



Department for
Business, Energy
& Industrial Strategy

THE ALLOCATION OF FUNDING FOR RESEARCH AND INNOVATION



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Contents

1.	Research and Innovation budgets _____	2
2.	Budget Allocations _____	3
3.	Overview _____	5
	Research and Innovation budgets _____	5
	National Productivity Investment Fund _____	5
	Official Development Assistance (ODA) _____	6
	Science Infrastructure Capital _____	6
4.	Annex 1 - Allocations broken down by organisation _____	8
	UK Research and Innovation _____	8
	Other Partner Organisations _____	9
5.	Annex 2 - Allocation of National Productivity Investment Fund _____	12
6.	Annex 3 - Allocation of Official Development Assistance _____	13
7.	Annex 4 - Allocation of Science Infrastructure Funding _____	14

1. Research and Innovation budgets

Research and Innovation are vital to our country's prosperity, security and wellbeing, and an integral part of delivering the UK's Industrial Strategy. At a time of tight control over public spending, the Government is increasing its investment to support our world-class research and innovation system, and drive productivity and growth.

The Government wants the United Kingdom to be the world's most innovative economy and through the Industrial Strategy, has committed to reaching the target of 2.4% of GDP investment in Research and Development (R&D) by 2027.

As a first step to reaching the target, the Government announced an additional investment of £7bn for R&D over 5 years (from 2017-18 to 2021-22) as part of the National Productivity Investment Fund. This raises public investment in R&D from around £9.5bn per annum in 2016-17 to around £12.5bn per annum in 2021-22 – the biggest ever increase in public funding of R&D.

In accordance with the Higher Education and Research Act 2017 (HERA), and following on proposals set out by Sir Paul Nurse in his review of Research Councils,¹ a new Non-Departmental Public Body (NDPB) called United Kingdom Research and Innovation (UKRI) came into operation on 1 April 2018. It brought together the Research Councils, including Innovate UK, with the Research and Knowledge Exchange functions of the Higher Education Funding Council for England (HEFCE) into one organisation.²

This booklet sets out the budget allocations to UKRI and the wider ring-fences managed by the Department for Business, Energy and Industrial Strategy (BEIS). The focus on UKRI means this is not intended to be a complete picture of R&D managed across government or the department as some R&D budgets reside elsewhere. A list of other BEIS organisations receiving research and innovation funding is in Annex 1.

The allocations demonstrate the Government's continued commitment to the dual support system, a system that provides stability in the funding underpinning our research base through both prospective competitive grant funding for projects and programmes alongside quality related funding for universities. The quality related funding supports universities' research capability and infrastructure, enabling them to invest strategically and plan-ahead in order to develop and support excellent researchers, to explore novel curiosity-driven research, while responding to emerging priorities and leveraging funding from other sources.

¹ <https://www.gov.uk/government/collections/nurse-review-of-research-councils>

² <https://www.gov.uk/government/news/john-kingman-to-lead-creation-of-new-6-billion-research-and-innovation-body>

2. Budget Allocations

Table 1: Research and Innovation budget totals.

	2017-18	2018-19	2019-20 ³	2020-21 ^{3,4}
	£m	£m	£m	£m
Research and Innovation ⁵	5,655	5,497	5,421	264 ⁶
National Productivity Investment Fund ⁷	423	769	1,165	1,154
Official Development Assistance	320	414	408	317
Science Infrastructure	1,113	1,231	1,163	1,203
To be allocated	-	71	456	1,187
<i>Of which:</i>				
<i>Research and Innovation</i>	-	1	2	-
<i>National Productivity Investment Fund⁷</i>	-	70	344	862
<i>Official Development Assistance</i>	-	-	110	325
Total⁸	7,511	7,982	8,614	4,125

The table above provides numbers for the current Spending Review period. Firm budget allocations are provided for 2018-19, budgets for 2019-20 and 20-21 are indicative.

BEIS funding for research and innovation represents the majority of public expenditure on R&D in the UK and is growing year on year. The planned increase of £7bn (£4.7bn of NPIF between 2017-18 and 2020-21, plus the additional £2.3bn in 2021-22 announced at Autumn Budget 2017) represents the largest ever increase in public funding of R&D over a 5-year period which, together with increases in the Official Development Assistance (ODA) budget, will provide a welcome and substantive boost to R&D funding. Table 2 provides further detail on the allocation of budgets to organisations.

³ Budget numbers are indicative.

