



Department for  
Business & Trade

Closed consultation

# **Invest 2035: the UK's modern industrial strategy**

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# Foreword

## **Rachel Reeves, Chancellor of the Exchequer and Jonathan Reynolds, Secretary of State for Business and Trade:**

Growth is the number one mission of this government. Our new industrial strategy is central to that growth mission.

This green paper sets out our vision for a modern industrial strategy – a credible, 10-year plan to deliver the certainty and stability businesses need to invest in the high growth sectors that will drive our growth mission.

There is rapid change in the global economy, and the case for governments to roll up their sleeves and shape markets rather than step back in the face of these challenges is stronger than ever. To capture the growth the UK so desperately needs, we need a modern industrial strategy to share in the next decade's growth opportunities.

This industrial strategy will provide a launchpad for businesses. It provides the firm foundation for investment that businesses have told us they need. This government believes it is our role to provide the certainty that inspires confidence, allowing businesses to plan not just for the next year, but for the next 10 years and beyond.

We will not repeat the mistakes of the past, with policy changing as fast as decision-makers. To put an end to the policy merry-go-round, we are going to establish a statutory Industrial Strategy Council, hardwiring stability and long-termism into our plan from the start.

In its drive for growth, the industrial strategy will take advantage of the UK's unique strengths and untapped potential, enabling our already world-leading services and manufacturing sectors to adapt and grow, and seizing opportunities to lead in new and emerging sectors.

Jobs will be at the heart of our modern industrial strategy, supporting growth sectors to create high-quality, well-paid jobs across the country, backed by employment rights fit for a modern economy.

It plays to our strengths. Over the last 25 years, a third of our highest productivity industries were responsible for generating nearly two-thirds of our economy's entire productivity growth [\[footnote 1\]](#).

That is why our industrial strategy will channel support to 8 growth-driving sectors – those in which the UK excels today and will propel us tomorrow.

They include the services and manufacturing industries that present the greatest opportunity for output and productivity growth over the long-term.

Our strategy is unreservedly pro-business, engaging on complex issues that are barriers to investment, like:

- skills
- recruitment of international talent
- data
- research and development
- technology adoption
- access to finance
- competition
- regulation
- energy prices
- grid connections
- infrastructure
- planning

all through the lens of promoting investment.

It will be international from the start – learning and applying what works in other countries and deepening our multilateral and bilateral economic partnerships in support of growth and the growth-driving sectors.

This includes our trade strategy, renewing our commitment to free and open trade, where we're forging a closer relationship with the European Union – ensuring smoother trade and simpler processes for doing business. But we are also striking new, market-opening trade deals with powerhouse economies across the globe. Our accession to the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) is just one example.

Most importantly, our industrial strategy will be driven by what business needs to succeed.

That is what this green paper is for. An industrial strategy developed in a vacuum, detached from practical realities, is no strategy at all. It is essential that this strategy is informed by the experiences of the individuals, businesses, and local communities it will support.

We need the input of mayors and multinationals, councils and CEOs, trade unions, devolved governments, and experts to deliver prosperity through



partnership. That is why we are asking for your input now to shape what will be a shared endeavour between private enterprise and public good.

We are enormously grateful for any time you can give to answering the questions in this green paper, so that we can be informed not by abstract concepts, but by experience and evidence. Your insights will be invaluable to creating an industrial strategy that cultivates the right pro-business, pro-worker environment for the UK to soar. And it is a strategy backed by a government that respects business, wants to partner with business, and is open for business.

The industrial strategy, alongside sector plans for the growth-driving sectors, will be published in spring 2025, aligned with the multi-year spending review.

## Executive summary

The new modern industrial strategy – Invest 2035 – is the UK government's credible, 10-year plan to deliver the certainty and stability businesses need to invest in the high growth sectors that will drive our growth mission.

The strategy will focus on tackling barriers to growth in our highest potential growth-driving sectors and places, creating the right conditions for increased investment, high-quality jobs and ensuring tangible impact in communities right across the UK.

The strategy's goal is to capture a greater share of internationally mobile investment in strategic sectors and spur domestic businesses to boost their investment and scale up their growth – an essential step in achieving sustainable, inclusive and resilient growth.

This green paper sets out the government's approach and asks for your views and evidence to help develop a successful, modern industrial strategy to be launched in spring 2025.

## UK context

The UK has major strengths to celebrate and build on, such as high-quality research institutions and innovative firms, its status as a global trading nation, a recognised set of regulatory and competition institutions, the pro-entrepreneurial environment, a highly skilled workforce, and investment

opportunities across the country. But the UK also faces significant challenges.

The UK economy has faced significant shocks in recent years and has had a poor productivity record over the past decade and a half, consistently investing less than its international peers, and lagging on the performance of city regions outside London and the South East.

There is room for improvement in the adoption and diffusion of technology and ideas, as well as improving market dynamism.

## **Our approach**

The industrial strategy will be ambitious and targeted. Its primary objective is to drive growth, by taking advantage of the UK's unique strengths and untapped potential, enabling the UK's world-leading sectors to adapt and grow, and seizing opportunities to lead in new sectors, with high-quality, well-paid jobs. It will shape the type of growth being pursued. The government will also seek to support net zero, regional growth, and economic security and resilience. It will be grounded in long-term stability, a renewed commitment to free and fair trade, and a pro-business approach focused on reducing barriers to investment in the UK.

## **Growth-driving sectors**

The industrial strategy will focus on the sectors which offer the highest growth opportunity for the economy and business. Eight growth-driving sectors have been identified:

- advanced manufacturing
- clean energy industries
- creative industries
- defence
- digital and technologies
- financial services
- life sciences
- professional and business services

In the next stage of development of the industrial strategy, the government will prioritise subsectors within these broad sectors that meet our objectives and where there is evidence that policy can address barriers to growth.

Ambitious and targeted sector plans will be designed in partnership with business, devolved governments, regions, experts, and other stakeholders, through bespoke arrangements tailored to each sector.

## **Pro-business environment**

Our industrial strategy will bring forward coordinated sector-specific and cross-cutting policies that support businesses to overcome barriers and invest. By considering and listening to businesses and experts, the government can identify the most effective levers for our sectors and geographical clusters across the country. These policy areas include:

- people and skills
- innovation
- energy and infrastructure
- the regulatory environment
- crowding in investment
- international partnerships and trade

## **Place**

A core objective of the industrial strategy is unleashing the full potential of our cities and regions. The industrial strategy will concentrate efforts on places with the greatest potential for our growth sectors: city regions, high-potential clusters, and strategic industrial sites.

The government is committed to devolving significant powers to mayoral combined authorities across England, giving them the tools they need to grow their sectoral clusters and improve the local business environment through ambitious local growth plans.

Partnership with devolved governments will make this a UK-wide effort and support the considerable sectoral strengths of Scotland, Wales, and Northern Ireland.

## Partnership

The ambitions set out in this document can only be realised in partnership.

The government will engage widely through the development of this strategy, engaging:

- businesses
- trade unions
- local and devolved leaders
- experts
- international partners

A statutory, permanent, and independent Industrial Strategy Council will be established so that the strategy is informed by a broad and high-quality evidence base.

The industrial strategy and growth-driving sector plans will be published alongside the Spending Review in spring 2025.

The government wants to hear from you and collaborate on the development of this modern, ambitious industrial strategy.

## Context

The new, modern industrial strategy will be the government's 10-year plan, with a primary objective of long-term sustainable growth in our highest potential growth-driving sectors – growth that is supportive of net zero, regional growth, and economic security and resilience. The strategy will be a significant driver of national renewal and a central pillar of the growth mission.

## The UK has significant strengths

We should be clear about the UK's strengths, which create huge opportunities for stronger and better growth. Working in partnership with businesses [\[footnote 2\]](#), the government will aim to establish the right

economic conditions and remove the barriers to growth, creating a platform for economic renewal based on the UK's fundamental strengths.

## The UK:

- has high-quality research institutions and innovative firms; the UK produced 57% more academic publications than the US and 6 times more than China, in per head of population terms, in 2020, and is a world leader in field-weighted citation impact (FWCI) [\[footnote 3\]](#), a benchmark for research quality [\[footnote 4\]](#)
- is one of the world's largest trading countries, the second biggest services exporter in the world [\[footnote 5\]](#), and one of the most globally connected economies in the world [\[footnote 6\]](#), it has excellent international transport links, is the home of the global language for business, and is at the centre of the world's time zones; the UK has established comparative advantages in parts of services sectors such as financial services and professional and business services, as well as in parts of growing goods sectors such as life sciences and advanced manufacturing [\[footnote 7\]](#)
- has a world-leading track record of decarbonisation; underpinned by the world-leading Climate Change Act, the UK was the first major economy to halve its emissions, cutting them by 50% between 1990 and 2022, while also growing the economy by 79% [\[footnote 8\]](#) and the Institute for Public Policy Research suggests that the UK is already world-leading in making 1 in 3 products vital to the net zero transition [\[footnote 9\]](#); there is evidence that clean technology specialisms are spread across the UK [\[footnote 10\]](#); the clean energy mission will enable the UK to achieve clean power by 2030 and accelerate the net zero transition across the economy
- has a strong pro-entrepreneurial environment, with several of the most successful start-up hubs in Europe [\[footnote 11\]](#) and the world's third largest venture capital market [\[footnote 12\]](#)
- has a strong, diverse and highly-skilled workforce; fourth in Europe and seventh in the OECD for tertiary education [\[footnote 13\]](#); supported by an immigration system that attracts the brightest and best, with the UK being the second most attractive country in the G20 for young people [\[footnote 14\]](#)
- has a recognised set of regulatory and competition institutions; according to the Competition and Markets Authority (CMA) State of Competition report 2022 [\[footnote 15\]](#), UK markets remain relatively competitive despite modest deterioration in performance over the last 2 decades
- has a global, urban powerhouse in London – our capital is a magnet for global talent and hosts Europe's most competitive financial centre [\[footnote 16\]](#)

[16\]](#), with long-standing expertise across the markets ecosystem from asset management to insurance and exchange markets, and in growing areas such as financial technologies (fintech) [\[footnote 17\]](#) and green finance [\[footnote 18\]](#)

