

Science and Innovation Investment Framework 2004 – 2014 : Progress against Measures

July 2006

Narrative

Measures announced since publication of the ten-year framework are marked NEW with date of announcement.

N	Policy	F'work paras.	Progress Update and Next Steps
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UNIVERSITY RESEARCH SUSTAINABILITY

1	Government will provide resources to enable Research Councils (RCs) to provide close to the full economic cost of university-conducted research by the beginning of the next decade. Spending Review 2004 allocated an additional £80 million towards this goal.	1.15, 3.18 3.20 + 3.21 + 3.24	RCs began paying 80% of the full economic cost (FEC) of the research projects they commission from Higher Education Institutions (HEIs) in September 2005. The Office of Science and Innovation (OSI) are now considering with other funders the trajectory of FEC in its planning for the Comprehensive Spending Review in 2007.
2	Transparent Approach to Costing (TRAC) methodology for costing research project applications by universities to be rolled out by January 2005 in all HEIs. All significant issues to be signed off by (HEIs audit committees by July 2005.	3.16	TRAC now rolled out to all UK HEIs. Joint Costing and Pricing Steering Group (JCPSG) work now complete. British Universities Finance Development Group (BUFDG) took over from JCPSG with the establishment of the BUFDG Costing and Pricing Group (including representation from Research Councils and Funding Councils). Transitional arrangements for Quality Assurance of TRAC remain in place with the KPMG QA team, pending development of the future joint QA arrangements.
3	Proposals to RCs to be made on a full economic cost basis from September 2005, with new awards made on this basis from April 2006. Monitoring, development and adjustment to take place during financial year 2006-07. Final adjustments to methodology to be made for financial year 2007-08.	3.16; 1.15	RCs began receiving proposals on a full economic cost basis from September 2005. For more information see http://www.pparc.ac.uk/jes/DualSupport.asp . RC monitoring plan now in place. Regular reports being provided to RCUK executive group and OSI.
4	Development of light touch forward looking regime to monitor the implementation of FEC methodology.	3.19	A light touch forward-looking regime to monitor university sustainability including implementation of full economic cost methodology has been developed by UK Funding Councils. The first Annual Report was presented to the Research Base Funders Forum in April 2006 and is published alongside this report. For more information see http://www.dti.gov.uk/science/science-funding/Funders_Forum/index.html .

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5	Monitoring against risk of price inflation.	3.21, 3.24	Indexation of RCs grants provisionally set for August 2006.
6	Monitoring effect of FEC on EU research projects	3.41, 3.42	<p>The European Commission's draft Rules of Participation for Framework Programme 7 envisage reimbursement of up to 75% of research costs under FP7, as opposed to the current 50%. This is still subject to negotiation.</p> <p>In February 2006 Universities UK (UUK) published a study on the costs of participation in EU Framework programmes. For more information see http://www.universitiesuk.ac.uk/research/downloads/EUFrameworkProgrammes.pdf.</p>
CHARITY PARTNERSHIP			
7	<p>Close the gap between the full cost of charity-sponsored research and the funds currently available from universities and charities.</p> <p>Rebalance support from charities towards infrastructural elements and increase the public funding support for research provided through the funding bodies, by up to £90 million in the first stage by 2007-08</p>	1.16; 3.33, 3.34	<p>The Higher Education Funding Council for England (HEFCE) Board approved the new charities support element in April 2005. Charity Partnership funding began in 2006/07 with initial funding of £135 million, rising to at least £180 million in future years. Details can be found at: http://www.hefce.ac.uk/research/funding/charities/.</p>
RESEARCH INFRASTRUCTURE			
8	Continue to support renewal of the UK's research infrastructure in universities through a dedicated capital fund of £500 million a year. A parallel process across Research Council Institutes will be supported through additional capital funding of £50 million a year by 2007-08.	1.17, 2.27, 3.67	<p>Science Research Investment Fund (SRIF) 3 was announced in July 2004. Allocations to HEIs were made January 2005. SRIF3 Funding will be available from 1 April 2006 to 31 March 2008. OSI have begun to collect project information where SRIF investment has been of particular benefit to the HEI. A report reviewing the impact of the programmes of capital grant funding allocated to the higher education sector through SRIF will be published by end summer 2006. Allocations have taken place for Research Council Institutes, additional capital from this fund will be available via the Large Facilities Capital Fund.</p>

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ANIMAL RIGHTS EXTREMISM

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9	Ensure protection of legitimate research activities from animal rights extremists.	1.38	<p>The Government is determined to stand up against animal rights extremism and protect those targeted by it. The strategy is being implemented, with the Prime Minister taking overall charge. Work across government and law enforcement to raise awareness and co-ordinate investigation and prosecution continues. The recent sentencing of a number of extremists has highlighted how seriously the criminal justice system views these offences. Significant new resources for the police and the creation of a specialist unit have already led to further prosecutions and there are a significant number of ongoing investigations.</p> <p>There has been considerable media coverage in the last few months, strongly condemning the extremist campaigns and giving individuals the platform to speak out, in a balanced way, about the issues associated with the use of animals in vital biomedical research and safety testing.</p>

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MULTI DISCIPLINARY WORKING			
10	More cross-disciplinary training at undergraduate and postgraduate levels, particularly cross-disciplinary PhD programmes; more four-year PhDs; more masters courses and fellowships with a cross-disciplinary slant.	2.11	<p>This measure combines some of the specific recommendations of the Roberts Review with more general points in the ten-year framework. Additional training has been provided to PhD students and postdoctoral researchers through RCUK that will enhance the skills underpinning interdisciplinary working. Longer PhDs will allow additional time for interdisciplinary work during projects and schemes. For example the Engineering Doctorate and the Life Sciences Interface Doctoral Training Centres, which give graduates a broad interdisciplinary grounding have been expanded. Within the Academic Fellowships scheme the proportion of interdisciplinary projects funded increased from 21% in the 2004 allocations round to 42% in the 2006 round.</p> <p>RCs continue to emphasise the role of interdisciplinary training through encouraging training in areas such as: environmental issues, which require the combined approaches of both the environmental and social sciences (ESRC/NERC Interdisciplinary Research Studentships) and the challenges from modern medicine and biology that require input from mathematicians, physicists, chemists and engineers at the interfaces with the life sciences.</p>

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11	RCs to work with universities and other funders in the public and private sectors to establish multidisciplinary capabilities in research-intensive universities over the next five years. To include translational courses and investigating ways to remove barriers to multi-disciplinary working.	2.11	All RCs are addressing potential barriers to multidisciplinary working. In July 2006, RCUK will be publishing significantly revised guidance to applicants explaining changes to the way RCs ensure collaboration on the peer review and funding of research projects that straddle their remits. The aim is to ensure that there is equality of opportunity for proposals at the interface between traditional disciplines, where these proposals fall across the Councils' subject domains. RCUK have received a significant proportion of multidisciplinary applications to their Academic Fellowship scheme.
12	Research Assessment Exercise (RAE) reforms to provide greater recognition for cross-discipline working.	2.11; 3.45	See 19 below.
RESEARCH COUNCIL PERFORMANCE MANAGEMENT SYSTEM			
13	Development of performance management system for the RCs; autumn 2004 allocations to be based on balance of investment.	2.17; 3.56; 1.14	The performance management system was used to allocate resources for the Spending Review 2004 period. For more details see pages 45-50 of the Science Budget allocation booklet http://www.ost.gov.uk/research/funding/budget05-08/allocations.pdf . Individual RCs and RCUK published Delivery Plans, scorecards and output frameworks in May 2005. OSI have received reports against deliverables and six-monthly reviews have also taken place. Annual Delivery Plan reports for each RC for 2006 are available at http://www.rcuk.ac.uk/deliveryplan.asp .

