

**TUC submission
to the Industrial
Strategy Green
Paper**

About the TUC

The Trades Union Congress (TUC) exists to make the working world a better place for everyone. We bring together more than 5.3 million working people who make up our 48 member unions. We support unions to grow and thrive, and we stand up for everyone who works for a living. We welcome the government's mission-led approach to industrial strategy and the opportunity to comment on the proposals. In formulating this response, we collected input from trade unions representing workers across the target growth-driving sectors.

Summary of submission

Good work should be a cornerstone aim of the strategy

The outcomes of the Industrial Strategy will primarily benefit working people where the strategy creates or maintains jobs and where it drives up job quality.

Currently the green paper holds an unstated assumption that growth in target sectors results in growth in good, well-paid jobs.¹ Without actively targeting policies for good work, the industrial strategy could prioritise growing businesses that fail to create jobs, or actively offshore them, or pursue growth at the expense of their workforce. The experience of the growth of the offshore wind sector shows that a strategy that successfully grows a sector can fail to deliver a corresponding growth in jobs and supply chains. Industrial strategy should be a tool to ensure that growth delivers tangible improvements to people's lives.

It is welcome that government recognises the need for growth to support high quality jobs with benefits that are shared across people, places and generations. But we think that in order to be effective, the strategy needs to pro-actively pursue good work.

A practical way to reflect this in the strategy would be:

1. Ensure explicit reference to good work in the top-level aims. This would work best as a stand-alone aim on a par with Net Zero and regional growth.
2. Conceptualise the 'successful people' outcome as 'good jobs and skills'.
Rather than focusing on 'higher-paid' employment in and of itself, 'good jobs'

¹ The exception is in the clean power sector, where the green paper acknowledges that 'more can be done' to secure good jobs.

should be defined holistically, for example in line with the recommendations of the Carnegie Measuring Good Work working group.² Such a definition could encompass pay, security of contract, voice at work, health and wellbeing at work, and inclusion. This is consistent with the approach the government is taking in its plan to Make Work Pay.

3. Define a process for how policies that form part of the strategy will be evaluated against this good work aim / outcome, or the aims / outcomes more broadly.
4. Commit that government support to companies as part of the industrial strategy will be conditional on companies committing to meet job quality standards (whether government support is provided through financial instruments, subsidies, licencing, tax credits, or other levers).
5. Ensure worker voice and trade unions are included throughout the institutions and stakeholder engagement processes developing the strategy and sectoral strategies.

Foundational sectors and value chains

The strategy should:

6. Incorporate measures to support thriving foundation sectors including steel, basic chemicals, engineering construction, ceramics, cement, freight & shipping sectors.
7. Set a mechanism for how policies will be designed to onshore supply chains where this is practical.

Skills

Government should

8. Use procurement, licencing, and other leverage to secure sustainable, quality apprenticeships in infrastructure, engineering, and energy projects.
9. Work with trade unions as delivery partners when managing technological transitions (and incentivise or require employers to do so).
10. Bring more resource and certainty into Further Education, including by addressing long-term underinvestment in the sector, and establishing a Right to Retrain. Re-establishing the Union Learning Fund would also support in-work upskilling where it is most needed.

Public investment and infrastructure

Underinvestment in infrastructure is a blocker to investment across many subsectors. We welcome government's measures aimed at increasing public co-investment in infrastructure

² <https://carnegieuktrust.org.uk/publications/measuring-good-work-the-final-report-of-the-measuring-job-quality-working-group/>

and energy projects, including the establishment of the National Wealth Fund and Great British Energy, and the fiscal rules amendment that differentiates investment from day-to-day spending.

To build on this, the strategy should:

11. Increase ambition in public investment into infrastructure (particularly urgently energy network upgrades and ports), including through the National Wealth Fund and Great British Energy.

Regulation and corporate governance

Government should make strategic use of regulation to enable jobs-rich growth, particularly in the following areas:

12. Reform the corporate governance regime, to encourage companies to plan for inclusive, long-term growth.
13. Impose tighter regulations on energy transmission and distribution companies, to curb profiteering and reach necessary investments in upgrades, and consider taking networks fully into public ownership over the long term.
14. Require companies to conduct due diligence on global value chains.

Industrial Strategy Council

15. In order to secure long-term policy certainty and accountability, the Council should be resourced appropriately and to support government's implementation as a critical friend. It should be empowered to feed into mission formulation and target-setting, into policy-making, and into evaluation.
16. Government has been clear that the industrial strategy will be developed in partnership with trade unions. The Industrial Strategy Council should have sufficient trade union participation to make this real. The TUC is calling for an absolute minimum of three members from trade unions out of 15. Trade union members should bring expertise and knowledge about a breadth of industrial sectors. Bodies developing sectoral policy should also incorporate relevant trade unions.

Broader growth strategy

Alongside the targeted measures proposed in the green paper to support growth-driving sectors, delivering on the aims of the strategy (net zero, regional growth, economic security and resilience), as well as the aim to protect and create good jobs, will need action across the economy – from strong public services to everyday economy sectors like retail.

Responses to the green paper consultation, by question

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

Alongside analysing for comparative advantage and productivity, government should take account of two criteria:

1) Subsectors' track record in, or potential for, good job creation. (For a comprehensive definition of quality of jobs, see Measuring Good Work.³) Where possible with existing data, this should look at industry pay (including in regional and local context), unionisation levels, contract security, and track record in delivering skills investment (e.g. apprenticeship statistics). Where subsectors that are being considered for prioritisation have a poor record on job quality, government should pay particular attention to mechanisms to ensure that job quality improves as a result of industrial strategy interventions.

2) Subsectors' concentration – and potential for growth – in locations with less concentration of wealth and highly-paid work currently. (This will align the strategy with the regional growth aim.)

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

Existing literature on industrial capacities required to meet net zero goals should allow Government to include some emergent or early-stage sectors in the assessment, for example:

- Manufacturing subsectors where the UK has a comparative advantage, and where there are reputable projections of massive growth in demand (including electrolyser manufacturing for green hydrogen production, cathode and anode manufacturing for battery production, tidal energy generation and Small Modular Reactors).
- Subsectors that contribute to shorter supply chains for key materials (e.g. lithium mining and processing and transition minerals recycling)
- Remanufacturing, across subsectors (as contributes to economic resilience, net zero and job creation)

³ <https://carnegieuktrust.org.uk/publications/measuring-good-work-the-final-report-of-the-measuring-job-quality-working-group/>

It is also important to identify where there are potential growth subsectors and supply chains that incumbents are less focused on expanding.

For example, the Offshore Wind Industrial Growth Plan⁴ developed by Renewable UK and the Offshore Wind Industry Council, while positive, lacks both ambition and foresight in the scale of investment and expansion needed in the UK supply chain to effectively compete with new, larger and cheaper Chinese turbines. For example, investment support will be needed over the next five years to develop next generation drive train components (e.g. power converters, generators and gearboxes). This would also play to the UK's strengths in combining its advanced manufacturing and clean power capabilities.

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

The ability of the industrial strategy to support regional growth, Net Zero, economic resilience and good work depends on incorporating foundational sectors and value chains into the strategy. For example: steel, basic chemicals, ceramics, glass, and cement manufacturing all play a significant role in the value chain of the growth-driving sectors (advanced manufacturing, clean energy, life sciences and defence). In defining priority foundation sectors, alongside assessing their contribution to the value chains of growth-driving sectors and to national security, Government should also consider

- The contribution of foundation sectors to the overall employment and wider economic footprint of growth-driving sectors
- The benefits of supporting foundation sectors to Net Zero and economic resilience (due to shorter supply chains)
- The geographic concentration of foundation sectors and consequently the potential for regional economic growth in supporting them (or regional economic decline if not supporting them).

We would be interested in working with the Industrial Strategy Unit to develop methodologies that consider these factors.

4. What are the most important subsectors and technologies that the UK government should focus on and why?

The following sub-sectors have been identified in our industry analysis based on their ability to deliver both economic growth and quality jobs across UK geographies. Supply chain

⁴ [Offshore Wind Industrial Growth Plan - 2024](#)

subsectors identified in particular have the potential to boost economic resilience. Due to the breadth of our submission we are not able to lay out evidence here in full.

Essential subsectors in Advanced Manufacturing should include:

- Automotive
- Battery Production
- Aerospace
- Rolling stock
- Shipbuilding (also under Defence)

Essential subsectors in Advanced Manufacturing supply chains include

- Automotive supply chains
- Battery supply chains (including cathode and anode manufacturing, lithium extraction and processing, and used battery recycling and processing lithium, cobalt and nickel)
- Glass Fibre

Clean Energy subsectors should include:

- Electricity network manufacturing and electricity network construction
- Small Modular Reactors
- CCUS
- Tidal Stream
- Offshore Wind (Floating and Fixed)

Important subsectors in the Clean Energy supply chains include

- Green ammonia, hydrogen and methanol production
- Rare earth magnets
- Electrolyser manufacturing
- HVDC Cable manufacturing
- Transformers and voltage-source converters
- Glass Fibre, Carbon fibre and Grain-oriented steel manufacturing
- Offshore wind components including power convertors, generators, gearboxes, floating platforms, towers, monopiles, anchors & moorings, transition pieces

In Cultural Industries:

- Live performing industries, film and television production subsectors should be addressed as one production ecology, with overlapping labour markets, skills pipelines and intellectual property assets.
- Target subsectors should include the subsectors which are currently in receipt of government creative industry tax reliefs and expenditure credits: film, animation, high-end TV, children's TV, video games and theatre. The inclusion of theatre is crucial as theatre industries provide the bedrock of skills and IP for the film and television sectors.

