



House of Commons
Science and Technology
Committee

The Last Report

Thirteenth Report of Session 2006–07

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written evidence*

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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 Innovation and its associated public bodies.

Current membership

Mr Phil Willis MP (*Liberal Democrat, Harrogate and Knaresborough*) (Chairman)
Adam Afriyie MP (*Conservative, Windsor*)
Mrs Nadine Dorries MP (*Conservative, Mid Bedfordshire*)
Mr Robert Flello MP (*Labour, Stoke-on-Trent South*)
Linda Gilroy MP (*Labour, Plymouth Sutton*)
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Chris Mole MP (*Labour/Co-op, Ipswich*)
Dr Bob Spink MP (*Conservative, Castle Point*)
Graham Stringer MP (*Labour, Manchester, Blackley*)
Dr Desmond Turner MP (*Labour, Brighton Kemptown*)

Previous Members of the Committee during this Parliament

Mr Jim Devine MP (*Labour, Livingston*)
Dr Ian Gibson MP (*Labour, Norwich North*)
Margaret Moran MP (*Labour, Luton South*)
Mr Brooks Newmark MP (*Conservative, Braintree*)
Anne Snelgrove MP (*Labour/Co-op, South Swindon*)

Powers

The Committee is one of the departmental Select Committees, the powers of which are set out in House of Commons Standing Orders, principally in SO No.152. These are available on the Internet via www.parliament.uk

Publications

The Reports and evidence of the Committee are published by The Stationery Office by Order of the House. All publications of the Committee (including press notices) are on the Internet at www.parliament.uk/s&tcom
A list of Reports from the Committee in this Parliament is included at the back of this volume.

Committee staff

The current staff of the Committee are: Dr Lynn Gardner (Clerk); Dr Celia Blacklock (Second Clerk); Mr Edward Waller (Assistant Clerk); Dr Christopher Tyler (Committee Specialist); Dr Joanna Dally (Committee Specialist); Ana Ferreira (Committee Assistant); Christine McGrane (Committee Secretary); and Jonathan Olivier Wright (Senior Office Clerk).

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

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Summary

On 28 June 2007, the Prime Minister announced changes to the machinery of Government that had an impact upon the select committee system within the House of Commons. As a result, the Science and Technology Select Committee will be dissolved and replaced by a new Innovation, Universities and Skills Select Committee at the beginning of the next session of Parliament. This Report explains the role that the Science and Technology Committee has played within Parliament and the science community. It outlines the Committee's innovations, its impact and concerns regarding future science scrutiny in the House of Commons. It concludes that, in the long term, a separate Science and Technology Committee is the only way to guarantee a permanent focus on science across Government within the select committee system and recommends that the House be given an opportunity to revisit this issue.

1 Science in Parliament

House of Commons Science and Technology Committee

1. The House of Commons first established a Science and Technology Select Committee in 1966 in order “to consider science and technology and report thereon”.¹ This Committee existed for the duration of the 1966–1971 Parliament and was re-appointed in 1971 and 1974. The Committee was abolished in 1979 when the departmental select committee structure was established. A similar Committee, with a remit more closely mirroring that of a departmental committee, was established in July 1992 and has remained ever since. The current Science and Technology Committee was appointed on 19 July 2005.

2. The function of the House of Commons Science and Technology Committee is to examine the expenditure, administration and policy of the Office of Science and Innovation (OSI) and its associated public bodies.² This includes the seven UK Research Councils, the Council for Science and Technology, the Royal Society and the Royal Academy of Engineering. The Science and Technology Committee has been unusual amongst departmental select committees in that it has monitored the OSI, which was part of the Department of Trade and Industry (DTI) at its conclusion, though it had been in the Department of Education and Science previously, rather than a department in its own right. The Office of Science and Innovation defined its mission as “supporting excellent science, engineering and technology and their uses to benefit society and the economy”. The Committee therefore has had a similarly broad remit. This means that the Committee's work has addressed the activities of other Government departments where they have had implications for, or made use of, science, technology and research. Recent examples that fall into this category include the Committee's inquiries into the classification of illegal drugs, the technologies supporting the identity cards scheme, and human enhancement technologies in sport.³

The Demise of the Committee

3. On 28 June 2007, the Prime Minister announced changes to the machinery of Government that resulted in the splitting of the responsibilities of the DTI and the Department for Education and Skills (DfES) into three new departments: the Department for Business, Enterprise and Regulatory Reform (DBERR), the Department for Innovation, Universities and Skills (DIUS), and the Department for Children, Schools and Families (DCSF).⁴ The responsibilities of the OSI, previously within DTI, have been taken over by

1 “Science and Technology Committee”, www.portcullis.parliament.uk

2 This remit changed in April 2006 to reflect the merger of the Office of Science and Technology and the Innovation Group within the Department of Trade and Industry to create the Office of Science and Innovation.

3 Science and Technology Committee, Fifth Report of Session 2005-06, *Drug classification: making a hash of it?*, HC 1031; Science and Technology Committee, Second Report of Session 2006-07, *Human Enhancement Technologies in Sport*, HC 67.

4 HC Deb, 28 June 2007, col 36WS

the DIUS Science and Innovation Group and the Government Office for Science within DIUS.⁵

4. Under Standing Order No. 152, the House of Commons Science and Technology Committee is appointed to scrutinise the OSI.⁶ The abolition of the OSI meant that it was necessary to revise this Standing Order. On 25 July 2007, the House agreed a motion to amend the Standing Order to replace the Science and Technology Committee with a departmental select committee, which would scrutinise the work of DIUS. The House agreed that the motion would take effect from the beginning of the next session.⁷ Therefore, at the beginning of the next session the Science and Technology Select Committee will cease to exist.

5. The new Innovation, Universities and Skills Committee will scrutinise the work of DIUS. DIUS has a broader remit than the OSI because it takes over policy areas previously within the Department for Education and Skills such as higher education and skills. DIUS defines its aims as:

“To:

Sustain and develop a world-class research base;

Maximise the exploitation of the research base to support innovation across all sectors of the economy;

Raise and widen participation in Higher Education;

Raise participation and attainment by young people and adults in post-16 education and learning;

Tackle the skills gap amongst adults, particularly equipping people with basic literacy and numeracy;

Increase the supply of people in science, technology, engineering and mathematics (STEM)”.⁸

Given these declared aims, we are disappointed that the Government has omitted the word ‘science’ from the title of the new department. **We urge the Government to change the title of the Department for Innovation, Universities and Skills to include the word ‘science’ to reflect the importance of science within Government.**

6. During the debate on the Standing Order changes, several Members questioned whether the new Innovation, Universities and Skills Select Committee would spread itself too thinly and science would not receive appropriate scrutiny in the Commons.⁹ These comments reflected the concerns of the science community regarding the demise of the Science and

5 “New Government Office for Science”, DIUS press release, 20 July 2007.

6 Standing Orders are the rules under which Parliament conducts its business and they regulate the way Members behave and debates are organised.

7 *Votes and Proceedings*, 25 July 2007

8 “The role of the new department”, www.dius.gov.uk

9 HC Deb, 25 July 2007, col 941-955

Technology Committee (see paragraph 30). Two alternative options were proposed: creating a sub-committee for science and technology, and retaining a separate science and technology committee.¹⁰ The Leader of the House, Ms Harriet Harman MP, said that the proposed Standing Order made provision for the Innovation, Universities and Skills Select Committee to set up a sub-committee and that the new Committee could use this sub-committee to scrutinise science and technology in a similar way to the existing Science and Technology Committee.¹¹ She explained that the new Innovation, Universities and Skills Committee would have 14 rather than 11 Members in order to make the establishment of a sub-committee easier. The Standing Order changes were subsequently agreed on division.

7. The new Innovation, Universities and Skills Select Committee will be scrutinising the work of DIUS. We hope that its inquiries will reflect all areas of DIUS's work including science, as well as areas such as skills, education, and innovation. We believe that the potential breadth of the work of the new committee is not accurately described in a name that omits the word 'science'. Even if the Government chooses not to change the name of the department, there is precedent for a select committee to have a different name from the body that it scrutinises. For example, we have remained the Science and Technology Select Committee whilst scrutinising the Office of Science and Innovation. **In order to reflect accurately the remit of the new committee, we recommend that the Leader of the House bring forward Standing Order changes to change the name of the Innovation, Universities and Skills Select Committee to include the word 'science'.**

House of Lords Science and Technology Committee

8. The work of the House of Commons Science and Technology Select Committee has been complemented by the work of the House of Lords Science and Technology Select Committee. The Science and Technology Select Committee is one of the four permanent investigative committees in the House of Lords; the others are the Select Committees on the Constitution, Economic Affairs and the European Union.¹²

9. The Science and Technology Committee was established in the Lords in 1979. Its terms of reference are "to consider science and technology". These terms of reference are broader than the terms of reference of the House of Commons Science and Technology Committee. Whilst the House of Commons Science and Technology Committee traditionally focuses upon science policy within Government, the House of Lords Science and Technology Committee tends to undertake broader inquiries focusing on technological challenges, such as personal internet security; public policy areas that ought to be informed by science, such as water management; and topics of public interest, like allergy.¹³ The different approaches and interests of the science and technology committees in the Lords and the Commons has meant that the committees have complemented one another, rather than duplicating effort.

10 HC Deb, 25 July 2007, col 941-942; HC Deb, 25 July 2007, col 945

11 HC Deb, 25 July 2007, col 941-942

12 House of Lords Briefing, *Science and Technology Committee*, November 2005

13 House of Lords Science and Technology Committee, Fifth Report of Session 2006-07, *Personal Internet Security*, HL 165; House of Lords Science and Technology Committee, Second Report of Session 2006-07, *Water Management: Follow-up Report*, HL 21; House of Lords Science and Technology Committee, Sixth Report of Session 2005-06, *Allergy*, HL 1 66

Parliamentary Office of Science and Technology

10. The Parliamentary Office of Science and Technology (POST) provides scientific briefings to the House and scientific support to select committees. Its aim is to inform debate and it does so with a range of briefing notes (POSTnotes), reports and lectures. Its work falls into four areas: biological sciences and health; physical sciences, IT and communication; environment and energy; and science policy. Although it provides independent and accessible analysis of public policy issues related to science and technology, POST does not undertake scrutiny and thus its work is quite different to select committees. The void left by the demise of the current Science and Technology Committee could not, and indeed should not, be filled by POST. The resources represented by POST could, however, and should be applied more effectively in the support of the scrutiny function of both Houses.

2 Role of the Committee

11. The House of Commons Science and Technology Select Committee undertakes work in relation to core tasks established following a recommendation made by the Liaison Committee and a resolution of the House on 14 May 2002. The core tasks for the Science and Technology Committee are:

- a) To examine and comment on science and technology policy;
- b) To examine and comment on Government expenditure on science and technology;
- c) To examine and comment on the administration of the Office of Science and Innovation and the Research Councils;
- d) To assist the House in debate and decision.¹⁴

The Committee's performance in relation to these core tasks is detailed in its Annual Reports and it is not our intention to reiterate this information but rather provide an overview of our working practices and approach to scrutiny.¹⁵

12. In practice, the work of the Committee can be broadly divided between cross-Government scrutiny and scrutiny of the research base. This division reflects the allocation of responsibilities within the OSI, now DIUS, between the Transdepartmental Science and Technology Group (now the Government Office for Science), and the Science and Innovation Group. The Government Office for Science, headed by Professor Sir David King, is responsible for science across Government, international relations and horizon-scanning. The Science and Innovation Group, headed by Professor Sir Keith O'Nions, is responsible for areas such as the research base, technology and innovation, the British National Space Centre, the Patent Office and the National Weights and Measures Laboratory. It is also responsible for the allocation of the Science Budget via the Research

14 Science and Technology Committee, First Report of Session 2006-07, *Work of the Committee in 2005-06*, HC 202, Box 1.

15 Science and Technology Committee, First Report of Session 2006-07, *Work of the Committee in 2005-06*, HC 202; Science and Technology Committee, Second Report of Session 2003-04, *Annual Report*, HC 199; Science and Technology Committee, First Report of Session 2002-03, *Annual Report*, HC 169.

Councils. In scrutinising the OSI, therefore, the Science and Technology Committee not only considers the research base, but also science across Government.

Cross-Government Scrutiny

13. All Government departments use science and technology, either to inform or to implement their policies. Consequently, many of our inquiries examine the work of departments other than the DTI, now DIUS. Table 1 outlines the departments involved in inquiries undertaken by the Committee since its appointment on 19 July 2005.

Table 1: Departmental involvement in inquiries since July 2005

Inquiries	Departments involved
Strategic Science Provision	Department for Education and Skills
Forensic Science on Trial	Department for Constitutional Affairs; Home Office
Carbon Capture and Storage	Department of Trade and Industry
Research Council Support for Knowledge Transfer	Office of Science and Technology
Scientific Advice on the EU Physical Agents (Electromagnetic Fields) Directive	Department of Health
Identity Card Technologies	Home Office
Classification of Illegal Drugs	Home Office
Scientific Advice, Risk and Evidence Based Policy Making	Cabinet Office; Department for Environment, Food and Rural Affairs; Department for International Development; Department for Transport; Department for Communities and Local Government; Department of Education and Skills; Department of Trade and Industry
Human Reproductive Technologies and the Law	Department of Health
Human Enhancement Technologies in Sport	Department for Culture, Media and Sport; Office of Science and Innovation
Research Council Institutes	Department for Environment, Food and Rural Affairs
Government Proposals for the Regulation of Hybrid and Chimera Embryos	Department of Health; Department of Trade and Industry
Space Policy	Department for Environment, Food and Rural Affairs; Department of Trade and Industry; Foreign and Commonwealth Office; Department for Transport; Ministry of Defence; Department for Education and Skills; Ministry of Justice
International Policies and Activities of the Research Councils	Department for Environment, Food and Rural Affairs; Department of Trade and Industry; Foreign and Commonwealth Office
Investigating the Oceans	Department for Environment, Food and Rural

	Affairs; Department of Trade and Industry; Ministry of Defence; Foreign and Commonwealth Office
Funding of Science and Discovery Centres	Department for Children, Families and Schools; Department for Innovation, Universities and Skills; Department for Culture, Media and Sport
Scientific Developments relating to the Abortion Act 1967	Department of Health
Renewable Energy-Generation Technologies	Department of Business, Enterprise and Regulatory Reform

14. Our scrutiny of science policy across Government also leads us to take evidence from different Ministers. In our inquiries since 2005, excluding our work on OSI scrutiny, we have taken evidence just once from the Secretary of State for Trade and Industry in his capacity as Cabinet Minister for science and twice from the Minister for Science. By comparison, we have taken evidence from Ministers from other departments on fourteen separate occasions, including three appearances from Home Office Ministers alone. The Ministers that have provided evidence to inquiries are detailed in Table 2.

Table 2: Ministerial evidence to inquiries since July 2005

Inquiry Name	Minister providing evidence
Strategic Science Provision	Bill Rammell MP, Minister of State for Lifelong Learning, Further and Higher Education, Department for Education and Skills
Forensic Science on Trial	Rt Hon Lord Goldsmith QC, Attorney General Rt Hon Harriet Harman QC MP, Minister of State, Department for Constitutional Affairs Andy Burnham MP, Parliamentary Under-Secretary of State, Home Office
Carbon Capture and Storage	Malcolm Wicks MP, Minister of State for Energy, Department of Trade and Industry
OSI Scrutiny	Rt Hon Alan Johnson MP, Secretary of State, Department of Trade and Industry
Scientific Advice on the EU Physical Agents (Electromagnetic Fields) Directive	Lord Hunt of Kings Heath, Parliamentary Under-Secretary of State for Work and Pensions
Identity Card Technologies	Joan Ryan MP, Parliamentary Under-Secretary of State for nationality, citizenship and immigration, Home Office
Classification of Illegal Drugs	Vernon Coaker MP, Parliamentary Under-Secretary of State for policing, security and community safety, Home Office
Scientific Advice, Risk and Evidence Based Policy Making	Rt Hon Alistair Darling MP, Secretary of State for Trade and Industry
Human Reproductive Technologies and the Law	Caroline Flint MP, Minister of State for Public Health, Department of Health
Human Enhancement	Rt Hon Richard Caborn MP, Minister for Sport and Tourism,

Technologies in Sport	Department for Culture, Media and Sport
Research Council Institutes	Rt Hon Lord Rooker, Minister of State for Sustainable Farming and Food, Department for Environment, Food and Rural Affairs
Government Proposals for the Regulation of Hybrid and Chimera Embryos	Caroline Flint MP, Minister of State for Public Health, Department of Health
Space Policy	Malcolm Wicks MP, Minister for Science and Innovation, Department of Trade and Industry
Investigating the Oceans	Jonathan Shaw MP, Parliamentary Under-Secretary of State, Department for Environment, Food and Rural Affairs
Funding of Science and Discovery Centres	Jim Knight MP, Minister of State for Schools and 14-19 Learners, Department for Children, Schools and Families Ian Pearson MP, Minister of State for Science and Innovation, Department for Innovation, Universities and Skills Rt Hon Margaret Hodge MP, Minister of State, Department for Culture, Media and Sport
Scientific Developments relating to the Abortion Act 1967	Rt Hon Dawn Primarolo MP, Minister of State for Public Health, Department of Health

15. The Government's continued interest in developing science across Government is demonstrated by several measures including the establishment of the Government Office for Science within DIUS, the implementation of the *Science and Innovation Framework 2004-2014*, the creation of Departmental Science and Innovation Strategies, the development of Guidelines on Scientific Analysis in Policy Making, and the appointment of Departmental Chief Scientific Advisers.¹⁶ Furthermore, developments such as the creation of the Office of Climate Change indicate a desire by Government to co-ordinate scientific policy across Government.

16. Given that science across Government appears to be burgeoning, we believe that it is essential for the select committee system to make provision for the cross-departmental scrutiny of science, whether that be through the main Innovation, Universities and Skills Committee, a sub-committee or a future free-standing Science and Technology Committee modelled on the Environmental Audit Committee. The importance of cross-cutting scrutiny has been underlined by Lord Rees of Ludlow, President of the Royal Society, who has stated that:

There is a need for a select committee that can deal with scientific issues that span several departments. Without this important 'check and balance', the House of Commons will find it more difficult to scrutinise the government's performance on issues in which science plays an important part.¹⁷

¹⁶ HM Treasury, DTI and DfES, *Science and Innovation Investment Framework 2004-2014* (July 2004); HM Government, *Guidelines on Scientific Analysis in Policy Making*, October 2005

¹⁷ Lord Rees of Ludlow, "A scientific subtext", *The House Magazine*, July 2007, 14.

This point has been reiterated by Dr Peter Cotgreave, Director of the Campaign for Science and Engineering, who wrote in an open letter to the Leader of the House:

In theory, other committees could investigate [issues outside their remits] but in practice they don't [...] it would be a mistake to limit the scope of parliamentary scrutiny of science policy to the narrow remit of the DIUS.¹⁸

The positive impact of the Science and Technology Committee's cross-departmental work has also been noted by Departmental Chief Scientific Advisers, such as Professor Paul Wiles at the Home Office and Professor Sir Gordon Conway at the Department for International Development.¹⁹ **We urge the new Innovation, Universities and Skills Committee to continue the current Committee's cross-departmental scrutiny approach to ensure that the whole range of science policy within Government is included within its scope.**

Research Council Scrutiny

17. In addition to cross-Government scrutiny, we undertake scrutiny of the Research Councils. The previous Committee held separate sessions with each of the Research Councils over the course of the Parliament and published Reports on each in turn. In October 2005, we decided to take a different approach to scrutinising the Research Councils and we began a programme of thematic scrutiny. The areas we have covered so far have included Research Council support for knowledge transfer, Research Council institutes, and the international policies and activities of the Research Councils.²⁰ We have found our new thematic approach to scrutinising the Research Councils to be effective. It results in continual rather than periodic scrutiny for each Council and highlights best practice.

18. As well as undertaking thematic inquiries, we also scrutinise the work of the Research Councils during other broader inquiries and in one-off sessions. Our inquiry into space policy, for example, considered in particular the work of the newly-created Science and Technology Facilities Council, whilst our inquiry into marine science focused upon the Natural Environment Research Council. We regularly hold one-off introductory sessions with newly-appointed Chief Executives or Chairmen of the Research Councils. Although we have no power to veto appointments, such sessions provide us with the opportunity to satisfy Parliament that the post has been filled with someone of sufficient calibre; to establish the views and the principles that the new incumbent brings to the job; and to heighten awareness of our role in scrutinising the Research Councils. When we have concerns about a new appointee, we do not hesitate to report them.²¹

18 "Science select committee hangs in the balance", *Research Fortnight*, 18 July 2007

19 Science and Technology Committee, First Report of Session 2006-07, *Work of the Committee in 2005-06*, HC 202, paras 34-35.

20 Science and Technology Committee, Third Report of Session 2005-06, *Research Council Support for Knowledge Transfer*, HC 995; Science and Technology Committee, Fourth Report of Session 2006-07, *Research Council Institutes*, HC 68; Science and Technology Committee, *International Policies and Activities of the Research Councils*, HC 472.

21 Science and Technology Committee, Eighth Report of Session 2006-07, *Chairman of the Medical Research Council: Introductory Hearing*, HC 746

19. Although the Research Councils are Non-Departmental Public Bodies, they are subject to changes in Government policy. In this Parliament, for example, the Research Councils have been heavily affected by the Government's *Science and Innovation Framework 2004-2014: Next Steps*.²² In March 2006, the Government published its *Science and Innovation Framework 2004-2014: Next Steps*, which included proposals for the creation of a new Large Facilities Council (later named the Science and Technology Facilities Council) and the merger of the Department of Health's R&D budget and Medical Research Council's budget.²³ In these cases, we sought clarification from the Government regarding its plans and followed the development of the proposals with great interest. Following the publication of Sir David Cooksey's review of the Government's proposals regarding health research, we took evidence from Sir David and subsequently published a Report.²⁴ We also took evidence from: the then Secretary of State, Rt Hon Alan Johnson MP, on 24 April 2006; Lord Sainsbury of Turville, the then Parliamentary Under-Secretary of State, Science and Innovation on 20 June 2006; and Malcolm Wicks MP, the then Minister for Science and Innovation on 21 March 2007.²⁵ In this session with Malcolm Wicks, we also discussed the DTI's decision in February 2007 to reduce the Research Councils' end of year flexibility by £68 million, an action that appeared to challenge the strict ring-fencing of the science budget. We subsequently recommended in our OSI Scrutiny Report that the DTI make an absolute commitment to observing the strict principle of ring-fencing the Science Budget in future.²⁶

20. The Research Councils play a critical role within UK science. It is essential that scrutiny of these bodies is not lost amongst the pressures of other tasks falling to the new committee on innovation, universities and skills. **We urge our successor Committee to set out at an early date how it will undertake scrutiny of the Research Councils.**

3 Innovations

Science Question Time

21. The Science and Technology Committee has traditionally held regular question time sessions with the Science Minister. This "Science Question Time" was originally agreed with Lord Sainsbury because his membership of the House of Lords denied us the opportunities enjoyed by members of other select committees to question Ministers during debates and departmental question times on the floor of the House. On 10 November 2006 Lord Sainsbury resigned and was succeeded by Malcolm Wicks MP, who continued the tradition notwithstanding his membership of this House.

