124

50 Ev 89

51 Ev 89

52 Ev 140

53 This number had been measured as contracts signed in 2001, and the figure was the highest for any EU Member State, Ev 140.

54 Ev 124

55 Q 341

comparing with the best in Europe [...] the European Union provides a very good test against which we can measure ourselves”.<sup>56</sup> Professor King cited the example of the significant support given by German Länder to R & D, particularly SMEs. SMEs in the UK are not winning the same amount of European research funding as their German counterparts, and Professor King suggested that UK RDAs could learn from the German example.<sup>57</sup> The Government also confirmed that it benefits from the generation of new knowledge which can help to inform important policy issues.<sup>58</sup>

52. When asked how the Commission measures the success of the Framework Programmes, Dr John Taylor, Director General of the Research Councils answered: “they would say, to what extent is it really building on wealth–creation and prosperity in Europe, on the one hand, and the creation and development of an European Research Area on the other?”<sup>59</sup>

**53. Whilst there are no conclusive statistics available from the European Commission on the amount of funding received by the UK from FP5, the indications are that the UK did better than most, if not all, of the other countries participating in FP5. That does not necessarily mean value for money: but it does speak volumes for the relative strength of the UK science base.**

## 3 Does the UK need the Framework Programmes?

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### Cooperation outside the Framework Programmes

54. There are already major shared infrastructures which are managed on an intergovernmental basis, e.g.: CERN; the European Space Agency; the European Southern Observatory; the European Molecular Biology Laboratory; the European Synchrotron at Grenoble; and the Joint European Torus at Culham.

55. Mr Hugh Richardson of the Commission’s Research Directorate–General told the Committee that without the framework programmes, there would be no mechanisms to allow people to work together. Organisations which are not supported by the Framework Programmes, such as EUREKA, EMBO, the European Science Foundation and CERN, account in total for less than 20% of European funding on research, while, in general, national research councils do not support researchers in other countries. In addition, Europe was unable to compete with the US and Japan whilst it had such a low proportion of GDP invested in R & D. As a direct result, most multi–national companies based inside and outside of Europe were not investing in Europe but were building laboratories in the US. Mr Richardson told us that national programmes in Europe often duplicated work and there was little communication between them.

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56 Q 346

57 Q 341

58 Ev 124

59 Q 347

56. Professor Sir George Radda, Chief Executive of the Medical Research Council (MRC) told us that there was a great deal of interaction between the MRC and other European research councils, such as INSERM and CNRS in France and DFK in Germany. The MRC had recently agreed with DFK that researchers who receive grants in either country could take their grants with them if they moved to the other country. MRC also has a bilateral agreement with CNRS for a joint programme. Professor Radda added that “if you take MRC scientists, 41% of the papers they publish acknowledge European support for their work, 11% of it is EU money, but the remaining money is money from other European sources, which is often other European research councils.”<sup>60</sup>

57. Research Councils UK (RCUK) told the Committee that the UK research councils enjoy close relations with their counterparts through formal organisations such as: the European Science Foundation; EuroHOCs—the European Heads of Research Councils—which meets twice a year; support for the COST (Co-operation in Science and Technology) programme; and through bi-lateral arrangements with European research councils regarding research grants, the sharing of information and policy and research partnership opportunities.<sup>61</sup>

## How the research community views the value of the Framework Programmes

58. Save British Science commented that it was hard to assess whether the UK was getting value for money as the Commission would not provide information on the breakdown of money received by each Member State as “It was not part of the ethos of the programme that that sort of information should be given out.”<sup>62</sup> The Commission provides a breakdown of how much each country received in funding from FP5 to members and associated states on request by their respective national authorities and for their own internal use. The annual reports on allocated expenditure provide information on the allocations by Member State of Community financing on research and technological development.<sup>63</sup> The latest Report states:

“In the case of research expenditure, payments are usually made to the principal contractor who is located in one country and who may then subdivide the payments among various other participants in the research contract. It is very difficult to trace these, often small, payments reliably.”

59. Save British Science also considered that whereas the Framework Programme had originally been constituted as “a simple instrument to enhance competitiveness by support for collaborative R & D, it had now come to comprise a much richer set of policy instruments aimed not only at improving competitiveness, but also attaining a range of other EU policy goals [...] that seems to be as much about funding the social, cultural integration of Europe as it is about funding scientific research.”<sup>64</sup> Whilst this was

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60 Q 310

61 Ev 89

62 Q 8

63 see [http://europa.eu.int/comm/budget/agenda2000/reports\\_en.htm](http://europa.eu.int/comm/budget/agenda2000/reports_en.htm).

64 Qq 23 and 24.

acknowledged as being good for countries in Europe without strong science bases, it was questioned whether this was the best thing for UK science.<sup>65</sup>

60. Many who gave evidence were enthusiastic about the results obtained from the Framework Programmes. For example, Professor Beveridge told us that non-UK nationals working at Plymouth University had been able to develop networks with colleagues in their home countries.<sup>66</sup> Professor Robertson told the Committee that between 1990 and 1996 200,000 co-operative links were established within the Framework Programmes, and Professor Gerry Gilmore of Cambridge University described the Framework Programmes as a “big success” in the physical sciences.<sup>67</sup>

61. Professor Ian Marshall of the Institute of Physics told the Committee that the Framework Programmes are very good for funding standards based research and developing broad based collaboration, but “very poor for doing the focused, small scale innovation that British universities are good at.”<sup>68</sup> Universities which participated in such research therefore did not play as full a role in the Framework Programmes as they should. Professor Thomas agreed that whilst the programmes had been very effective of broadening the science base into candidate countries and to stimulate collaboration, they had not been the most cost-effective way of funding excellent scientific programmes.<sup>69</sup>

62. Mr John Murphy of BaeSystems Ltd told the Committee that the benefit came not from the funding but from the facilitating of awareness of who is capable of what within Europe, and that this knowledge had been built up over successive frameworks. Dr Kinsman agreed that the framework programmes were a good mechanism to tap into European science and build up networks.<sup>70</sup> The knowledge of who to collaborate with was obtained whether or not a proposal was successful or not, from the background research and collaboration that came from working up a proposal.<sup>71</sup>

63. Dr Philip Wright of the Association of the British Pharmaceutical Industry (ABPI) told the Committee that the three main benefits from the framework programmes were that: major projects provide access to facilities that might not be available in each individual participant’s country; they provided access to mobility and training; and larger infrastructure projects could exist which could not be funded by an individual member state.<sup>72</sup> The programmes were necessary to achieve the necessary scale of impact to compete with the US.<sup>73</sup> Mr Nick Peacock of Rolls Royce PLC confirmed that “we really had no other way to go to develop the really large-scale projects.”<sup>74</sup>

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65 Q 26

66 Q 94

67 Q 95

68 Q 112

69 Q 121

70 Q 141

71 Qq 134 and 135

72 Q 141

73 Q 137

74 Q 189

64. The issue of training and mobility was one raised by many witnesses. Dr Kinsman stressed the importance of the programmes for keeping young postdoctoral researchers in Europe rather than moving to industry in the US.<sup>75</sup>

65. Dr Robert Leslie told the Committee that the UK food industry had benefited enormously from the Framework Programme since 1984, and the European food science capability was now well ahead of many parts of the world.<sup>76</sup> Similarly, Mr Peacock pointed out that the US aeronautics industry paid close attention to what was happening in the European programmes, and that this was an indication of the health of transatlantic competition.<sup>77</sup>

**66. We consider that the UK is fully committed to the Framework Programmes and as such would not be able to withdraw from the programmes without excessive damage to the research community. The UK apparently received more funding back from FP5 than it contributed to it, and the funding of projects facilitated research and cooperation that would not have happened without it. There is undoubted value in the programmes for the UK. The focus must now be on how the UK can maintain its strong performance, and on ensuring that the research community is able to participate to the maximum effect.** The difficulties faced by those applying to the programmes are dealt with later in this Report.

## Overheads

67. Much of the evidence received by the Committee raised the issue of the funding of overheads in grant awards. There appeared to be dissatisfaction with the arrangements made by the Commission, arising perhaps from the difference between the percentage of funding provided by the Commission and the UK's Research Councils. The Research Councils currently contribute 46% of the staff costs towards Higher Education Institution's indirect costs of research projects. The issue of how research costs are funded is currently under consideration by the Government following its consultation document *The Sustainability of University Research: a consultation on reforming parts of the Dual Support system*,<sup>78</sup> which will discuss why 46% has become considered the "going rate" for contributions towards indirect costs.

68. Many witnesses felt that universities and institutes were subsidising the Framework Programmes by funding the overhead costs from other sources, for example, funding council grants received by universities.<sup>79</sup> The University of Newcastle commented "In that sense, the EU undoubtedly gets value for money from the UK research base rather than vice versa."<sup>80</sup> Professor John Turner of the University of Surrey told the Committee "Every

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75 Q 141

76 Q 239

77 Q 240

78 Department of Trade and Industry and the Office of Science and Technology, *The Sustainability of University Research: a consultation on reforming parts of the Dual Support system*, May 2003.

79 Q 3

80 Ev 9

time we do a European research project we have to subsidise it from somewhere else. One of my real nightmares is that we might do too well and get a lot of them”.<sup>81</sup>

69. The options available to participants are the full cost model in which all actual direct and indirect costs can be charged, and for which the Commission will refund 50% (this is the model the Commission recommends to participants); and a variant of the full cost model in which a flat rate of 20% of all actual direct costs can be charged to cover indirect costs.<sup>82</sup> However, Professor Ebrahim Mamdami of the Royal Academy of Engineering said: “we tried additional funding comparison and costs with full funding comparison and costs, one hundred per cent or 50 per cent, one hundred per cent with 20 per cent overheads and 50 per cent with full funding and it works out exactly the same, but there is not much advantage in going for additional funding as opposed to going for full funding.”<sup>83</sup>

70. We were told by the Commission in Brussels the European Court of Auditors would not increase the amount contributed by the EU towards overheads. The current arrangements had been discussed with representatives from the Member States and there was no room for negotiation on this matter. The Commission considered that it was a case of many universities being forced to improve their accounting practices and choosing their funding carefully.

71. An improvement from FP5 seems to be that the Commission will provide 100% funding for consortium management and training, up to a total of 7% of the total cost of a project.<sup>84</sup> This is, of course, only if the project is successful; the cost of preparing a proposal for a large consortia that is unsuccessful must be found by the consortia themselves.

**72. We were told in Brussels that overheads were not an issue in other Member States and that movement on this by the Commission could not be expected. From the evidence we received, we consider that there is an issue of the cost of overheads in the UK which needs to be addressed by the UK Government, particularly if SMEs and universities are reluctant to participate as a result. There are a number of ways in which this could be tackled. The simplest is for the Government to provide help actively and guidance through the National Contact Point Network on the best way for participants to approach the issue of overheads and which cost model to apply for in order to optimise the overhead contribution from the Commission. There may also be a role for RDAs to provide financial or administrative assistance to SMEs. It remains the fact that the Commission contribution is still only a *contribution*, and the situation remains unsatisfactory with the most successful bidders at greatest financial risk. The UK Government’s refusal to contribute to the indirect costs associated with Framework Programme grants compromises the already delicate finances of our universities and therefore the participation of our best researchers. The Government has an opportunity to make the UK the clear leader in European research but to realise that aim requires that the Government provide extra funding in SR2004 to meet these costs. At a time when the Government wishes to encourage universities to charge for the full costs of their research, its stance is untenable.**

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81 Q 96

82 *Participating in European Research*, p 18

83 Q 100

84 Q 357

## EUROPES and Departmental Expenditure Limits (DEL)

73. RCUK raised the issue of EUROPES (the European Public Expenditure Settlement) in its memorandum—where Departmental budgets are top-sliced in advance by HM Treasury (HMT) according to estimated EU income from the Framework Programmes. HMT was also planning to charge Public Sector Research Establishments, including some Research Council Institutes, for their returns as coordinator or indeed of all UK participants in any successful project. However, by the time of the evidence session on 9 April, following discussions between OST and HMT this issue had been resolved.

74. On EUROPES Dr Taylor, Director General of the Research Councils said:

“for the last two cycles at least that has not been taken into account in spending review processes, so, as far as we are aware, there is not a penalty in that sense. People have not said, ‘You have got this additional money from Europe, so we will take it off your science budget allocation.’ [...] The other part of this is DEL and that is department expenditure limits and that says, ‘When you actually receive some money in an organisation, then previously if it flowed to a public body, then that money essentially was counted against your expenditure from the budgets you have,’ so, if you like, you can say that if the money came into a research council as a public body from a particular Framework Programme activity, then I would have to provide them some money to pay the Treasury back for that amount of money. We have recently negotiated the concession so that now we only pay half of it back, so we are now in twice as strong a position as we were in terms of the DEL activities.”<sup>85</sup>

**75. Whilst RCUK are now satisfied with the settlement over DEL, we remain concerned that there is a potential for HM Treasury to claw back money from Government Departments and research institutes in respect of money received from the EU. The Chancellor wishes to build a knowledge economy. It is unfortunate, therefore, that the Treasury wishes to penalise Government Departments which wish to participate. If Departments wish to support increased research through EU funding, the Treasury should not undermine their efforts.**

## 4 The selection of thematic priorities

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### Aims behind the structure of FP6

76. The four Fifth Framework Programme thematic programmes were: quality of life and management of living resources; user friendly information society; competitive and sustainable growth; and energy, environment and sustainable development. The three horizontal programmes were: confirming the international role of community research; promotion of innovation and encouragement of SMEs; and improving human research potential and the socio-economic knowledge base.

77. Framework Programme 6 has seven research priorities for Europe, which are:

- Life sciences, genomics and biotechnology for health;
- Information Society Technologies;
- Nanotechnologies and nanosciences, knowledge-based multi-functional materials and new production processes and devices;
- Aeronautics and space;
- Food quality and safety;
- Sustainable development, global change and ecosystems; and
- Citizens and governance in a knowledge-based society.

78. The Commission told us that although the thematic priorities seemed wide, the calls for proposals would be very specific to a field and selected projects would need to have clearly defined goals.

