BFPG British Foreign Policy Group

Global Britain and Levelling Up

Strengthening the UK's Democracy, Resilience and Security

Sophia Gaston

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The British Foreign Policy Group

The British Foreign Policy Group (BFPG) is an independent, non-partisan think tank dedicated to advancing the UK's global influence, at a crucial time in the nation's modern history. Our core objective is to bridge the link between the domestic and international spheres – recognising that Britain's foreign policy choices are shaped by our social, economic and democratic landscape at home. BFPG works as the connective tissue between the UK's policy-makers, businesses, institutions, and ordinary citizens, to promote the connectivity and understanding needed to underpin Britain's national resilience and global leadership in the 21st Century.

The BFPG produces pioneering social research, which provides a holistic picture of the social trends shaping public attitudes on foreign policy and the UK's role in the world. Our annual public opinion survey has become the leading UK quantitative research project on foreign affairs and the UK's role in the world. Our National Engagement Programme provides a crucial bridge between HMG and citizens and stakeholders, in their own communities. In addition, the BFPG produces dynamic events and facilitates networks amongst stakeholders with a vested interest in Britain's international engagement – including co-convening the UK Soft Power Group with the British Council, which highlights the strengths and potential influence of the assets harboured within the UK's towns, cities and nations towards projecting our national cultural and diplomatic power.

The BFPG also monitors and interrogates the social, economic and political constraints of both our allies and adversaries, as a crucial resource of strategic foresight in a rapidly evolving global landscape. We believe that, harnessed with this knowledge, and with the full capabilities of our considerable assets, Britain will have the best chance to succeed in its ambitions to promote prosperity, peace, security and openness – both at home and abroad. Our mission supports Britain as a strong, engaged and influential global actor. We promote democratic values, liberal societies, and the power of multilateralism – and we recognise Britain's critical international responsibility to uphold and extend these throughout the world. The BFPG believes that a strong and united nation at home is the essential foundation of a confident and effective British foreign policy.

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Acknowledgements

Introduction

The past decade in British politics has been characterised by a persistent sense of living through history – a self-consciousness that these months and years will be pored over by future generations, trying to unpick and understand a moment of great disruption, energy and upheaval. It is also a period in which we are laying the foundations for the political, social and economic contracts of the future. At the same time, the world around us has been in a state of similarly frenzied evolution, with both our allies and strategic rivals reconfiguring their domestic settlements and recasting their global roles. As we have travelled through these years with a degree of awareness about the significance of our small individual roles in the making of a new era for Britain, we have also been transfixed by the spectacle of global events – whether the rise of China, the devastating events of the coronavirus pandemic, the escalation of threats posed by climate change, or the relentless pace of technological development. We have lived, as the old saying goes, in interesting times.

Certainly, the prospect of an advanced democracy such as ours undertaking a kind of domestic revolution in the face of rapidly shifting and escalating global threats may feel overwhelming. It is also possible to argue the case that the kind of system-level disruptions that have been precipitated by Brexit, the coronavirus pandemic, and the ongoing threat to the future of the Union, have forced a new culture of thinking in Whitehall, which could help us to more decisively adapt to the global landscape of the future. Equally, one could insist that these events have, and will continue to, consume the kind of financial and political resources needed to undertake such a project. Much will be riding on the ambitions, courage and skill of our elected representatives.

In any case, although we have become very adept at debating the past, and history remains a powerful lens through which to examine our present crises, it is time for Westminster to look to the future. We have little choice but to adjust to a new world order and a new social paradigm, and therefore must accept the realities of our situation, comprehend where changes need to be made, and take stock of both our inherent vulnerabilities and strategic advantages in a competitive environment. At the British Foreign Policy Group (BFPG), we feel that one of the most effective, efficient pathways to strengthening our resilience comes through a more substantive integration of the Global Britain and Levelling Up strategies.

This report is by no means an exhaustive exploration of the full scope of threats and risks facing the United Kingdom at home and abroad, nor a substantive toolkit of public policy solutions for responding to them. We are fortunate in Britain to have a thriving suite of research institutions of all shapes, sizes and persuasions, focused solely on both of these individual matters. Rather, this is an effort to address the BFPG's central focus, the bridging of the domestic and international spheres, in an accessible way. In particular, to capture some of the key areas of alignment between our international and domestic renewal projects – Global Britain and Levelling Up – and elucidate how both conceptually and practically these could work together in a mutually beneficial way. In doing so, this report aims to spark a vibrant new public conversation about how best to consolidate and advance the strengthening of our resilience at home and abroad.

Sophia Gaston
Director of the British Foreign Policy Group

Report Summary

1. The UK possesses some distinct advantages in adapting to the 21st Century security paradigm, including world-leading universities, a dynamic innovation culture, a cultural instinct towards openness, and a stable and effective regulatory environment. But we cannot afford to rest on our laurels as the nature and scope of threats shift and proliferate.

2. Addressing our structural economic and social weaknesses at home – including regional inequalities, drags on our productivity, and asymmetrical education and skills outcomes – will help us to become more completive and resilient in a rapidly evolving global landscape.

3. There will be particular dividends to supporting talent pipelines into industries critical to our national security, as well as digital technologies, and 'green' jobs – careers which are also likely to be more sustainable into the future.

4. Integrating our domestic and international ambitions, giving Britons a more direct and visible stake in the globalised economy, and helping citizens to understand their individual role in the nation's security, will be crucial foundations to building public consent for an active, open and engaged Britain in the world.

5. Given many of our closest allies are facing similar domestic and international challenges, we should extend the framework of international cooperation outside of its traditional parameters, to also consider the future of democratic governance, social cohesion in open societies, and the provision of critical national infrastructure – as a matter of collective resilience.

Rising to the Challenges of the 21st Century

The conception of warfare is evolving, and the threats we face in advanced liberal democracies such as the United Kingdom are becoming increasingly difficult to contain within the traditional understanding of our national security. Although the 'hardware' of traditional combat and defensive capabilities remain important foundations of our defence arsenal, the battlegrounds we face increasingly stretch well beyond the armed conflict of the past into the digital realm, and encompass the full spectrum of our economies, political systems, and societies themselves. Our strategic rivals make no distinctions between these different spheres of influence, and are themselves practising forms of 'hybrid' warfare not only spanning different sectors and industries, but also bridging the citizen-military divide. These competitive interactions between state and non-state actors often take place below or outside of the threshold that would have historically generated an international defensive response; however, they are no less pernicious to the interests of democratic nations and the liberal world order in both the short and longer term.[1]

Like our allies, the United Kingdom must adapt to this new landscape, future-proofing our security capabilities and infusing a much greater degree of resilience into all areas of potential vulnerability. Reflecting the shift away from the battlefield, an effective approach to combatting grey-zone threats must be truly holistic, encircling all elements of our national strategic advantage and sovereignty. This necessitates an expansive conception of our critical infrastructure, our self-sufficiency, the independence of our economic and financial systems, our democracy, society, and citizens themselves.[2]

The United Kingdom approaches this new security framework from a standing start. Not only do we possess many aspects of the foundational architecture required to meet these challenges – such as a culture of innovation, a robust regulatory environment, cutting-edge intelligence services, and outstanding science and research capabilities – but the upheaval precipitated by the 2016 EU Referendum has compelled Whitehall to think in a more dynamic way, and to prepare itself for whole-of-system change. Political and economic disruption such as those wrought by Brexit undoubtedly consume resources and destabilise political attention, but in the medium term, the spirit of revolution may well play to our advantage.

The importance of the development of the UK's science and technology capabilities in ensuring the UK's prosperity, competitiveness and security is widely recognised in the Integrated Review, which outlines plans for the UK to become a 'science and tech superpower by 2030', through 'redoubling our commitment to research and development, bolstering our global network of innovation partnerships, and improving our national skills'.[3] Investment in technology research, development and commercialisation will be integral to laying the foundations for the UK's long-term prosperity and resilience, and – if undertaken with a strategic focus on economic geography – should prove themselves to be an important intersection where the UK's Global Britain and Levelling Up agendas could work seamlessly hand-in-hand.

The UK's Strengths in Science and Technology

From the cipher, to the submarine, to the telephone, steam power, the Industrial Revolution, DNA profiling, the World Wide Web, and – more recently – the Oxford-AstraZeneca vaccine, the UK has a long and established history as a global leader in science and innovation. Britain currently ranks fourth in the Global Innovation Index, performing particularly strongly in terms of its innovation culture. One of the UK's particular strengths lies in its strategic investment in emergent technologies, and we are a world leader in disruptive applied innovation, such as agri-tech, fin-tech, health-tech and clean-tech.[4] Sustaining the momentum behind these investments

will be imperative to achieving many of the core objectives of the Global Britain agenda, including advancing our international leadership on climate action, cyber security, and ensuring that we continue to have a seat at the table in strengthening the global health system.

The UK has also proven its technological abilities within the 'deep-tech' sector. In 2020, our investments in deep-tech rose by 17% – the greatest year-on-year increase globally – to reach almost £3 billion.[5] The deep-tech sector is categorised by the use of Artificial Intelligence, which is now crucial technology in products spanning from bio-tech to drones, and is likely to be an arena of significant innovation and investment in the future. This capacity to identify and drive new trends forward arms the United Kingdom with a particular advantage in this increasingly competitive field. When performing at its best, Britain has the potential to outflank our allies and strategic rivals in anticipating and projecting the social, economic and security marketplace of the future.

The success of the UK's tech sector to date has not come about by accident. It is linked to a strong innovation culture, consistent investments into research and development, our world-class universities, creative and cultural industries. Universities in the UK provide 60% more PhDs than the EU average, and the UK Research and Innovation agency has committed to increasing UK investment in R&D to 2.4% of GDP by 2027.[6] The thriving start-up alchemy in many cities has also created hotbeds of productive collaboration and agglomeration, and our assets of research, education and innovation still hold considerable potential to be scaled up and better harnessed into the future.

The UK's internationally recognised regulatory, legal, standards frameworks, and our historical expertise in forging new governance cultures, also means we are well-placed to build the international infrastructure to guide the ethical development of these new technologies and spheres of interaction. The UK is seeking to foster a new governance and ethical culture around Artificial Intelligence, through a collaborative network spanning academic institutes, think tanks and policy forums. This has contributed to the UK being ranked second in the world for 'AI readiness' in 2019, and strengthens the nation's legitimacy to act as a driving force behind establishing new international standards for this burgeoning area of innovation.[7]

Despite the UK's successes in these areas, however, there is no room for resting on laurels when it comes to innovation. Certainly, there are many aspects of Government policy and the contemporary business environment that may tip the balance away from Britain's favour, curbing the advantages we have built up thus far. Although many digital industries have thrived during the pandemic, the disruption precipitated by Brexit to many growing firms' talent recruitment and investment pipelines is presenting obstacles to entrepreneurs that cannot always be quickly remedied.[8] Many existing organisations are also struggling to adapt decisively to the digital age. A recent study by YouGov and BT found that UK businesses are suffering from 'digital immaturity', with almost a third of companies without any plans to invest in acquiring emerging data-driven technologies. These slow technology adoption rates threaten to stifle our global economic competitiveness.[9]

The UK's broadband infrastructure is also a potential impediment to productivity and innovation. Currently, just 27% of UK homes can access gigabit-capable broadband, yet as internet usage and pressures on older broadband systems increase, gigabit-capable broadband will become increasingly essential to consumer experience and service delivery. The UK Government has targeted 85% gigabit-capable broadband coverage by 2025; however, questions remain about the feasibility of Government financing towards achieving this.[10] Failure to improve the UK's broadband infrastructure will disproportionately affect regions with poor existing broadband access, which are overwhelmingly rural areas. Beyond capabilities, costs also vary significantly across regions, and households in the South West, North and East of England, and Wales on average spend seven times more on entry level broadband services as a proportion of their income, relative to other regions.[11] Investment in providing affordable and fast gigabit-capable broadband should therefore not only be driven by the pursuit of geopolitical advantage, but the urgent need to level the playing field of domestic economic productivity.

We must also look to the future to anticipate the areas in which our existing talents can be deployed. With global internet traffic increasing 25-30% during the coronavirus pandemic,[12] further attention is being directed to the issues around internet governance. Norms and regulations around internet governance remain an area of tension even within the Western alliance, with the EU's strict extraterritorial regulations and GDPR rules standing in stark contrast to the United States' free market model, and globally, Russia and China's 'sovereign' model is raising the spectre of a fragmented, nationally oriented internet.[13] Although the United Kingdom would have been well-placed to lead work into global internet governance, it is the Canadian Government that has been at the helm of efforts to advance thinking on this issue – including through hosting the Canadian Internet Governance Forum.[14] The UK is now seeking to partner with Canada to build a coalition of support around internet governance, but this issue demonstrates the need to be forecasting ahead of time – as many of these issues become not only a question of national security, but the projection of our values, cultural assets, and economic competitiveness.

