energy saving trust

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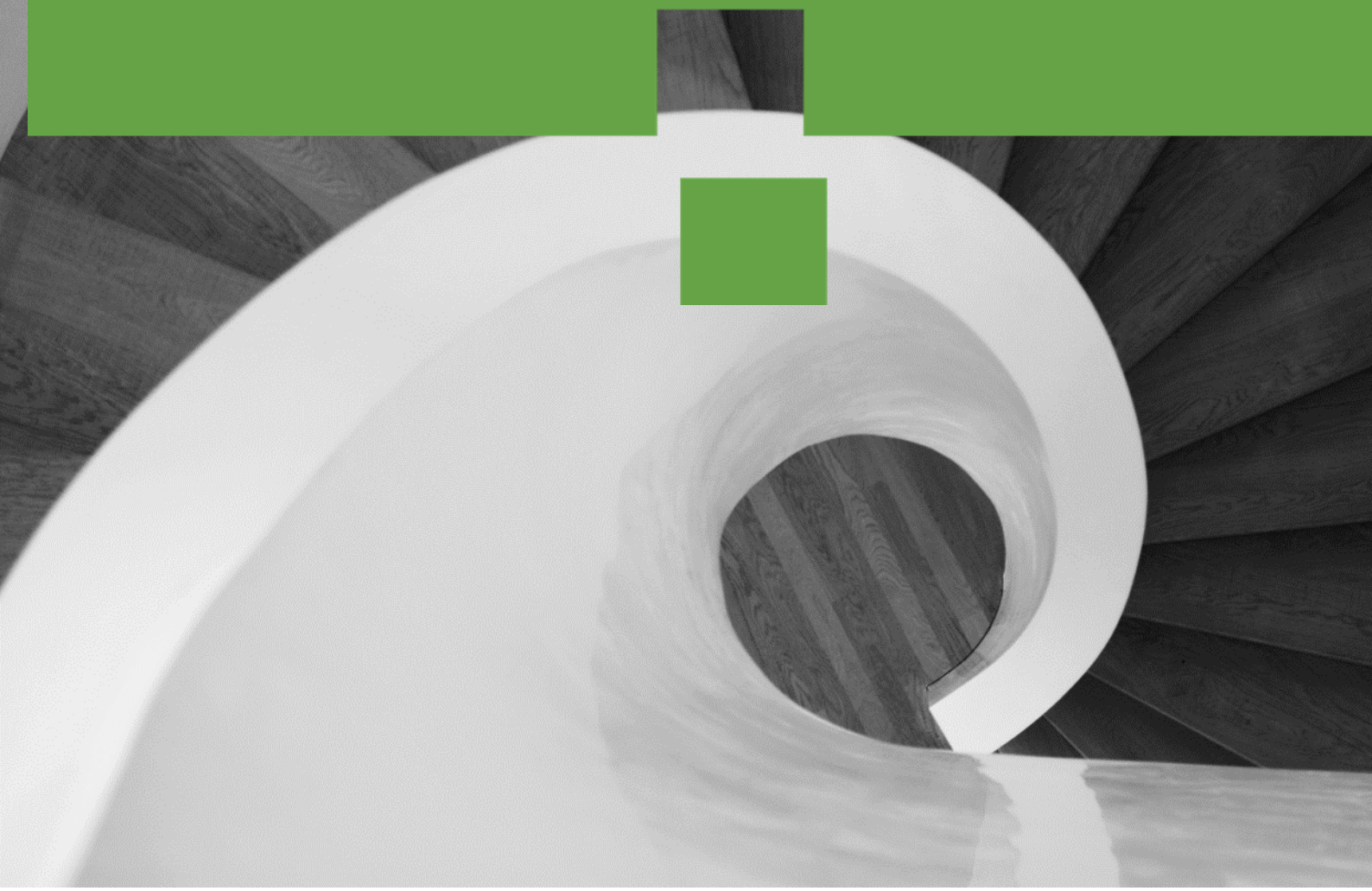

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How can policy better support SMEs in the pathway to Net Zero?

