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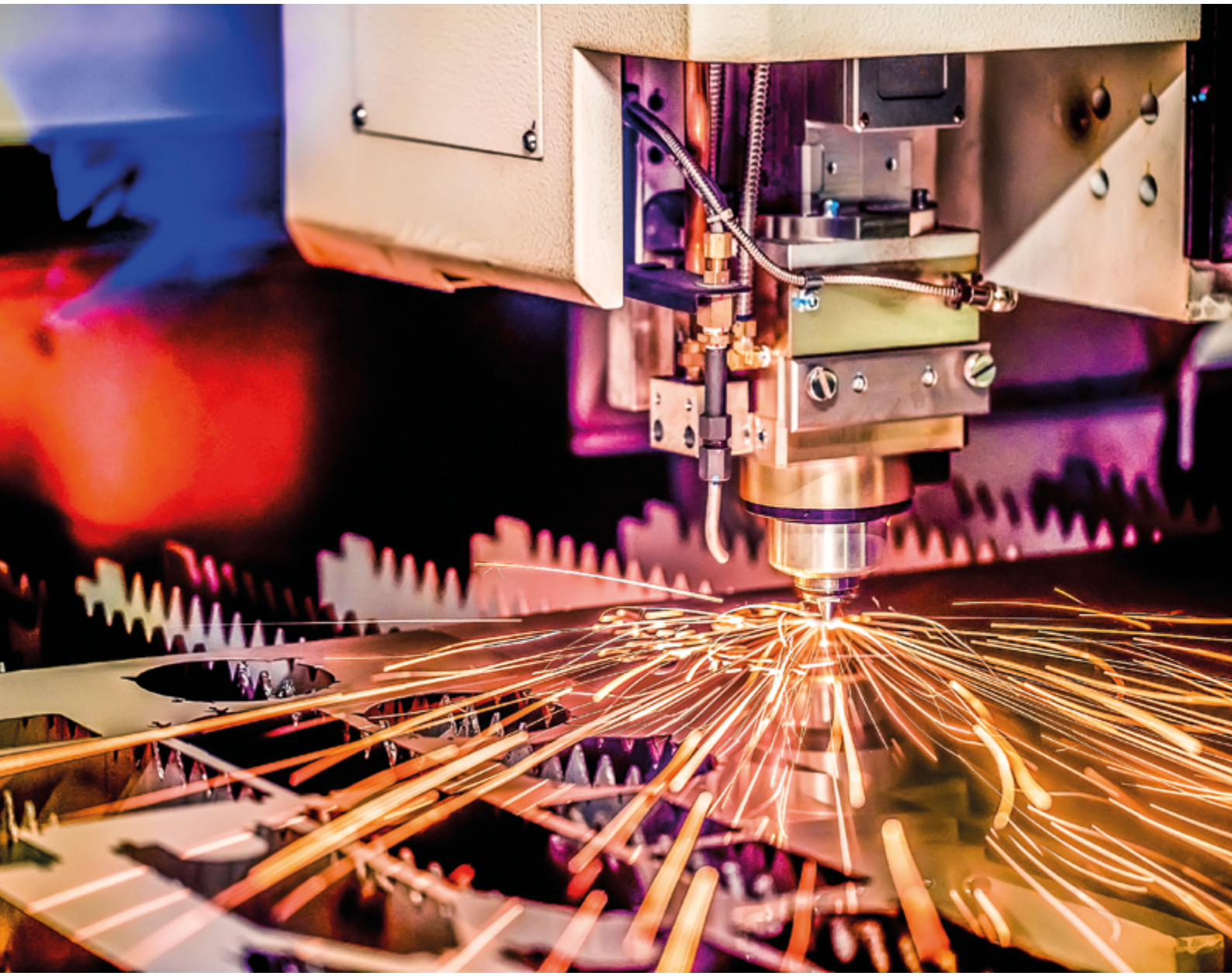
SME Manufacturers: Meeting the challenges of affordable energy and a skilled workforce



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Contents

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Robert has also published for the NATO Defense College, as well as having peer-reviewed papers published in leading journals highlighting the Chinese interventions in Xinjiang, as well as the British military response to the COVID-19 pandemic.

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Executive summary

Small manufacturers are struggling with twin challenges: limited access to highly skilled workers, and high energy costs. High energy costs have plagued global economies since the Covid-19 pandemic, and have been made worse by multiple geopolitical issues, including the ongoing war in Ukraine and conflict in the Middle East. Meanwhile, skills shortages are endemic across the UK economy.

Government policy has tried to stabilise the financial environment for small and medium-sized enterprises (SMEs).[1] This has included improving investment opportunities for UK manufacturing, combined with incentives and tax relief schemes introduced over the past 12 months. The previous Chancellor's 2023 Autumn Statement and Spring Budget were notably 'business friendly'. They included policies such as:

- Full expensing, to encourage investment in capital goods;
- Investment Zones, which double the time frame in which companies qualify for incentives and tax breaks;
- A recognition that the Apprentice Levy scheme is unfit for purpose and requires reform.

But is this enough? Are high, comparative energy costs undermining the competitiveness of UK manufacturing? And are skills shortages stifling the dynamism of the UK's SME manufacturers?

This report is based on in-depth surveys with SMEs across the country. It focuses on the challenges of energy costs and skills shortages. It examines whether current initiatives are effective. And it examines what sort of assistance will make a tangible difference to the long-term prospects and competitiveness of small British manufacturers.

Skilled labour and energy security

This paper examines the two prime impediments to growth for SMEs in 2023 and 2024: high energy costs and low skills availability.

Understanding the needs of SME manufacturers is vital to national prosperity. SMEs account for 48 per cent of employment in UK businesses, according to official data.[2] And while manufacturing delivers just 13 per cent of UK Gross Value Added (GVA) in the UK economy,[3] it *dominates* our export trade. According to the latest data, UK manufacturers delivered 88 per cent of our £364 billion-worth of goods exports in 2023.[4] In approximate terms, this is almost half of all the goods and services we export.

UK manufacturing may be lean, but it's also competitive – and possibly more competitive than it has been for some decades. According to the industry body Make UK, the UK moved from ninth to eighth place, globally, in terms of manufacturing output in 2023.[5] Our three biggest manufacturing export sectors – auto, aerospace and machinery – are now growing strongly in global markets. SMEs are contributors to all three sectors, even where the finished goods are dominated by a few big names, such as Jaguar Land Rover, or Rolls-Royce Plc.

1 Defined as companies with more than three but fewer than 250 employees.

2 Department for Business and Trade (2023) *Business population estimates for the UK and regions 2023: statistical release*. Available at: https://www.gov.uk/government/statistics/business-population-estimates-2023/business-population-estimates-for-the-uk-and-regions-2023-statistical-release (Accessed: 13 June 2024).

3 ONS: Annual Business Survey, results for 2021. GVA for manufacturing was £177.9 billion, out of a total for all sectors of £1,368.1 billion.

4 ONS: UK Trade in goods by Classification of Product by Activity, annual exports time series dataset, current prices, seasonally adjusted. February 2024. Minus precious metals.

5 Make UK. *UK Manufacturing, The Facts: 2023*. Available at: https://www.makeuk.org/insights/publications/uk-manufacturing-the-facts-2023 (Accessed: 13 June 2024).

The high costs of green power

Our research project seeks to better understand the challenges and barriers that face UK manufactures after a tumultuous few years. We conducted intensive interviews with 25 manufacturers, weighted towards SMEs.

- Over half of all respondents (56 per cent) reported as either high or relatively high energy users. Over half said they were concerned about meeting their energy bills and commitments over the next year.
- Almost 90 per cent of the manufacturers polled in this project reported that a more affordable, more secure source of energy was more important to their business than a greener alternative.

These findings highlight the central importance of energy in the day-to-day operations of UK SMEs. High energy costs mean many smaller businesses are now operating in short-term survival mode. But the research also reveals a profound insight: high-cost clean energy is currently a burden to UK manufacturing. It tends to make us comparatively uncompetitive. This may change, as and when consumers are willing to pay a premium for goods made from low or zero-carbon energy. But for now, they aren't. Our rapid energy transition causes an uncompensated cost to UK manufacturing.

At the time of writing, the Government's Net Zero strategy aims to ensure the UK has zero net carbon emissions by 2050 and to decarbonise the electricity grid by 2035. The new Labour government has promised to bring grid decarbonisation forward to 2030. Policies to achieve Net Zero include government investment into green technologies, coupled with planned phasing out of some pollutants – for instance, the sale of new petrol and diesel cars are to be banned from 2035, with the aim of supporting growth of electric vehicles.

However, concerns have been raised that these targets are unrealistic, and may raise prices for consumers and harm the competitiveness of the UK's industries, if businesses are forced to rely on expensive green energy while businesses abroad are able to continue using cheaper fossil fuels.[6]

Most survey respondents lent support to the idea of 'Net Zero Realism'. This is best defined as an approach to transitioning to Net Zero that does not meaningfully erode UK competitiveness. Interestingly, exactly the same proportion of respondents said they were not planning their own, *onsite* transition to clean energy at this stage. Three quarters of all manufacturers surveyed reported that they were not incentivised to support the government's Net Zero strategy in its current form.

Skills: The other big challenge

On skills, almost all respondents from our survey reported that it was important or very important to be able to access technical skills that their business relied upon. However, there remain multiple barriers to SMEs hiring the skilled workforce they require.

- Respondents said that the toughest barrier was covering staff costs whilst employees are on courses or absent for training.
- Staff retention and a lack of knowledge or availability for appropriate training courses were reported as further barriers.

Both factors impact competitiveness. SMEs have major concerns about skills training. They report that newly qualified trainees often arrive from further education institutions with significant skill gaps. This encourages manufacturers to upskill and train their existing workforce, rather than take on newly qualified trainees. Apprenticeship programmes are increasingly popular, but mostly among large manufacturing companies who can afford them. SMEs suffer disproportionately from the widespread disconnect between the supply of technical skills in the UK, and the needs of UK manufacturers.

6 Helm, D. (2023) 'Net zero electricity: the UK 2035 target'. *Oxford Review of Economic Policy*.

Local Enterprise Partnerships (LEPs) are one potential solution. These are centrally funded investment partnerships between businesses and local authorities, set up in 2011 by the then Department for Business, Innovation and Skills. One quarter of SMEs say they have successfully used LEPs. This implies that local initiatives may be better at meeting the skills needs of SMEs than national initiatives. However, the previous Government ceased sponsorship of LEPs. New Local Skills Improvement Plans (LSIPs) are setting out priorities in local areas to make post-16 technical training more responsive and closely aligned to local labour market needs. But their potential is unknown.

In general terms, SMEs say that private local schemes help in identifying future employees and recruitment. So, there is evidence that locally engineered training helps meet SME needs but uncertainty about how local schemes will evolve.

What support will be most effective?

Naturally, SMEs want assistance, and arguably it is fair that they should receive some forms of support from the state since UK Government policy has resulted in some of the highest energy costs in Europe, contributing to high costs for manufacturers. And most education in the UK is delivered by the state, in one form or another. If the end result is not fit for purpose – in terms of skills – businesses feel they are being left to make up for deficiencies out of their own pockets. It is therefore unsurprising that:

- Almost all SMEs want help to meet their energy costs;
- More than half of SMEs would like further assistance recruiting and retaining skilled labour.

SMEs also provided reactions to tax policy. More than half of manufacturers reported that a research and development (R&D) tax relief scheme would make investment into R&D more likely in the next two to five years. Meanwhile, almost two thirds of SMEs said the recent rise in Corporation Tax had diminished their appetitive for investment in the short-term.

In summary, our survey of UK manufacturers shows that energy costs and skills availability are the two biggest challenges to growth identified by small businesses. The UK Government has an obligation to address both, since current challenges are the direct result of Government policy. Success will improve the competitiveness of our SMEs. That, in turn, will boost exports and prosperity across industrial regions of the UK. If these concerns are not met by the Government, then it risks undermining the Prime Minister's pledge to grow the UK economy and 'reverse the decline of manufacturing'.[7]

7 PolicyMogul (2024) *"Only Labour will reverse the decline of manufacturing in Britain" says Starmer, as he sets out party's manufacturing plans in the North West*. Available at: https://policymogul.com/key-updates/37130/-only-labour-will-reverse-the-decline-of-manufacturing-in-britain-says-starmer-as-he-sets-out-party-s-manufacturing-plans-in-the-north-west (Accessed: 14 August 2024).

Introduction

UK manufacturing: Why it matters

In February 2023, the leading manufacturers' organisation, Make UK, reported two predominant challenges for UK businesses: high energy costs, and the difficulties of recruiting and retaining skilled employees. As a result, claimed Make UK, manufacturers were 'fighting hard to survive and thrive'[8] and needed more support.

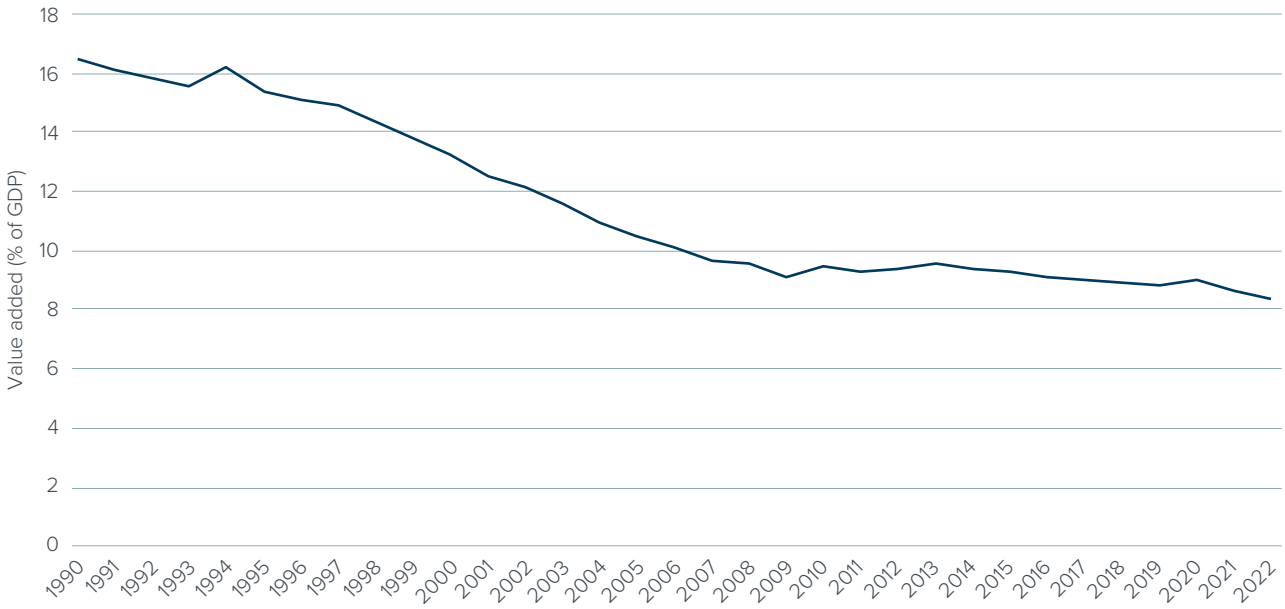
This paper seeks to unpack these challenges and examine how they impact small and medium-sized enterprise (SME) manufacturers. It seeks to provide realistic solutions that Government and local councils can implement. The challenges deserve consideration. If SMEs can boost productivity, then UK manufacturing will build competitiveness. Our major exporters will increasingly turn to domestic supply chains. Our manufacturing regions will become more prosperous, and in turn attract increased investment.

The importance of manufacturing to the UK

Cynics tend to miss one salient point about UK manufacturing: the long and steady decline of UK manufacturers *ceased* over a decade ago.

True, UK manufacturing has had a tough half century. Back in the 1970s, manufacturing contributed a quarter of the UK's gross domestic product (GDP), according to World Bank data. Steady decline during the 1980s meant that by the early 1990s, this proportion had dropped to just over 15 per cent. And during the first decade of the 2000s, the sector declined by another five percentage points. However, since around 2007 to 2009, manufacturing contribution to UK GDP has plateaued at just under 10 per cent of UK economic output.[9] As we shall see, employment in manufacturing has also held steady since that 2009/2010 inflection point.

Figure 1. UK Manufacturing as a percentage of GDP, 1990-2022



Source: World Bank. Manufacturing, value added (% of GDP) - United Kingdom. Available at: https://data.worldbank.org/indicator/NV.IND.MANF.ZS?end=2022&locations=GB&start=1990&view=chart (Accessed: 13 June 2024).

8 Make UK. *The economic challenges facing manufacturers*. Available at: https://www.makeuk.org/insights/blogs/the-economic-challenges-facing-manufacturers (Accessed: 8 February 2024).

9 Between July–September 2023, the manufacturing sector accounted for 9.4 per cent of total UK economic output as measured by Gross Value Added (GVA). House of Commons Library (2024) *A6: Manufacturing*. Available at: https://researchbriefings.files.parliament.uk/documents/SN05206/SN05206.pdf (Accessed: 8 February 2024).

This stabilisation has helped save our trade: manufacturing may be a small part of the domestic economy, but it is central to our exports. Over the past four years, goods (as opposed to services) have delivered between 46 per cent and 51 per cent of our entire exports,[10] and manufactured goods deliver 93 to 94 per cent of those goods exports — once analysts extract precious metals and energy. In other words, take away erratic commodities such as gold and natural gas, and almost all the goods that the UK exports are manufactured goods – with auto, aerospace and machinery now delivering 40 per cent of the export total.

UK manufacturing is also a hidden contributor to services income. For example, Rolls-Royce generated £4.6 billion of revenue from service agreements on its jet engines in 2023.[11] These revenues don't show up in goods export data. They have gone unnoticed by many commentators, and the economists who pronounce on export data. But they are an integral element of UK manufacturing. Also, some British engineers *mostly* manufacture overseas, but derive income and profits from design, engineering and marketing undertaken in the UK. Leicester-based Triumph Motorcycles would be an excellent example.

Internationally, we are still a major manufacturer. Make UK reported in 2023 that the UK has now overtaken France to become the eighth largest manufacturing economy.[12] This is largely thanks to recent rapid growth in our auto and aerospace sectors. The first is powering into global markets with premium marques. Meanwhile, prowess in aerospace engineering gives the UK the second largest aerospace sector in the world.[13] [14] Export success is also due to niche expertise in specific types of machinery, including construction machinery, measuring and testing equipment, and power equipment.

Most of these manufacturing sectors are export-led. As a rough guide, around 80 per cent of goods made in the UK's auto and aerospace sectors are destined for export. This explains how manufacturing is a small part of GDP, but a huge proportion of exports. It also explains why competitiveness in UK manufacturing is vital.

The success of UK manufacturing sectors in global markets translates into jobs. According to official government data, manufacturing employed 2.6 million people in 2023.[15] This figure stabilised around 2009 to 2010 – at the same time that manufacturing ceased to fall as a proportion of UK GDP.

10 Department for Business and Trade (2024) *UK trade in numbers (web version)*. Available at: https://www.gov.uk/government/statistics/uk-trade-in-numbers/uk-trade-in-numbers-web-version (Accessed: 13 June 2024).

11 Rolls-Royce (2024) *Rolls-Royce Holdings Plc 2023 Full Year Results*. Available at: https://www.rolls-royce.com/media/press-releases/2024/22-02-2024-rr-holdings-plc-2023-full-year-results.aspx (Accessed: 13 June 2024).