79. The other priorities of FP6 are: policy support and anticipating scientific and technological needs; horizontal research activities involving SMEs; specific measures in support of international co-operation, the Joint Research Centre; Structuring the ERA (covering research and innovation, human resources and mobility, research infrastructures and science and society); Strengthening the Foundations of the ERA (co-ordination activities and coherent development of research and innovation policies in Europe); and EURATOM priorities (priority thematic areas of research, controlled thermonuclear fusion, management of radioactive waste, radiation protection and other activities in the field of nuclear technologies and safety).

80. The Commission states that the seven priority areas are research fields “in which the Union’s intervention can provide genuine European added value (encouraging, among other things, a multi-disciplined, complementary approach to research). The aim is to promote integrated, cross-border projects which benefit from shared resources and ‘critical mass’”.<sup>86</sup> The priority areas are intended to complement the research undertaken by Member States, particularly if: the critical mass of a project exceeds the means of a single country—in both financial and human resources terms; co-operation is economically meaningful; where complementary national skills can be combined; the research is of cross-border interest, i.e. the environment; and where the research links in with the Union’s priorities and implementation of its policies.

81. Therefore, the three overriding principles the Commission applied for the formulation of FP6 can be summarised as:

- To concentrate on a selected number of priority research areas;
- To define new methods of intervention capable of exerting a structuring effect on the RTD activities conducted at community and national level; and

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86 *The European Research Area*, p 10

- To simplify and streamline management procedures.

## The selection process

### *Expressions of interest*

82. On 20 March 2002, for the first time, the Commission published a “call for expression of interest” in order to “receive as much feedback as possible, from the scientific and industrial community ideas for cutting-edge research in line with the priorities and new instruments in FP6.”<sup>87</sup> Research teams and consortia were invited to submit to the Commission outlines for projects they may intend to submit for funding once the formal “calls for proposals” were published.

83. The Commission intended to use the responses to assess whether the policy objectives of the European Commission and the commitment of the scientific and industrial community were matched. The UK Representation (UKREP) in Brussels told us that this consultation was seen as a move to a more organised approach and away from the culture of officials creating and protecting their own policies. More than 15,000 proposals were submitted in response to the call for expressions for interest; 14% (the largest number from a single member state) were from the UK. The Commission considered the exercise a success, particularly as responses had also come from the EU candidate countries—6% from Poland and 1% from the Czech Republic.

### *How are priorities chosen: who decides?*

84. The Commission told the Committee that the priority themes had been chosen in consultation with scientists, industry and national governments. The Government confirmed that the Commission had consulted widely with the scientific community and had included the CREST Committee of Member State officials (the EU’s Science and Technology Research Committee which is chaired by DG Research and attended by representatives from Member and Associated States).<sup>88</sup> The Commission told the Committee that themes were decided on a political basis. For example, the European Parliament had requested that the issue of major diseases be taken up in FP6.

85. The UKREP and UKRO both told the Committee that the Government had been heavily involved in the discussions over the thematic priorities (as well as the structure of FP6), and that there had been fierce debate over the ethics of stem cell research. The Government told us that the FP6 negotiations had progressed “relatively smoothly”, were completed on schedule and with no recourse to the conciliation procedure between the European Council and Parliament. The Government also confirmed that the most contentious issue had been that of bioethics and the use of human embryos in medical research as Member states hold very different views on this matter.<sup>89</sup>

86. Professor Sir David King, told the Committee that credit must be given to Lord Sainsbury for being so successful in getting much of the British position across in the

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87 *Sixth Framework Programme, FAQ, p 3*

88 Ev 125

89 Ev 122

negotiations. Professor King added that it was no coincidence that many of the UK research priorities matched those found in FP6.<sup>90</sup> Dr John Taylor, Director General of the Research Councils, commented that the themes covering the life sciences, information technology and aeronautics were particularly complementary to research themes in the UK.<sup>91</sup>

87. The UK Government successfully argued for research on both banked and isolated embryonic stem cells to be included in FP6, but discussions on research on embryos and embryonic stem cells have been postponed for a year.<sup>92</sup> We also received evidence from the Integrated Ocean Drilling Program (IODP) which had been an extremely successful international scientific collaboration funded by FP5. This had conducted research into, amongst other things, understanding recent climate change. Funding for IODP was included in the draft FP6 work programme until shortly before the formal publication of FP6, but suddenly dropped from the final document. It was not reinstated, despite the efforts of Lord Sainsbury. The representatives of IODP were left frustrated and mystified by the Commission's U-turn on its evaluation of the project with proven scientific impact and excellence.<sup>93</sup>

**88. We are reassured by the evidence that the UK Government was able to argue its corner on the issue of stem cells, but we are concerned that the Commission has also shown itself capable of disregarding projects such as the Ocean Drilling Programme supported under FP5, supported by the UK Science Minister, European National Research Councils and members of the Research Directorate-General, which are of great value to the European and UK research communities.**<sup>94</sup>

89. The UK Government told the Committee that it carried out a public consultation before FP6 negotiations began to identify key UK priorities. Dr John Taylor told the Committee that the Research Councils were just one of the inputs in that process, and there was a wider consultation across government departments. He believed that there had been an open and transparent consultation process as far as forming the UK Government's position on the FP6 negotiations.<sup>95</sup>

90. Professor Sir George Radda, Chief Executive of the MRC, told the Committee that they had a great deal of input through the OST into the discussions on the themes for life sciences, genomics, biotechnology and health.<sup>96</sup> MRC carried out a survey with its own scientists, and prepared a response through its strategy group which was provided to OST. Their advice, that the priorities should be clinical trials, genomics and epidemiology, was "taken up in FP6—we can really be quite pleased that the view of our scientific community ended up as the priorities in that particular theme."<sup>97</sup> Similarly, the Chief Executives of

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90 Q 361

91 Q 361

92 Ev 122

93 Ev 166

94 Ev 173

95 Q 361

96 Q 315

97 Q 315

BBSRC and PPARC confirmed that they had reasonable success in their requests for themes to be treated as priorities.<sup>98</sup>

91. Professor Halliday, Chief Executive of PPARC, commented that for FP7 the European Research Advisory Board (EURAB is a high-level, independent, advisory committee created by the Commission to provide advice on the design and implementation of EU research policy)<sup>99</sup> was likely to push for a more rational debate on the choice of themes, to ensure that the basis for decisions would be stronger.<sup>100</sup>

**92. Whilst there will always areas of research which lose out in the Framework Programmes and there needs to be a limit to the number of priorities across which the total budget is spread, the valuable input of the UK research community, through the Research Councils and Government, has ensured and should continue to ensure that the priorities in Europe are, as far as possible, reasonably closely aligned with those felt most relevant in the UK. The Research Councils should continue to consult their communities and provide the results to the OST in preparation for FP7. It is important the science community is consulted not only on the priorities that ought to be included in FP7, but on the optimal balance of funding between applied and basic research.**

93. Much of the evidence to the Committee indicated that a large element of the research community in the UK had been involved in negotiations and was content with the process. For example, Rolls Royce Plc told the Committee that there was continuous dialogue between the European aeronautics industry and the Commission. Aeronautics is already an industry in which organisations and companies compete and collaborate with each other for the benefit of themselves and Europe. This had made it easier for the Commission to put forward a balanced programme that met the needs of society whilst supporting a globally competitive industry.<sup>101</sup>

94. The University of Surrey told the Committee that the selection of high technology science priorities had been done with a great deal of consultation. Similarly, the Institute of Physics (IOP) claimed that the Commission had spent considerable time in developing its thematic priorities and had consulted widely both internally and externally. The IOP also pointed out that FP6 was not intended to be balanced—its purpose was to focus research efforts within a limited number of priority areas.<sup>102</sup>

95. However, some of the evidence received by the Committee suggested that the basis for selection of the priority areas for funding was far from clear to many in the UK research community, and was in fact the least transparent part of the whole process. The Royal Astronomical Society said that the process was not well understood.<sup>103</sup> This lack of transparency inevitably led to suspicions of undue political influence by large companies

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98 Qq 317 and 318

99 EURAB is made up of 45 top experts from EU countries and beyond. Its members are nominated in a personal capacity and come from a wide range of academic and industrial backgrounds, as well as representing other societal interests.

100 Q 324

101 Ev 64

102 Ev 30

103 Ev 146

and industries. Professor Marshall of the Institute of Physics commented that the process was based to some extent:

“on things going on behind closed doors that one does not see terribly clearly. The debate amongst practitioners is how much of what goes on behind closed doors is heavily influenced by the great and the good or by people who are extremely powerful [...] the problem is that the process is not completely transparent so you cannot say it is completely fair”.<sup>104</sup>

96. The Royal Academy of Engineering told the Committee that no indication was given “of the level of consultation with the relevant industries regarding needs and priorities.”<sup>105</sup> Dr Taylor commented that “because Brussels is perhaps a rather remote organisation, however transparent, most people feel they are not really having an input, so I think there is a fundamental, almost psychological problem which needs to be overcome.”<sup>106</sup>

97. On the role of the Government and Research Councils in the selection process, Dr Robertson of Newcastle University told the Committee “I would have liked to have seen some of the Research Councils identify—and maybe PPARC did—the key areas that they wanted to succeed in and to be much more aggressive in ensuring that those areas were properly represented in terms of the development of major initiatives [...] I think we need to be a little more aggressive in the UK in fighting for the things that make it consistent with UK policy so that it is adding value and not in conflict.”<sup>107</sup>

98. Professor Halliday, confirmed that there was a debate about how the process could be made more open, and how the input and basis of decisions could be made more transparent to everybody “to a scientist in an arbitrary university in the United Kingdom it must look a totally mysterious process.”<sup>108</sup> Professor Beveridge of Plymouth University commented on the lack of a coherent strategy relating European funding to national research funding: “we need a policy which looks at what the research benefits are in different research areas requiring different kinds of investment and infrastructure and seeing where European funding can benefit [...] it may exist but I have not seen that.”<sup>109</sup> Professor Radda suggested that it was for the national Governments involved in the negotiating process to make the negotiations clearer to the research community.<sup>110</sup>

**99. Whilst those who are privy to the selection process accept that the Commission consults widely in formulating its priorities, it would benefit the Commission greatly if it made the selection process better understood. The Expressions of Interest Exercise was a step in the right direction in allowing all sections of industry and academia some input into the process, and we would recommend that this is retained and expanded upon for FP7.**

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104 Q 110

105 Ev 26

106 Q 362

107 Q 91

108 Q 327

109 Q 97

110 Q 328

100. Whilst the Government appears to be closely involved in negotiating with the Commission, there is a need for the UK Government and Research Councils to disseminate their work with the Commission to the wider research community to avoid suspicion and misunderstanding. We consider that it is vital that the UK Government ensures UK research priorities are not dictated by Framework Programme priorities, but, so far as possible, Framework Programmes should complement UK priorities. The Government should make its role in the negotiations clearer to the UK research community. This information would encourage greater UK confidence in the Framework Programmes and through this confidence, encourage more participation.

### Opportunities for basic research

101. The imbalance between applied and basic research is very evident in the Framework Programmes, which are limited to objectives set out in the EU Treaty of Amsterdam—“The Community shall have the objective of strengthening the scientific and technological bases of Community industry and encouraging it to become more competitive at international level.”<sup>111</sup> The Government commented that a significant part of FP6 is likely to be spent on longer term research, and that FP6 makes provision for supporting research into areas of cutting-edge and newly evolving areas of science (New and Emerging Science and Technology NEST), especially those which are likely to have a long term impact on society. The first calls for NEST Basic research will also be supported through the mobility and training programmes outside the thematic programmes.<sup>112</sup>

102. Professor Sir David King told the Committee that the Government ought to look at whether the budget for open-ended research was enough—particularly during negotiations for FP7.<sup>113</sup> He added that although applied research has a role to play in wealth-creation, the impact of basic research could be greater. “If we look at the spin-out companies which have the potential disruptive technologies of the future, we are seeing that they are emerging much more from the five-star departments, from the excellent fundamental research-orientated departments than from others.”<sup>114</sup>

103. There was also concern that the rigid nature of the Framework Programmes—the advance setting of priorities for the four years—would preclude research into topical areas.<sup>115</sup> The need for a more bottom-up and responsive approach for research has led to discussions which include a proposed European Research Council, which is dealt with later in this Report.

104. We consider that the budget for New and Emerging Science and Technology, which at €215 million amounts to no more than 1.2% of the total FP6 budget, is unlikely to rectify the lack of substantial Framework Programme funding for basic science. This is short sighted when considering the ambitious targets set for R & D in Europe.

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111 Ev 88

112 Ev 125

113 Q 376

114 Q 377

115 Q 113

## 5 EU enlargement

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### Who may participate

105. The Framework Programmes have been open to participation by candidate countries for some time. The Government commented “in many ways research is a trailblazer for enlargement.”<sup>116</sup> FP6 is a further development as it is open to organisations in the 15 Member States of the EU and, for the first time, the 13 candidate countries for EU enlargement are allowed to participate *on the same basis* as Member States: i.e. research projects can now involve organisations from candidate countries alone. The candidate countries will need to apply for associate status to FP6 in order to do this. They will then pay contributions direct into the FP6 budget, based on a percentage of their GDP, rebates will be offered for the first two years of participation. Once they become Member States, their direct contribution will end and it will come from the overall EU budget instead.<sup>117</sup>

106. FP6 also aims to encourage and support participation by scientists and institutions from developing countries, Mediterranean countries, Russia and the Newly Independent States.

107. Commissioner Busquin told the Committee that the aim of including candidate countries in the Framework Programmes was not to create a bias towards those countries, but to help them identify high quality teams and help them participate with the rest of Europe.

