



REPORT

UK Research and Innovation: providing support through grants

Department for Science, Innovation and Technology

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UK Research and Innovation: providing support through grants

Department for Science, Innovation and Technology

Report by the Comptroller and Auditor General

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Gareth Davies Comptroller and Auditor General National Audit Office

2 May 2025

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Key facts

open to bold

UK Research and Innovation's (UKRI's) risk appetite when deciding what to fund with its research and innovation grants, meaning it intends to take high risks where there is a potential for high rewards number of applications for

competitive grant funding

UKRI assessed in 2023-24

28,866

£0.5mn

mean value of a UKRI grant awarded in a competitive process in 2022-23

£9.6 billion	UKRI's total budget in 2023-24
£6.0 billion	UKRI's spending on research and innovation grants in 2023-24, excluding block grants to higher education institutions in England
£20 million	threshold for the value projects or programmes, above which UKRI systematically commissions evaluations; UKRI also does so if the grant is especially novel or contentious
Seven years	time elapsed since the Department for Science, Innovation and Technology (DSIT) last updated the framework document which formally set out UKRI's role and objectives
2026	year during which UKRI expects its new grant management system, which it anticipates will improve its ability to monitor and strategically manage its grant spending, to reach full functionality

Summary

1 The government considers research and innovation (R&I) and the diffusion of new technologies to be vital to the UK's future and to achieving its major long-term and complex policy goals, including its mission to grow the UK economy and achieve net zero. R&I can be defined as the creation and application of new knowledge to improve the world. Often, R&I does not follow a neat stage-by-stage process but instead can be understood as taking place in a system. The UK R&I system is a complex network of organisations involved in the creation, diffusion and use of scientific knowledge as well as the coordination and support of these activities.

2 The government has a long history of investing in R&I, and in 2024 committed 'to promote innovation and harness the full potential of the UK's science base ... [through] protecting record funding for research and development' Many government departments and public bodies invest in R&I, with 24 government departments and public bodies publishing the main research questions they are facing. In the 2024 Autumn Budget, the government committed to invest £20.4 billion in R&I in 2025-26.

UK Research and Innovation (UKRI) is the UK's largest single public funder 3 of R&I, with a budget of £9.6 billion in 2023-24. Established in 2018, UKRI is a non-departmental public body formed of seven disciplinary research councils, Research England (which supports research and knowledge exchange at higher education institutions in England), and the UK's innovation agency, Innovate UK. Its purpose, as set out in its strategy, is to invest in R&I on behalf of the government to push the boundaries of discovery, support innovative businesses to grow and scale, and target solutions to national and global priorities, driving economic, social, environmental and cultural benefits. UKRI also supports wider government R&I across the UK and invests internationally. Examples of approved projects include funding for very early-stage research in microbial fuel cells and hydrogen purification; and the development of bone stem cell and biomaterial technology to reduce infection rates and the cost of hip repairs. In 2023-24, it made decisions on 28,866 applications for R&I grant funding. The mean value of a UKRI grant awarded in a competitive process in 2022-23 was £0.5 million.

4 The Department for Science, Innovation and Technology (DSIT) has overall responsibility for the government's spending on science, research and innovation. It is the sponsoring department for UKRI and sets UKRI's budget and objectives. The Secretary of State for Science, Innovation and Technology approves UKRI's strategy.

5 Government investment in R&I generally aims to support creating, applying and delivering value from new knowledge and ideas. However, there are many unique elements that make assessing and achieving value for money challenging. New ideas will not have any track record of achievement or delivery, outcomes of innovation carry a higher degree of uncertainty, and many projects will potentially lead to different discoveries or may fail altogether.

6 UKRI's support for R&I must follow certain principles. Under the dual support system, in addition to project-specific grants, R&I is also funded through block grants to higher education institutions for research and knowledge exchange which are allocated according to a formula. The statutory Haldane principle states that project research funding decisions are best taken following an evaluation based on the quality and likely impact of the project research. In practice, the evaluation is done through a process of independent, expert-led assessment, such as peer review.²

7 Given the level of ambition that the government has for R&I, the committed resources, and the uncertainty around outcomes, this report examines the extent to which good practice has been considered and applied. We focus on UKRI, given its size and experience, but with the intention of drawing out good practice and wider learning for government more broadly. We examine the extent to which UKRI has considered the principles and conditions for effective support for R&I and applied those principles in practice. In 2023-24 UKRI spent £6.0 billion on R&I grants, excluding block grants issued to higher education institutions in England. The report focuses on competitive grant funding, it covers:

- how well the government understands public sector requirements for R&I including UKRI's role in supporting and funding it (Part One);
- UKRI's effectiveness in using grant funding to harness innovation and opportunity (Part Two); and
- the extent to which UKRI is learning and developing its understanding of how best to support innovation and influencing government's overall approach (Part Three).

8 We have not sought to examine the overall effectiveness of UKRI as an organisation. UKRI was recently independently reviewed by Sir David Grant (2022); the UK's R&I organisational landscape was reviewed by Sir Paul Nurse (2023); and research bureaucracy was independently reviewed by Professor Adam Tickell (2022).³ These reviews inform our work where relevant.

2 For more information on UKRI's grant funding lifecycle and decision-making process, see Figure 7.

³ Department for Business, Energy & Industrial Strategy, UKRI Independent Review, Final Report and Recommendations, July 2022; Department for Business, Energy & Industrial Strategy, Independent Review of the UK's Research, Development and Innovation Organisational Landscape, Final Report and Recommendations, March 2023; Department for Business, Energy & Industrial Strategy, Independent Review of Research Bureaucracy, Final Report, July 2022.

Key findings

UKRI's role supporting innovation and its funding priorities

9 UKRI has played a vital role in shaping and supporting a successful UK R&I system. It funds all stages of R&I: in 2022-23, when excluding block grants to higher education institutions in England, 43% of its R&I spending was on basic research (driven by curiosity, with the aim of expanding human knowledge), 28% on applied research (that is with a specific, practical aim or objective) and 28% on experimental development (such as funding for a business to pilot an innovative new process). One of UKRI's main roles is widely acknowledged by DSIT staff and among senior academics as maintaining the health of the UK R&I system. This system has a strong international reputation, ranking fifth overall on the Global Innovation Index in 2024. The UK compares well with other countries in the top 10 on market sophistication and creative outputs, and less favourably on business sophistication and institutions (paragraphs 1.10 to 1.11 and Figure 3).

Government departments expect UKRI to support the delivery of an 10 extensive range of objectives, alongside its own work, but these are not brought together coherently. We found 105 government policy papers across 13 ministerial departments between 2021 and 2024, the majority of which were published under the previous administration, where UKRI was expected to play a role, or its activities contribute to their delivery.^{4,5} DSIT told us this reflects the broad span of UKRI's activity. Government departments use a wide variety of mechanisms to indicate their priorities to UKRI, including ad hoc and routine meetings; board meetings; formal letters; key UK government strategies and mission statements; and spending review budgets. These are not consolidated or ranked, meaning that the government does not currently have an overall picture of what it is asking UKRI to do. The government has recently set out its intention to define and justify more clearly the allocation of R&I funding under three categories: curiosity-driven basic research; targeted research aligned to government ambitions including economic growth; and investment to support innovative businesses including scale-up (paragraphs 1.12 to 1.15 and Figure 5).

⁴ A total of 13 ministerial departments published a policy paper with reference to UKRI and/or Innovate UK, with some of these papers also co-published with other bodies (including non-ministerial department, high-profile group, agencies and/or other public body, and devolved administrations).

⁵ To provide an approximation of the range and number of government commitments UKRI support, we undertook a desk-based review of policy papers hosted on gov.uk from 2021 to 2024 with reference to UKRI, and/or Innovate UK as a subset of UKRI. The number of policy papers found is unlikely to be an exhaustive list.

11 UKRI has developed a five-year strategy to set out its high-level priorities but it and DSIT have not yet set measurable objectives for UKRI's spending. Measuring the performance of R&I funding organisations can be difficult and governments internationally take a variety of approaches. In 2018, when UKRI was formed, DSIT set 10 strategic objectives for UKRI related to the health of the UK's R&I system.⁶ It published them in a framework document which defines its relationship with UKRI. In 2022, UKRI published its first five-year strategy, with six strategic objectives covering similar ground to the 2018 objectives. None of the formal objectives are specific, measurable or time-bound, making it difficult to understand what outcome UKRI is seeking to achieve. DSIT is updating the framework document, for the first time in seven years, and told us it intends to include new specific, measurable, achievable, realistic and time-bound objectives for UKRI with corresponding key performance indicators. DSIT told us it intends to finalise and publish UKRI's new objectives in summer 2025. UKRI will therefore not have a finalised and measurable set of objectives to guide advice and decisions on its future direction in Spending Review 2025 Phase 2. DSIT and UKRI are working together on prioritisation for the spending review and DSIT has provided information to UKRI on ministerial priorities during this work (paragraphs 1.16 to 1.19 and 1.24).

UKRI is investing its budget in order to build a responsive UK R&I system that 12 can pivot to meet emerging government priorities. UKRI is seeking to cultivate skills and institutional capability that will build responsiveness in the UK R&I system, which can take time to establish. UKRI told us that, for the R&I system to be responsive and resilient, it requires a continual baseline level of multi-year investment from UKRI in a range of areas. There are recent examples of the system reacting quickly to support major government priorities, for example, UKRI's response to the COVID-19 pandemic – UKRI part-funded the trial which, in June 2020, discovered the first effective COVID-19 treatment. As a result of the multi-year nature of UKRI's investments, lead times for new funding schemes, and other factors, however, UKRI makes a high level of financial commitments into future financial years. This limits the budget available to respond to emerging government priorities through initiating new programmes. Instead, UKRI has stated that it adjusts the direction of its existing activities and incentivises applicants to put forward ideas that align with government objectives which can be quicker and more efficient than setting up new programmes (paragraphs 1.20 to 1.23).

⁶ On 7 February 2023 the government announced that the Department for Business, Energy & Industrial Strategy (BEIS) would close, and its responsibilities would transfer to new departments, including the Department for Science, Innovation and Technology (DSIT). References to DSIT that relate to events prior to this date therefore refer to BEIS.