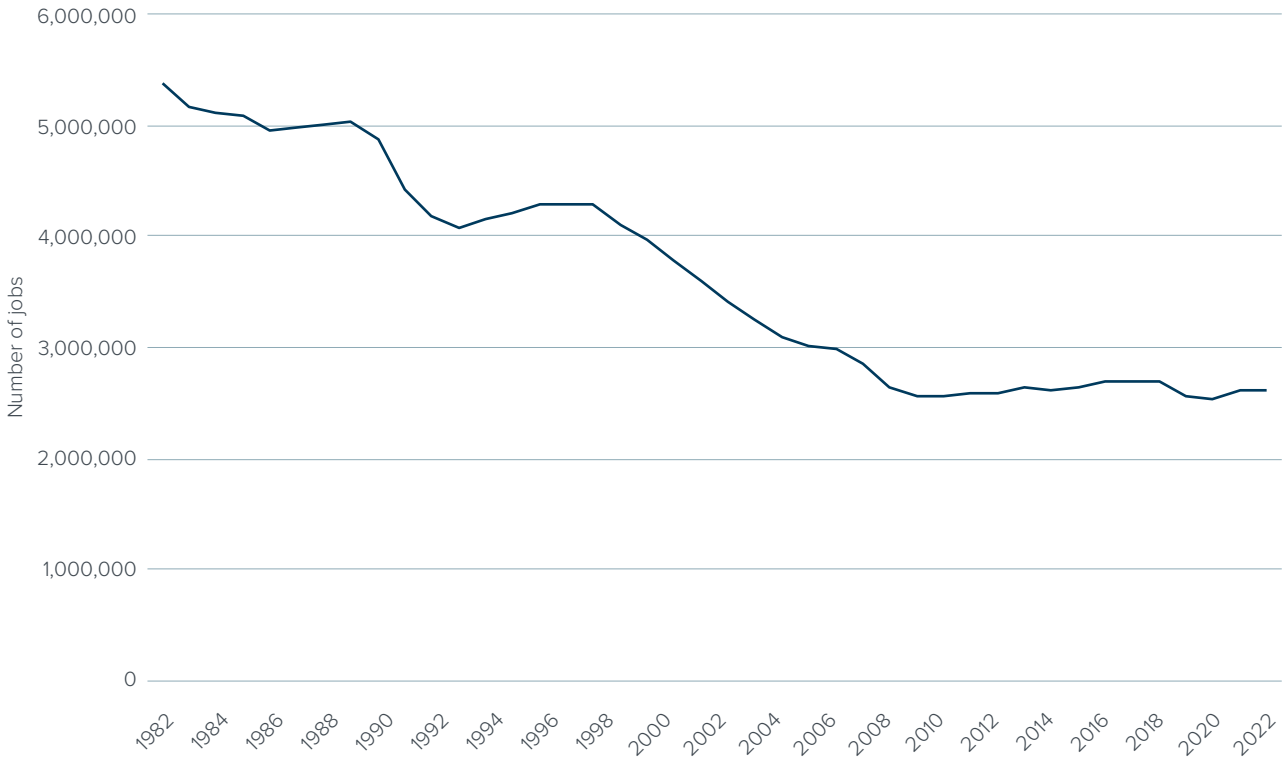
12 Make UK (2023) *Manufacturing Fact Card 2023 Report*. Available at: https://www.makeuk.org/insights/reports/manufacturing-fact-card-report-2023 (Accessed: 13 June 2024).

13 International Trade Administration (2023) *United Kingdom - Country Commercial Guide: Aerospace and Defense*. Available at: https://www.trade.gov/country-commercial-guides/united-kingdom-aerospace-and-defense (Accessed: 13 June 2024).

14 Around 80 per cent of output in our auto and aerospace sectors is exported.

15 ONS (2024) *EMP13: Employment by industry*. Available at: https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/datasets/employmentbyindustryemp13 (Accessed: 13 June 2024).

Figure 2. Number of workforce jobs in the UK manufacturing sector, 1982-2023



Source ONS, https://www.nomisweb.co.uk

The vital role of SMEs

Big names dominate manufacturing exports. Their success, however, is built on small-scale suppliers. For example, just 25 companies build vehicles in the UK. But they rely on 2,500 UK-based auto component providers, according to the Society of Motor Manufacturers and Traders (SMMT).[16] These suppliers need to stay competitive to retain supplier status. Competition is brutal. The UK is still tied into a single, free-trade European auto production area (which includes Turkey) and most UK suppliers are easily replaceable by suppliers based in the EU. As a rough average, around 40-50 per cent of the value add of a UK-assembled car will come from imported parts,[17] so the pressure on UK SMEs is intense.

What's at stake is a large slice of our manufacturing workforce. In total, the UK auto sector employs 182,000 people just in manufacturing.[18] Those jobs rely on UK suppliers remaining competitive.

Aerospace presents a similar picture. At the top level, our trade is dominated by three companies – Rolls-Royce, Airbus and British Aerospace. But beneath the big three are literally thousands of SME suppliers. According to the US's official International Trade Administration (ITA):

> *'More than 3,000 aerospace companies operate in the UK, and the aerospace sector has the largest number of SME companies in Europe, providing over 282,000 jobs…'*[19]

Incidentally, the ITA describes UK aerospace as the 'crown jewel' of UK exports. It should know. US companies are often direct competitors to aerospace suppliers in Britain and Northern Ireland.

16 Society of Motor Manufacturers and Traders. *UK Automotive*. Available at: https://www.smmt.co.uk/industry-topics/uk-automotive/ (Accessed: 13 June 2024).

17 Percentages vary dramatically by source. The FT estimated the percentage of UK content in UK-assembled vehicles at 44 per cent in 2017. Source: *Financial Times* (2017). 'More British parts being used in UK cars, says report' June 2017. Available at: https://www.ft.com/content/1f21764e-54fe-11e7-80b6-9bfa4c1f83d2

18 Ibid.

19 International Trade Administration (2023) *United Kingdom - Country Commercial Guide: Aerospace and Defense*. Available at: https://www.trade.gov/country-commercial-guides/united-kingdom-aerospace-and-defense (Accessed: 13 June 2024). Includes jobs not in manufacturing.

Meanwhile, other manufacturing sectors are highly SME-intensive. For example, according to the ONS Annual Business Survey,[20] an astonishing 25,000 companies were involved in metal fabrication in the UK in 2021. This is almost a fifth of all businesses engaged in manufacturing in the UK.[21]

Research is lacking on the role of SMEs in UK manufacturing. But it's likely that SMEs are gaining in relevance – at least so far as trade is concerned. In 2020, Marcus Gibson investigated the role of SMEs in UK exports.[22] He estimated that the UK was home to 235,000 SME exporters, and characterised their activity as the 'design, manufacture and market of niche, high quality goods.' He reported 'the extraordinary rise of UK export volumes – much of it pioneered by the UK's unequalled collection of SMEs.' He perceives small companies to be the natural home of some the UK's most creative engineers and product designers.

In other words, SMEs aren't just important as suppliers. They are a source of competitive advantage. Small enterprises are where entrepreneurs create new ideas and innovation happens. They help to make UK supply chains attractive for original equipment makers based in the UK and overseas. Thus, SMEs are vital contributors to UK manufacturing. Their dynamism matters to UK trade. This paper investigates the principal challenges they face. Address those, and we can improve our competitiveness and global prospects.

Headline findings from the SME survey

In this report, we surveyed 25 manufacturers. We asked what form of government support would most aid growth. We framed the questions in response to multiple interactions with small businesses engaged in manufacturing. Civitas researchers had already learned that energy costs, skills, taxation and the costs of R&D are among SMEs' biggest concerns. We wanted to find out that how important skills and energy costs were in comparison to the other principal challenges that SMEs confront.

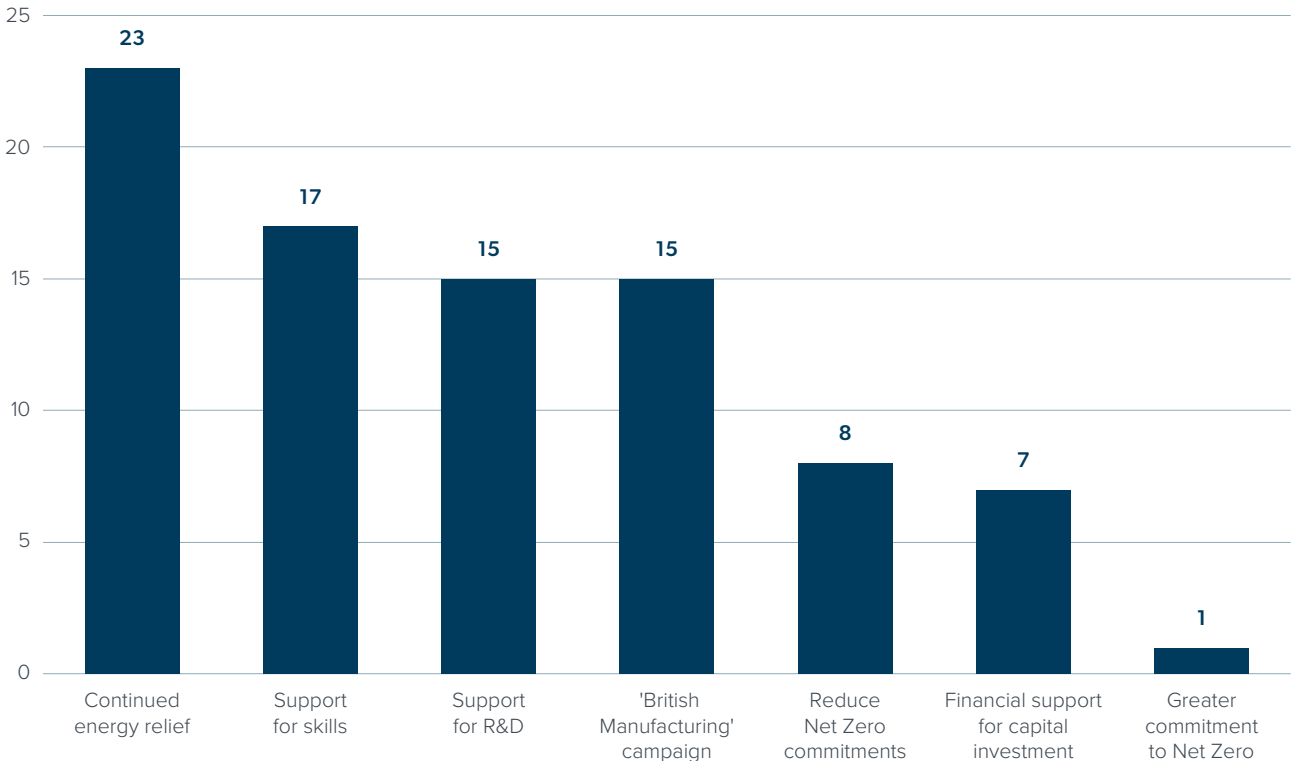
Once we identified the importance of skills and energy issues, we analysed the responses to gain a better understanding of the nature of SME challenges. Answers are set out and examined further in Chapter 4.

20 ONS (2023) *Non-financial business economy, UK and regional (Annual Business Survey): 2021 results*. Available at: https://www.ons.gov.uk/businessindustryandtrade/business/businessservices/bulletins/nonfinancialbusinesseconomyukandregionalannualbusinesssurvey/2021results (Accessed: 13 June 2024).

21 Ibid.

22 Gibson, M. (2020) *Britain's Export Boom and how to encourage it*. Civitas.

Figure 3. Which of the following would most help you in supporting business growth? (Select all that apply)



Number one concern: Continued energy relief

Energy costs were the top concern. All except two of the respondents said that a continued offer of Government relief from energy bills would help most in terms of growth. Context is important. The energy cap imposed by the Government via the Energy Bill Relief Scheme (EBRS) and the subsequent Energy Bills Discount Scheme (EBDS) for non-domestic energy bills, expired in April 2024, with no further guarantees to reimpose a cap. This caused some concern amongst our respondents.

The initial EBRS was available to everyone on a non-domestic contract, including businesses and other organisations if they were on existing fixed priced contracts that were agreed on or after 1 December 2021, or, for example, signing new fixed price contracts. The government-supported price was set at £211 per megawatt hour (MWh) or 21.1.p per kilott hour (KWh) for electricity, and £75 per MWh or 7.5p per KWh for gas. This provided expected savings of £211 per MWh for electricity and £105 per MWh for gas, respectively.[23] The later EBDS was similarly available to everyone on a non-domestic energy supply contract with a licensed energy supplier, including businesses. The threshold prices and maximum discounts were set at £19.61 per MWh with a price threshold of £302 per MWh for electricity, and £6.97 per MWh with a price threshold of £107 per MWh for gas.[24]

Smaller manufacturers said they found it hard to justify capital investment when they face potential spikes in energy costs in 2024. The previous Chancellor did not mention any extension to the EBDS in his March 2024 budget. Consequently, SME concerns that the scheme would end in April 2024 were confirmed. This likely means the cost of energy remains among SMEs' most pressing concerns.

23 Department for Energy Security and Net Zero and Department for Business, Energy & Industrial Strategy (2022) *Energy Bill Relief Scheme: help for businesses and other non-domestic customers*. Available at: https://www.gov.uk/guidance/energy-bill-relief-scheme-help-for-businesses-and-other-non-domestic-customers (Accessed: 14 August 2024).

24 Department for Energy Security and Net Zero, HM Treasury and Department for Business, Energy & Industrial Strategy (2023) *Energy Bills Discount Scheme*. Available at: https://www.gov.uk/guidance/energy-bills-discount-scheme (Accessed: 14 August 2024).

Number two concern: Support for skills

More than two thirds of respondents said that greater Government support for skills and apprenticeships would help their businesses grow. This view was notably strong in regional areas of the UK, including the South West, North West, and rural Scotland. In these areas, manufacturers are often located away from city-centre colleges and further education centres. This limits SMEs' ability to recruit and train younger workers.

The high cost of UK energy

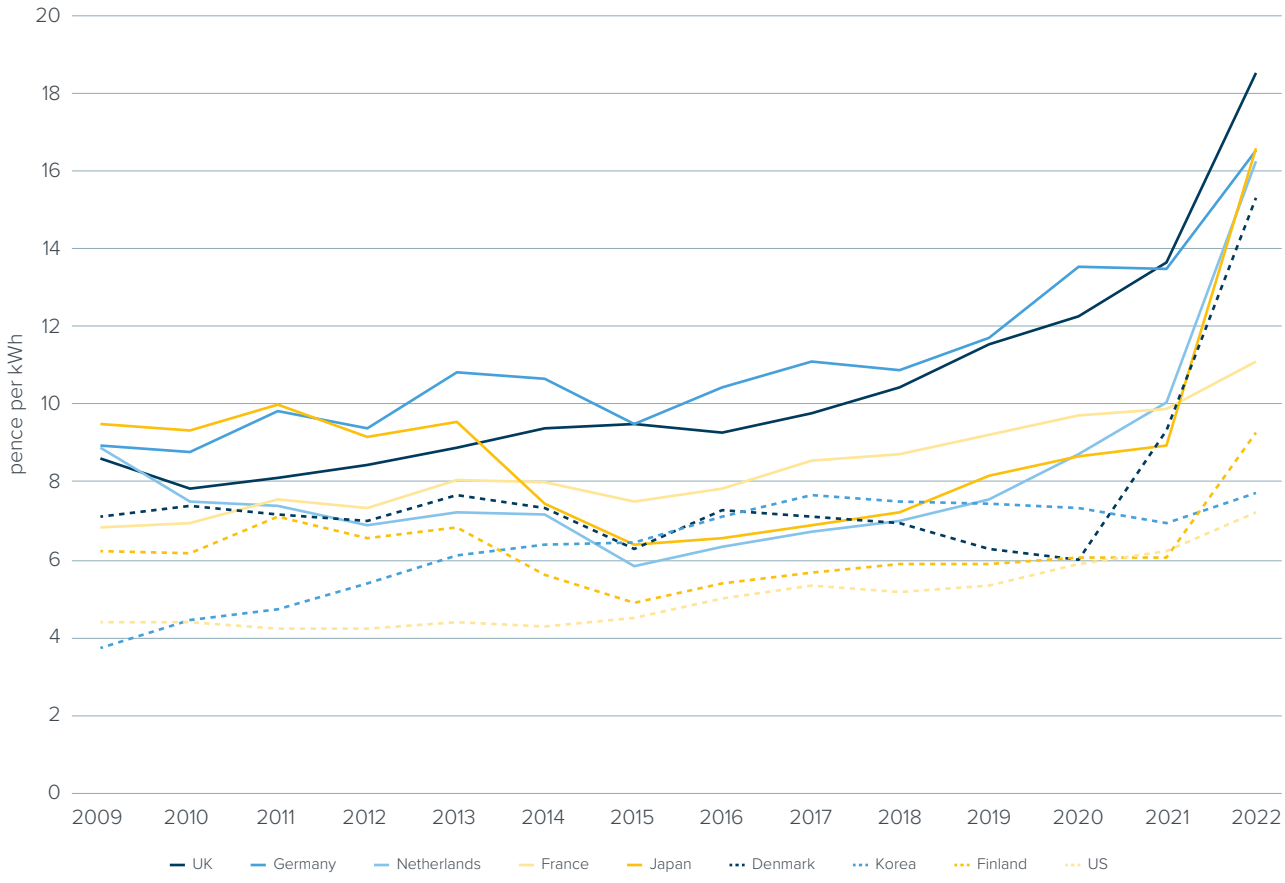
To what extent does economic research confirm these two challenges? In other words: SMEs may *say* that energy and skills are their biggest challenges, but does topical research bear them out?

The Department for Energy Security and Net Zero publishes data on the average yearly cost of industrial energy across developed economies. This reveals two things:

- Industrial energy in the UK really is comparatively costly.
- The UK's competitiveness in terms of energy costs has deteriorated since around 2012.

First, some background. Historically, cheap power gave UK manufacturing an in-built competitive advantage. High-quality coal available across England, Scotland and Wales gave manufacturers comparatively cheap energy from the Industrial Revolution onwards. Abundant North Sea oil and gas sustained that advantage into the late 1990s. They gave UK manufacturing a head start – and it partly explained why energy-intensive industries came to dominate UK manufacturing, including steelmaking, chemicals, and metal manufacturing.

Figure 4. Industrial electricity costs, major economies, 2009 to 2022 (pence per kWh)



Source: Department for Energy Security and Net Zero (2013) International industrial energy prices. Available at: https://www.gov.uk/government/statistical-data-sets/international-industrial-energy-prices (Accessed: 13 June 2024). Industrial energy prices in pence per kWh. Prices converted to pounds sterling using annual average exchange rates.

For the past two decades, however, UK industrial power prices have been consistently higher than our EU competitors – and that trend is becoming more pronounced. This drop in energy competitiveness has coincided with a period when the UK-EU trade balance in manufactured goods has swung from approximate balance to a plus £140 billion deficit. Power costs are not the only reason. But in an open market, the UK has traversed a two-decade period where the only way for manufacturing investment to stay in the UK was for UK to be competitive in factors *other than the cost of energy.*

To put the point a different way: SME manufacturers who supply our top tier manufacturers operate at an automatic cost-disadvantage as compared to SMEs in the rest of the EU. And that cost-disadvantage has become *more* pronounced over the past decade.

The cause can generally be ascribed to two policy actions. First, the UK's clean energy transition. The UK has rapidly transitioned its energy production to expensive renewables over the past 15 years. Renewables delivered 37 per cent of UK power generation in the 12 months to April 2024.[25] By far the greater share is delivered by offshore wind farms, at 30 per cent of the total. However, this form of power generation is so expensive it depends on government subsidy – with a projected £1 billion budgeted for auctions in 2024.[26] The UK boasts of its leadership in offshore wind power, and sure enough, we produce 45 per cent of Europe's offshore wind power, or 24 per cent of the global total.[27] But that saddles industry with high-cost energy.

Second, high taxation. This has accelerated the decline of North Sea hydrocarbon production, with output down by around two thirds over the past 20 years.[28] The net result is that the UK is now a huge importer of natural gas, including especially from the US, Norway and Qatar. This adds input costs to UK power generation and imperils our energy security. It also, incidentally, delivered an £18 billion deficit to the UK balance of trade last year.[29] Our importer status in natural gas is important because of its prominence in UK power generation. Last year, gas delivered 33 per cent of UK power generation.[30]

The combined effects of dependence on offshore wind and our status as a gas importer have eliminated and finally reversed the UK's energy advantage for power-intensive UK manufacturing.

So, how uncompetitive is UK energy?

According to data from the Department for Energy Security and Net Zero, the price of industrial energy in the UK (after tax) now routinely exceeds the prices paid by companies in almost all competitor economies.[31] The data used in Figures 4 and 5 is compiled for the 31 members of the International Energy Agency (IEA). Members include most countries in the EU, plus developed economies in Asia and North America, including the US, Canada, Japan, Korea and New Zealand and Australia. Consequently, they include almost all countries to which UK is a competitor in manufactured goods.

