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March 2023 Budget

techUK's submission to HM Treasury ahead of the March 2023 Budget

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About techUK

techUK is a membership organisation launched in 2013 to champion the technology sector and prepare and empower the UK for what comes next, delivering a better future for people, society, the economy and the planet.

It is the UK's leading technology membership organisation, with more than 900 members spread across the UK. We are a network that enables our members to learn from each other and grow in a way which contributes to the country both socially and economically.

By working collaboratively with government and others, we provide expert guidance and insight for our members and stakeholders about how to prepare for the future, anticipate change and realise the positive potential of technology in a fast-moving world.

Introduction:

The Spring Budget must give UK tech a shot in the arm to boost growth and competitiveness

The tech sector is routinely cited by leading members of the Government as one of the UK's economic bright spots. The Chancellor has repeatedly pledged to make the UK the 'world's next Silicon Valley', while in his New Year's address the Prime Minister vowed the UK must become 'the most innovative economy in the world'.

Tech already is a key part of the UK economy. Between 2010 and 2019 the tech sector's contribution to the UK grew by 25%[1] and that figure keeps on growing, with UK tech now adding over £150 billion to the economy every year[2]. In the same period, jobs in the sector have increased by a third, with over 1.7 million people in the country now working in tech.[3]

The sector's growth is not just good in its own right. More tech companies means more innovation, digital tools and skills that can benefit the rest of our economy and society.

Nearly every business sector and public service has a strategy for improvement based on digitisation and the better use of technology; we need to see the UK tech sector as the engine of growth for our whole society and economy.

Yet, while our technology sector has done well for the first time in its modern history there are growing concerns for the future. In techUK's latest digital economy monitor survey we saw a large drop in confidence, with more than a third (34%) of members surveyed saying they now thought that business conditions in the UK were more likely to get worse than better.[4]

2022 did not end well for the sector, a market correction following in the wake of the COVID-19 pandemic and subsequent energy and cost of living crisis has seen major redundancies in some firms while access to finance, talent and regulatory barriers remain a critical growth constraint for others.

At the same time, the Government cut key support for the sector - reducing the value of the UK's R&D tax credit and cancelling the Help to Grow: Digital programme. These cuts, and the delay to the rollout of making tax digital as well as significant new regulation across a range of digital markets are increasing the costs of doing business and creating a more fraught and less supportive environment for our most innovative firms with implications for the wider economy's progress towards digitisation.

While the UK remains ahead of its peers in Europe in terms of the amount of venture capital investment being pulled in, our competitors, in particular France, have made significant gains by exploiting the UK's poor trading relationship with the European Union and through a focused strategy on tech sector growth.[5]

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[1] DCMS Economic Estimates 2019
[2] DCMS Economic Estimates 2019
[3] DCMS Sector National Economic Estimates: 2011 to 2020
[4] techUK Digital Economy Monitor Q3 2022
[5] Atomico State of European tech report – France in the Spotlight

The UK cannot rest on its laurels. Positive rhetoric from Government is welcome, however, it is action, not words, that will be needed to restore the confidence and competitiveness of the UK tech sector.

To do so the Chancellor must use the budget on March 15 to deliver a shot in the arm for UK tech, with key announcements that show the Government still sees the tech sector as one of the UK's modern economic success stories and a key driver of wider economic growth.

In his budget the Chancellor should focus on three key areas:

I. ***Getting the building blocks of tech success right:*** *by* ensuring we have the right talent pipeline, digital infrastructure, support for digital adoption and approach to energy costs to remain competitive.

II. ***Creating the incentives needed for the UK to compete in the 21st century:*** *through the right incentives for investment, reform of the financial system and access to global markets*

III. ***Getting ready for the technologies of the future:*** by delivering the right regulatory frameworks and market support so that the UK can research, develop, and deploy the technologies that will shape tomorrow's world.

Through determined action and close engagement between the Government and the tech sector we can turn a corner on pessimism within the tech sector and begin to meet the Chancellor's objective of making the UK the next Silicon Valley.

The prizes for achieving this are enormous, DCMS' own estimates show that if effectively supported the UK's digital ecosystems could create 678,000 jobs by 2025 and add an additional £41.5bn to the UK economy[6]. The application of technology could have wider benefits from tackling the UK's longstanding productivity problems, to unleashing the positive benefits of artificial intelligence to leveraging tech and digital services to allow the UK to achieve net zero while spreading growth and prosperity across the country.

However, if the March budget is a missed opportunity and does not address the serious concerns raised by the sector then this will accelerate creeping doubts about the UK's prospects as an investment location and the willingness of the Government to back a core sector of the economy.

[6] DCMS Regional Digital Ecosystems report – DCMS 2021

Executive Summary:

I - Getting the building blocks of tech success right:

Objective	Policy change	Benefit
Improve access to digitally skilled talent	Urgently reform the apprenticeship levy, by increasing its flexibility and the transferable funds rate	Redirect up to £2.6bn into business investment in training during an acute skills shortage
	Reduce the cost of UK visas to match our competitors	Better enable firms to recruit the talent needed to grow and boost UK competitiveness
	Work with industry to sponsor the uptake of short modular digital skills courses	Offer flexible, employability focused retraining for the 500,000 people who have left the UK labour force.
	Develop an online 'Digital Skills Toolkit 2.0'	Better signpost provision for retraining for those who want to upskill or re-enter the labour market
	Replicate AI Masters conversion courses in other digital sub sectors	Boost the UK's talent pool for our most advanced digital sectors, quantum, semiconductors, Web 3.0 and AI.
Incentivise digital adoption through the tax system, regulation and supporting flexible working	Introduce a Digital Skills & Productivity Tax incentive	Nudge SMEs to greater technology adoption and retraining with the potential to unlock an up to £232 Billion GVA boost
	Reengage with the software industry on Making Tax Digital	Incentivise digitisation, improve the UK's investment prospects and improve Government data
	Ensure we have a modern and inclusive approach to flexible work	Plug skills gaps across the country and improve the attractiveness of working in the UK
Deliver on our commitments for full fibre broadband and 5G	Deliver project gigabit funding and enact supply side reforms to boost the rollout of broadband and 5G	Full fibre broadband rollout can deliver a £59bn productivity boost, while an attractive climate for 5G investment could add £7bn to the economy every year
	Reassess spectrum fees to ensure money is being effectively investment in UK networks	Boost investment in UK telecoms networks by £360m per year.
Support the resilience and competitiveness of energy intensive digital infrastructure	Ensure the UK's networks are resilient and competitive	Include telecoms and data centres in the Energy Intensive Industry Scheme to boost resilience, competitiveness and investment.