108. Some countries such as Poland and Hungary already have strong scientific bases. The European average spending on R & D is 1.9% of GDP. Poland already spends 0.75% which is not far behind some existing Member States.<sup>118</sup> Currently, research in Eastern Europe also has the advantage of being cheaper than in the rest of Europe. The potential for increase in competition following enlargement was seen as healthy by the Commission. It was accepted that it would take a while for candidate countries to establish networks, so it was unlikely that they would be successful at obtaining funds immediately. The Government told us “despite their [the candidate countries] pockets of scientific strengths, they may find participation in FP6 a significant challenge.”<sup>119</sup>

109. There are already some areas outside the Framework Programmes in which extensive collaboration exists with candidate countries. One of these is the nuclear industry. BNFL told us that they had a number of collaborations with former Eastern bloc countries which had nuclear power stations, and some of these had been through EU funded exchanges and safety improvement projects. Further collaboration would depend to a great extent on the commercial opportunities available for decommissioning or remediation in these countries.<sup>120</sup> BNFL told us that there would be a need for sharing best practice, in areas of

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116 Ev 125

117 *Participating in European Research*, p 27

118 <http://www.cordis.la/indicators> and [http://europa.eu.int/comm/enlargement/report2002/pl\\_en.pdf](http://europa.eu.int/comm/enlargement/report2002/pl_en.pdf)

119 Ev 125

120 Q 251

safety in particular.<sup>121</sup> NIREX agreed that they were also interested in exploiting FP6 as a means of “disseminating skills and the training–base to the applicant countries.”<sup>122</sup>

### The socio–political agenda behind FP6

110. Much of the evidence received by the Committee was enthusiastic about the potential participation of talented scientists in the Framework Programmes. Professor Gilmore of Cambridge referred to the example of Spain and Portugal whose science communities had grown rapidly over a generation to become large high–quality communities, achieved, in part, through active support from the scientific communities in other countries, together with structural funds.<sup>123</sup> The UK was prominent in this support, through training opportunities in the UK, support through the British Council and through academic exchange schemes. Professor Gilmore concluded “the sum effect of these was to strengthen the new community, and to provide a generation of leaders in that community who strongly support and appreciate the UK. Very valuable seed–corn investment.”<sup>124</sup> Professor Sir Richard Friend, of Cambridge Display Technology (an SME), told the Committee “I do see enlargement as providing a flow of very capable and well educated people”.<sup>125</sup>

111. Not all the evidence was of this opinion. Introducing a greater number of scientists into FP6 might have the result of lowering the quality of research across the EU. Professor Michael Trevan of Save British Science commented “whilst it would be a good thing for science in general in Europe to bring them on board, and be able to provide them with better facilities, that may not be the best thing for UK science.”<sup>126</sup>

112. The Institute of Physics raised the concern that the inclusion of countries needing investment in their science infrastructure could result in a potential reduction of funding available to individual research groups.<sup>127</sup> The Royal Academy of Engineering (RAE) agreed that competition for funds will be greater after enlargement as more people will wish to participate, and considered that enlargement would need to be accompanied by a larger budget.<sup>128</sup> The RAE also considered that enlargement would have an adverse impact on the organisation and management of projects.

113. There was some concern that the social and cultural integration of Europe was considered of greater importance than the scientific excellence of a project.<sup>129</sup> Nick Peacock of Rolls Royce told the Committee that “we are made very aware of the political element to be as inclusive as possible.”<sup>130</sup> The RAE considered that projects would include

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121 Q 249

122 Q 260

123 Ev 12

124 Ev 12

125 Q 218

126 Q 26

127 Ev 30

128 Ev 27

129 Q 24

130 Q 192

organisations and researchers from candidate countries as a strategic part of a bid rather than for the relevant and effective contribution that partner could make.<sup>131</sup>

**114. We consider that the effects of enlargement will not be dramatic as many accession countries already participate in the Framework Programmes. European science is likely to benefit from the greater pool of talented scientists made available by FP6. The Commission should avoid pressurising consortia to include partners from candidate countries. We welcome the opportunities offered by enlargement and accept that the long term goal of building a competitive Europe may be a priority, but a balance must be struck between this and the maintenance of a credible, meritocratic system.**

## 6 Selection of projects

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115. The Government told us that the selection of projects for funding is based on criteria set out in each call for proposals, including: “scientific and technological excellence, relevance to the objectives of the specific programme, potential for promoting innovation and the management ability to carry out the project successfully.”<sup>132</sup> The Government confirmed the Commission line that there are no national quotas when allocating funding under FP6. The Commission states that, providing the applicants satisfy the legal and administrative criteria, and their proposals are in accordance with programme objectives, the sole selection criteria is the quality of the proposals.<sup>133</sup>

116. The Government told us that all eligible proposals are evaluated with the help of outside independent experts appointed by the Commission from a database they hold of individuals who have either nominated themselves or been proposed by a Member State research institution.<sup>134</sup> Professor Manfred Horvat, told the Committee that the Commission uses a modified peer system which is applied with care:

“It has to be emphasised that it is an excellent approach to follow a two stage procedure of first individual evaluation by independent experts and then an interactive consensus meeting between those experts. This ensures that the experts have to defend their individual findings in a group of other experts in a professional interaction. This approach is important for ensuring high quality standards of the evaluation procedure, that would be lost to a certain extent when only remote evaluation would be applied.”<sup>135</sup>

117. In addition, the new instruments will also be evaluated by a hearing of the project consortium by a panel of evaluators, which will probably involve more than three independent experts.<sup>136</sup>

118. However, Professor Horvat commented that whilst the submission, evaluation and selection of EU projects was well organised, after the closing of a call, proposers remained

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131 Ev 26

132 Ev 125

133 *Participating in European Research*, p 46

134 Ev 124

135 Ev 164

136 Ev 164

ill informed: “proposers are confronted with the Commission acting as a ‘black box’, with no information on the progress in processing the submitted proposals, often for a rather long time.”<sup>137</sup>

119. The CBI claimed that some of its members considered the selection process was a “black art”, whilst to others it seemed relatively fair.<sup>138</sup> As will be further discussed below, there was some suspicion amongst evidence submitted to the Committee that projects were selected for their benefit to the social and cultural integration of Europe rather than for their scientific excellence. Feedback on why certain proposals failed was also requested to enable greater transparency of the process.<sup>139</sup> **We believe that the Commission needs to emphasise the basis on which the selection of projects is made, and give greater feedback to applicants on the reasons for failure.**

## 7 The application process

120. We found during the course of our inquiry that an organisation’s opinion of FP6, and the resources it makes available, depended heavily on its experience of participating in the previous Framework Programmes. Some organisations were so experienced, or had such a well-developed support service, that the application process was considered straightforward. However, the majority of those who offered evidence shared the opinion that the application process was at best complex and at worst impenetrable.<sup>140</sup> As the CBI pointed out, the complicated application process was to some extent inevitable as the very nature of a process involving collaborations across the European Union, and beyond to the candidate countries, would cause its own additional problems.<sup>141</sup>

### Bureaucratic and cumbersome...

121. Few of those submitting evidence considered the application process straightforward, and most agreed with the opinion put to us by the Royal Academy of Engineering that to successfully complete a proposal “the level of effort and persistence required was daunting.”<sup>142</sup> For most it was the sheer volume and complexity of the necessary forms, which, coupled with the large administrative burden of preparation, meant that applicants needed full-time specialist staff working on a proposal if they were to have any chance of success. This was a deterrent for all, for the cost had to be weighed against the likelihood of success.<sup>143</sup> The problem was particularly severe for many SMEs, who simply did not have the resources to gamble in this way. It was felt hard to prove that the effort involved was worth the high failure rate.<sup>144</sup>

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137 Ev 164

138 Ev 44

139 See para 132.

140 Ev 30, 34, 153

141 Ev 44

142 Ev 26

143 Ev 9, 12, 15, 26, 34, 65, 80, 153

144 Ev 25

122. The application process was described as a skill that takes a long time to learn, for it was necessary to understand how the Brussels process worked and the political pressures involved. Dr Oonagh Kinsman of GlaxoSmithKline told the Committee “You have to understand the game”.<sup>145</sup> The Royal Academy of Engineering said “success in writing proposals often required a deeper understanding of the culture behind the words”.<sup>146</sup> However, John Murphy of BAeSystems acknowledged that “we see benefit not so much in terms of funding but in terms of being a trigger for facilitating awareness of who is capable of what within Europe [...] even when we have put in proposals that have failed, we often get significant benefit from working up those proposals [...] the European programme facilitates us knowing who to corroborate with in Europe.”<sup>147</sup> It appears that participating and learning how to apply, and who to collaborate with, is an essential part of the whole process that helps to build the knowledge networks which are the political goal of the Framework Programmes and the EU. It is appropriate to ask, however, who is paying for attaining this political goal.

123. It was widely acknowledged that in making an application it was necessary to spend a significant amount of time in contact with Brussels officials.<sup>148</sup> The University of Surrey told the Committee that “having the right contact in Brussels can be important to the point of crucial.”<sup>149</sup> The Royal Academy of Engineering said there was a feeling that UK applications were not as adept at playing the system as some of their European counterparts. Although interest in this Programme is enormous, many applicants are not aware of what is available, unfamiliar with the time scales and essential lobbying necessary, and not aggressive enough in their applications: as a result proposals can be poorly budgeted and poorly presented.<sup>150</sup> Whilst it was acknowledged that the only way to really understand the process was to experience it, its complexity would dissuade many SMEs.<sup>151</sup> Professor Thomas of the Institution of Electrical Engineers said that [applying for and participating in the framework programmes] “is simply not an effective way of using skilled staff [...] putting the management effort into bidding for it on a one in ten chance of winning a programme is enough to frighten any sensible SME away from bidding.”<sup>152</sup>

124. Professor Ian Halliday told us “the Commission is very aware of all these criticisms [but] there is a tension in the Commission between fantastic fiscal rectitude, enormous checking of every last fact and allowing a little bit of flexibility in the application forms”.<sup>153</sup> He continued “We would like to simplify the procedures [but the Commission] are nervous that the governments would not find that the correct thing to do”. Change therefore seems unlikely without further intervention from the governments of Member States. However, we were told by the Royal Astronomical Society of the good working relationship between astronomers and the Science and Technology Directorate at the

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145 Q 131

146 Ev 26

147 Q 134

148 Q 43

149 Ev 15

150 Ev 26

151 Q 140, Ev 80, 159

152 Q 118

153 Q 303

Commission: “Commission staff have shown willingness to adapt their bureaucracy to suit the scientific environment. This has certainly ameliorated the process.”<sup>154</sup>

125. Most of the evidence submitted commented favourably on the new style application forms which were acknowledged to be a welcome improvement.<sup>155</sup> UKRO had been piloting the new electronic application form, which was seen as step forward in making the process easier to complete.<sup>156</sup> Professor Julia Goodfellow of BBSRC told the Committee that UKRO had worked “very closely with the Commission and several British Universities to test that out.”<sup>157</sup> RCUK commented that the Commission was planning a two-stage application form in future, in which detailed information would not be necessary in the initial application form.<sup>158</sup> This is a welcome move, which should reduce the amount of obligatory work and improve success rates of applications. The electronic submission software has also been improved since FP5.<sup>159</sup>

126. Comments were also made on the lengthy time scale between the acceptance of the proposal and the payment of contracts. The uncertainty caused by delayed contractual processes has a deleterious effect on project management and the recruitment of personnel.<sup>160</sup> The simplest contracts could take between 12 and 19 months in a contract administration process that was described as “tortuous”.<sup>161</sup> When asked who was responsible for the delays, Dr Klinsman from GlaxoSmithlineKline replied “the blame lies fairly and squarely in Brussels.”<sup>162</sup>

127. The Government told the Committee that the Commission accepted that it needed to address the criticisms made of the bureaucracy and the lengthy time in issuing contracts. However, the Directorate General of Research told the Committee in Brussels that it did not believe that the process was any more complicated or burdensome than that for national programmes. Similarly, contributions by a Commission official to the June 2003 EUREKA Inter-Parliamentary Conference in Copenhagen suggested that the Commission has adopted a defensive stance on the question of the burden of the FP6 application process. However, the Government told us that it was putting pressure on Brussels to improve its performance, and that Government Officials would hold the Commission to account through participation in programme committees which oversee the Commission’s management of programmes.<sup>163</sup> **We are encouraged that both the Government and Research Councils are aware of the problems encountered by UK applicants in submitting proposals. We welcome their acknowledgement that the complexity of application forms is off-putting to inexperienced applicants and SMEs, without large administrative resources, who may not consider it worthwhile continuing to spend time and money on applications. However, we are sceptical of the Commission’s**

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154 Ev 146

155 Ev 143, 159

156 Q 303

157 Q 303

158 Ev 90

159 Ev 90

160 Ev 65

161 Q 130, Ev 26, 52, 80

162 Q 164

163 Q 371, Ev 124

**commitment to reducing bureaucracy. We urge the Government and RCUK to continue to bring pressure to bear on the Commission to improve the application process, in particular to reduce the time taken in producing and issuing contracts. The Commission wishes to make Europe a research powerhouse to rival the USA. Only by significantly reducing the bureaucracy of the Framework Programme can this become a reality.**

## Transparency of the process

128. Most evidence accepted that the application process was transparent and well documented.<sup>164</sup> However, it was suggested that performance measures of the Commission should be published: outputs, results, who benefited, and the length of time it had taken to issue contracts and payments, and the distribution of funds across the member states.<sup>165</sup> Professor Horvat commented:

“the tools for supporting internal learning processes in the European Commission need substantial improvement beyond just very basic statistics on participation. In addition, the member states and associated states have to receive from the Commission all the data necessary for monitoring and assessing their participation as a basis for the further development of appropriate strategies for coordinated and coherent approaches towards optimising the synergies between national and EU RTD efforts.”<sup>166</sup>

**129. The Government should press for the publication of Commission performance targets so that any improvements, or deterioration, in contract turnover time are easier to assess.**

## Support for applicants

### *Information provided by the European Commission*

130. There is a large amount of information made available to parties interested in applying for funds from FP6. The various sources of which include: the Commission website;<sup>167</sup> CORDIS—the Community Research and Development Information Service, run by the European Commission’s Directorate–General for Enterprise;<sup>168</sup> and hard copy publications of informative documents (which are also available on line).<sup>169</sup> As well as directing applicants to helpful sections of the CORDIS and Commission website, the Commission provides details of helpdesks for each priority area and a helpdesk specifically for SMEs.<sup>170</sup> CORDIS also provides search engines to find partners for FP6 applicants, details of previous expressions of interest and SMEs participating in FP6, and also forthcoming FP6 events and success stories.<sup>171</sup> CORDIS also asks for feedback from those

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164 Ev 8, 9, 12, 15, 26, 80, 143, 153

