



**COUNCIL OF
THE EUROPEAN UNION**

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RECH 241

NOTE

Subject : UK position regarding the Seventh RTD Framework Programme of the EU

Please find attached the UK position relating to the Seventh Framework Programme and Future European Policy to support research. This relates to Point 13 of the Agenda of the Competitiveness Council on 25-26 November 2004.

UK position paper on the initial approach to the 7th EU Research & Development Framework Programme

Introduction

1. Raising Europe's innovation and R&D performance is central to achieving the Lisbon strategic goal for Europe to become the most competitive and dynamic knowledge-based economy in the world by 2010. The R&D Framework Programme provides a key mechanism by which Europe can drive up its performance in these areas. Importantly, it also provides an evidence base to support the development and implementation of wider EU policy.
2. Previous Framework Programmes, including the current 6th Programme, have provided vital support to European researchers and there is strong support in the UK for a continuation of this in Framework 7. In particular, the current Programme sets out to achieve greater integration within the European Research Area (ERA), structuring the ERA and strengthening the foundations of the ERA by attacking structural weaknesses of European research.
3. The UK supports the further development of the ERA through the seventh Programme, positioning Europe to compete effectively with other major global R&D markets and underpinning the achievement of the strategic goal Europe has set itself. In doing this Europe should develop hubs of scientific and technological excellence that can attract and retain high value added business investment. It should also enable its researchers to collaborate with the leading partners across the globe.
4. To achieve these ambitions, the Programme should focus more clearly on the key outcomes of:
 - raising the EU's capacity to conduct the very best research
 - improving industrial competitiveness and
 - ensuring EU policies are properly supported by research.
5. Key cross-cutting programmes should be retained and refocused on these three main objectives. Figure 1 illustrates a possible structure. The UK believes that such a Programme could be delivered using instruments based on those in the Sixth Programme to ensure essential continuity for participants.

6. Many of these themes relate to the six ‘axes’ identified in the European Commission’s Communication on the future of European science and technology¹. Specific comments on the axes are outlined in the Annex. Whilst noting the Commission’s intention to develop a separate competitiveness and innovation programme, the UK underlines the importance of designing the R&D Framework Programme so as to build in the necessary conditions for exploitation, knowledge transfer and innovation arising from research. The Euratom programme on nuclear research is shown separately, as it is covered under a separate Treaty.

