

Statistical bulletin

# UK government expenditure on science, engineering and technology: 2015

Science, engineering and technology (SET) expenditure by the UK government includes expenditure by government departments, Research Councils and Higher Education Funding Councils (HEFCs). It also includes the indicative UK contributions to the EU's research and development expenditure.

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## 1. Main points

- The UK government's expenditure on science, engineering and technology (SET) continued to grow, expanding by £0.2 billion to £11.4 billion in 2015, an increase of 1.4%.
- The 2015 SET estimate of £11.4 billion consists of expenditure on research and development (R&D) of £10.2 billion, UK contributions to EU R&D expenditure of £0.9 billion and knowledge transfer of £0.3 billion.
- The UK Research Councils contributed the most to expenditure on SET in 2015 at £3.4 billion, 30% of all expenditure on SET.
- Civil departments' expenditure on SET over the long term grew by 27% from £2.5 billion in 2004 in constant prices (adjusted to remove the effects of inflation) to £3.1 billion in 2015.
- Defence expenditure on SET over the same period decreased by 39% to £1.7 billion in 2015.

## 2. Statistician's comment

"Government spending on science, engineering and technology has been growing over time, in real terms. However, it has been falling as a share of GDP – down from over 0.8% in 2004 to 0.6% in 2015."

Daniel Groves, National Accounts and Economic Statistics, Office for National Statistics

## 3. Things you need to know about this release

UK government expenditure on science, engineering and technology (SET) covers estimates of expenditure by government departments, Research Councils and Higher Education Funding Councils (HEFCs). The estimates are on a net expenditure basis. This is defined as in-house research and development (R&D) performed plus purchased or funding provided for R&D, less funding received for R&D. Also included are estimates of knowledge transfer and the UK's contribution to the EU's R&D budget.

SET should not be confused with the <u>UK gross domestic expenditure on research and development: 2015</u> (<u>GERD</u>) statistical bulletin, published on 16 March 2017, which only includes expenditure on R&D performed "inhouse", that is, by organisations themselves, by all sectors of the economy. This is explained in more detail in the <u>UK gross domestic expenditure on research and development Quality and Methodology Information</u>.

In this statistical bulletin, R&D and related concepts follow internationally agreed standards defined by the <u>Organisation for Economic Co-operation and Development (OECD)</u>, as published in the <u>Frascati Manual 2015</u>.

The main source of estimates for this publication is the annual Government Research and Development Survey (GovERD).

Please note that £1.0 billion equals £1,000 million in this release and that all figures quoted are in current prices unless otherwise stated.

## 4 . Science, engineering and technology expenditure 2015

Expenditure on science, engineering and technology (SET) by the UK government was £11.4 billion in 2015. This was up from £11.2 billion in 2014, an increase of 1.4%. The average annual growth rate since 2004 was 2.5%.

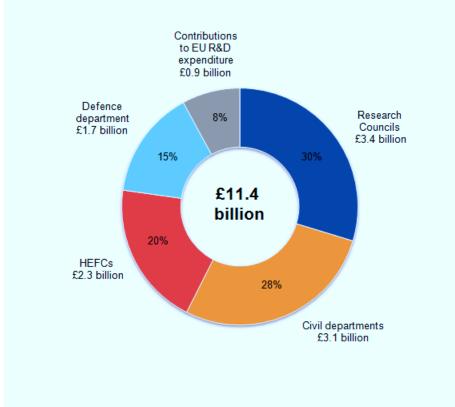
In constant prices, the 2015 estimate increased by 0.6% since 2014 and the average annual growth rate since 2004 was 0.5%.

Total expenditure on SET represented 0.60% of gross domestic product (GDP), a decrease from 0.62% in 2014. As a percentage of GDP, the level has fluctuated between 0.60% and 0.82%, with an average estimate of 0.70% for the period 2004 to 2015.

# 5. Research Councils account for almost a third of spending on science, engineering and technology

UK government's estimates of science, engineering and technology (SET) are categorised into expenditure by Research Councils, Higher Education Funding Councils (HEFCs) and by civil and defence departments, all of which include elements of knowledge transfer. Also included are estimates of the UK's contribution to the EU's R&D expenditure made by HM Treasury.

Figure 1 shows the contribution each sector made to the SET estimate in 2015. Almost one-third (30%) of UK government expenditure on SET was by Research Councils, with civil departments and HEFCs contributing 28% and 20% respectively. Defence expenditure and contributions to EU R&D expenditure made up the remaining 15% and 8% respectively.

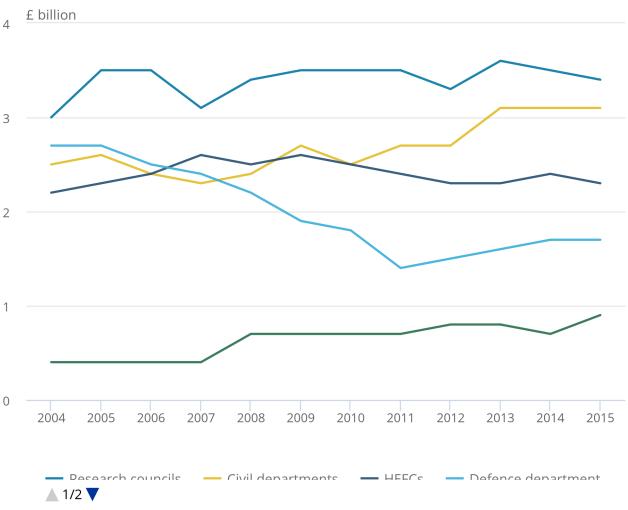


#### Figure 1: Composition of UK government expenditure on science, engineering and technology, 2015

Figure 2 shows changes in SET components between 2004 and 2015 in constant prices. Defence expenditure decreased by  $\pounds$ 1.0 billion (39%) from  $\pounds$ 2.7 billion in 2004 to  $\pounds$ 1.7 billion in 2015. In contrast, over the same period there was growth in civil departments' expenditure on SET of  $\pounds$ 0.7 billion.

# Figure 2: Components of UK government expenditure on science, engineering and technology in constant prices, 2004 to 2015

Figure 2: Components of UK government expenditure on science, engineering and technology in constant prices, 2004 to 2015



Source: Office for National Statistics

#### Source: Office for National Statistics

#### Notes:

1. HEFCs – Higher Education Funding Councils.

# 6. Decrease in Research Councils' expenditure on science, engineering and technology

<u>Research Councils UK (RCUK)</u> is the strategic partnership of the UK's seven Research Councils. Each year the Research Councils perform research and development (R&D) covering the full spectrum of academic disciplines, from the medical and biological sciences to astronomy, physics, chemistry, engineering, social sciences, economics, environmental sciences, and the arts and humanities.

Expenditure on science, engineering and technology (SET) by Research Councils was £3.4 billion in 2015. This was down £24.7 million (1%) since 2014. In constant prices, this was a rise of £0.4 billion (15%) since 2004.

The research council with the highest expenditure on SET (£0.9 billion in 2015) continued to be the Engineering and Physical Sciences Research Council (EPSRC), representing 26% of Research Councils' SET expenditure. However, while the EPSRC saw a drop of 4%, the Medical Research Council's expenditure grew by 14% from £0.7 billion in 2014 to £0.8 billion in 2015, representing 24% of all Research Councils' expenditure on SET. The Medical Research Council also had the highest growth since 2004, in constant prices, with a growth of 74%.

The Research Councils' estimated expenditure on SET includes their pension arrangements. These pension contributions are included separately in the datasets associated with this publication and in Figure 3.

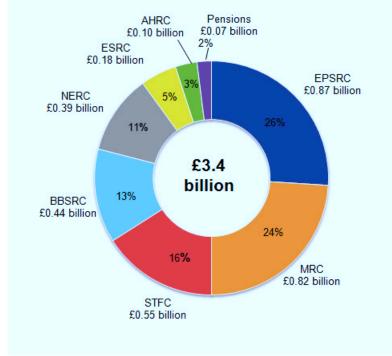
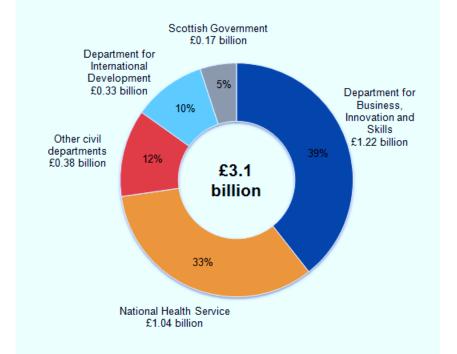


Figure 3: Breakdown of UK Research Councils' expenditure on science, engineering and technology, 2015

# 7 . Civil departments' expenditure on science, engineering and technology increases

The UK government owns many research institutes and laboratories that carry out research and development (R&D), which are managed by various government departments. It also uses a range of suppliers with facilities to carry out research, both inside and outside the UK.

In 2015, expenditure by civil departments on science, engineering and technology (SET) was £3.1 billion, showing growth of £86.8 million (3%) since 2014. In constant prices, the growth since 2004 was 27%. In 2015, four departments contributed £2.8 billion (88%) to the total. The Department for Business, Innovation and Skills (BIS) was the largest contributor to this, with expenditure of £1.2 billion, making up 39% of total civil departments' expenditure on SET (Figure 4). The Department for Business, Innovation and Skills was replaced by the Department for Business, Energy and Industrial Strategy in July 2016.





# 8 . Decrease in Higher Education Funding Councils' expenditure on science, engineering and technology

Higher Education Funding Councils (HEFCs) promote and fund teaching and research in higher education institutions (HEIs).

All HEIs (including universities) provide finance statistics to the <u>Higher Education Statistics Agency (HESA)</u>. Grant income provided by HEFCs is used as a proxy to estimate government-funded research and development (R&D) expenditure in HEIs. This is explained in more detail in the <u>UK gross domestic expenditure on research and</u> <u>development Quality and Methodology Information</u>.

In 2015, expenditure on science, engineering and technology (SET) by HEFCs was £2.3 billion, a decrease of £88.0 million (4%) since 2014. In constant prices, this was a decrease of £105.4 million (4%) since 2014 and an increase of £28.7 million (1%) since 2004. This was in contrast to the decrease from the peak of £2.6 billion in 2009 (Figure 2).

The Higher Education Funding Council for England (HEFCE) provides the most research funding as it has the highest number of HEIs. In 2015, expenditure by HEFCE on SET was £1.8 billion. This was 80% of the total HEFCs' expenditure on SET, a similar level to recent years.

# 9. Defence expenditure on research and development decreases

Defence expenditure on science, engineering and technology (SET) was £1.7 billion in 2015, a drop of £41.8 million (2%) since 2014. In constant prices, since 2004, defence expenditure has decreased by £1.0 billion (39%) (Figure 2). While defence research fell by 23% over this period, to £0.6 billion, defence experimental development fell by 45% to £1.1 billion.

# 10. UK more than doubles contribution to EU research and development expenditure

In 2015, the UK contributed £0.9 billion to EU research and development (R&D) expenditure. In constant prices, this was an increase of £0.5 billion (127%) more than doubling the figure in 2004. These figures were provided by HM Treasury and are broad estimates. This is because member states' contributions are not made to individual expenditure programmes, but to the EU budget as a whole. They are therefore referred to as "indicative UK contributions to EU R&D expenditure."

### 11 . Links to related statistics

Further statistics on <u>research and development expenditure in the UK</u> are available. Our <u>Business enterprise</u> <u>research and development</u>, <u>UK: 2015 statistical bulletin</u> contains estimates of research and development (R&D) performed by businesses in the UK.

Our <u>UK gross domestic expenditure on research and development: 2015 statistical bulletin</u> contains estimates of R&D performed by businesses, along with R&D performed by the higher education, government and private non-profit sectors, to give totals of R&D performed by organisations in the UK.

The data tables on qualified scientists and engineers in the labour force by gender (<u>LF1 and LF2</u>) are no longer included with the science, engineering and technology (SET) release but can be found as part of the <u>UK gross</u> domestic expenditure on research and development: 2015 statistical bulletin.