165 Q 170, Ev 44

166 Ev 162

167 [http://europa.eu.int/comm/research/fp6/index\\_en.html](http://europa.eu.int/comm/research/fp6/index_en.html)

168 <http://fp6.cordis.lu/fp6/home.cfm>

169 *Participating in European Research*, [http://europa.eu.int/comm/research/contact\\_en.html](http://europa.eu.int/comm/research/contact_en.html)

170 <http://www.cordis.lu/fp6/infodesks.htm>

171 <http://partners-service.cordis.lu/>

using its website.<sup>172</sup> The Official Journal of the Commission also makes announcements on FP6,<sup>173</sup> but this has been described by the University of Surrey as less helpful as it uses complicated legalistic phrasing.<sup>174</sup>

131. The Commission also provides details of information and assistance networks available to applicants and there is the network of National Contact Points in each EU Member State and associated states. Whilst this huge range of information is acknowledged by most as being comprehensive, some evidence to the Committee suggested that CORDIS was hard to navigate—“a labyrinth” and that it used jargon not easily understood by the novice applicant and therefore seemed daunting rather than helpful.<sup>175</sup>

132. Save British Science suggested that the CORDIS information partner searches were only for the “really desperate.”<sup>176</sup> However, the University of Surrey considered that “it is a bit of an old boy’s club in the sense that it would be very difficult for somebody who had never had any involvement with the European research project to start absolutely cold.”<sup>177</sup> More help than was available on the Commission website was needed for those at the bottom of the learning curve,<sup>178</sup> and it appeared that becoming familiar with the application process is a steep learning curve which one needed to experience rather than simply read about on CORDIS.<sup>179</sup> The Royal Academy of Engineering agreed that help was needed for those at the bottom of the learning curve.<sup>180</sup>

133. Most witnesses agreed that the best information was gained from speaking to experienced partners within a network, or failing that, with Framework Programme officials in Brussels direct.<sup>181</sup> The Institution of Electrical Engineers told us that the importance of direct contact with Commission officials “cannot be overstated.”<sup>182</sup> The problem came with inexperienced applicants or partners not knowing the right questions to ask or who to ask in Brussels.<sup>183</sup> Whilst most evidence agreed that Commission staff were approachable and helpful, and one piece of evidence to us said that the resources in Brussels were “ample,” others claimed that Commission staff were “stretched”.<sup>184</sup> Other evidence suggested that whilst the Commission were willing to help, the most useful sort of information for novice applicants did not seem to be available. For example, witnesses asked for more examples of success stories and said that examples of successfully completed applications would be useful to the uninitiated.<sup>185</sup> **The facility exists for feedback by applicants to the Commission on the application process in general, and we**

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172 [https://jupiter.cordis.lu/arsys/apps/shared/login1\\_en.jsp](https://jupiter.cordis.lu/arsys/apps/shared/login1_en.jsp)

173 [http://europa.eu.int/eur-lex/en/search/search\\_oj.html](http://europa.eu.int/eur-lex/en/search/search_oj.html)

174 Ev 15

175 Q 59, Ev 8, 15

176 Q 15

177 Qq 58, 59

178 Qq 99 -100

179 Q 59

180 Q 99

181 Qq 9, 14

182 Ev 34

183 Qq 11-12, 43

184 Ev 67, 153

185 Ev 15, 26

**suggest that applicants convey the shortfalls of the system to the Directorate for Research in Brussels. Research Councils UK should support the research community by pressing the Commission to place more useful information on the website, without overloading those seeking help. They should work to alter the perception that you need to be an old Brussels hand to have any chance of success and to make the process more accessible to all.**

## Information provided by the UK Government and Research Councils

### UKRO

134. The Committee received much evidence that UKRO—the UK Research Office funded by the Research Councils—provided extremely useful information and support. They were described as “phenomenally good [but a] slender resource.”<sup>186</sup>

135. UKRO is currently sponsored by the six grant awarding Research Councils, with the Biotechnology and Biosciences Research Council (BBSRC) as the managing partner and employer of the eight staff in Brussels.<sup>187</sup> UKRO’s mission is described as “to promote effective UK participation in EU funded research, higher education and related activities.”<sup>188</sup> It does this through providing a subscription service to organisations (any UK HEI, charity or public sector research organisation) alerting them to EU funding opportunities available and to providing updates on developments in programmes and EU policies. UKRO provides other services such as partner searches, an enquiry service, on-line tutorials on FP6, training courses, one day events (180 in the past 18 months), an annual conference and UK briefing visits. UKRO also runs the National Contact Point for the Human Resources and Mobility Programmes in FP6: this information service is available to all interested parties. The UKRO offices are also used by the UK research community as a base in Brussels when visiting the Commission, other European Institutions or for staging project consortia meetings.<sup>189</sup>

136. UKRO told us that they receive on average nearly 1,000 requests for pages on their website every day, 500 of these hits are to access the online tutorial.<sup>190</sup> 125 European Officers and 540 researchers attended UKRO events in October and November 2002, a sure sign of the need for the service UKRO provides.<sup>191</sup> UKRO had also trained 122 European Liaison Officers and 700 researchers in advance of FP6 calls.<sup>192</sup> It was confirmed by a witness that the annual conference was very good.<sup>193</sup>

137. The only drawback to UKRO appears to be its small size and its inability to offer its services to industry.<sup>194</sup> When we spoke to UKRO’s Director, Dr Martin Penny, in Brussels, he confirmed that UKRO aimed to expand its services to provide tailored advice to

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186 Q 91

187 Ev 95

188 UKRO, *Annual Report, 2002-03*, <http://www.ukro.ac.uk>

189 Ev 96

190 Ev 120

191 Ev 96

192 Ev 159

193 Q 159

194 Q 54

industry and SMEs, through a subscription service, as soon as possible. We were told in evidence that UKRO was receiving two extra members of staff to help with its activities on FP6.<sup>195</sup> We were also told that two Regional Development Agencies (RDAs) were signing up to the UKRO subscription service.<sup>196</sup> **We consider that this highly praised and well-run resource should be maintained by the Research Councils and developed where possible to include industry. The two extra staff is a good start, but it is likely that providing a tailored service to SMEs would require the Research Councils to consider whether UKRO needs to be expanded further, and to find the funding to do this.**<sup>197</sup>

### **Government and the National Contact Points**

138. The Government, through the Office of Science and Technology (OST), told the Committee of the events and conference held in advance of FP6.<sup>198</sup> The International Directorate of the Office of Science and Technology has a link on its website to the CORDIS, to information on Framework Programme 6, including the UK webpage on CORDIS with details of the network of National Contact Points and a timetable of related events.<sup>199</sup> There is also a telephone and email helpline at OST.<sup>200</sup>

139. The Government also gave the Committee information on how the Office of Science and Technology raises the profile of FP6 abroad through the Foreign and Commonwealth Science and Technology network. Through this method researchers from third, candidate and member countries are encouraged to seek UK partners in FP6 projects.<sup>201</sup>

140. There was mixed opinion on the usefulness of the National Contact Points. For example, UKRO and Betatechnology were considered good (Betatechnology, a technology services company, and the National Contact Point for specific SME activities, is credited with having brought many SMEs into the Framework Programmes) whereas others were “not great”.<sup>202</sup> RCUK told the Committee that Government National Contact Point activity was “mixed” in quality and usually consisted of one seminar at the outset of the FP followed by an enquiry service.<sup>203</sup> They tend to be reactive rather than proactive, which is what many witnesses considered was necessary.<sup>204</sup> We were told that National Contact Points should be reaching out to industry, who were currently reluctant to participate.<sup>205</sup>

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195 Q 368

196 Q297

197 UKRO has informed us that the two new members of staff have been appointed. Nine of the ten staff posts at UKRO are associated with the core work of the office in providing assistance to subscribers. Only one member of the office is employed through OST funding to run the FP6 Mobility and Human Resources NCP. See also UKRO Annual Report, 2002–03.

198 Ev 123

199 [http://www.dti.gov.uk/ostinternational/eu\\_rtd\\_d/src/fp6/index.html](http://www.dti.gov.uk/ostinternational/eu_rtd_d/src/fp6/index.html) and [http://www.cordis.lu/united\\_kingdom/contact.htm](http://www.cordis.lu/united_kingdom/contact.htm)

200 Ev 123

201 Ev 123

202 Qq 154, 222

203 Ev 88

204 Q 222

205 Q 148

141. We received evidence from the University of Surrey that the DTI had appeared confused over its role as National Contact Point on a number of thematic priorities, and had been reluctant to offer advice to universities seeking help.<sup>206</sup>

142. Professor King told us that the Office of Science and Technology was spending £2–3million in 2003 on improvements to the information networks to help applicants find out about FP6. There was an acknowledgement that maybe the current network of NCPs was not enough—“we are learning [...] perhaps we should review it.”<sup>207</sup> Part of the improvements would include a new Central Information Point, a web-based portal for those seeking help, expected to be available in Autumn 2003.<sup>208</sup> This was designed specifically for those actually seeking help and information. Further evidence was supplied by the Government after the evidence session, with a fuller picture of the network to be established in Autumn 2003, with an acknowledgement that the network service to date had been “fragmented” and not up to the standard of service offered by other member states.<sup>209</sup>

143. The Central Information Point will also facilitate contacts between National Contact Points, Innovation Relay Centres, RDAs and the devolved administrations, with the aim of encouraging the sharing of best practice.<sup>210</sup> Most evidence submitted commented on the new style application forms, as we noted in paragraph 124 above, which were acknowledged as a welcome development. **We welcome the Government’s commitment to improving the National Contact Point Network, and whilst we also welcome the creation of the Central Information Point, we expect the Government to ensure that the service and information provided by National Contact Points is substantially improved by Autumn 2003.**

144. However, Dr Taylor also suggested that promotion by the Government was not vital since he believed that the scientific community’s awareness of the framework programmes should be reasonable by now.<sup>211</sup> This attitude ignores the changes that the Framework Programmes have undergone, particularly the major changes in FP6, the new instruments and “new feel” of the European Research Area. It also overlooks the low proportion of SMEs and industrial applicants that are taking part and the need to convince this sector to at least take a look at the opportunities on offer. Dr Robert Leslie told us that senior people in the food industry were still unaware of the potential opportunities offered by the Framework Programmes.<sup>212</sup> The Government’s own memorandum stated that the Government attached “great importance to promoting FP6”, particularly in highlighting to the research community the challenges of the new instruments and the need for larger consortia. The Government had acknowledged that an expansion of the National Contact Point network would become necessary following these changes from FP5 to FP6.<sup>213</sup>

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206 Qq 60–65

207 Qq 358, 368

208 Q 369

209 Ev 140

210 Ev 140

211 Q 368

212 Q 220

213 Ev 123

145. There was a division of opinion amongst the witnesses who gave evidence to the Committee on the level of support necessary from the Government. Some believed that they did not need their hand held by Government, Professor Sir Richard Friend told us “I do not need a nanny.”<sup>214</sup> Some felt it was not the Department of Trade and Industry’s job to promote the European Framework Programmes. Rolls Royce Plc, for example, told us that although they had regular contact with the DTI, negotiations were held directly with the Commission.<sup>215</sup> However, others felt that the Government needed to ensure the research community, and particularly industry, knew of the opportunities offered by FP6. Promotion and raising awareness were needed, together with the dissemination of information on UK Framework Programme success stories.<sup>216</sup> **We believe that the Government has an important role to play in the promotion of the Framework Programmes to UK organisations. It should not assume that there is sufficient awareness of the Framework Programmes in the UK, particularly amongst SMEs. The Government has a responsibility to ensure that the National Contact Point network is developed and that the Research Councils and Regional Development Agencies are supported in their work to promote FP6 and help inexperienced applicants. We believe that RDAs have a valuable role to play in supporting participants. The Government should also continue to promote the UK to potential partners abroad through the Foreign and Commonwealth Office Science and Technology network and the British Council. The Government should increase its efforts to promote UK participation for as long as the UK continues to contribute towards the programmes.**

### **Research Councils**

146. The Research Councils told us that they were better placed than the Government to raise awareness of FP6 through the science community.<sup>217</sup> They did this through promotional activities such as seminars, conferences and advices, whether as a National Contact Point or not.<sup>218</sup> RCUK had made much effort to alert the research community to the new modes of funding and the changes from FP5 to FP6.<sup>219</sup> RCUK’s memorandum stated that it was becoming the norm for Government Departments to contract out National Contact Point activity to Research Councils.<sup>220</sup> Professor Radda explained that the Department of Health had asked the Medical Research Council to be the National Contact Point as the MRC had the better contacts in Brussels and would be more effective.<sup>221</sup> The Department of Environment, Food and Rural Affairs chose to work in close partnership with the BBSRC as the National Contact Point for Food and Safety.<sup>222</sup>

147. Research Councils had close relations with their European counterparts through organisations such as the European Science Foundation (ESF), COST and EuroHOCs which both encouraged and funded networking of scientists across Europe. Research

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214 Q 213

215 Q 187

216 Q 140, Ev 72

217 Q 300

218 Q 296

219 Ev 88

220 Ev 88

221 Q 300

222 Q 302

Councils also had bilateral arrangements to offer the transfer of Research Council grants to other countries.<sup>223</sup>

148. Research Councils already allocated parts of their budgets to raising awareness of the Framework Programmes and assisting applicants. MRC considered that more than the £100,000 they were spending on “pump–priming” activities to help people co-ordinate activities was not a legitimate way to spend the Science Budget.<sup>224</sup> BBSRC were allocating £65,000 for the same purpose.<sup>225</sup> BBSRC acknowledged that its challenge was to change people’s perceptions that the FPS were too challenging and that to ensure that the UK continues to lead consortia.<sup>226</sup> EPSRC had also allocated funding to assist FP6 applicants make overseas visits to build European contacts and consortia, whilst allowing UK network grants to be used for the same purpose.<sup>227</sup> NERC had allocated £100,000 to promote the development of selected consortia whose research was closely aligned with NERC’s strategic priorities.<sup>228</sup>

**149. We recommend that the Research Councils, together with the Government, should have a clear strategy on how to identify the key areas in which the UK could excel and then be more aggressive in ensuring that these areas were properly represented by UK applicants.**<sup>229</sup>

**150. The UK’s support for Framework Programme applications is too fragmented. While central government, Research Councils and RDAs all have a role, this effort should be streamlined and offer an single advice point regardless of the sector or the location of the applicant.**

### ***Regional Development Agencies (RDAs)***

151. Whilst the Research Councils provided some financial assistance to universities, the Research Councils and Government considered that RDAs had a major role to play in the support of SMEs wishing to apply to FP6.<sup>230</sup> The Welsh Development Agency, One North East and North West Development Agency were all cited as examples of RDAs that were particularly involved in FP6 and in helping SMEs.<sup>231</sup> The Government considered that other RDAs should be considering whether there is a role for them in supporting applications and should be developing strategies accordingly: these strategies could be linked to the development of science and technology councils within the RDA framework.<sup>232</sup> The Research Councils confirmed that a Joint Committee was being formed

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223 Ev 89

224 Qq 296, 305

225 Q 305

226 Ev 100

227 Ev 105

228 Ev 109

229 Ev 91

230 Qq 298, 306

231 Q 229

232 Qq 342, 358, 370

between Research Councils and Regional Development Agencies to consider support for participation in the Framework Programmes.<sup>233</sup>

## 8 EURATOM

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### Funding and Structure of the programme

152. EURATOM is part of the Framework Programme but has a different Treaty base and is a separate entity negotiated in parallel with the main EC Programmes. EURATOM has three main elements: nuclear fusion, nuclear fission and the Joint Research Centre (JRC). Under FP6 it has been allocated €1.23billion, of which €750million will be allocated to fusion, €90million to the management of radioactive waste and €50million to radiation protection and €50million to other activities in the field of nuclear technologies and safety.