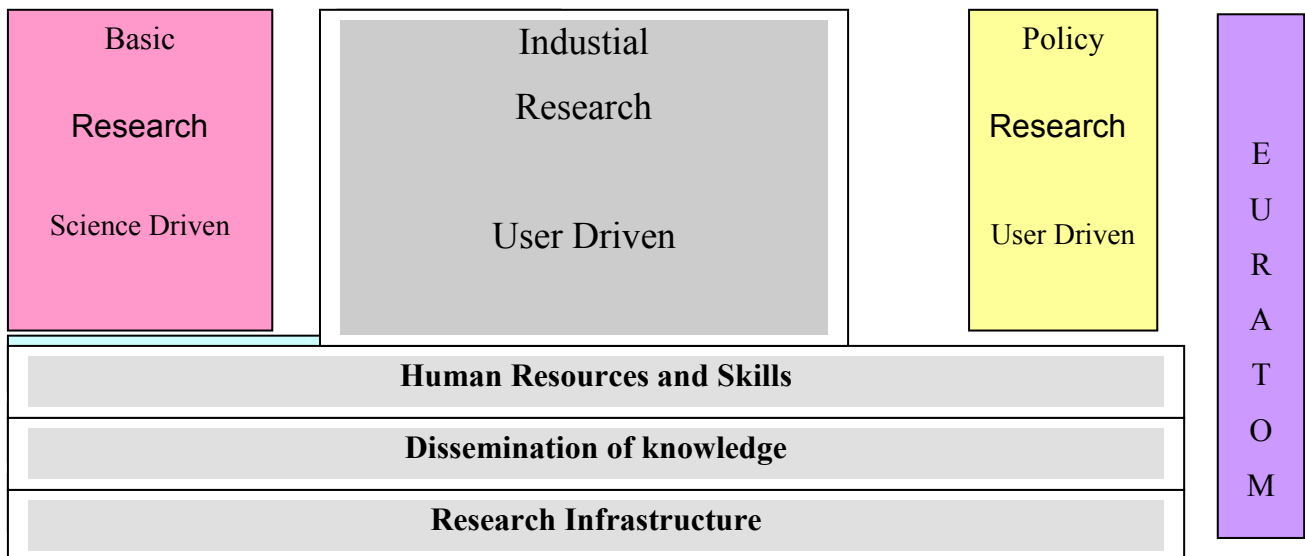


Figure 1

7. A key criterion for determining the appropriateness of EU spending is "value added". For EU level spending to be justified, there has to be tangible added value from giving the competence to the supranational level. We believe EU value added should be measured in terms of economic efficiency, fiscal and managerial factors, and in the context of negotiability. We recognise an a priori case for an increased focus on R and D within a budget of no more than 1% of EU GNI and consistent with the principle of EU value added, absorption capacity and the European Commission's ability to manage the funds.

Basic Research and Excellence

8. Although Europe is performing increasingly well in scientific publications and citations, it still lags behind the USA in its share of the very best science. It is therefore important to raise the quality of the best basic research. The allocation of funding at the European level to the best research teams would help achieve this aim by enabling competition between the best research on an EU-wide, supra-national scale. It may also have the effect of improving the ability of

¹ Communication from the Commission of the European Communities *Science and Technology, the key to Europe’s future – European Union policy to support research*, COM(2004) 353, 16 June 2004

national funding systems also to promote excellence more strongly. It should cover all fields of research, including engineering, the humanities and social sciences – as well as multi- and interdisciplinary research.

9. The UK supports the establishment of a European Research Council (ERC) to achieve these aims, allocating funding through competition based on scientific excellence and originality as assessed by international peer review, with recipients from both the public and private sectors. The total costs of projects should be supported by the ERC, to attract the best scientists and promote the financial sustainability of their institutions.
10. Administration must be with the minimum of bureaucracy consistent with accountability for public funds. The Council should operate independently of the Commission. It should be accountable to the European Council and European Parliament, based on a performance assessment by the Commission. Its impact should be judged according to evidence of an increase in European scientific performance, such as success in attracting centres of world-leading research to the EU and in the level of the top 1% of cited publications.
11. The UK supports a funding stream dedicated to basic research, provided it is administered in line with these principles. At present we estimate that under the 6th Framework Programme the proportion of funding allocated to basic research under the thematic priorities could be 10-15% of the total Programme budget. We believe that the funding allocated to basic research under the 7th Framework Programme should move to approximately 15-20% of the budget for the three main 'vertical' programme areas.

Industrially-driven Research

12. Having agreed its approach to basic research, the UK believes Europe should focus the bulk of its efforts, and the majority of the Framework 7 budget, on industrial competitiveness. The aim should be to increase private sector R&D investment, encourage technological innovation and attract high added-value international investment. International collaboration is key to this aim - being regarded by 73% of UK Framework Programme participants as increasing in importance². Partnerships with research teams outside Europe, including in emerging and developing countries can also benefit the EU's long-term competitiveness.
13. Here it is vital that the long-term research agenda is driven by businesses, as those economic actors who are in a position to exploit the research outputs. Evidence gathered in the UK² shows that business participation in Framework 6 has dropped sharply compared with the 5th Programme. Whilst previous Programmes have delivered research outputs well, evidence for exploitation is weak. This weakness may be associated with the relatively low involvement in projects by business research users. Only by re-aligning funding priorities with those of its business user communities will Europe win the greatest value out of its investment in the Programme.