22. The format of Science Question Time, broadly modelled upon Prime Minister's Questions, is four questions, including supplementaries, in forty minutes. We find that this

22 HM Treasury, DTI, DoH, and DfES, *Science and Innovation Investment Framework 2004-2014: Next Steps*, March 2006

23 HM Treasury, DTI, DoH, and DfES, *Science and Innovation Investment Framework 2004-2014: Next Steps*, March 2006

24 Science and Technology Committee, Third Report of Session 2006-07, *The Cooksey Review*, HC 204.

25 Oral evidence given on 20 June 2006, HC 490-iv.

26 Science and Technology Committee, Sixth Report of Session 2006-07, *Office of Science and Innovation: Scrutiny Report 2005 and 2006*, HC 203, para 37.

question time with the Minister is an extremely useful way to follow up issues and track developments in different areas. We have raised topics such as building new nuclear power stations, the numbers of students studying science, technology, engineering and maths subjects, peer review, and the funding of science centres. We also believe that a regular session builds up a positive working relationship between the Committee and the Minister in a way that is not necessarily achieved by question time in the Chamber. **We urge the new Innovation, Universities and Skills Committee to continue the tradition of ministerial scrutiny through Science Question Time.**

Improving Scrutiny

Government Responses

23. In our Report on the work of the Committee in 2005 and 2006, we noted that we had received the majority of Government responses within the established two month deadline.²⁷ Unfortunately in 2007, the Government's track record was somewhat marred because, as well as the late arrival of several responses, two responses were of particularly poor quality. The Government's response to our Report on the Cooksey Review, for example, did not address any of our recommendations.²⁸ We therefore took the unusual step of requesting that the Government revise its response. The response to our Research Council Institutes Report was also disappointing.²⁹ Some recommendations directed to individual Research Councils had no direct response, whilst other recommendations went unaddressed. Rather than requesting a completely new response in this case, we asked for clarification regarding particular recommendations. As the responses had already been delayed and the summer recess was looming, we agreed to publish the initial Government responses on our website in order to keep the public informed. We subsequently printed the revised responses. We are pleased to note, however, that in the short time since the establishment of DIUS, performance in this area had improved significantly and that we received responses to two of our reports before the agreed deadline.

Follow up

24. We resolved in October 2005 to develop a more strategic approach to following up previous inquiries. We have followed up Reports in a number of ways: holding one-off oral evidence sessions; publishing follow up Reports; initiating debates in Westminster Hall and on the floor of the House; holding informal meetings with those affected by our Reports; and writing to the departments involved in inquiries seeking updates. Table 3 outlines the various ways in which we have followed up inquiries.

27 Science and Technology Committee, First Report of Session 2006-07, *Work of the Committee in 2005-06*, HC 202, para 42

28 Science and Technology Committee, Third Special Report, *The Cooksey Review: Government Response to the Committee's Third Report of Session 2006-07*, HC 978

29 Science and Technology Committee, Fourth Special Report, *Research Council Institutes: Government Response to the Committee's Fourth Report of Session 2006-07*, HC 979

Table 3 Follow up to previous Reports since July 2005

REPORT	FOLLOW UP ACTIVITY
Science Education from 14 to 19 Third Report of Session 2001-02 HC 508	<ul style="list-style-type: none"> • Informal meeting with representatives of the Nuffield Curriculum Centre
Scientific Publications: Free for all? Tenth Report of Session 2003-04 HC 399	<ul style="list-style-type: none"> • Debate in Westminster Hall (15 December 2005)
Human Reproductive Technologies and the Law Fifth Report of Session 2004-05 HC 7	<ul style="list-style-type: none"> • Debate on floor of the House (3 July 2006) • One-off evidence session with the Minister (12 July 2006)
Strategic Science Provision in English Universities Eighth Report of Session 2004-05 HC 220	<p>One-off evidence session with the Minister and the Chief Executive of the Higher Education Funding Council for England (2 November 2005)</p> <p>Follow-up inquiry and Report (Second Report of Session 2005-06, Strategic Science Provision in English Universities: A Follow-up, HC 1011)</p> <p>Written inquiries to department (response printed with this Report)</p>
Forensic Science on Trial Seventh Report of Session 2004-05 HC 96	<p>One-off evidence session with Ministers from the Department for Constitutional Affairs and the Home Office (23 November 2005)</p> <p>Debate in Westminster Hall (20 April 2006)</p>
Meeting UK Energy and Climate Needs: The Role of Carbon Capture and Storage First Report of Session 2005-06 HC 578	Written inquiries to department (response printed with this Report)
Research Council Support for Knowledge Transfer Third Report of Session 2005-06 HC 995	Written inquiries to department (response printed with this Report)
Watching the Directives: Scientific Advice on the EU Physical Agents (Electromagnetic Fields) Directive Fourth Report of Session 2005-06 HC 1030	Written inquiries to department (response printed with this Report)
Drug Classification: Making a hash of it? Fifth Report of Session 2005-06 HC 1031	<p>One-off evidence session with Minister and Chairman of the Advisory Council on the Misuse of Drugs (22 November 2006)</p> <p>Debate in Westminster Hall (14 June 2007)</p> <p>Written inquiries to department (response printed with this Report)</p>
Identity Card Technologies: Scientific Advice, Risk and Evidence Sixth Report of Session 2005-06 HC 1032	Written inquiries to department (response printed with this Report)
Scientific Advice, Risk and Evidence-Based Policy Making Seventh Report of Session 2005-06	<p>Debate on the floor of the House (9 July 2007)</p> <p>Written inquiries to department (response printed with this</p>

HC 900	Report)
Government Proposals for the Regulation of Hybrid and Chimera Embryos Fifth Report of Session 2006-07 HC 272	Written inquiries to department (response printed with this Report)
Office of Science and Innovation: Scrutiny Report 2005 and 2006 Sixth Report of Session 2006-07 HC 203	Written inquiries to department (response printed with this Report)

25. As noted in Table 3, we have printed with this Report the responses received from the departments regarding their progress in implementing recommendations made in our Reports published since 2005.

New and Emerging Areas of Inquiry

Horizon-scanning

26. We are conscious that change often takes place rapidly within the science and science policy communities. With this in mind, we trialled an horizon-scanning session in March 2007 in which we discussed current and future topics of interest with members of the science policy community. The session was attended by representatives from the Royal Society, OSI, Council for Science and Technology, Royal Academy of Engineering, Cranfield University, and the Science and Technology Policy Research Unit at the University of Sussex, as well as Committee members. We found the exchange of ideas extremely interesting and note our thanks to those who participated in the session. We suggest that other select committees, including our successor, consider arranging such sessions.

Seminars

27. During this Parliament, we have sought to bring emerging policy areas, such as carbon capture and storage technologies and human enhancement technologies in sport, to the attention of politicians and policy-makers. At the start of such inquiries, we have been aware that the subject matter may be new territory for Parliamentarians and the public, and have experimented with introductory seminars. The first seminar, on carbon capture and storage technologies, was a private, informal seminar with experts. We found this format so successful that we subsequently held public seminars relating to human enhancement technologies and the Government's proposals for hybrid and chimera embryos.³⁰ In order to engage a wider range of people, we have also begun to hold seminars outside Westminster. On 17 April 2007, we held a public seminar in Plymouth to launch

30 Speakers at human enhancement technologies seminar on 21 June 2006: Linford Christie OBE, Olympic Gold Medal Winner; Dr Roger Palfreeman, British Cycling Team Doctor; Professor Ron Maughan, University of Loughborough; Mr Steve Maynard, HFL Ltd; Professor Julian Savulescu, University of Oxford. Speakers at Government proposals for hybrid and chimera embryos seminar on 27 February 2007: Rt Rev Lord Harries of Pentregarth, Former Bishop of Oxford, Chair, HFEA Ethics and Law Committee and former Interim Chair of the Authority; Professor Sir David King, Government Chief Scientific Adviser; Professor Lord Winston, Emeritus Professor of Fertility Studies, Imperial College; Dr David Jones, Academic Director, University College, Twickenham.

our investigating the oceans inquiry.³¹ We commend this practice to our successors and to our colleagues on other committees.

4 The effectiveness of the Committee

28. Since our appointment on 19 July 2005, we have published 19 Reports and pursued major inquiries into carbon capture and storage technologies; scientific advice, risk and evidence-based policy making; space policy, and marine science. We have achieved several notable successes and these are outlined in Box 1.

Box 1: Impact and results of the Committee's work

- Following the publication of our Report on **carbon capture and storage (CCS) technologies**, the Government launched a consultation on CCS that subsequently fed into the Energy Review. In this Report, we urged the Government to support a large-scale demonstration of CCS technology. The 2007 Budget announced that the Government would launch a competition in November 2007 to develop a commercial-scale CCS demonstration project.
- Our inquiry into **CCS technologies** was held up as a case study of good scrutiny in the Centre for Public Scrutiny's *Successful Scrutiny* publication.³²
- We undertook an inquiry into **strategic science provision** in English Universities focusing on the University of Sussex's plans to close its Chemistry Department. Following the publication of our Report, the University of Sussex decided to keep its Chemistry Department open. In May 2007, the Government announced a proposals for a national campaign to promote STEM careers.
- Our Report on **Research Council support for knowledge transfer** was warmly received and many of the recommendations were accepted by the Research Councils. In order to improve co-ordination of knowledge transfer activities, for example, the Research Councils have established a Knowledge Transfer and Economic Impact Group and have embarked upon a Knowledge Transfer Co-ordination project.
- Our inquiry into the **EU Physical Agents (Electromagnetic Fields) Directive** highlighted the potential impact of the Directive upon the use of MRI scanners. The Health and Safety Executive subsequently undertook research into impact of the Directive and confirmed our concerns that some procedures exceed the limit values set out in the Directive. The Commission has since announced that it will postpone implementation of the Directive for four years for further scientific reviews.
- The Advisory Council on the Misuse of Drugs has accepted our recommendation in our Report on the **classification of illegal drugs** to improve transparency. It is holding its Council meetings in public and publishing its agendas and minutes on the web.
- The Government welcomed our Report on **identity card technologies** and stated it "will endeavour to act on its recommendations". In response to our concerns regarding information and communication technology (ICT) within the identity cards scheme, the Government has expanded its Independent Assurance Panel to include ICT.
- In response to our Report on **scientific advice, risk and evidence**, the Government "agrees with the Committee that there is much further still to go in ensuring that science is managed and used by Government to best effect." In response to our recommendations, the

31 Speakers at investigating the oceans seminar on 17 April 2007: Professor Owens, Chair of the Plymouth Marine Sciences partnership and Director, Plymouth Marine Laboratory; Professor Steve Hawkins, Director of the Marine Biological Association; Dr Chris Reid Executive Director, Partnership for Observation of the Global Oceans; Professor Laurence Mee, Director of the Marine Institute, University of Plymouth.

32 Centre for Public Scrutiny, *Successful Scrutiny*, March 2007, pp 13-14.

Government is beginning the process to update the Code of Practice for Scientific Advisory Committees.

- We undertook an inquiry into the **Government's proposals regarding hybrid and chimera embryos**. The Government welcomed our report on "this scientifically complex and ethically contentious area of research". As a result of our inquiry, the Government is moving towards a more permissive regime and the Human Fertilisation and Embryology Authority has approved applications for work in this field. The Government said that "the Select Committee report has therefore very helpfully moved this debate forward". The latest announced Government position is in line with our recommendations.
- The Government welcomed our **space policy** report and accepted the majority of our recommendations.

29. We have received positive comments from Ministers and government departments about our work. Government responses have described recent reports as "thorough and constructive" and "constructive and stimulating".³³ Rt Hon Lord Goldsmith QC, Attorney General, told us that our Report on forensic science was "enormously helpful. It has meant that a lot of key information has been shared across the agencies."³⁴ In relation to the same Report, Andy Burnham MP, the then Home Office Minister, said "the Committee is not celebrating its achievements enough...I do not believe that there has ever been so much scrutiny or focus in Parliament on such matters."³⁵ During a debate in Westminster Hall on our Report on drug classification, the Minister, Vernon Coaker MP, said "I welcome the Select Committee report. I hope that what I have said shows that what the Committee said in its report has led to changes in the Government's policy and practice and caused us to think about the operation of the classification system."³⁶ On 9 July 2007, when the future of the Committee was already in doubt, the Minister for Science and Innovation, Ian Pearson MP, said during a debate on the floor of the House, "Let me put on the record the great value that the Government attach to the work of the Committee and the positive and constructive spirit in which its work has been conducted".³⁷

30. Despite these comments, it was only when the impact of the machinery of government changes was revealed, that the regard in which the Committee was held, both within Parliament and beyond, became truly clear. Many organisations expressed support for the Committee by writing either to newspapers or to the Leader of the House, Harriet Harman MP. On 13 July 2007, a letter was sent to *The Times* by the Royal Society of Chemistry, the Institute of Physics, the Institute of Biology, the Campaign for Science and Engineering, and the Geological Society of London.³⁸ This letter stated that:

33 Science and Technology Committee, Fifth Special Report of Session 2006–07, *2007: A Space Policy: Government Response to the Committee's Seventh Report of Session 2006-07*, HC 1042; Science and Technology Committee, Second Special Report of Session 2006-07, Office of Science and Innovation: Scrutiny Report 2005 and 2006: Government Response to the Committee's Sixth Report of Session 2006-07, HC635, p 1.

34 Oral evidence given on 23 November 2005, HC 685, Q1

35 HC Deb, 20 April 2006, col 179 WH

36 HC Deb, 14 June 2007, col369WH

37 HC Deb, 9 July 2007, col 1245

38 "Science Committee", Letter, *The Times*, 13 July 2007, p 18.

At a time when the Government has brought science and innovation policy centre stage [...] it would be a tragedy if its immediate parliamentary consequence was the abolition of the House of Commons Select Committee on Science and Technology [...] this select committee has proved itself to be an outstanding vehicle for the examination of science across government as a whole.

On 20 July 2007, Lord Rees of Ludlow, President of the Royal Society, Lord Browne of Madingley, President of the Royal Academy of Engineering, Dr Mark Walport, Director of The Wellcome Trust, Professor Colin Blakemore, Chief Executive of the Medical Research Council (MRC), four Nobel Laureates and thirty other distinguished scientists wrote to *The Guardian*. They said that the Science and Technology Committee, “does a great deal of vital work scrutinising scientific matters and the use of evidence across government departments and agencies”.³⁹ Professor Blakemore expanded upon this, saying “the MRC has not always had an easy ride from the science and technology select committee, but nevertheless I think it is really important that that kind of rigorous scrutiny exists.”⁴⁰ Five days later, during the debate on the Standing Order changes, Harriet Harman stated that she had received representations from “the Campaign for Science and Engineering in the UK, the Chemical Industries Association, Professor Derek Burke (a special adviser between 1995 and 2001), the Genetic Interest Group, the Royal Society, the Institute of Biology, the Association of Medical Research Charities and many more.”⁴¹ **We would like to take this opportunity to express our thanks to the science policy community, not only for its recent representations regarding the future of the Committee, but also for its support in the forms of evidence to inquiries, and assistance with visits, throughout the existence of the Committee.**

Inquiries affected by the Standing Order change

31. When we heard that the Committee was going to be affected by Standing Order changes, we had two inquiries planned for the period before Christmas 2007: scientific developments relating to the Abortion Act 1967, and renewable energy-generation technologies. Due to time pressure, we decided to concentrate upon the inquiry into scientific developments relating to the Abortion Act 1967 in the period before the demise of the Committee at the end of the session. We focused upon this inquiry because we felt that the Committee had a role to play in helping to inform Parliament about the scientific developments in this highly contentious area, particularly in light of the anticipated presentation of a Human Tissue and Embryos Bill in the new session. We believe that our inquiry into the scientific developments relating to the Abortion Act 1967 demonstrates the value of a cross-cutting Science and Technology Committee within the House of Commons in complementing the work of Departmental Select Committees in informing the House about the scientific evidence base in areas of controversy or great significance.

32. We chose not to pursue the inquiry into renewable energy-generation technologies because we anticipated that this would be a major inquiry and did not feel that it would be possible to undertake it in the time available. We have published the written evidence that

39 “Science needs its select committee”, *The Guardian*, 20 July 2007, p 41.

40 “Scientists call for scrutiny panel to stay”, *The Guardian*, 20 July 2007

41 HC Deb, 25 July 2007, col 941-942

we received and hope that the inquiry will be taken forward by a committee of this House at some stage.

Treatment of evidence

33. It is normal practice for select committees to put out a “call for evidence” at the start of inquiries. Written submissions can be made by any organisation or individual and we often receive submissions from a variety of bodies ranging from Government departments to learned societies to interested individuals. Although we welcome all submissions, we recognise that whilst some submissions are firmly evidence-based, others are primarily opinion pieces. It is important that select committees distinguish between evidence-based submissions and other submissions, particularly when undertaking technical or scientific inquiries, that is inquiries where conclusions will be based on judgements of the strength of the available scientific evidence. Following our direct experience of this problem during our inquiry into the science underlying the Abortion Act 1967, we believe that organisations and individuals should be asked to declare potentially relevant interests when submitting evidence and also state expertise and experience when stating opinions about scientific matters. **We encourage the new Innovation, Universities and Skills Committee to explore how the declaration of interests and expertise can be built into the inquiry process and urge the Liaison Committee to consider this approach for all select committees.**

34. In the light of our Report on evidence-based policy making, we recognise the potential for confusion, when pursuing an evidence-based approach, caused by the term ‘evidence’ being used in its scientific/research sense and also as a description for submissions (both written and oral) to inquiries. **We call upon the new Innovation, Universities and Skills Committee to explore the current terminology to avoid this confusion and whether there is merit in recommending that the Liaison Committee consider this issue.**

5 The future scrutiny of science in the House of Commons

35. The support that we received when faced with an uncertain future as a committee demonstrates, we believe, the importance of ongoing science scrutiny within the House of Commons. Our main concern is that, given its broader remit, the new Innovation, Universities and Skills Committee will be unlikely to continue the level of scrutiny undertaken by the current Science and Technology Committee (see paragraph 5). Although the OSI no longer exists, its activities continue under a different guise within DIUS. The work will still be taking place within Government, even if there is no adequate provision for scrutiny within the Commons. Indeed, it is likely that scientific activity within Government will continue to increase as more departments undertake science reviews of their activities, the recommendations of Lord Sainsbury's recent review are implemented and the Government grapples with issues such as stem cell research, the spread of viruses and nuclear power. In 1966, the House of Commons established a Science and Technology Committee with fourteen Members because science policy was rising up the political agenda. It is somewhat ironic that in 2007 the current Science and Technology Committee is being dissolved against a similar backdrop.

36. We believe that there will be a gap in science scrutiny when the current House of Commons Science and Technology Committee is dissolved. This gap will not, and indeed should not, be filled by the House of Lords Science and Technology Committee or POST, both of which have different functions within Parliament. Lord Rees of Ludlow, President of the Royal Society, makes the point that "The Commons should surely not be content to rely only on the expertise of the parallel committee in the Upper House."⁴²

37. Even if the Innovation, Universities and Skills Committee chooses to appoint a sub-committee, we are concerned that Members would be stretched by the membership and workload of, in essence, a second select committee. This issue was raised several times during the debate on the Standing Order changes. Theresa May MP, Shadow Leader of the House, said "the sub-committee is no replacement for a stand-alone specialist Science and Technology Committee."⁴³ Simon Hughes MP, Liberal Democrat Shadow Leader of the House, echoed her view, stating "a Sub-Committee of another Committee – however good its members – is not an adequate substitute".⁴⁴

38. Given the Government's focus on evidence-based policy-making and the wide consensus on the value of science in our society, we believe that this would be the wrong time to downgrade or reduce the scrutiny of cross-cutting science issues within Parliament. The strong view amongst the science community is that such scrutiny is best carried out by a select committee with a clear identity and a clear mission. Given the House's decision to replace the Science and Technology Committee with a departmental select committee, we hope that the new Innovation, Universities and Skills Committee will have the authority to

42 Lord Rees of Ludlow, "A scientific subtext", *The House Magazine*, p 14

43 HC Deb, 25 July 2007, Col 945

44 HC Deb, 25 July 2007, Col 952

work across Government rather than within the narrow confines of a single department. **We believe that in the long term a separate Science and Technology Committee is the only way to guarantee a permanent focus on science across Government within the select committee system. We recommend that the House be given an opportunity to revisit the question of science scrutiny in the Commons at the end of session 2007–08.**

Conclusions and recommendations

Inclusion of science in titles

1. We urge the Government to change the title of the Department for Innovation, Universities and Skills to include the word ‘science’ to reflect the importance of science within Government. (Paragraph 5)
2. In order to reflect accurately the remit of the new committee, we recommend that the Leader of the House bring forward Standing Order changes to change the name of the Innovation, Universities and Skills Select Committee to include the word ‘science’. (Paragraph 7)

Cross–Government Scrutiny

3. We urge the new Innovation, Universities and Skills Committee to continue the current Committee’s cross-departmental scrutiny approach to ensure that the whole range of science policy within Government is included within its scope. (Paragraph 16)

Research Council Scrutiny

4. We urge our successor Committee to set out at an early date how it will undertake scrutiny of the Research Councils. (Paragraph 20)

Science Question Time

5. We urge the new Innovation, Universities and Skills Committee to continue the tradition of ministerial scrutiny through Science Question Time. (Paragraph 22)

Science policy community

6. We would like to take this opportunity to express our thanks to the science policy community, not only for its recent representations regarding the future of the Committee, but also for its support in the forms of evidence to inquiries, and assistance with visits, throughout the existence of the Committee. (Paragraph 30)

Treatment of evidence

7. We encourage the new Innovation, Universities and Skills Committee to explore how the declaration of interests and expertise from witnesses can be built into the inquiry process and urge the Liaison Committee to consider this approach for all select committees. (Paragraph 33)
8. We call upon the new Innovation, Universities and Skills Committee to explore the current terminology to avoid confusion between ‘evidence’ in its scientific/research sense and as a description for submissions and whether there is merit in recommending that the Liaison Committee consider this issue. (Paragraph 34)

Future science scrutiny in the Commons

9. We believe that in the long term a separate Science and Technology Committee is the only way to guarantee a permanent focus on science across Government within the select committee system. We recommend that the House be given an opportunity to revisit the question of science scrutiny in the Commons at the end of session 2007–08. (Paragraph 38)

Formal minutes

Tuesday 29 October 2007

Members present:

Mr Phil Willis, in the Chair

Mrs Nadine Dorries
Mr Robert Flello
Linda Gilroy
Dr Evan Harris
Dr Brian Iddon

Chris Mole
Dr Bob Spink
Graham Stringer
Dr Desmond Turner

The Committee deliberated.