153. In addition, €290million of the JRC's budget (which amounts to 27% of the JRC's total FP6 budget) will be reserved for its nuclear activities. These include: the management of radioactive waste; the safeguarding of nuclear materials; reactor safety; ionising radiation monitoring and metrology; and a small sum (€15million) for the decommissioning of the JRC's own obsolete reactors. The JRC also provides advice and training to Member states and candidate countries, with the aim of ensuring the continued supply of qualified personnel required to operate nuclear facilities and their associated programmes safely in the future.<sup>234</sup> The wider work of the JRC is dealt with in greater detail in the next chapter of this report.

154. The EURATOM programme operates differently to other areas of FP6. Instead of calls for proposals, national organisations have contracts of association with EURATOM, which result in part-funding of some elements and additional funding for others. The collaboration between national organisations is intended to provide close coordination of national fusion programmes to help minimisation of duplication of research.<sup>235</sup>

155. The Government told the Committee that they were “content with the overall distribution of funding through the FP6 EURATOM programme”.<sup>236</sup> Fusion developments have so far centred on the UK based Joint European Torus facility. However, preparations are underway to move fusion research to the International Thermonuclear Experimental Reactor (ITER) which will be sited outside the UK. The Government has endorsed the Commission's commitment to funding fusion research, which is unlikely to produce a working fusion reactor before 2050, but is expected to contribute to long-term energy supply.<sup>237</sup>

156. With regards to fission research, the Government acknowledges that EURATOM has a valuable role in maintaining expertise and attracting young scientists in an industry facing decline. The Government told the Committee that it “took a proactive approach in

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233 Q 308

234 Ev 127

235 Ev 106

236 Ev 126

237 Ev 126

the negotiation of the programme the content which has broadly matched UK interests.”<sup>238</sup> This proactive approach involved the consulting of the UK research and nuclear industry in preparation for FP6, and the Government participation in the Consultative Committee EURATOM (CEE) Fission Working Group (which the UK will chair during FP6). The Government claim that their involvement ensured the inclusion of reactor safety in FP6, which is a particular concern of DTI.<sup>239</sup>

## Concerns

157. The Engineering and Physical Sciences Research (EPSRC) Council is responsible for fusion research in the UK. EPSRC identified the short timescale of Framework Programmes, compared to the long-term nature of fusion research, the risk of perpetuating already well-developed areas of research, and the problem of financing major new capital facilities as possible areas of concern with the EURATOM programme.<sup>240</sup> One activity of EURATOM is to provide loans for the construction of nuclear power plants in the EU, accession countries and the former Soviet Union. However the nuclear loan facility is nearly exhausted.<sup>241</sup>

158. Of the evidence received by the Committee, only British Nuclear Fuels (BNFL) and the Nuclear Industry Radioactive Waste Management Executive (NIREX) submitted substantial evidence on the EURATOM programme. BNFL was concerned that the EU was investing the majority of the EURATOM programme (around 60%) into fusion technology which would leave a gap in fission technology and future energy systems.<sup>242</sup> Additionally, BNFL raised two main concerns resulting from the lack of a UK domestic programme for fission R & D: that the UK had “nothing to take to the table in international programmes that gives us credibility” and the lack of a skills base in the UK made it difficult to capture know-how and technology advancement abroad and bring it back to the UK.<sup>243</sup> BNFL pointed out that the contribution by the UK towards the nuclear aspects of the FP6 programme was supporting the overseas skills base in the JRC whilst the national skills base was currently in decline.<sup>244</sup> BNFL claimed that there was very little Government involvement in battling for England in getting the EURATOM programme focused on what would be our priorities.”<sup>245</sup> BNFL and NIREX shared the concern that the shortage of nuclear skills was a European-wide issue, and that the industry needed to invest both, nationally and internationally, to ensure that future energy systems did not struggle to replenish its skills base.<sup>246</sup>

159. BNFL, rather than rely on the Government, puts its views to the Commission through FORATOM, the European trade agency for nuclear companies.<sup>247</sup> BNFL told us that it

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238 Ev 127

239 Ev 127

240 Ev 106

241 [www.eu-energy.com/euratom.html](http://www.eu-energy.com/euratom.html)

242 Q 253

243 Q 269

244 Ev 78

245 Q 242

246 Qq 271- 275

247 Q 252

actively works with UK universities to put in coordinated proposals for FP6 programmes.<sup>248</sup> NIREX had worked with most of the other EU waste management organisations to submit expressions of interest to the Commission.<sup>249</sup>

160. NIREX repeated EPSRC's concern that in the past the Framework Programmes had duplicated previous research on radioactive waste management, rather than develop it, but NIREX considered that FP6 showed signs of developing a more integrated approach to research.

**161. It is clear that there are concerns over the long-term investment in the nuclear skills base. Whilst the Commission have decided to invest most of EURATOM funding into a long-term strategy of developing nuclear fusion, this could lead to a gap in the development of fission technology in the years before the first fusion power stations are operable. There is also a concern that very few young people will wish to join an industry which is intent on winding itself down, and decommissioning its reactors, which could result in a serious skills gap for the future nuclear fusion industry. This issue is tackled in our Fourth Report of Session 2002–03.<sup>250</sup> Once the Joint European Torus project has finished at Culham, future EURATOM funded projects will move to mainland Europe, and the UK will have to consider how its investment to EURATOM will be returned if its own nuclear skills base is not developed using national funding. We urge the Government to consider how it will develop the national nuclear skills base and negotiate accordingly in future framework programmes.**

## 9 The Joint Research Centre

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### Structure of the Joint Research Centre (JRC)

162. The Joint Research Centre (JRC) is a Directorate General of the European Commission serving the European Union as a whole. The remit of the JRC is to provide independent scientific advice to the Commission, European Parliament, the Council and Member States.<sup>251</sup> It functions as an “in house” research institution undertaking research in support of the Community policies. Commissioner Busquin states in JRC literature that the mission of the Joint Research Centre is to:

“provide customer-driven scientific and technical support for the conception, development, implementation and monitoring of European Union policies. As a service of the European Commission, the JRC functions as a reference centre of science and technology for the Community. Close to the policy-making process, it serves the common interest of the Member states, while being independent of commercial or national interests.”<sup>252</sup>

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248 Q 241

249 Q 258

250 Science and Technology Committee, *Towards a non-carbon fuel economy: research, development and demonstration*, Fifth Report HC (2002–03) 674

251 See Joint Research Centre website: <http://www.jrc.cec.eu.int>.

252 European Commission, *Joint Research Centre*, European Communities, 2001

## Budget and priorities of the JRC

163. The JRC's annual budget is approximately €300 million and is funded by the European Commission's research budget and from competitive income (e.g. contract work for third parties). The JRC told the Committee that around 85% of its funding came from the FP budget, whilst the remainder came from the additional work for industry and regional authorities which the JRC competed for in order to maintain its competitive edge.

164. The current work programme is the JRC multi-annual work programme 2003–2006 which supports FP6. The JRC receives 6% of the FP6 budget, which amounts to €1.05 billion. This is a reduction from the FP5 allocation to the JRC which amounted to 6.82% of the total budget.<sup>253</sup> The split of this funding between priorities are as follows: food, chemicals and health (€212 million); environment and sustainable development (€286 million); and Euratom activities—nuclear safety and safeguards (€290 million, €15 million of which is for the decommissioning of obsolete facilities). These three key areas are underpinned by three horizontal competences: technical foresight; reference materials and measurements; and public security and anti-fraud (€262 million). The JRC is also allowed to participate in all the indirect actions of FP6, and is closely involved in preparations for EU enlargements by providing training to scientists from candidate countries.<sup>254</sup>

165. The JRC consists of seven scientific institutes which carry out research and work with industry, universities and institutes in Member States. The JRC works with more than 2,000 public and private organisations and in more than 150 major networks. The JRC institutes are based throughout Europe, these are the: Institute for Reference Materials and Measurements, Geel, Belgium; Institute for the Protection and Security of the Citizen, Institute for Environment and Sustainability, and Institute for Health and Consumer Protection, Ispra, Italy; Institute for Transuranium Elements, Karlsruhe, Germany; Institute for Energy, Petten, Netherlands; and Institute for Prospective Technological Studies, Seville, Spain. Additionally, the Brussels Support Services Office sets out policy direction and corporate requirements, and positions the JRC in relation to the ERA. The JRC employs 2,100 staff who are recruited from all over the EU and from candidate countries.

## Analysis of the JRC's work

166. Much of the evidence received by the Committee expressed doubts about the added value of the JRC to European research. A common observation was that the current ring-fenced funding and the lack of peer review were inappropriate for the JRC. The Royal Academy of Engineering said that it was a widely held view that the JRC institutes were not cost effective, and that money could often have been better spent by funding work in an established institution. There was also no guarantee that the research was of a high quality.<sup>255</sup>

167. For BNFL, the issue was one of cost-effectiveness rather than quality: “we have found they produce high quality work, and their staff are knowledgeable and helpful. Many

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253 Ev 130

254 Ev 130

255 Ev 28

Eastern European and Russian experts have been able to contribute, whereas otherwise, their knowledge and experience could easily have been lost.”<sup>256</sup> BNFL also acknowledged that the UK increasingly relied on JRCs for support, but they said “there is a strong perception that the JRCs are expensive, and it’s not clear to what extent their income is dependent on EU subsidies or commercial contracts.” BNFL sees confusion over policy amongst member state namely: “do we establish competing facilities or ensure the JRC facilities are reliably available at a competitive price?”<sup>257</sup> Therefore it is appropriate to ask whether the JRCs are stifling national or industrially funded facilities?

168. The Royal Astronomical Society, amongst others, commented that “it is hard to establish whether EU research centres are cost effective as they are not scrutinised with anything like the clarity and openness that our own institutes receive. A direct comparison with UK peer review would be very instructive.”<sup>258</sup> Rolls Royce told the Committee that, although they did not work with the JRC, they would be against putting more research into the JRC without and industry steer to ensure the needs of the market were adequately supported. They added “universities are more cost effective and contribute more to enhancing EU knowledge than the [JRC] research institutions.”<sup>259</sup>

169. CCLRC commented that in their experience, the JRC institutes were “good partners where their expertise and knowledge match the requirements of the project. There should be scope for EU research institutions having their programme of work interlinked with those of leading national research institutions so providing a better value for money skill–base Europe–wide.”<sup>260</sup>

## Suggestions for improvement of the JRC

170. The CBI told the Committee “a ring–fenced budget should be scrapped [...] JRC functions should be open to full competition from other research organisations across Europe.”<sup>261</sup> The CBI, as did GlaxoSmithKline, considered that the JRC, as it is now, should be replaced by a European Network of centres of excellence offering the best quality independent advice and evidence to the Commission and other users.<sup>262</sup>

171. The Association of the British Pharmaceutical Industry (ABPI) suggested that the creation of an European Chief Scientific Adviser, together with a smaller more efficient JRC office could deliver information necessary for European Policy making with greater efficiency and would “provide a focal point for European research efforts.” The Commission needs access to scientific advice, but this should be done through open competition across member states.<sup>263</sup>

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256 Ev 78

257 Ev 78

258 Ev 10, 28, 37, 81, 147, 161

259 Ev 64

260 Ev 102

261 Ev 45

262 Ev 45, 53

263 Ev 48

172. The Government told us that there have “in the past been concerns that the JRC lacked a clear customer focus and did not provide good value for money. However, since the arrival in April 2001 of the current Director General, Barry McSweeney, steps have been taken to improve the management culture and customer focus.”<sup>264</sup>

173. Dr Robert Leslie, who acted as an external scientific auditor for one of the JRC institutes in 2000, commented “it is appropriate and essential that they have to compete for some of their core funding [...] some of their old staffing policies and ring-fenced funding, contributed to a certain complacency and lack of scientific rigour and incisiveness.” However, Dr Leslie agreed with the Government that the new director (one of the architects of the Marie Curie Fellowship Programme) would be likely to have a large impact on the cost effectiveness of the JRC.<sup>265</sup>

174. The Director of Science Strategy of the JRC, Mr David Wilkinson, told the Committee in Brussels that there was no need for a Chief Scientific Advisor as the JRC performed this function for the Commission. A five year assessment of the JRC was due to report in early 2004 and the conclusions would inform the formulation of FP7.