⁴ Core Research and Innovation funding runs up to 2019-20, but in some instances budgets extend beyond this, including the National Productivity Investment Fund, ODA and Science infrastructure.

⁵ Includes the Science ring-fence (that funds both science and research) and additional funding for Innovation that sits outside the science ring-fence but is allocated to UKRI.

⁶ Confirmed plans for Science ring-fence currently only run up to 2019-20, with future funding due to be considered at the next Spending Review.

⁷ Additional funding for R&D that is part of a package of National Productivity Investment Fund measures was announced by the Chancellor at Autumn Statement 2016. The figures in this table reflect latest planning assumptions since the announcement with the department on track to deliver its commitment of an additional £4.7bn of R&D by 2020-21.

⁸ Individual lines may not sum due to rounding of figures to the nearest million.

Table 2: Research and Innovation budget totals by organisation.

		2017-18	2018-19	2019-20	2020-21
		£m	£m	£m	£m
Allocated to UKRI	Research and Innovation	4,906	4,848	4,818	-
	National Productivity Investment Fund	385	650	1,003	952
	Official Development Assistance	233	306	291	240
	Science Infrastructure	857	1,016	882	931
	Total	6,381	6,819	6,994	2,123
Allocated to UK Space Agency, National Academies, Public Sector Research Establishments and BEIS Programmes	Research and Innovation	749	649	604	264
	National Productivity Investment Fund	37	119	162	203
	Official Development Assistance	87	108	117	76
	Science Infrastructure	256	215	281	271
	Total	1,129	1,091	1,164	814
To be allocated	Research and Innovation	-	1	2	-
	Official Development Assistance	-	-	110	325
	National Productivity Investment Fund	-	70	344	862
	Total	-	71	456	1,187
Total		7,511	7,982	8,614	4,125

3. Overview

UKRI and other Partner Organisations are allocated budgets to be spent in line with strategic priorities agreed with the Secretary of State for Business, Energy and Industrial Strategy, and any ring-fences for specific projects and budget controls.⁹

This booklet provides a breakdown of budgets from the following sources:

- Research and Innovation budget¹⁰
- The National Productivity Investment Fund
- ODA (The Global Challenges Research Fund & The Newton Fund) and
- Science Infrastructure Capital budget

All budget lines are designated as Capital by the Office of National Statistics in accordance with the European System of Accounts 2010 (ESA10).

Research and Innovation budgets

The Research and Innovation budget makes up the majority of the Government's spend on science, research and innovation. It is allocated to delivery bodies not only to provide running costs for cutting edge research facilities but also to foster international collaboration and support postgraduate training, public engagement, knowledge transfer, and other core research activities. Innovation budgets are aimed at supporting businesses to improve productivity and growth by realising the potential of new technologies and helping to develop new commercial ideas.

National Productivity Investment Fund

The National Productivity Investment Fund (NPIF) announced as part of Autumn Statement 2016 adds £31bn across government in high-value investment from 2017-18 to 2021-22.¹¹

This includes £7bn allocated by Her Majesty's Treasury to BEIS to enhance the UK's position as a world leader in science and innovation and drive productivity and growth through the Industrial Strategy.

The NPIF is split into themes and includes:

Industrial Strategy Challenge Fund (ISCF)

ISCF is mission-oriented funding, which builds on the UK's competitive advantage in key areas of research and business sectors, supporting the development of innovative ideas that will transform industries and create whole new ones. It will bring together the UK's world-

⁹ Other Partner Organisations includes UK Space Agency and other Public Sector Research Establishments (PSREs), further detail on which is provided in Annex 1.

¹⁰ Includes the Science ring-fence (that funds both science and research) and additional funding for Innovation that sits outside the science ring-fence but is allocated to UKRI.

¹¹ <https://www.gov.uk/government/publications/autumn-budget-2017-documents/autumn-budget-2017> s1.3

leading research with business around a major industrial and societal challenge. The ISCF is structured around the Industrial Strategy Grand Challenges.

The ISCF is delivered by UKRI and takes a strategic business-led approach to delivering the challenges across the UK's research and innovation system. Challenge Directors, experts in their field, will oversee individual challenges and ensure that they deliver maximum impact for the UK.

Strategic Priorities Fund

The Strategic Priorities Fund aims to build on Paul Nurse's vision of a common fund. It will invest in strategically important research and innovation and emerging priorities, in multi- and inter-disciplinary research, and will support collaboration with Government departments and the priorities of BEIS Public Sector Research Establishments. It will be administered by UKRI.

