

# COUNCIL FOR SCIENCE AND TECHNOLOGY

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## ANNUAL REPORT FOR 1998-99

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### Introduction

1. This is the first annual report of the Council for Science and Technology since it was re-established in March 1998 with new terms of reference and membership.
2. The Council serves as the Prime Minister's top level advisory body, providing its independent views and recommendations about strategic issues concerning Science and Technology (S&T) in the UK. It is specifically charged with taking a medium to longer term, proactive approach to its core task of keeping under review and making recommendations on ways of improving:
  - (i) the performance of the UK (public and private) in S&T, in relation to current and future national needs and opportunities;
  - (ii) the overall impact of the funding arrangements for publicly supported S&T including those for research in higher education institutions;
  - (iii) the effective use and exploitation of S&T by business, Government and the public services to create wealth and improve our quality of life; and
  - (iv) the synergy between the UK's domestic and international S&T activities and the scope for the UK to get more benefit from S&T collaboration.
3. Additionally, the Council provides its independent advice on more specific strategic issues of national importance, whenever this is sought.

### Summary of Work Programme 1998/99

4. During this period, the Council met on 10 June 1998, 14 September 1998, 7 December 1998, 26 March 1999, 7 June 1999, 23 September 1999 and 6 December 1999. At the first two of these meetings the Council established its code of practice and procedures (see Annex A), determined the topics which members wished to address in its first programme of work, and set up sub-groups of members to work on each of the following topics:

- S&T Activities across Government;
- Exploitation of Science and Technology by British Business; and
- Helping Science Teachers in Primary and Secondary Schools.

5. The Council's remaining meetings dealt with the work of the sub-groups. Its report about S&T Activities across Government was published on 13 September 1999, along with the UK Government's initial response and the response of the Scottish Executive. Its reports on the other two topics are due to be published shortly.

### **Review of S&T Activity across Government**

6. Following the Government's first Comprehensive Spending Review<sup>1</sup>, the Council decided at its meeting on 14 September 1998 to take a short, strategic look at Government Departments' use of science and technology (S&T) and to consider what lessons might be drawn for the Government's S&T policy as a whole.

7. This work was undertaken by a sub-group comprising: Sir Robin Nicholson (chair), Dame Bridget Ogilvie, Sir Richard Sykes, Dr Chris Evans and Professor Sir Keith O'Nions. The sub-group held two rounds of meetings and considered written material from the five departments with the largest S&T expenditure: Ministry of Defence (MOD); Ministry of Agriculture, Fisheries and Food (MAFF); Department of the Environment, Transport and the Regions (DETR); Department of Trade and Industry (DTI); and the Department of Health (DH).

8. During the course of its work, the sub-group explored the ways in which departments use S&T, and in particular:

- the purpose of departmental S&T spending;
- how departments decide what they should spend money on; and
- the level of scientific management and scientific literacy in Departments.

9. The resulting report, published on 13 September 1999:

- emphasised the importance of science and technology (S&T) and the central role it plays in the work of Government Departments;
- called for a more forward looking, strategic approach to the use of S&T; and
- recommended that there should be greater co-ordination between Departments, and with others involved in R&D in both the public and private sectors, in the UK and overseas.

10. The report also proposed that the Government should undertake a radical review, in co-operation with our EU partners, of the existing arrangements for European collaboration on R&D; and that departments should take stock of the supply of, and career opportunities for, people with appropriate knowledge and expertise to understand and interpret scientific and technical issues.

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<sup>1</sup> *Modern Public Services for Britain: Investing in Reform*, Cm 4011, July 1999

11. In its initial response, the Government warmly welcomed the report, commenting that the findings and recommendations of the sub-group provided a valuable input to consideration of how to take this agenda forward. It set out its plans for dealing with the recommendations and undertook to publish an implementation plan, setting out how the recommendations would be taken forward.

### **Exploitation of S&T by British Business**

12. In anticipation of the Government's then impending Competitiveness White Paper<sup>2</sup>, the Council decided at its meeting on 7 December 1998 to address the question of *what more the Government should do to increase the capacity of UK business to exploit science and technology*.