A report to the Climate Change Committee from Energy Saving Trust working with Purple Market Research, Prof Richard Blundel (The Open University) and Dr Sam Hampton (Oxford University)

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Executive Summary

Decarbonising SMEs and promoting energy efficiency in these businesses will be essential if the UK is to meet its net zero commitments. The British Business Bank estimate that between 43% and 53% of UK business emissions are from SMEs (which corresponds to as much as 36% of total UK emissions).[1] As well as presenting a significant decarbonisation opportunity in themselves, many SMEs will facilitate wider decarbonisation, working with and influencing households and bigger businesses. This report from Energy Saving Trust provides analysis to support the Climate Change Committee (CCC) in its advice to Government on business action for decarbonisation. It is based on policy analysis and qualitative research with SMEs. Policy analysis consisted of desk research into the steps all SME sectors will need to take to decarbonise in line with the Sixth Carbon Budget, and into devolved nation and UK government policies that currently promote SME decarbonisation.

Our research with SMEs used a qualitative, interview-based approach with a focus on four diverse sectors. It was designed to explore, in detail, 24 SME managers' responses to current and potential policies that might impact their company. SME interviews were supplemented with desk research and semi-structured interviews with nine sector specialists from trade associations and academia.

Based on this policy analysis and SME research, we suggest in this report new or strengthened policies to ensure decarbonisation in line with the Sixth Carbon Budget.

There are 5.5 million SMEs in the UK. We wanted to foreground the diversity of SMEs in our analysis and so focused in detail on **four very different SME sectors: restaurants; horticulture businesses; clothing manufacturers; sole trader plumbers, electricians, and similar construction-related trades.**

Quotes from sectoral interviewees are italicised in the text below.

Headline Policy Recommendations

Our headline results from both SMEs and policy analysis show that an enhanced and much more joined-up policy and support framework is needed. Support also needs to take better account of the different needs of SMEs in different sectors. Specifically, we recommend to UK Government:

- A UK government plan for SME decarbonisation to enable more joined-up, cross-departmental policy making to address the common net zero challenges that small businesses face – particularly upfront financing and time and knowledge constraints. This plan must

[1] https://www.british-business-bank.co.uk/research/smaller-businesses-and-the-transition-to-net-zero/

include better coordination of activity delivered through regional development funding, both between regions and with national net zero policies.

- A clear regulatory timetable as a central part of the plan. SMEs respond to coming regulation, with investment planning made in line with the known timeline. Thus, government should establish firm dates for future low carbon standards, set as early as possible (and expressed more strongly than as 'ambitions'). This will reduce SMEs' decarbonisation costs and risks.
- A joined-up support framework. This should couple ongoing awareness raising with a single contact point for SMEs. The contact point should provide access to financing support, information on regulations, footprinting and audit services, as well as peer learning networks.

Findings – SME interviews and sectoral analysis

Sector: Horticulture

Context: The horticultural sector comprises three main segments: vegetables; fruit; ornamental plants and flowers. The sector is dominated by SMEs, with smaller producers often operating in partnership with larger firms. Horticulture firms with under 5 Hectares have not qualified for agricultural subsidies.

Opportunities

- Tend to own their premises so can improve the energy efficiency of the building fabric and introduce renewables.
- Often use multiple vehicles.
- A very wide range of decarbonisation opportunities: land use, inputs (e.g. fertilizer and growing media), waste reduction and recycling as well as building conditioning, transport and processing equipment.
- New technologies, depending on the crop (e.g., agri-robotics, or using stacked growing and LEDs).

Challenges

- Lack of capital to invest in major steps, such as upgrading buildings and switching to electric vehicles
- Lack of urgency in some businesses in this sector, with a preference for using existing equipment or vehicles and putting of upgrading until later.
- Concern that technical solutions are not yet viable, proven or affordable.
- Concern that support programmes may not take into account the specialist needs of the sector

We know that changes are coming and we want to do the right thing, but alternatives are not there, such as growing media, or the infrastructure is not there, such as for electric vehicle charging, or the things we need to do are too expensive.