Draft Report (*The Last Report*), proposed by the Chairman, brought up and read.

Ordered, That the draft Report be read a second time, paragraph by paragraph.

Paragraphs 1 to 38 read and agreed to.

Resolved, That the Report be the Thirteenth Report of the Committee to the House.

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

Written evidence reported and ordered to be published on 9 October 2007 was ordered to be reported to the House for printing with the Report.

[The Committee adjourned.]

List of written evidence

Memoranda from the Government updating the Committee on Government Responses to Committee Reports:

1	Scientific Advice, Risk and Evidence Based Policy Making	Ev 1
2	Office of Science and Innovation Scrutiny Report 2005 and 2006	Ev 3
3	Research Council Support for Knowledge Transfer	Ev 7
4	Identity Card Technologies: Scientific Advice Risk and Evidence	Ev 12
5	Strategic Science Provision in English Universities: A Follow-up	Ev 19
6	Drug Classification: Making a Hash of It?	Ev 21
7	Human Enhancement Technologies in Sport	Ev 23
8	Watching the Directives: Scientific Advice on the EU Physical Agents (Electromagnetic Fields) Directive	Ev 27
9	Government Proposals for the Regulation of Hybrid and Chimera Embryos	Ev 30
10	Carbon Capture and Storage	Ev 32

List of Reports from the Committee during the current Parliament

The reference number of the Government's response to each Report is printed in brackets after the HC printing number.

Session 2006–07

First Report	Work of the Committee in 2005–06	HC 202
Second Report	Human Enhancement Technologies in Sport	HC 67–I (Cm 7088)
Third Report	The Cooksey Review	HC 204 (HC 978)
Fourth Report	Research Council Institutes	HC 68–I (HC 979)
Fifth Report	Government Proposals for the Regulation of Hybrid and Chimera Embryos	HC 272–I (Cm 7139)
Sixth Report	Office of Science and Innovation: Scrutiny Report 2005 and 2006	HC 203 (HC 635)
Seventh Report	2007: A Space Policy	HC 66–I (HC 1042)
Eighth Report	Chairman of the Medical Research Council: Introductory Hearing	HC 746 (HC 1043)
Ninth Report	International Policies and Activities of the Research Councils	HC 472–I (HC 1044)
Tenth Report	Investigating the Oceans	HC 470–I
Eleventh Report	The Funding of Science and Discovery Centres	HC 903–I
Twelfth Report	Scientific Developments Relating to the Abortion Act 1967	HC 1045–I

Session 2005–06

First Report	Meeting UK Energy and Climate Needs: The Role of Carbon Capture and Storage	HC 578–I (HC 1036)
Second Report	Strategic Science Provision in English Universities: A Follow-up	HC 1011 (HC 1382)
Third Report	Research Council Support for Knowledge Transfer	HC 995–I (HC 1653)
Fourth Report	Watching the Directives: Scientific Advice on the EU Physical Agents (Electromagnetic Fields) Directive	HC 1030 (HC 1654)
Fifth Report	Drug classification: making a hash of it?	HC 1031 (Cm 6941)
Sixth Report	Identity Card Technologies: Scientific Advice, Risk and	HC 1032 (Cm 6942)
Seventh Report	Scientific Advice, Risk and Evidence Based Policy Making	HC 900–I HC (2006-07) 307
First Special Report	Forensic Science on Trial: Government Response to the Committee's Seventh Report of Session 2004–05	HC 427
Second Special Report	Strategic Science Provision in English Universities: Government Response to the Committee's Eighth Report of Session 2004–05	HC 428

Written evidence

Memorandum 1

Memorandum to update the Government Response to the House of Commons Science and Technology Select Committee Report: “Scientific Advice, Risk and Evidence Based Policy Making” (Seventh Report of Session 2005–06 HC 900)

1. The Government welcomes the opportunity to contribute to the Committee’s review of progress since the Government’s Response published on 27 February 2007¹, taking into account the statements made by the Science Minister, Ian Pearson, MP, during the Estimates Day Debate on 9 July 2007² and any further areas of progress, as appropriate.

2. In its Response and during the Estimates Day Debate, the Government recognised that there is always room for improvement and welcomed the positive contribution of the Committee’s scrutiny.

3. Progress in 2007 can find its roots in earlier reform and initiatives, supported by the contributions of the Committee and directed by a firm commitment to the importance of science and scientific evidence to the business of Government. As the Science Minister, Ian Pearson, stated, “In the 2002 spending review, we announced the largest sustained growth in science expenditure for at least a generation, and that growth continues. We have strengthened departmental use of science and research by appointing chief scientific advisers in most Departments. We have strengthened the use of scientific analysis in policy making through the publication of guidelines that set out how evidence should be sought and applied, and through the code of practice on scientific advisory committees. We are now working with Departments to ensure that the value of those approaches is recognised and applied”.³

4. The Government also draws the Committee’s attention to several landmarks in the continuing improvement in the application of scientific advice into evidence based policy-making, including:

- The widespread development of departmental science and innovation strategies.
- The rolling programme of Science Reviews conducted by the Government Office for Science (formerly OSI). Science Reviews have been completed for Department for Culture, Museums and Sport; Defra; Health and Science Executive; Department for Communities and Local Government. Current Reviews are underway for the Home Office and Department of Health.
- The recent report of the Select Committee on Public Administration, “Governing the Future”, commended the work of the Foresight programme and its ability to undertake systematic strategic thinking to advise the Government about future threats and opportunities.⁴ The Foresight programme continues to reinforce cross-Government working, the use of rigorous independent peer review and delivers a clear policy focus.
- The Horizon Scanning Centre’s programme, which was launched in March 2005, examines future threats and opportunities for Government policies. It draws on the full range of evidence, including science and technology. The centre contributed materially to Treasury’s planning and risk assessment ahead of the latest Comprehensive Spending Review (Long Term Opportunities and Challenges, November 2006, Chapter 5)⁵ by identifying eight technology clusters with the potential to disrupt or enhance policies.

4. Throughout this period the Government has benefited from the advice of the Government Chief Scientific Adviser whose independent voice has reinforced many of the issues that still confront Government and require continued improvement. Sir David King also gave independent evidence directly to the Committee’s Inquiry.

DEVELOPMENTS SINCE THE COMMITTEE’S REPORT AND THE GOVERNMENT’S RESPONSE

5. Many of the Committee’s Recommendations have been captured in a number of actions and proposed actions by the Government and by the Government Chief Scientific Adviser, Sir David King.

6. In particular:

- The Government welcomed the focus of the Committee’s Report on the importance of Scientific Advisory Committees. In response to the many relevant issues identified by Recommendations of the Committee Inquiry, the Government started a public consultation on 25 June 2007 to update the Code of Practice on Scientific Advisory Committees (CoPSAC). That public consultation included a public meeting and workshop on 5 September. The Consultation closes on

¹ <http://www.publications.parliament.uk/pa/cm200607/cmselect/cmsstech/307/307.pdf>

² <http://www.publications.parliament.uk/pa/cm200607/cmhansrd/cm070709/debtext/70709-0012.htm>

³ <http://www.publications.parliament.uk/pa/cm200607/cmhansrd/cm070709/debtext/70709-0012.htm>, Col 1243.

⁴ <http://www.publications.parliament.uk/pa/cm200607/cmselect/cmpubadm/123/12305.htm#a6>

⁵ http://www.hm-treasury.gov.uk/media/6/F/csr_longterm2711106.pdf

16 September 2007. The Government intend to issue a revised Code and a Government Response to the consultation before the end of 2007. An early review has identified 81 SACs currently operating; that list will be updated on the DIUS website [Rec 24].

- Sir David King, in his role as head of science and engineering professions, is preparing plans for the Government Chief Scientific Adviser to lead a campaign across Government to promote good practice and wider awareness of the value of scientific and engineering evidence in policy making across Whitehall. This initiative will capture many of the Select Committee's recommendations regarding the role and importance of scientists and engineers inside government and their relationship with the Government Chief Scientific Adviser. That campaign will:
 - Support the objectives of Professional Skills in Government (PSG) in close collaboration with other heads of analytical professions to gather examples of good practice across all disciplines in government and agree ways of taking that work forward.
 - Help build a fuller picture of the distribution and professional needs of the body of scientists and engineers in government.
- The Government Office for Science will continue to promote good practice across areas of particular concern that have been identified by stakeholders. They will do this through workshops, guidance and advice as appropriate. Examples include workshops on scientific peer review, horizon scanning, engaging the scientific community and earlier work with the National School for Government in developing the scientific element of the "analysis and the use of evidence" core skill.
- As the Committee will be aware, the recent Machinery of Government (MoG) changes led to the creation of the Department for Innovation, Universities and Skills (DIUS) and the Government Office for Science and this has been largely welcomed. In the Estimates Day Debate, the Science Minister explained: "[This] will provide a strong, integrated voice across Government for effective investment in research, science, innovation and skills, embedding them into the heart of the Government's competitiveness strategy . . . Driving up the Government's management of scientific advice, risk and evidence remains at the heart of both the Government Chief Scientific Adviser's remit and Government policy making. The route from science to innovation and economic performance will not be lost. It needs to be strengthened and more focused at every stage. There are opportunities for us to do more in those areas. I anticipate strong working relationships not only with the other two new Departments—the Department for Business, Enterprise and Regulatory Reform and the Department for Children, Schools and Families—but more widely across Government. That has to be done within an appropriate regulatory framework that safeguards the environment and health. In developing that framework, we must listen to the public's concerns. It is important to get that balance right".⁶
- On cross-departmental working, a new Heads of Analysis group has been formed to tackle issues of common concern to all analysts and lead on more effective collaborative working across the analytical professions. It is to be chaired by Nick Macpherson, the Permanent Secretary at HM Treasury, who will act as a link between the Heads of Analysis and the Civil Service Steering Board. The Heads of Analysis are Sir David King; Dave Ramsden and Vicky Pryce; Tony O'Connor; Karen Dunnell and Paul Wiles. [Rec 40]
- Areas of high policy profile continue to receive attention to ensure the appropriate use of scientific evidence in response. Examples where Government Office for Science is or has contributed alongside the formal policy responsibilities of departments include human pandemic influenza, climate change and more recently the re-emergence of Foot and Mouth Disease (FMD).
- The position regarding a scientific adviser inside the Treasury remains unchanged. DIUS and Government Office for Science enjoy a very good relationship at all levels with the Treasury. "The key point to make is that successive science budget settlements in tight spending rounds have made clear the real value that the Treasury places on science and its importance in creating the knowledge and innovation economy for the future".⁷
- Further to the Government Response (notably to Recommendation 11), the Chief Scientific Adviser's Committee met on 8 March 2007 to discuss—"Defining the Role of Departmental Chief Scientific Advisers". The Government Office for Science plans, by close of 2007, to revise the induction material for Chief Scientific Advisers (CSAs) to include a body of good practice to reinforce the importance of departmental CSAs and build the independent voice of the wider community of CSAs. The Chief Scientific Advisers also plan to participate in a special CSAC meeting on 29 November to look at successful behaviours and examples of the ways of working to underpin the effective use and management of science within departments.

⁶ <http://www.publications.parliament.uk/pa/cm200607/cmhansrd/cm070709/debtext/70709-0012.htm>, Cols 1244 and 1245.

⁷ <http://www.publications.parliament.uk/pa/cm200607/cmhansrd/cm070709/debtext/70709-0012.htm>, Col 1245.

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- The Consultation on Consultations, led by the Better Regulation Executive, concludes on 28 September and plans to report towards the end of November 2007.
 - Progress in public and media engagement was discussed during the Estimates Day debate [Col 1246–1247]. The Government’s commitment remains to establish an Expert Resource Centre for Public Dialogue on Science and Innovation to help all parts of government enable public debate on science and technology-related topics. Ministers are currently considering the options for implementation of that commitment within the context of a wider strategy for science and society.

7. As the Science Minister concluded in the Estimates Day Debate: “When the Science and Technology Committee published its report ‘Scientific Advice, Risk and Evidence Based Policy Making’ in November 2006, it included 69 recommendations. At the time, the Government welcomed its conclusions and recommendations, and that remains the case today. There is still more to be done. We are not complacent and we want to do more to ensure that science is managed and used to best effect by Government. We have made a great deal of progress over the past 10 years, and we have made further progress since the Committee published its report last year. We are determined to continue making progress. As a Government we remain firmly committed to continuing to improve our use of scientific advice, our management of risk and our use of evidence to support policy. I look forward to the continuing scrutiny of how we do that by hon. Members”. [Col 1249]

September 2007

Memorandum 2

Memorandum to update the Government Response to the House of Commons Science and Technology Select Committee’s Report: Office of Science and Innovation Scrutiny Report 2005 and 2006 (Sixth Report of Session 2006–07 HC 203)

INTRODUCTION

1. This memorandum provides the requested up-date to the Government’s Response, published on 19 June 2007, to the Committee’s Scrutiny Report of the Office of Science and Innovation.

2. Following the Government Response, the Prime Minister announced a series of Machinery of Government changes. These included the creation of a new Department for Innovation, Universities and Skills (DIUS) to enable effective investment in research, science, enterprise and skills, embedding these into the heart of the Government’s competitiveness strategy. The new department is leading work to deliver the Government’s long term vision to make Britain one of the best places in the world for science, research and innovation. It is also leading work to ensure that the UK has the skilled workforce it needs to compete in the global economy.

3. In recognition of the strategic positioning of science and innovation as a core part of DIUS, the Secretary of State announced on 20 July the creation of a Government Office for Science within DIUS. The Government Office for Science is headed by the Government Chief Scientific Adviser, Sir David King, and has taken over the functions and resources of the Transdepartmental Science and Technology Group, part of the former Office of Science and Innovation (OSI). The other part of the former OSI, Science and Innovation Group headed by Sir Keith O’Nions, continues in its previous form as a key component of DIUS, supporting John Denham, Secretary of State, Ian Pearson, Minister for Science & Innovation and Ian Watmore, the Department’s Permanent Secretary.

4. The third Annual Report setting out progress on the Science and Innovation Investment Framework was published in July. Key highlights include:

- (a) The UK remains second only to the US in global scientific excellence, despite increasing international competition.
- (b) The numbers of spin-outs, increasing licensing and consultancy income indicate knowledge transfer and commercialisation activities from the science base are showing a healthy upward trend.
- (c) Increased capital expenditure is improving research infrastructure in universities.
- (d) There has been an encouraging increase in the proportion of young people reaching expected levels in mathematics and science, and applications for science, technology, engineering and mathematics (STEM) subjects at undergraduate level have also increased.

- (e) Business investment in R&D is growing in real terms and is keeping pace with GDP growth, though more rapid growth is needed to meet the long-term ambitions set out in the 10-year framework.
- (f) The Technology Strategy Board (TSB), which became an arms-length body on 1 July 2007, will have an enhanced leadership role in driving up future levels of UK innovation performance.

FROM OST TO OSI

Objectives of the reorganisation

(Recommendation 1)

The OSI must remain alert to the potential of closer integration with the DTI to compromise its role in looking at science across the whole of Government and its duty to promote the health of UK science, including basic research as well as innovation and economic returns. This may argue for a separate Ministry of Science and we recommend that the Government consider this in any future change to the machinery of government. (Paragraph 14)

5. The creation of DIUS has reinforced the importance of science and innovation at the heart of Government, and will further help us to ensure that we are effectively using science across Government and that the UK remains a world-class research base and destination for top quality science. The Government continues to be committed to the strategy and approach outlined in the Science and Innovation Investment Framework.

Role of the Director General for Science and Innovation

(Recommendation 2)

The departure of the previous Chief Scientific Adviser was an opportunity for the DTI to change its stance on appointing its own independent CSA. We hope that the DTI will keep the arrangement whereby the DGSI also undertakes this role under review. It must be prepared to consider separating the roles, should it become apparent that the job of the DGSI has become overloaded. (Paragraph 16)

6. The role of Chief Scientific Adviser for DIUS is under consideration.

The review process

(Recommendation 4)

We expect to receive earlier notification of any structural changes to the department which involve the OSI in the future. (Paragraph 19)

7. The integration of the work of the former OSI into the newly created Department for Innovation, Universities and Skills was part of a series of Machinery of Government and other changes announced on 28 June by the Prime Minister.

The Technology Strategy Board

(Recommendation 5)

The need to appoint new members in October 2007 should provide an opportunity for a review of the Technology Strategy Board's activities in order to inform decisions on new appointees. We recommend that this review be carried out before October. (Paragraph 23)

8. The Technology Strategy Board became operational as planned as an Executive Non Departmental Public Body (NDPB) on 2 July 2007. The members of the governing Board were appointed in June, bringing a strong business focus as well as the skills and expertise necessary to make an impact across a wide spread of the UK economy.

9. The formal relationship between DIUS (as the sponsor department) and the Technology Strategy Board has been agreed and is set out in a management statement and financial memorandum, underpinned by a framework letter setting out the Government's policy priorities for the Technology Strategy Board. A strategic plan and delivery plan covering the next spending review period will be agreed once the outcome of the Comprehensive Spending Review is known.

OBJECTIVES AND PERFORMANCE MEASURES

The OSI performance management system

(Recommendation 6)

We accept that it is necessary to adapt the output frameworks used to measure the performance of the Research Councils as it comes fully into use in order that it remains a practical and useful document. We are concerned, however, that the measures should be firmly established in order to allow comparison from year to year. There must not be too many changes once the system has been allowed to bed down. It would be helpful for the OSI to highlight in the introduction to future output frameworks reports exactly which metrics have been amended and which are causing difficulties in terms of data collection or meaningfulness. (Paragraph 27)

10. The Delivery Plan reports for 2006–07 and draft populated output frameworks were submitted to DIUS at the end of June 2007. All the reports have been published on the Research Councils/RCUK web sites. The Second Annual Report on the Output Frameworks will be published in the autumn.

The DTI Performance Report

(Recommendation 7)

There is room for improvement in the transparency and presentation of information about how the performance of the OSI and its associated bodies is to be assessed across the board and we urge the DTI and OSI to address this. (Paragraph 28)

11. There were a number of performance management arrangements in place for the former OSI and the Department for Education and Skills. Since the formation of the Department for Innovation, Universities and Skills, these arrangements are being reviewed to ensure clear and consistent measurement of performance across the new department.

(Recommendation 8)

We welcome the work going on to identify meaningful and accessible output measures for the OSI and the Research Councils. We expect to receive updates as the work progresses in this area and before the changes have been finalised. (Paragraph 32)

12. The Government has developed a revised reporting framework to measure how investment in science and innovation delivers economic benefits at the aggregate economy level. This framework was developed with input from the Research Councils, industry and academic community. A draft version of this framework was placed on OSI's website at the end of May 2007 to enable public scrutiny, (at www.dti.gov.uk/files/file39754.doc, but now changed to www.berr.gov.uk/files/file39754.doc), and a number of useful comments received.

13. The first annual report of indicators and evidence based on this framework was published on 23 July 2007, alongside the annual report on the Science and Innovation Investment Framework, available at <http://www.berr.gov.uk/files/file40398.doc>. A separate publication reporting baseline information on the economic impact of the Research Councils will also be published in autumn 2007.

SCIENCE ACROSS GOVERNMENT

(Recommendation 16)

We expect the review of the Code of Practice for Scientific Advisory Committees to address the concerns raised in our scientific advice report, and we look forward to examining the new Code when it is published. (Paragraph 60)

14. A Review of the Code of Practice is being undertaken. Within the Review we commissioned a Public Consultation of the Code, which ran from 25 June to 16 September. As part of the Consultation a workshop was held on 5 September as an additional method of obtaining stakeholder views. We aim to complete the review by the end of 2007.

(Recommendation 17)

We recommend that the OSI again review the resources available to its Science in Government team, with a view to increasing the turnover and production of departmental science reviews. We also recommend that the OSI publish a more realistic assessment of timetables for each review and for the programme as a whole. In general, we recommend that far greater attention is paid by the OSI to updating its website. The OSI should be expected to set an example in communications and the use of IT to inform the public and stakeholders of its work. (Paragraph 65)

15. The Science Review team is now resourced to carry out three reviews concurrently. The first stage of the Home Office review reported in May 2007 and a final report is expected in December. A report on the first stage of the review of the Department of Health is also expected in December. A further review will be announced shortly, as will a provisional forward programme of reviews. This will be placed on the DIUS website, which is currently being developed following the creation of DIUS and the Government Office for Science.

16. As an interim measure, while the DIUS website is being developed, we have updated the information on the existing website (which can be found following the science link on the DIUS website (www.dius.gov.uk)). We have also made some structural changes to enable quick and easy access to the key information relating to the review programme. In particular the website now includes the formal departmental responses to reviews as well as information on completed and current reviews showing key milestones and a timetable for the programme as a whole.

SCRUTINY OF THE SCIENCE MINISTER

(Recommendation 19)

We recommend that the OSI outline in its response to this Report the new dialogues and initiatives within the OSI established since November 2006 to encourage the creation of a “knowledge democracy” and spread the use of science throughout Government and beyond. (Paragraph 69)

17. The Human Fertilisation and Embryology Authority (HFEA)’s public dialogue project to support their public consultation on the ethical and social implications of creating human/animal embryos in research took place over the summer, including a public meeting in June. HFEA announced their decision on two licences on 5 September.

18. The BBSRC and MRC have conducted a tender exercise to select a contractor to deliver the public dialogue programme to bring scientists and the public together to identify public expectations, aspirations and concerns about stem cell research.

19. The Human Genetics Commission announced a new Citizens’ inquiry into the use of DNA and genetic information to fight crime. HGC has advertised for an external contractor or consortium to deliver a series of dialogue activities to find out people’s views about DNA and the forensic use of genetic information, with particular reference to the National DNA database.