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DIRECTOR GENERAL RESEARCH COUNCILS STRATEGIC FUND			
14	Development of a central strategic fund for flexible deployment by OSI against emerging priorities, for example to build national capacity (including infrastructure) and ensuring the health of key disciplines.	2.6, 2.17	£70 million was allocated in Spending Review 2004 for the Director General of the Research Councils' (DGRC) Strategic Fund. This was used to address key strategic priorities including energy, clinical research, health of disciplines and the promotion of knowledge transfer.
HORIZON SCANNING			
15	Single centre of excellence in science and technology horizon scanning, to be coordinated by the OSI Foresight Directorate.	1.39, 2.19, 7.9, 8.18	The Horizon Scanning Centre was launched in March 2005 looking at a broad range of future trends relevant to policy and on emerging issues relevant to science and technology. For more details see http://www.foresight.gov.uk/HorizonScanning/index.html
INFORMATION INFRASTRUCTURE			
16	Government will work with interested funders and stakeholders to consider the national e-infrastructure necessary to deliver an effective research system	2.25	The e-infrastructure Steering Group, established in December 2004, completed a study of current UK e-infrastructure in September 2005. It then established six working groups to map the future requirements of different aspects of UK e-infrastructure. The Steering Group will integrate and iterate the results into a final report by September 2006.
MEASURING SUCCESS			
17	Government will conduct regular reviews of progress against attributes in the ten-year framework, reporting annually with a more detailed assessment every two years, consulting stakeholders.	2.29	Annual Report and Progress on indicators published alongside this report July 2006 http://www.ost.gov.uk/policy/sif.htm .

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RESEARCH ASSESSMENT EXERCISE

18	<p>Funding Bodies, in appointing RAE panel members, to secure members with experience of conducting research and commissioning and applying it in public bodies and business.</p> <p>Panels to produce clear statements about how work will be assessed with appropriate criteria for excellence.</p>	3.46	<p>Main and sub panel members were appointed April 2005. Details can be found at http://www.rae.ac.uk . 10% of all panel members are from organisations other than higher education institutions: alongside many of the HE-based members who collaborate with research users they have experience of commissioning and applying research in public bodies and businesses.</p> <p>Final criteria and working methods for panels were published January 2006 http://www.rae.ac.uk/news/2006/criteria.htm .</p>
19	<p>Reforms to the RAE will provide greater reward for academics to work on user-relevant research and cross-disciplinary boundaries.</p>	3.46; 1.21	<p>Guidance on working methods for unit of assessment panels in RAE 2008 published January 2006 (www.rae.ac.uk/pubs/2006/01/). This provides that panels may assess items of interdisciplinary research jointly and call on the expertise of specialist advisers where necessary. The guidance also calls on panels to take greater account of user-led research, in assessing which they may make use of the expertise of their non-academic members. On 13 June 2006, the Government published consultation proposals on a new research assessment and funding system to be tested in parallel with RAE 2008 and supersede the RAE process thereafter (http://www.dfes.gov.uk/consultations/). One of the main purposes of these proposals is to give greater recognition to interdisciplinary and applied research.</p>
20	<p>Scope for greater use of discipline-specific metrics in next RAE</p>	3.47	<p>Panel criteria and working methods for RAE 2008, published in January 2006, describe panels' assessment of esteem indicators, research outputs and environment indicators and the relative weighting for each. The assessment method was developed to allow each discipline to vary what importance it places on various metrics, including research income data and research student data.</p>

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21	Next RAE assessment process designed to ensure joint submissions are not disadvantaged	3.47	In RAE 2008, joint submissions may be made according to the same format as single-institution submissions and will be considered by panels on the same basis.
22	Metrics collected in next RAE used for shadowing exercise for benchmarking purposes	3.48 + 3.58	See 19 above.
N E W	The Government has launched a consultation on its preferred option for a metrics-based system for assessing research quality and allocating QR funding. Results will be published in time for 2006 PBR	Budget 2006	Consultation published 13 June 2006 with closing date for responses 13 October 2006. Final decisions to be announced by the end of 2006.
FUNDERS' FORUM			
23	All major funders encouraged to discuss proposed changes in the Funders' Forum to improve quality of decision making	3.51	Funders Forum meetings in 2005/06 received reports on health of disciplines, research careers and university financial sustainability (see also 4 above). Preparations for the next stage in full economic costing have also been discussed. A second plenary meeting, bringing together a wider group of funders, is planned for November 2006. Further details on Funders Forum activities at http://www.ost.gov.uk/fundersforum/ .
EFFICIENCY			

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24	Efficiency: RCs to work to ensure best practice in use of management information systems, and encourage dialogue with HEIs on measures to reduce proportion of non-competitive applications	3.55	<p>The RCUK delivery plan published in May 2005 and updated in May 2006 sets out the RCs commitment to working with HEIs to provide more effective and efficient services for the research community and for making efficiency gains to release more Science Budget resources for research. RCUK has established an Efficiency Delivery Project which has achieved efficiency gains of £76.89M against a target of £61.50M for 2005-06 and is well on track to deliver total efficiency gains of £170M per annum by 2007-08.</p> <p>During 2005-06, the Joint Electronic Submission (JeS) system was implemented by AHRC, CCLRC and ESRC so that seven RCs now use one system for handling research grant applications. The positive reception given to JeS by the research community has enabled paper applications to be discontinued. In addition, all RCs are continuing to work with HEIs to reduce the proportion of non-competitive applications.</p>
25	Stock-take exercise in 2008 to assess effect of changes on both sides of the dual support system	3.58; metrics Annex B	Post-implementation review of Dual Support Reform to begin in financial year 2007/08.
SCIENCE RESEARCH INVESTMENT FUND			
26	HEFCE to discuss with institutions rolling capital funding streams into one, in return for HEIs producing comprehensive asset management strategies	3.61	HEFCE consultation document was published in February 2006 http://www.hefce.ac.uk/pubs/hefce/2006/06_04/ .
27	Funders Forum to advise on overall shape of SRIF programmes; RCUK to continue to play role in assessing strategies	3.62 3.51	Funders Forum has provided input into the future trajectory of SRIF beyond SR04 and RCUK has been co-ordinating RC responses. OSI are currently working with the HE Funding Councils to update the JM Consulting report on the sustainability of the research base and will report by end summer 2006 (see also 8 above).

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28	Next round of SRIF to continue to enable universities to maximise public and private utilisation of research expertise and equipment	3.63	There is a requirement in SRIF3 that the applicants show how they will enable wider use of SRIF funded facilities and equipment, particularly permitting wider access by business. OSI have worked with the UK Funding Councils, DfES and the Research Councils to agree an appropriate format and mechanism for this, to include specific information captured on the project electronic application form.
LARGE FACILITIES RESEARCH COUNCIL			
NEW	The Government launched a consultation on whether the Council for the Central laboratory of the Research Councils (CCLRC) should be merged with the large facilities operations conducted by the Particle Physics and Astronomy Research Council (PPARC) to create a Large Facilities Research Council, and whether the grant-giving functions of PPARC should be moved to the Engineering and Physical Sciences Research Council (EPSRC).	Budget 2006	The Government announced on 25 July 2006 that a new Large Facilities Research Council will be created by merging the current responsibilities of PPARC and CCLRC. PPARC's grant-giving functions will not be transferred to EPSRC. Responsibility for nuclear physics will be transferred from EPSRC to the new Council. The Government aims to set up the new Council so that it can take on its new functions by 1 April 2007.
PUBLIC SECTOR RESEARCH ESTABLISHMENT SUSTAINABILITY			
29	Implementation of recommendations of Public Sector Research Establishment (PSRE) sustainability study.	3.66	The "Research Establishment Sustainability UK" forum will meet twice in 2006 to discuss matters relating to the implementation of full economic costing and the wider Research Council Institute and PSRE Sustainability Study (RIPSS) guidelines. A proforma return for the annual monitoring of sustainability of PSREs, developed in consultation with a group of eight PSREs and parent bodies, has been circulated to forty PSREs and the findings were published alongside the ten-year framework Annual Report 2006 http://www.dti.gov.uk/science/science-funding/ripss/page22675.html

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30	Allocation of new capital funding stream (£50 million a yr by 2007-08) for PSREs on basis of need and based on agreed investment strategies between Research Council Institutes and parent organisations.	3.67; 1.17	The amount allocated to each RC was announced as part of the allocations process in March 2005. Allocations were based on existing investment level data. Capital investment strategies produced in 2006 set out in detail how allocations will be spent.
KNOWLEDGE TRANSFER			
31	The Department for the Environment, Food and Rural Affairs (DEFRA) and DTI to identify R&D and knowledge transfer programmes to deliver their key objectives.	5.11	£50 million over the financial years 05/06 to 07/08 was allocated in Spending Review 2004 from Landfill Tax escalator. Funds from the Landfill Tax escalator have supported 55 research projects under the DTI Technology Programme in the areas of waste minimisation, zero emissions, design and manufacture of sustainable products and remediation of contaminated land. Resources from the landfill tax escalator have also been invested in the Envirowise best practice programme and the National Industrial Symbiosis Programme (NISP).

