

14 January 2021

Budget Representations ahead of the March 2021 Budget

The following representations were submitted via the Budget Representations Portal:

- 1) Commit funding to cover the costs of UK association to Horizon Europe
- 2) Targeted investment to maintain the UK's global standing and ambitions as a global science superpower
- 3) Take a joined-up approach to domestic and international R&D policy to make the UK a scientific superpower
- 4) Enabling data access and use to address policy challenges
- 5) Establish a long-term expert, evidence-based body to conduct technology assessments to inform investment decisions to deliver net zero
- 6) Establish an Office for Educational Research

1) Budget representation: Commit funding to cover the costs of UK association to Horizon Europe

Proposed intervention: Commit fund additional to the existing UK research and innovation budget to cover the cost of UK association to Horizon Europe.

Rationale:

The EU-UK Trade and Cooperation Agreement provides for the UK to participate in key European science programmes. Horizon Europe association must be finalised rapidly to prevent a funding shortfall across the UK research base, restore confidence, and ensure that valuable scientific relationships that have taken years to build are not further eroded.

The costs of association to Horizon Europe must be covered by additional funding to that already committed to building the UK's domestic and global strength in research and innovation. Association to Horizon Europe is not sufficient to realise the UK's ambitions as a responsible and visionary global science superpower. The government's commitment to increase public funding for R&D to £22 billion per year by 2024 to 2025 is crucial to delivering growth and productivity across the UK. To secure the long-term health of the research and innovation system, the UK should be seeking to increase overall investment in R&D to 3% of GDP.

Supporting documents: National Academies (2020) [Investing in UK R&D](#)

2) Budget representation: Targeted investment to maintain the UK's global standing and ambitions as a global science superpower

Proposed intervention: Avoid cuts to research and innovation investment categorised as Official Development Assistance.

Rationale:

The government's stated goal is to be a science superpower. Research and innovation will be central to achieving the government's broader global objectives including responding to climate change, preventing catastrophic biodiversity loss and preparing for future pandemics.

Global scientific programmes have been built over many years and delivered with overseas partners to maximise the impact of UK investment. These represent excellent value for money that will increase going forward as the UK realises the value of increased research capacity and leverages relationships with future scientific leaders around the world who can advocate for evidence-informed action to address global challenges. Cuts to Official Development Assistance will impact these programmes. Even a temporary reduction in funding will compromise their impact and cause serious and lasting damage to relationships and reputation that will take years to rebuild. The UK's credibility and trustworthiness will also be threatened.

3) Budget representation: Take a joined-up approach to domestic and international R&D policy to make the UK a scientific superpower

Policy intervention

- Launch a global campaign to promote the UK's investable assets to globally mobile investors and encourage talented individuals to choose the UK to develop their career, so unlocking research and innovation collaborations across the world

Rationale:

The government has already signalled the value it places on R&D with a commitment to increase public spending to £22 billion a year by 2025 and overall investment in R&D to 2.4% of GDP by 2027. This requires investment in people and further action to improve the sustainability of the system in support of wider policy objectives such as 'levelling-up'. While government funding is critical to growing R&D capacity, the UK will only maximise the benefits of increased public investment if it mobilises business which currently accounts for two-thirds of the UK's total R&D spend. Since more than half of private R&D expenditure is by foreign-owned businesses, it is vital that the UK showcases its science assets overseas to attract investment and global talent and unlock scientific collaborations across the world.

4) Budget representation: Enabling data access and use to address policy challenges

Policy intervention: Fund interdisciplinary pathfinder, or 'lighthouse' data projects involving collaborations between industries, government departments and academic disciplines. These should target specific policy questions and leave a legacy of expertise and guidance to improve access to and use of data for future policy challenges. They should also inform interoperable data standards and architectures and use appropriate technologies to embed privacy protections.

- **Net zero:** unlocking the potential of a data-driven approach to reaching net zero
- **Covid response:** enabling the use of data arising from everyday transactions to better understand Covid impacts.
- **Health inequalities:** using data to inform 'levelling-up' strategy for health post-Covid.

Rationale:

Covid-19 has demonstrated that timely access to data is critical, but there are often barriers. The National Data Strategy should address these by prioritizing the use of data to address societal and policy challenges such as reaching net zero. It lists 'lighthouse projects' as an action to drive implementation, which could play the role of 'pathfinder' studies that both enable the use of data to address a specific challenge and create learnings to support the use of data in other areas of critical importance.

Supporting documents

[Data Readiness: Lessons from an Emergency \(rs-delve.github.io\)](https://rs-delve.github.io)

[National academies response to the National Data Strategy \(royalsociety.org\)](https://royalsociety.org)

[The Royal Society addendum response to the National Data Strategy](https://royalsociety.org)

[Digital technology and the planet: harnessing computing to achieve net zero \(royalsociety.org\)](https://royalsociety.org)

5) Budget representation: Establish a long-term expert, evidence-based body to conduct technology assessments to inform investment decisions to deliver net zero

Proposed intervention: Establish a body to deliver an evidence-based, living and investible technology roadmap to net zero. This body should sit outside short political cycles or direction, and draw on independent expertise from scientists, engineers, economist and others across academia and industry for technology assessment.

Rationale:

Science is central to successfully delivering the UK's target to bring all greenhouse gas emissions to net zero by 2050, including a 68% cut in carbon emissions by 2030 over 1990 levels. Reducing carbon emissions and adapting to climate change will require research, development and deployment of low carbon technologies and nature-based solutions, while conserving biodiversity. Science can help to

identify which technologies and natural solutions are ready for deployment, which require further development, and which require research and importantly which are unlikely to deliver a sufficient return in carbon within the timescale and for which funding should be withdrawn. A body is required to conduct technology assessments that will inform investment decisions. Such an evidence-based approach, accompanied by long-term funding that is locked-in, will be critical to leveraging the scale of private sector investment that will be required for success.

Supporting documents: [The Prime Ministers Council on Science and Technology \(19 August 2020\) A SYSTEMS APPROACH TO DELIVERING NET ZERO: RECOMMENDATIONS FROM THE PRIME MINISTER'S COUNCIL FOR SCIENCE AND TECHNOLOGY](#)

6) Budget Representation: Establish an Office for Educational Research

Proposed intervention: Administrative support and dedicated funding for the creation and sustainable operation of an Office for Educational Research (OER).

Rationale: This is required now to coordinate the immediate and longer-term educational research needs in responding to the COVID-19 situation and to raise the esteem and achieve parity with other public research activities for educational research.

An OER would provide the leadership for a stronger education research ecosystem, including vocational and technical education. It would bring together governments, governmental organisations, researchers, teachers and funders to identify and address the mismatches in supply and demand for educational research. This would lead to more effective use of funding and widespread benefits to society that result from the better outcomes for individuals from the education they experience.

The OER would be jointly established by The British Academy and The Royal Society. It will work across all four nations of the UK. Researchers and policy makers agree that disseminating knowledge across and learning lessons from the different jurisdictions has potential to maximise the value of research. The costs are estimated at around £4,6000,000 over a period of 5 years (Year 1 £370,000; Year 2 £720,000, Years 3-5 £1,170,000).

For further information, please contact public.affairs@royalsociety.org