There is a drawback to having targets in 12 or 13 years time. If the business pays now to upgrade machinery, improve the premises or buy electric vehicles, that's a cost now for items that may need replacing again before the deadlines. [And] in 12 years' time …the technology will be cheaper and more

Sector: Clothing manufacturers

Context: The market share of UK clothing manufacturers is small, but the UK's fashion and textile sector is currently in a growth phase. Most clothing remains a commodity product, but there is growing consumer interest in locally produced and higher-quality products.

Opportunities

- SMEs in this sector do see waste reduction and reducing embodied carbon of supplies as opportunities and some have taken action in this area.
- Buildings and industrial equipment are areas of significant energy use/carbon emissions (though SME owners point to challenges in addressing these decarbonisation opportunities).
- Some manufacturers are using sustainability as a key component of their product offer.

We specialise in the creation of high-end premium basic garments. …Manufacturing in England gives us greater control over the quality and the environmental and social impact …[of] our products.

Challenges

- Global supply chains mean it is challenging for companies to understand the carbon emissions associated with their input materials despite efforts to develop tools to this end.
- Usually do *not* own their premises so control over refurbishing buildings/ heating is limited. Nor do they tend to run their own vehicles.
- Industrial machinery may also often be leased. Replacing industrial machinery is also expensive.

We don't own the building and don't run our own vehicles …what else can we do?

We have 9 knitting machines. …The electricity bill is huge... The machines …are leased and we replace them from time to time, but we're limited on how much we can improve the machines themselves.'

Sector: Restaurants

Context: A large and geographically dispersed sector with a predominance of smaller SMEs, restaurants engage more closely with their customers than SMEs in most other sectors. As well as direct emissions reduction, they are able to influence consumer decisions around diet and sustainability.

Opportunities

- View waste reduction and recycling as very relevant to their operations
- Some are already participating in auditing and labelling programmes
- Increasing interest in campaigns/ schemes to incentivise sustainable menu options and choices
- Interviewees recognised that measuring improvement, and demonstrating to customers that improvement is taking place, requires a baseline to be set (energy and carbon audits).

Challenges

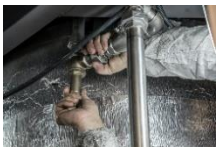
- Unlikely to own their business premises
- Tend not to run their own vehicles
- Focus currently is on remaining in business, with many struggling to recover from the impact of the Covid-19 pandemic. Restaurant owners and managers tend to be short of time.
- The cost of measures and a reluctance/ inability to borrow money are key barriers.

Due to not owning the building it would not be possible to install solar panels. I would very much like to do this but that would be down to the property owner. Changing the whole glazed front of the shop would cost in the region of £15-20,000 and at the end of the day I do not own the

Events have conspired against us: Covid, Brexit, local authority rules, a lack of skilled staff, rising costs of products sourced and of labour, the rising cost of living among the public. There is increasing competition from low-price chains.

(Recycling) would give us a competitive edge. Customers are for recycling so would be an incentive for them to be our customers. Something in the window to show we are into energy saving and it would demonstrate our commitment.

Sector: Tradespeople in the construction trades



Context: The sector is dominated by single-person businesses and our interviews focused on these single traders. These companies are unlikely to have business premises. Plumbers, heating engineers and electrical trades have an important advisory and delivery role for consumers' and other businesses' uptake of low carbon technologies.

Opportunities

- Transport and waste present the greatest opportunities
- Some interest in switching to electric vehicles but there are concerns about the upfront cost
- Tradespeople, notably plumbers and heating engineers, are influential in terms of advising consumers.