13. The work was undertaken by a sub-group, led by Professor Sir Alec Broers and comprising Professor Kumar Bhattacharyya, Dr Chris Evans, Sir Robin Nicholson, Dr David Potter, Miss Emma Rothschild and Mr J Martin Taylor. The Group also co-opted Professor Alan Hughes, Director of the ESRC Centre for Business Research, University of Cambridge.

14. The sub-group held a series of consultative meetings during 1999, with the aim of making an assessment of the UK's current capacity to exploit science and technology, and what might be done to increase it. At the time of writing, its report was in the final stages of preparation.

### **Helping Science Teachers**

15. At its first meeting on 10 June 1998, the Council decided at the question of the education of young people in science, engineering and technology. Following an initial investigative study<sup>3</sup>, the Council decided at its meeting on 7 December 1998 to address the question: *“what would make a real difference to helping science teachers in primary and secondary schools develop and improve their professional practices, both individually and collectively?”*

16. The work was undertaken by a sub-group, led by Professor Julia Higgins (chair) and comprising Sir Aaron Klug, Dr Robert Margetts, Dame Bridget Ogilvie, and Professor Sir Stewart Sutherland. They were assisted by a number of co-optees including Dr David Moore (Association for Science Education), Dr Ray Peacock (Science, Engineering, Technology, Mathematics Network), Ms Juliet Strang (Head of Villiers High School, Ealing), Dr Kay Stephenson (Head of Science and Chemistry, Felsted School, Essex), Ms Becky Parker (Head of Science, Simon Langton Girls School, Canterbury), Mrs Jay Pye (Head, St Michael's Church of England Junior School, Maidstone, Kent), Mr Roger Mitchell (Deputy Head, Warren Junior School, Romford, Essex) and Mr Justin Dillon (School of Education, King's College, London).

17. The group is looking at options for:

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<sup>2</sup> *“Our Competitive Future: Building the Knowledge Driven Economy”* Cm 4176, December 1998

<sup>3</sup> *School Science: Fit for the Future*, CST website at address [www.cst.gov.uk](http://www.cst.gov.uk)

- improving the continuous professional development (CPD) of qualified science teachers;
- facilitating the identification and spread of “good” or “best practice” in science teaching among these teachers;
- making the most of the resources and other support provided to them by third parties; and
- harnessing the potential of Information and Communication Technology for these purposes.

18. To inform its work and secure a sufficiently robust evidential base, the group commissioned the School of Education at King’s College London to undertake a survey in July 1999 to obtain the views of science teachers and head teachers about these matters. Questionnaires were sent to teachers in some 1900 primary schools and 750 secondary schools in England. Over 2,500 completed questionnaires were returned and a further 150 teachers willingly participated in 20 focus group sessions in a number of regions.

19. During the autumn of 1999, the group held two consultation meetings involving over 50 delegates and met privately with members of the Science and Technology Select Committee of the House of Lords.

20. At the time of writing the report was still in preparation. The results of the survey will be published shortly, in conjunction with the Council’s final report.

### **Future work programme**

21. The Council’s immediate priority is to complete its first work programme by finalising the two remaining reports and publishing them as soon as possible.

22. A process will also be completed shortly in accordance with the requirements of the Office of the Commissioner for Public Appointments to deal with the expiry of the terms of office of 8 of the 14 existing independent members (Annex B)

23. At its next two scheduled meetings in March and June of 2000, the Council will determine its second core programme of work. The Council has agreed in principle that one of the items on the programme should be a study on engineering. Further items for the second work programme are under consideration.

***CST***  
***February 2000***

## ANNEX A

### SUMMARY OF THE COUNCIL'S PRACTICES AND PROCEDURES

A.1 The Council meets four times a year. Its work is mostly conducted through sub-groups of independent members, each addressing a particular issue.

A.2 The Council applies the following general criteria in establishing the issues to address in depth through sub-groups during each programme of work:

- *Strategic importance*: is the issue sufficiently important to justify the Council's attention?
- *Timeliness*: is this the most appropriate time to consider this issue? How and when does it fit within the schedule of Government business?
- *Relevance*: is the issue of relevance to Government policy making?
- *Value Added*: what value can the Council add? Is it the most appropriate body to address this issue?
- *Coverage*: is the issue relevant to the whole of the UK?