² Independent report for the Office of Science and Technology by Technopolis Limited, *The impact of the EU Framework Programmes in the UK*, July 2004.

14. A long-term research and technology vision should be established that reflects business priorities, whilst taking note of key opportunities in science. Governments also have a strategic interest that should be taken into account in areas such as energy or clean technology, as they effectively represent ‘users’ of the long-term outputs. In some areas, businesses have already developed technology ‘road maps’ at the international level. In others, partnerships developed as European Technology Platforms (as outlined in the Commission Communication¹) or cluster projects under the EUREKA initiative may form the basis for programmes. The approach should ensure appropriate continuity between successive Programmes.
15. Resources should be targeted to maximum effect by integrating national and EU science and technology strategies more closely - connecting decision-making at national and EU levels and ensuring EU decisions take explicit account of national programmes. The role of the Framework Programme’s Management Committees should be strengthened to achieve this. There would therefore be three key elements to decision taking – firstly political agreement to the overall Programme structure and priorities, secondly industrially-led development of research and technology visions within this structure and thirdly decisions on work programmes by Programme committees based on the visions and taking account of existing and projected national support. In the UK we intend to involve users in our priority-setting through our Technology Strategy, which will set agreed high-level objectives in consultation with the industrial community and in turn inform the UK’s input to discussions at a European level.
16. The EUREKA initiative already operates broadly according to many of these principles. It engages a high proportion of SMEs in its programmes. The links between EUREKA and the Framework Programme should be strengthened, for example through combined actions, input from EUREKA to relevant European Technology Platforms, and new EU funding mechanisms, especially to support SME involvement. Greater use should be made of joint technical groups spanning the two programmes. This reflects the Ministerial declaration agreed at the recent Paris conference.³
17. Most support for SMEs falls within the responsibility of Member State or regional and local agencies, who are best placed to engage with them. Nevertheless, European support can add value for some more technologically-intensive SMEs, either through the main collaborative research programmes or a specific SME-focused instrument. There is experience in the current Programme of engagement through the business channels that SMEs normally use – for example trade bodies or other business intermediaries, regional agencies or through larger businesses who may sub-contract R&D activity. But only 55% of SME respondents in a UK survey believed that the benefit of participating in Framework projects had exceeded the costs.⁴ Substantial improvements are therefore required to meet SME needs – including the means of engagement, support instruments and the approach to bidding and contracting.

³ Declaration at EUREKA Ministerial Conference in Paris, 18 June 2004.

⁴ Independent report for the Office of Science and Technology by Technopolis Limited, *The impact of the EU Framework Programmes in the UK*, July 2004.

18. More widely, industrial and research users should be given a key role in improving the Programme's support instruments, whilst at the same time ensuring continuity between Programmes. The UK believes instruments will be most effective for the next Programme if radical changes or further new instruments are avoided. That said, improvements to Integrated Projects and Networks of Excellence are both necessary and desirable⁵. We would want to see active industrial and researcher involvement in refining them and other instruments to produce a suite of simplified, user-friendly instruments that are optimally designed to achieve their objectives.

Research to Support Policy

19. A third Programme area is support for the Community's wider policy aims such as on sustainable development (including farming and rural communities), international development, environment, health, food safety and climate change. Research to support policy has been estimated to comprise about 15% of the current Programme⁶ and should continue at a similar level.
20. As with industrial research, this area of the Programme should be more clearly delineated and driven by its policy users. We firmly support this programme being designed in line with the customer-contractor principle. The Commission Directorates General have a key role to play as customers and their responsibility and accountability needs to be significantly strengthened. They should engage with policy experts from Member States in identifying research needs. There should also be a more strategic approach to identifying overlaps and gaps between national and European programmes and establishing collaborations such as through the ERA-Net instrument. This will ensure that policy research is driven more strongly by the relevant research agenda across Europe and by the shared interests of Member States.
21. There should be more opportunity for interested policy users to be engaged in projects, including the definition stage. Where possible, projects should be clustered to ensure maximum synergy and impact. Consideration should be given to funding some projects at full cost, for example where Commission and member state policy makers are closely involved in specifying requirements. The intellectual property rights should then belong to the Commission to permit effective dissemination of the results. Project consortia would be required to make available appropriate project summaries and raw data for further analysis as well as to publish results in peer-reviewed journals.
22. A dedicated activity should support dissemination, actively identifying potential users of the research outputs. Results from related projects across all programme themes should be synthesised and marketed to be readily accessible to policy makers. The work should pay attention to research funded in previous Programmes and to relevant outputs from basic and industrial research projects.

