

Public Funding of UK Science and Engineering – March 2013 update

Summary

The 2010 Spending Review (SR10) left the Research Base Budget facing a cumulative shortfall of £1665m in research capital over the Spending Review period.

However, since SR10 additional commitments totaling £1354m have been announced. This reduces the shortfall from £1665 to £311m with two years of this Spending Review period remaining.

In addition to addressing the shortfall in the research capital, the Government has also committed £332m to Innovation Capital.

This update covers:

1. Research capital – commitments announced since SR10
2. Innovation capital – commitments announced since SR10
3. Total additional commitments to UK science and engineering
4. The effect of inflation
5. Spending on R&D by Government departments

1. Research capital – commitments announced since SR10

Following the 2010 Spending Review the UK's Research Base Budget faced a shortfall of £1665ⁱ million over this Spending Review period. This cumulative shortfall was the result of investment not being maintained at the levels planned by the previous Government in the 2007 Comprehensive Spending Review (CSR07).

The Research Base Budget is not the same thing as the Science Budget. The previous Labour Government and the current Coalition Government both define the Science Budget differently - Labour included capital spending, whereas the Coalition doesn't include capital spending, but does include HEFCE (Higher Education Funding Council for England) research spending. Our Research Base Budget includes all spending included in the Science Budget as defined in both CSR07 and SR10.

Figure 1: The Total Research Base Budget of all spending included in the Science Budget as defined by either CSR07 or SR2010 and the cumulative shortfall from 2010-11 CSR07 levels for each subsequent year of the spending review

	CSR07	SR10				
	2010-11	2010-11	2011-12	2012-13	2013-14	2014-15
Total Research Base Budget (£m)	5790	5725	5410	5343	5308	5399
Cumulative shortfall from 2010-11 CSR07 (£m)	0	-65	-345	-792	-1274	-1665

Since SR10 the Coalition has announced a number of additional commitments to research capital.

Figure 2: Additional commitments to research capital announced since SR10

Project	Amount (£m)	Announced in	Financial year
Large Facilities Capital Fund, UKSA and science campuses	100	Budget 2011	2010-2011
National Graphene Institute	50	October 2011	2011-2012
High performance computing	145	October 2011	2011-2012
Science funding including large facilities capital	175	November 2011	2011-2012
UK Research Partnership Investment Fund	100	Budget 2012	2011-2012
UK Research Partnership Investment Fund	200	October 2012	2012-2013
Additional European Space Agency contribution	120	November 2012	2012-2013
Additional Research Council capital funding	464	December 2012	2012-2013
Total	1354		

Together these additional commitments reduce the Research Base Budget shortfall from £1665m to £311m over the period of the Spending Review so far.

These figures do not include the £220m investment into UKCMRI (now known as The Crick Institute) as this announcement was made at the time of the 2010 Spending Review and is therefore not seen to be additional.

Figure 3: The cumulative shortfall from CSR07 updated to include additional investments in research capital of £100m in 2010-11, £470m in 2011-12, and £784m in 2012-13 (totaling the £1354m listed in Figure 2)

	CSR07	SR10				
	2010-11	2010-11	2011-12	2012-13	2013-14	2014-15
Total Research Base Budget (£m)	5790	5825	5980	6127	5308	5399
Cumulative shortfall from 2010-11 CSR07 (£m)	0	+35	+225	+562	+80	-311

The additional commitments have been added into the Research Base Budget in full in the financial year they were announced as outlined in Figure 2ⁱⁱ.

Innovation capital – commitments announced since SR10

As well as the additional commitments to Research Capital, the Government has also announced new commitments to Innovation Capital – the UK's ability to commercialise research. Although this type of funding is not included in our definition of the Research Base Budget - and therefore does not reduce the remaining £311m shortfall further – it is an important investment in ensuring we are able to capitalise on our excellent research.

