



House of Commons
Science and Technology
Committee

**Government Response
to the Committee's
Fourth Report, Session
2003–04, The Office of
Science and
Technology: Scrutiny
Report 2003**

Fourth Special Report of Session 2003–04

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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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Committee staff

The current staff of the Committee are: Chris Shaw (Clerk), Emily Commander (Second Clerk), Alun Roberts (Committee Specialist), Hayaatun Sillem (Committee Specialist), Ana Ferreira (Committee Assistant), Robert Long (Senior Office Clerk), and Christine McGrane (Committee Secretary)

Contacts

All correspondence should be addressed to: The Clerk of the Science and Technology Committee, Committee Office, 7 Millbank, London SW1P 3JA. The telephone number for general inquiries is: 020 7219 2793; the Committee's e-mail address is: scitechcom@parliament.uk

Fourth Special Report

On 4 March 2004 the Science and Technology Committee published its Fourth Report of Session 2003-04, The Office of Science and Technology: Scrutiny Report 2003. On 7 May 2004 we received a memorandum from the Government which contained a response to the Report. The memorandum is published without comment as an appendix to this report.

Appendix

Introduction

The Government welcomes the opportunity to respond to the Committee's scrutiny report of the Office and Science and Technology (OST) for 2003.

Since the Committee published its report, the Government has set out its emerging thoughts on a ten-year investment framework for science and innovation. OST is closely involved with the development of this major strategy. The framework will be published in the summer and will set out the attributes of a successful and competitive science and innovation system in the UK to which Government and other stakeholders are committed. It will clearly demonstrate this government's long-term commitment to science.

List of Recommendations and Government's Response

1. We commend the Office of Science and Technology for commissioning research into metrics for the Science and Engineering Base. This will have been of no use if weaknesses identified by the work are not remedied, however. In particular, the Government must heed the warning that, despite increased investment through the Science Budget, UK Government funding for R&D is in decline relative to its international competitors and that the UK's share of global publications is slipping. Having developed better measures, the OST should stick with them so that performance over time can be measured. (Paragraph 12)

The recently announced ten-year investment framework for science and innovation and the Chancellor's announcement that spend will increase by at least the trend rate of GDP growth will allow for long-term planning of science spending. This will build on the already significant investment in the science base – which will reach £3 billion by 2005-06. The OST recognises the importance of measuring performance over time, so that trends can be properly monitored and appropriate action taken. As such, we have already begun the tender process for a follow up to the metrics project which was so well received in 2003.

2. We urge and encourage all Research Councils to conduct a rolling programme of international reviews of disciplines within their remits to ensure that the UK retains its strength in all research areas. (Paragraph 14)

The Government shares the Committee's view that it is important to compare our achievements in science with those of our international competitors. The Research

Councils have set out proposals to strengthen their work in this area; this will be detailed in their response to the consultation on the ten-year investment framework.

3. We hope that the OST makes the Chancellor aware of the data on the Science Base compiled by Evidence Ltd and stresses that the UK cannot be the best place to do science, as he says he wishes, while investment lags behind that of its competitors. (Paragraph 17)

HM Treasury is aware of the Evidence data and agreed with the Department of Trade and Industry (DTI) that some indicators in the report should be used to monitor the DTI's performance of Public Service Agreement (PSA) Target 2: Improve the relative international performance of the UK's science and engineering base, the exploitation of the science base, and the overall innovation performance of the UK economy. Over the past two spending reviews, the Government has demonstrated its commitment to reversing previous underinvestment in science. Creating a long-term framework for investment in science will continue this commitment.

4. The Government has two choices, therefore: either it provides no information on the likely settlement for the Spending Review and leaves the Research Councils to make a case for what they feel the Science Base needs; or it provides clear and unambiguous advice. (Paragraph 19)

In order to provide as much planning stability as possible, the DTI does work very closely with the Research Councils on developing their long-term major programmes. For example, the Large Facilities Roadmap looks forward to the next fifteen years. However, these long-term plans will always be subject to the fiscal position at the two-yearly Spending Reviews. While the Research Councils do not make a submission direct to HM Treasury in the Spending Review, DTI, through the OST, has continued to work very closely over a period of several months with the Research Councils in developing its science proposals for the Spending Review submission.

