UK Research and Innovation

Annual Report and Accounts 2021-22

HC 416

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Annual Report and Accounts 2021-22

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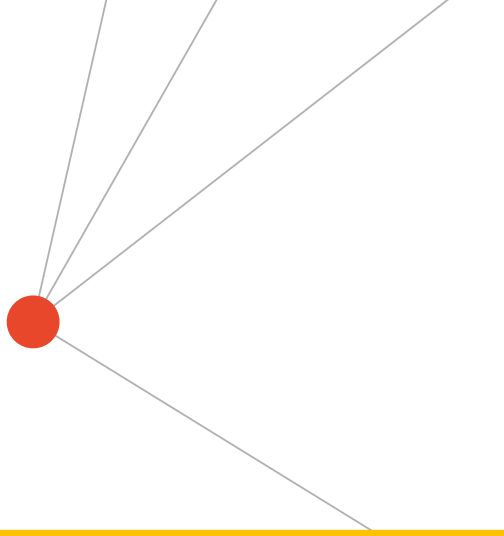

1. Introduction

Introduction by the Chair

Sir Andrew Mackenzie
Chair, UK Research and Innovation

As the Chair, I am delighted to introduce UK Research and Innovation's fourth Annual Report and Accounts.

2021-22 has been another remarkable year for UK Research and Innovation (UKRI). After only a year as Chair of UKRI I have simply scratched the surface of the landscape and the incredible people, infrastructures, discoveries, and interactions that UKRI supports across it. I have been particularly impressed by the organisation's ability to direct spend towards areas that are the most immediately pressing and productive for the UK's future while preserving commitments to the development of the skills the country requires for long term success. The willingness to embrace opportunities to further streamline our operations and to work across disciplines has also stood out to me as hugely valuable alongside the obvious hunger amongst staff and stakeholders to lift the social and economic impact of our work.

This past year has proven to me that UKRI has a critical role in powering an innovation led recovery and securing the UK as a science superpower. We have published our first 5-year strategy, and for the first time UKRI has a full 3-year financial allocation. The vision and ambition set out in our strategy captures this once in a generation opportunity to catalyse and harness our world-class research and innovation system. We will bring together the deep strengths and capabilities in all regions of the UK and, working alongside international partners, tackle complex challenges and improve lives at home and abroad.

I would especially like to recognise Ottoline Leyser for her outstanding leadership over the year. Her vision and work alongside UKRI's senior team has been fundamental in developing an ambitious strategy for UKRI. She has worked tirelessly to harness the talent and passion within UKRI and utilise it to deliver a shared vision for a world class research and innovation system and a world class organisation at the heart of it. I continue to be impressed by UKRI's resilience; its ability to learn and adapt. 2021-22 was no less challenging for our people than 2020-21, yet again they have proved they are our greatest asset as they have brought high levels of enthusiasm and dedication in often challenging circumstances to an astonishing range of exceptional work over the year.

We will continue to support our communities to increase their resilience and agility. We have done much over the past year to support the recovery from the impacts of COVID-19 and to mitigate the effects of the on-going uncertainty around the UK's association to Horizon Europe, and there remains much to do. We have also managed challenging cuts to our Official Development Assistance (ODA) budget, and I am proud of how UKRI has supported our communities, mitigating, where possible, these impacts.

We have started developing our new operating model to underpin the evolution of the organisation to ensure we realise the ambition within our strategy effectively and efficiently. We know there is much work still to do, and we welcome the independent review of UKRI led by Sir David Grant, and the forthcoming reviews of Research Bureaucracy led by Professor Adam Tickell and the Research, Development and Innovation Organisational Landscape (RDI Landscape Review) led by Sir Paul Nurse. We will use their valuable insights on the research and innovation system to help UKRI and the research and innovation system transform further and faster.

Finally, I would like to express my enormous thanks to those members of UKRI Board who stepped down this year: our outgoing Chair Sir John Kingman, Board members Sir Harpal Kumar, Fiona Driscoll and Vivienne Parry, observers Professor Dame Sally Davies and Professor Sir Ian Diamond. The contributions they have made to building and guiding UKRI over the past four years have been critical to UKRI's success and to its successful navigation of a number of complex challenges.

I would also like to welcome Professor Sir Ian Boyd, Dr John Fingleton, Professor Sir Anthony Finkelstein, Priya Guha, Nigel Toon, and Ruwan Weerasekera who joined the Board in 2021, and I look forward to working with them over the coming years. The future at UKRI has never been brighter as we deliver Government's ambitions for research and innovation and implement our strategy for a thriving, connected R&I system that allows people and ideas to flourish, realising economic and social impacts to the benefit of all.

Introduction by the CEO

Professor Dame Ottoline Leyser, Chief Executive, UKRI

This year again illustrates the exceptional strength of the UK's research and innovation system, working through numerous challenges to deliver extraordinary outcomes, addressing the challenges of today and of the future. Nowhere was this more clearly on show than at COP26. UKRI led the Science Day activities, celebrating an inspiring diversity of UK research and innovation needed to understand and tackle climate change. The events kicked off with a memorable voyage of NERC's new Research Ship, the Sir David Attenborough, up the Thames to Greenwich, with speeches from Sir David Attenborough and Sir Patrick Vallance highlighting the need for urgent action.

Another iconic new infrastructure investment that launched this year illustrating the power of collaboration was the James Webb Space Telescope, including the Mid-Infrared Instrument (MIRI) developed by a major international consortium including scientists from STFC's UK Astronomy Technology Centre and RAL Space, the University of Leicester, and Airbus UK. The unprecedented infrared resolution of the telescope will allow it to view objects older, further away and fainter than ever before.

The opportunities from exploiting cutting edge infrastructure shone through in the Research Excellence Framework, which concluded this year. The diversity, strength, depth and breadth of the UK's university research base was powerfully illustrated with world leading activity evidenced at 99% of the 157 universities assessed, right across the UK. The assessment covers research outputs, and their real-world impacts, illustrating the role of our university base in realising the UK's science superpower ambitions.

In July 2021, the Secretary of State for Business, Energy and Industrial Strategy launched the Government Innovation Strategy at the High Value Manufacturing Catapult (HVMC) in Sheffield. The Strategy sets out actions to make the UK the best place to start and grow an innovative business. The HVMC Catapult, supported through Innovate UK, has been instrumental in regeneration in the region, and is a great example of how public sector support for R&D can energise clusters through academic-industrial collaboration, and grow talent through a pioneering embedded apprenticeship programme.

I am proud of our continued response to COVID-19, where we have supported the national and international effort to understand, mitigate and recover from the effects of the pandemic on our lives and on the economy, from the safe reopening of schools and large public events, to understanding the impacts and causes of long-covid. I have also been inspired by the resilience of our communities, whom we have supported in navigating the many very difficult impacts of COVID-19. This comes on top of the reductions to our Official Development Assistance (ODA) budget, which this year presented further challenges.

We have also worked hard with our partners, including to manage and mitigate the delays over the UK's association to Horizon Europe, which continues to cause major difficulties for our research and innovation communities. We are delivering the government's guarantee to support successful Horizon Europe applicants and we are working to ensure we are ready in the event that our ambition to associate is not successful.

It is essential also that we recognise and accept responsibility for our mistakes, learn from them, and implement changes to improve. This year we took action in response to an independent investigation we commissioned into a bullying and harassment complaint. I am profoundly sorry that people have experienced this behaviour and I am grateful to those who took the difficult step of speaking up. Bullying is not tolerated at UKRI and we have worked hard to ensure that appropriate action has been taken. We are committed to continuing to improve our working culture, and fostering an open environment where such behaviours are prevented or identified and challenged when they first arise.

In July 2021, we welcomed Sir Andrew Mackenzie as the Chair of our Board, and I would like to express my deep gratitude and appreciation to him for everything he has done over the course of his first year as Chair, for UKRI and for me. I would like to echo his thanks to our outgoing Board Members for their immense contribution to the success of UK research and innovation. We also welcomed new members to our Executive senior leadership; Indro Mukerjee joined as the new CEO of Innovate UK, Professor John Iredale as interim Executive Chair for MRC, and Chris Ball as interim Chief People Officer. They further strengthen our senior leadership team as we continue to build an effective, efficient and collaborative culture across UKRI.

I am delighted to have led the organisation in the development of our first 5-year the strategy: 'UKRI Strategy 2022-27: transforming tomorrow together'. Underpinned by four principles for change – diversity, connectivity, resilience and engagement - it highlights UKRI's key role in delivering the government's ambitions for the UK as a global leader in research and innovation, and the priorities set out in the Plan for Growth, R&D Roadmap, Innovation Strategy, the R&D People and Culture Strategy, Integrated Review, and Levelling Up White Paper. Our first strategy is a significant milestone for us, and has been a collaborative, pan-UKRI endeavour. I have enjoyed working with colleagues across the organisation, and with our many stakeholders to bring it together, and I look forward to continued collective working to deliver it.

Combined with a full 3-year budget allocation we are, for the first time, in a position to plan and deliver over a longer time horizon. A suite of Council Strategic Delivery Plans and our Corporate Plan will be published in 2022-23, as well as cross-cutting strategic documents on our International work, Public Engagement, and Equality Diversity and Inclusion. Together with our Strategy they will provide further details on how we will deliver our vision for an outstanding research and innovation system in the UK that provides everyone with the opportunity to contribute and to benefit, enriching lives locally, nationally and globally.

Our staff have been incredibly adaptive and effective since the creation of UKRI in 2018, through all the challenges of COVID-19, and I would like to express my sincere thanks to them. We continue to evolve through our developing new operating model to realise the full benefits of the creation of UKRI, supported by the advice of the independent review of UKRI and the forthcoming reviews of Research Bureaucracy and the Research, Development and Innovation Organisational Landscape. We are looking forward to making UKRI an even more efficient, effective and agile world-class organisation, serving our diverse stakeholders across the UK and beyond.

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2. Performance Report

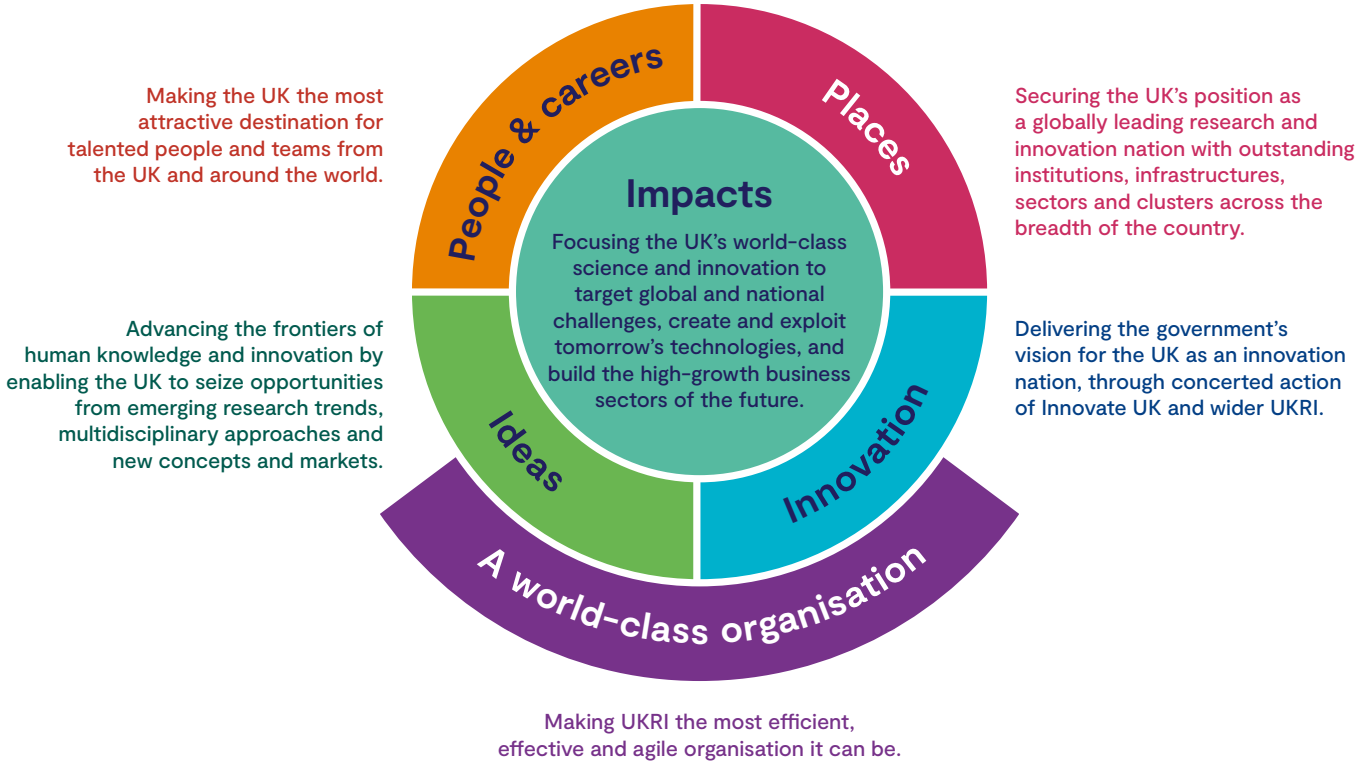
The **Performance overview** section provides a summary of our performance, our finances, our response to challenges over the year, including COVID-19 and EU Exit, and how we manage key risks.

The **Performance Analysis** describes in more detail how we have delivered over the year. Each section includes the relevant ambitions we set in our Corporate Plan and describes UKRI's progress against them.

Performance Overview

About us

UKRI is the UK's largest public funder of research and innovation. We invest more than £8 billion annually to advance our understanding of people and the world around us and deliver benefits for society, the economy and the environment. Working in partnership, we support a full spectrum of research and innovation capitalising on the UK's extraordinary talent to put the UK at the forefront of solutions to national and global challenges. In 2022 we published our first 5-year strategy, Transforming Tomorrow Together, spanning 2022-2027, structured around six objectives. These objectives will ensure the UK has the people, institutions, infrastructures and partnerships to be a global science superpower with the world's most innovative economy, attracting globally mobile business and talent.



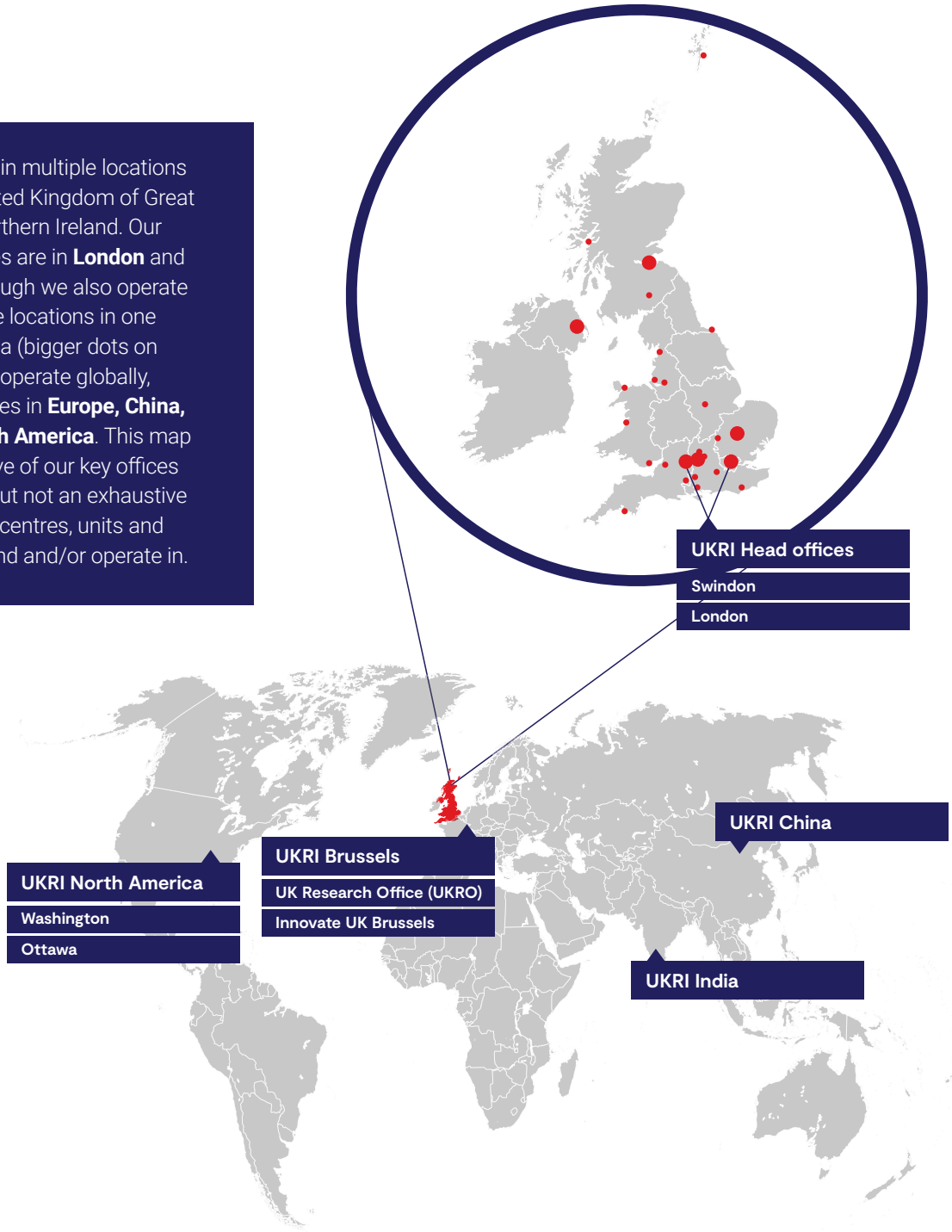
UKRI comprises the UK's innovation agency, Innovate UK, the seven disciplinary Research Councils and Research England, which is responsible for supporting research and knowledge exchange at higher education institutions in England. Through our nine councils, and the critical national capabilities provided by our centres, units and institutes, we deliver, support and champion the creativity and vibrancy of research and innovation in the UK. Our structure enables us to maximise the value of what we deliver, harnessing expertise, supporting cross-disciplinary collaboration and building capability from a whole-system perspective. For more detail on our councils see the Council Highlights on page 58.

How we are governed

UKRI is a non-departmental public body of the Department for Business, Energy and Industrial Strategy (BEIS). The UKRI Board is our primary governing body. It oversees and directs our activities, including delivery of our strategy. The Board provides updates and advice to the BEIS Secretary of State. It is supported by three committees: the Nominations and Remuneration Committee, Board Investment Committee, and the Audit, Risk, Assurance and Performance Committee.

We seek to be a responsible organisation in the activities, research and innovation we fund, and in how we inspire, lead and engage our staff, our partners and our communities. Our four principles for change – diversity, connectivity, resilience, and engagement - are fundamental to how we work as an organisation and will help to create the conditions for the UK's research and innovation system to flourish.

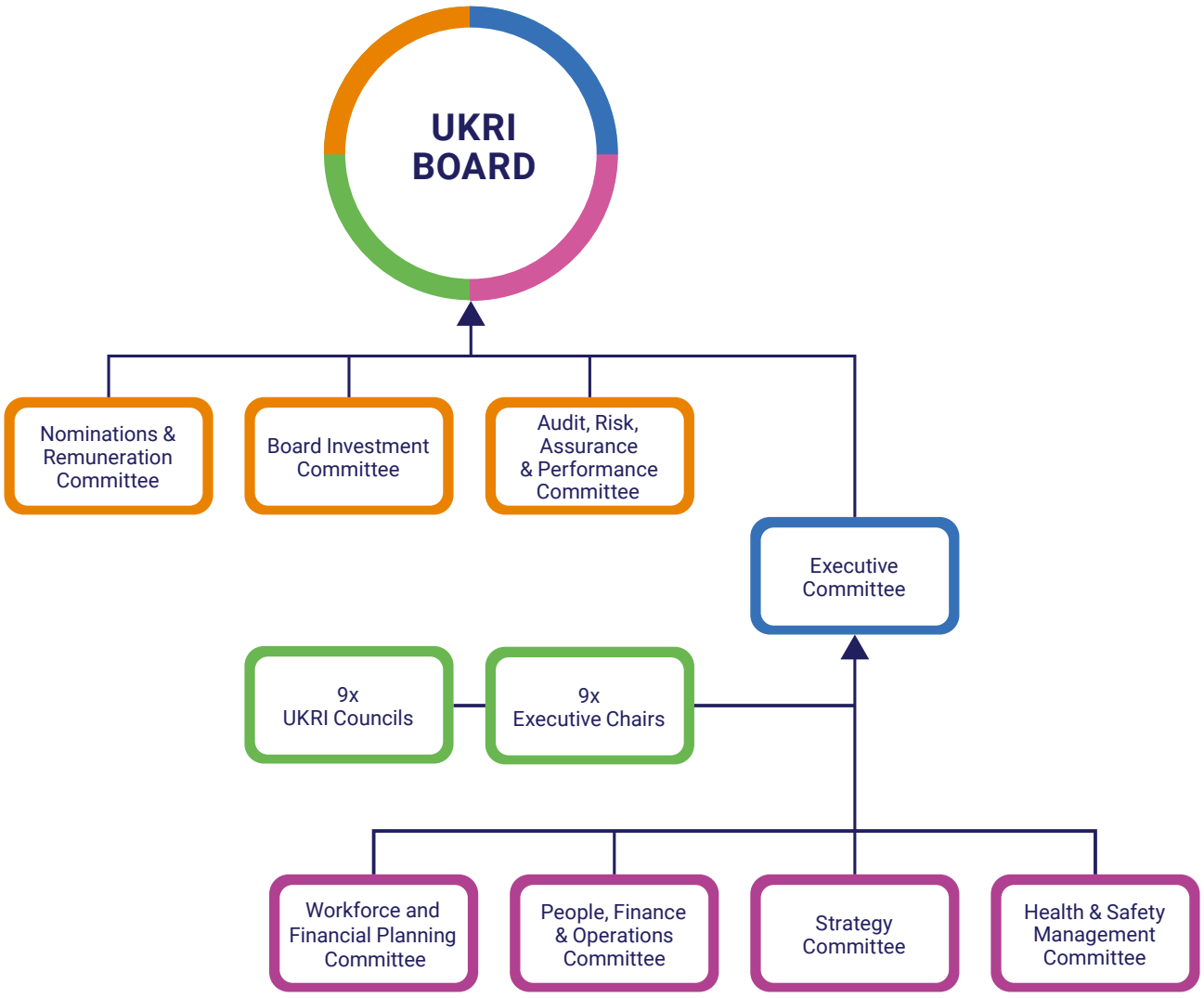
UKRI operates in multiple locations across the United Kingdom of Great Britain and Northern Ireland. Our UK Head offices are in **London** and **Swindon**, although we also operate across multiple locations in one geographic area (bigger dots on map). We also operate globally, with main offices in **Europe, China, India** and **North America**. This map is representative of our key offices and facilities, but not an exhaustive overview of all centres, units and facilities we fund and/or operate in.



How we are organised

Our Executive Committee provides strategic advice to the Board and is responsible for delivering the Board's vision by overseeing the organisation's overall performance and delivery. The Executive Committee is supported by the Strategy Committee; the People, Finance and Operations Committee; the Health and Safety Management Committee; and the Workforce and Financial Planning Committee. The Workforce and Financial Planning Committee has been established on a short-term basis to address the specific requirements arising from the review of the effectiveness and efficiency of UKRI.

Each of our nine councils is led by an Executive Chair advised by a Council comprising a majority of external members. Our nine councils work with their research and innovation communities and wider stakeholders to develop and implement delivery plans that contribute to our strategic objectives. Through their combined domain expertise, they collectively allow us to capture the synergies needed to steward a thriving research and innovation system. Further details of our governing bodies can be found in our governance statement on page 96.



How we know if we are successful

Our 2021-22 Annual Report and Accounts sets out the progress we have made against our vision, mission and priorities as laid out in our 2020-21 Corporate Plan.

Spending Review 2020 provided a single year funding settlement for all parts of UKRI for 2021-22, except for our core research budget which received a three-year settlement, providing longer-term assurance on core investments. As agreed with our sponsor department BEIS, we operated on the basis of our delegations issued in 2020-21. This has limited our ability to make substantial changes to the balance of our funding given the long-term nature of research and innovation investment.

In our Corporate Plan we committed to measuring our performance against four perspectives, based on a balanced scorecard approached that we have piloted over the year. The performance management framework enables us to judge our success and to manage our performance to maximise our impact and to deliver robust accountability.

Underpinned by a series of performance questions and measures, the four perspectives describe the areas across which UKRI must perform and 12 corporate objectives enable us to judge our success against delivering our vision robustly and transparently in 2021-22. We use these perspectives to report on our progress in the Performance Analysis section..

We will continue to evolve and test the performance management framework to improve our performance reporting including alignment with our five year strategy, and our new operating model and actions in response to the independent review of UKRI and reviews of Research Bureaucracy and the Research, Development and Innovation Organisational Landscape.

What we achieve for our stakeholders	OUTCOMES & IMPACTS	1a: Improving understanding of ourselves and the world around us 1b: Improving lives and increasing prosperity 1c: Addressing industrial and societal challenges (including COVID-19)
How our stakeholders experience us	OUR COMMUNITIES & PARTNERS	2a: Being a trusted steward and champion of the R&I system 2b: Supporting and developing a strong, diverse and inclusive R&I culture and environment 2c: Shaping an R&I system that gives everyone the opportunity to engage, contribute and to benefit
What we must excel at	OUR ORGANISATIONAL STRUCTURES & PROCESSES	3a: Identifying, incentivising and supporting people and their ideas across the UK 3b: Convening and catalysing ground-breaking R&I on a national and international scale 3c: Investing in and conducting R&I responsibly and effectively
How we learn and create value	OUR RESOURCES, LEARNING & GROWTH	4a: Increasing the efficiency of our processes 4b: Becoming a more evidence-based organisation 4c: Attracting, supporting and empowering our staff

Performance Summary

Teams across UKRI have worked together to meet the commitments in our 2020-21 Corporate Plan and deliver government priorities. We aim to make the most of key opportunities, such as the COP26 summit. Here we celebrated the breadth and diversity of our communities and the vital contribution researchers and innovators are making towards climate action, creating sustainable and resilient solutions and encouraging new behaviours and new ways of living that could enable the UK to reach net zero by 2050. We have collaborated with partners across the UK to harness opportunities for research and innovation-led economic growth and social benefit. We have also taken steps to ensure UKRI is as effective and efficient as possible, to deliver our ambition of being a world-class organisation.

This year we published our 5-year strategy: UKRI Strategy 2022-2027, Transforming tomorrow together. This strategy combined with our 3-year settlement provides us with clear objectives and priorities to deliver over a longer time horizon and to drive change across the research and innovation system to ensure it is fit for the future. We will implement our strategy through our councils' Strategic Delivery Plans and our Corporate Plan, as well as cross-cutting strategic documents, for example, on our international work and public engagement.

Key Achievements of 2021–22

- We supported world-leading research and innovation, discovering new knowledge and capabilities that drive economic, social and cultural benefit locally, nationally and globally, maintaining the UK research base's world-leading status as evidenced through field-weighted citation impact*, a position the UK has held since 2007.
- We invested in the development and exploitation of transformative technologies to maintain and grow the UK's competitive advantage in areas such as AI, quantum computing and engineering biology.
- We invigorated UK businesses, inspiring, involving and investing to help them grow and attract private investment through Innovate UK's Plan for action for UK business innovation.
- We have driven economic prosperity in all parts of the UK, through investment in world class people, businesses and ideas across key growth sectors, such as space and creative industries, and supporting over 3,400 new and existing partnerships across the UK.
- We supported world-leading universities and research institutes to deliver vital discovery research and innovation and grow our national capabilities. The latest Research Excellence Framework (REF 2021) saw a UK-wide assessment of university research covering 157 UK universities and over 76,000 academic staff, highlighting the diverse and rich ways that UK research is benefitting society.
- We delivered a highly successful COP26 programme highlighting the UK's role in climate action and celebrating UK research and innovation, at national and international levels.
- We worked with partners to maintain over 2,850 existing international partnerships across 150 countries in challenging circumstances, including refocusing Official Development Assistance (ODA) within a reduced budget, and supporting through the uncertainty around UK's association to Horizon Europe.
- We funded research and innovation across all disciplines and sectors as part of the UK's ongoing response to tackling COVID-19 funding the people and projects that make a real difference to lives and livelihoods and nurturing the evidence base and innovation needed to boost global recovery.
- We attracted, retained, and developed leading businesses and talent to help make the UK a science and technology superpower, enriching the research and innovation base through our doctoral training and fellowship programmes, Global Talent Visas and Innovate UK's Catapults and Knowledge Transfer Partnerships.
- We improved what we do and how we do it, streamlining how our communities engage with us through a single unified website, and on our harmonised digital funding platform. We have also agreed targets to reduce our operational expenditure over the next 3 years delivering even better value for the UK taxpayer.

Assessed

24,000+

funding applications

Made

5,497

new awards,
which included

Over

£900m

co-investment

From over

5,000

R&I project partners, over half in the private sector

Supported

3,375

organisations across our active portfolio

Of which

2,928

are businesses

Including

2,650

small and medium-size enterprises

* International comparison of the UK research base, 2022: accompanying note (publishing.service.gov.uk)

Our R&I investment award portfolio metrics for 2021-22 are published here: https://www.ukri.org/what-we-offer/what-we-have-funded/

Accelerating innovation in UK businesses

Innovation is the lifeblood of business. Businesses that invest in innovation have higher growth, higher productivity and export more, driving economic growth, new jobs and better living standards.

Building the future economy: Plan for action for UK business innovation 2021-2025, published this year by Innovate UK, is a key part of delivering the Government's Innovation Strategy. The Plan's five themes are underpinned by six strong foundations, describing how, working with partners across the UK innovation ecosystem, we will inspire, involve and invest to implement our Plan for Action, aiming to realise the Government's vision for the UK to be a global hub for innovation by 2035. The Plan for action outlines how we help innovative businesses to grow across all stages of the innovation lifecycle, enabling new products, processes and services to be developed and commercialised.

Early-stage funding: Getting ideas off the ground

Inspired by sneaker design, Koalaa makes soft, affordable and cool prosthetics.

Support from Innovate UK's Sustainable Innovation Fund allowed the London-based start-up to develop more sustainable prosthetics and to innovatively adapt their designs for patients who had recently undergone amputations, potentially offering wearers almost 60% functionality from very early on in their prosthetics journey, something never available before.

Miro-E by Consequential Robotics' is a new generation of social robots, with prototypes being used to understand how they could advance education. Funding from Innovate UK's Sustainable Innovation Fund helped the company, based in London, Bristol and Sheffield, develop their MiRo-E cloud-based program that can be used for free in any classroom, helping children of all ages develop essential coding skills to prepare them for the jobs of the future.

Entrust smart microgrids seamlessly switch between solar power, battery and the grid. Funding from Innovate UK allowed Entrust, based at Lancaster University, to develop a real-world demonstrator of their EnSmart Electric Vehicle (EV) technology, to show how the microgrid concept can help consumers of the future by balancing out the demands our developing EV infrastructure places on the electricity grid.

Scale-up to commercialisation

The Battery Electric Truck Trial (BETT) achieved rapid commercialisation using Small Business Research Initiative (SBRI) funding from Innovate UK, and in partnership with the Department for Transport and Leyland DAF. The trial has delivered 20 electric trucks, now entering day-to-day operations in public sector fleets including the National Health Service (NHS) and Local Authorities.

mOm Incubators is helping decrease infant mortality through their unique portable and collapsible neonatal incubator, providing an accessible and flexible solution for medical staff. Innovate UK's funding allowed the company to scale up their development, performing a usability study to gather data and detailed feedback to improve the performance of the incubator, enabling testing in a clinical setting for the first time.

Supported by UKRI through the Industrial Strategy Challenge Fund, Urban-Air Port were able to scale up from concept to commercialisation in two years. Their vertiport development in Coventry, designed to support sustainable urban air transport such as air taxis and autonomous delivery drones, is believed to be a world first.

Image credits - Getty image

Building connectivity, capability and talent

Deep Planet, an agri-tech startup that was born out of the vision of scientists and engineers from Oxford University, is now expanding in South Australia after benefitting from participation in an Australia-focused Global Business Innovation Programme, delivered by Innovate UK EDGE. The programme, helped Deep Planet to build extensive networks and gain market entry for their VineSignal tool, which uses AI, satellite imagery and IoT sensor data to enable winemakers and growers to make better farming decisions.

Innovate UK-supported Young Innovators met with the Science Minister to discuss how the government and the private sector can encourage more tech innovators. Attendees included the founders of Gwaan, a motivational fitness app that uses AI technology to gamify workouts, and UnifiQ, which is developing a video game with a social purpose, to enhance STEM learning for young people, and female players in particular.

MRC, BBSRC and LifeArc launched an £18 million network of Innovation Hubs for Gene Therapies to provide academics access to the materials, facilities and expertise required to progress gene therapy into clinical trials, with potential to transform care for millions of patients including those with rare and life-threatening genetic diseases.

Later stage funding and onward investment

Gloucestershire-based LatchAid, founded by a Women in Innovation winner and current holder of an Innovate UK loan, has secured £1 million of equity investment to further commercialise the pioneering app. Latchaid utilises cutting-edge 3D technology to help women learn breastfeeding skills intuitively from 3D avatars, creates virtual support groups to connect mothers to peer-to-peer support network, and an AI-powered virtual supporter chatbot, providing mothers with personalised expertise and companionship.

Maze Theory, London-based virtual studio using AI to make game characters more lifelike and responsive, used an Innovation Continuity Loan during the COVID-19 pandemic, allowing them to remain innovating and commercialising. They expect to release their new game, Peaky Blinders: A King's Ransom, in 2022 and double their staff count in the next 2-3 years, increasing from 12 at the start of the pandemic, to 65.

Agrisound, a York-based start-up established by Young Innovators award winner Dr Casey Woodward, benefited from participating in Innovate UK EDGE Pitchfest as part of our growth support and is in the process of raising £1.5 million in equity funding at a £3.5 million pre-money valuation to support the commercial roll-out of their sensor technology monitors insects using proprietary technological developments and cutting-edge algorithms.

Tackling a global pandemic

Our investments were pivotal in supporting the UK's response to COVID-19. UKRI supported work across every discipline and sector which has saved lives and livelihoods and helped to understand the many impacts of the pandemic. Over 2021-22 our contributions included:

Responding to the pandemic

Supporting one of the largest studies in the world into vaccination of immunocompromised patients, the OCTAVE study. Funded by UKRI, the study showed that some patients with impaired immune systems have a low or absent antibody response after receiving two doses of COVID-19 vaccine, helping shape vaccination policy.

Supporting research to better understand and address the longer-term effects of COVID-19 on physical and mental health, including £5.4 million funding from UKRI enabling the expansion of Imperial College's REACT programme to study long COVID-19.

The RECOVERY trial has now identified four lifesaving treatments. The trial, enabled by £18 million funding from UKRI and the National Institute for Health and Care Research (NIHR), has changed clinical practice worldwide and been credited with saving hundreds of thousands, if not millions, of lives.

Supporting Recovery

Minimising the risks of COVID-19 transmission as large events restarted in the UK, measuring air quality at a number of test events including the 2021 FA Cup Final and BRIT Awards through the AIRBODS project, a consortium led by Loughborough University supported by £1.3 million funding from EPSRC.

Supporting UK schools to use CO_2 monitors supplied as part of the Department for Education's £25 million rollout by establishing the www.CoSchools.org.uk platform to deliver 'tools for healthy schools' through the CO-TRACE project, led by University of Cambridge, Imperial College and University of Surrey and supported by £2.3 million funding from EPSRC.

Investigating the long-term effects of lung inflammation and scarring from COVID-19 through the on-going UKILD-Long COVID study, supported by £2 million funding from MRC. This national study aims to develop treatment strategies and prevent disability.

Image credits - ©Adam Gasson
Owned photograph from shoot at Quadram Institute

Connecting and convening expertise

Launching a new Global Research and Innovation Network for coronaviruses, co-funded by Defra and BBSRC, drawing together the major global research and industry players working on veterinary and human coronaviruses with the aim to compare, contrast and advance the understanding of coronaviruses.

Researchers at the Newton Fund-backed Brazil-UK CADDE centre have been central to the pandemic response. The project team were the first to identify the COVID-19 P.1/ Gamma variant of concern in Manaus and tracked the evolution of this new, more aggressive lineage.

Supporting a National Virology Consortium (G2P-UK) through £2.5 million MRC funding, to address phenotypic consequences of SARS-CoV-2 genomic variation, which has been central in the government's response to Omicron.

Engaging audiences and sharing insights

Sharing stories of the UK's continuing recovery from COVID-19, compiling a catalogue of 49 example real life impacts from across our UKRI-wide rapid response portfolio. This formed a basis for a raft of communications activity, including tailored emails to MPs, highlighting the people and projects working in local areas that are making a difference in tackling the pandemic, and inspiring public audiences through our creative COVID-19 content.

Consolidating, communicating and amplifying the early research findings of 77 projects in AHRC's COVID-19 portfolio. Coordinated by a team at Exeter University, Pandemic and Beyond established a significant media campaign over 2021, including a series of podcasts, blogs and films, as well as impact and policy workshops and the P&B team collaborated with Culture Commons to ensure research findings reach the widest audience possible.

The ESRC-supported Institute of Fiscal Studies was the authoritative voice for the public and media on the economic effects of the pandemic. For more on their work visit: https://ifs.org.uk/coronavirus.

COP 26 & UKRI

UKRI played a substantial role in the UN's COP26 conference, held in Glasgow in November 2021, highlighting how we have invested in cutting-edge research and innovation for more than 50 years to understand, tackle, and mitigate the effects of climate change and embed evidence in decision-making and climate policy.

We raised awareness of how research and innovation across all disciplines supports the drive towards Net Zero, demonstrating how communities are coming together to create sustainable climate change solutions and encourage new ways of living.

UKRI and partners were present in the COP26 Green Zone throughout the summit, contributing to discussions and key activities across both this and the UN-managed Blue Zone official zone. Our investments contributed to the success of the Science Pavilion within the UK Pavilion, all-in-all supporting 34 events and engaged over 900 people.

We took the lead role in shaping 'Science and Innovation Day' during the second week of COP working closely with GO-Science, Government CSAs, and the COP Unit to frame the day and celebrate science and innovation's significant contribution to COP26 ambitions and success.

We showcased the work of our communities and partners. Over 100 UKRI-funded centres, investments, academics and businesses showcased work at COP26, and over 1500 UKRI experts, collaborators and partners contributed to global discussions over the course of the year.

Over the 12 days during the COP summit, UKRI was involved in over 40 activities, 100 collaborations, and over 100 virtual collaborations and events. We hosted 8 public exhibitions in the Green Zone on the role of research and innovation in tackling climate change, attracting over 30,000 visitors.

We supported Government in developing the Science and Innovation Day at COP26, which provided a platform for a range of initiatives and announcements, and featured examples of UKRI-supported research and innovation and UKRI-funded artwork.

A COP26 policy session co-organised by UKRI and Science Europe explored how lessons learnt from tackling the COVID-19 pandemic can facilitate progress in addressing the global climate crisis, with 167 participants from across 22 countries around the world.

UKRI supported the UK's first significant exhibition on carbon capture and storage. Our Future Planet opened at the Science Museum in May 2021 and will remain open until September 2022. It helps visitors understand the cutting-edge technologies and solutions being developed to remove carbon dioxide from the atmosphere, to help mitigate the worst effects of climate change.

We engaged new audiences, including through Green Thinking, a series of 26 podcasts developed by AHRC and BBC Radio 3 featuring fresh informal conversations with some of the UK's leading researchers and experts. As part of the Engaging Young People with Climate Research programme, UKRI and AHRC funded 15 projects across the UK which encouraged 14 to 18-year-olds to engage with and contribute to important climate research.

Image credits - pexels-drone-trotter-6678097
Stock imagery for UKRI's COP26/climate change communications.



Image credits - UKRI at COP26

Our COP26 communications and engagement campaign covered the seven months leading up to the conference as well as the event itself. We wanted to create a sense of celebration and positive action and demonstrate UKRI's role as a critical part of delivering climate change solutions while inspiring and engaging with individuals to play their part in this global challenge.

COP26-focused media opinion pieces by UKRI spokespeople, including articles by UKRI's CEO, collectively reached over 13 million readers.

Over 1,200 broadcast, press, and online stories referencing UKRI's specific role in connection with COP26; collectively these reached an audience of over 500,000.

Our COP26 Virtual Event Site gained 72,430 visits – six times the amount anticipated - supporting 140 livestreamed events and presenting 235 pieces of created/ curated content.

Content on UKRI's 'Responding to Climate Change' web hub was received 10,392 page views.

1025 posts, over 25,000 views and 3.75 million impressions were created on UKRI social media channels, including 8,148 engagements during COP26 itself.

220 people registered for UKRI's Net Zero Parliamentary Event, with 147 attending the event itself.

30 new public engagement programmes delivered by UKRI teams targeted young people and underrepresented groups.

Internally there were 1,600 views of our intranet COP26 content and 4,301 'opens' of COP26- dedicated edition of *The Stream* newsletter.

Financial Overview

UKRI's expenditure is reported on two different bases in this Annual Report and Accounts:

1. The Consolidated Statement of Comprehensive Net Expenditure (page 142) presents net expenditure of £8.5 billion for the UKRI Group. The expenditure is calculated following accounting standards and guidance which are explained in more detail in Note 1 to the financial statements and on a similar basis to those rules applied by organisations internationally.
2. The Outturn against Budget is £8.8 billion. These figures are calculated in accordance with HM Treasury's budgeting framework. The figures used in this Annual Report have been prepared on this basis. There is a difference between these two bases primarily due to additions to Property, Plant and Equipment of £269 million that are capitalised, rather than being in the Statement of Comprehensive Net Expenditure, but which have a budgetary impact.

Table 1: Outturn against budget 2021-22

UKRI 2021-22 Budget Allocation	Full year Outturn £m	Full Year Budget £m	Variance to Outturn £m	UKRI Variance to outturn %
Core Research	4,936.3	4,946.2	9.9	0.2%
Science Infrastructure	895.1	831	(64.1)	(7.7%)
Strategic Programmes, formerly NPIF	1,270	1,230	(40.0)	(3.2%)
Innovation funding	637.2	635	(2.2)	(0.3%)
HE Teaching Grant Contribution	47	47	0.0	0.0%
Corporate Funding (ESA10 Administration)	140.6	152.5	11.9	7.8%
Core Capital Allocation	**7,926.2**	**7,841.7**	**(84.5)**	**(1.1%)**
ODA	131.9	143.4	11.5	8.0%
BEIS Managed Programmes	378	407.7	29.7	7.3%
Horizon Europe Guarantee	5.9	20	14.1	70.6%
Ringfenced Capital Allocation	**515.8**	**571.1**	**55.3**	9.7%
Grand Total Capital Allocation	**8442.0**	**8412.8**	**(29.2)**	**(0.3%)**
Innovation Loans	62.3	74	11.7	15.8%
Other Financial Transactions	(20.3)	(8)	12.3	153.2%
Ring-fenced Resource Budget	203.5	201.5	(2)	(1.0%)
Annually Managed Expenditure	131.5	201.1	69.6	7.2%
Total Allocation	**8,819.0**	**8,881.4**	**62.4**	**0.7%**

The table above provides a summary of UKRI's outturn against budget. UKRI has a financial management target to deliver an outturn that is within 1% of its capital allocation.

The table above includes £245 million of spend within Core Research, where UKRI increased expenditure by rephasing Research England Quality Research block-grant payments to Higher Education Institutions across the academic year such that they fell into the 2021-22 financial year. This included £108 million of BEIS funding.

If this £108 million is removed from outturn numbers, UKRI have reported an underspend of £23.6 million against the Core Capital allocation (0.3% variance), and £78.9 million (0.9% variance) against its total capital allocation, both within the target set.

UKRI continued COVID-19 interventions initiated in 2020-21, and activity to support the sector following EU Exit. In line with reporting requirements, please see the COVID-19 and EU Exit sections that follow for a specific overview of our financial performance in these areas.

The table below sets out our outturn since 2018-2019.

Table 2: Outturn since 2018-19

UKRI Allocation Headings	Full year Outturn 2021-22 £m	Full year Outturn 2020-21 £m	Full year Outturn 2019-20 £m	Full year Outturn 2018-19 £m
Core Research	4,936.3	4911.7	4,381.4	4,368.2
Science Infrastructure	895.1	1246.6	912.6	1,040.4
Strategic Programmes, formerly NPIF	1,270	1360.2	1,106.9	607.9
Innovation funding	637.2	537.3	487.8	563.5
HE Teaching Grant Contribution	47	57.6	57.7	57.7
Corporate Funding (ESA10 Administration)	140.6	117.8	102.5	111.1
Core Capital Allocation	**7,926.2**	**8,231.2**	**7,048.9**	**6,748.8**
ODA	131.9	387.6	347.5	301.9
BEIS Managed Programmes	378	294.9	268.2	268.7
Horizon Europe Guarantee	5.9	-	-	-
Corporation Tax (Asset Transfer Liability)	-	-	-	143.3
Ringfenced Capital Allocation	**515.8**	**682.5**	**615.7**	**713.9**
Grand Total Capital Allocation	**8,442.0**	**8,913.7**	**7,664.6**	**7,462.7**
Innovation Loans	62.3	37.7	23.7	15.8
Other Financial Transactions	(20.3)	(3.0)	(17.5)	(18.0)
Ring-fenced Resource Budget	203.5	192.6	190.0	233.2
Annually Managed Expenditure	131.5	23.6	87.9	(36.9)
Total Allocation	**8,819.0**	**9,164.6**	**7,948.7**	**7,656.8**

The Core Research outturn remained broadly in line between 2020-21 and 2021-22.

The science infrastructure ringfence grew in 2020-21 from 2019-20 due to a single-year increase in World Class Labs expenditure of £293 million designed to support the sector during the COVID-19 pandemic. In 2021-22 Science Infrastructure spending returned to 2019-20 levels.

In 2021-22 the National Productivity Investment Fund (NPIF) was renamed Strategic Programmes. It had previously been growing year on year due to the growth of new programmes including the Industrial Strategy Challenge Fund (ISCF); however, in 2021-22 a number of ISCF programmes ended as planned leading to a decline in spend.

Between 2019-20 and 2020-21 the admin outturn increased due to the direct recognition of the £24.5 million UKSBS service charge in UKRI's budgets for the first time. Admin increased further in 2021-22 due to the £25 million costs of UKRI's Transformation activity being reported for the first time under this category.

Innovation spend increased by £100 million; primarily as a result of £97 million expenditure on COVID-19 grants offered under business support schemes by Innovate UK; this was funded from Core research in the prior year.

Expenditure on Managed Programmes increased in 2020-21 and 2021-22 primarily due additional COVID-19 funding awarded to Innovate UK by the Vaccines Task Force. In 2021-22, included within this line is £20 million of new funding to support medical research charities and new funding of £17 million and £8 million for the Low Cost Nuclear and Industrial Energy Transformation Funds, respectively.

In addition, following the introduction of Innovation Continuity Loans as part of our COVID-19 response, Innovate UK loans outflow increased as an additional £75 million in repayable instruments was committed in 2020-21 with drawdowns continuing through 2021-22.

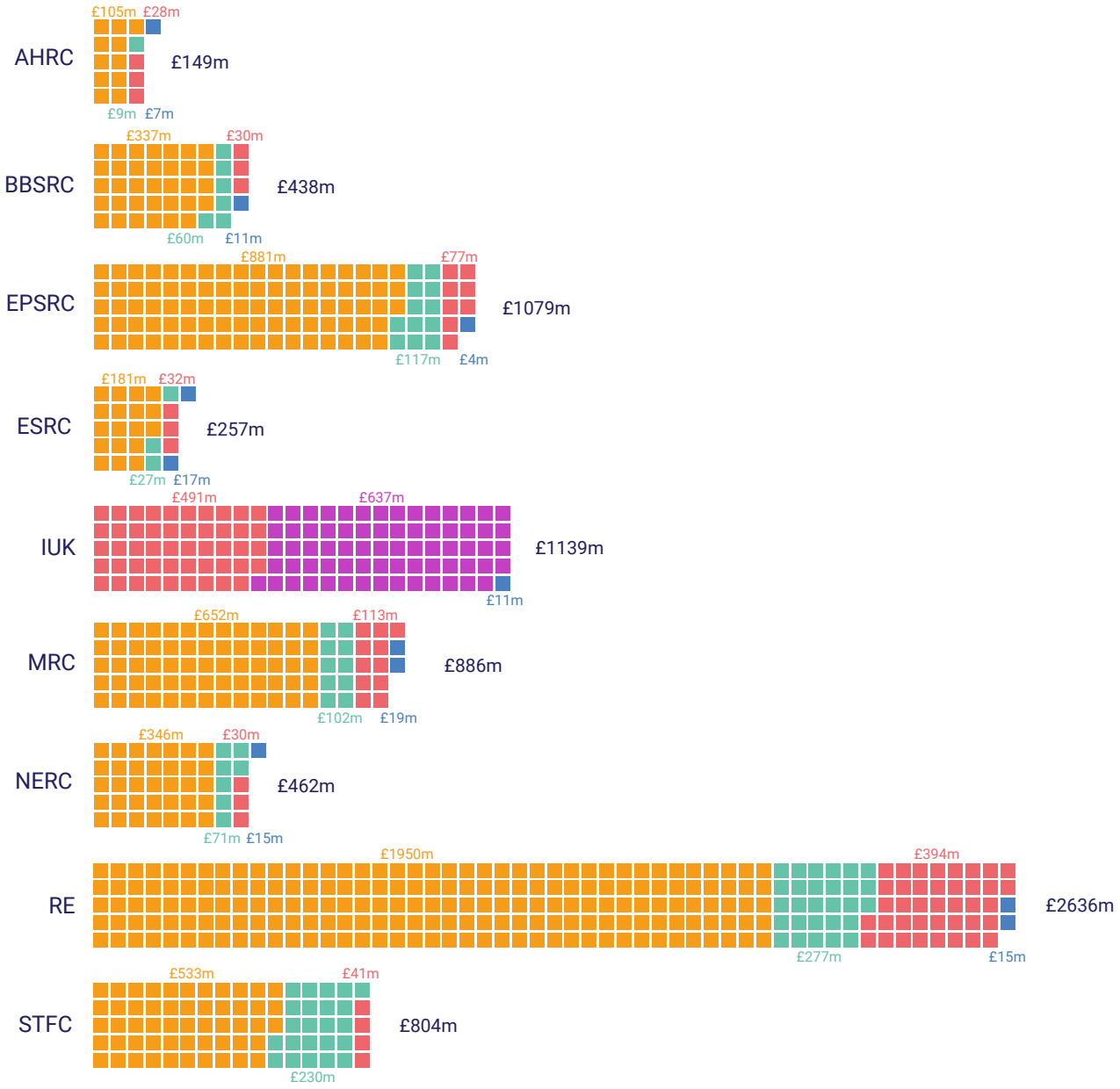
ODA expenditure decreased by £256 million following a significant reduction in funding for programmes as a result of COVID-19 and its impact on the UK economy announced in March 2021.

The amount recognised for Corporation Tax (Asset Transfer Liability) payments was a one-off charge arising from the transfer of assets from UKRI's predecessor entities to UKRI on its formation. Annual Managed Expenditure includes ongoing Corporation Tax charges recognised by UKRI and its subsidiaries.

Full detail on changes in UKRI's Consolidated Statement of Financial Position in 2021-22 is contained in the Financial Statements and notes at pages 147-187. Explanations for year-on-year variances in balances can be found in the notes to the financial statements.

UKRI Councils' Investment 2021-22

This chart sets out UKRI's budget outturn in 2021-22. The figures exclude administrative spend across the Corporate Hub and Councils, Corporation Tax, depreciation and amortisation costs and Annually Managed Expenditure. We recently published a summary of our budget allocations 2022-23 – 2024-25.



Budgets have been rounded to nearest £10m to represent in squares, with the exception of non-zero spend lower than £5m, which is represented as one square.

Infrastructure
Capital investment in research and innovation infrastructure within UKRI and research organisations, including equipment, data, facilities and technology.

Innovate UK programmes
Supporting businesses to improve productivity and growth by realising the potential of new technologies and developing new commercial ideas.

ODA
Research and development activities within the scope of Official Development Assistance as defined by the Organisation for Economic Co-operation and Development, including the Global Challenges Research Fund and Newton Fund.

Strategic Programmes
Programmes within scope of the cross-Government National Productivity Investment Fund, established to increase capital spending for areas critical for improving UK productivity, including the Industrial Strategy Challenge Fund and Strategic Priorities Fund.

R & D
Funding for research and innovation awards, research facility running costs, fostering international collaboration, supporting postgraduate training, public engagement, knowledge transfer, and other core research activities.

Risk summary

Risk

Effective risk management is essential to enabling us to deliver against our vision and mission. Our goal, through early identification and active management of risks, is to ensure that we can anticipate any impacts to the delivery of our identified priorities, plan mitigations, and more effectively manage issues should they arise. As a steward of the research and innovation system, we are responsible for looking inward, and outward, to ensure that we identify key risks that have an impact across the system. We continue to monitor how these risks change throughout the year.

Risk Appetite

We recognise as an organisation that we must take risks to achieve our objectives, and to manage this we developed a risk appetite statement in June 2020. This is undergoing a refresh this year, taking account of internal and external influencing factors. The appetite statement translates risks into escalation levels, with risks above appetite requiring escalation and a mitigation plan.

Risk Management Framework

As part of our governance, UKRI operates a risk management framework within which risks are owned at the lowest level of authority able to direct resources to address them. Risks are managed locally within councils, Institutes and Programmes through their existing governance structures, with support from the Risk and Assurance team.

Currently there are a total of 1,286 risks recorded in registers across UKRI, which are managed and escalated following standard governance structures and using the risk appetite statement. The principal risks to UKRI, managed by the Executive Committee and reported to the Board, are recorded on the Corporate Risk Register and categorised using three high-level themes – Strategic, Operational and Programme.