**175. Although the Commission should have access to scientific advice, the Committee remains unconvinced that the Joint Research Centre fulfils this role adequately and efficiently with its current structure. An advisory service needs to be informed by research but is unclear why it requires a research capacity. We believe that it would prove more effective to end the ring-fenced funding of the JRC and establish open competition for the provision of advice to the Commission. This would then be peer reviewed to ensure the Commission is receiving advice of the highest quality.**

**176. When responding to the Report of the Five-Year Assessment, due in early 2004, the Government and Research Councils should press the Commission for a more accountable system of advice and a decision on the future of the JRC which does not involve further reviews and the time delay that would cause.**

## 10 The European Research Council

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### Why do we need a European Research Council?

177. There seems to be general agreement, amongst those who have given evidence to the Committee, that although the Framework Programmes are aimed at promoting European economic competitiveness for the social benefits, the programmes are not about promoting basic research. Curiosity driven research is not funded as such at EU level.<sup>266</sup> A new funding mechanism to bridge this funding gap has been given as one of the driving forces behind the proposed creation of a European Research Council (ERC).

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264 Ev 131

265 Ev 68

266 Euroscience, *Summary of positions expressed by Euroscience members with respect to the creation of a European Research Council*, October 4 2002

178. EURAB, EUROHOCs, European Life Sciences Forum, EMBO and the European Science Foundation have all published papers on this issue.<sup>267</sup> The matter has been the subject of discussion in October 2002 at a conference held in Copenhagen, organised by the Danish Research Councils, entitled *Do we need a European Research Council?*<sup>268</sup> In February 2003, EMBO, ELSF, FEBS and UNESO held a meeting in Paris to discuss the issue.<sup>269</sup>

179. At the initiative of the Danish Presidency, these issues have been examined by a small group under the chairmanship of Professor Mayor (former Director-General of UNESCO) which will present possible options for an ERC by the end of 2003. Professor Ian Halliday of PPARC told the Committee that the Netherlands were adamant that they were going to propose a ERC during their presidency of the European Council, due to start in the second half of 2004—“they consider the debate over.”<sup>270</sup>

### **The Commission's position**

180. The Commission told the Committee in Brussels that the proposal for a ERC had sprung from an absence of pure research funded by the Framework Programmes. It was not intended to create a new bureaucratic institution, but to intensify links between existing institutions. Peter Kind of the Directorate General for Research told the Paris meeting of EMBO and the ELSF that the Commission was “very supportive” of the idea.<sup>271</sup>

### **The UK Government's position**

181. The UK Government retains an “open mind” on the subject.<sup>272</sup> However it states that a ERC would need to “fulfil a clearly identified need, add value, build on existing international collaborations and be committed to the excellence of science”, without any further suggestions as to what form the Government would like the ERC to take. As the Government says “at the moment the proposal for an ERC poses more questions than answers”. The main questions identified by the Government are:

- What relationship the ERC would have with the national bodies and pan-European bodies that already exist?
- Where the proposed budget (and some very large figures have been quoted<sup>273</sup>) will come from: Members States from their science budgets, the Framework Programmes, or new money?
- What added value would the ERC would bring as measured against the cost of diverting national/EU funds?

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267 European Science Foundation, *New Structures for the Support of high-quality research in Europe*, April 2003.

268 Board of the Danish Research Councils, *Do we need a European Research Council?: Summary Report of the Conference organised by the Danish Research Councils 7-8 October 2002*, November 2002.

269 EMBO, ‘Life Sciences in the European Research Council: Meeting Report’, *European Biotechnology News*, No. 1 Volume 2, 2003.

270 Q 310

271 *The Scientist*, February 20 2003, [www.the-scientist.com](http://www.the-scientist.com)

272 Ev 126

273 See *New structures for the support of high-quality research in Europe*, p 12.

- What would be the structure, remit and strategic objectives of the ERC?
- What links with the Commission and members states would be needed?
- What would be the geographical spread of its capabilities?
- How would the legal and ethical differences between members states be handled, and so on.<sup>274</sup>

182. The Government told us that OST and the Research Councils UK are contributing fully to the debate. Dr John Taylor, and several of the Chief Executives of the Research Councils, represented the UK at the Copenhagen Conference.<sup>275</sup> Dr Taylor is also the UK member of the expert group which is going to advise Ministers at the end of 2003 on the viability of an ERC.<sup>276</sup> He told the Committee that “we are at a very formative stage in discussions at the moment. We have been consulting around the Community informally [...] our position at the moment is for us to spell out several options”. “My personal position at the moment is to say that we should start talking about what it should do [...] let form follow function.”<sup>277</sup>

### ***The UK Research Councils' position***

183. RCUK and the Government have had several discussions on the subject to agree a position. Whilst the Research Councils are neither for or against at this stage, Professor Radda confirmed that they “want to be part of the debate” and that before a RCUK position on the ERC is decided: “We want a very clear definition of what it is about and what the consequences of that are.”<sup>278</sup>

184. Research Councils UK stated that discussions about an ERC had been fuelled by the debate on the need for greater trans-European competitive funding for basic research.<sup>279</sup> At this stage, RCUK stated that it did not want to see the establishment of a new bureaucracy funding basic research across Europe. Concerns were also expressed over who should fund it, and how it would prioritise the research it funded. RCUK would prefer FP7 to respond to the need for more basic research by expanding the basic research line of FP6 (New and Emerging Science and Technologies).

185. Professor Halliday, said that it was the smaller member states who were more eager to see the creation of the ERC, presumably because they saw it was to their advantage.<sup>280</sup> The UK has a highly effective national research council funding system in comparison to the smaller countries. It was important to assess the added value of a unified system if all the

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274 Ev 126

275 Ev 126

276 Q 366

277 Q 366

278 Q 311

279 Ev 90

280 Q 310

research councils' funding were put into one central European pot.<sup>281</sup> Professor Halliday made the comparison "it is like us setting up CERN in the 50s, it really is a leap of faith".<sup>282</sup>

186. Before an ERC is set up, RCUK wishes to establish what problem it is trying to address—it is unsure yet whether there is agreement on the what the problem is. How will the ERC make Europe more competitive with eg the US? Could member states and the Commission simply work more closely without the need to create a separate new bureaucracy? Research Councils are already pursuing interests in ERA–Net activity as a means of developing greater cooperation and integration between research funders in Europe.<sup>283</sup>

### ***The Report of the Danish Research Councils' Conference in Copenhagen***

187. The report stated that the ERC was needed to fund and co-ordinate basic research at European Level.<sup>284</sup> It should base its decisions on scientific criteria and a bottom up approach and have a rigorous and transparent peer review process. It should be run by highly respected scientists. Funding through the ERC should demonstrate genuine added value, and funding should come from "fresh money" provided by the EU, national governments and private sources where possible. Some participants pointed to the European Science Foundation as the best platform for the development of the ERC—but whatever form it took, it should be driven by the needs of scientists. There was urgent need for political endorsement of an ERC in the light of the Lisbon process and the EU commitment to increased R & D funding.

### ***European Science Foundation***

188. The European Science Foundation (the association of 76 major national funding agencies devoted to scientific research in 29 countries) strongly recommended in their paper that an ERC be created, and that the need for a ERC was urgent.<sup>285</sup> The ESF sets out the case for an ERC to be the cornerstone of the ERA, to fund "long-term fundamental curiosity-driven research judged on the basis of excellence and merit." By funding bottom-up European research proposals, it would complement the existing framework programmes and national funding programmes rather than replace them. The ESF believes that an ERC would employ simple and flexible management structures and procedures that would not be "burdensome for the scientific community it serves". Importantly, the ESF believes that it must be built on the trust of the scientific community, with research priorities driven by scientific quality, rather than be policy-driven like the Framework Programmes and with no *just retour*. Funding would come from aspects of FP6 which could be moved over to the auspices of the ERC, together with additional new contributions from member states (and from other private sources). This, the ESF believes, would enable the EU to move more quickly towards the Barcelona target for investment in R & D by 2010. As ESF assess the need for an ERC as urgent, they suggest that it could be created from an already legally constituted body—such as the ESF.

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281 Q314.

282 Q314.

283 Ev 91

284 *Do we need an European Research Council?*, pp 4-5

285 *New structures for the support of high-quality research in Europe*, p 15

### ***Life Sciences in the European Research Council Meeting Report***

189. The report of the meeting in Paris, February 2003, states that consensus at the meeting in Paris was achieved on a number of issues: the ERC must have a lean administration and base its decisions on scientific excellence. It should cover all scientific disciplines and EMBO should be used as a role model. Some participants insisted that national research systems should not suffer from the existence of an ERC.

190. Mr Peter Kind, of the Commission Directorate General for Research, had said that EUROHOCS or the ESF could be the founding fathers of the ERC. The European Commission had said it was not its role to establish an ERC.<sup>286</sup> Suggestions for the amount of funding needed for the ERC ranged from €2 billion to €20 billion. Mr Kind warned that money could not be diverted from the Framework Programmes and that the private sector could not be relied upon to provide significant funding. An overall increase in the contribution of Member states towards the ERC would also thereby raise budgets in line with the Barcelona agreement to raise the % of GDP to 3%. It was now necessary to give the stakeholders and politicians a clear idea of how the ERC could be created in order to ensure that it becomes a reality in the next five years.<sup>287</sup>

### ***The UK Research Community's response to the ERC proposals***

191. Some responses to the Committee on the question of whether there should be a European Research Council were negative, saying that it was unclear what an ERC could add, that the Commission already acted as an ERC and the creation of a new ERC would simply add more layers of bureaucracy.<sup>288</sup> However, many submissions had suggestions of how it could be a success.<sup>289</sup> A common theme was that it could fund the biggest research, curiosity driven, that individual member states could not afford to fund on their own. There was a feeling that under the current system, basic research was not adequately served by the national research council support in each country nor by the Framework programmes, and so a ERC could add to this.<sup>290</sup> It would be bottom-up research based on scientific quality not political decisions, and it would also bring more world class facilities to Europe.<sup>291</sup>

192. Unsurprisingly, evidence to the Committee suggested that the countries with stronger, effective research bases wish to preserve their funding agencies, whereas the smaller countries with less effective research bases favoured the European Research Council proposals and the development of stronger European facilities.<sup>292</sup>

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286 Summary of the meeting in Paris, 2003, Not printed.

287 *Life Sciences in the European Research Council*, p 34

288 Ev 31, 31, 45, 64, 69, 78, 144, 168

289 Ev 8, 13, 16, 28, 37, 53, 81, 147, 154, 155, 161

290 Ev 8, 10, 13, 53, 155

291 Ev 13

292 Ev 154

193. A couple of responses, including that of the Royal Society, were devoted to the topic of the European Research Council alone, whilst most memoranda commented that the lack of clarification over the issue had made it difficult to provide an opinion.<sup>293</sup>

194. The main questions that appeared to be asked were: what form would it take; who would sit on the Council and how would they be appointed; how would an ERC sit alongside the Commission Directorate for Research, the Framework Programmes and the national funding agencies; what would its remit be; and how would it be funded?

195. The Royal Astronomical Society stated that the UK Government must have a firm policy on this issue.<sup>294</sup> The Royal Academy of Engineering told the Committee “the UK has no choice but to be an active, enthusiastic and strong supporter, so as to ensure a chance of participation in the future.”<sup>295</sup>

196. **On the evidence given to us it is clear that there is a lack of funding under FP6 for basic research.** However, the Government pointed out that “Alongside the seven thematic priorities, FP6 makes provision for supporting research into areas of cutting-edge and newly evolving areas of science (New and Emerging Science and Technology –NEST)—especially those which are likely to have a long term impact on society. In addition, basic research outside the thematic programmes will be supported through the mobility and training programmes.”<sup>296</sup>

197. Nevertheless, the present thematic priorities and the majority of funding is directed at short-intermediate terms applications with very little fundamental science.<sup>297</sup> Whilst the longer time frames of FP6 are considered a welcome development by many,<sup>298</sup> Framework Programme funding is generally inappropriate for much blue skies research.<sup>299</sup> (This view was not shared by all those who gave evidence—for example, BNFL considered that FP6 was biased *towards* basic research.)<sup>300</sup>

198. Article 163 of the Treat of Amsterdam states that the European Community shall have the research objective of “strengthening the scientific and technological bases of Community industry and encouraging it to become more competitive at international level.”<sup>301</sup> Whilst applied research tends to have a more immediate industrial application, basic research is also essential to industrial technology. The OST memorandum stated that “many high-technology industries which are taken for granted today originated in discoveries or inventions with little or no foreseeable market.”<sup>302</sup> Save British Science reminded us that monoclonal antibodies and global positioning systems sprang from basic science and are now worth billions of euros a year.<sup>303</sup> **The position of basic research**

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293 Ev 144–145, 156–77

294 Ev 147

295 Ev 28

296 Ev 125

297 Ev 13

298 Ev 54, 67

299 Ev 16

300 Ev 78

301 <http://europa.eu.int/abc/obj/amst/en/>

302 Ev 125

303 Ev 2

within the Framework Programmes will be part of the discussion on an European Research Council. We consider that whilst an ERC could be a possible solution for the current need for greater funding for basic research in Europe, FP6 should, instead of creating a separate ERC, develop into an FP7 with the goal of a 50:50 ratio of applied and basic research funding. However, projects of basic research funded through FP7 or an ERC should be given longer time scales similar to the typical 10 year programmes of CERN.

199. Whilst we are reassured that the Government intends to participate in the debate over the possibility of the European Research Council, we recommend that the Research Councils engage the research community in the debate, so that the Government is well informed of the views of the science community before the Report by the Mayor-Group is published. The Government must produce a UK response quickly enough to enable the UK to lead on the discussions surrounding the role, remit, structure and chairmanship of the ERC rather than follow the decisions from smaller countries who are already keen for an ERC to be created. As the Director of the Babraham Institute said “we should get on the train and drive the engine”.<sup>304</sup> The Government must also make clear its position to the UK research community, which is currently unsure of either the Government or Commission position on the proposals.

200. We are concerned that the Government is taking the back-seat approach to the European Research Council. We recommend that it establishes a blue-print for an ERC that will work well with the UK’s national funding structures and its research base. The scenario in which the UK Government fights a rear-guard action to head off damaging proposals from others is too familiar.