Foundation sectors should include:

- Steel
- Basic chemicals
- Engineering Construction
- Ceramics
- Cement
- Freight and shipping

We would be interested in working with the Industrial Strategy Unit to develop methodologies for considering the jobs footprint of growth-driving sectors.

- 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?**
- 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?**

Mechanisms for addressing the following enablers and barriers are covered throughout the rest of our submission.

Enablers:

- **Quality jobs** capable of attracting, retaining, and developing a skilled workforce
- **Mature industrial relations frameworks** that provide certainty to both workforce and investors, for example in the automotive sector and in the film sector
- **Role of government as an influential customer and/or investor** in growth-driving and foundational sectors
- **Policy certainty, planning, and appropriate lead-in times** in the Net Zero agenda

Barriers:

- **Lack of policy certainty.** The past 14 years of chaotic changes to both industrial and climate policies have left businesses, workforces, and training providers with little confidence in the future. Long-term planning of the kind signalled in the Industrial Strategy green paper will help, but it needs to be backed up with long-term accountability measures. (See our answers to Questions 30-35.)
- **Corporate governance regime that prioritises short-term shareholder interests** (and consequently a high share price in the short term) over long-term growth or other impacts. (See our answer in Question 21.) This affects all sectors but particularly publicly traded companies.
- **Lack of public investment in the UK compared to long-term investment commitments elsewhere attracts businesses to invest elsewhere:** A number of industrial countries have established industrial strategies and invested heavily into domestic commercialisation, infrastructure and domestic manufacturing, to capture first-mover advantage in new technologies. The UK has lagged behind Germany and the US in terms of public investment towards manufacturers of green hydrogen technologies, batteries, or semiconductors. (See our answer to question 22.)
- **Industry fragmentation and subcontracting exacerbates skills shortages or gaps.** This particularly affects the clean energy sector and the engineering and construction workforces necessary to deliver upgrades in foundational industries and infrastructure.
- **Uncompetitively high and volatile electricity prices, plus unacceptably slow pace of upgrades to electricity grids** make the UK an uncompetitive destination to invest in any energy-intensive industry. This affects both manufacturing and, increasingly, digital technologies.
- **Slow or inconsistent transport infrastructure development** is a barrier to growth in the related manufacturing sectors. Challenges with the roll-out of electric vehicle chargers are frequently cited as the top reason for slow take-up of the technology.⁵ Slow and inconsistent government decisions on rail

⁵ https://assets.ey.com/content/dam/ey-sites/ey-com/en_gl/topics/automotive-and-transportation/automotive-transportation-pdfs/ey-mobility-consumer-index-2022-study.pdf

infrastructure have led to threats of mass job losses – and contraction of capacity – in the UK rolling stock manufacturing sector.⁶

- **Chronic under-investment in ports** specifically is a large issue for the clean power sector: UK ports physically constrain manufacturers out of the ability to make parts big enough to supply modern offshore wind farms, and this barrier gets worse as the size of installations grows, and with the expansion of Floating OW. In comparison, other European countries have pro-actively upgraded publicly-owned port areas to host offshore wind manufacturing, while privately-owned UK ports are more risk averse. (See our answer to question 15.)
- **Falling job quality in key sub-sectors leading to an aging workforce and skills shortages** in construction, manufacturing, and energy. Where industrial transitions are not managed well and ahead of time, this exacerbates the risk of losing already scarce workforce out of cornerstone sectors.
- **Lack of digital skills across the workforce** is a challenge across the economy, not only in tech roles: digital and AI skills are now needed in almost all sectors of employment,
- **Lack of a pro-active procurement strategy from government** reduces certainty and ability to plan for domestic industry.
- **Gaps in regulation.** For example, in the absence of new, context specific AI regulation, there is lack of certainty for businesses, and lack of trust from workers and consumers due to risks associated with use of AI and digital technologies.
- **Monopolisation** of cutting-edge technologies – AI as a prime example – and of film and TV industries.

People and Skills 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?**

⁶ <https://www.railmagazine.com/news/2024/04/16/alstom-begins-redundancy-talks-as-derby-could-close-after-150-years>

Strategic funding for skills sector

Skills strategy needs to align with industrial strategy. This includes ensuring the education sectors are equipped and funded to deliver, addressing the historic underfunding of both further and adult education in particular which saw the number of adult learners in FE fall by nearly half between 2010-2021.⁷

Higher education also has a huge role to play in delivering on both a skills and industrial strategy. The current funding model is putting pressure on the sector, endangering the widening participation programme and putting some providers at risk.⁸ Ultimately, a limited sector focusing on a narrow range of provision and only open to those most able to afford it will put any industrial strategy at risk.

Government should also make use of the successful model of union-led upskilling in work, and re-establish the Union Learning Fund.⁹

Right to Retrain

The TUC also supports a new right for paid leave to undertake training, ensuring workers can access upskilling opportunities while employed. This should include free access to courses from approved providers, enabling adults to achieve higher qualifications. This policy would benefit all sectors, but especially with skill shortages or requiring workforce planning, like engineering construction, and those with wide-spread skill gaps, e.g. digital skills in manufacturing sectors.

Establish Individual Learning Accounts

The TUC advocates for Individual Learning Accounts (ILAs) to empower workers to control their learning pathways. Personal learning accounts are already established practice in Wales, specifically for people on lower-incomes or whose jobs are at risk.¹⁰ ILAs would provide clear entitlements to free education and consolidate existing financial and learning support, simplifying the skills training system. By facilitating a more balanced cost structure, ILAs could ensure government and employers - who currently underinvest in training – pay their fair share.

Government leverage to secure apprenticeships in engineering and construction

⁷ <https://www.tuc.org.uk/news/tuc-number-adult-learners-has-halved-2010>

⁸ https://www.ucu.org.uk/media/14491/UCU-general-election-manifesto-2024/pdf/UCU_manifesto_2024.pdf

⁹ <https://www.unionlearn.org.uk/union-learning-fund>

¹⁰ <https://www.gov.wales/welsh-government-supports-over-16000-workers-upskill-and-retrain-during-covid-19-pandemic>

Funding for infrastructure projects should come with requirements for apprenticeship delivery. This follows the successful example of the Canadian government's approach to investment tax credits for clean energy projects, where a higher tax credit amount is attached to a requirement for 10% of the labour to be done by registered apprentices. In the UK, some projects have followed this approach, for example at Hinkley Point C, EDF and trade unions on site have agreed on a target of 1 apprentice for every 8 trades workers on site. Introducing a requirement tied to government funding would go a long way towards securing future industry workforce requirements.

Workforce redeployment schemes when managing transitions or closures

Where industrial sites do close, or lose significant numbers of workers, mass job losses are not only a problem in and of themselves, for the workforce and the local community and economies. They also entail a loss of skills from sectors already affected by skills shortages.

Appropriate forward planning and proactive collective transfer programmes are needed to prevent skills losses. Trade unions in the UK have a wealth of experience in developing and as a partner in such programmes, for example:

- Coal power workforces successfully redeployed e.g. at EDF's West Cottam, Radcliffe-on-Soar power stations, by the employer working with trade unions Unite, GMB, and Prospect.
- Alstom made 200 welders redundant at Derby plant. The trade union Unite worked to collectively transition this workforce into roles in Rolls Royce, Siemens, Toyota locally.
- Energy unions Unite, Unison, Prospect and GMB worked with energy utility companies to form a mass retraining scheme for meter reader workforce to install smart meters.

Where a reduction in workforce numbers is anticipated – in the growth-driving sectors or in adjacent ones – government should work proactively with businesses and unions in order to ensure a collective transfer programme that secures livelihoods and skills. Such schemes can also benefit sectors where the workforce is predicted to shrink significantly due to automation.

R&D 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?

Innovation policy should go beyond R&D

The Industrial Strategy should be underpinned by a sector specific understanding of the drivers of innovation, in order to identify appropriate corresponding policy levers. The chart below Figure 1 shows business expenditure on R&D is highly variable by sector, with construction, utilities and mining all typically spending less than 1% of GVA on R&D.