Strategic
Ensuring UKRI is in a position to inform and deliver the Government's long-term priorities for research and innovation, maintaining the UK's position as a world leader.

Operational
Ensuring that day-to-day operations are effective and efficient.

Programme
Ensuring our major programmes/projects are managed effectively.

There are 21 risks on the register currently, with 7 sitting above appetite. These risks are reviewed by ExCo and ARAPC on a regular basis. The Committees will discuss the risks that are above appetite as well as the mitigating plans in place, to ensure we are taking appropriate action to reduce the risk within appetite.

The ten risks presented below are the seven Corporate risks above appetite and three new strategic risks. We are working to bring these within appetite as described in the table.

Some of these risks map to the significant issues presented in the Governance Statement but differ in their management. The risks look to mitigate incidents that may occur in future, whereas the Governance Statement summarises the way we managed significant issues as they arose during the year.

Strategic

Risk and mitigating actions	Appetite and direction

Hostile or unethical interference in UKRI supported activities by state actors

UKRI is required to respond in an appropriate way to the risks posed from hostile interference by state actors to UKRI's support to the UK research and innovation sector. A Trusted Research and Innovation Programme has been launched to implement guidance in this area across UKRI. As part of the programme, we have:

- Updated the standard UKRI Grant Terms and Conditions to provide greater protection and clarity around our expectations.
- Successfully piloted a risk-based grant application review protocol.
- Developed a Trusted Research and Innovation Framework. This internal document for UKRI staff outlines how UKRI will practically implement guidance by the Centre for the Protection of National Infrastructure. This guidance aims to help UKRI make informed decisions about international collaboration, protecting staff, researchers and academic values. It also sets out how UKRI will align to the requirements of the National Security and Investment Act 2021.

This risk is currently above appetite, with the score increasing in likelihood in the past year due to global affairs.

Implementation of UKRI Strategy

UKRI's first five-year Strategy – Transforming Tomorrow Together – was published in March 2022 and signals the start of an exciting new chapter for UKRI.

Through our new performance management framework, we will regularly assess our progress against our objectives and strategic ambitions. We will use this to recognise our impact and successes, to consider any actions required to adapt plans, and to inform future plans and investments, including our submission for the next Spending Review period.

This is a new risk, following the publication of the Strategy. It is currently within appetite and stable in score, to be monitored via performance reporting.

Demonstrating value for money and impact

Value for Money (VfM) and impact is at the heart of everything we do. This year, we have undertaken action to further mitigate the risk of not accurately demonstrating this value.

- We have a framework in place to ensure our evaluations adopt the latest, best practice methodologies for assessing impact and are consistent with the Magenta Book. This year, we have undertaken a number of important evaluations, including the first phase of our evaluation of UKRI's response to COVID-19.
- Our large spending proposals are underpinned by robust, Green Book-consistent VfM analysis captured in a detailed business case consistent with the public sector Five Case Model. Our business cases are scrutinised by the UKRI Investment Advisory Working Group, BEIS Project and Investment Committee and HMT to ensure clear evidence of VfM and societal impact.
- This year, we introduced new guidance to support a consistent, transparent assessment of VfM in grant proposals.
- We continue to capture the outputs, outcomes and impacts of their research and innovation activity, and the resulting data is published.

This is a new risk which is currently within appetite due to the robust processes and governance in place to demonstrate value for money and impact. The risk is stable in score and will be kept under review.

Operational

Risk and mitigating actions	Appetite and direction
Post Transition Subsidy Control	
In order to remain compliant with UK international trade obligations around subsidy control, UKRI has developed a suite of controls. An auditable record of compliance is kept for all schemes/competitions and legal advice has been sought where necessary on emerging Subsidy Control issues. Mitigations for this risk continue to be developed in conjunction with the UKRI Subsidy Control working group and BEIS Policy teams. The UK Subsidy Control Act has now received Royal assent and is expected to come into force in October 2022 – the IUK Subsidy Compliance team is currently working with BEIS to clarify some key areas and identify essential process/system changes to be made internally.	This risk is currently above appetite and has varied in score in the past year, recently increasing due to the impact of legal challenge remaining high and mitigating actions ongoing. 
Security Risk	
UKRI appointed a senior security adviser in September 2021 to oversee and develop security. A proportionate and risk-based approach is being taken to provide a safe and secure environment to enable research and innovation. An overarching security strategy is being developed, along with all existing policies and procedures being refreshed. In relation to cyber security, plans are under development for investment in proportionate security controls. A Cyber Security Vulnerability Review has been undertaken via an independent third party and we are implementing new Cabinet Office Vetting requirements.	The score for this risk is currently above appetite, with comprehensive action plans under consideration. It has increased over the past year due to the threat landscape evolving and the requirement to further develop our security controls. 
Staff Capability and Capacity	
UKRI is continuing to develop its Employee Value Proposition to ensure it is best placed to attract, develop and retain the highest quality staff. We have developed a framework to enable the identification of critical and key roles and are working with BEIS on a pay flexibility case which will be designed to target the scientific, technical and professional groups experiencing the most acute attraction and retention pressures. In addition, we continue to expand and improve our early careers offer including apprenticeships, graduate and placement schemes to help build our talent pipeline for the future. A new monthly cycle for Workforce Planning has been introduced which sets out the process to monitor and maintain our people data, as well as help us better understand our workforce profile. This will inform our longer term, strategic workforce plan which will meet the needs of our new Operating Model. UKRI HR will deliver the specific people-related outcomes required by our organisational change programmes, improving HR capability with clear plans, deliverables, measures and objectives that align with organisational priorities and enable UKRI to deliver our strategy.	This risk is currently above appetite, with action plans in place focused on making changes to pay and career structures. The risk has increased in score in the past year as a result of OpEx constraints and increased pressure in terms of pay for science, technology, engineering and maths roles. 
Executive Chair Recruitment	
UKRI has a number of senior roles that fall within the ministerial appointments process. We continue to build closer relationships with government stakeholders to improve timeliness of the process, reduce potential for delays and obviate rerunning of campaigns. UKRI are committed to ensuring not only a fair and open recruitment process, but one that looks far and wide for the best talent. UKRI HR has built internal capacity and capability to deliver high quality recruitment and to substantially limit its reliance on external search consultancies.	This is a new risk this year, currently above appetite, with action plans in place to improve existing processes through relationship building with government stakeholders. 

Programme

Risk and mitigating actions	Appetite and direction
Ensuring UKRI is Efficient and Effective	
This risk encapsulates the current requirement for UKRI to make significant efficiencies in the coming years whilst still remaining operationally effective. A new UKRI-wide Operating model framework is under development to achieve part of these efficiencies in the way that we operate, aligned with our allocations process. A new system to support our HR, Finance and Procurement processes is being implemented, having passed the final business case sign off and selecting a provider through a rigorous tender process. A new funding platform is in development as part of the Simpler and Better Funding Programme, which will transform the way both applicants and UKRI process grant applications and the Reforming our Business portfolio is to be re-organised to allow UKRI to focus on those business changes which drive efficiency and maintain effectiveness.	This is a new risk, originated from two separate programme risks, now brought together to cover UKRI's efficiency and effectiveness as a whole. The risk is likely to remain above appetite until later into the 2023-24 financial year. As the programmes being used to deliver the efficiency begin to mature and more milestones are reached it is likely the risk will reduce in score to a more acceptable level. 
Horizon Europe delivery of guarantee, interims and alternatives	
UKRI has received two commissions relating to the operation of the guarantee and the design of short term alternatives, known as transitional measures, should the UK not be able to associate to Horizon Europe. To oversee that work UKRI has created a Horizon Europe Strategy Board bringing together all the relevant strategy, policy and international functions and chaired by International Champion Christopher Smith, and a Transitions and Guarantee Board to deliver the two commissions so far.	This risk is currently above appetite with the UKRI Horizon Europe Transitions and Guarantee Board leading on the preparation of contingency plans. This risk has increased in score in the last year, as delays to association continue. 
Infrastructure for UK research and innovation	
At CSR 2020, UKRI received a multi-year settlement for the first time in our history. As a result, for infrastructure we will have a multi-year settlement for 2022-23 to 2024-25 which includes funding for the UKRI Digital Research Infrastructure Programme focusing on driving higher utilisation and efficiency, environmental sustainability and accessibility. It also includes funding for our world class labs programme to support and maintain the research infrastructure base across the UK and improve physical estate lifecycle maintenance, as well as funding for UKRI's Infrastructure Fund for projects that will deliver a step change in capability in research and innovation across the disciplinary spectrum.	This risk, within appetite following the settlement, has remained stable in score this year. 

Performance Analysis

Reporting against our Corporate Plan commitments and priorities for 2021-22

In our 2020-21 Corporate Plan we set out our commitments towards delivering our vision and how we would measure ourselves against the objectives of our four performance perspectives:

Our Corporate objectives		To achieve them we committed to:	
Our Outcomes and Impacts	■ Improving our understanding of ourselves and the world around us. ■ Improving lives and increasing prosperity. ■ Addressing industrial and societal challenges.	■ Invest in the best ideas and discoveries. ■ Transform the way we maximise the impacts from research. ■ Provide critical support as part of the national response to COVID-19.
Our Communities and Partners	■ Being a trusted steward and champion of the R&I system. ■ Supporting and developing a strong, diverse and inclusive R&I culture and environment. ■ Shaping an R&I system that gives everyone the opportunity to engage, contribute and to benefit.	■ Enable a dynamic, diverse and inclusive system of research and innovation. ■ Build assurances for openness and integrity into the research system. ■ Strengthen networks across the research and innovation landscape. ■ Stabilise the system.
Our Organisational Structures and Processes	■ Identifying, incentivising and supporting people and their ideas across the UK. ■ Convening and catalysing all types of ground-breaking R&I on a national and international scale. ■ Investing in and conducting R&I responsibly and effectively.	■ Invest in the best people and infrastructure. ■ Apply a place-based lens to what we do. ■ Connect international communities. ■ Continue to support and provide funding to centres, units and facilities to support excellent research and innovation.
Our Learning, Resources and Growth	■ Increasing the efficiency of our processes. ■ Becoming a more evidence-based organisation. ■ Attracting, supporting and empowering our staff.	■ Improve what we do and how we do it. ■ Simplify and improve our business processes. ■ Build an organisational culture and environment that enables us to recruit, include and support the best and diverse talent.

In the sections below we describe how we have progressed against the commitments aligned to each perspective, using data, narrative and case studies or examples.

Our Outcomes and Impacts

We aim to deliver a dynamic aligned portfolio of investments spanning the full breadth of the UK's research and innovation system with our investments generating new knowledge and understanding, addressing major national and global challenges, and contributing towards economical and societal benefit to support economic growth and improve lives.

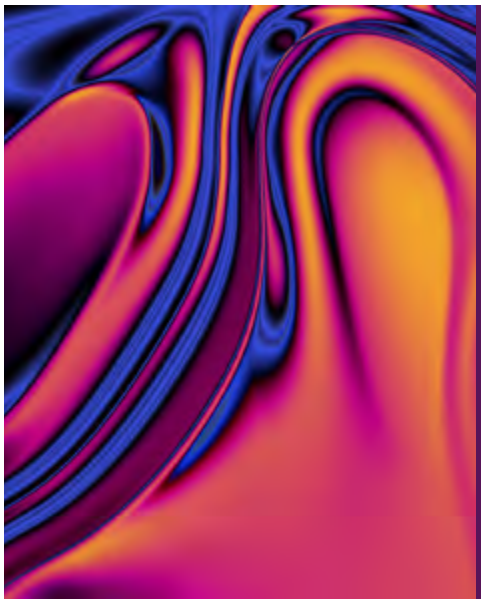
Investing in the best ideas and discoveries

Our diverse portfolio of investments leverages expertise across all disciplines and sectors, supporting outstanding ideas and discoveries to improve understanding of ourselves and the world around us.

We monitor the outputs of our investments as an indicator of how they are contributing to these aims, and evaluations of large programmes and case studies illustrate the ways we have contributed to outcomes and impacts.

This year:

- we evaluated the outcomes and impacts of our large grants and programmes. Independently led evaluations highlighted that:
  - Innovate UK's Artificial Intelligence investments incentivised further R&D activity. The study estimated that more than 1,100 jobs can be attributed to Innovate UK's support, and estimated the additional R&D spending and VC investment raised per £1 of Innovate UK funding was £2.94 and £1.21, respectively.
  - the research carried out at the UK's national synchrotron Diamond Light Source since 2007 has had an impact worth nearly £2 billion. The scientific, technological, societal and economic benefits of the research carried out at Diamond come as a result of the £1.2 billion invested in the facility to date.
- awards starting in 2021 have already generated over 4,000 journal, book and other types of publications. This is in line with previous years' data, for within year publication and is expected to increase markedly in future years. For example, awards started in 2017 generated more than 14,000 publications in 2021 and have produced over 69,000 in total.
- our various case studies illustrate some of the ways we have invested in world class ideas, people and places to generate benefit for society.



Driving and securing UK's strategic advantage in critical capabilities

The UK is a world leader in fluid dynamics research, the science and engineering of flows of any sort, whether liquids, gases or plasmas. This research plays a critical role in numerous sectors, for example, air flows around various forms of transportation, blood or liquid flows in healthcare and liquid and gas flows in the energy sector.

Fluid Dynamics is now a £13.9 billion UK industry, employing more than 45,000 people in 2,200 companies. UKRI has invested over £2.3 billion in research relevant to fluid dynamics over the last 10 years to underpin and grow this industry. An independent assessment undertaken this year has recognised the critical role of investments by EPSRC, BBSRC, MRC, NERC and STFC in transforming the strength and breadth of fluid dynamics in the UK

Image credits – Getty Images

Investing in innovative technologies to improve lives

Physics researcher Dr. Shakardokht Jafari founded TRUEinvivo and developed a transformative radiation detector that improves cancer survival rates and gives cancer patients a better quality of life during treatment. The device safely tracks where and how much radiation the patient receives from inside the body, allowing improvements to be made for the next rounds of cancer treatment. The technology has recently secured a patent and is currently in use in partnership with hospitals as part of pre-clinical trial work. Funding from Innovate UK's Sustainable Innovation Fund supported the commercialisation of the technology.

Image credits – Getty Images

Building life sciences capabilities in the North West of England

In its first 15 months The Infection Innovation Consortium (iiCON) has created 176 new high-value jobs across the North West, invested £9.4 million in local capacity and workforce development, and supported 11 new products to market, with a further 16 in the development pipeline.

iiCON has developed collaborative partnerships with over 186 UK SMEs and start-ups alongside projects with global industry giants including Pfizer and Unilever. Based in the North West of England and led by Liverpool School of Tropical Medicine, the consortium was established through £18.6 million support from UKRI's Strength in Places Fund and has raised an additional £154.9 million in public and private investment, creating a £173.5 million programme.

Image credits - Ruth Cobban, Liverpool School of Tropical Medicine & Getty images

Transforming the way we maximise the impacts from research

By connecting academic, business, policy and investor communities, we are promoting new ways of working and collaborating, and increasing the ways in which our activities and investments create diverse high-quality jobs and economic growth and deliver impacts for society. This year we have:

- helped forge stronger collaborations between industry, academia and the public sector through the 23 challenge programmes of the Industrial Strategy Challenge Fund (ISCF), addressing the big societal challenges being faced by UK businesses today in areas including clean growth, ageing society, the future of mobility and artificial intelligence and data economy.
  - With £2.6 billion of public funding, ISCF has so far leveraged over £1.58 billion of co-investment from the private sector and other partners. The original co-investment target of £2.8 billion is likely to be exceeded and is forecast to be between £3.8 billion and £5.8 billion over the programme's life cycle.
  - The challenges are on track to enable the creation of up to 12,700 jobs by 2027, the retention of over 7,500 jobs, and an estimated additional cumulative revenue of £1.7 billion.
- improved our understanding of how organisations access support from across UKRI and the British Business Bank, working in partnership on a joint data-sharing and analytic project, to better design future opportunities.
- supported institutions to develop and deliver a wide range of impact activities through our Impact Acceleration Accounts (IAA), awarding £117 million over three years to support critical early-stage translation of research to real impacts that transform public services, create new jobs, attract private investment and forge new partnerships with business and charities.
- supported new spinouts. Data reported in 2021-22 show awards starting between 2017-2021 have now generated 1,027 new spinouts. Comparing rolling 5-year tranches of awards, this is an increase from 973 reported in 2020-21 for awards starting between 2016-20 and 881 in 2019-20 for awards starting between 2015-19.
- showcased the work of some of our communities in EPSRC's Spin out success stories, STFC's From Knowledge to Impact: STFC Impact Acceleration Account and BBSRC's Impact Showcase.

Supporting innovators to accelerate the impact of their ideas

ViridiCO2, a highly ambitious start up that spun out from the University of Southampton, has developed an innovative technology that can efficiently and sustainably capture and convert CO_2 into chemical intermediates, such as those used in the production of chemical products. ViridiCO2 CEO, Dr Daniel Stewart, was an EPSRC-funded PhD, who went on to receive EPSRC Impact Acceleration Account funding. Daniel also had funding from Innovate UK's ICURe scheme.

Image credits – ViridiCO2

Developing regional impact from environmental science

The Regional Impact from Science of the Environment (RISE), delivered by NERC, enables research organisations to develop ambitious, long-lasting and inclusive partnerships that maximise research and innovation's contribution to local growth and opportunity. The initiative supported four programmes in Yorkshire, London, West Midlands and the South West regions worth £17 million, which between them have secured over £62 million in additional investment. The programmes each bring together a wide range of local organisations, spanning businesses, public sector bodies, charities, community and citizens groups to deliver high impact and focused research translation and innovation in environmental science.

Image credits – Getty Images

Growing the bioeconomy in the North of England

The THYME project aims to build on world-class bioeconomy regional assets, capitalising on a major opportunity to drive increased productivity of companies operating in the fast-growing bioeconomy across Yorkshire, Humberside and the Tees Valley. The THYME Project will establish a new and highly innovative collaboration, attracting trade and inward investment into sustainable bio-based industries and our HEIs. THYME is part of a multi-million investment package to drive university commercialisation across the country through Research England's Connecting Capability Fund (CCF).

Image credits – Getty Images

Providing critical support as part of the national response to COVID-19

UKRI-supported research and innovation continues to play an important role in the UK's response to and recovery from the pandemic. We continued to build connectivity and catalyse the flow of new knowledge and ideas this year:

- the UKRI funded JUNIPER (Joint Universities Pandemic and Epidemiological Research) consortium of researchers across eight UK universities provided predictions, forecasts and insights for the Scientific Advisory Group for Emergencies (SAGE), advising UK Government on matters relating to the UK's pandemic response.
- funding from our UKRI agile call for the Decision Maker Panel enabled surveys of businesses through the pandemic which informed decisions on the timing of the furlough scheme changes and interest rate rises.
- data from the Understanding Society COVID-19 module enabled key models estimating the effects of government interventions such as the probability of economic effects of COVID-19 on poorer households.
- we linked policy professionals and analysts across government to research outcomes, to enable better policy decisions, through 10 "Actionable insights" seminars, organised with the Government Social Research Profession (GSR). Drawing on ESRC's COVID-19 research portfolio, the virtual seminars linked hundreds of attendees across 15 ministerial departments, 9 non-ministerial departments, and dozens of other agencies and bodies.

More detail on our critical support for COVID-19 is captured in the Performance Overview section on page 20.

Our Communities and Partners

UKRI has a unique and critical role in supporting a creative and agile research and innovation system. We support diverse ideas, people, activities, and institutions and aim to build connectivity and break down silos across the system, nationally and internationally to drive economic, social, environmental, and cultural benefits for all citizens.

Enabling a dynamic, diverse and inclusive R&I system

UKRI support enables a broad range of talented people, teams and businesses to succeed in their R&I ambitions. We aim to connect the full spectrum of research and innovation to ensure that the UK continues to attract and retain globally mobile business and talent to create a global science superpower. To drive this ambition, over the last year, we:

- enabled a wider range of people to better demonstrate the breadth of their contributions in funding applications, piloting a narrative CV - Resume for Research and Innovation (R4RI) - and explored shared approaches to wider adoption.
- worked alongside the Cabinet Office and government departments on the GREAT Global Talent Campaign to promote the UK as a global research destination.
- enabled a globally mobile and dynamic system as an endorsing body for the Global Talent Visa (GTV), playing an instrumental role in delivering and developing the scheme, including:
  - processing 1127 GTV applications in 2021-22 (compared to 350 2020-21).
  - enabling research organisations outside of the public sector to host GTV holders.
  - increasing representation from across sectors on the GTV External Advisory Board.
- explored how inclusive design can improve research and innovation with our Future Leaders Fellows (FLFs), working with the Future Leaders Development Network. As well as a special interest session at the FLF annual conference and a subsequent roundtable, our support and resources enabled fellows to explore the benefits of inclusive design in the context of their own work as well as help shape UKRI's work in this area.
- published our draft Equality, Diversity and Inclusion (EDI) strategy for consultation. The nature of the topic and level of interest from stakeholders make this one of the largest and most significant public consultations undertaken by UKRI to date.
- initiated a pan-UKRI approach to our People, Culture and Talent (PC&T) portfolio, establishing a Change Board chaired by Professor Melanie Welham to drive forward our collective work to address under-representation, eliminate bias, and increase diversity to foster systems-thinking across our work.
- published detailed analysis of UKRI funding applicants' and awardees' ethnicity. While the data suggests that over time UKRI funding has been given to a more diverse range of people, the proportions of our awards and applications for some personal characteristics fall short of R&I system and national benchmarks. Across UKRI and within the R&I system, there are significant efforts underway to address under-representation, eliminate bias and increase diversity and inclusivity. We will continue to publish this data and support efforts within UKRI and across the R&I system to address the underlying causes of disproportionality.
- convened and chaired the cross-sector Forum for Tackling Bullying and Harassment, to share learning and knowledge of best practices across the R&I system.

Attracting and retaining the next wave of world-class research and innovation leaders

Our Future Leaders Fellowships (FLF) scheme has a proven track record of attracting and retaining research and innovation talent in the UK, with 43% of fellowships awarded to non-UK nationals. In 2021-22 three FLFs with experience of other countries' R&I systems, Ke Li, Muhammed Afolabi and Tom Gur, shared what had attracted them to the UK as part of the GREAT Global Talent Campaign.

Image credits – Getty Images

We are working to embed new approaches to communications, engagement and partnership, seeking to engage the broadest range of voices and helping to embed R&I in our society and economy. To enable this, over the last year we:

- showcased the breadth of roles and people that form the research and innovation system by launching 101 jobs that change the world, including video profiles and online chat sessions for schools to talk directly with the profiled people.

- recognised the achievements of Innovate UK's Women in Innovation Award winners, unveiling purple plaques in schools across the UK to inspire more young people into research and innovation.
- supported the public to work with researchers and identify the questions they want to ask by launching a new £1.5 million citizen science fund.
- used innovative online public dialogue to inform decisions about the future of NERC's healthy environment programme. Over 100 people from under-represented groups took part from across the country.
- investigated opportunities to support community involvement in research and innovation through scoping research with the Young Foundation and exploring community-led approaches to research with the British Science Association and The Social Innovation Partnership. These are informing the design of new community programmes which will launch in 2022.

Opening up public dialogue to improve policy and evidence

Early discussion of policy areas engaging members of the public with key scientists, pressure groups and other leaders in the field, enables more robust policy development, increasing confidence that the policy will be successfully implemented. In 2021-22 our flagship public dialogue programme, Sciencewise, enabled the public to influence policy decisions on issues as diverse as the future of food and small-scale nuclear reactors, and launched its report from an expert roundtable event on public engagement and climate adaptation.

Image credits – UKRI
ESRC Festival of Social Science Cardiff University reuse and repair workshop

Building assurances for openness and integrity into the research system

We work to support a research and innovation culture that is open and collaborative in which everyone can participate and from which everyone benefits. We aim to incentivise best practice across the system and are uniquely positioned to catalyse efforts to deliver this, working with our many partners nationally and globally. This year we:

- established the Trusted Research and Innovation Programme and successfully piloted risk-based grant application review protocols. We initiated a review of our funding terms and conditions, and reviewed ownership and significant control in the 17 sensitive areas of the economy in the National Security and Investment Act across our innovation portfolio, to identify and mitigate threats in the UK and internationally.
- increased the accessibility of UKRI-supported research and innovation findings through a new UKRI Open Access Policy, supporting our communities by publishing comprehensive guidance and resources and providing up to £46.7 million per year for institutions to implement the new policy.
- worked in partnership to establish the UK Committee on Research Integrity (UK CORI), which will work with UK Research Integrity Office and the signatories of the Concordat to Support Research Integrity to ensure the UK's research and innovation system has the right systems to support best practice in research integrity. The committee will be hosted by UKRI on behalf of the sector for its first three years.
- supported best practice in managing research and research misconduct allegations by updating the terms and conditions of our grant awards as set out in the updated UKRI policy on the Governance of Good Research Practice to improve clarity on individuals' and organisations' responsibilities.

Working in partnership to drive Open Research policy

Our new Open Access policy makes the findings from research and innovation more open to all. Throughout developing the policy, we worked closely in partnership to align approaches and reduce bureaucracy for research organisations. As a result, the National Institute for Health and Care Research (NIHR) announced an aligned policy in autumn 2021 and, working with the Devolved UK Higher Education funders, we established an agreement for commonality between the UKRI Open Access policy and any future research assessment policy.

Image credits – Getty Images

Strengthening networks across the research and innovation landscape

We work at interfaces between disciplines and sectors, connecting diverse knowledge and expertise, enabling the exchange of ideas, and building new partnerships that drive the translation of research ideas into outcomes that lead to real world impact and increased prosperity. This year our work to support this included:

- nurturing effective collaboration across Industrial Strategy Challenge Fund challenges, with three challenges - Healthy Ageing, Commercialising Quantum Technologies, and Transforming Foundation Industries - partnering on a series of combined Investor Partnership calls. We also engaged with new organisations, with 51% of business participants engaging with the ISCF being new partners for UKRI.
- bringing new skills and the latest academic thinking into businesses through Knowledge Transfer Partnerships. We invested £3.1 million through Innovate UK, supporting 317 projects and leveraging £2.4 million from business in cash contributions and £3.5 million from devolved administration contributions.
- our £242 million investment in the Catapult Network through Innovate UK has helped to underpin R&D activity in sectors affected by the pandemic and has enabled businesses to access the expertise and facilities needed to accelerate the economic recovery through, for example, accelerating digital technologies and access to secure remote connectivity.

Our portfolio of awards support new connections and networks across disciplines and sectors. Awards starting in 2021 have already reported more than 1,500 collaborations, spanning academic, private, charity, and public sectors.

Strengthening collaboration in the medical sector to revitalise drug discovery

The Psychiatry Consortium, convened and managed through the Medicines Discovery Catapult, is a £4 million international collaboration between seven global pharmaceutical companies and two leading medical research charities to support high-value drug discovery projects that address the unmet therapeutic needs of people living with mental health conditions, including psychiatric symptoms associated with dementia and depression.

Image credits – Getty Images

Driving green technologies to tackle climate change.

Research teams from across the UK are investigating the viability of five innovative methods for large-scale removal of greenhouse gasses from the air to understand their effectiveness, cost, and limitations at scale. The Greenhouse Gas Removal Demonstrators programme was made possible through a collaboration across UKRI, BEIS and the Department for Environment, Food and Rural Affairs (Defra). The £22.5 million investment forms part of the Strategic Priorities Fund.

Image credits – Getty Images

Demonstrating how to make our cities cleaner and less congested.

The Streetwise project, funded through the Industrial Strategy Challenge Fund, has proven the potential of using autonomous vehicles on public roads. Led by UK-based FiveAI, a specialist in computer vision and AI worked with experts from academia, industry and regulatory organisations to model and test in various scenarios, including weather and road obstacles, receiving glowing reviews.

FiveAI has grown from 13 to 130 employees, now focussed on commercialising the results of its work, and recently attracted $41 million in private investment.

Image credits – Getty Images

Stabilising the system

The long-term financial sustainability of the UK's research and innovation ecosystem is critical to maintaining our global leadership and leveraging our competitive advantage. In 2021-22 stabliising the system to mitigate the impact and challenges of COVID-19 has been key in supporting recovery and longer-term stability.

Working to support the stability and sustainability of the R&I system, this year we:

- supported our communities to mitigate the effects of COVID-19 through the costed grant extension allocation (£78.3 million) and extensions for doctoral training (£30.6 million).
- aided the UK innovation community in its response, resilience, and recovery to the global pandemic, providing £428 million to over 3,000 organisations as part of Innovate UK's COVID-19 response package. A further £160 million was allocated through payments brought forward to build resilience and maintain activity.
- launched a wider programme of work looking at the financial sustainability of the research system, focusing on some of the longer-term trends in how the system is funded and the financial risks associated with it, including those exposed during the pandemic, including:
  - providing an initial response to the review of the Transparent Approach to Costing (TRAC) through our membership of the Regulators and Funders Group.
  - initiating a review of the impacts of the full economic cost regime, with a focus on the pressures the funding approach may create for research organisations, as announced in the R&D People and Culture Strategy and at request of BEIS.
  - developing sector-wide understanding about how research funding flows through the UK research and innovation system. Working with the community, we have convened a sector-led group, the Financial Sustainability of Research Group (FSRG), to provide us with independent and evidence-based advice.

Understanding the effectiveness of measures to stabilise the R&I system

We are monitoring and evaluating the effectiveness of the interventions we put in place in response to COVID-19, including:

- With BEIS, commissioned RAND Europe and Vitae to undertake a formal process, impact and economic evaluation of UKRI and BEIS's interventions to stabilise the research system.
- Commissioned Vitae to perform a follow-up survey of the research workforce, tracking the impacts of the pandemic on researchers.
- Publishing reports on phase 1 and phase 2 of the doctoral training extensions, providing data and analysis on the extensions requested, awarded and the EDI characteristics of the students.
- A short survey of Universities on their research planning as they emerge from the pandemic.

Image credits – ESRC/UKRI

Shaping the future of research assessment as part of a sustainable R&I system

Throughout 2021-22 Research England managed the UK-wide Research Excellence Framework (REF) assessment of university research on behalf of all four higher education funding bodies. A large-scale review gathered evidence of attitudes to the REF in real time as institutions were preparing their submissions to the exercise and will inform thinking on future research assessment. The detailed results of the REF will be used by the four UK higher education funding bodies to allocate research funding to universities – around £2 billion per year from 2022-23. Research England and UKRI have externally commissioned evaluations to gain further insight from the wealth of information provided by Universities, which are due to be published later this year.

Image credits – UKRI

Our Organisational Structures and Processes

Our structures and processes ensure we invest our resources well, incentivising and supporting people and their ideas throughout the entire R&I system, and enabling connections, collaborations and partnerships.

Investing in the best people, ideas and infrastructure

We support the full range of research and innovation activity. Convening and catalysing in new and interesting ways to support an agile and creative research and innovation system.

This year we:

- consulted on the New Deal for Postgraduate Research. The New Deal aims to improve the experience and quality of postdoctoral research training in the UK.
- extended the flexibility UKRI's training grant holders have to support existing doctoral students as they respond to challenges arising from COVID-19 through reduced recruitment of new students over 2021-23.
- invested over £934 million in research and innovation infrastructure. This includes £33 million investment through the Infrastructure Fund which will enable us to evolve our long-term pipeline of research and innovation infrastructure investment priorities for the next 10 to 20 years.
- in 2021-22 we invested £33 million through the Infrastructure Fund and a further £17 million through the Digital Research Infrastructure Programme, representing the first portfolio of investments to come from UKRI's Infrastructure Roadmap programme to boost the UK's research and innovation capabilities. This is the first time UKRI has taken a long-term strategic approach to infrastructure across all research disciplines.

UKRI was established in 2018, we have supported more than 83,000 awards with a combined value of more than **£26 billion**

In 2021-22 we:

actively supported
3,375
organisations
(2020-21: 3,872)

of which
2,928
are businesses supported
(2020-21: 3,449)

including
2,650
small and medium-sized enterprises
(2020-21: 3,167)

supported a portfolio of
17,918
research and innovation awards (2020-21: 17,629)

supporting
60,285
individuals
(2020-21: 58,280)

including
2,010
fellowships
(2020-21: 1,815)

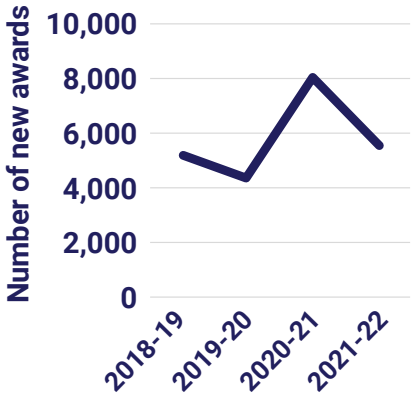
Data on our awards indicates that:

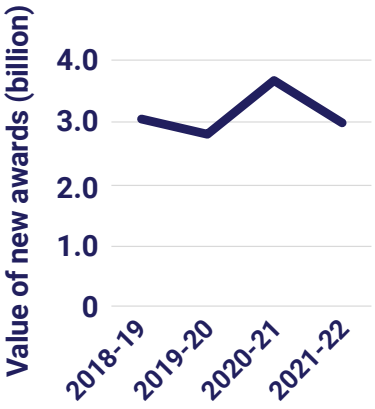
- the number of organisations actively supported by UKRI has decreased to 3,375 in 2021-22, from 3,872 in 2020-21. The decrease results from a number of short-term COVID-19 investments that ended in 2020-21, many supporting businesses.
- in 2018-19 the number of organisations actively supported by UKRI was 4,100, which has decreased over the period since to 3,375 in 2021-22. Innovate UK's investments support over 3,000 organisations and are the largest by number within UKRI's total portfolio. Changes to Innovate UK's competitions in 2018 and subsequently impacts of COVID-19 affected the rate of new awards, resulting in a difference between the number of awards starting and ending each year over this period.
- the number of individuals supported has continued to increase to 60,285 in 2021-22, from 58,280 in 2020-21, due to new awards made and extensions to existing awards in response to COVID-19 to ensure impacted individuals and projects were stabilised.
- of the 5,497 new awards in 2021-22, 79 were made through our COVID-19 response mechanisms. In 2020-21, UKRI made 4,668 new awards and an additional 3,381 awards through COVID-19 response mechanisms.
- the proportion of applications funded increased in 2021-22 to 23 percent, up from 21 percent in 2020-21, though still below the rate of previous years. In 2021-22 we funded 25 percent of the total value of applications received, which has decreased from decreased from 28 percent in 2018-19. In 2018-19 decisions were taken on 19,128 applications with a total value of £11.1 billion, compared to 23,568 applications with a total value of £11.4 billion in 2021-22.

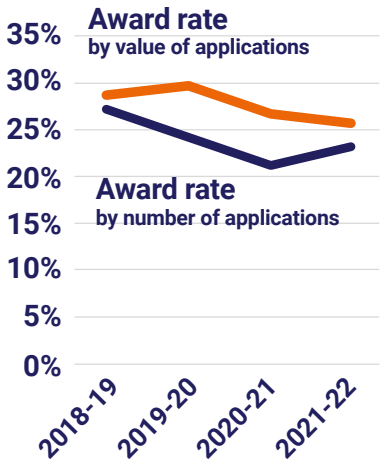
In 2021-22 we:

made **5,497** new awards

with an award rate of **23%**







* Data set: applications for competitive funding opportunities to Research Councils, Innovate UK, and Research England with funding decisions between 1st of April 2021 and 31st March 2022.

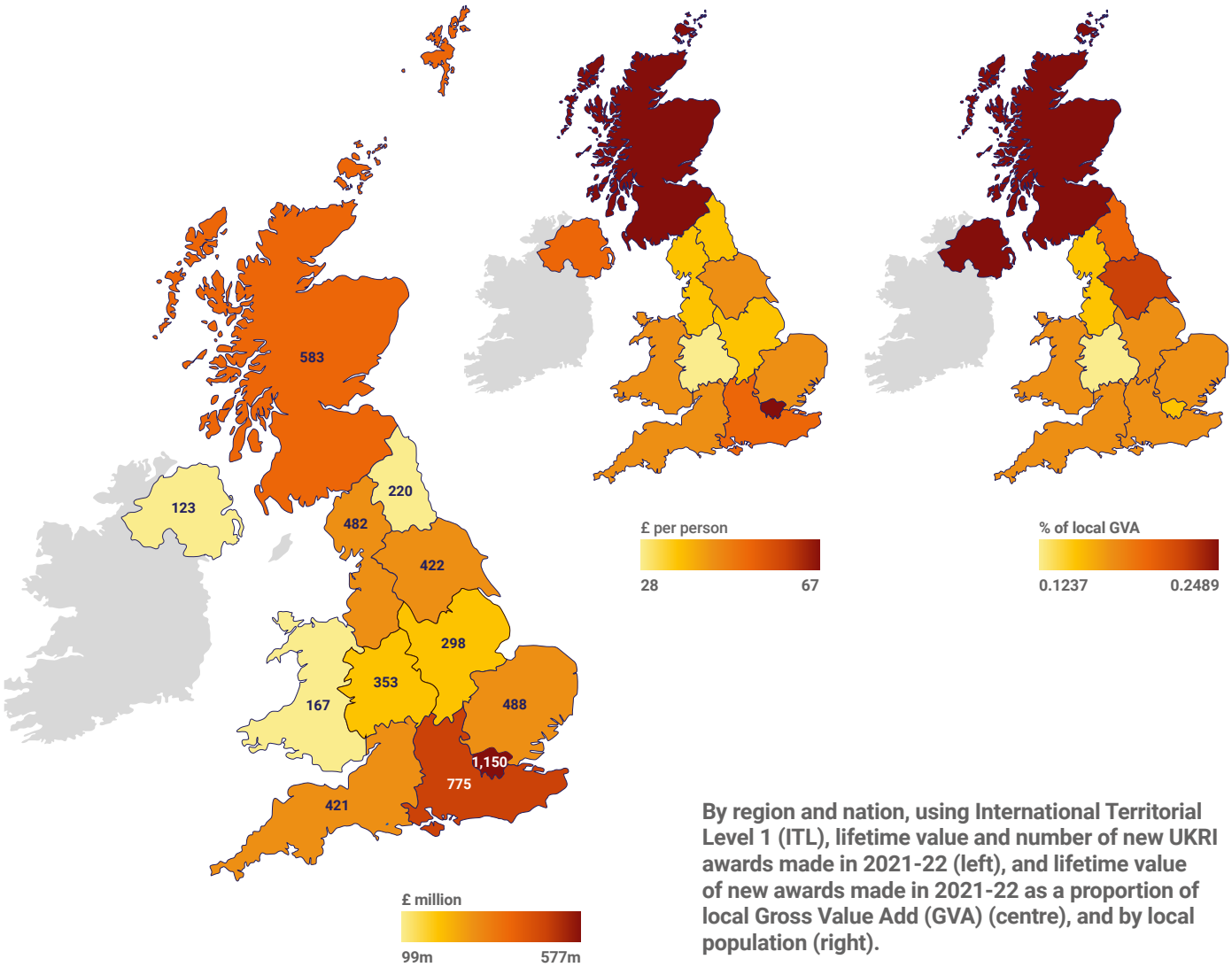
Applying a place-based lens to what we do

Research and innovation have the potential to play a central role in levelling up the UK. Working to progress national objectives, create high-value jobs and boost productivity, we have continued to work with partners across the country to identify opportunities for research and innovation-led growth.

We continue to join up the academic, business, policy and investor communities to make the UK the best place in the world to innovate and invest.

This year we:

- helped set out a compelling role for research and innovation within the Levelling-Up White Paper through close partnership working with BEIS.
- supported innovation-led regional economic growth, and enhanced local collaborations, including through the Strength in Places Fund (SIPF), delivered by Research England and Innovate UK in partnership with the Office for Students and the higher education funding bodies of Wales, Scotland and Northern Ireland, as well as through a range of UKRI programmes, including the Prosperity Partnerships delivered by EPSRC, NERC's RISE programme, Innovate UK's network of regional engagement managers, ESRC's Local Acceleration Fund, STFC's network of research infrastructures, and AHRC's Place Programme.



By region and nation, using International Territorial Level 1 (ITL), lifetime value and number of new UKRI awards made in 2021-22 (left), and lifetime value of new awards made in 2021-22 as a proportion of local Gross Value Add (GVA) (centre), and by local population (right).

- The dataset comprises awards made in 2021-22 through competitive funding opportunities by Research Councils, Innovate UK and Research England. The distribution of new awards is similar to 2020-21. Organisations in the London region received 21% of new awards, a decrease from 23.5% in 2020-21, with smaller changes across other regions.

The latest available data from the Office for National Statistics (ONS) was used for the GVA and population data as a way to contextualise the distribution of awards.

- A comprehensive overview of the geographical distribution of UKRI's spend in 2019-20 and 2020-21 has recently been published on our website.

Capitalising on local strengths to advance research and innovation

The Centre for the Analysis of Motion, Entertainment Research and Applications (CAMERA) at the University of Bath has state-of-the-art skills and facilities, putting it at the forefront of the UK's £116 billion creative industries sector. The CAMERA's capabilities are a unique asset for the sector, regionally and nationally and have benefitted more than 50 firms through access to its facilities and training. The EPSRC-supported centre is also a key partner in the MyWorld creative hub, a £30 million investment by the UKRI Strength In Places Fund (SIPF).

Image credits – UKRI

Connecting international communities

World leading research depends on connections and enduring international partnerships that help UK research and innovation thrive. We partner with other funders, seeking opportunities to coordinate and to leverage shared priorities for transformative change to make the UK a global science and technology superpower.

This year we have:

- enabled greater collaborations in key areas of research and innovation through new agreements with the Swiss National Science Foundation (SNSF) and the Japan Society for the Promotion of Science (JSPS), including the delivery of a UK-Japan Joint Call in the social sciences, arts and humanities disciplines to address challenges and opportunities associated with the COVID-19 pandemic.
- strengthened key bilateral and multilateral relationships through our UK teams and overseas offices including establishing a physical presence in Ottawa, Canada. Our presence here has supported the delivery of the UK-Canada Globalink PhD Exchange Mobility Scheme with Mitacs.
- supported a breadth of high-quality partnerships and impacts through the 12 Global Challenges Research Fund (GCRF) Hubs, bringing together 400 unique partner organisations in 85 countries and 550 researchers from a range of disciplines addressing 16 of the United Nations' Sustainable Development Goals. A formal review highlighted that the programme was delivering well and was considered to represent good value for money.
- fostered long-term research networks and collaborations through the Fund for International Collaboration (FIC), launching four new programmes this year. In total FIC has supported 419 collaborative research grants and 63 innovation projects as well as investments in research infrastructure, working with 24 partner countries.
- endorsed a Statements of Principles on Public Engagement and Mission-orientated Research as part of the 9th Annual Meeting of the Global Research Council, which UKRI co-hosted with South Africa's National Research Foundation (NRF).

Out of 32,273 publications, resulting from UKRI-funded R&I published in 2021, 60% (19,296) have international co-authorship. The International comparison of the UK research base, 2022 notes international partnerships achieve, on average, 50% higher impact in terms of citations than domestic collaborations, and ranks the UK 1st for international collaboration amongst comparator countries.

National and international collaboration shows that researchers are establishing relationships, exchanging expertise and gaining access to international facilities and infrastructure. This table shows information about collaborations reported since the award started. Collaborations are only reported against the year the award started. As a result, the number of collaborators reported for awards started in any given year increases cumulatively over time, and awards that started a number of years ago continue to develop new collaborations.

Table 3: National and international collaborations reported since the start of awards

Year Award Started	2017	2018	2019	2020	2021
The total **number of awards** with collaborators	1,994	1,754	1,477	1,227	597
[number reported up to 2021]	[1,938]	[1,633]	[1,280]	[623]	[N/A]
The total **number of UK collaborators** involved	6,306	4,843	3,764	2,665	1,013
[number reported up to 2021]	[5,087]	[3,859]	[2,674]	[1,137]	[N/A]
The total **number of international collaborators** involved	5,729	3,770	3,284	2,013	672
[number reported up to 2021]	[5,061]	[3,206]	[2,312]	[851]	[N/A]

- Collaborations are only reported against the year the award started. Awards are often multi-year, and the collaboration may have begun in any year after the award start. As a result, older awards will report more collaborations than newer awards, as demonstrated by the numbers reported up to 2021 included for comparison.
- The dataset comprises awards for which one or more collaborator have been reported to researchfish® and where the location of the collaborator is known. The data includes only Research Council awards.
- Better data linkage across UKRI's legacy systems has improved the quality of our datasets, and the 2020-21 data presented has been reproduced to offer a comparison. As a result, there are small discrepancies with the data published in the 2020-21 Annual Report and Accounts.

Managing impacts of a reduced Official Development Assistance allocation

UKRI received a reduced Official Development Assistance (ODA) settlement in March 2021, representing an overall cut of about 70% in all planned ODA expenditure for 2021-22 and leaving a £120 million gap against commitments within the Global Challenges Research Fund (GCRF) and Newton Fund programmes.

UKRI rapidly implemented a review of options to meet our allocation target and managed the reduction through a suite of approaches, including rapid reprioritisation of £7.1 million of our budget and investing an additional £15.5 million from Government Departments to mitigate the some of the effects of the reduction. We reallocated £19.7 million to support the 45 Research Organisations most impacted by reductions in ODA funding in February 2022, and managed down spending commitments through working with universities, institutes and businesses in the UK and globally.

As a result, in May 2021 UKRI was able to confirm that the vast majority of grants were continuing, albeit at a reduced rate, and in November 2021 we were able to confirm that funding is available to meet the legal commitments of all projects from 2022-23. This result was possible due to the commitment of the research and innovation community to these important projects, often including reprioritising their own funds to mitigate the cuts.

Image credits – Getty images

Russia and Ukraine

Following the UK government's sanctions of those with direct links to Russia's government in response to the invasion of Ukraine, our response included:

- reviewing all agreements, contracts, projects and related collaborations funded by our Research Councils and Innovate UK involving Russia and pausing payments for investments involving a Russia-based collaborator or director during the review.
- prioritising Global Talent Visa (GTV) endorsement applications from Ukrainian national researchers, technologists, and other specialists.
- providing evolving guidance to the R&I sector and continuing to work closely with partners to understand the longer-term implications of the conflict on international collaboration and partners.

For Russian nationals working and studying through regular established means in the UK, with a UK research organisation, our response had no known material impact. UKRI has no dedicated facilities in Russia or Ukraine and holds minimal fixed assets situated in either Russia or Ukraine. The situation did not change our ability to conduct direct research activities. We therefore do not believe that the initial response is material to UKRI's international partnerships or overall activities, however we are undertaking a more wide-ranging review of all aspects of our Russia-related work in line with the government's announcement of a comprehensive review across the sector, which will conclude during 2022-23.

We believe that international collaboration is vital in addressing global challenges and to push the boundaries of research and innovation. We continue to engage with longer-term thinking to develop sustainable responses and support mechanisms that can be stood up should further crises and conflicts emerge. Our experience has and will continue to inform relevant areas across our Trusted Research & Innovation (TR&I) work programme.

EU Exit

The Trade and Cooperation Agreement between the UK and the European Union which came into force in 2021 agreed that the UK would associate to Horizon Europe. However, there have been delays in formalising association, creating uncertainty for the research and innovation community.

We are supporting the government's efforts to secure association, which offers the greatest value for research and innovation in the UK. We are also working with BEIS to develop contingency plans if association is not possible.
Our extensive programme of work in 2021-22 has included:

- contributing towards participation in Horizon Europe from UK-based researchers and innovators. We are working to ensure the UK is seen as a trusted partner, including the UK Research Office (UKRO) currently chairing five working groups of Brussels-wide R&I networks. We are also informing discussion of the UK's involvement in Horizon Europe, through UKRO's understanding of European Commission plans for R&I funding and policy and draft Horizon Europe Work Programmes.
- delivering the government's guarantee of funding for successful Horizon Europe applicants. We have designed and launched a new funding route to deliver the guarantee, including a communications campaign to encourage holders to register their grants with UKRI. Delivery of the guarantee has involved staff redeployment and operational expenditure, described in the section below.
- designing transitional and longer-term alternatives to association in the event that the UK is unable to associate.

Financial Review: Statement of Financial Impact and Staff Redeployment to Support EU Exit

- In total, 10.6 UKRI staff were redeployed to support EU Exit work in 2021-22. Our activity and spending in this area focused on the Horizon Europe Guarantee programme. The Guarantee became operational on 21 February 2021, when calls were opened on our Innovation Funding Service (IFS) for successful UK applicants to the European Institute of Innovation and Technology Knowledge and Innovation Communities (EIT KICs) 2021 activities and the European Innovation Council (EIC) Pathfinder and Transition 2021 calls. In March the scope of the Guarantee was extended to a second wave of grants where the EU Grant Agreement would need to be signed up to the end of the calendar year 2022 pending UK association to Horizon Europe.

Table 4: EU exit staff redeployment

Movement onto EU Exit work	Civil Service Grade				
Year Award Started	AA/AO	EO	HEO/SEO	G6/G7	Grand Total
2019-20	33.1	21.5	20.3	4.7	79.6
2020-21	-	1.0	3.6	2.0	6.6
2021-22	2.0	6.0	2.0	0.6	10.6

The Guarantee is being delivered by SRO and chair of the steering board, Professor Christopher Smith, supported by a cross-UKRI programme team led by the UKRI Horizon Europe Transitions and Guarantee Board. In 2021-22:

- UKRI received an allocation of £20 million from BEIS to cover programme liabilities.
- Total spend was £5.9 million including Operational Expenditure (OpEx). Lifetime programme spend is estimated to be £253 million.
- UKRI spent OpEx of around £877,000 in 2021-22, of which £268,000 funded development of the IFS grants system to support grant administration.

At the end of 2021-22 UKRI was preparing funding routes to implement HMG's extension of the Guarantee for go-live from May 2022.

Table 5

Spend in the Year ended 31st Mar 2022	Full year Outturn 2021-22 £	Full year Outturn 2020-21 £	Full year Outturn 2019-20 £
Staff / Salary costs	590,356	1,267,469	4,136,124
Travel costs	-	156	31,795
Professional fees	18,967	15,091	48,266
IT costs	268,060	219,099	502,541
Buildings	-	-	301,265
Total	**877,383**	**1,501,815**	**5,019,991**

Continuing to support and provide funding to centres, units and facilities to support excellent research and innovation

UKRI maintains vital national and global capabilities, through our institutes, centres and investment in physical and virtual research and innovation, infrastructures. This also helps to anchor clusters of R&I excellence that drive growth and crowd in private sector investment in all parts of the UK.

UKRI's institutes are an integral part in the UK's research and innovation system. They undertake ground-breaking fundamental and applied research, provide vital capabilities and underpinning facilities accessible to the wider R&I system, and support and accelerate innovation.

A selection of the institutes, laboratories, centres and units supported by our councils

*2021-22 was the final financial year of core funding from EPSRC so is now no longer considered a UKRI/EPSRC Institute.
** Managed by MRC on behalf of its 6 stakeholders: BBSRC, Diamond Light Source, EPSRC, MRC, NERC and STFC

The following case studies offer examples of some of the highlights and critical research and innovation contributions made by our centres, units and facilities this year.

Dame Ottoline Leyser opened the central Royce Institute Hub building at The University of Manchester in 2021. Supported by EPSRC, the new building hosts £45 million of state-of-the-art equipment to enhance research and innovation in biomedical materials, metals processing, digital fabrication, and sustainable materials research for academia and industry. It also provides a variety of collaboration spaces for industry engagement, helping to accelerate the development and commercialisation of advanced materials.

Image credits – Henry Royce Building

The largest study of its kind has identified key risk genes linked to Alzheimer's disease. The study identified 75 genes associated with an increased risk of developing Alzheimer's disease, including 42 new genes which had not previously been implicated in the condition. The findings reveal new avenues for therapeutic intervention in a disease that currently has no cure. Spearheaded by the French National Institute of Health and Medical Research, this international project spanned eight partner countries. In the UK, the collaboration was led by researchers from the MRC-funded UK Dementia Research Institute (UK DRI) at Cardiff University.

Image credits – Getty images

Research at the BBSRC-funded Institute of Biological, Environmental and Rural Sciences (IBERS) at Aberystwyth University has demonstrated the remarkable capabilities of Miscanthus grass, not least its capacity to capture carbon in the soil. It also has potential as a net carbon-negative feedstock. IBERS insights are contributing to breakthroughs such as sequencing the crop's genome for the first time, which may lead to Miscanthus emerging sooner as a significant means of reducing carbon emissions, and the research has resulted in ten new Miscanthus species being licensed and undergoing commercial growing trials.

Image credits – Getty Images

The once-in-a-generation spacecraft, the James Webb Space Telescope, launched 25 December 2021. Scientists, engineers and technicians in the UK were crucial to the development and launch of one of the four main science instruments, the Mid-Infrared Instrument (MIRI), which will be able to see the faint light from the most distant stars, effectively looking further back in time than ever before. MIRI was designed, built, and tested by a European Consortium of 10 member countries led by the UK, in partnership with the US. The European contribution is led by Professor Gillian Wright MBE of STFC's UK Astronomy Technology Centre, and includes STFC RAL Space, University of Leicester, and Airbus UK.

Image credits – Getty Images

Our Learning, Resources and Growth

We are transforming UKRI to be more efficient, effective and agile. We are implementing a simplified operating model and reducing bureaucracy to maximise value for the UK taxpayer. We will exemplify the characteristics of an outstanding research and innovation system, increasing connectivity, working collaboratively and creating a culture that attracts and empowers our talented people.

Improving what we do and how we do it

We are making it easier for our communities to engage with us. We are reducing the complexity and bureaucracy of our processes and improving them by gathering evidence of what works.