201. Although it is important to first establish the added value that an ERC could bring, and the form that it could take, the Government should also consider the proposals for how it will be funded. Suggestions have been that Member States’ contributions will have to increase. It is unlikely, as Peter Kind told the life sciences conference in Paris, that FP6 will be able to produce funding for an ERC.<sup>305</sup> **The Government must consider where the extra funding for an European Research Council will come from. If Member States are asked for additional contributions, the UK’s share should not merely be taken from the current forecast allocations to Research Councils, but should be over and above the current Science Budget to ensure that nationally defined and funded science projects are not adversely affected**

202. Whilst the remit of the proposed ERC remains unclear, the Government must ensure that, should an ERC be created, its decisions must be subject to robust peer review, and the priorities for research should be pressing scientific issues chosen by scientists rather than based on geo-political considerations by the Commission or by European parliamentarians.

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304 Ev 145

305 See paragraph 189

## Conclusions

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203. There can be no doubt that as an instrument facilitating co-operation between scientists and researchers across Europe, the Framework Programmes work. Witnesses to our inquiry agreed that links had been made and networks built through previous programmes. The UK science base would not benefit from the UK pulling out of the Framework Programmes, and many valuable collaborations and networks would be lost as a result. However, as a funding mechanism, the Framework Programme has flaws. It is far too bureaucratic: there are serious time delays between submission of proposals, issuing of contracts and payment of funding. Participants have found the Framework Programmes' website CORDIS cumbersome, the application process difficult, and have found the lack of feedback on failed applications a disincentive.

204. The Commission has accepted to some extent that FP5 was too bureaucratic and has made improvements to the application process for FP6. **We believe that the UK Government will need to ensure that the Commission does not rest on its laurels and continues to make the process significantly more user-friendly throughout FP6 and towards FP7.**

205. Although the United Kingdom has performed well in the Framework Programmes compared to other Member States, we consider this is due to the relative strength of the existing science base in the UK. **The Government has not done as much as it should to encourage participation from the UK in FP6. There are many individuals and organisations which do not need assistance in applying, creating consortia or making contact with Brussels. However, there are many applicants who would benefit from a better organised, funded and presented National Contact Point network in the UK, particularly SMEs. The Government and Research Councils should continue to expand UKRO, which has to date provided an extremely useful service to its subscribers. UKRO is extending its service to SMEs, many of whom have been put off applying for Framework Programme funding due to the heavy administrative burden of the application process. It is likely that UKRO will need extra funding if it is to provide the same quality of service to its SME subscribers. The Government must provide greater support to those applying for project funding if the UK is to continue to do well in the Framework Programmes.**

206. **We consider that in negotiations for the thematic priorities of Framework Programmes, the Government should continue to take an active part, should consult the UK research community, and should de-mystify the negotiations for those in the UK who are unaware of the role the Government plays in this process.**

207. FP6 has been received by the research community as an improvement on FP5, with reserved judgment on the effectiveness of the new instruments. **There is widespread dissatisfaction throughout Europe between the balance of applied and basic research funded by the Framework Programmes. The proposals for an European Research Council have arisen in part from this dissatisfaction. We believe that there should be a gradual shift in funding towards more basic research. Whilst the alignment of research priorities across Europe will have its benefits, the Government must ensure that it takes**

**a lead in the negotiations over an ERC to prevent the creation of extra layers of bureaucracy and to protect UK interests.**

## Conclusions and recommendations

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### The new instruments in FP6

1. We are concerned that evidence suggests that large sections of the UK research community were not consulted in the formulation of the new instruments. Whilst the Commission is responsible for disseminating information about the Framework Programmes, it now falls to the UK Government to ensure that the research community is fully aware of the opportunities available and the new structure of FP6. This could be done through the National Contact Point network, which is discussed later in this Report. The Government and Research Councils should monitor the UK take up of FP6 carefully to carry forward suggestions for improvement in FP7. (Paragraph 26)
2. The Marie Curie Fellowship Scheme under FP5 seems to have been well regarded by the research community and it is unclear to us why change was necessary. The Government should monitor their take up under FP6 and consult industry for its views of the success of the new fellowships. If necessary the Government should negotiate with the Commission for improvement or reinstatement of the previous scheme. (Paragraph 31)

### Measuring the success of European research

3. We welcome the development of a European Patent as a step towards encouraging the registering of patents in the EU, and recommend that the Government monitor the situation carefully to ensure that the resulting patent is favourable to UK interests and not unduly delayed by the enlargement of the EU. As a tool for measuring the success of FP6, the number of patents registered in Europe may be misleading, as a community patent would no doubt produce a larger number of patents registered in Europe as a consequence of its creation. (Paragraph 37)
4. Due to the scale of the changes from FP5 to FP6, the assessment of the success of the new instruments in FP6 will be an important undertaking. The Government must make it clear to the UK research community how it, and the Commission, will be assessing the performance of FP6. The Framework Programmes will have gone a long way if, by the end of FP6, the UK research community accept the Framework Programmes as equally important as those funded by the research councils. (Paragraph 43)

### The UK's performance in Framework Programme 5

5. Whilst there are no conclusive statistics available from the European Commission on the amount of funding received by the UK from FP5, the indications are that the UK did better than most, if not all, of the other countries participating in FP5. That does not necessarily mean value for money: but it does speak volumes for the relative strength of the UK science base. (Paragraph 53)

## How the research community views the value of the Framework Programmes

6. We consider that the UK is fully committed to the Framework Programmes and as such would not be able to withdraw from the programmes without excessive damage to the research community. The UK apparently received more funding back from FP5 than it contributed to it, and the funding of projects facilitated research and cooperation that would not have happened without it. There is undoubted value in the programmes for the UK. The focus must now be on how the UK can maintain its strong performance, and on ensuring that the research community is able to participate to the maximum effect. (Paragraph 66)

## Overheads

7. We were told in Brussels that overheads were not an issue in other Member States and that movement on this by the Commission could not be expected. From the evidence we received, we consider that there is an issue of the cost of overheads in the UK which needs to be addressed by the UK Government, particularly if SMEs and universities are reluctant to participate as a result. There are a number of ways in which this could be tackled. The simplest is for the Government to provide help actively and guidance through the National Contact Point Network on the best way for participants to approach the issue of overheads and which cost model to apply for in order to optimise the overhead contribution from the Commission. There may also be a role for RDAs to provide financial or administrative assistance to SMEs. It remains the fact that the Commission contribution is still only a contribution, and the situation remains unsatisfactory with the most successful bidders at greatest financial risk. The UK Government's refusal to contribute to the indirect costs associated with Framework Programme grants compromises the already delicate finances of our universities and therefore the participation of our best researchers. The Government has an opportunity to make the UK the clear leader in European research but to realise that aim requires that the Government provide extra funding in SR2004 to meet these costs. At a time when the Government wishes to encourage universities to charge for the full costs of their research, its stance is untenable. (Paragraph 72)

## EUROPES and Departmental Expenditure Limits (DEL)

8. Whilst RCUK are now satisfied with the settlement over DEL, we remain concerned that there is a potential for HM Treasury to claw back money from Government Departments and research institutes in respect of money received from the EU. The Chancellor wishes to build a knowledge economy. It is unfortunate, therefore, that the Treasury wishes to penalise Government Departments which wish to participate. If Departments wish to support increased research through EU funding, the Treasury should not undermine their efforts. (Paragraph 75)

## The selection process

9. We are reassured by the evidence that the UK Government was able to argue its corner on the issue of stem cells, but we are concerned that the Commission has also shown itself capable of disregarding projects such as the Ocean Drilling Programme supported under FP5, supported by the UK Science Minister, European National Research Councils and members of the Research Directorate-General, which are of great value to the European and UK research communities. (Paragraph 88)
10. Whilst there will always be areas of research which lose out in the Framework Programmes and there needs to be a limit to the number of priorities across which the total budget is spread, the valuable input of the UK research community, through the Research Councils and Government, has ensured and should continue to ensure that the priorities in Europe are, as far as possible, reasonably closely aligned with those felt most relevant in the UK. The Research Councils should continue to consult their communities and provide the results to the OST in preparation for FP7. It is important the science community is consulted not only on the priorities that ought to be included in FP7, but on the optimal balance of funding between applied and basic research. (Paragraph 92)
11. Whilst those who are privy to the selection process accept that the Commission consults widely in formulating its priorities, it would benefit the Commission greatly if it made the selection process better understood. The Expressions of Interest Exercise was a step in the right direction in allowing all sections of industry and academia some input into the process, and we would recommend that this is retained and expanded upon for FP7. (Paragraph 99)
12. Whilst the Government appears to be closely involved in negotiating with the Commission, there is a need for the UK Government and Research Councils to disseminate their work with the Commission to the wider research community to avoid suspicion and misunderstanding. We consider that it is vital that the UK Government ensures UK research priorities are not dictated by Framework Programme priorities, but, so far as possible, Framework Programmes should complement UK priorities. The Government should make its role in the negotiations clearer to the UK research community. This information would encourage greater UK confidence in the Framework Programmes and through this confidence, encourage more participation. (Paragraph 100)

## Opportunities for basic research

13. We consider that the budget for New and Emerging Science and Technology, which at €215 million amounts to no more than 1.2% of the total FP6 budget, is unlikely to rectify the lack of substantial Framework Programme funding for basic science. This is short sighted when considering the ambitious targets set for R & D in Europe. (Paragraph 104)

## The socio-political agenda behind FP6

14. We consider that the effects of enlargement will not be dramatic as many accession countries already participate in the Framework Programmes. European science is likely to benefit from the greater pool of talented scientists made available by FP6. The Commission should avoid pressurising consortia to include partners from candidate countries. We welcome the opportunities offered by enlargement and accept that the long term goal of building a competitive Europe may be a priority, but a balance must be struck between this and the maintenance of a credible, meritocratic system. (Paragraph 114)

## Selection of projects

15. We believe that the Commission needs to emphasise the basis on which the selection of projects is made, and give greater feedback to applicants on the reasons for failure. (Paragraph 119)

## The application process

16. We are encouraged that both the Government and Research Councils are aware of the problems encountered by UK applicants in submitting proposals. We welcome their acknowledgement that the complexity of application forms is off-putting to inexperienced applicants and SMEs, without large administrative resources, who may not consider it worthwhile continuing to spend time and money on applications. However, we are sceptical of the Commission's commitment to reducing bureaucracy. We urge the Government and RCUK to continue to bring pressure to bear on the Commission to improve the application process, in particular to reduce the time taken in producing and issuing contracts. The Commission wishes to make Europe a research powerhouse to rival the USA. Only by significantly reducing the bureaucracy of the Framework Programme can this become a reality. (Paragraph 127)

## Transparency of the process

17. The Government should press for the publication of Commission performance targets so that any improvements, or deterioration, in contract turnover time are easier to assess. (Paragraph 129)

## Support for applicants

18. The facility exists for feedback by applicants to the Commission on the application process in general, and we suggest that applicants convey the shortfalls of the system to the Directorate for Research in Brussels. Research Councils UK should support the research community by pressing the Commission to place more useful information on the website, without overloading those seeking help. They should work to alter the perception that you need to be an old Brussels hand to have any chance of success and to make the process more accessible to all. (Paragraph 133)

### Information provided by the UK Government and Research Councils

19. We consider that this highly praised and well-run resource should be maintained by the Research Councils and developed where possible to include industry. The two extra staff is a good start, but it is likely that providing a tailored service to SMEs would require the Research Councils to consider whether UKRO needs to be expanded further, and to find the funding to do this. (Paragraph 137)
20. We welcome the Government's commitment to improving the National Contact Point Network, and whilst we also welcome the creation of the Central Information Point, we expect the Government to ensure that the service and information provided by National Contact Points is substantially improved by Autumn 2003 (Paragraph 143)
21. We believe that the Government has an important role to play in the promotion of the Framework Programmes to UK organisations. It should not assume that there is sufficient awareness of the Framework Programmes in the UK, particularly amongst SMEs. The Government has a responsibility to ensure that the National Contact Point network is developed and that the Research Councils and Regional Development Agencies are supported in their work to promote FP6 and help inexperienced applicants. We believe that RDAs have a valuable role to play in supporting participants. The Government should also continue to promote the UK to potential partners abroad through the Foreign and Commonwealth Office Science and Technology network and the British Council. The Government should increase its efforts to promote UK participation for as long as the UK continues to contribute towards the programmes. (Paragraph 145)
22. We recommend that the Research Councils, together with the Government, should have a clear strategy on how to identify the key areas in which the UK could excel and then be more aggressive in ensuring that these areas were properly represented by UK applicants (Paragraph 149)
23. The UK's support for Framework Programme applications is too fragmented. While central government, Research Councils and RDAs all have a role, this effort should be streamlined and offer an single advice point regardless of the sector or the location of the applicant (Paragraph 150)

### EURATOM

24. It is clear that there are concerns over the long-term investment in the nuclear skills base. Whilst the Commission have decided to invest most of EURATOM funding into a long-term strategy of developing nuclear fusion, this could lead to a gap in the development of fission technology in the years before the first fusion power stations are operable. There is also a concern that very few young people will wish to join an industry which is intent on winding itself down, and decommissioning its reactors, which could result in a serious skills gap for the future nuclear fusion industry. This issue is tackled in our Fourth Report of Session 2002-03. Once the Joint European Torus project has finished at Culham, future EURATOM funded projects will move to mainland Europe, and the UK will have to consider how its investment to

EURATOM will be returned if its own nuclear skills base is not developed using national funding. We urge the Government to consider how it will develop the national nuclear skills base and negotiate accordingly in future framework programmes (Paragraph 161)

### Suggestions for improvement of the JRC

25. Although the Commission should have access to scientific advice, the Committee remains unconvinced that the Joint Research Centre fulfils this role adequately and efficiently with its current structure. An advisory service needs to be informed by research but is unclear why it requires a research capacity. We believe that it would prove more effective to end the ring-fenced funding of the JRC and establish open competition for the provision of advice to the Commission. This would then be peer reviewed to ensure the Commission is receiving advice of the highest quality (Paragraph 175)
26. When responding to the Report of the Five-Year Assessment, due in early 2004, the Government and Research Councils should press the Commission for a more accountable system of advice and a decision on the future of the JRC which does not involve further reviews and the time delay that would cause. (Paragraph 176)