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32	<p>Creating predictable, metrics-based funding allocation process for the Higher Education Innovation Fund (HEIF).</p> <p>Development of HEIF 3 with increased funding.</p>	5.28	<p>HEIF 3 has allocated up to £238 million to HEIs in England, to be allocated over the period August 2006 to July 2008. This is to be allocated substantially on the basis of a formula in order to make HEIF funding more stable and predictable, and hence more embedded in HEIs' strategic planning.</p> <p>£164 million (75%) has been allocated by formula creating a more predictable basis to allow retention of highly skilled staff and greater continuity, reducing the administrative burden. This ensures a funding allocation to all HEIs in England ranging from £200,000 to £3,000,000.</p> <p>£54 million has been allocated to the 11 winners of the HEIF 3 competitive funding round to support a range of innovative knowledge transfer projects involving collaboration in the UK and abroad. This includes up to £20 million as continuation funding for Centres for Knowledge Exchange initiated in 2004 under HEIF 2.</p>
33	<p>Government to work with Regional Development Agencies (RDAs) and other partners to assess and codify successes and fully disseminate models on Knowledge Exchange developed by the Cambridge-MIT Institute (CMI).</p>	5.30	<p>DTI is working with CMI's Independent Review Committee to ensure that their reports promote CMI's opportunities for collaboration with other partners. The CMI Programme Review Committee submitted a report on CMI's activities, and opportunities for sharing best practice in September 2005. CMI continue to work to promote the outputs from the current phase of its activities by developing links with other UK institutions and also through its annual National Competitiveness Summits http://www.cambridge-mit.org.</p>

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34	Government and its research bodies will develop ways to encourage more research to be conducted with a stronger consideration of use built in to the design of the work from the outset.	2.20	RCs developed explicit plans for more knowledge transfer and business interaction in 2004 and knowledge transfer remains an integral part of the business planning process. The refreshed RCs and RCUK delivery plans (published in May 2006) demonstrate the continued focus on knowledge transfer and innovation. Increased Higher Education Innovation Fund (HEIF) and Public Sector Research Establishment (PSRE) fund will build capacity for more user interaction with HEIs and Research Institutes. (See also entries below).
35	OSI knowledge transfer programmes: evaluation	5.31	A report entitled 'Interim Evaluation of Knowledge Transfer Programmes funded by OSI through the Science Budget' was published in February 2005 see http://www.ost.gov.uk/enterprise/knowledge/evaluation_final.pdf .
36	RCs to develop knowledge transfer targets	5.33; 1.20	The DGRC approved RCs plans for increased knowledge transfer and business interaction in December 2004. Progress against plans is monitored as part of the new performance management system for RCs.
37	Public Sector Research Establishment (PSRE) fund to provide funding to support development of RCs knowledge transfer capabilities.	5.33	Individual RCs and their institutes received funding to support their knowledge transfer activities through the PSRE fund. OSI has allocated £15m over 2 years to enable RCs to deliver the knowledge transfer component of their delivery plans. RCs published their first set of annual outputs against these plans in 2006.
N	The Government launched a consultation on	Budget	Consultation closed on 16 June 2006. OSI are currently considering
E	further measures to maximise the impact of	2006	responses and will issue a summary of the responses received September
W	science on innovation.		2006.

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N E W	In the 2004 Pre-Budget Report and in Budget 2005, the Government supported plans by the RDAs to develop six science cities in Manchester, Newcastle, York, Birmingham, Nottingham, and Bristol.	PBR 2004 Budget 2005	The cities reported on their progress at the annual summit in Manchester 24 May 2006. Manchester, Newcastle and York have successfully put in place initiatives to improve the local environment for innovative businesses, and further initiatives are ongoing. The Science Cities announced in Budget 2005, Nottingham, Birmingham and Bristol, have set out their key priority areas and developed strategies for how to best exploit and build on their current areas of strengths. Science cities representatives met a cross-Whitehall group on 12 July 2006 where it was discussed how existing national policy and funding framework can best support the Science cities in generating innovation and business activity.
TECHNOLOGY STRATEGY BOARD			
38	Technology Strategy Board (TSB) to prepare an annual report for publication on its own activities and Government policies relating to technology innovation and knowledge transfer.	5.38	The first annual report of the TSB was published on 24 November 2005. The Report was accompanied by a shorter document designed to engage business and other partners in the development of a National Technology Strategy. http://www.dti.gov.uk/technologystategy/Technology_Board_Annual_Report_2005.pdf .
N E W	Widening the remit of the TSB to stimulate innovation in those areas which offer the greatest scope for boosting UK growth and productivity.	Budget 2006 Next Steps	As set out in the Next Steps document, plans for the TSB to operate at arms length from central government are being developed. DTI will ensure the new organisation has a broad mission to support technology and innovation across all the important sectors of the economy as well as across Government.

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N E W	Explore options for turning TSB into an arms length Body.	Budget 2006 Next Steps	Ministers have strongly supported the principle that creating an arm's length body for the TSB is the right way forward to ensure the technology support programme is delivered in an efficient, effective way. The Body will be implemented as soon as possible in order to build on the success of the TSB and maintain operating integrity throughout the transition.
SCIENCE, ENGINEERING AND TECHNOLOGY SKILLS			
39	Annually review the evidence on student participation and employment in shortage subjects in schools, Further Education (FE) and Higher Education (HE), to judge the relative balance between supply and demand for those skills, and recommend whether there is a need for further action.	6.11, 1.35	Published report updating and extending analysis on the supply of subjects from HE (further details within the second annual report). All stakeholders including government central departments, Learning and Skills Council (LSC) and Sector Skills Development Agency (SSDA) continue to work together to assess future market trends. Future analysis to be undertaken to consider the impact of the ten-year framework. RCs published their first annual report on the health of disciplines in March 2006, providing an overview of the supply of academic researchers and the demand from both the public and private sectors as well as outlining actions taken by RCs to address areas of concern http://www.rcuk.ac.uk/documents/hod.asp . Ministers have agreed that this will be included from 2007.
N E W	From 2007 include the percentage of pupils who achieve 2 or more A*-C GCSEs in science alongside school performance tables.	Budget 2006 Next Steps Box 6.1	
N E W	Build monitoring of pupil attainment in science into every school's self evaluation and the dialogue with schools school improvements partner	Budget 2006 Next Steps Box 6.1	Information on science has been posted on the School Improvement Partnership's knowledge bank http://www.standards.dfes.gov.uk/sie/si/ .

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N E W	Work with schools to consider ways of getting more transparency around post 16 progression rates, so that schools are aware of the importance of students progressing to study A level sciences	Budget 2006 Next Steps Box 6.1	Work on the development of an indicator will take place over the next few months, with a view to i) submitting proposals to Ministers by December 2006 and ii) carrying out trials with schools in 2007.
40	Eliminate so far as possible the undershooting of the Initial Teacher Training targets for science by 2007/08.	Box 6.1; 1.28, 6.21	For 2004/05, recruitment was 88% of the places available. This rose to 91% in 2005/06.
41	Government will double the number of science places on the Graduate Teacher Programme (GTP) (provided that sufficient demand from schools for places remains).	Box 6.1; 1.28 and 6.9	503 science starts on the GTP in 2004/5. The Training and Development Agency for Schools (TDA) estimate that 524 science trainees started the GTP in 2005/06. The TDA offers incentives to training providers to recruit additional science trainees.
42	Increase the value of the training bursary for science graduates to £7,000 and raise the 'Golden Hello' for new science teachers to £5,000 for trainees.	Box 6.1, Box 6.2; 1.28	Implemented in September 2005. Higher £9,000 bursary announced for September 2006 for maths and science.
43	Government will deregulate the salaries of science Advanced Skills Teachers (AST), including removing the cap on how much they may be paid, subject to the School Teachers' Review Body (STRB). This would result in science teachers on the AST skills scale securing a minimum pay of £40,000 (£45,000 in London)	Box 6.1, para 6.21; 1.28	The STRB did not support this proposal and the Government has accepted its recommendation. From September 2006 the AST pay scale will have a new spine coinciding with the first 18 points of the leadership pay scale.
N E W	Remit the STRB to advise on improving the use on current pay incentives and flexibilities.	Budget 2006 Next Steps Box 6.2	This was included in the STRB's current remit letter, issued on 17 May 2006. STRB will report by 22 December 2006.