The Economic Value of Science and Technology

Investments in the UK's science and technology capabilities make sound economic sense – not only because they are evidently areas in which we possess both the intellectual and human capital and the right business environment in which to excel, but because they are areas of future economic growth and therefore sound investments in a sustainable economic model. The UK's digital technology sector, for example, is growing exponentially faster than many other sectors, and in 2018 contributed £149 billion to the UK economy. UK tech start-ups raised almost £6 billion in venture capital in 2018, significantly more than in our European counterparts such as France and Germany, and twice that of tech powerhouse Israel. Overall, the digital and tech sector now accounts for 7.7% of the British economy.[15]

The tech sector is also a fast-growing job market in the UK, with 10 percent of all current UK job vacancies being situated in the industry.[16] The majority of these positions are high-skilled, and the recruitment demand has increased by 40% in the two years following 2018 – a particularly welcome development for graduates facing precarious employment prospects in many other industries. Salaries within the tech sector are higher than the UK national average, and in technical roles such as software engineering, salaries were steadily increasing before the coronavirus pandemic.[17] Perhaps most significantly, the sector appears to be unusually resilient in the face of disruption: across the tech industry, almost half of companies were increasing employee numbers during the pandemic, and 42% have experienced a boost in revenue over the past 12 months. If this growth rate continues, it is estimated that there will be 100,000 job openings per month in the tech industry by June 2021.[18]

The Role of Geography in Innovation

The UK is home to four of the world's top 100 science and technology clusters – London (15th), Cambridge (57th), Oxford (71st) and Manchester (93rd) – as well as a quarter of Europe's top 20 high-investment tech cities. Aside from these generalist big-hitters, other UK cities and regions have also successfully carved out science and technology specialisms for themselves. Leeds, for example, is home to 63% of all health-tech businesses in the UK, accounting for one fifth of all UK digital health jobs.[19] However, other regions of the UK lag significantly behind in their science and technology capabilities. In 2019, the North East, Yorkshire and the Humber, Northern Ireland and Wales, all received approximately £100 million venture capital investment in the tech sector – light years away from the East of England (£800 million), let alone London's £6.8 billion of investment.[20] These gaps in investment exemplify the need for the Levelling Up agenda to address the science and technological capabilities of areas that have not been able to transition as seamlessly into the digital economy.

London's supremacy in attracting investment into these future-oriented industries in part reflects its size, attractiveness as a place of residence, connectivity to Europe, and the agglomeration effects it is able to offer start-ups across a wide range of industries through its world-leading services sectors. London had already adapted well to the 21st Century global economy, and operates at a level of productivity around a third higher than the UK average.[21] Meanwhile, the places that tend to lag behind on science and technology capabilities are those still grappling with the scars of de-industrialisation and which lack the transport and education infrastructure needed to reinvigorate themselves – highlighting the need for strategic geographical investment.

A group of major British businesses has recently called on the UK Government to play a more active role in supporting supply chains for globally competitive industries, to enable a greater degree of long-term certainty for fledgling businesses in these growth sectors.[22] One of the most efficient ways to distribute Government resources to benefit multiple businesses through shared infrastructure is through the seeding of technology and innovation hubs – which allow otherwise disparate start-ups to build their own supply chains and share services through agglomeration. Hubs such as London's Silicon Roundabout, and Manchester's MediaCityUK, are close-knit communities designed to foster innovation among youthful companies. It is certainly the case that London entered the digital age with a distinct advantage compared to many other cities in the UK; however, it is also important to recognise the role that state investments and incentives played in the creation of this particular alchemy.

In 2010, the UK Government launched the Tech City Investment Organisation, which, through policies such as a new visa scheme for entrepreneurs, intellectual property reform and rolling out fast broadband, sought to encourage investment in London's Silicon Roundabout. In 2012, a further £50 million was invested to practically regenerate the roundabout, and by 2019, there were over 4,000 tech firms in the area, providing more than 50,000 digital economy jobs.[23] The strategic use of tactical policy reform and government facilitation and encouragement of FDI have helped create London's first rival to Silicon Valley, and provide a model that could theoretically be replicated in other parts of the nation. At the same time, we must recognise that London began from a standing start, and therefore some 'levelling up' will need to take place to reach the same foundational levels of skills, education, talent, and favourable business conditions.

Manchester provides another clear example of how the state and market can work together to foster successful tech and innovation hubs. In 2019, its technology firms managed to secure a four-fold increase in investment from the previous year.[24] Manchester's excellence in technology has been aided by the development of MediaCityUK, a 200-acre mixed-use development, now home to 250 media and digital businesses. The UK Government played an integral role in the success of this tech hub, following plans in 2010 to establish an internationally renowned social hub in the North. Alongside a £3.5 billion investment into the region more broadly, the UK Government's investment directly into MediaCityUK helped to facilitate BBC North's relocation to this development in 2011. BBC employees now comprise 40% of the 6,500 people employed in MediaCityUK. The development was crowned Europe's first 'connected neighbourhood' in 2020, with frictionless connectivity achieved via hi-speed outdoor Wifi throughout the estate.[25]

However, technology hubs do not have to be confined to large cities. The historic market town of Newbury in Berkshire has a population of just over 40,000, and yet has the highest levels of 'digital density' in the UK. Newbury is home to the Vodafone UK Headquarters, which employ a large proportion of the local population, and enable the company to provide services such as free shuttle transportation for employees to get to the campus, which improve both worker well-being and productivity.[26] Basingstoke is another example of a smaller town leaning into the digital revolution. Between 2015-18, tech deals in the town amounted to £425m, and Tech Nation named the town fourth for tech investment in the UK in 2020. These towns comprise part of the 'productivity power path' travelling along the M4 corridor and spreading

to Southampton and Portsmouth, indicating the capacity for towns and cities within a region to tactically mimic the agglomeration effects of the larger economic powerhouses.[27]

One of the striking examples of purpose-built research and development zones operating effectively is the Harwell Campus, a 700-acre innovation hub, housing 200 organisations across its space, health-tech and energy-tech clusters. Generating an estimated GVA of £1 billion, the cluster has brought benefits to the wider local area through creating demands for services and homes. The Harwell Campus' plans for a 'green' expansion will also include the creation of hundreds of new homes targeted towards people who currently work at Harwell on site.[28]

Tech and innovation hubs often have important global links. Of the 105 space organisations that the Harwell Space Cluster hosts, these include the UK Space Agency and the European Space Agency's European Centre for Space Applications and Telecommunications. The UK's new LaunchUK Spaceflight Programme has recognised Harwell's space capabilities, and is investing £99m for a new national satellite test facility as part of its 'Global Britain' agenda.[29] This will support the UK space industry in developing next-generation technologies and satellites, and aim to secure the nation's position as one of the world's leading space innovators. Through its intense research links, business initiatives and 'green homes' plans, Harwell exemplifies the potential for rural developments spring-boarding off established universities, and demonstrates the economic, social and security benefits that can be derived from the successful formation of a seamless ecosystem of innovation.

Technology and innovation hubs are not only vital for the Levelling Up agenda, but will help to provide the necessary economic dynamism required for citizens and communities to enhance their personal resilience, and become more adaptable to the changing security paradigm. International competitiveness on an economic level is both an objective of, and integral to, the success of the Global Britain project. In part, because prosperity equips us with the capability to project our influence, and to help other nations to achieve the same alchemy of growth and openness. Equally, because ensuring that economic security is better distributed across all regions in the UK will be an essential foundation to building public consent for an open foreign policy and trade agenda.

The Foundations of Resilience – Education and Skills

The Integrated Review recognises that much of the UK's competitive advantage comes from its human capital. However, economic growth over the longer term will necessitate improving UK-wide productivity through much more robust and radical investments in education, skills, and the UK's national infrastructure. Having identified the UK's human capital as one of our greatest strengths, it is equally important to recognise where we are under-performing in building the workforce and the intellectual engine of the future. Across many of our critical sectors, the UK faces significant skills shortages, which not only hamper our capacity to generate economic growth, but also threaten to undermine national security – with, for example, 45% of UK firms lacking the skills to perform one or more basic security tasks. Furthermore, for the UK to reach our net-zero ambitions by 2050 and strengthen our collective resilience, we will need to develop the skills required among our citizens to fill an estimated 400,000 future green jobs.[30]

The extent of these skills gaps is epitomised by the extent to which many of our critical industries are heavily reliant on migrant labour. The UK's food and beverage, manufacturing, and health sectors are all heavily dependent on imported workers, and therefore especially prone to disruption when border policies are altered, or migrant routes are impeded.[31] Britain is an open, trading nation, which has been greatly enriched by the presence of its migrant communities, and will undoubtedly continue to prioritise the movement of labour and talent as part of its economic model. Nonetheless, this connectivity and openness, which is a core aspect of the UK's strength and attractiveness, should not come at the expense of investing in the nation's domestic skills base. Efforts to build the UK's resilience in terms of its skill levels should focus primarily on the areas of critical importance to the nation's supply chains and infrastructure, and which are excessively reliant on imported temporary labour, as points of potential vulnerability.

Investments in skills and education will be essential to tackling the nation's persistent inequalities in regional prosperity. Universities and vocational education strengthen regional economies through equipping citizens with the skills needed to adapt to future economic change; citizens with lower education levels and without advanced skills are much more vulnerable in the longer term to having their careers displaced by technology in a manner that fundamentally threatens their employment prospects.[32] Citizens with skill levels matched to the 21st Century economy, and/or with a generalised higher education that supports adaptive capabilities, will be considerably more shielded from future economic slowdowns or disruptions, and will be able to play a more significant role in strengthening the UK's collective national resilience.

By the age of 11 years, significant regional disparities in education are already apparent, with regions such as Yorkshire and Humberside, and the West Midlands, home to disproportionately large numbers of low-scoring pupils, and areas such as the North West and London home to disproportionately large numbers of high-scoring pupils. These early disparities hold long-term consequences for regional economies. In areas such as Merseyside, Yorkshire and the North East, as many as 30% of adults are not in employment, education or training, compared to just 5% in the Thames Valley corridor.[33] These skills disparities closely correlate to the proportion of graduates in the regions. For example, in 2018, university graduates comprised 62% of Brighton's adult population, 14 percentage points above the national average (48%), compared to 38% in Hull & Lincolnshire. Concerningly, the skills gap between these two regions is widening, and leaping from just under 14% in 2005, to a 24% gap in 2018.[34]

The 2021 Queen's Speech focused heavily on articulating the UK Government's Levelling Up ambitions, in particular, the notion that citizens should be able to access quality job opportunities in their home towns – distilled in the slogan, 'live local and prosper'. The Speech

emphasised the prospect of better connecting local businesses and organisations with colleges, other vocational learning providers and universities, as well as a pledge towards a 'lifetime skills guarantee' to support the upskilling and reskilling of workers throughout their careers.[35]

In addressing the UK's educational and skills shortages, the UK Government should consider how best to stimulate the pipelines of British citizens moving into areas crucial to upholding our critical national infrastructure – whether critical industries themselves or those focused on generating the products, services and capabilities that defend them. There are signs that both local and national governments are increasingly recognising the need to invest in these pathways. The Scottish Government's Energy Skills Partnership for example, offers opportunities for skills development within the energy, engineering and construction industries.[36] The UK Government's CyberFirst schools programme has targeted initial pilots in regions such as Wales, Northern Ireland and the North of England, with a view to fostering a greater baseline level of specialised and highly valued skills amongst the future workforce in economically struggling areas.

Furthermore, the civil service offers a range of apprenticeships, including in Critical National Infrastructure, in which programmes offer individuals intense cyber security training. Apprenticeships are also common within the energy sector, with many of the Big Six energy suppliers, including EDF Energy and British Gas, offering apprenticeships and traineeships designed to build a diverse workforce able to adapt to the use of more sustainable energy sources.[37] These initiatives cannot, on their own, fundamentally reverse long-term decline in local economies, but – if attention is paid to their geographical distribution – they may tip the balance to encourage younger people to feel confident pursuing a career or seeding viable new businesses within their home regions. Over time, these shifts may help to begin the process of disentangling geography from being so closely linked to metrics of opportunity and disadvantage in the United Kingdom.