This year we:

- moved towards harmonising how applicants engage with us, making all funding opportunities from UKRI accessible in one place for the first time.
- successfully piloted 8 funding opportunities on our new digital funding platform and developed a roadmap for delivery of new platform by the end of 2023.
- launched a simplified single Impact Acceleration Account (IAA) model, merging five schemes into one and reducing bureaucracy for applicants.
- published the first study to understand the collective impact of Concordats and Agreements in partnership with the Wellcome Trust and Universities UK. The findings will be used to explore how agreements can be aligned to increase impact and reduce reporting burden.
- evaluated UKRI's National Productivity Investment Fund (NPIF) investments, enabling parliament to judge the overall impact and value for money of the fund and enhancing our understanding of what works in supporting impactful research and innovation.
- investigated concerns raised by our communities about tweets posted by ResearchFish and published an apology for our approach to sharing information on tweets.

Capturing early evidence to assess our programmes

Over 2021-22 we evaluated over 700 completed Industrial Strategy Challenge Fund (ISCF) projects to capture participant benefits in areas such as additional net revenue and the creation and retainment of jobs, providing early confidence ahead of a full independent evaluation of the Fund.

Image credits – ISCF_Energy_Revolution_Renovagen

Helping our communities to engage with us

We launched our single UKRI website in Spring 2022 to provide a strong and coherent presentation of the full breadth of UKRI. The user-friendly website was designed through extensive user-testing and completes our three-year endeavour to improve and modernise multiple legacy sites into a single website.

Image credits – Getty Images

Simplifying and improving our business processes

We continuously strive to improve how we work. We are streamlining and improving our systems and building on best practice to become and more efficient and agile organisation.

In 2021-22 we:

- increased efficiency by bringing three councils onto the single UKRI IT infrastructure, with the next four councils moving in spring 2022.
- secured over £60 million investment to replace our ORACLE and Workday systems with approval by the Department for Business, Energy and Industrial Strategy (BEIS) for the new HR, Accounting, Reporting and Procurement (SHARP) programme.

- worked to reduce our Operating Expenditure (OpEx), with work in hand to meet our three-year target. Analyses suggest that based on OpEx as a percentage of total capital allocation we are efficient compared to many other funders, but we intend to go further.
- established a framework for benefits, risk and financial management for the Reforming our Business (RoB) Portfolio and ensured efficient prioritisation and focus by streamlining the portfolio. For 2022-23 onwards this becomes part of our work to implement a simplified operating model.
- increased UKRI's project delivery maturity to 'Level 3' (Defined Process) since the last Portfolio, Programme and Project Management Maturity Model (P3M3) assessment by GIAA two years' ago. The Project Delivery Hub continues to support staff development through conferences and seven Specific Interest Groups.
- further improved the consistency of project management documentation, processes and reporting through further rollout of the Verto project management tool across UKRI.
- matured our data capabilities through the Data Programme, including the creation of DataBank that will enable better analysis and reporting across UKRI to support business decisions and created a new data excellence and optimisation project to reimagine the use of data within UKRI, making better use of our data processes through automation and optimisation.

Empowering our staff with timely, relevant information

Our all-staff intranet, The Source, makes key news and information available in one click, supports an inclusive workplace and enables us to celebrate our successes across the whole organisation. The Source has received good staff feedback, and our final council intranet moved over in April 2022.

Image credits – UKRI 'The Source'

Building an organisational culture and environment that enables us to recruit, include and support the best and diverse talent

Our people are our greatest asset. We will attract and retain talented people with diverse skills and knowledge. We will empower them to collaborate and thrive with long and rewarding careers.

This year we:

- achieved a bronze Inclusive Employer standard following an in-depth assessment of our EDI activity. Benefits of this accreditation include access to expert EDI advice/consultancy support and opportunities to network with other member organisations.
- commissioned research to better inform us about our talent pool and how we reach out to and encourage a more diverse population into UKRI.
- took a number of positive steps to close our Gender Pay Gap , including introducing a more robust approval processes for higher starting salaries, and harmonising some allowances and benefits. The mean Gender Pay Gap has remained fairly static whilst the median gap has increased from 2020 to 2021, driven by changes in the composition of staff within the middle pay quartiles. Full detail is available from the UKRI Gender Pay Gap Report 2021.
- strengthened our staff offer, including a 'UKRI Benefits Guide', an expanded Welfare Service that offers 1:1 support and team support and a Wellbeing Plan, with areas of focus for 2022-23 across mental, physical, and social and financial wellbeing.
- began implementing our new HR Operating Model, improving the efficiency and effectiveness of the HR service.
- undertook a full HR policy review, replacing all current policies with a short, clear policy statement, harmonising and removing contradictions across policies.
- ensured a harmonised approach for job evaluations increasing efficiency and effectiveness and harmonised the main grades across seven of our councils, as set out in the 2020 Pay Award, aligning them to UKRI structures.

Staff networks: making UKRI a stronger and more effective organisation.

Our organisation-wide staff networks are an important channel for staff to share experiences and insights, discuss topical issues, and to inform organisational decisions. UKRI becomes stronger when every individual has a voice and feels like they belong. This year we launched our Carers Network and Multifaith Network, adding to our suite of existing networks: the Racial Inclusion and Striving for Equity (RISE), PRIDE, Disability Matters, Parenting, Early Careers and UKRI Women's Chapter networks. The networks collectively delivered more than 40 webinars and 100 social drop-ins this year.

Image credits – Stuart Wallace/UKRI

Our Organisational Response to COVID-19

Across the organisation we have continued to manage the on-going challenges of responding to and recovering from the pandemic.

Staff Wellbeing, Estates and Offices

Our office space and headquarters have now fully reopened with no COVID-related restrictions inhibiting the ability for colleagues and visitors to work effectively and efficiently. Enhanced hygiene remains in place in the form of more frequent cleaning, the provision of hand and surface sanitisers and robust protocols around infection management.

During the year all colleagues who required a work setting away from their home environment had the ability to access the offices, providing them and their colleagues certainty about everyone being able to be engaged.

We supported staff in navigating 're-entry' conversations and structuring work in a hybrid world as part of our future workspace discussions with a range of supported and self-directed activities and resources for groups or individuals.

As working practices begin to normalise, we are reviewing the scale of estate required going forward. Assessment of this will continue as we move further away from the operational impact of COVID-19 allowing us to right-size the estate to best support strategic operational requirements.

Delivering Value for Money in challenging conditions

The UK Research Partnership Investment Fund (RPIF) supported 11 projects in 2020-21 to invest in Higher Education facilities, working closely with the university teams as the projects faced challenges including delays in building approvals, increased material costs, loss of co-investment, and pauses in construction. When one project withdrew from the scheme Research England responded innovatively, repurposing the funding to pilot 'UKRPIF Net Zero', and fund nine projects in 2021-22 which will widen our understanding of best practice of environmental sustainability-focused capital projects.

Image credits – Getty Images

UKRI Operations

We maintained stable grant funding services through effective management of resource to address the effects of the pandemic in parallel to delivering new funding opportunities. We have successfully managed high volumes of applications and a continuing rise in grant enquiries, with particular increases surrounding Grant Extension requests as a continuing impact from the pandemic. UKRI Infrastructure

UKRI Infrastructure

Despite the difficulties of running experiments under COVID-19 working practices, our facilities remained active during the pandemic, for example over 2020-21 and 2021-22 STFC's ISIS Neutron and Muon Source ran 900 experiments and delivered over 3,000 experiment days and the Central Laser Facility delivered 369 experimental weeks (2020-21 and 2021-22).

COVID-19 Staff redeployment

No UKRI staff were redeployed in 2021-22 to support COVID-19 work.

Statement of Financial Impact in relation to COVID-19

In 2021-22, UKRI allocated £466 million to COVID-19 initiatives. Our activities in response to COVID-19 will continue with financial impacts expected in 2022-23; in particular, multi-year grant programmes within the MRC initiatives and the Agile Call will continue in 2022-23.

Table 6: UKRI investment in COVID-19 Interventions.

UKRI COVID-19 Interventions	Council	2020-21 Outturn-£m	2021-22 Outturn-£m
IUK Initiatives Inc. Vaccine Taskforce, VMIC and Innovative Support Business Package	IUK	407.3	246.3
COVID-19 Grant Extension Allocation	Across UKRI	89.7	78.3
UKRI - Agile Call - Responsive and Strategic Proposals	Across UKRI	64.6	71.4
MRC Initiatives including National Core Studies	MRC	51.7	39.7
PhD extensions	Across UKRI	35.4	30.6
Small and Specialist Institutions and Block funding via Research England	RE	21.0	-
UKRI COVID-19 Institute Support Fund	Across UKRI	13.6	-
Other Cross UKRI Initiatives Inc. Coronavirus Explained Website, SURE Package	Across UKRI	0.6	-
Total		**683.9**	**466.3**

Council Highlights

Our nine councils work together to deliver a diverse portfolio of activities, operating across the whole research and innovation spectrum.

We work with our communities to understand the opportunities and requirements of the research and innovation landscape, and support and champion the breadth of disciplines and sectors required to maintain a healthy and creative research and innovation system.

Arts and Humanities Research Council

Arts and Humanities Research Council

AHRC's ambition is to sustain a rich, diverse and creative research ecosystem through the contributions that arts and humanities make to research and innovation. Through AHRC we aim to deliver changes that bring about healthier society, more prosperous economies, more open civil discourse, a richer cultural landscape and a thriving environment for ideas. We place humanity, imagination, and radical openness at the heart of our vision for change.

Shaping a better future through design research

In November 2021 the Future Observatory: Future by Design programme was launched in partnership with AHRC and the Design Museum. Enabling a national programme of research, debate and training demonstrated how design will drive Britain's future prosperity.

The programme seeks to accelerate how we find solutions to the most pressing societal issues, from achieving net zero to tackling the housing crisis.

15 Design Exchange Partnerships have been awarded and academic researchers have been partnered with non-academic design partners, including small and medium enterprises, public and third sector organisations.

Image credits – Getty Images

Over the last year we have continued to support:

Cultural and Creative Industries

Providing new investment in the creative economy, building on success and catalysing future innovation, we:

- supported regional research and innovation, people and infrastructure through investing £16.5 million in the Creative Industries Clusters Programme. Now in its fourth year, the programme has attracted over £200 million of public and private co-investment.
- focused efforts to drive sustainability across the fashion sector, launching two new fashion institutes, the Institute of Positive Fashion and the Leeds Institute of Textile and Colour. Through partnerships including with the British Fashion Council, the institutes are addressing real world challenges in fashion and textiles.
- awarded the Royal Shakespeare Company Independent Research Organisation status, the first performing arts organisation to receive this status, enabling it to conduct crucial arts research.
- further strengthened our global partnership network, supporting eight Creative UK-China Partnerships; to engage with industry partners in gaming, fashion, AI and screen, and explored new partnership opportunities scoping out a proposed UK-China Creative Industries Research and Innovation Hub.

Cultural Assets

Catalysing interdisciplinary research and innovation across a diverse range of places, collections and communities, we:

- launched five major discovery projects, as part of the Strategic Priorities Fund programme 'Towards a National

Collection', investing £3.4 million in year 1 to expand audiences and build new knowledge communities to work toward future shared collections.

- took a step forward in our support for arts and humanities infrastructure, investing £14 million in Capability for Collections as part of UKRI World Class Labs supporting excellence in collections-led research, and laying the foundations for major future investments.
- focused on addressing health inequalities, investing £1.6 million in our Mobilising Community Assets Against Health Disparities programme. Twelve projects address topics ranging from mental health inequalities in schools to delivering viable, sustainable place-based interventions using archaeological sites and ancient landscapes.
- unearthed neglected repertoires and celebrated diversity in classical music through Forgotten Diverse Composers, a one-year collaboration with BBC Radio 3 culminating in a concert with the BBC orchestra and a live audience of more than 230,000 people.

Contemporary Challenges

Deploying vital arts and humanities perspectives to tackle the biggest challenges of our time, we:

- continued our support for the production of high quality and impactful evidence of modern slavery, through the Modern Slavery Policy and Evidence Centre. Research from the Centre informed the Foreign Commonwealth and Development Office's international development strategy.
- scoped and prepared the groundwork to launch our new collaborative programme, Enabling a Responsible AI Ecosystem. Working in partnership with the Ada Lovelace Institute the programme will draw on and connect existing UK strengths across the landscape to extend and deepen our capabilities in responsible and ethical AI.
- strengthened our global partnership network, including by renewing our impactful bilateral partnership with the German Research Foundation. We have awarded research projects £15 million to explore topics including ethical questions relating to vaccine hesitancy and regulatory issues related to the Internet of things.

Strategically driven, efficient processes

To support efficient and effective processes, we:

- published our EDI Statement and Action Plan in April 2021 in alignment with our wider UKRI EDI activities. We have made strong progress, including developing and implementing equality impact assessments, working with Doctoral Training Partners to develop EDI action plans, and the appointment of a more diverse Peer Review College.

What's up with Everyone? Raising awareness for mental health

Launched in early 2021 in partnership with Aardman Animation and the University of Nottingham the What's up with everyone campaign has been a huge success reaching and engaging with young people aged between 17-24.

Co-created with 42 producers aged between 16-21, a series of animated stories and support materials were developed to share ideas and increase literacy relating to mental health and well-being in young people. Reaching a combined total of 17 million young people the campaign had influencers such as Stephen Fry actively supporting and engaged 14 MPs, as well as materials being included in the BBC Bitesize and Teach platforms during Mental Health Awareness week.

Image credits – Aardman-Whats-Up-With-Everyone-campaign

Image credit – Getty Images

Biotechnology and Biological Sciences Research Council

Biotechnology and Biological Sciences Research Council

Through BBSRC we invest in world-class bioscience research and training. This research is helping society to meet major challenges, including food security, green energy and healthier, longer lives, underpinning important UK economic sectors such as farming, food, industrial biotechnology and pharmaceuticals.

Action for food system transformation

UKRI's Global Food Security programme has published its new multi-stakeholder dialogue report which fed into the UN Food System Summit (UNFSS). In June, BBSRC held an independent dialogue titled 'nutrition: bridging the gap between farm to fork for improved health and resilience in a changing environment', the outputs from which were fed into the UNFSS ahead of the main summit this September. The stakeholders involved in the dialogue identified a range of multi-level actions that can be taken today to align the food system with global agreements.

Image credits – Getty Images

Over the last year we have continued to support our priority areas:

Advancing the frontiers of bioscience discovery

Prioritising excellence in discovery research and breakthrough innovations for research and innovation, we:

- continued investing in creative, curiosity-driven bioscience research through our £131 million flagship Responsive mode and Strategic longer and larger grants programme.
- published our review for data-intensive bioscience in November 2020, that provides a clear framework to guide our strategy for data-intensive bioscience. We developed an implementation plan to take forward the recommendations highlighted in the review and are now working to deliver against these.

Furthering UK leadership in engineering biology

Building on capabilities to date and grow the UK's global leadership in transformative technologies, we:

- established a National Engineering Biology Programme to enable excellent discovery and application-oriented research, leading the cross UKRI effort with the Defense Science and Technology Laboratory. As part of this, the six multidisciplinary Synthetic Biology Research Centres have been awarded £3.58 million for an extension to March 2022.

Tackling major societal challenges

To harness the UK's world-leading bioscience expertise and tackle global threats to human and animal health, we:

- provided support to a multidisciplinary, collaborative research project aimed to better understand the ecology, evolution and transmission of Bunyavirus. We invested £2.5 million alongside MRC in 2021-22 through the international Ecology and Evolution of Infectious Disease Programme.
- promoted and supported the plant health community in partnership with the Los Alamos National Laboratory international partnership. We are working to establish national and international collaborations for research in the Ecology and Evolution of Infectious Diseases.
- supported four interdisciplinary research projects working to transform the UK food system, through the first funding call of the £47.5 million Transforming the UK Food System for Healthy people and a Healthy Environment Programme. We have invested with ESRC, MRC, NERC and Innovate UK through the Strategic Priorities Fund as well as the Global Food Security Programme, Defra, DHSC, PHE, and FSA.

Building strong foundations

Supporting people, infrastructures and collaborations, we:

- announced a £22.5 million investment to support 10 new Collaborative Training Partnerships, to help build capacity across sectors and industries of the UK bioeconomy and address skills shortages. The new partnerships span 29 businesses and 12 academic research organisations, leveraging more than £14 million cash and co-investment from industry partners.
- worked with partners to deliver a £40.5 million investment at the Aberystwyth Innovation and Enterprise Campus, to enable the provision of world leading capability which brings business and academia together to accelerate innovation. Some of which include supporting low-carbon innovation, the food and drink, agri-tech, bioprocessing and biotechnology sectors. The facilities were formally opened by the Welsh First Minister on 20 October 2021.
- supported the translation of early-stage bioscience research into practical applications, including commercialisation, through our Follow-on Funding Programme. There were two calls and a total of £3.8 million investment to support 10 projects.

Field trials to advance the potential of genome-edited wheat

BBSRC funded UK research institute, Rothamsted Research, has been granted permission by Defra to run a series of field trials of wheat that has been genome edited. The Hertfordshire-based experiments will be the first of its kind, anywhere in the UK or Europe.

The wheat has been edited to reduce levels of the naturally occurring amino acid, asparagine, which is converted to the carcinogenic acrylamide when bread is baked or toasted. If successful the new trial will likely be welcomed by the food industry, where acrylamide is classed as a processing contaminant which requires close monitoring under EU law.

Image credits – Getty Images

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Economic and Social Research Council

Economic and Social Research Council

Through the Economic and Social Research Council we fund world leading research, data and post-graduate training in economic, behavioural, social and data sciences to understand people and the world around us. Our work helps raise productivity, address climate change, improve public services, generate a prosperous, inclusive, healthy and secure society.

Exploring population and generational change

Led by Professor Jane Falkingham OBE, the Connecting Generations Centre, is investigating inequality in people's opportunities and experiences, examining the impacts of gender, age, ethnicity, socio-economic background, education, and geographical region, to improve the lives of individuals, families and communities.

Through a collaboration between the Universities of Southampton, St Andrews, Stirling and Oxford, the Resolution Foundation, Office for National Statistics and National Records of Scotland, the ESRC funded centre will also work to understand the different impacts of COVID-19 and Brexit within and across generations, including how these factors have affected the 'traditional' stepping-stones to adulthood.

Image credits – ESRC/UKRI

Over the last year we have continued to support our key priority areas:

Tackling National Priorities and Global Challenges

Ensuring the full power of UK social science is brought to address the most pressing global, national and local challenges, we:

- focused on critical social and economic issues, such as international trade and intergenerational inequalities, investing £49 million in 6 new Research Centres. Our Research Centres seek to build capacity and encourage interdisciplinary research collaboration in the UK and internationally.
- invested £3.8 million in 7 new innovative and ambitious projects researching the long-term implications for Governance after Brexit. Working closely across our wider ESRC portfolio on UK-EU relations, the programme will provide a foundation of knowledge on issues such as trade, borders, migration and mobility, and national identity.
- launched a Digital Society Network Plus call to explore people's relationship with digital technologies. The Network Plus will generate insights into the relationships between people and technologies by carrying out and funding research and interdisciplinary capabilities.

Talent and leadership

To ensure the next generation of social science researchers have the skills, experiences and opportunities, we:

- published findings from our comprehensive review of the PhD in the social sciences, in October 2021. The review focused on the capabilities needed by social science

graduates and provides us with a comprehensive evidence base for our postgraduate vision.

Data and Infrastructure

To maintain, develop and innovate the UK's world-class national portfolio of data and infrastructure resources, we:

- secured over £90 million for the next 5 years of the Administrative Data Research UK , transforming the way researchers access the UK's public sector data to enable better informed policy decisions that transform people's lives.
- invested £4 million, supporting a multidisciplinary team across the four nations of the UK to deliver a feasibility study into an innovative longitudinal study focused on children born in the UK, led by University College London.

International collaboration

To strengthen international collaboration and increase the international impact of the social sciences, we:

- established a trans-atlantic platform to investigate the medium- and long-term effects of the COVID-19 pandemic on health, social, economic, political and cultural life. This was funded through the €14 million Recovery, Renewal and Resilience in a Post -pandemic World Programme, in collaboration with 12 partners and the projects spanning 25 countries.
- supported the launch of the seventh round of Open Research Area to help strengthen international co-operation in social science research. We worked in collaboration with the Agence Nationale de la Recherche (France), the Deutsche Forschungsgemeinschaft (Germany) and the Social Sciences and Humanities Research Council (Canada).

Knowledge exchange and impact

Maximising the impact of social and economic research by advancing creative knowledge exchange and impact initiatives, we:

- supported a cohort of 22 policy fellows to develop research and provide expert advice, on knowledge exchange between government and academia. Working in partnership with other research funders, the research and advice was provided for 10 government department priority policy areas.
- continue to convene policy makers and practitioners to share rapid insights to inform policy and practice, through our policy-focussed Observatories, the International Public Policy Observatory and the Economics Observatory.

Tackling the productivity puzzle

Researchers are closer to unravelling some of the complex reasons behind the UK's stagnant productivity, thanks to a new £11 million research investment from ESRC. UK productivity levels have been poor by international standards and have stagnated in recent years. Funding research to understand the issues driving low productivity continues to be of paramount importance to ESRC. Seven research projects will be supported to each tackle specific aspects of the so-called productivity puzzle. The findings will help policymakers and businesses take the steps necessary to improve productivity and raise living standards across the UK.

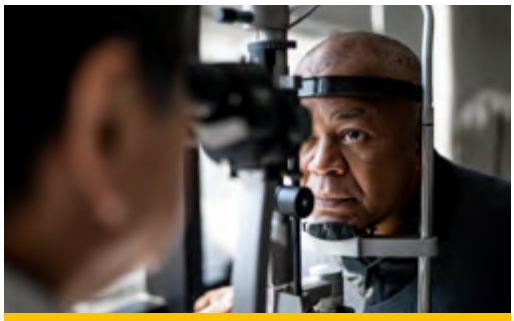
Image credits – Getty Images

Image credit – Getty Images

Engineering and Physical Sciences Research Council

Engineering and Physical Sciences Research Council

Through EPSRC we invest in world-leading research and postgraduate training across the engineering and physical sciences. This research builds the knowledge and skills base needed to address scientific and technological challenges and provides a platform for future UK prosperity by contributing to a healthy, connected, resilient, productive nation



Transforming healthcare screening

EPSRC-funded research has developed an artificial intelligence system that can identify patients at a high risk of a heart attack with 70-80% accuracy by analysing eye scans taken during a routine visit to an optician or eye clinic. Changes to tiny blood vessels in the retina are indicators of broader vascular disease, including problems with the heart. In the research, led by Professor Alex Frangi at the University of Leeds, deep learning techniques were used to train an AI system to automatically read retinal scans and identify those people who, over the following year, were likely to have a heart attack.

Research like this can transform healthcare by translating into new materials, sensors, imaging and analytical techniques needed to improve prediction, diagnosis and treatment of disease.

Image credits – Getty images

Over the last year we have continued to support our priority areas:

Delivering economic impact and social prosperity

Decreasing the time between discovery research and impact, we:

- launched the National Quantum Computing Centre to build on UK strengths in quantum computing towards the government's commitment to make the UK a quantum-ready nation.
- developed a UKRI Decarbonising Heating & Cooling programme, launching 11 new projects aimed at reducing pollution from heating and cooling, which currently accounts for one third of the UK's carbon emissions. Working with NERC, we invested £14.6 million.
- continued strategic conversations with the Department for Levelling Up, Housing and Communities and Health and Safety Executive towards a potential future UK-wide Building Safety Network.

Realising the potential of engineering and physical sciences research

Supporting and drawing together people, expertise and facilities across all our investments, we:

- established nine major new business-led research consortia to develop transformative technologies that deliver societal impact and economic growth, through our flagship Prosperity Partnerships. Backed by a £75.2 million joint investment from government, business and academia, the new programmes are in strategically critical areas

including environmental sustainability and AI, drawing on regional strengths from Teesside to Bristol.

- built on our strong partnership with Siemens to support research focused on providing digital solutions to reduce energy demand and carbon production, jointly funding £400,000 for this.
- launched the second call of our New Horizons scheme to fund high-risk-high-reward engineering and information and communication technologies, building on the lessons from the first call.
- established capital infrastructure and facilities to develop a world-class national infrastructures capability in support of the Infrastructure and Cities research at the UK Collaboratorium for Research on Infrastructure and Cities. Delivery of this £140 million investment is on track for completion in March 2022.

Enabling the UK engineering and physical sciences landscape to deliver

Ensuring the UK remains globally competitive and a magnet for great talent, we:

- completed the phased process for the £79 million ARCHER2 supercomputer, enabling future breakthroughs across the research and innovation landscape. This culminated in a visit from the Prime Minister, showcasing the role of research infrastructure investment in meeting government priorities.
- continued our commitment to improve the participation of under-represented groups. This includes investing in an Inclusion Matters project, that inspired the University of Birmingham's Board to undertake a successful 'reverse mentoring' partnership with the university's Black Asian and Minority Ethnic network members. We received over 1000 responses to our 'Have Your say' campaign, demonstrating increasing stakeholder engagement with our race equality initiative.
- partnered with the Royal Academy of Engineering on workshops to understand universities' approaches to trusted research and inform UKRI's response to support the sector in securing the integrity of international collaborations.

Catalysing innovation and growth

An EPSRC report shows how our investments have enabled more than 1,000 active spin-out companies (as of May 2021), unleashing innovation across all regions and nations of the UK, and in all major economic sectors.

Since their foundation, the companies have raised more than £4.6 billion in private investment, demonstrating EPSRC's role in attracting additional R&D investment in line with government commitments. Collectively the companies have an annual turnover of more than £6 billion and employ more than 25,000 people.

Image credit – Getty Images

Innovate UK

Innovate UK

Through Innovate UK we drive productivity and economic growth by supporting businesses to develop and realise the potential of new ideas, including those from the UK's world-class research base. We connect businesses to partners, customers and investors that can help them turn these ideas into commercially successful products and services, and into business growth.

Pivoting towards new opportunities during the pandemic

A spin-out from Cambridge University, PervasID, has had support from Innovate UK EDGE to pivot into new markets with its patented inventory tracking system, after orders from the aviation spares industry collapsed during the COVID-19 crisis. Innovate UK EDGE has worked with the company since 2016 on developing its strategy, implementing corporate governance measures, recruiting key employees, negotiating contracts with major suppliers and grant finance.

Image credits - Getty images

Over the last year we have supported priority areas that have emerged through our Plan for Action.

Future Economy

Maximising the impact of world-class knowledge, emerging technologies and high-growth sectors that will shape the future economy, we:

- delivered £24 million of support for business-led innovation in biomedical sciences through the Biomedical Catalyst, supporting 65 participants through 39 projects, including 42 small and medium-sized enterprises (SMEs).
- led the UKRI's delivery efforts of the Industrial Strategy Challenge Fund, overseeing £2.6 billion of public funding and actively monitoring its impact. This funding is being delivered through 20 challenges that are addressing complex societal, environmental, and economic challenges.
- continued to manage and deliver major innovation programmes on behalf of Government, including delivering three rounds of funding to the Advanced Propulsion Centre.

Growth at scale

Investing in early and late-stage research and innovation through our grant funding and loans to support growth, we:

- supported over 5,000 organisations with one-to-one high growth support through Innovate UK EDGE, which resulted in over 2,000 jobs and raised over £300 million in funding and finance.
- delivered seven investor partnership programmes, including Industrial Strategy Challenge Fund programmes in Quantum Technologies, Healthy Ageing, Transforming Foundation Industries and Transforming Food Production as well as a Regional Angels programme. 29 new SME

projects were started, with £10.8 million in grant offers aligned with £28.5 million in investment.

- committed £105 million through our open grant funding programme, Smart, on 331 new projects for game changing innovations across the UK.

Global Opportunities

Working with partners across the globe, we:

- delivered and launched 24 Global Business Innovation Programmes enabling cohorts of up to 15 innovative high growth UK businesses to explore international opportunities.
- continued to develop and expand the Global Incubator Programme enabling businesses to understand future market opportunities and how they might need to adapt their approach for the needs of the market.
- progressed building longer-term strategic relationships with countries which saw the signing of a three-year agreement with Enterprise Singapore in December 2021.

Innovation Ecosystem

Continuing to foster a more agile, well-connected, and responsive innovation ecosystem, we:

- invested £242 million in the Catapults network. Catapults have forecast around £183 million commercial income with £155 million in collaborative research and development (CR&D) income and £174 million invested by businesses match-funding to CR&D projects.
- changed our relationship with our Knowledge Transfer Network (KTN) to create Innovate UK KTN, supporting this with a core grant of £13 million to deliver thirteen innovation networks and support major programmes across the Industrial Strategy Challenge Fund. This resulted in more than 1,200 collaborations (including about 50% with new businesses).

Government Levers

Ensuring government levers become a catalyst for innovation, we:

- delivered two major workshops (on Smart Energy, and Regulatory Science and Innovation in Healthcare) as part of our lead on government's taskforce on innovation, growth, and regulatory reform.
- delivered £37 million internally in the Small Business Research Initiative competitions run either through a managed programme or where we hosted the competitions for public sector partners.

Encouraging Young Innovators

Casey Woodward, one of the Young Innovators 2020-21 cohort is founder of the company AgriSound, which specialises in bee monitoring using the Internet of Things. Since receiving the Young Innovators Award from Innovate UK, Casey has raised £250,000 in investment as one of the 19 Follow-on-Fund winners and showcased the technology at COP26. He has also won multiple awards including Barclays Eagle Labs.

Image credit – Innovate UK

Medical Research Council

Medical Research Council

Through the MRC we aim to improve human health through world-class research and innovation. We achieve this by addressing three objectives: investing in health focus themes, catalysing partnerships for health and economic impact, and supporting excellence.

Improving early diagnosis of oesophageal cancer

A simple, sponge-based cancer test for the early detection of oesophageal cancer has been developed by researchers at the MRC Cancer Unit. In October 2020, the Cytosponge test was introduced in parts of Scotland as a simpler alternative to endoscopy in a £500,000 programme. Less than a year later in July 2021, Scotland announced that the Cytosponge test will now be used across all mainland Scottish health boards in the surveillance of people with Barrett's oesophagus (a condition where cells in the gullet grow abnormally, prior to developing oesophageal cancer).

Image credits – MRC Cytosponge

Over the last year we have continued to support our key priority areas:

Investing in health focus themes to address national and global health challenges

Supporting high-quality research to address challenges, we:

- played a leading role in our UKRI response to COVID-19, findings and funding awards supporting on-going studies are described in the performance summary section.
- invested £24 million in seven large, 4-year multidisciplinary research programmes to help to identify more effective prevention and intervention approaches for young people's mental health. Working in partnership with ESRC and AHRC through the Strategic Priorities Fund's Adolescence, Mental Health and the Developing Mind programme.
- supported research to better understand the human brain, by renewing our funding for the MRC Centre for Neurodevelopmental Disorders at Kings College London and MRC Cognition and Brain Sciences Unit at University of Cambridge.
- grown our ambitions in Advanced Therapeutics research and development, with our Nucleic Acid Therapy Accelerator, funded by the Strategic Priorities Fund, which is generating an exciting pipeline of cutting-edge projects that bring together UK academia and industry to develop novel therapies for diseases of high unmet need.
- invested £19 million in three new 5-year consortia that aim to understand, influence and tackle the social, economic and environmental factors behind common health problems, through the 12-partner UK Prevention Research Partnership.

Catalysing partnerships for health and economic impact:

Supported researchers and institutions, maximising the impact of discovery science, we:

- provided dedicated support for ambitious, innovative experimental approaches in humans. Our newly established Experimental Medicine Panel funded over £7.2 million of exciting projects, with many of the studies bringing together collaborations from academia and the NHS and industrial partners.
- collaborated with 10 international partners to launch the first of three annual implementation research calls under the Global Alliance for Chronic Diseases' new strategy. This first call focuses on the prevention of non-communicable diseases in young people in low- and middle-income countries.
- brought together industry and academia to catalyse exciting ideas, through our Impact Accelerator Awards. We supported 36 research institutions and consortia across the breadth of the UK to enhance translation from discovery research to impact by investing £36 million.
- provided our Units and Centres with £1.5 million of funding to ensure they are able to make crucial assets available to the national and international research community.

Supporting excellence

Harnessing talent, fostering collaboration to strengthen the research and innovation system, we:

- invested £20 million over 5years in partnership with the Mary Lyon Centre at MRC Harwell. The seven outstanding multi-organisation research clusters will drive the development of clinically relevant mouse models and datasets to accelerate our understanding of human disease and improve diagnosis and treatments.
- offered multiple mechanisms to support research careers, providing flexible support focussed on key career transition points. Ongoing evaluation helped us to identify bottlenecks and take action to address these, this includes the 17 new Doctoral Training Partnerships awarded to support at least 195 new students per year, providing stronger support for training opportunities and widening participation.
- piloted the Resume for Researchers within our Clinical Academic Research Partnerships scheme and sponsored two cohorts of the BBSTEM mentoring scheme, which matches Black British university students and recent graduates with STEM industry or academic professionals.
- invested £215 million over 5 years for the MRC Laboratory of Molecular Biology which is dedicated to delivering world-class research through understanding important biological processes at the levels of atoms and molecules, through to cells and organisms.

Reducing child hospitalisations and deaths from malaria

Funded in a collaboration between MRC, Department of Health and Social Care, Foreign, Commonwealth and Development Office and the Wellcome Trust, a seasonal malaria vaccination and preventative drug combination has been found to dramatically reduce severe malaria among young African children. A randomised trial, supported by the donation of malaria vaccine by GSK, found that this combination lowers child hospitalisations and deaths by around 70% compared to current methods. This new approach has the potential to save hundreds of thousands of lives of African children. under five.

Image credits – Getty Images

Technique used to give different fluorescent colours to individual adult stem cells from the tissue lining the human knee joint.

Image Credit - Nathan White, PhD student, Arthritis and Regenerative Medicine Laboratory, Institute of Medical Sciences, University of Aberdeen

Natural Environment Research Council

Natural Environment Research Council

Through NERC we are the UK's leading investor in environmental science. Our world-class research, skills, and infrastructure provide deep understanding of environmental systems and form the partnerships needed to solve major global issues such as the crisis in our climate and pollution of our air and water. Our work delivers benefits to the UK and internationally, supporting affordable clean energy, sustainable agriculture, clean air, and resilience.

Putting the Midlands on the road to net zero

A consortium of eight Midlands-based universities and the NERC British Geological Survey is the UK's first region-based energy research acceleration (ERA) hub. ERA has delivered £110 million in industrial co-investment, catalysed £250 million in follow-on funding and helped to shape the energy strategy.

ERA brings together 1,400 researchers from across the region and with its uniquely place-based design it enables the development of long-term partnerships between regionally based researchers, businesses and civic organisations. The programme has engaged over 1,000 companies, led to the delivery of 23 new facilities and large-scale demonstrators, and is also developing future energy leaders through doctoral and post-doctoral training (part-funded by an additional Research England-funded grant).

Image credits – Getty Images

Over the last year we have continued to support our key priority areas:

Environmental Solutions

Supporting research and innovation to take a system wide approach to complex problems, we:

- led UKRI's presence at COP26 and engagement with government. Findings and funding awards supporting COP26 are described in the performance summary.
- doubled the size of the Changing the Environment programme to £40million, strengthening our commitment to tackle key environmental challenges faced in the UK.
- launched the Molecules to Landscapes programme to deliver environmental solutions to overcome the adverse effects of agriculture on biodiversity. In partnership with BBSRC, the £6 million programme will encourage an efficient and biodiverse agricultural system.

Productive Environment

Delivering fundamental research on the valuation of biodiversity and natural processes, and ensuring translation into financial systems and operations, we:

- established the £10 million Centre for Green Finance and Investment, delivered in partnership with Innovate UK. The centre will use the information generated by our innovative science to enable financial institutions globally to support companies and start-ups make environmentally sustainable decisions.
- launched the £4 million Improve Understanding of the Economics of Biodiversity programme. Working with ESRC, the programme will support research that will enable

governments and organisations in the UK to integrate the economics of biodiversity into decision-making.

Digital Environment

Developing a new strategic framework to advance our digital capability, we:

- began work to develop a pathway to Net Zero for the UKRI digital estate on behalf of UKRI. This is through the Centre for Environmental Data Analysis, a partnership between NERC Centres (NCAS, NCEO) and STFC RAL Space.
- explored leveraging cutting-edge digital technology and methods to catalyse solutions that improve outcomes for people as well as the environment. The agile process used enabled the co-creation of creative ideas, drawing on a wide range of skills and experience among our research base and opening up environmental science for a broader community.

Investing in people

Making environmental science more diverse, equitable and inclusive, we:

- provided £1.1 million funding in 2021-22 for enrichment, public engagement and digital technologies to harness the insight of our community on how to improve the diversity of environmental science.
- delivered, in partnership with AHRC, the Hidden Histories programme through our £500,000 investment. We have provided a mixture of seed funding to build partnerships and larger-scale research projects to explore how environmental science can learn from the legacies of race, social injustice and exclusion.
- undertook a community engagement which shaped our NERC Diversity and Inclusion Living Action Plan (2022-2025) that aligns to the wider UKRI EDI activities and will influence our plans for future engagement.

Exploring new frontiers in environmental science

NERC has developed a new scheme, Exploring the Frontiers, which is designed to be bureaucracy-light. The scheme will invest up to £4 million, supporting researchers to explore and test ideas and to exploit new technologies and approaches in a more dynamic way, potentially leading to an exploration of new and exciting areas of environmental science which could initiate further exploration or lead to impactful outcomes in themselves. Exploring the Frontiers builds on NERC's Pushing Frontiers scheme, piloted earlier in the year.

Image credit – Getty Images

Research England

Research England

Through Research England we are responsibile for England-only higher education providers concerning research and knowledge exchange (KE) funding. Our relationship with the higher education funding bodies and devolved nations is essential in creating and sustaining conditions for a sustainable and dynamic UK system.

Accelerating impact by connecting higher education and industry

Research England is unlocking investment in the north of England through over £5.5 million of Connecting Capability Fund money to strengthen commercialisation and create jobs.

Supported by £2million from Research England, Northern Gritstone Ltd is a ground-breaking investment company to help boost commercialisation of university spin outs and startups in the North of England, established in 2021 through a 15-year framework agreement with the partner universities of the Northern Triangle Initiative.

Image credits – Getty Images

Over the last year we have continued to support our key priority areas:

Supporting the Higher Education Sector

To help stabilise the higher education research system, we:

- engaged readily and repeatedly with the higher education sector who shared insights with us that directly informed the ongoing design of higher education interventions.
- provided continuity of funding for the sector in August, September, and October 2021, managing risks around the stability of the sector. We also maintained recurrent budgets into 2021-22 which provided much-needed stability for the sector.
- strengthened the capacity and capability of our universities to work in partnership with others to deliver post-COVID societal and economic benefits through several single year funds and subsequent additional allocations of £132 million of funding to the HE sector. This resulted from the resetting of dual support funding at around 64 pence in the pound. Research England continues to distribute over £2.2 billion to universities in England every year.
- supported the Research Excellence Framework (REF), with all of the UK's HE funding bodies working together to ensure the continuation of the Framework despite the effects of COVID-19. Significant engagement with the sector was taken across the UK to deploy flexibility that would ensure a robust and timely assessment. These revisions included
  - a revised submission deadline of 31 March 2021, removing the minimum of one output requirement, provision for submitting delayed outputs

- an extension to the assessment period for impact case studies as well as further guidance on the environment. With 157 universities participating in the REF2021 with over 185,000 research outputs submitted to expert panels, and approximately 6,700 case studies describing specific examples of research impact. Results from this exercise were announced in early 2022-23.

Driving high quality research

To continue to support high quality research in the higher education research system, we:

- supported the launch of The Future Research Assessment Programme (FRAP) in May 2021 at the request of the UK and devolved government ministers and funding bodies.
- established an international advisory group to advise the four HE funding bodies on possible approaches to the assessment of UK HE research performance. All four funding bodies launched the consultation on the FRAP in February 2022. This is one element of the programme, the outcomes from which will contribute to the broad evidence being compiled by the funding bodies and presents the opportunity to significantly inform a future exercise.
- supported the launch of the Knowledge Exchange Framework (KEF) in March 2021 to provide comparable, benchmarked, and publicly available performance information about universities' KE activities. A related review published in February 2022, revealed that the KEF demonstrates the significant contribution that English universities make to the economy and society. The publication of these results has driven further benefits, including, improving the status of KE and the quality of internal data collection, creating visibility around the diversity of KE activities and the providers conducting them. Recommendations will be progressed accordingly.progressed accordingly.

Gathering new strategic insights into the UK's technical workforce

The UKRI-Research England funded TALENT programme launched the TALENT Commission report in 2022. This national report sets out a vision for the future of the UK's technical talent to strengthen the UK's position in science, engineering and the creative industries. It includes 16 overarching recommendations to guide delivery of this vision and calls for a broadening of technical career entry routes across vocational and academic pathways. The TALENT report is the outcome of 20 months of in-depth research, stakeholder engagement and evidence gathering within the sector.

Image credit – Getty Images

Science and Technology Facilities Council

Science and Technology Facilities Council

Through STFC we provide world-leading multi-disciplinary science. We support and deliver research that seeks to understand the Universe from the largest astronomical scales to the tiniest constituents of matter, and creates impact on a very tangible, human scale.

Harwell's Health Tech Cluster, a global force for research and innovation

Harwell has over 1,400 people and 74 organisations working in life sciences and world leading capabilities in advanced therapies, vaccines, diagnostics and next generation imaging. The cluster draws on the campus's diverse expertise and open access National laboratories to deliver world firsts and life-changing innovations. As well as being central to the global COVID-19 effort, Harwell is also pioneering nucleic acid therapies and aims to provide new insights into disease and drug discovery at both a molecular and atomic level. We launched a refreshed Health Tech Strategy at our anniversary event in 2021 which marked 5 years of successful developments. This was attended by the Minister Zahawi and leading figures like Sir John Bell and Sir Jon Simmonds.

Image credits – Drone aerials of RAL site Oct 2021

In the last year we have continued to support our key priority areas:

World-class research

Championing UK global leadership in research to understand the universe, its fundamental constituents and their interactions, we:

- continued to support the UK particle physics research community, through a £68 million investment in research grants, based on a review of our current particle physics consolidated grants.
- produced several key components at our Daresbury Laboratory for the major international science experiment, Deep Underground Neutrino Experiment (DUNE). Hosted in the US, DUNE will advance our understanding of the origin and structure of the Universe.
- published an economic impact study of the UK subscription to the European Southern Observatory (ESO) showing that from an annual commitment of £22.7 million the UK receives back the monetary equivalent of around £45.5 million each year, and nearly half of all research papers using ESO data involve a UK author.
- secured £14.3 million in funding for the construction of the Square Kilometre Array Observatory (SKAO), the world's biggest radio telescope observatory.

World-class multidisciplinary facilities

Ensuring our National Laboratories and international facilities deliver world-leading science, we:

- kept all national facilities running during COVID-19 pandemic.

- completed the long shutdown of the world-class ISIS Neutron and Muon Source during which we undertook significant work on various systems which will tackle obsolescence and improve the reliability and performance of ISIS.
- held a breaking-ground ceremony at the UK's National Quantum Computing Centre facility on 20th September 2021. Based at the Harwell Campus in Oxfordshire, the new £93 million research institute will be completed in 2023 and will be dedicated to accelerating the development of quantum computing.

World-class innovation

To be innovative across all our activities, developing advanced technologies and creating new business opportunities, we:

- strengthened connections between Harwell Space Cluster, national and international organisations, including hosting over 30 delegations in 2021 and attending 19 conferences to raise the profile of UK science and innovation, and the cluster's innovative organisations. The Harwell Space Cluster is an important delivery partner of the National Space Strategy and involves working closely with all the public UK space stakeholders.
- engaged with Ministry of Defence Space Directorate and Space Command to explore the opportunities created by the combined civil and defence National Space Strategy.
- launched the north-west Digital Tech Cluster in November 2021, initial activities and early impacts include the signing of a new collaboration agreement with the UK Atomic Energy Authority and STFC for a Centre of Excellence in Extreme Scale Computing in Fusion, located at STFC's Hartree Centre, at Daresbury Laboratory.
- published the business case in February 2021 for the North West Space cluster, which was subsequently launched in May and will provide growth across the region by creating high value jobs and new skills.

World-class skills

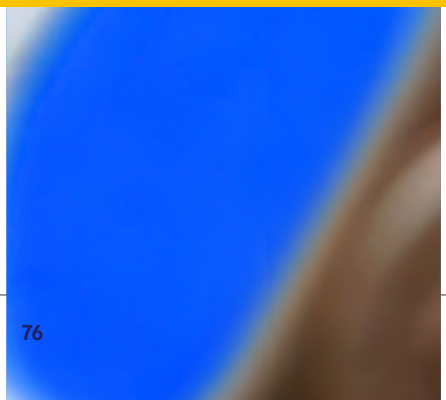
Utilising our National Laboratories and Science Programme to develop a pipeline of skilled engineers, technicians and scientists, we:

- undertook a review of learning from 24 months of STFC's public engagement initiative Wonder, an ongoing initiative to improve public engagement with groups from the 40% most deprived areas of the UK, which will be published in summer 2022.
- received Gold in the new Investors in People We Invest in Apprentices accreditation which has focused efforts on continuous improvement, including involving apprentices and managers in workshops to determine actions to further develop our Apprenticeship Scheme.
- reviewed the progression routes for degree apprentices which resulted in a Degree Apprentice Progression Scheme pilot from January 2022. We also revised the structure of our Graduate programme which has led to a significant increase in attraction and engagement having attended over 20 University events in 2020/21.

Advancing international and UK space science

Scientists have used UK supercomputers at STFC facilities to recreate the entire evolution of the cosmos, from the Big Bang to the present. One of the UK's most powerful high-performance computers has helped scientists produce the largest and most accurate virtual representation of the universe to date. The simulations were carried out at Durham University, using the Distributed Research utilising Advanced Computing (DiRAC) High Performance Computing (HPC) facility. This was funded by the Science and Technology Facilities Council (STFC), part of UK Research and Innovation (UKRI).

Image credits – Getty Images



Storage ring sextupole magnets

Image credit – STFC

Sustainable Development Goals

Working in partnership nationally and internationally, the UK's research and innovation system has a crucial role to play in finding innovative solutions to global challenges.

Some of the ways in which UKRI-supported research and innovation has contributed towards SDGs this year include:

GOAL 2: Zero Hunger

UKRI supports aims to end hunger and all forms of malnutrition. Key projects include:

- As part of our Strategic Priorities Fund: Bacterial Plant Diseases Programme, we have invested £13 million with Defra and the Scottish Government in research to counter infectious diseases of plants and trees that threaten crop production, forestry, commercial and amenity horticulture.
- Since 2018, our Innovate UK Satellite Applications Catapult and Manufacturing Technology Centre (part of the High Value Manufacturing Catapult) have worked together to transform the cocoa supply chain in Columbia, to deliver socioeconomic impact and a sustainable sector.

GOAL 3: Good Health and Well-being

Supporting health and wellbeing remains a key priority area in the work we fund and deliver. Key projects include:

- Our MRC Applied Global Health Research Board awarded its first round of grants. Studies covering global strategic priorities in early child development, maternal and neonatal health and infections research totalling £6.6 million were supported in partnership with the UK Foreign, Commonwealth and Development Office.
- As part of a £4 million investment, an ESRC-supported multidisciplinary team across the four nations of the UK is delivering a feasibility study into a new, world-leading longitudinal study focused on children born in the UK.

GOAL 9: Industry, Innovation and Infrastructure

UKRI is committed to supporting sustainable and resilient infrastructure and fostering innovation. Key projects include:

- Through EPSRC, completing the phased commissioning of the £79 million ARCHER2 supercomputer, which will enable future breakthroughs across the R&I landscape, from drug development and climate and earth system modelling to the design of sustainable technologies and materials.
- Strengthening connections between national and international organisations, with STFC's Harwell Space Cluster hosting over 30 delegations in 2021 and attending 19 conferences to raise the profile of UK science and innovation, and the organisations within the Cluster.

GOAL 13: Climate Action

We are committed to tackling climate change and its impacts and supporting the move towards net-zero. Key projects include:

- The Connected Places Catapult has partnered with Innovate UK and the Foreign Commonwealth and Development Office in Colombia and Chile to identify local challenges from which to translate of Net Zero pledges, plans and ambitions into real world actions in cities globally.
- Realising the benefits of the £20 million Plastics Research and Innovation Fund, delivered by EPSRC with NERC and Innovate UK. An evaluation found that the programme had diverted 7,121 tonnes of plastics from landfill and incineration, reduced CO_2 emissions by 5.7 million kg, and generated over £32 million of further public and private funding for follow on projects.

Environmental Sustainability Report

Introduction

Research and innovation play a critical role in understanding how our planet is changing, and in helping us act responsibly to protect and restore our natural environment. At UKRI we recognise that in delivering our mission to build a thriving, inclusive research and innovation system, we have a responsibility to minimise the negative environmental impacts of our activity and support the wider research and innovation sector to do the same. This responsibility is reflected in our Environmental Sustainability Strategy which commits UKRI to:

The efficient use of resources and to protect and enhance the natural environment.

Achieve net zero greenhouse gas (GHG) emissions from our owned operations by 2040.

Act as agents of change to drive and support an environmentally sustainable research and innovation sector.

In line with these commitments, during 2021-22 we have:

- improved our analysis of our greenhouse gas (GHG) emissions baseline to identify priority areas for action to decarbonise our operations in line with our 2040 net zero target
- established a baseline emissions footprint for our supply chain to inform development of a responsible procurement approach
- continued to invest in the decarbonisation of our UK and international science estate through additional on-site renewable energy generation and energy efficiency measures
- completed a scoping study on how UKRI can deliver net zero oceanographic research
- secured funding for a programme to modernise and decarbonise our Antarctica research operations
- started work with the universities sector on how we can collaborate to deliver more environmentally sustainable research and innovation practice.

Delivery against our Environmental Sustainability Strategy is governed via a Programme Delivery Board with a reporting line via the NERC Executive Chair to the UKRI Executive Committee and UKRI Board. External consultation and challenge on our environmental sustainability plans and policies has been delivered through an Advisory Group comprising senior sustainability leaders from academia, business, government and NGOs.

Our activity to decarbonise and minimise the negative environmental impacts of our operations supports several UN Sustainable Development Goal (SDG) targets including:

9.4
Upgrade infrastructure and retrofit industries to make them sustainable

12.5
Substantially reduce waste generation through prevention, reduction, recycling and reuse

13.1
Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters

Environmental sustainability performance

Scope

UKRI environmental sustainability performance is presented in line with the reporting requirements of the 2021-2025 Greening Government Commitments and HM Treasury Sustainability Reporting Guidance. Performance indicators are set against a 2017-18 financial year baseline.

The data set includes direct (scope 1) and indirect (scope 2) GHG emissions from UK operations and business travel (scope 3). The 2017-18 data are for the MRC, STFC and NERC estate. The data for remaining years are for all UKRI councils and UKRI corporate hub. Further detail on the performance figures presented in this section can be found in the UKRI Environmental Sustainability Report, published separately.

Mitigating climate change

Key Performance Indicators:

Net Zero by
2040
for UKRI owned operations

25%
of UKRI car fleet to be Ultra-Low Emissions Vehicles (ULEV) by end of 2022

100%
of UKRI car fleet to be zero emissions by end of 2027

Reduce GGC-scope GHG emissions by
65%

and direct emissions by
30%
by 2025

Reduce domestic business flight emissions by at least
30%
by 2025 and report international business flight distance travelled.

Image credit - Cambridge HQ. https://www.bas.ac.uk/project/towards-net-zero-carbon/cambridge-hq-decarbonisation/
https://www.bas.ac.uk/science/science-and-innovation/towards-net-zero-fit-for-the-future/

UKRI greenhouse gas emissions

UKRI has set a target of achieving net zero GHG emissions for its owned operations by 2040. This is a challenging goal in the context of continued investment in often energy-intensive new research and innovation facilities and infrastructure,

and our international remit. Although our operational emissions have decreased by approximately 50% since 2017/18 (Table 1), the scale of this reduction is largely attributable to decarbonisation of the electricity grid and the impacts of the COVID-19 on our science operations and business travel during the last two years.

Table 1: UKRI annual greenhouse gas emissions, energy consumption and expenditure 2017-18 to 2021-22.

UKRI greenhouse gas emissions			2017-18	2018-19	2019-20	2020-21	2021-22
Non-financial total gross indicators (1000t CO_{2e})	Total gross emissions		98.2	71.4	54.9	46.6	48.0
	Total net emissions		98.2	71.4	54.9	46.6	48.0
	Gross emissions Scope 1 (direct)	Gas & LPG	14.3	13.0	9.2	11.3	11.3
		Owned transport	0.2	0.2	0.1	0.03	0.03
		Fugitive emissions	1.7	1.6	1.5	0.6	0.3
	Gross emissions Scope 2 & 3 (indirect)	Electricity	74.3	52.0	37.4	34.3	35.3
		Heat	0.03	0.02	0.004	-	-
		Business travel	7.6	4.4	6.6	0.3	1.0
Related energy consumption (million kWh)	Electricity: non-renewable		193.3	169.4	134.8	12.9	-
	Electricity: renewable*		0.2	0.3	11.8	122.6	148.6
	Gas		67.4	68.9	49.6	61.2	64.5
	LPG		0.01	0.01	-	0.01	0.03
	Heat**		0.2	0.1	1.0	6.4	6.5
	Other		6.5	1.3	0.4	0.3	0.1
Financial indicators (£m)	Expenditure on energy		17.6	23.4	25.1	21.7	23.8
	CRC Expenditure		1.4	-	-	-	-
	Expenditure on accredited offsets		-	-	-	-	-
	Expenditure on business travel		5.2	4.5	3.86	0.53	2.1

Note: There was no expenditure on the purchase of carbon offsets during the financial year

* NERC moved to renewable electricity (REGO) tariffs in 2019-20. The remainder of the UKRI estate transitioned during 2020-21. Figure includes onsite renewable electricity generation (PV & CHP).