### Why do we need a European Research Council?

27. On the evidence given to us it is clear that there is a lack of funding under FP6 for basic research.(Paragraph 196)
28. The position of basic research within the Framework Programmes will be part of the discussion on an European Research Council. We consider that whilst an ERC could be a possible solution for the current need for greater funding for basic research in Europe, FP6 should, instead of creating a separate ERC, develop into an FP7 with the goal of a 50:50 ratio of applied and basic research funding. However, projects of basic research funded through FP7 or an ERC should be given longer time scales similar to the typical 10 year programmes of CERN. (Paragraph 198)
29. Whilst we are reassured that the Government intends to participate in the debate over the possibility of the European Research Council, we recommend that the Research Councils engage the research community in the debate, so that the Government is well informed of the views of the science community before the Report by the Mayor-Group is published. The Government must produce a UK response quickly enough to enable the UK to lead on the discussions surrounding the role, remit, structure and chairmanship of the ERC rather than follow the decisions from smaller countries who are already keen for an ERC to be created. As the Director of the Babraham Institute said “we should get on the train and drive the engine”. The Government must also make clear its position to the UK research community, which is currently unsure of either the Government or Commission position on the proposals. (Paragraph 199)
30. We are concerned that the Government is taking the back-seat approach to the European Research Council. We recommend that it establishes a blue-print for an

ERC that will work well with the UK's national funding structures and its research base. The scenario in which the UK Government fights a rear-guard action to head off damaging proposals from others is too familiar (Paragraph 200)

31. The Government must consider where the extra funding for an European Research Council will come from. If Member States are asked for additional contributions, the UK's share should not merely be taken from the current forecast allocations to Research Councils, but should be over and above the current Science Budget to ensure that nationally defined and funded science projects are not adversely affected (Paragraph 201)
32. Whilst the remit of the proposed ERC remains unclear, the Government must ensure that, should an ERC be created, its decisions must be subject to robust peer review, and the priorities for research should be pressing scientific issues chosen by scientists rather than based on geo-political considerations by the Commission or by European parliamentarians. (Paragraph 202)

## Conclusions

33. We believe that the UK Government will need to ensure that the Commission does not rest on its laurels and continues to make the process significantly more user-friendly throughout FP6 and towards FP7. (Paragraph 204)
34. The Government has not done as much as it should to encourage participation from the UK in FP6. There are many individuals and organisations which do not need assistance in applying, creating consortia or making contact with Brussels. However, there are many applicants who would benefit from a better organised, funded and presented National Contact Point network in the UK, particularly SMEs. The Government and Research Councils should continue to expand UKRO, which has to date provided an extremely useful service to its subscribers. UKRO is extending its service to SMEs, many of whom have been put off applying for Framework Programme funding due to the heavy administrative burden of the application process. It is likely that UKRO will need extra funding if it is to provide the same quality of service to its SME subscribers. The Government must provide greater support to those applying for project funding if the UK is to continue to do well in the Framework Programmes. (Paragraph 205)
35. We consider that in negotiations for the thematic priorities of Framework Programmes, the Government should continue to take an active part, should consult the UK research community, and should de-mystify the negotiations for those in the UK who are unaware of the role the Government plays in this process. (Paragraph 206)
36. There is widespread dissatisfaction throughout Europe between the balance of applied and basic research funded by the Framework Programmes. The proposals for an European Research Council have arisen in part from this dissatisfaction. We believe that there should be a gradual shift in funding towards more basic research. Whilst the alignment of research priorities across Europe will have its benefits, the Government must ensure that it takes a lead in the negotiations over an ERC to

prevent the creation of extra layers of bureaucracy and to protect UK interests.  
(Paragraph 207)

## **ANNEX 1: VISIT MADE IN COURSE OF THE INQUIRY**

**Monday 10 February 2003**

### **United Kingdom Permanent Representation to the European Union, (UKREP) Brussels**

The Committee met the Ms Anne Lambert, Deputy Permanent Representative in Brussels, Mr Anthony Vinall, Head, Industry and the Internal Market Section and Mr Steve Davies, Industry and the Internal Market Section. The Committee received a briefing from UKREP on the UK's participation on the negotiations for Framework Programme 6 (FP6).

### **Research Directorate-General, European Commission, Brussels**

The Committee met Commissioner Philippe Busquin, Commissioner for Research, Mr Hugh Richardson, Deputy Director of the Research Directorate-General, Mr Richard Escritt, Directorate A, Co-ordination of Community Activities, Mr Peter Kind, Directorate B, Structuring the European Research Area, and other staff of the Research Directorate-General. The discussions covered the European Research Area, the purpose of the Framework Programmes and the development of FP6, the selection of thematic priorities and projects, the application process and overhead costs and enlargement of the European Union.

### **Joint Research Centre (JRC), Brussels**

The Committee met Mr David Wilkinson, Director of Science Strategy and Ms Geraldine Barry, Assistant to the Director, to discuss the work of the JRC, its funding, and cost effectiveness.

### **United Kingdom Research Office (UKRO), Brussels**

The Committee met Dr Martin Penny, Director of UKRO to discuss the role of the UK Government in FP6 negotiations, the work of UKRO and its plans to include SMEs with the universities and organisations currently subscribing to UKRO.

## ANNEX 2: Budget for the Sixth Framework Programme

	€ million	€million
<b>1. FOCUSING AND INTEGRATING COMMUNITY RESEARCH</b>		<b>13345</b>
<b>Thematic priorities<sup>i</sup></b>		
Life sciences: genomics and biotechnology for health <sup>ii</sup>	2255	
<ul style="list-style-type: none"> <li>• Advanced genomics and its application for health</li> <li>• Combating major diseases (€1155 million)</li> </ul>		
Information society technologies <sup>iii</sup>	3625	
Nanotechnology and nanosciences, knowledge-based multifunctional materials and new production processes and devices	1300	
Aeronautics and space	1075	
Food quality and safety	685	
Sustainable development, global change and ecosystems	2120	
<ul style="list-style-type: none"> <li>• Sustainable energy systems (€810 million)</li> <li>• Sustainable surface transport (€610 million)</li> <li>• Global change and ecosystems (€700 million)</li> </ul>		
Citizenship and governance in a knowledge-based society	725	
<b>Specific activities covering a wider field of research<sup>iv</sup></b>		
Policy support and anticipating scientific and technological needs	555	
Horizontal research activities involving SMEs <sup>v</sup>	430	
Specific measures in support of international co-operation	315	
<b>Non-nuclear activities of the Joint Research Centre</b>	760	
<b>2. STRUCTURING THE EUROPEAN RESEARCH AREA</b>		<b>2605</b>
<b>Research and innovation</b>	290	
<b>Human resources and mobility</b>	1580	
<b>Research and infrastructures<sup>vi</sup></b>	655	
<b>Science and society</b>	80	
<b>3. STRENGTHENING THE FOUNDATIONS OF THE EUROPEAN RESEARCH AREA</b>		<b>320</b>
Support for the coordination of activities	270	
Support for the coherent development of R&I policies	50	
<b>EURATOM PRIORITIES<sup>vii</sup></b>		<b>1230</b>
<b>Priority thematic areas of research</b>	890	
<ul style="list-style-type: none"> <li>• Controlled thermonuclear fusion (€750 million)</li> <li>• Management of radioactive waste (€90 million)</li> <li>• Radiation protection (€50 million)</li> </ul>		
<b>Other activities in the field of nuclear technologies and safety</b>	50	
<b>Nuclear activities of the Joint Research Centre</b>	290	
<b>TOTAL</b>		<b>17500</b>

(1) Of which at least 15% is for SMEs.

(2) Including up to €400 million for cancer-related research.

(3) Including up to €100 million for the further development of GEANT and GRID.

(4) This amount of €315 million will fund specific measures in support of international co-operation involving developing countries, Mediterranean countries including Western Balkans, and Russia and the Newly

*Independent States (NIS). Another €285 million is earmarked to finance the participation of third-country organisations in the 'thematic priority areas' and the 'specific activities covering a wider field of research', thus bringing the total amount devoted to international co-operation to €600 million. Additional resources will be available under the 'human resources and mobility' section to fund research training for third-country researchers in Europe.*

*(5) Covering the whole field of science and technology.*

*(6) Including up to €200 million for further development of GEANT and GRID*

*(7) European Atomic Energy Community: certain activities within the context of FP6 fall under the jurisdiction of the Euratom Treaty and not the Treaty establishing the European Community. However, this has no practical significance for participants*

# Formal minutes

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**Monday 14 July 2003**

Members present:

Dr Ian Gibson, in the Chair

Dr Brian Iddon  
Mr Robert Key  
Mr Tony McWalter

Geraldine Smith  
Dr Desmond Turner

The Committee deliberated.

Draft Report (UK Science and Europe: Value for Money?), proposed by the Chairman, brought up and read.

Paragraphs 1 to 206 read and agreed to.

*Resolved*, That the Report be the Sixth Report of the Committee to the House.

*Ordered*, That the Chairman do make the Report to the House.

*Ordered*, That the Appendices to the Minutes of Evidence taken before the Committee be reported to the House.

[Adjourned till Monday 8 September at 4.00pm.]

## Witnesses

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### Wednesday 5 February 2003

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**Dr Peter Cotgreave**, Director and **Professor Michael Trevan**, member of the Executive Committee, Save British Science Ev 4

**Professor Mike Beveridge**, Deputy Vice-Chancellor (Research & Enterprise) University of Plymouth, **Professor Gerry Gilmore**, Professor of Experimental Philosophy, Institute of Astronomy, Cambridge University, **Professor John Turner**, Director of UniSdirect, University of Surrey, and **Dr Douglas Robertson**, Director of Business Development, University of Newcastle upon Tyne Ev 17

**Professor Ebrahim Mamdani**, Intelligent and Interactive Systems Research Group, Department of Electrical and Electronic Engineering, Imperial College, **Professor Ian W. Marshall**, Department of Electrical and Electrical Engineering, University College, London, and **Professor Martyn Thomas**, Fellow and Member of IT Sector Panel Ev 37

### Wednesday 12 February 2003

**Dr Tim Bradshaw**, Senior Policy Adviser, Technology and Innovation, Confederation of British Industry, **Mr John Murphy**, Head of University Partnerships, BAe Systems, and **Dr Philip Wright**, Director, Science and Technology, Association for the British Pharmaceutical Industry, and **Dr Oonagh Kinsman**, European Framework and Contracts Manger, GlaxoSmithKline Ev 55

**Mr Nick Peacock**, Rolls-Royce Plc, **Professor Sir Richard Friend**, Chief Scientist, Cambridge Display Technology, and **Dr Robert Leslie**, Chair, Executive Board of the European Masters in Food Studies Degree Programme Ev 69

**Professor Richard Clegg**, Director of Science and **Mr Adrian Bull**, Head of Technology Services, British Nuclear Fuels and **Dr Alan Hooper**, Chief Scientific Adviser, United Kingdom Nirex Limited Ev 82

### Wednesday 9 April 2003

**Professor Ian Halliday**, Chief Executive, Particle Physics and Astronomy Research Council, **Professor Sir George Radda CBE FRS**, Chief Executive, Medical Research Council, **Professor Julia Goodfellow CBE**, Chief Executive, Biotechnology and Biological Sciences Research Council Ev 113

**Professor Sir David King**, Chief Scientific Adviser and **Dr John Taylor, OBE**, Director General of the Research Councils, Office of Science and Technology Ev 131

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2	University of Plymouth		Ev 7
3	Dr D W Robertson, University of Newcastle		Ev 9
4	Professor Gerry Gilmore, Professor of Experimental Philosophy, Institute of Astronomy, University of Cambridge		Ev 10
5	University of Surrey		Ev 14
6	Royal Academy of Engineering		Ev 24
7	Institute of Physics		Ev 29
8	Institution of Electrical Engineers (IEE)		Ev 32
9	Confederation of British Industry (CBI)		Ev 43
10	Association for the British Pharmaceutical Industry		Ev 45
11	GlaxoSmithKline (GSK)		Ev 49
12	Rolls-Royce plc		Ev 62
13	Professor Sir Richard H Friend, Department of Physics, University of Cambridge and Chief Scientist, Cambridge Display Technology Ltd		Ev 65
14	Dr Robert Leslie		Ev 66
15	British Nuclear Fuels (BNFL)		Ev 75
16	Nirex		Ev 79
17	The Research Councils (RCUK)		Ev 87
	Background information on those Councils submitting evidence		Ev 91
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	Engineering and Physical Sciences Research Council		Ev 103
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	Natural Environment Research Council		Ev 108
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18	Supplementary memorandum from UKRO		Ev 120
19	Office of Science and Technology, Department of Trade and Industry	Ev 122	Ev 140
20	Loughborough University		Ev 143
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## Reports from the Science and Technology Committee since 2001

The following Reports have been produced by the Committee since the start of the present Parliament. The reference number of the Government's response to the Report is printed in brackets after the HC printing number.

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First Report	The Work of the Particle Physics and Astronomy Research Council	HC 161 (HC 507)
Second Report	Annual Report 2002	HC 260
Third Report	The Work of the Medical Research Council	HC 132 (CM 5834)
Fourth Report	Towards a Non-Carbon Fuel Economy: Research, Development and Demonstration	HC 55-I (HC 745)
Fifth Report	The Work of the Natural Environment Research Council	HC 674
First Special Report	Government Response to the Science and Technology Committee's Fifth Report, Session 2001-02, Government Funding of the Scientific Learned Societies	HC 53
Second Special Report	Government Response to the Science and Technology Committee's Sixth Report, Session 2001-02, the National Endowment for Science, Technology and the Arts: A Follow-up	HC 276
Third Special Report	Government Response to the Committee's Seventh Report, Session 2001-02, The Office of Science and Technology: Scrutiny Report	HC 293
Fourth Special Report	Government Response to the Committee's Eighth Report, Session 2001-02, Short-term Contracts in Science and Engineering	HC 442

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First Report	Cancer Research – A Follow-Up	HC 444
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Third Report	Science Education from 14 to 19	HC 508-I (HC 1204)
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Second Special Report	The Government's Response to the Science and Technology Committee's Sixth Report, Session 2000–01, Are We Realising Our Potential?	HC 361
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