# 12. Quality and methodology

The <u>UK government expenditure on science, engineering and technology Quality and Methodology Information</u> <u>document</u> contains important information on:

- the strengths and limitations of the data and how they compare with related data
- users and uses of the data
- how the output was created
- · the quality of the output including the accuracy of the data

### About the data

The following points should be noted when examining this bulletin or the data tables:

- note that £1.0 billion equals £1,000 million in this release
- the majority of the data series started in 2001 and constant price comparisons have been made using the start of the current dataset in 2004
- the 2013 and 2014 estimates have been revised where necessary to take account of misreporting and late returns
- estimates of launch investment loan repayments received by government from business are no longer included following a review of how these payments should be reported
- gross domestic product (GDP) deflators at market prices and money GDP used is non-seasonally adjusted; the <u>GDP deflators at market prices, and money GDP: December 2016 (Quarterly National Accounts)</u> can be viewed as a measure of general inflation in the domestic economy



UK government expenditure on science, engineering and technology, 2015 Published 15 June 2017

Notes to be used in conjunction with the datasets below.

Please click on the links below to access the datasets:

1 UK government net expenditure on science, engineering and technology (SET) by department: current prices, 2004 to 2015

2 UK government net expenditure on science, engineering and technology (SET) by department: constant prices (2015 prices), 2004 to 2015

<u>3</u> UK government net expenditure on R&D by department: current prices, 2004 to 2015

4 UK government net expenditure on R&D by department: constant prices (2015 prices), 2004 to 2015

5 UK government expenditure on knowledge transfer by department: current prices, 2004 to 2015

<u>6</u> UK government expenditure on knowledge transfer by department: constant prices (2015 prices), 2004 to 2015

<u>7</u> UK government net expenditure on R&D by primary purpose and department: 2015

<u>8</u> UK government net expenditure on R&D by socio-economic objective, percentage share: 2007 to 2015

9 Aggregate destination of UK government gross expenditure on R&D: current prices, 2004 to 2015

10 UK government net expenditure on R&D by Frascati type of research activity: current prices, 2004 to 2015

11 UK government net expenditure on R&D by Frascati type of research activity: constant prices (2015 prices), 2004 to 2015

<u>12</u> Expenditure on R&D performed in UK government by department: current prices, 2008 to 2015

13 Expenditure on R&D performed in UK government by department: constant prices (2015 prices), 2008 to 2015

14 UK government purchased or funding provided for R&D by funding and receiving organisations: 2015

15 UK government net expenditure on R&D by flow of funds and department: 2015

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Next publication: 14 June 2018



The following symbols and abbreviations are used throughout these reference tables;

- denotes nil, figures unavailable or too small to display.
- <sup>†</sup> denotes earliest data revision.

There may be discrepancies between totals and the sum of their independently rounded parts.

#### Notes:

- 1. The data in these tables and the associated statistical bulletin relate to financial years.
- There are 2 types of estimates in this release, current and constant prices. Estimates in current prices present the value of expenditure in cash terms. Constant price (real terms) estimates have been adjusted for inflation between years using the Gross Domestic Product (GDP) deflator. This allows changes in government expenditure on SET to be examined on a comparable basis over time.
- 3. UK government expenditure on R&D plus knowledge transfer (commonly known as SET): Tables 1 and 2.
- 4. Expenditure on R&D (excluding knowledge transfer): Tables 3 and 4.
- 5. Indicative UK contributions to the EU's R&D expenditure are included in Tables 1 to 4. The EU supports R&D programmes in member states. The UK makes a positive net contribution to the EU budget, and a proportion of this is assumed to be for R&D. However, because no specific information is available on where and how these contributions are spent, they are excluded from the remaining SET tables.
- 6. Knowledge transfer (including technology transfers) activities are designed to help the conveyance of ideas, research, results and skills between researchers, businesses and wider communities. These actions contribute to the dissemination and application of scientific and technical knowledge, including consultancy services, demonstration projects, and sharing information. For example developing partnerships, establishing forums for knowledge exchange, specialist training, and licensing. Knowledge transfer estimates which are included in the SET totals in Tables 1 and 2 are separately identified in Tables 5 and 6.

### UK GOVERNMENT NET EXPENDITURE ON SCIENCE, ENGINEERING AND TECHNOLOGY (SET) BY DEPARTMENT: 2004 to 2015

Current	prices

1

Current prices											
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2
Research Councils:											
Engineering and Physical Sciences (EPSRC)	489	555	643	694	734	756	845	854	920	991	
Medical (MRC)	379	416	471	494	581	634	679	672	600	790	
Science and Technology Facilities (STFC) <sup>1</sup>	-	-	-	552	590	607	563	542	467	511	
Biotechnology and Biological Sciences (BBSRC)	277	322	366	373	393	444	435	488	496	509	
Natural Environment (NERC)	317	373	361	364	396	454	433	400	490 392	408	
Economic and Social (ESRC)	105	125	144	151	162	434 174	182	174	170	408 194	
Arts and Humanities $(AHRC)^2$	105	69	82		94		92		97	194	
Pensions <sup>12</sup>	-			88	94 74	89	92 35	99 35		38	
OST - DTI <sup>3</sup>	42	15 578	17 508	25	/4	38	35	35	40	30	
	440			-	-	-	-	-	-	-	
Particle Physics and Astronomy (PPARC) <sup>1</sup>	295	334	329	-	-	-	-	-	-	-	
Council for the Central Laboratory (CCLRC) <sup>1</sup>	64	84	92	-	-	-	-	-	-	-	
TOTAL	2,408	2,871	3,014	2,742	3,024	3,196	3,280	3,280	3,183	3,543	3
Higher Education Funding Councils (HEFCs):											
England (HEFCE)	1,453	1,551	1,642	1,781	1,795	1,939	1,840	1,821	1,736	1,803	1
Scotland (SFC)	210	228	283	320	296	289	324	324	339	342 <sup>†</sup>	
Wales (HEFCW)	84	84	87	88	91	94	90	82	80	86	
Northern Ireland (DELNI)	57	66	74	63	65	81	75	59	57	65	
TOTAL	1,804	1,928	2,085	2,252	2,247	2,403	2,328	2,285	2,212	2,297 †	2
Civil Departments:											
Business, Innovation and Skills (BIS) <sup>1,3,14</sup>	-	-	-	-	-	308	464	696	771	1,021	1
	535	583		661	730	796	847	866	948	984	1
National Health Service (NHS) <sup>10</sup>	5/5	503	623	001							
National Health Service (NHS) <sup>13</sup>	575 215		623 247				220	236			
International Development (DFID)	215	265	247	151	169	237	220 177	236 169	238	272	
International Development (DFID) Scottish Government (SG)	215 176	265 209	247 214	151 221	169 218	237 219	177	169	238 177	272 178	
International Development (DFID) Scottish Government (SG) Environment, Food and Rural Affairs (DEFRA) <sup>3</sup>	215 176 273	265 209 288	247 214 299	151 221 202	169 218 198	237 219 185	177 157	169 161	238 177 144	272 178 129	
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International Development (DFID) Scottish Government (SG) Environment, Food and Rural Affairs (DEFRA) <sup>3</sup> Culture, Media and Sport (DCMS) Health (DH) (excluding NHS) <sup>13</sup> Energy and Climate Change (DECC) <sup>7</sup> Transport (DfT) <sup>3</sup> Home Office (HO) Work and Pensions (DWP) Welsh Government (WG) <sup>4</sup> Northern Ireland Departments (NI) <sup>5</sup> Education (DfE) <sup>6</sup> Other departments <sup>8</sup> Health and Safety Executive (HSE) Ministry of Justice (MoJ) <sup>8</sup> Communities and Local Government (DCLG) Food Standards Agency (FSA)	215 176 273 16 54 - 59 58 18 32 21 - 41 28 - 29 20	265 209 288 23 45 - 61 73 18 33 21 - 38 22 - 27 27 17	247 214 299 36 50 - 59 51 18 10 22 - 42 17 2 30 15	151 221 202 44 51 - 66 43 17 12 23 35 38 12 11	169 218 198 64 57 27 64 46 19 11 22 33 38 12 14	237 219 185 64 50 25 80 45 35 11 22 31 34 13 11	177 157 53 36 54 48 29 10 21 27 31 12 8	169 161 48 39 35 25 20 10 20 13 31 10 7	238 177 144 47 32 37 38 20 21 12 22 14 26 8 9	272 178 129 88 36 44 44 23 20 12 22 14 21 <sup>†</sup>	
International Development (DFID) Scottish Government (SG) Environment, Food and Rural Affairs (DEFRA) <sup>3</sup> Culture, Media and Sport (DCMS) Health (DH) (excluding NHS) <sup>13</sup> Energy and Climate Change (DECC) <sup>7</sup> Transport (DfT) <sup>3</sup> Home Office (HO) Work and Pensions (DWP) Welsh Government (WG) <sup>4</sup> Northern Ireland Departments (NI) <sup>5</sup> Education (DfE) <sup>6</sup> Other departments <sup>8</sup> Health and Safety Executive (HSE) Ministry of Justice (MoJ) <sup>8</sup> Communities and Local Government (DCLG) Food Standards Agency (FSA) Education and Skills (DfES) <sup>6</sup>	215 176 273 16 54 - 59 58 18 32 21 - 41 28 - 29	265 209 288 23 45 - 61 73 18 33 21 - 38 22 - 38 22 - 27	247 214 299 36 50 - 59 51 18 10 22 - 42 17 2 30	151 221 202 44 51 - 66 43 17 12 23 35 38 12 11 25 14	169 218 198 64 57 27 64 46 19 11 22 33 38 12 14 28 12	237 219 185 64 50 25 80 45 35 11 22 31 34 13 11 29	177 157 53 36 36 54 48 29 10 21 27 31 12 8 16	169 161 48 39 35 25 20 10 20 13 31 10 7 7	238 177 144 47 32 37 38 20 21 12 22 14 26 8 9 9 9	272 178 129 88 36 44 44 23 20 12 22 14 21 * 8 7 7	
International Development (DFID) Scottish Government (SG) Environment, Food and Rural Affairs (DEFRA) <sup>3</sup> Culture, Media and Sport (DCMS) Health (DH) (excluding NHS) <sup>13</sup> Energy and Climate Change (DECC) <sup>7</sup> Transport (DfT) <sup>3</sup> Home Office (HO) Work and Pensions (DWP) Welsh Government (WG) <sup>4</sup> Northern Ireland Departments (NI) <sup>5</sup> Education (DfE) <sup>6</sup> Other departments <sup>8</sup> Health and Safety Executive (HSE) Ministry of Justice (MoJ) <sup>8</sup> Communities and Local Government (DCLG) Food Standards Agency (FSA) Education and Skills (DfES) <sup>6</sup> Business Enterprise and Regulatory Reform (BERR) <sup>3</sup>	215 176 273 16 54 - 59 58 18 32 21 - 41 28 - 29 20 59 -	265 209 288 23 45 - 61 73 18 33 21 - 38 22 - 27 17 100	247 214 299 36 50 - 59 51 18 10 22 - 42 17 2 30 15 73 -	151 221 202 44 51 - 66 43 17 12 23 35 38 12 11 25	169 218 198 64 57 27 64 46 19 11 22 33 38 12 14 28	237 219 185 64 50 25 80 45 35 11 22 31 34 13 11 29	177 157 53 36 36 54 48 29 10 21 27 31 12 8 16	169 161 48 39 35 25 20 10 20 13 31 10 7 7	238 177 144 47 32 37 38 20 21 12 22 14 26 8 9 9 9	272 178 129 88 36 44 44 23 20 12 22 14 21 * 8 7 7	
International Development (DFID) Scottish Government (SG) Environment, Food and Rural Affairs (DEFRA) <sup>3</sup> Culture, Media and Sport (DCMS) Health (DH) (excluding NHS) <sup>13</sup> Energy and Climate Change (DECC) <sup>7</sup> Transport (DfT) <sup>3</sup> Home Office (HO) Work and Pensions (DWP) Welsh Government (WG) <sup>4</sup> Northern Ireland Departments (NI) <sup>5</sup> Education (DfE) <sup>6</sup> Other departments <sup>8</sup> Health and Safety Executive (HSE) Ministry of Justice (MoJ) <sup>8</sup> Communities and Local Government (DCLG) Food Standards Agency (FSA) Education and Skills (DfES) <sup>6</sup> Business Enterprise and Regulatory Reform (BERR) <sup>3</sup> Trade & Industry (DTI) <sup>3</sup>	215 176 273 16 54 - 59 58 18 32 21 - 41 28 - 29 20	265 209 288 23 45 - 61 73 18 33 21 - 38 22 - 27 27 17	247 214 299 36 50 - 59 51 18 10 22 - 42 17 2 30 15	151 221 202 44 51 - 66 43 17 12 23 35 38 12 11 25 14	169 218 198 64 57 27 64 46 19 11 22 33 38 12 14 28 12	237 219 185 64 50 25 80 45 35 11 22 31 34 13 11 29 11 - -	177 157 53 36 36 54 48 29 10 21 27 31 12 8 16 6 - -	169 161 48 39 35 25 20 10 20 13 31 10 7 7 7 7 7	238 177 144 47 32 37 38 20 21 12 22 14 26 8 9 9 9 7 7 -	272 178 129 88 36 44 44 23 20 12 22 14 21 * 8 7 7 8 7 8 7	
International Development (DFID) Scottish Government (SG) Environment, Food and Rural Affairs (DEFRA) <sup>3</sup> Culture, Media and Sport (DCMS) Health (DH) (excluding NHS) <sup>13</sup> Energy and Climate Change (DECC) <sup>7</sup> Transport (DfT) <sup>3</sup> Home Office (HO) Work and Pensions (DWP) Welsh Government (WG) <sup>4</sup> Northern Ireland Departments (NI) <sup>5</sup> Education (DfE) <sup>6</sup> Other departments <sup>8</sup> Health and Safety Executive (HSE) Ministry of Justice (MoJ) <sup>8</sup> Communities and Local Government (DCLG) Food Standards Agency (FSA) Education and Skills (DfES) <sup>6</sup> Business Enterprise and Regulatory Reform (BERR) <sup>3</sup>	215 176 273 16 54 - 59 58 18 32 21 - 41 28 - 29 20 59 -	265 209 288 23 45 - 61 73 18 33 21 - 38 22 - 27 17 100	247 214 299 36 50 - 59 51 18 10 22 - 42 17 2 30 15 73 -	151 221 202 44 51 - 66 43 17 12 23 35 38 12 11 25 14	169 218 198 64 57 27 64 46 19 11 22 33 38 12 14 28 12	237 219 185 64 50 25 80 45 35 11 22 31 34 13 11 29	177 157 53 36 36 54 48 29 10 21 27 31 12 8 16	169 161 48 39 35 25 20 10 20 13 31 10 7 7	238 177 144 47 32 37 38 20 21 12 22 14 26 8 9 9 9	272 178 129 88 36 44 44 23 20 12 22 14 21 * 8 7 7 8 7	