UKRI is working to address significant limitations in its data systems, 13 which currently restrict its ability to efficiently manage its grant spending in a strategic way. To effectively manage R&I funding, it is crucial to have good information on what is being funded across a portfolio, and against key objectives, so that informed decisions can be taken if particular projects need to be scaled up or stopped. Since its establishment, UKRI has faced challenges unifying the separate data systems of its predecessor organisations, including poor and disconnected data. It has broadly good data on individual grants for administrative purposes, but not at a portfolio level. For example, there is no routine central tracking of what strategic areas UKRI's research councils are planning to fund. While in 2024 it gained the ability to algorithmically analyse its spending on strategically important areas, data gaps restrict its strategic oversight of around 15% of its grants (mostly smaller, older grants). UKRI is currently overhauling its grants and finance systems to improve data quality and consistency, with the aim of better data to support decision making, for example through thematic analysis, and predictive insights (paragraphs 1.25 to 1.29).

UKRI's effectiveness in using grant funding to harness innovation and opportunity

14 UKRI has set out the level of risk it aims to operate with to support research and innovation and has designed a risk management strategy to underpin this. UKRI has developed a strategy which defines its approach to managing the different risks it faces and its risk appetite, meaning the level of risk it aims to operate with across its activities. To support the implementation of this approach, new employees are required to complete risk management training. UKRI monitors and manages its risks in a variety of ways, for example at its Audit and Risk Assurance Committee. UKRI told us it balances risk across its portfolio of funding by the type of funding mechanism and considers R&I grant funding to be of higher risk. Therefore, in its risk appetite statement, UKRI has indicated it seeks to operate with 'open/bold' risk when deciding what to fund for R&I grants, meaning it intends to take high risks where there is a potential for high rewards. This requires well-managed risk taking while accepting that outcomes of innovation carry a higher degree of uncertainty, and many projects will potentially lead to different discoveries or may fail altogether. We conducted focus groups (14 participants) and a follow-up survey (22 respondents) with staff identified by UKRI as having an influence on decision making in a number of stages of the funding lifecycle. Findings from focus groups and the follow-up survey indicates some did not have a clear understanding of UKRI's risk appetite for funding decisions (paragraphs 2.1 to 2.8 and Figure 6).

There are a number of factors across the grant funding lifecycle that influence 15 how bold UKRI's funding decisions are, which could be better understood. UKRI's grant funding lifecycle includes several stages, although the intricacies differ between funding type. Senior UKRI officials authorise funding decisions, and decisions taken at various stages of the grant funding lifecycle, such as the development of the funding opportunity, will influence the eventual level of risk taken. An important component of the grant funding lifecycle is the assessment process, where applications are reviewed and ranked by external experts. UKRI considers this assessment process to be an important part of taking appropriate risk in its grant funding decisions. To make decisions in line with UKRI's stated risk appetite, those participating in the grant funding lifecycle need to understand the expectations and scope for decision making, that is, how and at what stages in the grant funding lifecycle decisions are taken. UKRI has produced policy and process documents on roles and responsibilities and the grant funding lifecycle. Through focus group discussions and a follow-up survey with staff identified by UKRI as having an influence on decision making, we found that not all staff within that group clearly understood their role in decision making and where in the funding lifecycle they could have influence over grant funding decisions (paragraphs 2.9 to 2.12 and Figure 7).

UKRI is addressing deficiencies in its approach to funding assurance, and the 16 risk of fraud and error. A condition for taking bold risks with R&I funding decisions while protecting public money is that the risk of fraud and error is well-managed. For several years running, our financial audits of UKRI have found deficiencies in funding assurance. The controls on the individual grants we audited are adequate. However, UKRI cannot yet link together all the controls and assurance checks it has implemented in its different divisions into a reliable picture of whether, across the organisation, error and fraud are under control. For its grant fraud risk, UKRI's appetite is 'minimalist' to 'averse', but it is not currently in full compliance with the government's standards for counter-fraud. The counter-fraud team has been under-staffed, with a backlog of cases and limited capacity for preventative work. In 2023-24, it investigated suspected fraud on £42.6 million of grants, identified £4.6 million of fraud, prevented £13.5 million, and recovered £80,000. UKRI recognises there are issues with its approach and is in the process of reorganising its risk, assurance, counter-fraud and corporate governance team. It is working on a new counter-fraud strategy and a new approach to funding assurance. Its actions to date include recruiting new staff, efforts to improve team culture, and updates to fraud risk assessments. It told us it expects to see improvements by September 2025 (paragraphs 2.13 to 2.16).

17 UKRI seeking to ensure it has a positive organisational culture. A positive organisational culture is important for enabling open discussions about risk and performance, as well as supporting an organisation to deliver its objectives. UKRI recognises the importance of having a positive organisational culture and monitors a number of factors that underpin this. UKRI has identified a number of areas where it would like to improve, for example psychological safety (which means feeling safe to speak up, to disagree openly and to surface concerns without fear of negative repercussions) and has devised action plans to address this. Our focus groups with UKRI also identified some potential barriers that need to be overcome to operate with well-managed risk (paragraphs 2.17 to 2.21).

Monitoring, evaluation and influencing across government

18 UKRI is trialling new funding approaches to define best practice and improving consistency across its grant funding scheme.

- In 2024, DSIT and UKRI set up a joint 'Metascience unit' to develop and share evidence on the best ways to practise, fund and support science, including through experiments to test potential improvements to UKRI's processes.
- UKRI is also introducing a new grants management system and standardising its funding schemes, policy and process. It is developing the new system iteratively, with a first version already in use and full functionality expected in 2026. The system is not yet capable of responding quickly to changes in user needs or new approaches to funding, and therefore UKRI is investing in further development to achieve its strategic intent of a flexible service (paragraphs 3.3 to 3.5 and Figure 8).

19 UKRI's lack of measurable objectives makes it difficult to effectively understand progress at the portfolio level. UKRI's board tracks progress across four themes: its impact, stakeholders' experience of UKRI, the health of the UK's R&I system, and the extent to which UKRI is learning and improving as an organisation. UKRI told us it measures progress against some targets but mostly instead tracks trends against its strategy. In the board's January 2025 performance report, UKRI was making progress against some of its measures, but, without specific, measurable, achievable, relevant and time-bound objectives and KPIs, it is difficult to discern whether UKRI is making sufficient progress against its overall objectives (paragraphs 3.7 to 3.10 and Figure 9).

20 UKRI follows good practice in programme evaluation but does not consistently apply thematic evaluations across the organisation. The research councils routinely collect data on the research outputs and outcomes their grants achieve, and Innovate UK collects impact data on grants to businesses. UKRI has demonstrated good practice by conducting and publishing evaluations for a range of programmes. UKRI undertakes evaluations on projects or programmes that meet specific criteria - those that are over £20 million or considered politically or strategically important, novel, complex or contentious, or have potential to aid UKRI's understanding of what works. There are also some examples of research councils undertaking thematic evaluations that explore the impact of funding over a variety of investment mechanisms for a specific research area (Figure 11). These thematic evaluations can help to capture learning, and evidence impacts, from a range of research projects which may not normally be part of a bespoke evaluation as they do not meet the evaluation criteria. However, thematic evaluations are not consistently applied across the organisation and as a result the cumulative learnings and impacts of these grants may not be effectively captured (paragraphs 3.11 to 3.15 and Figures 10 and 11).

21 UKRI has mechanisms in place to share lessons and showcase the impact of its investments, but recognises improvements are required. In 2023, UKRI produced a communications and engagement strategic framework to inspire interest in R&I, build support for investment and showcase its impact to wider society. UKRI monitors the effectiveness of this strategy and recognises further work is required for example to improve MPs' awareness of UKRI's impact and early-career researchers' and students' understanding of UKRI's role (paragraphs 3.16 to 3.18).

Conclusion

22 The government considers that investing in the UK's R&I system is vital for achieving its long-term policy goals, including its mission to grow the UK economy, and achieve net zero. UKRI is the largest single public funder of R&I in the UK, spending around £9 billion annually. Providing effective support for R&I that secures value from public sector investment is a complex challenge: new ideas will not have a track record of achievement or delivery, outcomes of innovation carry a higher degree of uncertainty, and many projects will potentially lead to different discoveries or may fail altogether.

23 UKRI and its predecessor bodies have helped support a globally respected R&I system, which has demonstrated that it can respond effectively to emerging challenges such as to the COVID-19 pandemic. UKRI, together with DSIT, is seeking to continually improve by researching the best way to fund R&I. However, there is still more that UKRI could do to maximise the value for money it secures from supporting R&I. In particular, DSIT and UKRI need to define more clearly the overarching desired outcomes from its R&I spending, and UKRI needs better data to be able to identify where its resources are being spent and support decision making. UKRI must also be clearer on how decisions taken in the grant funding lifecycle influence how ambitious it is in its grant funding decisions and continue to work to ensure its culture supports well-managed risk taking.

Recommendations

- **a** To help improve visibility of the government's R&I needs and ensure they are communicated effectively, by December 2025, DSIT with UKRI should streamline the mechanisms through which the government communicates its priorities to UKRI. By the same date, they should map out government priorities and objectives whose delivery UKRI is expected to support.
- b It is vital that UKRI uses all available levers to ensure it is taking as much risk as it would like to in its funding decisions to achieve strategic objectives and to prevent missing out on high-reward opportunities. By April 2026, UKRI should consider ways it can improve the support it provides to those with responsibility for funding decisions. This should include:
 - providing and communicating a more detailed description of its risk appetite for funding decisions;
 - providing more practical guidance on how the risk appetite should be applied across the stages of designing and awarding grants; and
 - identifying the barriers and incentives to take bolder decisions in designing and awarding grants.
- **c** To enable UKRI to confidently take well-managed risks while effectively protecting public money, it needs a strong approach to funding assurance, fraud and error. By September 2026, it should ensure that the improvements it is implementing for 2025-26 have gone far enough to enable it to meet functional standards and fully address the findings raised by our financial audits.
- **d** While investing in ambitious and pioneering research, it is important for UKRI to understand how its work is providing a return on investment for taxpayers. To better understand the impact of its investments, inform future portfolio planning and position itself to most effectively harness opportunities, after the outcome of the next spending review, UKRI should develop a plan to build upon its existing programme evaluations by increasing its use of portfolio, thematic and longer-term evaluations.
- e By January 2026, UKRI should take stock of whether its systems are providing it with the data necessary for good portfolio management, and if not, develop a plan to improve its portfolio monitoring and strategic oversight. It should particularly consider collecting more information on activity and performance by research theme, and information to support a well-rounded understanding of how its risk appetite has played out in practice through its grant funding decisions. It should also consider whether the new systems provide enough flexibility and encourage new approaches.

Part One

UK Research and Innovation's funding priorities and strategy for its grants

1.1 This part covers the government's ambitions for research and innovation in the UK, and UK Research and Innovation's (UKRI's) role in supporting these. It examines:

- the government's ambitions for research and innovation (R&I) and the role of UKRI; and
- UKRI's strategy and funding.