Higher Education as a Driver of the UK's Global Competitiveness

A significant driver of the UK's innovation and research capabilities is the strength of the UK's higher education sector, with the UK ranking second in the Global Innovation Index for the quality of its universities.[38] Universities not only produce highly-skilled graduates and valuable research outputs, but also help to stimulate innovation, and provide other technical business support to the benefit of both the public and provide sector.[39] Creating better links between universities and the towns and cities in which they reside will be essential to realising the Levelling Up agenda, but it will also connect more citizens with a stake in the global knowledge economy. Scaling up the commercialisation of research undertaken within universities and other research institutions will play a crucial role in achieving this.

Given our world-class universities, it is unsurprising that the UK has a global lead on research quality; however, the United States is far ahead in generating income through harnessing the intellectual property produced in such research.[40] The economic potential of research commercialisation should not be understated, with studies suggesting that a 1% increase in patents is associated with a 0.19% increase in annual national economic growth. What's more, many of these commercial applications of research are also significant assets in advancing the UK's national resilience. The commercialisation of research benefits consumers, enhances citizens' quality of life, and increases national economic competitiveness. It also produces technology outputs that have security applications, such as new drone technology and medical research, and provides the technological and intellectual advances needed to build our resilience in other areas such as the environment, agriculture and health.[41]

For example, a Professor at the University of Sheffield developed a health index to calculate the cost-effectiveness of new healthcare interventions, which helped to improve the choices made by not only local and national governments, but private sector providers.[42] Research

commercialisation supports individuals and institutions to fund future research, and can be balanced alongside social and charitable applications. The recent partnership between the University of Oxford and the global biopharmaceutical company AstraZeneca to develop a Covid-19 vaccine, highlights the tremendous collective benefits possible when research excellence meets industry ingenuity, with crucial financial and risk absorption from the state, and a willingness to balance financial gains and social well-being.[43] Despite the vulnerabilities revealed by the coronavirus pandemic, many UK medical research charities continue to struggle to attract sufficient long-term funding streams,[44] emphasising the need for Government to look across supply chains as a whole and identify areas in which it can support private sector investment and prevent market failures for research areas crucial to our national resilience.

The commercialisation of research is integral to the UK's global competitiveness, exemplifying not only our academic and technical capabilities, but our ability to innovate, adapt and materialise invention. After many years of mixed enthusiasm under successive Governments, Whitehall is increasingly recognising the importance of research commercialisation in a geopolitical sense – establishing a transatlantic partnership between UK Research and Innovation and the US Department of Commerce's National Institute of Standards and Technology. The TenU scheme – funded by Research England – was created as part of this joint effort, bringing together ten top universities across both countries, with the aim of encouraging commercialisation and mutual interest in research for both the United Kingdom and the United States.[45]

Establishing stronger pathways to commercialise university research will require focused investment in the infrastructure needed to support these supply chains – such as research & development, venture capitalism, manufacturing, marketing, finance, and sales. UK Research and Innovation's Industrial Strategy Challenge Fund has announced plans to invest £5.6 billion from both the public and private sectors to address societal challenges faced by UK businesses, in line with themes set out by the Government's industrial strategy.[46] However, it is certainly the case that more targeted investment is needed to specifically strengthen research commercialisation pathways to work much more seamlessly between business and academia. In particular, to boost the prospects for commercialisation in areas outside of the 'Golden Triangle' in the South-East, which may be overlooked for funding and investment.[47] With the creation of a supportive and secure environment, absorbing and subsidising risk, research commercialisation has the potential to not only strengthen the higher education sector and the wider economy, but also the development of technological and intellectual innovations, which can themselves improve our resilience.[48]

Both city councils and universities will play an especially important role in embedding these links. For example, the University of Glasgow is investing £1 billion over ten years into their campus development, in part with the aim of creating a community hub for public engagement, to benefit the wider region.[49] Universities must regard integration with their wider geographic neighbourhoods as part of their fundamental mission, and recognise their own role in bridging the practical (and symbolic) divisions between universities and the places in which they reside. Indeed, the World Economic Forum recognises 'soft connectivity' as integral to cities' competitiveness. The education and research sectors can underpin this form of connectivity through the new forms of infrastructure, services and technology they tend to create or require to undertake their activities.

Beyond their own communities, higher education's contribution to the UK's strategic foreign policy, international engagement and soft power has not always been sufficiently recognised. Investments in the optimisation of research commercialisation will not only further deepen higher education's importance to the UK's economic prosperity, but will also render its role in national security more visible. Nineteen universities have been recognised by the UK Government as Academic Centres of Excellence in Cyber Security Research, as part of the National Cyber Security Strategy, for their integral contributions to national security. These universities provide expert academic input into Government policy, help train researchers, and to promote the UK's academic research on the world stage. The University of Cambridge,

for example, founded the Cambridge Cybercrime Centre in 2015, bringing together computing, criminology and law experts to better understand online criminal activity, while the University of Surrey is leading innovation in applied cryptography.[50]

It must also be acknowledged that at present, aside from domestic vulnerabilities such as financing and commercialisation environments, research pipelines also face external threats, with our strategic rivals increasingly seeking to embed themselves in both research and commercial supply chains. Many of these activities are strategic and centrally organised: for example, acquiring intellectual property is central to the Chinese Communist Party's 'military-civil fusion' doctrine, and its 'Made in China 2025' strategy makes clear that the nation's central focus is developing emerging dual-use technologies, which often have both commercial and security applications.[51]

The UK Government is becoming increasingly attuned to these threats to our supply chains, implementing the Academic Technology Approval Scheme (ATAS), in which an ATAS certificate is needed for postgraduate international students studying subjects relating to military technology, outside of the EU and selected countries.[52] During his time in office, former President Trump issued an executive order to suspend Chinese graduate students and researchers entering the United States in May 2020, and facilitated the arrest of multiple Chinese researchers accused of concealing their ties to the Chinese military on their visa applications – a hard-nosed approach that is likely to continue under President Biden.[53]

As such, in promoting the commercialisation of research – which may indeed involve attracting investment from international companies – the UK Government should also consider the integrity of end-to-end supply chains for outputs crucial to our national advancement and security. There will undoubtedly be types of research in which it will be hugely advantageous in the longer term for the UK to safeguard its intellectual property and the commercial application of this research, through end-to-end UK-owned and -led supply chains. It will be especially important to ensure that the necessary safeguards are in place at the early phases of research commercialisation, in which patents and other internationally recognised forms of intellectual property management can be determined. There is no doubt that our strategic rivals and many of our allies are also undertaking such decisions, and therefore just as crucial as supporting investments in domestic skills, education, innovation culture and technology, will be ensuring that the fruits of these labours are able to continue to return dividends to the British people and the British state.

The Green Recovery

The UK Government has described tackling climate change and biodiversity loss as its 'number one international priority'. The Integrated Review announced the intention to accelerate the UK's transition to net-zero carbon emissions, including a ten-point plan for a 'green industrial revolution'.[54] Achieving these ambitions will require radical thinking and action from all levels of government, the private sector, and citizens themselves.[55] However, although climate change adaptation is often discussed in reactive terms, it is also the case that bold investments in the technologies, industries and skills needed to undertake this will also support the longer-term economic and national security resilience of the United Kingdom.

The combined jolts of Brexit and the coronavirus pandemic may provide the impetus for this kind of 'scorched earth' approach, enabling policy-makers to think outside the traditional constraints and electoral logic of the embedded economic and political model. As with the shift to a digital form of warfare in the 21st Century, the transition to a green economy is both a necessity and an opportunity for the United Kingdom – an area in which the foundational building blocks exist for the UK to gain a competitive advantage, as we and our allies and strategic rivals are forced to respond to the evolving realities of the climate crisis. Although all nations will need to develop their own individual plans for tackling national emissions and contribute to advancing collective global action, there are clear economic and strategic advantages for those nations which are able to stand as leaders, not followers, on international policy.

In particular, those who are able to become authentically associated with decisive global leadership will not only reap the benefits in terms of national resilience and economic growth, but will ensure that the pathway to net-zero is designed in their image. Moreover, that they become a source of knowledge, advice and technological solutions for others in the international community, and that they secure the reputational, and soft power benefits conferred by driving positive change in this urgent policy area. A competitive environment encouraging a 'race to the top' on climate change may appear far-fetched at this particular point in time, but it is also true that these moods can shift quickly with the right critical mass of global leadership. Both the United States and the United Kingdom are seeking to encourage such an environment, but are limited by the increasing power and inconsistent actions of many of the world's largest emitters.

China's recent five-year plan to reach carbon neutrality by 2060 only commits to an 18% reduction target for "CO2 intensity" and 13.5% reduction target for "energy intensity" from 2021 to 2025, and many of its proposals, such as a carbon emissions cap, remain vague and noncommittal.[56] The UK's hosting of the G7 and COP26 Summits provides a timely opportunity for the UK to show its strength as a credible global leader on climate action, but also to demonstrate the ways in which the journey to net-zero can be undertaken in a manner that boosts economic growth, shields citizens from the asymmetrical burdens of the transition, and ensures climate action becomes a source of strength, not vulnerability, to governance in both advanced and developing nations.

As President Biden noted at his recent Leaders' Summit on Climate, 'within our climate response lies an extraordinary engine of job creation and economic opportunity', emphasising that a commitment to emissions reduction provides the opportunity to 'create millions of good-paying, middle-class, union jobs'. President Biden's Infrastructure Plan includes measures such as a $174 billion investment to boost the electric vehicles market and a $100 billion investment in America's power infrastructure, with the aim of creating more than one million jobs a year in energy efficiency and renewable sectors.[57]

While domestically, the UK is making significant strides in climate action, more can certainly be done to harness the nation's existing and emerging strengths in renewable energy. Iceland is leading the way in this process, with almost 100% of its electricity production coming from renewable sources. To achieve this, Iceland established strong cohesion between its Government, municipalities and the public, and invested heavily in the early stages of hydro-power development, which not only attracted international industrial energy users, but also empowered

local communities to engage in a green transition.[58] Valued at just under £50bn, the UK's low carbon and renewable energy economy already makes a significant contribution to the nation's economic output, and our geographical placement provides a natural advantage in terms of high levels of wind, solar and hydro power capabilities.[59]

Green hydrogen production is a particular asset in the UK's green energy sector, and plans for the first hydrogen-powered neighbourhood, village and town should outline a path that could help to transform local economies through the regions. Sectoral groups, such as the UK Hydrogen and Fuel Cell Association, have designed roadmaps to increase green hydrogen production, which call for more research and development funding and a financing model to drive lower consumer prices.[60] These groups hold unique purview over the areas in which strategic state investment can best be targeted, and should be considered constructive partners for Government as it seeks to achieve its ambitions.

The UK is also the largest producer of offshore wind energy in the world. While historically, wind energy has been one of the more expensive methods of energy production, offshore wind costs are now 46% lower than predicted in 2016, presenting significant opportunities for further growth.[61] The UK Government's £160 million commitments to invest in quadrupling the UK's offshore wind production by 2030, including through investing in two new offshore wind ports in the Humber region and Teeside, will also aim to bring 6,000 jobs to Northern England in support of the Levelling Up agenda. However, this investment is significantly less than the £19 billion that was privately invested in the UK between 2016-21, and far from the level of investment required for the UK to continue to lead in wind production.[62]

Tidal power is also another relatively untapped resource, with estimates forecasting that the global market could increase to £76bn by 2050.[63] The UK Government has funded research and development within this sector, however much of the funding stopped short of putting these devices into commercial use, and as such, France and Canada are quickly catching up to the UK's lead. For example, the Government rejected the £1.3 billion Swansea tidal lagoon scheme in 2018 due to the high project cost, despite the fact it could potentially have provided the UK with a strong supply chain, a new export industry, new jobs, and a source of reliable clean energy.[64]

Crucially, renewable energy production is place-based. It brings in large numbers of workers, in jobs that may well be stable, secure and well-paid, to areas which may otherwise have felt 'left behind' in the transition to a digital- and services-led economy. For example, renewable energy production in Scotland supported 46,000 jobs and generated a turnover of £11 billion in 2017. Recent estimates show that approximately 1,500 jobs are created per gigawatt of renewable energy that is created within Scotland.[65]

Community energy schemes also enable citizens in towns without proximity to major plants to benefit. The National Trust are increasingly investing into community renewable projects, for example partnering with a local community in North Wales to develop a small hydro-power scheme along the Anafon river.[66] Not only will this improve energy efficiency and help to reduce carbon emissions, the income from the sale of energy from the plant will be invested in educational opportunities and income-generating infrastructure, such as a village shop, supporting economic regeneration in this small Welsh town.