20. Sciencehorizons, the first ever mass public engagement programme designed to get the nation talking about how science and technology could affect our lives in the next 150 years ran public events between January and June. Approximately 3,000 people took part in three strands of engagement: deliberative workshops with same group of people over two separate full days; facilitated workshops run by science centres, museums, schools, Women’s Institutes etc; and a large number of small discussion groups run informally and self-facilitated by a range of groups. All the results have been posted on the project website and were presented at the BA Festival of Science on 12 September. This will now feed in to both development of policy for the Horizon Scanning Centre’s Wider Implications of Science and Technology (WIST) programme and future Sciencewise activity.

21. Sciencewise has published four case studies so far of funded projects as part of the development of the Expert Resource Centre for Public Dialogue on Science and Innovation (ERC).

Strategy and Communication

22. The four year Beacons for Public Engagement pilot programme, funded by Research Councils UK, the higher education funding councils and the Wellcome Trust has shortlisted bids from Universities and is expected to make a decision on the successful applicants in the autumn.

23. Sir David King, the Government’s Chief Scientific Adviser, held a workshop at the BA Festival of Science on 12 September to launch a new leaflet on the Universal Ethical Code for Scientists. Support for this continues to be received from Departments and Agencies across Whitehall following a letter from the CSA, and a number of these and external organisations also took part in the workshop, sharing their experiences of putting this into practice.

September 2007

Memorandum 3**Memorandum to update the Government Response to the House of Commons Science and Technology Select Committee Report: Research Council Support for Knowledge Transfer (Third Report of Session 2005–06)**

1. The UK is a world leader in research. Home to some of the best research universities and research institutions, the UK represents 1% of the global population but produces 9% of the world's scientific publications and 12% of the scientific citations.

2. Every day, researchers are making breakthroughs that revolutionise our health, our security, the environment and our quality of life. Pushing the very frontiers of science, researchers have developed the fundamental building blocks upon which so many other discoveries are being made. Watson and Crick's methodical but curious exploration brought to light the structure of DNA and laid the foundation for the UK's world leading bioscience sector. Today's researchers continue to ask those important "what if" questions at the edges of the unknown. A direct approach to research can elicit expected findings, but at times researchers stumble across breakthroughs with unrelated but highly valuable applications.

3. The UK's investment in research improves the relative international and overall innovation performance of the UK economy. Significant innovations emerge from all research disciplines.

4. Research is an important long-term investment in our economy and job creation. To maximise the impact of UK research and to ensure that earth-shattering innovations do not remain hidden in labs and researchers' notebooks, research institutions undertake a range of activities broadly described as knowledge transfer. This includes collaboration with industry, training skilled people, identifying the "commercial" applications of research and moving discoveries into the marketplace. Commercialisation professionals at universities and Research Council Institutes work with researchers to identify practical uses of research, protect their intellectual property by "spinning out" new companies and license their innovation to existing companies, thus stimulating the UK economy.

5. In the past three years, 25 university spin-out companies have floated on the stock market at a value of £1.5 billion. Spin-outs have been proving to be attractive investments for venture capitalists. 61% of university spin-out companies formed during 2005 were funded through external investment finance. The DIUS Higher Education Innovation Fund (HEIF) provides £110 million per year for UK universities' research-to-market activities. Since HEIF was launched, the income from patents, licences, intellectual property and consultancy have all increased significantly.

6. Each year the Research Councils invest around £2.8 billion in excellent, world class research and training. This supports the work of tens of thousands of researchers in universities and research Institutions a cross the UK. This funding gives the best researchers the time, resources and support to pursue their research ideas and helps to train talented graduates and postgraduates who will go on not just to careers in research, but also into business, finance, education and the public sector.

7. The Research Councils invest in a balanced portfolio of research and training which encompasses:

- highly innovative and novel research;
- capacity building in new and emerging disciplines;
- sustaining progression in well established areas;
- training of highly skilled people;
- investing in strategic priorities; and
- maintaining national capacity.

8. Major advances in knowledge and understanding arise from these activities. With effective knowledge transfer of research outputs and intellectual property, and the flow of trained people, Research Councils deliver greater national prosperity through:

- the development of new or improved products;
- the establishment of new businesses; and
- new or improved public policy and public services, and cultural benefits.

9. This enquiry enabled Research Councils to consider their performance in knowledge transfer, to present their strengths and areas for improvement in the future.

10. In parallel with this enquiry, Peter Warry led an Economic Impact Group which reported to the Director General of Science and Innovation, to consider how Research Councils could demonstrate that they are delivering—a major increase in the economic impact of their investments.

11. Recommendations focussed on Research Councils leadership of the knowledge transfer agenda; their role in influencing knowledge transfer behaviour of universities and Research Council Institutes; increasing their engagement with user organisations.

12. The report recognised that Research Councils have pivotal roles, both as funding bodies and as leaders of the research base. It noted that Councils were increasing their emphasis on knowledge transfer and the economic impact of their work but must increase this emphasis further without sacrificing the research excellence for which the UK is rightly admired.

13. Since the Government response to the enquiry on knowledge transfer, the emphasis on the economic impact of the Research Councils has increased.

14. Research Councils UK published their Warry Action Plan in January 2007. In the autumn RCUK will publish its “Warry Progress report”. This will outline progress in responding both to the House of Commons report on knowledge transfer, as well as the recommendations of the Warry Economic Impact Group. This will include the following:

- Economic Impact Study.
- User Satisfaction Survey.
- Comparative Analysis of Research Council Knowledge Transfer schemes.
- Partnership with Technology Strategy Board.
- How economic impact considerations will be reflected in Research Council peer review.

15. As part of the CSR07 allocation process Research Councils have been required to provide a baseline of economic impact and to describe the practical steps they will take to deliver a step change in their delivery plans for the next spending period.

IN RESPONSE TO THE COMMITTEE’S QUESTIONS IN RELATION TO SPECIFIC RECOMMENDATIONS, DETAILED INFORMATION IS SET OUT BELOW

Recommendation 2, paragraph 25

We are not convinced that measures put in place to facilitate national co-ordination of knowledge transfer are sufficient and we believe that there is a need for co-ordination between all UK funders of knowledge transfer to be enhanced. We recommend that the Government takes the necessary steps to ensure a co-ordinated knowledge transfer strategy. We recommend that the Research Councils lead the development of a strategy through which engagement between all organisations currently involved in support of knowledge transfer can be enhanced. We consider that there is a particular need for increased engagement between RDAs and the Research Councils. We call on the Research Councils to develop effective working relationships with all RDAs, strengthening links where necessary, disseminating good practice and supporting RDAs in building up their expertise.

16. The Research Councils recognised the need to improve co-ordination between key organisations in the knowledge transfer arena. Since the initial response to the Committee the Research Councils have worked more closely with the Regional Development Agencies (RDAs) through Regional Innovation Science & Technology (RIST). This has facilitated and enabled the co-ordination of knowledge transfer (KT) activities. The Research Councils have engaged with other KT stakeholders via the Confederation of British Industry (CBI) Inter-company Academic Relations Group (ICARG) and, Professor Esler, in his role as RCUK Knowledge Transfer and Economic Impact champion, has led this agenda on behalf of all Councils influencing key stakeholders.

17. The Councils recognise that still more can be done in this area and plan to work more closely with the Technology Strategy Board, Regional Development Agencies (RDAs) and Devolved Administrations (DAs) in the future.

Recommendation 3, paragraph 29

We welcome efforts to develop a clear, cross-Council understanding of what the term “knowledge transfer” should mean to the research community. We urge the Councils to clearly communicate what is and isn’t included within their view of knowledge transfer.

18. The Research Councils acknowledge the need to improve understanding of knowledge transfer expectations and achievements, by both the research and user communities. This is of even greater significance where economic impact considerations are included, as recommended by the “Warry” report. The Councils individually and collectively have sought to improve the coherence of their communication on this matter in the following ways:

- the publication of Impacts: Successes from UK Research (in conjunction with UNICO and Universities UK) to celebrate the success of Research Council supported Knowledge Transfer. This was launched at a House of Commons breakfast event hosted by Phil Willis on 15 March. The KT co-ordinator project aims to improve the collective Research Council knowledge transfer portfolio. It seeks to achieve much greater harmonisation, rationalisation and joint presentation (eg via a KT portal) of KT schemes; and
- to improve the understanding between the research and peer review community regarding expectations for knowledge transfer and economic impact, the Research Councils have reviewed how knowledge transfer and economic impact considerations should be reflected within peer review assessment. The outcomes of these will be promulgated to the research community in the Worry Progress Report.

19. Going forward an Economic Impact conference is planned for 2008 to publicise the outputs of the RCUK Economic Impact Project.

Recommendation 4, paragraph 32

Whilst we accept that the Research Councils may sit at the “push” end of the research chain, we are concerned by the perception that they are not interested in the requirements of industry. We urge them to address this perception and to ensure that user requirements are fully considered when determining funding priorities.

20. The Research Councils have always sought to involve their key stakeholders, including industry and other users, in developing strategy and delivery of research. In the last year, the Councils have investigated new systematic approaches to understand users and their expectations and experiences of the research communities.

21. RCUK have now completed a User Satisfaction Survey, which sought the views of around 400 expert users on the strategies, delivery and capabilities of the Research Councils. Prior to commissioning the study, Research Councils collectively agreed that “users” would be defined as those organisations and individuals who make use of Research Council funded outputs and outcomes (research and/or trained people) and those who have some direct relationship with one or more of the Research Councils. Higher Education Institutions (HEIs) and Research Council Institutes (RCIs) were excluded from the scope of the survey.

22. The survey represents the first attempt to understand, in a systematic fashion, the expectations and experiences of those users that have worked closely with the research councils during the previous two years. The results provide commentary on Research Council strategies and processes, and indicate areas of both strengths and weaknesses as perceived by users. The survey will help councils to improve their engagement with business. It will be repeated biennially to allow improvements in user engagement and experiences to be monitored. The findings will be published in the Worry progress report.

23. Industry and other users participate in many Research Council activities, including the peer review assessment of research. Peer review contributes to the success the UK has had in developing a world class research base. It is fundamental to the work of the Research Councils, who seek to operate it as efficiently and effectively as possible.

24. Research Council Delivery Plans are due to be published in early 2008.

Recommendation 5, paragraph 35

We welcome the effort made by the Research Councils to set out future knowledge transfer priorities within their Delivery Plans. We find that some of the Research Councils have taken a narrow approach and that consequently, their Delivery Plans do not reflect the wider view of knowledge transfer.

25. The Research Councils and RCUK are currently developing new revised delivery plans. The new delivery plans will give prominence to economic impact using the Treasury Green Book definitions which encompasses broader societal impacts. Knowledge transfer makes an important contribution to economic impact.

Recommendation 6, paragraph 38

We are concerned by negative perceptions of Research Council communication and engagement with their stakeholders. We urge the Research Councils to take steps to engage business users more effectively. It is important that the Councils clearly consult and act upon the views of all stakeholders, addressing the perception that they are only interested in informing them.

26. The User Satisfaction Survey has identified the strengths and weaknesses of each Research Council, as perceived by users. Councils aim to publish the survey, together with an initial response which outlines how the Councils will further improve their relations with users.

Recommendation 7, paragraph 40

We believe that there is a need to enhance SME-Research Council engagement considerably. We recommend that the Research Councils are more proactive in their engagement with SMEs, recognising that very distinct challenges must be overcome if SMEs are to be successfully involved in knowledge transfer, for example in collaborative work with universities.

27. Research Councils will continue to encourage collaboration between Small and Medium Enterprises (SMEs) and the research base, through support for collaborative research, postgraduate training, networking and knowledge transfer. Research Councils work with RDAs to provide more innovative approaches including knowledge transfer voucher schemes targeted at SMEs.

28. RCUK anticipates that a significant increase in SME involvement will be achieved through partnership with the Technology Strategy Board. Research Council involvement in Technology Strategy Board products targeted at SMEs such as KTP and Knowledge Transfer Networks is expected to grow. Councils would particularly welcome a more flexible approach to KTP in order to attract new businesses—for example shorter KTPs to reach micro-enterprises within the creative industries. Furthermore, Research Councils are keen to work with the Technology Strategy Board to develop ways of working which facilitate greater SME engagement.

Recommendation 10, paragraph 53

We commend PPARC for its efforts to promote the importance of applicability and knowledge use to researchers. We urge PPARC to actively communicate its intentions where knowledge transfer is included within grant proposal evaluation criteria and to clearly convey the message that knowledge transfer will not determine the success of a grant application. We recommend that the other Research Councils consider this approach as a mechanism for embedding a more result-orientated culture.

29. In 2006 RCUK initiated a project to review the efficiency and value for money of Research Councils' peer review processes. One strand of this project considered the extent to which peer review assessment can, or indeed should, reflect economic impact considerations. The feedback from the research community on this particular issue highlighted a need for the Councils to ensure there is clarity about what the Research Councils expect from the research and peer review communities, and also identified scope to build upon best practice approaches within the Councils.

30. In terms of the peer review of applications for research funding, RCUK wishes to emphasise that research quality is, and will remain, the primary determinant for Research Council funding. RCUK has reviewed the approaches currently used within the Councils to ensure that assessment and funding decisions effectively reflect economic impact considerations; this formed the topic of a Research Council workshop in July 2007. Different approaches are used to reflect the nature of specific research domains, characteristics of the user community or other strategic considerations. For example assessment criteria for medical research reflects healthcare priorities, practice based subjects give particular attention to the involvement of practitioners, and individual schemes and directed programmes tend to have bespoke assessment criteria, which are usually explicit in any guidance and/or call for proposals documentation. It is reasonable to anticipate variation in these assessment criteria in future—both within and between Councils. There are opportunities to spread best practice, and adopt common processes.

31. RCUK will publish a detailed response and actions as part of the “Warry” reporting in the autumn.

Recommendation 11, paragraph 55

We welcome the publication of Research Council performance assessment metrics but consider that refinement is required. We are particularly concerned that the Output 2 metrics, as they stand at present, measure activity rather than output and that they may influence the activities of the research community. We recommend that the Research Councils and RCUK regularly review the assessment metrics and the impact they are having, reporting back periodically.

32. The Research Councils acknowledge the importance and also the difficulties in the measurement of research outputs and impacts. In March 2007 RCUK commissioned an Economic Impact Study, a one-off report in which Research Councils describe the economic impact of the investment in their field. The report is helpful in highlighting the many different and complementary ways that Research Council-funded research leads to benefits for the economy and society, and also serves the purpose of defining baseline approaches to allow better and more consistent assessment of economic impacts in future. The findings will be published in the autumn on the RCUK web site as part of “Warry” reporting.

33. Councils have agreed to develop better data collection to manage their business. A project will collate output data collectively and in a more integrated fashion across all the Councils, replacing or augmenting existing reporting processes such as end-of-project reporting. The Outputs Project will be initiated in 2008, reflecting the new requirements to support economic analysis as revealed through the economic impact project; it is also one of the recommendations of the RCUK Peer Review Efficiency Project.

Recommendation 12, paragraph 59

We have found little evidence of Research Council co-ordination or sharing of best practice in the context of their knowledge transfer activities and we have not been persuaded that the Knowledge Transfer Group has achieved much in the two years since its formation. Also, despite their clear remit to co-ordinate and harmonise, we have not seen any added value from RCUK in this area. We urge the Research Councils and RCUK to take the necessary steps to enhance the effectiveness of their co-ordination in knowledge transfer.

34. The new high-level Knowledge Transfer and Economic Impact Group (KTEIG) was established in September 2006, and has been meeting on a regular basis since. The Group provides strategic direction and advice to the RCUK Executive Group on the delivery, co-ordination, monitoring and evaluation of activities which will increase the economic and social impact of Research Council's investments, and increasing the external visibility of these impacts. The Group has provided strong leadership, particularly to increase the policy impact of the Councils. For example, the RCUK response to the Sainsbury Review, pursuing opportunities with the new Technology Strategy Board, leading the harmonisation/rationalisation agenda within councils, and sponsorship of a number of joint projects and initiatives.

35. KTEIG is responsible for overseeing the development and the co-ordinated delivery of a programme of work that will contribute to increasing, and demonstrating an increase, in the economic and social impact of Research Council's investments. In 2007 the programme consists of the following three primary projects:

- (1) KT Co-ordination Project;
- (2) Economic Impact Project; and
- (3) User Satisfaction Survey.

36. The KT Co-ordination project (started in June 2007) consists of a comprehensive and comparative review of Research Council Knowledge Transfer schemes. The review investigates the scope for harmonisation and re-branding of KT schemes across the Research Councils. The final report of the review will be published in the autumn of 2007. Recommendations from the review will be taken forward by KTEIG and developed into actions, as required, as part of the "Warry" Action Plan.

Recommendation 13, paragraph 62

We were impressed by the evidence we have received and welcome such clear Research Council successes in supporting knowledge transfer.

37. No update.

Recommendation 14, paragraph 65

We commend PPARC for the approach that they have taken to develop a single, flexible scheme. We recommend that the other Research Councils, with support from RCUK, apply this simplification to their own knowledge transfer funding strategies. Communication of Research Council knowledge transfer funding strategies should be improved. We recommend that RCUK develops a single, simple web portal through which information on all Research Council knowledge transfer schemes can be easily accessed.

38. As outlined above, during 2007 Research Councils have undertaken a Knowledge Transfer Co-ordination Project to consider harmonisation and branding. In taking this forward KTEIG/RCUK will be laying the foundations for a developed web portal.

39. Harmonisation of terminology and branding is an essential prerequisite for the development of a new web portal. It is envisaged that a portal will be specified and initiated as a project during 2008, subsequently enabling users to access Research Council services more effectively. Research Councils currently evaluate their knowledge transfer schemes to form judgements on the relative success of investments. However, many KT programmes are still in early stages and Councils will be able to take a more robust approach as data becomes available.

Recommendation 18, paragraph 79

It is difficult to see how the Research Councils can effectively allocate funding to different knowledge transfer activities in the absence of comprehensive data on their impact. We recommend that the Research Councils proactively seek out information required to evaluate impact and that, once such data has been obtained, full impact analysis of all Research Council knowledge transfer schemes is conducted. In addition, we recommend that Research Council funding for knowledge transfer is neither increased or decreased until more is known about the impact of the schemes.

40. Research Councils currently evaluate their knowledge transfer schemes to form judgements on the relative success of investments. However, many KT programmes are still in early stages and Councils will be able to take a more robust approach as data becomes available.

41. Innovative schemes to attract SMEs are referenced in response to Recommendation 7.

Recommendation 19, paragraph 83

We welcome the idea behind conducting an External Challenge of Research Council activity in support of knowledge transfer. We consider that the processes employed led to a report with questionable independence. RCUK did not fully consider the resources required for a full review of this area, giving the External Challenge Panel a near impossible task. We recommend that the Councils conduct a detailed review of the processes involved in this External Challenge. Such a review should take account of problems such as provision of appropriate resources and timescales, and should enable the development of best practice to inform future exercises of this nature.

42. The Research Councils and DIUS have agreed that the external scrutiny has been superseded by the obligation to report against “Worry” economic impact. The lessons learned have informed the organisation and development of “Worry” reporting.

Recommendation 20, Further encouraging exploitation business skills development

We welcome recognition by the Research Councils of the importance of enhancing business skills and we encourage them to further develop training activities in this area, making them available to as many researchers as possible.

43. One of the overriding themes within the RCUK Delivery Plan is to promote a more entrepreneurial culture within the UK research base. This manifests itself in many ways, for example:

- RCUK will continue to foster a collaborative approach between HEIs and industry to promote the sharing of good practice on skills training, ensure relevance in training, and provide researchers with access to entrepreneurship, knowledge transfer and business skills.
- RCUK is seeking to embed the development of transferable skills relevant to employers within the PhD by providing additional support to postgraduate researchers via single, co-ordinated annual payments to HEIs.
- New researchers receive training in commercial awareness and enterprise through the Young Entrepreneurs Scheme (YES).
- RCUK also supports the Business Plan Competition, which provides support and training to academic researchers to develop high quality business plans to commercialise research carried out in UK universities and Public Service Research Establishments.

Recommendation 21, paragraph 88

We believe that the Research Councils should maintain a “hands off” approach to management of Intellectual Property within universities.

44. Following the recently published report to the Funders Forum by the Peter Saraga group, the Research Councils are reviewing their guidance and expectations on IP management. RCUK currently sees no need for a change in current policy and management of IP from research in HEIs will continue to be the norm—in the majority of cases, management of IP by the organisation undertaking the research is the most effective route.

September 2007

Memorandum 4

Memorandum from the Home Office on the National Identity Scheme to follow up certain recommendations in the House of Commons Science and Technology Select Committee Report: Identity Card Technologies: Scientific Advice, Risk and Evidence (Sixth Report of Session 2005–06 HC 1032)

1. The programme of projects set up to deliver the National Identity Scheme (“the Scheme”) started in the Home Office and moved to the Identity and Passport Service (IPS) with the formation of that agency from the UK Passport Service (UKPS) in April 2006. The work of delivering the Scheme was subject to inquiries from first the House of Commons Home Affairs Committee in 2004 (to which the Government responded in October 2004) and then the House of Commons Science and Technology Select Committee in 2006. A report on this latter inquiry was published in July 2006 (“the Committee’s report”) followed by the Government’s response in October 2006.

2. This memorandum is a response to a request (July 2007) by the Science and Technology Select Committee for further information on 10 of the recommendations made in the Committee’s report. It also provides a general progress report on the Scheme including plans for procurement.

