

The science budget : Government response to the Committee's first report of session 2015-16 : fourth special report of session 2015-16.

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House of Commons
Science and Technology
Committee

The science budget: Government Response to the Committee's First Report of Session 2015–16

**Fourth Special Report of
Session 2015–16**

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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 Government Office for Science and associated public bodies.

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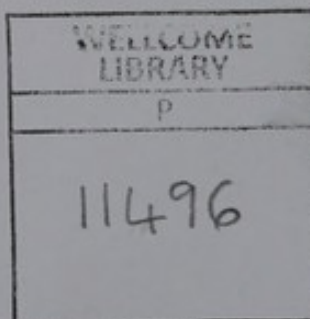
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Fourth Special Report

On 9 November 2015 we published our First Report of Session 2015–16, *The science budget* [HC 340]. On 18 January 2016 we received the Government's response to the Report. We published it on 19 January—the same day that we reported it to the House—so that it would be in the public domain when the Business Secretary gave oral evidence later that same day. The Response is appended below.

Appendix 1: Government response

The Government welcomes the opportunity to address the issues raised in this report on the Science Budget, and thanks the Committee for its work making the case for science funding in the recent Spending Review.

The Spending Review made clear the Government's commitment to science and research. We will protect science resource funding in real terms for the rest of the Parliament from its current level of £4.7bn per annum. Growth in the ring fence will be used to invest in a new £1.5bn Global Challenges Research Fund for UK science to pioneer new ways of tackling global problems, like anti-microbial resistance, flooding and famine. As well as increasing resource spending for science, we are investing in new scientific infrastructure on a record scale, delivering on the £6.9 billion science capital commitment in our manifesto.

We have considered the recommendations made by the Select Committee and our responses are set out in this document.

1. The UK has fallen behind its competitors in terms of total R&D investment and this will put UK competitiveness, productivity and high-value jobs at risk if it is not reversed. *We recommend that the Government produce a long term 'roadmap' for increasing public and private R&D investment in the UK to 3% of GDP. This would not only provide focus and accountability for public sector R&D investment but also send an important signal about the long term stability and sustainability of our science and innovation ecosystem, supercharging private sector R&D investment from UK industry, charities and overseas investors alike.* (Paragraph 37)

In "*Fixing the Foundations*", the Productivity Plan¹ published in July 2015, the Government highlighted the role of science in helping to meet our productivity challenge. As well as protecting investment in science, we will focus on the outputs and the benefits that investment in research brings to the economy and society. Every £1 spent by the government on R&D increases private sector productivity by 20p per year in perpetuity. That same government investment also leverages in private investment in R&D—an average of £1.36 for every £1 of public funding, with over a quarter of that foreign

¹ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/443898/Productivity_Plan_web.pdf

investment. That private investment leads to further increases in productivity benefiting the UK economy.

The UK is an efficient and highly productive research base, achieving per unit GERD scores well above the world average on key output measures and producing 16% of top quality published research findings, with just 3.2% of the world's R&D expenditure.

The Government does monitor changes in R&D levels as well as a range of other statistics bearing on the UK's research and innovation system. The UK's R&D intensity is calculated and reported annually by the Office for National Statistics.

2. While we welcome the Science and Innovation Strategy's commitment to delivering sufficient resource funding [for science infrastructure], and the Minister's assurance that this would be delivered, in reality, given existing capital commitments, this will only materialise with an upward trajectory in the resource budget. In addition, we are deeply concerned to hear of under-utilised facilities and a crisis in funding for mid-size equipment and core infrastructure. *We recommend that the Government conduct an urgent review of all existing capital allocations to ensure sufficient resource is in place to fully 'sweat our assets' and further recommend development of a more robust system of integrating future capital and resource allocations so that full value is realised for every capital investment.* (Paragraph 42)

In 2014 the Government carried out a Science and Research Capital Consultation resulting in the creation of a new Science Capital Roadmap², which set out Government's long-term strategic vision for a world-leading science and research infrastructure. The affordability criterion for identifying specific projects included consideration of likely resource implications, where known.

As part of the Spending Review, the Government conducted a zero-based review of all capital spend, following which the Chancellor reconfirmed the Government's commitment to boost science capital to a total of £6.9 billion between 2015-2021.