Looking to the Future

The UK's green technology sector has experienced a turbulent few years, as Government seeks to test the nature and scope of its role in its advancement. Between 2014 and 2018, the number of Britons employed in green jobs fell by 11,000, and the number of green businesses fell by 5,000 over the same period – volatility driven in large part by changes to solar power subsidy policies.[67] However, with the full scope of political will behind the green agenda, and the urgency in the recovery from the coronavirus pandemic to focus on building a more resilient economy, there is an opportunity to start a new chapter, and every reason to be confident in the sector's future growth in the aftermath of the pandemic.

Undoubtedly, there is precedent for economic disruption to precipitate growth in new industries. After the 2008 financial crisis, green energy became one of the UK's fastest growing industries, with the offshore wind industry, for example, increasing its economic contribution by almost 17% in the aftermath of the crash.[68] Such growth is likely to be replicated following the coronavirus pandemic. Before the pandemic, the UK Government predicted that the low-carbon economy could grow by 11% per year up to 2030, significantly above the predicted average 1-2% growth rate of the UK economy as a whole.[69] Encouragingly, although much of the existing digital economy is concentrated in the UK's leading cities, there is evidence to suggest that significant numbers of new jobs along the path to achieving net-zero by 2050 could be generated in less prosperous regions.[70]

In the North West of England, for example, there are significant prospects to increase the nation's wind capacity and nuclear operations, and in the North East, and Yorkshire and the Humber, employment opportunities are expected to be found in Carbon Capture & Storage plants, the installation of bio-energy facilities and the production of hydrogen to support de-carbonisation. At the same time, it is predicted that the East of England could foster 119,000 jobs in low-emission vehicle and component manufacturing, and low-carbon financial and IT services. Research from the Local Government Association has argued that through job guarantees and back-to-work programmes, combined with skills training and the right strategic investment, nearly 700,000 direct jobs could be created in England's renewable energy and low-carbon economy by 2030, with the potential to rise to 1.18 million by 2050 – many of which could be in areas desperate for new routes to prosperity.[71]

Adapting our regional economies to the 21st Century does not necessarily mean mothballing the industries of the past. In the North East and West Midlands, where the automotive industry accounts for more than one in six manufacturing jobs,[72] proactively embracing the transition to electric cars could help this sector become more resilient during a period of structural economic change. The Government has committed £1.3bn to accelerate the roll-out of charging points, £582m in grants to buy zero (or ultra-low) emission vehicles, and almost £500m investment for the development and mass-scale production of electric vehicle batteries. Of the 1.18 million jobs that could be employed in the low-carbon and renewable energy economy by 2050, 14% are projected to be directly involved in the manufacturing of low-emission vehicles and the associated infrastructure.[73]

Indeed, in its jobs and skills report, the UK Automotive Industry found that the main reasons for unfilled vacancies in the green automotive sector were unanticipated business growth, the lack of availability of skills in the job market, and competition for scarce resources. Improving talent pipelines with schools, colleges and universities will be essential to helping the sector achieve its expansion ambitions and overcoming this entirely needless obstacle to regional growth during a period in which the UK has a fleeting opportunity to seize a competitive advantage.[74]

There is a double dividend to creating new employment in green industries, because, like technology jobs, these careers will tend to be more resilient in the medium-term economic environment – both in light of the pandemic and the growing political salience of the climate emergency. As Sharan Burrow, the General Secretary of the International Confederation of Trade Unions, noted, "there are no jobs on a dead planet".[75] Sustainability jobs are increasingly regarded as central to businesses' operational and reputational objectives, and are therefore increasingly classed as 'business-critical' while other jobs suffer from hiring freezes. This demand both fuels and responds to the marketplace competition for talent, meaning employment in the renewable energy sector tends to be better-paid.[76]

However, it is also true that this salary premium in part also reflects the skills requirements of the positions; within the green energy sector, 59% of employees have had a university education. These well-paid, high-skilled jobs also appear to offer a greater level of work satisfaction, in part because of the conditions and in part because of their rewarding substance in contributing to action on climate change.[77] The central challenge, and opportunity, is therefore not only to encourage and support companies to continue to invest in these types of positions, but to create pathways for more Britons to be considered sufficiently skilled and equipped to access them.

The nuclear, heat pump and low-carbon services sectors are already facing significant skills gaps, and a substantial investment in education, life-long learning and re-skilling to prepare people for these roles is needed to enable the UK to capitalise on the prospects they offer for meaningful employment. The Energy and Utility Skills Group estimates the UK will need an increase of 260% workers employed in offshore wind by 2032, compared to 2018 figures. Shifting demographics will also increase the energy sector skills gap, as an estimated 600,000 positions will need replacing between 2019-2024 due to retirement. Other green energy sectors such as solar and electric cars, which currently have relatively stable supply chains, are also likely to require significant numbers of highly skilled technicians and researchers in the future.[78]

The UK's enthusiastic pursual of a green agenda is not only a moral project but an economic proposition, proactively adapting our industry mix to take advantage of the opportunities embedded within these growth sectors in the future. We have made some bold strides at home and abroad to legitimise our position in a select global community leading the pack in seizing the momentum on climate action. Nonetheless, there is still significant room for improvement. In particular, careful thinking about how best to connect the 'green recovery' project with the Levelling Up project could bring genuine dividends to struggling towns and cities and help them to become more resilient in the future. In doing so, we will cement the foundations of our domestic mandate in support of climate action, which will be essential to our capacity to lead on the world stage.

Localised Support and Resistance

Rebalancing economic growth through stimulating and supporting the green economy will require the input and oversight of local councils and city-regions, many of which are already advanced in their planning to reactively adapt to the threat posed by climate change – and could be encouraged to go further to proactively identify positive opportunities for economic growth. The 2008 Climate Change Act set out legally binding emission reduction targets, but it did not set a statutory duty for local councils to develop their own plans to reduce emissions or set carbon budgets for local authorities.[79] Nonetheless, three-quarters of local councils in the UK have already declared 'climate emergencies', and the majority have set climate change ambitions over and above the UK Government's net-zero 2050 ambition. The 'UK100 pledge', a network of locally elected leaders who have committed to supporting efforts to achieve net-zero by 2050, allows councils to share best-practice examples, collaborate and advocate directly towards the UK Government on climate issues.[80]

On a practical level, many councils are challenging themselves to identify distinct local offers for their areas in the green economy of the future. For example, the Kent and Medway Energy and Low Emissions Strategy outlines ambitious plans to reduce carbon dioxide emissions by 60% by 2030, and to deliver a clean energy supply that is both resilient and affordable, through an integrated approach. Kent has increased the installed capacity of its solar and wind power, energy-from-waste and Combined Heat and Power by more than seven times between 2012-17 and has outlined plans to increase its renewable energy capacity through the extension of one of its wind farms. This would make Kent the largest producer of renewable electricity of any English county, and highlights how with the right strategic leadership, regions across the UK can leverage their own specialisms within climate action.[81]

The UK Government could work more closely and productively with councils to ensure greater alignment and cohesion between local activities and national targets, ensuring that these targets are considered in council decision-making around issues such as infrastructure development.[82] As ever, financial constraints on local council budgets will necessitate creative thinking and strategic planning capabilities; however, there is an argument to be made that the direct local accountability and accessibility of councils to citizens' lives may mean they are a more effective advocate for supporting a green transition with the consent of local populations.[83]

The BFPG's surveys make clear that there is widespread support for the UK playing a leading role in promoting global action on climate change, and many individual citizens are willing to play their own part in helping the UK to collectively advance this ambition.[84] Other surveys have also identified strong levels of enthusiasm for the UK Government's plan for a 'green industrial revolution'.[85] However, public education regarding the dramatic shifts required on an economic and social level to mitigate climate change remains low. Almost two-thirds of Britons have not heard of 'net-zero' and are unaware of the individual shifts that will be required to achieve this goal, despite current evidence suggesting that 60% of emissions reductions will need to come from consumers' behavioural change.[86]

Raising awareness of the economic benefits of moving towards net-zero will therefore be crucial in off-setting some of the resistance we can anticipate towards both local and national governments' climate action policies. This will be especially important in communities that have already suffered heavily from the de-industrialisation processes of the 1980s and 1990s, and which may be inherently sceptical of the support they will receive during the next major economic upheaval. As it stands, three-quarter of Britons agree that climate action can help to foster jobs and opportunities in the UK, and 67% believe that these could be generated within their own communities;[87] however, it is reasonable to expect that this optimism may well be challenged over the coming years as climate change moves from an abstract, future space into the day-to-day grind of political debate, and regulatory interventions begin to be felt more acutely by individual citizens.

There is currently mixed evidence regarding the relationship between local climate initiatives and support for climate action. Investments in turbine factories at green ports in Hull have helped to generate new employment, which has stimulated local public support for action on climate change.[88] However, although the British public are conceptually supportive of wind energy, the building of wind farms often sparks protests in local communities. In Limekan and Drum Hollistan in Scotland, for example, proposals to build seven new wind turbines have divided the community, with some local residents affronted by the aesthetic implications and others welcoming the economic benefits the wind turbines may bring to the region. A number of these anti-windfarm campaigns have gained significant traction, with celebrities backing campaigns against an offshore wind farm off the East Anglian coast, claiming that the region is a 'tremendous protected landscape'.[89]

However, it feels obvious that efforts to involve communities are more likely to be successful and sustainable in the longer term than those which seek to steamroll past them – particularly if they can emphasise the importance of consensus in community decision-making, and overcome persistent barriers to participation in the process from socially and/or economically marginalised citizens. The energy cooperative Repowering London, for example, is prioritising community engagement in the aim of building an ecosystem to support the collective reduction of carbon dioxide emissions. By bringing together local authorities and community groups, and reinvesting profits into the area, the cooperative is not only hoping to reduce emissions but also to combat fuel poverty and seed new employment opportunities. Similarly, Switched On London, a campaign coalition for clean and affordable energy, is replicating an approach taken in Nottingham, in which the local council set up the first not-for-profit local authority-owned energy company since 1948 – connecting citizens much more closely on a local level with their service provider.[90]

Demonstrating the tangible economic, environmental and health benefits of climate action will be critical to anticipating and countering the public resistance that may arise as individual citizens and consumers become more directly impacted by the transition to net-zero. It will be particularly crucial to ensure that there are structures of direct democratic accountability and consultation in place to listen to and consider local perspectives and, over the longer term, to demonstrate the tangible benefits in terms of prosperity that climate action can bring to individual areas. As ever, securing public consent will be essential to achieving the UK Government's ambitions for climate change leadership, both at home and abroad.

Safeguarding the UK's Critical National Infrastructure

The centrality of the digital realm to the UK's national security has been formally recognised by the UK Government for some time. There has been a consistent acceleration in measures since 2010, when cyber-attacks came to be framed as a 'top-tier threat to national security', and the Huawei Cyber Security Evaluation Centre was founded.[91] However, the diffuse and complex nature of the threats posed by the digitalisation of warfare and influence operations to the UK's critical national infrastructure necessitates constant adaptation. There has been a sense over recent years that the UK's security approaches were at risk of falling behind in a period of profound dynamism. In July 2020, the UK Government banned the purchase of new China-owned Huawei 5G equipment by telecommunications suppliers after the end of 2020, and mandated the phased removal of all Huawei's 5G equipment by 2027.

This decision bore profound costs, delaying the roll-out of the nation's 5G capabilities, which are needed to maintain the UK's global competitiveness.[92] However, the growing awareness of the fundamental centrality of communications networks to the UK's prosperity, security and well-being, rendered the prospect of a 'halfway house' approach untenable. The price of the shift in Government thinking has been compounded by the distinct lack of alternative off-the-shelf options produced within the UK or among our allied global partners. As with many other areas of infrastructure, Huawei's 5G technology is currently significantly more affordable and accessible than other options, and able to be rolled out with greater haste. Huawei is approximately 30% cheaper than Nokia and Ericsson, currently the only other two companies in the market able to offer 5G technology.[93] Hence, the attributes that have made Chinese-led infrastructure so popular and compelling to the developing world were also major factors in decision-making in advanced liberal democracies.

There is a broad consensus, acknowledged by the UK Government, that over the last 40 years the UK has failed to prioritise infrastructure regeneration – despite the fact that our strong regulatory frameworks and favourable business environment mean we are well-placed to support such investments.[94] The Government has announced that its Levelling Up agenda will place a strong emphasis on infrastructure stimulation as a key driver of regional economic growth; however, it is increasingly difficult for individual nations to fulfil their end-to-end infrastructure supply chains without external investment, products and services. Having recognised the risks of these roles being fulfilled by our strategic rivals, the UK must seize the opportunity to drive a spirit of collaboration and collective innovation amongst our liberal allies.