5. It is not clear to us how Research Councils UK can use the results of its consultation exercise to develop priorities for its Spending Review bid. The scope of the Research Councils' themes for the 2004 Spending Review would have needed to have been fleshed out before meaningful views could be expressed. (Paragraph 22)

The Government welcomes Research Councils' and RCUK's engagement with stakeholders in setting research priorities. Following the publication of the Spending Review White Paper, the DTI, through the OST, will then engage the Research Councils in determining funding priorities and allocating the Research Council budgets for the Spending Review 2004 period. The information gathered by Research Councils will inform that process.

6. We urge the Government to give priority to sustaining responsive mode funding in its settlement for Spending Review 2004. Scientists working at the cutting edge are best placed to identify the most fertile areas of research, not Government officials. (Paragraph 24)

The Government attaches great importance to giving Research Councils maximum flexibility to fund appropriate research which is world class, relevant and robustly peer

reviewed and which has a healthy mix of responsive and managed mode research projects. This mix will inevitably vary over time but this is a judgement best taken by individual Councils.

7. We welcome the Academic Fellowship initiative which demonstrates that the Research Councils can directly intervene to create more stable careers for scientists. We believe that the principle of obliging universities to provide open-ended contracts as a condition of securing future grants could be more widely applied as a means for reducing the number of contract researchers. (Paragraph 31)

Government agrees that researchers are the science base's most important asset and we believe that the new academic fellowship scheme will help facilitate the career progression of young researchers. A guarantee of a permanent position by an Higher Education Institution (HEI) on completion of the five-year award is an absolute requirement - a measure that is intended not only to help individual researchers but also to encourage HEIs develop longer-term strategic plans for research and for human resources. We would expect that other research funders will consider the outcome of this measure when reviewing their own fellowship schemes.

8. We welcome the introduction of the UK Research Base Funders' Forum and hope that it will bring much-needed coherence to public research funding and that it will result in careers in research becoming a more attractive and secure option. (Paragraph 32)

The Government welcomes the Committee's support for the Funders' Forum. It is hoped that the Funders' Forum, by bringing together top-level representatives from charities, industry, Research Councils, Funding Councils, Regional Development Agencies, the Higher Education sector and Government departments, will bring coherence to public research funding with specific regard to sustainability and research strategies.

The Forum has agreed to take forward the objectives and work of the Research Careers Initiative (RCI) through the establishment of a Funder's Forum sub-group.

9. RCUK has been a useful initiative. We look forward to further progress in collaboration between Research Councils and greater convergence in administrative procedures and functions. (Paragraph 37)

The Government fully agrees with the Committee; RCUK has done much to facilitate collaborative working between the Research Councils. The current review of RCUK is expected to report to Government in the summer and will be considering how collective working can further contribute to the future success of the Research Councils.

10. The establishment of the Science Review Directorate is a good initiative and we await its outputs with interest. We welcome the OST's commitment to publish findings of the reviews in full. (Paragraph 39)

The Government welcomes the Committee's endorsement of the science review initiative. The Science Review Directorate is nearing completion of its first review, of science in the Department for Culture Media, and Sport, and publication is expected early this summer.

11. The new Council for Science and Technology deserves a chance to succeed but the Government must not waste another five years. The Government should put it on a year's probation and have the courage to abolish it if it is not working. (Paragraph 43)

As the Committee observes, the function of the Council for Science and Technology (CST) is to provide an insight into the bigger picture - not to provide a specialist view. Such advice is more essential than ever as the Government moves to make the UK a world leader in the knowledge based global economy and continues to develop policies for addressing long-term global challenges such as climate change. The Government believes that it can only be obtained from a standing body. A standing body can develop contacts across Government, experience how different parts of Government work and provide additional insights to those obtained from specialist and short-lived bodies.