£ million 2015	
874 817 553 441 388 181 97 69 - -	
3,420	
1,798 321 82 57	
2,258	
1,220 1,036 329 170 70 51 46 45 45 21 17 17 15 14 11 7 7 7 5 - - - -	

Current prices													£ million
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Foreign and Commonwe	ealth Office (FCO) <sup>11</sup>	-	-	-	-	-	6	3	-	-	-	2	-
TOTAL		1,993 †	2,123	2,072	2,050	2,201	2,455	2,352	2,510	2,642	2,986	3,048	3,135
Ministry of Defence (MoE	D) <sup>9</sup>												
of which:	Research	639	598	632	635	584	575	534	553	565	586	616	604
	Experimental Development	1,552	1,645	1,492	1,505	1,406	1,177	1,159	753	895	931	1,088	1,058
TOTAL		2,191	2,243	2,124	2,139	1,991	1,752	1,693	1,306	1,460	1,516	1,704	1,662
DEPARTMENTAL SET	TOTAL	8,397 <sup>†</sup>	9,166	9,295	9,183	9,462	9,805	9,653	9,380	9,498	10,343	10,543	10,475
Indicative UK contribution	ns to EU R&D expenditure <sup>10</sup>	325	365	374	374	593	668	647	661	751	768	688 <sup>†</sup>	910
GRAND SET TOTAL		8,722 <sup>†</sup>	9,531	9,669	9,557	10,055	10,474	10,299	10,042	10,249	11,111	11,231	11,386
Net Launch Investment (	(old methodology) <sup>14</sup>	-127	-158	-154	-154	-128	-57	-91	-108	-150	-153	-158	-
	ailable er tee emell te diapley										Source: Offic	e for National	Statistics

- denotes nil, figures unavailable or too small to display.

<sup>†</sup> denotes earliest data revision.

- 1 In April 2007, CCLRC and PPARC merged to form Science and Technology Facilities Council (STFC). In 2011, STFCs subscription for European Space Agency (ESA) transferred to BIS Space.
- 2 AHRC was established in April 2005.
- 3 From July 2007, the Department for Trade and Industry (DTI) and the Office for Science and Technology (OST) were renamed Business Enterprise and Regulatory Reform (BERR) and the Department of Innovation, Universities and Skills (DIUS) respectively. In 2009, DIUS and BERR merged to form BIS. DIUS was renamed as BIS Science and BERR renamed as BIS. A number of departments previously reporting under DIUS transferred to BIS. From 2010, BIS Science reported under BIS. From 2011 includes all UK subscriptions to the European Space Agency (ESA), and some budget transfers from DEFRA and DfT. BIS was replaced by the Department for Business, Energy & Industrial Strategy (BEIS) from July 2016.
- 4 NHS Wales was included from 2010 and Museum Wales included from 2011.
- 5 In 2011, Department of the Environment was included for the first time. This will be used as a base year going forward. No back data available.
- 6 From June 2007 DfES was renamed Department for Children, Schools and Families (DCSF). From May 2010 DCSF was replaced with Department for Education (DfE). In 2011, expenditure fell due to a move to drive down spend across all budgets, and reflects Ministerial priorities.
- 7 DECC was created in October 2008.
- 8 Prior to 2006, Ministry of Justice figures were included under "Other departments".
- 9 These data comprise elements from both the operating cost statement and the balance sheet in the Departmental Resource Accounts (DRAc). The funding received by MoD and its trading funds for expenditure on R&D are not necessarily spent on defence related R&D. The fall in 2011 net development expenditure was reported by the MoD's Defence Equipment and Support (DE&S) as a number of project teams moved from the development phase to manufacturing.
- 10 These indicative contributions are provided by HM Treasury.
- 11 Department was not surveyed prior to 2009.
- 12 Research Councils' pension contributions are included separately.
- 13 In previous publications, Department of Health (DH) included NHS, from this publication onwards DH estimates exclude NHS.
- 14 Estimates of launch investment loan repayments received by government from business are no longer included following a review of how these payments should be reported. These loan repayments are in relation to loans given out by BIS in previous years and therefore should not be included in current totals
- of R&D expenditure. The estimates of Net Launch Investment located below the Grand SET Total were prepared using the old methodology to allow for comparison.

### UK GOVERNMENT NET EXPENDITURE ON SCIENCE, ENGINEERING AND TECHNOLOGY (SET) BY DEPARTMENT: 2004 to 2015

#### Constant prices (2015)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	_
Research Councils:			750	700	o / =					
Engineering and Physical Sciences (EPSRC)	604 <sup>†</sup>	668	752	792	815	828	909	906	956	
Medical (MRC)	469 <sup>†</sup>	501	550	564	646	694	730	713	623	
Science and Technology Facilities (STFC) <sup>1</sup>	- +	-	-	630 <sup>†</sup>	655	664	606	575	486	
Biotechnology and Biological Sciences (BBSRC)	342 †	387	427	426	437	487	468	517	515	
Natural Environment (NERC)	392 †	449	422	415	439	497	483	442	408	
Economic and Social (ESRC)	129 <sup>†</sup>	150	168	173	180	191	196	185	177	
Arts and Humanities $(AHRC)^2$	-	83 <sup>†</sup>	96	100	104	98	99	105	101	
Pensions <sup>12</sup>	52 †	18	20	28	82	41	37	37	42	
OST - DTI <sup>3</sup>	544 †	696	593	-	-	-	-	-	-	
Particle Physics and Astronomy (PPARC) <sup>1</sup>	365 †	402	384	-	-	-	-	-	-	
Council for the Central Laboratory (CCLRC) <sup>1</sup>	80 <sup>†</sup>	101	107	-	-	-	-	-	-	
TOTAL	2,976 <sup>†</sup>	3,456	3,520	3,128	3,358	3,500	3,528	3,480	3,308	
Higher Education Funding Councils (HEFCs):										
England (HEFCE)	1,795 †	1,867	1,918	2,031	1,993	2,124	1,979	1,932	1,804	
Scotland (SFC)	260 <sup>†</sup>	274	331	365	329	317	348	344	353	
Wales (HEFCW)	104 <sup>†</sup>	101	101	101	101	103	96	86	83	
Northern Ireland (DELNI)	70 <sup>†</sup>	79	86	72	72	89	80	62	59	
TOTAL	2,230 <sup>†</sup>	2,321	2,436	2,568	2,495	2,632	2,504	2,424	2,299	
Civil Departments:										-
Business, Innovation and Skills (BIS) <sup>1,3,14</sup>	_	_	_	_	_	337 <sup>†</sup>	499	739	801	
National Health Service (NHS) <sup>13</sup>	710 <sup>†</sup>	702	728	754	810	872	911	919	985	
International Development (DFID)	266 <sup>†</sup>	319	289	172	187	260	236	251	247	
Scottish Government (SG)	218 <sup>†</sup>	252	249	252	242	240	191	180	184	
Environment, Food and Rural Affairs (DEFRA) <sup>3</sup>	337 <sup>†</sup>	347	350	231	220	203	169	170	150	
Culture, Media and Sport (DCMS)	19 <sup>†</sup>	28	42	50	72	70	57	51	49	
Health (DH) (excluding NHS) $^{13}$	67	28 54	42 58	50 59	64	70 55	39	41	49 33	
Energy and Climate Change (DECC) <sup>7</sup>	07	54	50	59	30	55 27	38	41 42 <sup>†</sup>	33	
Transport (DfT) <sup>3</sup>	73 <sup>†</sup>	73	69	76	30 71	87	58	42 37	39 40	
Home Office (HO)	73 71 <sup>†</sup>	88	59	70 49	51	49	58	27	40 21	
Work and Pensions (DWP)			59 21 <sup>†</sup>	49 19	21			27		
Welsh Government (WG) <sup>4</sup>	22 39 <sup>†</sup>	22				38	31		22	
		40	11	14	12	12	11	10	13	
Northern Ireland Departments (NI) <sup>5</sup>	26 <sup>†</sup>	25	26	26	25	24	22	21	22	
Education (DfE) <sup>6</sup>	- 	-	-	40 <sup>†</sup>	37	34	29	14	15	
Other departments <sup>8</sup>	51 <sup>†</sup>	46	49	43	42	38	33	32	27	
Health and Safety Executive (HSE)	34 <sup>†</sup>	26	20	14	14	14	13	11	8	
Ministry of Justice (MoJ) <sup>8</sup>	-	-	2	13	15	12	8	7	9	
Communities and Local Government (DCLG)	35 †	33	35	29	31	32	17	8	9	
Food Standards Agency (FSA)	25	20 †	18	16	13	12	6	7	7	
Education and Skills (DfES) <sup>6</sup>	73 <sup>†</sup>	121	85	-	-	-	-	-	-	
Business Enterprise and Regulatory Reform (BERR) <sup>3</sup>		-	-	2	2	-	-	-	-	
Trade & Industry (DTI) <sup>3</sup>	398 †	361	309	-	-	-	-	-	-	
Net Launch Investment <sup>14</sup>	- †	-	-		-	177	108	76	64	
BIS Science <sup>3</sup>	-	-	-	479 <sup>†</sup>	486	91	-	-	-	