II- Creating the incentives needed for the UK to compete in the 21st century:

Objective	Policy change	Benefit
Ensure the UK's tax incentives effectively support tech sector growth and innovation	Take action to reduce the damage of the Government's cut to the small company R&D tax credit scheme	Mitigate the negative impact on UK competitiveness in R&D intensive sectors which could cost start-ups up to £100,000 per company
	Ensure the UK's R&D incentives support modern innovation	Ensure the UK's leading RDEC scheme supports key growth sectors such as software development and boost business investment by up to 10% through reforms to the Patent Box
	Reform the UK's capital incentives to boost investment in new plants, labs and machinery:	Generate an additional £4bn over 10 years and create 12,200 new R&D jobs
Reform the UK's financial regulation to boost investment and the competitiveness of UK fintech	Leverage UK capital and financial assets to unleash the next wave of tech success stories	Address the UK's £15bn scale-up gap and drive investment into key sectors such as AI, quantum and semiconductors.
	Retain the UK's Fintech crown by delivering on Open Finance; Digital ID; and the FSM Bill	Stimulate the economy by creating new markets for UK FinTech and crypto through smart regulatory initiatives
Access to markets and resolving the UK's relationship with the European Union:	Deepen collaboration with our strategic partners and ensure access to overseas markets	Improve access to markets for key technology exports through Digital Economy Agreements and MoUs
	Resolve the UK's relationship with the European Union	Remove investor uncertainty and open up strategic partnerships for UK tech such as Horizon Europe and Euro HPC
Ensure our data protection and competition regimes support innovation	Support greater data driven innovation through a clearer and more usable data protection framework	Grow our data economy valued at £241bn from 2015-20 and create a market for digital IDs
	Deliver a well-designed Pro-competition regime for digital markets	Boost choice and innovation while reducing costs for consumers

III- Getting ready for the technologies of the future:

Objective	Policy change	Benefit
Updating our approach to regulation for a digital world	Use the Sir Patrick Vallance review to drive forward changes in the way we regulate the digital sector	Curtail the rising cost of business in the digital sector and promote innovation
	Urgently review the EU law (revocation and reform) Bill	Avoid harm to the tech sector and update regulation in a sensible way
Support key emerging technologies	Get the AI Whitepaper right	Leverage the UK's leadership in AI across a range of sectors from drug discovery to green tech
	Ensure the UK has the computing power needed to support next generation technologies	Allow the UK to remain attractive and competitive to the businesses developing next generation digital services include AI and quantum products
	Lead the global race for Quantum commercialisation	Secure market share in a future $850 billion industry
	Deliver a plan for UK chips	Secure the UK's place in a $1 trillion industry by boosting our leadership in semiconductor design and IP while incentivising the construction of new fabs
Support the rollout of green technologies and respond to the Inflation Reduction Act (IRA):	Support investment in green technologies and modernise the energy grid	Reduce carbon output, energy costs and create up to 24,000 green tech jobs
	Take a strategic approach to the Inflation Reduction Act	Secure the future of the UK green tech industry
Ensure public procurement aligns with national priorities on innovation	Deliver on the recommendations of Sir Patrick Vallance and Lord Browne of Madingley to develop and publish forward-looking annual 'statements of innovation needs and challenges'.	Reduce the cost of public procurement whilst enhancing the UK as a leading digital nation through demand signalling.

I - Getting the building blocks of tech success right:

The tech labour market has rebounded from COVID-19 but does not have the skills it needs to further expand. Demand for tech jobs was 42% higher in June 2021 than at the same time in 2019[7] and the UK is not on course to deliver the digital skills at the pace and scale that the economy needs. techUK's Digital Economy Monitor found that access to talent and skilled workers will be the top challenge techUK members say they will face in 2023.[8]

While there have been layoffs in part of the tech sector the demand for digitally skilled talent has not slowed, placing a cap on growth and innovation, not just for tech firms but other businesses and public services seeking to digitise.

The announcement of the Sir Michael Barber review by the Government is a positive step, however we must see near term and tangible action to increase the availability of digital skills using all the levers at the disposal of both Government and industry.

Similarly, the Government must also ensure we are delivering on our commitments to rollout digital infrastructure, incentivise digital adoption and support intensive energy users such as data centres and telecoms companies to resist spikes in energy prices and continue their investment plans.

Without these basic building blocks the UK tech sector will struggle to expand and other interventions by Government and business will have diminishing returns.

Improve access to digitally skilled talent:

Urgently reform the Apprenticeship Levy: The Apprenticeship Levy is an important part of the Government's framework to make a long-term and sustainable investment in skills and training. However, it is clear that the levy is not working as it should.

£2.6bn levy funds expired in 2020-22[9] which is money that was not invested back into businesses. Given the urgency of labour shortages and constraints to business budgets now is the time to institute a full review of the levy to ensure that it is working for tech businesses small and large.

The government must take three steps to do this.

- *allow levy funds to be used on modular courses and other functional skills courses*

This flexibility is invaluable to employers to tackle key skills gaps within their organisation. Under current rules, firms can only access apprenticeship funding to upskill employees in existing roles, not retrain them for new ones. Unless the government builds greater flexibility into the apprenticeship rules, many firms will struggle to transform their workforce for the future. techUK recommends reforming the apprenticeship levy into a broader skills and

[7] Tech nation jobs and skills report 2021
[8] techUK Digital Economy Monitor Q3 2022
[9] Written Parliamentary Question, UIN HL1896, tabled on 19 July 2022

training levy, and including in scope other forms of accredited training, that is more closely aligned to the practical and operational realities of the job. The broadening of the apprenticeship levy could include training provided in-house by companies and form part of the 'off-the-job' training requirements for apprentices.

- *increase the transferable funds rate from 25% to 80%.*

Currently, the bureaucracy and complexity of the levy has left funds going unspent, with smaller businesses missing out. Passing on a larger portion of their levy means companies can help fund training in smaller companies or those in their supply chain that might not have the resources to fund apprenticeships themselves which helps them develop their processes.

- *combat stagnant apprenticeship growth in companies by increasing the lifetime of apprenticeship levy funds from two to five years.*

By combating overall issues with the apprenticeship levy, businesses would ultimately find it easier to use their funds within two years. However, as we learn from the successes and errors of the levy, a short to medium-term solution is required. This would allow far more of the use of levy funds would be used for training and be more productive.