The Government has now put in place a system to ensure that there is frequent interaction between Ministers from across Government and CST to ensure that CST is kept up to date on Government priorities and give members a better insight into the effect of their advice. The Prime Minister announced the new membership of CST on 8 March and members gathered for the first time on 15 and 16 March. During the two days they met the Prime Minister, the Chancellor of the Exchequer, the Science Minister and the Minister of State for School Standards. CST will continue to have regular meeting with Ministers, including the Prime Minister.

12. The Government should acknowledge that the UK science community can benefit from the close proximity of large facilities, and that the prestige and profile of UK science can be enhanced. We urge the Government to provide the political will, and where necessary the finances, to support such ventures. (Paragraph 47)

The Government recognises the potential benefits to UK science of hosting large-scale scientific facilities.

Scientific benefits from hosting an international large facility in the UK include scientific influence on the research programme of the facility, larger participation by UK researchers and students, and the leverage that hosting one facility gives us in discussions on UK participation in other facilities overseas. In addition there may be industrial benefits, both a greater proportion of industrial contracts for the facility itself, but also the development of high technology industrial parks around the facility as skills and investment are brought into the area.

All these benefits need to be weighed against the additional costs to establish whether it is in the interests of the UK to seek to host a particular facility. In many cases UK interests will be well served by participating in a facility overseas, for example through international subscriptions or bilateral arrangements with the host country, and the UK participates very successfully in a number of such facilities.

The UK currently hosts Europe's primary fusion research facility, JET, and the world's most powerful neutron spallation source, ISIS, which is currently being upgraded with a second target station at a cost of £100M. The first stage of the new Diamond synchrotron source, at a cost of £250M, is currently under construction at the Council for the Central Laboratory of the Research Councils' (CCLRC) Rutherford Appleton Laboratory, jointly

funded by the Government (86%) and the Wellcome Trust (14%). The Government has set up a specific funding line for large facilities (rising to £95M p.a. by 2005-06) in addition to the funding invested by the Research Councils in the normal way to enable capital construction of large facilities for the benefit of UK scientists.

The issue of large facilities and the balance between seeking to host them in the UK and seeking to participate in facilities abroad is included in the consultation for the ten-year investment framework.

13. We welcome the Government's recognition of the benefits to the UK from building ITER in Europe and urge it to press the French case. The decision will inevitably be a political one but the science – and thus the success of the project – must not be compromised. Already, Spain has been invited to host the administration of ITER if France is successful. We urge the Government to resist any suggestion that the ITER project should somehow be split between France and Japan. (Paragraph 50)

The Government is firmly behind hosting ITER in Europe; it is doing all that it can to ensure the European bid succeeds.

14. The Cambridge-MIT Institute is an interesting initiative and appears to be bearing some fruit, but the £65 million expenditure must be put in context. For the same amount of money, the Government could have provided the Biotechnology and Biological Sciences Research Council with around 5% extra funding over the same period. The investment is only slightly less than the combined cost of the stem cell and sustainable energy programmes in Spending Review 2002. For this reason, we reiterate the importance of making the evaluation of CMI available to us, in commercial confidence if necessary. (Paragraph 57)

The Government's investment in science and innovation involves the development of a broad portfolio that embraces a variety of approaches of which the Cambridge-MIT Institute (CMI) is a part. Although a large investment, the partnership between MIT and Cambridge University is a bold venture and is itself funding a wide range of projects including research; educational programmes for undergraduates, post graduates and industry; industrial collaboration. Many of these projects have the potential to generate returns far in excess of the government's initial investment

The NAO report on CMI published on 17 March 2004¹, acknowledged that CMI is operating in an area where many outcomes are long term, and it will not be possible to evaluate fully the value for money of CMI for some years. An evaluation of knowledge transfer programmes funded from Science Budget, including CMI, has been formally commissioned by the OST. The evaluation report will be completed in October 2004 and will be published. In addition, CMI is in the process of appointing an external, stakeholder endorsed Programme Review Committee, that publish annually an independent report on the success of CMI as assessed by performance against its goals and metrics.