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N E W	From 2006, continue the drive to recruit science graduates into teaching via employment based routes (EBR), mainly through the Graduate Teacher Programme, with new incentives for providers of £1000 per recruit.	Budget 2006 Next Steps Box 6.2	New incentives are being introduced from September 2006.
44	Train a new cadre of science-specialist High-Level Teaching Assistants to enable every secondary school in England to recruit at least one.	Box 6.1, para 6.23; 1.28	To be implemented by 2007/08. Pilots underway since July 2005. The four TDA appointed pilot providers have now completed recruitment of candidates. The Science pilot recruited 130 candidates. The TDA and DfES are considering how to implement the pilot's findings. Courses will be introduced from September 2006.
N E W	From 2006 offer additional courses to enhance physics, chemistry and mathematics subject skills for those entering teaching who do not have a recent degree in the subject.	Budget 2006 Next Steps Box 6.2	Regional Science Learning Centres are now established in each region and are delivering CPD courses. Over 11,000 training days delivered between 1 April 2005 and 31 March 2006. Feedback is positive.
45	Improve the quality of science teaching by expanding the continuing professional development of science teachers, and enhancing support for the new Science Learning Centres	Box 6.1, para 6.25; 1.28	National Science Learning Centre has drafted a discussion paper for how TDA, the Association for Science Education, the Institute of Physics, the Royal Society of Chemistry and the Science Learning Centres could work together to develop and deliver the diploma.
N E W	Develop and pilot a CPD programme leading to an accredited diploma.	Budget 2006 Next Steps Box 6.2	This was included in the STRB's current remit letter, issued on 17 May 2006.
N E W	Remit the STRB to advise on whether science teachers who are not physics and chemistry specialists should receive an incentive to encourage them to complete physics and chemistry enhancement CPD.	Budget 2006 Next Steps Box 6.2	

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46	The Government will expand substantially the number of undergraduate volunteers supporting pupils learning science, by 2006/07 – (Students Associate Scheme).	6.28; box 6.1; 1.28 Budget 2006 Next Steps Box 6.2	In 2003/04 around 1,000 placements were science-based. This increased in 2004/05 to around 1,500 placements. Provisional figures for 2005/06 show that science subject placements have further increased to 2,000. In April 2006, the Secretary of State for Education and Skills agreed to fund the Student Associates Scheme for 2006/07 & 2007/08 and in Budget 2006 the Chancellor announced a further £700,000 for 2006-07 & 2007-08 to increase the number of maths and science placements. The TDA estimates that this will allow a further 450 maths and science placements above 2005/06 levels to be funded.
N E W	From 2006 produce a range of case studies which evidence the school level factors associated with high levels of progression to post 16 science and maths study and disseminate through the SNS	Budget 2006 Next Steps Box 6.2	The Secondary National Strategy has been commissioned to carry out this work.
47	Undertake immediate research to understand why and when teachers join and leave the FE sector	Box 6.1, para 6.38:1.3 0	DfES Standards Unit commissioned York Consulting in association with Mori Social Research Institute to carry out a large-scale survey to explore the issues of recruitment and retention of staff who work with learners across the post-16 learning and skills sector. The findings were published in November 2005 at http://www.successforall.gov.uk and have also been published as a DfES Research Report (No 697). The findings have been used to inform the development of a range of new programmes to increase recruitment, improve retention and promote diversity across the sector. These include Making a Difference, Business Interchange, Business Talent and Give Something Back. Further details are in the White Paper – ‘Raising Skills, Improving Life Chances’ and accessible on the DfES website at www.dfes.gov.uk/furthereducation .

N	Policy	F'work paras.	Progress Update and Next Steps
48	Continue 'Golden Hellos' for FE teachers in shortage subjects and increase the amount paid to science teachers (to £5,000)	Box 6.1, para 6.39; 1.30 closely related to 1.28, 6.39 and 6.63	Golden Hellos for maths and science will be maintained at £5,000 for 2006/07. Recent research carried out by Lifelong Learning UK (LLUK) has now been completed and science and maths categories are now fully defined. A revised list of shortage subject areas was announced by the Secretary of State for Education and Skills on 7 June 2006.
49	Continue supporting the bursary scheme for trainee FE teachers with an expectation that future payments will be increased for science (to £7,000).	Box 6.1, para 6.40; 1.30	Implemented. Eligible trainees will receive an increased bursary of £9,000 bursary from Sept 2006.
50	Work to increase significantly the science links to schools by supporting HEIs, industry and scientific societies in their outreach activities to schools and colleges in order to increase physical sciences and engineering participation in HE	Box 6.1, para 6.54; 1.32	HEFCE is funding a national Aimhigher project jointly with the LSC and DfES, led by the University of Leicester, with support from the Royal Society of Chemistry and industrial partners (including the major UK Pharmaceutical Companies). A number of Aimhigher regional and area partnerships are also undertaking work with students around science, including through the healthcare strand. Through its Strategic Development Fund HEFCE has funded three demand raising pilot projects with the Royal Society of Chemistry (part of which is the roll-out of the Aimhigher project referred to above), the Institute of Physics and the Royal Academy of Engineering. Two further projects are in the pipeline from the Institute of Mathematics and the British Computer Society.

N	Policy	F'work paras.	Progress Update and Next Steps
N E W	Produce guidance and consider the use of financial incentives to encourage schools and Higher Education Institutes to share resources and expertise with other schools in the area, including expanding on existing partnership schemes such as the 'Building Bridges Scheme'	Budget 2006 Next Steps Box 6.3	Independent schools have put in outline bids for funds to establish partnerships with maintained schools with a view to increasing science take-up and attainment. Nine are working up full bids. DFES working with HEFCE on ways to disseminate good practice in school/university collaboration.
N E W	From 2006, the Secondary Strategy and Specialist Schools and Academies Trust (SSAT) to identify and systemise models of effective collaborative working and distribute among schools.	Budget 2006 Next Steps Box 6.3	Secondary National Strategy and SSAT proposal has been received and agreed.
N E W	Engage more effectively with employers and universities on how they can help support attainment and progression in science to higher education and science careers through a model of best practice.	Budget 2006 Next Steps Box 6.3	The DFES/UCAS Curriculum Development Group discussed on 20 July how admission tutors could be more effectively engaged. Group are being assembled to engage with employers and higher education more generally on 14-19 issues.
N E W	Significantly expand the Science and Engineering Ambassadors scheme to support teachers and engage and enthuse pupils to continue studying science; so that by 2007-08 the total number of ambassadors will be 18,000, an increase of 50 per cent.	Budget 2006 Next Steps Box 6.3	SETNET has been commissioned to recruit an extra 6,000 ambassadors by 2007-08.
N E W	From 2006 pilot 250 after school science clubs to offer an engaging and stretching programme of activities to KS3 pupils with interest and potential in science.	Budget 2006 Next Steps Box 6.3	Proposal received from a consortium led by SETNET (and including among others ASE, SSAT and the Science Learning Centres).

N	Policy	F'work paras.	Progress Update and Next Steps
N E W	Review the Building Schools for the Future (BSF) exemplar designs for school labs to ensure they reflect the latest thinking on what is required to ensure effective interactive teaching;	Budget 2006 Next Steps Box 6.4	Ministers agreed on 5 June 2006 to a larger "School Science Labs of the Future" project with up to £10 million of additional funding, to commission exemplar designs which bring together leading designers and practitioners and innovators in science teaching and learning. A range of exemplar designs will be built in schools across the country. Three schools have been selected to act as pathfinders.
N E W	Ask the Secondary National Strategy to identify and promote effective practice in interactive teaching including imaginative use of practical work.	Budget 2006 Next Steps Box 6.4	Development of teaching materials to begin in Autumn 2006. Materials are likely to be disseminated to schools in Summer 2008.
N E W	Ask the Qualifications and Curriculum Authority (QCA) to design and implement monitoring arrangements for the new Key Stage 4 programme of study which will include consulting a group of independent scientists.	Budget 2006 Next Steps Box 6.5	QCA has defined the role of scientists and DTI is consulting the Royal Society and the Royal Academy of Engineering about which scientists to nominate.
N E W	Ask QCA to consider and seek advice from independent scientists on how the new Key Stage 3 programme of study can stretch the most able pupils.	Budget 2006 Next Steps Box 6.5	QCA has defined the role of scientists and DTI is consulting the Royal Society and the Royal Academy of Engineering about which scientists to nominate.
N E W	Develop a new strand of the Secondary National Strategy focused on support to increase the numbers achieving level 6+ at Key Stage 3.	Budget 2006 Next Steps Box 6.5	Development of materials to begin in Autumn 2006. Materials are likely to be disseminated to schools in Summer 2008.

