

Aldersgate Group response: Industrial Strategy green paper consultation

November 2024

Background

The Aldersgate Group represents an alliance of major businesses, academic institutions and civil society organisations which drives action for a competitive and environmentally sustainable UK economy.¹ Our corporate members represent all major sectors of the economy, and include Associated British Ports, Aviva Investors, BT, CEMEX, the John Lewis Partnership, Johnson Matthey, Michelin, Nestlé, Siemens, SUEZ, Tesco, and Willmott Dixon. Aldersgate Group members believe that ambitious environmental policies make clear economic sense for the UK, and we work closely with members when developing our independent policy positions.

You can find the Industrial Strategy green paper, along with the full list of questions, here: <https://assets.publishing.service.gov.uk/media/6711176c386bf0964853d747/industrial-strategy-green-paper.pdf>

Questions

1. How should the UK government identify the most important subsectors for delivering our objectives?

The Aldersgate Group welcomes the government's approach to developing an industrial strategy, building on identified strengths and setting out priorities for growth. The next steps in the development of the industrial strategy must incorporate how these sectors and subsectors can best contribute towards the delivery of the industrial strategy's objectives. The identification of most important sub-sectors should be based on their potential to contribute towards delivering the objectives, including net zero. Additional analysis may be necessary and can also help identify valuable targeted policy interventions to support delivery.

We are delighted that the government has recognised the opportunities from net zero and placed decarbonisation at the heart of its industrial strategy. As the Mission Zero report laid out, decarbonisation presents a huge economic opportunity for UK businesses. Demand is growing across the world for green technologies, products and services. The UK Government can link industrial policy to decarbonisation targets, enabling supply chains to develop and deliver wider benefits. Low-carbon technologies must be included in the industrial strategy where the UK has strengths or strategic needs, aligning with the delivery of the 2030 clean power mission and GB Energy. The UK's industrial strategy must also work in tandem with the net zero strategy and the wider decarbonisation policy framework.

¹ Individual recommendations cannot be attributed to any single member and the Aldersgate Group takes full responsibility for the views expressed.

All growth supported by the industrial strategy should be compatible with net zero and environmental improvement. The industrial strategy must futureproof growth in high-potential sectors as part of the transition to a low-carbon economy. Businesses need clarity on decarbonisation pathways and upcoming policies, as well as incentives to grow in a low carbon and environmentally sustainable way. The industrial strategy must contribute to a wider enabling policy environment, incentivising energy efficiency measures and uptake of low-carbon technologies.

The Aldersgate Group has set out recommendations for the delivery of a successful industrial strategy in the briefing ‘Placing decarbonisation at the heart of industrial strategy’.² A cross-sectoral industrial strategy must set out a long-term vision for the UK’s green industrial growth, with a supportive policy framework and key milestones. By taking a whole-value chain approach, the government can identify where policy interventions can resolve the challenges slowing growth of key sectors, enable those sectors to better take up opportunities, and maximise spill-over benefits.

The government should prioritise the following key considerations in identifying the sub-sectors of importance for the industrial strategy: existing strengths, scale of opportunity, alignment with the delivery of objectives (including net zero, potential for socio-economic spillovers across value chains and regions, economic security and resilience), and potential for policy solutions to resolve challenges or maximise opportunity.

Comparative advantage, productivity and economic growth are valuable metrics which can help to understand strengths within the identified sectors, and growth opportunities. However, a broader range of factors will contribute to sectors’ ability to increase existing or develop new strengths as well as deliver objectives, such as:

- Networks and knowledge exchange, including across supply chains and with research and innovation organisations such as universities;
- Geographical distribution and the existence of clusters;
- Availability and pipeline for skills, as well as location of existing skills;
- Innovation absorptive capacity, the ability of organisations and sectors to assimilate and deploy innovation);
- The value of products or services and the quality of jobs associated, where the UK has existing or potential strengths. For example, comparative advantage for low-value goods may translate into limited socio-economic opportunities.

The government should also seek to understand the value chains associated with sub-sectors. By looking along the value chain, opportunities can be maximised by providing confidence to invest in key sub-sectors and across their value chains.

Demand is another important metric to consider, including the potential size of the UK market and export opportunities. Certainty and scale of demand are key signals for businesses, and the government may wish to explore where public procurement or policy certainty can contribute to increasing certainty of demand.

² Aldersgate Group, 2024, [Placing decarbonisation at the heart of industrial strategy](#)

2. How should the UK government account for emerging sectors and technologies for which conventional data sources are less appropriate?

The UK government should account for emerging sectors and technologies by considering strengths (e.g. existing or transferable skills, R&D strengths and research output, regulatory ecosystem and innovation absorption capacity in relevant sectors) as well as demand. The scale and strength of demand both nationally and internationally can help ascertain the potential opportunity for growth. International competition will be important to consider, recognising advantages for first movers and fast followers.

The government may also wish to consider challenges that emerging sectors have the potential to address, but may not yet be doing fast or effectively enough, due to the scale of risk and uncertainty. Some decarbonisation and societal challenges do not yet have commercially available solutions; the industrial strategy could provide the policy framework and enabling environment to focus development and commercialisation efforts.

The government should also seek input and insights from experts across businesses and academia.

3. How should the UK government incorporate foundational sectors and value chains into this analysis?

The government should take a whole-value chain approach to developing an industrial strategy by engaging with businesses, trade-unions and national and regional public sector bodies. By taking this approach, the government can look broadly at the opportunities and maximise potential for spill-over benefits and success.

A value chain approach will enable the identification of foundation sectors on which the growth-driving sectors (identified by the industrial strategy) rely. The industrial strategy presents a significant opportunity to deliver cross-sector growth across the UK. WPI Economics research, carried out for the Aldersgate Group, highlights the economic importance of UK heavy industry, representing 21.2% of total UK exports, £152 billion in GVA to the UK economy and supporting over 1.4 million jobs in areas primarily outside of London and the South East.³

The government should commission a supply chain and skills capacity assessment to identify the UK's capability gaps and competitive strengths and what interventions can address these. The future role of UK industry in the high growth sectors' supply chains is unclear, as are the opportunities, barriers, and enablers for growth. This analysis would inform where policy and financial support should be targeted. It would also support workers in high carbon sectors by identifying pathways to new work. This study should build on the example of the 'UK renewables deployment supply chain readiness study', commissioned by DESNZ and published in April 2024, which identified potential supply chain constraints.⁴

³ Aldersgate Group, 2023, [Economic benefits of industrial decarbonisation: A low-carbon industrial future for the UK](#)

⁴ Department for Energy Security and Net Zero, 2024, [UK renewables deployment supply chain readiness](#)

UK heavy industry already contributes to other sectors, from advanced manufacturing to clean energy technologies and infrastructure, from green steel for wind turbines, chemicals for battery storage, glass for solar technology and concrete for new infrastructure and buildings. To seize this wider growth opportunity, the industrial strategy should consider how to best support an enabling policy environment which attracts investment and drives innovation and decarbonisation, while competing internationally across the supply chains relevant to important sub-sectors. By taking a whole-value chain approach, the government can also identify risks to mitigate to support important sub-sectors, including potential shortages in materials and products, skills and access to infrastructure

Government must ensure raw material and supply chain risks are understood alongside opportunities for UK industry. The government should seek to collaborate internationally on trade and responsible mining practices, support circular economy initiatives in the UK and the development of technologies reducing demand for raw materials. Additionally, the infrastructure needed to support UK supply chains should be explored. The evidence base built on supply chains will have implications for other strategies the government is developing, such as the Infrastructure, Circular Economy and Trade strategies. These strategies must be aligned and complementary to the Industrial Strategy.