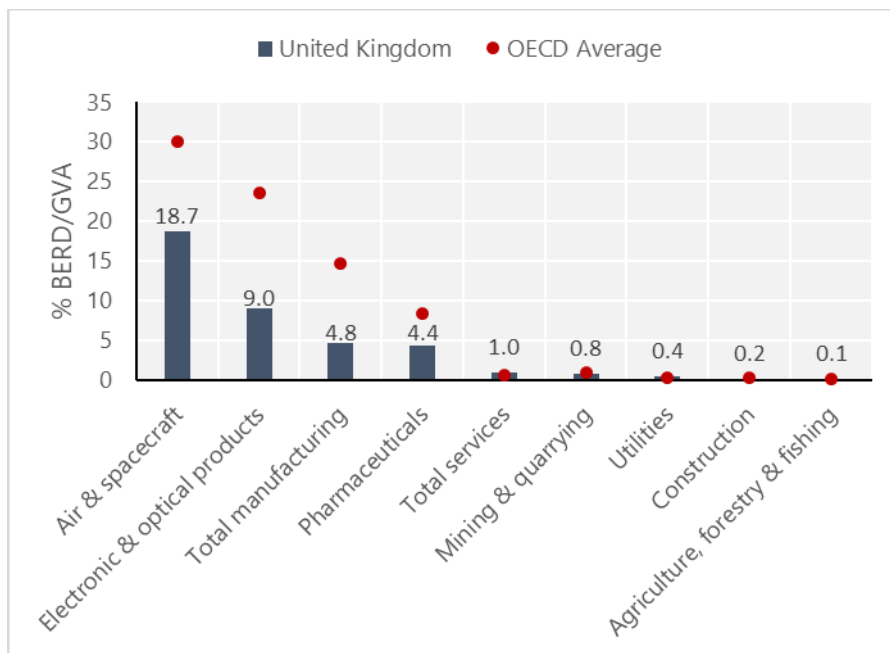


Figure 1: R&D intensity by industry, UK and OECD average: Business enterprise expenditure on R&D as a share of gross value added, 2019. Source: TUC based on data from OECD 2023¹¹

Connectivity between innovators and consumer markets influences the ease with which new innovations are able to successfully progress through development, demonstration, commercialisation, deployment and diffusion, and therefore the strength of incentive for companies to innovate without public intervention.^{12,13,14}

For sectors that display the below characteristics, such as most foundational industries, R&D funding and other ‘technology push’ drivers are unlikely to provide a sufficient incentive to overcome structural innovation barriers.¹⁵

- Lack of product differentiation – sectors in which innovations do not deliver products that are inherently differentiable (such as new vehicle models / electronics), but rather deliver materially equivalent or similar product produced in an alternative way, and therefore consumer markets do not naturally create innovation incentives without intervention.

¹¹ https://www.oecd-ilibrary.org/social-issues-migration-health/r-d-intensity-by-industry-business-enterprise-expenditure-on-r-d-as-a-share-of-gross-value-added-2019-or-nearest-year_26446e0e-en

¹² Ellwood, Paul, Ceri Williams, and John Egan. 2022. "Crossing the Valley of Death: Five Underlying Innovation Processes." *Technovation* 109 (January): 102162

¹³ Nemet, Gregory F., Vera Zipperer, and Martina Kraus. 2018. "The Valley of Death, The Technology Pork Barrel, and Public Support for Large Demonstration Projects." *Energy Policy* 119 (August): 154-67.

¹⁴ Weyant, John P. 2011. "Accelerating the Development and Diffusion of New Energy Technologies: Beyond the 'Valley of Death'." *Energy Economics* 33 (4): 674-82

¹⁵ Grubb et al (2017). On order and complexity in innovations systems: Conceptual frameworks for policy mixes in sustainability transitions. Available: <https://www.sciencedirect.com/science/article/abs/pii/S2214629617302827>

- Lengthy development cycles – sectors that are characterised by large, complex, expensive technologies and infrastructure that require significant investment and risk to adapt.
- High barriers to entry – for example sectors that are dominated by small number of powerful incumbents, or have high interdependency with other systems/infrastructure, and therefore require significant coordination as a pre-requisite to action.

For these sectors, innovation policy should look beyond R&D towards ‘demand-pull’ innovation policy in which the government takes strategic, mission-led action to shape markets, such as through deployment investment and incentives. In the context of solar PV and offshore wind, for example, evidence shows that by far the most significant driver of the cost revolution seen in the past two decades has been driven by ‘demand-pull’ public intervention – either directly through deployment of publicly owned energy infrastructure in the case of Europe and China – or via targeted policies that stimulate deployment such as Renewables Obligations, Feed-in-Tariffs and Contracts-for-Difference.¹⁶

This has two key implications for industrial policy:

- 1) Innovation policy should look beyond R&D and ‘technology push’ approaches and focus on ‘demand-pull’ incentives that explicitly choose priorities and shape markets to trigger radical rather than incremental innovation
- 2) The economic benefits associated with driving cost reduction in immature technologies through demand-pull innovation should be accounted for, at least qualitatively, in the appraisal of public investment into any immature but proven technology.

Regulation and worker voice in new technologies

In the field of AI, legislation, standards, co-governance systems and impact assessments would improve trust and certainty.

Workers are the experts of the world of work, with the deepest understanding of their role and its requirements. In order for innovation at work to truly enhance productivity, improve working conditions and outcomes, workers must be at the heart of innovation and the development of new efficiency technologies such as AI. In the US, trade union confederation AFL-CIO has recently entered into a partnership with a state-funded science research fund, to bring worker voice to the heart of technology innovation.¹⁷

Stability in innovation?

¹⁶ Grubb et al (2021). Induced innovation in energy technologies and systems: a review of evidence and potential implications for CO₂ mitigation. Available: <https://iopscience.iop.org/article/10.1088/1748-9326/abde07>

¹⁷ <https://aflcio.org/press/releases/afl-cio-enters-historic-partnership-us-national-science-foundation>

The short-term nature of much research carried out in universities is also a barrier to a long-term industrial strategy (and good employment practices). Public funding methodologies for research and innovation need to allow for more long-term horizons. This would also allow longer-term investment in future focussed activities such as artificial intelligence development in universities, in the context of developing technologies for the good of all society. This would also help improve job quality in the sector.

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

There are a range of examples where multinational companies use UK manufacturing sites for R&D, attracted by both the workforce skills base and government incentives, but then commercialise the product elsewhere – effectively extracting the available benefits from the UK economy, and then investing into production elsewhere. GKN Automotive, for instance, received funding through the Automotive Transformation Fund to develop electric powertrain units, but simultaneously closed its production facility in Coventry, opting to scale up production of the newly developed parts in Hungary instead.¹⁸ In cases like this, the investment made by the UK government in R&D largely bears fruit in terms of jobs, tax revenue and growth elsewhere.

Government should consider designing R&D funding schemes in a way that requires or at least prioritises commitment to commercialisation locally. Such a design could follow the example of Canada's Strategic Innovation Fund, which funds R&D and commercialisation projects and assesses projects based on economic benefits to Canada,¹⁹ including:

- *“growth of Canadian firms, clusters and supply chains*
- *expected benefits for Canada's workforce, including:*
 - *maintaining Canadian jobs*
 - *creating Canadian jobs*
- *ability to commit to further developing technologies for potential commercialization or research purposes”*

In line with this approach, in the case of supporting Research and Development in automation technologies like AI, government should prioritise use cases that augment productivity rather than result in a reduction of workforce.

Data questions

12. How can the UK government best use data to support the delivery of the Industrial Strategy?

¹⁸ <https://www.gknautomotive.com/en/media-centre/news-releases/2022/gkn-automotive-co-develops-uks-most-powerful-production-powertrain-for-ariel-hipercar/>; <https://www.unitetheunion.org/news-events/news/2021/may/warning-for-uk-automotive-sector-as-gkn-rejects-business-plan-to-secure-birmingham-factory-s-future>

¹⁹ <https://ised-isde.canada.ca/site/strategic-innovation-fund/en/project-requirements/benefits-for-canada>

13. What challenges or barriers to sharing or accessing data could the UK government remove to help improve business operations and decision making?

The use of data must prioritise respecting fundamental rights and data protection.

Infrastructure 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?

Infrastructure underpins success of supplying sectors

Government drives growth in advanced manufacturing sectors as the main end customer of infrastructure and civil engineering projects. This applies to manufacturing sectors including electrical components, rolling stock, defence. This also applies to clean energy supply chains, through government's licencing and commissioning role.

Infrastructure underpins success of energy intensive sectors

Manufacturing businesses frequently cite the long waiting time for electricity grid connections as a primary blocker to investment in upgrades of facilities. Although there is an ongoing process led by NESO to propose pathways for reforming the process of allocation of connections,²⁰ the likely volume of requests for connection requires significant additional resource and workforce to be handled in a timely way.

Infrastructure underpins success of regional growth

The evidence on rail investment is uncomplicated and authoritative: it delivers major positive returns for the economy, including for regional growth.

The rail sector contributes £43 billion in gross value added (GVA), supports 710,000 jobs, and generates £14.1 billion in tax revenue. The multiplier effect of rail investment is substantial: for every £1 spent on rail, £2.50 is generated elsewhere in the economy.

In our 2023 report with Transport for Quality of Life we looked in-depth at the level of additional rail investment needed to support the UK's net zero goals for the regions of England (outside of London) and Wales. It shows that an additional annualised investment of £7.5bn over 12 years would have an associated GVA of £185.4bn across the period.

²⁰ <https://www.neso.energy/industry-information/connections/connections-reform>

Analysis of the UK's freight industry by Deloitte also shows that:

90% of benefits likely accrue to freight customers and wider society outside of London and South-East England with notable concentrations generated by:

- *Industrial centres in Yorkshire and the Humber and North-West England.*
- *Logistics and manufacturing hubs in the Midlands and Wales.*
- *Container traffic from deep sea ports to and between inland domestic terminals across the length of the country, from the South of England to the Central Belt of Scotland.²¹*

Looking beyond just rail, our analysis has shown that an ambitious public transport investment programme designed to deliver the changes necessary to meet our net zero goals would drive a 7% increase in GDP per capita.²²

Role of public delivery

GB Energy – if developed at scale and with ambitious targets – has the potential to underpin delivery of a significant proportion of the UK's newly built clean power generation. This can be used as leverage to support the growth of UK supply chains. The founding statement for GB Energy reflects this appropriately. Aiming high in terms of GB Energy scale and capacity over the medium to long term will benefit the goals of this industrial strategy.