SUMMARY OF PROGRESS

3. There has been significant progress in the work to deliver the Scheme since the Committee's report:
- IPS is introducing passport application interviews. We are starting to require adult customers applying for a passport for the first time (a group which accounts for approximately half of passport frauds) to attend an interview with IPS in person to confirm their identity. The requirement to attend an interview is being introduced gradually. It started with interview offices in Newport, Peterborough, Glasgow, Belfast and Newcastle earlier this summer, then Birmingham and Manchester which opened on 10 September, London on 24 September and IPS will add further offices through to the end of 2007. This progressive introduction is enabling IPS to conduct research and get feedback; this will be used to enhance the interview process for customers. A biometric enrolment trial has also been conducted in September at the Derby interview office.
 - We are continuing to test and evaluate the Scheme proposition through a variety of avenues which seek to improve the delivery of public services and implement innovative identity management services. Examples include our work with the Criminal Records Bureau (CRB) on how a criminal records check can be made faster and with improved confidence in the authentication of identity, the Passport Validation Service (PVS) which allows public and private sector organisations to validate a passport presented as assurance of identity (the private sector service has now been live for a year and has answered more than 90,000 requests for validation from financial service organisations), and our move to issuing ePassports which store passport details on a chip embedded in the passport and represent a significant advance in the security of the document.
 - Since July we have been piloting an identity and “right to work” service with the Border and Immigration Agency (BIA) which is currently being extended to include UK visas data. We are already investigating suspected fraudulent UK passports uncovered through the pilot and introducing new participants to the pilot.
 - Last year the Chancellor of the Exchequer appointed Sir James Crosby to chair the Public Private Forum on Identity to review the current and emerging use of identity management in the private and public sectors and to consider how public and private sectors can work together, harnessing the best identity technology to maximise efficiency and effectiveness. IPS is one of the public sector organisations on the Forum along with DWP, DVLA, HMRC, SOCA and the City of London police. The private sector organisations are BA, Barclays, Boots, Compass, O₂ and Linklaters. Sir James will report to the Chancellor in the autumn.
 - With the release of the PIN and OJEU notice, we have formally begun procurement. The PIN (Prior Information Notice) forewarned the market of planned procurement(s) related to the Scheme. The OJEU (Official Journal of the European Union) notice invites the supplier market to submit an expression of interest in advance of a competitive dialogue process.
 - Our approach to procurement is to let a framework agreement with a small number of strategic suppliers and the use of this approach has a number of benefits and efficiencies over separate procurements. All of these selected suppliers will be capable of competing for projects to deliver NIS capabilities and there will be mechanisms to incentivise delivery and co-operation. In pre-selecting suppliers a significant proportion of terms and conditions will be agreed, which will allow projects to focus on their unique needs rather than on issues that are common to all requirements. Additionally the duration of the framework (four years) will enable relationships to develop, allowing co-operation between all parties to explore new and innovative ways to deliver the NIS.
 - A bidder's conference was held on 14 September. The purpose of this was to allow IPS to further articulate the aims and practicalities of the NIS Strategic Supplier Framework to ensure the market understands the process and has opportunity to ask questions. Additionally the “Competitive Dialogue” procurement process will include a series of meetings and workshops with selected bidders to inform needs and ensure market views are incorporated in our thinking.
 - We have made progress with the secondary legislation needed for the NIS. The Identity Cards Act 2006 sets out the legislative framework for the introduction of identity cards. The first secondary legislation under the Act, the Verification of Information in Passport Applications etc (Specified Persons) Order 2007 (Statutory Instrument 2007 No 2186) came into force on 26 July 2007, after approval by both Houses of Parliament. This Order was made under section 38 of the Identity Cards Act which allows the Secretary of State to require government departments to check their own records and to provide information to IPS which could be used to verify the accuracy of details supplied in connection with a passport application or to determine whether to withdraw a passport. The order was needed so as to add to section 38 the Registrar General for England and Wales and a credit reference agency with which IPS has a contract for the provision of identity information (currently Equifax plc). A further programme of secondary legislation under the Identity Cards Act will be required prior to the issue of the first ID cards to set out the detailed procedures for the scheme.

4. Other progress is summarised in various key documents published over the last year:
- The Strategic Action Plan for the National Identity Scheme (“the Action Plan”) which set out the key design decisions which have been made and the high-level objectives and plans for the Scheme, including biometric immigration documents in 2008 and ID cards for British citizens in 2009.
 - The Biometrics Assurance Group (BAG) Annual Report. This independent group, under the chairmanship of Sir David King, the Government’s Chief Scientific Adviser, has examined IPS’s plans for the implementation and testing of biometric technologies.
 - Identity Cards Scheme Cost Report—May 2007. These reports are regular updates to Parliament on the costs of the Scheme.
 - The IPS Annual Report to March 2007.

RESEARCH AND PILOTING

5. To support programme decisions and aid in scheme design, IPS has continued to undertake research which is periodically published on the IPS website. Research is an important input to business decisions which have a customer impact and is continuously undertaken to:

- Track public opinion and attitudes towards the Scheme and the changes to passports.
- Aid definition of the requirements for new products and services being developed for the Scheme.
- Track customer satisfaction to assess how well IPS delivers its current customer facing business processes.

6. As part of the development of the Scheme, services are being piloted with volunteers to confirm requirements whilst other services are being introduced to discrete audiences. IPS’s programme of research has successfully helped to assess customer acceptance. For example, the newly introduced interview process for first time passport customers has been thoroughly researched throughout all stages of services development, from concept to launch. This work included people with special requirements whose feedback has enabled us to make modifications to improve the customer experience.

RESPONDING TO THE COMMITTEE’S RECOMMENDATIONS

7. The Committee requested an update on 10 of the recommendations made in their report (Numbers 9, 10, 15, 16, 19, 24, 26, 27, 31 and 40). In general, the Government’s response to the Committee’s report was in agreement with the advice in the Committee’s recommendations and was able to respond positively. This memorandum can now show where progress has been made since then. In some cases the Government’s response to the Committee’s report indicated agreement with the concern behind the recommendation, but suggested a different approach to addressing this concern. Recommendation 10 suggested certain actions to ensure the programme received adequate ICT (Information and Communications Technology) assurance. The response agreed with the need for ICT assurance but proposed a different means of achieving it. Recommendation 24 was on the need to perform independent tests of the biometric systems; the response agreed with the need to assure and improve performance levels but that these should be done through contractual means and through IPS’s testing of the systems. Recommendation 31 proposed returning to and implementing the proposals of a specific report from KPMG on the methodology used to estimate costs in the Outline Business Case; the response addressed the proposals which had not already been implemented, summarising what was being done and the consideration which had been given to each proposal.

8. The recommendations from the Committee’s report are reproduced below, each followed by an update on work in the area referred to by the recommendation.

ASSURANCE

9. We welcome the establishment of the Biometrics Experts Group and the Biometrics Assurance Group, although we regret the time that the Home Office has taken to set them up. We support the involvement of Sir David King and believe that the Assurance Group has the potential to work well, particularly in providing consistent advice across Government. We seek confirmation from the Home Office that the Biometrics Assurance Group will be given the direction, tools and time to fulfil its tasks in practice and that the Group’s recommendations will be taken into account. (Paragraph 53)

9. The work of the BAG during 2006 and the recommendations it made are shown in the BAG Annual Report. Of the twelve recommendations the BAG made, IPS have accepted nine and rejected three. The recommendations were wide-ranging; Those that were accepted covered the use of test data, the range of fingerprint quality scores which should be included in testing, ensuring fairness in biometric procurement, requiring suppliers to show how they will avoid duplicate enrolments, proper management of biometric risks, use of biometric terminology, and the formats which should be used for the storage of biometrics. We rejected recommendations on the period for which test data should be retained (the BAG recommended a

period longer than we were advised was legally permissible), the suggestion that we should get an analysis of “fusion” strategies from suppliers (IPS’s preference is to set output-based requirements on suppliers), and the suggestion that we, rather than suppliers, should provide operators for the biometric testing programme (IPS considers that suppliers have less grounds to dispute test results if they supply the operators and IPS officials oversee the tests).

10. The recommendations and the number of them which have been adopted by IPS indicate a healthy assurance function. Of more value than the recommendations themselves however was the debate within the BAG and between IPS and BAG members which preceded the recommendations and which forms part of the BAG’s regular examination of IPS’s activities.

10. We recommend that the Identity and Passport Service establish an ICT Assurance Committee consisting of academics and industry experts and that this Committee reviews the programme specifications relating to ICT. (Paragraph 55)

11. As indicated in the Government’s response to the Committee’s report, IPS’s goal is to simplify and consolidate its external assurance and ensure that all areas in which assurance might be required (such as ICT, as suggested in the Committee’s report) are covered. Therefore IPS is in the process of broadening the remit of the Independent Assurance Panel and making it responsible for assurance on all aspects of the programme. To underline this wider role the panel will be renamed the Independent Scheme Assurance Panel. Assurance on biometrics and ICT, and other areas which fall outside the expertise of the core membership, will be provided by inviting contributions from the BAG or members of the BAG and other individuals and then forming a single view from these contributions. The scope of the panel’s interests will cover the entire Scheme and will include biometrics and ICT. By combining assurance on these topics with its other assurance activities, the panel will seek to provide holistic, “task-focused” assurance and a clearer interface through which assurance can be fed back into the programme.

12. In addition, formal assurance of all ICT infrastructure is also conducted by or on behalf of the National Technical Authority (CESG) as part of the accreditation process both during design and prior to operation and throughout its life.

RELATIONSHIPS WITH INDUSTRY

15. We recommend that, particularly as it enters the procurement phase, the Home Office works to develop further its relationships with industry. Industry is a significant source of scientific and risk reduction advice as well as being a pool of potential suppliers. We reiterate that the Home Office needs to engage in wideranging debate with industrial experts regarding scientific and technical aspects of the scheme. (Paragraph 70)

13. In August 2007 IPS published a contract notice in the Official Journal of the European Union (OJEU) formally launching procurement activity for the Scheme. This step has started the sequence of events to contract with a number of suppliers to deliver capabilities for the Scheme.

14. Since October 2006 we have been sharing information on the Scheme with the potential supplier market and receiving advice and feedback in return. For example, IPS’s Chief Executive and many of the IPS senior directors have spoken at conferences and industry events. We recognise the value of such activity and have received positive feedback from potential suppliers on the scale and nature of engagement. We have benefited from industry’s broad experience in refining our plans and working with suppliers has contributed to ensuring that the market is prepared to meet the challenges. This exchange of information has necessarily been constrained by the need to avoid prejudicing fair and open procurement but has been valuable in informing our approach to delivering the Scheme.

15. In November 2006 the IPS Chief Executive spoke at an event organised by Intellect, the trade body for the UK hi-tech industry . At this event the broad vision for how the challenges of delivering the Scheme would be approached was set out. Additionally the commitment to engage in dialogue with the market was reiterated. Following this session IPS worked with Intellect and its members to devise a series of workshops. These were focused on specific areas of the Scheme to enable industry to provide insights into the challenges and how they might be solved, as well as IPS presenting some of the thinking behind its plans. Details of the exercise and outputs can be found on the IPS website.

16. After the six sessions (held in January and February 2007), a final workshop was held on procurement in February. At this, the adoption of a framework approach to procurement with the aim of reducing risk and delivering value for money was discussed. This discussion provided useful feedback and led to publication of a “procurement briefing” document setting out the approach in more detail. Further views and comments on the strategy were invited in the publication and follow-up meetings were held with a cross section of the market.

17. We continue to work with trade bodies and suppliers and recognise the contribution that their broad range of experience has to offer. This includes working with industry now that the procurement has formally commenced to ensure that we continue to understand the market and make best use of available expertise.

18. Other important areas of collaboration with industry and Government bodies include:

- IPS is working with the DIUS (Department for Innovation, Universities and Skills) Innovation Platform, which along with EPSRC (the Engineering and Physical Sciences Research Council) and ESRC (the Economic and Social Research Council) is providing £10 million of funding for research into privacy and consent enabling processes and technology. Via this Innovation Platform, IPS is engaging industry to promote investment in the development of technologies that will be required in the future.
- IPS is leading work on the development of identity management standards including technical, data and identity assurance standards. Members of the Government CTO Council and the EURIM group are helping to inform the cross-Government standards that will be used in the Scheme.
- IPS is working with other members of the EU on developing proposals for a large scale pilot on “electronic ID” targeted on improving service delivery for EU citizens.

COMMUNICATION AND CROSS-GOVERNMENT ACTIVITIES

16. We recommend that the Home Office undertakes a cross-Government consultation regarding its plans for technology to support the identity card scheme before the specifications of the scheme are finalised and that it makes the findings of this consultation public. (Paragraph 76)

19. The Government’s response to the Committee’s report last summer acknowledged the need to be more public with its plans for the Scheme and made the point that IPS was committed to consultation and publishing an “action plan” which would set out the vision for the Scheme and the plans for its delivery.

20. This Action Plan was published in December. It describes the scope of the Scheme, its principal functions and how it will deliver services to customers. It covers the high-level vision for creating the National Identity Register (NIR) using some technology that already exists in government. It explains how the Scheme will be made secure and how we will ensure that information held by the Scheme is only seen or modified by those authorised to do so. Finally, it sets out the plans for the Scheme and its governance and how it will build up through the introduction of biometric visas and other documents for foreign nationals, enhancements to the passport, ID cards for British citizens, and identity checking services based on these.

21. IPS and the Home Office are working across Whitehall in a range of ways to develop this Action Plan and promote good identity management harnessing the best technology:

- Sir David Normington, Permanent Secretary of the Home Office, chairs the Identity Management Strategy Group which has senior representatives from around 15 departments, including the devolved administrations. As part of its Terms of Reference it maintains an overview of the development of the Scheme. Recently the group has invited local government to form an advisory panel to support the identity management agenda.
- The Chief Information Officer’s Council, again with wide membership, has a complementary role, focused on technology developments and implementing these and related changes across government.
- IPS is working with other government departments and agencies on a number of “joint venture” initiatives involving customer experience trials and engagement with potential business customers. These initiatives are tackling current identity-related business challenges with the aim of building confidence in and support for the Scheme, ensuring the requirements for the Scheme are right and piloting identity-related services.
- Innovative research on using technology to protect privacy is being explored in joint work with a number of government departments, suppliers, and outside experts.
- James Hall who joined IPS as Chief Executive in October 2006 leads within the Home Office on identity management.
- IPS is working closely with stakeholders to identify ways that existing Government assets can be used to deliver the Scheme.

TESTING, TRIALLING AND SELECTING THE RIGHT BIOMETRIC TECHNOLOGIES

19. We welcome the Home Office’s commitment to publicising fully its plans for trialling once the procurement process has begun. In order to continue this move towards transparency and to build public confidence in the scheme, we recommend that the Home Office also makes public the results of these trials. (Paragraph 83)

22. IPS policy on publishing reports based on the results of trials has not changed since the publication of the Government’s response to the Committee’s report. This noted the recognition by the Committee of IPS’s commitment to transparency in this area and confirmed IPS’s intention to publish reports based on the results of future tests.

24. Given the findings of the biometrics enrolment report regarding the performance of current biometric systems, we seek reassurance from the Home Office that systems will be adapted as necessary to improve performance levels and that final performance levels will be verified by independent testing. (Paragraph 89)
26. We are surprised and concerned that the Home Office has already chosen the biometrics that it intends to use before finishing the process of gathering evidence. Given that the Identity Cards Act does not specify the biometrics to be used, we encourage the Home Office to be flexible about biometrics and to act on evidence rather than preference. We seek assurance that if there is no evidence that any particular biometric technology will enhance the overall performance of the system it will not be used. (Paragraph 93)

23. The Government's response to the Committee's report indicated that the supplier would have a responsibility to meet certain performance criteria, that the supplier's technology would be tested and that these tests may be independently assured. It also indicated that, while we were somewhat constrained in our choices, we had some flexibility in which biometrics would be used.

24. Since then, we have elaborated this position. First, the Action Plan made it clear that the introduction of iris biometrics remains possible:

When you enrol into the Scheme, your fingerprint biometrics (all 10 fingerprints) will be recorded and stored in the National Identity Register. A subset of these will be held on your ID card or passport, in line with International Civil Aviation Organization standards. The introduction of iris biometrics also remains an option. (Paragraph 65)

25. The key point is that IPS will only require those biometrics to be enrolled which are needed for legislative or policy reasons, or to meet international standards for travel documents—eg EU law will require fingerprints for visa applications and for residence permits for third country nationals (ie non-EU citizens). IPS will also require a certain level of matching performance—that is, matching errors (where a biometric is either incorrectly matched against one in the database or fails to match against one it should have matched against in the database) will be recorded and suppliers will be bound to not exceed a certain level of matching errors. The supplier then has some flexibility in the design of the solution—having done those things specified to meet IPS's obligations they would be able to meet the business requirement (an identity management system capable of the required level of matching performance) in a variety of ways. The BAG Annual Report explained this and set out the process by which the choice of biometric technologies to be used by the Scheme will be made:

The reasons around the decision not to specifically require the enrolment of iris at the launch of the Scheme were discussed. IPS explained that the preference was to set as requirements those things which are necessary to comply with legislation or such things as the ICAO recommendations on the format of travel documents, but leave other requirements as “output-based”. In the choice of biometrics, this implied setting facial and fingerprint biometrics as requirements but allowing suppliers the choice of whether to use iris biometrics to comply with the required matching performance. (Section 3.1, bullet 7)

27. We note the lack of explicit commitment from the Home Office to trialling the ICT solution and strongly recommend that it take advice from the ICT Assurance Committee on trialling. We seek an assurance that time pressure and political demands will not make the Home Office forgo a trial period or change the purpose of the scheme. (Paragraph 95)

26. IPS's position on the testing of ICT remains as it was when the Government's response to the Committee's report was published. IPS recognises that the delivery of ICT-enabled services carries with it certain risks and seeks to manage these risks through:

- formal testing as part of the accreditation of all ICT including review by the pan-Government accreditor;
- adopting an approach to implementation which uses an incremental rollout or uses controlled pilot programmes to test specific parts of the Scheme; and
- testing systems through the life of the Scheme, to a level appropriate to their associated risks.

27. It is within the Independent Scheme Assurance Panel's remit to consider the need for ICT testing and make recommendations on this.

28. On the Committee's point about the purposes of the Scheme, these have not changed and cannot be changed without the consent of parliament.

THE KPMG AUDIT REPORT

31. We recommend that the identity cards programme team returns to the KPMG audit report and implements its recommendations. Furthermore, we re-emphasise that the Home Office needs to work out how costs will impact on performance and we seek reassurance from Government that cost limitations will not compromise the level of performance that is accepted. (Paragraph 102)

29. The work underway to deliver the Scheme is subject to a high level of scrutiny, including OGC Gateway reviews, Treasury approval of the Business Case and the regular publication to Parliament of reports detailing the Scheme's costs.

30. The KPMG audit report was thus one of many examinations of the work to deliver the Scheme. The Government's response to the Committee's report covered the recommendations from the KPMG audit report and noted that of the 12 specific recommendations made in the report only four had not been adopted.

31. Recommendations 3 and 4 proposed certain approaches to risk management. IPS is committed to a robust risk management methodology as an essential tool for project and programme management. This is also consistent with IPS's position at the time of the Committee's report, and as the Government's response to the Committee's report noted, the Committee's chairman attended a confidential briefing on the Identity Cards Programme risk register. Following this, the Committee's report expressed that they felt reassured by the programme's approach to risk management.

32. IPS has an established framework for the reporting and monitoring of risk with a programme risk manager and project-level risk managers in place and regular reports on the status of risks to the IPS Management Board. IPS is continually looking at ways to improve its ability to make informed, risk-based decisions. For example, IPS will shortly begin piloting the use of a new tool to support decision-making through risk modelling and is currently improving its ability to model the financial aspects of risk.

33. Recommendation 8 suggested that IPS consider increasing the five-year depreciation assumption for mobile enrolment centres to eight years. IPS regularly reviews the accounting treatments used in its financial forecasts and continues to consider a five year depreciation period for these assets to be prudent. The cost impact of this assumption remains minimal.

34. Recommendation 11 suggested a review of staffing levels required for the National Identity Register. We continue to keep the staffing levels under review as arrangements for the delivery of the scheme mature. The most significant change since the recommendation was made is the use of existing Government assets (as summarised in the Action Plan) and so the situation has changed since the recommendation was made. These plans make staffing levels a shared concern between the Scheme and the owners of these shared assets. Service Management arrangements for all services relating to the NIR will be developed by the various projects established to deliver the Scheme. Staffing levels will form part of such Service Management arrangements. The procurement exercise will provide further insight on the validity of the estimates in the business case but in any case these staffing levels are not a significant component of the overall cost.

COMMUNICATING PROCUREMENT REQUIREMENTS

40. Industry is hoping that the commencement of procurement and the release of specifications will clarify the Home Office's position. Once the specifications have been released, we urge the Home Office to take steps to ensure that the specifications, requirements and risks have been clearly understood by all involved. (Paragraph 126)

35. Considerable work has been focused on developing the requirements for the Scheme since the time of the Committee's report. Much effort has also been devoted to designing the plan for procurement, the intention being that suppliers should be able to join a framework within which the various parts of the Scheme would be offered to suppliers to compete for.

36. The requirements can be divided into high level Scheme-wide requirements and requirements specific to the various projects established to deliver the parts of the Scheme. The high level Scheme-wide requirements will be shared with potential suppliers during the first, "framework dialogue" phase of the procurement whilst the project specific ones will be shared during the second stage. At both stages the requirements will be discussed and negotiated with the bidders and there will be opportunity for clarification.

Memorandum 5

Government update on “Strategic Science Provision in English Universities: A Follow-up” (Second Report of Session 2005–06 HC 1011)

INTRODUCTION

Before we deal with the specific recommendations on which the Committee has requested an update, we would like to keep you informed more generally about our progress in ensuring strategic science provision in English universities.

The creation of the new Department for Innovation, Universities and Skills (DIUS) on 28 June provides a timely opportunity to tell the Committee about the Government’s achievements to date and the challenges ahead. The new Department will provide a strong integrated voice across Government for effective investment in research, science, innovation and skills, embedding these into the heart of the Government’s competitiveness strategy.

British science and innovation was badly damaged during the 1980s and 1990s because of years of underinvestment. However, since 1997, we have worked hard to remedy that. Public spending on science has more than doubled under this Government and will continue to rise in real terms between now and 2011.

Our support for science in higher education has included £2.6 billion spent since 2002 on refurbishing university science facilities so that our scientists can work in world-class laboratories. This is evidence of a Government committed to ensuring that British science can continue to compete successfully on the world stage.

Indeed, in terms of the number of science graduates we produce per head of young population, we are ahead or in line with most of our international competitors and way ahead of China and India, although given their population, they produce more scientists in absolute terms.

The overall number of science students has increased by 150,000 since 1997. In addition to the massive investment outlined above, over the next three years we will spend a further £75 million to directly support the teaching of strategically important and vulnerable subjects, including chemistry and physics. This additional funding will ensure the continuation of sufficient places to meet student demand for a number of years to come.

We are also engaged in work with our partners to encourage more students to continue studying science. We are expanding the Science and Engineering Ambassadors scheme, which is run by STEMNET, whereby practicing scientists and engineers go into schools to support teachers and engage and enthuse pupils to continue studying science. By 2007–08, the total number of ambassadors will be 18,000. Another aspect of this is HEFCE’s £160 million programme to raise the aspirations of young people to study subjects that are of fundamental importance to the prosperity and knowledge base of the country. This includes funding the Chemistry for Our Future Project, which is led by the Royal Society for Chemistry and the Stimulating Physics Project, which is led by the Institute of Physics. Schools are also raising attainment in science through the secondary national strategy and are making double and triple science more available to those who would benefit. The Department for Children, Schools and Families are piloting 250 science clubs for pupils at key stage 3 with an interest and aptitude in science.