The UK's Critical National Infrastructure

The UK currently faces areas of vulnerability across all 13 of its critical national infrastructure (CNI) sectors. The risks we are facing are proliferating, with new threats such as nuclear industrial accidents, efforts to 'undermine democratic processes', serious and organised crime, and commercial failures, all added to the National Risk Register in 2020.[95] Between 2018-19, the UK deterred over 300 state-backed cyber-attacks, the majority from North Korea, Russia, Iran and China – with Russian and Iranian attacks particularly targeted towards the UK's critical national infrastructure.[96] Although direct state attribution is sometimes possible, many contemporary incursions are pursued by non-state actors, proxies and obscure hybrid actors, which can be more difficult to identify and hold accountable.[97]

Although election interference justly receives a significant degree of attention, many digital infiltration operations are less explicitly focused on democratic structures – targeting consumers, businesses, and research institutions. Almost half of UK businesses, and a quarter

of charities, experienced a security breach or cyber-attack between 2019-20, with one-in-five of these leading to significant loss of money or data. The global insurer, Hiscox, estimated that on average, there are 65,000 attempted cyber-attacks on small businesses in the UK per day.[98] Aside from their costs to individual businesses and the collective economy, these attacks challenge the UK's open and entrepreneurial financial culture, bear down on citizens' confidence in systems, and influence their general feelings of safety and security.[99]

In 2020, both Russian and Chinese intelligence services targeted the European Medicines Agency to steal documents relating to Covid-19 vaccines and medicines.[100] In January 2021, British telecommunications companies and internet service providers were hacked by individuals linked to Hezbollah. The proliferation of threats, across different spheres of influence, and by different types of malignant actors, is spreading resources thinly. During the Cold War, 70% of Government Communications Headquarters (GCHQ) intelligence resources were directed towards the Soviet Union, but by 2016, just 10% of GCHQ resources were able to be focused on the ongoing threat posed by Russia, due to the need to monitor and respond to influence operations from China, North Korea, Iran and other non-state or state-sponsored actors.[101]

Failures of critical national infrastructure can be catastrophic, with serious implications for citizens' health and safety, national economic performance and social cohesion. Many of these risks have now taken on a cyber component, as digital technologies are increasingly integrated into the hardware of many of our most fundamental public services. For example, in February hackers in Florida gained remote access to a city's water treatment plant, altering sodium usage in the water – an attack that, had it gone undetected, could have led to mass poisoning.[102] While traditional cyber security threats, including intellectual property theft, espionage, or extortion by ransoming data and malware,[103] continue to wreak havoc, the pace of innovation and the entrenchment of digital services within our economies and societies is raising the stakes in geopolitical terms.

In the United States, the Department of Homeland Security has warned of the threat of digital authoritarianism, in which the internet and online platforms become a central aspect of the public sphere in which both national governments and foreign states are able to exert influence, control and coercion over citizens. The Department has warned that, 'if oil was the commodity synonymous with the industrial age, data is the coveted resource of the digital age', and claims that China is attempting to shape information flows in line with their own security interests.[104] The geopolitical dimensions of digital governance have heightened anxieties about the balance to be struck between defending an open, diverse and democratic public sphere online, and the increasing need to protect both citizens and state alike from interference operations – a discussion that will undoubtedly dominate much of the next decade of international relations. Not least of all, because much of the infrastructure underpinning our digital world, including social media platforms, are owned by enormous corporations that have not always felt responsible for upholding democratic political systems, policing national security, and defending social cohesion.

In the UK, much of our CNI even beyond the digital sphere is currently owned by private sector organisations, and has therefore not always fallen within the UK Government's jurisdiction to monitor, regulate and legislate.[105] At the same time, public-private partnerships appear to be especially effective at maximising the benefits that services focused on critical national infrastructure resilience can deliver towards local economic growth. If state contracts are awarded tactically and with care, there is no doubt that they can support the creation of a supply chain ecosystem populated by local small businesses. The potential added value of the private CNI protection market, for example, is expected to grow at a compound annual growth rate of almost 7% between 2021-26.[106] The adoption of cloud computing is driving the market, which will be particularly important for the development of smart cities, and which will in turn require further critical infrastructure protection measures.

The emergence of small businesses working with the UK government to improve public services – called GovTechs – has resulted in a thriving new digital economy. Employer demand for cyber security provisions is also growing by up to 3% every year, which is stimulating both employment

and business growth, and fostering a culture of innovation in surveillance, monitoring and recovery products.[107] The UK Government has been establishing working groups, programmes and projects across a range of departments and agencies, including DCMS, the Department for Health and NHS England, to work directly with both established and emerging sectors on security and resilience planning.[108]

Part of the process of auditing the UK's resilience vulnerabilities will be to determine where it is most efficient for the state and the private sector to lead. We must determine how best the state can act as an investor, underwriter and safeguard to ensure full oversight over areas of the nation's CNI, and where the market is better-placed to generate solutions, employment and economic growth. The provision of broadband and digital connectivity, sustainable energy supplies, upgraded transport infrastructure, and shielding communities from extreme climate events,[109] are all examples of critical resilience investments where both the state and the private sector can play a role, and which have the potential to stimulate business creation and generate meaningful jobs.

Collaboration with Allies

In 2015, China added the 'Digital Silk Road' to its wider Belt and Road Initiative, specifically focusing on advancing technological infrastructure. It took a number of years for the full weight of this signal from China of its intent to invest heavily in cementing its dominance as an infrastructure provider into the 21st Century economy to be fully absorbed and understood. The implication was that China's size, wealth and efficiency were to be focused on gaining a dominant foothold in the global marketplace for increasingly valuable commodities, rendering liberal and free-market alternatives struggling to compete.[110] In deciding to ban Huawei from its 5G infrastructure, the United States noted that the dominance of one nation or provider in technology provision was especially problematic because both governments and businesses tended to continue upgrading on existing platforms, as the sunk costs of unique technology frameworks tend to be significant. This could afford China a long-term structural advantage that would further raise the barriers to competition for liberal alternatives. Under the CCP's 2017 National Intelligence Law, Chinese individuals, organisations and institutions are legally mandated to support, assist and cooperate with state intelligence work, including surveillance.[111]

In its decision to restrict and strip out Huawei from its communications networks, the United Kingdom joins a diverse range of allies and other partners, including the United States, Australia, Japan, Sweden, Poland, Romania, Luxembourg and Taiwan. Other countries, including France and New Zealand, have not explicitly banned Huawei, but have put some restrictions in place towards a phasing-out process. However, there are a number of notable absences in this growing alliance of states, with Ireland, the Netherlands, Switzerland and Austria continuing or planning to use Huawei's 5G technology in their communications networks.[112] This lack of consensus amongst liberal nations about the best way in which to balance the risks posed by Huawei against the benefits it offers in terms of speed and price speaks to broader inconsistencies in the positions that nations are adopting towards this powerful, increasingly hegemonic authoritarian state.

It is patently clear that liberal nations have failed to rise to the challenge of the particular threats posed by a state that operates seamlessly between the government, military and market. Yet, the growing awareness in advanced liberal democracies of the need to better securitise citizens against the asymmetrical impacts of globalisation, and the catastrophic effects of the coronavirus pandemic, are promoting more radical thinking about how to better harness the unique qualities of both the state and the private sector. This conceptual shift should be harnessed and extended to liberal alliances old and new, to access the full potential of pooled resources and collective efforts towards national security.

Some early efforts at cooperation suggest the potential for such an approach to eventualise. In 2019, Western allies called the Prague 5G Security Conference, a meeting of representatives from 32 countries, in which the Prague Proposals were established – an agreement securing

5G global deployment through trusted vendor innovation. The Proposals outlined a set of key recommendations and best practices for the implementation of 5G, including security considerations. Unfortunately, however, they were non-legally binding and fairly vague, to account for the fact that nations are at different stages of 5G implementation and to allow flexibility for nations to address their own unique security concerns.[113]

Following the conference, there were calls for Western partners to work together to develop Open RAN architecture, which would allow multiple companies to supply different parts of 5G networks, speeding up the process in which liberal nations could compete with China on both price and efficiency. The Open RAN Policy Coalition, a group of 60 global tech companies including Google and Vodafone has since formed, as has the ORAN G4, a group of European telecommunications companies, both with the objective of advancing interoperable RAN solutions.[114] However, calls by both groups for government funding to support the Open RAN ecosystem have thus far not been heeded.[115]

It has also been suggested that a D-10 alliance of liberal democracies could provide the basis on which to shift thinking from national to collective resilience. In May 2020, the UK Government extended invitations to Australia, South Korea and India to attend the G7 Summit being hosted in Cornwall in June 2021. South Africa has also subsequently been invited to join a portion of the conference.[116] The decision to invite delegations from the three Indo-Pacific nations raised particular interest amongst foreign policy communities, as it was taken as a signal that the United Kingdom will leverage its global leadership roles this year to lay the groundwork for new forms of cooperation in the 21st Century – specifically, to explore the feasibility of a 'D-10' alliance of democracies. Ultimately, the breadth of domestic and international issues surrounding the G7 pushed discussion about the D-10 off the agenda and there were no formal statements made about it in the communiqué; however, it is possible that it will be pursued through other forums.

The D-10 idea remains in its conceptual infancy, with key elements of its practical realisation – such as its defining criteria, the scope of its mission and its relationship to existing partnerships and institutions. It is thought that a D-10 alliance could help to pool not only research and development investments and resources, but facilitate the sharing of best practice standards, regulations and governance frameworks to support trade liberalisation, supply chain residence, and strengthen national security. In particular, it is expected that one focus of such an alliance would be towards remedying the challenges of liberal competitiveness around technology and infrastructure.[117] The degree to which this ambition would be expressed in terms of an explicit focus on China, or a more implicit emphasis on countering the dominance of authoritarian states, is unclear. Although, the choices made in the framing of the Integrated Review perhaps signal the latter.

There has been some discussion in diplomatic circles around the need to develop a more cohesive approach to relations with China amongst leading democratic nations – particularly in terms of the position towards China's role in the international community and within global institutions. Yet, it is unclear as to whether the D-10 concept will be able to rise to this challenge, as a considerable degree of heterogeneity remains in nations' strategic choices towards China, and their institutional understandings of critical national infrastructure. Moreover, some nations – including France and Japan – remain unconvinced of the value of developing such a new partnership, particularly at a time when other alliances and multilateral institutions are under pressure to reassert their ongoing value. Certainly, the resources and capital required to bring a concept such as the D-10 to life are significant, and some kind of secretariat and other organisational infrastructure may well be needed.[118]

Given its emphasis on intelligence-sharing and security, there is undoubtedly an opportunity to deepen the proactive cooperation within the Five Eyes alliance – particularly given all of its member nations are currently going through a re-evaluation of their conception of natural resilience, and face many of the same challenges in terms of the sustainability of their supply chains. For example, over the past decade, China has produced 90% of the world's rare earth elements supply, and in 2018, the CCP outlined ambitions to build a 'Polar Silk Road' to further

monopolise its ownership over mineral production. The Polar Research and Policy Initiative has called for a Five Eyes Critical Minerals Alliance with Greenland to establish a supply chain of rare earth metals, which would harness UK energy and Greenland's mining resources to establish a secure, independent supply chain.[119] Western leaders must project their scenario-mapping into the future, to consider the scarce materials that will become increasingly contested in the coming years and decades – whether those needed for consumer technology products, facilitating citizens' health and well-being, agriculture, water provision, or defence infrastructure, such as satellites and lasers.[120]

Nevertheless, even within this most cohesive of existing alliances, stumbling blocks remain. New Zealand has recently made clear that, despite the common concern amongst its fellow Five Eyes members regarding China's recent behaviour, it does not feel that the Five Eyes is the best forum in which to be confronting the Chinese Communist Party.[121] A consistent theme of the past few years appears to have been the recognition that many of the alliances and institutions that currently exist are simply unable to adapt to the particular set of circumstances demanded by these times, and yet both practical and conceptual obstacles continue to persist in the formulation of new forms of alliances. The West and other democracies and nations with a stake in economic liberalism appear to appreciate that cooperation will be central to ensure the future of the open world order, and yet are trapped in a state of inertia about how best to facilitate this cooperation. Given our historical role in the architecture of the liberal world order at stake, the United Kingdom carries a particular responsibility, and skill, in ensuring the actualisation of these ambitions.