25 National Grid. *National Grid: Live*. Available at: https://grid.iamkate.com/ (Accessed: 13 June 2024).

26 Twidale, S. (2024) *Britain announces 1 billion pound auction for renewable power projects*. Available at: https://www.reuters.com/world/uk/britain-announces-1-billion-pound-auction-renewable-power-projects-2024-03-06/ (Accessed: 13 June 2024).

27 The Crown Estate (2022) *Offshore Wind Report 2022*. Available at: https://www.thecrownestate.co.uk/media/4382/11720_owoperationalreport_2022_tp_020523plusaccessibility.pdf (Accessed: 13 June 2024).

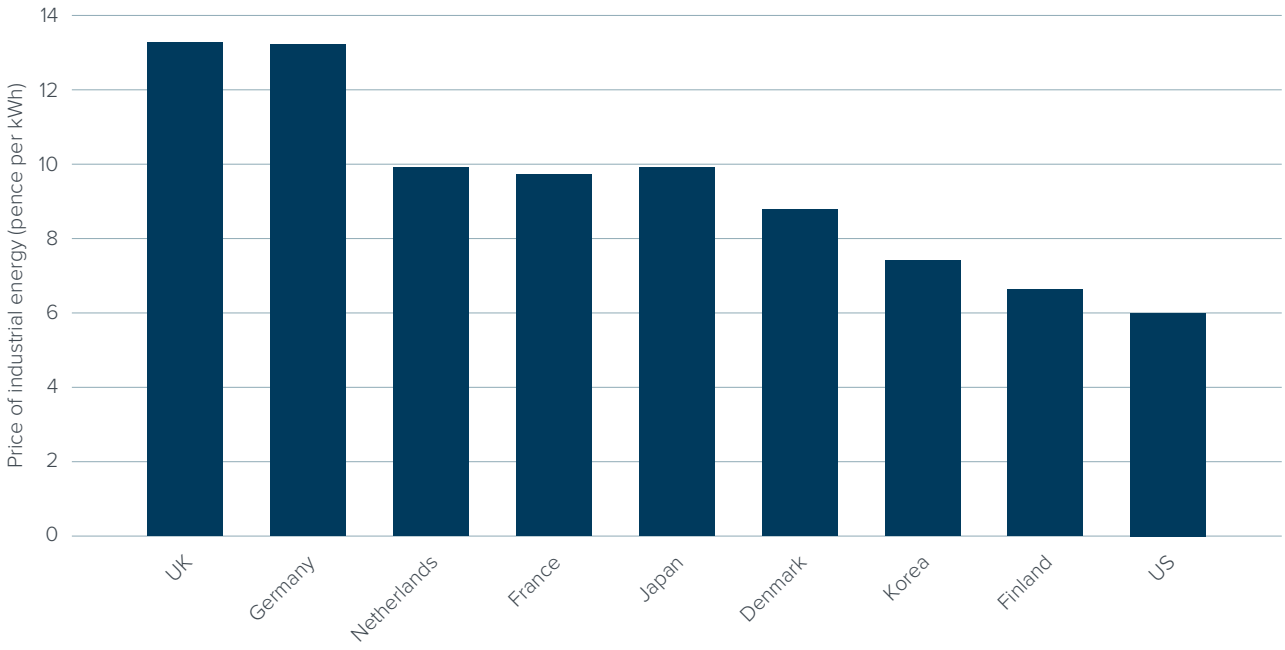
28 Nasralla, S. (2023) *UK tax sweetener won't stop plummeting North Sea oil, gas output*. Available at: https://www.reuters.com/business/energy/uk-tax-sweetener-wont-stop-plummeting-north-sea-oil-gas-output-2023-06-09/ (Accessed: 13 June 2024).

29 ONS: UK Trade in goods by Classification of Product by Activity, time series dataset, Quarterly and Annual up to and including 2023 Q4.

30 National Grid. *National Grid: Live*. Available at: https://grid.iamkate.com/ (Accessed: 13 June 2024).

31 Department for Energy Security and Net Zero (2013) *International industrial energy prices*. Available at: https://www.gov.uk/government/statistical-data-sets/international-industrial-energy-prices (Accessed: 13 June 2024).

Figure 5. Price of industrial electricity, five-year average (2018-2022)



Source: Department for Energy Security and Net Zero (2013) International industrial energy prices. Available at: https://www.gov.uk/government/statistical-data-sets/international-industrial-energy-prices (Accessed: 13 June 2024). Industrial energy prices in pence per kWh. Prices converted to pounds sterling using annual average exchange rates.

The current data shows that UK businesses have incurred some of the highest costs for industrial electricity since 2018 of all G7 countries, except Italy.[32] On a five-year average (2018 to 2022) the UK marginally pipped Germany. And the data for 2022 was especially poor.

- In 2022, our average price of industrial energy (including taxes) was 18.6p per kWh. This was 17.2 per cent higher than the median for IEA members.[33] [34]
- Out of the 31 member countries of the IEA group, the UK now ranks 22nd in terms of the most expensive industrial electricity prices.
- While industrial power has typically been cheaper in the UK than Germany since 2009, now it's not. The UK's power costs slid past Germany's in 2021.
- In the last year for which there is data (2022), our power was 12 per cent more expensive than in Germany (16.5p per kWh) – despite Germany's epic energy woes.[35]

The data shows a long-term deterioration in our energy competitiveness commencing a decade ago. This means the problem is chronic. Until a decade ago, the UK was 'middle of the pack' in terms of industrial energy costs. From 1984 to 2013, the UK tended to rank 15–20th in terms of our power prices. Since 2014, however, we've ranked an average 22nd. And that puts us firmly in the bottom third of IEA members.

- Over the previous 10 years, our prices were on average 26.3 per cent higher than France, and more than double the average costs of industrial power in the US (110 per cent).
- From 2013 to 2022, our industrial energy costs were on average 32.1 per cent higher than the IEA average.

32 Data on Italy is partial during this period and so not reported.

33 Mostly developed economies: members include most members of the EU, plus the US, Canada, Australia, New Zealand, Japan, Korea and Turkey.

34 Department for Energy Security and Net Zero (2013) *International industrial energy prices*. Available at: https://www.gov.uk/government/statistical-data-sets/international-industrial-energy-prices (Accessed: 13 June 2024). Inclusive of taxes.

35 Ibid.

High, persistent power costs put SME manufacturers at a direct cost-disadvantage compared to SME suppliers in Europe who supply our major auto, aerospace and machinery industries. They directly impact competitiveness. On a larger scale, high prices mean, for example, that some power-intensive manufacturing activities can only be sustained through direct government support. Steelmaking is one example. It also means that our chemicals industries – concentrated in the North East – operate at a direct cost disadvantage.[36]

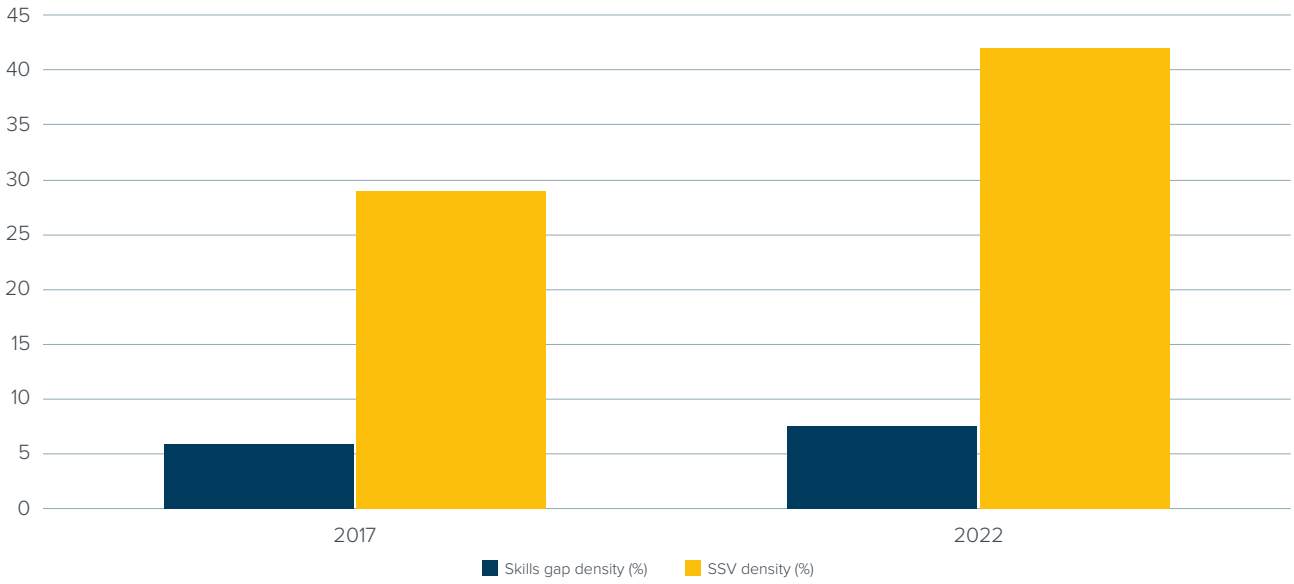
The UK Government is semi-alive to the problem. In February 2023, it announced a price support scheme targeting the UK's most energy-intensive industry.[37] However, the scheme was only intended to apply to around 300 companies, and so most SMEs wouldn't benefit. What's more, according to the *Daily Telegraph*, the ongoing beneficiaries will be those engaged in clean energy-related activities such as metal refiners and car battery makers.[38] In other words, the UK Government knows it has to subsidise the cost of power for manufacturers in order to sustain investment. But it focuses efforts only on those it regards as strategic and involved in Net Zero industries. This bodes ill for the tens of thousands of SMEs, including those who supply our big export brands.

Skills shortages

Turning to skills shortages, data from the Government's 'Employer Skills Survey' shows a rise in the proportion of job vacancies that are due to an absence of relevant skills.

A 'skills vacancy' is defined as a job vacancy that is hard to fill 'due to a lack of skills, qualifications or experience among applicants'.[39] The metric used to assess the relevance of skills shortages to job vacancies is 'skill-shortage density'. The density is the proportion of all vacancies where the reason for the vacancy is specifically skills-related. If skills availability is an increasing issue for the UK labour market, skills shortage density will rise.

Figure 6. Density of skills gap and density of skill-shortage vacancies (SSV) in UK manufacturing



Source: UK Government (2023) Employer Skills Survey. Available at: https://explore-education-statistics.service.gov.uk/find-statistics/employer-skills-survey/2022 (Accessed: 13 June 2024).

36 The SMMT claims that UK auto makers incur power costs '80%' above the European average. However, the SMMT is not famous for the understating the challenges that confront UK auto making, and the origins of that claim are not apparent.

37 Business and Trade Committee (2024) *Batteries for electric vehicle manufacturing: Government Response to the Committee's First Report of Session2023-24*. Available at: https://publications.parliament.uk/pa/cm5804/cmselect/cmbeis/547/report.html (Accessed: 13 June 2024).

38 Oliver, M. (2024) 'British battery plants given cheap power to break dependence on China', *The Telegraph*, 10 March. Available at: https://www.telegraph.co.uk/business/2024/03/10/british-battery-plants-cheap-power-china-dependence/ (Accessed: 13 June 2024).

39 UK Government (2023) *Employer Skills Survey*. Available at: https://explore-education-statistics.service.gov.uk/find-statistics/employer-skills-survey/2022 (Accessed: 13 June 2024).

The above chart is taken directly from the Government's Employer Skills Survey.[40] It's categorised specifically for manufacturing companies. And it shows a steady climb in the density of skills shortages among job vacancies in UK manufacturing; from just under 30 per cent of vacancies in 2017 to over 40 per cent in 2022. In other words, the reason companies advertise a vacancy is – increasingly – because they don't have the skills they need. Official data bears out the challenge identified by respondents in our survey.

Another metric helps identify skills deficiency: density of skills gap. This is the number of employees in any given organisation that are judged *not* fully proficient. The metric is expressed as a proportion of all employees. Again, we again see a steady climb. The proportion of all employees considered not to be fully proficient by their employer has increased from 4.4 per cent in 2017 to 5.7 per cent in 2022. This is a national figure, whereas for manufacturing specifically it increased from 5.8 per cent to 7.5 per cent.

The importance of skills shortages can also be gleaned from anecdotal evidence on apprenticeships. Corporate data on apprenticeships is revealing because it evinces companies' need to intervene to develop skills in-house.

Today, there appears to be an explosion in UK manufacturing companies creating apprenticeships. ADS, the industry body for the UK's aerospace, defence and space industry, reported a record high of over 20,000 apprenticeships in 2023.[41] And in November 2023, the automotive industry body SMMT reported a 45 per cent jump in apprenticeships and traineeships in the UK.[42] In other words, the UK's two biggest manufacturing export industries[43] are turning to apprenticeships to fill skills gaps.

More generally, representative organisations report that 'skills' is a major issue across UK manufacturing. Recent polling by Make UK shows that two thirds of the manufacturing sector polled have confirmed that they would increase organic investment in skills if the tax and regulatory environment improves.[44] Make UK has also highlighted that the skills in which the UK is deficient are the *skills required for boosting productivity.* For example, in digital and data skills, and the ability to access generative Artificial Intelligence (AI).[45]

Large companies are creating their own skills academies. For example, BAE Systems is creating a new £12 million Applied Shipbuilding Academy at its Scotstoun yard on the Clyde to support skills development for its entire Glasgow-based workforce.[46] Rolls-Royce opened a new Nuclear Skills Academy in September 2022 to train 200 apprentices per year.[47] The academy is a partnership with the University of Nottingham and will help sustain the 4,000-strong workforce that Rolls employs on making nuclear reactors. The academy will ensure Rolls has the skills it needs to supply Australia with submarine power plants in the 2030s as part of the AUKUS alliance. But note: this 'take back control' option will never be an option for SMEs.

40 UK Government (2023) *Employer Skills Survey*. Available at: https://explore-education-statistics.service.gov.uk/find-statistics/employer-skills-survey/2022 (Accessed: 13 June 2024).

41 ADS (2023) *Industry facts and figures 2023*. Available at: https://www.adsgroup.org.uk/knowledge/ads-industry-facts-figures-2023-launched/ (Accessed: 13 June 2024).

42 SMMT (2023) *UK auto sector puts apprentices in the driving seat amid huge investment in workforce of the future*. Available at: https://www.smmt.co.uk/2023/11/uk-auto-sector-puts-apprentices-in-the-driving-seat-amid-huge-investment-in-workforce-for-the-future/ (Accessed: 13 June 2024).

43 Food manufacturers comprise the biggest single group within UK manufacturing. However, GVA per head in food manufacturing is far lower than in our auto and aerospace industries.

44 Make UK. 2023. *Manufacturing Growth- Building a Competitive Business Environment.* p.12

45 Ibid p.24.

46 BAE Systems (2024) *Construction of new £12 million ship building academy starts in Glasgow*. Available at: https://www.baesystems.com/en/article/construction-of-new--12m-shipbuilding-academy-starts-in-glasgow (Accessed: 13 June 2024).

47 Rolls-Royce (2022) *Rolls-Royce Submarines Opens Nuclear Skills Academy*. Available at: https://www.rolls-royce.com/media/press-releases/2022/26-09-2022-rr-submarines-opens-nuclear-skills-academy.aspx (Accessed: 13 June 2024).

High energy costs and skills gaps: So what?

In its report '2030 Skills: Closing the gap', Make UK states that competition for skilled workers is set to intensify leading up to 2030. It asserts that sustainability and automation are now at the heart of most companies' strategic planning. Half of manufacturers surveyed in its report claim that they cannot locally source the talent their business needs. Some 62 per cent said they would not find it easy to ensure their businesses have the skills they need to power ahead to 2030.[48]

The industry publication *The Manufacturer* conducted polling research in 2020 which showed that only 39 per cent of manufacturers thought that the skills gap was being taken seriously by the Government.[49] At the same time, the British Chambers of Commerce (BCC) reported that around three quarters of its members (some 50,000 UK businesses) struggled to find the skills they needed in a tight labour market. This was impacting their ability to meet orders, take on new work, and operate profitably – as well as impacting on the workload and morale of staff.[50]

Equally, high energy prices inevitably take their toll. They increase costs at the factory gate, with a resulting impact on producer inflation – which is almost always passed on to consumers. UK businesses know high energy costs make them uncompetitive. The SMMT recently asserted that:

> *'Economic instability, trade protectionism, regulatory change, a cost-of-living crisis, skills shortages and soaring energy costs already some 80% higher than the EU average, are all acting as a brake on its global competitiveness.'*[51]

The undermining of our competitiveness is a serious concern. There is little or nothing to stop global auto brands from offshoring auto manufacturing if UK suppliers cannot compete. The more energy-intensive the business, the worse the consequences. Even before power costs surged in 2022, UK Steel published an analysis that showed UK steel producers incurred £54 million of extra energy costs as compared to Germany's steel industry.[52] UK Steel asserted that:

> *'Our new report plainly demonstrates UK steelmakers face systemic disadvantages in higher electricity prices than our competitors... [and] ...the issue is becoming even more urgent with the growing need to rapidly decarbonise.'*

Make UK reckoned that the threat from high energy prices and supply issues is such that businesses are having to 'operate in survival mode'. [53]

48 Make UK. *2030 skills: Closing the gap*. Available at: https://www.makeuk.org/insights/reports/2030-skills-closing-the-gap (Accessed: 8 February 2024).

49 The Manufacturer (2020) *Annual Manufacturing Report 2020*. Available at: https://info.themanufacturer.com/amr-2020 (Accessed: 8 February 2024).

50 British Chambers of Commerce. *Skills shortages*. Available at: https://www.britishchambers.org.uk/policy-campaigns/people-and-work/issues/skills-shortage/ (Accessed: 8 February 2024).

51 SMMT (2022) *UK Automotive calls for urgent action plan to safeguard £14bn recovery as investment deadlines loom*. Available at: https://www.smmt.co.uk/2022/11/uk-automotive-calls-for-urgent-action-plan-to-safeguard-14bn-recovery-as-investment-deadlines-loom. (Accessed: 13 June 2024).

52 Make UK (2021) *UK Steel Electricity Price Report*. Available at: https://www.makeuk.org/insights/publications/uk-steel-electricity-price-report (Accessed: 13 June 2024).

53 Birtwistle, I. *The Economic Challenges Facing Manufacturers*. Available at: https://www.makeuk.org/insights/blogs/the-economic-challenges-facing-manufacturers. (Accessed: 13 June 2024).

Public policy responses: Skills

The UK government is coming under increasing pressure from industry and the public to develop and publish an up-to-date industrial strategy – particularly given the strains placed upon SME manufacturers.[54] To an extent, the previous government had already responded.

The 'Build Back Better' policy – released in March 2021 – served as a policy framework for UK manufacturing. Released during the 'pandemic bounce back', the document has a chapter each on skills and energy (tellingly listed as 'Net Zero'). It cites three core pillars for UK growth: infrastructure; innovation; and *skills*.[55]

The policy framework acknowledges the challenges and highlights the UK's persistent technical skills shortage in sectors including construction and manufacturing. It says that only four per cent of the UK workforce has a technical qualification by the age of 25, compared to 33 per cent who have degrees. The awkward reality for the UK is that in the rush for degrees that occurred during the 1990s, technical education has stagnated. This is proving a chronic misfortune to UK manufacturers – especially SMEs for whom apprenticeship programmes represent an outsized risk.

The Industrial Strategy Council has highlighted the decline of skills in one crucial sector, estimating that up to 5 million workers could become under-skilled in digital technology by 2030. However, in an indication of how UK manufacturing has immense untapped potential, the OECD found that UK productivity could increase by five per cent or more if it reduced the level of skills mismatch.[56]

'Build Back Better' cited several aspirational initiatives that were supported by the then Government. This includes additional investments in technological education, reforms in further education, and improved apprenticeships. Additionally, the previous Prime Minister announced that it would fully fund apprenticeships for SMEs for under-21-year-olds from April 2024.[57] The policy aim is to eliminate the costs of training for SMEs.