The government's support for R&I

1.2 The government considers research and development and the diffusion of new technologies to be vital to the UK's future and to achieving its major long term policy goals, including its mission to grow the UK economy, as well as net zero. It has a long history of investing in R&I and in 2024 committed 'to promote innovation and harness the full potential of the UK's science base ... [through] protecting record funding for research and development'.⁷ Many government departments and public bodies invest in R&I, with the government committing to invest £20.4 billion on research and development in 2025-26 in the 2024 Autumn Budget.⁸ Twenty-four government departments and public bodies have published the main research questions they are facing.

1.3 R&I can be defined as the creation and application of new knowledge to improve the world. Often, R&I does not follow a neat stage-by-stage process but instead can be understood as taking place in a system. The UK R&I system is a complex network of organisations involved in the creation, diffusion and use of scientific knowledge as well as the coordination and support of these activities.

- 7 HM Government, Plan for Change: Milestones for a mission-led government, December 2024, CP 1210.
- 8 Grants and other forms of support are also offered by other parts of government to support R&I. For example, HM Revenue & Customs offers tax credits for research and development carried out by businesses, and the Ministry of Defence funds and carries out R&I relating to defence, including through the Defence Science and Technology Laboratory.

1.4 UKRI is the UK's largest single public funder of R&I. Established in 2018, it is a non-departmental public body bringing together seven disciplinary research councils, Research England (which supports research and knowledge exchange at higher education institutions in England), and the UK's innovation agency, Innovate UK. Its purpose, as set out in its strategy, is to invest in R&I on behalf of Government to push the boundaries of discovery, support innovative businesses to grow and scale, and target solutions to national and global priorities, driving economic, social, environmental and cultural benefits. UKRI also supports wider government R&I across the UK and invests internationally. In 2023-24, it made decisions on 28,866 applications for R&I grant funding and had a budget of £9.6 billion. The mean value of a UKRI grant awarded in a competitive process in 2022-23 was £0.5 million. Examples of approved projects are detailed in **Figure 1**.

Figure 1

Examples of UK Research and Innovation (UKRI) grant funding

UKRI funds a wide	range of projects	across its researc	h councils. A sma	Il selection includes:
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Research council	Funding source (and value)	Example of grant(s) funded		
Arts and Humanities Research Council (AHRC) ¹	Creative industries clusters (at least £50 million)	A long-term investment, from 2018 to 2023, into multiple clusters that will support innovation in creative technologies and music. The aim of the programme is to create jobs and drive creation of companies, products and experiences that can be marketed around the world		
Engineering and Physical Sciences Research Council (EPSRC) ²	Energy programme (£1.1 billion)	Set up in 2004, the programme provides initial public investment to attract follow-on private funding. Recent projects have supported very early-stage research in microbial fuel cells and hydrogen purification		
Biotechnology and Biological Sciences Research council (BBSRC) ³	Multi-disciplinary funding research grant (£9.5 million made up	Over the past 20 years, joint research council funding has been awarded to develop bone stem cell and biomaterial		
EPSRC	of more than 20 grants)	and the cost of hip repairs		
Medical Research Council (MRC) ⁴				
Innovate UK (IUK) ⁵				

Notes

- 1 AHRC funds research in subjects from philosophy and the creative industries to art conservation and product design.
- 2 EPSRC creates knowledge in engineering and physical sciences.
- 3 BBSRC funds bioscience.
- 4 MRC supports research to prevent illness, develop therapies and improve human health.
- 5 Innovate UK help businesses grow through their development and commercialisation of new products, processes and services.

Source: National Audit Office analysis of UK Research and Innovation (UKRI) funding awards

1.5 The Department for Science, Innovation and Technology (DSIT) has overall responsibility for the government's spending on science, research and innovation.⁹ It is the sponsoring department for UKRI and sets UKRI's objectives. The Secretary of State for Science, Innovation and Technology approves UKRI's strategy. The main decisions on the shape of UKRI's portfolio, including allocations to the research councils and UKRI's budget, are made by DSIT, using advice from UKRI. DSIT also attends UKRI's Board, which provides strategic leadership of UKRI. DSIT's representative can take part in any board deliberations but not in board decisions. DSIT and UKRI both form part of the UK's research and innovation system (see **Figure 2**). Since UKRI was established in 2018, there have been a number of changes of government and the structure of its sponsoring department.

1.6 Government investment in R&I generally aims to support creating, applying and delivering value from new knowledge and ideas. However, there is no single universal definition of R&I and there are unique elements that make assessing and achieving value for money challenging. The outcomes of innovation are unknown, its benefits are difficult to quantify, especially in the short term, and many projects will potentially lead to different discoveries or may fail altogether. There is rarely a single, neat path of causation from a piece of new knowledge, discovered by basic research, to an easily defined impact on society or the economy. Given the uncertainty around outcomes, achieving value for money depends on applying the best possible practice to how public spending on R&I is done.

1.7 UKRI's support for R&I must follow certain principles. For example, under the dual support system, in addition to project-specific grants, R&I is also funded through block grants to higher education institutions for research and knowledge exchange, allocated according to a formula. The formula takes into account the volume and quality of research undertaken at each institution. In addition, the statutory Haldane principle, means project research funding decisions are best taken following an evaluation based on the quality and likely impact of the project research.¹⁰ In practice, the evaluation is done through a process of independent, expert-led assessment, such as peer review.

⁹ On 7 February 2023 the government announced that the Department for Business, Energy & Industrial Strategy (BEIS) would close, and its responsibilities would transfer to new departments, including the Department for Science, Innovation and Technology (DSIT). References to DSIT that relate to events prior to this date therefore refer to BEIS.

¹⁰ Higher Education and Research Act 2017, Part 3, Section 103. Higher Education and Research Act 2017 (legislation.gov.uk), accessed 16 April 2025.

Figure 2

The UK research and innovation system

The UK has a complex and diverse ecosystem of organisations involved in research and innovation which interact in myriad ways

Category	Organisation	Main focus on	
		Basic research	Innovation
Strategic	Department for Business and Trade		
leadership organisations	Department for Science, Innovation and Technology		
Strategic advisers	Council for Science and Technology and Government Office for Science		
Research and	ARIA		
innovation funders	British Business Bank		
	Charitable organisations		
	HM Revenue & Customs		
	National Institute for Health and Care Research		
	Other government departments		
	Overseas investors		
	UK venture capital and other finance		
	UK Research and Innovation		
Research	Galleries, libraries, archives, and museums		l i i i i i i i i i i i i i i i i i i i
performing organisations	Institutes and units		l i i i i i i i i i i i i i i i i i i i
	Large firms		
	Public sector research establishments		l i i i i i i i i i i i i i i i i i i i
	Start-ups and SMEs		
	Translational research organisations		
	Universities		I

Government organisation Other

Notes

- 1 Research and Innovation (R&I) can be defined as the creation and application of new knowledge to improve the world. Often R&I does not follow a neat stage-by-stage process but instead can be understood as taking place in a system. The UK R&I system is a complex network of organisations involved in the creation, diffusion and use of scientific knowledge as well as the coordination and support of these activities.
- 2 While, for clarity, we have classified each organisation type by its primary role, many organisations have some activities in multiple roles and stages. For example, UK Research and Innovation (UKRI) is also involved in strategic leadership.
- 3 The Council for Science and Technology is the government's top-level advisory body on science and technology. It is co-chaired by the Government Chief Scientific Adviser and an independent chair. It provides impartial advice to the Prime Minister and Cabinet on how issues such as what the government's high-level priorities for science and technology should be to deliver the government's national missions.
- 4 ARIA is the Advanced Research and Invention Agency.
- 5 Translational research organisations, for example, the network of Catapults supported by UKRI, exist specifically to create bridges between basic research and real-world applications. They carry out pre-commercial research and provide services to businesses.

Source: National Audit Office analysis of Department for Science, Innovation and Technology analysis and Independent Review of the UK's Research, Development and Innovation Organisational Landscape, 2023. Available at: https://assets.publishing.service.gov.uk/media/6409fda2d3bf7f02fef8832b/ rdi-landscape-review.pdf **1.8** Given the level of ambition that the government has for R&I, the committed resources and the uncertainty around outcomes, this report examines the extent to which good practice has been considered and applied. We focus on UKRI, given its size and experience, but with the intention of drawing out good practice and wider learning for the government more broadly. We examine the extent to which UKRI has considered the principles and conditions for effective support for R&I and applied those principles in practice. The report focuses on competitive grant funding and does not examine UKRI's block grants. It covers:

- how well the government understands public sector requirements for R&I, including UKRI's role in supporting and funding it (Part One);
- UKRI's effectiveness in using grant funding to harness innovation and opportunity (Part Two); and
- the extent to which UKRI is learning and developing its understanding of how best to support innovation and influencing the government's overall approach (Part Three).

1.9 We have not sought to examine the overall effectiveness of UKRI as an organisation. UKRI was recently independently reviewed by Sir David Grant (2022), the UK's R&I organisational landscape was reviewed by Sir Paul Nurse (2023), and research bureaucracy was independently reviewed by Professor Adam Tickell (2022).¹¹ These reviews inform our work where relevant.

UKRI's role within the government

1.10 UKRI has played a vital role in shaping and supporting a successful UK R&I system. One of UKRI's main roles is widely acknowledged by DSIT staff and among senior academics as maintaining the health of the UK's R&I system. Junior academics and the business community have less awareness of this aspect of UKRI. This system has a strong international reputation. On average, papers published by UK researchers since 2000 have since been cited 2.7 times more than the global average for papers in their academic field in the same year. In 2024, the UK also ranked fifth overall on the Global Innovation Index (**Figure 3**).

¹¹ Department for Business, Energy & Industrial Strategy, UKRI Independent Review, Final Report and Recommendations, July 2022; Department for Business, Energy & Industrial Strategy, Independent Review of the UK's Research, Development and Innovation Organisational Landscape, Final Report and Recommendations, March 2023; Department for Business, Energy & Industrial Strategy, Independent Review of Research Bureaucracy, Final Report, July 2022.

Figure 3

Benchmark of the UK's scores in the 2024 Global Innovation Index and its seven assessment areas

The UK ranked fifth in 2024, comparing well with other countries in the top 10 of the Global Innovation Index on market sophistication and creative outputs, and less favourably on business sophistication and institutions





Notes

- 1 The Global Innovation Index is an analysis produced annually by the World Intellectual Property Organization. The 2024 index ranks 133 economies on the quality of their innovation ecosystems using 78 indicators.
- 2 'Institutions' is a measure covering operational stability for businesses, government effectiveness, the regulatory environment and the business environment.
- 3 In the calculation of the overall rank, the two output measures (creative outputs, and knowledge and technology outputs) are weighted equally to the five input measures.