N	Policy	F'work paras.	Progress Update and Next Steps
N E W	Additional training and guidance for teachers delivering the new science Key Stage 4 programme of study and GCSEs.	Budget 2006 Next Steps Box 6.5	Discussions are currently taking place to confirm the exact requirements for meeting this commitment and which organisation is best placed to meet them. A decision is expected to be made before the end of summer 2006.
N E W	By September 2008 all pupils achieving at least level 6+ at Key Stage 3 to be entitled to study triple science GCSE for example through collaborative arrangements with other schools, FE colleges and universities.	Budget 2006 Next Steps Box 6.6	Initial discussions held with SSAT for ensuring that all specialist science schools offer triple science as a first step to making it more widely available.
N E W	By September 2008 ensure that all specialist science schools offer triple science at least to all pupils achieving level 6+ at the end of Key Stage 3.	Budget 2006 Next Steps Box 6.6	Specialist Schools guidance for all initial applicants, re-designating schools and high performing schools was issued in May 2006. This includes direct advice to Science Specialists that from 2008 specialist science colleges will be expected to deliver triple science from 2008 both in their own schools and in their families of schools. They should aim to offer triple science at least to all pupils achieving level 6+ at the end of Key Stage 3. All applications for specialist status (both initial and re-designating) including targets set are assessed as part of the application process.
N E W	Encourage all schools to make triple science available to all pupils who could benefit.	Budget 2006 Next Steps Box 6.6	Initial discussions held with SSAT for ensuring that all specialist science schools offer triple science as a first step to making it more widely available.

N	Policy	F'work paras.	Progress Update and Next Steps
N E W	The Government will work with key stakeholders to develop ways to improve the awareness of young people and their parents' and teachers of the benefits of studying science and the career opportunities available to those with science, engineering and maths degrees and other qualifications.	Budget 2006 Next Steps Box 6.7	A stakeholder group will meet Sector Skills Councils concerned with science in September as a first step towards engaging with science industries.
N E W	As part of the annual reporting on the <i>Science and Innovation Investment Framework 2004-2014</i> the Government will continue to monitor performance in international benchmarks and will encourage all schools to take part in international assessments.	Budget 2006 Next Steps Box 6.9	DfES has established a School Science Board to oversee Budget 2006 commitments. Details of implementation plans are now being drawn up.
51	HEFCE will consider providing additional funding to university departments if there is a powerful case that falling provision in a particular region would hinder student access to disciplines that are important to national and regional development	Box 6.1, para 6.50; 1.32	HEFCE has considered the case and set out its advice to ministers. Future proposed closures will be discussed with regional stakeholders to establish what combination of demand- and supply-side measures might be appropriate in particular circumstances.
52	Ensure high quality information is provided to prospective students and will explore provision of information on course quality and employment and salary outcomes across subjects by each HEI, including through the Teaching Quality Information (TQI) web site and HEIs' prospectuses	Box 6.1, para 6.46; 1.32	Accurate information about the quality and standards of HEIs' academic provision, by institution and subject area, and including access to the results from the first ever independent national student survey of their view on the quality of their course, has been published through the TQI website – http://www.tqi.ac.uk . There are plans (over 2006 and 2007) to develop the site further, to ensure that it provides high quality information in an accessible form for learners and other stakeholders.
53	HEFCE to explore the possibility of introducing a notice period of 12 months before the closure of any department as a condition of any grant.	Para 6.49	HEFCE has considered the issue and set out its advice to ministers. They have discussed the position with the institutional representative bodies, and in July 2006 wrote to all institutions encouraging them to notify HEFCE at an early stage of any possible closures .

N	Policy	F'work paras.	Progress Update and Next Steps
54	<p>HEFCE will set up an expert group, including business and scientific leaders, to review how falling Science, Engineering and Technology (SET) provision will affect long-term economic development and the roles to be played by all stakeholders in securing future SET provision.</p>	<p>6.51 (ref. 6.11)</p>	<p>The Widening Participation policy team, supported by the regional policy team, will lead on the issue of student access at the regional level to strategically important subjects.</p> <p>HEFCE has established Regional Advisory Groups, including RDAs, Government Offices and funding bodies such as the LSC. These meet regularly with HEFCE to discuss policy initiatives and advise on funding allocations where there is an appropriate regional focus (See also 53).</p>
55	<p>Increase the PhD stipend in line with inflation over the Spending Review2004 period and review the stipend rate over the period, implementing any further increases where appropriate</p>	<p>Box 6.1, para 6.60; 1.33</p>	<p>Inflationary increases included in Spending Review2004 allocations to Research Councils. Annual increases will be implemented each October. RCs have funded a study to assess the initial impact of enhanced stipends and salaries on the recruitment and retention of postgraduate and postdoctoral researchers in key shortage areas.</p>

N	Policy	F'work paras.	Progress Update and Next Steps
56	<p>Research Councils report in two years time to both the Minister for Science and Innovation and the Minister of State and Lifelong Learning, Further and Higher Education on the effectiveness of the Academic Fellowships and Research Council funded postdoctoral salary increases in supporting increased participation by high quality postdoctoral researchers.</p>	6.61	<p>RCUK has reported progress on Academic Fellowships and selective salary increases in the ten-year framework Annual Report 2006. Annual reports on the Academic Fellowships scheme, from universities to RCUK, have clearly demonstrated the impact of the scheme in: attracting high quality applications; building interdisciplinary bridges; as an effective tool for development of contract research staff; and stimulating interest in recognised outreach activities such as Science Ambassadors. RCUK has compiled a report on the responses of the sector which will be published on the RCUK website during July 2006.</p> <p>RCs now have evidence from an externally commissioned report on the impact of the Roberts' measures to selectively enhance researcher salaries to tackle recruitment and retention problems. The study was undertaken by the Centre for the Study of Law and Policy in Europe (CSLPE) and utilised a web-based questionnaire and in-depth interviews with staff at ten research intensive UK HEIs, other funders, the Trade Unions and the European Commission (DG Research). The Councils have produced a collective response to the recommendations that will be published alongside the report in July 2006. The RCUK Research Careers and Diversity Group will continue to monitor the effectiveness of the schemes and will report on progress against the whole of the 'Roberts' measures through updates to the Research Base Funders Forum.</p>

N	Policy	F'work paras.	Progress Update and Next Steps
57	Maintain the funding for 'Golden Hellos' for new teaching staff in shortage subject areas beyond 2005-06, subject to the evaluation showing that the initiative is good value for money.	Box 6.1, para 6.63; 1.33	The evaluation of the higher education Golden Hello scheme was broadly positive about the scheme as a mechanism for institutions to develop appropriate recruitment and retention initiatives/incentive packages. As part of our commitment to better regulation and the move to reduce hypothesized funding streams we are not providing further separate funding for this scheme. Instead institutions will develop individual packages/schemes appropriate to their own circumstances using their recurrent teaching grant. The evaluation found that 64% of the 59 HEIs currently using golden hello funding were likely to operate a recruitment and retention scheme in the future. For details of the evaluation see http://www.hefce.ac.uk/pubs/rcreports/2006/rd04_06/
58	Invest £2.4 million into a new resource centre for women over the next 3 years, to help employers make SET a more attractive career for women.	Para 6.10, para 6.72; 1.34	In its first two years of operation the Resource Centre for Women in SET has worked closely with employers to develop an expert women's database, and a returners package which includes courses at the Open University, a "SET for Work" scheme to fund grants to HEI's, and setting up an Employers Award and Recognition scheme. The Government has now committed a total of £7 million for the operation of the centre over the period 2004-08.
59	The Government will review with stakeholders the evidence on student participation in shortage subjects in Higher Education and workforce employment annually and will judge the relative balance between supply and demand for those skills and recommend whether there is a need for further action by Government or by others.	6.11	The joint UCEA report "Recruitment and retention of staff in higher education 2005" (http://www.hefce.ac.uk/Pubs/RDreports/2006/rd05_06/) was published in March 2006. In July 2006, HEFCE published the report "The higher education workforce in England: a framework for the future" (http://www.hefce.ac.uk/pubs/hefce/2006/06_21/).