Reduce cost of UK visas to match our competitors: migration is critical to delivering continued innovation, competitiveness, and employment opportunities in the UK. However, the skyrocketing prices of visas is a disincentive for firms and damages the UK's competitiveness a as location to base a tech firm. The cost to small UK firms is £6,910 and £11,030 for large firms for a five-year sponsored visa. In comparison with Australia, France, Germany and Canada, the UK's visa fees are significantly more expensive. One techUK member reported that it can cost six times more to get a UK visa as it does than to get a visa for their offices in a competing country.

The need for international talent should not be seen as a stopgap until such time as the UK is able to train a sufficient domestic talent pool. If the UK is to be home to the world-leading tech companies, the need to attract international talent will be constant. Companies will always want to hire the best and brightest talent available to them, wherever they come from. This principle will not change as the domestic talent pool grows. Ultimately, to keep the UK at the forefront of global innovation and to become a science and tech superpower, we must ensure that we are delivering value for money via the visa system and that costs are kept at a competitive rate versus other countries.

Work with industry to sponsor the uptake of short modular digital skills courses: short modular courses, including bootcamps have proven to be a flexible, affordable, and effective route for learners to acquire productive digital skills that are valued by employers.

For example, IBM Skills Build[10] is an online learning platform that aims to upskill 30 million people globally by 2030, while Uber has established a partnership with the Open University[11] to provide free flexible degree courses and access to free short courses for their drivers (or one of their family members), supporting flexible earning and learning around other

[10] IBM Skills Build - 2023
[11] Uber Skills Hub - 2023

commitments. These types of more modular learning can drive lifelong skill building and offer easier avenues for people transitioning between sectors.

Through the Sir Michael Barber review the Government should review how it supports this kind of retraining and where additional funding can be used to encourage the wider use of bite-sized industry-led training designed to fit around the learner and their life. Remote learning also increases accessibility and with increasing availability of online and virtual digital skills training, organisations are able to build a more inclusive workforce with up-to-date digital skills.

Develop an online 'Digital Skills Toolkit 2.0': techUK wants to work with government to deliver a transformational package to ensure every individual has the opportunity to explore and build a digital skills portfolio that enables them to access the jobs of the future. Building on the success of the government's Skills Toolkit[12], an end-to-end 'Digital Skills Toolkit 2.0' should be funded to make digital opportunities and pathways more transparent and accessible to more people. It would enable people across all areas of society to understand the digital job opportunities available to them and the skills pathways to access those jobs.

techUK believes this solution is appropriate for those who are motivated to learn and looking to reskill but not comfortable navigating the digital landscape, a potentially vital intervention at a time when 500,000 UK citizens left the labour market after the pandemic.

Businesses already offer a wide variety of online and in-person training, from basic digital skills right through to courses on the latest technological developments. We need to find a way to bring these initiatives together and increase the confidence people have investing their time in training opportunities.

Replicate AI Masters conversion courses to other digital sub-sectors: techUK has welcomed joint government-industry collaborations to drive up AI skills in the UK. The UK has had success in the creation of AI Masters conversion courses which enable graduates to do further study courses in the field even if their undergraduate course is not directly related. Supported by techUK members including Deepmind, QuantumBlack, Cisco, BAE Systems, Infosys, and Accenture, this programme has enabled 2,500 people to develop new digital skills or retrain to help find new employment in the UK's cutting-edge AI and data science sectors.

UK government could help deliver further training opportunities, working to develop post-graduate certificates to fill key missing gaps to develop graduates with an understanding of the huge potential of technologies such as quantum, semiconductors, web 3.0 and metaverse technologies from a technological and business perspective. Creating a steady pipeline of tech talent is imperative to the UK remaining a science and tech superpower and these partnerships are needed to develop the next generation of tech talent.

[12] The Skills Toolkit – gov.uk

Incentivise digital adoption through the tax system, regulation and supporting flexible working:

Introduce a Digital Skills & Productivity Tax incentive: SMEs make up 99% of all UK businesses, employing three-fifths of the UK's working population[13] and making around half the turnover in the UK private sector. SMEs face a number of obstacles to investing in their workforce, including a lack of information about what training is available, access to economies of scale (smaller employers typically pay three times more per member of staff than larger firms for formal training) and accessing training that is flexible and specific to their needs.

Another obstacle to training staff is upfront costs to investing in learning (both from a time and financial perspective) as well as a feeling among employees/potential learners that it is not for them. The sector, working with government and others, has a responsibility to tip the scales so that motivations for learning outweigh any barriers faced. While it has become standard practice for larger corporates to incorporate learning into the working day, SMEs were underfunding employee training even before the pandemic began. 53% of SME employers had not arranged or funded training in 2018, compared to 4% of organisations with 250 or more workers – the lowest rate since the surveys began in 2010.

The Government tried to address this issue via the Help to Grow: Digital Programme. However due to a number of design flaws the scheme failed to achieve the take-up required. The loss of this scheme though leaves a significant gap in the support available to help small firms digitise, which is exactly where support needs to be targeted to increase productivity.[14]

techUK worked closely with the Government on the development and rollout of Help to Grow: Digital. While the scheme showed promise it became overly complex. A simpler solution via the tax system such as a Digital Skills & Productivity Tax Incentive offers a potentially better offering, allowing SMEs to reduce the costs of adopting digital solutions and the training needed to roll them out.

A tax deduction would be simpler for both SMEs and government to administer, as it would only require an additional box on a tax return and could be deducted from a company's annual tax bill. This approach would also align with existing SME practices identified during the Help to Grow: Digital rollout, showing that advice on training and software purchases often came from accountants and trusted resellers.

To control costs and target the incentive the Treasury could examine an upper limit for deductions, providing clear criteria around what can be purchased (i.e. software, onboarding and training costs) and applying a turnover limit so as to minimise the deadweight loss. This would be similar to a scheme recently launched in Australia providing tax deductions of up to 20% for small businesses with a turnover below 50m AUD who invest in new technology and training.[15]

The Treasury should therefore urgently consult on the option of a Digital Skills & Productivity Tax incentive. Getting this right has significant potential rewards with recent economic

[13] Business population estimates for the UK and regions: 2019 statistical release – BEIS 2020
[14] Closure of Help to Grow: Digital leaves a major gap in support for UK digital adoption – techUK 2022
[15] Small Business Technology Investment Boost and Small Business Skills and Training Boost – Australian Taxation Office

modelling shows that further £232 billion GVA per year could be unlocked through effective action by government to encourage digital adoption.[16]

Reengage with the software industry on Making Tax Digital for Income Self Assessments (MTD for ITSA) to ensure we do not have further delay in April 2026: the delay to MTD for ITSA has put the UK behind on digital adoption at a time when other countries such as France and Spain are pushing ahead. This has damaged the UK's investment profile and competitiveness for the software and accounting industries and has set the UK's digital transformation backward.