** From onsite Ground Source Heat Pump and Combined Heat and Power (heat) generation.

Note: Annual figures quoted within this report are not comparable to the figures presented in previous years UKRI Annual Reports. This is due to a change in the emissions factors used for the period 2017-18 to 2021-22 (as set by DEFRA in July 2021), and an updating of the UKRI baseline data requested by BEIS.

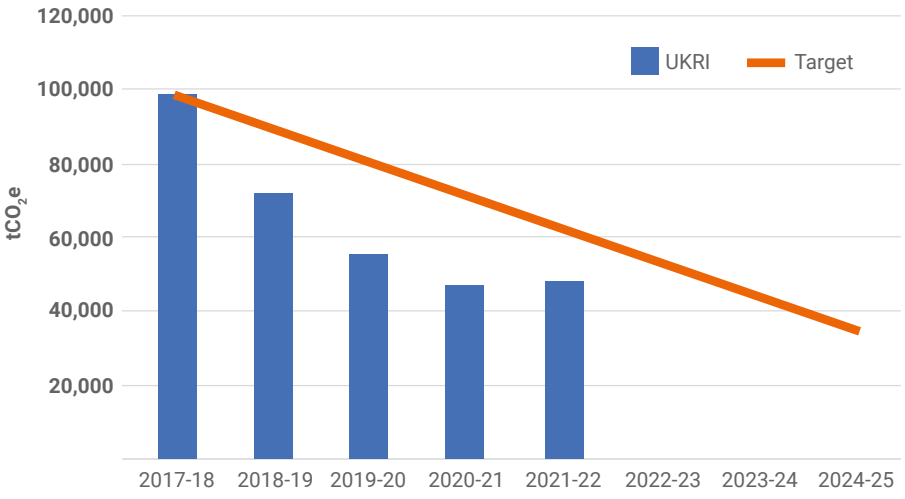


Figure 1: UKRI annual greenhouse gas emissions (tCO_2e) compared to GGC target of 65% reduction from baseline by 2024-25.

Emissions are expected to continue to increase as pandemic impacts abate and as we continue to invest in new research and innovation infrastructure. Minimising this short-term increase and delivering a longer-term decrease in emissions will require increasing focus and investment for our science and office estate and infrastructure. During 2021-22, UKRI allocated £8M for such activity, for example:

- MRC has invested in solar PV and building energy efficiency measures including LED lighting upgrades, ventilation systems heat recovery, window replacements and water-use efficiency measures at the London Institute of Medical Sciences (LMS) and other MRC institutes. Freezer replacements in MRC institutes are estimated to deliver energy savings of 33% compared with older equipment.

Image credits – ISCF_Energy_Revolution_Nottingham_Trent

- NERC has undertaken a range of enablement and feasibility projects across its centres and marine research infrastructure to inform future estate and infrastructure decarbonisation. Air source heating and solar panels have been installed by the British Geological Survey at its Keyworth site.

Image credits – NERC-BGS solar and heat pump project - Leah Crosby from BGS

- The British Antarctic Survey has commenced a project to develop a digital twin of the RRS Sir David Attenborough research ship. This investment will use AI algorithms that exploit the diverse range of sensor measurements and remote sensing available on-board to provide automated decision support in delivering optimal fuel economy and minimising carbon emissions.

Image credits – https://www.bas.ac.uk/event/engagement-seminar-digital-twinning-for-marine-science-fieldwork/

- Energy efficient chillers installed at the STFC Central Laser Facility and the Research Complex at Harwell are estimated to save approximately 50 tonnes CO_2-equivalent a year. At STFC's Royal Observatory Edinburgh, a new energy saving system has been retrofitted to the existing gas boilers to cut fuel use and improve efficiency delivering estimated annual carbon savings of approximately 40 tonnes CO_2-e.

Image credits – roe-ukatc-aerial-view

- The NERC-funded Net Zero Oceanographic Capability (NZOC) scoping study has identified a range of options for how UKRI can transition from carbon-intensive ship-based research to a net zero future. Recommendations include the scaling up of low carbon platforms including satellites, un-crewed and autonomous vehicles, alongside research vessels using AI to design more efficient routes powered by low carbon alternative fuels.

Image credits – NZOC scoping study

Other examples of climate change mitigation action have included:

- STFC launched the Environmental Sustainability Concept Fund to support researchers to develop innovative solutions to environmental challenges. Seven projects were funded including one investigating the use of electrochromic materials to improve the environmental sustainability of STFC's campuses.
- The UKRI Infrastructure Fund requires all proposals for funding to demonstrate how the investment will take environmental sustainability concerns into account and reduce and minimise negative impacts. Examples include storing and providing data in carbon efficient ways, investigating low-carbon sensor options to mitigate carbon emissions and ensuring policies support minimising travel and waste.

Low emission vehicles

UKRI operates a fleet of around 100 vehicles, including some specialist vehicles to support our science operations. These vehicles are being replaced with ultra-low emission models as they come to the end of their operating life or lease period in line with the Government Fleet Commitment targets. As at the end of March 2022, 24% of the UKRI fleet is ULEV.

- STFC has used UKRI decarbonisation funding to purchase seven electric vehicles, including an EV Forklift, to ensure that STFC meets the Government Fleet Commitment.
- We continue to plan and roll-out additional EV charging points on our UK estates. NERC has carried out an options appraisal for the integration of EV charging infrastructure for NERC fleet and for staff and visitors' vehicles at its six main sites in the UK.
- During 2021, the estates team at UKRI headquarters Polaris House has utilised low-emissions hybrid vehicles to make equipment deliveries with reduced environmental impact when compared to traditional delivery methods. Delivering in this way also reduced packaging, and recycled packaging materials were used where required.

Business travel

As with energy related emissions, GHG emissions from UKRI employee business travel during 2021-22 have continued at a lower level than before the pandemic (Figure 2 and Figure 3), enabled by the roll-out of remote working technologies across UKRI offices (See '*Reducing environmental impacts from ICT and Digital*' below). This pattern is also reflected in the total number of passenger kilometres travelled by UKRI employees on international flights for business travel (Figure 4).

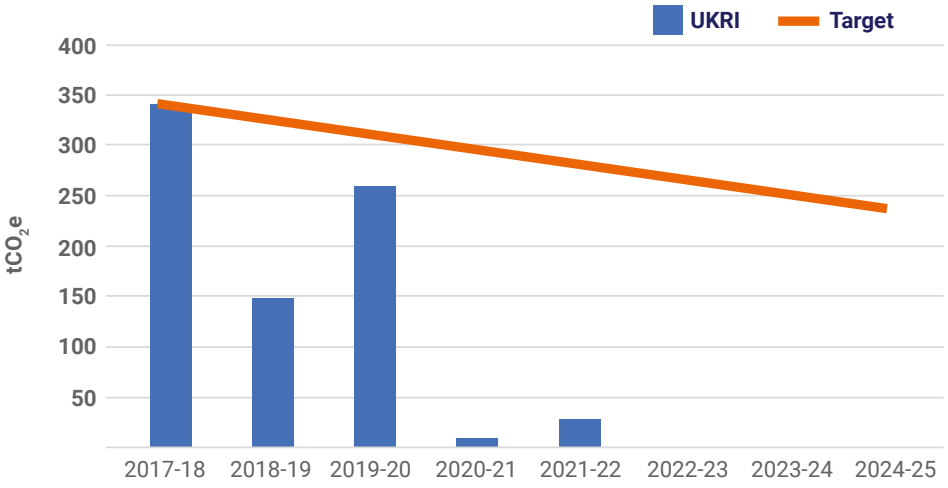


Figure 2: Greenhouse gas emissions (tCO_2e) from domestic flights compared to GGC target reduction of 30% from baseline by 2024-25

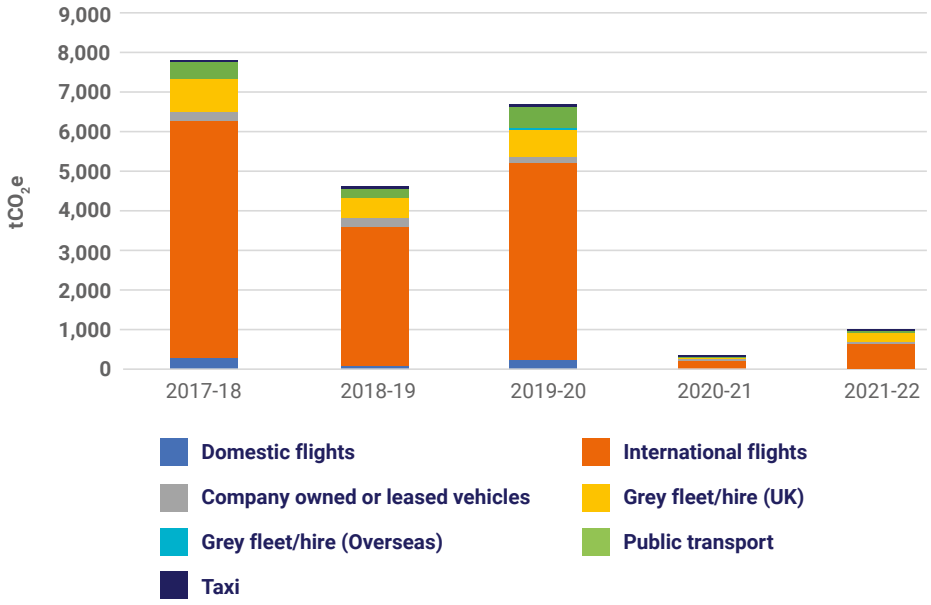


Figure 3: Annual greenhouse gas emissions by travel mode

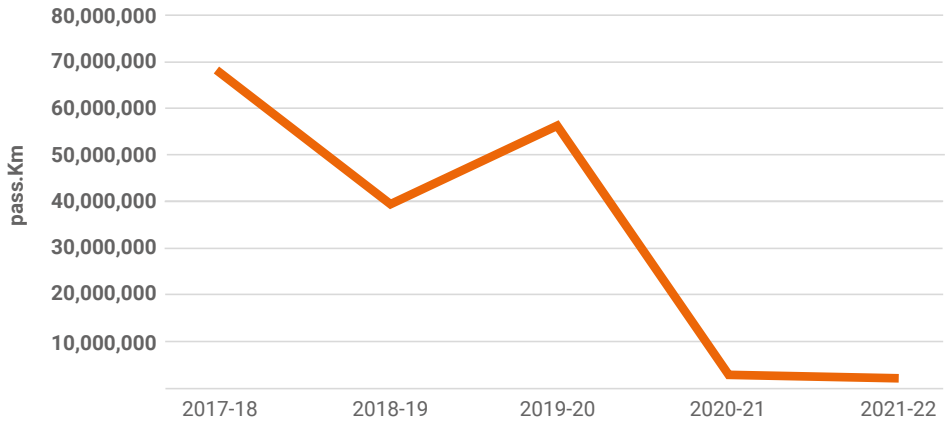


Figure 4: Total number of annual passenger kilometres travelled by UKRI employees on international flights

Note: Some data for 2018-19 not available

- During 2021-22, UKRI conducted an extensive staff survey and roundtable consultation exercise for how we best reduce our travel emissions in the long term. This exercise has informed the development of a new UKRI travel policy and guidelines to encourage 'climate conscious' travel choices. This policy, launching in 2022, includes a target to reduce total business travel emissions by a minimum of 25% and by 30% for emissions from flights by 2025.

Minimising waste and promoting resource efficiency

Key Performance Indicators - by 2025:

Reduce the overall amount of waste generated by
15%

Reduce the amount of waste going to landfill to less than
5%
of overall waste

Reduce paper use by at least
50%

- Remove consumer single use plastic from the office estate
- Measure and report on food waste
- Report on the introduction and implementation of reuse schemes

Increase the proportion of waste that is recycled or reused to at least
70%
of overall waste

Image credit - Getty images

UKRI has continued to reduce its total waste generation from operations during 2021-22 (Table 2, Figure 5). As of 2021-22 the percentage of UKRI waste going to landfill is 3% compared to the GGC 2024-25 target of less than 5%. UKRI's overall recycling rate has increased slightly compared to 2020-21 but at 46% remains some way below the 2025 target of 70% (Figure 6). As with energy consumption, waste generation has continued to be affected by the impacts of low office occupancy compared to pre-pandemic and we expect waste generation figures to continue to rebound as more activity returns to our office and science estate during 2022-23.

Table 2: UKRI annual waste generation indicators 2017-18 to 2021-22

UKRI waste generation			2017-18	2018-19	2019-20	2020-21	2021-22
Non-financial total gross indicators (tonnes)	Total waste		2111	1976	1155	1130	1072
	Hazardous Waste	Total	302	276	147	243	125
	Non-hazardous waste	Landfill	128	105	51	64	28
		Reused/ recycled Inc. composting	1394	1172	617	499	513
		Incinerated with energy recovery	284	419	339	324	403
		Incinerated without energy recovery	2	4	2	-	3
Financial indicators (£m)	Total disposal cost		0.8	0.8	0.9	0.9	1.0
	Hazardous Waste		0.3	0.3	0.4	0.8	0.7
	Non-hazardous waste	Landfill	0.06	0.03	0.3	0.02	0.2
		Reused/recycled/ composted	0.3	0.2	0.2	0.1	0.2
		Incinerated with energy recovery	0.2	0.2	0.2	0.01	0.01
		Incinerated without energy recovery	-	-	-	-	-

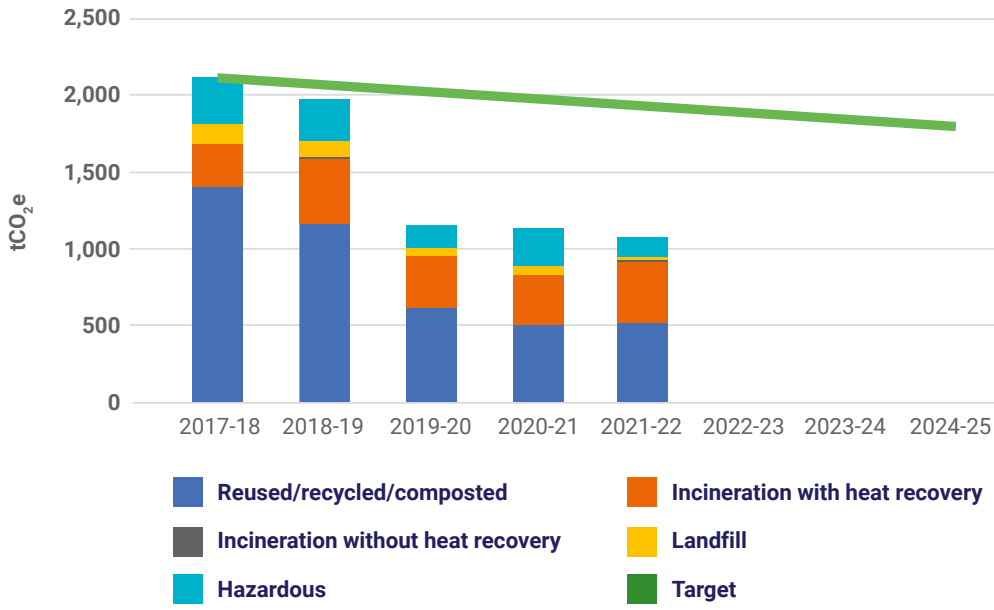


Figure 5: Annual UKRI waste volume (tonnes) compared with GGC reduction target trajectory to reduce overall waste by 15% from baseline by 2024-25

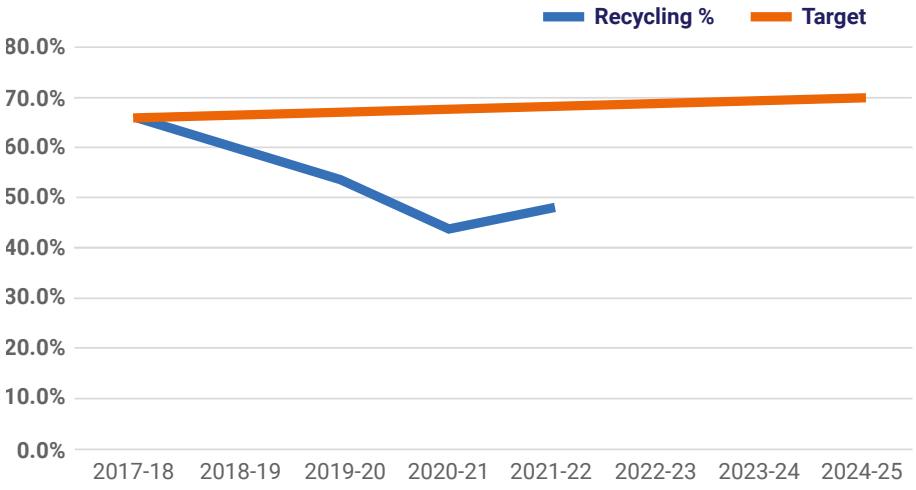


Figure 6: Annual UKRI waste recycling (tonnes) as a percentage of overall waste compared with GGC target trajectory to increase overall recycled waste to at least 70% overall by 2024-25

We are not currently able to confirm a complete set of figures for consumer single use plastic use, paper consumption and food waste volume due to the required data capture systems not yet being in place. We will be working during the next year to enable these metrics to be reported in the future.

Environmental sustainability action plans for our Councils and Head Office set out how waste, including specialist waste streams generated by science facilities, will be reduced and re-use and recycling rates increased to meet our targets.

- UKRI councils responsible for running research laboratories are working to identify and realise opportunities for more environmentally sustainable operations, including the avoidance and reduction of waste and maximising the re-use and recycling of consumables. MRC's London Institute of Medical Sciences (LMS) is undertaking a trial on re-usable alternatives to single-use plastic pipettes and all MRC and several NERC labs are signed up to the LEAF sustainable labs scheme. During 2021-22 the British Antarctic Survey's labs at Cambridge and Rothera research station in Antarctica received bronze LEAF accreditation whilst the British Geological Survey's Keyworth labs are the most recent to be accredited silver.

- MRC's LMS has invested in the purchase and installation of software to track and manage chemicals in storage and in use to reduce the waste of highly hazardous materials and reduce the need for new purchases.
- In addition to improving waste management in our own operations, UKRI funding has supported research and innovation to eliminate, reduce, reuse and recycle waste in a range of industries. For example: the ISCF Smart Sustainable Plastic Packaging programme has leveraged £182.9 million co-investment from project partners on an investment of £52.5 million across over 60+ projects to make a step-change in how we reduce, re-use and recycle plastic packaging.

Reducing our water use

Key Performance Indicators

Reduce water consumption by at least
8%
by 2025

Image credit - Getty images

UKRI water use across our office and science estate has decreased year on year since 2018-19 (Figure 7). As with energy and waste, a proportion of this reduction can be attributed to lower estate occupancy due to COVID-19 with a small increase in 2020-21compared with the previous year as estate occupancy has increased.

Table 3: Total UKRI annual water consumption (m^3) disaggregated by office and non-office estate

UKRI water consumption			2017-18	2018-19	2019-20	2020-21	2021-22
Non-financial total gross indicators (000 m^3)	Total water consumption		268.9	283.4	221.6	203.1	205.8
	Water consumption (office estate)	Supplied	85.9	106.7	54.4	50.7	6.8
		Abstracted	-	-	-	-	-
	Water consumption (non-office estate)	Supplied	183.0	176.7	167.2	152.4	199.0
		Abstracted	-	-	-	-	-
Financial indicators (£m)	Total cost		0.58	0.82	0.85	0.56	0.59
	Water supply cost (office estate)		0.19	0.25	0.42	0.02	0.01
	Water supply cost (non-office estate)		0.39	0.57	0.43	0.54	0.58

Note: For 2020-21, water consumption for 'office estate' is for Polaris House. Water consumption for 'non-office estate' is for NERC, MRC and STFC estates. No water is abstracted for consumption across the whole UKRI estate. Water costs include costs of any associated licences.

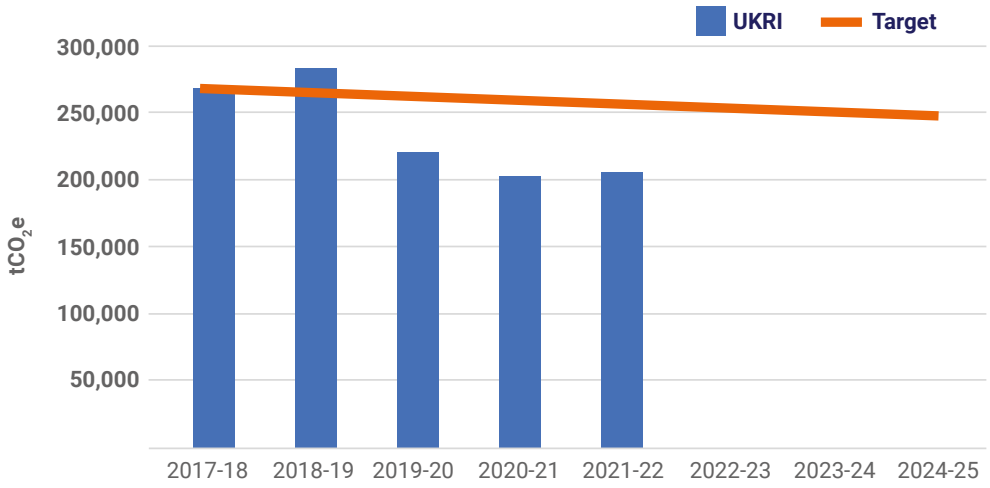


Figure 7: Annual UKRI water consumption (m^3) compared with GGC reduction target trajectory to reduce overall water consumption by 8% by 2024-25

- As examples of active water management improvements during 2021-22, MRC has invested in a range of water efficiency measures including at the London Institute of Medical Sciences (LMS) and Mary Lyon Centre at Harwell, where a new tunnel washer is forecast to deliver significant water use savings.
- NERC has completed water audits across all its main UK and field sites to identify quick wins for reducing water consumption and identify where additional metering is required to provide more data on improvement opportunities.

Procuring sustainable products and services

The GHG emissions outlined in Table 1 / Figure 1 do not include the embodied emissions of the goods and services procured by UKRI. As a first step in quantifying the environmental impact of our purchasing activity we have developed an emissions baseline that estimates annual emissions from goods and services to be approximately 78,500 tonnes CO_2-equivalent. This equates to around 36% of our total when adding supply chain emissions with emissions from our owned operations.

- We have used this analysis to identify goods and services with the highest per unit embodied emissions so that we can take action to reduce these negative impacts. Work has started to develop a 'Responsible Procurement' Charter informed by the ISO20400 Sustainable Procurement standard, along with guidance for staff that includes consideration of GHG emissions in production, transportation use and end-of-life as well as conservation of resources, pollution of the natural environment and waste minimisation.
- During 2021-22 we have also updated our procurement approach to implement the Government requirements on taking account of social value and carbon reduction plans in our major contracts.
- NERC is collaborating with DEFRA on a review of the Government Buying Standards to identify opportunities to enhance the standards and ensure they reflect the latest environmental science.

Nature recovery and biodiversity

Protection of biodiversity is a key component of the UKRI Environmental Sustainability strategic ambition to be positive for the environment and is in line with the Greening Government Commitment to protect and enhance nature through our estate and operations. Baseline assessments and biodiversity enhancement plans are being developed across our key office and research estate and infrastructure. They will be in line with the GGC requirement on Nature Recovery Plans. Proposals for new UKRI-funded infrastructure developments are required to plan mitigation of negative impacts on nature from construction and operations.

With biodiversity under threat globally, UKRI funded research and innovation is helping to understand and promote biodiversity and nature recovery along with the environmental, economic and wellbeing benefits it brings.

- Achieving Sustainable Agricultural Systems (ASSIST) is a long-term national capability, jointly funded by BBSRC and NERC to develop innovative farming systems that maintain or increase productivity and resilience and help reduce the environmental and ecological footprint of agriculture. Researchers are exploring the potential for 'nature-based solutions'. For example: planting mixed species pastures and enhancing the populations of natural enemies of crop pests to simultaneously increase food production from existing farmland while improving environmental quality and outcomes.

Adapting to Climate Change

Climate change adaptation assessment and planning is a key objective within the UKRI Environmental Sustainability Strategy.

- NERC has developed an organisational climate change adaptation plan based on a risk assessment across NERC UK and international operations, informed by the latest forecast scenarios and using the ISO14090 standard. The plan will inform NERC investment decisions and estates strategy and action planning for staff wellbeing and health and safety. It will also inform similar exercises for other UKRI and council operations during 2022-23. Adaptation considerations are also being embedded in UKRI investment decision-making and business case processes to ensure that UKRI operations are sustainable in the face of climate change in the long term.
- UKRI research also continues to contribute to the evidence base and to inform the development of climate change risk assessment scenarios adopted by the UK Government and informing the latest Intergovernmental Panel on Climate Change (IPCC) reports. Examples of international collaboration in climate adaptation and resilience include the signing in May 2021 of a Memorandum of Understanding between UKRI and several Canadian funding partners to develop a new research programme focussing on changing Arctic ecosystems and the impacts on Inuit communities. The Canada-Inuit Nunangat-UK Arctic Research Programme will explore innovative and practical mitigation and adaptation mechanisms and technologies to enhance resilience to environmental change.
- UKRI also partnered with the Indian Ministry of Earth Sciences (MoES) to develop and deliver a partnership event on Adaptation and Resilience research for climate change. This led to the identification of shared priority themes currently under discussion for future bilateral collaboration in this key global challenge. Additionally, in discussion with MoES, UKRI invested over £1 million in small UK-India scoping projects to further develop opportunities for future partnership in this area.
- NERC co-hosted a series of international workshops with strategic partners, as part of the UKRI COP26 offer. These workshops enabled partners in 12 different countries to showcase investments, share learning and enable cross-stakeholder discussions around key climate adaptation and resilience research challenges.

Reducing environmental impacts from ICT and Digital

COVID-19 restrictions have led to continued use of virtual meetings and remote working services in UKRI during 2021-22, enabled by continued investment in Information and Communications Technology (ICT). UKRI maintains a network of over 350 video-enabled meeting rooms that integrate seamlessly with remote meeting software. With the easing of restrictions, virtual meetings will continue to support hybrid working.

- To reduce the environmental impact of our ICT supply chain, the environmental sustainability credentials of vendors are considered in procurement and we work with our suppliers to support them in delivering products and services in an environmentally and socially responsible way. As we procure new technology to replace legacy infrastructure, we emphasise low power consumption, high efficiency devices that have a substantially lower impact on the environment than previous technologies.
- UKRI has prioritised the re-use of IT equipment ahead of disposal; a pilot scheme by UKRI's Digital, Data and Technology (DDaT) team gives devices a second use through employee resale. We are also taking positive action to ensure we manage our ICT assets to meet evolving business needs. This includes a reduction in the use of desk and mobile telephony, leading to a reduction in ICT resource use.
- UKRI continues to support innovations in the ICT sector that improve sustainability and energy efficiency; our Digital Research Infrastructure investments will have a strong focus on net zero and other environmental sustainability impacts. 2021-22 saw the start of the £1.9 million NERC-funded Net Zero Digital Research Infrastructure scoping project. This project, led by the NERC and STFC Centre for Digital Analysis (CEDA), is convening experts from across UKRI, universities and the commercial sector to gather evidence to develop a clear roadmap in support of future UKRI investment in delivering net zero digital research infrastructure.

Sustainable construction

Pioneering more sustainable forms of construction is a key theme in UKRI's Industrial Strategy Challenge Fund (ISCF), as well as other areas of UKRI funding.

- Construction has started on the EPSRC-funded National Quantum Computing Centre on the STFC Rutherford Appleton Laboratory site at Harwell, Oxfordshire. Several sustainability principles have been included within the design including targeting a BREEAM rating of 'Excellent', minimising energy use and CO_2 emissions through highly efficient building materials and low carbon energy, and maximising recycling of all construction waste to reduce the lifetime carbon footprint.

Image credit - NQCC concept design https://www.nqcc.ac.uk/facility/

- EPSRC-funded researchers at Swansea University have developed the UK's first purpose-built, low-cost energy smart house, capable of exporting 1.3 times more energy to the national electricity grid than it uses, resulting in overall net negative carbon emissions. The prototype house was designed and constructed as part of the EPSRC, Innovate UK and Welsh Government funded SPECIFIC Innovation and Knowledge Centre with £10 million from EPSRC and Innovate UK and £2 million from the Welsh Government).
- The ISCF Transforming Construction Challenge (TCC), involved a collaboration across government, industry and academia to accelerate the modernisation of construction. An independent evaluation of the programme confirmed several environmental benefits including: influencing a total of £22.8 billion of projects that reduce greenhouse gas emissions (against an original target of £3 billion), and the Active Office prototype building incorporating innovative technologies to generate, store and release solar energy. The evaluation found that over 70% of respondents reported a positive impact on carbon dioxide emissions, energy consumption and waste from adopting TCC concepts.

Image credits - STFC-ISIS solar installations

- In addition to supporting innovation in this sector, UKRI is undertaking work to reduce the environmental impact of its own new and existing buildings. From 2020 environmental impacts have been included in the assessment of proposals for new UKRI investment in research infrastructure including those involving construction projects.

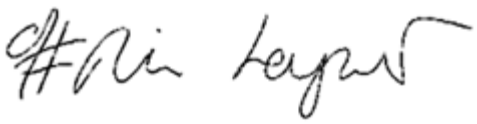
Rural proofing

Rural proofing is about understanding the impacts of our policies in rural areas of the UK and where relevant helping to enhance the economies of our rural communities. During 2021-22 UKRI has funded several projects and programmes that are explicitly focussed on rural economies in the UK. Highlights include:

- UKRI's Strength in Places Fund (SIPF) funding has been utilised for rural economic development through the Digital Dairy Value-chain project. It is investing £21.3 million in direct support to the rural economy in Cumbria and south-west Scotland for research and business innovation in advanced, sustainable, high-value dairy processing.
- In collaboration with EPSRC, NERC and ESRC, BBSRC launched the £5 million Network Plus on sustainable agri-food. The aim is to develop interdisciplinary research networks focussed on improving the sustainability of the UK agri-food system. Priority areas to inform policy development affecting rural agricultural areas include climate change, biodiversity and soil health, sustainable production and manufacturing systems.
- NERC has invested £10 million in a programme led by University of Cambridge researchers to work with farmers, landowners, conservation groups and local communities as part of a major countryside regeneration project to safeguard the country's most important agricultural land and rural idylls. The research will help to develop landscape regeneration solutions that support sustainable development in several rural areas of the UK including the Fens, the, Cairngorms and the Lake District.

To find out more about sustainability activity across UKRI visit:

https://www.ukri.org/about-us/policies-standards-and-data/environmental-sustainability/



Dame Ottoline Leyser
Chief Executive and Accounting Officer

07 July 2022

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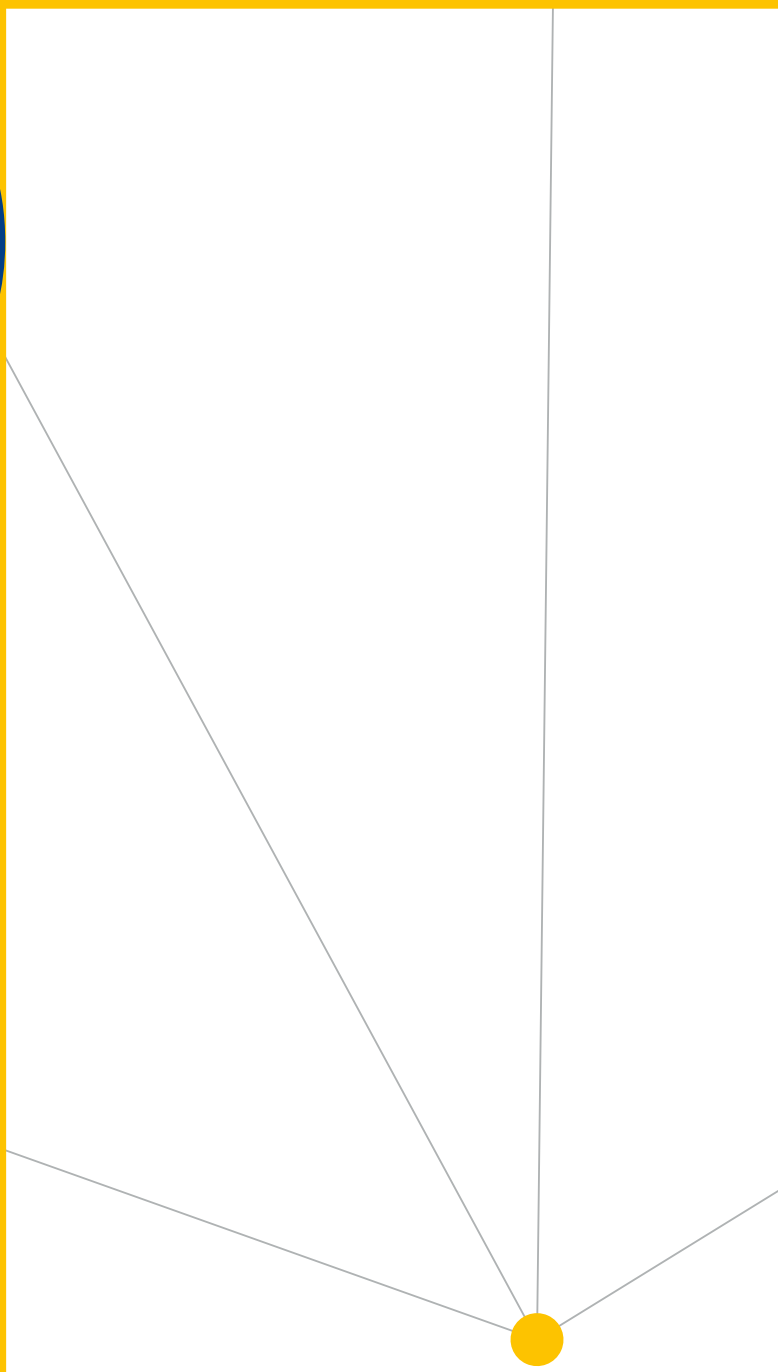


3. Accountability Report

Corporate Governance Report

The Corporate Governance Report sets out the governance arrangements of UKRI and comprises:

1. The Director's Report
2. The Statement of Accounting Officer's Responsibilities
3. The Governance Statement

1.

Director's Report

Statutory Background

UK Research and Innovation (UKRI) is an independent non-departmental public body of the Department of Business, Energy and Industrial Strategy (BEIS), established by the Higher Education and Research Act 2017. As UKRI's Chief Executive Officer (CEO) and sole Accounting Officer, I am accountable to the public via Parliament. Parliament monitors and influences UKRI's work through its Select Committees and the Parliamentary Ombudsman.

UKRI Leadership

A full account of UKRI's governance structure can be found within the Performance Report on page 14.

A list of Board and Committee members with their attendance for the period covering 1 April 2021 to 31 March 2022 can be found on page 99-100 of the Governance Statement.

Registers of interest for UKRI's Board and Committees can be found at: https://www.ukri.org/about-us/governance-and-structure/conflicts-of-interest/

Personal data related incidents

UKRI recognises and fully supports the need for effective information governance in protecting its information assets and the information entrusted to it in the course of its business. UKRI's approach to information governance is described in the Governance Statement. The table overleaf sets out UKRI personal data related incidents from 1 April 2021 to 31 March 2022.

No personal data breaches required reporting to the Information Commissioner's Office (ICO) in 2021-22.

Summary of personal data breaches in 2021-22

Category	Nature of Incident	Total
I	Human Error	118
II	Malicious Intent	26
III	Process Error	19
IV	System Error	16
	Total	**179**

Action is taken to recover and learn from each personal data breach.

Freedom of Information

UKRI is subject to the Freedom of Information Act and the Environmental Information Regulations. Responses were provided to 298 requests during 2021-22.

UKRI responded to 95% of Freedom of information Requests in 2021-22 within ICO deadlines compared to 79% in 2020-21.

2.

Statement of Accounting Officer's Responsibilities

Under the Higher Education and Research Act 2017, the Secretary of State for Business, Energy and Industrial Strategy with the consent of HM Treasury has directed UK Research and Innovation to prepare a statement of accounts in the form and on the basis set out in the Accounts Direction. The accounts are prepared on an accruals basis and must give a true and fair view of the state of affairs of UK Research and Innovation and of its income and expenditure, Statement of Financial Position and cash flows for the financial year.

As UKRI's Accounting Officer, in preparing the accounts, I am required to comply with the requirements of the Government Financial Reporting Manual and in particular to:

- observe the Accounts Direction issued by the Secretary of State, including the relevant accounting and disclosure requirements, and apply suitable accounting policies on a consistent basis;
- make judgements and estimates on a reasonable basis;
- state whether applicable accounting standards as set out in the Government Financial Reporting Manual have been followed, and disclose and explain any material departures in the financial statements;
- prepare the financial statements on a going concern basis; and
- confirm that the Annual Report and Accounts as a whole is fair, balanced and understandable and I take personal responsibility for the Annual Report and Accounts, and the judgments required for determining that all reasonable steps have been taken to ensure the annual report and accounts as a whole is fair, balanced and understandable.

The Department of Business, Energy and Industrial Strategy has appointed the CEO as Accounting Officer of UK Research and Innovation. The responsibilities of an Accounting Officer, including responsibility for the propriety and regularity of the public finances for which the Accounting Officer is answerable, for keeping proper records and for safeguarding UK Research and Innovation's assets, are set out in 'Managing Public Money' published by HM Treasury.

As the Accounting Officer, I have taken all the steps that I ought to have taken to make myself aware of any relevant audit information and to establish that UK Research and Innovation's auditors are aware of that information. So far as I am aware, there is no relevant audit information of which the auditors are unaware. I take personal responsibility for the Annual Report and Accounts, and the judgments required for determining that all reasonable steps have been taken to ensure the Annual Report and Accounts as a whole are fair, balanced and understandable.

3.

2021-22 Governance Statement

Scope of Responsibility

This Governance Statement, for which I take personal responsibility, describes the dynamics of UKRI, its governance, risk and internal control arrangements, and how successfully the organisation has coped with the challenges and opportunities presented this financial year.

This Statement explains how UKRI has maintained a sound system of governance and taken significant steps to enriching internal control. It is my responsibility to ensure sound governance underpins the achievement of UKRI's policies, aims and objectives whilst safeguarding the public funds and UKRI assets. I am also accountable for ensuring UKRI is administered prudently and economically and that resources are applied in accordance with HM Treasury's 'Managing Public Money' guidance and the responsibilities assigned to me by the Department for Business, Energy and Industrial Strategy.

The Purpose of Internal Control

The system of internal control is designed to manage risk to a reasonable level rather than to eliminate all risk of failure to achieve policies, aims and objectives. It can therefore only provide reasonable and not absolute assurance of effectiveness. The system of internal control is based on an ongoing process designed to identify and prioritise the risks to the achievement of the policies, aims and objectives of UKRI, to evaluate the likelihood of those risks being realised and the impact should they be realised, and to manage them efficiently, effectively and economically.

Capacity to Handle Risk

As CEO, I have overall responsibility for ensuring there is an effective risk management system in place within UKRI for meeting all relevant statutory requirements, and for ensuring adherence to guidance. Further accountability and responsibility for elements of risk management are set out in the UKRI's Risk Management Strategy and Policy.

Governance Framework

In my role as UKRI's Accounting Officer, I am supported by the UKRI Board, the nine Executive Chairs of the Councils, and the Executive team within UKRI, who use a range of management information to monitor performance and inform decision making. The Executive Chairs, in turn, are supported and challenged in the delivery of their specific aims and objectives by their Councils, which comprise the Executive Chair and ordinary Council members.

UKRI Board Overview

The UKRI Board ('the Board') comprises a very strong team of research and business leaders who work with me and my Executive team to ensure that UK research and innovation continues to be world leading.

The Board is chaired by Sir Andrew Mackenzie, and comprises me as CEO, the Chief Finance Officer (CFO) and 9-12 other non-executive members. All non-executive members are appointed by the Secretary of State for BEIS and details of membership can be found at: https://www.ukri.org/about-us/our-structure/ukri-board/

The following Board members left during the year:

- Vivienne Parry – 4 May 2021
- Sir John Kingman (Chair) – 11 July 2021
- Fiona Driscoll (ARAPC Chair) – 29 October 2021
- Professor Sir Ian Diamond (observer) – 31 October 2021
- Sir Harpal Kumar (Innovation Champion) – 30 October 2021
- Professor Dame Sally Davies (observer) – 30 October 2021

The following new Board members were appointed:

- Sir Andrew Mackenzie (Chair) – 12 July 2021
- Professor Sir Ian Boyd – 20 September 2021
- Dr John Fingleton (Innovation Champion) – 20 September 2021
- Professor Sir Anthony Finkelstein – 20 September 2021
- Priya Guha – 20 September 2021
- Nigel Toon – 20 September 2021
- Ruwan Weerasekera (ARAPC Chair) – 20 September 2021

The Board is UKRI's top-level decision-making body and exercises full and effective control over the activities of UKRI and its people. The Board provides strategic leadership and makes decisions on issues of major importance, including on: key strategic objectives and targets; corporate strategy; major decisions involving the use of financial and other resources; and substantive personnel issues including key appointments.

Following the Board effectiveness review (BER) in 2020-21, there have been significant changes to the Board membership, and UKRI is now undergoing an Independent Review, led by Sir David Grant. The recommendations from that review will be considered by the Board along with the BER conclusions as part of the Board's refining its working practices.

The Board met seven times during this financial year and the key areas discussed included:

- ongoing and longer-term impacts of the pandemic on UKRI and the broader research and innovation community, including on the sustainability of the research and innovation system;
- preparations for a new funding settlement, and preparing allocations advice;
- cross-cutting policy areas, including international strategy and EU exit, equality, diversity and inclusion (EDI), open access, and people and culture;
- development of the UKRI Strategy;
- corporate governance, risk and assurance; and
- the Performance Management Framework and the pilot of a new balanced scorecard approach.

Minutes of the Board meetings are published on UKRI's website at:
https://www.ukri.org/about-us/our-structure/ukri-board/

All Board members are required to declare any personal or business interests which may influence their judgement in discharging their obligations, or which may be perceived to do so. These interests are published on UKRI's website at:
https://www.ukri.org/about-us/how-we-are-governed/conflicts-of-interests/

The UKRI Board's approach to governance aims to comply with the HM Treasury / Cabinet Office's Corporate Governance in Central Government Departments: Code of Good Practice (the Code), the Public Sector Equality Duty and the Cabinet Office Code of Good Practice for Partnerships between departments and arm's-length bodies.

Audit, Risk, Assurance and Performance Committee

The role of the Audit, Risk, Assurance and Performance Committee (ARAPC) is to support the UKRI Board and Accounting Officer by reviewing UKRI's operational performance, the comprehensiveness and reliability of assurances on governance, risk management, the control environment, and the integrity of financial statements. ARAPC provides oversight and independent challenge regarding the design and implementation of policies and processes. Its work is carried out in line with HM Treasury's Audit and Risk Assurance Committee Handbook.

ARAPC has established links with the BEIS Audit and Risk Committee to enable clear BEIS departmental sight of UKRI's risk and assurance arrangements. Where Councils have non-executive audit, risk, or assurance committees, ARAPC also works closely with them.

ARAPC held seven full meetings in the 2021-22 year and has focused on:

- UKRI's assurance and corporate risk management arrangements, including alignment to Government Functional Standards;
- Findings from the internal audit programme for 2021-22, including UKRI's actions in response to audit recommendations, and internal audit plans for 2022-23;
- Significant risks to UKRI's delivery, including deep dives on cyber security, people risks, the Reforming our Business programme and Horizon Europe; and
- Preparation for the 2021-22 Annual Report and Accounts.

ARAPC is chaired by Ruwan Weerasekera, a non-executive Board Member. Its independent members are: Sir Anthony Finkelstein, another non-executive Board Member, who acts as Deputy Chair; Christina Coker; Philip Greenish; Fiona Sheridan; and Ian Wilson. The Chair, CFO, COO, and I regularly attend ARAPC meetings. Meetings are also attended by representatives from BEIS, the National Audit Office (NAO) and Government Internal Audit Agency (GIAA), UKRI's internal audit service provider. Two independent members, Richard Bacon and Jane Madeley, stood down from ARAPC at the end of their terms on 31 January 2022; recruitment for additional independent members may run in the 2022-23 year.

Nominations and Remuneration Committee

The Nominations and Remuneration Committee is chaired by the UKRI Chair, Sir Andrew Mackenzie. During the past year Sir Peter Bazalgette and Fiona Driscoll stood down. They were replaced by new Board members Priya Guha and John Fingleton, who join continuing members Professor Julia Black and Lord David Willetts. I attend as Chief Executive Officer and the Chief Finance Officer and Chief People Officer are invited attendees without decision-making powers. The Secretary of State, or a representative, is entitled to observe meetings and receive all relevant committee papers. An attendee from BEIS may therefore also be present.

The Committee is responsible for determining the membership and effectiveness of the nine UKRI Councils, reviewing UKRI's people strategy, and having strategic oversight of senior remuneration with regard to diversity and equal pay. The Committee met five times in the past year.

Board Investment Committee

The Board Investment Committee (BIC) provides assurance to the UKRI Board on major investments. BIC promotes accountability for financial decision making by the Executive and strengthens the independent challenge provided by the Board on UKRI's large, novel or contentious investments and projects, including considering the alignment of business cases with UKRI's strategy and ethical investment principles. BIC works closely with the Investment Advisory Working Group, the CFO, and UKRI Executive Committee (ExCo) as cases proceed through UKRI's executive approval processes.

BIC met once during the year, in April, and subsequently underwent a thorough membership and role refresh as part of the change in UKRI Board membership. It is expected to meet approximately quarterly in 2022-23 and beyond, subject to the business case pipeline.

BIC is now chaired by Priya Guha, and its members are Nigel Toon, and Professor Sir Ian Boyd, and the UKRI CFO and COO.

Executive Committee

I chair the UKRI Executive Committee (ExCo) which comprises the nine Executive Chairs, the Chief Finance Officer, Executive Director of Strategy, Performance and Engagement, the Chief Operating Officer and Chief People Officer. The Executive Committee is responsible for providing strategic advice to the UKRI Board and constitutes the executive leadership of UKRI. The Director of External Relations, Communications and Public Engagement also attends regularly.

The Executive Committee met seventeen times last year and now meets once every month. Its areas of operational focus have included the development of a UKRI Strategy, UKRI's response to the COVID-19 pandemic (including the impact of COVID-19 on the sustainability of the research and innovation system), UKRI's programme for Reforming our Business and the Simpler and Better Funding programme, planning for EU exit and Horizon Europe alternatives, governance, risk and assurance, communications, development of a UKRI Corporate Plan and Council Strategic Delivery Plans and staff performance and reward. Policy areas considered have included the UKRI five year Strategy and preparations for a new funding settlement, international strategy, commercialisation, equality, diversity and inclusion (EDI), place, people and culture, ethics and talent.

Table of Attendance for UKRI Senior Executive and Non-Executive Boards and Committees

	UKRI Board	ARAPC	BIC	Nom/Rem Committee	ExCo
Number of meetings	**7**	**7**	**1**	**5**	**17**
Board Members					
Sir John Kingman*	2/2	-	1/1	1/1	-
Sir Andrew Mackenzie*	5/5	-	-	4/4	-
Professor Dame Ottoline Leyser (CEO)	7/7	5/7	-	5/5	-
Siobhan Peters (CFO)*	3/7	2/7	1/1	1/5	-
Ruth Elliot (Deputy CFO)*	3/7	7/7	-	2/5	-
Professor Julia Black	6/7	-	1/1	4/5	-
Professor Sir Leszek Borysiewicz	7/7	-	-	-	-
John Browne, Lord Browne of Madingley	4/7	-	0/1	-	-
Fiona Driscoll*	4/4	5/5	-	2/2	-
Sir Harpal Kumar*	4/4	-	-	-	-
Vivienne Parry*	1/1	-	-	-	-
Lord David Willetts	7/7	-	1/1	4/5	-
Dr John Fingleton*	7/7	-	-	3/3	-
Professor Sir Ian Boyd*	3/3	-	-	-	-
Professor Sir Anthony Finkelstein*	3/3	1/3	-	-	-
Priya Guha*	3/3	-	-	3/3	-
Nigel Toon*	3/3	-	-	-	-
Ruwan Weerasekera*	3/3	3/3	-	-	-
Professor Dame Sally Davies*	2/4	-	-	-	-
Professor Sir Ian Diamond*	3/4	-	-	-	-
ARAPC Independent Members					
Richard Bacon*	-	6/6	-	-	-
Jane Madeley*	-	6/6	-	-	-
Christina Coker	-	4/7	-	-	-
Philip Greenish	-	7/7	-	-	-
Fiona Sheridan	-	7/7	-	-	-
Ian Wilson	-	7/7	-	-	-
Executive Committee Members					
Professor Dame Ottoline Leyser	-	-	-	-	16/17
Siobhan Peters	-	-	-	-	8/17
Ruth Elliot	-	-	-	-	9/9
Tim Bianek	-	-	-	-	12/17
Isobel Stephen/Emma Lindsell	-	-	-	-	16/17
Sue Donaldson	-	-	-	4/4	15/16
Chris Ball	-	-	-	1/1	1/1
Professor Christopher Smith	-	-	-	-	12/17
Deputy for AHRC Exec Chair	-	-	-	-	5/17
Professor Melanie Welham	-	-	-	-	15/17
Deputy for BBSRC Exec Chair	-	-	-	-	1/17
Professor Alison Park	-	-	-	-	16/17

Table of Attendance for UKRI Senior Executive and Non-Executive Boards and Committees (continued)

	UKRI Board	ARAPC	BIC	Nom/Rem Committee	ExCo
Number of meetings	**7**	**7**	**1**	**5**	**17**
Executive Committee Members					
Deputy for ESRC Exec Chair	-	-	-	-	1/17
Professor Dame Lynn Gladden	-	-	-	-	13/17
Deputy for EPSRC Exec Chair	-	-	-	-	6/17
Indro Mukerjee*	-	-	-	-	9/15
Deputy for IUK Exec Chair	-	-	-	-	7/17
Professor Fiona Watt*	-	-	-	-	12/14
Professor John Iredale*	-	-	-	-	3/3
Deputy for MRC Exec Chair	-	-	-	-	1/17
Professor Sir Duncan Wingham	-	-	-	-	14/17
Deputy for NERC Exec Chair	-	-	-	-	2/17
David Sweeney	-	-	-	-	17/17
Professor Mark Thomson	-	-	-	-	17/17

Notes

- Sir John Kingman's term as UKRI Chair ended on 11 July 2021.
- Sir Andrew Mackenzie's term as UKRI Chair began on 12 July 2021.
- For a significant period of the financial year, Siobhan Peters (CFO) has been on sick leave. Ruth Elliot has been appointed as Deputy CFO and has been deputising for the CFO. Her attendance is indicated above, but she is not a formal member of any of the bodies for which attendance is being reported.
- Fiona Driscoll's tenure on the Board and term as ARAPC Chair ended on 27 October 2021.
- Sir Harpal Kumar's tenure on the Board ended on 30 October 2021.
- Vivienne Parry's tenure on the Board ended on 4 May 2021.
- Professor Dame Sally Davies' tenure as Board observer ended on 30 October 2021.
- Professor Sir Ian Diamond's tenure as Board observer ended on 15 October 2021.
- Dr John Fingleton was appointed as a full member of the Board from 20 September 2021. Prior to this he attended the Board as an observer.
- Professor Sir Ian Boyd, Professor Sir Anthony Finkelstein, Priya Guha, Nigel Toon and Ruwan Weerasekera were appointed to the Board from 20 September 2021.
- Richard Bacon and Jane Madeley's tenure on ARAPC ended on 31 January 2022.
- Sue Donaldson's term as UKRI Chief People Officer ended on 15 March 2022.
- Chris Ball's term as UKRI Chief People Officer started on 16 March 2022.
- Indro Mukerjee was appointed as Innovate UK Chief Executive on 5 May 2021. Arrangement's are in place for a Deputy to cover ExCo meetings that Indro Mukerjee is not able to attend.
- Professor Fiona Watt's term as MRC executive Chair ended on 8 January 2022.
- Professor John Iredale was appointed as Interim MRC Executive Chair on 10 January 2022.
- In line with the Executive Committee Terms of Reference, if members are not able to attend meetings they may authorise an appropriate colleague to represent them.

Strategy Committee

The Strategy Committee (StratCo) is chaired by the Executive Director of Strategy, Performance and Engagement and comprises senior strategy representatives from the nine Councils as well as directors with crosscutting responsibilities

such as talent and infrastructure. StratCo provides expertise and advice on the development and implementation of UKRI's research and innovation strategy. It played a very significant role in the development of the UKRI Strategy 2022 to 2027, including through its Strategy Steering Group. The committee met eleven times last year and provides input on emerging areas of strategy before they are considered by Executive Committee.

People, Finance and Operations Committee

The People, Finance and Operations Committee (PFO) is chaired by the CFO and comprises senior operational professionals from the central Corporate Services teams and councils. PFO is responsible for establishing and monitoring effective common operational frameworks and policies and acts as a second line of defence across areas including Commercial, HR, and Grants and Funding. PFO met ten times in the year. As well as its work on financial reporting, operational performance, and people policies, throughout the year PFO also focused on trusted research, UKRI's Operating Model and Efficiency Plan, the UKRI Data Programme, grant management in the light of COVID-19, and research ethics.

Health and Safety Management Committee

The Health and Safety Management Committee (HSMC) is chaired by the CFO and comprises the UKRI Head of Health and Safety, the UKRI Head of Office Estates, and senior operational professionals and lead health and safety advisors from across UKRI, together with senior representatives from the Estates, Risk and HR functions. The Committee is responsible for monitoring the capability and performance of health and safety management systems with the objective of safeguarding the health and safety of staff and visitors, and regulatory compliance, and for establishing and developing continuous improvement in health and safety performance. HSMC met four times in the year focusing on UKRI's health and safety policy, codes, management system components, reporting, and performance.