However, these initiatives are unlikely to resolve the root cause of UK skills shortages. This is the inability of training institutions to supply the skills that are in demand in UK manufacturing. Big businesses are rapidly expanding apprenticeship schemes. Small businesses don't have the resources. Without structural change, the core problem will persist – at least for the UK's SME manufacturers.

Public policy responses: Energy

The same challenge exists in relation to energy costs. In 2023, the UK Government announced a huge wave of subsidies into UK manufacturing, which included £2 billion for UK motor manufacturing and £975 million for our aerospace industry. These subsidies formed part of a £4.5 billion package of subsidies for UK manufacturing.[58]

These subsidies are often framed as 'investment' that is supposed to make UK manufacturing more competitive. In reality, they are reactive stop-gap measures to ensure that global companies do not pull manufacturing from the UK. Most new subsidies have a 'green' element. They are best understood as both a response to the US' Inflation Reduction Act, and the colossal subsidies now swilling through Europe's entire automotive industry. The UK had little choice if it wanted to avoid an industrial exodus from companies who know that the UK is a soft touch for subsidies.

54 Centre for Social Justice (2023) *Making the change: A plan to reboot British manufacturing and restore growth*. Available at: https://www.centreforsocialjustice.org.uk/library/making-the-change (Accessed: 8 February 2024).

55 HM Treasury (2021) *Build Back Better: our plan for growth*. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/968403/PfG_Final_Web_Accessible_Version.pdf (Accessed: 8 February 2024).

56 Department for Education (2020) *Working Futures 2017-2027: Long-run labour market and skills projections for the UK*. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/863506/Working_Futures_Main_Report.pdf (Accessed: 8 February 2024).

57 Prime Minister's Office et al (2024) *Prime Minister to announce major reform package to boost apprenticeships and cut red tape for thousands of small businesses*. Available at: https://www.gov.uk/government/news/prime-minister-to-announce-major-reform-package-to-boost-apprenticeships-and-cut-red-tape-for-thousands-of-small-businesses (Accessed: 13 June 2024).

58 The scale of subsidies is breathtaking. In November 2023, the UK Treasury announced £4.5 billion in funding in British manufacturing '...to increase investment in eight sectors across the UK.' This included £2 billion for the auto industry, and £975 million for aerospace. It also included £960 million for a 'green industries accelerator' and £520 million for life sciences manufacturing. This came on top of colossal subsidies for individual car makers to help them transition to electric vehicles. Jaguar-Land Rover alone scored £500 million for its battery ambitions in Somerset, whilst Nissan's sweeteners remain classified.

Periodic subsidies do nothing to address the root causes of competitiveness. Nor do they reach far into the UK's manufacturing supply chain. High energy costs hobble the thousands of manufacturing SMEs who compete to supply the big brands and original equipment makers. As with skills shortages, there is a structural challenge to be fixed, which results in structural uncompetitiveness. Failure means that the cars and aerospace equipment we export will increasingly consist of imported parts.

More radical policies will be required to ensure that UK manufacturing gains durable competitive advantage. Our supply chains must be competitive, or taxpayers will never be free from subsidy extortion. At each investment turn, global manufacturers will threaten to pull out of the UK and invest elsewhere unless funds are forthcoming. Their threats are not idle. This is exactly what happened to our auto industry from 2000 to 2019, when UK governments failed to play the subsidy-matching game. Investment skidded across the channel, UK auto factories shut, and our deficit in auto goods with the EU rocketed from £8 billion to a truly shocking £30 billion.[59]

In other words, the UK needs to fix its energy and skills-shortage challenges. If we don't, we will have to pay the price either in disinvestment or subsidies — or both.

59 ONS: UK Trade in goods by Classification of Product by Activity, time series dataset, Quarterly and Annual up to and including 2023 Q4.

1. Methodology

This investigation is the latest in a series of reports into the challenges and opportunities that confront UK manufacturing. It builds on recent research conducted by Civitas on UK manufacturing, and it focuses on affordable energy supplies and skills levels.[60] This is because these are two challenges that manufacturers say they must master in order to compete internationally in target markets.[61]

Our previous research, *'Adapting the manufacturing sector for a brighter future: new approaches to energy resilience among SMEs'*, uncovered significant energy costs as a prime barrier to growth for SMEs.[62] Many manufacturers said a secure energy supply was better than a green or clean energy supply. They said they could not prioritise cleaner energy supplies over sustainable and more affordable ones. Sustainable energy is a global problem. The UK making itself dependent on expensive forms of energy without regard for cost risks seriously harming our competitiveness internationally without making a significant difference to global emissions.

This paper explores the topic further. It analyses what 'Net Zero' means for small enterprise. Specifically, we wanted to understand how Government policy may be eroding SMEs engaged in manufacturing. And we wanted to explore 'Net Zero Realism'. This means understanding how industry can better work alongside the government to achieve a clean energy supply chain that is both affordable and sustainable: one that reduces industry costs in the long-term and *helps SMEs stay competitive*.

This project involved conducting detailed, one-on-one surveys with 25 UK manufacturers, between March 2023 and January 2024. Candidates were chosen to reflect a cross-section of UK manufacturing. Our survey sample varied from small companies with two to three employees, to larger businesses turning over eight figures annually, and employing several hundred people. However, the sample was geared heavily towards SMEs.

Research questions

We framed our research questions to explore two principal topics: sustainable energy supplies, and the acquisition and retention of a skilled workforce. However, we asked multiple subsidiary questions, both to set these issues in perspective, and to examine them in more depth.

1. Does government action help or hinder manufacturers from taking on and skilling new workers in order to drive growth?

Our aim was to find out whether central and local government has been helping manufacturers to take on and train new employees or holding them back. This is a complex issue. The landscape keeps changing – in terms of policies – and there is no established mechanism for matching supply and demand for technical skills in UK manufacturing. The network of polytechnics that existed in England, Wales and Northern Ireland and focused on engineering disappeared in the 1990s.

We have focused on the types of support that SMEs receive from Government and other non-governmental bodies to develop the skills they need. Follow-on questions examined whether support is provided at the right level; for example, central government versus local government. We wanted to know whether direct, resource-heavy engagements were appropriate. And we wanted to discover whether SMEs look to further education or apprenticeships to bridge gaps.

60 McConalogue, J. and Banerji, A. (2023) *Adapting the manufacturing sector for a brighter future: new approaches to energy resilience among SMEs*. Civitas. Available at: https://www.civitas.org.uk/publications/adapting-the-manufacturing-sector-for-a-brighter-future-new-approaches-to-energy-resilience-among-smes/ (Accessed: 8 February 2024).

61 See also: Civitas. *Re-Industrialising Britain*. Available at: https://civitas.org.uk/press/re-industrialising-britain/ (Accessed: 8 February 2024).

62 McConalogue, J. and Banerji, A. (2023) *Adapting the manufacturing sector for a brighter future: new approaches to energy resilience among SMEs*. Civitas. Available at: https://www.civitas.org.uk/publications/adapting-the-manufacturing-sector-for-a-brighter-future-new-approaches-to-energy-resilience-among-smes/ (Accessed: 8 February 2024).

2. Do current government energy and Net Zero policies help or hinder manufacturers in their growth plans?

The survey explored the impact of Net Zero and energy policies on UK manufacturers. The Russian invasion of Ukraine triggered a surge in oil and gas prices in 2022 and 2023. This has compounded the UK's vulnerability to high energy costs.

Our survey investigated the long-term problem of high UK energy costs from several perspectives:

- How have SMEs balanced regular operations with the rising energy costs?
- Have the commitments and regulations directed at 'Net Zero' emissions targets helped or hindered SME energy challenges?
- What Government assistance have SMEs received that helps reduce energy costs?
- What can be done to remedy the impact of chronic high energy costs for UK manufacturers?

The following section provides a breakdown of the survey's respondents — by industry type, business models, size and scale. We have been asked to preserve anonymity. This is because many respondents work with government-funded projects, in addition to working in sensitive sectors within the defence and aerospace industries.

The survey sample

The survey involved 25 UK manufacturers. Of these, 20 were SMEs, defined as companies with more than three employees, but fewer than 250.

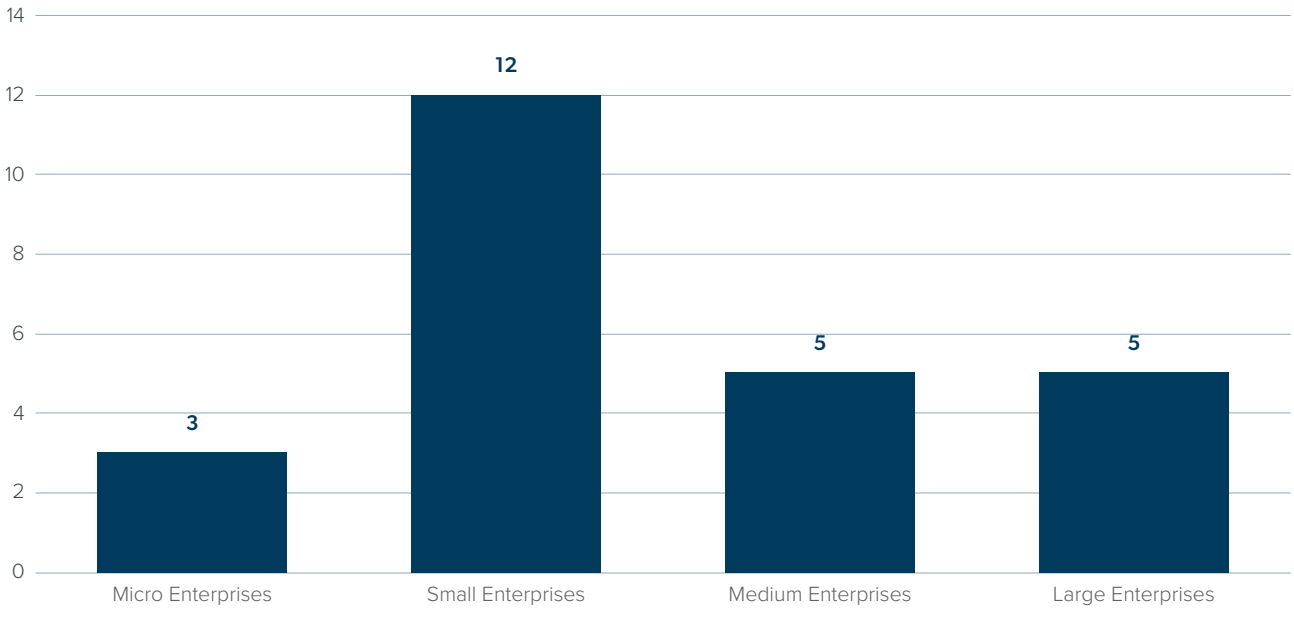
Of the 20 SMEs:

- Three were classified as micro enterprises (fewer than 10 employees);
- Twelve were small enterprises (between 10 and 49 employees);
- The remaining five were classed as medium enterprises (between 49 and 249 employees).

A further five survey respondents had in excess of 250 employees and are categorised as large enterprises. These large enterprises were included to allow for some comparisons and contrasting of data in relation to the SMEs.

Figure 1.1 below shows this break-down by size of all survey respondents.

Figure 1.1. Survey respondents by size



We wanted our sample to cover a broad cross-section of UK manufacturing. Many of the challenges facing the UK's more traditional sectors, including automation, aerospace, and machinery, are well documented and the challenges well known. They already have a powerful public voice. We wanted to include other industries within UK manufacturing, such as sensors and photonics, and autonomous systems.

Table 1.1 below shows this breakdown by sub-sector.

Table 1.1: Survey respondents by industry

Industry	Number of survey respondents
Metals and metal products	3
Aerospace	2
Defence	2
Electronic components	2
Transport equipment	2
Pharmaceuticals	2
Wood, paper, printing	2
Autonomous systems	1
Sensors and photonics	1
Food, beverages, tobacco	1
Communications and sensing systems	1
Textiles and clothing	1
Refined petroleum products	1
Chemicals, chemical products	1
Other manufacturing and repair	3

Respondents to our survey were spread across Britain and Northern Ireland. This break-down by region show that seven manufacturers were from outside England.

Table 1.2: Survey respondents by region

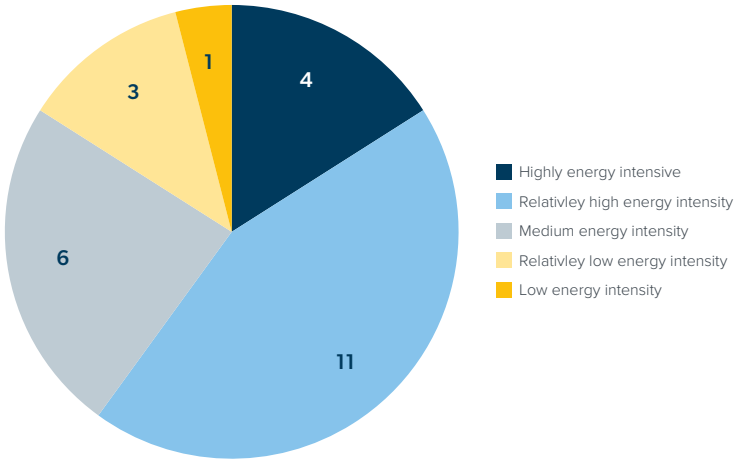
Region	Number of respondents
South East & London	3
South West	1
East Midlands	5
West Midlands	4
North East	4
North West	1
Scotland	2
Wales	2
Northern Ireland	3

2. Access to Energy

Energy intensity

This chapter presents survey data on respondents' exposure to the high cost of energy. This includes attitudes to clean energy, the barriers to clean energy adoption, and the effectiveness of measures that UK governments have taken to encourage a corporate transition to Net Zero.

Figure 2.1. Self-reported energy-intensity of manufacturers surveyed.

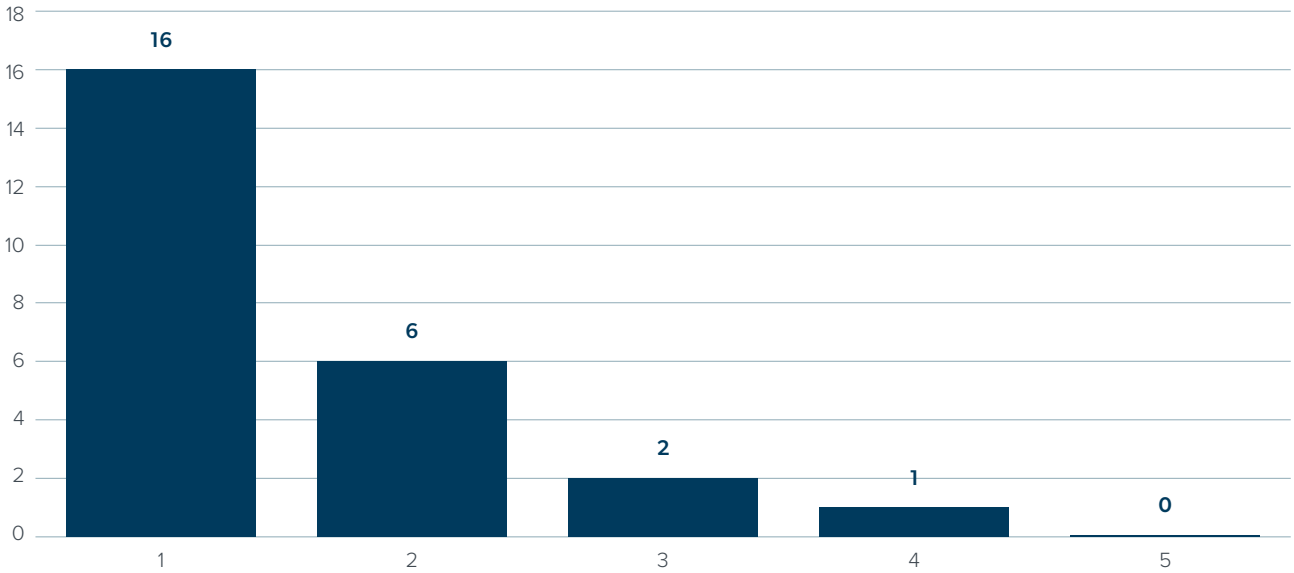


First, we enquired about energy intensity. This metric captures the degree to which energy costs matter. A company whose energy costs represent a high or the highest cost input would regard themselves as highly energy intensive. Metal-forming companies and chemicals companies would likely fall into this category.

Just over half of respondents reported either high or relatively high energy intensity. The majority of these were micro enterprises and small enterprises, which make up 60 per cent of the survey's respondents.

Affordable energy supplies

Figure 2.2. On a scale of 1 to 5, 1 being very important and 5 being less significant, how would you rate the importance of accessing an affordable energy supply to your overall business?



Access to affordable energy was overwhelmingly a strong factor for almost all respondents, as shown in Figure 2.2. This was the most emphatic result in the survey. Two companies gave a neutral response; one reported that it was not very significant. One small-sized chemical products enterprise based in Northern Ireland reported that:

> *'The ability for us to ensure an affordable supply of energy is one of the key driving factors behind whether our business will survive or not into 2024. Being a [highly] energy-intensive manufacturer, we have had to rely on various Government schemes to help meet the energy cap in order for our orders to be met on time..... At the minute we cannot afford to think about energy transition, let alone Net Zero, when energy is still this expensive for an industry which relies on an affordable and guaranteed supply.'*

This concern is not confined to smaller manufacturers. The larger enterprises reported that it was very important to ensure an affordable energy supply for their businesses. A large food products manufacturer in the West Midlands reported that:

> *'The Government did well to keep the energy cap where it has been the last 12 months, but with costs still soaring [...] this must be carried on into next year. It's difficult to [plan] and thus invest in overdue capital infrastructure projects given the current energy climate. We manage by offsetting energy costs elsewhere across the business, but these are often passed on to the consumer.'*

Transition to onsite generation

One way to mitigate energy costs and transition to clean energy is 'onsite generation'. This refers to energy that is produced where it is also consumed. This reduces or eliminates dependence on the national grid and (high) national energy prices. By generating their own power on site, companies may gain greater control over their energy costs. But they may sacrifice reliability – depending on the source.

Over four fifths of respondents reported that despite the potential savings, they did not currently plan a transition to onsite generation. The main reasons given were:

- Lack of available capital to invest in a transition (44 per cent of respondents –including *all* the micro and small enterprises);
- Concerns regarding reliability and disruptions (20 per cent of all respondents);
- That a transition was not currently a priority at this time (the remainder).

Net financial benefit of Net Zero approach

Almost nine out 10 respondents said they thought there was no financial benefit to their business when adapting their strategy towards Net Zero (for instance by switching to solar panels, or investing in energy storage – changes that can make energy cheaper in the long run, but will incur initial costs). Of these, just under three quarters reported that this was because they had not yet adopted a full Net Zero strategy. This included all the micro and small enterprises.

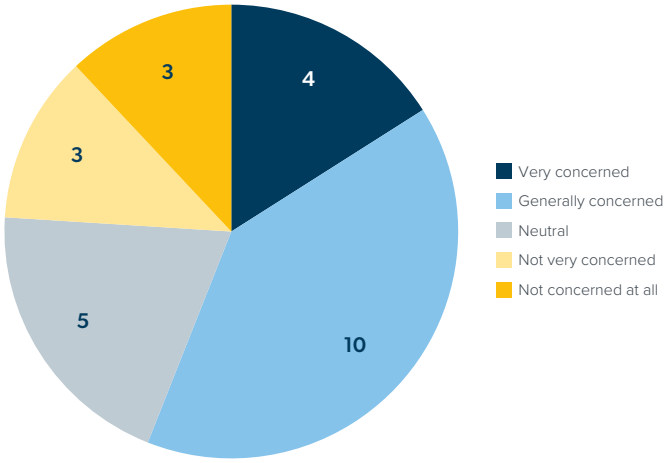
The six remaining companies that also reported no overall financial benefit gave varying causes:

- That it was too soon for their Net Zero transition to begin recouping initial investment;
- That it was too soon to accurately calculate the financial benefit of a transition;
- That they had not fully transitioned to a Net Zero strategy.

Of the three manufacturers who had reported a net financial benefit, the reasons included government assistance and a lower energy intensity level for their businesses. This resulted in lower energy costs.