The EU estimates that digital record keeping, and reporting is delivering its member states a Net Annual benefit of €8bn. When implemented MTD for ITSA would enable 4.5 million of self-employed to keep digital records and have a quarterly view of income and expenses.

The Government must immediately reengage with the accounting software industry to issue a roadmap for accelerating the MTD testing and a pilot by 2024, work in confidence with the software industry to enable more collaboration and introduce a roadmap for e-invoicing and ensure the Government has the capabilities to receive e-invoicing data. Doing so will not only create opportunities for investment in the UK but improve Government data and oversight of the UK's tax take across a growing market of self-employed workers.

Ensure we have a modern and inclusive approach to flexible work: the pandemic has changed how people work with hybrid and more flexible models being adopted across the economy. These new working practices can help drive up participation in the labour market, not only by increasing the diversity of people who can take part, but also what jobs are accessible and where. Across the UK's nations and regions hundreds of thousands of tech jobs are advertised every year but go unfilled[17]. We can help meet that skills gap through a more modern and inclusive approach to work. For example, by making the right to request flexible work available to all employees (who it is suitable for) on day one, ensure right to work checks can be carried out digitally and encourage the development of local co-working hubs near high streets to provide more space in communities for collaborative work as well as access to the local businesses. We can also provide more certainty in work through a Single Enforcement Body tasked with ensuring consistent and clear obligations for 'gig economy' firms to deliver a fair and competitive market. These are long term asks however strong signals to businesses and the wider market that reforms are coming could have powerful effects.

Deliver on our commitments for full fibre and 5G:

Deliver Project Gigabit funding and enact supply side reforms to boost the rollout of broadband and 5G: the UK's digital economy is supported by its communications infrastructure. Advanced, high-quality and secure communications infrastructure provides the bedrock for increased productivity and competitiveness. The nationwide deployment of full fibre broadband is estimated to provide a £59bn boost to UK productivity by 2025[18].

The pro-competition regime put in place under the Future Telecoms Infrastructure Review has been successful in attracting significant investment. However the rollout of digital

[16] Untapped tech adoption could boost UK economy by £232 billion annually – Sage 2022
[17] Tech nation jobs and skills report 2021
[18] Openreach full fibre turbocharging the UK

infrastructure will only be successful via a combination of a stable regulatory regime, incentives for private investment and additional support for where the private sector cannot go alone.

This ambition must be funded, by drawing down the remaining £3.8 billion for Project Gigabit as well as enacting key supply side reforms recommended by techUK to encourage investment[19]. These include the introduction of the flexi permits regime and reforming the planning regime to support mobile network densification.

Skills remains a key barrier to the deployment of advanced communications services in the UK. techUK recommends Government reviews the Shortage Occupation List and include Telecommunications Engineers (5242), to help the UK's telecoms sector meet the acute labour shortage it faces and connectivity ambitions of this Government. To address longer-term labour supply and workforce issues, an industry taskforce (with DCMS and the Home Office) should be convened to seek practical and workable solutions to the labour supply challenge.

Government should consider reintroducing telecommunication infrastructure reliefs which allowed fixed infrastructure operators to claim 100% relief on new fibre infrastructure for five years, and played a significant role in helping to support the fibre business case for greater investment across the industry.

Getting an attractive investment climate for 5G could see an additional £7bn added to the UK economy a year[20] and means the Government could expect to see accelerated digital infrastructure deployment, bringing forward the benefits to citizens across the UK through cutting edge, secure and resilient mobile infrastructure.

Reassess spectrum fees to ensure money is being effectively investment in UK networks: The Government should request that Ofcom to reviews and reports on the efficacy of the Annual Licence Fees (ALFs) which mobile operators pay to use spectrum in the UK.

A recent study published by the UK Spectrum Policy Forum[21] has concluded that Ofcom setting ALFs to reflect full market value (as directed to by the Government) is no longer required to secure efficient use of the tradable spectrum. ALFs could be removed or the money (up to £360m p.a.) re-invested in the mobile industry, better supporting economic growth or improving network resilience. Frontier Economics have estimated that there is a multi-billion investment gap between what the levels of investment which the mobile sector can deliver and what is needed to deliver standalone 5G services nationwide. Enabling reinvestment of ALFs would be an important step towards closing this investment gap.

Support the resilience and competitiveness of energy intensive digital infrastructure:

Ensure the UK's networks are resilient and competitive: telecoms companies and data centre operators underpin the UK's modern economy by processing, managing, storing, and transacting digital data and, with communications networks, form the UK's core digital infrastructure.

[19] The FTIR: Fit to deliver for 5G and full fibre four years on? – techUK 2022
[20] Digital Ambition 2030 – Vodafone June 2022
[21] UK SPF Reports: Key insights into future spectrum policy – UK SPF 2022

Our core digital infrastructure is not a single system but multiple systems and networks that interoperate. The three main constituents are fixed line telecommunications (made up of the high capacity and highly resilient core network plus the access network which runs from the exchanges to tens of millions of individual customer premises), mobile telecommunications (that interact with the core network but provide customer coverage through a cellular network) and data centres (that manage, transmit, process and store data for government, businesses, individuals, and academia).

Mobile infrastructure is dependent on a fully functioning fixed network (i.e., links) to provide backhaul that connects the core to the radio access network (RAN). Satellite and broadcast communications also play important roles in digital infrastructure. They are all interconnected, for example, data centres require uninterrupted connectivity to the telecoms network to maintain business continuity.

High energy costs for digital infrastructure mean high costs for the whole of the economy, including consumers and SMEs. The UK's high electricity costs make it the second most expensive country in Europe for investment in cutting edge digital infrastructure. Whilst we support initiatives such as the Energy Intensive Industries Scheme (EIIS), this scheme is currently limited to a small subset of traditional manufacturing industries identified within the EU's State Aid Guidelines on Energy & Environment.

As a result, it excludes several strategically important electricity-intensive industries, including data centers and telecoms networks. This makes the UK a less attractive market for investment for such industries where energy costs are a major and increasing determinant of site selection.