Investment Advisory Working Group

The Investment Advisory Working Group (IAWG) comprises a set of subject-matter experts who provide challenge and advice on business cases, including making recommendations to the CFO and to the Executive Committee about whether cases should be approved. Formerly chaired by the Director of Risk and Assurance, IAWG is now chaired by the Head of Project Delivery Profession. IAWG met 17 times in the year and discussed a wide range of cases, including major infrastructure investments and the ongoing running and development of some of UKRI's institutes.

Workforce and Financial Planning Committee

The Workforce and Financial Planning Committee is formed from representatives from UKRI Councils and the Corporate hub to provide oversight and assurance that the UKRI workforce is the right shape, size, and profile to deliver its aims, whilst not exceeding its agreed headcount and budget. It has specifically focused on the immediate efficiency plans during 2021-22 and manages the new approvals process for recruiting all external recruitment and all Senior Civil Service (SCS) equivalent roles.

UKRI Councils

As set out in the Higher Education and Research Act (2017) the UKRI Councils are responsible for both advising the Board and making decisions on scientific, research and innovation matters in their discipline specific area. The Councils have a pivotal role in ensuring the success of UKRI, helping us to achieve our strategic objectives to be the single, strong voice of UK research and innovation, and building on our world-leading reputation.

Each Council consists of an Executive Chair and between five and twelve ordinary members, one of whom is a Senior Independent Member (SIM) responsible for supporting the Executive Chair and assuring the Chair and the Board of the effective operation of the Council. Council members are non-executive office holders, not members or employees of UKRI. The full list of Council members can be found at: https://www.ukri.org/about-us/our-structure/council-members/#contents-list. Each Council met between 4-6 times last year.

During the year 2021-22 we appointed 18 new Council members to seven of the nine Councils following an open and highly competitive process. This was designed to recruit a diverse set of new members with broad expertise in research and innovation across higher education, industry, commerce, policy and/or civil society and the relevant user communities for each Council. They will help ensure that our organisation makes the very best choices, investing wisely and developing capability and capacity for the future.

Risk Management Framework

The UKRI system of internal control is designed to manage risk to an appropriate and proportionate level rather than to eliminate all risk of failure to achieve policies, aims and objectives. UKRI has a robust risk management framework designed to support informed decision-making concerning the risks that effect our ability to achieve our objectives. The framework provides a consistent approach to identifying, assessing and dealing with risks facing us, to ensure that they do not exceed the level of risk the organisation is willing to accept. The framework is designed to manage, rather than eliminate, the risks to UKRI's objectives. The UKRI Risk Management Framework includes a Risk Management Policy and Strategy.

The Risk Management Framework is supported by a central team with qualified Risk Business Partners to embed effective Risk Management across UKRI. The UKRI's Risk Management Framework complies with the requirements of HM Government's Orange Book.

UKRI has implemented a new, integrated Risk and Assurance Management System this year, which provides ample opportunities for increased reporting, quality of information and improved functionality and usability. The system is being used to record and manage improvement actions, internal controls, policies as well as risk management and assurance activity. Alongside embedding the new system and seeking these benefits, a review of the Risk Appetite statement is planned for 2022, ensuring a positive risk culture that is enabled, not risk-averse and which supports effective decision making across the organisation, aligning closely with UKRI's Strategic plans.

Counter Fraud

The UKRI Fraud control framework is designed to minimise the risk of fraud and includes a Counter Fraud and Bribery policy and an approved Counter Fraud strategy with key target outcomes. This complies with the requirements of the Cabinet Office Functional Standards for Counter Fraud and sets out UKRI's approach with an action plan for the year.

Review of the Governance, Assurance, Risk and Information Governance functions

Following a review of the Governance, Assurance, Risk and Information Governance functions the UKRI Counter Fraud and Investigations Team (CFIS) now works alongside the UKRI Funding Assurance Team.

Working alongside Funding Assurance, the CFIS team will provide a more strategic and targeted approach to assurance and counter fraud activity across UKRI. A revised strategy will see an increased focus on proactive work including joint assurance and fraud reviews of research funding. This approach will enable better prevention and detection of fraud on UKRI funding.

UKRI COVID-19 Job Retention Scheme (CJRS) pilot

Through data analysis we identified 1,577 Innovate UK grant recipients who, following the introduction of the CJRS, continued to submit project claims, heavily weighted in staff costs. HMRC was asked to review the list of grant recipients against data held by HMRC in relation to companies that have received funding from the CJRS.

HMRC identified matches to 804 companies which were in receipt of CJRS payments while also in receipt of Innovate UK funding. This represents 51% of the 1,577 companies submitted to HMRC for this exercise.

We are reviewing the matches to establish whether the grant recipients were incorrectly or fraudulently applying for grant awards whilst in receipt of CJRS funding. This involves approaching the relevant companies and requesting specific information which will allow us to confirm whether the applications for CJRS funding were legitimate.

Participation in the National Fraud Initiative (NFI)

The NFI is an exercise that matches electronic data within and between public and private sector bodies to prevent and detect fraud. As part of a two-yearly national exercise the NFI provide creditor payment screening and has developed a range of tests to identify duplicate payments. Aside from the financial benefits, data matches help to improve the efficiency of organisations' creditor payment systems.

The NFI help to identify duplicate payments and incorrect VAT payments that can be recovered, caused by incorrect supplier invoices, input errors and VAT miscalculations. The reasons for this are wide ranging, from human error to poor processes, controls that can be overridden and the fact that accounting systems can only carry out basic checks.

A project team has been established to ensure that UKRI is able to meet the data submission, requirements by October 2022.

Fraud Awareness

In September 2020 UKRI launched the updated Counter Fraud E-learning Programme which provides a basic level of fraud awareness to all. The package includes a knowledge test which will be used to establish the level of fraud awareness, show that staff understand how to report concerns,and reveal any areas where additional awareness may be required, such as extra knowledge of relevant UKRI policies.

Project Delivery

The UKRI Project Delivery Profession continues to expand. Over 420 members have benefited from the tools, training and development it offers. The Project Delivery Competency Framework continues to be used to bring consistency to job roles when recruiting. A Portfolio, Programme and Project Management Maturity Model (P3M3) assessment exercise is nearing completion, and the outcome will help inform the key focus areas for the Profession going forwards.

Seven Specific Interest Groups (SIGs) continue to run to facilitate knowledge sharing and the development of best practice in key project management areas including risk management, benefits realisation and learning from experience. A review of SIG effectiveness is currently underway to inform future development and will tie in with the outcome of the P3M3 exercise.

A Phase 2 project for Verto, the project management tool, is currently underway, and aims to build on the functionality launched in June 2020 and to broaden its user base to additional business areas and functions. This will include the ability to manage and report on Programmes and Portfolios in addition to projects, as well as opening up the functionality to UKRI's major projects beyond just reporting.

The Business Case hub continues to provide expertise covering HMT's Five business case model, primarily helping projects and programmes within UKRI's Major Projects Portfolio produce business cases that set projects up for successful delivery, and which in doing so are approved by BEIS at first submission. Since its inception, the Business Case Hub has maintained its 100% success rate of first-time approval by BEIS.

In response to GIAA recommendations and in line with best practice, a benefits management framework and a minimum quality standard for templates and processes has been developed. Both have been successfully piloted within the Reforming our Business (RoB) Portfolio and approved by PFO for rollout more widely across UKRI.

SHARP Programme

SHARP is a multi-year programme established to implement a new modern Enterprise Resource Planning (ERP) solution for UKRI, including Innovate UK and our shared service provider, UK SBS. It will enable wider changes, through a new technology platform which can deliver efficiencies in process harmonisation, resource and service. The new ERP system will replace both the Workday platform used by Innovate and the existing Oracle platform used by the rest of UKRI, which will cease to be supported by Oracle after December 2023.

In 2021-22 the SHARP programme has progressed through its initial Outline Business Case, conducted a competitive procurement to source a new solution and implementation partner, and produced a Full Business Case which received final approval from Cabinet Office on 24 February 2022 and HM Treasury on 18 March 2022. In addition, the SHARP programme has established an experienced team and robust governance structure to help deliver this complex business change programme throughout 2022 and 2023 in order to realise the benefits set out in the business case and achieve value for money.

The SHARP programme team is working to gain top level managerial support from UKRI and the engagement with all parts of the business as design decisions are made, so the business change impacts can be managed.

Simpler and Better Funding Programme

The Simpler and Better Funding (SBF) Programme aims to reduce the bureaucracy and difficulty involved in applying for grant funding from UKRI. It will do so by delivering a single funding service and digital front-door. These will replace the current JeS/Siebel and Innovation Funding Service (IFS) systems, and incorporate the needs of Research England (RE). It will have an Initial Operating Capability for all Research Councils by December 2023, and a Full Operating Capability by March 2025.

The Programme has successfully piloted funding opportunities for seven Research Councils and has used the learning it has gleaned from applicants, research officers and Council staff to develop a roadmap for the delivery of the service at the end of 2023.

A number of elements are in progress through the delivery roadmap. The programme is standardising and simplifying UKRI policies and processes for greater service consistency and predictability, particularly for our external stakeholders. It is changing UKRI's approach to data capture, so that, where possible, we collect information once but reuse it often. It is also working with other funders and BEIS to bring consistency across the sector. An example is the trial and roll-out of Resume for Researchers and Innovators (R4RI) to make the process of applying for funding more equitable and to aid early-career researchers.

We will continue to work with Councils, research officers and applicants to test the functionality, processes and policies of the new service across a variety of opportunities this year.

Regularity and Propriety

UKRI is committed to establishing and applying appropriate regularity and propriety standards, and is embedding appropriate cultures and behaviours. It does not tolerate any form of fraud, bribery or corruption. The key components in this regard are UKRI's:

- Counter Fraud and Bribery policy and arrangements;
- Gifts and Hospitality policy;
- Whistleblowing policy;
- Complaints policy; and
- Conflicts of Interest policy.

I confirm that for 2021-22:

Neither I nor my staff authorised a course of action, the financial impact of which is that transactions infringe the regulatory requirements as set out in 'Managing Public Money':

- there were no novel, contentious or repercussive transactions;
- no new UKRI employees or contractors have received renumeration in excess of the amount approved by BEIS and HM Treasury. We can confirm that all legacy non-compliant pay and PRP cases have now been resolved; and
- there have been no instances of fraud which materially impacted UKRI identified within UKRI and UK SBS; 53 fraud referrals were received and investigated by CFIS, which resulted in interventions (recovery, withdrawal, prevention and termination) valued at £3,768,776.

Modern Slavery

UKRI is committed to the principles of the Modern Slavery Act 2015 and the abolition of modern slavery and human trafficking. UKRI seeks to minimise the risk of modern slavery and human trafficking in its operations through a control framework which focuses on recruitment, selection and resource management, commercial supply chain arrangements, policy development for safeguarding and reporting of concerns, and employee awareness training.

The latest UKRI Modern Slavery and Human Trafficking Statement published in September 2021 reported the following:

- no concerns identified or reported by employees or third parties;
- uptake of Modern Slavery training increased from 78% to 93% by relevant staff; and
- our controls had been reviewed in the light of risks associated with COVID-19 and EU Exit.

During 2021-22 UKRI has continued to:

- monitor recruitment and commercial activity for potential modern slavery; and
- improve the take up of training towards our 100% target.

Whistleblowing

UKRI does not condone any form of malpractice in the workplace and is committed to creating a safe, fair, and honest working environment. The UKRI Whistleblowing - Freedom to Speak Up Policy encourages and enables employees to

speak out when they encounter or suspect malpractice. No one who raises a genuine concern about malpractice will be at risk of losing their job or suffering any form of retribution or detriment as a result of doing this.

The Standard Operating Procedure for undertaking a whistleblowing investigation was updated in 2021-22 to take account of lessons learned from casework. UKRI will contract a third party in next financial year to improve the timeliness of investigations.

Ten concerns were submitted in 2021-22 of which seven were assessed as being in scope of the UKRI Whistleblowing 'Freedom to Speak up' Policy and were investigated as a 'qualifying disclosure' about alleged or actual malpractice. The findings from each completed investigation have been acted upon and a process has been established to identify and address lessons learned.

Complaints

As a public body, it is important that we have mechanisms to receive feedback. Complaints can be an early warning of failures and where improvement is needed in service delivery. UKRI recognises that when complaints are handled well, they provide an opportunity for us to improve our service and reputation.

In the 2021-22 financial year we received 123 (205: 2020-21) formal complaints. UKRI continues to review learnings and provide assurance that actions arising from the complaints are addressed and evidenced on completion.

One complaint was escalated to the Parliamentary and Health Services Ombudsman (PHSO) for investigation. UKRI fully accepts the PHSO decision to partially uphold the complaint and has agreed an action plan to address their recommendations.

Conflicts of Interest

UKRI recognises the important role of ensuring transparency and compliance with The Seven Principles of Public Life. UKRI staff are expected to comply with the highest standards of professional and ethical practice and are required to declare any interests which may conflict, or may be perceived to conflict, with UKRI's business. The current UKRI Conflicts of Interest policy is underpinned by the UKRI Code of Conduct, which applies to all UKRI employees.

Declaring interests supports transparency and demonstrates the integrity of the UKRI's business and employees by providing assurance that any potential conflicts are considered and managed effectively. The current policy also requires senior leaders to declare any interests that could be (or be perceived as) a conflict in any discussions, decisions or actions that could risk the impression that UKRI has acted improperly. These registers are updated annually or when an individual requires an amendment to be made to their details. The UKRI Board and Executive Committee member declarations are published annually on ukri.org. Controls designed to mitigate declared conflicts of interest are subject to management approval and are recorded on our registers.

Gifts and Hospitality

As a major funding organisation, we are aware that accepting or giving gifts or hospitality may affect how we are perceived and may be seen to affect our decision-making and behaviour. The purpose of our Gifts and Hospitality Policy is to ensure that all staff are aware of their responsibilities and are vigilant in ensuring that we remain impartial and fair across the work we do.

The cost of gifts and hospitality offered by UKRI must be proportionate, approved beforehand and recorded on our Gifts and Hospitality Register. All offers of gifts or hospitality made to staff must be declared even if not accepted and it is not standard for staff to accept gifts and hospitality. In line with the policy, gifts above £20 in value are surrendered.

Prompt Payment

UKRI's policy is to comply with the Prompt Payment Code for the payment of invoices for goods and services. Whilst our standard terms and conditions specify payment within 30 days of receipt, we aim to make payments within five working days. In 2021-22, UKRI paid 97% of undisputed invoices within 30 days (2020-21: 97%) and 71% within five working days (2020-21: 69%).

Pay Remit

I can confirm that UKRI is complying with Civil Service pay-setting requirements set out in guidance issued by HM Treasury.

Tax Arrangements of Public Sector Appointees

The government's review of tax arrangements for public sector appointees highlighted the possibility of artificial arrangements to enable tax avoidance. UKRI's senior staff are all paid through the payroll and controls exist to provide assurance that appropriate tax arrangements are in place to cover other in-year appointees. UKRI provides BEIS with tax assurance evidence on a yearly basis, which forms part of their summary of BEIS tax assurance data at www.gov.uk.

Quality Assurance of business-critical models

UKRI has implemented an approach to identify, review and maintain business-critical models. This approach utilises existing review processes and expertise within UKRI, with oversight from its Analytical Leadership Group, and aligns UKRI practice with recommendations and standards for analytical modelling as outlined in Managing Public Money, the MacPherson Review, and the Aqua Book.

Ministerial Directions

There were no Ministerial directions given in 2021-22.

Information Governance

Information governance relates to the policies, procedures and controls used to ensure that our information is valued, managed and protected. Information governance risks are reviewed regularly and managed through appropriate mitigating actions. During 2021-22 a key data protection risk was addressed through the development of a UKRI-wide information asset register.

The Data and Information Governance Committee, reporting to the People, Finance and Operations Committee, promotes strategic interaction between all key data and information stakeholders to ensure that data and information are valued, accessible and protected where appropriate.

Security

UKRI has appointed a Senior Security Adviser and established a Security Forum to drive collaboration operationally and inform strategic direction. The Security Forum reports to the PFO Committee, and has personnel, physical and cyber security sub groups involving subject matter experts from membership drawn from across UKRI.

This governance structure will provide UKRI with a risk-based approach to security, and support alignment with Government Functional Standards. It will set timelines and directions for security development, and secure resources and budget requirements via engagement with UKRI risk owners, UKRI's Board and Executive Committee, driven by a clear visualisation of organisational risk within the corporate risk register.

Review of effectiveness

As Accounting Officer, it is my responsibility to ensure UKRI is maintaining a sound system of governance and internal control. In 2021-22 I look to the work of the ARAPC, the Executive Committee and its supporting Committees, the internal audit service provided by GIAA, UKRI's Funding Assurance Programme, the assurance opinion provided by the Accounting Officer of UK SBS, and comments made by the NAO as our external auditors in its management letter and other reports to inform my view.

Executive Accountability Assessment

UKRI has developed an assurance framework that describes the assurance available on:

- legal, regulatory and government requirements; and
- good governance and best practice frameworks.

The design of the assurance framework is aligned to HM Treasury Guidance. The assurance framework identifies and evaluates the different sources of assurance using a three lines model comprising: management; internal assurance; and independent assurance.

An Executive Accountability Exercise is completed at the end of each financial year. The exercise comprises self-assessments approved by Executive Directors which are subject to review and challenge by the Deputy Director Risk and Assurance. The outcomes are summarised and reported to the me as well as the Executive Committee and Audit Risk and Performance Committee.

The 2021-22 Executive Accountability Exercise provided an overall medium level of assurance. Four out of 168 assessments received a low level of assurance. These related to: off payroll (IR35) working in IUK; the code of practice & concordat to support research integrity, subsidy control arrangements in NERC; and information technology related business continuity arrangements. There are plans in place to address the weaknesses identified in these areas.

Government Functional Standard Framework Compliance

Government Functions enable excellence and consistency in the delivery of policy and services. Functional standards are set by each function to provide direction and advice for people working in and with the UK government. They bring together and clarify what needs to be done, and why, for different types of functional work. They are mandated for use in departments and their arm's length bodies.

UKRI completed self assessments against each functional standard in 2021-22 and submitted these to the Cabinet Office for review. Plans are being established to better align to functional standards where UKRI practices are not consistent with mandatory requirements.

GIAA Internal Audit Opinion

The Group Chief Internal Auditor (GCIA) is required to provide me with an opinion on the overall adequacy and effectiveness of UKRI's framework of governance, risk management and control.

In their annual report and opinion, the GCIA has provided a Moderate opinion for 2021-22. This is a maintained level of assurance from 2020-21 with a similar proportion of engagements in each rating category, though it does include one additional unsatisfactory engagement.

The GCIA concluded that UKRI is building increasingly resilient corporate governance arrangements, noting the publication of the strategy in March 2022 and continuity in top-level executive and non-executive appointments.

The GCIA also reported that financial controls are effective and that there is continuing strengthening of programme and project disciplines, both of which should stand UKRI in good stead in supporting efficiency savings in the coming years. Corporate reform, led through the 'Reforming our Business' portfolio, is set-up and governed effectively for the current stage of delivery.

The GCIA noted the need for an effective operating model to build upon is paramount, associated with which there is a need to fully document and review the corporate governance framework, to ensure clarity in decision-making and assurance responsibilities. Other key areas requiring focus observed by the GCIA include: fraud and error risk management; Innovate UK funding oversight; realising the benefits of the consolidated HR function; and continuing with mitigations on security and data governance risk.

The GCIA highlighted several control weaknesses that had not been sufficiently mitigated from the 2020-21 audit opinion. The GCIA has supported me in reviewing and updating action plans to address these issues during 2022-23.

Assurance on our funding

UKRI has established a funding assurance programme to evaluate whether the research and innovation funding invested during the year continues to accord with the purposes intended and set out in the grant or funding agreements. These procedures allow control weaknesses in research organisations and ineligible spend to be identified and assessed, and ultimately enable me to form a view that my responsibilities as Accounting Officer have been properly discharged. A breakdown of Research and Innovation expenditure by council can be found in the overview section.

UKRI funding assurance processes are subject to regular review by GIAA. In 2021-22 a review of research councils funding assurance was undertaken and concluded with moderate assurance. Work has commenced on delivering a more integrated UKRI funding assurance service overseen by a strengthened oversight group. The oversight group will review programme planning, testing methodologies, tolerances for fraud and error in sample testing, assurance opinion definitions and will monitor timely completion of agreed actions resulting from relevant GIAA reports and other Assurance reports . This is consistent with GIAA recommendations.

Research Councils

The assurance provided though the research councils' funding assurance framework indicates a low level of current and historic errors for all councils. The Head of Funding Assurance has provided me with opinion of Moderate assurance based upon a programme of work undertaken in 2021-22, with the following highlights:

- 49 funding assurance assignments were undertaken, of which 1 achieved Unsatisfactory assurance, 5 Limited assurance, 39 Moderate assurance, and 4 achieved Substantial assurance. This is compared to one Limited assurance, 24 Moderate assurance, and six Substantial assurance assignments completed in 2020-21. Across the 49 assignments, 357 research grants/fellowships and 91 training grants were selected for substantive testing, from which ineligible expenditure of £164k was detected on closed awards, and a further £425k of errors were prevented. For comparison, £293k of Ineligible expenditure was identified in 2020-21.
- 4 of the assignments were undertaken as joint reviews with Innovate UK, Research England, the Wellcome Trust and the National Institute for Health Research respectively.
- those previously receiving unsatisfactory or limited assurance continue to operate under special measures, with final expenditure statements (FES) subject to additional checks by UKRI's Funding Assurance team. FES checks detected £74k of errors.
- post-award checks were undertaken on 78 grants awarded directly to overseas Research Organisations. These checks involve undertaking regular transaction testing throughout the lifetime of projects with the frequency determined by the risk rating assigned during the initial due diligence process. Testing detected £13k and prevented a further £59k of ineligible expenditure.

The Head of Funding Assurance considered the results of GIAA work and the changes in assurance outcomes when providing their Moderate opinion.

Research Council's Off-System Funding

An exercise has been conducted to identify, document, and risk assess the control arrangements for research and innovation spend administered outside of standard UKRI grants management systems. The controls have been benchmarked against the government functional standard for Grants. The outcome of the assessment is a risk rating for each activity based upon value and the controls that are in place. 43% of the spend managed outside of the grants system was rated green and 57% rated amber. GIAA have supported us with this work and is currently undertaking an audit of one of the largest activities managed off-system. An assurance programme will be established in 2022-23 to cover this spend.

Innovate UK

Innovate UK funds a range of organisations including privately owned businesses to help commercialise world-class UK innovation, meaning that an inherently higher level of risk is associated with this funding compared to universities. To manage this risk, assurance arrangements have been put in place for Innovate UK grants, for example including pre-award due diligence, match funding requirements, monitoring, independent assurance, post award funding assurance and independent investigations by the UKRI Counter Fraud Team.

Newly established in 2020-21, the IUK Post-award Funding Assurance Team carried out 1,530 reviews relating to £39.7m of COVID-19 grant claims. These reviews identified £467.3k of ineligible spend, which was either not or paid or is being recovered.

The UKRI Counter Fraud and Investigation Service conducted targeted investigations covering £8.9m worth of Innovate grants in 2021-22 which identified £2.1m of fraud which has been or is in the process of being recovered.

Innovate UK has acknowledged the need to continue making year-on-year improvements in the understanding of risks and weaknesses in the control environment, taking into account lessons learned and open GIAA audit actions. Work is on-going to implement improvements that will not only strengthen controls but will make the most efficient use of Innovate UK resources.

By considering the assurance from Innovate UK's funding assurance arrangements, Innovate UK has provided me with a moderate level of assurance to the public that funds are being spent in accordance with the principles contained within 'Managing Public Money'.

Research England

The Office for Students, as the regulator of the English higher education system, assesses and monitors the financial sustainability of higher education institutions in England. Research England only funds those institutions that have met the thresholds for financial sustainability. Alongside the assurance provided by the Office for Students and the joint OfS/RE Data Adjustments Panel process, Research England commissions independent audits to seek assurance on the effectiveness of the systems and processes used to inform quality-related funding. No specific GIAA audits were undertaken in-year but work for future years is underway.

By combining the assurance received from the Office for Students with the work of the Funding Assurance Programme, I am able to assure the public that funds are being spent in accordance with the principles contained within 'Managing Public Money'.

Diamond Light Source Ltd.

Diamond Light Source Ltd (DLS) was first established in 2002 as a Joint Venture by the Science and Technology Facilities Council (which became part of UKRI in 2018) and Wellcome Trust. As a body classified by the Office for National Statistics as central government, DLS complies with the central Government control framework. The DLS CEO will be appointed as Accounting Officer for DLS in 2022-23, with UKRI as acting as sponsor.

Innovate UK Loans Ltd.

Innovate UK Loans Ltd (IUKL) is a wholly owned subsidiary of UKRI, which delivers financial support to innovative businesses as a part of Innovate UK's wider commitment to fostering business-led innovation. As a wholly owned subsidiary, IUKL is subject to the central government controls framework and is governed by a framework agreement which is being agreed between IUKL and UKRI.

The IUKL Annual Report and Accounts are subject to audit by the National Audit Office and are consolidated with UKRI's Annual Report and Accounts. GIAA is responsible for the provision of internal audit services to IUKL.

Further narrative and detail of their annual assurance opinions are available within the IUKL Annual Report and Accounts lodged with Companies House.

Shared Services Assurance

For the year 2021-22, UKRI received services from UK Shared Business Services Ltd (UK SBS), another BEIS partner organisation, and which also provides services to BEIS.

UKRI receives bi-annual assurance reports from UK SBS on the design and effectiveness of its internal control framework. UK SBS also receives its internal audit provision from GIAA. UK SBS is in receipt of two annual audit opinions, one for UK SBS customer facing operations and the other for internal operations. For 2021-22 these have both been awarded Moderate assurance.

Further narrative and detail of these annual assurance opinions are available within the UK SBS Governance Statement, which is published separately as part of its Annual Report and Accounts.

Significant issues

Budgetary Constraints and Resourcing

The Spending Review 2020 provided a single-year funding settlement for all parts of UKRI for 2021-22, except for our core research budget which received a longer settlement. This has limited our ability to make substantial changes to the balance of our funding given the long-term nature of research and innovation investment.

In response to budgetary constraints and recruitment freezes, UKRI is continuing to provide significant value through its core mission, while addressing substantial foundational challenges such as dealing with legacy technology, protecting against cyber-attacks, and upskilling workforce to reduce loss of talent.

We were successful at Spending Review 2021 in bidding via BEIS for a multi-year funding settlement for all parts of UKRI, which will take effect from 2022-23 onwards.

As a result of Spending Review 2021 and in common with other parts of the public sector, we have been set challenging targets to reduce our headcount and operational expenditure by 2025. To meet these targets and improve our overall efficiency and effectiveness, UKRI is developing a new Operating Model to be implemented in 2022-23.

Security

A newly established security function is developing an overarching security strategy for UKRI and refreshing all existing policies and procedures. A Cyber Security Vulnerability Review was undertaken in 2021-22 via an independent third party. The review made a number of recommendations and comprehensive action plans under consideration to mitigate cyber risks.

Conflict and Regional Instability

The conflict in Ukraine, reminds us that the continued success of research and innovation within the UK relies on our ability to work collaboratively with partners and suppliers both at home and abroad. In response to the developing conflict and ongoing related geopolitical events, UKRI is acting to support and protect our people, partners and those with whom we collaborate. UKRI has established a Conflict Taskforce to keep the changing geopolitical situation under constant review and ensure that the organisation can quickly adapt to changes.

COVID-19

UKRI's has continued to embrace flexible working practices, while ensuring that office space and science facilities have been accessible where possible and have remained operational. This has meant enhancing already rigorous health and safety controls and maintaining COVID-19 secure environments for staff. UKRI's incident management structure remains in place to keep the situation under constant review and ensure that the organisation can quickly adapt to changes.

Capacity and Capability of Staff

During this year, UKRI completed the implementation of its HR Target Operating Model. In addition, there have been key initiatives to address capability and capacity challenges across UKRI. These have included completion of the project to reform recruitment processes across UKRI which has provided increased resourcing to drive forward the organisation's attraction methods. Its new workforce planning practice has seen closer partnerships between the HR and Finance functions.

Senior Leadership Changes

The Senior Leadership across UKRI has seen significant change during 2021-22, with the recruitment of a new UKRI Chair and six Board members, an Executive Chair, two interim Executive Chairs, and an interim Chief People Officer as well as numerous Directors for the Research Councils. UKRI has significantly enhanced the capability and capacity of its Senior Appointments team, and developed succession plans for the Board and Executive Committee. In addition, we have developed marketing and engagement strategies aimed at attracting the highest calibre of diverse candidates to our senior roles, and worked with BEIS to maintain the continuity of Executive leadership. We have also developed tailored attractions strategies for senior leadership roles at Director and Deputy Director level, building on our enhanced in-house search capability.

Official Development Assistance Reductions

In February 2021, UKRI learnt that the BEIS Official Development Assistance (ODA) allocation to UKRI had been significantly reduced to £125 million, resulting in an initial £120 million gap between the allocation and commitments to the Global Challenge Research Fund (GCRF) and Newton Fund programmes. Reductions on this scale are unprecedented and affected every UKRI Council, including Research England and Innovate UK. UKRI immediately introduced a critical incident response approach to manage these reductions, led by Christopher Smith as SRO.

Over a compressed timescale and alongside other difficulties during the pandemic, universities, institutes and businesses in the UK and globally worked with UKRI to manage down spending commitments to meet the reduced allocation. In May 2021 UKRI was able to inform grant holders that the vast majority of grants awarded by UKRI are continuing, albeit at a reduced rate. After the spending review outcome in November 2021, BEIS and UKRI confirmed that project funding was available to meet the legal commitments of all projects from 2022-23.

Horizon Europe

UKRI has worked closely with BEIS on Horizon Europe alternatives, preparing both for association to Horizon Europe later in 2022 and for the possibility of non-association. BEIS has issued two commissions thus far. The first, in September 2021, related to the construction of a guarantee to successful UK applicants to the first wave of Horizon Europe calls, including European Research Council Starting grants 2021 and European Innovation Council 2021 calls. After valuable work by the International, Finance and Innovate teams this work is now well under way, the guarantee is open and the first calls issued. A second wave of the guarantee was announced in March, which covers all successful applications with an expected grant agreement signature date up to December 2022. The second commission was issued in February 2022 and asked UKRI to prepare interim measures to protect and stabilise the UK research and innovation sectors, higher education establishments and businesses in the event of a UK government decision to leave Horizon Europe later this year.

Open Access

In August 2021, UKRI announced its open access (OA) policy, which applies to all UKRI research. From April 2022, we require immediate OA to articles arising from UKRI funding, and have introduced restrictions on the eligible use of our OA funding to help achieve better value for money. This policy development involved wide stakeholder consultation, and we have provided guidance to enable compliance. There are challenges of affordability for the research sector, author choice, and the sustainability of research publishing to be navigated. We considered these issues in policy development and continue to mitigate these challenges through supporting actions, for example, by providing increased funding of up to £46.7 million per annum, and supporting the uptake of OA agreements. We have introduced a new requirement for OA to longform outputs, to be introduced in 2024, and are progressing associated implementation detail. We are working with UK stakeholders, HMG and international partners to progress OA and open research.

Conclusion

I have considered the accounts and evidence provided by colleagues across UKRI in the production of this Governance Statement as well as independent advice and assurance provided by our organisation's Audit, Risk, Assurance and Performance Committee.

Based on the review outlined above, I conclude that UKRI has a sound system of governance, risk management and internal control that supports the department's aims and objectives for 2021-22.

Remuneration and Staff Report

Board Chair and Board members except Chief Executive Officer and Chief Finance Officer

Remuneration Policy

The Chair and Board members receive a letter of appointment from the Department for Business, Energy and Industrial Strategy (BEIS).

They are not employees of UKRI, although remuneration is made through the UKRI payroll.

BEIS advises UKRI of the rates it is required to pay, and these are reviewed with each new appointment.

Board members may receive additional remuneration for attending advisory committees.

The Board Chair and Board Members are defined as Office Holders. They are neither employees nor civil servants.

Appointments are usually made for up to four years. In exceptional cases members may be offered the possibility of re-appointment which cannot exceed ten years in total.

Appointments are non-pensionable and there are no superannuation payments relating to the fees paid to them. There is no compensation for loss of office.

Remuneration – Audited Information

Total Remuneration of Board Membership

Remuneration (£ per annum)	2021-22	2020-21
Board Chair	29,500	28,000
Board Members	9,180	9,180

Board Honoraria – Audited Information

Board Membership

Name	Period of appointment		Remuneration	Remuneration
	From	To	£000s 2021-22	£000s 2020-21
Professor Sir Mark Walport [1]	01 Apr 2018	28 Jun 2020	******	******
Sir John Kingman [2]	01 Apr 2018	11 Jul 2021	5–10	25–30
Sir Peter Bazalgette	01 Apr 2018	24 Mar 2021	-	5–10
Lord John Browne of Madingley [3]	01 Apr 2018	09 Oct 2023	-	-
Professor Max Lu	01 Apr 2018	24 Mar 2021	-	5–10
Fiona Driscoll	01 Apr 2018	29 Oct 2021	5–10	10–15
Professor Sir Leszek Borysiewicz	01 Apr 2018	30 Oct 2022	5–10	5–10
Sir Harpal Kumar [4]	01 Apr 2018	30 Oct 2021	5–10	5–10
Mustafa Suleyman [3]	01 Apr 2018	29 Oct 2020	-	-
Professor Julia Black	01 Apr 2018	29 Oct 2021	10–15	10–15
Lord David Willetts	01 Apr 2018	07 Nov 2023	5–10	5–10
Vivienne Parry	01 Apr 2018	04 May 2021	0–5	5–10
Professor Sir Ian Diamond [5]	01 Apr 2018	31 Oct 2021	-	-
Professor Dame Sally Davies [6]	01 Apr 2018	30 Oct 2021	-	-
Siobhan Peters [7]	29 Jun 2020		******	******
Professor Dame Ottoline Leyser [1]	29 Jun 2020	28 May 2025	******	******
Sir Andrew Mackenzie	12 Jul 2021	12 Jul 2026	20–25	-
Professor Sir Anthony Finkelstein	20 Sep 2021	19 Sep 2024	0–5	-
Professor Sir Ian Boyd	20 Sep 2021	19 Sep 2024	0–5	-
Dr John Fingleton [8]	20 Sep 2021	19 Sep 2024	5–10	-
Nigel Toon [3]	20 Sep 2021	19 Sep 2025	-	-
Priya Guha	20 Sep 2021	19 Sep 2025	0–5	-
Ruwan Weerasekera	20 Sep 2021	19 Sep 2025	0–5	-

Notes:

1 Remuneration disclosed in Senior Staff Remuneration Table.

2 Sir John was Chair of UKRI until 11 July 2021.

3 Lord Browne, Mustafa Suleyman and Nigel Toon declined to receive honoraria.

4 Sir Harpal stepped down from his role as the UKRI Innovation Champion in November 2020, a role for which he received a separate honorarium in addition to his UKRI Board membership honorarium.

5 Sir Ian has declined his honorarium from July 2018. From 29 October 2019 he was no longer formally a Board member but joined the meetings as an unpaid observer.

6 Dame Sally was not formally a member of the Board but joined meetings in a personal capacity. She took no remuneration for this role. Dame Sally was a Civil Servant until 30 September 2019.

7 Remuneration disclosed in Senior Staff Remuneration Table. Siobhan Peters has an open-ended term of appointment to the Board linked to her role as UKRI CFO; whilst she remains in post, in line with the Higher Education and Research Act 2017, she remains a member of the UKRI Board.

8 Dr John Fingleton is the current UKRI Innovation Champion. Dr Fingleton is also an Innovate UK Council Member for which he receives a separate honorarium. The figure disclosed above includes both his UKRI Board and Innovate UK Council honoraria, the latter pro rated from the date of his appointment to the Board.

Chief Executive Officer, Chief Finance Officer and Executive Chairs

Ministerial appointments (CEO, CFO, and Executive Chairs) have their initial remuneration package, both the basic pay and the performance related pay element, agreed by the relevant BEIS minister.

The UKRI Nominations and Remuneration Committee provides advice and recommendations to BEIS as to the performance element of the pay package, changes in basic pay for existing role holders, and the package for new recruitment exercises. They will also review and oversee the expenses arrangements of these appointments. Inputs include scrutiny of performance, benchmarking, recruitment and retention issues, compliance with equality duties and overall efficiency and affordability.

This advice is exchanged between the Chair of UKRI and the BEIS Permanent Secretary, where the context of wider public sector pay policy and managing public money rules are relevant factors in decision making. The final decision as to the performance related pay elements of these ministerial appointees is taken by the BEIS Permanent Secretary.

When setting remuneration policy, the UKRI Nominations and Remuneration Committee reviews and has regard to pay and employment conditions across UKRI and the wider public sector, especially when determining annual salary increases. This will include the Senior Civil Service Pay Award practitioner guidance published annually by the Cabinet Office.

Other Senior Employees

The remuneration of other senior roles which existed before the formation of UKRI and transferred into UKRI on 1 April 2018 remained unchanged and with their pay arrangements protected.

The pay award date for all senior employees and Executive Chairs has been harmonised at 1 April since April 2020.

A harmonised performance management system was also introduced from this date.

Remuneration for senior roles is linked to job weight, and a minimum salary for Deputy Director equivalent posts has been introduced. The remuneration for new senior roles recruited into the MRC Institutes is in line with their legacy pay arrangements as agreed at the establishment of UKRI.

The role of the UKRI Nominations and Remuneration Committee is to ensure that remuneration arrangements support the strategic aims of UKRI and enable the recruitment, motivation and retention of senior staff, while complying with public sector pay policy and other requirements.

Senior Staff Remuneration Table (audited)

Chief Executive & Directors	2021-22 Salary (£'000)	Bonus * (£'000)	Non-cash benefits	Pension benefits ** (£'000)	Total (£'000)	2020-21 Salary (£'000)	Bonus * (£'000)	Non-cash benefit	Pension benefits ** (£'000)	Total (£'000)
Professor Sir Mark Walport[1] UKRI Chief Executive	-	-	-	-	-	40–45	5–10	-	-	50–55
Mike Blackburn [2] UKRI CFO / UKRI Interim COO	-	-	-	-	-	260–265	-	-	-	260–265
Emma Lindsell [3] Executive Director, Strategy, Performance and Engagement (job share)	75–80	0–5	-	13	95–100	75–80	0–5	-	83	165–170
Isobel Stephen [4] Executive Director, Strategy, Performance and Engagement (job share)	70–75	0–5	-	12	85–90	55–60	0–5	-	71	130–135
Professor Dame Lynn Gladden [5] Exec Chair EPSRC	115–120	-	-	-	115–120	115–120	5–10	-	-	125–130
Professor Melanie Welham Exec Chair BBSRC	145–150	10–15	-	72	230–235	145–150	-	-	54	200–205
Professor Jennifer Rubin [6] Exec Chair ESRC	-	-	-	-	-	115–120		-	25	140–145
Professor Alison Park [7] Exec Chair ESRC	115–120	-	-	41	155–160	25–30	0–5	-	11	40–45
Dr Ian Campbell [8] Exec Chair IUK	-	-	-	-	-	130–135	10–15	-	41	185–190
Mike Biddle [9] Exec Chair IUK	10–15	-	-	51	60-65	35–40	-	-	48	85–90
Simon Edmonds [9] Exec Chair IUK	10-15	-	-	8	20–25	45–50	-	-	44	90–95
Professor Fiona Watt [10] Exec Chair MRC	130–135	-	-	25	155–160	150–155	-	-	29	180–185
Professor Sir Duncan Wingham Exec Chair NERC	145–150	5–10	-	66	215–220	145–150	10–15	-	50	205–210

Senior Staff Remuneration Table (continued)

Chief Executive & Directors	2021-22 Salary (£'000)	2021-22 Bonus * (£'000)	2021-22 Non-cash benefits	2021-22 Pension benefits ** (£'000)	2021-22 Total (£'000)	2020-21 Salary (£'000)	2020-21 Bonus * (£'000)	2020-21 Non-cash benefit	2020-21 Pension benefits ** (£'000)	2020-21 Total (£'000)
David Sweeney [11] Exec Chair RE	135–140	-	-	-	135–140	135–140	-	-	-	135–140
Professor Mark Thomson [12] Exec Chair STFC	150–155	-	-	48	200–205	145–150	-	-	48	195–200
Professor Andrew Thompson [13] Exec Chair AHRC	-	-	-	-	-	25–30	-	-	6	35–40
Professor Dame Ottoline Leyser [14] UKRI Chief Executive	215–220	-	-	8	225–230	165–170	-	-	-	165–170
Siobhan Peters [15] UKRI CFO	145–150	5–10	-	31	185–190	125–130	-	-	100	225–230
Professor Christopher Smith [16] Exec Chair AHRC	140–145	10–15		26	180–185	85–90	-	-	15	100–105
Tim Bianek [17] UKRI Chief Operating Officer	115–120	-	-	47	165–170	15–20	-	-	7	20–25
Indro Mukerjee [18] CEO at IUK	160–165	-	-	25	185–190	-	-	-	-	-
Professor John Iredale [19] Exec Chair MRC	40–45	-	-	2	40–45	-	-	-	-	-

Notes:

1 Sir Mark's role as CEO was 88% of full-time. The FTE salary was in the 195-200 banding. He opted out of the pension scheme. Sir Mark left this role as of 26 June 2020.

During 2020-21, two bonuses were paid; one bonus in the banding 35-40 was paid relating to performance during the period February 2017 to February 2020 (included in the bonus calculation for 2019-20) and a further bonus in the banding 5-10 was paid for the final five months of his tenure as UKRI CEO (included in the bonus calculation for 2020-21). This was approved by the UKRI Nominations and Remuneration Committee.

Sir Mark remained an employee of UKRI until 31 July 2020, having stepped down as CEO. This was to provide oversight of UKRI's COVID-19 work and to represent UKRI in cross-government initiatives. Sir Mark was no longer a member of the UKRI Board or Executive Committee during this time. Therefore his remuneration for this position is not disclosed.

2 Mike Blackburn joined UKRI as CFO on 15 July 2019. He was employed through an independent agency and did not belong to the available pension schemes. He was retained via a Crown Commercial Service Public Sector Resourcing framework contract. His role had been assessed as being within scope of the IR35 regulations; consequently, Income Tax and National Insurance deductions were made at source by the independent agency that directly employed him in compliance with the IR35 regulations. The FTE salary banding was 305-310. Mike was CFO until 29 June 2020 and then the Interim COO from 29 June 2020 to 8 February 2021.

3 Emma Lindsell joined UKRI on 5 August 2019 in a 65% job-share role. The FTE salary banding is 120-125.

4 Isobel Stephen joined UKRI on 27 August 2019 in a 60% job-share role. The FTE salary banding is 120-125.

5 Professor Gladden is an employee of the University of Cambridge and is on secondment to UKRI. Professor Gladden's role is 80% of full time. The FTE salary banding is 145-150.

6 Professor Rubin is an employee of King's College London and was on secondment to UKRI. The values shown above are the amounts reimbursed to King's College from April 2020 to the end of December 2020. VAT is payable on the total amount invoiced but is not included in the figures above. Professor Rubin's secondment is 95% of full-time. FTE salary banding was 140-145. Professor Rubin left her role on 31 December 2020.

7 Professor Alison Park is covering the ESRC Executive Chair in the interim.

8 Dr Ian Campbell left his role as Executive Chair of Innovate UK on 25 November 2020.

9 Mike Biddle and Simon Edmonds were covering the IUK Executive Chair role on an interim basis. Mike and Simon's salary has only been disclosed above in respect of the period they were members of the Executive Committee, which was 1st December 2020 until 4th May 2021. Stewart Miller and Louisa Simons were also covering this role in the interim; their remuneration is not disclosed as they were not members of the Executive Committee. Indro Mukerjee was appointed as Chief Executive Officer IUK on 5 May 2021.

10 Professor Watt is an employee of King's College London and was on secondment to UKRI. Professor Watt left the role on 9 January 2022. Professor Watt's secondment was 80% of full-time. FTE salary banding for a complete year was 190-195.

11 David Sweeney has opted out of the pension scheme.

12 Professor Mark Thomson is an employee of the University of Cambridge and is on secondment to UKRI. The values shown above are amounts reimbursed to the University of Cambridge. VAT is payable on the total amount invoiced but is not included in the figures above.

13 Professor Andrew Thompson was an employee of the University of Exeter and on secondment to UKRI. From September 2019 Professor Thompson moved to the University of Oxford, continuing as AHRC Executive Chair on a fixed consultancy fee representing 60% of full-time. The values shown above are amounts reimbursed (excluding Pension and National Insurance Contributions) to the University of Oxford from April 2020 to August 2020. VAT was payable on the total amount invoiced but is not included in the figures above. Professor Thompson's secondment was 80% of full-time. The FTE salary banding was 120-125. Professor Thompson left the role on 31 August 2020.

14 Professor Dame Ottoline Leyser commenced the role of UKRI Chief Executive on 29 June 2020. Professor Leyser is an employee of the University of Cambridge and on secondment to UKRI. FTE salary band is 215-220.

15 Siobhan Peters commenced the role of CFO on 29 June 2020. FTE salary band is 155-160.

16 Professor Christopher Smith commenced the role of AHRC Executive Chair on 1 September 2020. Professor Smith is an employee of the University of St. Andrews and on secondment to UKRI. FTE salary band is 140-145. A small overpayment to St. Andrews in year will be reclaimed. Disclosure is of the true secondment value.

17 Tim Bianek commenced the role of Chief Operating Officer on 8 February 2021. FTE salary band is 115-120.

18 Indro Mukerjee commenced the role of Chief Executive Officer at Innovate UK on 5 May 2021. FTE salary band is 175-180.

19 Professor John Iredale is covering the role of MRC Executive Chair in the interim. Professor Iredale's secondment is 80% of full time. FTE salary band is 170-175.

* Bonuses paid in the financial year 2021-22 relate to the performance year 2020-21, unless otherwise stated.

** The value of pension benefits accrued during the year is calculated as (the real increase in pension multiplied by 20) plus (the real increase in any lump sum) less (the contributions made by the individual). The real increases exclude increases due to inflation or any increase or decreases due to a transfer of pension rights. The pension benefit disclosure for secondees is not equivalent to the pension benefit disclosure of the other directors, it is the re-imbursement of the contributions UKRI makes to their employers in respect of the secondees' pension. Where no benefit is shown the UKRI makes no such contribution.

Salary and Allowances, Benefits in Kind and Bonuses

Salary paid in 2021-22 includes salary and any allowances. It does not include severance payments, reimbursement of expenses, employer pension contributions or the cash equivalent transfer value of pensions.

The monetary value of benefits in kind covers any benefits provided by the employer and treated by HM Revenue and Customs as a taxable emolument. There were no benefits in kind paid to any of the UKRI Executives in 2021-22 (Nil in 2020-21).

Decisions on whether to award non-consolidated performance awards to Directors are made by the CEO in conjunction with the UKRI Nominations and Remuneration Committee. Decisions are strictly performance based. They are made in accordance with Cabinet Office Guidance for the approval of senior pay document published in November 2018, and the Cabinet Office Senior Civil Service Pay Award Practitioner Guidance (Annual) as well as the annual Senior Salaries Review Body report and any guidance from HM Treasury, Cabinet Office or BEIS. Directors are awarded non-consolidated awards based on how well they achieved or exceeded the personal objectives given to them at the beginning of the appraisal period.

Performance awards for 2021-22 for Directors will be paid in 2022-23 following the internal moderation processes and will be included within next year's report.

Reporting bodies are required to disclose the relationship between the remuneration of the highest-paid director in their organisation and the median remuneration of the organisation's workforce.

Fair pay disclosure – Audited Information

Reporting bodies are required to disclose the relationship between the remuneration of the highest-paid director in their organisation and the lower quartile, median and upper quartile remuneration of the organisation's workforce.

The banded remuneration of the highest-paid director in UKRI in the financial year 2021-22 was £215,000 to £220,000 (2020-21, £305,000 to £310,000), a 29.3% reduction from the previous financial year. This was 5.47 times (2020-21, 8.10) the median remuneration of the workforce, which was £39,748 (2020-21, £37,956). The decrease in multiple is primarily a result of the change in banded remuneration of the highest paid director.

In 2021-22, no (2020-21, nil) employees received remuneration in excess of the highest-paid director. Remuneration ranged from £11,925 to £220,000 (2020-21, £11,446-£308,000).

Total remuneration includes salary, non-consolidated performance-related pay, and benefits-in-kind. It does not include severance payments, employer pension contributions and the cash equivalent transfer value of pensions.

Components of total pay and reward at quartiles

	Components of total pay and reward	
Percentile	**Total Pay**	**Salary Component**
25	£31,931.00	£31,931.00
50	£39,748.00	£39,748.00
75	£49,498.00	£41,496.00

Average change in total pay & reward

	2021-22	
	Salary & Allowances	**Bonus Payments**
Staff Average	2%	-14%
Highest Paid Director	-29%	0%

The 14% decrease in average bonus payment per employee arose from the employee numbers growing year on year against a static total budget.

Pay ratios

	Quartiles		Ratio against max salary mid-point	
	20-21 Quartiles	**21-22 Quartiles**	**20-21**	**21-22**
Min	£10,063.42	£11,925.00	-	-
25	£31,305.00	£31,931.00	9.82	6.81
50	£37,956.00	£39,748.00	8.10	5.47
75	£47,000.00	£49,498.00	6.54	4.39
Max salary range	**£307,500.00**	**£217,500.00**		

The reduction in ranges and ratios is due to:

- the departure from UKRI of the previously highest-paid director during 2020-21 (Mike Blackburn)
- the median point moving from the Band D pay range to the higher Band E pay range

Total UKRI payroll staff from 31 March 2022 has been grouped from lowest to highest paid (based on total pay including allowances). As per HM Treasury's guidance we identified the median and quartile points based on total pay. The first table shows the median and quartiles and details how much of the total pay was for the individual at that quartile was comprised of salary and how much their total pay was. The 25th and median employee's total pay was entirely comprised of salary, the 75th quartile employee was in receipt of an £8,000 allowance.

With regard to the median pay ratio, we believe that the ratio is consistent with the pay, reward and progression policies for UKRI; all UKRI pay arrangements are subject to our existing pay policy which is governed by Civil Service Pay Guidance and is regularly assured though audit and compliance returns.

Senior staff pension table

Information regarding the following staff to be provided for year-end report

Chief Executive and Executive Chairs	Accrued pension at pension age at 31 March 2022 and related lump sum £000	Real increase in pension and related lump sum at pension age £000	CETV at 31 March 2022 £000	CETV at 31 March 2021 £000	Real increase in CETV £000	Accrued pension at pension age at 31 March 2021 and related lump sum £000	Real increase in pension and related lump sum at pension age £000	CETV at 31 March 2021 £000	CETV at 31 March 2020 £000	Real increase in CETV £000
Emma Lindsell Executive Director, Strategy, Performance and Engagement (job share)	30–35 plus a lump sum of 70–75	0–2.5	542	511	1	30–35 plus a lump sum of 70–75	2.5–5 plus a lump sum of 5–7.5	511	437	55
Isobel Stephen Executive Director, Strategy, Performance and Engagement (job share)	30–35 plus a lump sum of 65–70	0–2.5	560	528	1	30–35 plus a lump sum of 70–75	2.5–5 plus a lump sum of 5–7.5	528	460	51
Professor Melanie Welham Exec Chair BBSRC	25–30	2.5–5	460	387	53	25–30	2.5–5	387	326	37
Dr Ian Campbell Exec Chair IUK	-	-	-	-	-	10–15	2.5–5	182	144	23
Professor Sir Duncan Wingham Exec Chair NERC	35–40	2.5–5	647	560	60	30–35	2.5–5	560	484	44
Mike Biddle Exec Chair IUK	25–30	2.5–5	425	360	38	20–25	2.5–5	359	308	35
Simon Edmonds Exec Chair IUK	35–40 plus a lump sum of 105–110	0–2.5 plus a lump sum of 0–2.5	808	784	8	30–35 plus a lump sum of 100–105	0–2.5 plus a lump sum of 5–7.5	784	743	43
Professor Alison Park Exec Chair ESRC	5–10	2.5–5	106	64	27	0–5	0–2.5	64	55	7
Siobhan Peters UKRI CFO	60–65 plus a lump sum of 35–40	0–2.5	979	916	7	55–60 plus a lump sum of 35 – 40	5–7.5 plus a lump sum of 0–2.5	916	814	68
Tim Bianek UKRI Chief Operating Officer	0–5	2.5–5	41	5	27	0–5	0–2.5	5	-	4

Details of Pension Schemes

Most employees of UK Research and Innovation are members of one of three occupational pension schemes; Research Councils' Pension Scheme (RCPS), Medical Research Council Pension Scheme (MRCPS) and Civil Service Pension Scheme (CSPS). These are all defined benefit schemes.

UKRI complies with auto-enrolment legislation by enrolling eligible employees into a qualifying occupational pension scheme. Most staff employed by UKRI are entered into the CSPS arrangements.

Staff who are employed at the MRC institutes in Cambridge, London and Oxford are enrolled in the MRCPS. Staff who were previously employed by the BBSRC, AHRC, STFC, EPSRC, ESRC, NERC, Innovate UK, MRC or Research England, and who had their employment transferred to UKRI through a statutory staff Transfer Scheme on 1 April 2018, are entitled to remain in their pension scheme, including if they take up a new post on UKRI Terms and Conditions.