To enable achievement of the industrial strategy's objectives, in particular net zero, the Industrial Decarbonisation Strategy and the new industrial strategy will need to be well-aligned.

The industrial strategy provides a mechanism to send clear demand signals to industry. Some of the growth-driving sectors may require low carbon products which are not currently available at scale. Modelling by Cambridge Econometrics and the Cambridge Institute for Sustainability Leadership found that guaranteed downstream demand for low carbon goods could drive the upscaling of low carbon technologies within the studied sectors (cement, glass and ceramics), which in turn could lead to a quicker cost decrease through learning-by-doing and market competition effects.⁵

Demand-side interventions such as public procurement, regulation and standards can be used to drive demand for low-carbon products and provide essential custom to help innovative businesses grow and meet future demand. The government should consider how the industrial strategy can best communicate to industry and wider supply chains of important sub-sectors to ensure it contributes to increasing clarity and investment confidence.

A final measure that can be developed with a value chain lens and consideration of foundational sectors is the intervention needed on skills. Government should seek to work with businesses and devolved authorities to understand current and future skills gaps and local strengths to inform policy support for training, education and attracting talent to certain geographies. Additionally, this approach may provide evidence to inform just transition planning.

⁵ University of Cambridge Institute for Sustainability Leadership, 2023, [The role of demand-led innovation in supporting decarbonisation in foundation industries: Challenges, opportunities, and policy implications](#)

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?

The UK has endured the lowest levels of private investment in the G7 for 24 of the last 30 years. For the industrial strategy to support the twin goals of growth and net zero, the UK needs to attract investment in high-growth sectors whilst creating an enabling environment and incentives for net zero-aligned growth.

There are several significant barriers to investment in low-carbon products and services in the UK. The importance or scale of investment challenges will vary across sectors and the regions of the UK. These include:

- **Financial constraints and economic uncertainty:** the recent Covid pandemic, energy crisis and inflationary period have created economic uncertainty and, in some cases, made investment riskier.
- **Policy uncertainty:** mobile investment will flow to geographies with clear government support. This is exemplified by the fact in 2023 the UK's leading position on net zero slipped, most notably with investment in clean energy falling by 10% while investment in the US and Germany grew by 24% and 17% respectively. Many have linked this swing to the development of industrial policy in the EU and US. In August 2022, the US passed its Inflation Reduction Act (IRA), putting \$369bn of public funds up for grabs for investors in clean energy, manufacturing, and transport, plus \$300bn in tax incentives, grants, and loans. The EU created a €270bn funding pot with its Green Deal Industrial Plan. In September 2023, the UK government rolled back on some of its net zero commitments, including delaying the date of the phase out of internal combustion cars, damaging investor confidence in the UK green industries. Clear policy and enabling public finance can work to lower the risk of investment and help crowd in private finance.
- **Access to infrastructure:** lack of access to infrastructure and uncertainty around future access can be a significant barrier to investment. Key infrastructure includes transport links, electricity connection and access to other forms of energy such as green hydrogen. For example, IDRIC research found that delays for electricity connections for industrial sites and upgrades ranged from 2 to 12 years. The worst example was a quoted date of 2037 in response to a requested date of 2025. This aligns with Government's own findings that the average delay was 5 years. Infrastructure delays and uncertainty increase costs, risk investment and ultimately damage competitiveness and economic viability.
- **Skills:** one of the top issues highlighted by members was that the availability of skills and a skills pipeline are key factors in business investment decisions. A lack of both technical (e.g. manufacturing and digital) and soft cross-sectoral (e.g. project management, communication, and systems thinking) skills is undermining business productivity, innovation, and growth. Research by Kingfisher, for example, has found that the UK is on course to face a shortfall of 250,000 tradespeople by 2030, which

could cost the UK economy £98 billion in missed GDP growth opportunities.⁶ UK employer investment in training and development is far less than for OECD counterparts and has fallen by 28% in real terms since 2005.

- **Under-resourced public bodies:** linked to the skills gap is the lack of resources in public bodies to deliver the services and process needed for the growing economy in a timely fashion. Businesses rely on local authority and other public bodies to facilitate various processes and operations. For example, delays in the planning system linked to limited resource at statutory consultees such as Natural England and the Environment Agency, create uncertainty in timelines to progress through the planning process and introduce additional investment risk for developers and their supply chains.
- **High operational costs including electricity:** UK electricity prices are far above those in competitor nations, damaging competitiveness, slowing electrification, and even causing some businesses to shut operations. This is particularly the case for energy intensive users. The government's recent consultation on industrial electrification found that the high cost of electricity relative to natural gas is the primary barrier to widespread industrial electrification. With electricity costs four times greater than gas, it is challenging for industrial users to make a strong business case and as such investment is not made.
- **Market demand:** investment decisions and risk assessment are informed by certainty of market demand. Market demand may be uncertain, including for low carbon technologies, products and services. In the case of low carbon products, demand can be driven by regulation and compliance. The characteristics of a value chain should be considered to determine where regulation should be applied to ensure desirable outcomes are achieved. For example, a current challenge for some value chains is that regulatory pressure applied to suppliers to produce lower carbon goods (for example with the UK ETS) is misaligned with a lack of demand for low-carbon goods from their customers.
- **International competition:** other markets may be more appealing to investors due to policies in place, tax or other financial incentives, trade policy, or other opportunities. Private investment is highly mobile and global competition to attract it is increasing. For example, the US Inflation Reduction Act offers significant fiscal incentives, providing long-term certainty for investment in clean energy technologies and manufacturing, and the EU Green Deal policy package provides regulatory certainty. Trade barriers can also increase risk for investors, sectors where supplies chains are global or where the product is exported are particularly vulnerable.

⁶ Kingfisher, 2024, [UK to lose out on £98bn of growth by 2030 due to shortage of tradespeople](#)

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?**

The Aldersgate Group recommends a three-pillared approach to encourage investment into training to ensure people are equipped with the skills needed for the future net zero economy:

- **Equipping tomorrow's workforce.** According to a survey commissioned by WSP, 75% of students agreed that they would like or would have liked to learn more about climate, sustainability, and environmental-related topics at school. Additionally, just 22% of students felt informed about the range of green jobs available to them.⁷

The government should ensure climate change and environmental sustainability issues are embedded across all stages of the curriculum to equip students with the skills and knowledge needed for career opportunities in the low-carbon economy. This must be accompanied with better training for teachers, a proactive strategy to encourage the uptake of STEM skills (particularly amongst underrepresented groups), and a systemic approach to career advice in schools to improve awareness of the different pathways and training provisions (e.g., apprenticeships, skills bootcamps, sector-based work academy programmes etc...) to access low-carbon jobs.

- **Supporting today's workforce.** At least 80% of the UK's 2030 workforce is already in employment. Measures to upskill and reskill the current workforce, therefore, are vital.

The UK needs a tailored strategy to support those already in the workplace, particularly for those in the sectors expected to phase-down. To support this, the government should utilise the extensive research and work undertaken by the Green Jobs Delivery Group and originally destined to form a 'Green Jobs Plan'. Underpinned by sectoral assessments, the purpose of the plan was to understand where there may be workforce shortages and skills gaps, and how government and business working together can better provide opportunity for new entrants and existing workers to develop skills required to join low carbon and nature-positive sectors and occupations.