15. It is disappointing that the OST will not publish submissions to its consultation on dual support before it publishes its response. It is normal practice for the Government

¹ Cambridge-MIT Institute, National Audit Office (2004), www.nao.gov.uk

to publish at least a summary of submissions before reporting. It is reasonable that, where the authors have given permission, submissions are published as soon after the deadline as possible. If the Government's decisions are seen to be made in an open and transparent manner, the evidence being used to inform that decision should be freely available as soon as possible. (Paragraph 59)

The Government shares the Committee's view that submissions to its consultations should be made public, wherever possible. To this end, all submissions where authors gave permission were published on the OST website on 5 March 2004².

16. Charities such as the Wellcome Trust have made a huge contribution to UK research and it is important that their interests are represented at a high level in Government. We are concerned that the new Higher Education Research Forum does not include a representative from the research charity sector. We recommend that this oversight is remedied without delay. (Paragraph 61)

Charities have become an integral funder of the UK research base. In recognition of this, the Funders Forum has two charity representatives, the Director of the Wellcome Trust and a representative from the Association of Medical Research Charities. The Higher Education Research Forum is a short-term forum which focuses on teaching – research links.

17. A more coordinated approach to policy-making is needed. Science and research are in danger of being over-reviewed, wasting the time of researchers and lecturers who feel obliged to make responses, and the uncertainty they engender is demoralizing for these staff. We can only hope that as a result of these reviews on science, research and innovation a clear timetable for implementation is drawn up. (Paragraph 63)

The Government recognises this concern, though it is important that appropriate channels are available for a wide range of views to be put forward on specific issues. The ten-year investment framework will build on previous reviews and will demonstrate to the science community Government commitment to the future of British science

18. We are concerned that the Government's piecemeal approach to research funding does not serve UK science well. We shall be monitoring developments in higher education science with interest over the next year. (Paragraph 66)

The Government welcomes the Committee's interest. The Government has recently reaffirmed, however, its support for the current system of funding – the Dual Support system – which ensures that there is no single-point failure. Funding council block grants (QR) allow Vice Chancellors a high degree of autonomy in deciding strategic objectives, and Research Council grants ensures the very best research is funded.

19. We welcome the fact that the OST is commissioning academic studies to provide an evidence-based approach to policy-making. It is regrettable, therefore, that having done so, the Minister is content to disregard a study's findings. (Paragraph 67)

² <http://www.ost.gov.uk/research/dualsupport.htm>

The OST carefully considers all evidence it receives and is committed to evidence-based policy making. The study in question, by SPRU, criticised a caricature of Government policy. We aim to invest in the best science, wherever it is found and will continue to commission further studies to inform policy development.

20. The UK has a high level of research concentration. Should this trend continue, the UK risks whole regions being devoid of research capabilities in subjects, particularly the physical sciences and engineering, that underpin innovation. This undermines the Government's attempts to make universities the drivers of knowledge economy in these areas because many universities that provide research support for regional and local industry and commerce would be starved of funding and their research would become unsustainable. In addition, the increasing prospect of debt is likely to force students to study nearer to home and the option to study physics, chemistry or engineering should not be denied them. It should be the Government's policy to maintain capacity in a full range of disciplines in each region. (Paragraph 68)

The Government's priority is to support and encourage the highest quality research nationally to ensure that we remain globally competitive in the longer term, policy which has been backed by substantial increases in funding in science and research since 1997. The Government notes the Committee's concern about research concentration and its potential impact on regional development. It should be noted, however, that high quality departments are located in a wide spread of institutions, and that each region has at least one institution receiving a minimum of £5 million research funding. Further, in addition to capability funding to support research in seven emerging areas, funding of 4-rated departments (£118m) will be maintained in real terms and 62 less research intensive HEIs will also receive additional funding to support promising researchers in 2004-05.