Building Public Consent and Civilian Resilience

Securing the Consent of the British People

Public opinion on foreign policy has traditionally been shaped by political leadership and media narratives; however, as advanced democracies move into periods of greater social instability and governance becomes more challenging, the need to build public consent around all areas of policy, including international engagement, takes on a new level of urgency. The importance of securing support for the UK's foreign policy ambitions from the British public is captured in both the Brexit referendum, which in part reflected concerns about the pace and nature of globalisation, and the long-term spectre of the Iraq War, which continues to fundamentally guide social attitudes towards military interventionism. Both of these policy areas ultimately became sources of political and institutional crisis, and damaged the trust citizens held towards their elected representatives to act in and defend their interests.

Harnessing public opinion should not only be seen as a necessary aspect of the process of governance. When consent is secured in a vibrant, open democracy such as ours, it equips the UK Government and our political leaders with a tangible asset from which to enhance their strategic position. Knowing that they have achieved the informed support of the British people imbues the UK's representatives and their messages on the world stage with a degree of legitimacy that others may not be able to manufacture and replicate. Ultimately, the success of the Global Britain agenda is contingent on the strength and unity of the UK's democracy, and the endorsement given by the British people towards the values, priorities and objectives we seek to advance abroad.

The power of public consent is evident in the UK's global leadership on climate change.[122] Many years of concerted political focus on this issue has fundamentally shifted opinion amongst every major social group in the UK, with citizens now recognising both the critical risk it poses to the UK's own security and global security, but also the importance of the UK Government taking a primary role in coordinating and driving the international response to climate change. There is a clear strategic advantage to this political achievement, which exemplifies the need for some degree of consistency on foreign policy and security between governments and administrations. While other nations remain socially and politically divided within and between themselves on the issue of climate change, the considerable degree of support amongst the British people allows the UK Government to assume a more robust, authentic position of global leadership, and ensures we will be at the forefront of designing the international road map.

The transformation of public opinion on climate change demonstrates the opportunity, and the necessity, to involve the British people in discussions about our international leadership. Other aspects of the UK's foreign policy, as set out in the Integrated Review, are relatively under-interrogated in the nation's political discourse, are often complex in nature, and respond to a variety of unseen intelligence points. Britons' opinions towards these issues are generally either cautious, ambivalent, or – where strong positions are taken – reflect the influence of other social and political cues. Although Britons tend to be relatively optimistic, believe openness and connectivity are national characteristics, and are generally more positive towards globalisation than many of their counterparts in other advanced democracies, it is also true that there is some way to go before a consensus of support underpins the full scope of ambitions within the Global Britain project.

The Integrated Review outlines a desire for the UK to be a 'force for good' in the world, acting as an active defender of the liberal world order and upholding our domestic values, while recognising the need to cooperate with strategic rivals on several key global challenges. This

approach reflects a balance of pragmatism, strategic interest, idealism, and moral conviction. However, many Britons do not share the same conception of global risks and opportunities, nor do they draw the same conclusions about the UK's role in the world and how we should respond to them. These distinctions are evident in the evolving understanding that citizens hold about the meaning of the Global Britain project. While 34% of Britons regard Global Britain as meaning the UK acting as a champion of free trade and globalisation, and a further 27% believe it will mean the UK behaving as 'a diplomatic powerhouse', a fifth of Britons – and 32% of Leave voters – view this project as facilitating a Britain focused inward on issues at home.[123]

Competing forces are driving citizens' antipathy and unease towards the nature of the foreign policy being pursued by the UK Government. Broadly, one group of citizens is uncomfortable with the idea of devoting resources to international engagement, and fundamentally approaches foreign policy within a defensive frame – believing it should focus on both proactively and reactively securing the nation against the world at large. These individuals tend to carry activated security risk profiles, to be sceptical about the benefits of globalisation, and to favour reductions in foreign policy spending. Another group of citizens, whose members tend to prioritise a values-based, humanitarian-focused foreign policy, is diametrically opposed to the Conservative Party and therefore unwilling to accept its legitimacy as a foreign policy actor on the nation's behalf. These citizens are over-represented in the sizeable proportion of the population (24%) who claim to not regard any aspect of the UK's international activities as a source of pride. Both of these groups, for separate reasons, pose distinct challenges to the Government's ambitions to secure public consent for its Global Britain agenda.

Any efforts to build support amongst the British people will need to be targeted to the groups which remain consistently less engaged, informed, and sceptical of the merits of an active, open and collaborative foreign policy. These include Britons from working-class backgrounds, those without further education, women, BAME Britons, and citizens residing in less prosperous regions such as the North East of England. The first instrument of persuasion is of course understanding. It is essential that the Government is able to recognise the full ecosystem of factors which are influential in the formation of public opinion, and appreciate that these will differ considerably between groups of citizens. Moreover, that Britons from distinct backgrounds and circumstances may well come to the same conclusion, with some foreign policy opinions formed by a lack of knowledge and others informed by powerful instincts and life experiences.

For example, the Integrated Review proposes a careful balance between a values-led foreign policy agenda, and the need to engage with strategic rivals out of economic necessity and to address shared global challenges. It is clear, however, that certain groups of Britons are considerably less supportive of the values component in the UK's international engagement – and that these include citizens who are both over- and under-indexed in terms of socio-economic security. For those individuals from comfortable socio-economic backgrounds, efforts to persuade as to the merits of the UK's international values agenda will need to emphasise the degree to which these values are entrenched in the UK's national identity and unique character, and also the strategic and self-interested benefits underpinning the projection of our values. For Britons from lower socio-economic backgrounds, however, and living in less prosperous regions, the values agenda is often regarded as an unaffordable luxury, compelling resources that could be invested in promoting economic growth and advancing equality at home. For these citizens, establishing a stronger degree of financial security, and enhancing their perceptions of the nation's democratic institutions as being responsive and inclusive to their needs, will be the critical foundations of securing consent.

One of the most instructive expressions of citizens' world views and instincts on foreign policy can be found in their beliefs about the existence and distribution of benefits from globalisation. Although in some ways, globalisation is considered an abstract force, many of its primary components – free trade, global supply chains, competitive labour, and immigration – feel very tangible to citizens, and a sizeable proportion of those who hold concerns about globalisation have perceived direct, negative consequences for their own families and communities. For

this reason, Britons living in areas that have struggled to make the transition into the post-industrialised economy, and particularly older men without educational qualifications, who may themselves have held jobs that have been superseded by a digital and services-based economy, are the least likely to perceive personal benefits from globalisation and the least likely to think globalisation has benefited the UK as a whole. These Britons are then the most likely to hold 'nationalist' profiles, as opposed to internationalist instincts and globalised identities.[124]

Equally, however, these insecurities about globalisation may reflect anxieties about social and economic change, and a broader sense that the anchors of the nation are being challenged. For example, more than half of Britons perceive that globalisation increases existing social inequalities, and concerns over the impact of globalisation on national social and economic welfare are a particularly strong determinant of perceptions of globalisation.[125] These opinions are partly formed because of the enduring power of the zero-sum framework, whereby national and international policy-making is seen to be falling into competition, and the gains the UK makes in terms of its international choices are often seen to come at the expense of national well-being and sovereignty.[126] As such, both policy and political levers are required to overcome the reticence towards globalisation.

There is some early evidence that the coronavirus pandemic may make this process more difficult. Previous crises, such as the 2008 financial crash, have certainly contested citizens' support for connectivity and openness, and focused minds on the need to build national resilience – often in a defensive framework against a construction of reckless and uncontrollable global forces. In the aftermath of the crash, the proportion of Europeans regarding globalisation as an opportunity for economic growth fell, countering a broader long-running trend in which Europeans had otherwise become more favourable to globalisation. Support for globalisation fell particularly dramatically in the European countries most affected by the economic crash.[127] Perceived competition around scarce state and market resources can heighten negative sentiment towards immigration and encourage citizens to demand protection within the framework of the state.[128]

The coronavirus pandemic has not only focused attention on the volatility of global markets, and the vulnerabilities that can arise from globalised supply chains, but it has also precipitated widespread border closures and raised new potential threats, particularly health concerns, associated with the free movement of people. Particularly in nations like Australia, which have pursued an aggressive coronavirus suppression strategy, there will be a significant political task in resecuring public consent for the risks associated with migration and international travel – making clear that, when well-managed, these are heavily outweighed by the positive economic and social benefits these forces bring, not to mention their centrality to family reunion for such a multicultural nation.

More broadly, the economic disruption of the pandemic and its catastrophic impacts on government finances may further entrench the role that economic inequalities play in the formation of public opinion towards foreign policy expenditure. For example, although three-quarters of Britons believe the UK's foreign aid spending should be stopped or reduced during the pandemic, this view is most ardently held amongst those in lower socio-economic groups and school leavers. And it has become clear that Britons living under more precarious financial circumstances have been most directly impacted by the negative economic consequences of the pandemic. Around 40 percent of workers in minimum wage jobs, for example, have been at high or very high risk of losing their jobs, during the first phases of the pandemic, compared to just 1% of workers earning over £41,500.[129]

An especially interesting finding of the BFPG's research into the effects of the pandemic and the trajectory of global events on individual overall perceptions of security during 2020 was that, rather than casting a broader spectre across the population as a whole, the pandemic had intensified disadvantage and insecurity amongst vulnerable populations.[130] These include women, particularly older women, and Britons from lower social grades and without further

education. This suggests that any efforts to bring Britons from these groups on board with an open and internationalist foreign policy agenda will need to be redoubled after the pandemic, and take into account – both in terms of policy levers and political narratives – the specific concerns about economic inequalities and the security of the nation that may have been further embedded during this global crisis.

One of the apparent curiosities of the Brexit era in British politics is the fact that the choices made to enact the will of the British people in the EU Referendum, which for some voters was an expression of a rejection of certain aspects of globalisation and a reassertion of national sovereignty, have compelled the need to engage in further activities that strengthen the UK's participation in a globalised economy. In particular, the imperative to pursue free trade agreements with a large number of countries around the world, including those which may not share our values and/or our production and regulatory standards. The response to this apparent paradox is generally that the distinction lies in the fact that these activities will be undertaken through the full control and oversight of the United Kingdom Government and Parliament, rather than through a framework of implied consent via the European Union and its institutions.

It is true, of course, that many of the voters who supported Brexit and who reject some of the core tenets of globalisation – particularly in terms of being attuned to immigration and the loss of the prestige of national manufacturing – are not in any way financially insecure.[131] Moreover, concerns of voters towards globalisation are held on a spectrum. There should, however, be encouragement for those seeking to build public consent towards an active and open Britain in the degree to which citizens can be persuaded to put their trust in leaders who they feel will sufficiently respond to their need to balance engagement with security. Undoubtedly, Prime Minister Boris Johnson remains a divisive figure across the electorate as a whole, but the endorsement he has been able to secure towards his agenda amongst voters experiencing some degree of practical or conceptual insecurity is striking.

Trade has become such a powerful totem of the Global Britain agenda, that many Leave voters who previously were ambivalent or quite sceptical towards free trade agreements, and who are often themselves vulnerable to their potential impacts, have utterly transformed their opinions and are now active proponents of free trade. In turn, many Remain voters who are otherwise internationalist in their instincts have become cautious towards the free trade agreements being negotiated by the UK Government.[132] This astonishing shift in public opinion emphasises both the benefits and pitfalls of political persuasion during times of deep social polarisation, but also highlights the potential for public opinion to be shaped even in ways that transgress hard-wired instincts. In doing so, it offers a precedent that one hopes could be tested in the future in efforts to unite the nation around a positive shared vision – superseding, rather than entrenching ,the emotional divisions of the past five years.

Despite the ongoing tensions and issues pertaining to the UK's trading relationship with the European Union, the issue of trade has not really reached its full potential in Westminster as a social or political force because the UK's global trading policy has thus far focused largely on rolling over existing agreements. Moreover, the UK Government has been keen to ensure that the British public are assured that standards of food and beverages, agricultural production, environmental protocols and animal welfare – the most important issues to citizens overall – will be upheld. Although this has made the process of brokering deals with even relatively like-minded partners such as Australia more difficult than first imagined, the real tests will begin as the UK diverges away into even less comfortable terrain.