Figure 4: Additional commitments since SR10 in Innovation capital

Project	Amount (£m)	Announced in
Large Scale Demonstrator	25	November 2011
Open Data institute	6	November 2011
Innovation funding (including for SME R&D)	75	November 2011
Technology Strategy Board contribution to Biomedical Catalyst	90	December 2012
Autumn Statement 2012 (unallocated at present)	136	
Total (£m)	332	

Total additional commitments to UK science

The total additional commitments to UK science since the last spending review currently stands at nearly £1.7bn.

However, as detailed above only £1354m of this (those commitments listed as research capital) can be included as Research Base Budget funding, reducing the shortfall of £1665m at the start of this Spending Review to £311m.

Figure 5: Total additional commitments to the Research Base Budget and commercialising research since SR2010

Area of investment	(£m)
Research capital	1354
Innovation capital	332
Total additional investment	1686

The effect of inflation

Inflation will substantially erode the value of the Research Base Budget in real-terms over the spending review period. Using the latest figures from the Office of Budget Responsibility for the GDP deflator at market prices – the

measure of inflation that applies to research spending – we can see the extent to which inflation will erode the science budget. Over the course of the spending review period, the Research Base Budget will be £660m worse off.

Figure 6: The effect of inflation on the Research Base Budget (including additional Research Capital spends) over the course of the spending review

Spending Review period	SR10	SR10	SR10	SR10	SR10
Year	2010-11	2011-12	2012-13	2013-14	2014-15
GDP deflator (% change on previous year)	2.84	2.13	2.5	2	2
Research Base Budget (£m)	5825	5980	6127	5308	5399
Loss due to GDP deflator (£m)	165	127	153	106	108
Total loss due to GDP deflator (£m)	165	293	446	552	660

Spending on Research and Development (R&D) by Government departments

In addition to the Government's spending on research through the Research Base Budget, Government departments also fund mission-specific R&D. This spending provides the evidence base for policy development, helping to develop new ideas as well as evaluate existing ones.

Under pressure to reduce their overall departmental budgets, many departments are making disproportionate cuts to their R&D budgets.

Figure 7: Departmental budget change in comparison to change in departmental R&D budget

Department	Departmental budget change	R&D budget change	Difference in spend (£m)
Defra	-3.5%	-15.5%	-28
Transport	-11.3%	-47.8%	-33
Justice	-0.2%	-27.6%	-3
CLG	-0.6%	-45.2%	-13
Education	3.7%	-12.1%	-4
FCO	3.2%	-45.5%	-3
DWP	0.9%	-17.7%	-6
Defence	11.8%	-11.0%	-192
DECC	-6.00%	-0.60%	0

Figure 7 shows that Defra, Department for Transport, Department for Justice, and Department for Communities and Local Government have all made disproportionate cuts to their R&D budget in comparison with overall budget cuts.

More concerning is that even in the face of increases in departmental budgets, the Department for Education, Foreign and Commonwealth Office, Department for Work and Pensions, and Ministry of Defence are still making cuts to their R&D budgets.

It is crucial the R&D budgets are not seen as an early target as the next round of departmental budget cuts hit. This attitude runs counter to the Government's desire to produce evidence-informed policy and make the best use of the UK's research base.

Further information

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Notes

ⁱ The full calculations for the £1665m cumulative shortfall can be found in our previous report 'Public funding of UK science and engineering: Putting Government rhetoric to the test': <http://sciencecampaign.org.uk/?p=7144>

ⁱⁱ Some commitments will be allocated across a number of years and while this won't affect the overall change in the shortfall, it would change the yearly totals. Unfortunately, this information is not currently available for all additional commitments and this is the reason for including the commitments in full in the financial year they were announced.

Information on the years in which the commitments will be spent is available for:

Project	2011-12	2012-13	2013-14	2014-15
UK Research Partnership Investment Fund (£m)		20	120	160
Additional European Space Agency contribution (£m)			60	60

Sources:

Research Partnership Investment Framework – [HEFCE grant letter 2013-14](#)

European Space Agency – [Autumn Statement 2012 policy decisions](#)