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?

Role of public investment

As outlined in our answer to question 14 above, additional public investment in electricity networks – potentially through the National Wealth Fund – is needed to address blockages in manufacturing sectors. (See our answer to question 20 for the regulatory policy that should complement this.)

Ports

In relation to the constraint identified in Question 7, public investment in ports infrastructure to host offshore wind supply chains is crucial to growing this sector. According to the independent report by the previous government's Offshore Wind Champion Tim Pick, "privatised UK ports have been unable to take full advantage of the UK Offshore Wind deployment to date, largely due to a shorter term more commercially-focused risk appetite than publicly-owned ports in continental Europe, with longer-term investment horizons. The ports of Esbjerg in Denmark and Cuxhaven in Germany have benefited from significant

²¹ Rail Delivery Group, 2021. *Assessing the value of rail freight*.

²² Transport for Quality of Life/Trades Union Congress (TUC), 2023. *Public transport fit for the climate emergency*.

public investment and attracted subsequent private investment. For example, in 2014 the state of Lower Saxony invested €200m in a dedicated offshore wind berth at the port of Cuxhaven: over €400m of private investment has followed including the Siemens Gamesa nacelle assembly plant.”²³

Note that in this case, the public investment does not generate private co-investment in the *same* asset (e.g. a dedicated large berth or quay), but instead enables larger private investment in *adjacent assets that would not be possible otherwise*. Government methodologies for assessing the benefits of infrastructure investment should adequately account for this effect.

Energy 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?

The Call for Evidence on industrial electrification sufficiently covered barriers.

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?

In evaluating options to support businesses on energy (and decarbonisation), the below risks should be considered:

- Companies may seek funding for upgrades that they can easily fund themselves.
- Companies may set out an energy or decarbonisation plan that doesn’t involve the workforce or future-proof jobs – undermining broader Industrial Strategy objectives.
- Smaller companies may not have the resources and skills needed to put together a case for support.

The Industrial Strategy (as well as the Industrial Decarbonisation Strategy and interlocking sector plans) has the potential to address the above risks and use energy and decarbonisation support schemes to leverage the future-proofing of foundational industry across the UK, with significant benefits to regional economic growth and jobs.

We propose that one powerful way to achieve this would be to require companies receiving any form of government funding to sign a Just Transition Agreement (JTA) with their workforce. The core aim would be to involve workers in decarbonisation planning such that

²³ <https://assets.publishing.service.gov.uk/media/65a662c1867cd800135ae90b/offshore-wind-champion-independent-report.pdf>

existing sites and the jobs they support are futureproofed through taking early and decisive action to decarbonise. However where a reduction in the workforce is foreseen, workforce involvement in planning is likewise essential.

The form of JTAs could be guided by templates (e.g. differentiated based on project size)²⁴, involving standardised terms to be developed in collaboration with unions, though likely covering the below:

- Support for worker voice, including trade union recognition and openness to collective bargaining, for example establishing a Just Transition Committee with union representation and decision-making power
- Commitment to no compulsory redundancies
- Funding for training and paid time-off for workers to upskill or transition into alternative jobs where desired
- Commitment to redeployment support, co-ordinated job transfer schemes & priority for vacancies, in the event of future site closure

As well as JTAs signed with the workforce, companies in receipt of support should also be required to demonstrate the below job quality criteria through transparent and regular reporting:

- Pay rates should be consistent with existing nationally negotiated rates. Where nationally negotiated rates do not already exist for particular roles, these should be encouraged.
- Investment into skills including a 'good' apprenticeship & upskilling training, including commitments on numbers of apprentices per total staff number.²⁵

Below we review a few prominent proposals for supporting businesses on energy and decarbonisation, and how they might be shaped to deliver on jobs, including through the integration of mandatory Just Transition Agreements.

Power pools

For businesses where electrification is a preferred route, we believe it is worth considering the 'Green Power Pool' concept proposed by UCL academics and the Aldersgate Group²⁶, which carries the following benefits in particular:

²⁴ For example drawing on US Community Workforce Agreements/Community Benefit plans <https://www.americanprogress.org/article/how-project-labor-agreements-and-community-workforce-agreements-are-good-for-the-biden-administrations-investment-agenda/>

²⁵ This could be structured as staff to apprentice employee number ratio requirements, e.g. akin to the recent agreement secured by GMB union requiring an 8:1 staff to apprentice ratio at Hinkley C, or requirements for proportion of labour hours completed by apprentices; such as 10% of labour hours under [Canada's Red Seal investment tax credits \(ITCs\)](#), and rising to 15% under the [US Inflation Reduction Act](#)

²⁶ https://www.ucl.ac.uk/bartlett/sustainable/sites/bartlett_sustainable/files/navigating_the_energy-climate_crises_working_paper_4_-_green_power_pool_v2-2_final.pdf

- i) Potential to deliver low fixed energy prices without high public cost due to the circumvention of the wholesale market
- ii) Potential for near-term impact through redirecting sales of electricity from existing CfD generators to targeted consumer groups, without significant contractual changes.

The UCL proposal²⁶ suggests industrial consumers as priority beneficiaries²⁷, and also identifies potential suitability for consumers who are contributing to reduced fossil fuel dependence through electrification.

This proposal carries the potential to be a powerful lever for just transition within energy-intensive industry, through introducing the following eligibility criteria for industrial users benefiting from the scheme:

- The existence of a Just Transition Agreement signed with the workforce, adhering to the content outlined above;
- A net zero plan, outlining commitments to decarbonise operations (with minimal reliance on offsets). This should be structured so as to not disadvantage SMEs, for example involving a preliminary commitment upon entering the scheme to develop a plan within e.g. 6 months, and access to resource to support its development for SMEs (See example at the end of this response for an example of decarbonisation planning support for SMEs in France).

The Low Carbon Contract Company (or other administering body) should have the mandate to regularly review progress and adherence to the above and withdraw rights to participate in the case of non-adherence.

The above could form the basis for an electrification business model, though shouldn't be restricted to consumers opting for electrification as a route to decarbonisation (i.e. industry should be able to access cheap electricity whilst also pursuing other forms of decarbonisation).

Underwriting Power Purchase Agreements (PPAs)

Whilst the aggregation of consumers and generators as well as the ability to buy and sell from the wholesale market under the power pools concept hedges risks of default on both sides, the underwriting of bilateral PPAs represents an alternative or additional opportunity for the government to support reduced electricity costs for industry.

Under this proposal the government would essentially become the 'buyer of last resort'. The government could play an active role in facilitating PPAs between generators and industry, for example setting up a streamlined brokering service and actively matchmaking between parties to target sites that are particularly exposed to high prices and/or at risk of closure and job losses. To deliver rapid impact on energy prices this proposal would initially rely on existing renewable generators but with the aim of financing new schemes, and potentially

²⁷ Suggesting a potential classification as eligibility for the Energy Intensive Industries Exemption Scheme, which in 2021 accounted for 9.9 TWh of electricity demand, 45% of the electricity produced under CfDs.

onshore and solar generation that would not otherwise be captured by the current CfD scheme.

See the [Green Alliance briefing](#) on the potential of PPAs to support the steel sector where Electric Arc Furnaces are used.

Sectoral Carbon Contracts for Difference

Carbon Contracts for Difference (CCfDs) may be a useful instrument for sectors that face high decarbonisation costs and often a range of decarbonisation technology pathways that depend on site-specific context, such as cement, ceramics, steel and chemicals.

CCfDs could be structured with sectoral strike prices that reflect differentiated decarbonisation costs and reduce financial risks associated with investing in electrification, green hydrogen, and in some cases CCUS. Additional support for particular technologies could be factored into the strike price as a premium.²⁸

CCfDs could be funded such as to not substantially burden public spending, for example drawing on forthcoming CBAM revenue, or green bond issuance / alternative debt financing via the National Wealth Fund.

Germany has already announced a pilot CCfD scheme as part of its broader *National Hydrogen Strategy* and its *Climate Action Program 2030*.²⁹

As above, eligibility to participate in any CCfD scheme should be conditional on the existence of a signed Just Transition Agreement with the workforce.

Summary of international best practice examples:

- **Integration of conditionality on jobs and union voice into public funding schemes:** [US Community Workforce Agreements/Community Benefit plans](#)
- **Conditionality on apprenticeships:** e.g. 10% of labour hours under [Canada's Red Seal investment tax credits \(ITCs\)](#), 15% under the [US Inflation Reduction Act](#)
- **Pilot scheme on CCfDs in Germany**³⁰
- **Support for industrial SMEs to develop and implement decarbonisation plans:** France's public investment bank, [Bpifrance](#), offers support to SMEs to develop detailed decarbonisation roadmaps, as well as sector-specific market diagnostics and ongoing advisory support through the implementation phase. This goes significantly beyond the energy audits and feasibility studies offered under the IETF, in terms of level of detail and continuity of support. Introducing a similar scheme in the UK (potentially delivered through the National Wealth Fund) could help SMEs overcome resourcing barriers in

²⁸ https://climatestrategies.org/wp-content/uploads/2021/03/Carbon-Contracts_CFMP-Policy-Brief-2020.pdf

²⁹ <https://www.iea.org/policies/17538-carbon-contracts-for-difference-ccfd-program-for-energy-intensive-industries>

³⁰ <https://www.iea.org/policies/17538-carbon-contracts-for-difference-ccfd-program-for-energy-intensive-industries>

identifying decarbonisation pathways, understanding market dynamics and throughout implementation

Regulatory environment questions

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?