⁵ Report of a High-level Expert Panel chaired by Professor Ramon Marimon *Evaluation of the effectiveness of the New Instruments of Framework Programme VI*, 21 June 2004; Department of Trade and Industry *Consultation on the 7th EU R&D Framework Programme Summary of responses to the public Consultation*, September 2004.

⁶ Background paper (Framework Programme Evaluation Case Studies) to the Independent report for the Office of Science and Technology by Technopolis Limited, *The impact of the EU Framework Programmes in the UK*, July 2004.

23. The UK believes that the JRC should compete on an equal footing with other organisations to undertake EU policy research, so as to maintain high standards and make maximum use of centres of excellence across Europe. We also recognise that the JRC is a valuable institution and would need core funding of about 60% of full costs in order to maintain its expertise and research capacity. The JRC would also be a good candidate to administer the dissemination programme.

Cross-cutting Programmes and Issues

24. Having considered the three ‘vertical’ areas on which the Framework 7 should focus, there remain several crucial cross-cutting activities such as human capital and mobility, research infrastructure and knowledge transfer, that cut across the main objectives. These cross-cutting programmes are valuable and should be retained and developed in Framework 7. They should be enhanced to support more clearly the three ‘vertical’ objectives and to focus on knowledge transfer.

Human Resources and Skills

25. The transfer of knowledge through people is the most effective of the Programme’s means for raising Europe’s research and innovation capabilities. The Marie Curie Programme supporting researcher mobility and training has been recognised by UK participants as having the strongest impact of any Framework Programme area⁷. Knowledge transfer between academic and industrial sectors has also proved highly effective in the UK.
26. The industry host fellowship scheme that operated under earlier Framework Programmes was a valuable means of transferring knowledge and skills from academia to industry. The academia to academia scheme is also very popular and successful. In Framework 7 the Marie Curie Programme should include three separate funding streams: academia to academia, academia to industry and industry to industry. However, we recognise that because of the likely demand for the first stream, the funding would not be split equally between the three. The industrial schemes should support industry hosts and include marketing to support industrial thematic priorities. The Programme should operate in synergy with other initiatives, such as work to improve the attractiveness of research careers through a European Researchers’ Charter.
27. Developing country participation in human resources areas should be further encouraged including exploring the possible provision of return fellowships to developing countries.

Research Infrastructure

28. European funding has been effective in securing pan-European access to key research facilities and other infrastructure and should be continued. There is also evidence of a need to plan the development of research infrastructure more efficiently across Europe. The range of requirements is increasing as costs rise and as developments in information and communication technologies drive greater integration and as long-term monitoring networks increase in importance. There is therefore a need to take a more strategic overview of Europe's infrastructure needs and the UK supports the initiative currently being undertaken by

⁷ Independent report for the Office of Science and Technology by Technopolis Limited, *The impact of the EU Framework Programmes in the UK*, July 2004.

the European Strategy Forum for Research Infrastructures (ESFRI) to draw up a road map for future European science infrastructure needs while also noting that this is a long term project.

29. To address research infrastructure needs, multilateral agreements between Member States remain the best way of creating specific facilities. This collaborative Member State investment could potentially be supported by some modest European co-funding, to assist in agreeing an overall package that maximises the benefits to researchers across the EU. The organisation and management of such projects should continue as a collaboration between partnering organisations and states. Support should be confined to science or public-good activities where a technically-based case can be identified, through bottom-up open competition.