Following the Spending Review, BIS has commenced the process of determining the allocation of the science budget to partner organisations including Research Councils. The process will include bids for resource funding to support both pre-existing and new facilities and infrastructure, and Government is working with partner organisations to match resource funding with capital. We are also working across Research Councils to come to a collective view of the strategic requirements for existing large national facilities such as Diamond and ISIS as well as how we can ensure they remain sustainable in the longer term.

3. *The Spending Review is being conducted under present protocols, dealing with capital and resource budgets for science separately. Any subsequent change to the way in which science and innovation spending are classified must be transparent, allowing like-for-like comparisons with year-on-year expenditures set in the Spending Review. The Government*

² <https://www.gov.uk/government/consultations/science-and-research-proposals-for-long-term-capital-investment>

should make it clear in the Spending Review that ESA-10 will not be used as a means to change the underlying funding settlement. (Paragraph 46)

In the Spending Review, the Chancellor committed to protect the £4.7bn ring-fenced science budget in line with inflation for the rest of the Parliament. He also confirmed the Government's manifesto commitment to science capital which will rise with inflation to a total of £6.9 billion between 2015-2021. The Treasury intends to change the budgeting system so that R&D spending will be budgeted for in Capital Departmental Expenditure Limits. This will be a budgeting rather than a policy change, and it is not envisaged that these changes will affect the government's policy commitments.

4. The catapult network is a key success of the last Government's commitment to strengthen our capacity to exploit research by building better research-industry partnerships. It is understandable, therefore, that the current Government should wish to build on this success by expanding the catapult network. *While we commend the motivation, we feel the first priority should be to consolidate and establish the existing catapults—in particular ensuring that all catapults have the necessary operating resource and business strategies in order to operate at peak capacity. (Paragraph 55)*

The Government is committed to the Catapult Centres which provide valuable innovation support to business and help foster collaboration across the research base. In addition to maintaining funding in cash terms for Innovate UK, the Spending Review settlement prioritised spending on these Centres. Following the announcement at the Spending Review, BIS will now work through the detail of its settlement with Innovate UK and other stakeholders to establish specific programme impacts. Those discussions are now underway.

5. *Catapults are only one strand of innovation support, however, and commitments to expanding the catapult network should not come at the expense of other innovation priorities. The Government has made successive, clear commitments to innovation more generally and should deliver on these by ring-fencing Innovate UK's budget. (Paragraph 56)*

The Government wants Britain to be the best place in Europe to innovate, patent new ideas and start a business and we are focused on creating the best conditions for innovative businesses to flourish. In addition to the provision of direct support through Innovate UK, the Government also helps to create an innovation-friendly business environment through schemes such as R&D tax credits and the Patent Box and by supporting key organisations such as the Intellectual Property Office and the National Physical Laboratory.

In the recent Spending Review, the Government made clear its commitment, over the course of this Parliament, to protect the Catapult network and total funding for business led innovation through Innovate UK. The Government also wants to broaden the type of financial support available for innovation so it will look to evolve Innovate UK's existing funding models to deliver up to £165m of support through new finance products by the end of the Parliament. The Government will also look to integrate Innovate UK into Research UK—the proposed new body incorporating the seven Research Councils.

Innovate UK would retain its clear business focus and separate funding stream while also helping to foster a more strategic partnership with the wider research base.

The Government's approach to innovation is also ensuring that we are addressing some of the biggest challenges we face. Announced in November 2015, the UK is part of Mission Innovation, an initiative of 20 countries across the globe pledging to double funding for clean energy R&D projects with a view to providing reliable and affordable energy. In 2020/21, the UK expects to spend in excess of £400m on relevant projects.

With these commitments over the course of this Parliament, the Government is continuing to support innovation in businesses.

6. We recommend that major government policy announcements and new legislation should be routinely accompanied by a formal statement of the relevant evidence base, without depending on a prompt from our forthcoming evidence checks. (Paragraph 58)

The Government welcomes the Committee's advocacy of evidence in the development of policy and legislation.