N	Policy	F'work paras.	Progress Update and Next Steps
60	<p>Subject to its continuing performance, Government will continue to provide financial support at the current level of around £3m a year to the Science, Engineering, Technology and Mathematics Network (SETNET), and will also provide funding of up to £1.8m over 3 years to enable it to improve their delivery by introducing 10 regional co-ordinators.</p>	<p>Para 6.32</p>	<p>SETNET currently receive over £3m a year through the OSI and has received new funding of £200k to appoint additional regional directors, bringing total funding for regional directors to £1.9m over three years. The regional structure is now complete, with 9 regional directors in place. A further £900k has been awarded over the next two years to extend the Science and Engineering Ambassadors programme. There are currently over 12,000 Ambassadors - 50 per cent are under the age of 35, 38 per cent are women and of those who declare their ethnic origin around 15 per cent are non-white. Further details available at http://www.setnet.org.uk/.</p>
61	<p>The Government will, through HEFCE, support all HEIs in maintaining progress in full implementation of their human resources strategies.</p>	<p>6.63</p>	<p>The Government provided some £0.88 billion in dedicated funding to HEIs in 2005-06 via HEFCE's Rewarding and Developing Staff in HE programme, to help them improve HR capabilities. HEFCE completed a review of the Rewarding and Developing Staff (RDS) scheme in March 2005 (http://www.hefce.ac.uk/pubs/rdrreports/2005/rd14_05/), and introduced a self assessment tool for human resources from Spring 2005. From 2006/07, R&DS funding is being incorporated into institutions' core grants.</p>
62	<p>Government will build on the recommendations of the current review of careers education and guidance.</p>	<p>Box 6.3</p>	<p>The End to End Review of Careers Education and Guidance was used to inform the development of proposals in the Green Paper Youth Matters, and was published alongside it in July 2005. http://www.dfes.gov.uk/publications/youth/</p>

N	Policy	F'work paras.	Progress Update and Next Steps
63	Government will also seek to work with research employers to encourage and enable a reduction in the current reliance on short-term contracts.	6.62	<p>The RCUK Research Careers and Diversity unit (RCDU) is leading on the delivery of the final recommendations of the Research Careers Committee. This includes :-</p> <ul style="list-style-type: none"> the development of a research careers map that will be web-based and will demonstrate the variety of options available to those interested in a career in research, and the mapping of the European Researchers Charter and Code onto existing UK practices, which is part of the work looking at refreshing the Concordat for research staff. <p>A sub-group of the Research Base Funders' Forum members carried out a situation analysis and made recommendations including monitoring of the number of researchers on short-term contracts – the Forum agreed that this group would report annually.</p>
64	Foreign science and engineering graduates in specific shortage subjects in the UK will have the automatic option of working in the UK for one year following graduation	Para 6.64	<p>The Science and Engineering Graduate Scheme (SEGS) was set up in October 2004 to offer overseas students in specific subjects leave to remain in the UK. In response to feedback from the sector and from students, eligibility has been extended so that overseas students who begin studying for a higher degree (Masters or PhD) after 1 May 2006 are eligible to apply for SEGS regardless of their subject of study.</p>
ACHIEVING PUBLIC CONFIDENCE			
65	Understanding and responding to public concerns and expectations of science and technology. Launch of new grants scheme to build engagement capacity.	7.7 + 7.21;1.3	<p>Sciencewise grants scheme launched September 2004 (£1.2 million over 2 years). First call closed December 2004; grants announced March 2005. The Programme will now operate through direct commissioning under competitive tender. Further details at http://www.sciencewise.org.uk</p>

N	Policy	F'work paras.	Progress Update and Next Steps
66	Council for Science and Technology (CST) to work with Government in considering how better use can be made of public debate and dialogue in developing policy.	7.8	<p>In March 2005, CST published its report <i>Policy through dialogue: informing policies based on science and technology</i> (available from http://www.cst.gov.uk/est/reports/files/policy-through-dialogue/report.doc). The criteria proposed in the report for selecting priorities for public dialogue have already been incorporated into the revised Chief Scientific Adviser's Guidelines on Scientific Analysis in Policymaking Government response September 2005 (http://www.ost.gov.uk/society/estreportresponse.pdf).</p>
67	The OST will explore with the Wellcome Trust opportunities for further joint working on public engagement activities.	7.23	<p>Regular meetings, including also HEFCE and RCUK, have been held to discuss matters of shared concern, such as the assessment of the impact of investments in public engagement with science and technology. OSI and the Wellcome Trust are collaborating and jointly funding a number of specific projects - e.g. the Democs project under the Sciencewise programme http://www.sciencewise.org.uk.</p>
68	Improving the evaluation of public engagement and confidence.	7.24	<p>Research by MORI published March 2005, with follow-up research published in July 2005 http://www.mori.com/polls/2004/pdf/ost.pdf. This will be repeated in 2008 and has been used in the planning of the Sciencewise programme, the work of the Horizon Scanning Centre, and the public consultation on the guidelines for the use of science in policy-making.</p>

N	Policy	F'work paras.	Progress Update and Next Steps
SCIENCE AND INNOVATION ACROSS GOVERNMENT			
69	Government Chief Scientific Adviser (CSA) to review departments' science and innovation strategies following Spending Review 2004.	8.10 + 8.13	5 Departments (Defra, DTI, Home Office, DfES and DWP) have completed and published their Science and Innovation Strategies, which will be used to inform SR07 proposals by Departments; 4 other Departments are very close to completing theirs; and 2 Departments will be late in completing their S&I Strategies. 3 Agencies (HSE/FSA/Environment Agency) and 2 of the Devolved Administrations (Welsh Assembly and Scottish Executive) have produced Science and Innovation Strategies voluntarily. The overall process will conclude with discussions between Sir David King and each departmental Perm Sec and/or CSA.
70	Cabinet Office examining options for strengthening the determination of cross-cutting analytical and research priorities and ensuring the coordination of research and analysis to support policy development.	8.15	A Coordination of Research and Analysis Group (CRAG) was set up in December 2004, with an ongoing role in setting strategy for analytical services, promoting better coordination across the analytical community in agreeing strategic priorities for research and analysis, and ensuring these are appropriately focused on policy priorities.
HEALTH RESEARCH			
71	Development of Joint Medical Research Council (MRC)/Department of Health (DH) Health Research Delivery Group	8.26; 8.27 1.44	This has been superseded by announcements in <i>Science and Innovation Investment Framework 2004-2014: Next Steps</i> that the Government intends to maximise the impact of the Medical Research Council (MRC) funded medical research and the DH's R&D budget by creating a single jointly held health research fund (see NEW measures below).

N	Policy	F'work paras.	Progress Update and Next Steps
72	Improving public health research capacity and links between public health academics and practitioners	8.30	<p>Actions taken since publication of the Public Health White Paper in 2004 include a number of steps to increase research funding in public health which will increase capacity:</p> <ul style="list-style-type: none"> • The UK Clinical Research Collaboration partners have established a strategic planning group to develop a co-ordinated approach to funding public health research; • In Oct 2005, DH launched the new Public Health Research Consortium with funding of £3.5m over five years; • In Apr 2005, NICE took on the functions of the Health Development Agency to create a single organisation responsible for providing national guidance on the promotion of good health and the prevention and treatment of ill health; • The NIHR Health Technology Assessment Research Programme has set up a new Disease Prevention Panel to identify and prioritise health promotion and public health topics in NHS settings.
N E W	Government accepted the recommendations of the UK Stem Cell Initiative chaired by Sir John Pattison. Total public funding for stem cell research will be up to £100m for 2006-07 and 2007-08, representing additional investment of around £50m	PBR 2005	<p>The additional investment in stem cell science is being overseen by the UK Stem Cells Funders Forum chaired by MRC. Already, the UK Stem Cell Bank has been awarded £9.2m to build a permanent facility for clinical grade stem cell lines. A joint MRC & UK Stem Cell Foundation Scientific Committee is considering applications for stem cell clinical trials. DH and DTI are conducting an industry consultation to establish a PPP for stem cells in predictive toxicology. The BBSRC is taking forward recommendations for greater co-ordination via a UK Stem Cell Network.</p>

N	Policy	F'work paras.	Progress Update and Next Steps
N E W	A new NHS R&D strategy, including the creation of a National Institute of health Research in the NHS and measures to support excellence in clinical R&D and to improve the regulatory environment for clinical trials in the UK	PBR 2005	PBR 2005 announced a new R&D strategy for the NHS including the creation of a National Institute for Health Research (NIHR) to coordinate research in the NHS, and an increased focus on promoting excellence in clinical trials and facilitating clinical trials. Implementation of the strategy began in April 2006.
N E W	A consultation led by Sir David Cooksey to look at the best institutional arrangements to deliver health R&D under a jointly held health research fund.	Budget 2006	Consultation was launched in May 2006 and he will report on options in time for the 2006 Pre-Budget Report.
ENERGY RESEARCH			
73	The Carbon Trust will continue its support for developers and co-investors to tackle climate change through the discovery and development of low carbon technologies and business.	8.33	<p>DTI is working with the Carbon Trust through the Low Carbon Working Group to ensure that DTI and Carbon Trust programmes are complementary. In 2004/05 the Carbon Trust invested £11.5 million and committed an additional £5.3 million to the development of low carbon technologies and businesses. Highlights include :-</p> <ul style="list-style-type: none"> • Carbon Vision a £14 million joint undertaking with EPSRC to support university research into low carbon technologies; • Investment in deals worth £26 million alongside venture capital partners, including the first successful IPO of Ceres Power Holdings Ltd • Low carbon incubator scheme supporting 21 early stage companies at Imperial College and Sheffield.