Dissemination and Transfer of Knowledge

30. To drive competitiveness more strongly through European research there is a recognised need to increase exploitation⁸. As set out above, this should be achieved by more active engagement of users in driving the research agenda and through collaborative research itself. More effort is also required to link research outputs with entrepreneurs who can exploit the results. For policy-related research a specific dissemination activity is required.
31. Exploitation and dissemination to industry should be supported more strongly through conferences, including those organised by professional and learned societies. Aims should include knowledge transfer between:
 - researchers – promoting more activities tailored to the needs of industrial scientists and encouraging networking between academic and industrial scientists;
 - science and industry – supporting separate high-level activities across Europe designed to expose decision-makers in industry to the cutting-edge of science.
32. In the USA, for example, the American Chemical Society proactively targets industrial needs by promoting networking between businesses and with scientists, supporting learning through industry participation in scientific sessions and facilitating technology transfer. The activities are planned within the main conference series, but also include conferences specifically targeted at senior academic and industry figures and centred around emerging and inter-disciplinary science.
33. A specific budget should be allocated to this activity. Calls should be open to appropriate bodies in more than one Member State (or alternatively pan-European bodies), including professional societies and others. Areas supported could include those identified by European Technology Platforms, EUREKA! clusters or similar bodies, but also cover promising developments across broad scientific disciplines. This support would differ from existing Framework Programme activity in being more focused on knowledge transfer to businesses and more strategically-driven.

⁸ Commission of the European Communities *draft Innovation Action Plan, "Innovate for a Competitive Europe" A new Action plan for innovation, April 2004*

Other Issues

34. The UK proposes that criteria for EU-level funding should include:
- Need for scale of research or infrastructure which is not possible at national level, including the needs for collaboration to bring in a wide range of inputs from different disciplines and sectors and to disseminate and exploit research results across Europe;
 - Support for an industrial or research community that is already increasingly integrated at European or global level;
 - Need to support EU policies, priority problems common across Europe or where the EU is seeking to influence policy on global issues;
 - Providing stronger alignment between aims of different national programmes, where the risks of overlapping or fragmented funding is high or where greater EU-level competition is required to raise the quality of research to global standards;
 - Appropriateness of the timescale required for developments, bearing in mind EU planning and contracting processes.
35. The European Commission's Communication¹ proposed two new areas for research: space and security. Civil space is an important enabling technology for many current and future applications and services. The emphasis of funding should continue to be on applications and standards rather than the underpinning technology.
36. Security-related research is increasingly an area on the EU agenda and it is important that there is greater EU co-operation on this subject generally. This area is of interest to national Governments and can have wider impact across and beyond the Community. It is therefore important that EU support takes full account of existing national programmes and fully engages the user community across the EU. The issue of security research raises significant national concerns, including issues of subsidiarity, Commission competence, information security and classification. This needs to be fully debated inter-institutionally and the national security concerns of member states taken fully into account.

International co-operation beyond the EU

37. European research and development depends increasingly on collaboration with the leading researchers world-wide⁹. In addition, European competitiveness will also be enhanced by global public goods research into international development issues. International collaboration on research to address global problems such as climate change and threats to health is particularly important, to ensure a common evidence base for global action and to stimulate economically efficient solutions. The international dimension of the Framework Programme should be strengthened, with a focus on priority areas identified by research, industrial and policy users. Research collaboration in support of international development throughout the programme, should focus on the Millennium Development Goals (MDGs) - especially combating HIV/AIDS and malaria, increasing agricultural productivity and food security including hunger, and promoting sustainable development, including low-carbon energy, energy efficiency, and water ownership and management.

⁹ In the Independent report for the Office of Science and Technology by Technopolis Limited, *The impact of the EU Framework Programmes in the UK*, July 2004 73% of organisations said international R&D collaboration was increasingly important, with only 5% disagreeing.