Source: National Audit Office analysis of World Intellectual Property Organization, *Global Innovation Index 2024*, September 2024. Available at: https://www.wipo.int/en/web/global-innovation-index

1.11 Of its £9.6 billion budget, in 2023-24 UKRI spent £6.0 billion on R&I grant funding across its research councils and Innovate UK, excluding block grants to higher education institutions in England (**Figure 4**). UKRI funds and incentivises interdisciplinary working, for example in 2023-24 it committed to invest £65 million over two rounds of its UKRI cross research council responsive mode pilot scheme. UKRI estimates that in 2023-24 around £1.5 billion of its funds and initiatives were cross cutting. In 2022-23, also when excluding block grants, 43% of UKRI's R&I spending was on basic research (driven by curiosity, with the aim of expanding human knowledge), 28% on applied research (that is with a specific, practical aim or objective) and 28% on experimental development (such as funding for a business to pilot an innovative new process).¹²

Setting the strategic direction

UKRI's work across government

1.12 Government departments expect UKRI to support the delivery of an extensive range of objectives. We found 105 government policy papers across 13 ministerial departments between 2021 and 2024, the majority of which were published under the previous administration, where UKRI was expected to play a role, or its activities contribute to their delivery (**Figure 5** on page 22).^{13,14} DSIT told us this reflects the broad span of UKRI's activity. Across these policy papers, references to UKRI's role included:

- as a partner to operationalise national and local government strategies;
- specific projects and programmes funded by UKRI that contribute to a department's strategy;
- UKRI's role in supporting talent, partnerships and knowledge exchange; and
- UKRI's role in improving access to funding.

¹² Office for National Statistics, Research and development expenditure by the UK government, table 10, data for 2022-23. Not comparable with other grants figures in this report. Excludes Research England block grant funding. Numbers do not sum due to rounding.

¹³ A total of 13 ministerial departments published a policy paper with reference to UKRI and/or Innovate UK, with some of these papers also co-published with other bodies (including non-ministerial department, high profile group, agencies and/or other public body, and devolved administrations).

¹⁴ To provide an approximation of the range and number of government commitments UKRI support, we undertook a desk-based review of policy papers hosted on gov.uk from 2021 to 2024 with reference to UKRI and/or Innovate UK as a subset of UKRI. The number of policy papers found is unlikely to be an exhaustive list.

Figure 4

UK Research and Innovation's (UKRI's) grant spending by research council, 2023-24

The seven research councils, Innovate UK and Research England all distribute funding through research and innovation grants



Total

Total	2.461	1.791	1.727	880	480	396	330	267	140	8.470
Managed programmes		29	394	12	4	68	17	16	6	547
Talent		226	-	202	58	25	36	47	29	623
Infrastructure, institutes and networks		429	348	290	185	159	123	62	13	1,608
 Other research and innovation funding 		1,106	985	376	233	143	154	142	91	3,230
Block grant funding to higher education institutions in England	2,461									2,461

Notes

- 1 The total in this figure does not represent total UKRI activity. For further information see UKRI's Annual Report and Accounts 2023-24.
- 2 More information on UKRI's budget and spending can be found on its website, www.ukri.org.
- 3 UKRI funds some programmes and projects that are interdisciplinary, for example in 2023-24 UKRI committed to fund and incentivise interdisciplinary working through its UKRI cross research council response mode pilot scheme. For the purpose of this figure, funding has been categorised under only one research council. UKRI estimates that in 2023-24 around £1.5 billion of its funds and initiatives were cross cutting.
- 4 Managed programmes excludes Horizon Europe Guarantees (£345 million) and those managed programmes which are accounted for in the other government department's accounts (£468 million).
- 5 The Arts and Humanities Research Council (AHRC) funds research in subjects from philosophy and the creative industries to art conservation and product design.
- 6 The Biotechnology and Biological Sciences Research Council (BBSRC) funds bioscience.
- 7 The Engineering and Physical Sciences Research Council (EPSRC) creates knowledge in engineering and physical sciences.
- 8 The Economic and Social Research Council (ESRC) funds economic, social, behavioural and human data science.
- 9 Innovate UK is the UK's innovation agency.
- 10 The Medical Research Council (MRC) supports research across the biomedical spectrum, from fundamental lab-based science to clinical trials.
- 11 The Natural Environment Research Council (NERC) funds environmental science.
- 12 Research England is responsible for funding and engaging with English higher education providers.
- 13 The Science and Technology Facilities Council (STFC) supports research in astronomy, physics and space science, and operates research facilities.
- 14 Numbers may not sum due to rounding

Source: National Audit Office analysis of UK Research and Innovation data

Figure 5

Policy papers published by ministerial departments with references to UK Research and Innovation (UKRI) between 2021 and 2024

At least 105 policy papers by 13 ministerial departments were published between 2021 and 2024 with references to a role or contribution of UKRI

Department



Number of policy papers

Notes

- To provide an approximation of the range and number of government commitments UKRI supports, we undertook a desk-based review of policy papers hosted on gov.uk from 2021 to 2024 with references to UKRI and/or Innovate UK as a subset of UKRI. The desk-based review included both a structured and unstructured review. The number of policy papers found is unlikely to be exhaustive.
- 2 Across these policy papers, there were references to UKRI's role as a partner to operationalise strategies at a national and local level; to specific projects and programmes funded by UKRI that contribute to the strategy; to UKRI's role in supporting talent, partnerships and knowledge exchange; and to its role in improving access to funding.
- 3 A total of 13 ministerial departments published a policy paper with reference to UKRI and/or Innovate UK, with some of these papers also co-published with other bodies (including non-ministerial department, high profile group, agencies and/or other public body, and devolved administrations).
- 4 Some of the policy papers were published by multiple departments, therefore the sum of the number of policy papers published by departments is greater than the total number of policy papers (105).
- 5 Some of these policy papers were published under previous governments and may have been retired.

Source: National Audit Office analysis of policy papers published on gov.uk. Available at: https://www.gov.uk/search/policy-papers-and-consultations, accessed 6 March 2025

1.13 The government policies and activities UKRI is expected to support are not consolidated or ranked, meaning that the government does not currently have an overall picture of what it is asking UKRI to do. Priorities are instead communicated to UKRI through several different mechanisms including:

- ad hoc and routine meetings with contacts across government, such as board meetings, quarterly progress and performance meetings between officials, and fortnightly meetings between the Minister of State for Science, Research and Innovation and the Chief Executive Officer of UKRI;
- formal letters outlining government priorities for R&I investment;
- key UK government strategies and mission statements, for instance the upcoming 2025 Industrial Strategy; and
- spending review budgets, for instance, the Autumn Budget 2024.

1.14 The 2023 Independent *Review of UK's Research, Development and Innovation Organisational Landscape* led by Sir Paul Nurse concluded that short-term policy making and a high turnover of new initiatives were undermining the development of R&I, and recommended the government reduce policy volatility across the landscape.

1.15 The government recently set out its intention to more clearly define and justify the allocation of R&I funding under three categories:

- Curiosity driven basic research: Funding for curiosity-driven, investigator-led research that might not bring economic value in the near term but that might prove to be valuable in the longer term.
- Targeted research aligned to government ambitions: Funding that is expected to be aligned to government missions and approaches, including its drive for economic growth, and leverage private sector funding to go alongside it.
- Investment to support innovative businesses: Funding directed at helping the transition from start-up to scale-up as well as supporting large research-and-development intensive companies.

UKRI's strategy

1.16 To help articulate its strategic direction, UKRI has developed a five-year strategy setting out its high-level priorities. In 2018, when UKRI was formed, DSIT set 10 strategic objectives for UKRI related to the health of the R&I system. It published them in a framework document which defined its relationship with UKRI. In 2022, UKRI published its first five-year strategy, which introduced six strategic objectives covering similar ground to the 2018 objectives. It was not designed around a specific government strategy but was instead intended to provide a five-year vision for UKRI's work.

1.17 UKRI's strategy sets out, at a high level, how it intends its actions (inputs) to result in additional R&I outputs such as new knowledge or start-ups, leading to outcomes such as ground-breaking technologies, a stronger UK R&I talent pool, and the UK having cutting-edge research infrastructure. It expects this to contribute to the UK having a world-class R&I system (impact), benefitting people across the UK through increased prosperity and wellbeing.¹⁵ The research councils have each developed a strategic delivery plan, outlining how they are working towards UKRI's objectives and providing a framework on which to build their portfolios of investments. For individual programmes, the strategic case for investment is set out in the programme business case, which can include specific value-for-money considerations and areas of market failure.

1.18 None of UKRI's formal objectives are specific, measurable or time-bound, making it difficult to understand what outcome UKRI is seeking to achieve and what DSIT expects UKRI to achieve. For example, the 2018 objectives included for UKRI to 'be the unified voice for continued strengthening of the UK R&I system, nationally and internationally' while the 2022 objectives included 'securing the UK's position as a globally leading R&I nation with outstanding institutions, infrastructures, sectors and clusters across the breadth of the country'. The 2022 independent review of UKRI found little evidence that UKRI's budget allocation advice was made on a clear analysis of its goals and of what the right allocation was to achieve those goals.

1.19 DSIT and UKRI are now working together on prioritisation for Spending Review 2025 Phase 2. DSIT has provided information to UKRI on ministerial priorities during this work. DSIT is updating the framework document which defines its relationship with UKRI, for the first time in seven years, and told us it intends to include new specific, measurable, achievable, realistic and timebound objectives for UKRI, with corresponding key performance indicators. DSIT has included UKRI in this process and shared draft high-level objectives. It told us it intends to finalise and publish UKRI's new objectives in summer 2025. UKRI will therefore not have a finalised and measurable set of objectives to guide advice and decisions on its future direction in the spending review (see paragraph 1.24).

Prioritisation and management of UKRI's portfolio

1.20 Several factors mean that UKRI commits a high proportion of its budget to defined activities, often years in advance. Most project research grants run for two to four years, while grant funding for fellowships and for institutes may run for five years or longer. UKRI told us that, due to long lead times, it cannot start a programme and then channel significant funding through it in a single financial year. In common with other government organisations, UKRI mostly cannot move budget between financial years. UKRI's role in supporting R&I also means that it chooses to commit to long-term funding to cultivate the institutions, knowledge and expertise that make up the R&I system, which can take time to establish.