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

Regulation as an enabler of growth

It is important that the Industrial Strategy recognises regulation as a key driver of innovation and growth, particularly in the context of delivering on net zero. Since first introduced by Porter in 1991, a significant body of empirical literature finds that well designed environmental regulation drives innovation,^{31,32,33} challenging the view that regulation predominantly imposes costs. For example, interviews with twenty business leaders and practitioners, conducted by Buro Happold, find that environmental regulations have clear benefits in terms of competitiveness and innovation.³⁴ In particular regulatory frameworks that emphasise performance standards rather than prescriptive rules (therefore offering companies the flexibility to determine appropriate solutions), and are forward looking, with clear, ambitious outcomes and targets that tighten over time tend to be most effective in driving innovation.^{34,35}

Regulation such as product codes, performance standards and production mandates can stimulate innovation by providing markets with policy confidence and signalling the direction of technological change.

In order for regulation to effectively stimulate rather than deter investment, it must be accompanied by policy that makes it viable and attractive to pursue the desired technological pathway.

³¹ Buro Happold (December 2017), Help or Hindrance? Environmental Regulations and Competitiveness. Available at: <https://www.aldersgategroup.org.uk/content/uploads/2022/03/Help-or-hindrance-Environmental-regulations-and-competitiveness.pdf>

³² Frontier Economics (2019), Carbon Policy and Economy-wide Productivity. Available at: <https://es.catapult.org.uk/news/uk-productivity-figures-fail-to-reflect-value-of-a-cleaner-economy/>

³³ Porter, M. E., (1991), Towards a Dynamic Theory of Strategy. Available at: <https://onlinelibrary.wiley.com/doi/10.1002/smj.4250121008>

³⁴ Buro Happold (2021), Fostering Prosperity: Driving Innovation and Creating Market Opportunities Through Environmental Regulations. Available at: <https://www.aldersgategroup.org.uk/content/uploads/2022/03/2103-Fostering-Prosperity-report.pdf>

³⁵ Ambec, S., Cohen, M. A., Elgie, S., & Lanoie, P. (2013). *The Porter Hypothesis at 20: Can Environmental Regulation Enhance Innovation and Competitiveness?* Review of Environmental Economics and Policy, 7(1), 2-22.

- Where this involves nascent technology (e.g. standards on embodied carbon in materials to stimulate low carbon production methods), strategic public investment in technological deployment (either directly or through shaping market demand) is typically required during early stages of technological development to bring down costs through learning-by-doing (see chart below Figure 2), and make investment viable. For example this applies in the context of the Zero Emission Vehicle mandate – supply-side regulation must be matched by policies to incentivise sufficient demand growth in order to trigger the positive feedback loop between widespread diffusion and cost reduction (in production and purchase) through learning effects.
- Economic incentives (e.g. carbon pricing) can support regulation for example by improving the business case of technological change, and in the context of energy efficiency standards, counter the 'rebound' effect.

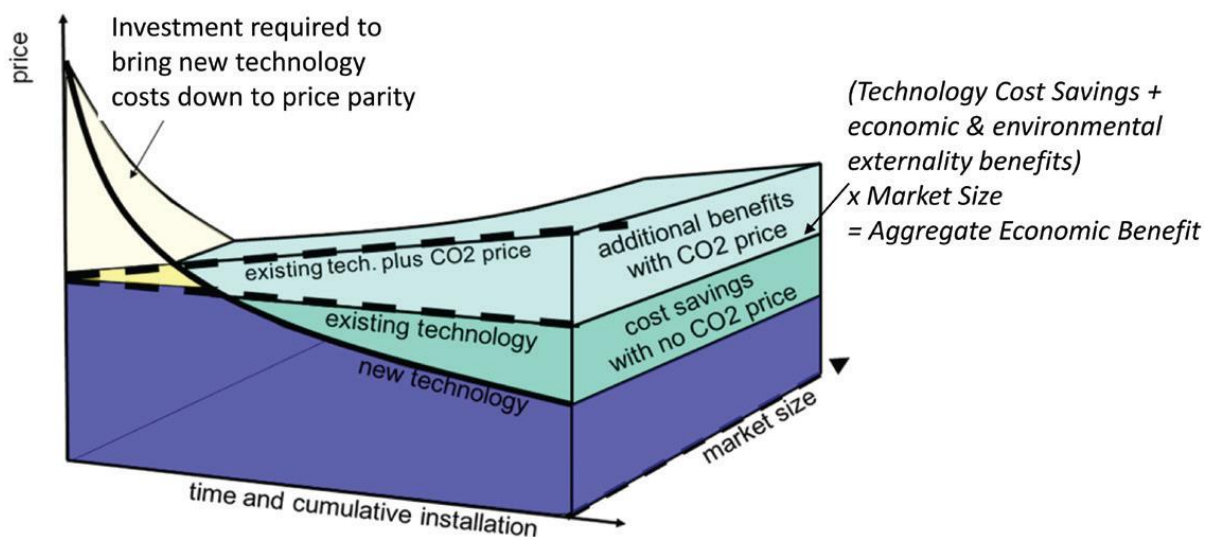


Figure 2: The cost–benefit structure of strategic investment. Source: Grubb et al. (2014, ch. 9)³⁶

For more on complementary policy packages and the interaction of regulation with wider policy in the context of driving innovation in the energy transition, see Grubb et al (2023).³⁷

³⁶ Grubb, Michael, Jean Hourcade, and Karsten Neuhoff. 2014. *Planetary Economics: Energy, Climate Change and the Three Domains of Sustainable Development*. Routledge.

³⁷ Grubb, M., Poncia, A., Drummond, P., Neuhoff, K., Hourcade, J-H. Policy complementarity and the paradox of carbon pricing. *Oxford Review of Economic Policy*, 2023, 39, 711–730 <https://doi.org/10.1093/oxrep/grad045>

20. Do you have suggestions on where regulation can be reformed or introduced to encourage growth and innovation, including addressing any barriers you identified in Question 7?

Economic regulators

Across the board, the UK's economic regulatory regime is not strong or robust enough to support innovation and investment appropriately, nor to deliver protection for households and workers. Across the board, economic regulators' priorities should be reformed, to include appropriately increased long-term investment in R&D, innovation, and infrastructure needed to support the UK's industrial strategy and net zero goals. We cover the case of energy networks in more detail below.

Energy networks regulation

In the case of energy networks, regulation directly determines the profitability and investment levels in the sector. The effectiveness of regulation – and resulting capital investments made by companies – directly affects the ability of businesses to access upgrades to electricity supply or an offtaker for electricity or hydrogen. As a result, effective regulation of energy networks has a direct impact on the success of the industrial strategy.

The UK is an outlier in European context in having energy networks owned by private companies. Because the potential cost of bringing energy distribution and transmission networks into public ownership at once is relatively large, this option should be explored over a longer period of time. The National Energy System Operator should be tasked with exploring the long-term potential, benefits and risks of expanding public ownership to the monopoly distribution and transmission networks.

In the short-term, Ofgem should put tighter curbs on energy networks' profits, as recommended by the National Audit Office, and take a more stringent approach to:

- Industrial strategy alignment, climate targets and capital investment needs
 - Ensure stricter enforcement of networks' climate targets compliance, including responsibility for upgrades that are necessary for transport electrification or industrial users;
 - Ofgem should set clearer and more stringent climate targets;
 - Explore a programme rather than project approach;
 - Stricter evaluation of networks' planning and spending in relation to extreme weather events.
- Planning for Workforce resilience
- Workforce Satisfaction, Development and Renewal, Diversity and Equality, Health and Safety

AI regulation

To encourage growth and innovation as well as alignment to the government's broader missions and goals from AI technology, government should develop the regulatory bodies, capacity and legal instruments to regulate the development and use of AI. Updates to legal frameworks are needed across disciplines including competition, employment and IP law.

Regulation of global supply chains

The TUC welcomes the government's commitment to build resilient supply chains in the growth-driving sectors. At present, evidence indicates a concerning trend in human rights violations and environmental harms linked to critical minerals and clean energy technology,³⁸ including the use of forced³⁹ and child labour⁴⁰ and the financing of conflict.⁴¹ Strong regulations must underpin the UK's partnerships with governments and business – with increased corporate accountability. The UK is falling behind the international trend to regulate global value chains, with legislation passed in, for example, the EU,⁴² France,⁴³ Germany⁴⁴ and Norway.⁴⁵ Therefore, the TUC is calling on the government to introduce new UK mandatory human and labour rights and environmental due diligence legislation. This will help ensure that in delivering the Industrial Strategy, human and labour rights are respected, growth does not come at the expense of harms down the global value chain, and where harms occur, that victims, including workers and their trade unions, have access to justice.

Furthermore, any partnership the UK enters into with Global South countries on critical minerals must support value addition in the country of origin and ensure respect for fundamental labour rights.