2

		£ million
2013	2014	2015
2010	2014	2013
1,013	920	874
808	721	817
522	556	553
521	535	441
418	387	388
199	196	181
102	103	97
39	52	69
-	-	-
-	-	-
-	-	-
3,622	3,470	3,420
1 0 4 0	1 0 4 0	1 700
1,843	1,843	1,798
350 88	374 87	321
67		82 57
67	60	57
2,348	2,364	2,258
<b>,</b>	<b>,</b>	,
1.042	1.067	1 000
1,043	1,067	1,220
1,006	1,043	1,036
1,006 278	1,043 320	1,036 329
1,006 278 181	1,043 320 174	1,036 329 170
1,006 278 181 132	1,043 320 174 101	1,036 329 170 70
1,006 278 181 132 90	1,043 320 174 101 60	1,036 329 170 70 51
1,006 278 181 132 90 37	1,043 320 174 101 60 41	1,036 329 170 70 51 46
1,006 278 181 132 90 37 45	1,043 320 174 101 60 41 42	1,036 329 170 70 51 46 45
1,006 278 181 132 90 37 45 45	1,043 320 174 101 60 41 42 52	1,036 329 170 70 51 46 45 45
1,006 278 181 132 90 37 45 45 45 24	1,043 320 174 101 60 41 42 52 22	1,036 329 170 70 51 46 45 45 45 21
1,006 278 181 132 90 37 45 45 45 24 20	1,043 320 174 101 60 41 42 52 22 18	1,036 329 170 70 51 46 45 45 21 17
1,006 278 181 132 90 37 45 45 45 24 20 13	1,043 320 174 101 60 41 42 52 22 18 16	1,036 329 170 70 51 46 45 45 21 17 17
1,006 278 181 132 90 37 45 45 45 24 20 13 22	1,043 320 174 101 60 41 42 52 22 18 16 19	1,036 329 170 70 51 46 45 45 21 17 17
1,006 278 181 132 90 37 45 45 45 24 20 13 22 14	1,043 320 174 101 60 41 42 52 22 18 16 19 14	1,036 329 170 70 51 46 45 45 21 17 17 15 14
1,006 278 181 132 90 37 45 45 45 24 20 13 22 14 22	1,043 320 174 101 60 41 42 52 22 18 16 19 14 21	1,036 329 170 70 51 46 45 45 21 17 17 15 14 11
1,006 278 181 132 90 37 45 45 24 20 13 22 14 22 8	1,043 320 174 101 60 41 42 52 22 18 16 19 14 21 8	1,036 329 170 70 51 46 45 45 21 17 17 15 14 11 7
1,006 278 181 132 90 37 45 45 45 24 20 13 22 14 22 8 7	1,043 320 174 101 60 41 42 52 22 18 16 19 14 21 8 8 8	1,036 329 170 70 51 46 45 45 21 17 17 15 14 11 7 7
1,006 278 181 132 90 37 45 45 45 24 20 13 22 14 22 8 7 8 7	$     \begin{array}{r}       1,043\\       320\\       174\\       101\\       60\\       41\\       42\\       52\\       22\\       18\\       16\\       19\\       14\\       21\\        8\\       8\\       7     \end{array} $	1,036 329 170 70 51 46 45 45 21 17 17 15 14 11 7 7 7
1,006 278 181 132 90 37 45 45 45 24 20 13 22 14 22 8 7	1,043 320 174 101 60 41 42 52 22 18 16 19 14 21 8 8 8	1,036 329 170 70 51 46 45 45 21 17 17 15 14 11 7 7
1,006 278 181 132 90 37 45 45 45 24 20 13 22 14 22 8 7 8 7	$     \begin{array}{r}       1,043\\       320\\       174\\       101\\       60\\       41\\       42\\       52\\       22\\       18\\       16\\       19\\       14\\       21\\        8\\       8\\       7     \end{array} $	1,036 329 170 70 51 46 45 45 21 17 17 15 14 11 7 7 7
1,006 278 181 132 90 37 45 45 45 24 20 13 22 14 22 8 7 8 7	$     \begin{array}{r}       1,043\\       320\\       174\\       101\\       60\\       41\\       42\\       52\\       22\\       18\\       16\\       19\\       14\\       21\\        8\\       8\\       7     \end{array} $	1,036 329 170 70 51 46 45 45 21 17 17 15 14 11 7 7 7
1,006 278 181 132 90 37 45 45 45 24 20 13 22 14 22 8 7 8 7	$     \begin{array}{r}       1,043\\       320\\       174\\       101\\       60\\       41\\       42\\       52\\       22\\       18\\       16\\       19\\       14\\       21\\        8\\       8\\       7     \end{array} $	1,036 329 170 70 51 46 45 45 21 17 17 15 14 11 7 7 7
1,006 278 181 132 90 37 45 45 24 20 13 22 14 22 8 7 8 7 8 8 7 8 8 7	1,043 320 174 101 60 41 42 52 22 18 16 19 14 21 8 8 7 10 - -	1,036 329 170 70 51 46 45 45 21 17 17 15 14 11 7 7 7

Constant prices (2015)												£n
	2004	20	2006	2007	2008	2009	2010	2011	2012	2013	2014	
Foreign and Commonwealth Office (FCO) <sup>11</sup>	-			-	-	6	3	-	-	-	2	
TOTAL	2,463	† 2,5	55 2,421	2,338	2,444	2,689	2,530	2,662	2,746	3,053	3,071	
Ministry of Defence (MoD) <sup>9</sup>												
of which: Researc			20 738	724	649	630	575	587	587	599	621	
Experim	ental Development 1,918	† 1,9	30 1,743	1,716	1,561	1,289	1,247	798	930	951	1,096	
TOTAL	2,708	† 2,7	00 2,481	2,440	2,210	1,918	1,821	1,385	1,517	1,550	1,717	
DEPARTMENTAL SET TOTAL	10,377	† 11,0	32 10,858	10,474	10,507	10,740	10,383	9,952	9,869	10,573	10,621	
Indicative UK contributions to EU R&D expe	nditure <sup>10</sup> 402	† 4	39 437	427	658	732	695	702	780	785	693	
GRAND SET TOTAL	10,778	† 11,4	71 11,295	10,900	11,165	11,472	11,078	10,654	10,649	11,358	11,315	
Net Launch Investment (old methodology) <sup>14</sup>	-157	<sup>†</sup> -1	91 -180	-175	-142	-63	-98	-114	-156	-157	-159	
2015 = 100									Sour	ce: Office f	or National	I St
	2004	20	05 2006	2007	2008	2009	2010	2011	2012	2013	2014	
GDP deflator used to convert current prices	to constant prices 80.925											

- denotes nil, figures unavailable or too small to display.

<sup>†</sup> denotes earliest data revision.

Please see Table 1 for footnotes.

#### UK GOVERNMENT NET EXPENDITURE ON R&D BY DEPARTMENT: 2004 to 2015

#### Current prices

Ourient prices											
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	
Research Councils:											
Medical (MRC)	376	416	471	494	581	634	679	672	600	790	
Engineering and Physical Sciences (EPSRC)	480	553	643	494 694	734	634 754	879 802	872	793	790 870	
Science and Technology Facilities (STFC) <sup>1</sup>	400		043	694 548	734 583	754 599	802 556	535	793 456	502	
Biotechnology and Biological Sciences (BBSRC)	- 275	- 320	- 364	369	383	599 432	556 421	535 472	436 478	502 489	
Natural Environment (NERC)	296	363	351	350	381	435	442	407	378	393	
Economic and Social (ESRC)	98	116	133	147	158	170	177	168	161	187	
Arts and Humanities (AHRC) <sup>2</sup> Pensions <sup>12</sup>	-	58	70	86	91 70	87	89	95	90 97	92	
OST / DTI <sup>3</sup>	40	15	17	24	72	37	34	34	37	36	
	356	503	413	-	-	-	-	-	-	-	
Particle Physics and Astronomy (PPARC) <sup>1</sup>	295	334	329	-	-	-	-	-	-	-	
Council for the Central Laboratory (CCLRC) <sup>1</sup>	64	84	92	-	-	-	-	-	-	-	
TOTAL	2,281	2,763	2,883	2,714	2,984	3,148	3,201	3,189	2,993	3,359	
Higher Education Funding Councils (HEFCs):											
England (HEFCE)	1,453	1,551	1,642	1,781	1,795	1,939	1,840	1,821	1,736	1,803	
<b>C</b> ( )	210	228	283	302	276	281	299	1,821 296	312	312 <sup>†</sup>	
Scotland (SFC) Wales (HEFCW)	84	220 84	203 87	88	270 91	201 94	299 90	290 82	80	86	
	57	66	87 74	63	91 65	94 81	90 75	62 59	80 57	65	
Northern Ireland (DELNI)	57	00	74	03	65	01	75	59	57	65	
TOTAL	1,804	1,928	2,085	2,234	2,227	2,395	2,303	2,257	2,185	2,266 †	
Civil Departments:											
Business, Innovation and Skills (BIS) <sup>1,3,14</sup>	_	_	_	_	_	266	410	646	729	981	
National Health Service (NHS) <sup>13</sup>	575	583	623	661	730	200 796	847	866	948	984	
International Development (DFID)	215	265	023 247	134	149	225	209	226	229	262	
Scottish Government (SG)	131	137	132	137	141	154	167	158	163	164	
Environment, Food and Rural Affairs (DEFRA) <sup>3</sup>	191	201	194	190	187	181	153	150	141	128	
Culture, Media and Sport (DCMS)	16	23	36	39	47	46	47	42	45	79	
Energy and Climate Change (DECC) <sup>7</sup>	-	-	-	-	27	40 25	35	39	37	44	
Transport (DfT) <sup>3</sup>	48	51	57	62	60	68	53	34	38	43	
Health (excluding NHS) <sup>13</sup>	54	45	50	51	57	50	35	38	32	36	
Home Office (HO)	58	73	50	42	44	43	42	24	19	22	
Work and Pensions (DWP)	18	18	18	17	19	35	28	20	21	20	
Welsh Government (WG) $^4$	32	33	10	12	10	10	9	8	11	11	
Northern Ireland Departments $(NI)^5$	21	21	22	22	22	21	20	19	21	21	
Education (DfE) <sup>6</sup>	-	_	-	35	33	31	27	13	14	14	
Other Departments <sup>8</sup>	28	25	30	36	37	33	29	30	26	20 <sup>†</sup>	
Communities and Local Government (DCLG)	28	25 27	30 30	30 25	27	28	29 16	30 7	20	20	
Health and Safety Executive (HSE)	25	19	30 14	23 12	12	13	10	, 10	9 8	8	
Ministry of Justice (MoJ) <sup>8</sup>	- 20	19	2	12	12	9	7	7	о 8	7	
Food Standards Agency (FSA)	- 20	- 17	2 15	10 14	12	9 11	5	6	8 7	7	
Education and Skills (DfES) <sup>6</sup>	20 59	100	73	14	11	11	5	0	1	1	
Business Enterprise and Regulatory Reform (BERR) <sup>3</sup>		100	10	- 1	- 1	-	-	-	-	-	
Dusiness Enterprise and negulatory neronni (DENN)	-	-	-	I	I	-	-	-	-	-	

3

2014	£ million 2015
716	817
808	770
541	541
513	421
369 <sup>†</sup>	373
186	171
96	91
48	65
-	-
-	-
3,277 <sup>†</sup>	3,250
1,829	1,798
320	285
86	82
55	52
<b>2,290</b>	<b>2,218</b>
1,023 <sup>†</sup>	1,178
1,036	1,036
309 <sup>†</sup>	314
164	161
100	70
53	46
41	44
51	44
40	44
20	20
18	17
15	16
18	15
14	14
20	10
7	7
8	7
8	7
9	5
-	-

 Current prices												
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	
Trade & Industry (DTI) <sup>3</sup> Net Launch Investment <sup>14</sup> BIS Science <sup>3</sup> Foreign and Commonwealth Offic	e (FCO) <sup>11</sup>	275 _ † _	243	204	- - 393 -	- - 408 -	- 162 83 6	- 100 - 3	- 71 -	- 62 -	- 46 -	
TOTAL		1,793 <sup>†</sup>	1,880	1,807	1,892	2,033	2,295	2,255	2,423	2,565	2,906	
Ministry of Defence (MoD) <sup>9</sup> of which:	Research Experimental Development	639 1,552	598 1,645	632 1,492	635 1,505	584 1,406	575 1,177	534 1,159	553 753	565 895	586 931	
TOTAL		2,191	2,243	2,124	2,139	1,991	1,752	1,693	1,306	1,460	1,516	
 DEPARTMENTAL R&D TOTAL		<b>8,069</b> <sup>†</sup>	8,814	8,899	8,979	9,235	9,590	9,452	9,174	9,202	10,048	-
Indicative UK contributions to EU	R&D expenditure <sup>10</sup>	325	365	374	374	593	668	647	661	751	768	
GRAND R&D TOTAL		8,394 <sup>†</sup>	9,179	9,273	9,353	9,827	10,258	10,098	9,836	9,953	10,816	-
Net Launch Investment (old meth	odology) <sup>14</sup>	-127	-158	-154	-154	-128	-57	-91	-108	-150	-153	

denotes nil, figures unavailable or too small to display.
 <sup>†</sup> denotes earliest data revision.