The Government's support for evidence-based policy making is demonstrated by its continued support for the *What Works* initiative, a network of centres which enable policy makers, commissioners and practitioners to make decisions based upon strong evidence of what works and to provide cost-efficient, useful services.

The Government requires that major policy decisions including legislation are accompanied by an impact assessment that includes an assessment of the evidence base; summarises the rationale for Government intervention, the options considered (including non-regulatory options), and the expected costs and benefits.

7. We are dismayed by the steep decline in research and development in some departments. This is driven by understandable budgetary pressures but also by lack of transparency surrounding these budgets. We recommend that the Government produces an annual report to Parliament setting out, and explaining, public spending on science and innovation, including the rationale for the relative support given to scientific research and to innovation. (Paragraph 60)

Efficient and effective government requires access to the best science and scientists. The Government Chief Scientific Adviser works closely with departmental Chief Scientific Advisers to deliver the science advice and evidence that government needs.

The Office for National Statistics publishes an annual Statistical Bulletin containing Official Statistics on UK Government expenditure on science, engineering and technology. This includes details of all government expenditure—on R&D, knowledge transfer activities, and indicative UK contributions to the European Union's (EU) R&D expenditure—including by Government Departments, Research Councils and Higher Education Funding Councils.

The Government set out its strategy for supporting Science and Innovation in “*Our Plan for Growth – Science and Innovation*”, published in December 2014. Accompanying that strategy was an evidence paper that set out the rationale for Government investment in research and innovation, the role of the knowledge system in the UK and how it is resourced; and described the role of government in supporting the effective functioning of the system as a whole. At present, the Government has no plans to issue a further evidence paper on this area.

8. The ‘dual support’ system has produced a world class and highly efficient system for scientific research. *Any significant changes to this system, including the balance of funding between research councils and university funding councils, would require a clear justification, which has yet to emerge. The Government should make clear its continued commitment to the dual support system and the previous Government’s 2010 iteration of the Haldane Principle in the forthcoming Spending Review. A significant element of research funding should continue to be channelled through both the research councils and the higher education funding authorities.* (Paragraph 64)

The Government has made clear its commitment to the dual support system and the Haldane Principle, most recently in “*Fulfilling our potential: teaching excellence, social mobility and student choice*”, the Higher Education Green Paper, published in November 2015. Following the conclusion of the Spending Review, BIS has commenced the process of determining the allocation of the science budget, including the balance of funding between the two arms of the dual support system.

9. Given the stable nature of funding allocations between the various research councils and the drive for greater strategic oversight in science funding, it is in order to consider if the research councils are working as an optimal system. However, the shift towards applied research over the last decade and the efficient, competitive and innovative output of the science they fund, imply that research councils are continuing to reflect changing research priorities and driving excellence in our science base. (Paragraph 68)

10. While most witnesses accept there is scope for better interdisciplinary working and strategic oversight between research councils, clear justification will be needed for any significant change in funding allocations, beyond simply seeking further administrative efficiency savings or structural adjustments. Sir Paul Nurse’s review will guide this process, and the Government will no doubt weigh its conclusions carefully. *But we caution against a radical reorganisation of the research councils which could potentially harm the research programme.* (Paragraph 69)

The Higher Education Green Paper set out proposed changes to the higher education architecture in England, in particular to the Higher Education Funding Council for England (HEFCE). These changes will have implications for the research funding landscape in England, which the Green Paper and the Nurse review address.

At the Spending Review, the Chancellor announced that the Government would accept Sir Paul Nurse’s recommendation to bring the seven research councils under a new body, Research UK. The government also announced that it would look to integrate Innovate UK

into Research UK in order to strengthen collaboration between the research base and the commercialisation of discoveries in the business community. This new organisation would be a non-departmental public body with a single accounting officer.

The creation of Research UK will facilitate greater strategic coordination of research activity and enable a stronger focus on multi-disciplinary research and research addressing society's grand challenges. This will maximise value for money from public investment in research and ensure that research outcomes can be fully exploited for the benefit of the UK.

Government recognises the importance of retaining strong leadership in individual discipline areas and this will be preserved in line with the recommendations of Sir Paul's review.

Over the coming months we will consider the responses to the Green Paper consultation and formally respond to Sir Paul Nurse's review with further details of our plans to create Research UK.