Members of relevant pension schemes as at 31 March 2022

RCPS:	3,413
MRCPS:	1,089
CSPS:	3,008

Research Councils' Pension Scheme (RCPS)

The RCPS is a defined benefit scheme funded from employer and employee contributions and annual grant-in-aid on a pay-as-you-go basis. The benefits are by analogy to the Principal Civil Service Pension Scheme (PCSPS), except that while the schemes provide retirement and related benefits based on final or average emoluments, redundancy and injury benefits are administered and funded by UKRI. The scheme is administered by the Joint Superannuation Service, with the associated grant-in-aid managed by UKRI. The scheme accounts are prepared by UKRI on behalf of the UKRI Chief Executive as the Accounting Officer of the RCPS. Separate accounts are published for the pension schemes.

Employees may be in one of four defined schemes; either a 'final salary' scheme (classic, classic plus or premium); or a career average scheme (nuvos). Pensions payable are increased annually in line with changes in the Consumer Prices Index (CPI). Employees' contributions vary between 4.6 and 8.05% depending on the scheme. The employer's contribution is agreed by the RCPS Management Board on the recommendation of the Government Actuary's Department (GAD) and is currently set at 26.0% of pensionable pay.

RCPS Employee Contribution Rates for 2021-22:

Annualised Pensionable Earnings	Normal Member Contribution Rate (%)
Up to £23,100	4.60
£23,101 - £56,000	5.45
£56,001 - £150,000	7.35
£150,001 and above	8.05

The employer's contribution to the RCPS for 2021-22 was £38.4 million (2020-21: £40.4 million).

Contributions are set at a level that is expected to be sufficient to pay the required benefits falling due in the same period, with future benefits earned during the current period to be paid out of future contributions.

Formal actuarial valuations are used to determine employer and employee contribution rates. The last full actuarial valuation was undertaken for RCPS on 31 March 2018 and completed in 2020. The RCPS Management Board agreed to continue with an employer contribution rate of 26.0%.

As an alternative to the RCPS, a Partnership Pension Account was made available to new staff from 1 October 2002, based on the portable Stakeholder Pension introduced by the Government in 2001. This is a defined contribution scheme. The employers pay the RCPS 0.8% of pensionable pay to cover death in service and ill-health benefits. The employers pay the balance to the employee's private pension provider. The employer contribution for 2021-22 was

£287,471 (2020-21: £221,981). The employer's 0.8% death in service Partnership contribution for 2021-22 was £11,021 (2020-21: £11,398).

Further details of the Research Councils' Pension Scheme can be found at http://jsspensions.nerc.ac.uk

Medical Research Council Pension Scheme (MRCPS)

Details of the Medical Research Council Pension Scheme are disclosed in Note 10 of the Financial Statements.

Civil Service Pension Schemes

UKRI have a statutory requirement to participate in the Civil Service Pension Scheme (ref. Higher Education and Research Act 2017 Sch. 9 para. 8(6)). The Civil Service Pension arrangements comprise the Principal Civil Service Pension Scheme (PCSPS) and Alpha, a new scheme set up in April 2015. Generally, all new employees joining on UKRI Terms and Conditions are enrolled in the Alpha pension scheme.

Alpha provides benefits on a career average basis with a normal pension age equal to the member's State Pension Age (or 65 if higher). Before April 2015 civil servants were enrolled in the Principal Civil Service Pension Scheme (PCSPS). The PCSPS has four sections: three providing benefits on a final salary basis (classic, premium or classic plus) with a normal pension age of 60; and one, Nuvos, providing benefits on a career average basis with a normal pension age of 65.

These statutory arrangements are unfunded, with the cost of benefits met by monies voted by Parliament each year. Pensions payable under classic, premium, classic plus, nuvos and alpha are increased annually in line with Pensions Increase legislation.

Employee contributions are salary-related and range between 4.60 to 8.05% for members of premium, classic plus, nuvos and alpha.

Civil Service Employee Contribution Rates for 2021-22

Annualised Pensionable Earnings	Normal Member Contribution Rate (%)
Up to £23,100	4.60
£23,101 - £56,000	5.45
£56,001 - £150,000	7.35
£150,001 and above	8.05

The employer contribution rate for the 2021-22 period was between 26.6 and 30.3% depending on the employee's salary.

Benefits in classic accrue at the rate of 1/80th of final pensionable earnings for each year of service. In addition, a lump sum equivalent to three years' initial pension is payable on retirement. For premium, benefits accrue at the rate of 1/60th of final pensionable earnings for each year of service. Unlike classic, there is no automatic lump sum. classic plus is essentially a hybrid with benefits for service before 1 October 2002 calculated broadly as per classic and benefits for service from October 2002 worked out as in premium. In nuvos a member builds up a pension based on their pensionable earnings during their period of scheme membership. At the end of the scheme year (31 March) the member's earned pension account is credited with 2.3% of their pensionable earnings in that scheme year and the accrued pension is uprated in line with Pensions Increase legislation. Benefits in alpha build up in a similar way to nuvos, except that the accrual rate in 2.32%. In all cases members may opt to give up (commute) pension for a lump sum up to the limits set by the Finance Act 2004.

The partnership pension account is a stakeholder pension arrangement. The employer makes a basic contribution of between 8 and 14.75%, depending on the age of the member, into a stakeholder pension product chosen by the employee from a panel of providers. The employee does not have to contribute, but where they do make contributions, the employer will match these up to a limit of 3% of pensionable salary in addition to the employer's basic contribution. During 2021-22, employer contributions of £431,547 (2020-21: £183,752) were payable to partnership pension providers. Employers also contribute a further 0.5% of pensionable salary to cover the cost of centrally provided risk benefit cover for death in service and ill health retirement, referred to as mini Accruing Superannuation Liability Charges (mini ASLCs); these totalled £16,293 for 2021-22 (2020-21: £18,274).

The accrued pension quoted is the pension the member is entitled to receive when they reach their scheme pension age, or immediately on ceasing to be an active member of the scheme if they are already at or over pension age. Pension age is 60 for members of classic, premium and classic plus, 65 for members of nuvos, and the higher of 65 or State Pension Age for members of Alpha.

The accrued pension quoted is the pension the member is entitled to receive when they reach pension age, or immediately on ceasing to be an active member of the scheme if they are already at or over pension age. Pension age is 60 for members of classic, premium and classic plus, 65 for members of Nuvos, and the higher of 65 or State Pension Age for members of alpha. (The pension figures quoted for officials show pension earned in PCSPS or alpha – as appropriate. Where the official has benefits in both the PCSPS and alpha the figure quoted is the combined value of their benefits in the two schemes but note that part of that pension may be payable from different ages.)

Further details about the Civil Service pension arrangements can be found at www.civilservicepensionscheme.org.uk

During 2021-22, employer contributions of £28,236,196 (£21,014,687 in 2020-21) were payable to the Scheme at one of four rates in the range 26.6% to 30.3% of pensionable earnings, based on salary bands.

Other Pension Schemes

UKRI also paid contributions during the year to two other multi-employer pension schemes for specific groups of employees. These schemes are:

- Principal Non-Industrial Superannuation Scheme (PNISS) of the United Kingdom Atomic Energy Authority (7 employees)
- National Employment Savings Trust (NEST), the Government's workplace pension scheme (49 employees)

Cash Equivalent Transfer Value

A Cash Equivalent Transfer Value (CETV) is the actuarially assessed capitalised value of the pension scheme benefits accrued by a member at a point in time. The benefits valued are the member's accrued benefits and any contingent spouse's pension payable from the scheme.

A CETV is a payment made by a pension scheme or arrangement to secure pension benefits in another scheme or arrangement when the member leaves a scheme and chooses to transfer the benefits accrued in their former scheme.

The figures shown relate to the benefits that the individual has accrued as a consequence of their total membership of the pension scheme. They also include any additional pension benefit accrued to the member as a result of their purchasing additional years of pension service or buying additional pension benefits at their own cost. CETVs are worked out in accordance with The Occupational Pension Schemes (Transfer Values) (Amendment) Regulations 2008 and do not take account of any actual or potential reduction to benefits resulting from Lifetime Allowance Tax which may be due when pension benefits are taken.

Real Increase in the Value of the CETV

This reflects the increase in CETV that is funded by the employer. It does not include the increase in accrued pension due to inflation, or contributions paid by the employee (including the value of any benefits transferred from another pension scheme or arrangement), and uses common market valuation factors for the start and end of the period.

Staff Report

Staff Numbers – number of persons employed at 31 March 2022 – Audited Information

	2021-22		2020-21	
	Headcount	FTE	Headcount	FTE
Permanent & Fixed Term Employees	7,931	7,602	7,793	7,472
Temporary & Contract Staff	378	246	377	271
Secondments	73	35	80	60
Total number of staff	**8,382**	**7,883**	**8,250**	**7,803**

Total FTE increase compared to last year of 77 FTE. Efficiencies in some areas offset by increases to support change programmes in UKRI such as SHARP, RoB and IUK change portfolios.

Staff Related Costs – Audited Information

	2021-22			2020-21
	Permanently employed staff £000	Temporary Staff £000	Total £000	Total £000
Wages and Salaries	322,247	19,707	341,954	346,947
Social Security costs	72,908	-	72,908	33,735
Other Pension costs	107,757	-	107,757	89,761
Sub Total	502,912	19,707	522,619	470,443
Less recoveries in respect of outward secondments	(548)	-	(548)	(214)
	502,364	**19,707**	**522,071**	**470,229**

Year on year, wages and salaries have decreased by £5.0 million (1.4%) despite a 1.0% reported increase in FTE between 31 March 2021 and 31 March 2022. This is explained by significant year-on-year changes in the financial value of annual leave owed to UKRI staff since the beginning of the COVID-19 pandemic. In 2020-21 this value increased by £10.1 million as staff carried forward additional annual leave as UKRI responded to the impact of the pandemic; in 2021-22 this value reduced by £2.5 million as staff reduced annual leave balances. Once the impact of these year-on-year movements is removed, Wages and Salaries showed an underlying growth of £6.1million/1.8% similar to the growth in FTE.

Social Security costs increased year-on-year; following a review of the IR35 status of Monitoring & Assessment Officers engaged by Innovate UK, UKRI has concluded that some of these Monitoring & Assessment officers should have been considered to be inside the scope of IR35 regulations, and thus subject to Income tax and national insurance contributions. UKRI has estimated a liability related to these income tax and national insurance contributions for the period to 2018-19 to 2021-22 which is included in Social Security costs. It is expected that this liability will be settled in 2022-23.

Within other pension costs, the net impact of the MRC Pension Scheme on Staff expenditure (£23.7 million against £9.2 million for the prior year) is the key driver of year-on-year change; current service costs increased from £29.0 million to £40.9 million, whilst employer contributions reduced from £19.8 million to £17.1 million. Employer contributions for UKRI's other schemes increased by £3.5 million year-on-year.

Sickness Absence

UKRI HR and management monitor employee sick absences continuously, with sickness absences followed up by a return-to-work interview in line with UKRI Sickness Absence Policy. Short-term and long-term absences are managed on a case-by-case basis with appropriate support from an Occupational Health Assessor. Throughout 2021-22 sickness attributed to COVID-19 was also separately communicated to BEIS and monitored through a Bronze, Silver, Gold command structure. Sickness was significantly reduced in 2020-21 as a result of the work from home orders, but across all reasons increased in 2021-2022 as staff returned to office buildings and employers lost the protective effect of lockdown conditions against other minor illness. This also impacted rates of long term sickness. The sharpest changes in long term absence were within 'back pain & musculoskeletal injuries' and 'Surgery and Post-op recovery'. Many procedures were cancelled or postponed over the pandemic period accounting for the decline and subsequent rise in 'surgery and post-op' recovery absences. It is likely that easy access to home place adjustments and the removal of commute for work impacted 'back pain and musculoskeletal injuries' although with hybrid working available to most of the workforce it is not clear why we have seen a rise to rates approaching pre-pandemic levels in this type of sickness absence.

Although sickness did increase against the previous year, total percentages of days lost were still lower than pre-pandemic absence rates (for both short term and long term absence). In particular, we attribute lower rates of stress and mental ill-health to the impact of hybrid working conditions.

	2021-22		2020-21	
Sickness Absence	**Days**	**Working Days**	**Days**	**Working Days**
Total days of absence	47,598	38,813	30,088	24,090
Frequency of absences lasting longer than 28 days	344	344	246	246
Total days of long-term absence	21,121	15,408	14,894	10,832
Average days of sick absence per person in UKRI	6	5	4	3

Staff Numbers by Sex

	Head Count				FTE			
Pay Bands	**Male**	**Female**	**Unknown**	**Total**	**Male**	**Female**	**Unknown**	**Total**
Directors (X&Y)	86	50	-	136	81	47	-	128
Senior Managers (G & H)	350	194	-	544	331	184	-	515
Other Employees (A-F)	4,047	3,526	129	7,702	3,868	3,247	122	7,237
Total	**4,483**	**3,770**	**129**	**8,382**	**4,280**	**3,478**	**122**	**7,880**

Staff Numbers by Ethnicity

Ethnic Group	Year End Number of Employees	Percentage
Black, Asian, mixed and minority ethnic	554	6.6%
White	5,223	62.3%
Ethnicity Withheld	590	7.0%
Ethnicity Not Reported	2,015	24.0%
Total	**8,382**	**99.9%**

To be consistent with Higher Education Statistical Authority (body responsible for analysis of higher education in UK, a useful comparator/benchmark for UKRI), census categories and other public bodies, UKRI use the term Black, Asian, mixed and minority ethnic for the purposes of clarity about the categories of data collected.

Staff Numbers by Disability

Disability	Year End Number of Employees	Percentage
Yes	214	2.6%
No/None reported	8,158	97.3%
Not disclosed*	10	0.1%
Total	**8,382**	**100.0%**

* Disability is reported by exception, Not Disclosed indicates where Employees have explicitly opted out by indicating a 'prefer not to say' or similar option on equality monitoring forms.

Staff Turnover

Turnover	2021-22	2020-21
All Staff Turnover	14.9%	9.7%
Employees Turnover	11.7%	7.7%
Resignation Rate	7.5%	4.8%

Over the pandemic period staff turnover in UKRI was significantly reduced. As we have emerged from lockdown conditions our annualised turnover has returned to pre-pandemic levels.

UKRI has some known turnover hotspots.

Within research facing areas, as highlighted above, turnover is above appetite in STEM areas. We believe that for junior staff the perceived lack of career progression and pay progression are key drivers; and for world-class senior scientists, we can't compete on pay rates. There are various initiatives in train to address this. For example, UKRI is working in partnership with BEIS on a STEM pay flexibilities case to reduce compensation disparities with our competitors, particularly across specialist and niche technical areas such as Quantum Computing, and to link pay to competences and career development.

Across professional support areas we are experiencing elevated turnover rates in DDaT, Change and Project Management and Analysis roles, and Estates. The turnover in DDaT is somewhat inflated due to planned turnover from fixed-term contracts. Change and Projects is of more concern given a high proportion of turnover in this area is driven by resignations suggesting a more competitive marketplace. A range of local actions are being taken to address this, and corporate work is underway on a clearer employee value proposition (EVP).

Reporting of Civil Service and other Comprehensive Schemes – Exit Packages

Audited Information

Redundancy costs have been paid in accordance with either the provisions of the Research Councils' Compensation Scheme, which mirrors the terms of the Principal Civil Service Compensation Scheme, a statutory scheme made under the Superannuation Act 1972, or the provisions of the Medical Research Council Redundancy Compensation Scheme.

	Number of compulsory redundancies		Number of other departures agreed		Total no of exit packages by cost band	
Exit package cost band	**2021-22**	**2020-21**	**2021-22**	**2020-21**	**2021-22**	**2020-21**
<£10k	2	10	16	22	18	32
£10k - £25k	6	18	30	26	36	44
£25k - £50k	2	13	12	28	14	41
£50k - £100k	-	3	4	30	4	33
£100k - £150k	-	-	-	7	-	7
£150k - £200k	-	-	1	-	1	-
Total no by type	10	44	63	113	73	157
Total value of exit packages accounted for in year £	**163,231**	**1,007,170**	**1,438,687**	**4,940,602**	**1,601,918**	**5,947,772**

Health and Safety

Thanks to the efforts of all our staff, UKRI has safely completed a full year's operation during the COVID-19 pandemic. Our safety management systems, professional safety advisors, staff safety representatives and workforce deserve great credit for keeping research and innovation open for business. From those key workers who attended our offices and laboratories to those who built new workstations at home, and to those who undertook two weeks of full isolation ahead of joining our research ships and Antarctic Stations, our collective professional adaptability is a key ingredient for success. We will keep striving to be safer both through our own inspections and external regulation, and to recognise the impact on the wellbeing and mental resilience of our workforce and society.

Other specific H&S achievements for the year include:

- A review of our H&S policy resulted in only very minor amendments; the policy will be re-signed by the CEO in early FY 22-23.
- The contract to provide an H&S incident reporting and management system was successfully retendered. The current system provider was selected; however, it requires some reconfiguration to ensure it can be used to its best effect.
- A suite of trial UKRI H&S metrics have been implemented this year, covering several H&S topics including H&S incidents, risks, training, incident investigation and audit. Performance against these is overseen by the UKRI H&S Management Committee.
- STFC, RAL and DL, won the top Royal Society for the Prevention of Accidents (RoSPA) competitively assessed award in the "Research and Development" sector for 2021, for the second year in a row.
- Within NERC, BAS has been re-certified to the ISO 45001 standard.
- UKRI's top H&S hazards have been identified and collated into a single list. Further work to analyse the attendant risks from the hazards will be delivered in FY 22-23.
- The H&S project to deliver a more unified approach to H&S management across the office estate has remained on track and has delivered a common approach to H&S risk assessment.
- A first draft of detailed arrangements to achieve a more consistent approach to consulting staff representatives on H&S matters has been circulated for initial comment to inform its further development.

We have maintained our H&S governance arrangements during the pandemic. The key H&S committees and working group have continued to meet, albeit online, discussing and approving papers to develop the H&S management system

and to review progress and performance which is consolidated into the quarterly UKRI H&S reports which, once approved by the HSMC, are provided to the ExCo and ARAPC.

Performance

UKRI injury and non-injury incident data is consolidated into the quarterly H&S reports to the Executive Committee. Both injury and non-injury incident numbers increased during the year, consistent with more people being back in the workplace this FY. This translates to the average injury incident rate being 26 per 1000 staff and a non-injury rate of 100 per 1000 staff, again increased from the previous year. Most incidents are of a minor nature. Three injury incidents were reported to the Health and Safety Executive (HSE) and two incidents to the Marine Accident Investigation Board, fewer than for FY 20-21 and the former is below the HSE published national figure. These incidents were investigated to establish root causes and identify and implement remedial actions. An overview of each incident was shared between UKRI H&S Advisors. No improvement or prohibition notices were issued for any of the incidents. External inspections of the COVID-19 arrangements at our sites all achieved satisfactory outcomes. There has been no enforcement action undertaken against UKRI by our external regulators this financial year.

Expenditure on Consultancy

Expenditure on consultancy in 2021-22 was £215,970 (2020-21: £560,317). Year-on-year changes in consultancy spend largely relate to support for changes to Polaris House Head Office, construction and maintenance of science estate, Innovate UK competitions and knowledge transfer activity.

Expenditure on Contingent Labour

Expenditure on contingent labour in 2021-22 was £19.7 million (2020-21: £15.8 million). Year-on year changes largely relate to expenditure on UKRI's transformation agenda.

Off Payroll Engagements (more than £245 per day and longer than 6 months)

All payroll workers at UKRI are on arrangements in which the supplier agencies process their payments through PAYE to ensure full tax compliance. The only exception to this is in rare cases where the HMRC tool has shown that an off-payroll worker's engagement arrangements fall outside the scope of the intermediaries legislation IR35. No workers were identified as being subject to this circumstance in 2021-22.

	Number
Number of existing engagements as of 31 March 2022	184
Of which, the number that have existed:	
For less than one year at the time of reporting	118
For between one and two years at the time of reporting	47
For between 2 and 3 years at the time of reporting	9
For between 3 and 4 years at the time of reporting	3
For 4 or more years at the time of reporting	7

For all new off-payroll engagements between 1 April 2021 and 31 March 2022, for more than £245 per day and that last longer than six months:

	Number
Number of new engagements, or those that reached six months in duration between 1 April 2021 and 31 March 2022	350
No. assessed as caught by IR35	285
No. assessed as not caught by IR35	65
No. engaged directly (via PSC contracted to department) and are on the departmental payroll	-
No. of engagements reassessed for consistency / assurance purposes during the year	161
No. of engagements that saw a change to IR35 status following the consistency review	2

For any off-payroll engagements of board members, and/or, senior officials with significant financial responsibility, between 1 April 2021 and 31 March 2022:

	Number
Number of off-payroll engagements of board members, and/or senior officials with significant financial responsibility, during the financial year	-
Total number of individuals on payroll and off-payroll who have been deemed "board members, and/or, senior officials with significant financial responsibility" during the financial year	25*

*Includes all UKRI Board and Exec Co Members

Employee Engagement

People are central to the success of UKRI, and the organisation is working to establish a range of communications and engagement channels to ensure staff understand the importance of what they do and can connect their contributions to the success of UKRI's strategic objectives. We are committed to effective engagement with staff and taking forward their suggestions and ideas. We do this through:

- Day to day leadership and management at every level in the organisation.
- An effective partnership with recognised Trade Unions, through a Joint National Consultative Committee, who represent staff on a range of matters including pay, benefits, pensions, and organisational change.
- Regular updates to staff by senior executives which is accessible by all staff irrespective of their working location. This provides staff with updates on corporate initiatives and also provides the opportunity for employees to ask challenging questions of the executive.
- The "Source" providing a central online portal for all UKRI staff covering news, events, and resources; complemented by additional material for each constituent Council.
- The 'Yammer' platform, facilitating networking and social interaction among UKRI staff.

People Survey

The UKRI People Survey 2022 is the first full survey we have held for three years and is the centre piece of an ongoing programme of engagement to gather the views and experiences of employees working throughout the organisation to shape priorities for action over the coming months and years. In 2019, UKRI took part in the Civil Service People Survey but the question set was not completely relevant for UKRI as an arms-length public body, so we partnered with independent employee survey experts DJS Research to develop our own.

DJS worked with colleagues throughout UKRI to develop a question set that more accurately reflected our uniqueness, whilst retaining the relevant aspects of the Civil Service People Survey to provide continuity for benchmarking and measuring progress.

The survey was open for just over three weeks and responses were invited from all employees, achieving a participation rate of 61%. Engagement scores are provided below.

Engagement with UKRI	Engagement with [council/area]	My work	Organisational objectives and purpose	My manager
58% Difference to Civil Service benchmark -4%	**69%** No Civil Service benchmark	**74%** Difference to Civil Service benchmark -2%	**62%** Difference to Civil Service benchmark -19%	**74%** Difference to Civil Service benchmark +2%
Support for managers	**My team**	**Learning and development**	**Pay and benefits**	**Resources and workload**
71% No Civil Service benchmark	**81%** Difference to Civil Service benchmark -1%	**55%** Difference to Civil Service benchmark -2%	**40%** Difference to Civil Service benchmark +2%	**67%** Difference to Civil Service benchmark -6%

Inclusion and fair treatment	Wellbeing	Senior leadership within UKRI	Senior leadership within [council/area]
73% Difference to Civil Service benchmark -4%	**67%** Difference to Civil Service benchmark -4%	**57%** Difference to Civil Service benchmark -4%	**61%** Difference to Civil Service benchmark -4%
Managing change	**Organisational culture**	**Experienced discrimination**	**Experienced bullying or harassment**
50% Difference to Civil Service benchmark -1%*	**74%** No Civil Service benchmark -4%	**5%** Difference to Civil Service benchmark -4%	**7%** Difference to Civil Service benchmark -2%

The scores shown above are calculated by applying a weighting to each response on the five-point agreement scale. This approach means that a score of 100 percent is equivalent to all colleagues saying strongly agree to all questions in the section, while a score of 0 percent is equivalent to all colleagues saying strongly disagree to all questions.

UKRI is committed to sharing and learning from the survey results openly and transparently, and deepening its ongoing engagement with employees. A series of long-term engagement plans is being developed corporately and locally to address the emerging priorities, as part of the organisation's commitment to continuous improvement.

Staff Policies

UKRI has implemented a revised HR policy framework. This ensures that HR policies are easy to use and can be reviewed and updated through an established consultation and agreement protocol with Trades Unions.

During 2021-22 HR undertook a full Policy Review in collaboration with a range of stakeholders. Work was completed to:

- Work through all current HR policies, to replace them with a short policy statement confirming the key requirements of the policy
- Provide a comprehensive supporting framework and toolkit to enable employees, line managers and (where appropriate) HR colleagues to navigate through the corresponding policy more smoothly
- Remove or reduce contradictions between policies and processes which could cause procedural issues
- Define the consultation and continuous review process to provide clarity to all stakeholders across UKRI
- Clarify ownership of the policies alongside governance colleagues and confirm which are the 'HR' policies,
- Harmonise MRC Institutes to UKRI policy.

Learning and Development

Learning and development opportunities are available to all UKRI employees, covering core skills, compliance training, leadership and management development, vocational training, apprenticeships, and specialist skills.

As part of UKRI's future workspace discussions, uncertainty from line managers, particularly around having 're-entry' conversations and the structuring of work in a hybrid world, was tackled through extended support from the Learning and Development team. The team implemented a range of activities, and signposted line managers to them. These activities, supported line managers as individuals, as well as provided team and self-directed support.

Wellbeing

UKRI recognises that there is a correlation between wellbeing (including physical health and mental wellbeing) at work and job performance, including attendance. UKRI has identified a number of coordinated initiatives across UKRI that employees can access and participate in. Improvements to wellbeing were attributed to UKRI wide interventions which included sessions on 'Psychology of Remote Working', the promotion of support groups and welfare services and strong communication and reassurance from senior leaders on wellbeing matters. This is a maturing area for UKRI and by the end of 2022 will have a strategy in place to formally signal our commitment in this space.

In December 2021, UKRI HR published a 'UKRI Benefits Guide' via the source online portal. Our guide has been produced to provide colleagues with a detailed account of UKRI benefits offering in one place linked to these specific themes:

- Emotional wellbeing
- Holidays and days out

- Shopping and eating out
- Financial support
- Saving for your retirement
- Physical Health

The guide is shared with employees as part of local inductions (including cross Research Council transfers) and signposting is provided where an employee could benefit from any of the services available (such as EAP, Financial and Welfare).

Equality, diversity and inclusion (EDI)

UKRI holds Disability Confident Employer status, which is awarded to employers who have made a commitment to employ, keep and develop the abilities of disabled people, this will be done through the framework of our EDI Plan, the progress of which we will measure annually. We continue to publish our Gender Pay Gap report alongside longer term plans to address pay gaps. Our institutes and centres continue their own EDI programmes, primarily but not exclusively focused on the participation of women in science.

UKRI was awarded the Bronze Inclusive Employer Standard this year (29 September 2021) in recognition of the hard work that has taken place across the business in the equality, diversity and inclusion domain. This accreditation administered by Inclusive Employers was awarded after an in-depth assessment of our EDI portfolio covering a breadth of employment activity.

Trade Unions

In the first quarter of the year in June a new recognition agreement was been signed by the Trades Unions and UKRI.

UKRI has a recognition agreement with the following Trades Unions: The British Medical Association (BMA), The FDA, Prospect, The Public and Commercial Services Union (PCS), Unite the Union (Unite), The University and College Union (UCU), Nautilus International (Nautilus), and The Rail, Maritime and Transport Union (RMT). UKRI engages with unions through a Joint Negotiation and Consultative Committee at an organisational level, Local Joint Consultative Committees at some sites, and Joint Council Consultative Committees at Council level.

The following tables are provided under section 172A of the Trade Union and Labour Relations (Consolidation) Act 1992 in connection with the imposition of requirements on public authorities to publish information on facilities time taken by trade union officials.

Trade Union Facility Time Report 2021-22

No. of employees	FT equivalent
32	40.2
%time	
0 – 0.9%	11
1 – 50%	21
51 – 99%	-
100%	-
Total	32
Total cost facility time £	50,480
total pay bill £'000	503,170
% of total pay bill	0.010%
(Total time spent on TU activities / total facility time hours) x 100	3.6%

During 2021-22 Trade Union Representatives have been recording their facilities time using the centralised absence booking system, allowing a simple overview of the number of representatives and the time that they are taking for their union duties to ensure compliance with the terms of the recognition agreement.

Senior Civil Servant Pay Structure

The number of staff paid within £10k pay bands for Senior Civil Servants (SCS) equivalents as of at 31 March 2022 are as follows:

Minimum (£)	Maximum (£)	Number of Staff*
£50,001	£60,000	-
£60,001	£70,000	-
£70,001	£80,000	-
£80,001	£90,000	17
£90,001	£100,000	20
£100,001	£110,000	5
£110,000	£120,000	6
£120,001	£130,000	4
£130,001	£140,000	4
£140,001	£150,000	4
£150,001	£160,000	2
£160,001	£170,000	-
£170,001	£180,000	1
£180,001	£190,000	-
£190,001	£200,000	-
£200,001	-	-

*Includes UKRI staff on payroll and those paid via an agency at Band X and above. Does not include those on secondment to UKRI or staff in research Centres, Institutes or National Labs.

SCS equivalent pay has been assumed based on oranisation hierarchy matching the Chief Executive, Executive Chairs, Director and their direct reports (where they are Band H and above) to SCS grades.

Parliamentary Accountability and Audit Report

Losses and Special Payments – Audited Information

The 2020-21 loss (£322,785) pertained to specialist hydraulic equipment originally intended for the Halley VI Antarctic Base; the equipment was discovered to be unsuitable for use after transportation to the Antarctic and was left in situ when Halley VI was relocated. A £582,833 loss arose when UKRI impaired and retired equipment damaged beyond use in a fire at a facility that forms part of the ISIS Neutron and Muon Source at Rutherford Appleton Laboratory, part of UKRI's owned scientific estate.

The total losses and special payments incurred by UKRI in the year were £870,141 (2020-21: £615,383).

One special severance payment was made during 2021-22; the amount paid to the recipient is not disclosed as doing so would conflict with UKRI's legal obligation under the Data Protection Act 2018.

Remote Contingent Liabilities – Audited Information

In addition to contingent liabilities reported within the meaning of IAS 37, UKRI also reports liabilities for which the likelihood of a transfer of economic benefit in settlement is too remote to meet the definition of contingent liability.

UKRI has one remote contingent liability as at 31 March 2022.

Through STFC, UKRI collaborates with international partners in the funding, management and operation of technical facilities which are not owned by STFC. In the event of a decision to withdraw from any of these arrangements, it is likely that STFC would assist in the search for a replacement partner to ensure that technical commitments were met. The most significant international collaborations are in respect of CERN and ESO. For both facilities there is the possibility that STFC would be obliged to contribute to decommissioning costs arising from a decision taken to discontinue operations. The decisions to decommission are not wholly within STFC's control.

Audit Fees – Audited Information

The cost of the external audit for UKRI was £475,000 (2020-21: £475,000), and the statutory audit fee for Innovate UK Loans Limited was £100,000 (2020-21: £100,600). UKRI has accrued £14,050 (2020-21: £13,900) for the statutory audit fee for STFC Innovations Ltd (SIL). During the year £8,400 was also paid for the statutory audit of those predecessor bodies not closed at 31 March 2021 and £8,400 has been accrued for the statutory audit of one predecessor body not closed at 31 March 2022. All of the above fees exclude VAT. VAT is charged to UKRI and the predecessor bodies at 0% and IUKLL and SIL at 20%.

No remuneration was paid to the external auditors in respect of non-audit work in 2021-22 (2020-21: £nil).

Fees and Charges – Audited Information

Fees are set to comply with the cost allocation and charging requirements set out in HM Treasury and Office of Public Sector Information guidance.

Facilities are offered to European Union users, commercial users and external users. Users are charged a unit cost based on direct operating costs and annual quantity of access, with an allowance for overheads.

Disclosure does not include recovery from other bodies to cover direct costs of grants paid from programmes funded jointly with other organisations.

We have identified two material items to which disclosure requirements apply in 2021-22.

STFC – Other income

Programme delivery, scientific facilities, goods and services are offered to European Union users, other government departments, commercial users and external users.

The default position for facilities, goods and services provided is that users are charged a cost based on direct operating costs and annual quantity of access, with an allowance for overheads to achieve full economic cost recovery.

Prices for facilities, goods and services provided by STFC are calculated to differentiate between the type of service and access charged for.

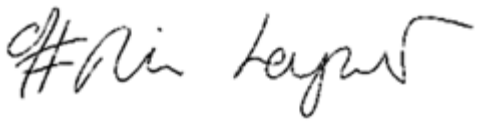
Innovate UK – programme delivery recharge

Innovate UK recharged Other Government Departments to recover the costs arising from evaluation, assessment and monitoring of grants issued to meet the common policy objectives of UKRI and relevant Other Government Departments and EU grant awarders.

Agreements with Other Government Departments relating to revenue seek to cover actually incurred direct costs only, either by direct recharge of costs incurred retrospectively or via a formula contribution to direct costs; there is no use of standard unit costs to calculate charges.

Income item	£	Description
STFC – Other income	£25,365,067	Charged for facilities and goods & services
IUK – programme delivery recharge	£6,957,970	Recharges for grant delivery costs

There was no subsidy or overcharging arising from provisions of relevant facilities, goods and services.



Dame Ottoline Leyser
Chief Executive and Accounting Officer
07 July 2022

THE CERTIFICATE AND REPORT OF THE COMPTROLLER AND AUDITOR GENERAL TO THE HOUSES OF PARLIAMENT

Opinion on financial statements

I certify that I have audited the financial statements of United Kingdom Research and Innovation and its Group for the year ended 31 March 2022 under the Higher Education and Research Act 2017.

The financial statements comprise United Kingdom Research and Innovation (parent) and its Group's:

- Statement of Financial Position as at 31 March 2022;
- Statement of Comprehensive Net Expenditure, Statement of Cash Flows and Statement of Changes in Taxpayers' Equity for the year then ended; and
- the related notes including the significant accounting policies.

The financial reporting framework that has been applied in the preparation of the Group financial statements is applicable law and UK adopted International Accounting Standards.

In my opinion, the financial statements:

- give a true and fair view of the state of United Kingdom Research and Innovation and its Group's affairs as at 31 March 2022 and their net expenditure for the year then ended; and
- have been properly prepared in accordance with the Higher Education and Research Act 2017 and Secretary of State directions issued thereunder.

Opinion on regularity

In my opinion, in all material respects, the income and expenditure recorded in the financial statements have been applied to the purposes intended by Parliament and the financial transactions recorded in the financial statements conform to the authorities which govern them.

Basis for opinions

I conducted my audit in accordance with International Standards on Auditing (UK) (ISAs UK), applicable law and Practice Note 10 *Audit of Financial Statements of Public Sector Entities* in the United Kingdom. My responsibilities under those standards are further described in the *Auditor's responsibilities for the audit of the financial statements* section of my certificate.

Those standards require me and my staff to comply with the Financial Reporting Council's Revised Ethical Standard 2019. I have also elected to apply the ethical standards relevant to listed entities. I am independent of United Kingdom Research and Innovation and its Group in accordance with the ethical requirements that are relevant to my audit of the financial statements in the UK. My staff and I have fulfilled our other ethical responsibilities in accordance with these requirements.

I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my opinions.

Conclusions relating to going concern

In auditing the financial statements, I have concluded that United Kingdom Research and Innovation and its Group's use of the going concern basis of accounting in the preparation of the financial statements is appropriate.

Based on the work I have performed, I have not identified any material uncertainties relating to events or conditions that, individually or collectively, may cast significant doubt on United Kingdom Research and Innovation and its Group's ability to continue as a going concern for a period of at least twelve months from when the financial statements are authorised for issue.

My responsibilities and the responsibilities of the Accounting Officer with respect to going concern are described in the relevant sections of this certificate.

The going concern basis of accounting for United Kingdom Research and Innovation is adopted in consideration of the requirements set out in HM Treasury's Government Financial Reporting Manual, which require entities to adopt the going concern basis of accounting in the preparation of the financial statements where it anticipated that the services which they provide will continue into the future.

Other Information

The other information comprises information included in the Annual Report, but does not include the parts of the Accountability Report described in that report as having been audited, the financial statements nor my auditor's certificate thereon. The Accounting Officer is responsible for the other information.

My opinion on the financial statements does not cover the other information and, except to the extent otherwise explicitly stated in my certificate, I do not express any form of assurance conclusion thereon.

In connection with my audit of the financial statements, my responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or in my knowledge obtained in the audit or otherwise appears to be materially misstated.

If I identify such material inconsistencies or apparent material misstatements, I am required to determine whether this gives rise to a material misstatement in the financial statements themselves. If, based on the work I have performed, I conclude that there is a material misstatement of this other information, I am required to report that fact.

I have nothing to report in this regard.

Opinion on other matters

In my opinion the part of the Remuneration and Staff Report to be audited has been properly prepared in accordance with Secretary of State directions issued under the Higher Education and Research Act 2017.

In my opinion, based on the work undertaken in the course of the audit:

- the parts of the Accountability Report subject to audit have been properly prepared in accordance with Secretary of State directions made under the Higher Education and Research Act 2017; and
- the information given in the Performance and Accountability Reports for the financial year for which the financial statements are prepared is consistent with the financial statements and is in accordance with the applicable legal requirements.

Matters on which I report by exception

In the light of the knowledge and understanding of United Kingdom Research and Innovation and its Group and its environment obtained in the course of the audit, I have not identified material misstatements in the Performance and Accountability Reports.

I have nothing to report in respect of the following matters which I report to you if, in my opinion:

- I have not received all of the information and explanations I require for my audit; or
- adequate accounting records have not been kept by United Kingdom Research and Innovation or returns adequate for my audit have not been received from branches not visited by my staff; or
- the financial statements and the parts of the Accountability Report subject to audit are not in agreement with the accounting records and returns; or
- certain disclosures of remuneration specified by HM Treasury's Government Financial Reporting Manual have not been made or parts of the Remuneration and Staff Report subject to audit is not in agreement with the accounting records and returns; the Governance Statement does not reflect compliance with HM Treasury's guidance.

Responsibilities of the Accounting Officer for the financial statements

As explained more fully in the Statement of Accounting Officer's Responsibilities, the Accounting Officer is responsible for:

- maintaining proper accounting records;
- the preparation of the financial statements and Annual Report in accordance with the applicable financial reporting framework and for being satisfied that they give a true and fair view;
- ensuring that the Annual Report and accounts as a whole is fair, balanced and understandable;
- internal controls as the Accounting Officer determines is necessary to enable the preparation of financial statement to be free from material misstatement, whether due to fraud or error; and
- assessing the United Kingdom Research and Innovation and its Group's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the Accounting Officer anticipates that the services provided by the United Kingdom Research and Innovation and its Group will not continue to be provided in the future

Auditor's responsibilities for the audit of the financial statements

My responsibility is to audit, certify and report on the financial statements in accordance with the Higher Education and Research Act 2017.

My objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue a certificate that includes my opinion. Reasonable assurance is a high level of assurance but is not a guarantee that an audit conducted in accordance with ISAs (UK) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

Extent to which the audit was considered capable of detecting non-compliance with laws and regulations including fraud

I design procedures in line with my responsibilities, outlined above, to detect material misstatements in respect of non-compliance with laws and regulations, including fraud. The extent to which my procedures are capable of detecting non-compliance with laws and regulations, including fraud is detailed below.

Identifying and assessing potential risks related to non-compliance with laws and regulations, including fraud

In identifying and assessing risks of material misstatement in respect of non-compliance with laws and regulations, including fraud, we considered the following:

- the nature of the sector, control environment and operational performance including the design of United Kingdom Research and Innovation's accounting policies.
- Inquiring of management, United Kingdom Research and Innovation's head of internal audit and those charged with governance, including obtaining and reviewing supporting documentation relating to United Kingdom Research and Innovation's policies and procedures relating to:
    - identifying, evaluating and complying with laws and regulations and whether they were aware of any instances of non-compliance;
    - detecting and responding to the risks of fraud and whether they have knowledge of any actual, suspected or alleged fraud; and
    - the internal controls established to mitigate risks related to fraud or non-compliance with laws and regulations including the group's controls relating to compliance with the Higher Education and Research Act 2017 and Managing Public Money;
- discussing among the engagement team including significant component audit teams and involving relevant internal and external specialists, including Pension and Properties where specialist expertise was engaged on the audit, regarding how and where fraud might occur in the financial statements and any potential indicators of fraud.

As a result of these procedures, I considered the opportunities and incentives that may exist within United Kingdom Research and Innovation and its Group for fraud and identified the greatest potential for fraud in the following areas: posting of unusual journals, complex transactions, bias in management estimates and grant expenditure. In common with all audits under ISAs (UK), I am also required to perform specific procedures to respond to the risk of management override of controls.

I also obtained an understanding of United Kingdom Research and Innovation and its Group's framework of authority as well as other legal and regulatory frameworks in which United Kingdom Research and Innovation and its group operate, focusing on those laws and regulations that had a direct effect on material amounts and disclosures in the financial statements or that had a fundamental effect on the operations of United Kingdom Research and Innovation and its Group. The key laws and regulations I considered in this context included Higher Education and Research Act 2017, Managing Public Money, employment law, pensions legislation, and tax legislation.

In addition, I considered the fraud and error risk and impact assessments produced by United Kingdom Research and Innovation's Counter Fraud and Funding Assurance Functions, including their consideration of Internal Audit findings in relation to the susceptibility of United Kingdom Research and Innovation's grant funding activities to fraud.

Audit response to identified risk

As a result of performing the above, the procedures I implemented to respond to identified risks included the following:

- reviewing the financial statement disclosures and testing to supporting documentation to assess compliance with provisions of relevant laws and regulations described above as having direct effect on the financial statements;
- enquiring of management, the Audit, Risk, Assurance and Performance Committee and in-house legal counsel concerning actual and potential litigation and claims;
- reading and reviewing minutes of meetings of those charged with governance and the Board and internal audit reports;
- in addressing the risk of fraud through management override of controls, testing the appropriateness of journal entries and other adjustments; assessing whether the judgements made in making accounting estimates are indicative of a potential bias; and evaluating the business rationale of any significant transactions that are unusual or outside the normal course of business; and
- enquiring of and reviewing the reports produced by the in-house Funding Assurance teams.

I also communicated relevant identified laws and regulations and potential fraud risks to all engagement team members including internal specialists and significant component audit teams and remained alert to any indications of fraud or non-compliance with laws and regulations throughout the audit.

A further description of my responsibilities for the audit of the financial statements is located on the Financial Reporting Council's website at: www.frc.org.uk/auditorsresponsibilities. This description forms part of my certificate.

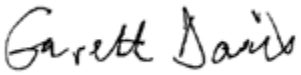
Other auditor's responsibilities

I am required to obtain evidence sufficient to give reasonable assurance that the income and expenditure reported in the financial statements have been applied to the purposes intended by Parliament and the financial transactions conform to the authorities which govern them.

I communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that I identify during my audit.

Report

I have no observations to make on these financial statements.



Gareth Davies **Date** 14 July 2022

Comptroller and Auditor General

National Audit Office
157-197 Buckingham Palace Road
Victoria
London SW1W 9SP

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4. Financial Statements

Consolidated Statement of Comprehensive Net Expenditure

for the year ended 31 March 2022

	Note	2021-22 UKRI £000	2021-22 Consolidated £000	2020-21 UKRI £000	2020-21 Consolidated £000
Total operating income	3	(404,104)	(405,432)	(355,429)	(368,700)
Staff costs	4	522,241	524,947	473,699	476,680
Purchase of goods and services	5.1	645,478	647,993	628,304	630,430
Depreciation and impairment charges	5.2	207,505	208,008	182,489	187,111
Research and Innovation	5.3	7,434,328	7,434,746	7,837,264	7,837,736
Provision expense	5.4	73,871	69,500	13,574	18,533
Other operating expenditure	5.5	3,996	3,001	26,579	21,291
		8,887,419	**8,888,195**	**9,161,909**	**9,171,781**
Net operating expenditure		**8,483,315**	**8,482,763**	**8,806,480**	**8,803,081**
Taxation	6	31,621	32,467	6,509	5,929
Finance income		(332)	(7,685)	(925)	(3,846)
Finance expenditure		(534)	2,209	(1,339)	39
Net expenditure for the period		**8,514,070**	**8,509,754**	**8,810,725**	**8,805,203**
Other comprehensive expenditure					
Net (gain)/loss on revaluation of property, plant and equipment		(189,500)	(189,500)	(6,855)	(6,855)
Net (gain)/loss on revaluation of intangible assets		14,442	14,442	(54,469)	(54,469)
Net loss/(gain) on revaluation of investments		(31,385)	(28,548)	9,762	8,491
Actuarial (gain)/loss on defined benefit pension plan		(190,846)	(190,846)	(146,055)	(146,055)
Total net comprehensive expenditure for the period		**8,116,781**	**8,115,302**	**8,613,108**	**8,606,315**

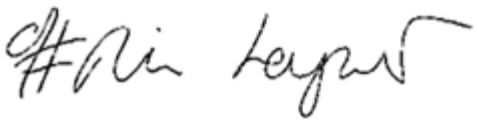
The notes on pages 147 to 187 form part of these accounts

Consolidated Statement of Financial Position

as at 31 March 2022

	Note	2021-22 UKRI £000	2021-22 Consolidated £000	2020-21 UKRI £000	2020-21 Consolidated £000
Non-current assets					
Property, plant and equipment	7	3,023,352	3,023,352	2,696,792	2,696,792
Intangible assets	8	94,599	94,599	137,249	137,249
Investment property		4,470	4,470	4,300	4,300
Investments	9a	735,703	741,996	723,197	732,295
Financial assets	9b	11,399	138,326	11,067	75,276
Pension asset	10	420,226	420,226	243,661	243,661
Trade and other receivables	11	128,235	-	95,035	10,422
		4,417,984	**4,422,969**	**3,911,301**	**3,899,995**
Current assets					
Assets held for sale		5,792	5,792	5,182	5,182
Trade and other receivables	11	574,996	578,217	648,821	643,952
Cash and cash equivalents	12	290,739	299,030	231,851	259,458
		871,527	**883,039**	**885,854**	**908,592**
Total assets		**5,289,511**	**5,306,008**	**4,797,155**	**4,808,587**
Current liabilities					
Trade and other payables	13	(1,396,877)	(1,411,242)	(1,382,004)	(1,388,408)
Provisions	14	(4,012)	(4,600)	(4,760)	(9,723)
		(1,400,889)	**(1,415,842)**	**(1,386,764)**	**(1,398,131)**
Total assets less current liabilities		**3,888,622**	**3,890,166**	**3,410,391**	**3,410,456**
Non-current liabilities					
Trade and other payables	13	(51,066)	(51,066)	(130)	(130)
Provisions	14	(258,246)	(258,246)	(183,259)	(183,259)
		(309,312)	(309,312)	(183,389)	(183,389)
Total assets less total liabilities		**3,579,310**	**3,580,854**	**3,227,002**	**3,227,067**
Taxpayers equity and other reserves					
General fund		(1,859,818)	(1,859,633)	(1,803,575)	(1,799,074)
Revaluation reserve		(1,227,938)	(1,229,667)	(1,073,361)	(1,077,927)
Intellectual property reserve		(71,328)	(71,328)	(106,405)	(106,405)
Pension reserve		(420,226)	(420,226)	(243,661)	(243,661)
Total reserves		**(3,579,310)**	**(3,580,854)**	**(3,227,002)**	**(3,227,067)**

The notes on pages 147 to 187 form part of these accounts



Dame Ottoline Leyser
Accounting Officer
UK Research and Innovation
07 July 2022

Consolidated Statement of Cash Flows

for the year ended 31 March 2022

	Note	2021-22 UKRI £000	2021-22 Consolidated £000	2020-21 UKRI £000	2020-21 Consolidated £000
Cash flows from operating activities					
Net expenditure for the period	SoCNE	(8,514,070)	(8,509,754)	(8,810,725)	(8,805,203)
Adjustments for non-cash transactions	15	224,416	226,653	234,920	233,726
Decrease/(Increase) in trade and other receivables	11	40,625	76,157	(311,801)	(268,078)
Increase in trade and other payables	13	11,172	19,132	302,711	308,172
Increase in provisions	14	74,239	69,864	9,492	14,456
Net cash outflow from operating activities		**(8,163,618)**	**(8,117,948)**	**(8,575,403)**	**(8,516,927)**
Cash flows from investing activities					
Purchase of property, plant and equipment	7	(268,754)	(268,754)	(345,942)	(345,942)
Purchase of intangible assets	8	(6,268)	(6,268)	(4,910)	(4,910)
Investment in joint ventures	9.1	-	-	(21,806)	(21,806)
Other investments	9.3	-	(31)	-	(2,372)
Investment in Loans	9.4	(332)	(66,282)	(939)	(38,590)
Proceeds of disposal of investments		-	995	-	5,588
Proceeds of disposal of assets held for sale		4,840	4,840	4,841	4,841
Proceeds of disposal of property, plant and equipment		3,581	3,581	3,286	3,286
Net cash outflow from investing activities		**(266,933)**	**(331,919)**	**(365,470)**	**(399,905)**
Net cash outflow before financing activities		**(8,430,551)**	**(8,449,867)**	**(8,940,873)**	**(8,916,832)**
Cash flows from financing activities					
Grant-in-aid received from BEIS		8,493,582	8,493,582	8,968,356	8,968,356
Lease repayments		(4,143)	(4,143)	-	-
Net cash inflows from financing activities		**8,489,439**	**8,489,439**	**8,968,356**	**8,968,356**
Net increase/(decrease) in cash and cash equivalents		**58,888**	**39,572**	**27,483**	**51,524**
Cash and cash equivalents at the beginning of the period		231,851	259,458	204,368	207,934
Cash and cash equivalents at the end of the period		**290,739**	**299,030**	**231,851**	**259,458**

The notes on pages 147 to 187 form part of these accounts

Consolidated Statement of Changes in Taxpayers Equity

for the year ended 31 March 2022

Consolidated

	Note	General reserve £000	Revaluation reserve £000	Pension reserve £000	Intellectual property reserve £000	Total reserves £000
Balance at 1 April 2021		**(1,799,074)**	**(1,077,927)**	**(243,661)**	**(106,405)**	**(3,227,067)**
IFRS 16 Implementation		16,000	-	-	-	16,000
Balance at 1 April 2021		**(1,783,074)**	**(1,077,927)**	**(243,661)**	**(106,405)**	**(3,211,067)**
Grant in aid from BEIS		(8,493,582)	-	-	-	(8,493,582)
Net expenditure for the period		8,509,754	-	-	-	8,509,754
Movements in reserves:						
Net gain on revaluation of property, plant and equipment	7	-	(189,500)	-	-	(189,500)
Net loss on impairment of property, plant and equipment		-	-	-	-	-
Net gain on revaluation and addition of intangible assets	8	-	-	-	14,442	14,442
Net loss on revaluation of investments	9	-	(28,548)	-	-	(28,548)
Net loss on impairment of investments		-	13,181	-	-	13,181
Actuarial gain in the pension scheme	10	-	-	(190,846)	-	(190,846)
Contributions from other employers in pension scheme		-	-	(4,688)	-	(4,688)
Transfers between reserves		(92,731)	53,127	18,969	20,635	(0)
Balance at 31 March 2022		**(1,859,633)**	**(1,229,667)**	**(420,226)**	**(71,328)**	**(3,580,854)**

Parent

	Note	General reserve £000	Revaluation reserve £000	Pension reserve £000	Intellectual property reserve £000	Total reserves £000
Balance at 1 April 2021		**(1,803,575)**	**(1,073,361)**	**(243,661)**	**(106,405)**	**(3,227,002)**
IFRS 16 Implementation		16,000	-	-	-	**16,000**
Balance at 1 April 2021		**(1,787,575)**	**(1,073,361)**	**(243,661)**	**(106,405)**	**(3,211,002)**
Grant in aid from BEIS		(8,493,582)	-	-	-	(8,493,582)
Net expenditure for the period		8,514,070	-	-	-	8,514,070
Movements in reserves:						
Net gain on revaluation of property, plant and equipment	7	-	(189,501)	-	-	(189,501)
Net loss on impairment of property, plant and equipment		-	-	-	-	-
Net gain on revaluation and addition of intangible assets	8	-	-	-	14,442	14,442
Net loss on revaluation of investments	9	-	(31,385)	-	-	(31,385)
Net loss on impairment of investments		-	13,181	-	-	13,181
Actuarial gain in the pension scheme	10	-	-	(190,846)	-	(190,846)
Contributions from other employers in pension scheme		-	-	(4,688)	-	(4,688)
Transfers between reserves		(92.731)	53,127	18,969	20,635	-
Balance at 31 March 2022		**(1,859,818)**	**(1,227,938)**	**(420,226)**	**(71,328)**	**(3,579,310)**

The notes on pages 147 to 187 form part of these accounts

Consolidated Statement of Changes in Total Equity

Consolidated

	Note	General reserve £000	Revaluation reserve £000	Pension reserve £000	Intellectual property reserve £000	Total reserves £000
Balance at 1 April 2020		**(1,553,889)**	**(1,138,447)**	**(98,692)**	**(68,124)**	**(2,859,152)**
Grant in aid from BEIS		(8,968,356)	-	-	-	(8,968,356)
Net expenditure for the period (excl transfer of undertakings)		8,805,203	-	-	-	8,805,203
Movements in reserves:						
Net gain on revaluation of property, plant and equipment	7	-	(6,855)	-	-	(6,855)
Net gain on revaluation of intangible assets	8	-	-	-	(54,469)	(54,469)
Net gain on revaluation of investments	9	-	8,491	-	-	8,491
Actuarial gain in the pension scheme	10	-	-	(146,055)	-	(146,055)
Contributions from other employers in pension scheme		-	-	(5,874)	-	(5,874)
Transfers between reserves		(82,032)	58,884	6,960	16,188	-
Balance at 31 March 2021		**(1,799,074)**	**(1,077,927)**	**(243,661)**	**(106,405)**	**(3,227,067)**

Parent

	Note	General reserve £000	Revaluation reserve £000	Pension reserve £000	Intellectual property reserve £000	Total reserves £000
Balance at 1 April 2020		**(1,563,912)**	**(1,135,152)**	**(98,692)**	**(68,124)**	**(2,865,880)**
Grant in aid from BEIS		(8,968,356)	-	-	-	(8,968,356)
Net expenditure for the period (excl transfer of undertakings)		8,810,725	-	-	-	8,810,725
Movements in reserves:						
Net gain on revaluation of property, plant and equipment	7	-	(6,855)			(6,855)
Net gain on revaluation of intangible assets	8	-	-	-	(54,469)	(54,469)
Net gain on revaluation of investments	9	-	9,762	-	-	9,762
Actuarial gain in the pension scheme	10	-	-	(146,055)	-	(146,055)
Contributions from other employers in pension scheme		-	-	(5,874)	-	(5,874)
Transfers between reserves		(82,032)	58,884	6,960	16,188	-
Balance at 31 March 2021		**(1,803,575)**	**(1,073,361)**	**(243,661)**	**(106,405)**	**(3,227,002)**

The notes on pages 147 to 187 form part of these accounts

Notes to the Accounts

1. Statement of Accounting policies

United Kingdom Research and Innovation (UKRI) is an executive non-departmental public body established by the United Kingdom Parliament. The principal accounting policies applied in the preparation of these consolidated financial statements are set out below. These policies have been applied consistently to all the years presented unless otherwise stated.