N	Policy	F'work paras.	Progress Update and Next Steps
74	Cross-cutting research: climate change and energy	Box 8.4	<p>OSI is working closely with DTI Energy Group, the UK Energy Research Centre (UKERC) and other major public and private sector players to raise the profile and improve the effectiveness of UK Energy R&D and facilitate greater pull through of innovative technologies to commercialisation A key vehicle for this is the new UK Energy Research Partnership, announced in the 2005 Budget and launched formally in January 2006. The Partnership brings together public and private funders of energy research to discuss strategic priorities and opportunities for collaboration, to provide leadership, and to enhance the coherence and impact of the total UK energy research and innovation activities. Further information on the Partnership, including key priorities and work programme, is available at: http://www.energyresearchpartnership.co.uk/erp.php.</p>
N E W	Establishment of a new National Institute for Energy Technologies (NIET)	Budget 2006	<p>Budget 2006 announced the intention to develop a 50/50 public private partnership to bring a new level of focus, ambition and industrial collaboration to the UK's work in the field of energy science and engineering. The Energy research Partnership under the joint chairmanship of Paul Golby and Sir David King is committed to raising substantial sums of private investment. Proposals are now being worked up by DTI with industry and will shortly publish an outline prospectus for the Institute will shortly be published to seek broader views and gauge wider interest.</p>
INTERNATIONAL DEVELOPMENT			

N	Policy	F'work paras.	Progress Update and Next Steps
75	The Department for International Development (DFID) to set up UK Funders' Forum to bring together Government Departments, Research Councils and the private sector to pool knowledge on the application on science and research to international development goals	8.40	A meeting of potential stakeholders in a UK Funders Forum took place in October 2005 where it was agreed DFID would coordinate an annual report and meeting on the activities supported by the research funders. The first report is currently being prepared and will be published late summer 2006.
76	Wellcome Trust exploring with DFID the joint development of capacity building for health research in sub-Saharan Africa	8.42	The inception phase for this capacity strengthening work is due to start shortly. Wellcome Trust and DFID are working with the International Development Research Centre (IDRC) in Canada who will work in Kenya and Malawi. The inception phase to be completed by end of financial year 06/07.
HOME OFFICE			
77	Home Office science and technology strategy to be developed covering 2005-08.	8.51	The Science and Innovation Strategy was published in November 2005 http://www.homeoffice.gov.uk/documents/science-strategy.pdf .
GLOBAL PARTNERSHIPS			
78	Development of overarching national strategy for international engagement in R&D and access to large facilities, through cross Government group – the Global Science and Innovation Forum (GSIF) – led by Government Chief Scientific Adviser.	9.8; 1.46 + 9.9 +9.10	GSIF strategy to be published in the second half of 2006.

N	Policy	F'work paras.	Progress Update and Next Steps
79	<p>Government will work to raise the visibility of the support available [under the EU Framework Programme for Research], ensure that the service is easy to navigate and that an appropriate level of support is provided across all areas, in addition to national programmes for collaborative research.</p>	9.34	<p>The Government provides advice and support to UK bidders into the 6th EU Framework Programme (FP6) via a network of National Contact Points. In addition, advice is available at the regional and developed administration level and the Research Councils have an FP dedicated office in Brussels.</p> <p>In preparation for FP7, the Office of Science and Innovation (OSI) is working with UK intermediaries to ensure a consistent service across all areas of the new programme, to coordinate this activity more effectively and establish better links with wider business support. OSI will also manage the development of practical web-based information and a series of FP7-related events, including a UK launch event in November 2006.</p>
BUSINESS R&D (INCLUDING LAMBERT REVIEW ACTIONS)			
80	<p>Research Councils to enhance the scale of their support for developing the RDAs' professional capabilities in science and technology issues, including through secondments of experienced staff into the RDAs and through representation on the advisory boards of regional Science & Industry Councils (SICs)</p>	9.45	<p>OST has brokered the remaining RDAs and Science Innovation Councils (all SICs now formed) to achieve representation of Research Councils across all SICs. The final SIC was formed at end 2004.</p> <p>A joint workshop was held in January 2006 between the Research Councils and RDAs to discuss capacity building proposals and identify scope for increased collaboration.</p>

N	Policy	F'work paras.	Progress Update and Next Steps
81	Government to establish a high-level business forum	C.4	<p>Government has established a regular high-level group, the UK Science Forum, chaired by Sir Tom McKillop of AstraZeneca. The group held its first meeting on 20 July 2005, focusing on progress with the ten-year framework following the first Annual Report. At this meeting a number of key issues were identified including Science, Technology, Engineering and Mathematics (STEM) skills, the role of public procurement, joint programmes and projects, public attitudes to science and the measurement of progress on the ten year framework. Working groups were established to take forward this agenda jointly with HMT, DfES and OST. Conclusions and recommendations were presented to Ministers at the forum meeting on 13 July 2006.</p>
82	Government to direct a higher proportion of support for business R&D towards small- and medium-sized enterprises (SMEs).	C.6	<p>PBR 2005 announced a new mandatory target for Government departments and agencies participating in the Small Business Research Initiative (SBRI) to place at least 2.5% of their extra-mural R&D contracts with SMEs. The Small Business Service (SBS) will publish the 2003/04 and 2004/05 performance figures in early 2006. Work continues on improving Whitehall's record keeping in this area. In March/April 2006 a new government procurement website was launched, http://www.supply2.gov.uk/.</p>
83	Knowledge Transfer Partnerships (KTPs) to be better marketed to business, with a greater regional focus.	C.10	<p>The number of KTPs has risen to 1002 as of April 2006. The RDAs are becoming increasingly involved in delivering KTPs - for example, the three northern RDAs recently committed an additional £2 million over three years to support KTPs and SEEDA committed £0.25M.</p>

N	Policy	F'work paras.	Progress Update and Next Steps
84	Government to take steps to increase take-up of R&D tax credits.	C.12 Budget 2006	PBR 2005 announced a package of improvements to the administration of the R&D tax credits scheme including the creation of dedicated R&D units in HMRC to develop specialist R&D expertise and handle all SME tax credit claims. It is envisaged that these units will be fully operational across the country by the end of the year. DTI, in conjunction with HM Treasury, HMRC and Business Link, are also working to better promote R&D tax credits. 'Next Steps' announced proposed changes to R&D tax credits to provide additional support to firms between 250 and 500 employees, subject to outcome of state aid discussions with the European Commission. Details will be published later this year.
85	Universities UK (UUK) to develop a database of academics interested in becoming non-executive directors.	C.14	UUK and Standing Committee of Principals (SCOP) commissioned research into the number of academics that sit as non-executive directors on FTSE 100 company boards: 705 non-executive directors in total, of which 112 have academic links (16%), 61 of these are present or former academics, or senior representatives for universities (9%); Leadership Foundation and UUK to agree a cadre of eminent Vice-Chancellors who could be seen by the executive search firms; work ongoing.
86	Higher Education Funding Council for England (HEFCE), UUK and SCOP developing national professional standards framework for teaching	C.17	The HE Academy was responsible for developing the national professional standards framework for teaching The agreed professional standards framework was published in February 2006 (http://www.heacademy.ac.uk/regandaccr/StandardsFramework(1).pdf) and will be embedded through accreditation of programmes and a series of HE Academy workshops; and from September 2006 all accreditation activities will be aligned with the new framework. The HE Academy offers a range of support and advice for institutions as they integrate these standards into their academic staff development programmes.