There is a financial dimension to retraining and upskilling. Employers may need help to cover the cost of training and the loss of income whilst staff are off-the-job (including the cost of backfill). Individuals, meanwhile, may need financial support to complete training as part of the process of transitioning between sectors/industries. The Aldersgate Group has previously called for the government to increase the Apprenticeship Incentive Payment to support SMEs to take on

⁷ WSP, 2023, [Students not drawn to careers in sectors crucial to UK's net zero ambitions, new research suggests](#)

apprentices and replace the Apprenticeship Rate with the national minimum wage to improve the attractiveness of apprenticeships.⁸

- **Skills do not sit in a silo.** For businesses to invest in new green skills for their workforce, and for education institutions to develop new courses, there needs to be a consistent and stable policy framework which provides some degree of certainty for employers and encourages investment in low-carbon infrastructure, products, and business models in the first place. This is particularly true of SMEs, which only have the capacity to focus on short-term business needs and lack confidence that there will be sufficient demand in emerging green markets. The government should publish clear, sectoral decarbonisation pathways to give employers and training providers clarity on the future demand of low-carbon products and services, as well as future skills needs.

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

Government should seek to work with businesses and devolved authorities to understand current and future skills gaps and local strengths to inform policy support for training, education and attracting talent to certain geographies. Additionally, this approach may provide evidence to inform just transition planning.

When considering interventions for specific sub-sectors, the government should seek to better understand the factors contributing to skills challenges and lack of private sector investment. For example, sectors operating with small margins may struggle to increase investment in skills, especially if demand is not clear or strong enough. In other cases, policy certainty or regulatory compliance may provide a sufficient signal to the private sector to invest in skills development.

The government should also consider where there are opportunities to align the delivery of publicly supported training and education, including in particular places, and raise awareness of the availability of training programmes and potential careers available to develop skills pipelines where they may be lacking. Phasing out fossil fuels means an end to operations in relevant sectors in future. While it is not appropriate for an industrial strategy to focus on maintaining these industries in their existing form, the skills and expertise in their workforces may be highly transferable for growth sectors or present opportunities for retraining and upskilling the workforce. To deliver a just transition, central government must ensure local and regional views are sought early in the process. Alongside other just transition policies, an industrial strategy should consider how best to use these strengths and create jobs in impacted areas. The right framework can enable a transition to net zero emissions without deindustrialisation in key areas.

To deliver a step-change in employer investment in growth-driving sectors, the government can support with clarity of demand and targeted support where most appropriate.

⁸ Aldersgate Group, 2024, [Beyond the levy: ensuring the effective implementation of the growth and skills levy](#)

For example, to encourage investment in apprenticeships, the government could top-up the funding bands for specific apprenticeship programmes. The previous government did this in 2024, with a two-year £50 million pilot for 13 high-value advanced manufacturing and engineering, green, and life sciences apprenticeship standards. Under this pilot, training providers will receive a £3,000 per-apprentice funding boost intended for course equipment, machinery and other capital expenses. Increasing the funding pot and the scale of the pilot to include a greater number of growth-driving sectors, could help to increase the supply of high-quality apprenticeship standards.

The government could also consider a skills tax credit to incentivise businesses in growth-driving sectors to invest in training. The Learning & Work Institute has suggested modelling a skills tax credit on the existing Research and Development tax credit to enable SMEs to deduct 230% of the cost of accredited training and apprenticeships from their tax liabilities (and 13% for large firms). The Learning & Work Institute estimate that this credit could increase employer investment in skills by over £1 billion per year with an extra 250,000 people gaining qualifications each year.⁹

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?

A number of barriers affect RDI, technology adoption and diffusion. Businesses across the economy would benefit from clarity on the decarbonisation pathways for different sectors. For example, industry and manufacturing sectors would benefit from better understanding how, where and by whom different fuels and technologies (such as electrification, hydrogen, and CCUS) will be used across the economy. Understanding where low-carbon energy may be available only in certain locations or in limited amounts is key to unlock business investment in the development and adoption of low-carbon technologies.

A blueprint for the infrastructure needed for deep decarbonisation and a clear roadmap for decarbonising dispersed sites, with details on how government will invest in the infrastructure critical for a successful industrial transition, would also be valuable. This infrastructure is a crucial enabler for technology adoption, with businesses unlikely to invest if infrastructure (outside their control) is uncertain. This includes consideration of grid infrastructure, planning and permitting guidance for local authorities and upcoming strategic spatial planning policies.

The UK has long faced challenges in the later stages of technology development and commercialisation, often capital intensive and perceived as higher risk for private investment. The Advanced Propulsion Centre's Automotive Transformation Fund uses a model that supports R&D and capital investments such as gigafactories, an approach that serves as a potential example to expand or replicate in other sectors. For some technologies, operational costs or lack of business models are a key barrier to investment in RDI and technology adoption, with opportunities for the government to help resolve such challenges.

⁹ Learning & Work Institute, 2022, [Raising the bar: Increasing employer investment in skills](#)

When considering adoption of new technologies, businesses will be assessing the associated risks and may be concerned about being first adopters. Potential policy solutions including public support for demonstrator programmes or market demand support, increasing incentives for technology adoption.

Research from Nesta found that corporate incentives inhibit innovation.¹⁰ The government may wish to explore with the Industrial Strategy Council and wider business engagement how businesses can be better incentivised to innovate.

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

R&D and commercialisation of new products and services carry risk. Risk comes from assorted factors, including cost and access to finance, scale of technical challenge, uncertainty and time to market, availability of knowledge, expertise and skills. Despite world-leading research capabilities, the UK has long faced challenges in the later stages of technology development and commercialisation, often capital intensive and perceived as higher risk for private investment in the case of new green technologies.

The government should ensure that support already available for R&D and commercialisation is well understood, and identify lessons or key gaps for the sectors prioritised in the industrial strategy. For example, the Advanced Propulsion Centre's Automotive Transformation Fund uses a model that supports R&D and capital investments such as gigafactories, an approach that serves as a potential example to expand or replicate in other sectors. Other under-utilised policy tools are public procurement, policy certainty and regulation, which can provide clear demand signals to industry and reduce the risk associated with R&D and commercialisation.

Public procurement can provide that essential first contract enabling the commercialisation of an innovative product or service. Outcomes-based approaches can be helpful to drive innovation, enabling businesses to propose solutions rather than being prescriptive in what should be delivered. Outcomes-based procurement is not appropriate in all situations and policymakers/commissions should carefully consider the extent to which sectors and supply chains will be able to deliver innovative solutions to a challenge. This includes the complexity of the challenge, technology readiness, innovation capability and skills in the sector. Collaboration and expertise from sector teams across government departments, the Catapult Centres, Innovate UK, and other networks such as trade associations and academic experts will be valuable. Lessons should be learnt from the Small Business Research Initiative (SBRI) and large public sector bodies such as the NHS.

¹⁰ Nesta, 2019, [The Invisible Drag on UK R&D: How corporate incentives within the FTSE 350 inhibit innovation](#)

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?

The government must ensure that the industrial strategy places decarbonisation at its heart and contributes to the enabling environment for low-carbon and sustainable growth. Infrastructure is a key component to this, from access to the low-carbon energy sources needed to power industry, to charge points for electric vehicles. Businesses consider access to infrastructure in their investment decisions for growth and decarbonisation. This will also include transport infrastructure used by employees and customers, which can give access to a wider skills pool, making an area more desirable to live in and attracting global talent to or influence demand for certain products. The government should identify where infrastructure is a key factor or enabler for decarbonisation and identify solutions accordingly. Place-based approaches will be important here to support opportunities across the regions and clusters.