NOTE 1.1 Basis of accounting

The consolidated Financial statements have been prepared in accordance with the Accounts Direction issued by the Secretary of State for Business, Energy and Industrial Strategy, with approval of HM Treasury, in pursuance of Section 14(2) of Schedule 9 of the Higher Education and Research Act 2017.

The consolidated Financial statements have been prepared in accordance with the 2021-22 Government Financial Reporting Manual (FReM) issued by HM Treasury. The accounting policies contained in the FReM apply International Financial Reporting Standards (IFRS) as adapted or interpreted for the public sector context.

Where the FReM permits a choice of accounting policy, the accounting policy judged to be most appropriate to the particular circumstances of UKRI for the purpose of giving a true and fair view has been selected. The particular policies adopted by UKRI are described below. They have been applied consistently in dealing with items that are considered material to the consolidated Financial statements.

Going concern

UKRI is dependent on funding from the Department for Business, Energy and Industrial Strategy (BEIS) to meet liabilities falling due within future years. Confirmation of UKRI's budget allocation for 2022-23 to 2024-25 was received through publication by BEIS of its partner organisation allocations https://www.ukri.org/news/ukris-three-year-budget-is-confirmed/

Management has not identified any risks outside of risk appetite relating to its future levels of funding such that it considers it will not be able to meet liabilities falling due within future years.

It has accordingly been considered appropriate to adopt a going concern basis for the preparation of the Financial statements. UKRI monitors future levels of commitment to ensure they remain within anticipated budgets and delegated authority from BEIS.

NOTE 1.2 Accounting convention

The consolidated financial statements have been prepared under the historical cost convention modified to include the fair value of property, plant and equipment, intangible assets and financial instruments to the extent required or permitted under IFRS as set out in the relevant accounting policies.

The consolidated financial statements are presented in pound sterling and all values are rounded to the nearest thousand (£'000), except where indicated otherwise.

NOTE 1.3 Presentational currency

The consolidated financial statements are presented in pounds sterling, the functional currency of UKRI. Transactions denominated in a foreign currency are translated into sterling at the rate of exchange on the date of each transaction. In preparing the financial statements, monetary assets and liabilities denominated in foreign currencies are translated at the rates prevailing at the reporting date. All translation differences of monetary assets and liabilities are included in net expenditure for the year.

NOTE 1.4 Basis of consolidation

The Group comprises:

- UK Research and Innovation (UKRI)
- STFC Innovations Limited
- Innovate UK Loans Limited

UKRI prepares financial statements in accordance with the FReM. Innovate UK Loans Limited and STFC Innovations Limited prepare accounts under IFRS as adopted by the EU. For those bodies that do not prepare financial statements in accordance with the FReM, adjustments are made at consolidation if necessary where differences would have a significant effect on the financial statements.

NOTE 1.5 New accounting standards adopted in the year, FReM changes and future accounting standards

UKRI has now adopted IFRS 16 Leases effective 1 April 2021.

IFRS 16 provides a single lessee accounting model and requiring a lessee to recognise assets and liabilities for leases which last over 12 months (UKRI having made use of the exemption to exclude short-term leases), largely eliminating the current 'off-balance sheet' treatment of operating leases under IAS 17.

UKRI has made use of the exemption where the underlying asset is classified as of "low value". This is deemed to be £10,000 for the group, which is the capitalisation threshold for UKRI.

Leases excluded as low value of short term have £0.15 million impact on operating expenditure.

Where assets have not been previously recognised for the assets leased, £27.87 million of assets and liabilities have been recognised initially at the discounted value of the minimum lease payments (excluding VAT) and shown as leased assets and lease liabilities within the accounts. In cases where leased assets have previously been recognised and exceed the discounted value of the minimum lease payments, £22.6 million of new liabilities have been recognised with the other side being posted to the reserves, in addition £3.2 million of previous recognised finance lease liabilities have been moved to show as lease liabilities.

Buildings are only recognised as leased where the building itself is leased from the lessor, in instances where the land has been leased and then constructed on by UKRI, the land is included under leased assets and the buildings under freehold. To ensure consistency in this area £50.56 million of buildings previously classified as freehold have been reclassified to leased, these reflect capital costs incurred by UKRI in the buildings' construction (these having been factored into the rent charged) or subsequent improvements where the buildings themselves will revert to lessor ownership at the end of the lease.

In order to achieve consistency in UKRI's treatment of 'peppercorn' leases, £10.56 million of assets have been recognised reflecting leases where the rent has been wholly prepaid via a lease premium and £6.57 million of assets recognised where the leased building's construction has been funded via capital grant; the other side of both types of recognition again being the reserves.

In total £45.0 million of assets and £53.65 million of liabilities are shown as restatements of brought forward balances reflecting UKRI's implementing IFRS 16 retrospectively with cumulative effect. The impact on total expenditure was an increase of £0.53 million.

UKRI's weighted average incremental borrowing rate with regards lease discounting is 2.8%, reflecting the use of interest rates inherent to the leases where stated; this includes many of UKRI's largest leases by liability.

UKRI's discounted operating lease commitments applying IAS 17 at the end of 2020-21 were £28.32 million, the difference between this and the £53.65 million of lease liabilities recognised largely (-£27.08 million) relates to the different methods used to calculate the minimum lease term under the two standards. IAS 17 commitments being calculated using the minimum legal commitments, these being limited to any break dates within the lease; IFRS 16 instead requires options and break clauses to be factored into calculations only if it is probable that they will be exercised. The remaining difference relates to IAS 17 commitments including VAT (£1.56 million) and the use of the exemptions for short life and low value leases (-£0.19 million).

NOTE 1.6 Future accounting standards

IFRS 17 Insurance Contracts is effective within the private sector from 1 January 2023. However, at present the Financial Reporting Advisory Board (FRAB), has advised the adoption be delayed for the public sector by at least 1 year to allow full considerations. That would mean that the 2024-25 year would be the earliest year for adoption date of this standard.

NOTE 1.7 Grant-in-aid

In line with the FReM, grant-in-aid for revenue purposes and grants from BEIS (the controlling body) are recognised as a financing flow and thus credited to the General Reserve.

NOTE 1.8 Income

Revenue is recognised when goods are delivered and title has passed, and services in the accounting period in which the service is rendered.

Grant Income receivable and funding for collaborative projects are recognised as income over the period in which UKRI recognises the related costs for which the grant or funding is intended to compensate in accordance with IAS 20. This accounts for approximately 81% of UKRI income.

Commercial income is recognised in line with the satisfaction of performance obligations at a point in time in line with the terms of contract or license agreement, as per IFRS 15. Where the contract is for the supply of goods this will be at a point in time. Commercial income includes royalties, rental of facilities for use by third parties, property rental or canteen/ restaurant revenue. This represents approximately 19% of UKRI income.

NOTE 1.9 Deferred income

UKRI receives funding for projects to support UKRI research, separate to grant-in-aid provided by BEIS. The majority of such funding is received from the UK public sector, charities, and from the European Commission (EC). Some funding may involve payment for projects in advance of the accounting period to which it relates.

Where there is a variance between activity in the accounting period and received funding, income will be deferred when there is a condition which makes the grant repayable or returnable (BEIS grant-in-aid funding cannot be classified as deferred income).

NOTE 1.10 Staff costs

Staff costs are recognised as expenses when UKRI becomes obliged to pay them, including the cost of any untaken leave entitlement.

NOTE 1.11 Grants and training awards payable

Research Grants, Fellowships and Studentships

Research grants and fellowships are paid on an instalment basis in accordance with an agreed payment profile. For grants administered through the JeS/Siebel platform, these payment profiles are linear or 'flat' through the life of the grant, with payments in equal instalments. Grants administered and monitored via other arrangements, may have non-linear profiles. Grant payments made in advance or in arrears are accounted for on a prepayments or accruals basis in the financial statements. Where the grant documentation does not specify a pre-agreed payment profile or other matching considerations, obligations are recognised in full. Studentship payments are paid on a quarterly instalment basis in advance or arrears directly to the research institute.

Where the profile indicates that an unclaimed and/or unpaid amount exists at the Statement of Financial Position date, such sums are accrued in the financial statements. Where the profile indicates a payment of grant that is yet to be utilised by the recipient, a prepayment is recognised.

Innovate UK Technology Grants

Technology grant expenditure is recognised in the period in which eligible activity creates an entitlement in line with the terms and conditions of the grant.

Where activity has been undertaken but no grant claim has been received, accrued grants are charged to the Statement of Comprehensive Net Expenditure based on estimates (see Note 1.29 below) and are included in accruals in the Statement of Financial Position.

Research England Formula-based Grants

Most grants are paid on an agreed profile, as a contribution to research costs within institutions.

The profiles are periodically updated throughout the academic year, and as such no financial year end accruals are expected for these streams of expenditure.

Other Research England Grants

For Research England grants, such as the Strength in Places Fund, which fund agreed and specified eligible activity, expenditure is recognised in the period in which eligible activity creates an entitlement in line with the terms and conditions of the grant.

Future commitments at the Statement of Financial Position date are disclosed in Note 16.

NOTE 1.12 Ownership of equipment purchased with grants

Equipment purchased by an institution using UKRI grants belongs to the institution and is not included in UKRI property, plant and equipment. UKRI reserves the right through its grant conditions to determine the disposal of such equipment and how any disposal proceeds are to be used.

NOTE 1.13 Taxation

UKRI is subject to corporation tax on taxable profits. Current tax assets and liabilities are measured at the amount expected to be recovered from or paid to HM Revenue and Customs, based on tax rates and laws that are enacted or substantively enacted by the reporting date; these are included within other receivables and payables on the Statement of Financial Position and include UKRI Parent and subsidiaries.

Tax expense recognised within the period includes payment on account for the current period and changes in the amount expected to be recovered from or paid to HM Revenue and Customs, relating to current and prior periods.

Where applicable, current tax assets and liabilities expected to be recovered from or paid to HM Revenue and Customs include amounts relating to Innovate UK Loans Limited (IUK LL), including relief on losses incurred by IUK LL.

NOTE 1.14 Value added tax

As UKRI is partially exempt for VAT purposes, all expenditure and non-current asset purchases are shown exclusive of VAT except in the following circumstances:

- Irrecoverable VAT is charged to the Statement of Comprehensive Net Expenditure, and included under the relevant expenditure heading.
- Irrecoverable VAT on the purchase of an asset is included in additions.
- Residual input tax reclaimable by the application of the partial exemption formula is taken to the Statement of Comprehensive Net Expenditure as a reduction of expenditure.
- The net amount due to, or from, HM Revenue and Customs in respect of VAT is included within other receivables and payables on the Statement of Financial Position.

NOTE 1.15 Intangible assets

Recognition

Expenditure on intangible assets is capitalised where the cost is £10,000 or more and is applied on a grouped basis using a threshold of £10,000 where the elements in substance form a single asset.

Subsequent acquisitions of less than £10,000 in value which are of the same nature as existing grouped assets are appended. Otherwise, expenditure on intangible assets which fall below £10,000 is charged as an expense in the Statement of Comprehensive Net Expenditure.

Measurement

Intangible assets are initially measured at cost in line with IAS 38. For separately acquired assets cost comprises the purchase price and any directly attributable costs to prepare the asset for its intended use. The cost of internally generated assets comprises all directly attributable costs necessary to create, produce, and prepare the asset to be capable of operating in the manner intended by management.

There are no active markets for any of UKRI's intangible non-current assets which are valued at the lower of depreciated replacement cost and value in use using a valuation technique (for example for income-generating assets); where there is no value in use, depreciated replacement cost is used. Assets of low value or with short useful lives are carried at cost less accumulated amortisation and impairment losses as a proxy for fair value.

Impairment

Intangible assets are monitored for any indication of impairment. At the end of each reporting period, tests for impairment are carried out for any such asset with an indefinite useful life or in the course of development.

Where indications of impairment exist, and any possible differences are estimated to be significant, the recoverable amount of the asset is estimated and, where this is less than the carrying amount of the asset, an impairment loss is recognised in the Statement of Comprehensive Net Expenditure.

Where an impairment loss is subsequently reversed, the reversal is credited in the Statement of Comprehensive Net Expenditure, up to the amount of the original loss, adjusted for amortisation that would have been charged if the loss had not been recognised.

Amortisation

Amortisation is provided on all intangible assets from the date at which they are available for their intended use at rates calculated to write off the cost of each asset (less any estimated residual value) on a straight-line basis over its expected useful economic life. UKRI reviews and updates the remaining useful economic lives of its assets each year. The estimated useful economic lives of the intangible assets care summarised as below:

Internally developed software	3 – 5 years
Software licenses	Up to 15 years (subject to the length of the license)
Internally developed websites	2 – 5 years
Data sets	5 – 10 years
Patents	Up to 15 years (subject to the length of agreement)

Disposals

When scrapping or disposing of an intangible asset, the carrying amount is written off to the Statement of Comprehensive Net Expenditure and a loss (or gain) is recognised and reported net of any disposal proceeds.

NOTE 1.16 Property, plant and equipment

Recognition

Expenditure on the acquisition, creation or enhancement of property, plant and equipment is capitalised on an accruals basis, provided that it is probable that the future economic benefit including service potential, associated with the item will flow to UKRI and the cost of the item can be measured reliably. A capitalisation threshold of £10,000 is applied to all asset classes. Expenditure below this value is charged as an expense in the Statement of Comprehensive Net Expenditure.

Property, plant and equipment usually comprises single assets. However, capitalisation is applied on a grouped basis using a threshold of £10,000 where the elements in substance form a single asset. Further, where an item includes material components with significant different useful economic lives, those components are capitalised separately and depreciated over their specific useful economic lives.

Expenditure that maintains, but does not add to, an asset's potential to deliver future economic benefits or service potential (i.e. repairs and maintenance) is charged as an expense when it is incurred.

Any capital funding provided by UKRI to independent institutes relating to UKRI owned assets is accounted for as a non-current asset addition in the property, plant and equipment note based on the construction costs during the year up to the Statement of Financial Position date.

Measurement

Property, plant and equipment are initially measured at cost, comprising the purchase price plus any costs attributable to bringing the asset to the location and condition necessary for it to be capable of operating in the manner intended by management. The initial estimate of the costs of dismantling and removing the item and restoring the site on which it is located are recognised as a provision where an obligation to dismantle or remove the asset arises from its acquisition or usage. The related expense is recognised as a provision expense in the Statement of Comprehensive Net Expenditure.

Assets are thereafter carried in the Statement of Financial Position using the following measurement bases:

Land, buildings, polar research stations, ships and aircraft are professionally revalued every five years by Council and in the intervening period relevant indices are used. Indexation is not applied to assets under construction. All other tangible assets are subject to annual indexation using relevant indices.

Specialised assets are valued on a depreciated replacement cost basis in line with the FReM.

For non-specialised assets, market value in existing use is used where this can be established. Any surplus on revaluation is taken to a revaluation reserve.

For furniture, fixtures and fittings where an asset pool is maintained replacements on a one-to-one basis are charged directly to the Statement of Comprehensive Net Expenditure in the year of replacement.

Impairment

Property, plant and equipment is monitored for any indication of impairment. At the end of each reporting period, tests for impairment are carried out for any assets with a remaining useful life and on assets in the course of construction.

Where an annual check is impractical given the number of assets held, a targeted risk-based approach is taken to assess all assets within 18 months of the end of their useful life plus a randomly selected check of 10% by number of the whole asset population.

Where indications of impairment exist, or trigger points are noted (such as transfer from assets under construction (AUC) into property, plant and equipment) and any changes are estimated to be significant, the recoverable amount of

the asset is estimated and, where this is less than the carrying amount of the asset, an impairment loss is recognised in the Statement of Comprehensive Net Expenditure.

Where an impairment loss is subsequently reversed, the reversal is credited in the Statement of Comprehensive Net Expenditure, up to the amount of the original loss, adjusted for depreciation that would have been charged if the loss had not been recognised. Anything over and above is recognised in the revaluation reserve.

Depreciation

Assets under construction are not depreciated until the asset is brought into use.

Depreciation is provided on all property, plant and equipment, apart from assets under construction, from the date at which they are available for their intended use at rates calculated to write off the cost of each asset (less any estimated residual value) on a straight-line basis over its expected useful economic life. Increased depreciation charges arising from revaluations are matched by transfers from the revaluation reserve to the general reserve. Assets that are under construction are not depreciated until such time as they are available for their intended use.

UKRI reviews and updates the remaining useful economic life of its assets each year. The estimated useful lives of the assets currently in service are summarised as follows:

Freehold land	Not depreciated
Leasehold land	The length of the lease
Freehold buildings	Up to 60 years
Leasehold buildings	Up to 60 years (subject to the length of the lease)
Decommissioning assets	Up to 60 years (matched to related assets)
Scientific equipment	3 to 30 years
IT equipment	Up to 20 years
Other plant and machinery	3 to 30 years
Furniture, fixtures and fittings	Up to 10 years
Motor vehicles	Up to 15 years
Polar research stations	Up to 60 years
Ships	20 to 50 years
Aircraft	15 to 50 years

Disposals

When scrapping or disposing of property, plant and equipment, the carrying amount is written off to the Statement of Comprehensive Net Expenditure and a loss (or gain) is recognised and reported net of any disposal proceeds. On disposal of a revalued asset, the resulting element of the revaluation reserve that is realised is transferred directly to the general reserve.

NOTE 1.17 Non-current assets held for sale

Non-current assets are classified as held for sale if their carrying amount will be recovered through a sale transaction rather than through continuing use. This condition is regarded as met only when the sale is highly probable, the asset is available for immediate sale in its present condition, management are committed to the sale and completion is expected within one year of the date of classification.

The asset is revalued immediately before reclassification and carried at the lower of this amount and fair value, less selling costs. Assets held for sale are not depreciated. Where there is a subsequent reduction in fair value, the loss

is reported in the Statement of Comprehensive Net Expenditure, and increases are only recognised as gains in the Statement of Comprehensive Net Expenditure up to the amount of any previously reported losses.

NOTE 1.18 Investments in joint arrangements and associates

UKRI's investments in joint ventures and associates are accounted for using the equity method of accounting in both the separate UKRI financial statements and the consolidated financial statements in line with IAS 28. This is the method required by that standard and FReM

The investment in an associate or joint venture is initially recorded at cost and is subsequently adjusted to reflect UKRI's share of the net profit or loss of the associate or joint venture. Where appropriate, UKRI adjusts information from the investee's financial records to bring it in line with the FReM.

Details of UKRI's investments in Joint Ventures and Associates can be found in Note 9, including adjustments made to the investee's financial information.

NOTE 1.19 Financial instruments

UKRI recognises and measures financial instruments in accordance with IFRS 9 Financial Instruments as interpreted by the FReM.

A financial asset or financial liability is measured initially at fair value plus, for an item not at fair value through profit or loss, transaction costs that are directly attributable to its acquisition or issue.

UKRI derecognises a financial asset when the contractual rights to receive future cash flows from the financial asset expire or it transfers the rights to receive the contractual cash flows in a transaction in which substantially all of the risks and rewards of ownership of the financial asset are transferred or in which UKRI neither transfers nor retains substantially all of the risks and rewards of ownership and does not retain control of the financial asset.

UKRI derecognises a financial liability when its contractual obligations are discharged, cancelled or expired.

Innovation loans

Loans to borrowers issued by Innovate UK loans Limited are designed to stimulate later stage innovation and are offered on non-commercial terms including a low rate of interest.

Innovation Loans: Competitions 1-5 and 6-8 cohorts

These cohorts of loans pass the business model test (where the objective of the business model is to hold the financial assets to collect the contractual cashflows) and the cash flows characteristics test; therefore, the loans are held at amortised cost. In accordance with IFRS 9, amortised cost loans are recognised at fair value at initial recognition. A fair value adjustment is required for innovation loans because a rate of interest is charged that is below the market rate (non-commercial terms).

For financial instruments measured at amortised cost the effective interest rate (EIR) method is used to measure the carrying value of a financial asset or liability and to allocate associated interest income or expense over the relevant period. The effective interest rate is the rate that exactly discounts estimated future cash payments or receipts over the expected life of the financial instrument or, when appropriate, a shorter period, to the net carrying amount of the financial asset or financial liability

Interest income is calculated by applying the EIR to the gross carrying amount of non-credit impaired loans. For amortised cost credit-impaired loans the interest income is calculated by applying the EIR to the amortised cost of the credit-impaired loans (i.e., net of the allowance for expected credit losses (ECLs) – known as the net EIR approach).

Where credit risk has increased significantly since initial recognition, lifetime expected losses are recognised. In these circumstances, interest revenue is calculated on the gross carrying amount of the asset.

For loans, which are assessed to be credit impaired or defaulted, a lifetime expected credit loss is recognised and interest revenue is calculated on the net carrying amount net of credit allowance.

Innovation loans will be written off at the point when any further recoveries are unlikely or become uneconomical to pursue. At this point, any remaining provision held against a credit-impaired (or defaulted) loan asset will be taken to the Statement of Comprehensive Net Expenditure and the value of the loan written off in the Statement of Financial Position.

Innovation Loans: Innovation Continuity Loans and Convertible Loan Notes

Innovation Continuity Loans and Convertible Loan Notes differ from loans issued under Competitions 1-5 and 6-8 cohorts by including equity conversion features. The inclusion of these features mean that they do not meet the test to show that the IFRS 9 cash flow characteristics are solely payments of principal and interest and not be classified as amortised cost loans; these loans have been classified as fair value through profit and loss. No expected credit loss is recognised for these loans, nor any expected credit loss provision for loss against irrevocable commitments.

The approach used to calculate the FV at origination of innovation loans including discount rates is refreshed for the recalculation of the FVs of loans classified as FVTPL at the reporting date. The assumptions for estimating the arm's length commercial interest rate taking of an individual borrower's credit rating and the cashflow projections are updated to the position at the reporting date to arrive at a proxy FV at the reporting date.

These loans are outside the scope of IFRS 9 Effective Interest Rate requirements. Interest income accrued is part of the FV calculation.Other income includes the movement of FVTPL loans after the fair value adjustment on initial recognition to the fair value of reporting date, excluding contractual interest receivable.

Innovation Continuity Loans and Convertible Loan Notes will be written off at the point when any further recoveries are unlikely or become uneconomical to pursue.

NOTE 1.20 Trade and other receivables

Under IFRS 9, trade and other receivables are measured at amortised cost. In line with the FReM, the simplified approach will be adopted and any loss allowances will be recognised at an amount equal to expected lifetime credit losses.

NOTE 1.21 Trade and other payables

Trade and other payables are recognised in the period in which related money, goods or services are received or when a legally enforceable claim against UKRI is established, or when the corresponding assets or expenses are recognised.

NOTE 1.22 Cash and cash equivalents

Cash and cash equivalents comprise cash in hand and other short-term highly liquid investments which are readily convertible to known amounts of cash, are subject to insignificant risk of changes in value, and have an original maturity of three months or less. Any bank overdraft amounts without the right of offset are included within trade payables and other liabilities.

NOTE 1.23 Risks

Due to the non-trading nature of its activities, and the way in which UKRI is financed, UKRI is not exposed to the degree of financial risk faced by non-public sector entities. UKRI has only very limited powers to borrow or invest surplus funds. Financial assets and liabilities are generated by day-to-day operational activities and are not held to change the risks facing UKRI in undertaking its activities.

UKRI is subject to foreign currency risk through the maintenance of bank accounts in foreign currencies to deal with day-to-day overseas transactions. The risk is low-level and not actively managed by UKRI.

Innovation loans are exposed to Credit risk, Credit risk is the risk of a customer or a counterparty failing to meet their financial obligations. Credit risk also encompasses refinance risk and concentration risk. Refinance risk is the risk of loss arising when a repayment of loan occurs later than originally anticipated. Concentration risk is the risk of loss arising from insufficient diversification. Further details on credit risk is disclosed in note 9.4 in this set of financial statements.

NOTE 1.24 Provisions

Provisions are recognised and measured in accordance with IAS 37 Provisions, Contingent Liabilities and Contingent Assets. Where the time value of money is material, provisions are discounted to present value using HM Treasury's real

discount rates, except in the case of the ILL decommissioning provision, where the underlying provision that determines UKRI's share of the provision has been calculated using a discount rate of 4.59% (2021: 3.39%), in accordance with the Fifth Protocol to the Intergovernmental Convention, as agreed by the members of ILL.

NOTE 1.25 Leases

Leases are classified in accordance with IFRS 16 as leases when the risks and rewards of ownership are transferred substantially to the lessee; other leases are classified as operating leases.

Finance leases – UKRI as lessor

Amounts due from lessees under finance leases are recognised as receivables at the amount of UKRI's net investment in the lease. Finance lease income is allocated to accounting periods to reflect a constant periodic rate of return on UKRI's net investment outstanding in respect of the leases.

Finance leases – UKRI as lessee

Assets and liabilities are recognised at the discounted value of the minimum lease payments (excluding VAT, which is expensed) on a straight-line basis over the term of the lease) and shown as leased assets and lease liabilities within the accounts. In instances where no interest rate is stated with in the lease, the HMT discount rate in effective at the commencement of the lease is used.

Lease assets will be depreciated over the life of the lease; where they relate to assets held at fair value (including land and buildings), they will be subject to the same revaluation treatments as other assets within the category.

Lease liabilities are adjusted during the year to reflect both the repayments made and the impact of interest on the balances outstanding.

Buildings are recognised as leased assets only if the building itself is leased from the lessor. The value of these assets will include any capital costs incurred in their construction (including lease premiums) and any subsequent improvement works to the building that will belong to the lessor at the end of the lease. The value of such leased building additions, where material, will be disclosed within the PPE note.

In instances where the land has been leased and then constructed on by UKRI, the land will be included under leased assets and the buildings under freehold.

Operating leases – UKRI as lessor

Assets subject to operating leases are recognised in the Statement of Financial Position with rental income plus initial direct costs incurred in arranging the lease, including incentives to the lessee to enter into the lease, recognised on a straight-line basis over the lease term.

Operating leases – UKRI as lessee

Rentals payable under operating leases, including benefits received and receivable as incentives to enter into the leases, are expensed on a straight-line basis over the term of the lease.

NOTE 1.26 Pensions

Retirement benefits to employees of UKRI are provided by:

- the Research Councils' Pension Scheme (RCPS);
- the Principal Civil Service Pension Scheme (PCSPS);
- the Medical Research Council Pension Scheme (MRCPS);
- the Prudential and Scottish Widows Pension Scheme (PSWPS);
- and United Kingdom Atomic Energy Authority (UKAEA).

The RCPS, PCSPS, PSWPS and UKAEA are unfunded pension schemes and the MRCPS is a funded scheme. The treatment of the different pension schemes is explained below:

Unfunded pension schemes

The RCPS, PCSPS and UKAEA pension schemes are public sector pension schemes and, as required by the Government Financial Reporting Manual, it is the scheme (rather than the employer) that reports the expected value of future pension payments. Employers whose employees are members of these pension schemes account for the scheme as a defined contribution plan, with employer contributions charged to the Statement of Comprehensive Net Expenditure in the period to which they relate.

Funded pension scheme

Employer superannuation costs are based on an actuarially-derived calculation under IAS 19: see Note 10. The defined benefit plan requires contributions to be made to separately administered funds. The cost of providing benefits under the defined benefit plan is determined using the projected unit credit actuarial valuation method.

Actuarial gains and losses are recognised in full as income or expense in the Statement of Comprehensive Net Expenditure.

The past service cost is recognised as an expense on a straight-line basis over the average period until the benefits become vested. If the benefits are already vested immediately following the introduction of, or changes to, a pension plan, past service cost is recognised immediately.

The defined benefit asset (or liability) is the aggregate of the present value of the defined benefit obligation and actuarial gains and losses (not recognised reduced by past service cost not yet recognized) and the fair value of plan assets out of which the obligations are to be settled directly. If such aggregate shows a surplus, the asset is measured at the lower of such aggregate or the aggregate of cumulative unrecognised net actuarial losses and past service cost and the present value of any economic benefits, available in the form of refunds, from the plan or reductions in the future contributions to the plan. The net asset is recognised as UKRI derives benefits from the reduced contributions to the scheme.

Defined contribution pension schemes

Contributions are charged to the Statement of Comprehensive Net Expenditure when they become payable. UKRI has no further liabilities in respect of benefits to be paid to members.

NOTE 1.27 Contingent assets and liabilities

Contingent assets and liabilities are disclosed in accordance with IAS 37 Provisions, Contingent Liabilities and Contingent Assets.

Where an outflow of economic benefits from a past event is possible but not probable, UKRI discloses a contingent liability. No disclosure is made for those contingencies where crystallisation is considered to be remote or the amounts involved are immaterial.

Where an inflow of economic benefits from a past event is probable, UKRI discloses a contingent asset. No disclosure is made where realisation is considered to be possible, but not probable, or the amounts involved are immaterial.

NOTE 1.28 Judgements, estimates and assumptions

Funded Pension Scheme

The determination of the pension cost and defined benefit obligation (liabilities) of the Medical Research Council Pension Scheme depends on the selection of certain assumptions, which include the discount rate, inflation rate, salary growth, mortality rates and expected rate of return. The pension assets include £444 million of property investments, valued by the expert valuer and approximately £4557 million of unquoted equity investments, which are estimates and are based on fund manager valuation reports as at 31 March 2022. See Note 10 for further details..

Property, Plant and Equipment

A number of judgements have been made around valuation of PPE, useful economic lives, depreciation rates and indices used. These have been more fully explained in Note 1.16 above.

Patents and Royalties

Where patents and royalties are recognised as intangible assets, these are revalued annually by specialists on the basis of future royalty income streams. Management applies the discount rate as provided by PES to these future income streams estimates. These estimates are subject to business uncertainty in terms of sales and the fluctuation of exchange rates. Judgement has been required in assessing the impact of these variables. The policy has been judged to be compliant with IAS 38.

Innovation Loans

The measurement of the expected credit loss under IFRS 9 for the innovation loans made to UK small or medium-sized enterprises is an accounting estimate.

In assessing the expected credit loss provision, management believes to require the most critical accounting judgements are:

- the approach of calculating a fair value at origination of an innovation loan including discount rate
- the approach to applying the staging requirements – identifying significant increases in credit risk and identifying credit impaired loans and the definition of default;
- the basis of forward-looking information and multiple economic scenarios and the application of weightings of expected credit loss models for the sensitivity of systemic risk factors.
- the approach to calculating a fair value at the reporting date for loans classified as FVTPL.

Grant Accruals and Prepayments

Financial statements include a grant accrual for each project (including fellowships, studentships and grants) where it has been determined that there is an unclaimed amount at the year-end that is due to participants.

Given the nature of this estimate and the history of recipients not spending, and therefore not being reimbursed for, their full entitlement, an expected future underspend percentage is calculated based on historic data of underspend against payment profile and applied to the year-end balance.

A No Cost Extension (NCE) arises when a grant recipient moves the end date of a research or fellowship grant into the future without changing the value of the grant.

A new grant profile is modelled and a prepayment is recognised as a result. Payments continue to be made quarterly in accordance with the original grant profile, however the new profile recognises expenditure through to the new end date of the grant agreed between UKRI and the grant recipient. In recognising this prepayment UKRI makes judgements and assumptions regarding: the population of grants affected; the impact of NCEs on the length of the grant; the amount that will be paid to the recipient during the term; the impact and timing of this impact on underlying activity supported by the grant arising from the NCE.

Recognition of Research Grants and Fellowships Expenditure, and payment profiles

Where Research Grant and Fellowship grant payment profiles are linear, as referenced in Note 1.11, and a grant is not subject to NCE, UKRI judges that there is an alignment between the payment profile, the underlying activity it supports, and costs incurred by grant recipients. UKRI makes this judgement because the majority of costs incurred by grant recipients are similarly linear (for example, direct costs of employing researchers, overheads associated with a grant), and therefore sufficiently aligned with the payment profile of the grant such that it is the most reasonable and appropriate basis for recognising expenditure.

This judgement means that UKRI therefore recognises expenditure on individual Research Grants and Fellowships when payment is made, except where final payment is withheld awaiting a final statement of expenditure from a grant recipient.

Innovate UK Grant Accrual

The grant accrual is based on participants' forecast of expenditure submitted with their latest claim,. For a number of large non-core projects, the Knowledge Transfer Network (KTN) and Catapult Centres, Innovate UK contacts the participants directly to obtain further information and assurances on claims due at the year-end date. For those grants that are based on procurements, Innovate UK confirms the accruals based on purchase orders raised for the period. The grant accrual as at 31 March 2022 was £620.6 million (31 March 2021: £685.3 million).

The major sources of uncertainty in the estimate relate to the profiling of incurring and defraying the project costs that create the entitlement to the grant, and the amount of the grant not utilised at the end of the project. The projects funded by Innovate UK are typically collaborations between private businesses and academia; this aspect introduces a degree of interdependency between project partners that may impact on the timing of individual work packages. In addition, projects are typically two to five years long, which permits a degree of flexibility for grant recipients in the scheduling of their project activity. These projects seek to develop new technology-based products and services for future markets and, as such, are inherently uncertain in terms of their success and, related to this, the project duration and activity costs ultimately incurred.

Decommissioning Provisions

Calculation of the decommissioning costs for STFC and NERC facilities constitutes a significant accounting estimate. External experts give insight into the current cost of the work to be undertaken and assumptions regarding inflation rates. Management translates these costs into a provision using knowledge of the timing of the decommissioning and the profiling of the expenditure. To reduce the risk of material misstatement, the estimates and assumptions are reviewed annually.

STFC's share of the *Institut Laue-Langevin* (ILL) decommissioning provision is taken from information included in the ILL financial statements. The provision was re-evaluated in 2019 by the *Commissariat à l'Énergie Atomique* (CEA) using information provided by ILL management.

2. Statement of Operating Expenditure by Operating Segment

Analysis of UKRI information by business segment

2021-22	AHRC £000	BBSRC £000	EPSRC/ UKRI £000	ESRC £000	IUK £000	MRC £000	NERC £000	RE £000	STFC £000	Total £000
Total operating income	(2,757)	(4,731)	(12,542)	(7,386)	(174,104)	(96,875)	(32,934)	(4,333)	(69,770)	(405,432)
Staff costs	6,069	9,868	95,694	9,965	95,070	99,572	70,047	5,108	133,554	524,947
Purchase of Goods and services	277	2,448	77,704	(1,195)	36,297	90,228	52,270	7,159	382,807	647,993
Depreciation and impairment charges	14	11,609	15,880	-	7,179	42,832	42,412	-	88,082	208,008
Research and Innovation	147,229	416,581	1,111,944	263,218	1,469,075	813,102	314,415	2,632,806	266,360	7,434,746
Provision expense	-	-	(3)	-	(4,371)	(15)	21,506	-	52,384	69,500
Other operating expenditure	-	(45)	-	-	(170)	5,154	165	-	(2,103)	3,001
Net expenditure	**150,832**	**435,731**	**1,288,676**	**264,602**	**1,428,976**	**953,998**	**467,881**	**2,640,739**	**851,328**	**8,482,763**

2020-21	AHRC £000	BBSRC £000	EPSRC/ UKRI £000	ESRC £000	IUK £000	MRC £000	NERC £000	RE £000	STFC £000	Total £000
Total operating income	(2,305)	(2,380)	(14,664)	(9,459)	(119,816)	(132,442)	(29,774)	(2,809)	(55,051)	(368,700)
Staff costs	6,024	9,039	87,580	9,897	55,099	96,009	72,395	4,820	135,817	476,680
Purchase of Goods and services	265	1,428	75,052	1,747	42,425	77,961	53,410	3,376	374,766	630,430
Depreciation and impairment charges	(8)	11,768	786	42	11,250	30,566	27,056	-	105,651	187,111
Research and Innovation	175,561	449,613	1,145,890	312,856	1,594,994	834,043	311,056	2,737,566	276,157	7,837,736
Provision expense	-	12	(18)	-	4,959	33	3,791	-	9,756	18,533
Other operating expenditure	-	(125)	1,222	-	(30)	3,019	30	-	17,175	21,291
Net expenditure	**179,537**	**469,355**	**1,295,848**	**315,083**	**1,588,881**	**909,189**	**437,964**	**2,742,953**	**864,721**	**8,803,081**

UKRI reports its expenditure by operating segments in accordance with IFRS 8 Operating Segments.

Operating segments are funding segments about which separate financial information is available that is regularly reviewed by the chief operating decision maker, the UKRI Executive Committee.

3. Total operating income

	2021-22 UKRI £000	2021-22 Consolidated £000	2020-21 UKRI £000	2020-21 Consolidated £000
Current grants from Central Government	(72,639)	(72,639)	(94,755)	(94,755)
Current grants from European Commission	(8,284)	(8,284)	(10,364)	(10,364)
Capital Grants	(24,997)	(24,997)	(9,721)	(9,721)
Current grants from private sector	(50,082)	(50,082)	(49,739)	(49,739)
Income from other government departments and public sector	(171,748)	(171,748)	(116,266)	(116,266)
Rental income	(8,598)	(8,598)	(8,391)	(8,391)
Sales of goods and services	(20,792)	(21,007)	(38,403)	(38,603)
Other income	(46,964)	(48,077)	(27,790)	(40,861)
	(404,104)	**(405,432)**	**(355,429)**	**(368,700)**

4. Staff costs

	2021-22 UKRI £000	2021-22 Consolidated £000	2020-21 UKRI £000	2020-21 Consolidated £000
Wages and salaries	339,593	341,954	344,150	346,947
Social security costs	72,794	72,908	33,676	33,735
Other pension costs	107,526	107,757	89,636	89,761
	519,913	522,619	467,462	470,443
Staff severance costs	2,328	2,328	6,237	6,237
	522,241	**524,947**	**473,699**	**476,680**

Year on year, wages and salaries have decreased by £5.0 million (1.4%) despite a 1.0% reported increase in FTE between 31 March 2021 and 31 March 2022. This is explained by significant year-on-year changes in the financial value of annual leave owed to UKRI staff since the beginning of the COVID-19 pandemic. In 2020-21 this value increased by £10.1 million as staff carried forward additional annual leave as UKRI responded to the impact of the pandemic; in 2021-22 this value reduced by £2.5 million as staff reduced annual leave balances. Once the impact of these year-on-year movements is removed, Wages and Salaries showed an underlying growth of £6.1million/ 1.8%, aligned to the growth in FTE.

Social Security costs increased year-on-year; following a review of the IR35 status of Monitoring & Assessment Officers engaged by Innovate UK, UKRI has concluded that some of these Monitoring & Assessment officers should have been considered to be inside the scope of IR35 regulations, and thus subject to income tax and national insurance contributions. UKRI has estimated a liability related to these income tax and national insurance contributions for the period from 2018-19 to 2021-22 which is included in Social Security costs.

It is expected that this liability will be settled in 2022-23.

Within other pension costs, the net impact of the MRC Pension Scheme on Staff expenditure (£23.7 million against £9.2 million for the prior year) is the key driver of year-on-year change; current service costs increased from £29.0 million to £40.9 million, whilst employer contributions reduced from £19.8 million to £17.1 million. Employer contributions for UKRI's other schemes increased by £3.5 million year-on-year.

5.1 Purchase of goods and services

	2021-22 UKRI £000	2021-22 Consolidated £000	2020-21 UKRI £000	2020-21 Consolidated £000
Rentals under operating leases	4,340	4,340	5,655	5,655
Finance, HR, IT and support costs	29,140	29,140	28,827	28,827
Accommodation and office equipment costs	143,061	143,265	139,427	139,921
Consultancy and legal expenditure	4,368	4,368	4,918	4,918
Training and other staff costs	5,495	5,506	4,131	4,132
Travel and subsistence costs	9,338	9,346	5,691	5,692
Advertising and publicity	2,144	2,202	2,500	2,558
Professional services	62,670	64,713	60,501	61,883
Auditors remuneration	483	620	475	600
Programme management and administration of grants and awards	3,390	3,390	3,010	3,010
Professional and international subscriptions	325,282	325,282	302,485	302,485
Recharges	5,419	5,484	25,899	25,966
Other purchase of goods and services cost	50,348	50,337	44,785	44,783
	645,478	**647,993**	**628,304**	**630,430**

5.2 Depreciation and impairment charges

	2021-22 UKRI £000	2021-22 Consolidated £000	2020-21 UKRI £000	2020-21 Consolidated £000
Depreciation	156,087	156,087	131,913	131,913
Amortisation of intangible assets	31,947	31,947	40,216	40,216
Impairment of PPE	15,893	15,893	10,155	10,155
Impairment of financial assets	1,673	1,673	-	-
Expected Credit Loss	1,905	2,408	205	4,827
	207,505	**208,008**	**182,489**	**187,111**

Depreciation of land and buildings has gone up by £10.4 million following significant upward revaluation of the BBSRC and NERC estates during 2020-21 and 2021-22 and the recognition in 2021-22 of £45 million of assets relating to right of use leased properties. Transport depreciation has increased by £4.9 million following the bringing into service of the RRS Sir David Attenborough. Plant and Machinery and IT Equipment depreciation have increased by £5.6 million and £3.2 million respectively with £120 million of assets coming into service in 2020-21 and 2022-22 following the completion of major projects including the Rosalind Franklin Institute, UKGEOS's Glasgow site and the ARCHER II Supercomputer.

Amortisation has fallen by £8.3 million in line with a general reduction of in service intangible assets as UKRI has harmonised its capitalisation criteria.

Impairments for 2021-22 include £15.3 million of land and building market value impairments following the buildings being professionally valued, see note 7 PPE for more detail; 2020-21 impairments included £9.7 million for impairments relating to demolition of a building to provide space for the Rosalind Franklin Institute and the decommissioning of the Muon Ionisation Cooling Experiment (MICE).

Consolidated expected credit losses include the additional IFRS9 impairment charge for IUKLL's Innovation loans classified as amortised cost of £1,798k for 2021-22, reduced by £1,295k resulting from a reclassification of Innovation Continuity Loans to fair value through profit and loss (FVTPL) in IUKLL's 2020-21 statutory accounts. This reclassification was finalised after the UKRI 2020-21 Annual Report and Accounts were approved; therefore this adjustment has been recognised in UKRI's 2021-22 financial statements. The adjustment is required as FVTPL loans are outside the scope of IFRS 9 impairment requirements, and do not require expected credit losses.

5.3 Research and Innovation

	2021-22 UKRI £000	2021-22 Consolidated £000	2020-21 UKRI £000	2020-21 Consolidated £000
Research and Innovation grants	1,836,143	1,836,143	1,844,688	1,844,688
Quality Research	1,799,997	1,799,997	1,711,642	1,711,642
Talent	532,460	532,460	504,218	504,218
Institutes, centres, facilities & catapults (ESA10)	723,070	723,488	701,301	701,773
Knowledge exchange	153,395	153,395	130,407	130,407
HEIF	231,000	231,000	254,221	254,221
International	5,019	5,019	14,854	14,854
Managed Programmes	438,883	438,883	351,050	351,050
Other costs	43,120	43,120	43,056	43,056
ISCF	407,746	407,746	440,315	440,315
Strategic Programmes	414,619	414,619	462,616	462,616
GCRF	135,268	135,268	342,533	342,533
Newton	15,213	15,213	50,424	50,424
Infrastructure	569,461	569,461	868,244	868,244
Competitive	128,960	128,960	98,588	98,588
Administration	(26)	(26)	19,107	19,107
	7,434,328	**7,434,746**	**7,837,264**	**7,837,736**

Total research and Innovation grants expenditure decreased by £403 million in 2021-22.

In March 2022, BEIS provided UKRI with permission to pay an additional £245 million (2020-21 £160 million) of QR funding. As a consequence, the QR grant allocations for 2022-23 have been reduced by £245 million (2020-21 £160 million). Over the two financial years the changes in funding cancel each other out so there is no impact on the funding provided to Higher Education Institutions in academic year 2021-22.

Expenditure on Managed Programmes increased by £88 million, primarily in relation to medical research charities, the Low Cost Nuclear and Industrial Energy Transformation Funds.

Industrial Strategy Fund (ISCF) expenditure had been previously growing year on year due to the growth of new programmes, however in 2021-22 a number of ISCF programmes ended leading to a decline in spend.

In 2021-22 Strategic Programmes, which had been re-named from the National Productivity Investment Fund (NPIF), no longer funded Innovate UK's SMART programme.

ODA (GCRF & Newton) expenditure decreased by £242 million following a significant reduction in funding for programmes as a result of COVID-19 and its impact on the UK economy announced in March 2021.

The science infrastructure ringfence grew in 2020-21 from 2019-20 due to a single-year increase in World Class Labs expenditure of £293 million designed to support the sector during the COVID-19 pandemic. In 2021-22 the Science Infrastructure returned to 2019-20 levels.

The year-on-year decrease in Administration is due to the transfer of the Polaris House freehold to the Government Property Agency in 2020-21; this required UKRI to recognise the associated loss on disposal as a Capital Grant in Kind. This was a one-off event and the admin cost was not required in 2021-22.

5.4 Provision expense

	2021-22 UKRI £000	2021-22 Consolidated £000	2020-21 UKRI £000	2020-21 Consolidated £000
Provision expense - Early retirement	(18)	(18)	5	5
Provision expense - Other provisions	1,554	1,554	140	140
Provision expense - Loan commitments	-	(4,371)	-	4,959
Provision expense - Decommissioning	72,335	72,335	13,429	13,429
	73,871	**69,500**	**13,574**	**18,533**

The provision expense consists of increases and decreases in the provision required by changes to the discount rate. The Public Expenditure System paper produced by HM Treasury lays down the discount rate used by UKRI. During 2021-22 the rate for long term discounting decreased from 1.99% to 0.95%, therefore increasing the value of provisions; the short term rate increased from -0.02% to 0.47% thereby leading to a decrease in the value of provisions.

Decommissioning provisions includes ISIS decommissioning £59.4 million (2020-21 £3.4 million), ISIS Waste Separation Facility £5.1 million (2020-21 £21.2 million) and Antarctic Decommissioning £20 million (2020-21 £3.7 million).

The movement in ISIS decommissioning is due to a change in the discount rate applied (£24.4 million) and cost increases of £35 million (of which £14 million at current prices and £21 million inflation). The increase in the Antarctic Decommissioning is due to significant increases in construction and transport costs. The Waste Separation Facility was a new provision in 2020-21 of £21.2 million was revised downward by £5.1 million.

Consolidated loan commitment provisions includes a £3.2 million reduction resulting from the reclassification of innovation continuity loans to FVTPL in IUKLL's 2020-21 statutory accounts. This reclassification was finalised after UKRI's 2020-21 results were approved: therefore this adjustment has been recognised in UKRI's 2021-22 financial statements. This reduction was due to FVTPL loan commitments being outside the scope of IFRS 9 ECL provisions.

5.5 Other operating expenditure

	2021-22 UKRI £000	2021-22 Consolidated £000	2020-21 UKRI £000	2020-21 Consolidated £000
Revaluation - asset held for sale	-	-	-	-
Revaluation - Investment Property	(170)	(170)	(30)	(30)
Loss on disposal - assets held for sale	-	-	-	-
Profit on disposal - PPE	164	164	59	59
Loss on disposal - PPE	(21)	(21)	34	34
Profit on disposal of other investments	-	(995)	-	(5,288)
Share of profits on joint venture and associates	(13,734)	(13,734)	(4,999)	(4,999)
Share of losses on joint venture and associates	17,757	17,757	31,515	31,515
	3,996	**3,001**	**26,579**	**21,291**

The reduction in the year on year share of profits was due to Harwell Sceince and Innovation Campus (HSIC) profit of £5 million for 2020-21 not being matched for 2021-22.

The reduction in the losses was primarily due to Diamond Light Source making £12 million loss this year as opposed to a £27 million loss last year.

6. Taxation

	2021-22 UKRI £000	2021-22 Consolidated £000	2020-21 UKRI £000	2020-21 Consolidated £000
Current Year Corporation Tax	14,507	15,353	5,641	5,061
Prior Year Corporation Tax	17,114	17,114	868	868
	31,621	**32,467**	**6,509**	**5,929**

Tax charges for current year relate only to corporation tax incurred by UKRI and Innovate UK Loans Limited in the normal course of business. UKRI has accrued an amount based on an initial calculation of the tax liability. This may be subject to change prior to final submission of the UKRI 2021-22 Corporation tax return during 2022-23.

Prior year corporation tax charges relate to the period 2018-19 to 2020-21.

During 2021-22, HMRC raised enquiries into the 2018-19 Corporation Tax return. In response to HMRC's enquiries on elements of the 2018-19 tax return, UKRI has established that re-calculation of corporation tax liabilities for 2018-19 and 2019-20 is required. This is because a different interpretation of UKRI's tax position was necessary in relation to elements of the initial tax returns.

UKRI is recognising charges of £0.3 million and £13.9 million for additional liabilities in 2018-19 and 2019-20 respectively (this includes the underlying liability and expected interest for late payment).

Following computation of the 2020-21 Corporation Tax liability, UKRI has established that it under-accrued by £2.8 million in 2020-21, now estimating tax for the year to be £8.5 million. This has increased charges in the current year relating to prior years by £17.1 million including interest for late payment.

UKRI has also recognised an estimated accrued tax charge of £14.5 million for 2021-22.

7. Property Plant and equipment

	Land £000	Buildings £000	Plant, equipment, fixtures and fittings £000	IT equipment £000	Transport £000	Assets under construction £000	Total £000
Cost or Valuation							
At 1 April 2021	**235,969**	**1,953,208**	**1,278,046**	**124,415**	**284,434**	**638,906**	**4,514,978**
IFRS 16 Initial Adoption b/fwd adjustment	12,874	32,122	-	-	5	-	45,001
At 1 April 2021	**248,843**	**1,985,330**	**1,278,046**	**124,415**	**284,439**	**638,906**	**4,559,979**
Additions	100	8,951	17,385	29,043	8,448	204,827	268,754
Disposals	(5)	-	(26,808)	(4,508)	(78,204)	-	(109,525)
Transfers	(5,450)	7,290	41,425	38,875	200,221	(285,282)	(2,921)
Revaluation	11,085	250,224	99,315	(2,063)	1,776	-	360,337
Lease Remeasurement	-	1,930	-	-	-	-	1,930
Impairment	(17)	(15,295)	(581)	-	-	-	(15,893)
At 31 March 2022	**254,556**	**2,238,430**	**1,408,782**	**185,762**	**416,680**	**558,451**	**5,062,661**
Depreciation							
At 1 April 2021	**(27,821)**	**(685,381)**	**(836,485)**	**(86,067)**	**(182,432)**	**-**	**(1,818,186)**
Charged in period	(1,465)	(54,927)	(65,519)	(19,287)	(14,889)	-	(156,087)
Disposals	5	-	26,780	4,508	74,508	-	105,801
Transfers	-	(240)	240	-	-	-	-
Revaluation	(606)	(112,083)	(59,090)	1,043	(101)	-	(170,837)
Impairment	-	-	-	-	-	-	-
At 31 March 2022	**(29,887)**	**(852,631)**	**(934,074)**	**(99,803)**	**(122,914)**	**-**	**(2,039,309)**
Net book value							
At 31 March 2022	**224,669**	**1,385,799**	**474,708**	**85,959**	**293,766**	**558,451**	**3,023,352**
At 31 March 2021	208,148	1,267,827	441,561	38,348	102,002	638,906	2,696,792
Asset financing:							
Owned	160,903	1,297,127	474,708	85,959	293,763	558,451	2,870,911
Finance leased	63,766	88,672	-	-	3	-	152,441
At 31 March 2021	**224,669**	**1,385,799**	**474,708**	**85,959**	**293,766**	**558,451**	**3,023,352**
Cost or Valuation							
At 1 April 2020	**224,580**	**1,940,187**	**1,193,404**	**156,397**	**275,348**	**486,160**	**4,276,076**

	Land £000	Buildings £000	Plant, equipment, fixtures and fittings £000	IT equipment £000	Transport £000	Assets under construction £000	Total £000
Additions	-	2,849	47,855	9,077	3,920	282,241	345,942
Disposals	(5,734)	(40,372)	(22,433)	(44,956)	(465)	-	(113,960)
Transfers	15,777	68,656	37,230	2,992	-	(129,495)	(4,840)
Revaluation	1,477	(17,793)	31,695	905	5,631	-	21,915
Impairment	(131)	(319)	(9,705)	-	-	-	(10,155)
At 31 March 2021	**235,969**	**1,953,208**	**1,278,046**	**124,415**	**284,434**	**638,906**	**4,514,978**
Depreciation							
At 1 April 2020	**(27,590)**	**(672,449)**	**(778,803)**	**(114,366)**	**(169,488)**	**-**	**(1,762,696)**
Charged in period	(823)	(45,209)	(59,861)	(16,046)	(9,974)	-	(131,913)
Disposals	-	23,718	22,349	44,951	465	-	91,483
Transfers	-	(51)	51	-	-	-	-
Revaluation	592	8,610	(20,221)	(606)	(3,435)	-	(15,060)
Impairment	-	-	-	-	-	-	-
At 31 March 2021	**(27,821)**	**(685,381)**	**(836,485)**	**(86,067)**	**(182,432)**	**-**	**(1,818,186)**
Net book value							
At 31 March 2021	**208,148**	**1,267,827**	**441,561**	**38,348**	**102,002**	**638,906**	**2,696,792**
At 31 March 2020	196,990	1,267,739	414,601	42,031	105,860	486,160	2,513,381
Asset financing:							
Owned	156,652	1,252,980	441,561	38,348	102,002	638,906	2,630,449
Finance leased	51,496	14,847	-	-	-	-	66,343
At 31 March 2021	**208,148**	**1,267,827**	**441,561**	**38,348**	**102,002**	**638,906**	**2,696,792**

The £5.45 million of Land transfers entirely relates to BBSRC surplus land being transferred to Assets Held for Sale.