- leads Europe in attracting foreign direct investment (FDI) and is one of the top destinations for FDI stock in the world [\[footnote 19\]](#); recent FDI growth has been driven by a resurgence in digital investment, with the UK securing over a quarter (27%) of all European technology projects last year [\[footnote 20\]](#)

There is huge potential in our cities, regions, and nations, with sector strengths spread across the country. For example:

- city regions like Greater Manchester, West Yorkshire, and the West Midlands are burgeoning centres of modern industry
- Edinburgh hosts a major global financial centre with expertise in asset management, and approximately two-thirds of Financial Services sector employment is outside of London [\[footnote 21\]](#)
- Manchester, Leeds, Cardiff, and Belfast are home to diverse and successful creative industries clusters
- clean Energy industries are flourishing in Scotland, Wales, the North West, and the North East
- advanced manufacturing is thriving in South Yorkshire, the West of England, and beyond

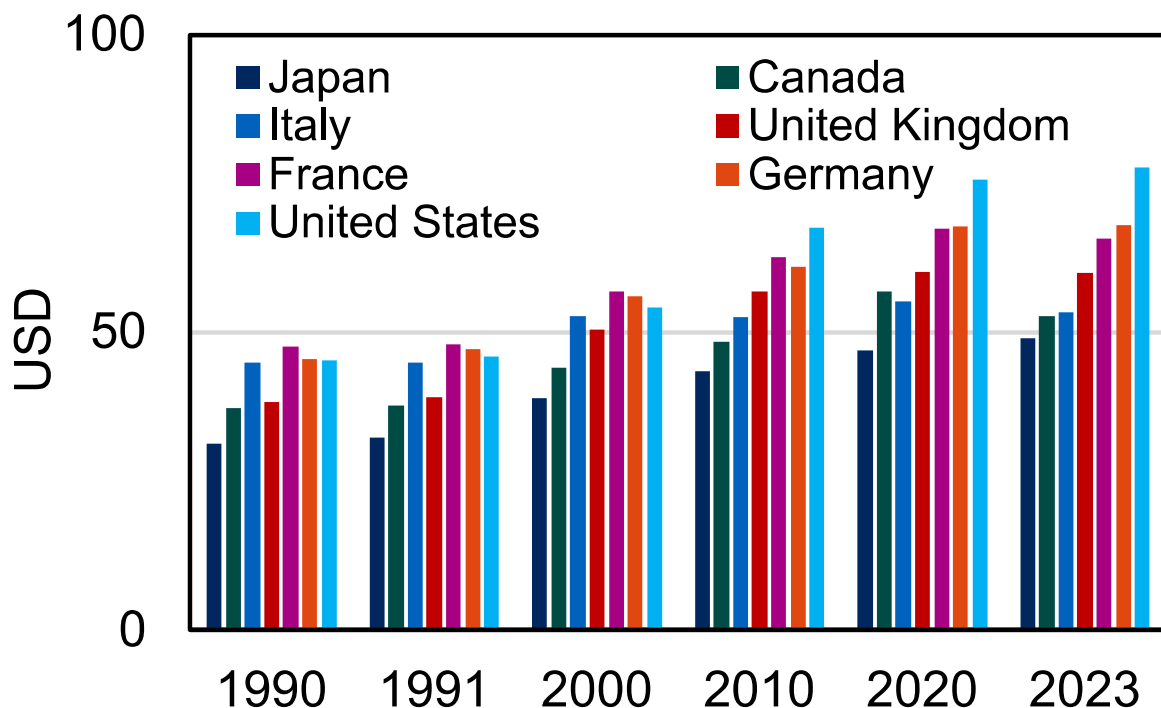
## However, the UK economy has faced a turbulent past decade and a half

In recent years, the UK economy has faced significant shocks, including the COVID-19 pandemic, high levels of economic uncertainty following the UK's exit from the European Union (which is estimated to have reduced investment by about 11% over the 3 years following the 2016 referendum relative to trend) [\[footnote 22\]](#), [\[footnote 23\]](#), and the energy price shock following Russia's invasion of Ukraine. This followed the impact of the global financial crisis, subsequent slow economic recovery, and relative stagnation in household incomes.

The UK is recovering from an environment of global macroeconomic uncertainty and a cost-of-living crisis. These conditions have led to lower consumer spending, depressed business investment, and lower job security [\[footnote 24\]](#). While the recovery has started, the economy still faces several challenges, including rising worker inactivity, and falling goods trade.

The fundamental and longer-term challenge is that the UK has experienced a slowdown in productivity growth over the last decade and a half, which is the ultimate driver of people's living standards ([Figure 1](#)). Although this productivity slowdown is not unique to the UK, it appears to have had a larger slowdown than many other advanced economies [\[footnote 25\]](#). This has contributed to a period of exceptionally weak real wage growth, with average real wages only 0.5% higher in July 2024 than they were just before the global financial crisis in December 2007 [\[footnote 26\]](#).

**Figure 1: Output per hour worked, UK vs G7 countries, 1990 to 2023**



This figure is a bar chart showing the output per hour worked across G7 countries from 1990 to 2023. The average output per hour worked in the UK has increased from just under \$40 US dollars in 1990 to \$60 US dollars in 2023.

Compared with the other G7 economies, the UK, as of 2023, had output per hour worked above that of Japan, Canada, and Italy. But had output per hour worked below that of France, Germany, and the United States. Over the 1990 to 2023 period, the UK has shown a greater increase in the output per hour worked than Japan, Canada, Italy, and France.

Source: [OECD Productivity Database \(https://www.oecd-ilibrary.org/employment/data/oecd-productivity-statistics\\_pdtvy-data-en\)](https://www.oecd-ilibrary.org/employment/data/oecd-productivity-statistics_pdtvy-data-en)

These economic challenges have occurred against a backdrop of broader and longer-term trends in the UK and wider global economy. These include the opportunity presented from:

- our transition to net zero
- continuing geopolitical uncertainties
- the rapid development of artificial intelligence (AI), digitalisation, and increased automation
- changing patterns of demand and demographics

These trends will shape the UK's economic future, which means that government needs to help capture the benefits and mitigate the costs for the industrial strategy to be successful.

The causes of the UK's productivity weakness are structural, longstanding, and inter-related with a broad consensus that there is no single driving factor [\[footnote 27\]](#). There are many drivers such as:

- macroeconomic conditions
- trade policy
- migration policy

These will be addressed within the growth mission more broadly, and other missions where relevant. The UK has closed productivity gaps before — and can do so again [\[footnote 28\]](#). To that end, we have prioritised 4 central factors that the industrial strategy can particularly address:

### **Persistently low levels of investment**

The UK has routinely ranked in the bottom 10% of OECD countries for overall investment intensity [\[footnote 29\]](#). Since at least the 1990s, the UK has frequently had the lowest share of investment in gross domestic product (GDP) in the G7.

This weakness has primarily been driven by low levels of private sector investment, though public sector investment has tended to be relatively low by G7 standards as well [\[footnote 30\]](#). Private sector investment varies significantly across industries, firm sizes, and regions [\[footnote 31\]](#). Despite FDI being an economic strength, conversely UK business investment is weak, with around 40% of firms in any given year doing no investment at all [\[footnote 32\]](#).

### **Major city regions**

The UK's economic performance is skewed towards London and the South East, while other city regions have historically underperformed relative to both the national economy and their international counterparts [\[footnote 33\]](#). Tackling this underperformance is key to raising economic growth and



reducing inequality. For the 8 largest cities outside London combined, the gap between actual and potential productivity could be worth £47 billion [\[footnote 34\]](#). With 69% of the UK population living in cities and their surrounding areas, reversing this underperformance can raise the living standards of millions [\[footnote 35\]](#).

### **Weak diffusion and adoption of technologies, ideas, and processes**

Better diffusion and adoption of both established and novel technologies, ideas, and processes is a critical part of how UK's 'follower firms' can improve their productivity. While the UK ranked fifth out of 133 countries in the World Intellectual Property Organisation (WIPO) 2024 global innovation index, it ranked only 31st in knowledge absorption [\[footnote 36\]](#), [\[footnote 37\]](#). In particular, UK firms lag in adoption of intermediate digital technologies. According to the World Digital Competitiveness Ranking, the UK ranked 20th out of 64 economies in 2023 [\[footnote 38\]](#).

### **Slowing market dynamism**

The UK has seen declining market dynamism [\[footnote 39\]](#) in recent decades. Market dynamism is the process by which markets increase the productivity of the overall economy by moving labour and capital from less productive firms to more productive ones over time. Historically, this has been the largest component of overall productivity growth, compared with innovation or efficiency improvements within firms [\[footnote 40\]](#). The job creation rate was 2.6 percentage points lower in 2011 to 2019 compared with 2001 to 2007, and the job destruction rate 2.7 percentage points lower [\[footnote 41\]](#).

The industrial strategy will need to increase market dynamism to allow labour and capital to flow more freely towards growth-driving sectors. However, economic change can create 'losers' as well as 'winners' – at least in the short term. Government needs to consider these impacts and provide the right transition mechanisms to ensure that people, places, and businesses are not left behind.

## **The rationale for an industrial strategy**

The government's growth mission will lead the way in delivering growth for all. Reforms are already underway to address planning barriers to growth, channel finance towards growth priorities, and accelerate the transition to net zero.

These will be supported by a modern industrial strategy which will implement targeted policy interventions [\[footnote 42\]](#), to drive growth where the UK has, or could develop, a comparative advantage, or to unlock barriers essential for delivering long-term, sustainable, inclusive, and resilient growth.

There is a strong case for governments to more actively direct the structure of the economy, which is gaining traction across the world in the wake of things such as:

- major shocks and long-term trends, such as COVID-19
- re-orientated global supply chains
- the global productivity slowdown
- digital transformation
- climate change

The historic debate on industrial strategies has been characterised by advocates of extensive state planning on the one hand, and equally vehement supporters of the private market on the other.

While governments pursuing both approaches can point to some successes, through the experiences of countries around the world, a new perspective on industrial strategies has emerged in recent years that takes a more practical and pragmatic view.

This approach is one that seeks to place private business, entrepreneurship, and innovation at its heart, supported by governments playing a strategic and coordinating role beyond the fundamentals of upholding the rule of law and macroeconomic stability. It is an approach of partnership between government, businesses, and workers, working together to create the conditions for sustained and long-term growth across the economy.

