

March 2021

# IOP Institute of Physics

## IOP analysis and response to the 2021 Budget

On Wednesday 3 March 2021, [HM Treasury](#) (HMT) published its [Budget](#) for the coming fiscal year.

This comes in the midst of continued, significant economic disruption. The Office for Budget Responsibility (OBR) has announced that COVID-19 has led the UK into its first recession in 11 years, and that GDP fell by 9.9% across 2020, the largest annual fall in 300 years. With national borrowing reaching eye-watering highs, designed to sail the UK through the turbulence, many sectors and individuals across the nation continue to rely on direct support from the Treasury.

The IOP is pleased to see the Treasury's continued investment in science, technologies and innovative companies, despite the significant strains the nation and its finances continue to face. The strategy to invest in R&D and tech for the future is a clear signal of confidence in the sector, and the resources committed at this difficult time show that innovation is a core priority which will not be shelved during hard times, but a vehicle to accelerate the UK out of the challenges it faces today.

IOP CEO Paul Hardaker said:

“The IOP welcomes the Government's plans for an innovation-friendly Future Fund, a national infrastructure bank, and a detailed consultation on the competitiveness of R&D tax credits as ways to accelerate progress against the grand challenges facing the UK and of financing the green industrial revolution. These developments will not only help to unlock the potential of UK physics, an industry which will play a transformative role in developing the technologies and creating the jobs needed to accomplish these goals, but will help ensure that science plays as important a role in the UK's recovery and future growth as it has during the pandemic.

“The UK will need a highly skilled, diverse and educated workforce to deliver the projects and innovations necessary to power this new revolution. While the announcement of a new visa system for science superstars is positive, the Government must not overlook the potential of communities in UK regions outside traditional scientific hubs. Young people in all corners of the UK are passionate about solving the challenges of improving healthcare, a growing population, decarbonising economies, and ensuring water, food and energy supplies. IOP therefore looks forward to working alongside the Government and industry to create new opportunities for young people, particularly those from disadvantaged communities.”

This summary details what the 2021 budget means for the physics community in the UK.

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- **Innovation and R&D**

The IOP welcomes the development of the new Future Fund: Breakthrough, which will invest £375m into fast-growing UK technology companies. The fund will support “potentially world-beating UK tech companies” to scale up, which will accelerate the development of physics-based research into consumer-ready products and processes. The Government has committed this investment in collaboration with high-growth and innovative private companies in the UK<sup>1</sup>, including those in “life sciences, quantum computing or clean tech”.

The investment in the Future Fund is an excellent step to achieving the nation’s target of investing 2.4% of GDP into R&D by 2027, as set out in the government’s [R&D Roadmap](#). It presents a groundbreaking opportunity for cross-sector collaboration, and the IOP will continue to call for this to invest in companies outside of the Golden Triangle of London, Oxford and Cambridge, to support the Levelling Up agenda. The IOP will also [continue to advocate](#) for the Government to achieve the 2.4% target, and progress this to 3% in the longer term, and call for greater granularity on how 2.4% and the R&D roadmap will be delivered. We are committed to playing our part in supporting progress, by launching the unprecedented £10m [Challenge Fund](#), and developing a R&D roadmap for physics, to further unlock the capabilities of the sector.

We will be responding to the [forthcoming review into R&D tax reliefs](#), which aims to ensure the UK remains a competitive location for cutting edge research, that the reliefs continue to be fit for purpose and that taxpayer money is effectively targeted.

- **International collaboration and funding**

Following the UK terminating freedom of movement with the EU and enacting a blanket points-based immigration system, the IOP is pleased to see the Government is investing to modernise the system, to help attract “the most highly skilled, globally mobile talent – particularly in academia, science, research and technology”. A new elite, points-based system will be in place by March 2022, and the Government will create a scaleup’ stream, enabling those with a job offer from a recognised UK scale-up to qualify for a fast-track visa.

The IOP is pleased that there will be reforms to the Innovator Visa, and the founding of a new Global Business Mobility Visa by Spring 2022 to allow staff mobility between countries. The IOP is further pleased to see plans to reform the [Global Talent visa](#), to allow holders of international prizes and winners of scholarships and programmes for early promise to automatically qualify. However, there remain significant concerns over the affordability of these routes, and the IOP is calling for a re-thinking of these costs, to ensure the UK STEM sector remains an attractive option for international talent. With significant domestic STEM skills gaps, international talent is vital for the UK to achieve its national goals.

The Budget did not provide further details on the Government’s resourcing for the UK’s association to EU funding programmes such as [Horizon Europe and ITER](#). Whilst association has been agreed, the IOP is calling for more information on the terms of this association, to provide our researchers with the direction and confidence they need to participate in the schemes. These programmes are fundamental for a healthy and thriving science sector which supports the UK economy and progress of the nation.

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<sup>1</sup> The British Business Bank will take equity in funding rounds of over £20 million led by private investors.

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There was also lack of mention of the [Turing Scheme](#). Concerns remain that this domestic scheme will not deliver the same benefits afforded by the reciprocal international exchange offered by [Erasmus+](#), impacting the relationships and status of the UK as an international science collaborator. The IOP is calling for Turing to live up to, and go beyond, the high standards of Erasmus+, in terms of the number of participants catered to, the available destinations for exchange, and the opportunities they enjoy.

Looking further afield, the IOP calls for the Government to seek new, innovative partnerships outside of and beyond Europe. The IOP recommends that BEIS invest in the development and implementation of strategic partnership programmes with other nations to develop physics capacity both domestically and abroad, strengthening the physics talent pipeline, and facilitating stronger research and innovation links between the UK and other nations.

- **Education and skills**

The IOP welcomes the £300m Recovery Premium for state primary and secondary schools to support them to educate the next generation through the COVID-19 pandemic. The education system has adapted to extraordinary challenges over the last year, and the government has responded by providing them with the means to support students' learning, through resourcing summer schools and catch-up classes. This includes £200 million for secondary schools to deliver face-to-face summer schools; an important resource which will help progress students' learning in physics. However it remains unclear how much of this resourcing is new money.

The Government announced the new "flexi-job" apprenticeship programme, which will enable apprentices to work with a number of different employers in one sector. This will provide physics students with a great breadth of experience and industry exposure, and employers will have the opportunity to provide this by bidding into a £7m fund to create new agencies that individuals will be linked to. This is a welcome move to support apprentices in the aftermath of a challenging learning environment. The IOP also welcomes the increased "cash incentives" for businesses that take on apprentices. Providing employers with £2,000 payment per hire, this will open physics-based opportunities for those in an early stage of their career at all ages.

The IOP further welcomes funding announced to support job search, kickstart and re-start schemes, which builds on the [Plan for Jobs](#) and may support people to get into physics roles. In particular, investment of £111 million in 2020-21, to fund high quality work placements and training for 16- 24-year olds in England, could triple traineeship numbers. The IOP welcomes a new route for students into physics-based roles, and looks forward to more details on how these will be delivered.

Beyond the support provided for today, the IOP now calls for the Government to look to the future and invest in a National Skills Survey to run alongside the R&D roadmap and UKRI's talent strategy. The findings should be used to inform a UK-wide skills strategy to reduce the skills gaps in the UK, aimed at providing the skills and workforce required for the next industrial age. Moreover, the IOP is asking the Government to support and boost physics education in the future by investing in a world-class system of subject-specific continuing professional development (CPD) for teachers, to provide them with the necessary subject knowledge quickly and efficiently and build a more confident, engaged teaching profession. The IOP believes this action will reduce STEM skills gaps in years to come.