The Aldersgate Group, RenewableUK and CPRE worked together to explore how the planning system for renewable energy and grid infrastructure can be improved, whilst protecting nature, landscapes and communities' right to input.^{11,12} As part of this project, we found that energy developers view the Nationally Significant Infrastructure Projects (NSIP) regime positively, with it providing a high degree of process certainty and objective assessment. This factors into some developers' decisions on whether to enter the NSIP or Town and Country Planning Act (TCPA) regime, with process certainty one of the reasons to justify the additional resources need for the NSIP process. The NSIP process also supports power cable connections, whereas projects going through the TCPA process need to be located close to the grid or require permissions for cabling – joined-up approaches are welcome. The TCPA process can be quick but it is also viewed as having the potential to be more subjective or driven by local politics.

Uncertainty in timelines for the NSIP process is, however, increasing. Uncertainty in process timescales introduces risk, potentially jeopardising a project's position in the grid connection queue and with its supply chain arrangements. Delays can stem from lack of resourcing at statutory consultees or time taken at the final decision stage with the Secretary of State, viewed as slower than necessary. The challenge lies with efficiency in the system, and in some cases additional time is necessary to ensure good outcomes.

Lack of resources and skills for statutory consultees introduce unintended consequences, with variation in process timescales. A lack of early engagement by statutory consultees can result in unexpected requests for additional time and information during the formal application process, introducing delay. Productive conversations at early engagement help develop more thorough and high-quality applications upfront and reduce the back and forth in the formal process. Some energy developers use paid services (e.g. Discretionary Advice

¹¹ Aldersgate Group, RenewableUK, and CPRE, 2024, [Insights for the decarbonised electricity system: journeys through planning: Interim findings](#)

¹² Aldersgate Group, RenewableUK, and CPRE, 2024, [Electric dreams: how the planning system can help deliver the UK's low-carbon energy: Final report and recommendations](#)

Service, Service Level Agreements, Planning Performance Agreements) but these are not viewed as a complete solution to the challenge.

Other barriers include inefficiencies affecting the environmental impact assessment process. The environmental impact assessment can start years before a formal application is submitted to allow time for surveys, with potential challenges or additional resources required if location is initially uncertain. Energy developers can consider environmental impact data as commercially sensitive, limiting data sharing. In addition, the availability of accessible environmental data is limited. This can introduce duplication, wasted resource or additional time to the process if further assessment is required. Some developers view the EIA process as overcomplicated. EIA documents are not always readily available or understandable to the public.

Lack of policy clarity is also introducing uncertainty, delays and politics into decision-making. Policy clarity on how to balance trade-offs is lacking, introducing challenges for the Planning Inspectorate in making recommendations. Politics can also enter decision-making, and in some situations the Planning Inspectorate's recommendation is not followed. Public opposition to projects can be high and contribute to political opposition or delays in decision-making.

In our final report 'Electric dreams: how the planning system can help deliver the UK's low-carbon energy', we make recommendations to the government, particularly focused around strategic planning and communication, and solutions for resource challenges, to ensure the NSIP regime works more effectively and efficiently to enable the deployment of renewable energy and grid infrastructure. The recommendations are:

- Set out comprehensive decarbonisation plans for the power system to provide clarity to the public and businesses on the 2030 power and 2050 net zero targets.
- Deliver a public campaign to make the case for new renewable energy and grid infrastructure, laying the foundations for positive community engagement.
- Develop the Strategic Spatial Energy Plan to reduce cascading challenges in the planning system and front-load consideration of the natural environment.
- Improve join-up between environment and energy policy to harness opportunities and incentivise integrated solutions for decarbonisation and nature-positive energy infrastructure.
- Increase the quality of community engagement across the planning system.
- Efficiently resource statutory consultees and local authorities, for example with accessed to centralised or regional hubs and relevant expertise.
- Enable the use of technology and innovation to increase efficiency in environmental impact assessment.
- Digitalise the planning system to increase efficiency and accessibility.

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?

With regards to energy infrastructure, the government needs to give clarity to businesses to support investment. The Strategic Spatial Energy Plan, Clean Power 2030 Plan, and local

energy plans can all help illustrate of what infrastructure will go where and how, including where there are opportunities or incentives for them to invest, for example in on-site generation.

The government must also ensure that clarity on energy supply is paired with a policy framework addressing energy demand, including incentives or requirements from businesses to drive uptake of energy efficiency measures and ensure business growth is aligned with a net-zero economy.

Transport infrastructure is also crucial and is very wide-ranging – from roads and railways to vehicle charging points and international air and shipping terminals. Investment in transport infrastructure can significantly support a UK industrial strategy by enabling efficient movement of goods, people, and resources, which is crucial for economic growth, competitiveness, and sustainability. Key aspects are as follows:

- **Boosting regional connectivity and growth:** Improved transport links can connect less developed regions with economic hubs, supporting equitable growth nationally. Enhanced connectivity also allows businesses to reach broader markets, reducing costs and increasing competitiveness. In addition, strategic investments can create and strengthen industrial clusters, encouraging innovation and collaboration.
- **Enhancing supply chain efficiency:** Modern transport systems decrease shipping times and costs, supporting manufacturing and trade. Reliable transport networks also mitigate disruptions and improve supply chain predictability, essential for industries reliant on just-in-time production.
- **Supporting low-carbon growth and sustainability:** Investments in public transport, electric vehicle infrastructure and rail freight reduce emissions. Upgraded rail and waterways can shift freight from roads, easing congestion and reducing environmental impact.
- **Enabling workforce mobility:** Better transport links expand the reach of the labour force, connecting workers with employment opportunities in key industrial zones. Reduced travel times allow employees to work more efficiently, benefitting businesses and the wider economy.
- **Attracting investment:** Modern infrastructure signals a commitment to long-term economic growth, attracting both domestic and foreign investment. Investment in transport can also support cutting-edge sectors such as autonomous vehicles.
- **Strengthening trade and export potential:** Ports, airports, and rail systems facilitate trade by improving export logistics and import efficiency. Upgraded transport systems make UK cities and regions more attractive for global business operations.

The natural environment is also ‘critical infrastructure’ for a resilient economy. 55% of global GDP is moderately or highly dependent on nature. Clean air, clean water, flood mitigation, pollination, the provision of food and materials, and nutrient cycling are among the foundations of a habitable planet, and are directly or indirectly essential to all businesses.

Nature also has huge value in its beauty and benefits to our health and wellbeing, and to that of other species. Practical action and delivery on the ground are urgently needed to reverse the UK's poor track record on nature and grasp opportunities to drive nature restoration and biodiversity. Importantly, this will also generate new jobs and improve the UK's climate and supply chain resilience.

Businesses increasingly understand the risks posed by nature's decline pose to their revenues, operations, supply chains and overall resilience, as well as the opportunities action for nature recovery brings. Our corporate members agree that ambitious environmental policies make clear economic sense for the UK. It is undeniable that a significant proportion of investment and implementation needed to support nature recovery will need to come from the private sector. Given the right conditions, including regulation and robust nature markets, this can be deliverable. The Aldersgate Group is due to publish recommendations shortly on enabling business action and investment for the environment.