Energy costs in general

Figure 2.3. How concerned is your business about being able to pay energy costs in the next year?

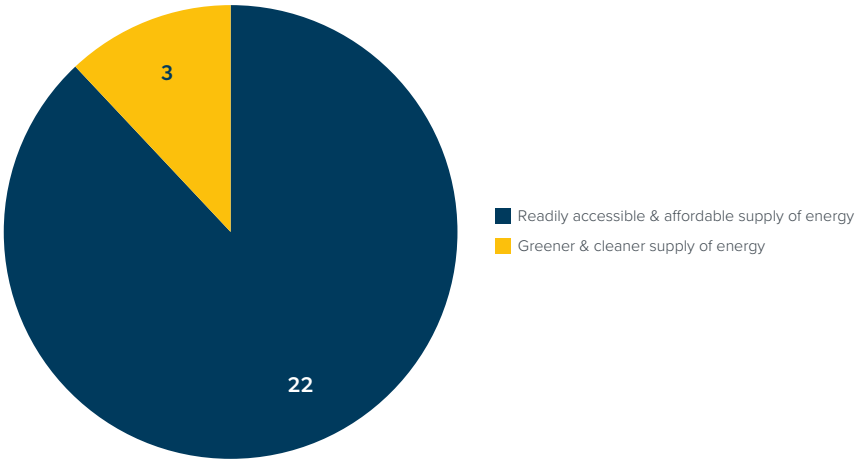


Just over half the respondents reported they were either ‘very concerned’ or ‘generally concerned’ regarding their business’s ability to meet energy costs. All were either micro or small enterprises.

The three manufactures who said they were ‘not concerned at all’ were large enterprises. The other three large enterprises reported that they were ‘not very concerned’. The remainder of the medium-sized enterprises reported a neutral attitude.

Greener or more affordable supply?

Figure 2.4. Which is more important to your business?



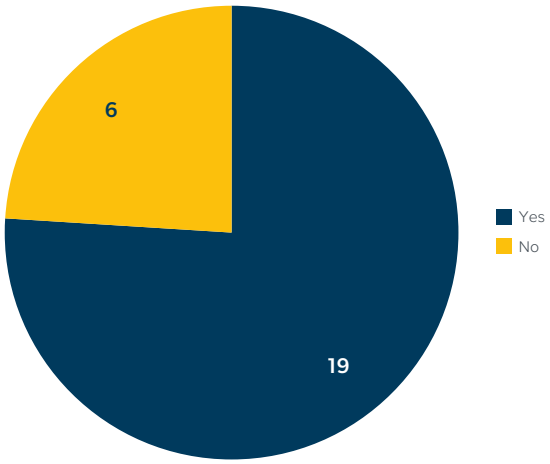
In our survey results, respondents clearly showed that cheap power was more important to them and their businesses than clean power. The overwhelming number of respondents – almost nine out of 10 – reported that a readily accessible and affordable supply of energy was their business’ energy priority. This compared to just over one-tenth, who reported that a greener and cleaner supply of energy – even if that was more expensive – was their business’ energy priority.

We broke responses down into type of business. This preference for a readily available and affordable supply of energy was shared by all micro and small enterprises, all medium, and even two large enterprises.

None of the micro and small businesses reported any current desire to access a greener and cleaner energy supply — especially if it was more expensive. This, in turn, implies that customers are not willing to pay a premium for greener goods.

A UK equivalent to the US Inflation Reduction Act?

Figure 2.5. President Biden introduced the Inflation Reduction Act (IRA) in order to generate $216 billion in tax credits for private investments in clean energy, transport, and manufacturing. Should the UK do something similar?



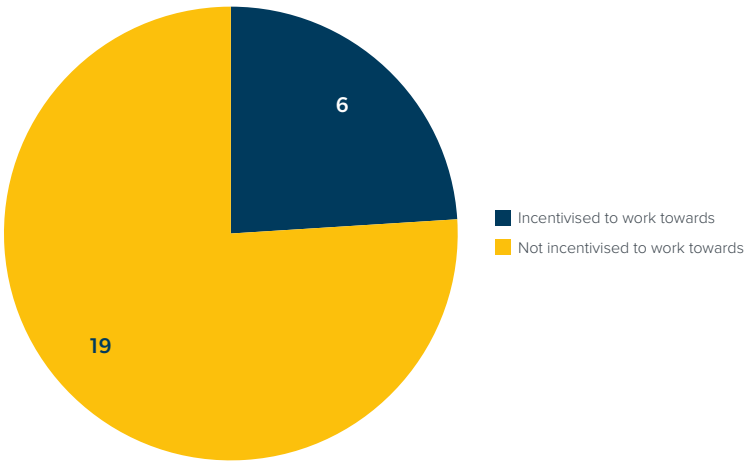
Just over three quarters of all respondents agreed that the UK should have an equivalent to the US Inflation Reduction Act (IRA) - or some other Government scheme to allow tax credits for private investments in clean energy, transport, and manufacturing.

There was 100 per cent support amongst all medium-sized and large enterprises. Many within the micro and small enterprise groups agreed in principle that such a scheme in the UK would be beneficial in the long term. But they also said that other priorities took precedence in the short-term to help the business deal with more immediate concerns to their survival. These concerns included inflation, rising and unstable energy costs, low skills among the labour force, and market uncertainty.

These results confirm what common sense suggests: that concern for Net Zero policies diminishes as enterprises become smaller. It's primarily a big company issue.

Incentivised to work towards Net Zero?

Figure 2.6. Do you feel incentivised in the long-term to work towards the government's 'Net Zero' emissions targets?



Three quarters of respondents said they did not feel incentivised to support the UK government's Net Zero strategy in the long-term. This was the universal attitude amongst all micro and small enterprises. Four fifths of mid-sized companies shared the same view. Only large companies evinced enthusiasm for the Government's Net Zero agenda.

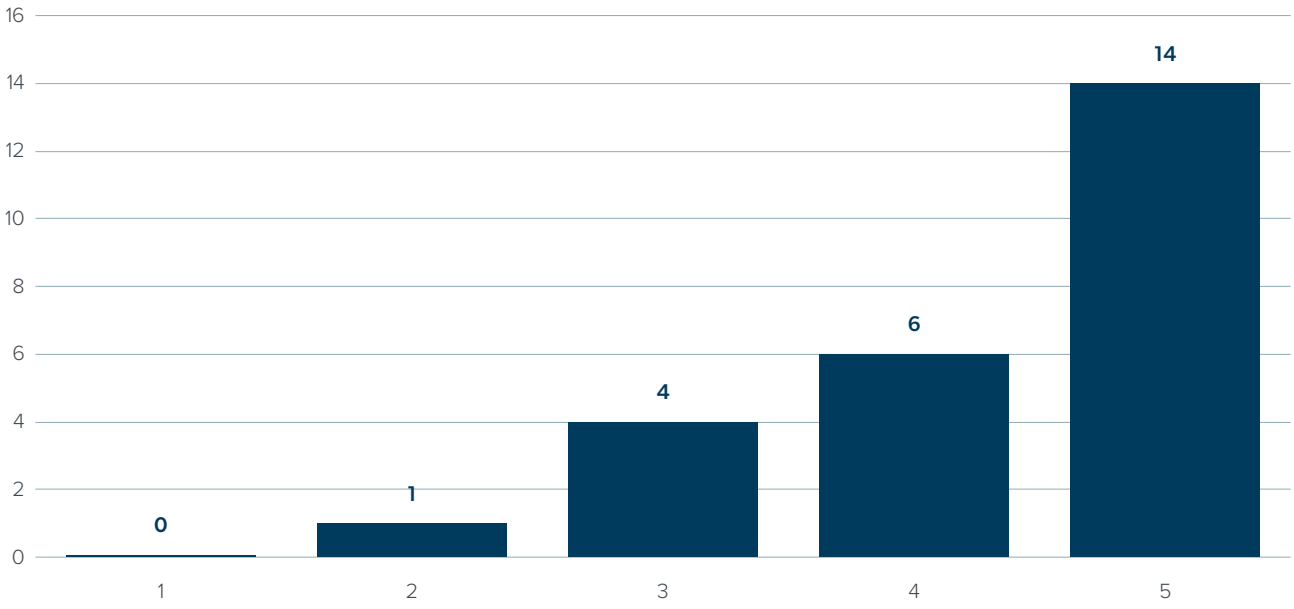
The most common answer given by the micro and small enterprises was that they were simply unaware of what the agenda entailed. Among those that did know, there was a fear of short-term costs in achieving goals such as onsite generation, and sourcing cleaner energy.

One small-sized metal products manufacturer based in the East Midlands reported that:

> *'We do not feel in any way incentivised to work towards the government's Net Zero strategy, principally because we are not currently aware of any schemes to (help) incentivise our business towards emissions targets. If there was help or grants readily available then we would be more inclined to work towards these targets'.*

Net Zero targets – the impact on business

Figure 2.7. On a scale of 1 to 5, 1 being very important and 5 being less significant, how will the Government's 'Net Zero' emissions targets impact on your business in the short-term (1-5 years)?

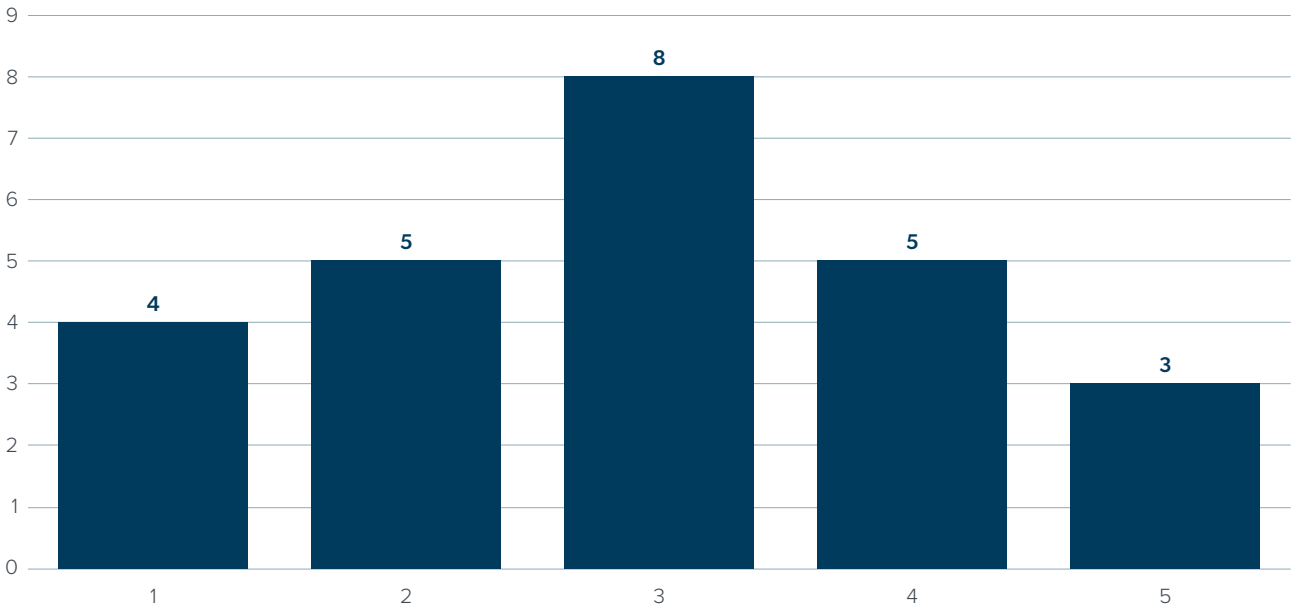


Four out of five respondents said the Government's Net Zero emissions targets did not impact their business significantly in the short term.

Of the 14 respondents (just over half) that reported a value of 5 (that is, less significant), the majority of these were micro, small, and medium enterprises. One micro enterprise reported a value of 2, fearful that the government's Net Zero emissions target would prove far too costly to their business's short-term financial position. The large enterprises were largely neutral (four out five reporting a rating of 3 out of 5).

Are manufacturers lukewarm on green subsidies but accepting of need?

Figure 2.8: On a scale of 1 to 5, 1 being very important and 5 being less significant, to what extent do you agree that the UK government should subsidise green industries and innovations within SME manufacturing?



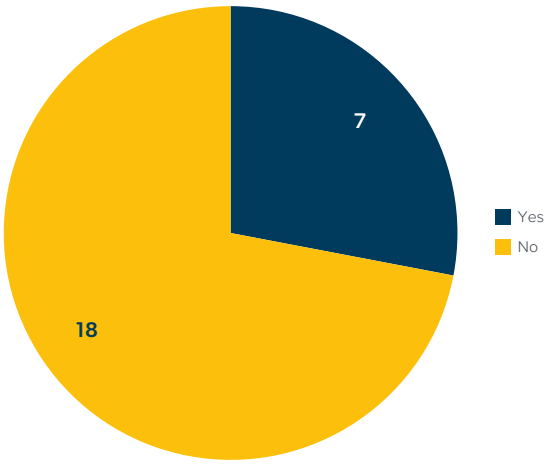
On the need for green subsidies, views were evenly spread.

Approximately one third reported that green subsidies were either very important or important. Interestingly, this reflected opinion from across the sample spectrum, in terms of large and small businesses. Just under one third thought that green subsidies were unimportant – including two large enterprises.

Despite the range of responses, there was a general acceptance that the Government could do more to subsidise green industries and innovation.

Energy costs holding back SME investment plans for small enterprises

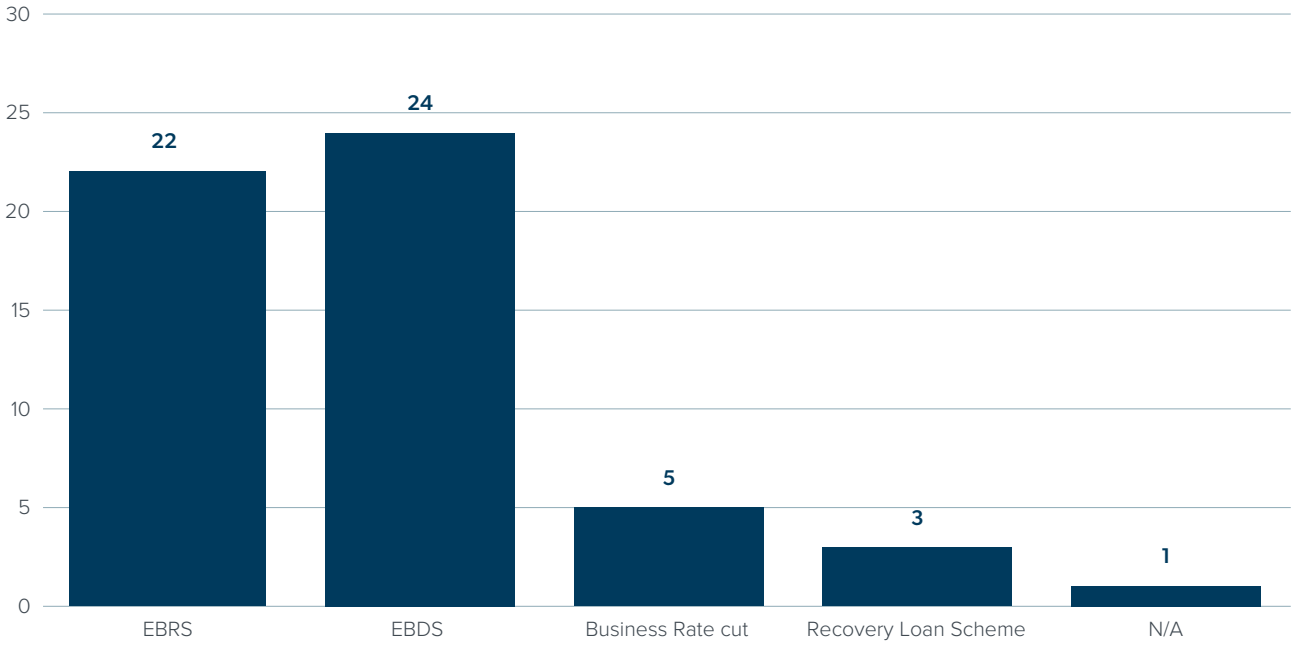
Figure 2.9. Have any future investment intentions been held back by the current uncertainty regarding energy costs?



Over a quarter of respondents reported that the uncertainty concerning energy costs had forced future investment intentions to be held back. Of the seven respondents which reported that energy costs had held back future investment intentions, five were large enterprises, the other two medium-sized.

Energy Bill schemes well utilised

Figure 2.10. What existing government assistance or relief do you receive which is of help in reducing your energy costs?



Finally, almost all of the survey's respondents reported utilising the Government's Energy Bill Relief Scheme (EBRS). EBRS lasted between October 2022 and March 2023. Only three respondents did not use it. The EBRS was replaced from April 2023 with the Energy Bill Discount Scheme (EBDS). This was reported to be used by all but one of the survey's respondents.

Many respondents felt that the newer EBDS was not as well funded as the previous EBRS. Twelve manufacturers (48 per cent) reported concerns that the EBDS would not be adequate to meet their businesses energy demands through the winter of 2023/24. This group of 12 included all three micro enterprises, five small companies, two medium-sized companies and two large enterprises.

Five respondents also reported utilising the previous Government's cut to business rates. This was accessible for plant and machinery to be used in onsite renewable energy generation and storage. Three of these respondents were medium-sized enterprises and the other two were large enterprises. One of the medium-sized enterprise manufacturers reported that:

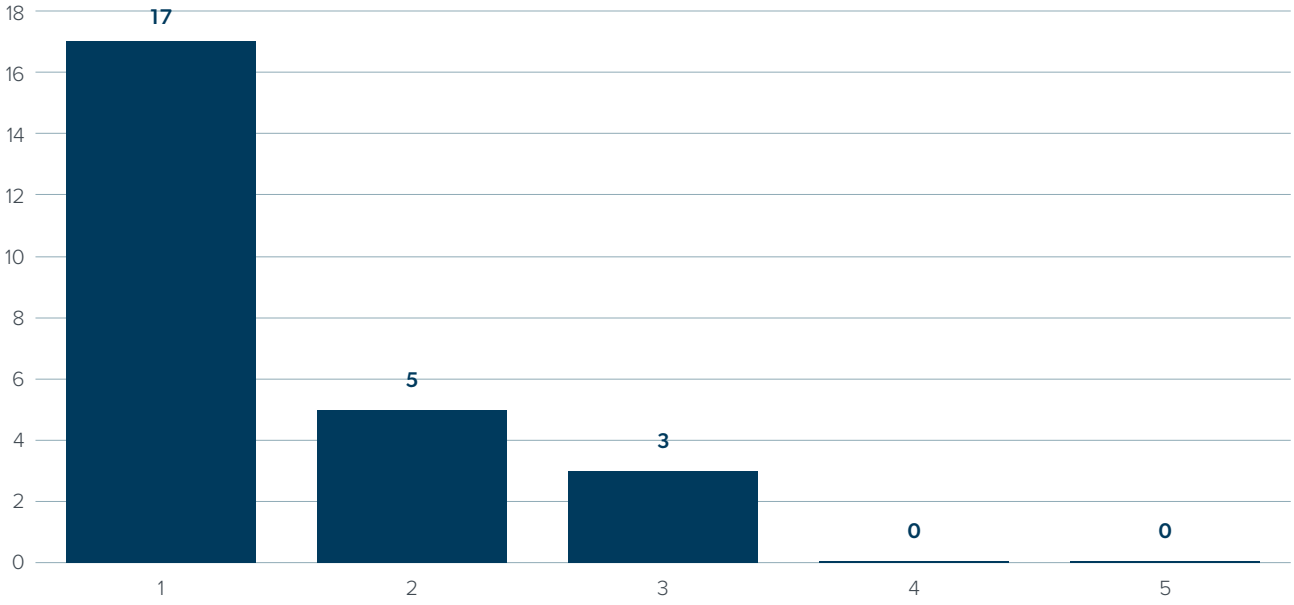
> *'[T]he ability for our company to offset significant capital costs against an exemption from business rates for investing in green technology was the deciding factor to invest more into our onsite generation in early 2023.'*

3. Skilled labour

This chapter details respondents' attitudes to skills. Our survey examined SMEs' challenges in terms of recruitment, training and retention. We also explored the impact that skills shortages have on manufacturing companies.