Please see Table 1 for footnotes.

	£ million
2014	2015
_	_
25	-
-	-
2	-
2,981	3,055
616	604
1,088	1,058
1,704	1,662
10,253	10,185
688 <sup>†</sup>	910
10,941	11,095
-158	-

Source: Office for National Statistics

### 4

#### UK GOVERNMENT NET EXPENDITURE ON R&D BY DEPARTMENT: 2004 to 2015

Constant prices (2015)		_	_	_				_			_	£ mil
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	20
Research Councilor												
Research Councils:	464 <sup>†</sup>	501	550	564	646	604	700	713	600	000	701	8
Medical (MRC)	464 593 <sup>†</sup>	665	550 751	564 791	646 815	694 826	730 863	856	623 823	808 889	721 814	-
Engineering and Physical Sciences (EPSRC)		600										
Science and Technology Facilities (STFC) <sup>1</sup>	-	-	-	625 <sup>†</sup>	648	657	598	567	473	513	545	
Biotechnology and Biological Sciences (BBSRC)	340 <sup>†</sup>	386	425	421	426	473	453	500	496	500	517	
Natural Environment (NERC)	366 †	437	410	399	423	477	475	432	393	402	372	
Economic and Social (ESRC)	121 <sup>†</sup>	140	156	168	176	186	191	178	168	191	187	
Arts and Humanities $(AHRC)^2$	- +	70 <sup>†</sup>	82	98	101	95	96	101	94	94	97	
Pensions <sup>12</sup>	49 <sup>†</sup>	18	20	28	80	41	37	36	38	36	48	
OST / DTI <sup>3</sup>	440 †	605	483	-	-	-	-	-	-	-	-	
Particle Physics and Astronomy (PPARC) <sup>1</sup>	365 †	402	384	-	-	-	-	-	-	-	-	
Council for the Central Laboratory (CCLRC) <sup>1</sup>	80 †	101	107	-	-	-	-	-	-	-	-	
TOTAL	2818 <sup>†</sup>	3325	3368	3095	3313	3448	3443	3383	3109	3433	3302	3
Higher Education Funding Councils (HEFCs):												
England (HEFCE)	1,795 †	1,867	1,918	2,031	1,993	2,124	1,979	1,932	1,804	1,843	1,843	-
Scotland (SFC)	260 <sup>†</sup>	274	331	344	306	308	321	314	324	319	323	
Wales (HEFCW)	104 <sup>†</sup>	101	101	101	101	103	96	86	83	88	87	
Northern Ireland (DELNI)	70 <sup>†</sup>	79	86	72	72	89	80	62	59	67	55	
TOTAL	2,230 <sup>†</sup>	2,321	2,436	2,548	2,473	2,623	2,477	2,395	2,270	2,317	2,307	2
Civil Departments:												
Business, Innovation and Skills (BIS) <sup>1,3,14</sup>	-	_	_	_	_	291 <sup>†</sup>	441	686	757	1,002	1,031	
National Health Service (NHS) <sup>13</sup>	710 <sup>†</sup>	702	728	754	810	872	911	919	985	1,002	1,043	
International Development (DFID)	266 <sup>†</sup>	319	289	152	166	247	224	240	238	268	311	
Scottish Government (SG)	200 162 <sup>†</sup>	165	209 154	152	156	169	179	168	238 169	208 168	165	
	236 <sup>†</sup>											
Environment, Food and Rural Affairs (DEFRA) <sup>3</sup>		241	227	216	208	199	165	167	146	131	101	
Culture, Media and Sport (DCMS)	19 <sup>†</sup>	28	42	44	52	50	50	44	47	81	53	
Energy and Climate Change (DECC) <sup>7</sup>	- +	-	-	-	30	27	38	41	38	45	41	
Transport (DfT) <sup>3</sup>	60 <sup>†</sup>	61	67	70	67	74	57	37	39	44	52	
Health (DH) (excluding NHS) <sup>13</sup>	67 <sup>†</sup>	54	58	58	63	54	38	40	33	36	41	
Home Office (HO)	71 <sup>†</sup>	88	59	48	49	48	46	26	20	23	21	
Work and Pensions (DWP)	22	22	21 <sup>†</sup>	19	21	38	31	21	22	20	18	
Welsh Government (WG) <sup>4</sup>	39 <sup>†</sup>	40	11	14	11	11	10	9	11	12	15	
Northern Ireland Departments (NI) <sup>5</sup>	26	25	25 <sup>†</sup>	25	24	23	21	20	22	21	18	
Education (DfE) <sup>6</sup>		-	-	40 <sup>†</sup>	37	34	29	14	15	14	14	
Other Departments <sup>8</sup>	35 †	31	35	41	41	37	32	31	27	21	20	
Communities and Local Government (DCLG)	35 <sup>†</sup>	33	35	29	30	31	17	8	9	8	7	
Health and Safety Executive (HSE)	31	22 †	16	14	14	14	13	11	8	8	8	
Ministry of Justice (MoJ) <sup>8</sup>	-	-	2	11 <sup>†</sup>	14	10	7	7	8	7	8	
Food Standards Agency (FSA)	25	20 †	18	16	13	12	6	6	7	7	10	
Education and Skills (DfES) <sup>6</sup>	73 <sup>†</sup>	121	85	-	-	-	-	-	-	-	-	
Business Enterprise and Regulatory Reform (BERR) <sup>3</sup>	-	-	-	1	1	-	-	-	-	-	-	
Trade & Industry (DTI) <sup>3</sup>	340 <sup>†</sup>	292	238	-	-	-	-	-	-	-	-	
Net Launch Investment <sup>14</sup>	_ †	-	-	-	-	177	108	76	64	47	25	

Constant prices (2015)													£n
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	
Foreign and Commonwealth	Office (FCO) <sup>11</sup>	-	-	-	-	-	6	3	-	-	-	2	
TOTAL		2,216 <sup>†</sup>	2,262	2,110	2,158	2,258	2,514	2,425	2,570	2,665	2,971	3,003	
Ministry of Defence (MoD) <sup>9</sup>													
of which:	Research	790 <sup>†</sup>	720	738	724	649	630	575	587	587	599	621	
	Experimental Development	1,918 †	1,980	1,743	1,716	1,561	1,289	1,247	798	930	951	1,096	
TOTAL		2,708 †	2,700	2,481	2,440	2,210	1,918	1,821	1,385	1,517	1,550	1,717	
DEPARTMENTAL R&D TOT	ΓAL	9,971 <sup>†</sup>	10,609	10,396	10,241	10,254	10,504	10,166	9,733	9,562	10,271	10,329	
Indicative UK contributions to	EU R&D expenditure <sup>10</sup>	402 <sup>†</sup>	439	437	427	658	732	695	702	780	785	693	
GRAND R&D TOTAL		10,373 <sup>†</sup>	11,048	10,833	10,667	10,912	11,236	10,862	10,435	10,342	11,057	11,022	
Net Launch Investment (old r	methodology) <sup>14</sup>	-157 <sup>†</sup>	-191	-180	-175	-142	-63	-98	-114	-156	-157	-159	
2015 = 100										Sour	ce: Office f	or National	St
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	_

- denotes nil, figures unavailable or too small to display.

<sup>†</sup> denotes earliest data revision.

Please see Table 1 for footnotes.

#### UK GOVERNMENT EXPENDITURE ON KNOWLEDGE TRANSFER BY DEPARTMENT: 2004 to 2015 5

Business Enterprise and Regulatory Reform (BERR)<sup>3</sup>

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	2004	2005	2006	2007	2008	2009	2010	2011	2012
Research Councils:									
Engineering and Physical Sciences (EPSRC)	9	2	1	1	-	1	43	47	128
Biotechnology and Biological Sciences (BBSRC)	5	1	2	4	10	13	13	16	18
Natural Environment (NERC)	21	10	11	14	15	19	7	9	14
Science and Technology Facilities (STFC) <sup>1</sup>	21	10	-	4	7	7	8	3 7	12
Economic and Social (ESRC)	7	9	10	4	4	4	5	6	ç
Arts and Humanities (AHRC) <sup>2</sup>	1	9 11	10	4	4	4	3	4	7
Pensions <sup>11</sup>	- 3	11	11	2	ی ۱	3 1	3	4	-
OST - DTI <sup>3</sup>	84	- 75	- 95	-	I	I	-	I	3
		75	95	-	-	-	-	-	
Medical (MRC)	4	-	-	-	-	-	-	-	
Particle Physics and Astronomy (PPARC) <sup>1</sup>	-	-	-	-	-	-	-	-	
Council for the Central Laboratory (CCLRC) <sup>1</sup>	-	-	-	-	-	-	-	-	
TOTAL	128	108	130	29	40	47	79	91	<b>19</b> 1
Higher Education Funding Councils (HEFCs):									
Scotland (SFC)	-	-	-	18	21	8	25	28	28
Northern Ireland (DELNI)	-	-	-	-	-	-	-	-	
England (HEFCE)	-	-	-	-	-	-	-	-	
Wales (HEFCW)	-	-	-	-	-	-	-	-	
TOTAL	-	-	-	18	21	8	25	28	28
Civil Departments:									
Business, Innovation and Skills (BIS) <sup>1,3</sup>	-	-	-	-	-	42	54	50	42
International Development (DFID)	-	-	-	18	19	12	11	10	
Scottish Government (SG)	45	72	81	84	77	65	11	11	1
Culture, Media and Sport (DCMS)	-	-	-	5	18	18	6	6	
Health (DH) (excluding NHS) <sup>12</sup>	-	-	-	1	1	1	-	-	
Home Office (HO)	-	-	-	1	2	1	5	1	
Other Departments <sup>8</sup>	13	13	13	1	1	1	1	1	
Transport (DfT) <sup>3</sup>	11	10	2	5	4	12	1	1	
Northern Ireland Departments (NI) <sup>5</sup>	-	10	2	1		1	1	1	
Environment, Food and Rural Affairs (DEFRA) <sup>3</sup>	81	88	105	12	11	1	1	Ч	
Ministry of Justice (MoJ) <sup>8</sup>	01	00	100	1	1	2		0	
Health and Safety Executive (HSE)	3	3	3	I	1	2	1	_	
Energy and Climate Change (DECC) <sup>7</sup>	5	5	5	-	-	-	-	-	
	-	-	-	-	-	-	-	-	
Food Standards Agency (FSA)	-	-	-	-	-	-	-	-	
Welsh Government (WG) <sup>4</sup>	-	-	-	-	I	I	I	I	
Education and Skills (DfES) <sup>6</sup>	-	-	-	-	-	-	-	-	
Education (DfE) <sup>6</sup>	-	-	-	-	-	-	-	-	
Communities and Local Government (DCLG)	-	-	-	-	-	-	-	-	
National Health Service (NHS) <sup>12</sup>	-	-	-	-	-	-	-	-	
Work and Pensions (DWP)		_	_	-	-	-	_		

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	£ million
2014	2015
105 17 15 12 9 6 3 - - -	104 19 16 12 9 6 5 - - -
167	170
51 5	35 5
-	-
-	-
56	41
36 9 8 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	43 15 9 5 2 1 1 1 1 1 - - - - - - - - - - - - - -

Current prices												£ millio
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	201
Trade & Industry (DTI) <sup>3</sup>	47	57	61	-	-	-	-	-	-	-	-	
Net Launch Investment	-	-	-	-	-	-	-	-	-	-	-	
BIS Science <sup>3</sup>	-	-	-	27	30	-	-	-	-	-	-	
Foreign and Commonwealth Office (FCO) <sup>10</sup>	-	-	-	-	-	-	-	-	-	-	-	
TOTAL	200	243	266	158	167	160	97	87	77	80	67	1
Ministry of Defence (MoD) <sup>9</sup>	-	-	-	-	-	-	-	-	-	-	-	
GRAND TOTAL	328	352	396	205	228	215	201	206	296	295	290	2

Source: Office for National Statistics

- denotes nil, figures unavailable or too small to display.

<sup>†</sup> denotes earliest data revision.