Crowding-in investment

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,

³⁸ Business and Human Rights Resource Centre (2024) Critical Minerals Tracker, available at: <https://www.business-humanrights.org/en/from-us/transition-minerals-tracker/>

³⁹ Unison (2022) 'Dirty energy: sourcing solar panels without Ugyhur forced labour', available at: <https://www.unison.org.uk/content/uploads/2022/08/Clean-dirty-energy-1.pdf>

⁴⁰ The Guardian (3 January 2021) 'Child labour, toxic leaks: the price we could pay for a greener future', available at: <https://www.theguardian.com/environment/2021/jan/03/child-labour-toxic-leaks-the-price-we-could-pay-for-a-greener-future>

⁴¹ US Department of State (2024) 'Statement of Concern Related to Certain Minerals Supply Chains from Rwanda and Eastern Democratic Republic of the Congo Contributing to the Ongoing Conflict', available at: <https://www.state.gov/statement-of-concern-related-to-certain-minerals-supply-chains-from-rwanda-and-eastern-democratic-republic-of-the-congo-contributing-to-the-ongoing-conflict/>

⁴² https://commission.europa.eu/business-economy-euro/doing-business-eu/sustainability-due-diligence-responsible-business/corporate-sustainability-due-diligence_en

⁴³ Légifrance (2017), LAW No. 2017-399 of March 27, 2017 relating to the duty of vigilance of parent companies and contracting companies', available at: <https://www.legifrance.gouv.fr/jorf/id/JORFTEXT000034290626>

⁴⁴ German Federal Office for Economic Affairs and Export Control (2024) 'Supply Chain Act', available at: https://www.bafa.de/EN/Supply_Chain_Act/supply_chain_act_node.html

⁴⁵ Forbrukertilsynet (2024) 'The Transparency Act', available at: <https://www.forbrukertilsynet.no/vi-jobber-med/apenhetsloven/the-transparency-act>

vehicles, software, RDI, workforce skills) and types of firms (large, small, domestic, international, across different regions)?

Our corporate governance regime has a significant impact on business investment decisions. The priority given to shareholders within corporate governance encourages the payment of dividends at the expense of both investment and wages and can promote short-termism in decision-making. As a result, while government looks 10 years ahead in setting a long-term industrial strategy, a large proportion of businesses within the growth-driving sectors are structurally impeded from making long-term growth plans on a similar time horizon. This is explored further below.

The problem with the UK corporate governance regime

UK company law and corporate governance prioritise the interests of shareholders over those of other stakeholders. Institutional investors generally hold shares in hundreds of companies and do not have the staff capacity to analyse and engage with all the companies whose shares they hold.

The average holding period for UK shares has declined from around six years in 1950 to less than six months. The short-term nature of share ownership and the increased reliance on strategies based on share trading undermine the argument that there is a convergence of long-term interests between investors, the company in which they invest and other company stakeholders. Many investors' interests are no longer tied to the long-term success of the company and hence other stakeholder interests, but instead to short-term movements in its share price.

The share of profits allocated to dividends has increased significantly over time, rising from 16 per cent in 1987 to peak at 52 per cent in 2018. It fell during the pandemic but is now rising sharply once more, reaching 41 per cent in 2021.

Under the UK's mergers and takeovers regime, UK companies are uniquely vulnerable to hostile takeover, and the best way of protecting against this is to maintain a high share price, which is also often incentivised through executive remuneration structures. The pressure to maintain a high share price leads companies to pay dividends even when not justified by company performance (e.g. Carillion before its collapse).⁴⁶

Analysis of the FTSE 100 between 2014 and 2018 by the TUC and the High Pay Centre found that in 27 per cent of cases returns to shareholders were higher than the company's net profit, including 7 per cent of cases where dividends and/or buybacks were paid despite the company making a loss. In 2015 and 2016, total returns to shareholders came to more than total net profits for the FTSE 100 as a whole.

⁴⁶ TUC and High Pay Centre (2019) How the shareholder-first business model contributes to poverty, inequality and climate change A briefing note from High Pay Centre and the TUC available at: <https://www.tuc.org.uk/research-analysis/reports/how-shareholder-first-businessmodel-contributing-inequality>. Adam Leaver et al (2020) Against Hollow Firms: repurposing the corporation for a more resilient economy, Sheffield University Centre for Research on Accounting and Finance in Context

The opportunity cost of spending ever-higher amounts on dividends has led to lower allocations to investment as well as wages. In 1987, business investment was around four times higher than dividends; now, they are close to parity.

Research⁴⁷ for the Bank of England found that 80 per cent of publicly-listed firms agreed that financial market pressures for short-term returns to shareholders had been an obstacle to investment. The most important reason for under-investment was a constraint on using profits for investment purposes, with three quarters of firms rating distribution to shareholders (including dividends and share buybacks) and purchase of financial assets (including mergers and acquisitions) ahead of investment as the most important use of internally generated funds.

The risks to industrial strategy

If corporations are regulated to prioritise short-term shareholder interests over long-term growth (or other interests), this creates several risks for implementing the industrial strategy, including:

- Companies may treat government incentives as a revenue stream not a genuine enabler for growth
- Companies are impeded from planning workforce needs or investment programmes far enough in advance to meaningfully collaborate with the skills system and skills policy reforms
- There are no governance disincentives to offshoring.

What reforms are needed to address this

Reform of corporate governance is needed to ensure that business models are based on long-term, sustainable company success that will benefit all stakeholders.⁴⁸

Directors' duties in company law should be reformed to require companies to promote the long-term success of the company as their primary aim, taking account of the interests of stakeholders including the workforce, shareholders, suppliers, customers and the local community and impacts on human rights and the environment. In addition, company boards should include elected worker directors, which would bring a diversity of perspectives and experience into the boardroom and encourage boards to take a long-term perspective.

Mobilising capital

22. What are the main barriers faced by companies who are seeking finance to scale up in the UK or by investors who are seeking to deploy

⁴⁷ Sir Jon Cunliffe (2017) Are firms underinvesting - and if so why? Speech to the Greater Birmingham Chamber of Commerce, 17 February 2017

⁴⁸ For more detail on our proposals, please see: TUC (2022) *Companies for People - How to make business work for workers* <https://www.tuc.org.uk/research-analysis/reports/companies-people-how-make-business-work-workers>

**capital, and do those barriers vary for the growth-driving sectors?
How can addressing these barriers enable more global players in the
UK?**

Lack of policy certainty.

The past 14 years of chaotic changes to both industrial and climate policies have left businesses, workforces, and training providers with little confidence in the future. Long-term planning of the kind signalled in the Industrial Strategy green paper will help, but it needs to be backed up with long-term accountability measures. (See our answers to Questions 30-35.)

Uncompetitive offer of government co-investment

The TUC has compared, using available government data where possible, the amounts of public support to three key industries.

Hydrogen. In our estimate, the German government has invested 29 times more than the UK, and the US government 79 times more than the UK in hydrogen industry in absolute terms – see Table 1. While the size of the German and US economies is larger than that of the UK, expecting the UK government to match these investments in full may not be realistic. But even correcting for the relative size of the economies, the difference is stark. Scaled by the relative size of the economies (measured in GDP), Germany’s investment is 21 times larger than the UK’s, and the US’s 10 times.

Semiconductors. UK public investments as part of the National Semiconductor Strategy are dwarfed by EU and US public investments. In our estimate, the EU has invested 17 times as more than the UK, and the US government 31 times more than the UK in semiconductor manufacturing in absolute terms. Scaled by GDP to correct for the relative size of the economies, the US public investments are 4 times more than that of the UK, and the EU has invested 3 times more.

Gigafactories. In our estimate, EU support to battery manufacturing is 3-4 times more advantageous to business, and US support is 23 times more advantageous than that of the UK government. (The US package of support amounts to returning more than the full cost of the investment to the company over time.) Note that this table compares the amount of subsidy proportional to full cost of a gigafactory project, rather than the total amounts of subsidies. This is because the total amounts of subsidies to US Gigafactories are currently difficult to estimate.

This lag of UK public co-investment directly results in companies directing investment in new facilities to Germany, the US, or other countries. The UK should use the National Wealth Fund to offer competitive level of co-investment in key growth-driving sectors, using conditions on investment to make sure the outcomes are in line with Industrial Strategy goals.

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?

Direct public sector delivery programmes

Direct public sector delivery programmes play an essential role in most effective industrial strategies, expanding domestic industries and delivering growth. These upgrades guarantee a pipeline of work for private sector companies, especially in advanced manufacturing and clean power.

Across Europe and the US, publicly-owned energy companies have been central to delivering new power and network upgrades – with large ripple effects across manufacturing and European supply chains.

Similarly, Australia's example to commission, build and crew a domestic merchant shipping fleet has been positive.⁴⁹

Procurement

The UK's annual public procurement budget is worth £407 billion (gross spending on public sector procurement 2023/24) an increase of 5% compared with the previous year⁵⁰. This can and should be used to create a stable, internal market to support UK manufacturing with targeted procurement, tied to UK job guarantees, resulting in clear social value, creating UK jobs, sustaining industry and reviving communities.

Ensuring that procurement is tied to high standards and active, demonstrable due diligence extending across supply chains, must be a linchpin of future policy.