Building additions include £2.45 million of Right of Use Lease Additions relating to a new lease at STFC's Harwell site.

The leased buildings figure includes £50.56 million of MRC Building Assets Reclassified from Freehold to Leasehold to bring the treatment in line with IFRS16 Leases (see notes 1.5 and 1.25 for further details), this includes £50.88 million of balances brought forward from 2020-21.

Depreciation of Buildings charged during the year includes £12.52 million for leasehold assets.

Included in IT Equipment transfers is £21.75 million for the ARCHER 2 Supercomputer project which has now gone into service.

Included in Transport transfers is £196.8 million for the bringing into service of the Antarctic research vessel RRS Sir David Attenborough.

Transport disposals include £78.88 million of cost and £75.23 million of accumulated deprecation relating to the sale of the Antarctic research vessel RRS James Clark Ross following its replacement by the RRS Sir David Attenborough

Assets under construction additions include:

- £18.65 million (2020-21 £49.14 million) for BBSRC institute work,
- £46.89 million (2020-21 £40.18 million) for the London Institute of Medical Sciences,
- £37.84 million (2020-21 £16.72 million) for the Antarctic Infrastructure Modernisation Programme and other Antarctic projects.

Included in Assets under construction is £98.32 million (2020-21 £79.67 million) for BBSRC institute work, £78.5 million (2020-21 £72.34 million) for National Satellite Test Facility construction, £98.84 million (2020-21 £51.95 million) for the London Institute of Medical Sciences, £77.46 million (2020-21 £39.32 million) for the Antarctic Infrastructure Modernisation Programme and other Antarctic projects.

Lease Remeasurement includes £1.93 million reflecting the rent review on MRC's Harwell site.

All Impairments of land and £9.57 million of impairments of buildings relate to right of use leased assets established under IFRS16 being impaired their open market value as established by professional valuation. Additionally impairment of buildings include £1.13 millon of other leasehold properties and £4.59 millon of freehold properties being impaired to their open market value as established by professional valuation (see above for details of valuation exercises).

Impairments of plant, equipment, fixtures and fittings include £0.58 million resulting from a fire in building STFC's ISIS R55 Biological Support Laboratory.

NERC and EPSRC UK land and buildings were professionally revalued during 2021-22 as at 31 December 2021 by Carter Jonas LLP, Chartered Surveyors, an independent valuer. Land and buildings were valued in accordance with the the appropriate sections of the current RICS Professional Standards (PS) and in accordance with the appropriate sections of the current RICS Valuation - Global Standards (incorporating the IVSC, International Valuation Standards) and the UK national supplement (the 'Red Book'), and are prepared either on a Market Evidence or a Depreciated Replacement Cost basis. NERC's Antarctic buildings were professionally revalued during 2021-22 as at 31 March 2021 by Powis Hughes Ltd Chartered Surveyors, an independent valuer. Buildings were valued at Fair Value as defined by the International Accounting Standards Committee (IASC) under IFRS 13 as the basis of value in accordance with th Royal Institute of Chartered Surveyors (RICS) Valuation Global Standards 2020 (effective from 31 January 2020) and the UK Supplement (together with the Red Book) on a Depreciated Replacement Cost basis.

The former BBSRC land and buildings were professionally revalued during 2020-21 as at 31 January 2021 by Avison Young Limited, Chartered Surveyors, an independent valuer. Land and buildings were valued in accordance with the Royal Institute of Chartered Surveyors Valuation Standards (8th Edition), the "Red Book", and are prepared either on a Market Evidence or a Depreciated Replacement Cost basis.

MRC land and buildings were professionally revalued during 2018-19 as at 31 December 2018 by Powis Hughes Limited, Chartered Surveyors. STFC Land and buildings at the Rutherford Appleton Laboratory were professionally valued during 2017-18 as at 31 January 2018 by external valuers GVA Grimley Limited, all other STFC Land and buildings were professionally revalued during 2018-19 as at 30 November 2018 by Grimley Ltd, Chartered Surveyors, an independent valuer. NERC's research ships: RRS Discovery, RRS James Clark Ross, and RRS James Cook were valued by E.A. Gibson Shipbrokers Ltd during 2018-19 as at 16th August 2018. All NERC aircraft were revalued in 2018-19 as at November 2018 by the International Bureau of Aviation Group Limited.

During 2020-21, UKRI decided to switch the index used to revalue Land and Buildings from the Implied Output Price Indicator for New Construction: Other Public (OPI-OP) to the All-In Tender Price Index (TPI). This was because RICS issued guidance that the publication of some indices, including the OPI-OP, would likely become more volatile with limited data available due to the COVID-19 pandemic. After discussions were held with UKRI's expert valuer and assessing the various indices, it was decided the TPI was the most stable and more robust index.

8. Intangible assets

	Patents and Licences £000	Software Intangibles £000	Assets under construction £000	Total £000
Cost or Valuation				
At 1 April 2021	**384,101**	**134,370**	**3,663**	**522,134**
Additions	-	221	6,047	6,268
Disposals	-	(1,283)	-	(1,283)
Transfers	-	1,683	(4,212)	(2,529)
Revaluation	(14,442)	-	-	(14,442)
Impairment	-	-	-	-
At 31 March 2022	**369,659**	**134,991**	**5,498**	**510,148**
Amortisation				
At 1 April 2021	**(277,717)**	**(107,168)**	**-**	**(384,885)**
Charged in period	(20,634)	(11,313)	-	(31,947)
Disposals	-	1,283	-	1,283
Transfers	-	-	-	-
Revaluation	-	-	-	-
Impairment	-	-	-	-
At 31 March 2022	**(298,351)**	**(117,198)**	**-**	**(415,549)**
Net book value				
At 31 March 2022	**71,308**	**17,793**	**5,498**	**94,599**
At 1 April 2021	**106,384**	**27,202**	**3,663**	**137,249**
Cost or Valuation				
At 1 April 2020	**329,632**	**139,570**	**4,657**	**473,859**
Additions	52,958	1,523	3,387	57,868
Disposals	-	(11,104)	-	(11,104)
Transfers	-	4,381	(4,381)	-
Revaluation	1,511	-	-	1,511
Impairment	-	-	-	-
At 31 March 2021	**384,101**	**134,370**	**3,663**	**522,134**
Amortisation				
At 1 April 2020	**(261,529)**	**(94,244)**	**-**	**(355,773)**
Charged in period	(16,188)	(24,028)	-	(40,216)
Disposals	-	11,104	-	11,104
Transfers	-	-	-	-
Revaluation	-	-	-	-
Impairment	-	-	-	-
At 31 March 2021	**(277,717)**	**(107,168)**	**-**	**(384,885)**
Net book value				
At 31 March 2021	**106,384**	**27,202**	**3,663**	**137,249**
At 31 March 2020	68,103	45,326	4,657	118,086

Additions of £52.9 million arose during 2020-21 due to a new patent being licensed.

9. Investments and Financial assets

9a Investments	Notes	2022 UKRI £000	2022 Consolidated £000	2021 UKRI £000	2021 Consolidated £000
Investments in joint ventures	9.1	720,907	720,907	692,711	692,711
Investments in associates	9.2	9,093	9,093	23,780	23,780
Other investments	9.3	5,703	11,996	6,706	15,804
		735,703	**741,996**	**723,197**	**732,295**

9.1 Investments in joint ventures

	FCI £000	DLSL £000	ILL £000	HSIC £000	Other £000	Total joint ventures £000
At 1 April 2021	**292,436**	**314,412**	**43,627**	**40,743**	**1,493**	**692,711**
Additions	-	-	-	-	-	-
Transfers	-	-	-	-	-	-
Revaluation	13,691	18,177	538	-	(18)	32,388
Impairments	-	-	-	-	(125)	(125)
Share of joint venture profit/(loss)	(5,146)	(12,430)	-	13,390	119	(4,067)
At 31 March 2022	**300,981**	**320,159**	**44,165**	**54,133**	**1,469**	**720,907**
At 1 April 2020	**299,319**	**320,248**	**44,218**	**35,744**	**1,497**	**701,026**
Additions	-	21,806	-	-	-	21,806
Transfers	-	1	-	-	-	1
Revaluation	(3,881)	(200)	(591)	-	-	(4,672)
Impairments	-	-	-	-	-	0
Share of joint venture profit/(loss)	(3,002)	(27,443)	-	4,999	(4)	(25,450)
At 31 March 2021	**292,436**	**314,412**	**43,627**	**40,743**	**1,493**	**692,711**

The revaluation of investment in Institut Laue-Langevin (ILL) relates to the movement in UKRI share of the ILL capital investment reserve. The adjustment is taken to revaluation reserve.

The revaluation of investment in Diamond Light Source Limited (DLSL) relates to the adjustment required to account for differences in accounting policy between UKRI and DLSL. The adjustment is taken to revaluation reserve.

The revaluation of investment in the Francis Crick Institute (FCI) relates to the adjustment required to account for differences in accounting policy between UKRI and FCI. The adjustment is taken to revaluation reserve.

The Francis Crick Institute Limited (FCI)

The FCI is a UK registered charity and limited company formed in partnership with Cancer Research UK, University College London, Kings College London, Imperial College of Science Technology and Medicine and the Wellcome Trust. The Institute became operational on 1 April 2015. The entity is designed to allow the delivery of the scientific aims of the joint venture.

The FCI's objectives as set out in its Articles of Association are "the advancement of human health and education for the benefit of the public by the promotion and carrying out, directly and indirectly, of all aspects of biomedical research and innovation".

The funding of the project was via capital contributions leading to shares. The UKRI investment in the FCI is represented by issued shares. The investment is therefore valued under the equity method in accordance with the arrangements of IFRS 11 Joint Arrangements as a Joint Venture and additional disclosures regarding the investment are made under

IFRS 12 Disclosure of Interests in Other Entities. The principal place of business is Midland Road, London. The proportion of share capital of The Francis Crick Institute that the UKRI holds is 41.9%.

Summarised financial information relating to the FCI is presented below:

Summarised financial information	2021-22 £000	2020-21 £000
Current asset	72,788	78,819
Non-current assets	531,642	543,799
Current Liabilities	(43,005)	(49,912)
	561,425	**572,706**
Revenue	178,477	167,089
Profit/(loss) from continuing activities	(13,970)	(8,544)

Other financial information	2021-22 £000	2020-21 £000
Cash and cash equivalents	46,365	39,075
Depreciation and amortisation	(38,343)	(38,813)

Other information	2021-22 £000	2020-21 £000
Capital commitments	5,184	1,284
Grant commitments	-	-

A lease dated 7 June 2012 between the original founders and the FCI grants land at Brill Place, Camden, London (site of the FCI) to the FCI. The lease term is for a period of 55 years at peppercorn rent. The land had been revalued by Powis Hughes, Chartered Surveyors at 31 December 2018. The valuation was carried out in accordance with RICS Valuation Manual, as amended in April 2010, known as the revised "Red Book", at Market Value. The MRC's interest in the land is recorded at £6 million (2020 £6 million) and reflected in the financial statements accordingly.

Diamond Light Source Limited (DLSL)

UKRI has an 86% interest in DLSL, a company incorporated and operating in the UK. DLSL is a synchrotron science facility. Its purpose is to produce intense beams of light to be used in scientific research, and the principal activities are research and experimental development in natural sciences and engineering.

DLSL is a separate structured vehicle under the joint control of UKRI and the Wellcome Trust. UKRI has a residual interest in its net assets. Under IFRS 11 this joint arrangement is classified as a joint venture and has been included in the consolidated accounts using the equity method.

UKRI holds 86% of the ordinary share capital and 100% of the non-voting redeemable shares in DLSL. The purpose of the redeemable shares is to provide for the funding of irrecoverable VAT incurred during the construction and operation of the synchrotron facility.

DLSL is consolidated using the equity method based on UKRI's net share of the ordinary and preference shares and after adjusting DLSL financial statements for differences in accounting policy.

Summarised financial information relating to the DLSL is presented below:

Summarised financial information	2021-22 £000	2020-21 £000
Current asset	36,004	36,579
Non-current assets	331,084	341,256
Current Liabilities	(30,029)	(29,293)
Non-current liabilities	(60,964)	(59,581)

Summarised financial information	2021-22 £000	2020-21 £000
	274,508	**288,961**
Revenue	99,969	76,225
Profit/(loss) from continuing activities	(12,866)	(31,911)

Other financial information	2021-22 £000	2020-21 £000
Cash and cash equivalents	22,970	23,288
Depreciation and amortisation	(35,796)	(34,175)

Other information	2021-22 £000	2020-21 £000
Capital commitments	16,728	6,972
Grant commitments	-	-

Institut Laue-Langevin (ILL)

UKRI has a 33% shareholding and 27.5% net interest (31 March 2021: 27.5% net interest) in the ILL; an international research centre for neutron science, incorporated and operating in France. UKRI is the UK representative and, along with the French and German Foreign Ministries, jointly controls the ILL. The ILL is a separate structured vehicle and UKRI has a residual interest in its net assets. Under IFRS 11 this joint arrangement is classified as a joint venture and has been included in the consolidated accounts using the equity method. ILL prepares accounts to 31 December (in euros); they are produced in accordance with French accounting rules and principles.

Summarised financial information relating to the ILL is presented below:

Summarised financial information relating to the ILL is presented below:

Summarised financial information	2021-22 £000	2020-21 £000
Current asset	82,389	84,038
Non-current assets	491,013	500,922
Current Liabilities	(43,763)	(49,574)
Non-current liabilities	(359,460)	(365,276)
	170,179	**170,110**
Revenue	89,723	68,945
Profit/(loss) from continuing activities	-	-

Other financial information	2021-22 £000	2020-21 £000
Cash and cash equivalents	40,828	41,444
Depreciation and amortisation	(11,763)	(10,895)

Other information	2021-22 £000	2020-21 £000
Capital commitments	-	-
Grant commitments	-	-

Harwell Science and Innovation Campus Public Sector Limited Partnership (HSIC PubSP)

UKRI has a 41% (31 March 2021: 41%) interest in HSIC PubSP, a company incorporated and operating in the UK. Management and control of HSIC PubSP is jointly shared by UKRI and the UKAEA, with financial interests reflecting the relative contributions of the partners; under IFRS 11 the joint arrangement is classified as a joint venture and is equity accounted. The principal activity of HSIC PubSP is to manage and develop the Harwell Campus as a partner in the Harwell Science and Innovation Campus LP alongside the private sector partner, Harwell Oxford Developments Limited.

Summarised financial information relating to HSIC PubSP is presented below:

Summarised financial information	2021-22 £000	2020-21 £000
Current asset	24,271	24,317
Non-current assets	103,514	71,111
Current Liabilities	(2)	(8)
Non-current liabilities	-	-
	127,783	**95,420**
Revenue	-	-
Profit/(loss) from continuing activities	32,563	12,194

Other financial information	2021-22 £000	2020-21 £000
Cash and cash equivalents	24,269	24,315
Depreciation and amortisation	-	-

Other information	2021-22 £000	2020-21 £000
Capital commitments	-	-
Grant commitments	-	-

UK Shared Business Services Ltd (Registered in England)

UKRI holds one Non-Government Department (NGD) £1 share in UK Shared Business Services Ltd. BEIS holds one Government department (GD) £1 share carrying 51% of the votes. All other stakeholders, including UKRI, each hold 1NGD share with a combined vote of 49%.

9.2 Investments in associates

	2022 UKRI	2022 Consolidated	2021 UKRI	2021 Consolidated
Opening balance	23,780	23,780	24,847	24,847
Impairement	(14,728)	(14,728)	-	-
Transfers	-	-	(1)	(1)
Profit/loss	41	41	(1,066)	(1,066)
	9,093	**9,093**	**23,780**	**23,780**

Anglia Innovation Partnership (AIP) LLP (formerly Norwich Research Park (NRP) LLP)

The Biotechnology and Biological Sciences Research Council's investment of £833k in the AIP LLP is an equal share of a £2.5 million capital investment made by the three landowners of the NRP in 2011-12, (BBSRC, John Innes Foundation, and the University of East Anglia). The NRP LLP was formed between the NRP Partners – which consists of the three landowners, the Norfolk and Norwich University Hospital, the John Innes Centre, The Sainsbury Laboratory, and the Earlham Institute – with the aim of transforming the NRP into a world-leading centre for research and innovation in life and environmental science, as well as delivering significant economic benefits and growth in jobs, as a result

of the government's £26 million capital investment in the facilities and infrastructure on the NRP. (https://www.norwichresearchpark.com/).

Babraham Research Campus Ltd (BRCL) (formerly Babraham Bioscience Technologies Ltd (BBT))

UKRI currently holds 25% of shares in BRCL, with a nominal value of £6.6 million, with the Babraham Institute holding the remaining 75% shares. This equity stake in BRCL will ensure that £50 million government investment to date in the Babraham Research Campus facilities and infrastructure, and in any future developments, will deliver economic growth and job creation through the creating an environment where life science businesses can focus on developing their science and building their business in a supportive and highly networked community, helping to create new medicines, jobs and growth, and maximising the impact of UK science. (https://www.babraham.com/)

Aberystwyth Innovation and Enterprise Campus Ltd (AIEC) (also referred to as Aberinnovation)

UKRI currently holds 25 ordinary share of 100p each, representing 25% of AIEC's issued share capital, with Aberystwyth University holding the remaining 75% shares. Government has invested £12 million, out of a total investment of £40.5 million, to provide world-leading facilities and expertise at Aberystwyth University's Goggerdan campus, within the bioscience, agri-tech, food and drinks sectors, in order to attract researchers and companies interested in creating commercially viable products, based on modern approaches to plant breeding, whilst facilitating the development of spin-out companies and inward investment. The aim is to drive economic growth in the region through the creation of high value-add jobs and thriving knowledge-based companies. AIEC is incorporated in England and Wales. (https://aberinnovation.com/)

Plant Bioscience Ltd (PBL)

UKRI currently holds 110 ordinary shares at 10p each, representing one third of the issued share capital of PBL a company incorporated in England and Wales.

Rothamsted Centre for Research and Enterprise (ROCRE)

Rothamsted Centre for Research and Enterprise (RoCRE) changed its name to Rothamsted Enterprises Ltd (REL) on 24 January 2019. UKRI hold one ordinary share at 100p, representing 20 per cent of the issued share capital (with voting rights) of Rothamsted Centre for Research and Enterprise Ltd (RoCRE). Lawes Agricultural Trust and Rothamsted Research each hold two ordinary shares, or 40 per cent, of the remaining issued share capital. RoCRE is incorporated in England and Wales. RoCRE's primary aim is to promote collaboration and innovation through partnering with commercial agricultural technology businesses and opening up the research process. www.rocre-rothamsted.com/

Leaf Systems International Ltd

UKRI currently holds 30 ordinary shares at 100p each, representing 30 per cent of the issued share capital (with voting rights) of Leaf Systems International Ltd. Leaf Systems International Ltd is incorporated in England and Wales and was launched in January 2017, following construction of the government- funded £5 million transitional facility at Norwich for producing high-value protein in plants, including antibodies and allergens, enzymes and vaccines, using plant-based transient expression technology. LSI is incorporated in England and Wales. (https://www.leafexpressionsystems.com/)

9.3 Other investments

	2022 UKRI	2022 Consolidated	2021 UKRI	2021 Consolidated
Opening balance	6,706	15,804	11,795	17,551
Additions	-	31	-	2,372
Revaluation	(1,003)	(3,839)	(5,089)	(3,819)
Disposals	-	-	-	(300)
	5,703	**11,996**	**6,706**	**15,804**

9b Financial assets

9.4 Loans

	2022 UKRI	2022 Consolidated	2021 UKRI	2021 Consolidated
Opening balance	11,067	75,276	10,128	40,779
Reclassification – expected credit loss	-	1,295	-	-
Additions	332	67,477	939	39,780
Loans repaid	-	(4,948)	-	(1,190)
Expected credit loss	-	(1,798)	-	(4,623)
Accrued interest	-	3,753	-	1,897
Fair value movement – Day 1	-	(1,345)	-	(1,367)
Fair value movement	-	(1,384)	-	-
	11,399	**138,326**	**11,067**	**75,276**

9.4.1 Loans analysis

The loans are further split between Innovate Loans UK Limited (IUKLL) and a loan to Daresbury SIC LLP (DSIC), which is a joint venture between UKRI and Halton Borough Council. The IUKLL loans receive contractual interest in a range from 3.7% to 7.4%, whilst the DSIC loan's contractual interest rate is 3%.

	UKRI			Consolidated			
	DSIC Amt cost £000	IUKLL Amt cost £000	Total £000	DSIC Amt cost £000	IUKLL Amt cost £000	IUKLL FVTPL £000	Total £000
At 1 April 2021	**11,067**	**-**	**11,067**	**11,067**	**64,209**		**75,276**
Reclassification	-	-	-	-	(15,937)	15,937	-
Reclassification - ECL	-	-	-	-	-	1,295	1,295
Reclassification in year	-	-	-	-	(900)	900	-
Additions	332	-	332	332	14,155	52,990	67,477
Loans repaid	-	-	-	-	(4,033)	(915)	(4,948)
Expected credit loss	-	-	-	-	(1,798)	-	(1,798)
Accrued interest	-	-	-	-	1,515	2,238	3,753
Fair value movement – Day 1	-	-	-	-	(721)	(624)	(1,345)
Fair value movement – FVTPL	-	-	-	-	-	(1,384)	(1,384)
At 31 March 2022	**11,399**	**-**	**11,399**	**11,399**	**56,490**	**70,437**	**138,326**
At 1 April 2020	**10,128**	**-**	**10,128**	**10,128**	**30,651**	**-**	**40,779**
Additions	939	-	939	939	38,841	-	39,780
Loans repaid	-	-	0	-	(1,190)	-	(1,190)
Expected credit loss	-	-	-	-	(4,623)	-	(4,623)
Amortisation	-	-	-	-	1,897	-	1,897
Fair value movement	-	-	-	-	(1,367)	-	(1,367)
At 31 March 2021	**11,067**	**-**	**11,067**	**11,067**	**64,209**	**-**	**75,276**

Subsequent to the signing of the 2020-21 Group Accounts £17.2 million innovation loans previously classified as amortised cost were reclassified as FVTPL following a detailed assessment of an equity conversion clause on the cash flow characteristics of innovation continuity loans (ICLs), leading to the Reclassification - ECL item. ICLs were made available to support the continuation of innovation by Innovate UK award recipients who are SMEs or third sector organisations that found themselves facing a sudden shortage or unavailability of funds resulting directly from the COVID-19 pandemic. The intention of the conversion to equity feature is defensive, to support the recovery of any outstanding capital and interest.

Maximum credit risk exposure

The maximum credit risk exposure is calculated by adding the balance sheet carrying value of loans advanced (net of expected credit loss provisions) to the irrevocable loan commitments that are not yet advanced (so are not recognised on the balance sheet), less provisions on these commitments. The maximum credit risk exposure totalled £151.5 million at 31 March 2022 (2021 £147.2 million).

Staging and credit quality (amortised cost loans only)

UKRI's most substantial exposure to credit risk relates to the lending by Its subsidiary Innovate UK Loans Limited (IUKL). More detailed disclosure is available in the published statutory accounts of this subsidiary which will be approved by the IUKL directors and will be made available on the Companies House website later this year.

The nature of innovation loans is such that this type of lending is expected to have a relatively higher credit risk profile compared to lower risk commercial lending secured on a range of tangible and intangible assets at market interest rates that private sector financial institutions typically offer. IUKL adopts robust credit risk management policies designed to recognise and manage the risks arising from the portfolio. At 31 March 2022 there were 14 innovation loans with a significant increase of credit risk and 8 loans that were credit impaired (defaults) (at 31 March 2021 there were 3 loans significant increase of credit risk and 5 loans with credit impairment (defaults), as defined by the IUKL's staging transfer criteria, at the end of the financial year.

A consequence of the classification of innovation continuity loans as FVTPL is that these loans are outside the scope of ECL provisions and the provisions for irrevocable commitments and so ECL provisions cannot be made for these loans.

The table below shows the loan balances and provisions for DSIC and amortised cost IUKL innovation loans, by risk grade.

Loan balance and provisions by risk grade

31 March 2022

Amortised cost loans only

	Loan balance				Provisions			
Risk grade	Stage 1 £'000	Stage 2 £'000	Stage 3 £'000	Total £'000	Stage 1 £'000	Stage 2 £'000	Stage 3 £'000	Total £'000
DSIC non graded	11,067	-	-	11,067	-	-	-	-
Strong (AAA to A-)	-	-	-	-	-	-	-	-
Good (BBB+ to BBB-)	4,776	-	-	4,776	44	-	-	44
Satisfactory (BB+ to BB-)	30,939	670	-	31,609	817	16	-	833
Weak (B+ to B-)	18,365	2,530	-	20,865	1,529	501	-	2,030
Bad/Financial difficulties (CCC+ and below)	0	3,481	-	3,481	0	1,364	-	1,364
Default/credit impaired (D)	-	-	3,790	3,790	-	-	3,790	3,790
Total	**65,147**	**6,681**	**3,790**	**75,618**	**2,390**	**1,881**	**3,790**	**8,061**

Although ICLs are outside the scope of ECL provisions, IUKL manages the credit risks of ICLs on exactly the same basis as other innovation loans and is exposed to the same risks of default. As at 31 March 2022 the additional provisions that would have been made if ICLs had been classified as amortised cost would have been £4.6 million.

9.5 Subsidiary Undertakings

STFC Innovations Limited (SIL)

STFC Innovations Limited (SIL), a company registered and operating in the UK, is a wholly owned subsidiary of UKRI. SIL was established to manage and commercially exploit intellectual property owned by UKRI for the benefit of the UK economy in accordance with HM Government policy.

SIL is consolidated in UKRI's financial statements in accordance with IFRS 10. In 2021-22 SIL recorded a loss of £0.7 million. Its net deficit of capital and reserves at 31 March 2022 was £2.2 million.

Innovate UK Loans Limited

Innovate UK Loans Limited (IUKLL), a company registered and operating in the UK, is a wholly owned subsidiary of UKRI. IUKLL was incorporated on 22 February 2018 to implement a programme of innovation loans for the benefit of the UK economy in accordance with HM Government policy.

IUKLL is consolidated in UKRI's financial statements in accordance with IFRS10. In 2021-22 IUKLL recorded a loss of £1.0 million. Its net deficit of capital and reserves at 31 March 2022 was £0.7 million.

10. Funded Pension Scheme

The MRC operates a funded pension scheme (MRCPS) providing benefits based on service and final pensionable pay at the normal retirement age of 65. The scheme is a defined benefit scheme that prepares its own scheme statements. Benefits accrue at the rate of 1/80th of pensionable salary for each year of service. In addition, a lump sum equivalent to three years' pension is payable on retirement. Members pay contributions of between 6.0% and 6.5% pensionable earnings to the Scheme.

Following the transfer of MRC research units and employees to universities, a University section was set up to account for the obligations to individuals that remain in the MRCPS. During the period obligations of £5.5 million were recognised under Section 75 (S.75) of the 1995 Pensions Act in respect of liabilities of transferred employees; the University section, has been set up within MRCPS to manage S.75 liabilities. These costs are reflected in the valuation of the pension scheme.

The required MRCPS contribution rate is assessed every three years in accordance with advice of the Government Actuary. The latest actuarial assessment of the MRCPS was at 31 December 2019; showed a surplus of £230.9 million (2016 valuation £160.3 million) and the market value of the assets of the MRCPS was £1,647 million (2016: £1,406 million), an ongoing funding level of 116% (2016 valuation 113%). The actuarial value of the assets was sufficient to cover 116 per cent of the benefits that had accrued to members after allowing for expected future increases in earnings. Triennial valuations are conducted under the Pensions Act 2004 on a scheme specific funding basis. The present MRCPS employers' contribution rate rose to 16% in 2021-22 (2020-21: 15%).

The contributions due to the scheme are set out in the schedule of contributions for each section. The most recent schedules of contributions were signed on 21 December 2020 and are due to be reviewed following the next actuarial valuation of the scheme which is due to be carried out as at 31 December 2022.

The following payments are due in 2022-23:

MRC Section

By the members:	6.5% of pensionable pay
By MRC:	16.0% of pensionable pay
By other employers:	16.9% of pensionable pay

The total contribution expected to be paid into the MRC section in 2022-23 is £12 million.

University Section

By the members:	6.5% of pensionable pay
By the universities:	16.9% of pensionable pay
By MRC:	27.1% of pensionable pay

The total contribution expected to be paid into the university section in 2022-23 is £11 million.

As at 31 December 2019 the average maturity of the scheme as a whole was around 20 years.

The valuation used for IAS 19 disclosures has been based on the data for the most recent actuarial valuations as at 31 December 2019, and updated to take account of the requirements of IAS 19 in order to assess the liabilities of the scheme at 31 March 2022. The mortality assumptions included within the figures are that male and female members who retire at typical ages will live to approximately age 87 and 89 respectively.

a. Financial assumptions used to calculate scheme liabilities

	2021-22 %	2020-21 %
Rate of increase on pensionable salaries	4.00	3.40
Rate of increase on pension payments	3.00	2.40
Discount rate	2.70	2.00
Inflation rate	3.00	2.40
Expected return on equities	2.70	2.00
Expected return on bonds	2.70	2.00
Expected return on overall fund	2.70	2.00

The results of any actuarial calculation are inherently uncertain because of the assumptions which must be made. The table below indicates the approximate effects on the actuarial liability as at 31 March 2022 of changes to the main actuarial assumptions.

Change in assumption			Approximate effect on total liability
Discount rate	-½%	+10.0%	+£167m
Rate of increase in earnings	-½%	-1.0%	-£20m
Rate of increase in pensions	-½%	-7.0%	-£120m
Removing age rate for pensioner mortality		+4.0%	+£64m

b. Analysis of Actuarial gain

	2021-22 £000	2020-21 £000
Actual return less expected return on pension scheme assets	151,902	331,243
Experience gains arising on the scheme liabilities	(18,107)	23,045
Changes in demographic assumptions	17,108	8,759
Changes in financial assumptions	39,943	(216,992)
Actuarial gain	**190,846**	**146,055**

c. Analysis of actuarial gain expressed as a percentage of the scheme's assets and liabilities at the statement of financial position date

	2021-22 %	2020-21 %
Actual return less expected return on pension scheme assets	7.34	17.36
Experience (loss)/gain arising on the scheme liabilities	(1.10)	1.38
Actuarial gain	**11.57**	**8.78**

d. The assets and liabilities in the scheme

Assets	2021-22 £000	2020-21 £000
Equities	1,262,581	1,172,934
Property	444,101	380,413
Bonds	300,841	288,554
Cash	62,137	65,882
	2,069,660	**1,907,783**
Actuarial value of liability	(1,649,435)	(1,664,122)
	420,225	**243,661**

Equities and bonds contain assets that have a quoted market price in an active market. As at March 2022, the value of those assets within equities is £705,547k and £168,696 within bonds.

An investment strategy is in place which has been developed by the pension trustee, in consultation with the employer to mitigate the volatility of liabilities, to diversify investment risk and to manage cash. To this end the majority of assets are invested in growth assets, which in the long term are expected to yield a greater return than would be available for fixed income assets such as bonds and gilts.

e. The movements in the scheme surplus

	2021-22 £000	2020-21 £000
Surplus at the start of the period	243,661	98,692
Current service costs net of employee contributions	(38,455)	(33,788)
Employer contributions	26,420	30,470
Past service cost	(7,000)	-
Other finance income (note 10f)	4,753	2,232
Actuarial gain (note 10b)	190,846	146,055
Surplus at end of period	**420,225**	**243,661**

f. Other finance income

	2021-22 £000	2020-21 £000
Expected return on pension scheme assets	37,878	35,699
Interest on pension scheme liabilities	(33,125)	(33,467)
Net return – other finance income (note 10e)	**4,753**	**2,232**

11. Trade and other receivables

	2022 UKRI £000	2022 Consolidated £000	2021 UKRI £000	2021 Consolidated £000
Due within one year				
Trade receivables	86,173	88,258	89,097	89,136
Other receivables	3,504	3,500	28,687	22,825
Prepayments	313,771	313,795	394,383	395,235
Accrued income	146,015	147,131	120,264	120,366
Contract assets	25,533	25,533	16,390	16,390
Total receivables	**574,996**	**578,217**	**648,821**	**643,952**

	2022 UKRI £000	2022 Consolidated £000	2021 UKRI £000	2021 Consolidated £000
Due after more than one year				
Other receivables	128,235	-	84,613	-
Prepayments	-	-	10,422	10,422
	128,235	**-**	**95,035**	**10,422**

Prepayments has significantly decreased this year. This is mainly attributable to COVID-19 competitions from 2020-21 where the majority of prepayments on grants as at 31 March 2021 have come to an end and unwound and put in claims against that prepayment in quarter 1 and 2 of 2021-22.

Accrued income has increased this year due to increased co-funding activity within Innovate UK in relation to the COVID-19 response package and an increase in funding from other government bodies relating to programmes to help the UK to reduce carbon emissions.

The increase in UKRI parent receivables due after more than one year relates solely to the amount that is repayable from Innovate UK Loans Limited to UKRI.

12. Cash and cash equivalents

	2022 UKRI £000	2022 Consolidated £000	2021 UKRI £000	2021 Consolidated £000
Balance at 1 April	**231,851**	**259,458**	**204,368**	**207,934**
Net change in cash and cash equivalent balances	58,888	39,571	27,483	51,524
Balance at 31 March	**290,739**	**299,030**	**231,851**	**259,458**
The following balances at 31 March were held at:				
Government Banking Service	254,799	262,693	207,608	233,160
Commercial banks and cash in hand	35,940	36,337	24,242	26,298
Total	**290,739**	**299,030**	**231,851**	**259,458**

13. Trade and other payables

	2022 UKRI £000	2022 Consolidated £000	2021 UKRI £000	2021 Consolidated £000
Amounts falling due within one year:				
VAT	(3,125)	(3,111)	(723)	(691)
Other taxation and social security	(8,679)	(8,679)	(10,591)	(10,591)
Trade and other payables	(108,144)	(121,910)	(80,855)	(86,780)
Accruals	(246,709)	(247,322)	(237,498)	(238,009)
Grant accruals	(981,311)	(981,311)	(1,014,333)	(1,014,333)
Deferred income	(38,374)	(38,374)	(34,074)	(34,074)
Lease liability	(4,395)	(4,395)	-	-
Contract liabilities	(6,140)	(6,140)	(3,930)	(3,930)
	(1,396,877)	**(1,411,242)**	**(1,382,004)**	**(1,388,408)**
Amounts falling due after more than one year:				
Accruals	-	-	(130)	(130)
Lease liability	(51,066)	(51,066)	-	-
	(51,066)	**(51,066)**	**(130)**	**(130)**

	2022 UKRI £000	2022 Consolidated £000	2021 UKRI £000	2021 Consolidated £000
IFRS 16 Restatement of Lease Commitments				
Lease liability - Less than 1 year	-	-	(49,505)	(49,505)
Lease liability - More than 1 year	-	-	(4,140)	(4,140)
Total Restatement	**-**	**-**	**(53,645)**	**(53,645)**
Analysis of Lease Liability Movements				
Lease Repayments	4,143	4,143		
Lease Interest	(1,579)	(1,579)		
Lease Remeasurements	(1,930)	(1,930)		
New Leases	(2,450)	(2,450)		
	(1,816)	**(1,816)**	**-**	**-**
Analysis of expected timing of cash flows				
Not later than one year	(4,395)	(4,395)	(4,140)	(4,140)
Later than one year and not later than five years	(12,306)	(12,306)	(13,336)	(13,336)
Later than five years	(38,760)	(38,760)	(36,169)	(36,169)
Balance at 31 March	**(55,461)**	**(55,461)**	**(53,645)**	**(53,645)**

The trade and other payables increased year on year due to invoices outstanding at 31 March 2022 relating to the installation and commissioning of the ARCHER 2 facility

Accruals has increased due to:

- an accrual of £32 million for corporation tax for years 2018-19 to 2021-22
- an accrual of £36 million for IR35 tax relating to years 2017-18 to 2021-22
- a decrease of £19 million on the GRNI accrual year on year as there has been a concentrated effort throughout the year to reduce the number lines and very old transactions on this account
- a decrease in accrual of £21 million for ARCHER 2, as 2021-22 outstanding payment is in trade payables as invoices received at year end

Grant accruals have decreased in year mainly due to 2020-21 figures being elevated due to the COVID-19 Response Package which was a time limited two year programme in response to the pandemic. Majority of the funding was in FYs 2020-21 and 2021-22 – and therefore competitions like Fast Start, Continuity Grants plus the Sustainable Innovation Fund (SIF) projects ended on 31 March 2021 and there was no follow on funding.

Lease liability - UKRI has now adopted IFRS 16 Leases effective 1 April 2021, in total £45.0 million of assets and £53.6 million of liabilities are shown as restatements of brought forward balances reflecting the standard being implemented retrospectively with cumulative effect. Liabilities reflect the present value of the remaining lease payments, discounted using either the rate specified within the lease or, in the absence of a specified rate, the HMT rate of 0.91%. Further details can be seen within the accounting policy section of these accounts.

14. Provisions for liabilities and charges

	2021-22 Consolidated £000	2020-21 Consolidated £000
Balance at 1 April	192,982	178,526
Provided in the period	61,058	19,843
Provisions not required written back	(9,779)	(1,284)
Provisions utilised in the period	(667)	(5,010)
Reclassification of ICLs irrevocable commitment reversals	(3,216)	-
Change in the discount rate	21,439	(52)

	2021-22 Consolidated £000	2020-21 Consolidated £000
Unwinding of discount	1,029	959
Balance at 31 March	**262,846**	**192,982**
Analysis of expected timing of cash flows		
Not later than one year	4,600	9,723
Later than one year and not later than five years	21,336	24,332
Later than five years	236,910	158,927
Balance at 31 March	**262,846**	**192,982**
Analysis of provisions		
Decommissioning		
ISIS	127,869	72,971
ILL	91,653	93,610
Other	38,924	18,831
Early retirement	1,390	1,638
Other provisions	3,010	5,932
	262,846	**192,982**

The ILL decommissioning provision of £91.7 million (2020-21 £93.6 million) has been derived from UKRI's share of the provision disclosed in ILL's Financial Statements for the year ended 31 December 2021, produced in accordance with French accounting rules and principles and compatible with IFRS. This provision has been calculated using a discount rate of 4.59% (2020-21: 3.39%). The provision is subject to a range of variables, the key ones being the methodology applied to estimate the total cost of decommissioning of the ILL facility.

End of Life (EoL) – no decision has yet been made on the EoL of the ILL facility. The timing of the EoL will both impact the start date of the overall decommissioning plan, and hence discounting of the value, and the overall cost since delivery of the decommissioning plan assumes preparatory actions have been taken. This is under active consideration by ILL.

Discount rate – if the HM Treasury PES (2021) discount rate for general provisions of 0.95% had been used the provision would increase by £80.8 million. Exchange rate – a change of 10% in the EUR:GBP exchange rate is estimated to have an impact in the order of £9 million on the provision.

UKRI places reliance on the detailed Decommissioning Feasibility Study that was produced by the ILL in conjunction with the CEA (French Atomic Energy Commission) in 2019 and the subsequent review by the Decommissioning Costs Working Group (DCWG) as to its reasonableness concerning the decommissioning costs and timescale. The DCWG concluded that it was content with the current estimate of the ILL decommissioning costs and the key assumptions used are a reasonable base case.

The membership of the DCWG comprised representatives from the UK, Germany and France with experience in the nuclear industry and nuclear decommissioning.

ISIS Decommissioning includes:

£111.8 million (2020-21 £51.8 million) for the estimated cost of decommissioning (including disposal of radioactive waste) of the ISIS Spallation Neutron Source facility. Decommissioning is expected to begin in 2040 and be completed in 2095.

£16.1 million (2020-21 £21.2 million) for construction of a Waste Separation Facility (WSF) to handle the higher activity waste (HAW) produced by the ISIS facility. A significant proportion of ISIS waste is HAW which is the most expensive and difficult to prepare for disposal. The WSF will handle and segregate the waste to minimise the cost for transportation and disposal.

Construction began in 2021-22 and will take 5 years to complete.

ISIS Decommissioning provisions have been discounted to present value using discount (and inflation) rates provided by HM Treasury.

15. Adjustments for non-cash transactions

	2021-22 UKRI £000	2021-22 Consolidated £000	2020-21 UKRI £000	2020-21 Consolidated £000
Depreciation and impairment charges	203,927	203,927	182,489	187,111
Capital grant of assets	-	-	19,100	19,100
Other operating expenditure	1,520	3,757	26,371	20,555
IAS19 Pension costs	18,969	18,969	6,960	6,960
	224,416	**226,653**	**234,920**	**233,726**

16. Commitments - Parent

16.1 Capital commitments

	2021-22 £000	2020-21 £000
Contracted capital commitments at 31 March 2019 not otherwise included in these accounts:		
Contracted capital commitments at 31 March 2019 not otherwise included in these accounts	-	-
Property, plant and equipment	297,292	309,489
Intangible assets	0	0
	297,292	**309,489**

16.2 Grant commitments

	2021-22 £000	2020-21 £000 Restated
Not later than one year	4,097,477	4,581,492
Later than one year but not later than five years	6,025,859	4,291,701
Later than five years	403,637	147,310
	10,526,973	**9,020,503**

16.3 International subscriptions

UKRI had the following commitments in respect of membership of international collaborations

2021-22

Organisation	Within one year £000	Between one year and five years £000	After five years £000	Total £000
European Organization for Nuclear Research (CERN)	142,777	88,468	0	231,245
European Spallation Source (ESS)	21,614	30,853	0	52,467
Institut Laue-Langevin (ILL)	19,893	15,072	0	34,965
European Synchrotron Radiation Facility (ESRF)	8,916	25,431	0	34,347
European Organisation for Astronomical Research in the Southern Hemisphere (ESO)	26,638	13,569	0	40,207
European X-Ray Free-Electron Laser Facility GMBH (XFEL)	3,674	22,420	5,802	31,896
Other	23,520	7,604	931	32,055
	247,032	**203,417**	**6,733**	**457,182**

2020-21

Organisation	Within one year £000	Between one year and five years £000	After five years £000	Total £000
European Organization for Nuclear Research (CERN)	145,598	88,399	0	233,997
European Spallation Source (ESS)	22,118	53,836	0	75,954
Institut Laue-Langevin (ILL)	20,424	36,691	0	57,115
European Synchrotron Radiation Facility (ESRF)	9,197	36,138	0	45,335
European Organisation for Astronomical Research in the Southern Hemisphere (ESO)	27,448	13,996	0	41,444
European X-Ray Free-Electron Laser Facility GMBH (XFEL)	2,496	26,775	5,953	35,224
Other	19,986	3,268	0	23,254
	247,267	**259,103**	**5,953**	**512,323**

16.4 Innovation Loan Commitments

Innovation loan commitments less provisions on commitments at 31 March 2022 were £13.1 millions (31 March 2021 - £70.6 millions)

17. Contingent liabilities

UKRI recognises a contingent liability for its share of Institut Laue-Langevin (ILL) staff related commitments that will arise on the closure of the facility. The contingent liability will become a provision when a detailed closure plan has been documented and communicated to all those affected.

UKRI is subject to Corporation Tax on taxable profits. During 2021-22, HMRC raised enquiries into the 2018-19 Corporation Tax return. Subject to the position agreed with HMRC regarding the specific treatment of an absorption gain recognised within the 2018-19 tax return, UKRI may recognise a further Corporation tax liability, in addition to those identified at Note 6 – Taxation.

This enquiry was ongoing as at 31st March 2022 and UKRI did not have certainty over the value or validity of this obligation.

18. Related party transactions

UKRI is a non-departmental public body sponsored by BEIS. For the purposes of International Accounting Standard 24, BEIS is regarded as a related party. During the year UKRI has had various material transactions with BEIS and other bodies for which BEIS is regarded as the parent department, namely UK Space Agency and UK Atomic Energy Authority. In addition, UKRI also had a number of related transactions with UK SBS Limited.

UKRI had transactions with other government departments and with other central government bodies, such as:

Intellectual Property Office; the Foreign, Commonwealth and Development Office; Department for Environment, Food & Rural Affairs; Department of Health and Social Care; Department for Transport; and Ministry of Defence. UKRI also had transactions with devolved administrations, such as the Scottish Government and the Welsh Government.

The accounts provide disclosure of all material transactions with those who are recognised as key management personnel as per IAS 24 'Related Parties'. This is taken to be those members of staff who are included under Executive Directors' remuneration in the Remuneration Report and all UKRI Board members.

During the year UKRI entered into no new awards or contracts funded by UKRI where UKRI Board members or Executive Directors are the principal investigator.

The following aggregated payments were made by UKRI in respect of funded awards or contracts to Institutions where Executive Directors, Board members or their close family members were employed during the year:

The following aggregated payments were made by UKRI in respect of funded awards or contracts to Institutions where Executive Directors, Board members or their close family members were employed during the year:

Organisation	Board Member or Director* (Relationship where involvement is not direct)	Position	Amount awarded (£)
Cancer Research UK	Professor Sir Leszek Borysiewicz	Chair	1,288,949
	Emma Lindsell (Parent)	Board Member	
Courtauld Institute of Art	Julia Black	Trustee	4,163,420
	Professor Sir Leszek Borysiewicz	Governor	
	Lord John Browne of Madingley	Chairman	
DEFRA	Professor Anthony Finkelstein (Sibling)	Permanent Under-Secretary	94,269
Diamond Light Source Limited	Professor Mark Thomson	Board Member	82,673,405
Fera Science Ltd	Sir Ian Boyd	Non-executive Director	1,011,467
Financial Reporting Council	Ruwan Weerasekera	Non-Executive Director/Chair of People Committee	15,514
Foundation for Science and Technology	Lord David Willetts	Chair	3,862
Francis Crick Institute	Lord John Browne of Madingley	Chairman	61,479,806
King's College London	Professor Fiona Watt	Director	175,280,813
London School of Economics	Julia Black	Director	44,497,315
National Oceanography Centre	Sir Ian Boyd	Trustee	53,800,343
Our Future Health	Professor Fiona Watt	Trustee	7,216,675
Sirius Constellation Limited	Lord David Willetts	Director and shareholder	304,690
The Digital Catapult	Priya Guha	Non-Executive Director	17,418,306
University of Cambridge	Ottoline Leyser	Regus Professor	314,847,592
University of Leicester	Lord David Willetts	Chancellor	52,255,034
University of London	Professor Anthony Finkelstein	President	11,893,688
University of St Andrews	Sir Ian Boyd	Chair	9,463,779
University of York	Ottoline Leyser	Board Member	63,272,240
Wellcome Trust	Professor Fiona Watt (Spouse)	Director	11,317,659

UKRI also has related party transactions with it joint ventures; the Crick, DLSL, Daresbury SIC LLP, HSIC (PubSP), HSIC LP. These are disclosed in the table below:

Joint Venture	Type of transaction	Transaction amount Expense/(Income) £000	Balance Debtor/(Creditor) £000
Crick	Operations funding	58,849/(102)	76/(3,468)
DLS	Sale of goods and services	(1,139)	106
	Purchase of goods and services	634	(251)
	Operations funding	79,691	(3,998)
Institute Laue-Langevin	Operations funding	22,748	-
	Purchase of goods and services	17	-
Daresbury SIC LLP	Purchase of goods and services	525	-
HSIC (PubSP)	Purchase of goods and services	1,362	-

UKRI sponsors nine research institutes, which conduct long-term, mission-orientated research using specialist facilities that are in line with UKRI's priorities. UKRI provides Strategic Programme Grants to the institutes to fund specific research programmes. The sponsored institutes have separate charitable status and an independent governing body oversees the institutes' activities.

Transactions with UKRI-sponsored Institutes

	Type of transaction	Transaction amount Expense/(Income) £000	Balance Debtor/(Creditor) £000
Babraham Institute	Purchase of goods and services	18,515	(157)
The Pirbright Institute	Purchase of goods and services	49,644	(6,926)
Quadram Institute Bioscience	Purchase of goods and services	12,122	(621)
John Innes Centre	Purchase of goods and services	37,392	(3,267)
Rothamstead Research	Purchase of goods and services	26,310	(2,902)
The Earlham Institute	Purchase of goods and services	8,901	(839)
UK Biobank Limited	Operations funding	6,267	(874)
UK Dementia Research Institute	Operations funding	25,768/(119)	119/(3,983)
Health Data Research UK	Operations funding	25,502	(11,645)

Transactions with other related parties

	Type of transaction	Transaction amount Expense/(Income) £000	Balance Debtor/(Creditor) £000
LifeArc Limited	Operations funding	2,211/(1,917)	(120)/(241)
Babraham Research Campus Ltd (formerly known as Babraham Bioscience Technologies Ltd)	Operations funding	(950)	-
Aberystwyth Innovation and Enterprise Campus Ltd	Purchase of goods and services	142	-
Rothamsted Enterprises Ltd	Purchase of goods and services	372	-
Alan Turing Institute	Operations funding	(639)	294

19. Financial instruments and derivatives

IFRS 7, Financial Instruments: Disclosures, requires disclosure of the role which financial instruments have had during the period in creating or changing the risks UKRI faces in undertaking its activities. Specifically: (a) the significance of financial instruments affecting financial position and performance; and (b) the nature and extent of risks arising from financial instruments to which it is exposed. Because of the largely non-trading nature of its activities and the way it is financed, UKRI is not exposed to the degree of financial risk faced by businesses. Moreover, financial instruments play a limited role in creating or changing risk on its operational activities.

Liquidity risk

UKRI's net revenue resource requirements are largely funded by the grant-in-aid from its sponsor department. The capital expenditure is also financed through the grant-in-aid. UKRI is therefore not exposed to significant liquidity risks.

Interest rate risk

UKRI has a low level of exposure to interest rate fluctuations; it does not actively seek to invest cash in money markets. Any excess funds held outside of the Government Banking Systems banking framework, and which could attract interest, are maintained in low level current accounting arrangements, as part of its banking arrangements with Lloyds Banking Group.

Foreign currency risk

The council maintains US dollar, Euro and Swiss francs bank accounts in order to deal with day-to day transactions.

Foreign currency risk arises when UKRI enters into transactions denominated in a foreign currency. UKRI pays in Euros and Swiss Francs for the UK's membership to the international collaborations of CERN, ESO, ESRF and ILL. To minimise the currency risk, UKRI policy is to take out forward contracts arranged by the Bank of England to cover up to 90% of its annual international subscriptions due over the course of the current spending review period.

Execution of this policy is subject to BEIS approval. BEIS may consider other aspects beyond UKRI's immediate financial considerations in evaluating the business case for hedging e.g. sector reform and related budgetary uncertainty, and potential to manage risks across the department.

Therefore, the risk attached to holding foreign currency denominations is not considered to be material.

Receivables and creditor risk

For those financial assets and liabilities held at fair value changes in values are recognised in the Statement of Comprehensive Net Expenditure. The fair value of the council's financial assets and liabilities are equivalent to the carrying amount unless stated above. The council has limited powers to borrow or invest funds; financial assets and liabilities are generated by day-to-day operational activities and are not held to change the risks facing the council in undertaking its activities. Of current outstanding trade debt 39% is greater than 30 days old.

Credit risk

Innovation loans are exposed to Credit risk, Credit risk is the risk of a customer or a counterparty failing to meet their financial obligations. Credit risk also encompasses refinance risk and concentration risk. Refinance risk is the risk of loss arising when a repayment of loan occurs later than originally anticipated. Concentration risk is the risk of loss arising from insufficient diversification. Further details on credit risk is disclosed in note 9.4 in this set of financial statements.

20. Events after the reporting period

In accordance with the requirements of IAS 10 Events after the Reporting Period, post Statement of Financial Position events are considered up to the date on which the Accounts are authorised for issue. This is interpreted as the same date as the date of the Certificate and Report of the Comptroller and Auditor General.

The Knowledge Transfer Network (KTN) is an organisation that is grant funded by UKRI through Innovate UK; it was subject to a Memorandum of Understanding between UKRI/Innovate UK and KTN. Previously it has been assessed as clearly falling short of the IFRS10 test of definition of control over the investee. However, plans enacted on 1 April 2022 to alter the corporate governance of the KTN will bring it into UKRI control and require its consolidation from 1 April 2022.

On 4 April 2022, following a competitive bidding process, assets owned by VMIC Ltd were purchased by Catalent Inc.

Under the terms of the Grant Funding Agreement between UKRI and VMIC Ltd, UKRI became entitled to repayment of grants paid to VMIC Ltd during its life to fund its construction and initial operations during constructions. Such future receipts will be accounted for in subsequent accounting periods following a final distribution of funds once VMIC Ltd's members voluntary liquidation process is completed.

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