1 In April 2007, CCLRC and PPARC merged to form Science and Technology Facilities Council (STFC). In 2011, STFCs subscription for European Space Agency (ESA) transferred to BIS Space.

2 AHRC was established in April 2005.

3 From July 2007, the Department for Trade and Industry (DTI) and the Office for Science and Technology (OST) were renamed Business Enterprise and Regulatory Reform (BERR) and the Department of Innovation, Universities and Skills (DIUS) respectively. In 2009, DIUS and BERR merged to form BIS. DIUS was renamed as BIS Science and BERR renamed as BIS. A number of departments previously reporting under DIUS transferred to BIS. From 2010, BIS Science reported under BIS. From 2011 includes all UK subscriptions to the European Space Agency (ESA), and some budget transfers from DEFRA and DfT. BIS was replaced by the Department for Business, Energy & Industrial Strategy (BEIS) from July 2016.

4 NHS Wales was included from 2010 and Museum Wales included from 2011.

5 In 2011, Department of the Environment was included for the first time. This will be used as a base year going forward. No back data available.

6 From June 2007 DfES was renamed Department for Children, Schools and Families (DCSF). From May 2010 DCSF was replaced with Department for Education (DfE). In 2011, expenditure fell due to a move to drive down spend across all budgets, and reflects Ministerial priorities.

7 DECC was created in October 2008.

8 Prior to 2006, Ministry of Justice figures were included under "Other departments".

9 These data comprise elements from both the operating cost statement and the balance sheet in the Departmental Resource Accounts (DRAc). The funding received by MoD and its trading funds for expenditure on R&D are not necessarily spent on defence related R&D. The fall in 2011 net development expenditure was reported by the MoD's Defence Equipment and Support (DE&S) as a number of project teams moved from the development phase to manufacturing.

10 Department was not surveyed prior to 2009.

11 Research Councils' pension contributions are included separately.

12 In previous publications, Department of Health (DH) included NHS, from this publication onwards DH estimates exclude NHS.

### UK GOVERNMENT EXPENDITURE ON KNOWLEDGE TRANSFER BY DEPARTMENT: 2004 to 2015

Constant prices (2015)												£ million
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Become because the												
Research Councils: Engineering and Physical Sciences (EPSRC)		3	4	4		4	46	50	133 <sup>†</sup>	124	106	104
Biotechnology and Biological Sciences (BBSRC)	11 2	2	2 <sup>†</sup>	5	- 11	14	40 14	50 17	133	20	18	104
Natural Environment (NERC)	26 <sup>†</sup>	12	12	16	17	21	8	17	15	20 15	16	19
Science and Technology Facilities (STFC) <sup>1</sup>	20	12	12	5	8	21	8	8	12	9	10	10
Economic and Social (ESRC)	- 8	10 <sup>†</sup>	12	5	8 4	ь 5	8 5	8	9	9 8	9	9
Arts and Humanities $(AHRC)^2$	0	10 13 <sup>†</sup>	12	2	4	3	3	7	9 7	9	9 6	9
Pensions <sup>11</sup>	3	13	13	2	1	1	1	4	3	3	3	0 5
OST - DTI <sup>3</sup>	104 <sup>†</sup>	91	- 111	-	1	I	I	1	3	3	3	5
Medical (MRC)	5	51		-	-	-	-	-	-	-	-	-
Particle Physics and Astronomy (PPARC) <sup>1</sup>	5	-	-	-	-	-	-	-	-	-	-	-
Council for the Central Laboratory (CCLRC) <sup>1</sup>	-	-	-	-	-	-	-	-	-	-	-	-
Council for the Central Laboratory (CCLRC)	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	158 <sup>†</sup>	131	152	33	44	52	85	97	198	188	168	170
Higher Education Funding Councils (HEFCs):												
Scotland (SFC)	-	-	-	20 †	23	9	27	29	29	31	51	35
Northern Ireland (DELNI)	-	-	-	-	-	-		-	-	-	5	5
England (HEFCE)	-	-	-	-	-	-	-	-	-	-	-	-
Wales (HEFCW)	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	-	-	-	<b>20</b> <sup>†</sup>	23	9	27	29	29	31	56	41
Civil Departments:												
Business, Innovation and Skills (BIS) <sup>1,3</sup>	-	-	-	-	-	46 <sup>†</sup>	58	53	44	41	37	43
International Development (DFID)	-	-	-	20	22	13	12	11	9	10	9	15
Scottish Government (SG)	56 <sup>†</sup>	87	95	96	86	71	12	12	15	13	9	9
Culture, Media and Sport (DCMS)	-	-	-	6	20	20	7	6	3	9	7	5
Health (DH) (excluding NHS) <sup>12</sup>	-	-	-	1	1		1	-	1	-	-	2
Home Office (HO)	-	-	-	1	2	1	6	1	1	1	1	- 1
Other Departments <sup>8</sup>	16	15 <sup>†</sup>	15	1	- 1	1	1	1	1	1	1	1
Transport (DfT) <sup>3</sup>	13	12	2	5	4	13	1	1	1	1	1	1
Northern Ireland Departments (NI) <sup>5</sup>	-	-	-	1	1	1	1	1	1	1	1	1
Environment, Food and Rural Affairs (DEFRA) <sup>3</sup>	101 <sup>†</sup>	105	123	14	12	4	4	4	4	1	1	-
Ministry of Justice (MoJ) <sup>8</sup>	-	-	-	1	1	2	1	-	-	-	-	-
Health and Safety Executive (HSE)	4	4	4	-	_	_	-	-	-	-	-	-
Energy and Climate Change (DECC) <sup>7</sup>	-	-	-	-	-	-	-	-	-	-	-	-
Food Standards Agency (FSA)	-	-	-	-	1	-	-	1	-	1	-	-
Welsh Government $(WG)^4$	-	-	-	-	1	1	1	1	1	1	1	-
Education and Skills (DfES) <sup>6</sup>	-	-	-	-	-	-	-	-	-	-	-	-
Education $(DfE)^6$	-	-	-	-	-	-	-	-	-	-	-	-
Communities and Local Government (DCLG)	-	-	-	1	1	-	-	-	-	-	-	-
	_	-	-			-	-	-	-	_	-	-
National Health Service (NHS)' <sup>2</sup>	-											
National Health Service (NHS) <sup>12</sup> Work and Pensions (DWP)	-	-	-	-	-	-	-	-	-	-	-	-

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Constant prices (2015)												£١
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	
Trade & Industry (DTI) <sup>3</sup>	58 <sup>†</sup>	69	71	-	-	-	-	-	-	-	-	
Net Launch Investment	-	-	-	-	-	-	-	-	-	-	-	
BIS Science <sup>3</sup>	-	-	-	31	33	-	-	-	-	-	-	
Foreign and Commonwealth Office (FCO) <sup>10</sup>	-	-	-	-	-	-	-	-	-	-	-	
TOTAL	248 <sup>†</sup>	293	310	180	186	175	104	92	80	82	68	
Ministry of Defence (MoD) <sup>9</sup>	-	-	-	-	-	-	-	-	-	-	-	
GRAND TOTAL	405 <sup>†</sup>	423	462	233	253	236	216	219	307	301	292	
2015 = 100									Sou	rce: Office fo	or National	S
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	
GDP deflator used to convert current prices to constant prices	80.925 <sup>†</sup>	83.085	85.604	87.677	90.059	91.298	92.968	94.259	96.238	97.825	99.262	

- denotes nil, figures unavailable or too small to display.

<sup>†</sup> denotes earliest data revision.

Please see Table 5 for footnotes.

#### UK GOVERNMENT NET EXPENDITURE ON R&D BY PRIMARY PURPOSE AND DEPARTMENT: 2015

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	General	Government	Policy	Technology	То
	Research	Services	Research	Research	R
Research Councils:					
Medical (MRC)	601	111	21	85	8
Engineering and Physical Sciences (EPSRC)	219		21	551	7
Science and Technology Facilities (STFC)	465	_	_	76	
		-	-	23	
Biotechnology and Biological Sciences (BBSRC)	398		-		
Natural Environment (NERC)	268	7	69	28	
Economic and Social (ESRC)	87	-	84	-	
Arts and Humanities (AHRC)	91	-	-	-	
TOTAL <sup>1</sup>	2129	119	175	763	3
Higher Education Funding Councils (HEFCs):					
England (HEFCE)	1,798	-	-	-	1
Scotland (SFC)	285	-	-	-	
Wales (HEFCW)	82	-	-	-	
Northern Ireland (DELNI)	52	-	-	-	
TOTAL	2,218	-	-	-	2,
Civil Departments:					
Business, Innovation and Skills (BIS) <sup>2,4,5</sup>	128	-	10	1,039	1
National Health Service (NHS) <sup>3</sup>	1,036	-	-		1
International Development (DFID)	-	-	188	126	•
Scottish Government (SG)	71	4	54	32	
Environment, Food and Rural Affairs (DEFRA)	11	17	42	1	
Culture, Media and Sport (DCMS)	23	2	20	-	
Energy and Climate Change (DECC)	23	7	6	9	
Transport (DfT)	25	7	19	25	
	-	-			
Health (excluding NHS) <sup>3</sup>	-	10	34	-	
Home Office (HO)	-	8	12	-	
Work and Pensions (DWP)	-	-	17	-	
WG (formerly WO and WAG)	-	8	7	1	
Northern Ireland Departments (NI)	10	2	3	-	
Education (DfE)	-	-	14	-	
Other Departments	-	3	5	3	
Communities and Local Government (DCLG)	-	-	7	-	
Health and Safety Executive (HSE)	-	-	7	-	
Ministry of Justice (MoJ)	-	4	3	-	
Food Standards Agency (FSA)	-	-	5	-	
Foreign and Commonwealth Office (FCO)	-	-	-	-	
TOTAL	1,303	64	452	1,236	3,
Ministry of Defence (MoD)	-	1,662	-	-	1,
GRAND TOTAL <sup>1</sup>	5,650	1,845	626	1,999	10

- denotes nil, figures unavailable or too small to display.

1 For the purpose of this analysis Research Councils expenditure for Pensions have been excluded as they cannot be attributed to type of research.

2 Please note for the purpose of this analysis Launch Investment is not shown separately.

3 In previous publications, Department of Health (DH) included NHS, from this publication onwards DH estimates exclude NHS.

4 Estimates of launch investment loan repayments received by government from business are no longer included following a review of how these payments should be reported. These loan repayments are in relation to loans given out in previous years and therefore should not be included in current totals of R&D expenditure.

5 BIS was replaced by the Department for Business, Energy & Industrial Strategy (BEIS) from July 2016.

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#### UK GOVERNMENT EXPENDITURE ON R&D BY SOCIO-ECONOMIC OBJECTIVE, PERCENTAGE SHARE: 2007 TO 2015

Current prices	2007	2008	2009	2010	2011	2012	2013	2014	
ΤΟΤΑΙ									
TOTAL	8,979 <sup>†</sup>	9,235	9,590	9,452	9,174	9,202	10,048	10,253	
	2007	2008	2009	2010	2011	2012	2013	2014	
Per cent									
TOTAL	100	100	100	100	100	100	100	100	
Health	16 <sup>†</sup>	18	19	20	21	21	22	22	
General advancement of knowledge: R&D financed from General University Funds	25	24	25 <sup>†</sup>	24	25	24	23	22	
Defence	24	22	18 <sup>†</sup>	18	14	16	15	17	
General advancement of knowledge: R&D financed from other sources	17 <sup>†</sup>	18	16	18	13	13	13	12	
Exploration and exploitation of the earth	3	3	3	3	3	3	3	4	
Transport, telecommunication, other infrastructure	1	1	1	1	3	3	3	4	
Industrial production and technology	2 †	2	4	3	4	3	4	4	
Agriculture	3	3	4	3	4	4	4	3	
Exploration and exploitation of space	2	2	2	2	3	3	4	3	
Political and social systems, structures and processes	1	2	2	2	1	3	3	3	
Energy	1	1	1	1	2	2	2	2	
Environment	2	3	3	3	3	3	3	2	
Culture, recreation, religion and mass media	2	2	2	2	2	1	1	1	
Education	1	1	1	1	-	-	-	-	

- denotes nil, figures unavailable or too small to display.

<sup>†</sup> denotes earliest data revision.