Infrastructure can also play a role stimulating demand from the priority sectors, net zero and innovation challenges. Significant investment is going into infrastructure in the UK over the coming decade and provides an opportunity to give a strong net zero market signal and confidence for low-carbon solutions such as low carbon cement. This will give the private sector the confidence to invest and funders the confidence to fund.

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?

The government's response to the call for evidence on industrial electrification captures the key barriers well. We agree that these are high electricity costs, grid connection delays, technology uncertainty and unclear and inconsistent levels of support between hydrogen, bioenergy and electrification.

A further gap is the role of demand-side policy intervention to support competitiveness and encourage private sector investment in electrification. The lack of or limited market demand for low-carbon products makes it challenging for industry to invest in low-carbon solution such as electrification. The government should seek to understand how demand side policy like green public procurement and product standards could support industrial electrification, alongside other decarbonisation pathways. The government must also continue with the implementation of the Carbon Border Adjustment Mechanism (CBAM), working alongside the UK Emissions Trading Scheme (ETS), to ensure that low-carbon goods are not at a competitive disadvantage compared to high-carbon goods.

Further research is needed in the following areas:

- The government's response recognises the need to increase supply to meet future industrial electricity demand and asserts that the government are working with network companies and NESO to deliver this. However, more analysis is needed to understand how distribution network constraints will develop over time, where and which sectors or sites may be affected. This can help inform investment and policy decisions.

- The grid connection process, agreements and customer service at the distribution level are widely reported to be inconsistent and unclear. More analysis is needed on the barriers faced and solutions, including standardisation, that can be put in place to improve and accelerate the process.
- Some industrial sites may seek to develop on-site generation and storage. There may be a role for policy intervention to better support this private sector investment.

The review of electricity market arrangements (REMA) will also be important to consider from the perspective of competitive industrial activity and increased electrification. Complementary policy may be needed to mitigate potentially negative or unintended consequences of locational pricing or decoupling of gas and electricity prices (which are likely to be important interventions in themselves). The government should seek to understand what industry needs to accelerate electrification and how to best ensure the transition enables them to be commercially competitive. Dispersed sites and smaller businesses who lack capacity or access to shared infrastructure may be most vulnerable.

Reducing electricity prices for industrial customers, especially energy intensive sectors, is a vital pre-requisite to enable growth in tandem with decarbonisation, especially where electrification is a solution. The government should explore solutions to support businesses on energy prices as well as energy efficiency, with additional gains from reducing energy demand.

The government should take decisive action to reduce industrial electricity prices, both relative to prices in key competitor nations and in relation to gas prices. Moving policy and network charges from electricity bills to general taxation would be a first step. The government should also look to support the ability of industry to strike Power Purchase Agreements (PPAs) and develop business models and financial incentives for electrification, learning from relevant initiatives such as contracts for difference, and hydrogen and CCUS business models.

The government should also ensure that incentives are in place to progress decarbonisation and energy efficiency. The UK ETS and carbon price need to fulfil their role and incentivise decarbonisation. The carbon price is currently lower than the EU's, limiting incentives to decarbonise and invest in low-carbon technologies. The cost of carbon emissions must be high enough to initiate the retirement or decarbonisation of emitting installations. ETS market mechanisms should be explored to resolve this issue and enacted in the next iteration of the UK ETS. This includes considering the introduction of an increasing carbon price floor and conditionality for free allocations, for example requiring installations to provide a decarbonisation strategy. The burden placed on ETS participants should be carefully considered, with support and alignment to EU ETS where appropriate.

The government should explore options to enhance the PPA market, including mitigating the risk of off-taker payment default. This can be achieved, for example, by developing standardised tradeable PPA contracts or offering state guarantees. Without solutions, the use of CPPAs will continue to be limited to certain stakeholders only. A report produced by UCL for the Aldersgate Group, "A zero-carbon power grid and the electrification of heavy industry: how to deliver on a twin challenge", highlighted a lack of evidence that private PPAs could support the pace of renewables deployment. Between 2019 and 2021 only 1.3GW of

subsidy-free PPA capacity was signed in the GB market, contrasting with the need for 10GW/yr or more average over the next decade. The report also brings to the fore challenges faced by energy-intensive sectors with regards to CPPAs. In the chemicals sector, a limited proportion of PPAs are based on renewable energy due to very high power demand. The steel sector is limited in its ability to contract PPAs in part due to uncertainty around future plant viability, precluding long-term contracts. The cement sector tends to buy directly from the wholesale market or procure from suppliers through green tariffs backed by Renewable Energy Guarantees of Origin (REGO).

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?

France has introduced policy focused on services businesses and building owners. The Éco-Énergie Tertiaire Regulatory obligation imposes a 40% reduction on the services sector's final energy consumption by 2030. Building owners also have a reporting obligation to measure progress. Article 101 of the French Climate & Resilience Law of August 22, 2021, introduced a requirement for certain buildings and associated parking lots to install solar arrays, shading and rainwater management systems.

Germany has introduced contracts for difference for energy intensive manufacturing. To be eligible, projects will need to achieve 60% emissions reduction in three years and 90% emissions reduction in 15 years compared to the best available conventional technologies based on EU ETS benchmarks. The level of aid awarded to each business will be defined through a competitive bidding process and takes the form of direct grants. Successful projects will be awarded "Climate Protection Contracts", with yearly payments for 15 years which begin upon the operational start of the project. If the greenhouse gas emissions savings achieved by the project are below the 60% objective by the beginning of the third year of the project's implementation and 90% by the last twelve months of the contract duration, aid payments will be reduced. Contractual penalties or a full reclamation of aid may also be imposed in certain cases. The scheme supports investment and protects Government spending through the two-way mechanism. One significant advantage is that the policy is technology neutral, allowing business to choose the most appropriate technology option for them. One disadvantage is that the scheme isn't that suitable for SMEs, although the German government have mitigated this by also introducing the Federal Funding Industry and Climate Protection scheme which is aimed specifically at SMEs.

18. Where you identified barriers in response to Question 7 which relate to competition, what evidence can you share to illustrate their impact and what solutions could best address them?

The industrial strategy should consider the international policy landscape and understand where UK businesses are potentially at a disadvantage. This includes ensuring that a level playing field is in place, ensuring that those businesses contributing towards the wider delivery of net zero are not placed at a competitive disadvantage compared to higher carbon activities.

It is vital that the government mitigates the risk of carbon leakage and supports the competitiveness of UK industry in the UK market. We support the government's plan to

introduce a carbon border adjustment mechanism into the UK and recommend the continued review of the sectors covered by the UK ETS and CBAM to ensure these policies are aligned with the priorities of the industrial strategy and avoid unintended consequences. For example, an ambitious approach to ETS and CBAM may support the net zero aim of the Industrial Strategy's growth-driving sectors.

The Aldersgate Group also recommends the linkage of the UK ETS and CBAM to those in the EU, taking an ambitious approach to ETS reform. A considered approach to linkage will ease compliance for UK companies exporting to the EU, who would not have to produce new documentation of compliance with EU rules. It should also improve liquidity in the UK ETS, as being part of a larger market increases the opportunity for trading allowances; and perhaps most importantly, would exempt UK producers from the EU CBAM. Linkage would reduce trade barriers, while maintaining high environmental integrity, creating an enabling environment for investment.

The UK must use its influence on the global stage to support international cooperation on carbon leakage mitigation. This includes working with other nations to establish common carbon pricing and emissions reporting methodologies and driving international action.