A.3 The Council adheres to the seven principles of public life, the so-called "Nolan" standards, namely:

*Selflessness*: Holders of public office should take decisions solely in terms of the public interest. They should not do so in order to gain financial or other material benefits for themselves, their family or their friends.

*Integrity*: Holders of public office should not place themselves under any financial or other obligation to outside individuals or organisations that might influence them in the performance of their official duties.

*Objectivity*: In carrying out public business, including making public appointments, awarding contracts, or recommending individuals for awards and benefits, holders of public office should make choices on merits.

*Accountability*: Holders of public office are accountable for their decisions and actions to the public and must submit themselves to whatever scrutiny is appropriate to their office.

*Openness*: Holders of public office should be as open as possible about all the decisions and actions they take. They should give reasons for their decisions and restrict information only when the wider public interest clearly demands.

*Honesty*: Holders of public office have a duty to declare any private interests relating to their public duties and to take steps to resolve any conflicts arising in a way that protects the public interests.

*Leadership*: Holders of public office should promote and support these principles by leadership and example.

A.4 In accordance with the principle of openness, a new Council website<sup>4</sup> was established in the autumn of 1998. As well as containing details about the Council's role, membership and current work, this website also contains summaries of each Council meeting, copies of its published reports on particular topics, and any interim sub-group papers which warrant publication.

A.5 Members of the Council are collectively responsible for its operation and the advice it provides. They:

- engage fully in collective consideration and agreement about the advice to be provided by Council, taking full account of all the relevant factors, including any guidance or information which is provided to them by Ministers, the Government's Chief Scientific Adviser, Departmental Officials or the Secretariat;
- agree the Council's annual programme of work and its Annual Report; and where practicable and appropriate, hold at least one meeting a year in public;
- respond appropriately to any complaints received from third parties; and
- ensure that the Council complies fully with its terms of reference including the presumption in favour of publication of its advice.

A.6 Members serve on the Council without remuneration. They are normally appointed by the Prime Minister for a period of 3 years and can be re-appointed for further periods up to a maximum of ten years.

A.7 Members are appointed in accordance with the procedures and requirements of the Office of the Commissioner for Public Appointments. Applicants are assessed using the following general criteria, namely that they should:

- hold a very senior position in academia, commerce or industry, usually at the equivalent of chief executive or above;
- be eminent, widely respected and active in the world of academe, industry, commerce or finance including trade unions and the charitable sponsorship of scientific or technological research;
- be willing to devote at least five working days to Council business each year, as well as serving as the Council's antennae and advocates within the circles in which they move; and
- be able to contribute to the Council's core tasks through their experience and position, not necessarily as scientists, engineers or technologists themselves.

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<sup>4</sup> The address is [www.cst.gov.uk](http://www.cst.gov.uk)

## ANNEX B

### INDEPENDENT MEMBERS OF THE COUNCIL IN 1998/1999

Professor S Kumar Bhattacharyya CBE FEng  
*Professor of Manufacturing Systems - University of Warwick*

Professor Sir Alec Broers FRS FEng  
*Vice Chancellor - University of Cambridge*

Dr Chris Evans OBE  
*Chairman - Merlin Ventures*

Professor Julia Higgins CBE FRS  
*Professor of Polymer Sciences - Imperial College*

Professor Sir Aaron Klug OM PRS  
*President - Royal Society*

Dr Robert Margetts CBE FEng  
*Vice Chairman - ICI plc*

Sir Robin Nicholson FEng FRS  
*Director - Rolls Royce plc*

Dame Bridget Ogilvie ScD FIBiol FRCPATH  
*Chairman - Committee on the Public Understanding of Science (COPUS)*

Professor Sir Keith O’Nions FRS  
*Professor of the Physics and Chemistry of Minerals - University of Oxford*

Dr David Potter CBE  
*Chairman - Psion plc*

Miss Emma Rothschild  
*Director - Centre for History and Economics, University of Cambridge*

Professor Sir Stewart Sutherland FBA  
*Principal & Vice Chancellor - University of Edinburgh*

Sir Richard Sykes DSc FRS  
*Chairman - Glaxo Wellcome plc*

Mr J Martin Taylor  
*Chairman - WH Smith Group plc*