15 UKRI, *UKRI Strategy 2022–2027: Transforming tomorrow together*, March 2022. Available at: www.ukri.org/wpcontent/uploads/2022/03/UKRI-210422-Strategy2022To2027TransformingTomorrowTogether.pdf **1.21** UKRI told us that, for the R&I system to be responsive and resilient, it requires a continual baseline level of multi-year investment from UKRI in a range of areas. There are recent examples of the R&I system responding to support major government priorities.

- It reacted quickly and effectively to the COVID-19 pandemic. The research UKRI funded during this time had 'wide-ranging and substantive' positive impacts, and 'almost all the individual [grant] awards looked at through the five case studies [had] benefitted from past investments by UKRI' according to an evaluation it commissioned. For example, in February and March 2020, UKRI and the National Institute for Health and Care Research ran a joint funding opportunity targeting COVID-19 research. They awarded grants to the RECOVERY trial, which identified the first effective COVID-19 treatment in June 2020 (dexamethasone), and to the researchers developing the Oxford/AstraZeneca COVID-19 vaccine.
- From 2014 to 2022, three research councils collaborated to fund a national synthetic biology research programme, which built up a relevant research community and infrastructure. The R&I system was therefore well placed to respond to the government's inclusion of engineering biology as a priority technology in its 2021 *UK Innovation Strategy*.

1.22 UKRI's budget is far too small to fund all of the high-quality R&I proposals it receives and fund in-depth activity on all government interests: it must prioritise and allocate its budget in a way that balances excellence and national interest. In 2023-24, UKRI funded 22% of the applications it assessed.

1.23 In February 2025, UKRI estimated that, were it to receive a 2% budget increase each year for the following three financial years, its existing legal, statutory and political commitments would take up around 98% of its budget in 2025-26, 84% in 2026-27, and 74% in 2027-28. When also including investments that it considers critical, such as continuing to fund similar numbers of new doctoral students and similar levels of new curiosity-driven research, this would then take up around 103%, 101%, and 99% of its future budget, respectively, in those years.¹⁶ This limits the budget available to respond to emerging government priorities through initiating new programmes. UKRI has stated that, when new policy demands arise, it adjusts its existing activities and incentivises applicants to put forward ideas that align with the government's goals. It considers this can be a quicker and more efficient method to achieve UKRI's goals than setting up new programmes.

1.24 In preparation for the next comprehensive spending review, UKRI is undertaking a major prioritisation exercise and, with DSIT and HM Treasury, is making strategic decisions on its high-level spending plans for forthcoming years.

UKRI's management information

1.25 To effectively manage R&I funding it is important to have good information on what is being funded across a portfolio, and against key objectives, so that informed decisions can be taken, for example, if particular projects need to be scaled up or stopped. The impact of R&I activity is not evenly distributed across projects: transformative impact usually comes from a small group of highly successful outliers. The failure of a single research or innovation project to produce impact does not therefore mean that investing in it was a poor decision. UKRI needs a good overview and control of its portfolio to implement the government's decisions on how much risk it should take and the balance between different types of R&I.

1.26 UKRI's grants can be split into broad categories including:

- Curiosity-driven research, to support the most excellent R&I ideas on any topic (around £1 billion in 2023-24). UKRI does not seek to influence the focus of this part of its portfolio through its strategy.
- R&I targeted by UKRI at priorities set by the individual research councils (around £300 million in 2023-24). The research councils use their expert networks to identify and pursue their own priority R&I challenges.
- Grants administered by UKRI on behalf of DSIT and other government departments (around £500 million in 2023-24).¹⁷ Those other government departments, and not UKRI, determine how these grants should be targeted.

The remaining grants could be categorised in multiple ways, in part because single grants may target multiple priorities. Some is targeted by UKRI to support cross-UKRI or cross-government strategic priorities, for example the Technologies Missions Programme (\pounds 55 million). Some is for Horizon Europe Guarantees (\pounds 345 million). Other grants in this group are not tied to specific R&I projects, for example, block grants to higher education institutions in England (\pounds 2.5 billion), grants to build new infrastructure or to support institutes, and grants for training and knowledge exchange.

¹⁷ Excludes those managed programmes which are accounted for in the other government department's accounts (£468 million).

1.27 Since its establishment, UKRI has been grappling with consolidating the data of its predecessor organisations who had separate systems, and data quality issues. It has broadly good data on individual grants for administrative purposes. In 2024, it developed a way to algorithmically classify its grants by theme, based on the award title and description. It is using this to track some important areas of spend, such as the National Science and Technology Council's five priority technologies. It produces one-off analyses of parts of its portfolio, for example, in 2024 it produced a review of its portfolio of spending on net zero and climate change. However, tracking or analysing other aspects of spending across UKRI remains a difficult manual exercise. UKRI told us that around 15% of its grants do not have a full description on its system (mostly smaller, older grants), and in other cases the descriptions are poor quality; spending on these grants cannot be accurately automatically classified. There is no routine central tracking of what strategic areas its research councils are planning to fund, although it told us it does carry out coordination exercises at intervals, for example, during spending reviews.

1.28 UKRI's ambition is to produce reliable analysis rapidly, including thematic analysis, and use predictive insights, thereby supporting better decision making and tracking of progress against its key objectives. It has several modernisation programmes underway, which it expects will improve the quality and consistency of its data.

- Its SHARP programme is implementing a new HR, accounting, reporting and procurement system, Oracle Fusion, to merge and overhaul all back-office functions of the research councils into one.
- The Simpler and Better Funding programme aims to simplify and standardise UKRI's processes to manage grant funding. It includes a project to optimise the implementation of a new digital platform for grant applications and grant management called The Funding Service (TFS).
- UKRI is currently developing a 'Databank' where data from across the organisation are captured in a common format, so that they can be more easily analysed. It is working on new ways to classify the data, which it hopes will provide a better thematic picture of its portfolio. The dataset currently has poor coverage of grants and other spending that were not associated with an application, such as direct awards, and requires a lot of manual quality assurance.

1.29 Achieving UKRI's ambition depends on it successfully delivering these programmes across the entire organisation, and ensuring its data are useful for general analysis as well as day-to-day operations. Although UKRI has had developing modern systems as a priority since 2019, both programmes have been delayed. While TFS is now in use, it will not reach full functionality until 2026 and is at risk of further delays. UKRI expects to move to its new Oracle Fusion system in June 2025. Neither will include Innovate UK at this stage, although UKRI plans to integrate it into the new Oracle Fusion system in future.

Part Two

UK Research and Innovation's mechanisms to support the delivery of grant funding and harness opportunities

2.1 Research and innovation (R&I) activity requires actively seeking well-managed risk taking, as the path to outcomes are not necessarily clear or known. Good practice in support of bold decision making and well-managed risk taking requires:¹⁸

- a clear articulation of the levels of risk that the organisation is willing to accept in pursuit of successful innovation (known as its risk appetite);
- effective communication of the responsibilities and behaviours required by staff to make decisions on what to fund in line with corporate ambitions; and
- an organisational culture that supports well-managed risk taking to seek potential opportunities.

2.2 Part Two of this report focusses specifically on UK Research and Innovation's (UKRI's) R&I grant funding which comprises open funding opportunities and strategically targeted opportunities focused on specific priorities. We have not looked in any detail at how it manages risk in decision-making in other areas of its portfolio of activities, such as its block grants to higher education institutions in England, its infrastructure projects and its portfolio of research institutes.

2.3 We examine whether UKRI has the right structures and culture in place to support staff to act in line with its risk appetite. In this section we examine the following:

- **UKRI's risk appetite:** The level of risk that UKRI is prepared to take to support innovative research, and how this is communicated through the organisation.
- **Delivery of UKRI's risk appetite:** How UKRI is making grant funding decisions and operating in line with its risk appetite.

¹⁸ These criteria have been developed from a review of National Audit Office's (NAO's) good practice guide – Overcoming challenges to managing risks in government, February 2025, and with insights from the NAO's People & Operations team on work culture and risk.

- **Governance and protecting public money:** Whether UKRI governance structures ensure proportionate protection of public money.
- **Organisational culture:** The extent to which UKRI has a positive organisational culture that supports well-managed risk taking.

UKRI's overall approach to risk

2.4 UKRI has demonstrated good practice by developing a framework that defines the level of risk it is willing to operate with across its activities, recognising that different aspects of its operation will require different risk appetites and approaches to risk. There are five risk levels ranging from 'averse' to 'bold', with a risk management strategy further expanding on the definitions of each risk level (**Figure 6**).

Figure 6

Overview of UK Research and Innovation's (UKRI's) risk appetite

UKRI's risk management strategy comprises five risk levels; different areas of the organisation will need to operate with and manage different risk levels



1 The risk areas displayed in this figure are illustrative examples and they do not represent all the risk areas identified.

Source: National Audit Office analysis of UK Research and Innovation risk management strategy documentation

2.5 UKRI monitors and manages its risks in a variety of ways, for example at its Audit and Risk Assurance Committee, UKRI Board meetings and at its Executive Committee. To support the implementation of these different risk appetite levels, new employees are required to complete training, which includes overall approach to risk management and general guidance on how to apply its risk appetite. There is currently no requirement for staff to complete refresher training throughout their career, however there is a range of additional support, guidance and training provided across the organisation by its Risk Management Function.

UKRI's approach to risk in R&I funding decisions

2.6 UKRI told us it balances risk across its portfolio by the type of funding mechanism. UKRI's total funding portfolio comprises a wide range of investments including R&I grants, strategic institutional funding to English higher education providers, infrastructure, institutes, centres, facilities and catapults, innovation project grants to small and medium-sized enterprises, challenge-led funding, international collaboration and public engagement activities. Of its different types of funding, UKRI considers R&I grant funding to be of higher risk, therefore, in its risk appetite statement UKRI has indicated it seeks to operate with 'open/bold' risk when deciding what to fund for R&I grants, meaning it intends to take high risks where there is a potential for high rewards. This requires well-managed risk taking while accepting that outcomes of innovation carry a higher degree of uncertainty, and that many projects will potentially lead to different discoveries or may fail altogether.

2.7 We undertook focus groups and a follow-up survey with staff members UKRI identified as having an influence on decision making in a number of stages of the funding lifecycle to explore their understanding of UKRI's risk appetite in relation to R&I grant funding decisions.¹⁹ Perceptions shared with us indicate some UKRI decision makers did not have a clear understanding of UKRI's risk appetite for R&I grant funding decisions. Focus group participants shared a range of views on UKRI's risk appetite. Some participants felt that UKRI does have a high-risk appetite in what it funds, but not who it funds. Others felt that UKRI has the ambition to take more bold risk to support innovation, but with some feeling that UKRI's ambition to be bold is not being delivered in practice.