38. As well as a strengthened international co-operation programme, the Millennium Development Goals should be taken into account in deciding the main areas of the programme. The participation of developing country institutes should be required wherever possible in research that impacts on international development. In addition the marketing of the Programme, means of engaging researchers (particularly in target developing countries) and monitoring of progress should be improved. This should address barriers to participation and improve access and raise understanding of EU opportunities.

EURATOM

39. Euratom has a very successful track record in supporting research, access to facilities and training to develop the role of nuclear energy. Fusion is a key long-term option for energy supply and it is vital to support the development of the proposed international fusion experimental reactor (ITER) as the highest priority global fusion experiment. Support will continue to be required for major peripheral activities conducted by member states, including the UK-hosted JET facility. The fission programme should continue to play an important role in maintaining and developing Europe's nuclear research and expertise, including through attracting younger scientists.

Project Selection and Funding

40. To maximise the impact on productivity and growth, R&D collaboration expenditure should be allocated by competition solely according to scientific and technical excellence, for projects that have already met minimum thresholds of relevance and European added value. Collaboration should continue to include at least organisations from 3 Member States. Basic research should be funded solely on the basis of scientific excellence.
41. Up to now funding through the Framework Programmes has been provided at approximately 50% of the economic cost to the organisation undertaking the research. That is to say that full costs of projects are not funded by Europe. For universities and other academic partners, we strongly believe that Framework 7 should provide funding at the full economic cost to the organisation undertaking the research.

Promoting the development of S&T infrastructure across Europe

42. EU R&D expenditure is not a tool for cohesion policy. Competition based on excellence is the best means for raising the level and quality of research in Europe. Instead, Structural Funds are the right mechanism to support R&D with cohesion aims. Some redirection of funds for convergence to R&D should help the poorest Member States improve their innovation performance.
43. Under the objectives of collaboration, mobility and infrastructures, a system could, however, be developed that provided more attractive funding terms to projects involving an organisation from one of the poorer Member States, while maintaining the top-level focus on excellence. This could involve, for example, a higher percentage of the project being paid by EU funds. For collaborative projects this would have the positive effect of ensuring both that EU R&D funding is directed towards the best projects and that incentives are strengthened to work right across the enlarged Union, so helping to transfer knowledge from richer to poorer Member States. It would also strengthen the best research teams in these states. This must not be at the expense of scientific excellence and would not be appropriate in the case of large

infrastructure projects where Member States might be competing to host a particular European level facility.

Implementation

44. We welcome the Commission's initiatives to improve Programme design and implementation, including a short-term task force and a commitment to involve participants and national funding bodies in reform for the seventh Programme. This work needs to engage all three Community Institutions at a high level to secure political buy-in to reform, ranging from revision of the Financial Regulation to internal organisational issues. The UK will contribute actively at the political and operational level to achieve appropriate change.
45. Contractual and delivery issues should reflect the needs of the relevant vertical objective of the Programme. In the industrial programmes, Intellectual Property Rights would, for example, reflect industry norms. For basic research the rights would belong to the host institution or individual scientist and for policy research the Commission should have at least the right to full use of the research outputs.
46. We welcome the Commission's commitment to place a number of operations, including funding for basic research and mobility, under external management and will support work to implement the necessary changes. UK consultation responses have also highlighted the need for better internal arrangements, given that five Directorates General are currently directly involved in delivery. Making all these changes work will be a major challenge and further, more radical, options should not be considered at this time. Over the longer term, however, the case for external management of the bulk of operations should be kept under review, with the Commission taking a stronger role in policy and monitoring performance.
47. A comprehensive performance management system should be introduced for the whole Programme incorporating any internal audit functions. This should be led by an independent agency and include regular reports. The approach should include:
 - Performance metrics related to the overall objectives, including outputs and impacts of research;
 - Quality control data on bidding, evaluation, contracting and dissemination, including user feedback and remedial action;
 - Rapid and complete supply to member states of participation data;
 - Systematic, strategic analysis of Programme impact, conducted at arm's length from the Commission and with a dedicated budget.