Other Programmes

This includes a number of new programmes planned from 2018-19, including major investments in research talent, a fund to drive new international collaborations and support for areas of lower economic activity to benefit from the world-class research and innovation capability spread across the UK through the Strength in Places Fund.

A detailed breakdown of NPIF spend by programme can be found in Annex 2.

Official Development Assistance (ODA)

The Government has pledged to allocate 0.7% of Gross National Income to ODA. Critical to achieving this target are the Global Challenges Research Fund (GCRF) and the Newton Fund, both are protected science spend.

GCRF was announced as part of Spending Review 2015. It provided an additional £1.5bn of spend over the Spending Review Period to ensure that UK research takes a leading role in addressing the problems faced by developing countries.

The Newton Fund aims to promote the economic development and social welfare of either the partner countries or, through working with the partner country, to address the wellbeing of communities. It does so through strengthening partner country science and innovation capacity and unlocking further funding to support this work.

A detailed breakdown of ODA spend by entity can be found in Annex 3.

Science Infrastructure Capital

The Government committed to spending £6.9bn on Science Infrastructure Capital between 2015-16 and 2020-21. This spend includes World Class Lab funding for maintaining and refreshing existing UK scientific infrastructure, to ensure the scientific community's ability to carry out exceptional science and to retain the country's prominence in scientific research and output.

The spend also includes budget allocated to bodies to spend in line with their own strategic priorities for national projects that align to key Government priorities including energy, health and well-being, and advanced materials (Grand Challenges). This enables the development of new UK-based Institutes or centres of excellence for the UK scientific community such as the Sir Henry Royce Institute, the National Innovation Centre for Ageing, and the Rosalind Franklin Institute. This spend, and any associated ongoing spend, is only committed when business cases are signed-off by Government. A list of these projects is provided in Annex 4.

4. Annex 1 - Allocations broken down by organisation

The following pages provide a breakdown of the Science, Research, and Innovation planning allocations into the individual bodies within UKRI and other Partner Organisations. All bodies are responsible for managing planning allocations within their scheme of delegations. These allocations do not include some cross-cutting NPIF and ODA budgets that account for about 1% of budget in 2018-19 and 5% in 2019-20. These will be allocated to organisations by the department in due course, subject to business case.

UK Research and Innovation

UKRI have published a strategic prospectus setting out their plans to strengthen the UK's world-leading knowledge economy and deliver impact across society. UKRI and its councils will continue to engage with their communities, the wider public and undertake research and analysis to further develop their strategy and deliver individual strategic delivery plans for each of its councils.

Council Funding

The Councils, working individually and collaboratively within UKRI, have a major role in supporting the UK's world-class research and innovation base, contributing significantly to the growth, prosperity, and wellbeing of the UK.

The overarching ambition is to ensure that the UK is the best place in the world to do research, to innovate and to grow businesses contributing both nationally and internationally to challenges such as tackling poverty; managing the environment responsibly; and in promoting physical health, social cohesion; as well as contributing to the wellbeing of the UK and the world. Collectively and individually, the Councils will continue to invest in developing skills, leadership and the infrastructure needed to deliver for the nation.

Table 3 provides a snapshot of Council planning allocations up to 2019-20. In some cases, varying science infrastructure capital allocations reflect the nature of project-based spend, with different investments starting and ending in each year. In addition, new cross-cutting funds, like the Strategic Priorities Fund will provide increasing support to Council spend, allowing UKRI greater flexibility in maintaining the UK's position as a world leader in research and innovation while realising the ambitions of the Industrial Strategy.

Research England

The Higher Education and Research Act 2017 established Research England as a Council of UKRI.¹²

¹² <https://re.ukri.org/about-us/>

Research England is responsible for the former research functions of the Higher Education Funding Council for England (HEFCE) including distribution of Quality Related (QR) research funding, research capital for Higher Education¹³ and Higher Education Innovation Funding (HEIF) to English Higher Education Institutions.

Research England will administer the UK Research Partnership Investment Fund (RPIF) to support major research infrastructure projects in Higher Education Institutes (HEIs) across the UK. It will also administer the Strength in Places Fund (SIPF) in a delivery partnership with Innovate UK, on behalf of UKRI. Research England will manage both RPIF and the SIPF in partnership with the UK funding bodies to ensure the programmes can operate effectively on a UK-wide basis.

Innovate UK

Innovate UK drives productivity and growth by supporting businesses to realise the potential of new technologies, develop ideas and make them a commercial success.