19. How can regulatory and competition institutions best drive market dynamism to boost economic activity and growth?

Regulatory and competition institutions, as well as accreditation and standard bodies, have a crucial role to play in delivering an enabling environment and level playing field for businesses to operate in. These institutions must be appropriately resourced to carry out their role effectively, noting concerns raised by businesses with regards to resourcing of regulators and ensuring they have the capacity to enforce regulations, crucial to maintaining a level playing field.

21. What are the main factors that influence businesses' investment decisions? Do these differ for the growth-driving sectors and based on the nature of the investment (e.g. buildings, machinery & equipment, vehicles, software, RDI, workforce skills) and types of firms (large, small, domestic, international, across different regions)?

Businesses' investment decisions are influenced by several key factors:

- **Financial return.** Financial return is the primary consideration behind business investment decisions. Businesses are unlikely to invest in activities (such as machinery & equipment, buildings, RDI) that are not currently commercially viable, unless incentivised to create a commercial case or where they have a high degree of confidence as to the future commercial benefit. Here, the cost of capital (that is, the minimum return a company would need to justify a capital budgeting project) plays an important role. In 2023, for example, Vattenfall suspended the 1.4 GW Norfolk Boreas offshore windfarm because of rising costs, inflation, and geopolitical instability, which made the project no longer profitable.¹³

¹³ Reuters, 2023, [Vattenfall says it is stopping British Norfolk Boreas offshore wind farm](#)

- **Non-financial factors.** Aside from financial return, businesses may be incentivised to invest in activities because of non-financial factors, including meeting regulatory and legislative requirements, adhering to industry standards, retaining staff and developing their capabilities, and improving the business's reputation.
- **Risk.** Risk is another critical factor, as it affects investors' and businesses' ability to tolerate fluctuations in the value of their investments. The cost of capital reflects the real and perceived risks associated with cash flows and balance sheets, making higher risk investments more expensive to finance. This is a particular challenge for emerging and nascent low-carbon technologies, which often have uncertain commercial viabilities because of their capital-intensive nature, long-term time horizons, and unknown payback periods.
- **The wider policy and economic environment.** Business investment decisions are influenced by their confidence in the UK economy and policy, compared to other markets and jurisdictions. Following recent policy instability in the UK, investment in the UK over other countries would be encouraged by a clear, well-communicated, consistent and enabling policy environment.

The factors that influence businesses' investment decisions will be experienced differently across growth-driving sectors. Clean energy industries, for example, are capex-intensive and have higher upfront costs, making them particularly vulnerable to changes in the cost of capital.

These factors also differ by firm size. According to a Bank of England survey, financial constraints (high borrowing costs and strict collateral requirements) and economic uncertainty as the key reasons for underinvestment in SMEs. SMEs may also struggle to access finance as they are a traditionally risky asset class that is not very liquid. Large, multinational companies' investment decisions, meanwhile, which be influenced to a greater extent by non-financial factors such as regulation. These firms may invest to ensure their products or services are compliant with different regulatory standards, avoiding added cost and complexity.¹⁴

23. The UK government currently seeks to support growth through a range of financial instruments including grants, loans, guarantees and equity. Are there additional instruments of which you have experience in other jurisdictions, which could encourage strategic investment?

The UK government's current approach to supporting growth could be improved with:

- **A simplified public finance ecosystem.** As recommended by the National Wealth Fund Taskforce, there should be a "review of the government-owned development finance institutions with the objective of simplification, building economies of scale and reducing friction for private investors". Relatedly, the government could also streamline HMG funds and grants or at least ensure clear communication and ease

¹⁴ Bank of England, 2024, [Identifying barriers to productive investment and external finance: a survey of UK SMEs](#)

of navigation for businesses. The Hydrogen Net Zero Investment Roadmap, for example, references 20 separate funding schemes.

- **Considered approaches to balance risk.** Public Financial Institutions (PFIs) play an important role in de-risking investment into emerging markets and technologies. A common issue raised, however, is where “the risk appetite, minimum ticket size or returns mandate of institutions do not permit them to be active in areas where there are major market barriers”. Without a greater risk appetite, nascent technologies within growth-driving sectors may be deemed too risky.¹⁵

The UK should also look to draw on international examples of good practice to encourage strategic investment. Japan, for example, has recently issued US\$11 billion of climate transition bonds aimed at funding projects, that, while not strictly ‘green’, are expected to reduce emissions in high-carbon economic sectors. Of the proceeds, 55% has been allocated to research and development (with 18% specifically for the use of hydrogen in steel production), while the remaining 44.5% of funds are designed to support decarbonisation objectives, including a large subsidy for silicon carbide power semiconductors for renewable energy, clean transport, electricity storage batteries, and electricity transmission and distribution.¹⁶

The UK issued two green gilts in 2021, which have raised £43.4 billion as of October 2024. The UK government could look to issue an inaugural transition bond to raise finance for nascent technologies necessary to unlock growth and accelerate decarbonisation.

Public financial instruments are an important lever at the government’s disposal. It is essential to ensure that public funding supports growth and crowds in private investment. The government must ensure that financial instruments deployed as part of the industrial strategy do not crowd out private investment, rather that it maximises opportunities and attractiveness for private sector investment.

24. How can international partnerships (government-to-government or government-to-business) support the Industrial Strategy?

The government’s commitment to “free and fair trade,” as outlined in the green paper, represents a positive step towards fostering global economic cooperation. A key priority should be identifying opportunities where the UK’s industrial strategy can build on international collaboration. The 2021 Atlantic Declaration between the US and UK is a prime example of this approach. It successfully deepened economic relations, particularly by enabling UK electric vehicle manufacturers to access US green tax credits and subsidies, which is crucial for accelerating the transition to a greener economy.

The government should also seek to better understand supply chain risks, including for critical raw materials, and collaborate internationally on trade and responsible mining practices. Secure supply chains are important to consider for decarbonisation and economic security. According to a 2023 OECD report, “the development of secure and competitive supply chains in clean energy technologies is critical to ensure a resilient clean energy

¹⁵ TFMR, 2024, [Scaling Transition Finance: Findings of the Transition Finance Market Review](#)

¹⁶ Climate Bonds Initiative, 2024, [Japan’s Climate Transition Bond: a milestone in sustainable finance](#)

transition and energy/economic security". The UK's low-carbon energy sector is import-dependent on many raw materials, such as critical minerals, steel, glass, and ceramics. Geographical or market concentrations in clean energy supply chains create bottleneck risks where material shortages, climate change and natural disasters, or policy decisions could disrupt clean energy supply chains. Boosting domestic supply chain resilience and circular economy initiatives can bring economic benefits with novel technology commercialisation, job creation and export opportunities. For those imports that are not always possible to replace - for example, critical raw materials that the UK does not have access to, fostering open markets and developing strategic partnerships will be key.

Furthermore, the UK government should focus on facilitating the flow of finance across jurisdictions by ensuring that UK regulations are compatible with those in other major markets. One specific step in this direction would be linking the UK Emissions Trading System (ETS) and Carbon Border Adjustment Mechanism (CBAM) to those in the EU. This would not only ease compliance for UK companies exporting to the EU, but would improve the liquidity in the UK ETS, as being part of a bigger market increases opportunity for trading allowances. Endorsing and adopting the International Sustainability Standards Board (ISSB)'s disclosure standards would also help provide international investors with decision-useful, consistent, and comparable information. By embracing such frameworks, the UK can encourage greater cross-border investment.

26. Do you agree with this characterisation of clusters? Are there any additional characteristics of dimensions of cluster definition and strength we should consider, such as the difference between services clusters and manufacturing clusters?