Redesigning the scheme to include strategic industries and large energy users will be vital to improve investment in the UK. Given the need to incentivise future-looking and innovative technologies, any future scheme could be targeted further to encourage deployment of future-proofed technology – such as full fibre – or incentivise the use of renewable energy. This will both have a long-term benefit of reducing our overall energy reliance, boost resilience and cut costs for end users, including businesses of all sizes and consumers as well as supporting the UK's broader digital transformation.

techUK would welcome opportunity to work with the Treasury and BEIS to review the EIIS scheme to ensure it is fit for purpose.

II - Creating the incentives needed for the UK to compete in the 21st century:

Boosting business investment is a crucial mission for the UK Government. In 2020, on average in the G7 business investment made up around 13% of GDP, however this was just 9% in the UK.

UK financial institutions also underinvested in our high growth economy when compared to others. For example, in the United States, 9% of pension assets are directed into private equity, funding companies all over the world. Australia's pension system has 4% of its assets invested in private equity. In the UK only 0.3% is invested.

Getting investment up will be vital to turning around the UK's poor economic and productivity performance and help raise the tax revenue needed to invest in public services and reduce the national debt.

As well as boosting business investment we also need the right incentives to encourage tech businesses to see the UK as a research and development hub as well as a springboard to new markets. Access to markets is also as vital as tax incentives to drive growth in a hyper competitive environment for tech investment.

Ensure the UK's tax incentives effectively support tech sector growth and innovation:

Reduce the damage of the Government's cut to R&D tax credits for innovation intensive SMEs: in the Autumn Statement the Government significantly reduced the generosity of the R&D tax credit scheme for small companies. While the Government has taken this step aiming to mitigate fraud and mis-use of the small company scheme it has inadvertently slashed a key pillar of support for R&D intensive companies a key pillar of the UK's economic success.

The actions of the Treasury pose a significant risk to vital growth sectors in the UK, including the AI and biotech sectors. A recent survey has found start-ups could lose up to £100,000 per company,[22] while techUK has heard from a number of members about the major uncertainty this change has created and the significant damage this cut will cause to UK competitiveness.

To reduce the impact the Treasury needs to act quickly to reassure innovation intensive companies. The Treasury should consider reverse the proposed cut before it begins in April 2023 and instigate new requirements for the credit to minimise mis-use and boost the return on investment (ROI). Such steps could include:

- Introducing a de minimus threshold or proportion of costs requirement that tightens SME participation but ensures higher spending innovation intensive SMEs are protected. This could take the form of a 15% R&D spend out of overall expenditure or a £10,000 de minimus threshold for claims on qualifying expenditures.

[22] UK startups could lose £100k under R&D tax changes – UK Tech News 2023

- Review the eligibility criteria to refocus the credit on intensive research and development, this should include both capital and operational expenditure.
- Introduce a visible HMRC campaign aiming to deter weak applications.

techUK is currently responding the Treasury's consultation on merging the large company scheme (RDEC) with the small company scheme.

While there are benefits in this approach, and in the suggestion to provide additional support to particular sectors, techUK has concerns that merging the scheme could inadvertently act as a stealth cut, reducing the overall support available to R&D intensive firms.

Ensure the UK's R&D incentives effectively support modern innovation: the UK could go further to modernise R&D incentives by recalibrating the system to better support key operational expenditures as well as incentivising a wider range of IP rights. In its upcoming review of the R&D tax credit system and in the budget the Treasury should:

- Build on the welcome expansion of the R&D tax credit from April 2023 to cover data and cloud computing costs by also moving to **include software development costs within the qualifying expenditures.**
- **Introduce an upfront or pre-clearance approach to R&D tax credit claims**. Given there is often uncertainty around whether an R&D tax credit claim is successful until after the fact the Government could improve business certainty and predictability by providing a pre-clearance route for businesses on certain projects. This would be particularly helpful under new or uncertain qualifying expenditures, for example data, cloud and software development costs.
- **Reform the Patent Box (PB) scheme,** the patent box is a valuable part of the UK's innovation incentives, encouraging companies to extract value from their IP by marketing a new product, production method, or service, that they have patented. Businesses using the existing Patent Box can boost their investment by up to 10%.[23] techUK believes an expansion to the Patent Box should include a wider range of IP rights, including software, copyright materials and inventions that may not be patentable. This would bring the UK Patent Box in line with the Dutch Innovation Box which is viewed by many in the tech sector as a globally leading scheme for incentivising innovation and R&D. Members believe such a change would deliver further investment incentives to SMEs, tech start-ups, scale-ups and companies focused on design, software and data-based R&D.

Reform the UK's capital incentives to boost investment in new plants, labs and machinery: In 2021, the Chancellor acted to assist businesses recovering from the COVID-19 pandemic by establishing a Super Deduction that allowed businesses to claim 130% allowances on qualifying plant and machinery investments, making the UK's capital allowance regime more internationally competitive and raising the net present value of our plant and machinery incentives from 30th to first in the OECD[24].

[23] Evaluation of the Patent Box HM Revenue and Customs 2020

[24] HM Treasury Budget 2021 – Superdeduction

This allowance will end in April 2023. While the decision to permanently increase the Annual Investment Allowance (AIA) to £1m the at the 2022 Autumn Statement was welcome the UK still faces a cliff edge when it comes to our competitiveness for capital investment.

To address this the Government must take a number of steps to ensure the UK remains a competitive destination for capital projects:

- Expand the qualifying expenditures in the UK Research and Development Expenditure Credit (RDEC) scheme to cover capital expenditure such as new plans and machinery. Reforms to the R&D tax credit[25] in this way could generate an additional £4bn over 10 years, providing 12,200 new R&D jobs. In a recent paper on UK semiconductor techUK's members have also highlighted the benefit of this change for supporting the growth of the UK's semiconductor industry[26].
- Re-open a previous Treasury review into capital incentives[27]. This should consider increasing the Annual Investment Allowance further consider options for full expensing that would support a wide range of businesses.

Reform the UK's financial regulation to boost investment and the competitiveness of UK fintech:

Leverage UK capital and financial assets to unleash the next wave of tech success stories: Even though the UK start-up investment landscape remains relatively healthy 2022 saw a 22% drop in investment into the UK, a larger drop than the European average[28]. The UK still ranks second globally for start-up investment, ahead of both India and China and second only to the USA. However, we have a major scale-up gap estimated at around £15bn a year[29]. The lack of these funds prevents start-ups from becoming the tech giants of tomorrow and if this gap is allowed to persist it could see the UK supplanted by our competitors.