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Source: Office for National Statistics

Current prices

Current prices											
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
GROSS EXPENDITU	RE <sup>1</sup>	9,140 <sup>†</sup>	9,903	10,042	10,189	10,519	10,960	10,887	10,545	10,633	11,555
of which:											
	Within government departments <sup>2</sup>	2,864 †	2,998	3,044	3,057	3,197	3,365	3,406	3,307	3,275	3,428
	Higher Education Institutions	3,400	3,868	4,146	4,136	4,366	4,661	4,608	4,631	4,472	4,764
	Private Industry/Public corporations	2,058	2,225	2,124	2,080	1,783	1,727	1,935	1,535	1,841	2,081
	Overseas	648	609	531	705	946	, 916	676	720	688	750
	Others	170	203	197	211	228	290	262	353	357	532
	Less funding received <sup>3</sup>	1,071 <sup>†</sup>	1,089	1,143	1,210	1,285	1,370	1,436	1,371	1,431	1,50
	TOTAL NET EXPENDITURE	8,069 <sup>†</sup>	8,814	8,899	8,979	9,235	9,590	9,451	9,174	9,202	10,048
GROSS CIVIL EXPEN											
of which:		<b>6,880</b> <sup>†</sup>	7,585	7,830	7,968	8,446	9,121	9,106	9,197	9,129	9,99
	Within government departments <sup>2</sup>	2,502 <sup>†</sup>	2,627	2,683	2,778	2,927	3,073	3,179	3,144	3,122	3,25
	Higher Education Institutions	3,384	3,863	4,132	4,131	4,361	4,657	4,604	4,628	4,472	4,76
	Private Industry/Public corporations	427	416	372	428	430	609	576	493	595	77
	Overseas	397	476	446	429	500	493	485	580	584	66
	Others	169	203	197	203	228	290	261	353	357	53
	Less funding received <sup>3</sup>	1,002 †	1,015	1,055	1,129	1,202	1,283	1,348	1,329	1,387	1,46
	CIVIL NET EXPENDITURE	<b>5,878</b> <sup>†</sup>	6,571	6,775	6,840	7,244	7,838	7,758	7,869	7,742	8,53
GROSS DEFENCE E											
of which:		2,260	2,318	2,212	2,220	2,074	1,839	1,782	1,348	1,504	1,56
	Within government departments <sup>2</sup>	362	371	361	279	269	293	227	163	154	16
	Higher Education Institutions	16	5	13	5	5	5	4	3	-	
	Private Industry/Public corporations	1,631	1,809	1,752	1,652	1,353	1,118	1,359	1,042	1,246	1,30
	Overseas	251	132	85	276	446	423	191	140	104	8
	Others	-	-	-	8	1	-	1	-	-	
	0	<u> </u>	75	00	81	83	87	89	42	44	4
	Less funding received <sup>3</sup>	69	75	88	01	00	07	00			

- denotes nil, figures unavailable or too small to display.

<sup>†</sup> denotes earliest data revision.

1 Gross expenditure is the amount of R&D expenditure within and outside government departments. Civil includes Research Council Institutes and Local Authorities.

2 Includes Research Council Institutes and Local Authorities.

3 Funding received for R&D from outside the reporting department.

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2014	£ million 2015
11 706	11 602
11,796	11,692
3,299	3,189
4,870	4,872
2,299	2,195
825	904
503	532
1,543	1,508
10,253	10,185

10,047	9,984
3,132	3,008
4,868	4,871
835	896
709	677
503	532
1,498	1,462
8,549	8,523

1,749	1,708
167	181
2	1
1,464	1,299
116	227
-	-
45	46
1,704	1,662

Source: Office for National Statistics

#### UK GOVERNMENT NET EXPENDITURE ON R&D BY FRASCATI<sup>3</sup> TYPE OF RESEARCH ACTIVITY: 2004 to 2015

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2
RESEARCH COL	INCILS R&D <sup>1</sup>										
Basic	- pure	766	1,019	953	739	817	808	790	746	718	
	- oriented	747	853	980	1,010	1,114	1,206	1,218	1,209	1,167	1
Applie	d - strategic	594	686	755	733	754	838	896	890	767	
	- specific	116	166	157	167	186	206	213	255	255	
Exper	mental Development	19	24	21	40	41	53	50	54	49	
	TOTAL NET EXPENDITURE	2,241	2,748	2,866	2,689	2,912	3,111	3,166	3,155	2,956	:
CIVIL R&D <sup>2</sup>											
Basic	- pure	69	43	46	105	100	123	122	109	116	
	- oriented	77	46	39	82	216	138	101	129	90	
Applie	d - strategic	787	890	831	670	620	669	697	681	768	
	- specific	756 <sup>†</sup>	775	795	948	1,024	1,303	992	1,176	1,177	
Exper	mental Development	104	126	95	87	73	61	344	328	413	
	CIVIL NET EXPENDITURE	1,793 <sup>†</sup>	1,880	1,807	1,892	2,033	2,295	2,255	2,423	2,565	:
DEFENCE R&D											
Basic	- pure	-	-	-	-	-	-	-	-	-	
	- oriented	-	-	-	-	-	-	-	-	-	
Applie	-	75	30	35	21	13	29	21	17	59	
	- specific	564	568	598	614	571	546	513	536	506	
Exper	mental Development	1,552	1,645	1,492	1,505	1,406	1,177	1,159	753	895	

- denotes nil, figures unavailable or too small to display.

<sup>†</sup> denotes earliest data revision.

1 For the purpose of this analysis Research Councils expenditure for Pensions have been excluded.

2 For the purpose of this analysis Higher Education Funding Councils are excluded.

3 R&D and related concepts follow internationally agreed standards as published in the Frascati Manual.

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Source: Office for National Statistics

	£ million
2014	2015
776	<sup>†</sup> 753
1,232	1,154
870	919
293	† 300
59	59
3,229	† 3,185
110	111
98	<sup>†</sup> 107
† 838	816
1,333	1,301
<sup>†</sup> 602	721
2,981	3,055
-	-
-	-
100	120
516	484
1,088	1,058
1,704	1,662

UK GOVERNMENT NET EXPENDITURE ON R&D BY FRASCATI<sup>3</sup> TYPE OF RESEARCH ACTIVITY: 2004 to 2015

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	£ milli 20
		2004	2003	2000	2007	2000	2009	2010	2011	2012	2013	2014	20
RESEARCH COUNCILS	S R&D <sup>1</sup>												
Basic	- pure	946 <sup>†</sup>	1,227	1,114	843	907	885	849	792	746	772	782	-
	- oriented	923 <sup>†</sup>	1,026	1,144	1,152	1,236	1,321	1,310	1,282	1,213	1,333	1,241	1,
Applied	- strategic	734 <sup>†</sup>	826	882	836	837	918	963	945	797	926	876	
	- specific	143 <sup>†</sup>	200	184	190	207	226	229	271	265	309	296	:
Experimenta	I Development	24	29 <sup>†</sup>	24	45	45	58	54	57	51	58	59	
	TOTAL NET EXPENDITURE	2,769 <sup>†</sup>	3,307	3,348	3,067	3,233	3,408	3,406	3,347	3,071	3,397	3,253	3,
CIVIL R&D <sup>2</sup>													
Basic	- pure	86 <sup>†</sup>	52	54	119	112	135	131	116	121	123	111	
	- oriented	95 <sup>†</sup>	55	46	93	240	151	109	137	94	101	99	
Applied	- strategic	972 <sup>†</sup>	1,071	971	765	688	733	749	723	798	832	844	
	- specific	935 <sup>†</sup>	932	929	1,081	1,137	1,428	1,067	1,247	1,223	1,317	1,343	1,
Experimenta	l Development	128 †	152	111	100	81	67	370	348	429	598	606	
	CIVIL NET EXPENDITURE	2,216 †	2,262	2,110	2,158	2,258	2,514	2,425	2,570	2,665	2,971	3,003	3,0
DEFENCE R&D													
Basic	- pure	-	-	-	-	-	-	-	-	-	-	-	
<b>A</b>	- oriented	-	-	-	-	-	-	-	-	-	-	-	
Applied	- strategic	93 <sup>†</sup>	36	40	23	15	32	23	18	61	91 500	101	
	- specific	697 <sup>†</sup>	684	698	700	634	598	552	569	526	508	520	4
Experimenta	I Development	1,918 <sup>†</sup>	1,980	1,743	1,716	1,561	1,289	1,247	798	930	951	1,096	1,0
	DEFENCE NET EXPENDITURE	2,708 †	2,700	2,481	2,440	2,210	1,918	1,821	1,385	1,517	1,550	1,717	1,6
2015 = 100										Sour	ce: Office f	or National	Statis
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2

- denotes nil, figures unavailable or too small to display.

<sup>†</sup> denotes earliest data revision.

Please see Table 10 for footnotes.

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12	EXPENDITURE ON R&D PERFORMED IN UK GOVERNMENT BY DEPARTMENT: 2008 to 2015
12	

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Source: Office for National Statistics

Current prices	0000	0000	0010	0011	0010	0010	0014	£ million
	2008	2009	2010	2011	2012	2013	2014	2015
Research Councils:								
Science and Technology Facilities (STFC)	304	275	228	304	254	297	314	305
Natural Environment (NERC)	214	261	283	285	263	262	261 <sup>†</sup>	280
Medical (MRC)	320	340	394	348	278	246	232	172
Pensions <sup>4</sup>	23	11	10	10	8	8	11	17
Biotechnology and Biological Sciences (BBSRC) <sup>1</sup>	173	202	219	87	-	-	-	-
Economic and Social (ESRC)	8	7	6	-			-	
Engineering and Physical Sciences (EPSRC)	-	,	-	_			-	
Arts and Humanities (AHRC)	-	-	-	-	-	-	_	-
						• • •	e / e +	
TOTAL	1,041	1,097	1,141	1,035	804	814	819 <sup>†</sup>	773
Civil Departments:								
Business, Innovation and Skills (BIS) <sup>2,5,6,8</sup>	-	83	85	112	123	134	92	85
Culture, Media and Sport (DCMS)	37	39	39	38	54	93	68	63
Scottish Government (SG)	55	57	55	51	58	57	57	57
Environment, Food and Rural Affairs (DEFRA)	107	109	91	91	86	93	80	42
Health (excluding NHS) <sup>7</sup>	35	24	30	26	28	36	30	32
Home Office (HO)	16	16	18	13	9	12	15	16
Other Departments	39	40	39	47	41	32 <sup>†</sup>	32	11
International Development (DFID)	4	5	6	6	7	8	8 †	7
Health and Safety Executive (HSE)	8	8	8	9	7	7	7	6
Work and Pensions (DWP)	5	15	6	5	5	5	6	6
Ministry of Justice (MoJ)	7	4	4	5	6	5	6	5
Northern Ireland Departments (NI)	9	8	7	8	8	8	7	5
Education (DfE)	4	4	3	2	3	3	3	3
Welsh Government (WG)	3	2	2	2	2	3	2	2
Transport (DfT)	4	3	3	2	3	3	3	2
Energy and Climate Change (DECC)	-	-	1	1	1	2	2	2
Communities and Local Government (DCLG)	3	3	3	1	1	1	1	1
Enterprise and Regulatory Reform (BERR) <sup>2</sup>	83	_	_	-	-	-	-	-
Food Standards Agency (FSA)	-	-	-	-	-	-	-	-
Foreign and Commonwealth Office (FCO) <sup>3</sup>	-	2	1	-	-	-	-	-
BIS Science <sup>5</sup>	-	_	-	-	-	-	-	-
National Health Service (NHS) <sup>7</sup>	-	-	-	-	-	-	-	-
Local Authorities	667	697	746	745	797	838	816	810
TOTAL	1,087	1,119	1,146	1,164	1,241	1,339 <sup>†</sup>	1,233	1,156
Ministry of Defence (MoD)	262	288	226	158	150	164	158	168
GRAND TOTAL	2,390	2,504	2,513	2,356	2,195	2,316 <sup>†</sup>	2,210	2,097

Please note, no R&D data appears on this table for HEFCs as they are R&D funders and not performers.

- denotes nil, figures unavailable or too small to display.

<sup>†</sup> denotes earliest data revision.

1 From 2011, the research institutes that BBSRC funded, were reclassified from general government to either the higher education or non profit organisation sectors.

2 In 2009, BERR was renamed BIS. BIS was replaced by the Department for Business, Energy & Industrial Strategy (BEIS) from July 2016.