Funding, in the form of grants and loans¹⁴, provides opportunities for business-led, high-value innovation in any sector. Innovation and business networks, supported by Innovate UK, enhance connectivity between innovators, researchers, investors, sectors, government, and potential customers in the UK and around the world.

Other Partner Organisations

UK Space Agency

The UK Space Agency, an executive-agency of BEIS, leads the policy, regulation and delivery of UK civil space activities. It targets investments at key priorities for the UK's space sector. The Agency's work is delivered in part through the UK contribution to the European Space Agency (ESA) enabling access to a broader field of collaborative space programmes. The UK's contribution to ESA is complemented by a National Space Technology Programme and bilateral international partnerships tying industry with key markets overseas. The Agency's work covers a broad spectrum of activity, from fundamental research into the origins of the Universe to investment in down-to-Earth uses of space, such as weather forecasting, telecommunications and safety critical navigation. The Agency also supports the wider STEM agenda, inspiring students across the country with space activities and careers information.

National Academies

The UK's four independent National Academies (The Royal Society, The British Academy, The Royal Academy of Engineering and the Academy of Medical Sciences) provide leadership and promote excellence across all fields of UK research, to the benefit of society. They are independent, autonomous charities that receive funding for key programmes that help deliver Government priorities.

¹³ Separate research capital allocations will be made to Scotland, Wales and Northern Ireland administrations for distribution to their HEIs across the UK,

¹⁴ The loan budgets are outside the scope of this publication and therefore not included.

Public Sector Research Establishments (PSREs)

Beyond UKRI, UKSA and Academies, the department provides funding to a range of other PSREs, including:

- the UK Atomic Energy Authority researches fusion energy and related technologies with the aim of positioning the UK as a leader in sustainable nuclear energy.
- the Met Office, the United Kingdom's national weather service, carries out a broad range of research from weather and ocean forecasting to climate prediction. BEIS funds the Public Weather Service that comprises the Met Office's observation networks, scientific research, weather and climate modelling and supercomputing capabilities.
- NPL- BEIS funds the National Measurement System programmes at NPL and other measurement institutions to provide the UK with an infrastructure of laboratories. The programmes deliver world-class measurement science and technology and provide traceable and increasingly accurate standards of measurement that can support economic growth

Table 3: Planning Allocation by organisation

<i>(all amounts in £m)</i>	2017-18	2018-19	2019-20 ¹⁵
UK Research and Innovation			
Arts and Humanities Research Council (AHRC)	110	124	167
<i>Of which: Fund for International Collaboration^{16,17}</i>		10	45
Biotechnology & Biological Sciences Research Council (BBSRC)	446	438	445
Engineering and Physical Sciences Research Council (EPSRC)	1,052	1,148	1,110
Economic and Social Research Council (ESRC)	210	224	211
Medical Research Council (MRC)	727	717	746
<i>Of which: Future Leader Fellowships¹⁶</i>		3	46
Natural Environment Research Council (NERC)	445	441	404
Science and Technology Facilities Council (STFC)	674	725	697
Innovate UK	714	829	906
<i>Of which: Wave 2 ISCF^{16,18}</i>		91	211
Research England ¹⁹	2,013	2,217	2,355
<i>Of which: Strength in Places Fund¹⁶</i>		2	32
Total UKRI²⁰	6,390	6,865	7,040
Other Investments			
UK Space Agency	397	370	446
National Academies	153	176	195
Public Sector Research Establishments	230	234	244
BEIS Programmes	400	346	329
Total Other Investment¹⁷	1,180	1,126	1,213
To be allocated²¹	-	71	456
Total R&D Investment²²	7,570	8,062	8,710

¹⁵ Allocation numbers are indicative.

¹⁶ Subject to business case.

¹⁷ These cross-cutting funds are managed by the respective councils on behalf of UKRI

¹⁸ ISCF Wave 1 budgets have already been allocated and are included in individual organisation's numbers. ISCF Wave 2 has been highlighted as it is administered from Innovate UK but will be spent on activities across the whole of UKRI as with other cross-cutting funds highlighted in the table above.

¹⁹ This includes £57m funding per annum from the Department for Education for which they are accountable

²⁰ Totals might not sum due to figures being rounded to the nearest million.

²¹ This includes the Strategic Priorities Fund, and funding for Plastics announced by the Chancellor at the 2018 Spring Statement, that will be allocated to individual organisations.