Addressing this gap is vital for the UK to continue its tech leadership in a more competitive world. Currently the UK underuses our own domestic capital[30]. UK domestic investment accounts for only 28% of venture capital funding[31] and this is especially low when it is delivered by UK institutional investors such as DC pension schemes. Just 0.3% of pension assets are directed into funds that support tech such as private equity and VC (in the USA the figure is 9% and in Australia 4%). This is despite evidence from the British Business Bank[32] and others showing that investment in tech delivers high returns.

To improve this scenario the Government must move forward with the DWP's proposal to remove performance fees from the charge cap for DC pension schemes. If implemented, it would give DC pension scheme trustees more leeway to focus on generating returns to their

[25] Making the UK a science superpower – WPI Strategy 2021
[26] A UK Plan for Chips – techUK 2023
[27] Potential Reforms to UK's Capital Allowance Regime – Inviting views – HM Treasury 2021
[28] State of European tech report 2022 – Atomico
[29] Scale-up institute annual report 2020
[30] The state of UK tech in 2022, what did we learn from London Tech Week? – techUK 2022
[31] UK tech sector achieves best year ever as success feeds cities outside London – DCMS 2021
[32] UK Venture Capital Returns 2021

members rather aligning them with development objectives outlined in the UK Government's Plan for Growth and creating new investment opportunities in tech.

This regulatory change will be an essential step toward that goal; however, we need to go further through wider discussions with the financial sector, tech sector and the Treasury to instil a broader cultural shift that can create new market-based opportunities for investment in asset classes that support our tech sector.

To support this the Government, deliver at speed the Long-Term Investment for Technology & Science (LIFTS) competition and use its convening power to bring investors and tech leaders together and encourage the market to design new investment vehicles to further boost UK tech. This could be particularly useful for driving investment into areas of strategic importance such as the green-tech, semiconductor, AI and next generation telecoms and quantum sectors.

Retain the UK's Fintech crown by delivering on Open Finance and Digital ID: in January 2023, the Open Banking Implementation Entity (OBIE) announced that the roadmap for Open Banking has now been completed. However, a roadmap for the cross-regulatory successor to this temporary institution has not yet been published, leading to concern that the UK risks missing a key opportunity to deliver upon Open Banking and move to the next phase of the roll-out; Open Finance.

In order to fulfil the Government's ambitions for Open Banking and its next iteration, Open Finance, we need to enable fintech's use of Open Banking data for innovation purposes, empowering digital technology suppliers to create and develop the next generation of Open Banking products and services.

The Joint Regulatory Oversight Committee (JROC) was established to be this successor; however, the industry and key stakeholders have grown increasingly frustrated by the lack of direction and clarity as to what happens next.

techUK calls on HMT to use both its influence and position in JROC to expediate publication of the roadmap, allowing stakeholders to understand OBIE's replacement. Any further delay further risks institutions and tech firms alike prioritising other areas of delivery – leading to an acute loss of momentum. This would likely result in the UK losing its crown as a world-leader in FinTech.

Further, the FCA has identified Digital ID as one of the key facilitators to Open Finance. Digital ID provides the opportunity for data attributes to be owned and used by consumers who in turn grant permissions for firms to access their data when they use a service. The trust framework that underpins this has also been hit by delays and techUK members have warned that unless this is also delivered within the next twelve months, a regulated market for Digital ID could be severely hampered. This would be yet another missed opportunity and leaves the vision for Open Finance at risk.

Ensure our data protection and competition regimes support innovation:

Support greater data driven innovation through a clearer and more usable data protection framework: reforming our data laws is one of the clearest opportunities of Brexit. Data-driven

innovation is thought to have added £241 billion in value to the UK economy between 2015 and 2020[33]. Data's importance will only increase and therefore progressing the UK's well designed Data and Digital Information Bill is vital. Delivering this new regime will have instant benefits for businesses, as companies already compliant with the GDPR will be exposed to new freedoms, allowing for increased innovation and reduced regulatory burdens straightaway. The balanced nature of the Bill will also help maintain important data sharing agreements such as data adequacy with the EU.

For R&D focused companies the Government's proposed changes to the legitimate interest basis for processing and expansion of the scientific research definition to cover private as well as public research are seen as the most valuable reforms.

techUK members tell us that the EU GDPR's restrictions on data use for research are often why businesses choose the US over Europe for R&D activities. The Government should therefore seize the opportunity for reform and should where possible seek to ensure that the proposed reform to the definition of scientific research in the UK Data Bill aligns with the definitions in the R&D tax credit. Enabling companies to better process data for research purposes while also having good certainty of receiving R&D incentives for data and cloud computing costs would be a major boost to the UK's competitiveness.

Legislation can only go so far due to the need for regulatory guidance to support the UK's data protection framework. The Government must therefore make its policy intent clear through public statements, written ministerial statements and further to ensure that the regulator provides clear guidance that aligns with the Government's policy intent.

Beyond reforms to the data protection framework, the Data Bill provides the basis for a market for Digital IDs, a clear economic opportunity for the UK and one that also provides an additional tool to help tackle online fraud. Creating a market for digital IDs will also save the public purse by removing the need to build centralised Government digital identity services. There are already live certified services that could be used by citizens to access Government services which could be integrated into Government systems. Such an approach will also better support for a new innovative technology sector that could be world-leading and follow in fintech's footsteps as a UK success story

Deliver a well-designed Pro-competition regime for digital markets: our lives have been vastly improved by access to innovative digital services and devices driven by a competitive and innovative tech sector. Ensuring citizens have choice over how they take part in the UK's digital society and economy is vital.

The UK Government has set out a targeted and designed regime for boosting competition in digital markets. techUK supports the proposals which will be enabled by an empowered regulator; however, this makes the inclusion of safeguards in the legislation critical to give businesses confidence.

The UK Government therefore needs to deliver a well-designed Digital Markets, Competition and Consumer Bill. The Bill must ensure that the UK's proposed Digital Markets Unit (DMU) keeps its objective to be targeted, evidence driven and limited to areas where genuine anti-competitive practices can be demonstrated, in contrast to the EU's catch all Digital Markets

[33] Six Principles for the future of data governance – techUK 2022

Act. The Bill must also build in appropriate redress mechanisms and appeals standards and ensure the DMU engages with all market participants when carrying out its duties.

Getting this right has significant opportunities to reduce barriers to entry for firms and improve innovation and economic growth.

Access to markets and resolving the UK's relationship with the European Union:

Deepen collaboration with our strategic partners and ensure access to overseas markets: becoming a science and technology superpower will mean being strategic about how the UK fits into global value chains and ensure continued access to markets. The UK has done well post-Brexit to secure a new generation of Free Trade Agreements (FTAs) with world leading provisions on digital trade.