The UK is no exception. Since the last industrial strategy in 2017 and the Plan for Growth in 2021, global shocks and trends, alongside stagnant UK output and productivity growth and persistent regional and income inequality, have strengthened the case for a more targeted approach.

As an open, mid-sized economy, there is a need to prioritise and target policy interventions carefully in areas that will deliver the largest growth benefit. Some government policies can make greater contributions to overall economic growth when they are focused on specific sectors, places, and types of economic activity. By improving the targeting of some cross-cutting policy levers [\[footnote 43\]](#), governments can deliver better economic outcomes for the same inputs.

The government is also building the institutional capabilities necessary to set the foundations for long-term and agile policy implementation. Past industrial strategies have often not achieved their objectives because they have been too short lived – the UK has had around 10 industrial strategies, growth plans, or similar since 2011 [\[footnote 44\]](#). This is why the government is going to establish a statutory and independent Industrial Strategy Council and new partnership structures to provide stability and ensure longevity.

Actively shaping and directing the economy in this targeted way means that the government has to choose what to do – and importantly what not to do. Even when governments do not have explicit industrial strategies, they still take decisions that impact specific sectors. An industrial strategy creates a framework for systematic prioritisation to maximise growth and broader benefits.

## Targeting the industrial strategy

There are a variety of ways to approach industrial strategy. The government will take a deliberate and targeted approach towards growth-driving sectors and places, addressing barriers to growth. This should look across the economy, from services to manufacturing, from existing to emerging sectors.

The need for this type of approach is clear from the views of experts and businesses. Different sectors face different economic conditions and market failures, and hence different policy solutions. Each sector will also benefit from reforms to economy-wide policies, which can raise the overall productive capacity of the economy and help address market barriers and opportunities specific to a given sector [\[footnote 45\]](#).

First, this approach to industrial strategy addresses the need in parts of the economy for temporary catalytic government support to scale up industries, particularly those with potential for global competitiveness. This catalytic support addresses:

- dynamic effects
- external economies of scale
- information failures

in emerging sectors and in capital-intensive industries, where high uncertainty can deter private investment [\[footnote 46\]](#).

Government intervention can reduce uncertainty and support the development of critical sector-specific knowledge, and crowd in private capital to growth-driving sectors.

Second, this approach encourages competitive and innovative business ecosystems, particularly in industries with low market dynamism and high barriers to entry. It also identifies the importance of strong supply chain linkages between sectors, as supporting upstream sectors can enhance the productivity of downstream sectors.

By providing targeted support, government can foster competitive markets to improve efficiency and improve the performance of interconnected value chains, ultimately benefiting consumers through better prices, quality, and choice.

Third, this approach allows government intervention where markets are insufficiently coordinated, due to the need for simultaneous investments or complex value chains. Projects requiring extensive supplier networks or multiple production steps may necessitate government coordination through information sharing or facilitating stakeholder cooperation.

Finally, this approach allows targeted policy where certain economic activities or sectors produce positive or negative spillovers for the rest of the economy. This can lead to issues such as under-investment in new technologies where the direct – or private – benefits accruing to firms are lower than the collective benefits to society as a whole, for example, technologies which reduce carbon emissions. Or activity in one sector generates benefits for others, for example, knowledge spillovers. Government policy can address undesirable costs – internalise externalities – or stimulate activity to generate desirable benefits.

From a practical perspective, a targeted approach also helps in terms of building a partnership with business. Businesses organise, compete, and recognise themselves in terms of sectors – even if these do not always align with standard statistical definitions. Firms in these sectors are more likely to face similar barriers and opportunities to growth, making it easier to target them together.

## Objectives for the industrial strategy

The industrial strategy is a central part of the growth mission. The purpose of the growth mission is to fix the foundations of the UK economy and to kickstart a decade of national renewal in order to drive growth and to deliver on the mandate to:

- rebuild Britain
- support good jobs
- unlock investment
- improve living standards across the country

This includes promoting productivity and growth in small businesses across our economy, particularly in supply chains across our growth-driving sectors.

In its drive for growth, the industrial strategy will shape the economy, taking advantage of the UK's unique strengths and untapped potential, enabling already world-leading industries to adapt and grow, and seizing opportunities to lead in new and emerging industries.

It is essential to consider the type of growth that the industrial strategy will deliver – growth that supports high-quality jobs and ensures that the benefits are shared across people, places, and generations. To that end, it will also support net zero, regional growth, and economic security and resilience.

### **Net zero**

The UK is committed to sustainable growth – growth that is aligned with our net zero and environmental objectives.

The UK approach will demonstrate global climate leadership, including focusing on supporting the clean energy mission. It will build a strong domestic industrial base across services and manufacturing to gain strategic economic advantage – creating good, well-paid jobs in the green sectors of today and of the future. This includes opportunities presented by the circular economy.

The net zero objectives for the industrial strategy will be to:

- capture the growth opportunities of the clean energy mission and net zero transition
- identify and support clean energy industrial sectors with the greatest growth potential.
- align sector plans with net zero and environmental objectives

### **Regional growth**

Higher national growth must involve unlocking the economic potential of the UK's cities and regions, by tailoring policy to specific place-based constraints and opportunities.

There are enormous growth opportunities in city regions and clusters across the UK. Businesses co-locate in specific clusters, with their own place-based opportunities and barriers to growth. The success of the industrial strategy's growth driving sectors can only be achieved if these clusters reach their full potential, supported through a place-based approach to policy.

The regional growth objectives for the industrial strategy will be to:

- unleash the potential of UK cities and regions, taking into account regional growth when considering growth-driving sectors
- consider where sectors and relevant capabilities are located to identify clusters that can drive growth

## **Economic security and resilience**

Geopolitical shifts, COVID-19, and Russia's invasion of Ukraine have exposed vulnerabilities and dependencies within the global trading environment.

Tackling these challenges and building a strong economy are complementary objectives – the UK's long-term growth needs to be secure and resilient, including by building a secure supply of critical goods. Building on the UK's existing strengths in areas such as life sciences, renewables and emerging technologies – for example AI – the UK can grow the economy and project strategic leadership at the forefront of geopolitical competition, while being better placed to respond to future shocks.

Our economic security objectives for the industrial strategy will be to:

- promote key sectors in the economy which drive growth and strengthen economic security
- reduce supply chain and other vulnerabilities in growth-driving sectors which could harm their long-term growth or ability to deliver critical outputs
- ensure national security risks inform the approach to driving growth in these sectors

Our industrial strategy, including our partnership with the Industrial Strategy Council, will help us think strategically about how we prioritise in support of these objectives. Decisions that government and business make in the short term will have lasting impacts, and there will be choices to make. Our industrial strategy will help us balance short- and long-term considerations to deliver growth that is sustainable, inclusive, and resilient.

## **Partnership with business, local leaders, and unions**

National, regional, and local leaders understand the strengths and opportunities of their communities and know where business can thrive with the right support.

For those areas where responsibility is devolved to Scotland, Wales, and Northern Ireland, the government will respect devolved arrangements, while also working to ensure that the industrial strategy helps to cohere national efforts so that industrial policies work in concert.

To ensure collaboration and success, the government has established the Council of the Nations and Regions, led by the Prime Minister with the First Ministers of Scotland and Wales, the First and deputy First Minister of Northern Ireland, and mayors. The government will also partner on

developing and delivering the industrial strategy with national and regional leaders through the Inter-Ministerial Group on Business and Industry and the Mayoral Council.

The industrial strategy's sector plans and business environment interventions will be designed and implemented in lockstep with local and devolved leaders. The strategy will give mayors in England the tools they need to grow their economies and develop ambitious 10-year Local Growth Plans. The government will work in partnership with the devolved governments to make this strategy a UK-wide effort.

## Our approach – a modern industrial strategy

To maximise its impact on growth, the industrial strategy will focus on stimulating investment and activity in sectors with the highest growth potential. The top 30% of sectors ranked by productivity [\[footnote 47\]](#) in 1997 accounted for roughly 60% of all productivity growth from 1997 to 2022 [\[footnote 48\]](#). Overall growth has slowed as our growth-driving sectors have slowed [\[footnote 49\]](#). As set out in the objectives, the strategy will also target growth that is long-term, sustainable, inclusive, and resilient.

Based on this, 8 growth-driving sectors will be prioritised across services and manufacturing, based on both existing and emerging strengths:

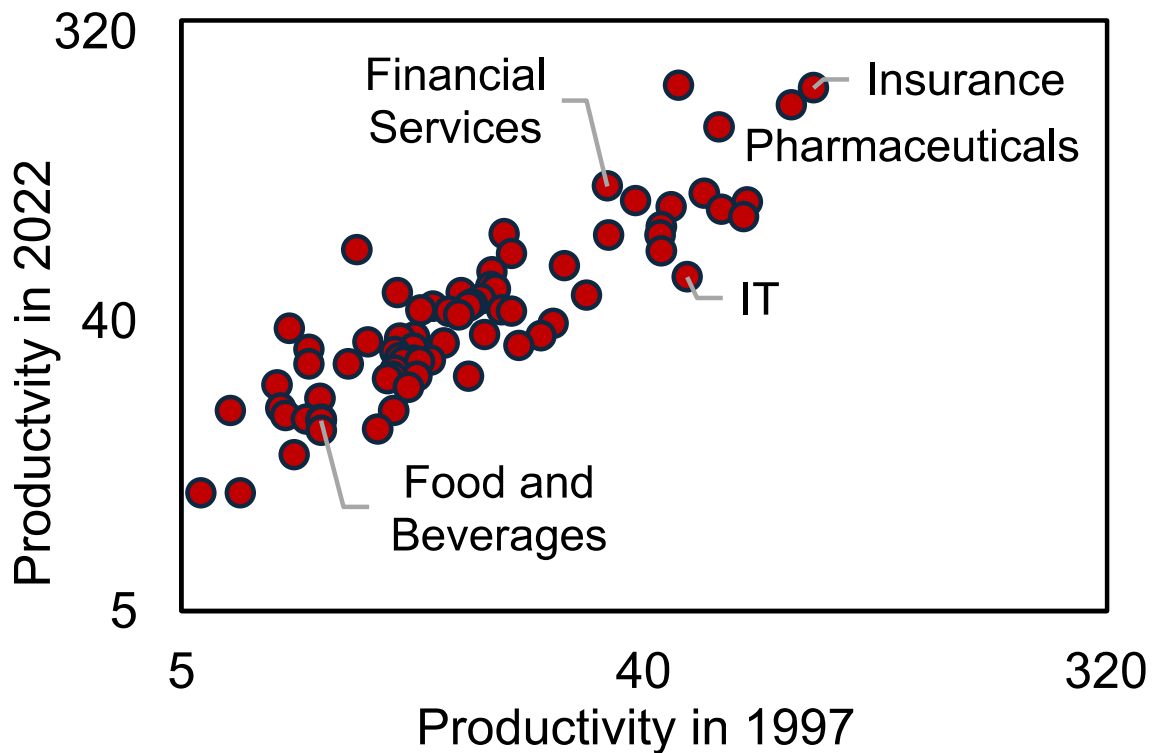
- advanced manufacturing
- clean energy industries
- creative industries
- defence
- digital and technologies
- financial services
- life sciences
- professional and business services

In the next stage of development of the industrial strategy, the government will identify subsectors within these broad sectors that meet our objectives and for which there is evidence that policy can address barriers to growth. This includes their contribution to net zero, regional growth, and economic security and resilience. It includes an assessment of the capabilities that government should build on and the barriers and market failures that government should address. The government will use the responses to this green paper to inform this programme of analysis.