The BFPG's research has found that, although citizens' concerns are diffuse and trade continues to be a relatively low salience issue in terms of electoral politics, the ecosystem of stakeholders across a diverse range of industries is sophisticated, skilful and prepared to mobilise, so there is certainly no grounds to assume that the relative peace around this issue will continue to perpetuate as the stakes continue to rise.[133] Nonetheless, it's also important to note that, despite its centrality to many debates in advanced liberal democracies around the asymmetrical benefits of globalisation, free trade agreements are not, by their nature, necessarily designed

to disadvantage struggling communities nor entrench regional inequalities. A UK-US free trade agreement could, for example, provide benefits to areas such as the North of England through enabling increased exports of machinery and manufactured products, as well as increasing trade and investment in Wales' automotive and steel industries.[134]

President Biden's administration is increasingly positioning trade as an instrument through which to support the middle class, by focusing on domestic priorities that will boost the United States' international competitiveness. By implementing 'Buy American' federal policies to favour domestic producers, the new administration is attempting to strike the right balance of facilitating an open, liberal international order, while emphasising employment security for blue-collar workers in the United States, who have typically felt less well-served by globalisation. The Biden administration's 'American Jobs Plan' focuses on investments in infrastructure, transport and education, and seeks to radically reconceive infrastructure as encompassing not only traditional bricks and mortar, but also policy areas such as child and family care. Significantly, the Plan makes repeated references to China and ensuring the United States' competitiveness in a rapidly evolving global landscape, making explicit the link between economic renewal at home and America's strength abroad, without succumbing to a defensive and security-focused narrative that could precipitate isolationism.[135]

Of particular note is the language around "mobilis(ing) the country to meet the great challenges of our time", casting Americans as integral to a shared effort to advance the nation's successes, and the weight given to addressing issues of racial and social injustice as the bedrock of America's moral mission in the world. Equally significant is the importance placed on framing foreign policy as "delivering" for the middle classes of America. In 2019, Jake Sullivan, who has now become the National Security Advisor under Joe Biden, wrote, "The country's entire national-security strategy—the resources it allocates, the threats and opportunities it prioritizes, the events and circumstances it tries to shape, the relationships it cultivates—should more explicitly be geared toward reviving America's middle class".[136]

The obvious parallels between the thinking taking place within the White House and the UK's own Levelling Up Agenda, and the way in which the integration of domestic and foreign policy was expressed in the Integrated Review, is an encouraging development. It not only exemplifies the degree to which the shared challenges of governance that both nations face are being recognised, but the extent to which a new dialogue could begin to take place that extends beyond the traditional security framework. Certainly, the congruence in language and policy positioning on both sides could provide opportunities to approach the bilateral relationship, including the trading relationship, from a position of mutual understanding, and to find opportunities for cooperation which meet both nations' domestic needs. For example, to frame a future trade agreement in a manner that speaks to the specific concerns and aspirations of citizens in both the United Kingdom and the United States, highlighting the potential for global relationships to facilitate the 'win-win' that globalisation had once sought to promise.

After a backlash towards the Trans-Pacific Partnership (TPP), the New Zealand Government has trialled this approach to support the roll-out of its membership of the Comprehensive and Progressive Trans-Pacific Partnership (CPTPP), building a dedicated public online microsite that methodically explains how the CPTPP benefits consumers, regions, and businesses. The manner of a recent announcement by the UK Government of a new UK-India investment partnership suggests that this strategy of emphasising the direct dividends of trade agreements to the lives of ordinary citizens may well become the status quo moving forward.[137]

This tactical integration of domestic and international policy-making is not unique to this moment, nor is the notion that a country must earn its legitimacy on the world stage through its actions at home. The fact it has been resurrected at this moment, however, reveals much about the scale of the tests that governments perceive themselves to be facing on multiple fronts. The American diplomat George Kennan, who played an instrumental role in devising America's 'containment' policy towards the Soviet Union during the Cold War, wrote in 1946 that, "Every courageous and incisive measure to solve internal problems of our own society…is a diplomatic

victory over Moscow". After his retirement, he reflected that, "It is primarily by example, never by precept, that a country such as ours exerts its most useful influence beyond its borders".[138]

Although the rise of China will not replicate the suite of threats posed by the Soviet Union to the future of the West, and in many ways exceeds them, it is certainly the case that there is a degree of existentialism to the battle of civilisations bearing down on advanced liberal democracies. Not least of all, because the threats they face to their longevity and endurance are equally as profound on the domestic level. We are living in a time of a great democratic experiment, in which we are seeking to build societies that are more diverse, and more empowered, than at any other time in history. Any efforts to bring together domestic and international policy-making must skilfully address both the domestic weaknesses of public consent inherent in fragile and conflicted societies, and the international threats stemming from the rising influence of authoritarian nations set on undermining the future of democracy itself. In years to come, we will surely wonder how we believed that there was indeed a choice as to whether to undertake this integration process at all.

Citizens' Role in Building National Resilience

One of the most significant ways in which citizens can strengthen their stake in the UK's international affairs is through more directly connecting them with the nation's resilience agenda. With hybrid warfare extending threats beyond the traditional battlefield and into everyday spaces, and technological advancement simultaneously improving society's functioning and exposing it to new vulnerabilities, civilians have an increasingly important role to play in upholding the UK's sovereignty. The coronavirus pandemic has brought the urgency of civilian preparedness into sharp relief, highlighting the vulnerabilities in our systems and how a whole-of-society approach is needed to mitigate the effects of social and economic shocks.[139]

Although the state should clearly play a leading role in both safeguarding and responding to risks as they emerge, and forecasting those that may arise in the future, it is essential that citizens are also equipped with the knowledge and skills needed to play their own role in strengthening the UK's resilience. Research by the National Infrastructure Commission suggests that the UK public have limited awareness of the emerging and growing risks and threats to our economic infrastructure and the impacts this would have on the services that Britons rely on day-to-day.[140] As such, while there is a heightened sense of insecurity relating to terrorism, for example, the public has little understanding of the changing security paradigm, and how actors are increasingly targeting different aspects of our social infrastructure and foundational institutions to undermine the legitimacy of democratic nations.

The BFPG's surveys reveal that a sizeable 84% of Britons view cyber-attacks as a security threat to the nation, with almost half believing cyber-attacks from other countries are a 'critical threat' to the vital interests of the United Kingdom in the next ten years.[141] However, this awareness has not necessarily translated into preparedness, as many Britons are not necessarily aware of or inclined to defend their own individual security. There has of course been a rise in cyber-attacks during the coronavirus pandemic, as more citizens have been using their home networks.[142] As technology becomes increasingly embedded in everyday life, citizens may become somewhat numb to its risks and unable to take the necessary security steps needed, allowing opportunities for malignant actors to target these blind spots.

The significance of education in building citizens' critical thinking capabilities to help navigate the digital world has been well established, and a considerable degree of further investment has been made on critical thinking programmes in the UK, specifically targeting the potential for radicalisation and extremism.[143] However, the potential for initiatives focusing on building citizens' contribution to national security resilience – making the direct connection between the UK's strategic rivals and efforts to infiltrate and coerce for geopolitical advantage – has not been substantively addressed.

Building Public Consent and Civilian Resilience

In a more unstable global environment, and with the risk of unpredictable climate events increasing exponentially,[144] it is essential for ordinary Britons and the local government and civil society groups within their communities to be better prepared to mobilise quickly in times of crisis. In the event of floods, for example, trained civilian volunteers can assist with tasks ordinarily undertaken by military personnel, such as building sandbag barriers. During the Blitz in the Second World War, millions of civilians worked in air raid precautions and the auxiliary services, supported fire-watching, or joined the Home Guard. Others were able to help the war effort through recycling and reusing resources, as well as growing their own food to relieve pressures on food supplies.[145]

In the 21st Century, however, civic engagement in the UK tends to be lower than among many of our allies, with approximately 18% of Britons engaging in informal voluntary activities in 2015, compared to 81% of residents in the Netherlands and 74% in Finland.[146] Levels of civic engagement tend to be particularly low in less prosperous areas, with 34% of residents in the UK's most deprived areas engaging in civic participation in the last 12 months, compared to 47% of those in the least deprived areas. This relative lack of civic participation also feeds into a sense of diminished political agency, with citizens in poorer areas also less inclined to feel that they hold influence over decisions affecting their local area.[147]

Many of our allies provide interesting examples of civic mobilisation schemes, which could be adapted to the UK. The Danish Home Guard, for example, which is comprised of volunteers, is regularly deployed to undertake a range of community protection functions, and is trusted by three-quarters of Danes as a public service institution. Norway also places value on enhanced civilian-military cooperation within their Defence Strategy, and through hosting NATO's Trident Juncture 18 exercise. And in 2018, the Swedish Government circulated a pamphlet entitled 'If Crisis or War Comes' to all citizens with advice and information on how best to respond to different crises, including terror attacks and the climate crisis.[148]

The UK may not feel as though it is facing the same level of direct threats posed by times of traditional warfare, but the high levels of social cohesion and community cooperation that were able to be deployed so effectively during the Second World War are themselves the targets of foreign interference in the new grey-zone digital landscape. Efforts to strengthen our national resilience must therefore focus not only on the hardware of crisis response, but on the 'softer' dimensions of community-building, empathy, dialogue and engagement that underpin social and institutional trust. Issues of community segregation, social polarisation and failing trust in the foundational pillars of British democracy must be classified as existential risks to not only effective governance in the short term, but our sovereignty and resilience in the longer term. After all, one of the most consistently effective means of penetrating and subverting liberal democracies over the past decade has been to identify and seize upon existing tensions and fissures, and seek to exacerbate these in ways that can leave lasting scars on the social and political fabric.

The UK already has some of the architecture in place to ensure that the new skills and capabilities required to successfully navigate the evolving geopolitical landscape can be instilled in the next generation, yet many of these touchpoints are being under-utilised. Initiatives such as the CyberFirst schools programme,[149] for example, which provides accreditation to schools with exemplary cyber security teaching, could play a more important role in fostering best practice amongst education providers, while equipping young people with the knowledge and skills they need to uphold their individual resilience as citizens. The UK's National Citizen Service also now provides valuable life skills on democratic engagement, social cohesion and social mobility for younger Britons. However, compared to France's new Universal National Service, it contains a distinct lack of civilian preparedness training.[150] It is also true that, despite the advantage conferred by English remaining the 'global language', one of the areas of education that can best strengthen citizens' resilience in a globalised world is the provision of foreign language learning, an area in which the United Kingdom continues to lag behind.[151]

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It is also important to recognise that, as threats continue to proliferate and technology continues to advance, it will be crucial to engage citizens in a programme of lifelong learning, which equips all generations with the necessary resilience to thrive in this changing environment. As ever, it is much easier to project state influence and education through the schooling system, but much more difficult to reach older Britons – many of whom are the least prepared to successfully traverse the digital environment. Given the speed at which threats in the online environment are multiplying, it is not feasible to simply anticipate the dominant elevation of more digitally literate citizens into the workforce, and therefore courageous, creative investments must be made into a whole-of-society upskilling of citizens' capabilities.

Taking Forward the Integration Agenda

There are a number of ways to consider the architecture of integration between domestic and foreign policy, and an even greater number of potential remedies for tackling the issues identified within this paper. As a first step, below we present a series of priorities, recommendations and guiding principles to support new thinking that will take forward the meaningful integration of the Levelling Up and Global Britain agendas.

Building Resilience and Harnessing our Competitive Advantage

The integration of domestic and international policy must be pursued whole-heartedly and underpinned by a centralised form of policy oversight.

The Biden administration is moving ahead at a radical pace to set in train its vision to dismantle the traditional hard walls between domestic and foreign policy. The President has appointed Susan Rice, a well-known face in the foreign policy community as former National Security Advisor and Ambassador to the United Nations, to become the Director of the Domestic Policy Council. Former Secretary of State, John Kerry, the President's new climate change Sherpa, also sits on the National Security Council. The administration's American Jobs Plan (ie. the Infrastructure Bill) clearly and accessibly sets out the relationship between these multi-trillion-dollar investments and the need for the United States to remain competitive, in the face of an increasingly powerful Chinese state.

After a period in which its attentions have necessarily been entirely consumed by the coronavirus pandemic, the United Kingdom is beginning to take some decisive steps forward in enacting its Levelling Up agenda. But there does not yet appear to be a substantive, embedded relationship between Levelling Up and Global Britain – rather, a sense that incidental cohesion will be celebrated. The UK Government should establish a dedicated point of coordination within the Cabinet Office – perhaps a Minister for Resilience, or a Resilience and Integration Unit – to ensure end-to-end oversight of all the touchpoints of convergence between domestic and international policy-making, and the vulnerabilities and opportunities on both sides.

As a first step, this unit should conduct a comprehensive audit of the areas of national security weakness in our domestic sphere, and the consequences of our international engagement for domestic economic and social outcomes. The threats we face from our strategic rivals permeate all aspects of our democratic functioning and community fabric, and embedding a stronger foundation of resilience within each of these spheres will help to buttress our national security. It can then shift to more proactive thinking extending beyond safeguards, focusing on harnessing the opportunities provided through the integration agenda in terms of advancing our international competitiveness, future-proofing our economy, and strengthening social cohesion. Each core component of the Levelling Up and Global Britain agendas should be methodically assessed against the other's core objectives, which will naturally highlight areas of mutual benefit and prevent areas of competition emerging in the future, necessitating hasty back-peddling or undermining our international reputation.