¹⁹ In the focus groups (14 participants) and follow-up survey (22 respondents), we engaged with UKRI staff identified as 'key decision-makers at UKRI who oversee, assess, and apply UKRI's risk appetite at the grant/loan funding level'. For further details of methodology see Appendix One.

2.8 We conducted a follow-up survey with individuals who attended or were invited to attend the focus group discussions to better understand their opinions on UKRI's risk appetite for R&I grants and to get further clarity on UKRI senior staff decision-making responsibilities. The survey findings indicate that there is a lack of clear understanding of UKRI's risk appetite as it relates to R&I grants. Out of 22 respondents, 14 indicated that UKRI has not communicated its risk appetite in relation to funding decisions on R&I grants to them. Out of the eight remaining respondents, two indicated that UKRI has communicated its risk appetite in this context as 'cautious', five respondents chose 'open', and one respondent selected 'bold'. When asked what they feel UKRI's risk appetite is in practice in relation to funding decisions on R&I grants, 17 out of 22 respondents indicated 'cautious' or 'minimalist', four respondents indicated that it is 'open', and one respondent viewed UKRI's risk appetite as 'bold'.

Application of UKRI's risk appetite

2.9 The UKRI grant funding lifecycle includes several steps and, while the intricacies can differ between funding type, the overarching stages remain broadly similar across UKRI. We mapped out and summarised the stages of this process, see **Figure 7** on pages 32 and 33.

2.10 Senior UKRI officials authorise funding decisions and decisions taken at various stages of the grant funding lifecycle, such as the development of the funding opportunity, will influence the eventual level of risk taken.

2.11 UKRI is committed to the Haldane principle and ensures that its decisions about which research projects to fund are based on advice received from experts in the field (see paragraph 6). At the peer review/assessment stage, applications are reviewed and ranked by external experts from the academic and business community. UKRI considers this assessment process to be an important part of taking appropriate risk in its grant funding decisions. UKRI commissioned a study, carried out in 2023, to examine ways to optimise and innovate the peer review process. In response, UKRI has been piloting peer review methods and engaging with the R&I community to understand how UKRI can make improvements. Not withstanding this, given the importance of the peer review process interacts with UKRI's risk appetite.

Figure 7

UK Research and Innovation's (UKRI's) grant funding lifecycle and decision-making process

UKRI's grant funding lifecycle can be summarised as comprising five main stages



Stages of funding lifecycle

O Steps within the stages of funding lifecycle

Figure 7 continued UK Research and Innovation's (UKRI's) grant funding lifecycle and decision-making process

Notes

- 1 The intricacies of each step can differ between funding type, but the overarching stages remain similar across the whole of UKRI. This figure is intended to serve as a summary of the main stages.
- 2 Relevant delegated authority can include board or other governance mechanisms.
- 3 Assessment is the process undertaken on submitted applications to determine whether an application is fundable, and which applications should be funded. Assessments can take different forms including independent review assessment (review) or collective panel assessment (panel). An assessor can be a reviewer or a panellist, experts or a peer from business or academia, or other sectors. Assessments often involve a two-stage assessment process, where applications are considered by reviewers (by correspondence) and then by a panel (at a meeting) but can also take other forms such as one-stage assessment processes where applications are considered solely by reviewers or solely by a panel. UKRI aim to ensure that the assessment processes are appropriate to the proposed research and innovation with respect to its scale and complexity.
- 4 This stage, expert review, may not be present depending on the type of assessment process.

Source: National Audit Office (NAO) analysis of NAO survey data and UK Research and Innovation (UKRI) documentation including UKRI Principles of Assessment and Decision Making March 2021 (viewed on 1 May 2025). Available at: https://www.ukri.org/wp-content/uploads/2023/07/UKRI-14072023-UKRI-Principles-of-Assessment-and-Decision-Making-March-2021-V5.pdf

2.12 To make decisions in line with UKRI's stated risk appetite, those participating in the grant funding lifecycle need to understand the expectations and scope for decision-making, that is, how and at what stages in the grant funding lifecycle decisions are taken. UKRI has produced policy and process documents on roles and responsibilities, and on the grant funding lifecycle. In the survey we asked participants to identify which stages of the funding lifecycle they think decisions on technical risk are being taken for R&I grants.²⁰ Of the 19 respondents to this question, 14 felt that decisions on technical risk in R&I grants are being made at multiple stages in the funding cycle, with each stage in the cycle being selected at least 12 times. However, there was a lack of consensus in survey responses which indicates some UKRI decision makers are unclear on exactly how, and by which teams, decisions on what to fund are applied in line with UKRI's risk appetite.

Processes to protect public money

2.13 A condition for taking bold risks with R&I while protecting public money is that the risk of fraud and error is well managed. It is impossible to eliminate all fraud and error, therefore a good approach is one that reduces it as far as possible without interfering with UKRI's mission and the need to promote innovation. Effective controls should not be in tension with innovation in government but should enable it by giving officials and the public confidence that money is being spent on its intended purpose. UKRI's appetite for grant fraud risk is 'minimalist' to 'averse'.

20 By technical risk we refer to the potential for performance shortfalls against intended outcomes that may be realised in the design and development of a new idea or project. In the focus group and survey, we asked participants to focus on technical risks as opposed to other risks such as risk of fraud and programme management related risks. **2.14** UKRI is addressing deficiencies in its approach to fraud and error. UKRI is not currently in full compliance with the government's standards for counter-fraud. The counter-fraud team has been under-staffed (as at March 2025, two of six posts are vacant), with a backlog of cases and with limited capacity for preventative work. In 2023-24, it investigated suspected fraud on £42.6 million of grants, identified £4.6 million of fraud, prevented £13.5 million and recovered £80,000. Deterrence and prevention are often more cost-effective than detection, correction and pursuit.

2.15 In addition, for several years running, our financial audits of UKRI have found deficiencies in funding assurance. The controls on the individual grants we audited are adequate. However, UKRI cannot yet link together all the controls and assurance checks it has implemented in its different divisions into a reliable picture of whether, across the organisation, error and fraud are under control.

2.16 UKRI recognises these issues and is in the process of developing a new policy, strategy and response plan. It has made the Department for Science, Innovation and Technology (DSIT) aware of them and is in the process of re-organising its risk, assurance, counter-fraud and corporate governance teams. It is working on a new counter-fraud strategy and a new approach to funding assurance. As at April 2025, its actions to date include recruiting new staff, with more recruitment under way; efforts to improve team culture; and updates to fraud risk assessments. UKRI told us it expects to see improvements by September 2025.

Organisational culture

2.17 A positive organisational culture is important for enabling open discussions about risk and performance, as well as supporting an organisation to deliver its objectives. UKRI recognises the importance of having a positive organisational culture and has set, monitors and reports a number of factors that underpin this, for example through its people survey and annual balanced scorecard, and at the Audit and Risk Assurance Committee.

2.18 The 2023 UKRI People Survey highlighted a number of strengths in its culture. For example, 92% of staff felt that they had the skills to do their job effectively, and 94% felt that they were trusted to carry out their job effectively. UKRI also improved its scores in a number of other areas, such as leaders taking action in response to the previous people survey, and the reasons behind changes being communicated to staff.

2.19 In the 2023 People Survey, UKRI also identified some areas that it wanted to explore further. In particular, concerns about psychological safety were raised and 7% of all UKRI staff reported that they had been bullied or harassed at work during the previous 12 months. Psychological safety – meaning feeling safe to take interpersonal risks, to speak up, to disagree openly, to surface concerns without fear of negative repercussions or pressure to sugarcoat bad news – supports a positive risk culture by promoting open dialogue and enabling opportunities for staff to raise concerns and questions about risk taking and innovation. Despite that, UKRI is concerned about this because psychological safety is an important component of its anti-bullying harassment and discrimination culture. In UKRI's 2023 People Survey, concerns over psychological safety were raised; 72% of all UKRI staff did not feel encouraged to speak up when they identify a serious policy or delivery risk.

2.20 UKRI subsequently commissioned another survey specifically to understand these issues further.²¹ This showed that 31% of staff did not feel confident challenging the way things are done and that 17% of staff felt they could not make a mistake at work without it being held against them. To address these issues, UKRI devised an action plan in 2024, which includes introducing an anonymous reporting tool to encourage people to raise concerns. At the time of fieldwork, it was too early to assess the impact of this work, but offering a clear route for people to raise concerns is good practice.

2.21 We explored culture and risk in our focus groups with staff identified by UKRI as decision makers. Participants identified some potential barriers that need to be overcome to operate with well-managed risk such as concerns over the reputational implications of contentious projects, funding constraints leading to less openness to failure, and a perceived culture of risk aversion in the academic community which may influence decisions made in the peer review process.

Part Three

Culture for improvement, monitoring and evaluation

3.1 In this part we look at how UK Research and Innovation (UKRI) is making organisational changes to improve the capture and consolidation of its performance data and to understand from its evaluations the impact its investments are making.

- 3.2 We examine:
- UKRI's approach to improving its grant funding processes;
- UKRI's monitoring arrangements at the portfolio and project level; and
- arrangements for evaluating UKRI's grant funding and disseminating findings.

Changing UKRI's grant funding processes

3.3 The evidence on best practices for R&I funding processes is not always clear. For example, the strength of evidence on different peer review interventions is mixed. There is also appetite for innovation in government processes: the government has stated that it intends to drive innovation across the public sector, while Professor Adam Tickell's *Independent Review of Research Bureaucracy* recommended that funders including UKRI should experiment with both application and assessment processes to reduce the burden on applicants and peer reviewers.

3.4 UKRI is therefore trialling new funding approaches and learning from the best practices of its research councils. In 2024, the Department for Science, Innovation and Technology (DSIT) and UKRI set up the joint UK 'Metascience Unit' to develop and share evidence on the best ways to practice, fund and support science, including through experiments to test potential improvements to UKRI's processes (see **Figure 8**). The unit has a staff of seven and three years of funding. It is overseen by a programme board chaired by DSIT officials with UKRI representation. UKRI is considering how it could optimise its peer-review processes and has commissioned research in aid of this. It is also testing ways to give researchers safe access to more of its administrative data for analysis; it already publishes data on almost all its awards through its Gateway to Research website.²²

Figure 8 Main functions of the UK Metascience Unit

The UK Metascience Unit (the unit) seeks to support research and innovation funders in their decision-making by investing in research to improve their understanding of what works best

Function	Purpose	Example of action
Designing and running experiments.	To test and improve UK Research and Innovation's (UKRI's) research funding process.	The unit is conducting an experiment to find out whether UKRI can identify low-scoring applications and reject them before sending them for peer review, to increase efficiency.
Competitive grants for applied research in metascience, including through partnerships with other funders.	To grow the UK's metascience research community and encourage collaboration within the global metascience research community.	In February 2025, UKRI announced the award of 23 metascience fellowships on topics ranging from assessing whether Al can reliably review academic work, to the impact of scientific prizes.
Sharing metascience insights.	To provide research funders and policymakers with the best available evidence to support decision-making.	As well as interaction with policymakers, the unit plans to publish an annual review of its work to make its findings accessible to a wider audience including researchers and the public.