There is no room for complacency but this is starting to bear fruit. The latest UCAS application figures have continued to show a positive trend in the uptake of STEM subjects. There have been increases in accepted applications in a number of subjects including physics (+ 12%), chemistry (+ 9%), biology (+ 6%), maths (+ 9%), combined maths/computer studies (16%), as well as most of the engineering subjects.

We expect that the combination of all of our work as outlined above will allow us to maintain capacity in universities and will secure continuing stability, and even growth, in science provision.

UPDATE ON RECOMMENDATIONS AND COMMENTS

Recommendation 5

Whilst the Government’s decision to conduct a fundamental review of the RAE is welcome, it is essential that the review involves thorough and detailed consideration of the potential implications of any replacement system, including unintended effects on the sustainability of STEM departments.

The Government ran a consultation during summer 2006 on proposals for new research assessment arrangements and we announced the outcome in December 2006. After 2008, new arrangements will be introduced, basing assessment on a “basket” or metrics including research income, student numbers and a quality indicator. The use of metrics to assess quality is better established in some disciplines (including most STEM subjects) than others, and the new arrangements respond to the demand from consultation respondents to recognise the differences between disciplines within a common assessment framework.

For subjects where metrics are well established, the quality indicator will be a bibliometric measure and an assessment using the new measures will take place in 2009. This assessment will begin to inform funding from the 2010–11 academic year and will be fully implemented by 2014. For other subjects, including Mathematics, where bibliometrics are less well established, a lighter touch expert review will be used alongside income and student number indicators, with the first assessment taking place in 2013–14. This timeframe will allow account to be taken of any potential impact on sustainability of STEM departments.

HEFCE is taking forward the development of the new arrangements and has established key aims for the framework, which include avoiding creating undesirable incentives and providing a stable framework for continuing support of world-leading research. However, it should be noted that the overall policy aim is to support research excellence across a variety of subjects, not to specifically focus on supporting the needs of STEM departments in particular. HEFCE will make a progress report to the Secretary of State later in the autumn.

Recommendation 6

We urge the Government to be proactive in evaluating the impacts of the introduction of full economic costing to ensure that emerging problems are identified at an early stage.

Government wholeheartedly supports this recommendation. DIUS will continue to work closely with Research Councils, Funding Councils and other stakeholders such as the British Universities Finance Directors Group to monitor the impacts of the full economic costing. HEFCE will also be providing data on full economic costing and teaching next year.

Recommendation 8

By working with the Sector Skills Councils, Regional Development Agencies, learned societies, employers, careers advisory services and universities, HEFCE could play a useful role, both in leveraging student interest in non-core STEM subjects to promote the uptake of core STEM subjects and ensuring that the employment prospects associated with different STEM degrees are communicated to prospective students.

The Government continues to work with stakeholders to find the best ways of communicating key facts about STEM careers to young people. In addition to the actions outlined in our earlier response, we announced in May 2007 proposals for a national campaign to promote STEM careers in partnership with universities, employers, subject associations and other stakeholders. The campaign will run from September 2008, using the Science Council's "Careers from Science" website and other shared materials to promote an agreed set of messages to young people, parents and teachers. It is part of a wider action programme that includes the incorporation of careers information into the teaching of STEM in schools, using resources such as the Science and Engineering Ambassadors scheme and the appointment of a national STEM careers co-ordinator to bring together promotional activities and improve the range and quality of information available.

Recommendation 12

We believe that it is both inappropriate and ineffective for HEFCE to rely on UUK to disseminate important information relating to the process of reorganisation in universities.

Following the original recommendation HEFCE wrote to all institutions on 28 July 2006 (http://www.hefce.ac.uk/pubs/circlets/2006/cl17_06/#annex). Since then, HEFCE have been kept informed of changes in provision affecting Strategically Important and Vulnerable Subject and were closely involved in discussions with the University of Reading during 2006 before it announced its decision to withdraw physics provision. Apart from Reading, although there has been some minor re-structuring, there has been no significant further withdrawal of provision in physics or chemistry since the committee's report.

It should be noted that some institutions have recently chosen to revive or increase their science provision. For example, the University of Central Lancashire at Preston is now offering a single-honours chemistry degree; Queen Mary, University of London has recently invested £2.5 million into two new chemistry teaching laboratories, and is launching new BScs in chemistry with biochemistry and chemistry with forensic science this autumn; and at the University of Hertfordshire, £2 million has been invested in new chemistry labs as part of a newly-created School of Pharmacy.

Most encouragingly of all, these positive developments are being matched by increasing demand for science among prospective students. Applications and acceptances for university courses starting this autumn for subjects like physics, chemistry and chemical engineering are all increasing at nearly 10% above last year's level.

Recommendation 14

It is disappointing that the University of Sussex contacted HEFCE so late in the day, but it also highlights the severe disadvantages of an arrangement where HEFCE is entirely dependent on universities alerting it to the potential closures at an appropriate stage with no power to reprimand universities that do not do this. The softly, softly approach adopted by HEFCE has failed at its first test. We recommend that universities be required to alert HEFCE to proposed departmental closures in STEM subjects not less than 18 months before the changes are due to come into effect.

We refer the Committee to our previous response.

The Government does not want to specify a particular time period for notice for such decisions. Both we and HEFCE have made it clear that HEIs should enter into early and effective dialogue with HEFCE so that they are able to reach a judgement and as can be seen by the case of Reading's physics department, HEIs are following this guidance. Therefore, if another situation were to arise where a department may be closed, HEFCE would be able to work with the institution to assess the overall impact on the national and regional provision and to encourage collaboration between institutions in order to secure the continuation of provision in each region.

September 2007

Memorandum 6

Follow up memorandum to Science and Technology Committee Report: Drug Classification: Making a Hash of it? (Fifth Report of Session 2005–06 HC 1031)

As requested, this memorandum updates the Science and Technology Select Committee on the specific recommendations 15, 28 and 39 of its report, Drug Classification: Making a Hash of it? (Fifth Report of Session 2005–06). More broadly, the memorandum also refers to general developments related to the Committee's recommendations and the Government's Response.

Recommendation 15

In summary, the Committee recommended that the Home Office commissions independent reviews of the Advisory Council on the Misuse of Drugs (ACMD) not less than every five years. The Government accepted this recommendation in principle and referred to the work already commissioned by the Home Office, as part of its wider reform agenda, to undertake a departmental review of all its non-departmental public bodies (NDPBs).

The Government is fully committed to the Committee's well placed recommendation.

The departmental review, the terms of reference of which had yet to be settled at the time of the Government's Response, ultimately focused on the Executive NDPBs and Agencies. However, its findings are to be applied as appropriate to individual non-executive NDPBs, such as the ACMD. Of note, and in keeping with the Committee's own recommendation in respect of the ACMD, the departmental review identified that all NDPBs, should be reviewed not less than every five years.

The ACMD is therefore to be subject to an individual review. Government has considered the timing of this, to ensure that it takes into account the changes the ACMD is making, in light of the Committee's recommendations (see below), and the forthcoming change in its membership and chairmanship. It is therefore envisaged that the review will commence in mid 2008 and be completed by the end of that calendar year. We will shortly be compiling the terms of reference, and identifying an independent individual chair to lead the review. With value for money, in mind, we may combine the review with that of similar NDPBs sponsored by the Home Office.

Recommendations 28–30

Recommendations 28–30 refer to matters of transparency of the ACMD. The Government's response accepted recommendations 28 and 29 and agreed that: "... there is a need to increase the transparency of the work of the Council ..." and "... the Council intends to undertake an assessment of how it can increase the transparency of its work ..." However, the Government did not accept recommendation 30: "... that the Chairman displayed so little interest in improving the Council's approach".

The Committee asked for greater openness and transparency in the workings of the Advisory Council on the Misuse of Drugs (ACMD); specifically, that the ACMD, in keeping with the Code of Practice for Scientific Advisory Committees, routinely publish the agendas and minutes of its meetings, removing as necessary any particularly sensitive information. The Committee also recommended that holding open meetings would be of benefit for strengthening the public confidence in the scientific advisory process.

The ACMD has undertaken an assessment of its current practices and has revised these in line with the Committees recommendations. The ACMD therefore:

- (a) plans to hold future ACMD Council meetings in public (next meeting 29 November);⁸
- (b) has published the minutes of the last ACMD Council meeting (24 May) on the Home Office website (www.drugs.gov.uk). Future ACMD Council meeting agendas and minutes will be published on the ACMD web-pages; the former in advance of the meeting;
- (c) has published its publication strategy on the Home Office website; and
- (d) has published a Code of Practice, on the Home Office website, that all current and new members of the ACMD will sign up to.

In particular, the ACMD's Code of Practice notes that the ACMD will operate with a presumption of openness.

Recommendation 39

The Government accepted in principle both the Home Office and the ACMD improving its relations with Research Councils; particularly the Medical Research Council (MRC), the Economic and Social Research Council (ESRC) and further improve relations with the Department of Health. However, the Government did not accept that interactions between both the Home Office and ACMD with the Department of Health were lacking.

The ACMD Secretariat recently moved under the management of the Home Office Chief Scientific Adviser, Professor Paul Wiles (April 2007). Professor Wiles regularly holds meetings with the Chief Executives of the Research Councils and Chief Scientific Advisers of other government departments and is therefore in a position to strengthen links in these areas.

Specifically, the Home Office has a concordat with the Economic and Social Research Council that details annual meetings; the next meeting is scheduled for December 2007. The Home Office is meeting with the MRC this autumn (meeting to be scheduled).

The Government believes that there is positive engagement between the ACMD and other government departments, particularly the Department of Health (DH). The ACMD has already noted in its response to the Committee (October 2006) that they already have 'extremely close (and good) relations with the DH'. It is still practice that officials from DH attend all meetings of the Council; and, between meetings, the Council's officers and its secretariat interact with DH officials as well as (where relevant) with Health Ministers. Three examples of close working with OGDs since the Committee's Report are:

1. In September 2006 ACMD published 'Pathways to Problems'—'Hazardous use of tobacco, alcohol and other drugs by young people in the UK and its implications for policy'. Of the 24 recommendations in the report, 12 specifically relate to DH policy/interests. In following up this work the ACMD Pathways to Problems working group recently met with officials from five government departments, including DH, and the Devolved Administrations, to discuss how the responses may be taken forward and how the ACMD can further support departments in this work.
2. At a recent meeting of the Pathways to Problems working group a representative from DH, on secondment to the Home Office, was invited to present the revised National Alcohol Strategy; this was as a direct link up with the work of the sub-committee on the hazardous use of alcohol by young people and its implications for policy.
3. The Home Office and the DH have been engaged with the ACMD on a number of proposals concerning the Misuse of Drugs Regulations, and the regime by which the management of controlled drugs is governed. These have included proposals to further implement key findings of The Shipman Inquiry and also the expansion/introduction on non-medical prescribing of controlled drugs. The ACMD has provided comprehensive advice that has been accepted by Government, and in the case of non-medical prescribing, has formed the basis of public consultation.
4. The ACMD has recently held discussions with the Department of Culture Media and Sport in relation to the use of steroids and other performance enhancing drugs in sport—a particular focus in the run-up to the 2012 Olympics.
5. The ACMD will ensure that representatives from all relevant departments (eg Home Office, Department of Health, Department of Children, Schools and Families) and Research Councils are invited to attend the next ACMD public meeting.

⁸ The Select Committee Chair will be notified, in advance, of the registration process for this meeting—the Chair and Select Committee members would be welcome to attend.

 GENERAL DEVELOPMENTS

In brief, general developments related to the Committee's findings have included:

1. *ACMD Membership*

The Government is in agreement that the Council should be fit for purpose and functioning effectively. The measure of this is the provision of timely, comprehensive and expert advice, predicated on the available diversity of evidence, from ACMD to Government. The Home Office is content that the advice provided to Government is sound and fulfils these criteria. The provision of such evidence relies on the membership of ACMD being appropriately balanced; reflecting a diversity of views (recommendation 8).

The ACMD has recently undertaken a recruitment campaign for a Chair and 6 new members to replace members that retire at the end of 2007. The Committee will wish to note that the recruitment campaign has been conducted in a variety of media to ensure maximum relevant coverage; so as to ensure applications would be received from a diversity of applicants. To ensure an appropriate balance of membership on the ACMD Professor Paul Wiles (Home Office Chief Scientific Adviser) was consulted at the initiation of the recruitment process to oversee the expertise required on the Council.

The Government appreciates the steps taken by the ACMD, in light of the Committee's recommendations to review their functioning (eg recruitment campaign, Code of Practice) and ensure that they retain a diverse membership as part of their current appointments process.

2. *Drug Classification matters*

- (a) Methamphetamine was reclassified from a Class B drug to a Class A drug. The Government set out in clear terms in Parliament, in the Home Office Circular which accompanied the law change and public statements, the reasons for the reclassification.
- (b) The ACMD is developing a framework for its systematic review of a number of individual drugs—both their classification and harm reduction measures. This work is to incorporate advice on whether other drugs should be reclassified depending on the route of administration. The ACMD review of Ecstasy is currently ongoing and is expected to be published in Summer 2008.
- (c) The Prime Minister announced on 18 July, as part of the consultation to review our drug strategy, that the Government would also consult on whether it is now right that cannabis should be moved from Class C back to Class B under the Misuse of Drugs Act 1971. This decision was taken in light of real public concern about the mental health effects of cannabis use, and the part that increased potency may play, particularly for young people. The Home Secretary has now written to the ACMD with the request that the Council re-assess its advice. This letter and the ACMD's response is available at [<http://drugs.homeoffice.gov.uk/drugs-laws/acmd/>]. The Home Office is also consulting the public on this matter in *Drugs : Our Community, Your Say*.

September 2007

 Memorandum 7

Memorandum from the Department for Culture, Media and Sport and UK Sport

**Additional memorandum to the Science and Technology Committee Report:
Human Enhancement Technologies in Sport
(Second Report of Session 2006–07 HC 67)**

INTRODUCTION

The Department is pleased to provide the Committee with an additional memorandum setting out developments in the fight against doping since the Government's formal response was published on 23 April 2007.

This document aims to provide assurance to the Committee that Government and UK Sport are continuing to strengthen the UK's anti-doping policy and programme. In doing so, in the months since publication of the formal response, attention has been focused on two key areas: responding proactively to the World Anti-Doping Code review, and looking carefully at how DCMS and UK Sport can strengthen relationships with our enforcement agencies, primarily through the Home Office and HM Revenue and Customs.

On the Code review, the UK's final submission was forwarded to WADA in July, which reflected some of the views proposed by the Committee. Further details on the Code review are provided in the memorandum below.

This review will culminate with the World Conference on Doping in Sport in Madrid in November, an event which will mark a truly global and collaborative effort to improve the Code. Gerry Sutcliffe, appointed Minister for Sport in June, will attend this Conference, and intends to use it as an opportunity to signal the high priority we give to the fight against doping.

In working to strengthen relationships with enforcement agencies, DCMS and UK Sport officials attended in May a meeting of the Technical Committee to the Advisory Council on the Misuse of Drugs (ACMD) where the current approach to the misuse of anabolic steroids was discussed. It is expected that officials will attend the next meeting of this Committee in October.

Also, in July officials from DCMS and UK Sport attended a conference of the Association of Chief Police Officers' (ACPO) Drugs Standing Committee, and gave a presentation on potential information sharing requirements between the National Anti-Doping Organisation (NADO) and UK's enforcement agencies.

Finally, a Ministers' meeting is scheduled for November, chaired by the Home Office Minister, Vernon Coaker, to bring together various relevant agencies in considering the issue of trafficking of doping substances.

UPDATE ON RECOMMENDATIONS

4. *We do not believe that it is in the best interest of the athlete for WADA to remove its accreditation from laboratories testing commercial supplements for use in sport. We recommend that the Minister for Sport maintain pressure on WADA to secure the continuing accreditation of laboratories which also test commercial supplements. In addition, we recommend UK Sport take the lead in working with relevant bodies to put in place a certification system for supplements used in sport to regulate against contamination of food supplements and provide assurance to athletes on the purity of what they are taking. (Paragraph 57)*

Government Update

Since publication of Government's response both DCMS and UK Sport have continued to push WADA on this matter.

In his foreword to the UK's final Code review submission to WADA, in July 2007, Gerry Sutcliffe said that "We also have a duty of care to support athletes to make informed choices about the supplements they take, so I would urge WADA to reconsider its position in restricting WADA accredited laboratories from testing supplements".

Further, in August, UK Sport provided WADA with comments on the proposed changes to the International Standard for Laboratories, which includes the restriction on WADA accredited laboratories testing commercial supplements. In this submission UK Sport reinforced its opposition to this restriction.

UK Sport continues to explore the possibility of establishing a Supplements Risk Minimisation Scheme for sport in the UK. Several meetings have been held with the Supplements Working Group throughout 2006 and 2007 and a proposal for a Quality Assurance programme for supplements in sport is currently being drafted. Consultation with the supplements industry on the proposed programme took place at the end of September.

5. *We recommend that UK Sport consult upon and review its education material aimed at general practitioners and other medics on the issues faced by athletes, providing further education if this is deemed necessary to clarify WADA prohibited substances and the routes via which such substances may be given. (Paragraph 58)*

Government Update

In its new *Strategy for the Prevention of Doping in Sport*, to be published in October, UK Sport will set out its commitment to building on the information and education provided to medical practitioners by:

- Maintaining and expanding its Drug Information Database (DID™) at www.didglobal.com. This is used by medical practitioners around the world.
- Information on the 100% ME website to support the application of the Therapeutic Use Exemption process, including provision of guidelines and memos relating to the use of specific treatments in order to assist medical practitioners in completing TUE applications accurately.
- Hosting Medical Practitioner workshops at UK medical conferences. These workshops highlight the responsibilities of medical personnel when working with high performance athletes. In addition to the ongoing education provided to medical practitioners through UK Sport's Fast Track Practitioner programme and Bath University Sports Medicine Diploma, UK Sport plans to deliver a workshop at the British Association of Sports Exercise Medicine (BASEM) Conference in the spring of 2008.

- Providing information on anti-doping specific medical news to UK wide GP journals and magazines. With the support of UK Sport, the British National Formulary (BNF) continues to provide information on drug-free sport to general medical practitioners. UK Sport will liaise with the BNF over the next year to identify opportunities to expand this information.
- Providing 100% ME workshops and education material to athletes emphasising the need for them to inform their general medical practitioner and their pharmacist of the regulations they compete under. While UK Sport will endeavour to provide as much information to general medical practitioners as possible, athletes play a crucial role in making sure their GPs are aware of their requirements.

6. *We urge DCMS and UK Sport to press WADA for clear reasoning to be given for each substance and method included on the Prohibited List and for its decisions in cases where substances and methods are examined but not banned. As a general rule, we should like to see increased attention paid by WADA to the science behind substances and methods considered for inclusion in the List. (Paragraph 63)*

Government Update

As with recommendation 4 above, both DCMS and UK Sport have raised this with WADA on a number of occasions.

Each of UK Sport's submissions to WADA on the Code Review has included a foreword from the Minister for Sport, and each foreword has called for WADA to make the process for the inclusion, or otherwise, of substances on its Prohibited List more transparent. In the latest foreword, submitted to WADA in July, Gerry Sutcliffe stated, "... it is important that WADA maintains credibility in its annual consideration of the Prohibited List. To do this, it must be more transparent about how it comes to its decisions".

UK Sport also continues to raise this issue with WADA as part of the consultation processes not only on the revisions to the Code, but as part of the annual review of the substances on the WADA Prohibited List.

The Minister for Sport is due to meet with the current Chair of WADA, Richard Pound, on 30 October, and to attend the World Conference on Doping in Sport in Madrid from 15–17 November. He will reiterate his concerns regarding the proposed amendments at both of these meetings.

10. *We recommend that UK Sport work with WADA to help further develop WADA's testing regime and increase the chance of catching athletes who are guilty of doping. (Paragraph 71)*

Government Update

As set out in the Government's response to the Committee's report, UK Sport has well established and strong links with WADA and other international partners, and has continued to develop these since the response was published in April.

To illustrate, in May UK Sport attended and contributed to the inaugural Drug Control Officer (DCO) Seminar, held by WADA, to share best practice and improve the training of doping control staff. In the same month they delivered training to more DCOs in the Gulf States region, and trained Tutors in the region to deliver anti-doping education to athletes. Furthermore, UK Sport plans to conduct similar sessions with South Asia nations in November 2007.

UK Sport officials have now attended three WADA ad hoc working group meetings, in March, June and August this year, on the re-drafting of the International Standard for Testing, with particular emphasis placed on out-of-competition testing and the submission of whereabouts information from athletes. It is universally acknowledged that out-of-competition testing is the most effective method of testing from both a detection and deterrence point of view. The draft Standard sets some clear mandatory provisions on this, closely based on the model developed by, and already in place in, the UK.

11. *Whilst we accept that most testing is satisfactorily carried out through urine, we are of the view that increased research may be needed to determine the most appropriate testing route for different prohibited substances and we urge the Government to consider supporting studies of this nature. In the meantime, we urge UK Sport to increase its programme for testing blood samples since this may facilitate more detailed testing for prohibited substances, either in the present or future (Paragraph 72)*

Government Update

As set out in its formal response, Government welcomes the Committee's endorsement of an anti-doping programme which incorporates both urine and blood testing. As of May 2007, UK Sport has established and is implementing a blood test distribution plan for 2007–08 across a variety of sports. In carrying out this programme UK Sport will use the information gained through the Intelligence Testing programme to select appropriate times to test athletes.

16. *We recommend that UK Sport work with schools to develop an effective mechanism for educating about the harm which doping in sport can cause. (Paragraph 82)*

Government Update

UK Sport's primary commitment to education and information is to athletes and athlete support personnel. That said, UK Sport recognises that schools play a fundamental role in shaping the attitudes and values of young people, many of which will go on to compete in sport at varying levels. In addition, UK Sport recognises that doping in sport is a technical issue and very few resources exist to support teachers in delivering education about this topic.

For these reasons, UK Sport will outline, in its *Strategy for the Prevention of Doping in Sport*, the following commitment to schools:

- To expand the relevant section on the 100% ME website, using the yet to be completed the WADA Schools Toolkit, to include a set of activity plans for lessons on drug-free sport.
- To work co-operatively with LOCOG to promote anti-doping in schools ahead of London 2012.
- To work co-operatively with the Advisory Council on the Misuse of Drugs to identify opportunities for education to school age adolescents about the health and social consequences of the misuse of substances for improved performance or appearance, such as steroids, human growth hormone and stimulants.