On a more political level, the UK Government must appreciate that its domestic and international policies, legislation and rhetoric will now be scrutinised alongside one another, and this will create a new framework of accountability that will need to be constantly monitored. The strength of our legitimacy on the world stage in advancing our values will frequently be tested by domestic policy choices, and both our allies and strategic rivals will be

watching for areas of inconsistency. It will therefore be prudent to have a mechanism through which to be constantly sense-checking our foreign policy and domestic policy announcements – particularly in the areas of democratic rights and freedoms, migration policies, and legislative reform – and identifying any potential conflicts, so that these can be taken into account as part of the decision-making process.

The Government must integrate Global Britain objectives into the DNA of the Levelling Up agenda, ensuring security and openness do not fall into competition, and giving more Britons a stake in the globalised economy.

Just as important as embedding 'Levelling Up thinking' into the Global Britain agenda – through ensuring that our foreign policy is responsive and connected to citizens' concerns – is the shift to incorporating an internationalist Global Britain mind-set into the Levelling Up project. It will be crucial to ensure that the domestic renewal project does not become reactionary, a visceral force pulling inwards in response to the rising visibility of concerns regarding globalisation. Undoubtedly, these anxieties need to be addressed, but the remedies are not mutually exclusive to upholding an open and active foreign policy. Indeed, the pathways to softening regional inequalities and advancing the UK's economic competitiveness lie in dramatically scaling up our capabilities and output in the industries that will underpin global economic growth in the future.

The UK has core strengths in its intellectual and human capital, the proliferation of the English language, its world-class universities, and its expertise in designing and setting international standards and regulations. These provide a natural environment for us to deepen and expand our economic strength in new and emerging industries, particularly the advancement of Artificial Intelligence and renewable technologies and codifying global governance around these. Investing in the foundations of our intellectual capital – both structurally and in terms of citizens' capabilities – will be essential to building a more equitable, ambitious and globally competitive society. Forging a more productive economy and resilient society, underpinned by inclusive and responsive democratic institutions, is the best possible springboard on which we can seek to influence on the world stage.

Not only must we improve the quality of our education and skills provision, and widen access to them, but it is also essential that we help direct future and existing workers towards the more sustainable and satisfying jobs that will be created in growth sectors in the future. In particular, careers in industries that work towards strengthening our national security and sovereignty, support the transition to net-zero, and safeguard our critical national infrastructure. Renewable energy and other green industries, the research and innovation sectors, and the supply chains of new and emerging digital technologies, will be the source of much of our forward-looking prosperity, and a font of meaningful job opportunities for British workers – while helping the nation to become more resilient and better equipped to deal with the challenges of a fast-evolving global landscape.

One of the key instruments to achieving the practical integration of the Levelling Up and Global Britain agendas will lie in bridging the 'town and gown' divide, by supporting better research commercialisation ecosystems and seeding new innovation clusters around our well-established and high-performing universities. Government can play a crucial role in facilitating the alchemy of agglomeration, as it has done in several of the UK's most successful examples of fostering start-up innovation culture, and the first place to start should be in building on the assets we already hold – namely, our wealth of internationally respected universities throughout the United Kingdom. The more Britons can feel that they have a direct stake in our globalised economy, and see the benefits of business growth on the streets of their communities, the more they will be able to come to see our openness and connectivity as a source of strength, and a reflection of their own contribution to our successes.

Preventative, tactical and cohesive foreign policy will reduce the costly burden of reactivity and endlessly needing to seek renewed consent.

In considering some of the most challenging areas of foreign policy in terms of building consent – whether support for military interventionism, or international aid – it's clear that financial and reputational costs weigh heavily on citizens, as does the sense that some areas of public spending may not be delivering solid returns in terms of outcomes or direct benefits for the British people. Beyond the need to educate and engage with citizens around these policy areas and the transformative impacts of our investments, it's also patently obvious that there will be tangible benefits to embedding a stronger philosophy and more explicit rhetoric of 'preventative foreign policy'. Essentially, ensuring that our diplomatic, development, defence and trade investments are strategically targeted to minimise the likelihood of emerging security vulnerabilities, to shield us from economic shocks, and to prevent the emergence of conflicts and humanitarian crises emerging down the track.

Our foreign policy-making apparatus must strive to look ahead beyond the current geopolitical paradigm, to consider the scenarios likely to emerge over the coming decades – such as the risks to agriculture and water supplies posed by climate change, the fragmentation of the internet, emerging defence tensions in the Arctic region, the contestation of space regulation, and new pressures on international migration patterns – and begin to reorganise government to mitigate rather than simply respond. Given the fragile domestic social landscapes in many of our closest allies, it will be essential to develop our strategic foresight of potential threats to international cooperation – a process which should also be extended towards better anticipating the choices of our strategic rivals. We have been on the back foot in anticipating major structural shifts in the nature and scope of warfare, with adversaries such as Russia driving the agenda on malign digital influence operations and China methodically pursuing its own interests against Western expectations of integration or containment. Understanding the political and economic contracts within these nations will help us to better anticipate their evolving priorities and tactics.

The UK Government's push to integrate its foreign policy offer across the varied touchpoints of its activities should help to facilitate this joined-up thinking, although there are undoubtedly still practical internal barriers to break down. And certainly, the financial constraints bearing down on Government spending at the moment may render this process more difficult. As the revolutionary fervour of 2016 and the initial upheaval of the pandemic subsides, the Government must recognise the singular importance of seizing this moment to drive through fundamental structural change and create new norms for both foreign policy operations and expenditure. In doing so, to avoid the lure of passing bold ideas or intractable problems onto the next generation – a tendency which has historically so often consumed political instincts.

The UK shares many foreign policy and domestic governance challenges with its allies, and should work collaboratively with them as part of the integration agenda.

Many of the specific challenges facing the United Kingdom in the 21st Century, both domestically – such as, shifting demographics, strained democratic systems, economic insecurity, intergenerational conflict – and internationally – including, the rise of grey-zone warfare, the need to upskill in digital capabilities, the rising influence of authoritarian states – are shared amongst many of our key allies in the West. There are also many other nations outside of the traditional 'Western' alliance framework, which also carry a stake in the future of the liberal world order – whether through their interests in regional security, open trade, or the future of democracy.

As many advanced liberal nations have endured a challenging period in terms of their domestic governance over the past decade, there has been a tendency to draw inwards, and many of the traditional alliances and institutions have struggled to adapt to this more volatile period of escalating and fragmenting threats. The widespread agreement that cooperation remains essential, and that new forums of engagement and collaboration may well be needed, has not attracted a consensus as to the best path forward. There is surely a spectrum of new

cooperation points that encompasses formalised alliances with secretariats and sequenced forms of engagement, all the way down to more informal dialogues to share best practice examples of how best to respond to our collective challenges.

In particular, in integrating its domestic and international resilience and renewal agenda, the UK Government should consider how best to evolve discussions from the strategic framework of foreign policy into a more nuanced space that bridges common challenges and opportunities in terms of domestic governance – recognising the significant role these social forces are playing in shaping nations' global choices. It is entirely in the interests of Western and liberal nations to ensure that other leaders within the alliance are able to be responsive to and considerate of their domestic mandates, and there should be an emphasis on sharing insights into effective policy tools and political narratives to securitise citizens to the degree of connectivity and openness we collectively wish to uphold. This will be especially prudent during the next two years, as many of our closest allies move through electoral cycles and as the West seeks to reconstitute its combined power and influence.

Giving Britons a Stake in a Globalised World and Securing Public Consent

The British people need to feel represented, understood and connected to their foreign policy. The UK Government and the foreign policy, national security, and development communities must start directly engaging with the British people.

The strongest foundation on which we can build our foreign policy lies in the consent of the British people. Yet, despite the growing awareness of the significance of foreign policy and international affairs to domestic political identities and social tribes, few tangible efforts have been made to genuinely overhaul the process of engagement with the British people. The Global Britain project presents a once-in-a-generation opportunity to establish ongoing feedback loops by which the Government can better communicate its strategic priorities, seek to persuade Britons of the value of our foreign policy investments, and listen to and better understand the concerns, scepticism, and hesitancy of different social groups. After all, many citizens cautious in their attitudes towards foreign policy may well be responding to influencing factors well beyond the realm of international affairs, which may be rooted in the consequences of domestic policy choices.

Foreign policy and security issues are complex, but our institutions can no longer expect to secure the implicit consent of the British people without investments in education to help citizens to better understand the trade-offs that stand behind many of our choices. Equally, in a time in which the benefits of cooperation and connectivity have been fundamentally called into question, the Government and the foreign policy community must make a renewed case for the value of our global relationships, and our membership of international institutions and alliances. The BFPG's workshops and focus groups make clear that engagement itself is not sufficient to persuade, but no persuasion can be achieved without engagement.

Given that support for international activities tends to come under strain when a zero-sum frame between domestic and international spending is activated, it will be essential that advocates for an active UK foreign policy become more tangibly connected to the issues of immediate daily importance to the British people. The development sector must better position itself as allies of domestic efforts to improve standards of living, social deprivation, women's security, and educational outcomes at home. Similarly, the green sector must demonstrate its understanding of the uneven short-term financial and practical costs of many aspects of the transition citizens will be making towards net-zero, and play an active role in advocating towards the Government to ensure these can be overcome. Connecting global poverty reduction and international climate action to a national mission of advancing equality of opportunity and environmental conservation at home, will be essential for cultivating deeper and more widespread support for these agendas.

Levelling Up must extend beyond the archetypal narrative of the 'left behinds', to better address the issues of disengagement and insecurity that persist amongst other, less visible, social groups.

The Levelling Up agenda, and indeed the entire 'left behinds' discourse that has so dominated our political cultures over the past decade, is often expressed and depicted in our public life through a narrative and iconography of working-class men made insecure from the loss of their vocations in the de-industrialisation of the 1980s and 1990s. The BFPG's research makes clear that socio-economic status and educational attainment do play an extremely significant role in shaping engagement and, broadly, support for an active form of international engagement. However, it also highlights two other important phenomena.

Firstly, that there are many Britons for whom socio-economic security is not the driving factor in their scepticism towards international connectivity and openness. Secondly, that many of those who are least engaged with UK foreign policy, who feel most palpably insecure, and who carry the weakest convictions, are no longer exclusively White British men in deprived towns – but also, women, the younger generations, and/or Britons from ethnic minority backgrounds living in large urban areas. The long-term health of our democracy, and the capacity of our leaders to govern effectively, will not be secure without also addressing the needs and concerns of these social groups.

Efforts to build consent through the integration of Levelling Up and Global Britain must therefore acknowledge that the Levelling Up agenda will need to extend beyond the so-called 'Red Wall' of electorally valuable seats. It should be pursued through a whole-of-society approach, with targeted interventions to address the multiplicity of factors bearing down on the engagement of these distinct social groups – which may not be the same issues as those required to address the issues at the root cause of anti-establishment and populist politics.

Arguably, one of the best means of tackling foreign policy disengagement and isolationist impulses within certain groups is to ensure that our foreign policy community – both inside and outside Government – better reflects British society as a whole. This should include greater presence and visibility in key public-facing posts for women, ethnic minorities, Britons from lower socio-economic backgrounds, and Britons with disabilities. Over time, this should drive new talent from across the nation into our diplomatic service and foreign policy community, which will not only afford the United Kingdom a reputational or moral advantage, but a strategic and tactical edge in harnessing a more diverse spectrum of thinking. What's more, the diversification of our foreign policy-making should encourage more Britons to see themselves represented within international affairs, affording them a more tangible stake in the system purporting to serve their interests.

Conclusion

The threats we face in the United Kingdom in an era of grey-zone warfare will necessitate bold new approaches to our conceptual of national security and critical infrastructure, and enhancing our technological capabilities, and building citizens' stake in our resilience, will be essential tools in our arsenal to respond to these challenges. Equally, we can conclude that building a more prosperous, equitable and cohesive society, underpinned by a well-functioning and inclusive economy and democratic institutions, must be the foundational underpinning of an effective foreign policy. Rather than feeling overwhelmed by the plethora of risks we face, we need to bring these challenges together. We must consider where we already possess structural advantages in responding to this new landscape, and where tactical investments in our human capital will not only build our resilience but also allow us to harness the economic and social opportunities this new model could provide.

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