The industrial strategy will build from the UK's current sectoral strengths. Path dependency is critical – few sectors have moved from below average productivity in 1997 to above average productivity in 2022 and vice versa (Figure 2). Therefore, the industrial strategy should focus on innovating and capturing opportunities in those sectors where we have strengths and capabilities, or where there is evidence that these can be built.

**Figure 2: Output per hour worked, 1997 vs 2022, £, current prices, log scale**



This figure is a scatter plot which compares the output per hour worked in different sectors in 1997 to 2022. It shows a positive correlation between sectoral productivity rates in 1997 and 2022.

Sectors such as insurance and pharmaceutical manufacturing had high levels of productivity in 1997 and 2022 as opposed to sectors such as food and beverages which have had lower.

Source: [Office for National Statistics \(2023\) Output per Hour Worked, UK](https://www.ons.gov.uk/economy/economicoutputandproductivity/productivitymeasures/datasets/outputperhourworkeduk/current)  
<https://www.ons.gov.uk/economy/economicoutputandproductivity/productivitymeasures/datasets/outputperhourworkeduk/current>

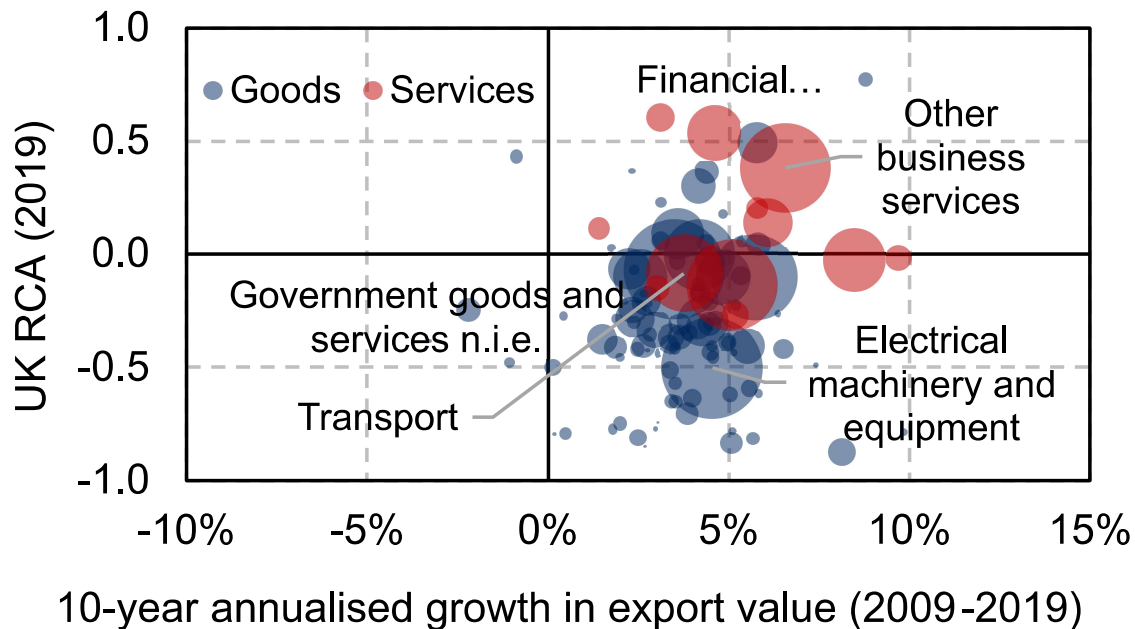
The UK has strengths within services and manufacturing. The UK is the second biggest services exporter in the world [\[footnote 50\]](#), with established advantages in financial services, creative industries, and other business services. The UK has also revealed comparative advantage in growing



advanced manufacturing markets, such as pharmaceuticals and aerospace [\[footnote 51\]](#) (Figure 3).

### Figure 3: Sector analysis of UK revealed comparative advantage

10-year annualised growth in global export value, by product category: 2019 [\[footnote 52\]](#)



This figure plots the UK's revealed comparative advantage in various goods and services categories in 2019 against growth in global export value over the previous decade. The size of the bubble denotes the product's share in total global trade.

The chart shows that in service exports, the UK's revealed comparative advantage is especially high in financial services, insurance and pensions, and other business services. Whereas there are a number of large and growing goods areas where the UK clearly does not have advantages such as electrical machinery and equipment and vehicles.

Source: [Resolution Foundation \(2023\) Analysis of Harvard Growth Lab, Atlas of Economic Complexity \(HS version\) and Organisation for Economic Cooperation and Development-WTO, Balanced Trade in Services](https://www.resolutionfoundation.org/app/uploads/2022/04/Enduring-strengths.pdf) (<https://www.resolutionfoundation.org/app/uploads/2022/04/Enduring-strengths.pdf>)

The UK also has emerging strengths in new technologies, systems, and processes. The UK's strengths in research and development, innovation, and skills mean that it is well placed to capitalise upon emerging technologies, processes, and ideas. For example, the UK has existing specialisms in over a third of technologies needed for net zero, such as

environmental monitoring technologies and carbon capture, utilisation and storage (CCUS) [\[footnote 53\]](#), [\[footnote 54\]](#), [\[footnote 55\]](#). Interventions in emerging technologies may differ to those for existing sectors, for example, focusing more on helping firms to commercialise innovations, scale up, and access finance.

## Methodology

The government has undertaken initial analysis to help determine the 8 growth-driving sectors. This is set out at high level in this section. Future work will build on this analysis to determine the key subsectors within these broad sectors, using evidence collected from this green paper as well as further evidence-gathering and use of wider methodologies.

There is no single agreed analytical methodology to identify highest growth potential sectors due to longstanding measurement challenges, such as data quality and sector definitions, and the inherent uncertainty around economic growth [\[footnote 56\]](#). Any sector is broad and heterogeneous, comprising a range of varied subsectors, some of which have greater growth opportunities than others. Therefore, identifying sectors which meet the industrial strategy's objectives must be based a combination of evidence and judgements, including deciding which metrics, data, and methodologies to use.

This initial analysis considers the different characteristics and needs of existing and emerging sectors in order to identify:

- current strengths: the UK's highest productivity and most internationally competitive sectors and key drivers of growth within the economy
- emerging strengths: sectors in which the UK could feasibly develop a comparative advantage, often because of their proximity to the UK's current strengths – this analysis considers:
  - forecast growth
  - the future importance of the sector
  - the UK's global position now and in the future

It uses a multi-indicator assessment to identify UK subsector strengths:

- output growth: the size and growth rate of the subsector
- productivity: to see where opportunities are to boost national productivity
- international position: to see where the UK is, or could be, good, relative to other countries, including comparative advantage in tradeable sectors

This approach was used to identify potential growth subsectors in existing sectors. Initial analysis was conducted at the SIC-2 level – or equivalent – because less granular data is too aggregated to identify strengths. This selection of subsectors should be regarded as indicative and not the final key subsectors, as further analysis will be conducted.

Where necessary, different metrics were used for emerging subsectors and technologies, as these are less well captured by traditional SIC sector data [\[footnote 57\]](#). Measuring emerging technologies is also challenging as they are not linear and predictable, and they interact with each other. To mitigate data challenges, evidence was triangulated from academic evidence, market intelligence, industry reports, and relevant datasets.

These subsectors were then aggregated to identify the 8 growth-driving sectors:

- advanced manufacturing
- clean energy industries
- creative industries
- defence
- digital and technologies
- financial services
- life sciences
- professional and business services

## Next steps

In the next stage of development of the industrial strategy, the government will design ambitious and targeted sector plans for each of the 8 growth-driving sectors in partnership with business, devolved governments, regions, experts, and other stakeholders, through bespoke arrangements tailored to each sector.

To do this, the government will prioritise subsectors within these 8 broad sectors that meet its objectives and where there is evidence that policy can address barriers to growth. We will also consider the overlap and interdependencies across the growth-driving sectors.

The sector plans will also include policies for those subsectors on which the growth-driving sectors have critical dependencies. To that end, value chain analysis is being progressed to identify subsectors within:

- **foundational sectors:** these are the sectors which provide critical inputs and infrastructure to our growth-driving sectors
- **technologies:** these are the technologies which are a critical or emerging part of a growth-driving sector's value chain

## Questions

- 1) How should the UK government identify the most important subsectors for delivering our objectives?
- 2) How should the UK government account for emerging sectors and technologies for which conventional data sources are less appropriate?
- 3) How should the UK government incorporate foundational sectors and value chains into this analysis?

## Our growth-driving sectors

For each of the growth-driving sectors, we set out how they link to the industrial strategy objectives, their strengths, and outline where government can – in partnership with business and others – go further to support growth. As we have not yet prioritised the key subsectors, these descriptions are illustrated using indicative examples of subsectors and policy interventions.

### Advanced manufacturing

Manufacturing spreads opportunity across the country, delivering high-value jobs attracting a higher-than-average hourly wage [\[footnote 58\]](#). The majority of manufacturing jobs lie outside of London and the South East, 84% compared with 69% for the economy as a whole [\[footnote 59\]](#).