Source: National Audit Office analysis of UK Research and Innovation and Department for Science, Innovation and Technology documentation

3.5 UKRI has several other change initiatives to standardise its finance and grants management systems and to deliver the recommendations of Sir David Grant's 2022 review. Of these, The Funding Service will have the greatest influence on UKRI's ability to monitor its grants effectively.²³ UKRI is developing the new system iteratively, with a first version already in use and full functionality expected in 2026. At its current stage of development, the system is not yet capable of responding quickly to changes in user needs or new approaches to funding and requires some manual workarounds. UKRI is therefore investing in further development to achieve its strategic intent of having a flexible service.

²³ UKRI's separate Innovation Funding Service, for Innovate UK grants, also influences UKRI's ability to monitor its grants effectively.

3.6 UKRI has also been working to reduce its number of operational staff to meet targets agreed in the 2021 Spending Review. Operational staff are those working on grant delivery and in other back-office functions such as HR, finance and digital – not counting those whose back-office role is to support a specific research programme, institute or infrastructure. UKRI was required to reduce its number of operational staff from 3,053 full-time equivalent in April 2022 to 2,650 full-time equivalent by April 2025, and achieved this target ahead of schedule, in November 2024. In 2023-24, UKRI's budget for operational costs was 3.3% of its budget.

UKRI's monitoring and evaluation arrangements

3.7 Understanding the efficiency and effectiveness of interventions and their impacts is critical to good decision making. In December 2021, we reported on the government's progress in developing the provision and use of evaluation evidence across government. Our work highlighted the importance of performance monitoring to provide real-time insights into delivery, and how evaluation is crucial to understanding the effectiveness and efficiency of interventions.

How UKRI monitors progress across its portfolio of activity

3.8 Measuring the performance of research and innovationfunding organisations can be difficult. Governments internationally take a variety of approaches, including the use of performance indicators, contextual indicators, portfolio evaluations and narrative progress updates. In the absence of specific, measurable, achievable, relevant and time-bound objectives to measure UKRI's performance against, UKRI's Board monitors performance through a 'balanced scorecard' (**Figure 9** on pages 39 and 40). This scorecard tracks progress across four themes: UKRI's impact, stakeholders' experience of UKRI, the health of the UK research and innovation (R&I) system and the extent to which UKRI is learning and improving as an organisation. The scorecard is complex, comprising over 100 metrics drawing on data of varying quality and reporting frequencies. UKRI also monitors progress in quarterly performance reports.

3.9 Our *Good practice in annual reporting* guide identified that having a clear statement of performance against targets, and quantified key performance indicators (KPIs) aligned to strategic objectives, are good measures of success.²⁴ UKRI's lack of measurable objectives has limited its ability to effectively monitor progress at the portfolio level. DSIT told us that it is in the process of setting new organisational objectives for UKRI and intends to finalise them during Summer 2025. In the Board's January 2025 performance report, UKRI was making progress against some of its measures, but without SMART objectives and KPIs, it is difficult to discern whether UKRI is making sufficient progress against its objectives.

UK Research and Innovation's (UKRI's) framework for performance reporting

UKRI uses quarterly progress and performance reports and its balanced scorecard to monitor its progress against the strategic objectives



- O UKRI product
- Strategic objective or activity
- \rightarrow Information is combined
- --> Request for additional work

Figure 9 continued

UK Research and Innovation's (UKRI's) framework for performance reporting

Notes

- 1 UKRI's 'Databank' informs the production of the quarterly progress and performance reports and the annual balanced scorecard. There are also manual systems in place as the research councils submit other data that cannot currently be captured by the Databank and where there are data inconsistencies.
- 2 UKRI reports a snapshot of its annual performance in the Annual Report and Accounts. UKRI does not publicly publish its quarterly progress and performance reports or its annual balance scorecard in full.
- 3 The progress and performance report measures progress against some targets, and for other metrics, tracks trends against UKRI's strategy, rather than having a target.
- 4 UKRI was independently reviewed by Sir David Grant in 2022: UKRI Independent Review, Final Report and Recommendations, July 2022. Available at: https://assets.publishing.service.gov.uk/ media/62cd4706d3bf7f30011985df/uk_research_and_innovation_independent_review_report.pdf

Source: National Audit Office analysis of 2024-25 UK Research and Innovation balanced scorecard

3.10 UKRI has told us that it measures progress against some targets but, for all other metrics, tracks trends against its strategy, rather than having a target. It reports progress against one target in its 2024-254-25 annual balanced scorecard: to reduce its number of operational staff (see paragraph 3.6). It also describes two other targets: DSIT's expectation that UKRI should increase spend outside the Greater South East by £1.2 billion in the 2021-22 to 2024-25 period, and a target for operational expenditure. As at January 2025, it tracks progress against 10 targets in its quarterly reporting, comprising the following:

- Four spending targets:
 - To spend at least £1.1 billion on infrastructure in 2024-25.
 - To spend £3.8 billion through un-targeted funding calls over 2022-23 to 2024-25.
 - To spend £255 million or less on routine operational expenditure in 2024-25.
 - To achieve an outturn-to-budget variance of 1% or less.
- Two targets for activity levels on specific programmes:
 - To increase the total number of live knowledge transfer partnerships to 1,100 by the end of 2024-25.
 - To attract at least £2.8 billion of co-investment to the Industrial Strategy Challenge Fund. It achieved this in 2022.
- Four targets relating to the quality and efficiency of its operations:
 - To reduce its number of operational staff to 2,650 full-time equivalent by April 2025. It achieved this in November 2024.
 - To achieve an internal audit annual assurance opinion of moderate or higher.

- For Innovate UK projects to go live within 90 days of competition closure, on average.
- For research councils to make decisions on grant applications within 180 days of receipt, on average.

How UKRI monitors the progress of individual projects

3.11 UKRI routinely collects data at the project level of the outputs and outcomes its grants achieve. For businesses, routine monitoring includes impact data which are captured, analysed and reported by Innovate UK through its Impact Management Framework. For research grants, information on research outputs (such as publications, exhibitions or new research tools) and outcomes (such as new or improved products, processes or policies) is submitted annually via a system known as 'Researchfish'. Researchfish data are collated and made public via UKRI's Gateway to Research platform and feed into UKRI's annual balanced scorecard. These data can also be used as evidence to support evaluations where projects or programmes meet the criteria for an evaluation.

How UKRI evaluates its portfolio of activity

3.12 UKRI has demonstrated good practice by conducting and publishing evaluations for a range of programmes.²⁵ UKRI undertakes evaluations on projects or programmes that meet specific criteria – those that are over £20 million or considered politically or strategically important, novel, complex or contentious, or have potential to aid UKRI's understanding of what works (**Figure 10** overleaf). An example of this can be seen with UKRI's Strategic Programmes which meet these criteria for bespoke evaluations. UKRI's Strategic Programmes include five funds of significant value:

- Industrial Strategy Challenge Fund (£2.6 billion);
- Strategic Priorities Fund (£830 million);
- Strength in Places Fund (£316 million);
- Fund for International Collaboration (£160 million); and
- Future Leaders Fellowships (£900 million).

Each of these funds either has been, or is in the process of being, evaluated at the fund portfolio level through both process and impact evaluations. There are also examples of the funds being evaluated at more granular levels such as in the Industrial Strategy Challenge Fund, which has evaluations by theme and by specific challenge areas.

Figure 10

Number of evaluation reports published by UK Research and Innovation (UKRI) and its predecessor organisations, 2008 to 2024

UKRI has published a total of 127 evaluation reports from 2008 to 2024, increasing in number substantially from 2022



Notes

1 Evaluation reports dated from 2008 to 2017 were published by research councils and Innovate UK prior to UKRI forming in 2018.

2 Figure presents number of published evaluations on UKRI's website as of 4 March 2025.

Source: National Audit Office analysis of evaluation reports published on UK Research and Innovation website. Available at: www.ukri.org/who-we-are/how-we-are-doing/evaluation-reports/browse/, accessed 4 March 2025

3.13 The mean value of a UKRI grant in 2022-23 was \pounds 0.5 million therefore, in most cases, individual grants to researchers and businesses fall below the \pounds 20 million threshold for a published evaluation. UKRI considers that in many cases these grants are included in evaluations when they form part of programmes of investment above the threshold. All R&I grants form part of UKRI's routine monitoring systems which are focussed on output and outcome type data (see paragraph 3.11).

3.14 There are also some examples of research councils undertaking thematic evaluations that explore the impact of investments over a variety of investment mechanisms for a specific research area (**Figure 11**). These thematic evaluations can help to capture learning and to evidence impacts from a range of research projects which may not normally be part of a bespoke evaluation as they do not meet the evaluation criteria. However, thematic evaluations are not consistently applied across the organisation and, as a result, the cumulative learnings and impacts of these grants may not be effectively captured.

Figure 11

Examples of UK Research and Innovation (UKRI) research councils' thematic evaluations

Research councils' thematic evaluations capture how a range of research projects contribute to a research area

Evaluation (Publication year)	Summary
Evaluating BBSRC investments in industrial biotechnology research (2024)	The Biotechnology and Biological Sciences Research Council (BBSRC) identified industrial biotechnology as a strategic priority in 2010, investing \pounds 413 million between 2010-11 and 2021-22 across a variety of mechanisms. This evaluation examined the effectiveness and impact of these investments, with conclusions covering areas such as international competitiveness, capacity and capability building, and barriers to further impact.
MRC 10-year translational research evaluation report 2008 to 2018 (2019)	A 2006 independent review of 'UK health research funding' recommended improved support for translational research. The independent evaluation examined progress made since the Medical Research Council's (MRC's) increased commitment to translational research, covering the period between 2008 and 2018 and approximately £1.5 billion total spend directed at new treatments or diagnostics. The report concluded that the UK is now better equipped to support translational research while recognising that further streamlining of funding opportunities will improve clarity to academia and industry.