Views on the six ‘Axes’ in the Commission’s Communication¹

Current UK views on the key themes of the Commission Communication are based on our objective of delivering European added value (see section below) and also take account of evaluation evidence and an assessment of delivery issues:

- **Creating European centres of excellence through collaboration between laboratories.** Collaborative research is key to improving innovation, given its potential to create new linkages in the innovation system and to distribute knowledge. EU funding should be focused more clearly on desired outcomes (principally business competitiveness, but also wider policy aims) and promoting greater exploitation and dissemination. Funding in Framework 6 amounts to about three quarters of the total and this area should retain a large amount of funding.
- **Launching European technological initiatives.** The UK supports a concept of a European Technology Platform in the sense of formulating a long-term research vision that is driven strongly by business and other relevant ‘users’ of research outputs. Stronger links should be built with related work under the EUREKA initiative. To be effective, Technology Platforms do not need substantial public funds, but may require some largely administrative funding to bring partners together. Funding should therefore be small, but there should be a commitment to support relevant areas of the research agendas as industrially-driven collaborative research. We are not convinced of the case for large-scale formal public-private partnerships. It may be appropriate to pilot this concept in one or two areas, but it does not seem widely applicable to many science and technology fields.
- **Stimulating the creativity of basic research through competition between teams at European level.** We recognise the strong case for devoting a substantial share of EU R&D spending to basic research projects, allocated according to the sole criterion of scientific excellence, but provided that it is delivered in line with the principles described in this paper. Some projects of this nature may require substantial funding, especially if this is necessary to engage the very best research teams. There should be a clearer distinction between the organisation and delivery of funding for science-driven and industrially- or policy-driven research.
- **Making Europe more attractive to the best researchers.** Researcher mobility has been highly successful and has helped to spread knowledge. It should remain at least at current levels. Funding should be rebalanced to promote transfer of knowledge and expertise between the science base and industry, and between businesses, which may justify some overall increase.
- **Developing research infrastructures of European interest.** There is some evidence that research infrastructure is not planned and funded in the most efficient way across Europe. Modest EU co-funding, perhaps along the lines of transport networks (TENs), may assist in achieving an overall package that maximises the benefits to researchers across the EU. This should be confined to science or public-good activities where a technical case can be identified and the strength of this case will need further examination.

- **Improving the coordination of national research programmes.** This is an important area, and the ERA-Net support instrument has shown strong promise. The work should be coordinated more strategically. Decisions on the main Framework Programme (collaborative research) funding should take explicit and strategic account of national funding activities. The possibilities for closer collaboration, for example as provided for under Article 169 of the Treaty should be explored. Less than 5% of Framework 6 funding is devoted to coordination activities. A small increase may be necessary for activities to avoid duplication between programmes, spread knowledge and create critical mass, with funding should be devoted largely to administration, rather than research costs.
- **Space and Security.** It is noted that the Commission have communicated a proposal for funding of these areas from the Framework Programme.
- **Euratom.** As outlined in the paper, spending will need to rise as a result of support for fusion research (ITER).

European added value

There is not a ready-made formula to assess European value added. A mix of positive and normative criteria are required, to reflect the complexities of European policy objectives. Three categories of value added are suggested:

- economic efficiency, including spillovers, economies of scope and scale and leverage of other investment flows and minimisation of distortions. R&D has well known characteristics as a public good, but the case needs to be analysed in detail. For example, a strong case can be made for basic research to be funded at European level on the basis of the spillover effects of research across the EU or the economies of scale by pooling resources and diversifying risk;
- fiscal and managerial factors, such as the capacity of national tiers to provide public goods or to innovate, and the scope for kick-starting reform at the Member State level; and
- the negotiability of the budget and its distributional implications.