Our industrial base plays an important role in our future economic resilience, as a significant dependency for many of our services sectors and as a driver of innovation. It is also critical to achieving the clean energy mission, which will bring opportunities for the sector. It is estimated that additional capital investment averaging £50 to £60 billion per year is needed through the late 2020s and 2030s, across the whole economy [\[footnote 60\]](#).

UK manufacturers produce many of the essential goods, parts, and components needed to sustain and protect citizens in the UK and across the world.

The UK's manufacturing strengths are broad and built on our world-class innovation expertise. For example, up to 56 gigawatt hours (GWh) of electric vehicle battery capacity is planned for the UK so far, and the UK is on its way to reaching the 2030 capacity requirements expected by the sector [\[footnote 61\]](#), helping it to remain a globally competitive investment destination. The South West and Wales has one of the largest aerospace clusters in the world, producing around half of the world's large civil aircraft wings. The UK manufacturing supply chain is world-renowned for its specialist strengths in high-quality and innovative products.

The UK is entering a major investment cycle, where the net zero and digital transformations present considerable opportunities for UK manufacturing investment. However, many countries offer sizable subsidies and incentives to secure this internationally mobile investment. To compete, government will need to ensure that the UK has a competitive offer across all the factors that influence investment, removing barriers and building on UK strengths, including:

- world-class network of universities
- research institutions
- Catapults
- deep venture capital pool
- trade openness

### **Clean energy industries**

Clean energy industries are a major driver of global growth. Over 90% of global GDP is now covered by net zero targets [\[footnote 62\]](#). There is rapid growth in global demand for low-carbon products, with McKinsey estimating a global market opportunity of £1 trillion for British businesses in the period to 2030 [\[footnote 63\]](#). An additional £50 to £60 billion of capital investment will be required each year through the late 2020s and 2030s to achieve our net zero ambitions [\[footnote 64\]](#) – it will be money well spent, as the 'size of the prize' is significant. An International Monetary Fund (IMF) study suggested that growth multipliers associated with clean energy investment (1.1 to 1.5) are larger than those associated with fossil fuels [\[footnote 65\]](#).

The UK is well placed to capture these opportunities – the industrial strategy and the clean energy mission will help drive the UK towards becoming a clean energy superpower. The UK has a comparative advantage in established and emerging clean energy industries, and a developed services sector [\[footnote 66\]](#), [\[footnote 67\]](#). Our support has already delivered significant clean investment into the UK, including Sumitomo Electric's recent commitment to a subsea cable manufacturing plant at the Port of Nigg, Scotland, which will bring over £350 million in investment [\[footnote 68\]](#).

While we have successfully delivered some of the largest clean energy infrastructure projects in the world, we can go further. Barriers often cited



include:

- high capital investment requirements
- significant international competition
- skills shortages

More can be done to build the resilient supply chains and manufacturing base to secure the jobs that accompany them.

Germany has almost twice as many renewable jobs per head of population as the UK, Sweden almost 3 times and Denmark almost 4 times as many [\[footnote 69\]](#). With the right policy, the government can stimulate investment to grow the clean energy industries to deliver across all areas of the country – including in the UK's industrial heartlands.

The Climate Change Committee estimates that by 2030, up to 725,000 jobs could be created in low carbon sectors [\[footnote 70\]](#) and that moving to clean homegrown sources of electricity will reduce the UK's dependence on volatile fossil fuel imports, improving energy security and helping to protect billpayers from rising and volatile energy prices.

### **Creative industries**

The UK's creative industries are world-leading, showcasing the best of its creativity and culture to the world. According to UN Trade and Development, the UK is the third largest creative services exporter behind the US and Ireland, worth \$87 billion in 2022 [\[footnote 71\]](#). Globally, 1 in 10 songs streamed are from the UK [\[footnote 72\]](#). The UK is a global centre for screen production, with £4.23 billion in production spend in 2023, of which 78% was from inward investment [\[footnote 73\]](#). According to the Creative Industries Policy and Evidence Centre, the creative industries accounted for 67% of the UK's digital exports in 2021 [\[footnote 74\]](#).

The sector is expected to grow worldwide, creating further growth opportunities. The sector is highly innovative, attracting significant inward investment and producing goods and services that are world renowned. PwC estimates that the global entertainment and media sector will grow to \$3.4 trillion by 2028 [\[footnote 75\]](#). Half of global trade is expected to be digital by 2050 [\[footnote 76\]](#).

To enable growth in the sector, the government will leverage UK creative industries' global comparative advantages by unlocking private investment, boosting exports, and developing its highly skilled workforce. The government needs to ensure that the UK sector remains globally competitive as a home for world class talent while maximising access to important markets to tour and collaborate. The sector plays an important role in driving growth across regions and nations, through creative clusters and corridors across the country that spread opportunity and prosperity in

communities, as well as driving growth by enhancing access to skills, spillovers, and knowledge sharing.

## Defence

The UK's defence sector is a global leader. The government will set out the pathway to spending 2.5% of GDP on defence. Defence and national security are foundational for economic growth across the UK and the defence sector provides good, well-paid jobs.

Government defence spending supports around 434,000 jobs across the UK, equivalent to 1 in 60 UK jobs [\[footnote 77\]](#). The majority (67%) of defence spend with UK industry and commerce goes outside of London and the South East [\[footnote 78\]](#), with local areas benefitting from defence exports. Defence drives innovation through investment in research and development, including developing and applying new technologies such as AI, quantum, and space capabilities, which drive positive spillovers across the economy.

Alongside the UK's significant defence budget – at £53.9 billion, with £25 billion of that spent with the UK industry and commerce on a range of key industrial capabilities [\[footnote 79\]](#) – the UK is an exporter of leading defence capabilities to its allies and partners. However, with threats increasing, the government needs to address issues that inhibit or prevent growth in the defence sector. There has been a lack of UK government strategy on its defence industrial base in recent years. The defence industrial strategy will ensure that the government can improve the UK's performance on defence exports and get more defence output for every defence pound spent.

The government's manifesto committed to “bringing forward a defence industrial strategy aligning our security and economic priorities”. This will be commissioned by the Secretary of State for Defence and will be the sector plan for defence in the industrial strategy.

Defence industrial strategy will make sure the imperatives of national security and a high-growth economy are aligned. Strengthening the UK's defence sector will boost the prosperity of its people. With a better, more innovative and more resilient defence sector, the UK can innovate at speed to help Ukraine:

- defeat Russia and restock its Armed Forces
- deter its adversaries
- seize opportunities presented by the technologies of the future
- create new partnerships and promote defence exports

## Digital and technologies

The economy is fundamentally different to where it was a decade ago, transformed by digital sectors and increasingly by advances in AI and other

technologies. This sector is at the forefront of geopolitical competition, so developing its strengths can enhance the UK's security and prosperity.

In 10 years, the economy will be radically different again. Digital and technology businesses have been responsible for transformative shifts in productivity in recent years. Strategic technologies that industry can point to now will be disrupting existing sectors and markets, and creating entirely new ones with high growth potential. The most valuable businesses in the world are digital and technology companies – 8 of the top 10 by market capitalisation [\[footnote 80\]](#).

The UK already has a strong story to tell, as only the third country in the world (alongside the US and China) to have a tech ecosystem valued at over \$1 trillion. Our track record in creating over \$1 billion start-ups – over 165 to date and the highest in Europe – continues to attract investors [\[footnote 81\]](#). In 2023, UK start-ups raised the most venture capital in Europe – more than France and Germany combined (who hold second and third place, respectively) – making the UK the third largest tech ecosystem globally by investment [\[footnote 82\]](#).

To deliver growth in this sector, the government will focus on a range of technologies and their commercialisation, with a portfolio approach that backs smaller, less proven, and more disruptive businesses alongside larger, well-established businesses in existing sectors.

With its world-leading research, strong culture of innovation, and thriving start-up ecosystem, backed by a deep talent pool and the investment required to grow and scale sustainable businesses globally, the UK is well positioned to build on its success and develop the next wave of groundbreaking digital and technology companies.

## **Financial services**

The UK's financial services sector is one of its greatest assets as an economy. The international nature of the sector means it could attract global investment and take advantage of the potential of a new decade. The sector is also unique in driving growth through providing growing businesses with the finance they need to expand, supporting consumers with mortgages, and driving capital into productive investment.

The sector will play a core role in providing the tens of billions needed to finance the net zero transition [\[footnote 83\]](#) alongside providing thousands of jobs in every region of the UK, with emerging hubs in Belfast, Leeds, Cardiff, and Glasgow, and a global centre in Edinburgh, driving regional growth.

The UK's financial services sector has a unique, core role to play in delivering growth across the whole economy. Along with the US, the UK is 1 of 2 truly global financial centres – a vibrant hub, employment rich and export focused. London, Edinburgh and Glasgow all rank within the top 40



most competitive, globally significant financial centres [\[footnote 84\]](#). The financial services sector also has significant export potential, with 41% of the firms headquartered within the UK in 2019 having operations outside of the country [\[footnote 85\]](#).

The UK is also home to fast-growing, new areas such as fintech and sustainable finance. London is ranked top in the Global Green Finance Index [\[footnote 86\]](#) and the 2021 Kalifa Review noted that the UK accounts for around 10% of global market share for fintech, with revenues forecast to more than triple between 2020 and 2030 – assuming that this market share is maintained. [\[footnote 87\]](#)

The government will:

- partner with the financial services sector to pivot to export to new and growing markets
- make the UK the location of choice for green business to finance the net zero transition
- take advantage of trends in digitalisation, to attract the firms of the future and increase productivity across the economy

### **Life sciences**

Over the next decade, the life sciences sector holds enormous potential to drive economic growth and productivity while significantly improving health outcomes for thousands of patients across the country. This sector delivers goods that are critical to the functioning of our economy and society and increases the UK's resilience, for example, to epidemics. Recent breakthroughs, such as the development of promising new vaccines targeting cancer, underscore the transformative impact of the sector. The UK's life sciences sector offers unparalleled opportunities for future economic growth, propelled by:

- new discoveries
- data availability
- AI
- groundbreaking treatments
- personalised healthcare
- innovative manufacturing processes

Crucially, the UK's life sciences sector is built on a strong foundation, with over 6,800 businesses in 2021 to 2022 that generated over £100 billion in turnover [\[footnote 88\]](#). The UK is also home to 4 of the top 10 global universities for life sciences and medicine, and with the expertise of the NHS, the UK is a global hub for innovation [\[footnote 89\]](#).