19. *We urge UK Sport to recommend to WADA that a minimum four year ban is applied in all incidences of proven doping. (Paragraph 92)*

Government Update

The current revised draft of the World Anti Doping Code allows for an athlete to receive a sanction of up to four years ineligibility if it is shown that there were aggravating circumstances involved in their anti-doping rule violation.

The issue of sanctions will be discussed at the World Conference on Doping in Sport in Madrid.

26. *We recommend that UK Sport and DCMS urgently consult on requirements for scale-up of testing facilities, personnel and protocol during the London 2012 Olympics and that Government funding for meeting such requirements be made available. This will clearly require close working with LOCOG and to facilitate this, we urge the Government to provide a clear statement on the responsibilities and remit of LOCOG and UK Sport regarding the London 2012 testing programme. (Paragraph 109)*

Government Update

On 14 June the former Minister for Sport, Richard Caborn, met with Debbie Jevans, LOCOG's Director of Sport, Richard Budgett, LOCOG's Chief Medical Officer, and a representative from UK Sport to discuss the planning required for anti-doping programmes in the run-up to, and during, the 2012 Games.

At this meeting Debbie Jevans confirmed that LOCOG's Anti-Doping Manager would take up post in October 2007. It was agreed that once the manager was in post a further meeting would take place between DCMS, UK Sport and LOCOG. This meeting will be arranged in due course.

29. *We recommend that mechanisms be put in place for informed liaison between UK Sport or any replacement anti-doping authority and HM Revenue and Customs to identify and monitor prohibited substances brought into the UK which may be intended for use during the 2012 Olympic Games. (Paragraph 112)*

Government Update

Prior to publication of the Government's response, on 16–17 April, UK Sport hosted the WADA Legal Symposium, the aim of which was to identify, and learn from, best practice around the world in the area of information sharing and co-operative working between public authorities, law enforcement agencies and Anti-Doping Organisations. This was attended by officials from DCMS and HM Revenue and Customs.

Officials from DCMS have since met with colleagues from HM Revenue and Customs and the Home Office a number of times to explore options for establishing mechanisms for informed liaison between UK Sport and the UK's enforcement agencies. To illustrate, meetings have included DCMS and UK Sport staff presenting information sharing requirements to an Association of Chief Police Officers' (ACPO) Drugs Standing Committee in July.

Additionally, following a telephone meeting in July between the Minister for Sport, Gerry Sutcliffe, and the Home Office Minister Vernon Coaker, agreement was reached that the Home Office Minister would chair a meeting on trafficking of doping substances in November. It is expected that representatives from the Home Office, DCMS, HM Revenue and Customs, the Association of Chief Police Officers (ACPO), the Serious and Organised Crime Agency (SOCA), and UK Sport will be invited to attend.

31. *We recommend that the Government review the quality of sports science research in the UK and implement mechanisms for enhancing training and support where required. (Paragraph 118)*

Government Update

Since April UK Sport has convened two meetings of the research and innovation advisory panel referred to in the formal response. The role of this panel is to drive forward specific areas of research pertinent to the needs of Olympic and Paralympic Sport, and is made up of a range of technical staff from some of GB's leading sports. At these meetings, which took place in June and September, the panel has agreed to focus, at this stage, on research related to training science and injury management.

In June, UK Sport launched its programme to develop sports specific research opportunities, aimed primarily at sports scientists and medics working in the high performance system. This programme offers a range of annual awards to help take forward these ideas through the sports themselves, or in partnership with the commercial or University sectors. Since the launch, UK Sport has received a number of applications and ideas for projects for research in a range of areas, including equipment development, coaching technologies and the human sciences, such as injury management.

In September, UK Sport launched the pilot of a competition for young scientists to help identify new initiatives for the elite sport system. This will involve students and staff at a select number of universities for the pilot year, businesses and industrial partners who have been identified due to their size and graduate programmes.

34. *We urge UK Sport to develop formal mechanisms for the sharing of knowledge and information between the different sectors and to look at mechanisms for maximising the application of knowledge already in existence to the benefit of sport in the UK. Furthermore, we recommend that the UK Research Councils identify mechanisms for enhancing the sharing of information relevant to sports science between the different academic disciplines. (Paragraph 129)*

Government Update

UK Sport continues to work with various partners, in the University, research and commercial sectors, and bring their knowledge and expertise to benefit elite sport. Much of this work is ongoing, and formal partnerships are in development, supported in part through UK Sport's research and innovation advisory panel. The Committee will also want to be aware that in September, UK Sport presented to the British Association of Sport and Exercise Sciences (BASES) Conference to draw its attention to the opportunities to work in partnership with the Research Councils.

September 2007

Memorandum 8

House of Commons Science and Technology Select Committee Inquiry "Scientific Advice, Risk and Evidence: How Government Handles Them" 2005–06 Report: Watching the Directives: Scientific Advice on the EU Physical Agents (Electromagnetic Fields) Directive (Fourth Report of Session 2005–06 HC 1030)

In its response to the above report in October 2006, the Government acknowledged criticisms of the process of negotiating the Directive, and indicated a strong intention to learn lessons from this episode. This memorandum seeks to update the Committee on general developments in the field since the Government's response in October 2006.

Work in relation to the EMF Directive has continued in partnership with stakeholders including those in the medical community, those from other sectors such as the manufacturing organisation, EEF, and other government bodies. The Health and Safety Executive (HSE) has worked throughout the year with the European Commission and other Member States on concerns about the Directive.

HSE published research into the impact of the Directive on MRI in June 2007. This confirmed the concerns of the MRI community that some procedures, as currently practised, could expose workers to EMFs above the exposure limit values set out in the Directive, and brought this to the attention of the European Commission.

In the light of this and other evidence, the Director General of the Directorate General for Employment and Social Affairs has written, most recently in July 2007, to Member States with a commitment to take action including a possible postponement of the implementation date of the Directive. The most recent of these letters is at Annex 1.

Other relevant improvements made by HSE and other government bodies to ensure similar problems do not arise again are outlined below, many of these already underway in advance of the Committee's Inquiry.

IMPACT OF THE EMF DIRECTIVE ON MRI (RECOMMENDATIONS IN PARAGRAPHS 76 AND 78)

1. Progress has been made toward resolving issues relating to the possible impact of the Directive on MRI. In addition to work mentioned above, the following can be noted:

Research

2. The Wellcome Trust, Medical Research Council, Cancer Research UK and Engineering and Physical Sciences Research Council have conducted a survey of UK MRI researchers to assess the potential impact of the EU Physical Agents (EMF) Directive on research of clinical and public benefit. This found that research using MRI, as currently practised, could also expose workers above the exposure limit values in the Directive. The full report, once completed, is to be submitted for publication in the Journal of Magnetic Resonance Imaging.

3. The European Commission have funded additional research intended to complement that funded by HSE. This is due to report later in 2007.

Activity in Europe

4. The extension, at the UK's instigation, of the mandate of an existing EMF working group run under the auspices of the European Commission's statutory Advisory Committee on Safety and Health at Work to discuss this issue. This tripartite body has met several times, and has two UK members. It will make recommendations to the full Committee later in 2007.

5. The European Parliament's Employment and Social Affairs Committee discussed the matter on 7 May 2007. This has the effect of raising the profile of the issue, with many more Member States becoming concerned. This has resulted in a number of actions by the European Commission, culminating in two letters, in March and July, from the Director General for Employment and Social Affairs, to all Member States, giving a commitment to take appropriate steps. The EC have indicated they may propose a delay to the transposition deadline for the Directive, perhaps by two to four years, to enable an appropriate solution to be found.

6. The European Society of Radiology has organised an "alliance for MRI" which includes around 50 MEPs.

7. The International Commission on Non-Ionizing Radiation Protection (ICNIRP) is reviewing some of the limits, which underpin the Directive.

CONSULTATION (60 AND 70)

8. HSE published new internal guidance on consulting stakeholders in March 2007. The document links directly to the Better Regulation Executive's guidance and Code of Practice on Consultation so that HSE's approach is consistent with that of other government departments. The opportunity was taken to re-emphasise a few key points, particularly in the light of lessons learnt from the House of Commons Science and Technology Select Committee report:

- (a) The importance of early external consultation on the basis of a full stakeholder analysis beyond the customary consultees.
- (b) The need to comply with the Chief Scientific Adviser's Guidelines and involve the Chief Scientist in scientific dossiers, especially if there is conflicting scientific advice.
- (c) The desirability of talking to stakeholders (for example SMEs or professional groups) in addition to the more usual written/internet consultations.
- (d) How HSE reports the results of consultation.
- (e) How to handle disagreements with stakeholders and the importance of flagging these up within HSE and HSC, and making it clear to stakeholders that they can escalate their case.

9. The new guidance has been actively promoted throughout HSE, with training for all key staff likely to be engaged in similar consultations.

10. The Interdepartmental Liaison Group on Non-ionising Radiation (IDLG NIR) has no executive powers but functions as a means of raising awareness of NIR and electromagnetic fields (EMF) issues that might affect policy. Following the Select Committee report, members the IDLG considered in December

2006 how to review and strengthen its approach. Rather than add more members to its ranks, they chose to consult more widely within their own organisations and include horizon scanning as apart of this consultation. In this way members of the IDLG should therefore be more alert to the various needs of the other parts of their complex organisations as and when issues arise.

MANAGEMENT OVERSIGHT OF EUROPEAN NEGOTIATIONS (61)

11. New procedures have been put in place to improve the management oversight of all European negotiations, and this is already reaping rewards with better co-ordination within HSE and across Government. This new oversight involves regular senior level reviews of all proposals and, in some instances, the use of senior-level project boards chaired by a HSE Director. These address questions such as the adequacy of plans for stakeholder engagement and consultation, the proper resourcing to ensure the right balance of policy and specialist input, potential difficulties and how can they be avoided, and how the Health and Safety Commission (HSC), Ministers and Parliament will be involved.

ROLE OF THE HSE AND DEPARTMENT OF HEALTH (DH) CHIEF SCIENTIFIC ADVISORS AND MAKING BEST USE OF SCIENCE (40, 54, 60)

12. HSE's new Chief Scientific Advisor (CSA), Patrick McDonald, has been instrumental in taking forward a "Making Best Use of Science" project. There are three key strands of this work which relate to the findings of the Select Committee. The first is the establishment of a core Science and Technology Group which will bring together expertise from within HSE and the Health and Safety Laboratory (HSL). This will help to ensure that HSE can respond to new and emerging risks in a more co-ordinated and coherent manner; the second is the establishment of two senior scientific advisors to work directly to the CSA with a remit to ensure that HSE's scientific resource meets the current and future challenges of a changing work place; the third is the establishment of a more rigorous and longer term methodology for science planning, which will involve input from HSE's horizon scanning team, and the establishment of an HSE Board Science Sub Group, including external representatives, chaired by the CSA.

13. HSE has recognised the need to ensure that both policy makers and scientists understand the requirement for sound, underpinning evidence when formulating new policy. A series of workshops have been run and more are planned, which bring together policy makers and scientists with the aim of developing a mutual understanding of needs and constraints of each party. These have been very well received and a recent external review by Environmental Research Funders' Forum (ERFF) commented on their value.

14. The scientific responsibilities in the Department of Health (DH) are three-fold: The DH Chief Scientist is Dr David Harper, the Chief Scientific Adviser is Professor Sally Davies and the Chief Scientific Officer is Professor Sue Hill (NHS Healthcare Science). All three have an interest in the issues identified by the Select Committee recommendations on MRI and the Physical Agents (EMF) Directive and will be kept informed of such cross-boundary issues. Since the Select Committee report was published, the DH Chief Scientist has met with the CSA at the HSE.

REGULATORY IMPACT ASSESSMENTS (PARAGRAPH 32)

15. There have been a number of changes to Regulatory Impact Assessments, now called Impact Assessment (IA), procedures in central government and HSE. They include the need for the Chief Economist to provide a submission to the HSE's Chief Executive or HSC's Chair which will need to clarify that the analysis is of sufficiently high standards, a number of additional tests which will be integrated in the IA as and when needed and the attempt to start the IA process as early as possible to ensure a full reflection of all impacts and the scope for the IA to influence policy making.

16. In May 2007, the Better Regulation Executive introduced new guidance and an electronic toolkit on when Impact Assessments need to be produced by government departments. HSE formally agreed the introduction of these new guidelines at Board level, and promulgated them through a message to staff and through new better policy making seminars. These seminars, aimed at policy staff, focus on the importance of developing good Impact Assessments through all stages of policy development. They also reinforce, for those involved in EU negotiations, the need to have a well-developed Impact Assessment available prior to the start of EU negotiations and amended, as necessary, to take account of changes to the EU proposal during negotiations.

17. HSE has also established a Challenge Panel whose operating criteria include supporting effective handling of emerging EU proposals. In line with UK EU policy, HSE is pressing the European Commission (EC) to honour its commitment in "*Better Regulation for Growth and Jobs in the European Union*" COM(2005) 97 final, to produce good quality Impact Assessments for significant proposals. When produced, HSE's negotiators are instructed to challenge poor quality assessments.

October 2007

Memorandum 9

Memorandum from the Department of Health to the House of Commons Science and Technology Committee Report: Government Proposals for the Regulation of Hybrid and Chimera Embryos (Fifth Report of Session 2006–07 HC 272)

EXECUTIVE SUMMARY

1. The Science and Technology Committee reviewed Government proposals regarding hybrids and chimeras as published in the Government's December 2006 White Paper: *Review of the Human Fertilisation and Embryology Act: Proposals for revised legislation (including establishment of the Regulatory Authority for Tissue and Embryos)*.⁹

2. This memorandum provides a short summary of the history leading up to the publication of Government proposals, and a summary of progress and development since publication of the Government's response to the Science and Technology Committee.

LEAD UP TO THE SCIENCE AND TECHNOLOGY COMMITTEE REPORT

3. In January 2004 the Government announced its intention to undertake a review of the Human Fertilisation and Embryology Act 1990, beginning that year and to include a public consultation exercise in 2005. The Government considered that a review was necessary in the light of, in particular, advances in technology and possible changes in attitudes since the formulation of the original Act. Following the review, proposals were published on 14 December 2006 in a White Paper.

4. The Government's principal aims in proposing revisions to the legal and regulatory framework were:
- to ensure that legitimate medical and scientific applications of human reproductive technologies can continue to flourish;
 - to promote public confidence in the development and use of human reproductive technologies through effective regulatory controls applicable to them; and
 - to secure that regulatory controls accord with better regulation principles and encourage best regulatory practice.

5. The White Paper was informed by, among other things, reports from the Chief Medical Officer's Expert Advisory Group,¹⁰ the House of Lords Stem Cell Research Committee¹¹ and the House of Commons Science and Technology Committee.¹²

6. The White Paper included proposals for the regulation of hybrid and chimera embryos. Of primary importance was that the law should clarify which hybrids and chimeras warrant regulation by the Authority. On 5 April, the House of Commons Science and Technology Committee published a report on those proposals, following a short inquiry.

7. The Science and Technology Committee's recommendations concerned the regulation, risk management and legal limits of inter-species embryo research. Other recommendations were on other related topics such as legal definitions, ethical concerns, the value of research, and public awareness and engagement. The Committee recommended a more liberalised approach to inter-species embryo research, and that such research should be permitted for research, subject to regulation.

8. The Government published a formal response to the Committee's recommendations in June 2007, shortly after publication of a Bill in draft form.

PROGRESS SINCE THE SCIENCE AND TECHNOLOGY COMMITTEE'S REPORT

9. On 17 May 2007, the Government published draft legislation to revise and update the Human Fertilisation and Embryology Act 1990, in the form of the Human Tissue and Embryos (Draft) Bill.¹³ The provisions of the draft Bill were based on proposals published in the December 2006 White Paper.¹⁴ However, we made clear in the introduction to the draft Bill that we were prepared to accept the principle that legislation should provide for inter-species embryo research using human cybrid, chimera and transgenic embryos.

⁹ Cm 6989.

¹⁰ Stem cell research: medical progress with responsibility: A report from the Chief Medical Officer's Expert Group, reviewing the potential of developments in stem cell research to benefit human health, 2000.

¹¹ Report from House of Lords Stem Cell Committee: Stem Cell Research, HL83(i).

¹² Human Reproductive Technologies and the Law, HC-7.

¹³ Human Tissue and Embryos Draft Bill, Cm 7087.

¹⁴ ????????

10. A Joint Committee of both Houses of Parliament was established to undertake pre-legislative scrutiny of the draft Bill. The Joint Committee examined the draft Bill closely on a number of proposals, taking evidence from 46 oral witnesses in addition to 115 submissions of written evidence. Following the inquiry, the Committee published a report on 1 August 2007.

11. A number of the recommendations made by the Science and Technology Committee, are issues which have now been re-examined by the Joint Committee report including issues such as public engagement, and the regulation of hybrid and chimera embryos.

12. The Government published a response to the Joint Committee on 8th October 2007.

HFEA Consultation

13. In November 2006, the HFEA received applications from two different research teams for a licence to derive stem cells from human embryos, created using animal eggs instead of human eggs.

14. The HFEA felt that in order to ensure that it was able to make an appropriate and reasoned decision, it needed to ensure that it had a comprehensive and robust evidence base as a foundation for their decision. In April the HFEA launched a public consultation to explore people's views on whether or not scientists should be allowed to create embryos containing animal DNA in embryo research. This consultation was supported by the Government's *Sciencewise* programme.

15. The consultation included a published paper, an online questionnaire, a public meeting with interest groups, scientists and members of the public, a public opinion poll, and deliberative work including discussion groups and workshops. This approach allowed participants to make informed judgements on this research.

16. On 5 September the HFEA announced that "Having looked at all the evidence the Authority has decided that there is no fundamental reason to prevent cytoplasmic hybrid research. However, public opinion is very finely divided with people generally opposed to this research unless it is tightly regulated and it is likely to lead to scientific or medical advancements".

AMS Report

17. In June, the Academy of Medical Sciences produced a report¹⁵ on inter-species embryo research. The report was produced by a working group of the Academy, chaired by Professor Martin Bobrow CBE FRS FMedSci.

18. The report concluded that research involving inter-species embryos should be permitted under regulation, especially in developing tools to understand human development and to further knowledge about the process of cell nuclear transfer. The report acknowledged that at this time there is no scientific reason to generate "true" hybrids, created by the mixing of human and animal gametes, but they felt that they could not rule out the emergence of valid reasons in the future.

19. The report also concluded that, "provided good laboratory practice is rigorously followed, research involving cytoplasmic hybrids or other inter-species embryos offers no significant safety risks over and above regular cell culture research."

Health and Safety Executive

20. The Health and Safety Executive have made an assessment that the risks to human health and the environment by the creation and use of inter-species embryos will be low, as the embryos will only grow in very specialised media, and will not survive outside this. The work would normally be carried out in a "clean room" in a safety cabinet, so exposure of workers/environment should not be a concern. If the organisms did pose a risk to human health, then the general provisions of the Health and Safety at Work regulations, and the Control of Substances Hazardous to Health Regulations would apply. These would require appropriate measures to be taken to minimise exposure to the organisms.

CONCLUSION

21. Since the Science and Technology Committee's report on Government proposals for the regulation of hybrid and chimera embryos, the Government has published its Bill in draft form, and the specific clauses of the Bill have been examined by a Joint Committee of both Houses.

22. The Government has taken forward many of the Science and Technology Committee's recommendations in drafting the Bill, and we remain grateful for their examination of these difficult issues. The Government's proposals on hybrids were published on 8th October, in its response to the Joint Committee's recommendations (Cm 7209). Copies have been placed in the Library.

¹⁵ Inter-species embryos—A report by the Academy of Medical Sciences
<http://www.acmedsci.ac.uk/index.php?pid=118&pressid=34>

23. We are now re-drafting the Bill following the Joint Committee's report, ready for introduction to Parliament in the next parliamentary session. We are working closely with the HFEA, the AMS, and other stakeholders to this end.

October 2007

Memorandum 10

Memorandum from the Department for Business, Enterprise and Regulatory Reform Update on Carbon Capture and Storage (CCS) Developments since the Government's Response of 24 April 2006 to the Committee's Report: Meeting UK Energy and Climate Needs: The Role of Carbon Capture and Storage (First Report of Session 2005–06 HC 578)

INTRODUCTION

The Government welcomes the opportunity to provide an update following its response to the Science and Technology Committee's report of 9 February 2006 on "*Meeting UK Energy and Climate Needs: the Role of Carbon Capture and Storage*".

Since its response of 24 April 2006 to the Committee's Report the Government has made significant progress in taking forward its work on the development and demonstration of CCS. This Memorandum informs the Committee of work that has taken place since, particularly in relation to recommendations by the Committee which were accepted by the Government or where the response indicated that work was ongoing.

BACKGROUND

Climate Change Policy

Sir Nicholas Stern's report of autumn 2006 on the economics of climate change concluded that there is still time to avoid the worst impacts of climate change if strong action is taken now. He highlighted the strategic role that technology, and particularly CCS, could play globally in lowering carbon emissions. The International Energy Agency has concluded that CCS has the potential to contribute up to 28% of global carbon dioxide mitigation by 2050, particularly relevant to tackling emissions in fast growing economies with rising fossil fuel consumption, such as China and India. Sir Nicholas's report also highlighted the very significant cost of a single CCS demonstration project, commenting on the "lumpy" nature of CCS investments implying that it may be better for a limited number of countries to demonstrate CCS. CCS has the potential to reduce carbon dioxide emissions from fossil fuel stations by as much as 90%.¹⁶ The Government remains committed to playing a leading role in tackling the threat of climate change and believes strongly that encouraging the development, demonstration and subsequent wide scale deployment of CCS has a key contribution to make towards this.

UK Demonstration of CCS

The possibility of large-scale demonstration of CCS in the UK has moved on considerably since last reported and is a cornerstone of our work on developing sustainable fossil fuel energy.

In the 2006 Pre-Budget Report the Government announced that engineering consultants would be appointed to help assess whether supporting a CCS demonstration plant would provide value for money. Their findings confirmed that companies would not bring forward a commercial-scale CCS project without additional support because of the uncertain costs of full-scale deployment. The 2007 Budget announced that the Government would launch a competition to develop a commercial-scale CCS demonstration project. The Energy White Paper, published in May 2007, indicated that Government intended to launch the competition in November 2007. The EWP¹⁷ indicated that the criteria against which proposals would be assessed would be likely to include the need for any project proposal to:

- Be located in the UK.
- Cover the full chain of CCS technology on a commercial scale power station.
- Be at least 300MW, and capture and store around 90% of the carbon dioxide.