The automotive industry is indicative of the missed opportunity of public sector procurement. From electric cars to commercial vehicles and hydrogen/battery hybrid buses, the UK automotive sector can provide vehicles suitable for all UK public bodies. Yet, data collected by Unite reveals that 74% of vehicles procured by public bodies in the UK are not produced in the UK.

Stronger Social Value criteria across procurement policy – with conditions on job quality applied, as outlined above, - can direct much needed investment into growth-driving sectors.

Additionally, certainty in the procurement pipeline is crucial for the development of related sectors (e.g. UK rolling stock manufacturing capacity has been at risk of shrinking due to uncertainty in rail projects, and delays to commission Royal Fleet Auxiliary ships has contributed to issues for the shipbuilding and maritime sectors.)

⁴⁹ <https://www.itfseafarers.org/en/news/landmark-victory-australian-strategic-fleet-pilot-sets-sail-tender-new-ships>

⁵⁰ <https://commonslibrary.parliament.uk/research-briefings/cbp-9317/>

Public investment in creative sectors

Declining direct public investment in the arts and entertainment is a key barrier to growth. Public investment is critical to guaranteeing the talent pipeline, providing supply-side production capacity, and developing new intellectual property. Through the Public Service Broadcasters, screen agencies and arts councils, UK and devolved governments 'crowd-in' private investment into the creative industries. For example, Public Service Broadcasters (PSBs) play a vital role in the production ecology by providing production capacity, training the workforce, and offering significant opportunities for decent work that allow creative practitioners to sustain careers. Policy measures that have diminished the BBC over the last few years, for example the previous government's cuts to the BBC's annual budget worth £1bn³ (roughly 30% in real terms since 2010), will have a negative effect on the attractiveness of the UK film and television market to outside investors. Some of the largest streaming services operating in the UK openly state how important the BBC is in forming, developing and sustaining the British market they are operate within. This also applies to ITV and Channel 4, the latter of which was forced to temporarily halt commissioning this year due to rising costs and the uncertainty created by government proposals to privatise the channel.

Business instruments and incentives (including direct subsidies and tax relief)

We support the use of a broad range of financial instruments to support growth. Additional instruments that could be considered – that go somewhat beyond financial instruments – are:

- Direct subsidies to consumers (e.g. for automotive, a scrappage scheme aimed at low-income workers who require a car for work, combining grant and interest-free loan, that provides increased benefit where the vehicle is made in the UK – similar to the electric vehicle incentives under the Inflation Reduction Act in the US)
- Tax reliefs in the creative industries. Every £1 of tax revenue foregone through reliefs in film and high-end television in 2019 generated an average of £7.30 in additional Gross Value Added (GVA), for example.⁵¹

The success of these instruments in catalysing the right kind of investment will depend on the active use of government leverage. For example, Canada's clean energy investment tax credits, as well as various incentives under the IRA in the United States, offer a higher financial incentive if certain conditions on job creation or job quality are met. In the UK creative industries, if existing tax reliefs policies are applied with conditions on quality of jobs, this will go a long way towards levelling up pay and employer practices in the video games sector to the relatively high standards elsewhere in the sector.

⁵¹ Olsberg SPI & Nordicity (2021), Screen Business: How screen sector tax reliefs power economic growth across the UK 2017 – 2019, BFI

Trade questions

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

25. Which international markets do you see as the greatest opportunity for the growth driving sectors and how does it differ by sector?

Bilateral partnerships for industrial clusters and joint investments

Government should consider possibilities of joint development of linked industrial clusters, and co-investment into industrial facilities that mutually benefit partner countries. A recent example of such an approach is the French-German co-operation on gigafactories,⁵² that eventually drove the EU push to invest in the industry. Government could consider such an approach, for example, in the offshore energy sector.

EU relationship

Alignment of policy instruments between the UK and the EU is important for maintaining UK industries' competitiveness.

The TUC welcomes the government's commitment to negotiating a closer relationship with the EU based on respect for the highest standards of workers' rights. The TUC believes the government should use its 'reset' of the UK-EU Trade and Cooperation Agreement to ensure:

- the UK upholds at least EU levels of protections for workers' rights
- barriers to trade are removed through closer regulatory cooperation
- the UK Carbon Border Adjustment Mechanism 'catches up' as soon as practically possible to its EU counterpart, and UK and EU Emissions Trading Scheme alignment to prevent UK goods facing tariffs from the Emissions Trading Scheme
- a mobility agreement that includes the possibility for visas to be renewable subject to ongoing employment and a visa waiver for creative UK workers to tour in the EU

Other trade agreements

The TUC is concerned that the government has signalled an intention to implement the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP). The CPTPP contains the Investor-State Dispute Settlement court system which would allow the UK government to be sued for changes of policy that affect profits projected by investors. This threatens the Make Work Pay agenda, regulatory policies targeting net zero, other moves to legislate to improve workers' conditions, and potentially any other policy where government directly or indirectly supports priority industries.

⁵² <https://www.reuters.com/article/economy/france-and-germany-commit-to-european-electric-battery-industry-idUSKCN1S80SE/>

The TUC is calling for the government to agree side letters with other CPTPP countries to disapply the Investor State Dispute Settlement system in the agreement, as Australia and New Zealand have done.

The CPTPP also involves countries where independent unions are banned such as Vietnam and Brunei and Malaysia where there is significant use of forced labour. CPTPP and trade agreements with the Gulf Cooperation Council States, Türkiye and India risk undermining good jobs in the UK by allowing more market access to goods that are cheaper than UK goods due to the fact they have been made by workers who have been exploited and are not able to claim decent pay.

The TUC is calling for trade talks with the Gulf Cooperation Council states, Türkiye and India to halt due to their negative impact on good jobs and workers' rights and for the government to consider how CPTPP can be reformed to address workers' rights concerns.

Place questions

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

Cluster opportunities for held-back areas

The definition of clusters risks missing out on opportunities for growth in areas that don't currently display a strong concentration of employment, output, high productivity, or innovation. The definition implies that those areas already showing high economic strength or high employment would be targeted for *more* investment. The characterisation of clusters fails to address how communities and areas outside existing zones of high employment/economic output will benefit from the strategy. Those that have experienced decades of deprivation and under-investment and have seen work siphoned away to economic hubs elsewhere, don't stand to gain from these plans. This is particularly relevant in parts of Wales and elsewhere in the UK where public sector employment accounts for the majority of employment.

One opportunity to address this issue is to properly take account of the geographical flexibility of the definition of clusters. In Wales, for example, many of the communities that have experienced successive deindustrialisation and have been held back by previous industrial policies, have infrastructure links with larger urban centres. But the flow is almost always out of these communities and into established employment hubs. Clusters should be modelled to facilitate more 'two-way traffic' between these areas by making sure cluster zones encompass these areas, and that investment into them is adequately incentivised.

Clusters and skills

Regional skills analysis should contribute to defining clusters. Where there have been closures of manufacturing sites the last 10-15 years, there is still a legacy of skills in those communities which is an asset in itself. This should be considered as part of cluster analysis.

Clusters and good work

The definition should include a good work dimension. Otherwise, there is a risk that the strategy ends up rewarding exploitative working practices. Cluster designation should be contingent on strong evidence of good work principles in action (see Analytical framework section below), and credible plans to swiftly achieve it where it is lacking.

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?

Places on the brink of transformation

Port Talbot and Scunthorpe steelworks are examples of places where a highly-skilled workforce, currently in jobs that are better paid and on better conditions than regional averages, is at risk of being lost due to the lack of forewarning of industrial transformation, and the lack of a well-funded pathway forward for the industrial site. While recognising it is not the core aim of the Industrial Strategy to prevent job losses in general, it will serve the aims of the Industrial Strategy to foresee risks of significant closures in growth sectors and their crucial supply chains, and make sure a process is in place that prevents the loss of capacity and skills ("stranded skills").

One such regional focus ought to be on the East Coast supply chain sectors that currently service the North Sea oil and gas industry. The volatility of the sector in the short term, and the decline of the UK's continental shelf oil and gas basin, plus the government's commitment to ending oil and gas licencing in the longer term, all create an uncertain and diminishing pipeline of work for the fabrication yards, shipyards, and multiple other subsectors located along England and Scotland's East Coast. These companies represent a large proportion of the jobs currently supported by the oil and gas sector. Many of these companies are already diversifying to supply the offshore renewables sector, or other sectors. A holistic plan is needed to ensure a well-planned transition that protects jobs and skills, and supports the wider aims of the industrial strategy.

Skills interventions

Greater emphasis and investment in skills, particularly those that contribute to net-zero/decarbonisation agendas, should be a priority in making an area 'investment-ready'. Some work has already been done in this area, for example the introduction of personal learning accounts and provisions for green skills in Wales. However, the pathway between green qualifications on offer and green careers is unclear, with disparities between the qualifications available, and the demand for them in the economy.

Public and Private sectors must therefore bridge that gap, utilising all available levers to ensure the workforce - primarily those local to the strategic industrial site - can access upskilling and reskilling opportunities, and embed guarantees of high-quality jobs as part of the offer to workers.