²² Planning allocations to individual bodies are higher than the budget limit to mitigate risk of underspends and ensure best use of available funding.

5. Annex 2 - Allocation of National Productivity Investment Fund

Table 4: NPIF Planning Allocations

	2017-18	2018-19	2019-20	2020-21
	£m	£m	£m	£m
Industrial Strategy Challenge Fund	249	386	491	469
Talent	51	126	186	266
Fund for International Collaboration	-	10	45	55
Quality Related Funding	-	20	88	-
Commercialisation	55	93	97	116
Strength in Places	-	2	32	82
Other NPIF Programmes	67	132	226	166
To be allocated	-	70	344 ²³	862 ²¹
Total^{24,25}	423	839	1,509	2,017

The above figures represent planning allocations to UKRI and other Partner Organisations, however some are subject to business case approval by BEIS and Her Majesty's Treasury.

²³ This is funding earmarked for future waves of programmes, including Industrial Strategy Challenge Fund and the Strategic Priorities Fund.

²⁴ Totals might not sum due to rounding of figures to nearest million

²⁵ Planning allocations to individual bodies are higher than the budget limit to mitigate the risk of underspends and ensure best use of available funding.

6. Annex 3 - Allocation of Official Development Assistance

Table 5: ODA Planning Allocations by organisation

	2017-18	2018-19	2019-20
	£m	£m	£m
Arts and Humanities Research Council (AHRC)	9	12	12
Biotechnology & Biological Sciences Research Council (BBSRC)	33	48	46
Engineering and Physical Sciences Research Council (EPSRC)	28	34	31
Economic and Social Research Council (ESRC)	22	37	33
Medical Research Council (MRC)	51	61	59
Natural Environment Research Council (NERC)	22	30	29
Science and Technology Facilities Council (STFC)	11	11	7
Innovate UK	16	19	11
Research England	41	55	63
UK Space Agency	30	30	30
National Academies	53	54	53
Public Sector Research Establishments	10	11	18
BEIS Programmes ²⁶	15	14	16
To be allocated	-	-	110
Total ²⁷	340	415	518
<i>Of which:</i>			
GCRF	215	299	393
Newton Fund	125	115	125

²⁶ Includes allocations to Devolved Administrations.

²⁷ Planning allocations to individual bodies are higher than the budget limit to mitigate the risk of underspends and ensure best use of available funding. Totals may not sum due to rounding of figures to nearest million.

7. Annex 4 - Allocation of Science Infrastructure

Table 6: Planning Allocations for Science Infrastructure

	2017-18	2018-19	2019-20
Biotechnology & Biological Sciences Research Council (BBSRC)	69	47	64
Engineering and Physical Sciences Research Council (EPSRC)	185	228	196
Economic and Social Research Council (ESRC)	35	42	19
Medical Research Council (MRC)	35	76	66
Natural Environment Research Council (NERC)	128	120	89
Science and Technology Facilities Council (STFC)	208	195	185
Research England	197	336	308
UK Space Agency	174	135	195
Public Sector Research Establishments	45	38	35
BEIS Programmes	37	41	51
Total ²⁸	1,113	1,258	1,209

As highlighted on page 8, in some cases Council allocations are shown to vary between years. This reflects the nature of project-based Capital expenditure, with different investments starting and ending in each year. Below is a list of projects included in the preceding planning allocations.

Research England

- Research Partnership Investment Fund

MRC

- Investment in Biobanking
- National Innovation Centre for Ageing (formerly National Centre for Ageing Science & Innovation)
- Dementia Research Institute

EPSRC

- Sir Henry Royce Institute for Advanced Materials
- Flagship Nuclear Magnetic Resonance Spectroscopy (NMR) facilities
- Rosalind Franklin Institute (formerly Institute of Physical Sciences)

²⁸ Planning allocations to individual bodies are higher than the budget limit to mitigate the risk of underspends and ensure best use of available funding.

- The UK Collaboratorium for Research in Infrastructure and Cities
- Alan Turing Institute
- National Innovation Centre for Data

NERC

- UK Geoenergy Observatories (formerly Energy Security & Innovation Observing System for the Subsurface)
- New Polar Research Ship – the RSS Sir David Attenborough.

STFC

- Hartree Phase III
- The X-ray Free Electron Laser (XFEL)
- Square Kilometre Array (SKA)
- European Spallation Source
- The Higgs Centre for Innovation

UKSA

- ESA Capital
- PLATO Space Mission

Other

- Inspiring Science Capital Fund (The Wellcome Trust)



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