We welcome the government's interest in clusters and broad characterisation, with skills, infrastructure, and innovation as key ingredients for a successful cluster. A key additional characteristic to consider is that clusters can be cross-sectoral, especially where similar skills or infrastructure are needed or due to supply chain connections. For example, the concentration of design skills from the automotive sector in the Midlands is viewed as a key factor in the development of a video games cluster in the region. Infrastructure such as ports can create a geographic hub where different sectors operate. The government should incorporate this into its definition to ensure that too narrow a lens is not applied and maximum opportunities can be leveraged for a cluster.

Other characteristics making for a successful cluster include but are not limited to access to transport and telecommunications infrastructure, connections to local government, local skills training provision and links to R&D organisations such as universities, knowledge exchange and cross-cluster collaboration.

In the context of a low-carbon and environmentally sustainable economy, a successful cluster should also incorporate principles of circular economy and resource efficiency. For example, one company's waste or excess heat is another's raw material or energy supply, increasing productivity and growth opportunities.

Significant literature is available on clusters, as well as international case studies for the government to learn from. In many cases, clusters emerge organically and are not 'created'

by policy intervention, but policy has a key role to play in supporting the development and growth of a cluster with an enabling environment.

27. What public and private sector interventions are needed to make strategic industrial sites ‘investment-ready’? How should we determine which sites across the UK are most critical for unlocking this investment?

The government should engage with businesses to better understand what ‘investment-ready’ looks like from their perspective and any sector specifics. Businesses will look at a number of factors to determine where to locate their activities, including the availability and pipeline of skills, location of their supply chains and local networks, availability and access to infrastructure (including energy, telecoms and transport), and any other factors that may introduce investment risk.

Existing policies, such as freeports and investment zones, provide a locational signal for investment and may offer valuable lessons and insights for implementation. It will be important to ensure that the government considers the complexity businesses face when navigating new policy and ensure any new interventions are well communicated.

‘Investment-ready’ sites can present unintended consequences. As part of a project on the planning system for renewable and grid infrastructure, we tested the idea of ‘turnkey sites’ for energy infrastructure, drawing inspiration from France. ‘Turnkey sites’ are sites made available to developers ready for construction, for example with existing planning approval and community consent. Caution was raised by environment NGOs, community stakeholders and energy developers, highlighting potential strain on resources in the planning system diverting from other sites, watering down of environmental protection requirements (or the perception of), other sites being viewed as un-investable as a result, and how long community consent would be valid for.

The Industrial Strategy Council and engagement with stakeholders more widely will be essential to ensure any new policy can be successfully implemented and unintended negative consequences avoided or mitigated.

28. How should the Industrial Strategy accelerate growth in city regions and clusters of growth sectors across the UK through Local Growth Plans and other policy mechanisms?

A whole value chain approach which is spatially cognisant will enable a better understanding existing strengths, opportunities, including for just transition, and potential risks. A place-based strategy should draw on targeted policies, for example targeted support for re-training, incentives for co-location of certain businesses or better connections to other knowledge hubs.

Currently, most of England’s biggest cities outside London have productivity levels below national average. The industrial strategy provides an opportunity to take a spatial approach and build on regional strengths. Lessons from the devolved nations and the City Deals will be valuable, including the South Wales compound semiconductor cluster and Cardiff City Deal, Belfast technology cluster and Scottish photonics cluster.

The UK approach to supporting industrial clusters, as part of the industrial decarbonisation strategy, is generally considered to be successful so far, providing policy certainty and the planned access to infrastructure to attract investment.

Collaboration and networks lie at the heart of clusters, sharing knowledge, ideas, data and trade between businesses. An environment which encourages and incentivises collaboration will be valuable, with a potential role for government and public sector organisations that needs to be explored further. Government could leverage existing institutions, such as regulators or Catapults, who already have in-depth knowledge of industrial clusters. There is also an opportunity for clusters in the government's circular economy strategy, as industrial clusters may provide opportunities to deploy circular business models including the use of by-products and re-use of products and materials.

With increasing devolution, including transport, local energy plans and local nature recovery strategies, mayoral combined authorities and other regional or local authorities have important roles to play in the development and delivery of the industrial strategy. They can provide local insights and knowledge of challenges facing businesses, as well as contributing to the delivery of an enabling environment for businesses to operate in, for example through local transport or skills policy aligned with the needs of the cluster. We support the government's recognition of the role of metro Mayors, and the request for them to produce 'local growth plans' to show how an area can contribute to the national growth mission and what interventions may be needed locally to inform and deliver the industrial strategy and regional growth.

The government should clarify how local plans and the national industrial strategy will align and be interoperable. Sequencing and alignment between the Industrial Strategy, the devolution framework and local growth plans will be key. We recommend an iterative approach, ensuring that local growth plans can inform the development of the industrial strategy with evidence on strengths, existing barriers and potential interventions. Plans should be updated to reflect the industrial strategy once published and reviewed on a regular basis to form part of monitoring and evaluation of the delivery of the industrial strategy, including identifying where interventions are not delivering intended outcomes and potential solutions. The government should consider how to best to support the development of local growth plans with access to resource and expertise, time for engagement with local businesses and other key stakeholders, as well as the degree of consistency for plans and methodologies across different areas. A centralised or regional hub with resource and expertise for combined authorities to draw on may be an efficient model.

Cluster- and city-based approaches are an opportunity to deliver inclusive growth. A holistic view of the enabling infrastructure needed will be important for success, including transport, digital infrastructure, availability and affordability of housing, local education and training, as well as mechanisms to attract new businesses, talent and investment to the area. Places perceived as 'attractive' and better to live in can draw further investment and interest from global talent.

The industrial strategy must also be aligned with and inform spatial strategies currently under development, including the Strategic Spatial Energy Plan and the Land Use Framework, the long-term transport strategy, and devolution. For example, places and

sectors supported by the industrial strategy should be considered as part of energy demand forecasts and planning for grid connections and the grid upgrade. Environmental improvement and nature recovery have wider social and wellbeing benefits that can contribute to how 'attractive' a place is viewed as.

29. How should the Industrial Strategy align with devolved government economic strategies and support the sectoral strengths of Scotland, Wales, and Northern Ireland?

Sectors and businesses operate across jurisdictions. Ease of operation across different jurisdictions is crucial characteristic of an enabling environment for businesses. The government should work closely with the devolved nations to ensure strategies are complementary and identify mechanisms to facilitate business operations across the nations.

Several policy areas are relevant here, including skills, planning and regulation. For example, policy for apprenticeships diverges across the devolved administrations. Businesses with operations across the UK and contribute to the Apprenticeship Levy can face challenges to deliver a consistent and equitable experiences for apprentices and are limited in their ability to direct Apprenticeship Levy funds outside of England, irrespective of the scale of opportunity.

30. How can the Industrial Strategy Council best support the UK government to deliver and monitor the Industrial Strategy?

The primary role of the Council should be to offer an independent "reality check" on the government's approach to the industrial strategy. Members should have a range of expertise encompassing different business and industry sectors (including finance), as well as the view of employees, which enables the Council to understand and play back where the opportunities and gaps are within the strategy, and how it can deliver benefits most effectively. For the Council to have real impact, it needs to have early sight of analysis, evolving policy and the ability to offer views, which are then genuinely factored in to final decision-making. This means all relevant policy teams (which might be a broad spectrum across various government departments) building in time for that step, and the process being part of a coordinated governance approach. It may also be valuable for the Council to have access to analytical capability and resource.