Skilled workforce fundamental to SMEs

Figure 3.1. On a scale of 1 to 5, 1 being very important and 5 being less significant, how would you rate the importance of accessing the necessary technical skills to your overall business?



Unsurprisingly, most respondents said that technical skills were important to some degree. All micro businesses said that technical skills were 'very important to their business'. Ten out of 12 small businesses said the same. The three 'neutral' respondents were large enterprises.

A small-sized defence manufacturer in the East Midlands reported that:

> *'Given we operate in a fast-paced industrial environment – with precision-set measurements – we absolutely require access to a good level of technical skill in our workforce. We simply could not survive without this'.*

Resources to cover staff shortages and worker retention are key barriers

Manufacturers reported a variety of factors that impede attempts to upskill workers. The most common reason cited was a lack of available internal resources to cover prolonged periods of staff shortages. These occur when workers attend external courses or training. Almost half of all respondents signalled this as an impediment. This included all micro businesses and half of all small enterprises.

The most common answer given for the large enterprises – four out of the five – was 'worker retainment'– and the worry that investing in upgrading the skills of employees might be lost if those employees move on to work elsewhere soon afterwards. One of the large enterprises alluded to this problem:

'Quite often when putting younger employees – say, out of college – into training courses and external providers to meet that skills gap between further education and the job expectations/requirements, they may only last a short few months once qualified before looking elsewhere for a job which suits their recently acquired skills, and where [they] can gain further courses and education.'

The least common answer was 'time investment'. One commented on how the time required to build skills doesn't always stack up:

'Being engineering based, we require people willing to put a lot of time in to learn the processes correctly and as such, with apprentices, the government scheme regarding apprentice wage[63] only lasts so long. Once you're recruiting reliable individuals that don't have a background in English but are willing to learn, they tend to be at the age where the current apprentice wage at £5.28 per hour isn't going to cover the costs of their day to day … which means we must offer more (quite a lot more) above that rate to retain them, or simply employ post-grad engineers on a similar wage.'

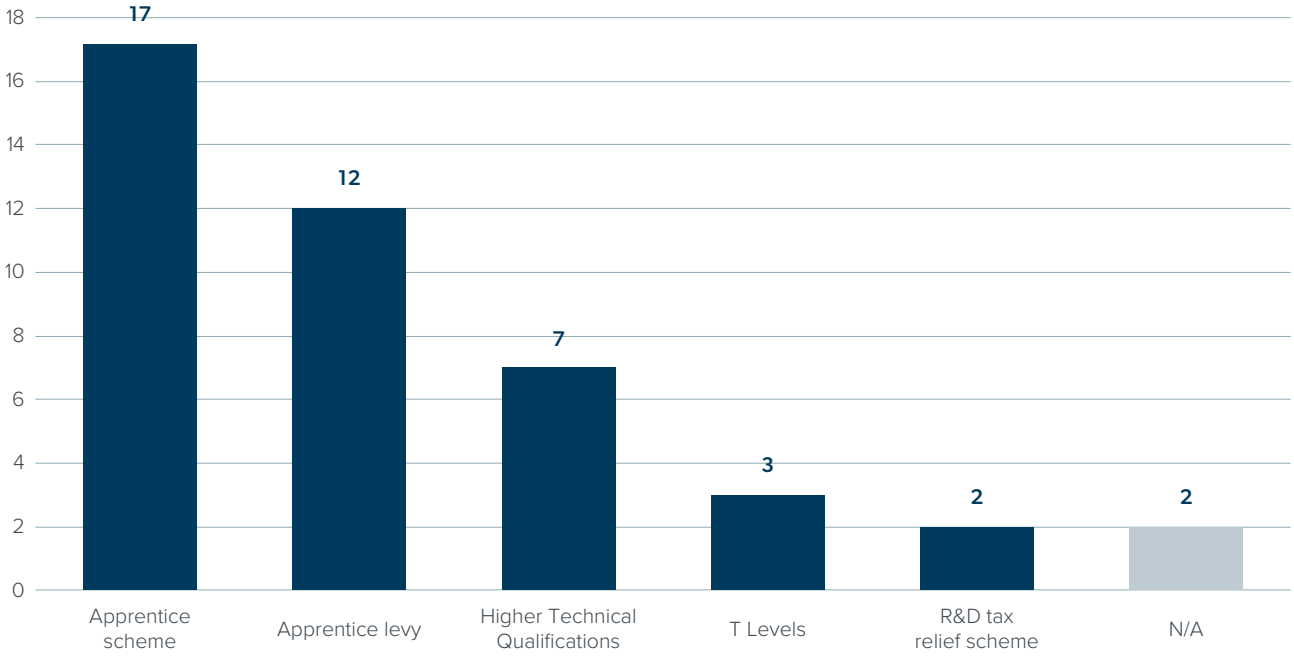
Are graduate engineers worth it?

Interestingly, five of the respondents expressed a reluctance to hire graduates. This response was due to perceived gaps between what higher education teaches and what the labour market actually needs. One medium enterprise respondent commented:

'We've not personally had much luck with post-grad engineers due to the skills gap where university-level courses don't teach the hands-on side very effectively. Hence, we'd rather employ a younger, fresh-to-the-industry mind and teach them in real time.'

BTEC, apprenticeship schemes and 'T levels' may help remove skill barriers

Figure 3.2. Are there any Government schemes that have helped you take on and skill new workers and drive forward your growth strategy?



63 See below for explanation of this scheme.

The survey aimed to understand which, if any, government schemes helped businesses take on and skill new workers. Two respondents reported that they had not used any Government schemes to help skill new workers. When asked, both replied that they were unaware of the existence of such schemes. Both of these businesses were micro businesses.

Both the Apprenticeship Scheme and Apprenticeship Levy were represented across the small, medium-sized, and large enterprise groupings (seven, five, and five, respectively for the Apprenticeship Scheme; and six, four, and two, for the levy). This represented all medium-sized and all large enterprises using the Government's Apprenticeship Scheme. 'T level' workers were utilised by small enterprises (two out of three, with the third in a medium-sized enterprise), whilst Higher Technical Qualifications (HTQ) employees were engaged by medium-sized and large enterprises (four and three, respectively). One of the medium-sized enterprise respondents mentioned that:

> *'We would rather retain an employee and either retrain or upskill them using an approved BTEC qualification or similar, rather than go through a formal hiring process … to find a new person for that role. Any absence as part of that retraining process is usually covered and managed perfectly fine.'*

When contrasting this evidence with the barriers facing manufacturers wishing to upskill their workforce, all micro and half of the small enterprises reported a lack of internal resources to manage employees' time out of work (for upskilling). Medium-sized enterprises evinced greater resources for upskilling employees externally, including qualifications like HTQ.

Case study: Why the 'skills gap' matters – the case of automation

The automation subsector offers a microcosm of the challenges facing much of UK manufacturing. According to Make UK, companies report multiple barriers to automation. Almost half pointed to a lack of technical skills as the single biggest obstacle.[64]

The process of automating primarily refers to machine-based solutions, such as robotics, machine learning, and computer-controlled machines. It currently excludes new digital technologies such as augmented reality/virtual reality, Internet of Things (IoT) or artificial intelligence (AI).

Due to the severe lack of technical skills facing the automation sub-sector, most companies have automated only a small proportion of their processes. According to Make UK, this is particularly so for SME manufacturers who are less able to adopt the most advanced automation technologies. They lack the insights to discover which technologies would generate the highest return on investment, and the skills and finance to implement them.[65] Conversely, Make UK reports that only 18 per cent of manufacturers automate precisely to overcome the shortages created by skills gaps.[66]

While businesses are not looking for tax incentives directly for the adoption of automation capital, they have a clear interest in solving the skills challenge by upskilling/reskilling the workforce to be able to work with new automation technologies.

Automation inevitably removes roles, and older workers will struggle to adapt and re-skill. The Government's recently announced 'returnships' could help solve this challenge.[67] These were introduced in 2023 as an offer bringing together three programmes to help get older worker back to work: Apprentiships, Skills Bootcamps and Sector-Based Work Academy Programmes (SWAPs).[68]

64 Make UK. 2023. *Manufacturing and Automation*: Opening the Gates for Productive and Efficient Growth. Available at: www.makeuk.org/insights/reports/manufacturing-and-automation (Accessed: 8 February 2024).

65 Ibid.

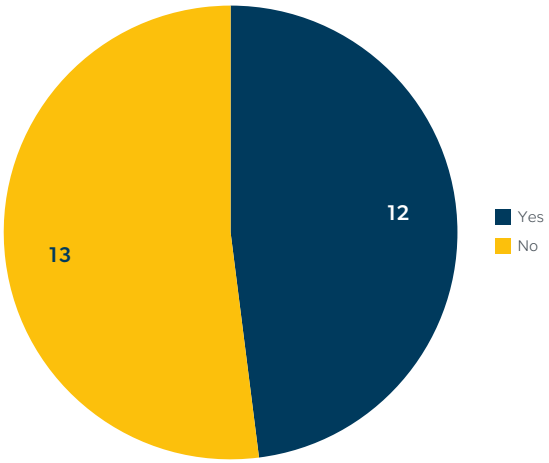
66 Ibid.

67 UK Government (2023) *Budget 2023: What are 'returnerships' and who are they for?* Available at: https://educationhub.blog.gov.uk/2023/03/17/budget-2023-what-are-returnerships-and-who-are-they-for/ (Accessed: 8 February 2024).

68 Budget 2023: What are 'returnerships' and who are they for? – The Education Hub (blog.gov.uk)

The Apprenticeship Levy is helpful – but manufacturers have been split over its use

Figure 3.3. Have you been helped by the Government's Apprenticeship Levy designed to help companies offer more apprenticeships?



Just under half (12 out of 25 respondents) reported that they had been helped by the Government's Apprenticeship Levy. The levy is a co-payment scheme. It is accessible to companies with a payroll of over £3 million, and it was designed to help companies offer more apprenticeships to 16- to 21-year-olds. Participants pay 0.5 per cent of their payroll into the scheme. Then they access the funds to pay for apprenticeships in England. Smaller companies benefit from the scheme, because it enables them to pay five per cent of an apprenticeship, while the government levy pays the rest.[69] In March 2024, the previous Government announced that in future, apprenticeships for SMEs would be 100 per cent funded.

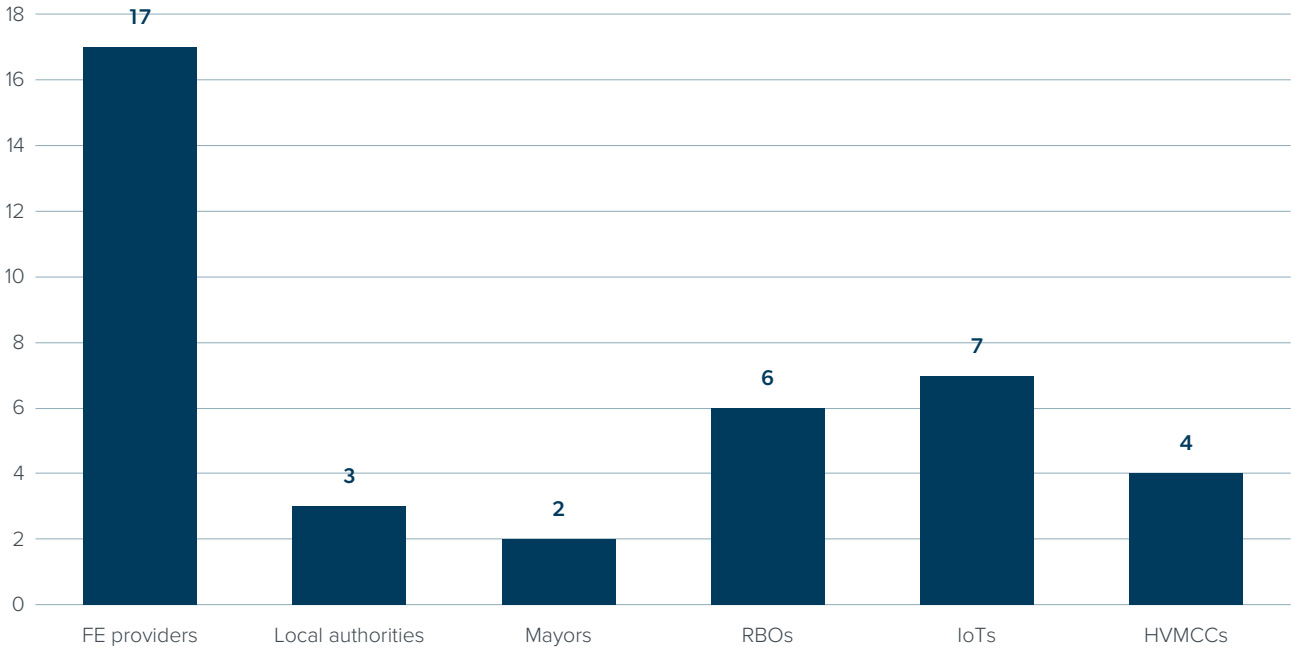
All of the 12 respondents who used the Apprenticeship Levy scheme agreed that it had been useful. This included all seven of the small enterprises in the sample, plus three of the medium-sized and two large enterprises. The two large enterprises – each with an annual payroll above the £3 million levy threshold – found the levy useful by engaging in the levy transfer. The levy transfer means they can transfer up to 50 per cent of their levy funds to smaller manufactures in their respective industry supply chains. The transfer limit was increased from 25 per cent on 1 April 2024.

Two of the three micro enterprises reported a lack of knowledge regarding the Government's Apprenticeship Levy allowance, and how this could benefit their business.

69 Department for Education and Milton, A. (2019) *Key facts you should know about the apprenticeship levy*. Available at: https://www.gov.uk/government/news/key-facts-you-should-know-about-the-apprenticeship-levy (Accessed: 13 June 2024).

Partnerships: Further Education providers, British Chambers of Commerce network, Institutes of Technology and High Value Manufacturing Catapults

Figure 3.4. Have Further Education providers, local authorities, mayors, representative business organisations, local Chambers of Commerce, Institutes of Technology or High Value Manufacturing Catapult centres helped you take on and skill new workers?



All respondents bar two (both micro-sized enterprises) reported using some form of further assistance to take on and skill new workers.

Seventeen manufacturers – or more than two thirds – reported using further education providers, including schools, colleges and universities. This included:

- Three of the five large enterprises;
- Four of the five medium ones;
- Nine of the 12 small enterprises;
- And one of the three micro enterprises.

In addition, three manufactures utilised local authorities; two used mayoral offices; and six used Representative Business Organisations (RBOs) which were under the British Chambers of Commerce (BCC). Seven used various centres under the Institutes of Technology (IoTs), and four used High Value Manufacturing Catapult (HVMC) Centres.

Of the six manufacturers who reported using the BCC, three each were large and medium-sized enterprises. All three of the micro and four small enterprises reported that the fees for joining the BCC would put them off wanting to use them to help bridge existing skills gaps within their businesses.

A small-sized manufacturer based in the West Midlands reported using the WMG Skills Centre at the University of Warwick's HVMC Centre for bridging skills gaps in employees. The WMG (formerly the Warwickshire Manufacturing Group) is probably one of the best UK examples of a long-term bid to combine academic research with skills training and local industry prosperity. It focuses on the automotive industry in the West Midlands.[70] This manufacturer reported that:

70 WMG was founded by Kumar Battacharya in 1980. Its first venture was a part-time master's degree for employees in the automotive industry. The WMG opened an academy for young engineers in Coventry in 2014, and one in Solihull in 2016. They take students from the age of 14 onwards.

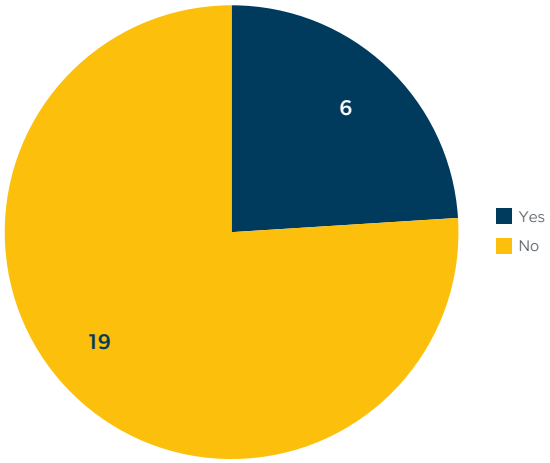
'No degree or college course can equip people with everything [...] they need for their new career. Facing tight time pressures, the WMG short courses offer some of our new graduates the opportunity to gain further knowledge in a short space of time, to add to their existing skill set, and progress quicker in their career.'

A medium-sized manufacturer based in the North East reported a positive and helpful relationship with the Institute of Technology (IoT) at Middlesbrough College:

'Middlesbrough College-provided courses in the North East IoT readily help align the delivery of a very high-quality technical education, with the necessary skills required, with significant benefits to both the individual and ourselves.'

What was the value of Local Enterprise Partnerships?

Figure 3.5. Did you previously have a relationship with your Local Enterprise Partnerships (LEP) supporting skills over the previous decade that worked well?



Local Enterprise Partnerships (LEPs) are voluntary partnerships between local authorities and businesses.

Just under one quarter (six) of all respondents reported that they had previously had a relationship with their LEP to support skills development during the previous decade. Of those six manufacturers, three each were small and medium-sized enterprises. All six responded that they had worked well. One medium-sized electric vehicle supply chain manufacturer based in the West Midlands reported that the Coventry and Warwickshire LEP had 'supported their business by ensuring that required local skills reflected the needs of the local economy.'

A further medium-sized manufacturer in the East Midlands reported that:

'[T]he LEP's ability to pull in more private sector investment (than public finance alone) has significantly helped boost investment in innovative skills capital funding projects targeted at local need — including the skills campus in Nottingham, which has received over £30 million from the D2N2 LEP'.

The Government announced in August 2023 that it would cease direct funding of the LEPs after 30 March 2024, and transfer their functions to local and combined authorities in a push to stimulate greater devolution and local economic growth.[71] This announcement was made during the data-collection and manufacturer-engagement phase of this project. Accordingly, many of the manufacturers who reported positive dealings with their respective LEPs felt uncertain about how this imminent period of transition from April 2024 would affect their business.

Overall support for national and local schemes

All 23 respondents who reported using either wider government or private local schemes to help recruit and upskill their workforce unanimously responded that their respective endeavours had led either to:

- Help in identifying future employees;
- Opportunities to skill employees;
- Or longer-term recruitment of their employees.

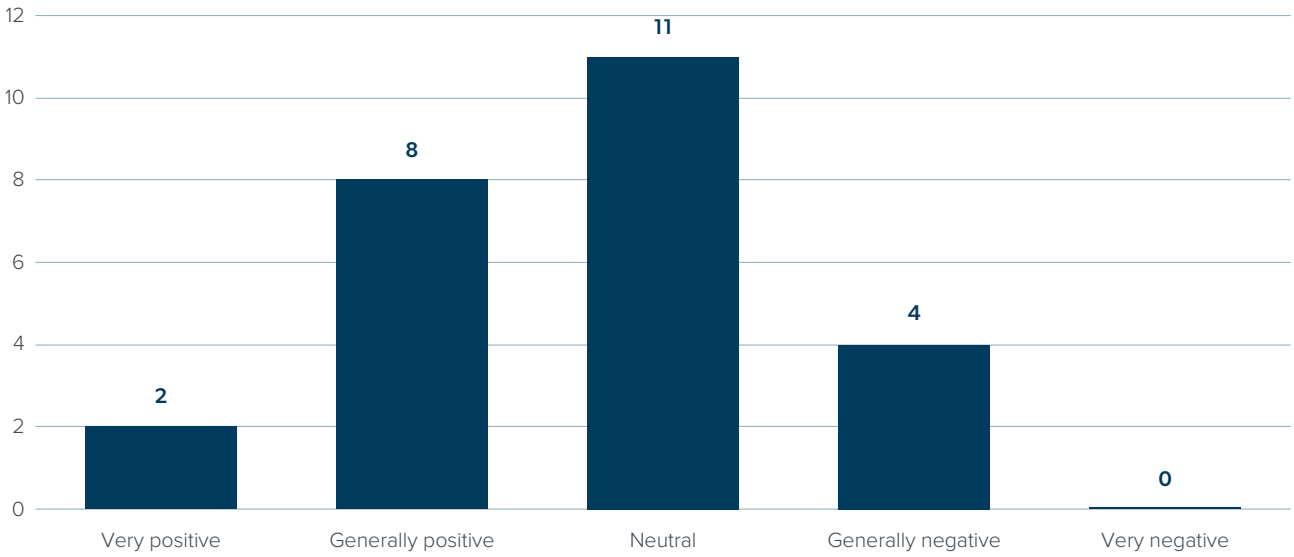
71 Department for Levelling Up, Housing and Communities et al (2023) *Transfer of Local Enterprise Partnership (LEP) core functions to combined and local authorities*. Available at: https://www.gov.uk/government/publications/transfer-of-local-enterprise-partnership-lep-core-functions-to-combined-and-local-authorities (Accessed: 8 February 2024).