However not all trade issues can be dealt with through FTAs. To build on our current progress the UK needs to move quickly to establish strategies to boost our trade in services[34] by concluding Digital Economy Agreements (DEA), such as the recent deal with Singapore with other key partners. These agreements are often accompanied by Memorandums of Understanding (MoUs) between regulators and trade groups allowing for faster trade liberalisation. The UK will also need to ensure likeminded partners share common values and coordinate on the supply of key technologies such as telecoms and semiconductors and on key areas of regulation such as data sharing. The recent G7 roadmap for data free flow with trust[35] and the UK's work through the G7 Cyber Expert Group serve as good examples of UK leadership.

Resolve the UK's relationship with the European Union: while building new strategic partnerships with allies around the world is important the UK also needs to settle its relationship with the European Union. Continued uncertainty over the Northern Ireland Protocol is preventing practical solutions from being found to increased trade barriers and creates powerful disincentives to invest in the UK which is holding back the tech sector and the wider economy. The Government must find a suitable solution to disagreements over the Northern Ireland protocol to allow progress to be made.

This would improve UK-EU collaboration on a number of key digital files while also unlocking important collaborations on Horizon Europe and Euro HPC.

[34] Crafting a Strategy: UK International Digital Policy Cooperation Report – techUK 2022
[35] G7 roadmap for cooperation on data free flow with trust – FCDO 2021

III - Getting ready for the technologies of the future:

The UK is home to world leading science and research, however often we are slow to commercialise and deploy the very technologies that have their intellectual roots here. It is imperative that the UK prioritises turning world leading academic and scientific research into new market ready, commercial products and services, to become a more dynamic economy, where the worlds brightest and best come to build success.

To do this we not only need to get the right investment skills, infrastructure and investment incentives as outlined above but also need to have strong market engagement and effective forward-looking approaches to regulation. For example, by providing schemes to encourage acceptable risk taking such as sandboxes and support the sector with tools that make it easier for innovators to navigate the UK's regulatory landscape.

Further we also need to ensure that immediate legislation on competition and data seizes the opportunity to showcase a UK approach that is proportionate and innovation while also minimising consumer harms and ensure that the UK finds a strategic response to support green tech in light of the USA's Inflation Reduction Act.

Updating our approach to regulation for a digital world:

Use the Sir Patrick Vallance review to drive forward changes in the way we regulate the digital sector: as well as undertaking immediate changes to UK law to support the key sectors included in the Sir Patrick Vallance Review the Government must also utilise the review to explore how regulator behaviour can be changed to enable more effective regulation for the digital sector.

Doing so would be welcomed against a backdrop of rising costs for digital businesses across the world where the UK could carve out a competitive advantage by creating a light, clear and innovation supporting framework for digital regulation, helping meet the objectives of the Government's well received Plan for Digital Regulation.[36]

The Sir Patrick Vallance Review could help meet this objective by:

- Accelerating the delivery of projects through the Regulators Pioneer Fund to support innovators such as the planned multi-agency advice service offering joined up regulatory advice.[37]
- Consider increasing the funding of the Regulators Pioneer Fund
- Incorporate more objectives for innovation and economic growth across the UK's regulators.
- Reduce double regulation where this is not needed such as in the case of the ICO and Ofcom who both have responsibilities for the cybersecurity industry.
- Support cross regulator sandboxes and temporary/mission based sandboxes
- Continue to improve the operation of the Digital Regulation Cooperation Forum (DRCF)

[36] Plan for Digital Regulation, DCMS 2021

[37] Projects selected by the regulator' pioneer fund

- Consider how strategic steers could be used more effectively to address widespread industry concerns over regulator behaviour, for example persistent concerns that the Civil Aviation Authority is not effectively supporting UK UAV development and concerns over how quickly the UK Space Agency evaluates and approves launch licenses for small space craft.

The Government should also commit to publish the review once completed.

Urgently review the EU law (revocation and reform) Bill: the EU retained law and (revocation and reform) bill offers a useful opportunity to update UK law to suit the post Brexit landscape. However, with its current timetable and scope the Bill is actively harmful to industry and a waste of both business and civil service resources when there are significant demands on both Government and industry time.

Ministers should consider delays to, and the sequencing of the Bill's review processes to make it more effective. The Government has already introduced legislation on the Data Protection and Digital Information Bill and initiatives such as the Sir Patrick Vallance Regulatory review that seek to update UK and EU legislation in an industry and innovation friendly way through consultation and clear processes. The Government should reconsider the EU law (revocation and reform) Bill in line with these two examples.

Support key emerging technologies:

Getting the AI Whitepaper right: the UK is a leader in Artificial intelligence with one of the strongest academic and commercial bases in the world for this emerging technology. AI has the power to transform industries, boosting productivity and driving advancements in technology exponentially faster than previously thought. Technologies such as generative AI, such as Chat GPT have a huge range of applications, from vastly speeding up drug discovery to revolutionising software design to supporting green technologies the UK has a golden opportunity to leverage our strong AI base into countless other sectors.

However, ensuring we can do this will require building trust across industry and the public. As well as taking steps get the right incentives, investment and skills support for the AI sector we need to develop a strong and adaptive regulatory framework.

Through its policy paper on establishing a pro-innovation approach to regulating AI the Government is on the right track to building a system that is clear on the risks that need to be mitigated but does not arbitrarily stunt AI applications. However to get this right the Government must achieve six key aims with its AI whitepaper due to be published later this year. The AI whitepaper must:

- Allow companies to readily identify whether the system they are developing or deploying would be defined as an 'AI system' and subject to the UK's regulatory regime.
- Provide clarity over the regulatory landscape as applying to AI.
- Set out clearly what is meant by 'real' and 'unacceptable' risks.
- Identifying the rights and responsibilities of all contributors to the AI lifecycle.

- Open and continuous dialogue between businesses and regulators, and coordination between regulators to prevent uncertainty, duplication and heavy burdens for those that work with AI across sectors.
- Provide confidence that UK regulation is compatible with other approaches being implemented around the world, for example the EU AI Act, and that UK regulation can support the export and licensing of systems developed from the UK.

Ensure the UK has the computing power needed to support next generation technologies: Large Scale Computing (LSC) is a key enabler of science, research and innovation and sits at the heart of value chains that extend deep into the economy including healthcare and drug discovery, engineering and manufacturing and financial services. LSC is also the foundation of a number of technology ecosystems that the UK is seeking to become a major hub for, such as quantum and AI.