There is an opportunity to renew the UK's leadership in life sciences, strengthening and supporting the areas where the UK is already effective alongside bold innovation and collective partnership, with business, academia, and the health system to drive economic growth and build an NHS fit for the future.

The sector sits at the intersection of healthcare innovation and cutting-edge technologies offering immense potential to transform public health, enabling people to live longer and healthier lives, and boosting productivity, while driving high-value job creation and attracting significant investment.

### **Professional and business services**

The UK's professional and business services operates with a comparative advantage in a market with global demand of \$1.9 trillion [\[footnote 90\]](#). Through provision of essential business sectors and trusted business advisers, it is also an enabler of growth across the economy, helping businesses to raise finance, scale up, export, and invest.

The UK's professional and business services sector has a global reputation for quality and innovation, with its expertise, qualifications and standards used worldwide, underpinned by our world-renowned institutions and legal system.

The bulk of sector performance is driven by a relatively small number of firms, mainly concentrated in London and the South East. There are clear opportunities to raise the performance of the sector as a whole, both at national and local level, by improving sector productivity.

Opportunities cited by business include:

- improving management skills
- exploring the use of data and AI
- expanding into overseas markets
- exploiting new opportunities in supporting the climate transition and digital transformation of clients

The government, with industry, will also look to expand the global market for the UK's professional and business services, for example, by:

- capitalising on emerging strengths in accounting and law-tech
- promoting the UK's regional professional and business services strengths overseas
- unlocking barriers to trade in services

## **Questions**

- 4) What are the most important subsectors and technologies that the UK government should focus on and why?
- 5) What are the UK's strengths and capabilities in these subsectors?
- 6) What are the key enablers and barriers to growth in these subsectors and how could the UK government address them?

## Creating a pro-business environment

The government will work in partnership with businesses, trade unions, mayors, devolved governments, experts, and other stakeholders to help address the biggest challenges to unlocking business investment, focusing on the 8 growth-driving sectors and clusters across the country.

The industrial strategy and its sector plans will explain how government will help address those challenges when published in spring 2025, having been designed in partnership with stakeholders, through bespoke arrangements tailored to each sector.

We welcome views on the questions set out in this green paper, which forms an important part of this engagement.

Based on initial feedback from businesses and cross-economy business intelligence [\[footnote 91\]](#), there are several policy areas that are important for growth-driving sectors and the pro-business environment:

- people and skills
- innovation
- energy and infrastructure
- regulatory environment
- crowding in investment
- international partnerships and trade

The industrial strategy will consider the effectiveness of both cross-cutting policies and targeted solutions, for growth driving sectors. In doing so, the industrial strategy will help ensure a pro-business environment, as set out in the government's manifesto.

To support that policy development, and to underpin a robust monitoring and evaluation framework, the government is developing a theory of change for the industrial strategy (see [Annex - theory of change](#)).

Addressing sector-specific and cross-cutting challenges together will underpin long-term growth, helping overcome coordination issues that have hindered past strategies [\[footnote 92\]](#), [\[footnote 93\]](#).

The industrial strategy will be a central pillar of the growth mission, through which the government is working to fix the foundations of the economy and to kickstart a decade of national renewal. The industrial strategy will also complement and benefit other priorities, such as the clean energy and opportunity missions. At the same time, those missions will also support the industrial strategy.

## Questions

7) What are the most significant barriers to investment? Do they vary across the growth-driving sectors? What evidence can you share to illustrate this?

To develop the industrial strategy, the government is prepared to tackle the issues head on and listen to the needs of business. The aim is to provide the certainty and simplicity for businesses to confidently invest in the UK. To do this, government policy will be guided by 4 principles:

- building long-term stability
- using the power of strategic government
- a commitment to free and fair trade
- easing the investor journey

## Principles for the industrial strategy

### Building long-term stability

The government will not repeat the mistakes of the past. Too often, the impact of industrial strategies has been concentrated in certain regions and not shared across communities. Businesses say that past plans have been short-lived and often been felt as being done to rather than with them.

To succeed, all of government will need to work in unison, with every action taken considering how to spur investment and growth. The industrial strategy will be developed and delivered in partnership with business, unions, local and devolved governments, experts, and other stakeholders, working as one to identify barriers to investment, build long-term confidence, and kick-start growth. As part of this, the government will

promote stable regulatory frameworks to give businesses the certainty they need to invest.

### **Renewing commitment to free and fair trade**

The government will ensure that the industrial strategy is international from the start and aligned with the trade strategy, to attract quality investment from abroad and expand markets for the growth-driving sectors, as well as across the wider economy.

The coming year is critical for going further with trading and wider economic relationships. Firstly, the government will build on the UK's trade and investment relationship with the EU, with strengthened cooperation in areas such as the economy, energy, security, and resilience.

The government will also seek economic partnership opportunities internationally to build future markets, address shared challenges, and respond to the risks and opportunities of the changing geopolitical context.

### **Easing the investor journey**

The government will ensure that the industrial strategy is pro-business and focused on reducing barriers to investment in the UK. To do this, policy must make it simpler and cheaper for companies to scale up and invest in the UK.

The first steps in a fundamental shift towards backing growth have already been taken, including through planning reform announced in the summer. The government will focus its efforts on carrying this reform through to policy change, having heard the feedback from businesses that it must go further. The industrial strategy will consider how the government can address issues that are critical for driving investment such as skills, recruitment of international talent, data, innovation, technology adoption and diffusion, business finance, competition, regulation, energy prices, grid connections, planning, and infrastructure.

### **Being a strategic, growth-focused state**

The government is committed to using the power of the state strategically to support and shape the UK's economy and future growth. Through the industrial strategy, the government will harness the UK's strengths to create an economy that produces high yields for investors and highly paid jobs for working people.

For the industrial strategy to have the greatest impact, the government must be clear-eyed about the sectors which offer the highest growth opportunity for the economy and businesses, including where the UK has existing and emerging strengths. The government will also seek to foster a more dynamic scale-up environment offering high returns. The UK can compete on quality and generate high growth, in the services, technologies and supply chains of the future.

## People and skills

The people that create and work in businesses will be central to the success of the growth-driving sectors and clusters, supporting the government's growth, opportunity, and clean energy missions in particular. Workforce skills are a key area raised by businesses, for example, with Deloitte's CFO survey highlighting it as an area that government should prioritise [\[footnote 94\]](#).

Ensuring the UK has a healthy population whose skills meet the needs of employers will bring people into the labour market and support their shift into high-skilled, high-wage jobs. The Office for Budget Responsibility (OBR) estimates that improving health outcomes among the working-age population, by reducing incidence of work-limiting ill-health by a quarter, would increase the size of the economy by 0.8% over the longer-term [\[footnote 95\]](#). Skilled workers are more productive, drive innovation, and facilitate the adoption of new technology – ultimately boosting growth [\[footnote 96\]](#).

Around a third of average annual UK productivity growth was attributable to an expansion of skills available in the workforce between 2001 and 2019 [\[footnote 97\]](#).

While the UK has many strengths, including first-class universities and a relatively flexible labour market, alongside employers the government needs to address several barriers raised by businesses.

The UK has a skills mismatch greater than many peer economies [\[footnote 98\]](#), with 10% of businesses reporting at least one skill shortage vacancy [\[footnote 99\]](#). The UK has a lack of technical skills – such as in electrical, mechanical and welding trades, key to the advanced manufacturing and clean energy industries – as well as basic skills in English and maths [\[footnote 100\]](#), [\[footnote 101\]](#).

What employers need will vary according to their sector and geography, and the skills system must be more flexible and address those disparities [\[footnote 102\]](#). For example, the creative industries sector, which is clustered across the UK, has reported needing workers with skills in digital, design and data.

There are weaknesses in management and leadership skills, particularly in small businesses [\[footnote 103\]](#). Workforce participation is falling and employer investment in skills lags behind many comparator countries, with UK employers investing half as much per employee than the EU average [\[footnote 104\]](#), [\[footnote 105\]](#).



With over 80% of the 2030 workforce already in work [\[footnote 106\]](#), the government needs to address the impact that changing technologies and demographics will have on skills needs and job numbers in the growth-driving sectors. These barriers will require targeted interventions across different sectors and places.

Government has already taken steps to tackle some of these issues, including by establishing Skills England, which will improve the skills system so that it is simpler, more data driven, and responsive.

The government will transform job centres into a national jobs and careers service that will help employers find the talent they need.

The new growth and skills levy, which replaces the existing apprenticeships levy, will enable employers to access a broader range of high-quality training offers. Skills England will play a crucial role in determining which training will be eligible for the expanded levy, in line with its assessment of skills needs and future demand, and through extensive engagement with its partners in the skills system.

To improve coordination for investors, the Office for Investment and Skills England will implement a skills triage service, providing bespoke guidance for strategically important investments.

In the coming months, the government will set out a detailed plan to support getting people back into work in the Get Britain Working white paper, reducing inactivity. The government has also introduced new legislation that will ensure employment rights are fit for a modern economy as part of its plan to Make Work Pay.

The Industrial Strategy Advisory Council will work in partnership with Skills England, the Migration Advisory Committee, the Department for Work and Pensions, mayors, and wider government as part of a new framework to support a coherent approach to skills, migration and labour market policy.

## Questions

8) Where you identified barriers in response to question 7 which relate to people and skills (including issues such as delivery of employment support, careers, and skills provision), what UK government policy solutions could best address these?

9) What more could be done to achieve a step change in employer investment in training in the growth-driving sectors?

## Innovation

Accelerating the rate of innovation and increasing the adoption and diffusion of those ideas, technologies, and processes is an essential step for growing the productivity of our growth-driving sectors. This must include ensuring that data is created, handled, and shared in a way that both unlocks economic opportunities and is safe and ethical across the economy.

The UK's innovation system needs to operate holistically to achieve the ambitions of its industrial strategy.