3 Department was not surveyed prior to 2009.

4 Research Councils' pension contributions are included separately.

5 From 2010, BIS Science reported under BIS.

6 Please note for the purpose of this analysis Launch Investment is not shown separately.

7 In previous publications, Department of Health (DH) included NHS, from this publication onwards DH estimates exclude NHS.

8 Estimates of launch investment loan repayments received by government from business are no longer included following a review of how these payments should be reported. These loan repayments are in relation to loans given out in previous years and therefore should not be included in current totals of R&D expenditure.

#### EXPENDITURE ON R&D PERFORMED IN UK GOVERNMENT BY DEPARTMENT: 2008 to 2015

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Constant prices (2015)								£ mill
	2008	2009	2010	2011	2012	2013	2014	2
Research Councils:								
Science and Technology Facilities (STFC)	337 <sup>†</sup>	302	245	323	264	304	317	
Natural Environment (NERC)	238 <sup>†</sup>	286	305	303	274	268	263	
Medical (MRC)	355 <sup>†</sup>	372	424	370	288	251	234	
Pensions <sup>4</sup>	25 <sup>†</sup>	12	11	10	9	8	12	
Biotechnology and Biological Sciences (BBSRC) <sup>1</sup>	192 <sup>†</sup>	221	235	93	-	-	-	
Economic and Social (ESRC)	9 <sup>†</sup>	8	7	-	-	-	-	
Engineering and Physical Sciences (EPSRC)	-	-	-	-	-	-	-	
Arts and Humanities (AHRC)	-	-	-	-	-	-	-	
TOTAL	1,156 <sup>†</sup>	1,202	1,227	1,098	835	832	825	
Civil Departments:								
Business, Innovation and Skills (BIS) <sup>2,5,6,8</sup>	-	91 <sup>†</sup>	91	119	127	137	93	
Culture, Media and Sport (DCMS)	41 <sup>†</sup>	42	42	40	57	96	68	
Scottish Government (SG)	61 <sup>†</sup>	63	59	54	61	58	57	
Environment, Food and Rural Affairs (DEFRA)	119 <sup>†</sup>	119	98	97	90	96	80	
Health (excluding NHS) <sup>7</sup>	39 <sup>†</sup>	26	32	28	29	36	30	
Home Office (HO)	18	17	19	13	10	12	15	
Other Departments	43 <sup>†</sup>	44	42	49	43	33	32	
International Development (DFID)	4 †	5	6	6	8	8	8	
Health and Safety Executive (HSE)	9 †	8	9	9	7	7	7	
Work and Pensions (DWP)	6	17	6	6	5	5	6	
Ministry of Justice (MoJ)	7 †	4	4	5	6	5	6	
Northern Ireland Departments (NI)	10	9	8	8	8	8	7	
Education (DfE)	5	4	3	2	3	3	3	
Welsh Government (WG)	3	3	2	2	2	3	2	
Transport (DfT)	4	3 †	3	2	3	3	3	
Energy and Climate Change (DECC)	-	-	1	1	2	2	2	
Communities and Local Government (DCLG)	4	3	4	1	1	1	1	
Enterprise and Regulatory Reform (BERR) <sup>2</sup>	92 <sup>†</sup>	-	-	-	-	-	-	
DTI (ex OSI and Launch Investment)	-	-	-	-	-	-	-	
Net Launch Investment	-	-	-	-	-	-	-	
Food Standards Agency (FSA)	-	-	-	-	-	-	-	
Foreign and Commonwealth Office (FCO) <sup>3</sup>	-	2	1	-	-	-	-	
BIS Science <sup>5</sup>	-	-	-	-	-	-	-	
National Health Service (NHS) <sup>7</sup>	-	-	-	-	-	-	-	
Local Authorities (including NHS Trusts)	741 <sup>†</sup>	764	803	791	828	857	822	
TOTAL	1,207 <sup>†</sup>	1,225	1,233	1,234	1,290	1,369	1,242	1

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Constant prices (2015)								£ million
	2008	2009	2010	2011	2012	2013	2014	2015
Ministry of Defence (MoD)	291 <sup>†</sup>	315	243	167	156	168	159	168
GRAND TOTAL	2,654 <sup>†</sup>	2,742	2,703	2,500	2,281	2,368	2,226	2,097
2015 = 100						Source: Offic	ce for Nationa	I Statistics
	2008	2009	2010	2011	2012	2013	2014	2015
GDP deflator used to convert current prices to constant prices	90.059 <sup>†</sup>	91.298	92.968	94.259	96.238	97.825	99.262	100

Please note, no R&D data appears on this table for HEFCs as they are R&D funders and not performers.

- denotes nil, figures unavailable or too small to display.

<sup>†</sup> denotes earliest data revision.

Please see Table 12 for footnotes.

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			Organi	sations receiv	ing funds for	r R&D		
	UK Research Councils	Elsewhere within Own Organisation	Elsewhere within UK Central Government	UK Local Authorities	UK Higher Education	UK Business	UK Other	Abr
Department providing the funds for R&D								
Research Councils:								
Engineering and Physical Sciences (EPSRC)	16	-	24	-	744	-	13	
Medical (MRC)	10	-	10	-	592	-	118	
Biotechnology and Biological Sciences (BBSRC)	-	-	-	-	259	-	180	
Science and Technology Facilities (STFC)	-	-	1	-	122	-	-	
Economic and Social (ESRC)	11	-	-	-	176	-	3	
Natural Environment (NERC)	14	-	-	-	150	1	- 1	
Arts and Humanities (AHRC)	2	-	-	-	91	-	-	
TOTAL <sup>1</sup>	53	-	36	-	2,135	1	314	
Higher Education Funding Councils (HEFCs):								
England (HEFCE)	-	-	-	-	1,798	-	-	
Scotland (SFC)	-	-	-	-	285	-	-	
Wales (HEFCW)	-	-	-	-	82	-	-	
Northern Ireland (DELNI)	-	-	-	-	52	-	-	
TOTAL	-	-	-	-	2,218	-	-	
Civil Departments:								
Business, Innovation and Skills (BIS) <sup>2,4</sup>	45	9	3	1	109	662	132	
National Health Service (NHS) <sup>3</sup>	7	-	2	756	225	70	10	
International Development (DFID)	49	-	-	-	25	16	43	
Scottish Government (SG)	2	1	1	43	33	26	2	
WG (formerly WO and WAG)	-	9	7	1	32	5	1	
Energy and Climate Change (DECC)	2	1	-	-	3	36	5	
Transport (DfT)	-	-	6	1	2	24	10	
Environment, Food and Rural Affairs (DEFRA)	6	2	5	-	7	18	2	
Health (DH) (excluding NHS) <sup>3</sup>	1	3	-	-	27	-	1	
Northern Ireland Departments (NI)	-	-	4	6	5	-	1	
Culture, Media and Sport (DCMS)	-	-	-	1	2	10	1	
Work and Pensions (DWP)	1	-	6	-	-	6	-	
Education (DfE)	-	-	-	-	1	10	-	
Communities and Local Government (DCLG)	-	-	1	-	-	3	4	
Home Office (HO)	-	1	2	-	1	3	-	
Other Departments	-	-	-	-	1	4	-	
Food Standards Agency (FSA)	-	_	_	-	2	2	-	

### <u>to Main Menu</u>

£ million

Total

2,756

2,218

	Organisations receiving funds for R&D											
	UK Research Councils	Elsewhere within Own Organisation	Elsewhere within UK Central Government	UK Local Authorities	UK Higher Education	UK Business	UK Other	Abroad				
Department providing the funds for R&D												
Ministry of Justice (MoJ)	-	-	-	-	-	1	-					
Health and Safety Executive (HSE)	-	-	-	-	-	-	-					
Foreign and Commonwealth Office (FCO)	-	-	-	-	-	-	-					
TOTAL	113	26	39	810	478	895	213	454				
Ministry of Defence (MoD)	1	-	12	-	1	1,299	-	227				
GRAND TOTAL <sup>1</sup>	167	26	87	810	4,831	2,195	527	89				

- denotes nil, figures unavailable or too small to display.

1 For the purpose of this analysis Research Councils expenditure for Pensions have been excluded as they cannot be attributed to type of research.

2 Please note for the purpose of this analysis Launch Investment is not shown separately.

3 In previous publications, Department of Health (DH) included NHS, from this publication onwards DH estimates exclude NHS.

4 BIS was replaced by the Department for Business, Energy & Industrial Strategy (BEIS) from July 2016.

n

Total

2 1 -3,027 1,540

9,541

Source: Office for National Statistics

# **15** UK GOVERNMENT NET EXPENDITURE ON R&D BY FLOW OF FUNDS AND DEPARTMENT: 2015

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				£ millior
	In-House Expenditure	Purchased or Funding	Funding Received	Net Expenditure
	on R&D	provided for R&D	for R&D <sup>1, 6</sup>	on R&D <sup>2,</sup>
Research Councils:				
Medical (MRC)	172	756	110	817
Engineering and Physical Sciences (EPSRC)		798	28	770
Science and Technology Facilities (STFC)	305	300	64	54 <sup>-</sup>
Biotechnology and Biological Sciences (BBSRC)	-	445	23	42 <sup>-</sup>
Natural Environment (NERC)	280	170	77	373
Economic and Social (ESRC)	-	194	23	17 <sup>-</sup>
Arts and Humanities (AHRC)	_	94	20	9 <sup>.</sup>
Pensions	17	54 54	6	6
r ensions	17	54	0	0
TOTAL	773	2,810	334	3,250
Higher Education Funding Councils (HEFCs):				
England (HEFCE)	-	1,798	-	1,798
Scotland (SFC)	-	285	-	28
Wales (HEFCW)	-	82	-	8
Northern Ireland (DELNI)	-	52	-	5
TOTAL	-	2,218	-	2,218
Civil Departments:				
Business, Innovation and Skills (BIS) <sup>3, 6, 7</sup>	85	1,236	143	1,178
National Health Service (NHS) <sup>5</sup>	-	1,070	34	1,03
International Development (DFID)	7	307	-	31
Scottish Government (SG)	57	109	4	16
Environment, Food and Rural Affairs (DEFRA)	42	42	14	7
Culture, Media and Sport (DCMS)	63	15	32	4
Energy and Climate Change (DECC)	2	48	5	4
Transport (DfT)	2	43	1	4
Health (DH) (excluding NHS) <sup>5</sup>	32	33	21	4
Home Office (HO)	16	7	4	2
Work and Pensions (DWP)	6	12	1	1
WG (formerly WO and WAG)	2	55	41	1
Northern Ireland Departments (NI)	5	18	8	1
Education (DfE)	3	12	1	1
Other Departments	11	6	7	1
Communities and Local Government (DCLG)	1	8	2	
Health and Safety Executive (HSE)	6	C	=	

	In-House Expenditure on R&D	Purchased or Funding provided for R&D	Funding Received for R&D <sup>1, 6</sup>	£ million Net Expenditure on R&D <sup>2, 6</sup>
Ministry of Justice (MoJ) Food Standards Agency (FSA) Foreign and Commonwealth Office (FCO) Local Authorities (including NHS Trusts) <sup>4</sup>	5 - - 810	2 5 -	- - - 810	7 5 -
TOTAL	1,156	3,027	1,128	3,055
Ministry of Defence (MoD)	168	1,540	46	1,662
GRAND TOTAL	2,097	9,595	1,508	10,185

- denotes nil, figures unavailable or too small to display.

1 Funding received for R&D excluding grant in aid (also referred to as own funds).

2 Net expenditure is calculated as in-house R&D plus purchased R&D or funding provided for R&D less funding received for R&D.

3 Please note for the purpose of this analysis Launch Investment is not shown separately.

4 Departmental estimates of funding provided to Local Authorities/NHS Trusts' are used as a proxy for Local Authorities/NHS Trusts' performed (in-house) R&D expenditure.

5 In previous publications, Department of Health (DH) included NHS, from this publication onwards DH estimates exclude NHS.

6 Estimates of launch investment loan repayments received by government from business are no longer included following a review of how these payments should be reported. These loan repayments are in relation to loans given out in previous years and therefore should not be included in current totals of R&D expenditure.

7 BIS was replaced by the Department for Business, Energy & Industrial Strategy (BEIS) from July 2016.