Creative industries funding stability

The UK government already has significant levers to drive an integrated, place-based, strategic approach to the performing arts and entertainment in England via partnerships with city and local administrations. Improving the governance and integration of public funding by the Public Sector Broadcasters, screen agencies and Arts Council England are critical to this. By focusing funding on long-term settlements for regional clusters and anchor institutions, arms-length arts and entertainment funding sources could drive quality production on decent terms and conditions in every region of the UK, improving meaningful supply-side capacity, and attracting private investment.

Medium term funding stability and stronger co-ordination between the UK government and national governments would support creative industries' growth and investment across the UK. A UK-wide arts and entertainment funding roadmap would tackle the severe inconsistency in arts funding prevalent recently among the devolved national administrations, providing stability for investment. National governments should be consulted throughout the development of the creative industries sector industrial strategy.

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?

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

Devolved Wales strategies and legislation

Specific legislation exists in Wales that will affect the implementation of the Industrial Strategy. The Social Partnership and Public Procurement Act establishes a tripartite relationship between Welsh Government, trade unions, and employers as a core aspect of its plan to "build an economy that promotes fair work, equality and economic, social and environmental justice".⁵³

The UK Industrial Strategy must therefore recognise the role of trade unions as key partners in Wales, and the duty on designated public bodies, including Welsh Government, to consult, engage and seek consensus with their recognised trade unions. The voice of workers must be central to the strategy's implementation, both for its own sake, and to respect unions' legal status as social partners in Wales.

The [Wellbeing of Future Generations Act](#) establishes seven well-being goals in Wales to ensure future generations have a quality of life at least as good if not better than what we

⁵³ [Social Partnership and Public Procurement \(Wales\) Bill: Explanatory Memorandum](#)

have now.⁵⁴ Included in the Act are the goals of prosperity, equality, and cohesive communities. The UK Industrial Strategy should honour these commitments and create the conditions for communities across Wales to flourish. In particular, care should be taken to not exacerbate inequality of opportunity between places.

In their [Net-Zero Skills Action Plan](#) Welsh Government commits to growing a skilled workforce to meet their net-zero commitments. Working with trade unions as social partners and the concept of just transition are key elements of this plan. The UK Industrial Strategy must be implemented in a way that complements and enhances these objectives and not work against them. Investment and skills initiatives arising from the Industrial Strategy must be credible, respect the legislative framework in Wales, and not duplicate nor diminish existing Welsh Government provision.

Industrial Strategy Council questions

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

We support the government's position that the Council should be on a statutory footing, in order to provide for the longevity necessary for a successful industrial strategy. The Council should have a dedicated Secretariat to conduct analysis.

It is essential that the Industrial Strategy Council has sufficient members from trade union organisations. The Green Jobs Taskforce in the Johnson Government was effective with a ratio of 2 business organisations to each trade union voice, and we would expect the Industrial Strategy Council to be similar.

At a minimum, a 15-member Industrial Strategy Council should have 3 trade union voices. Trade union members are able to bring deep and broad knowledge and expertise of the targeted sectors and sub-sectors, as well as access to data, networks and resources – without participating as representatives of either an organisation or a sector.

Trade unions should also be appropriately represented on bodies developing sectoral elements of the strategy.

The Industrial Strategy Council must have the ability and latitude to act, and to support government's implementation as a critical friend. It should be empowered to feed into mission formulation and target-setting, into policy-making, and into evaluation.

The ISC should be given a clear, ambitious mission with clear success metrics by which the progress of that mission can be judged. The closest existing equivalents are the Low Pay Commission or Climate Change Committee, which have both successfully achieved consensus and built stable policy environments. The Council should be sufficiently resourced

⁵⁴ <https://www.gov.wales/well-being-future-generations>

to develop its own analysis and have metrics to provide oversight and accountability on delivery.

The Council should be empowered to create and run programme-specific committees or taskforces, such as the pre-existing Made Smarter Commission. The Made Smarter Commission had a budget of £150 million.

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

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

Institutions that have a defined role to contribute to implementing the industrial strategy – e.g. the National Wealth Fund, government departments – should report regularly to the Council, in order for the Council to have a clear overview of the Strategy and the impacts it's having.

The Council should have a regular programme of evidence-gathering and reporting on progress, similar to the annual cycles followed by the Low Pay Commission and the Climate Change Committee.

Industrial Strategy Council members and officials, as well as other parts of the civil service that are tasked with implementing the strategy, should receive training on working with the different kinds of stakeholders. This is particularly crucial for working with trade unions because recent governments have instructed government departments not to seek trade union input, and as a result, officials can be unfamiliar with the mandate and expertise of trade unions.

As the umbrella organisation of the UK trade union movement, the TUC is well placed to support the Industrial Strategy Council in convening trade union input where appropriate, and supporting officials to access to the right expertise from across the movement, including small and specialised unions in relevant sectors.

Analytical framework questions

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

From an analytical perspective, the framework should more closely integrate the top-level aims (net zero, regional growth, economic security & resilience) with the top-level target outcomes. For example:

- The outcome 'successful places' already closely mirrors the regional growth aim
- 'Successful sectors' could reflect several of the aims
- There should be an outcome that clearly reflects Net Zero
- There should be an aim that correlates to the outcome 'successful people'

Creating and maintaining good jobs should be better prioritised in the green paper.

Failure to create substantial numbers of jobs over a decade and a half of massive growth in the offshore wind power sector is a case in point. While the Contracts for Difference regime has successfully encouraged companies to rapidly build out energy projects at decreasing prices, the policy incentivised companies to reduce costs by any means – including by offshoring supply chains. As a result, the policy grew an industry without significantly growing the workforce or domestic supply chains.⁵⁵ This led to lower economic growth in the UK overall.

Actively pursue good work. Government must not assume:

- that jobs will be created automatically as a result of growth in sectors, or
- that any job created is a good job, or
- that only high-skilled jobs are good jobs, or that high-skilled jobs are necessarily good jobs, or
- that higher pay alone defines job quality.

Without actively targeting policies for good work, the industrial strategy could risk growing businesses that fail to create jobs, or actively offshore them, or pursue growth at the expense of their workforce. It is welcome that government recognises the need for growth to support high quality jobs with benefits that are shared across people, places and generations. But we think that in order to be effective, the strategy should pursue good work actively.

The practical way to reflect this in the strategy is:

- **Ensure explicit reference to good work in the top-level aims.** This would work best as a stand-alone aim on a par with Net Zero and regional growth.
- **Conceptualise the ‘successful people’ outcome as ‘good jobs and skills’.** Rather than focusing on ‘higher-paid’ employment in and of itself, ‘good jobs’ should be defined holistically, for example in line with the recommendations of Carnegie’s Measuring Good Work working group.⁵⁶ Such a definition could encompass pay, contract, voice at work, health and wellbeing at work, and inclusion. This is consistent with the approach the government is taking in its plan to Make Work Pay.
- **Define a process for how policies that form part of the strategy will be evaluated against this good work aim / outcome, or the aims / outcome more broadly.**
- **Commit that government support to companies as part of the industrial strategy will be conditional on companies committing to meet job**

⁵⁵ <https://www.stuc.org.uk/resources/broken-promises-and-offshored-jobs-report.pdf>

⁵⁶ <https://carnegieuktrust.org.uk/publications/measuring-good-work-the-final-report-of-the-measuring-job-quality-working-group/>

quality standards (whether government support is provided through financial instruments, subsidies, licencing, tax credits, or other levers).

- **Ensure worker voice and trade unions are included throughout the institutions and stakeholder engagement processes** developing the strategy and sectoral strategies.

In addition, with a view to both the Successful People objective / proposed good work aim, and with a view to the Net Zero and economic security objectives, the strategy should

- **Set a mechanism for how policies will be designed to onshore supply chains** where this is practical.

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

As noted above, currently the green paper holds an unstated assumption that growth in target sectors results in growth in good, well-paid jobs. (The exception is in the clean power sector, where the green paper acknowledges that 'more can be done' to secure good jobs.) We have made suggestions above on how to build good work outcomes into the policy design process, instead of making this assumption.

Risks

- Growth of businesses in target sectors – if policy is insufficiently targeted for the strategy's objectives – may result in negligible job creation, or creates jobs with poor employment practices, or limited benefit to Net Zero etc
- Government support to industries 'bleeds' to fund supply chain expansion elsewhere, not the target industries in the UK
- Businesses see government support as an additional revenue stream, rather than a growth opportunity
- Lack of business response due to structural incentives against long-term growth strategies
- Imperative to meet 2030 clean power target, if combined with lack of swift success in investment into supply chains, locks renewables sector into seeking the cheapest available suppliers, contributing to China's market dominance and undermining UK sector growth.

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

Crucial metrics for assessing a Good Work aim / Successful People objective, that should be easily measured with current datasets, are:

- UK domestic content for growth-driving subsectors

- Numbers of jobs (in target sectors and their supply chains) supported by growth-driving subsectors, and by government incentives specifically
- Of these, numbers of jobs that meet national collective agreements on pay, where these exist; that are covered by collective bargaining agreements; that have trade union recognition
- Numbers of apprenticeship and other vocational training starts and completions for key trades for target sectors

There are additional detailed recommendations on measuring job quality in the recommendations of the Carnegie Working Group on Measuring Good Work.⁵⁷

The TUC would be happy to work with government to further support the development of a framework for monitoring job quality.

⁵⁷ <https://carnegieuktrust.org.uk/publications/measuring-good-work-the-final-report-of-the-measuring-job-quality-working-group/>