If industry engagement is already routinely happening at sectoral level, that should be fed back into the Council to avoid duplication and slowing down of the process. Similarly, it is likely that an outer advisory tier might be needed in order to keep the Council itself to a manageable size. The outer tier might pick up closely connected issues with a sector or place-based lens or across key areas such as education and skills, nature restoration, transport/energy/water infrastructure, and housebuilding, where there are many vital interactions with industrial strategy and the need to connect in key experts.

As well as contributing to policy development, the Council should also be able to offer ongoing feedback on how delivery is working, creating a positive loop which then influences future policy design.

The government should learn lessons from different models that have been in place previously to ensure the Council is set up for success. A clear role and purpose, as well as effective networks, are essential.

31. How should the Industrial Strategy Council interact with key non-government institutions and organisations?

There is a huge range of expertise available across trade associations, arms-length bodies, NGOs, think tanks – not forgetting regional and local organisations (including Chambers of Commerce and local government) that can provide vital intelligence about real world impacts. It will be helpful for all those organisations if the Council has a clearly signposted and timetabled work programme, with engagement opportunities flagged early and designed openly. The use of online workshops and digital tools is legitimate if it enables maximum engagement from around the UK.

The Climate Change Committee does external engagement very well (noting that its main duties and outputs are scheduled in legislation) and would be a model worth emulating. As mentioned in Q30, it would also be worth considering an outer advisory tier to pick up key representatives of some of those organisations, keeping the remit of the Council clear while enabling others to contribute in a timely way.

It's also important not to forget international interfaces, including the European Union. Many businesses will have an international presence and be able to offer insights accordingly, but a strong understanding of how the strategy will play out in the global context is vital (given that essentially an effective industrial strategy will disrupt the status quo for how UK industry is positioned globally).

32. How can the UK government improve the interface between the Industrial Strategy Council and government, business, local leaders and trade unions?

As mentioned in response to question 31, it would help to have a clearly stated remit for the Council along with a timetable of engagement and outputs published substantially in advance. The remit should make clear how the work of the Council interfaces with government decision-making (across all relevant departments, not just DBT), and indicate when engagement with others will happen and the aim of that engagement (i.e. consultation versus notification). Where difficult trade-offs or decisions emerge, these should be surfaced early and openly, giving all interested parties the opportunity to understand the rationale and share views.

The Council should also have well-established networks and connection points to ensure that, if necessary, rapid requests for input can be cascaded to relevant organisations and stakeholder. Potential risks that would affect the industrial strategy include acute events and geopolitics. It will be invaluable to put in place networks ahead of time to maximise agility. Lessons from the COVID-19 pandemic and expertise networks developed by the Government Office of Science may be valuable to support forward planning.

34. How could the analytical framework (e.g. identifying intermediate outcomes) for the Industrial Strategy be strengthened?

The analytical framework would be strengthened by clearly incorporating the objectives of the industrial strategy, including net zero. This would translate into intermediate outcomes, for example on around energy efficiency and low-carbon energy deployment, percentage of green growth as a proportion of overall growth, circularity, environmental improvement, embodied carbon.

The industrial strategy can play a role in delivering other government targets, such as the 2030 clean power mission, which should be recognised in the analytical framework.

35. What are the key risks and assumptions we should embed in the logical model underpinning the Theory of Change?

International competition is growing, driven by government interventions and soaring demand for low-carbon technologies. Private investment is highly mobile and global competition to attract it is increasing as other nations' ambitions and actions have dramatically increased, in particular with regards to decarbonisation and clean energy.

China currently dominates clean energy technology supply. Industrial policy interventions in other jurisdictions are also shaping markets. The US Inflation Reduction Act offers significant fiscal incentives, for example, providing long-term certainty for investment in clean energy technologies and manufacturing. The EU has also set out a response with the Net Zero Industry Act and Green Deal policy package, with potential further action following Mario Draghi's report on EU competitiveness. The International Energy Agency found that almost 400 trade measures affecting clean energy technologies have been introduced since 2020, most of them restrictive. With an uncertain global context, key risks include conflict and potential further energy or supply chain shocks, as well as new or changing international industrial policy interventions with potential to impact UK businesses and global investment.

Supply chain bottlenecks are a risk, with particular concerns identified and anticipated for critical raw materials and clean energy technologies.

Demand for critical raw materials is expected to soar. Clean energy technologies require significantly more critical raw materials than fossil fuel technologies. For example, just in the case of batteries, global demand for raw materials is expected to increase significantly: by 20 times for nickel, 19 for graphite and 14 for lithium in 2040 compared to 2020.¹⁷ Supply shortages are already anticipated this year, depending on the materials. Critical raw materials demand isn't limited to energy technologies but also electronics and other high-growth sectors. As demand is expected to soar, there isn't a pipeline of mining projects being delivered. It takes an average of 15.7 years for mines to go from discovery to commercial production. Furthermore, critical raw material supply chains can be vulnerable to disruption from natural or geopolitical events due to concentration in one or a small number of countries. For example, 89% of polycrystalline silicon, an essential material for solar cells, is produced in China (China also produces 70% of the world's solar cells). 70% of cobalt is

¹⁷ S&P Global, 2023, [Discovery to production averages 15.7 years for 127 mines](#)

mined in the Democratic Republic of Congo.¹⁸ Other jurisdictions are taking action, such as the EU Critical Raw Materials Act. The UK government can play an important role, in creating incentives and market demand, to accelerate the development and deployment of energy technologies with lower critical materials demand.

Other uncertainties or risks identified by businesses include increased complexity or misalignment of regulation and legislation across jurisdictions introducing compliance challenges, rapid rate of change amplifying current challenges (e.g. skills gaps, public opinion), technology development for decarbonisation including uncertainty around timelines for readiness and implications for different sectors, lack of policy clarity, inequality, increasing impacts of climate change and decline of nature.

Risk and uncertainty reinforce the importance of developing an industrial strategy embedding agility, to ensure the government and industry can react and respond to events when appropriate.

35. How would you monitor and evaluate the Industrial Strategy, including metrics?

We welcome the government's commitment to develop a monitoring and evaluation framework for the industrial strategy, recognising the importance of ensuring that the strategy must be working in practice. The Industrial Strategy Council should be involved in shaping the monitoring and evaluation framework.

The framework should include metrics that can assess uptake of industrial strategy interventions as well as the delivery of outcomes. It will be important to identify signals or indicators that may provide early insights for those metrics that may take more time to reflect changes.

The government should also draw on existing public sector work for metrics and monitoring, including at the local level. For example, the UK government has previously committed to track private investment into the net zero economy, commissioning two pieces of research to scope existing investment tracking methodologies and evaluate available data sources. Tracking financial flows into the net zero economy will help to understand if it is achieving its objective of sustainable growth, that is, growth that is aligned with the UK's net zero and environmental objectives.

The government should also look to harness the wealth of data being produced by financial institutions and corporates in the form of climate transition plans. The Transition Plan Taskforce's disclosure framework recommends entities considers the dependencies on which the plan relies, including policy barriers. Using the insights from published transition plans will help the government to produce a dynamic picture of the policy barriers hindering investment into growth-driving sectors.

The Aldersgate Group is carrying out further engagement with members on monitoring and evaluation of the industrial strategy.

¹⁸ International Renewable Energy Agency, 2023, [Geopolitics of the Energy Transition: Critical Minerals](#)