Notes

This figure includes examples of thematic evaluations undertaken by UKRI research councils, in particular BBSRC and MRC. Thematic evaluations are those that explore the impact of investments over a variety of investment mechanisms for a specific research area.

2 Translational research refers to turning basic research and fundamental discoveries into improvements in human health, such as through new treatments or prevention of disease.

Source: National Audit Office analysis of UK Research and Innovation's publicly available evaluation reports. Available at: www.ukri.org/who-we-are/how-we-are-doing/evaluation-reports/browse/, accessed 4 March 2025

3.15 UKRI is undertaking work to improve its ability to evidence its impacts. In March 2024, it set the ambition to have the evidence of the economic and non-economic impacts of its organisation through reviewing and utilising existing mechanisms and capabilities. In April 2024, the Strategy Committee agreed three priority areas for scoping evidence of UKRI impact: Discovery, International and Public sector/services. A summary of the work undertaken was presented in a Strategy Committee update in February 2025 and includes a set of 11 short case study examples and a framework for describing UKRI's impact on the public sector. As part of this work undertaken, UKRI has found that, while there is significant activity across all parts of UKRI that delivers impacts for the public sector, activity happens in silos, with limited coordination or sharing of practice and lessons learned.

Diffusion of knowledge and learning

3.16 UKRI aims to maximise learning and use of evaluation evidence through communication and engagement with relevant stakeholders and has developed a guide to support evaluation managers in disseminating findings. The intended beneficiaries of the evaluation findings are broad, including both internal and external stakeholders, so UKRI uses a variety of mechanisms to share evaluation findings, including senior board meetings, cross-UKRI networks, intranet pages, webinars and learning series. Where UKRI submits business cases to DSIT for large programmes, evaluation findings have been included as part of the business case to highlight what has been learnt from similar programmes. UKRI has an appetite to share learning and good practice, and has provided a few specific examples of where it has shared learning or good practice in higher-risk projects.

3.17 UKRI is responsible for disseminating findings from research into science, technology and the humanities. In 2023, in response to identifying weaknesses in UKRI's communications, including a lack of understanding from key stakeholders on the outcomes and impacts of UKRI investment, it produced its *Communications and engagement strategic framework 2023–2027*. This sets out UKRI's objectives including to inspire interest and participation in R&I, build investment by demonstrating its impact and value to wider society, and encourage understanding of UKRI's unique position in shaping the UK R&I system.

3.18 UKRI evaluates performance against the strategy through measures including media coverage and engagement levels, website user experience, public sector reputation surveys, and through interviews with key stakeholders. UKRI's 2024-25 annual balanced scorecard shows some areas of strength such as user satisfaction with the UKRI website and a growing social media following. However, only 19% of MPs surveyed in 2023 felt that UKRI is investing in taxpayers' money wisely, with 76% responding either 'neutral' or 'don't know'. UKRI's perceptions research found that understanding of UKRI's role was lower among students and early-career researchers. UKRI indicates that these examples are key areas of focus, and has activities in place to improve MP awareness of the impact of its investments.

Appendix One

Our audit approach

Our scope

1 This report examines the extent to which UK Research and Innovation (UKRI) has considered the principles and conditions for effective support for research and innovation (R&I) and applied those principles in practice in its management of its competitive R&I grants. Our areas of focus were as follows.

- An assessment of the extent to which UKRI's overarching strategy, governance and budget allocations enable it to shape its grant portfolio to support the government's ambitions for R&I in the UK. We reviewed UKRI's data and monitoring arrangements at both portfolio and project level (Part One).
- An assessment of the extent to which a focus on well-managed risk taking is embedded in UKRI to support innovation where in taking high risks there is a potential for high rewards. Specifically, we reviewed whether UKRI officials are supported by suitable structures and culture in taking expert-led decisions on competitive grants, in line with UKRI's risk appetite (Part Two).
- An assessment of UKRI's understanding of how far its grants are fulfilling their intended purpose. We examined UKRI's approach to improving its grant funding processes, and arrangements for evaluating UKRI's grant funding and disseminating findings (Part Three).

2 We excluded Research England from our fieldwork because its main role is to provide recurrent, formula-based funding for higher education institutions in England, rather than competitive grants.

Our evidence base

Interviews

3 Between August 2024 to February 2025, we conducted 33 interviews with UKRI – which included speaking to the executive chairs of five research councils – and 11 interviews with Department for Science, Innovation and Technology (DSIT) officials. Interviewees from within DSIT and UKRI, identified by senior staff from within their respective organisations, had responsibilities for individual processes or activities. We were given additional contacts from within these initial meetings for following up on specific audit areas. We also observed two peer review panels.

4 We set agendas for each interview based on our three key study questions and ancillary areas which needed clarification from our document reviews: does UKRI have a clear and reasonable strategy for its grants and loans portfolio; does UKRI have the right processes, data, governance mechanisms and culture to efficiently manage its grants and loans, support well-managed risk taking and to harness opportunities; and does UKRI have a culture of learning and improvement to disseminate its results, and an adequate understanding of how far its grants and loans are fulfilling their intended purpose?

5 We triangulated findings from interviews with UKRI and DSIT documents and published evidence.

6 We held seven meetings with officials from other parts of government involved in R&I grant funding and/or the implementation of R&I policy. We also met with individuals who had undertaken previous reviews of UKRI and other aspects of government support for R&I, and with 12 third parties with knowledge and experience of different aspects of government-funded R&I, including academics and industry representatives. We undertook 14 interviews with academia representatives and industry stakeholders. We then consulted four members of this group again at a later stage, drawing on their expertise and experience to test our key evidence and emerging issues.

Document review

7 We reviewed a range of internal and published documents to understand UKRI's strategy, priorities, processes, culture, and monitoring and evaluation activity. These included:

- UKRI's suite of corporate reports (strategy, strategic delivery plans, annual report and accounts, annual balanced scorecard, regular internal reports);
- correspondence between DSIT and UKRI about UKRI's objectives and budget, and UKRI's regular reporting to DSIT;
- documents about UKRI's internal processes, including grant management, risk management, funding assurance, and performance management;
- the results of UKRI's people survey and other surveys of UKRI staff;
- impact case studies and papers relating to UKRI's monitoring and evaluation activity;
- a range of research commissioned by UKRI to inform its future approach, such as on peer review and on the economic impact of research and development; and
- internal reporting on UKRI's modernisation programmes.

8 As part of the document review, we conducted an analysis of government strategies to provide an approximation of the range and number of government commitments UKRI supports. We undertook a desk-based review of policy papers hosted on gov.uk, published between January 2021 and December 2024, with references to UKRI and/or Innovate UK.

- The desk-based review included both a structured and unstructured review. The number of policy papers found is unlikely to be an exhaustive list.
- Across these policy papers, references to UKRI's role included as a partner to operationalise strategies at a national and local level; references to specific projects and programmes funded by UKRI that contribute to the strategy; UKRI's role in supporting talent, partnerships and knowledge exchange; and UKRI's role in improving access to funding.
- Some of the policy papers were published by multiple departments, therefore the sum of the number of policy papers published by departments is greater than the total number of policy papers (105).

Financial analysis

9 For paragraph 1.11, Figure 4 and paragraph 1.26, we used internal UKRI financial data consistent with the expenditure reported under "research and innovation" in UKRI's *Annual Report and Accounts 2023-24*, page 115. This spending comprises grants in the broad accounting sense. For Figure 4, we used judgment to aggregate the categories presented in Note 5.3 of the accounts and then split the resulting figures by the seven disciplinary research councils, Research England and Innovate UK. For paragraph 1.26, we used a more detailed breakdown of the same total to draw out categories of spend of particular interest for this study: Curiosity-driven research, and R&I targeted by UKRI at priorities set by the individual research councils.

Focus groups

10 Between November 2024 and January 2025, we conducted four online focus groups across seven research councils, Innovate UK, and UKRI. Our final sample of 14 participants consisted of 10 UKRI decision makers and four UKRI funding leads. Being a key decision maker was the primary criterion for inclusion in our sample. Given this criterion, and the variation in job titles and roles across councils, it was not feasible to select the sample ourselves. As a result, we asked UKRI to identify a minimum of two individuals per research council, Innovate UK and UKRI that met our primary sampling criterion of being a key decision maker who oversees, assesses and applies the risk appetite at the grant funding level. UKRI identified a total of 13 staff who were all members of the Strategy Committee within UKRI. To reach our final sample we asked people in this initial sample provided by UKRI to identify further colleagues who they felt met our criterion.

11 During the sessions, we explored several topics: the culture within UKRI and its support for well-managed risk taking and innovation; the organisation's risk appetite, risk management, and decision-making processes; and attitudes towards success and failure. We explored additional topics specific to the funding lead role with the four funding lead participants.

12 At the start of each focus group, we outlined what we meant by risk and culture for our discussions. Culture was defined as the values, beliefs, knowledge and understanding, shared by a group of people with a common purpose. For risk, we outlined that we were specifically interested in technical risk and intellectual risk, as opposed to risk of fraud, for example. We defined technical risk as the risk associated with the evolution of the design and the production of the system of interest affecting the level of performance necessary to meet the stakeholder expectations and technical requirements. Intellectual risk was defined as engaging in adaptive learning behaviours (sharing tentative ideas, asking questions, attempting to do and learn new things) that place the learner at risk of making mistakes or appearing less competent than others. We set out that the focus of the study was considering well-managed risk taking in the context of support for innovation. We analysed the focus groups by identifying key themes from each question and assessing these against the key study themes.

Follow-up survey

13 Between January and February 2025, we delivered a survey on the topic of UKRI's risk appetite and approach to risk in grants. The aim of the survey was to provide further clarity on issues raised during focus group discussions on decision-making responsibilities and UKRI attitudes to risk. At the start of the survey, we outlined that we were specifically interested in managing technical and intellectual risks related to funding decisions on research and innovation grants, which is opposed to other risks such as risk of fraud and project-management-related risks.

14 The survey sample (a total of 32 UKRI staff) was the same sample curated by UKRI for the focus groups in addition to other contacts provided during focus groups whose roles were deemed relevant to the topic (that is those identified by UKRI as key funding decision makers). A set of 14 multiple-choice survey questions were developed. The final survey link was tested internally by the team to check for clarity, sense and errors and then sent to the sample. Reminders were sent leading up to and until the deadline to improve response rates. The survey received a total of 22 responses, which included respondents from all research councils and Innovate UK. Due to the small sample of the survey, the results were not statistically analysed, but descriptive statements were used to support focus group findings.

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