11. We are disappointed that the Government has yet to respond to the Dowling Report given its important insights into gaps in our innovation landscape. *We recommend that the Government presents its response in the Spending Review.* (Paragraph 74)

We are grateful for the insights and recommendations provided by Dame Ann Dowling's Review of Business-University Research Collaborations. We recognise and support the conclusion it has reached. Alongside the recent Higher Education Green Paper and Sir Paul Nurse's review, it will now be taken forward in our review of the funding landscape to make it, as recommended by Dame Ann, more strategic, coherent and effective.

12. Innovation loans may have a role to play as a new, additional, funding mechanism for later-stage ventures, but their success will depend greatly on the terms of any loans system introduced. *We recommend that the Government retains the current system of innovation grants as a key policy tool, alongside R&D tax credits, for de-risking innovation investment.* (Paragraph 77)

The Government is focused on creating the best conditions for innovative businesses to flourish. The lack of available financing is often an obstacle for driving growth and productivity and we want to broaden the type of financial support available for innovation. Some countries (like France, Finland, or the Netherlands) make use of a variety of financial instruments to support innovative businesses. We want to learn from this approach as we continue to support, drive and encourage innovation in the UK. The Government announced in the Spending Review that it will introduce new finance products for business-led innovation. We will engage with businesses to better understand their financing needs as we develop this approach.

13. Tax incentives have become a significant and welcome support for businesses seeking funding to innovate by applying research, but there remains scope for further assistance. Given the often thin operating margins of risky innovative start-ups, the delay in waiting for R&D tax credits is not ideal. *We recommend that the Treasury critically examine in the*

Spending Review the potential for extending the scope and availability of tax incentives and investment vehicles for innovation businesses. It should also examine alternative models for R&D tax credit payment, including the scope for a quarterly schedule. (Paragraph 80)

R&D tax credits now support about 80% of all business investment in R&D. In 2013/14 over 18,000 companies used the schemes, claiming a total of £1.75 bn. This supported about £14.3 bn of investment compared with total business R&D investment in 2013 of £18.4bn, and Government continues to promote awareness and further take-up of the schemes³. The SME scheme is among the most generous in the world with the enhanced credit being worth about 26p for every £1 of qualifying R&D expenditure. The certainty of the schemes mean that they are an integral part of companies' investment planning. This incentivises companies to undertake R&D more quickly or to perform more risky R&D, enabling them to remain competitive and grow. A recent evaluation conducted by HMRC concluded that each £1 of tax foregone by R&D tax credits stimulates between £1.53 and £2.35 of additional R&D investment.

The Government is committed to ensuring that R&D tax credits are paid to companies as quickly as possible. In the year to date 82% of SME payable tax credit claims have been paid within 28 days. It is currently not possible for HMRC to pay R&D tax credits on a quarterly basis as they form part of the Corporation Tax system, which is administered on an annual basis. However, the Government realises that more can be done to improve the payment time, which is why in October 2015, the Government published its 'making R&D easier' plan⁴. This outlined HMRC's plan to improve the accessibility of the scheme over the next two years for small businesses. This includes launching an advanced assurance service for the smallest firms—providing them with greater certainty and enabling them to plan their finances effectively. This will support first-time claimants in submitting their claim and therefore minimise their delay.

In addition to this, the Incentives and Reliefs R&D specialist units have extensively reviewed their working practices. The units will be introducing new digital services to automate some aspects of payment processing and concentrating processing in one location to improve the speed, consistency and accuracy of HMRC's treatment of new claims for relief.

³ Total expenditure on Research and Development (R&D) performed in UK businesses, in current prices, in 2013 was £18.4 billion (Source: ONS Business Enterprise Research & Development in the UK, 2013). The BERD statistics do not cover quite the same period as the FY13/14 R&D tax credit figures and are not completely comparable in their coverage, but provide an indication of the total level of business expenditure during a broadly comparable period.

⁴ <https://www.gov.uk/government/news/boost-for-small-businesses-as-government-launches-rd-plan>

The first of these is the fact that the majority of the patients who are treated with the drug are those who are in the early stages of the disease. This is a very important point because it means that the drug is most effective when it is used in the early stages of the disease.

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