N	Policy	F'work paras.	Progress Update and Next Steps
87	HE Academy asked to build into their evaluation of the new professional standards framework a specific focus on their impact on the participation of business people in teaching	C.18	The HE Academy's national professional standards framework for teaching is flexible enough to accommodate the needs of different groups, including business people. The HE Academy will evaluate the impact of the framework on the participation of business people in teaching.
88	Committee of University Chairmen to include guidance on conflicts of interest in its revised Guide to Members of Governing Councils	C.22	New Guide to Members of Governing Councils includes guidance on conflict of interest ; guidance published in November 2004 and accessible via HEFCE website. http://www.hefce.ac.uk/pubs/hefce/2004/04_40/
89	Intellectual Property (IP) Working Group to draw up a range of model collaborative contracts and to develop an IP protocol	C.24	An internet version of the suite of model agreements (the "Lambert Agreements") and a number of supporting tools were launched on 21 February 2005 http://www.innovation.gov.uk/lambertagreements/
N E W	An independent review of Intellectual property (IP) in the UK led by Andrew Gowers	PBR 2005	Call for evidence was published on 23 rd Feb 2006
N E W	An enhanced role for UKTI in marketing the UK science base to business, implementing a new £9 million international R&D strategy to attract R&D investment to the UK and to promote Britains innovative firms abroad	Budget 2006 Next Steps	UKTI, OSI, DTI and HMT have held regular meetings since Budget 06 to develop the R&D Strategy into concrete proposals. UKTI plan to publish details of the R&D strategy alongside the wider marketing strategy later this summer.

N	Policy	F'work paras.	Progress Update and Next Steps
90	<p>DfES and OST to work with universities, PSREs and business to create a long-term career path for academics and knowledge transfer professionals who wish to focus on interacting with business and external partners</p>	C.31	<p>Third round of Higher Education Innovation Fund (HEIF) launched November 2005 (worth a total of £238m over two years 2006-07 and 2007-08) with bulk of funds to be allocated by formulaic funding. This will provide a predictable stream of funding which will allow HEIs to plan and maintain their knowledge transfer activities, allowing continuity of employment for Knowledge Transfer practitioners.</p> <p>Outcome of third round of Public Sector Research Exploitation fund announced on 19 January 2006, which allocated nearly £25m to support commercialisation from PSREs.</p> <p>Working with Partnerships UK to mentor those Government research organizations which have strong research programmes but lack knowledge transfer capacities to develop their commercialization activities. (see also entries 40, 101)</p>
91	<p>Third stream funding should support regional shared services in technology transfer.</p>	C.35	<p>The second round of HEIF supported 46 collaborations. The HEIF3 formula allocates funding to every English HEI. It encourages institutions to collaborate and to consider cost effectiveness and whether collaboration could help achieve economies of scale (see also entry 40).</p>

N	Policy	F'work paras.	Progress Update and Next Steps
92	<p>The Association for University Research and Industry Links (AURIL) and the University Companies Association (UNICO) to take forward recommendation on developing industry experience among technology transfer offices. AURIL, Praxis (the UK university technology transfer training programme) and UNICO to take forward recommendation to learn from the US in providing quality technology transfer training, increasing industry involvement and sharing best practice.</p>	C.39 + C.42	<p>AURIL has developed a flexible range of work-based Continuing Professional Development programmes including a Post Graduate Qualification and a Level 4 Professional Qualification with the Open University, both based on its set of professional knowledge transfer competency standards, and has achieved incorporation of the Institute of Knowledge Transfer (December 2004). Praxis has delivered an increased number and range of short courses.</p> <p>AURIL have established a 3-day KT induction course for staff new into the profession (within their first year).</p>
93	<p>Third stream funding should rebalance commercialisation activities more towards licensing.</p>	C.44	<p>The Government has switched funding for commercialisation activities to a general third stream funding mechanism (HEIF) which leaves HEIs greater flexibility to set their own priorities. Data from the latest Higher Education Business and Community Interaction Survey (HE-BCI) http://www.hefce.ac.uk/pubs/hefce/2006/06_25/ report shows over 1,000 active 'spin-off' companies from UK HEIs employing 15,000 people with turnover of nearly £450 million. UK graduates also started nearly 600 new companies in 2003-04. Universities generate revenue from knowledge exchange work. Income from the exploitation of intellectual property (IP) by the HE sector has also increased to over £38 million. The UK HE sector held over 5,700 active patents in 2003-04 and granted over 2,000 licenses for third parties to use knowledge and technologies .</p>
94	<p>Regional Selective Assistance (RSA) should be targeted to support more regional business innovation and business-university collaboration.</p>	C.48	<p>RSA has been replaced by Selective Finance for Investment in England (SFIE), which is aimed at improving productivity and skill levels. DTI will undertake an evaluation of the impact of this product in advance of CSR07.</p>

N	Policy	F'work paras.	Progress Update and Next Steps
95	Government will task Regional Development Agencies (RDAs) to help a broader spectrum of businesses develop more productive links with the university base in each region	C.56	The RDAs' tasking framework has built a mandatory target into each RDA corporate plan for the number of businesses within the region that the RDA will assist to engage in new collaborations with the UK knowledge base. There has been appropriate input into the 5/6 Regional Economic Strategy (RES) consultations, to continue to support this.
96	Government will work with the RDAs to further develop their capabilities in facilitating business-university interaction	C.57; C.61	RDA and Research Council Capacity building fund started April 2006. (The RDA/RC meeting to discuss this took place on 19 th Jan 06).
97	Government supports recommendation to develop a league table of world class universities, and encourages the Russell Group to actively benchmark performance internationally	C.63	The Government's consultation proposals on the use of metrics in research assessment and funding, published on 13 June 2006, aim to provide a robust basis for the national and international benchmarking of research performance from 2009/10 onwards.
98	Committee of University Chairman (CUC) to develop a code on governance. CUC to recommend a more regular and thorough approach to effectiveness reviews when it published its new Guide to Members and its Code of Governance in autumn 2004	C.66 + C.72	Code of governance published autumn 2004. Report says effectiveness reviews and consequential changes to structures and processes should be undertaken at least every 5 years. Self assessment can be part of this. Guide also gives examples of good practice. See http://www.hefce.ac.uk/pubs/hefce/2004/04_40/
99	HEFCE to undertake in 2004 an audit of all hypothesized funding streams	C.77	2004 audit published at http://www.hefce.ac.uk/Pubs/rcreports/2004/rd10_04/ Following an internal review and discussions with the HE Regulation Review Group, in December 2004 HEFCE cut the number of special funding streams to 8 and in the medium term will reduce it further to 6, distributing a greater proportion of funds through formula funding and reducing the accountability burden on HEIs.

N	Policy	F'work paras.	Progress Update and Next Steps
100	Government to continue to work with the sector on how the accountability regime can better reflect the low level of risks in well run universities, and will report on progress at the end of 2004	C.84	Following discussions between HEFCE and the HE Regulation Review Group, HEFCE agreed a new approach in December 2004. HEFCE will move to a 'single conversation' with HEIs on financial returns, and in the process combine forecasts with annual accounts, and require institutions to submit a Mid Year Financial Return only exceptionally when the institution is 'at risk'. HEFCE will monitor through the Annual Monitoring Statement only on an exception basis and rely more on existing data, rather than making additional demands. HEFCE consulted on its new approach in 2005; is piloting its new approach in 2006; and aims to implement in 2007. The development work is taking place in conjunction with other public funders of HE with the objective of streamlining the whole accountability burden on HEIs. To revisit in 2007.
101	Government will revisit Oxford/Cambridge situation in three years	C.86	
102	Government to review in summer 2005 the impact of Sector Skills Councils (SSCs) and HEI's initiatives on courses and curricula, and consider a further response to this recommendation	C.93	Following publication of the White Paper "Further Education: Raising Skills, Improving Life Chances" on 27 March 2006, HEFCE is reviewing its policy on funding and supporting HE in FE colleges, with the aim overall of developing a consistent and coherent strategy that will enable FE colleges to best contribute to HE.

N	Policy	F'work paras.	Progress Update and Next Steps
103	Funding Council reviewing its teaching funding method	C.97	<p>Evaluation of current method undertaken by consultants SQW and published on the HEFCE website: http://www.hefce.ac.uk/Pubs/rdreports/2005/rd06_05/ HEFCE published 'Review of the funding method for teaching' (HEFCE 05/21), it established the aims of the new funding method and reported on progress of the review document - available at www.hefce.ac.uk/pubs/hefce/2005/05_21/ . HEFCE consultation on proposed changes to the funding method closed on 13 January 2006. Outcomes paper available at http://www.hefce.ac.uk/pubs/hefce/2006/06_12/. A second consultation will take place in early 2007 which will develop proposed changes further. The earliest any changes, if agreed, will be implemented is for the 2007/08 academic year with phased implementation over a number of years.</p>