### Research, development, and innovation

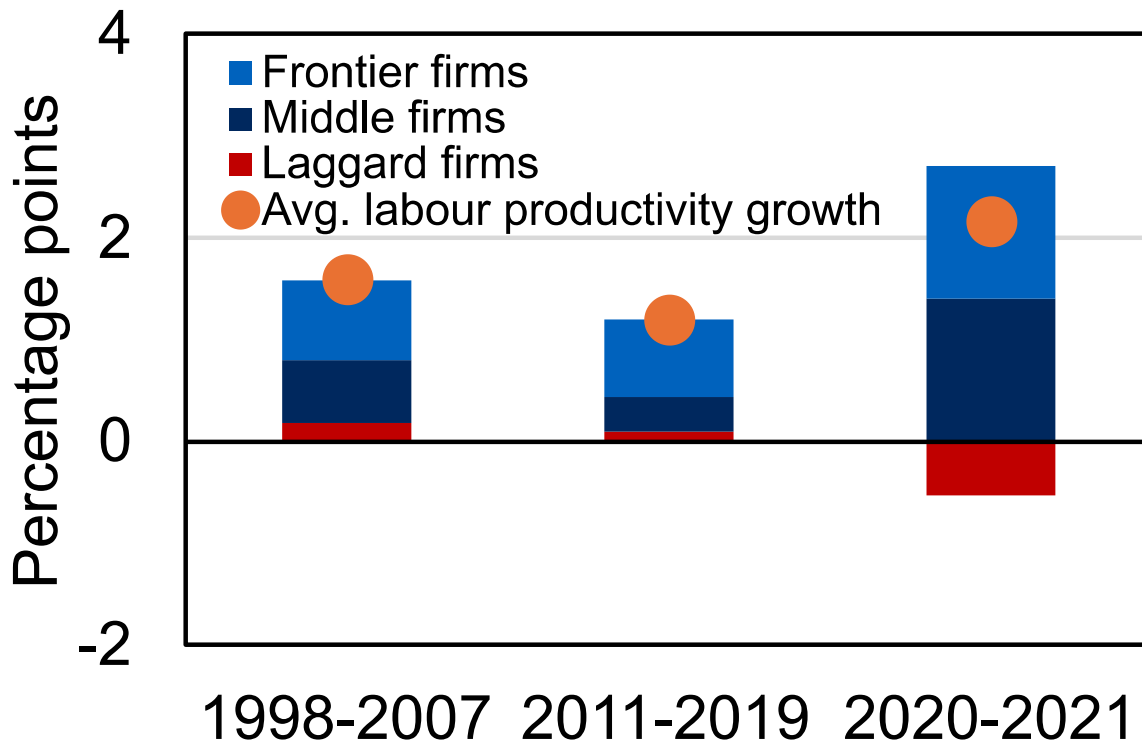
Research, development, and innovation (RDI) are essential to developing the UK's growth-driving sectors. The UK has a world-class research base, with 4 of the world's top 10 universities [\[footnote 107\]](#), which include specialisms in many of the growth-driving sectors, such as life sciences. UK universities also create globally competitive spinout companies, which raised £1.66 billion in equity funding in 2023 [\[footnote 108\]](#), 9.5% of all equity funding raised by UK companies, and are second only to the US in total investment in spinouts [\[footnote 109\]](#). The UK has considerable strengths in RDI, however, we can struggle to translate these into commercial goods and services domestically.

The UK would experience significant productivity gains if we improved the adoption and diffusion, particularly beyond our frontier firms, as shown in [Figure 4](#). The UK ranked fifth out of 133 countries in the WIPO 2024 global innovation index but only 31st in knowledge absorption [\[footnote 110\]](#). The proportion of UK firms adopting a range of intermediate digital technologies is significantly below OECD leaders [\[footnote 111\]](#) and UK SMEs were ranked sixth in the G7 on technology adoption [\[footnote 112\]](#), [\[footnote 113\]](#).

#### **Figure 4: Contribution to UK labour productivity growth, 1998 to 2021**

Average annual contribution to growth in output per job, non-financial business economy.





This figure is a bar chart showing the different contributors to UK labour productivity growth across laggard, middle, and frontier firms. The figure uses multiple year ranges and plots the average labour productivity growth within these years.

Frontier firms are defined as the top 10% weighted by employment, laggard firms the bottom 50% weighted by employment and middle firms the remainder.

The chart shows that the average labour productivity growth was stronger in 1998 to 2007 than in 2011 to 2019, though the UK more recently saw stronger growth in 2020 to 2021 than in both earlier periods.

The main contributor to this growth has primarily been from frontier firms between 1998 to 2007 and 2011 to 2019. During 1998 to 2007 middle firms also made a substantial contribution to productivity growth. But during 2011 to 2019 their contribution dropped sharply.

The contribution of both frontier firms and middle firms has increased since 2020, but this is likely distorted by the effects of the COVID-19 crisis.

Source: [Office for National Statistics \(2023\) Trends in UK Business Dynamism and Productivity](https://www.ons.gov.uk/economy/economicoutputandproductivity/productivity)  
<https://www.ons.gov.uk/economy/economicoutputandproductivity/productivity>

[easures/bulletins/trendsinukbusinessdynamismandproductivity/2023#firm-level-labour-productivity\)](https://www.gov.uk/government/consultations/invest-2035-the-uks-modern-industrial-strategy/invest-2035-the-uks-modern-industrial-strategy#firm-level-labour-productivity)

There are a range of barriers to increasing RDI and adoption and diffusion (including access to finance, skills, and regulation) which vary widely by firm sector, size, and region, requiring tailored policy solutions [\[footnote 114\]](#). The UK has successful policies such as the Made Smarter programme, which supports adoption in the manufacturing sector, and the Innovate UK Catapult network, which supports the commercialisation of RDI in areas closely aligned to several growth-driving sectors.

We have many strengths from which to build, for example, the Ventilator Challenge led by the High Value Manufacturing Catapult in 2020, which combined the knowledge and skills of 33 UK technology and engineering businesses to deliver 13,437 ventilators to the NHS in response to the anticipated escalation in COVID-19 cases, implementing an end-to-end supply chain in 1.5 weeks [\[footnote 115\]](#).

There is further to go.

The newly established Skills England will help ensure that the domestic workforce has technical skills needed for businesses to make the best use of technology.

The AI Opportunities Action Plan, led by Matt Clifford, technology entrepreneur and Chair of the Advanced Research and Invention Agency (ARIA), will propose an ambitious approach to grow the AI sector and drive responsible adoption across the economy.

The Department for Business and Trade (DBT)'s Global Talent Network and Global Entrepreneurs Programme will ensure the UK is the best place in the world for scientists, innovators, and entrepreneurs to live and work.

## Questions

10) Where you identified barriers in response to question 7 which relate to RDI and technology adoption and diffusion, what UK government policy solutions could best address these?

11) What are the barriers to R&D commercialisation that the UK government should be considering?

## Data in the industrial strategy

Data fuels modern business, both as users and producers. There is a huge opportunity for the UK to use its data more strategically, driving innovation

and economic growth, including in the growth-driving sectors. It has been estimated that data has the potential to contribute to UK productivity growth by between 0.23% to 1.26% per year [\[footnote 116\]](#), but the UK is currently on the lower end of this range, and further productivity growth gains require greater data maturity [\[footnote 117\]](#).

Data-specialised businesses are a growing part of the economy, increasing their share of GDP from 6.5% to 7.4% between 2021 and 2023 [\[footnote 118\]](#). At 7.4% of GDP, the UK data economy is larger as a fraction of the total economy than any European country except Estonia [\[footnote 119\]](#). However, of businesses that handle digitised data:

- only 21% analysed their data to generate new insights and knowledge
- only 2% used their data for AI or automated decision-making [\[footnote 120\]](#)

The transformative power of data comes through investment in creating, combining, and building capability to use high-quality data from different sources.

Collaboration between the public sector, businesses, and researchers is critical to maximising the benefits of data for the economy. Ensuring public trust, security, and international data arrangements will always be at the heart of this. The industrial strategy could include:

- using public sector data as a driver of growth, including the proposed National Data Library, so that prioritised public data assets – for example from transport to environmental data – are an essential part of the UK's broader, forward-looking approach to data access, with better use of public data economy-wide while ensuring citizens' data are protected
- empowering individuals and businesses with their data – new smart data schemes can provide secure sharing of a customer's data upon their request, with authorised third-party providers; these can drive innovation in and between sectors, such as open banking in the finance sector
- improving data maturity in businesses to help businesses to do more with data, both as users and producers – this includes improving competition in data-driven markets, and collaborative government and private sector arrangements on consistent standards, data-sharing infrastructure, and supporting businesses in the way data is used across supply chains

## Questions

12) How can the UK government best use data to support the delivery of the industrial strategy?

13) What challenges or barriers to sharing or accessing data could the UK government remove to help improve business operations and

decision-making?

## Energy and infrastructure

Infrastructure underpins all economic activity by connecting people, goods, services, energy, and ideas. Improvements in infrastructure will be foundational to success across our growth-driving sectors and to addressing place-specific constraints to growth in city regions and sectoral clusters.

### Planning, infrastructure, and transport

An effective planning system is a fundamental enabler for business investment in our growth-driving sectors.

At the national and regional level, planning constraints hold back growth, including in high-performing life sciences clusters like Cambridge [\[footnote 121\]](#) and clean energy industries hubs such as Tees Valley and the North East.

Firms require predictability and efficiency when applying for consent for projects, but this is not being provided by existing processes. Businesses have told us that the planning consent process is too lengthy and uncertain. Infrastructure projects spend an average of 65 months in pre-construction phases, the highest among peer countries [\[footnote 122\]](#).

Growth-driving sectors also require high-quality infrastructure and transport connectivity. A resilient, safe, and secure transport network provides access to social and economic opportunity, and is fundamental to business investment and location decisions. A lack of infrastructure is holding back the growth of major city regions such as Manchester, where lack of transport is estimated to cause a productivity gap of £8.8 billion each year [\[footnote 123\]](#).

Targeted, long-term infrastructure investment is a vital catalyst to the success and stability of major city regions and clusters of our growth-driving sectors. Businesses agree that the UK has for too long failed to provide a long-term vision and clear statement of intent to support this [\[footnote 124\]](#), [\[footnote 125\]](#), [\[footnote 126\]](#), [\[footnote 127\]](#).

A lack of housing in some places across the UK also prevents labour markets from operating effectively and prevents successful agglomerations.