4. Business outlook

SME concerns over the unpredictable economic outlook and unsustainable energy costs

It is important to understand the wider business challenges faced by many small manufacturers. These challenges are often interlinked with energy and skills concerns. To better understand these broader issues, we asked our respondents how they felt about their business outlook more generally. This section of the survey covered the full gamut of typical SME issues, including tax and regulation, the potential for short-term growth and investment.

Figure 4.1. How would you describe your business outlook today?



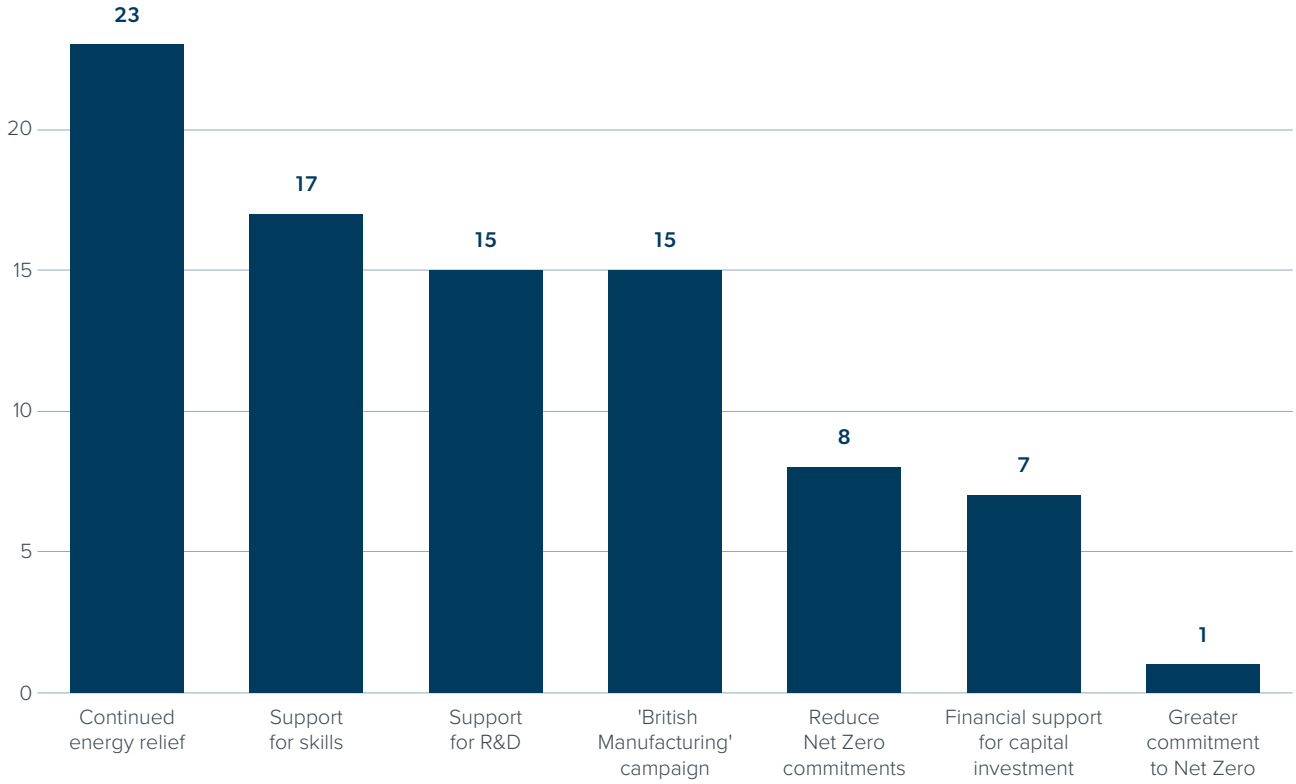
Just under half of the businesses we interviewed felt neutral regarding their business outlook. Two fifths felt either positive or very positive. Meanwhile fewer than one-fifth felt negative or very negative. Given the interviews took place during the nadir of business optimism in 2023 – when interest rates rose sharply – the tilt towards positivity was a surprising outcome.

Of the two businesses that reported feeling very positive, both were large enterprises. When those feeling generally negative were pressed further on the reasons for this feeling, the four companies involved blamed:

- An unpredictable long-term economic outlook (three out of four);
- Lack of available capital investment (two out of four);
- An unsustainable energy market (three out of four).

What helps manufacturers the most?

Figure 4.2. Which of the following would most help you in supporting business growth? Select multiple.



Continued energy relief

All bar two respondents said continued offer of Government relief from energy bills would help their businesses in supporting business growth. This is as clear an indication as possible that the cost of energy is among the biggest challenges facing SME manufacturers in the UK today. Consequently, the reservations of the previous Government to extend the EBDS for non-domestic energy bills from April 2024 caused some distress. The fear expressed in 2023 was high spikes in energy costs in 2024. This fear may be dissipating as the year progresses, but the take-home point is clear: the fear of high energy costs makes it hard for SMEs to justify capital investment — including capital investment in energy-saving equipment or onsite power generation.

Support for skills

More than two thirds of the respondents stated that greater government support for skills and apprenticeships would help their businesses grow. This attitude was most prevalent among businesses outside the South East, including the South West, North West, and Scotland. As noted, manufacturers in these regions are less likely to be close to colleges and further education centres. This limits their ability to recruit and train younger workers.

Support for research & development

Three out of five respondents said that government help for boosting research and development (R&D) programmes would greatly help their businesses grow. This was before the Chancellor's Autumn Statement in November 2023, which confirmed that the threshold to be considered 'R&D intensive' will be reduced from 40 to 30 per cent of total expenditure from April 2024.[72] The Spring 2024 budget made no changes to the autumn announcement.

72 HM Treasury (2023) *Technical note on changes to research and development tax reliefs at Autumn Statement 2023*. Available at: https://www.gov.uk/government/publications/autumn-statement-2023-research-and-development-tax-reliefs-reform/technical-note-on-changes-to-research-and-development-tax-reliefs-at-autumn-statement-2023 (Accessed: 8 February 2024).

Six respondents (two large, three medium-sized and one small enterprise) said the prior system was a fairer means to support an industry as R&D-heavy and reliant as British manufacturing. This previous system meant SMEs could claim back up to 33 per cent of the amount they had spent on qualifying R&D, which was reduced from April 2023 to a maximum of 27 per cent.

'British Manufacturing' campaign

Three out of five (15) of respondents also backed the idea for a Government-led and industry-supported campaign to revitalise British manufacturing. This was especially keenly felt amongst small and medium-sized enterprises. Enthusiasm was strong because of perceived export market potential. One medium-sized textile manufacturer located in South Wales reported that:

> *'The reason we supported the decision to exit the European Union was the ability to increase export markets of our products. Since Brexit, there has been very little sign of the Government attempting to help smaller businesses make the most of these new trading opportunities. A British manufacturing campaign is needed to work alongside a much-needed industrial strategy to revitalise manufacturing at a time of perceived decline, and very real threats to our longer-term survival'.*

Reduce Net Zero commitments

Almost a third of the respondents felt that moving away from the Government's Net Zero commitments would boost growth. Many respondents were unsure what the previous government's Net Zero strategy is. This attitude was keenly felt among smaller businesses.

Financial support for capital investment

Although full expensing was made permanent in the Chancellor's 2023 Autumn Statement – ensuring firms receive a 100 per cent first year tax deduction for expenditure on qualifying plant or machinery – seven respondents (just over a quarter) felt that greater financial support to boost capital investment projects would help stimulate growth. In 2021, the then shadow Chancellor Rachel Reeves declared that a Labour government would borrow £28 billion a year for green capital investments into buildings, equipment, machinery, or vehicles that conform to a green agenda. This plan was curtailed, then reformed by Sir Keir Starmer prior to his election.[73]

These plans were, however, broadly supported by four of the five large-sized enterprises. They said such schemes would help manufacturers transition to onsite generation capability whilst also helping to achieve Net Zero targets. Smaller-sized respondents (all three micro and eight out of 12 small SMEs) reported that there wasn't enough financial support from the Government with capital investment; the majority of smaller manufacturers' capital investments came from private investors, loans, and from profits when they could afford to do so.

Greater commitment to Net Zero

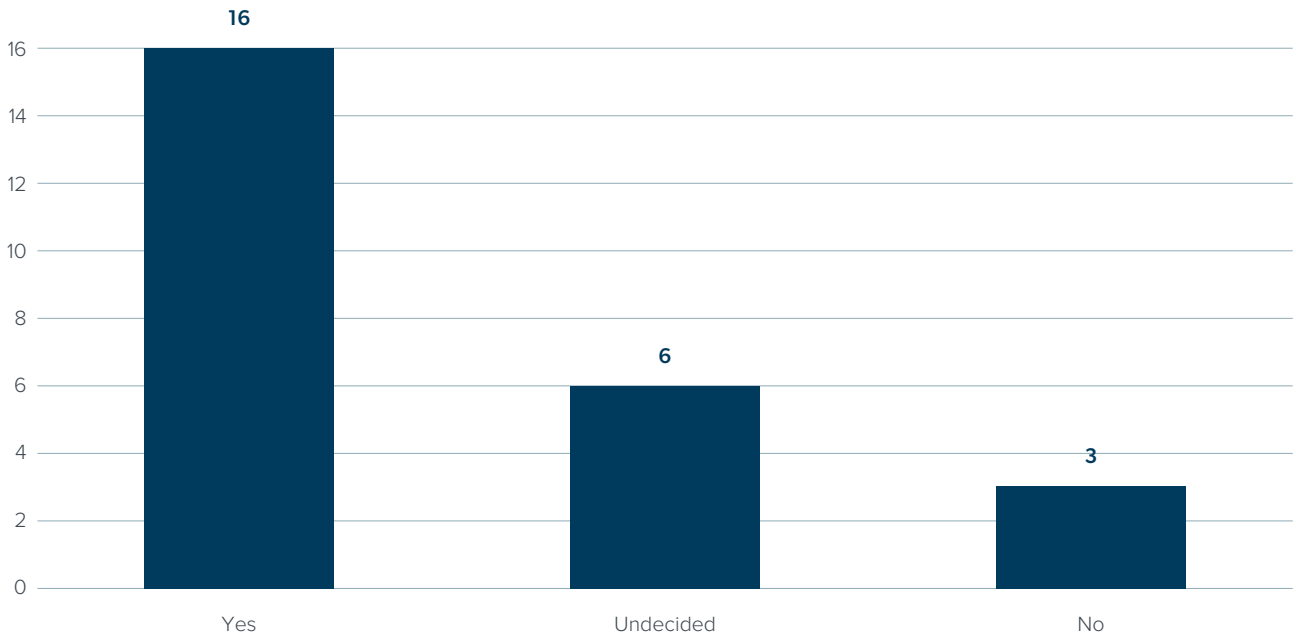
Only one respondent reported that a greater commitment to achieving the Government's Net Zero targets would boost growth in their business. This company was a medium-sized enterprise from the South East that manufactures parts used in solar panels. The respondent argued that:

> *'The green transition is already coming into effect, and with a larger commitment by the Government, SMEs can not only transition quicker themselves, but can diversify products and systems cheaper … resulting in a growth area for the long-term survival of manufacturing.'*

73 Walker, P. et al (2024) 'Labour to ditch £28bn annual green investment pledge, party sources say', *The Guardian*, 1 February. Available at: https://www.theguardian.com/politics/2024/feb/01/labour-to-ditch-annual-green-investment-pledge-party-sources-say (Accessed: 13 June 2024).

The rise in Corporation Tax

Figure 4.3. Has the recent rise in Corporation Tax affected your business' desire to reinvest in the short-term?



Almost two thirds of respondents said the 2023 rise in Corporation Tax would negatively impact investment. In the Spring 2021 Budget, then Chancellor, Rishi Sunak, announced a major reform to the corporate tax regime. This involved an increase in the rate of tax from 19 per cent to 25 per cent, to apply to companies with profits over £250,000, from April 2023. A separate rate of 19 per cent would apply for companies with profits under £50,000.[74] Marginal relief is available for companies whose profits fall between these brackets.[75]

Just three respondents (12 per cent) reported that the rise in Corporation Tax would *not* affect their business's desire to reinvest in the short-term. All three were large enterprises. Sixteen manufacturers (64 per cent) reported that the rise in Corporation Tax had affected their desire to reinvest in the short-term. Of these 16, two were micro enterprises, 11 were small-sized enterprises, and three were medium-sized enterprises. The remaining six respondents were undecided how the rise would affect their decision to reinvest in their businesses.

One micro-sized enterprise from the East Midlands reported that:

> *'Corporation Tax is essentially a tax on short-term investment, hitting smaller companies like ours the hardest. We cannot afford now to invest over the next 12–18 months, with the tax environment high and politically uncertain. The cost of funding that investment has gone from less than two per cent to over seven per cent.'*

A medium-sized enterprise from London also confirmed that the rise in Corporation Tax to 25 per cent would affect their business's desire to invest in the short-term, reporting that:

74 Seely, A. (2023) *Corporate tax reform*. House of Commons Library. Available at: https://commonslibrary.parliament.uk/research-briefings/cbp-9178 (Accessed: 8 February 2024).

75 Gov.uk. *Corporation Tax rates and reliefs*. Available at: https://www.gov.uk/corporation-tax-rates (Accessed: 13 June 2024).

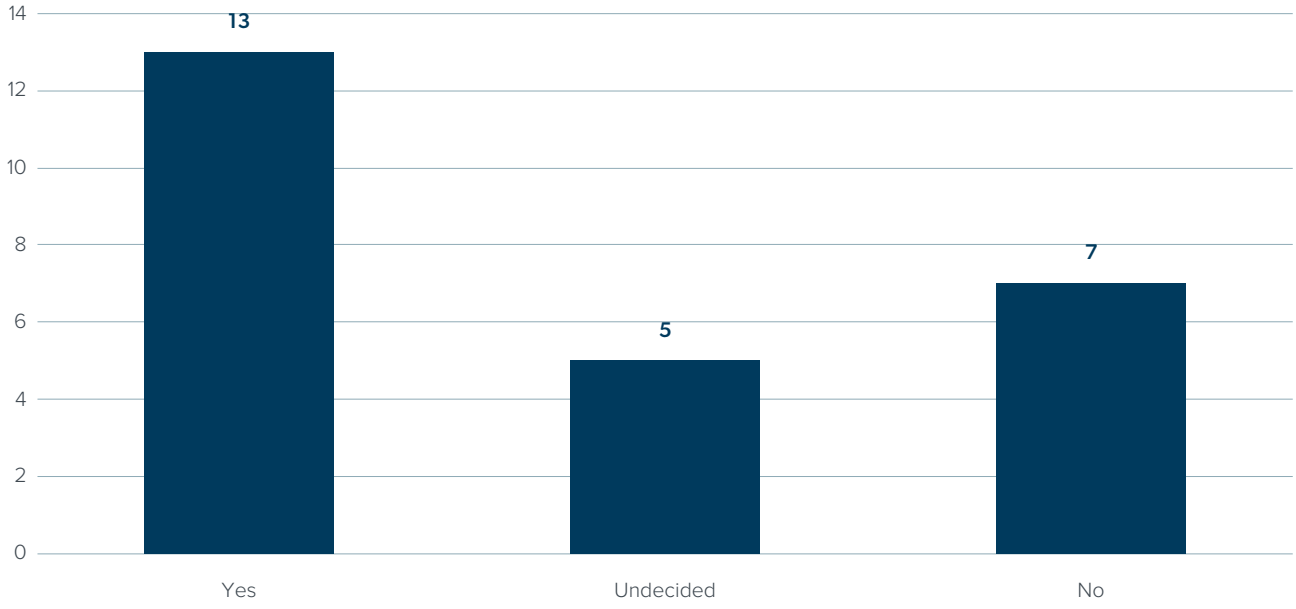
'Raising the rate of Corporation Tax but without improving investment allowances for SMEs in particular like ours (which rely on lower taxation environments to invest or allowances which are not present) acts as a double whammy [...] severely restricting our growth for the next year'.

There are mounting concerns from within UK manufacturing that increased Corporation Tax will drive the UK down the league table of countries offering competitive business tax regimes. The fear is that a non-investor-friendly tax environment will hamper growth throughout the manufacturing sector, but particularly in SME manufacturing.

Recent analysis of the UK and Irish pharmaceutical sectors indicates that differing rates of corporate taxation can indeed have a dramatic impact on investment, and an equally dramatic impact on exports.[76] Ireland's low corporate tax rate of just 12.5 per cent has helped create a pharmaceuticals phenomenon just across the Irish Sea, with an export industry that is now 2.5 times larger than the UK's. This comes as the US government is offering increasingly generous incentives for businesses to invest,[77] and the EU is also attempting to respond.[78]

R&D tax relief and future investment

Figure 4.4. If your company were eligible for any Research and Development (R&D) tax relief schemes, would that make investment into R&D more likely in the next 2-5 years?



Over half of the respondents said that an R&D tax relief scheme would make investment into R&D more likely in the next two to five years.

Of the seven respondents who stated it would not make R&D investment more likely, five reported it was due to their business already being R&D intensive, receiving help, or because they would be involved in R&D regardless. The two other manufacturers that reported 'no' declared that was because their business was not involved in R&D (which one had outsourced), and that this was unlikely to change.

One medium-sized defence enterprise stated that:

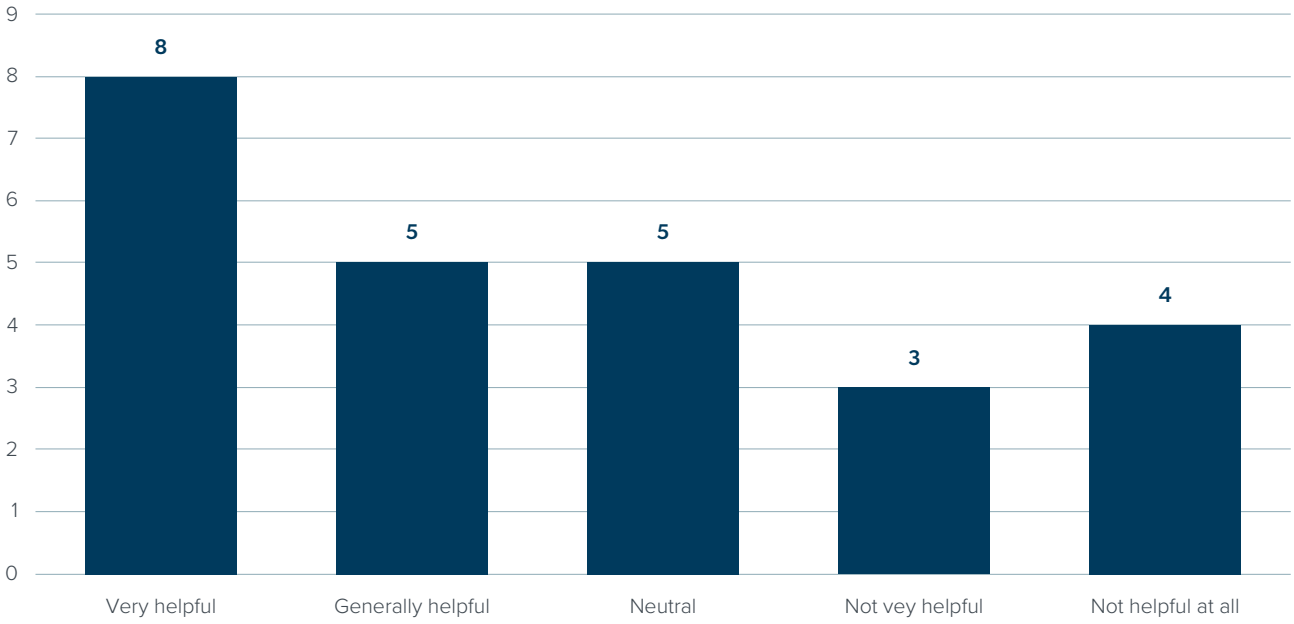
76 Radford, P. (2022) *The case for low corporate taxation: Lessons from the International Pharmaceutical Industry*. Centre for Brexit Policy. Available at: https://centreforbrexitpolicy.org.uk/wp-content/uploads/2022/11/The-Case-for-Low-Corporate-Taxation.pdf (Accessed: 13 June 2024).