¹⁶ Intergovernmental Panel on Climate Change (IPCC).

¹⁷ <http://www.berr.gov.uk/files/file39387.pdf>

- Start demonstrating the full chain of CCS at some point between 2011 and 2014.
- Address its contribution to the longer term potential of CCS in the UK, and to the international development of CCS.

On 9 October John Hutton announced that the project should demonstrate post-combustion CCS on a coal-fired power station, with CO² stored offshore. The Government will consider a phased approach to the project as long as the full CCS chain is demonstrated by 2014, and the project captures around 90% of the CO₂ emitted by the equivalent of 300 MW generating capacity as soon as possible thereafter. The announcement launched a short period of discussion with industry prior to the planned formal launch of the competition.

Post-combustion is the most globally relevant technology. It can be used with existing and planned coal-fired stations globally, and can also be retro-fitted, tackling emissions from power stations that will be in operation for 30–40 years—vital in combating climate change and relevant particularly to China and India.

Given the high cost of demonstrating CCS at scale, it is important that projects that go ahead globally demonstrate different aspects of the CCS chain of technologies and that the learning is shared as widely as possible to encourage rapid deployment. The UK demonstration will complement projects in the USA (the Futuregen coal-based IGCC project) and Norway (demonstrating post-combustion on gas). Proposals for sharing the results of the UK demonstration will form part of the competition.

When operational the plant will be one of the world's first commercial scale CCS plants. The Government is fully committed to the success of the competition which we hope will put the UK ahead in the global race for clean coal.

Progress has also been made on a range of international outreach and collaborative initiatives. For example, we are working bilaterally and through the EU and G8, with developed as well as developing countries to facilitate the development and deployment of CCS. The UK is leading the EU Near Zero Emissions Coal (NZE) initiative in China and is actively pursuing a similar project in India. The NZEC project will identify by the end of 2008 options for demonstration of CCS in China for coal fired power generation by 2014. The UK has committed £3.5 million to this project for a feasibility study and we are actively pursuing contributions from other Member States for further phases for the work. In addition, the Government has started collaboration with India to develop understanding of CCS and supported an Indian CCS research conference in January 2007.

We are also continuing to work with the US through an Implementing Agreement on Fossil Energy research and are now actively trying to broaden the scope of that agreement to include Carbon Capture and Storage.

Recommendation 4

We recommend that the government makes capture readiness a requirement for statutory licensing of all new fossil fuel plant. This would compel the developer to demonstrate that consideration has been given in the planning and design of the plant facilitating subsequent addition of suitable carbon dioxide capture technology, as and when it becomes available and economic.

The Government's Energy White Paper, highlighted whether we should require future fossil fuel power stations to be built "capture ready" and if so what the options would be for doing this. We will need to recognise that for some projects the scope for CCS may be limited (eg because of geographical location or other technical limitations). To this end, the Government will be launching a consultation later this year on the aspects of capture readiness which should be included in future applications for consent. It will also deal with how practically we might deal with this issue in the consenting process. This will include building new and retrofitting existing fossil fuel power stations.

In addition, the International Energy Agency, as part of the G8 Gleneagles action plan, is investigating the concept of capture readiness for all fossil fuel power stations. Its report was published in May 2007 (Reference IEA GHG "CO₂ Capture Ready Plants" 2007/4, May 2007) for consideration by the G8 summit meeting in Tokyo, Japan in July 2008.

Recommendation 6

The UK is fortunate in being very well endowed with potential CO₂ storage sites, many of which have been thoroughly characterised. This provides the UK with a competitive advantage in terms of access to potential CO₂ storage sites, both for its own use and to demonstrate UK geological skills to the rest of the world.

Since the Committee's report the Government has been active in further assessing the suitability of the North Sea as a storage site for CO₂. Firstly, we undertook a sources and sinks study in 2006, the result of this was to identify areas off-shore and on-shore where CO₂ could be stored. Whilst the existing oil and gas fields have been well characterised, there is still more work needed to assess the potential of other geological formations for CO₂ storage. During the course of this year, we have completed a study into developing an infrastructure in the North Sea; this study was commissioned by the then Chancellor of the Exchequer, Gordon Brown and the Norwegian Prime Minister Mr Stoltenberg. This study was undertaken in

collaboration with our Norwegian colleagues under the auspices of the North Sea Basin Task Force. It is planned to publish the results before the end of the year. The study confirms the suitability of the North Sea to not only take CO₂ emissions from both the UK and Norway but also from other European countries.

In addition to this, the Government played a key role in securing the amendments in 2006–07 to the two international marine conventions that prohibited (except in very specific circumstances) the disposal of waste and other matter in the marine environment including in geological formations under the sea bed. Both the Protocol to the London Convention and the OSPAR Convention have now adopted amendments to allow CO₂ storage beneath the seabed, with suitable regulation and guidance. The amended treaties result in a major step towards enabling the implementation of CCS.

Please refer to the response to Recommendation 37.

Recommendation 11

Most of the component technologies of CCS are not novel: the key to outstanding requirement is to integrate them within full-scale demonstration projects involving different elements of the technology and operating under different conditions (including offshore).

Recommendation 13

We are encouraged by the number of companies considering investing in UK CCS demonstration projects. Industry evidently believes that CCS technology is sufficiently advanced to proceed with full scale demonstrations. What is needed now to complement this positive response from industry is a commensurate effort from the Government.

We agree that the processes involved in CCS are not novel but have yet to be demonstrated together at commercial scale on power generation. Demonstration will test scale-up, process integration, operating flexibility and the impact on plant efficiency of installing capture on generating plant. It will also test the robustness of the storage facilities, including the regulatory regime for site selection and monitoring of the stored CO₂. These are all needed before wide scale deployment can take place.

The Government is pleased to report that industry's interest in the deployment of CCS continues to be sustained. We are aware of a number of potential CCS projects in the UK and continue to work closely with potential project developers. Further details of raising awareness of the project are given in our response to Recommendation 32.

BERR continues to support research and development for carbon capture and storage (CCS) through the Technology Programme. Funding for this programme will continue through 2007 at which stage the new arrangements for the Technology Strategy Board and Energy Technologies Institute will be introduced.

DIUS is currently supporting applied research and development projects for carbon capture and storage (CCS) through the Technology Strategy Board's (TSB) Technology Programme. The TSB became an executive Non Departmental Public Body in July this year and is currently developing a forward looking strategy for 2008–11 with a focus on benefiting business, increasing economic growth and improving the quality of life in the UK. Future funding priorities will be decided as part of this process.

The Energy Technologies Institute (ETI) is a 50:50 partnership between government and industry. ETI brings together some of the world's biggest companies, including BP, Caterpillar, EDF Energy, E.ON UK, Rolls-Royce and Shell, with the aim of raising up to £1.1 billion over a 10-year period for low-carbon energy technologies. Following a competitive process, a Midlands consortium led by Loughborough University has been selected to host the institute headquarters, and the ETI Chief Executive has been identified. The Institute is currently developing its strategy and expects to be fully operational in 2008.

Additionally, the Government continues to support demonstration of elements of the chain of CCS technologies through the £35m Carbon Abatement Technology (CAT) demonstration scheme. A first call for proposals was made in October 2006. Subject to contract, the Department will be funding under the HFCCAT programme a technology demonstration project of an oxyfuel combustion system.

This is a four-year project, expected to commence by the end of this calendar year. The principal aim is to demonstrate an oxyfuel combustion system of a type and size (40MWt) applicable to new and retrofit advanced supercritical oxyfuel plant. A combustion rig will be developed to carry out the testing.

The Department will confirm the full details of the project once the contract has been completed.

Recommendation 15

The Government can play an essential role in 'pump priming' the initial demonstration projects. In order to do this effectively, Government support in the order of hundreds of millions of pounds needs to be forthcoming over the next five years.

As described above, in November the Government plans to launch a competition to support a full-scale demonstration of CCS, which should be operational by 2014.

Recommendation 17

The Government must do its utmost to work together with both the private sector and academia to give the UK the best chance of hosting any major EU-funded CCS demonstration project.

The UK Government continues to play an active part in the EU Technology Platform for Zero Emissions Fossil Fuel Power Plant (ZEP). At both industry and Government levels we have been taking a leading role in developing strategies for deployment and research of CCS technologies on a European scale. The ZEP Government Group is chaired by a BERR senior official.

ZEP produced two key documents at the end of last year—a Strategic Deployment Document and a Strategic Research Agenda which are becoming influential in the Commission's thinking on CCS policy, for example feeding into the Spring Council's Statement that 10 to 12 CCS demonstration projects will be required. Currently there are four Task Forces taking forward the work of the ZEP; these are concentrating on R&D, Demonstration (via the Flagship Programme proposing 10–12 EU CCS demonstrations), Regulation and Public Outreach. These taskforces reported on their work to the ZEP General Assembly in October 2007.

Recommendation 18

The increasing co-operation between the UK and Norway on CCS is sensible, but the UK should also learn from the Norwegian Government's approach of backing its words with action and investment.

As reported earlier in the Memorandum, the UK and Norwegian Governments are working closely together, through the North Sea Basin Task Force, on how the transport and storage of CO₂ in the North Sea should be managed.

We have continued to work with the Norwegian Government through the North Sea Basin Taskforce to develop a set of common principles to regulate the transport and storage of carbon dioxide beneath the North Sea. The Taskforce submitted a Report to the UK and Norwegian Energy Ministers in June 2007 which laid the foundations for a regulatory framework to enable CCS to develop effectively, safely and in line with the Government's environmental principles.

As reported in response to Recommendation 6, the Task Force has also produced a report on the development of a North Sea Infrastructure for the transport and storage of CO₂ beneath the North Sea.

Recommendation 27

The main source of leakage from CO₂ storage sites is likely to be from boreholes, although it is expected that any breach of the borehole seal could be remediated quickly. Further R&D to develop cements and sealants optimised for CO₂ storage would nevertheless be valuable.

The R&D programme which operates under the Technology Strategy Board includes research themes for investigating the sealing of bore holes. This area is widely recognised as needing further R&D and as such it is also being undertaken in an international context. The IEA GHG R&D Programme operates an international R&D network specifically on well bore integrity. Along with other UK stakeholders, BERR intends to participate in this network at its next meeting in 2008.

Recommendation 28

We recommend that the Government works both with other interested parties within the UK and, over the longer term, internationally, in order to develop a standardised methodology for site characterisation. More generally, there is a need for codes of practice to be developed to ensure good design and management of CO₂ storage facilities.

In April 2006, BERR established a cross-Government Regulatory Taskforce to examine a range of issues relating to the regulation of CCS in the UK including licensing of offshore CO₂ storage, responsibility for the long term liability and the encouragement of capture-ready generation. The establishment of the Group means that CCS policy can be better co-ordinated. The Taskforce met several times to consider these issues, including those which relate to the possible CCS legislative framework at the EU level. The work of the taskforce has now largely concluded and has progressed to the development of UK regulation and licensing for CCS. High level provisions for a regulatory framework for CCS in the UK are included in the Energy Bill, planned to be introduced autumn 2007. We are intending to launch a consultation later this year on the details of the regulatory regime. BERR continues to follow the methodology in the 2006 IPCC Guidelines for GHG Inventories for CO₂ storage site characterisation and to work with international experts on site characterisation, including the UK's British Geological Survey, to understand how best practice can be reflected in the UK regulatory developments. BGS are advisers to Government on CO₂ storage for the UK demonstration project.

The work of the North Sea Basin Taskforce on regulatory principles mentioned earlier in this Memorandum has contributed to this.

Recommendation 29

Further research is needed to improve the tools for site selection and subsequent monitoring and verification of CO₂ stored in geological formations. Although companies will be expected to take steps to improve monitoring and verification in the projects that they sponsor, the Government must take primary responsibility for commissioning research in this area in view of its significance for public safety and confidence in the technology. We recommend that the Government makes this an RD&D priority.

We recognise that the need for further research into such activities as monitoring or modelling of CO₂ is required and this will be encouraged under the TSB or ETI initiatives for R&D funding. In addition, R&D is being undertaken in an international context as we also recognise the need for further R&D in this area. The IEA GHG R&D Programme operates an international R&D network specifically on monitoring, and along with other UK stakeholders, BERR is a participant in this network.

The scope for R&D projects under the Technology Programme also invites proposal for work covering this area.

Please also refer to the response to recommendation 27 on R&D in relation to leakage from boreholes.

Recommendation 30

Providing that the pipelines are designed and routes are selected in such a way as to minimise risk, transportation of CO₂ by pipeline between capture and storage sites should not pose any greater threat to human health or the environment than natural gas transport and may indeed be lower.

Recommendation 31

Overall, the evidence suggests that for well-chosen sites the risk of leakage of CO₂ from geological storage reservoirs of pipelines is low. The risks associated with storage of CO₂ would be further mitigated by thorough site characterisation and management, monitoring and verification of storage sites.

In response to the Energy Review consultation the Health & Safety Executive (HSE) published an expert report "The health and safety risks and regulatory strategy related to energy developments" in June 2006.

The report identified that a significant area of uncertainty and concern associated with CCS is centred on the properties and behaviour of supercritical or dense phase CO₂. In particular, the report states that the lack of large-scale experimental data and the failure of existing modelling techniques to handle the complexity of its behaviour following a leak or other loss of containment event needs to be addressed.

The report concluded that whilst the current regulatory framework predates the concept of large-scale CCS it provides a sound basis for the appropriate regulation of most aspects of the on and offshore activities, particularly in respect of the general management of health and safety, the established areas of major hazard sites, and occupational hygiene.

The prospect of transporting or injecting very large quantities of CO₂ was not envisaged when the regulatory framework for controlling the risks from hazardous installations was drafted. Consequently the presence of CO₂ does not by itself trigger any of the major hazard legislation. The information currently available gives some cause for concern regarding its major accident potential, and HSE gave a commitment to examine this in detail in appropriate research programmes.

Since publishing its report, HSE has raised its safety concerns relating to the major accident potential of dense phases and supercritical CO₂ at the Committee of Competent Authorities in Europe and asked that they be considered as part of the forthcoming review of the Seveso II Directive.

Recent work done by the Health and Safety Laboratories (HSL) indicates that CO₂ exhibits major accident potential, when transported by pipeline at pressures and temperatures below those that categorise CO₂ as dense phase or supercritical. It is not yet clear exactly what controls should be applied to the transport of CO₂ in this context but pending further research it is possible that HSE will propose amending the Pipelines Safety Regulations to include CO₂ as a dangerous fluid.

HSE is co-ordinating efforts to establish a joint industry project to run large scale experiments. These will provide appropriate data to improve duty holders' capability to anticipate foreseeable accident scenarios and predict accurately the consequences of a major loss of containment event involving dense phase or supercritical CO₂.

The risk mitigation of storage leakage referred to in the DTI 2006 response, which was based on the IPCC GHG Inventory Guidelines, has since been reflected in and reinforced by the work of the OSPAR convention and its own Guidelines for Risk Assessment and Management, to which the UK was a major contributor.

Recommendation 32

Clear and transparent information about CCS at an early stage will be crucial for securing public acceptance. The Government must therefore adopt a pro-active approach to communication.

As part of its commitment from the G8 Summit in Gleneagles, BERR has contributed to an IEA Communications Strategy which assesses the degree of public awareness in the major countries around the world and has highlighted the areas of concern. This is to be published as a document for the International Energy Authority's Working Party on Fossil Fuels.

The Government recognises that an effective and proactive communication strategy surrounding CCS will be important in ensuring the success of the UK demonstration and, more broadly, acceptance of CCS technology as a concept. Both of these objectives are viewed as important to the success of wider CCS deployment. In particular, Government will need to work closely with stakeholders to deliver the demonstration project itself, and have a clear effective strategy to ensure buy-in from external stakeholders such as the public and wider industry. Engagement with the international community will be key in influencing the deployment of CCS and the policy and regulations required to support this process.

The Government has been very proactive within the last 12 months in working with developers of potential CCS projects in the UK. We have raised awareness within industry of the competition with a series of information seminars and workshops held at BERR where all aspects of the competition process and its supply chain were fully explained. This work forms the basis of a communication strategy on our CCS demonstration project. It will be taken forward and expanded to a wider audience as the competition progresses, and CCS becomes even more high profile to the public.

Public awareness of CCS is likely to have been heightened by the announcement of the demonstration project. Addressing public awareness is an integral part of our approach to effective communication.

Recommendation 37

It is commendable that the Government has taken a lead in international negotiations to amend the London Convention/Protocol to ensure that CCS projects are permissible. Whilst we appreciate that it may take time to secure international agreement, it is vital that the UK does its utmost to expedite this process: industry needs to have one hundred per cent confidence that multinational environmental agreements are not going to serve as barriers to future deployment of CCS technology. In addition we urge the Government to take steps to clarify the legality of the various types of CCS project to ensure that uncertainty and ambiguity in this area does not hinder the progress of CCS demonstration projects in or around the UK unnecessarily.

Further to the work described in the DTI 2006 response, we have achieved great success in this area outlined in the response to recommendation 6. We secured amendment of the Protocol to the London Convention to allow CO₂ storage in geological formations in the marine environment at the London Convention meeting on 2 November 2006. We also worked in the London Convention Scientific Group to develop risk assessment guidelines. We then actively worked within OSPAR, developed with others, a risk assessment and management framework for CO₂ geological storage in the marine environment, and then secured adoption of an enabling amendment at the OSPAR meeting on the 25 June 2007. OSPAR also adopted the risk assessment guidelines and require these to be used. The London amendment came into force on 10 February 2007. The OSPAR amendment will come into force when seven Parties have ratified the amendment, and the UK is monitoring this ratification progress. The requirement to use the OSPAR Guidelines for Risk Assessment and Management will come into force on 15 January 2008.

Recommendation 38

The private sector should take responsibility for CO₂ during the injection phase of any CCS project but we believe that Government will have to take responsibility for the stored CO₂ thereafter. We are pleased that the Minister appeared to acknowledge this, but it is essential that the Government makes an explicit commitment to serve as the long term guarantor and makes it very soon. Industry will not proceed with CCS projects in the absence of such a commitment.

We continue to agree that there may be a case for the Government to take responsibility for stored CO₂ in the longer term. This matter and other CCS regulatory issues will therefore form part of our consultation which we are currently developing. Further details on our consultation are given in our response to Recommendations 40 and 41.

Recommendations 40 and 41

At present, multiple Government Departments and agencies, including BERR, DEFRA, Environment Agency and the Health and Safety Executive, have expertise and functions that would be required for the regulation and monitoring of CCS. In the absence of a Department of Energy, we propose the establishment of a CCS Authority to bring together all the relevant functions. We believe that a single body in the area could make regulation more transparent, thus building public confidence, as well as minimising bureaucracy for companies engaging in CCS projects. In order to ensure that these objectives are met, it is essential that all the relevant onshore and offshore functions be subsumed into the CCS Authority, leaving no residual responsibilities in other departments and that the Authority has a clearly defined line of accountability to a single Secretary of State.

The Government considers that it would not be feasible or practical to have a CCS Authority as the Committee suggested. We strongly believe we have sufficient agencies and mechanisms in place to carry out the wide tasks required. The UK CCS Taskforce has made good progress in preparing the regulatory environment for the whole CCS chain. We will be consulting on the conclusions on this work, together with the development of a regulatory regime, as our proposal develops, which will manage the safe and reliable storage of CO₂. We expect to be bringing forward CCS enabling legislation as part of the planned Energy Bill in the next Parliamentary session.

Recommendation 45

There are no fundamental barriers to the development and deployment of CCS in the UK, apart from the lack of a suitable long term policy framework to provide industry with the incentives and confidence it requires making the substantial investments entailed in CCS projects. The Government must put this framework in place as quickly as possible—it is already at risk of holding back UK industry.

HMT launched a consultation on the barriers to CCS at Budget 2006, and the responses are published on the HMT website. The results of this consultation led to the Energy Review conclusion that the next logical step would be a demonstration of CCS.

Recommendation 47

We acknowledge the need for Government support during the early stages of technology development. Ultimately, however, a market based mechanism that puts a price on carbon is the best way to incentivise industry to invest in CCS and other carbon abatement technologies.

The Government believe that the best way to encourage a change in investment patterns towards a low carbon economy, and the most effective way of reducing global emissions, is to establish a price for carbon. We consider that credible, long-term frameworks for tackling climate change provide clear signals to industry about the future path of emissions. In the context of putting a value on carbon, it is a UK government priority that the EU ETS operates effectively as the primary EU policy tool for incentivising the reduction of CO₂ emissions and as part of the European Commission's wider set of energy policy commitments and targets. It is also one of our priorities to improving developing country participation through improvements to the Clean Development Mechanism to provide greater certainty and continuing in the market.

We are also working to ensure that CCS is fully able to be recognised within the EU ETS, as described in the Energy White Paper. BERR are working closely with DEFRA on this, including in developing detailed monitoring and reporting guidelines for CCS, and in May 2007 have signalled to the EC the UK's intention to opt-in a CCS project into Phase II of the ETS. We are also working, through the EU, for CCS to be recognised within the Clean Development Mechanism.

Recommendation 48

The ETU-ETS has the potential to provide the requisite incentive framework to stimulate investment in CCS and other carbon abatement technologies in the long term. At present, however, the scheme delivers neither the long term visibility nor a sufficiently high carbon price to fulfil this function.

We are also working with other member states to strengthen the EU Emissions Trading Scheme to deliver a meaningful carbon price as part of the European Commission's wider set of energy policy commitments and targets. This includes pressing for the overall ETS targets to be set much further ahead, to give industry a predictable long term regulatory framework, and pressing for targets to be set to put us on a path to the necessary emissions reductions.

Recommendation 50

Competitive capital grants may be needed to encourage the first demonstration projects but they are not a substitute for developing a long term incentive framework.

See response to Recommendation 45.

Recommendation 53

In the longer term, as well as working towards an effective EU-ETS, the Government should continue to make the case for a global framework for trading carbon.

As mentioned earlier, the Government continues to work in international negotiations to achieve the widest possible coverage of emissions trading and other flexible mechanisms.

Recommendation 54

In the meantime, the Government should also support efforts to enable CCS to qualify for the Joint Implementation and the Clean Development Mechanism, which were established by the Kyoto Protocol to allow investment in emissions reduction projects in developing countries and economies in transition.

See responses to Recommendations 47 and 48.

October 2007