However, the UK is falling behind in compute infrastructure when compared to other leading nations. Whilst the EU, USA, China, and Japan are all pushing forward with exascale systems, the UK's share of global LSC capacity has decreased by three-fifths over five years, falling to 2.0% in 2019[38]. UK systems such as DiRAC are oversubscribed, and techUK members have reported difficulty for industry -particularly SMEs to access this infrastructure. With the training of next-generation AI algorithms so reliant on LSC, this lack of investment will imperil our broader goals in science and technology and hamper economic growth.

techUK calls on UK Government to rapidly re-invest in large scale compute hardware and software infrastructure, including in a roadmap for exascale compute in the UK. This should have a focus on opening access to academic communities, industry and SMEs who will all benefit from large scale compute infrastructure in the UK. The Government should also take special note of the forthcoming independent Future of Compute Review.

Lead the global race for Quantum commercialisation: Quantum technologies are set to play a formidable role unlocking innovation both in the UK and internationally. Such advancements will have a profound and positive impact in the UK as we build on our position as a science and technology leader and turn academic strength in quantum into economic success. Estimates show that Quantum technology could create new global market opportunities amounting $450 billion- $850 billion in the next 15 to 30 years.[39]

To reap the benefits of this Quantum revolution, we need to sustain the UK as a leader in Quantum as other nations continue to invest in the commercialisation of these technologies. We need to support our developing quantum industry and instil confidence that the UK is the place to be for commercial success.

As set in techUK's report: Quantum commercialisation: Positioning the UK for success,[40] achieving this objective will mean ensuring the UK has access to quantum talent and developing quantum skills in the UK; working with the UK tech sector to develop models of easy access to quantum technologies, including building pathways with other critical emerging technologies such as Cloud, HPC and AI; promoting international collaboration

[38] Large Scale Computing the case for greater UK coordination – Government office for science 2021
[39] What Happens When 'If' Turns to 'When' in Quantum Computing? – BCG 2021
[40] techUK report: Quantum commercialisation: Positioning the UK for success – techUK 2022

globally to help grow and develop opportunities for the UK sector; encouraging public sector procurement of quantum to grow the quantum market; and ensuring commercialisation and innovation is achieved in a responsible and ethical manner.

Deliver a plan for UK Chips: also known as 'chips,' semiconductors are present in every day-to-day consumer electronic device and underpin the key technologies shaping today's world and tomorrow's possibilities. Global competition over chips is fierce—the semiconductor industry is projected to value $1 Trillion by 2030[41], and other jurisdictions, such as the USA, the European Union and China are launching significant investments to guarantee their stake in that growth. For the UK to effectively compete and achieve its aspirations of being a technology superpower, we need a semiconductor strategy that not only builds on our strengths but also fosters new opportunities for the UK's Chips industry.

Achieving the UK's fullest potential in this technology will require us to nurture advantages in areas where we already lead, such as in design and research into new and advanced materials. However, this will not be enough. Ensuring UK chip designers and builders have access to markets, effective protection for their intellectual property, access to the talent they need, incentives to invest in cutting edge R&D, as well as facilitating growth in new fabrication plants and machinery will be essential to the future of UK chips.

techUK has set out five recommendations from our members to achieve this in our *UK Plan for Chips*[42]. These include:

- Retaining the UK's position as global leader on chip intellectual property and design
- Incentivise investment in advanced designs, new materials, and new fabrication plants
- Partner with our global allies on supply and monitor the UK's access to chips
- Nurture the skills we need for the chips industry
- Ensure access to markets and private capital

Support the rollout of green technologies and respond to the Inflation Reduction Act (IRA):

Support investment in green technologies and modernise the energy grid: techUK research in collaboration with Deloitte[43] identified that digital technologies already in the field could deliver a 15% decrease in UK carbon emissions by 2030 whilst adding £13.7bn Gross Value Added (GVA) to the UK.

Deploying digital has the combined benefits of growth, reduced emissions and lower bills for consumers. Increasing venture capital and patient capital investment in the sector is essential to accelerate action towards our climate targets.

The UK saw a 21% increase in investment for climate tech[44] and agriculture companies, reaching a record $798m in 2020. To boost our investment in green tech the new Government must increase the pool of investment for green technologies by ensuring the UK has the right incentives to boost business investment and accelerate plans to digitise the energy grid which

[41] The semiconductor decade: A trillion-dollar industry – McKinsey & Company 2022
[42] A UK Plan for Chips – techUK 2023
[43] Making the UK a digital clean tech leader – techUK 2020
[44] Tech Nation Report 2021

by 2050, could reduce overall UK energy costs by up to £10bn annually and create up to 24,000 jobs[45]. As the Government reviews the energy support scheme telecoms providers and data centre operators must be supported with energy costs so that businesses from all sectors and our public services remain online.

Take a strategic approach to the Inflation Reduction Act: significant subsidies for green tech development in the USA following from the passage of the inflation reduction act has the potential to significantly damage the UK and EU tech industries. Firstly, the IRA should be welcomed as the US significant increases investment in green technologies. However, the UK needs to work with the EU to address barriers to trade and unfair subsidisation arising from the IRA that could damage British industry. The UK also needs to recognise the hypercompetitive nature of the green tech and energy generation industry. This should spur Government to work quickly with industry to develop a package of incentives both financial and supply side to accelerate the UK's competitive advantages as well as reducing costs in key parts of the global value chain where UK strengths exist.

Ensure public procurement aligns with national priorities on innovation

Deliver on the recommendations of Sir Patrick Vallance and Lord Browne of Madingley[46] for all government departments to develop and publish forward-looking annual 'statements of innovation needs and challenges' to provide a framework for business engagement and planning.

Ensuring that public procurement delivers value for money is essential. However, at times this narrowly focuses on cost rather than on focusing on overall impact for the UK, including the potential to assist in the delivery of national priorities such as the support of emerging technologies in high-growth sectors.

Government should take two actions:

- All public sector bodies with a significant level of public procurement should public rolling plans to provide a clear direction for the private sector. This aligns with best practice[47] and will allow the private sector to invest in digital products, services and talent to improve the support they can offer government.

- Step outside of individual public body procurement channels for major national strategies. Here, Government should co-create technology roadmap with the private sector to create a demand signal for the private sector to invest. This is similar to the approach taken by the Vaccines Taskforce and will help steer R&D investment.

[45] Transitioning to a net zero energy system Smart Systems and Flexibility Plan – BEIS 2021
[46] Letter to the Prime Minister on delivering national priorities through public procurement – Council for Science and technology 2022
[47] Getting IT Done: techUK Public Sector Supplier Perspectives – techUK 2022