Further, additional data centre capacity and access to fast, secure, and reliable digital connectivity is essential to enabling economic growth and to reap the transformational productivity benefits of digitalisation and the

adoption of AI. Continued investment is needed to meet our ambitious targets to bring gigabit-capable broadband to all of the UK, and standalone 5G to all populated areas, by 2030.

As a key priority of the growth mission, the government has made significant planning, transport, and infrastructure policy announcements. In July 2024, the Chancellor of the Exchequer announced plans to update relevant National Policy Statements within 12 months. In the same month, the Planning and Infrastructure Bill was announced in the King's Speech to unlock more housing and infrastructure across the country.

The government is developing a 10-year infrastructure strategy, which will be aligned with the industrial strategy, and is in the early stages of developing a rolling stock strategy.

Support for investors navigating the planning system will be delivered via a new planning triage service, implemented jointly between the expanded Office for Investment and the Ministry of Housing, Communities and Local Government (MHCLG). These steps will unlock infrastructure investment across the country, which government will augment through developing clear investment propositions.

## Questions

14) Where you identified barriers in response to question 7 which relate to planning, infrastructure, and transport, what UK government policy solutions could best address these in addition to existing reforms? How can this best support regional growth?

15) How can investment into infrastructure support the industrial strategy? What can the UK government do to better support this and facilitate co-investment? How does this differ across infrastructure classes?

## Energy

Access to cheap and reliable energy is an influential determinant of business competitiveness and an important consideration for internationally mobile investment. This is within a context where industrial energy will need to decarbonise to meet the UK's net zero goals and support the clean energy mission, including encouraging fuel switching to electricity.

Investment in networks will bring benefits to the economy. Onshore network investment to meet net zero could directly support an additional 50,000–130,000 full-time equivalent (FTE) jobs by 2050, contributing an estimated £4 billion to £11 billion of gross value added (GVA) to the UK economy [\[footnote 128\]](#).

The UK has a stable and enduring framework for clean energy through the Climate Change Act 2008 [\[footnote 129\]](#) and its carbon budget framework [\[footnote 130\]](#). With the Prime Minister's clean energy superpower mission, in the first 3 months the new government has:

- swept away barriers to onshore wind farms [\[footnote 131\]](#)
- consented nearly 2 gigawatts (GW) of new solar [\[footnote 132\]](#)
- delivered the most successful renewables auction in UK history, with 131 clean energy projects powering the equivalent of 11 million homes [\[footnote 133\]](#)
- made available £21.7 billion of funding available over 25 years to make the UK an early leader in 2 growing global sectors – CCUS and hydrogen [\[footnote 134\]](#)
- established Great British Energy, which will own and invest in clean energy generation in partnership with the private sector, as well as announcing a groundbreaking partnership with the Crown Estate [\[footnote 135\]](#)

However, a number of growth-driving sectors, including advanced manufacturing and digital and technologies have cited electricity costs as a barrier to growth.

Electricity prices in Germany are 34% to 39% lower than for comparative businesses in the UK of any size, while in France they are 31% less for small businesses rising to 53% for the very large [\[footnote 136\]](#). On average, very large UK energy users face relatively high electricity prices compared with EU competitors (£228 per megawatt hour (MWh) in 2023, compared with £108 per MWh in France and £148 per MWh in Germany) [\[footnote 137\]](#), although about 400 of the most electricity and trade-intensive UK industrial users benefit from lower electricity prices due to government policies. These high electricity costs are a major barrier to growth and investment.

The only way to guarantee our energy security and protect billpayers is to speed up the transition away from fossil fuels and towards homegrown clean energy.

Through supporting the UK's clean energy industries, the UK will create good jobs in Britain's industrial heartlands, including a just transition for the industries based in the North Sea. The North Sea is critical to the clean energy mission, and the UK has the opportunity to build on the world-leading expertise in its oil and gas supply chain.



Businesses have told the government that it needs to improve the electrification of industrial sites and bring parity with other low carbon fuels, allowing them to choose the right decarbonisation option for them [\[footnote 138\]](#).

Government is considering reform of wholesale electricity markets and is also planning further engagement with stakeholders as it looks to act on the specific issue of industrial electricity prices.

Businesses also see the lack of timely grid connections as a significant barrier to investment. Respondents to the recent Call for Evidence on industrial electrification stated that the average delay industrial sites face for an upgraded connection is 5 years, and some firms are being quoted 8 to 10 years or longer for a connection. Connection delays are caused by the unprecedented volume of connections being sought, the need for major upgrades to transmission and distribution networks, and the outdated 'first-come-first-served' connections process.

Tackling these barriers will be critical to achieving clean power by 2030. The National Energy Systems Operator (NESO) and network companies are already releasing network capacity and offering earlier connection dates, and the government is working at pace with Ofgem, NESO, and network companies to further accelerate connections, including ensuring projects necessary for the UK's mission for clean power by 2030 can connect in time. Great British Energy will give confidence to industry and investors through development of sites for clean energy deployment.

By investing in and owning clean power generation assets, Great British Energy will provide demand certainty to enable supply chains to invest.

The Clean Energy Mission Control, alongside planning reforms to speed up infrastructure development, will play a vital role in accelerating the transformation of the electricity network.

## Questions

16) What are the barriers to competitive industrial activity and increased electrification, beyond those set out in response to the UK government's recent call for evidence on industrial electrification?

17) What examples of international best practice to support businesses on energy, for example purchase power agreements, would you recommend to increase investment and growth?

## Regulatory environment

The regulatory and competition environment in which our growth-driving sectors operate will be an important determinant of their success. For example, regulation should support emerging sectors to grow, while enabling existing sectors to modernise and evolve.

### Competition

Competition and consumer policy, including subsidy control, is an important lever across and beyond the growth-driving sectors. Businesses can invest with certainty when they know that they are protected from unfair competition and consumers can buy with confidence. Competition policy creates incentives for businesses to innovate and allows more productive firms to increase their market share.

The UK has a recognised set of regulatory and competition institutions, including the CMA. Different measures of competition for the whole economy from the CMA State of Competition report 2022 [\[footnote 139\]](#) and the OECD [\[footnote 140\]](#) suggest that while UK markets are relatively competitive, there has been a modest deterioration in performance over the last 2 decades on mark-ups and churn rates.

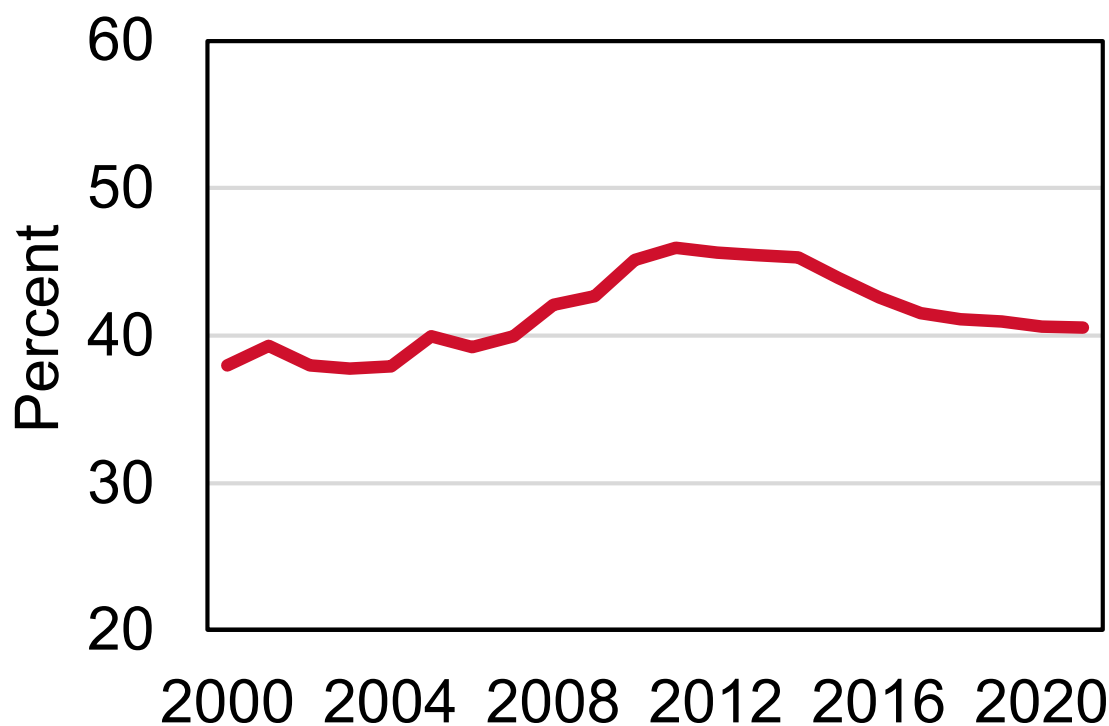
The growth-driving sectors have varying barriers to entry and exit, market structures, and regulation, so are affected by competition differently. In the digital and technologies sector, for example, a key concern for competition is large firms with dominant positions gained through scale economies, lock-in, and network effects [\[footnote 141\]](#), [\[footnote 142\]](#). To that end, the government is delivering reforms in the Digital Markets, Competition, and Consumers Act (2024) to allow additional scrutiny by the CMA of dominant firms in the digital sector, which are due to commence in January 2025.

The government is committed to robust and independent enforcement of competition law and consumer protection. It will also investigate ways to boost competition, including in growth-driving sectors, whether through competition law and economic regulation, or through integrating competition considerations into other government policies such as planning, skills, and trade openness. It will explore how policies which boost firm-level productivity and growth (such as innovation and investment) and market dynamism can drive competition by creating competitors in established sectors and growing markets in emerging sectors.

We will be consulting on a draft of the next strategic steer to the CMA from the Business and Trade Secretary to seek stakeholders' views on competition regulation priorities. Government will also be seeking views on similar statements to major regulators in the coming months.



**Figure 5a: Concentration, turnover shares of top 5 companies, weighted by turnover**



This figure is the first of 4 time series graphs that illustrate UK market competition.

Figure 5a illustrates the average market share of the 5 largest firms in each industry from 2000 to 2020. It shows that there was a marked increase in concentration in the years after the 2008 financial crisis. Since then, concentration has fallen, but it still remains above levels seen prior to 2008.

**Figure 5b: Rank persistence, number of top 10 companies that were in the top 10 3 years before**