77 U.S. Department of the Treasury (2023) *FACT SHEET: How the Inflation Reduction Act's Tax Incentives Are Ensuring All Americans Benefit from the Growth of the Clean Energy Economy*. Available at: https://home.treasury.gov/news/press-releases/jy1830 (Accessed: 8 February 2024).

78 Norton Rose Fulbright (2024) *EU scales up green subsidies: How you can benefit from new support for clean investments*. Available at: https://www.nortonrosefulbright.com/en/knowledge/publications/b01d19d5/eu-scales-up-green-subsidies-how-you-can-benefit-from-new-support-for-clean-investments (Accessed: 8 February 2024).

'The ability for us to deduct up to 86 per cent of our R&D costs (particularly labour and energy) against our annual profit for tax relief greatly incentivises our business to invest more profits back into our R&D stream, which is only growing year to year. This helps our business grow.'

Figure 4.5. How helpful is the Employment Allowance to your business?



The Employment Allowance enables eligible employers to reduce their National Insurance (NI) liability. As of April 2022, this reduction can be up to £5,000 (conditions apply to size).[79]

Eight respondents reported that the Employment Allowance was 'very helpful' to their business, whilst a further five reported that it was 'generally helpful'. Combined, this meant that 13 respondents, or just over half, found the allowance's reduction in NI contributions to be helpful to their business. Of the eight that reported it to be 'very helpful', two were micro enterprises whilst the other six were small enterprises. One micro-sized manufacturer from the North East reported that: 'Employment costs are one of our largest outgoings, so last year's increase (April 2022) was very welcome news for us'.

Of all seven respondents who reported that the Employment Allowance was either 'not very helpful' or 'not helpful at all', all were either medium- or large-sized enterprises employing more than 50 staff. This meant the companies exceeded the Allowance's threshold. One medium-sized manufacturer from Scotland reported that:

'Our business met the threshold for EA in 2021/22, but having since taken on more graduates in a new scheme this year we will be unable to claim this tax year as our NI bill is higher. It would be good to see a system where the threshold is raised or takes into account hiring younger workers to offset against without penalising.'

79 UK Government. *Employment Allowance: What you'll get.* Available at: https://www.gov.uk/claim-employment-allowance (Accessed: 8 February 2024).

5. Summary of findings

The survey confirmed the observations of industry bodies. The high cost of energy is the biggest threat to viability for SME manufacturers. All SME manufacturers say the availability of skilled labour is another key concern. Most SMEs report using further education of one type or another to improve skills, as opposed to larger manufacturers who develop apprenticeship schemes. Most important of all, UK manufacturing is still a high-energy and high skills enterprise. In summary, our survey revealed the following:

1. **The two issues that *most* concern SMEs are high energy costs and low skills availability.** This confirms industry commentary and data analysis on energy costs. It also confirms anecdotal evidence of accelerating interest in in-house training schemes.
2. **Almost all respondents considered affordable energy to be important to their business.** This is a principal concern expressed in the survey. Many were concerned about their ability to meet energy costs during 2024.
3. **More affordable power is overwhelmingly more important than green power.** Most SMEs say there is no financial benefit to adopting a Net Zero strategy, and they were not incentivised to work towards a Net Zero strategy.
4. **Very few SMEs are planning a transition to onsite energy generation.** For almost half of our respondents, this was because of the anticipated costs of installing onsite energy-generating and energy storage equipment.
5. **Three quarters of respondents said there should be a UK equivalent to the US Inflation Reduction Act.** This should allow tax credits for private investment in clean energy, transport or manufacturing. Currently, three quarters of SMEs said they were not incentivised to support Net Zero goals.
6. **The biggest barrier to upskilling is finding stand-ins to cover while training takes place.** A secondary disincentive to skills training was the fear that employees would promptly move on, so the investment would be lost.
7. **The current levy system of subsidised apprenticeship system is not overwhelmingly effective.** Just under half of respondents said they found the Apprenticeship Levy useful. In general, SMEs prefer to train workers in-house rather than rely on external providers.
8. **SMEs use a very wide variety of external organisations to boost skills.** Most relied on further education providers. Over a quarter used Institutes of Technology. Other sources of external skills training include the Catapult organisation and Representative Business Organisations.
9. **Amost two thirds of SMEs say the 2023 rise in corporation tax had impacted plans for investment.** Half of respondents said that tax relief would make investment in R&D more likely. Most respondents said that the employment allowance was in some measure helpful to their business.

These findings lead to several conclusions that should help guide policy formulation.

Competitiveness of UK SMEs

Expensive clean energy erodes the competitiveness of UK-based SMEs if it's not matched by cost increases among competing suppliers, especially in the EU. The high comparative cost of UK energy is making UK manufacturing progressively less competitive against other advanced economies in the EU, as well as the US.

The inevitable result is that the thousands of UK SMEs who supply our auto, aerospace and machinery industries will gradually lose their supplier status to EU competitors. This will mean that the UK value-add of signature British exports will decline. Already, the value-add of a UK-exported car in 2024 is unlikely to exceed 50 per cent.

The transition to clean energy

Currently, there can be little commercial benefit to the adoption of clean energy or Net Zero policies. Until consumer attitudes change, the only way to enforce a transition is through financial incentives or legislation. This equation will only change if the cost of onsite generation falls substantially. This might occur if the cost of onsite power storage changed dramatically, which it may with new battery technologies.

Without onsite power generation, the price of industrial power will remain a powerful constraint on the success and competitiveness of SME manufacturers. Consequently, any government policy that seeks to promote UK manufacturing must instigate polices that will progressively lower the cost of industrial power in the UK as compared to economies in Europe. This is a long-term endeavour. But it's a basic point of political economy.

Skills training

Manufacturing in the UK is a high-skills activity. Today, SMEs rely on multiple types of skills development, from courses at local training colleges to engineering degrees. Some industries are even developing their own forms of science, technology, engineering, and mathematics (STEM)-focussed secondary schools – this is what the WMG (formerly Warwick Manufacturing Group) has been doing in Coventry and Solihull. This means there is no established hierarchy of external skills providers – from short courses at technical colleges to masters degrees at universities. There is no neat terrain for national policy making.

Consequently, no single initiative is likely to deliver improved skills for SMEs across the country. The policy challenge will likely be to investigate where skills development is already working well for SMEs, and support whatever makes those initiatives a success. Sometimes this may mean adopting different strategies in different parts of the country. It may mean committing financial resources to local authorities for them to enhance or support existing schemes. Potentially, some skills might be generic, such as automation, AI and robotics. Consequently, it is worth examining industry demand and encouraging short courses in high-demand areas.

In-house training

Respondents generally showed a preference for in-house training over external training providers. The renewed popularity of apprenticeships among major manufacturers implies this is a reaction across the spectrum of UK manufacturing. This in turn implies that for whatever reasons, UK skills-training institutions are not adept at matching supply with demand. Consequently, any action to improve external training will need to incentivise training organisations to develop training that minimises time away from employers.

Recommendations

This research is intended to be practical. Therefore, it concludes with recommendations that will help support small manufacturers with the two biggest issues they confront: high energy costs and low skills availability.

1. Incorporate manufacturing skills need into Skills England – emphasising colleges

The movement of the current government towards a new body, Skills England, which will bring together the combined force of central and local government, businesses and training providers to meet regional skills needs in order to improve the post-16 skills system[80] is a welcome step forward. Our conversations with SME manufacturers for this report would suggest this is a helpful intervention. As Ben Silverstone at WMG, University of Warwick also indicated at the time of the announcement, government will also need to be cognisant of the significant number of employees in the workforce in need of reskilling and upskilling – that further education is not diminished in this capacity and that colleges are effectively made bastions of industrial capability through skilling the existing workforce.[81]

2. Comprehensive review of apprenticeship system and reform of the levy

The Apprenticeship Levy has not met its intended objective, since the interest in apprenticeships has declined. The current government's intention to therefore reform the apprenticeship levy is not only a welcome one, but as expertise at Make UK suggests,[82] its reform should really begin with a more comprehensive review of the system as a whole, not only the apprenticeship levy, to better understand how to support employer investment in skills training, and essentially what works and what doesn't.

3. Development of an industrial strategy focused on SME growth

The welcome creation of a new industrial strategy, combined with establishing an Industrial Strategy Council is an innovative aspect of the new Labour government's policy framework, demonstrating a much needed long-termism, but requires genuine fresh thinking. Importantly, it should not be deliberately restrictive therefore as to how ministers might choose, for example, to confine their focus to niche AI or green subsectors deserving of subsidy which may well not always encourage growth, nor resolve short-termism, nor provide certainty to SME manufacturers. If Britain is to enhance its position as a leading industrial nation and enable the country to take advantage of new opportunities that can promote growth and wealth creation, as the government clearly intends, it would do well to start with an industrial strategy focus on the SMEs who make up such a large proportion of the manufacturing sector.

4. A more sustainable and 'manufacturing-friendly' energy strategy

There is a distinct lack of 'buy in' with regards to the UK's Net Zero strategy. What's more, manufacturers believe there is a lack of 'Net Zero Realism'. This trait is pronounced among smaller companies. One clear way that this manifests in UK manufacturing is the extremely low number of businesses transitioning to onsite energy generation.

80 Department for Education et al (2024) *Skills England to transform opportunities and drive growth*. Available at: https://www.gov.uk/government/news/skills-england-to-transform-opportunities-and-drive-growth (Accessed: 14 August 2024).

81 Silverstone, B. *Skills England: Expert comment from Dr Ben Silverstone*. Available at: https://warwick.ac.uk/fac/sci/wmg/news-and-events/news/wmgnews/?newsItem=8a17841b909c4b540190c563f1941ee4 (Accessed: 14 August 2024).

82 Make UK (2024) *Make UK's Response to the King's Speech*. Available at: https://www.makeuk.org/news-and-events/news/make-uks-response-to-the-kings-speech-2024 (Accessed: 14 August 2024).

This research confirms suspicions that only larger manufacturers feel able to offset the costs of installing onsite energy generation. Three of the respondents in our research are transitioning to onsite generation or are planning to do so. Conversely, 11 SMEs – almost half of our survey – said they were simply not sufficiently financially secure to begin this process. This is because energy transition requires large initial capital expenditure which executives feel they are unlikely to recoup.

Whilst tax relief schemes aid with transition, the Government could consider initiatives to help manufacturers transition more quickly and efficiently. Furthermore, helping companies develop low-carbon heat networks by applying an energy price cap may help incentivise SMEs further.

5. Start benchmarking UK industrial power costs

Government policy gives businesses the impression that environmental objectives are more important than domestic commercial prosperity. One casualty of this lack of domestic focus is that UK manufacturers now incur some of the highest industrial power costs of any developed economy. This directly impacts competitiveness and investment. Ultimately, it can't avoid impacting exports as well.

This commercial reality should permeate Treasury policy. The competitiveness of UK manufacturing is a direct casualty of British Net Zero policies. And the only way to regain competitiveness – especially against EU countries – is for the UK Treasury to start benchmarking UK industrial power costs, and progressively lowering them in comparison to competitor economies.

The Treasury should be tasked with ensuring that in 10 to 15 years' time, UK industrial power costs return to being in the lower third or quarter of IEA countries. This requirement would ensure that all Treasury policies that impact the production and distribution of energy in the UK will have to be measured against their long-run impact on prices. The objective should be to ensure that the comparative price of UK industrial power falls to the point where investors are confident we have durable competitive advantage in energy costs.

6. Incentivise further education hubs to focus on technical skilled workforce

Access to a skilled labour force is the second biggest barrier to SME growth, according to our research. What's more, Civitas research shows that SMEs' capacity for in-house development is extremely limited. Consequently, SMEs are dependent on external skills training mechanisms. Our research shows, however, that many students are under-skilled for commercial needs when they exit formal training programmes.

For skills training to improve, British universities, sixth form colleges and training institutes will need to become more adept at matching their syllabus with local demand. Big organisations can sustain employees through that hiatus; SMEs cannot. Training organisations should be hubs that can provide apprenticeships and teach the necessary skills SME manufacturers actually want. The aim should be that people aged 16-18 can go relatively seamlessly from education to a workplace and immediately add value.

The manufacturing organisation Make UK says the following five skills are set to be the ones in highest demand by UK manufacturing over the next five years:

1. Design and engineering;
2. Research and development;
3. Production and manufacturing;
4. IT, including all recent developments in AI;
5. Distribution and logistics.[83]

83 Make UK (2021) *Unlocking the skills needed for a digital and green future*. Available at: https://www.makeuk.org/insights/reports/unlocking-the-skills-needed-for-a-digital-and-green-future (Accessed: 8 February 2024).

The challenge is in matching supply and demand. If that were easy, training organisations would already be doing it. This paper makes two recommendations, both requiring policy research:

- **An improvement of the incentives under which training organisations operate**. Employees and trainers *should* benefit from the successful placement of students, and their subsequent success. This can only happen if the funding bodies monitor results.
- **A review of how other countries match the supply of skills training with local demand**. This might include, for example, an examination of Australia's extremely successful technical and further education (TAFE) network in which employers and employer organisations are intimately involved with course development and delivery.

Furthermore, universities and sixth form colleges should support a scheme to help early retirees become educators. The previous Government rightly identified the need for skills teachers to have recent, relevant experience of working in industry. The Skills for Jobs White Paper in 2021 proposed the creation of a Workforce Industry Exchange scheme. This policy commitment provides an opportunity to transition recently retired skilled workers into the classroom to help train and skill those about to enter the labour market.

7. Launch a strategic review of the competitiveness of UK manufacturing, which includes assessing the comparative impact of policy measures

This research mirrors work by Make UK and previous Civitas research. It highlights how Government policy settings are eroding UK industrial competitiveness. Therefore, the Government should review the impact of multiple policies on manufacturing, and benchmark competitiveness against peer economies. Specifically, a strategic review should examine:

- Tax and regulation, including the impact of lower corporation tax, and simplified regulation;
- Skills and R&D, including how skills-training colleges react to local demand in growth industries, including in automotive, nuclear engineering, hydrogen and aerospace;
- Business process challenges, such as digitalisation and supply-chain resilience.

As UK manufacturing attempts to transition to onsite generation and Net Zero, manufacturers need Government policy that ensures a level international playing field. This is exceptionally hard given the scale of subsidisation currently underway in the EU and North America. To remain competitive, SMEs require a 'Net Zero realism' attitude among policy-makers. This means cost-effective energy measures that allow them to compete, invest and grow. Forcing transition policies on UK companies without aiding their capital investment will guarantee further bouts of offshoring.

8. Promote business rate relief for building improvements

Landlords of older and less energy-efficient buildings should be made more aware of rate relief that is available for improving a building's energy efficiency ratings. Councils across England should ensure landlords are aware of this scheme. The Government should consider promoting rate relief to the devolved authorities across Wales, Scotland, and Northern Ireland.

It would be especially useful to support those landlords whose properties are used by SMEs. These premises are likely to be extremely outdated in terms of their energy efficiency. In turn, improved energy efficiency would significantly reduce energy costs for SMEs. Landlords who can upgrade the insulation, heating, ventilation, or lighting systems of their property would also benefit.

9. Identify imminent skills gaps and increase incentives for relevant apprenticeships

The Department for Education's Unit for Future Skills (UFS) undertakes research and fact-finding tasks. Its goal: to better understand where national skills gaps will occur, in what areas, and in what regions.

Whilst the UFS is already heavily invested into by the Department for Education, the unit should better integrate with industry and SMEs. In terms of technical skills, supply must respond to demand – faster, and more effectively. Immigration policy should be more nimble and prescriptive. Measures should be practical and local. Where skills shortages are identified, then employers should be eligible for incentive payments for apprenticeships that boost in-demand skills.

The prize is huge – especially for British exports. Effective responses to skills gaps in manufacturing will gradually transform this country's competitiveness. Remember: manufacturing still delivers 85-90 per cent of our goods exports. Greater competitiveness will transform the prospects of those exports, currently worth £340 billion per year.[84] And note: our traditional manufacturing sectors – auto, aerospace and machinery – are prospering. They now deliver 40 per cent of our total manufacturing exports, up from 29 per cent in 2000.

10. Expand Investment Zones to include more remote regions of the UK

The UK's first two Investment Zone sites were announced by the Government in July 2023. These are the South Yorkshire Advanced Manufacturing Investment Zone, and an Investment Zone in Liverpool focussing on the life sciences industry.[85] Each Investment Zone will benefit from an £80 million funding package. This comprises tax incentives and flexible grant funding, including enhanced capital allowances, enhanced structures and buildings allowances, Stamp Duty Land Tax relief, employer National Insurance contributions relief, and business rates relief.

South Yorkshire and Liverpool are large urban conurbation sites with advanced manufacturing and national infrastructure already developed. However, this project uncovered some of the barriers facing more remote areas of the UK, leading to regional disparity amongst SMEs' ability to access skills, investment, and even energy availability. In particular, the South West and North West regions (beyond Manchester) in England would benefit immensely from an expansion of the Investment Zone policy. So too would Northern Ireland.

Extending the available tax reliefs to other Investment Zones will give manufacturers in these regions a greater ability to plan future investments. Many SMEs in remote areas will struggle to compete without a more sustained and meaningful levelling up programme. And competitiveness is vital given the ever-mounting commercial tax reliefs emerging in the US and across Europe.

84 ONS: UK Trade in goods by Classification of Product by Activity, annual exports time series dataset, current prices, seasonally adjusted. February 2024.

85 HM Treasury (2023) *South Yorkshire named as first UK Investment Zone*. Available at: https://www.gov.uk/government/news/south-yorkshire-named-as-first-uk-investment-zone (Accessed: 13 June 2024).

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In this survey of UK SME manufacturers, energy costs and skills availability were the two biggest challenges to growth identified. The Government has an obligation to address both, since current challenges are the direct result of policy. Success will improve the competitiveness of our SMEs. That, in turn, will boost exports and prosperity across industrial regions of the UK.

This report highlights a number of findings amongst small-to-medium-sized enterprises (SMEs). The two issues that most concern SMEs are high energy costs and low availability of skilled workers.

On energy, almost all respondents considered affordable energy to be important to their business. More affordable power is overwhelmingly more important to them than green power. Most SMEs were not incentivised to work towards a Net Zero strategy, and very few were planning a transition to onsite energy generation.

On training and skills, the biggest barrier to upskilling is finding stand-ins to cover while training takes place. The current levy system of subsidised apprenticeship system had not been overwhelmingly effective. SMEs use a very wide variety of external organisations to boost skills with many relying on further education providers.

It concludes with 10 key recommendations to support small manufactures:

1. Incorporate manufacturing skills need into the new Skills England body – emphasising colleges.
2. Comprehensive review of apprenticeship system and reform of the levy.
3. Development of an industrial strategy focused on SME growth.
4. A more sustainable and 'manufacturing-friendly' energy strategy.
5. Start benchmarking UK industrial power costs.
6. Incentivise further education hubs to focus on technical skilled workforce.
7. Launch a strategic review of the competitiveness of UK manufacturing, which includes assessing the comparative impact of policy measures.
8. Promote business rate relief for building improvements.
9. Identify imminent skills gaps and increase incentives for relevant apprenticeships.
10. Expand Investment Zones to include more remote regions of the UK.

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