The Government will continue to work with regional bodies to facilitate local engagement with the science base. Third stream funding (Higher Education Innovation Fund) has been increased from £60 million in 2003-04 to £100 million by 2005-06, with the twin aims of building on current success and broadening the funding reach to more less research intensive departments. The second round of HEIF has a stronger regional focus by encouraging RDA involvement in proposal development, assessment of the bids and increased representation on the Advisory Board.

21. The Science Minister has accepted that many issues concerning science, research and higher education are interrelated. It is reasonable to expect that he provide formal input into the deliberations of Ministers in the Department for Education and Skills and be able to articulate the policy as a whole in giving evidence to us. His statements give us no confidence that these issues are being considered by Government in a coherent manner. (Paragraph 73)

The Science Minister regularly discusses and makes input to policy with Ministers in other departments including the Department for Education and Skills, both bilaterally and through committees such as the Investing in Innovation Ministerial Group. Senior officials also work closely together, for example in the Science and Engineering Base Coordinating Committee (SEBCC).

22. The Government should consider establishing bursaries for undergraduates to study shortage subjects, such as physical sciences and engineering. These should cover the full cost of the charged top-up fee. (Paragraph 75)

Government has provided financial support to provide both an increase to the minimum PhD stipend and also a higher stipend in areas of recruitment and retention difficulty, which we believe is complementary to the implementation of variable fees. However, we would like to assess the effectiveness of this policy before extending it to other areas.

The development of a ten-year investment framework is looking closely at issues of supply and demand of skilled personnel for science, engineering and technology (SET) careers. This particular area of the framework is being developed by officials across OST, Department for Education and Skills (DfES) and HM Treasury and takes a broad overview of recruitment and retention at all level. Discussions will include the relative merits of financial incentives.

23. We are pleased that the OST has developed a coherent strategy for science and society following the collapse of Copus. We will follow its progress with great interest. The OST must ensure, however, that gathering statistics is not a substitute for action. The UK needs a more effective dialogue on scientific issues and we are looking to the OST to provide the impetus. (Paragraph 80)

The Government agrees that the UK needs more effective dialogue on scientific issues. As the Committee notes, we have recently commissioned reports on GM and nanotechnology. The Government will continue to consider how it can engage with the public as new issues arise. The Science and Society Directorate will support other parts of government in this and will, in particular, be the centre of excellence within Government on the processes of public engagement in relation to such issues.

We also agree that it is important to horizon-scan for potentially controversial scientific issues. The OST is continually looking at how it can enhance its capability in this area. For example, a media monitoring project is being taken forward in response to recommendations from the British Association. This is in addition to the Foresight programme's horizon-scanning on specific issues, which generally looks to 20 years and beyond.

The Government agrees with the Committee that gathering statistics should not be an end in itself, and indeed, many of its current activities go well beyond data collection. Nevertheless, in accordance with general Government moves towards evidence-based policy, both current and future activities need to be based on a sound evidence base.

We welcome the Committee's view that OST has developed a coherent strategy for science and society. The aims of the Science and Society Directorate are broad, and seek to achieve a number of objectives, for example: increasing the involvement of women and minority ethnic groups in science and technology and its governance; ensuring that the UK economy has a sufficient supply of scientists and engineers; and raising public awareness of, engagement with and support for science and innovation. Action is being taken in all of these areas, for example: the establishment of the UK Resource Centre for Women in SET;

the launch of the Academic Fellowship scheme; and our continued funding of activities such as the public engagement grants scheme and National Science Week.

24. We welcome the opportunity to question the Science Minister on a more regular basis. This will result on a more productive dialogue between Parliament and Government on scientific issues. (Paragraph 83)

The Science Minister is delighted to have the opportunity to meet the Committee more regularly and agrees that this results in a more productive dialogue between Parliament and Government.

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