Challenges

- Most have business vehicles/ use a van for work, and interviewees viewed opportunities to reduce carbon emissions as limited to their vehicle
- Tend to be time and cash poor
- Few installers currently see the urgency of retraining for low carbon products/services. Pent-up demand post-covid meant they are not short of work and do not feel an economic push towards retraining
- Scepticism about government programmes

I just run one diesel van and that's probably the one thing I could change to reduce my (carbon) footprint. I work from home and my van. I buy materials as I need them, mainly online. I do a bit of recycling of leftover materials, like metal and cardboard packaging. Otherwise, my job doesn't produce a lot of emissions.

I have considered switching from my diesel van to an electric one, yes absolutely. The problem is the upfront cost…That's a huge stumbling block.

I did qualify for solar installation but the government kept changing the Feed-in Tariff and it was not becoming as attractive to people.

Common challenges across sectors

Finance	Finance is cited across all sectors as a key challenge. Of the four sectors we looked at, financing challenges were most deeply felt in the restaurant sector where our interviewees were mainly focused on survival, given recent economic shocks.
Information and advice	In sectors with more complex decarbonisation challenges (eg horticulture), there can be deep confusion about the next steps. In other sectors (eg construction trades) many SMEs feel that they already know the answer: that there is little they can do. Understanding – or perceived understanding – of government regulatory frameworks is mixed, though where a regulatory timetable is in place, SMEs generally know they will need to act.
Shortage of time	Allocating time and resources to decarbonisation is a widely-reported issue, with SMEs consistently stating they are time poor or find it difficult to negotiate access to services.
Leasing of assets	The leasing of buildings, vehicles and equipment is repeatedly cited as a reason for lacking control over emissions. This is not always a total barrier, particularly in buildings where SMEs have good relations with landlords and plan to stay long term.

We struggle to make a profit and we're reluctant to take on further loans - we are still paying back debt taken on during the pandemic.

(Restaurant)

I know about the government targets and I'm aware what the impact on our business is likely to be, such as that we will have to phase out petrol and diesel vehicles, although that is some way down the line.

(Horticulture)

We have one site, comprising two units on an industrial estate. We lease the units, and any changes to the building structure or heating system used have to be agreed with the landlord, although he is fairly accommodating and will consider and discuss changes.

(Manufacturer of apparel)

I could look for the info on online government sites. I know the info is there, but I have not time to look for it. Just give me the info but don't ask me to look for it.

(Restaurant)

Findings - Policy analysis

- **There is currently no UK Government SME-specific decarbonisation plan or strategy,** with policies spread across a range of responsible parties, strategies, and frameworks. This has led to significant policy gaps, a lack of priority given to SME decarbonisation, and disjointed implementation.
- **The national-level response across the UK varies widely.** England typically falls short relative to Wales, Scotland, and Northern Ireland. For example, there is no national support and funding programme for SME building energy efficiency in England, other than the planned £5-6,000 Boiler Upgrade Scheme grant for low carbon heating. In Scotland, free audits and accompanying zero interest loans are available, up to £100,000, and there is a national Business Energy Scotland advice service.[2]
- **Further awareness-raising activity is required.** The UK Government has undertaken awareness-raising activity in the build up to, and following, COP26 with the Together for Our

[2] Administered by Energy Saving Trust

Planet Business Climate Leaders' Campaign,[3] the related Business Climate Hub and the Race to Zero campaign. While the Campaign has achieved an unprecedented 3,000 UK SME sign ups, this is only a very small fraction of the UK's SMEs.

- **There has been a lack of coordination between policies and within delivery programmes.** SME decarbonisation support in England has tended to be delivered through European Regional Development Fund (ERDF) projects which have been poorly coordinated with national decarbonisation policy. Coordination between different SME decarbonisation-focused ERDF projects has also been poor. ERDF is being replaced by the post-Brexit UK Shared Prosperity Fund, which may give a lower priority to SME decarbonisation.

Across many areas of SME decarbonisation, UK Government has, in recent years, been stronger in its policy ideas than its policy delivery. For example, final decisions are pending on the extension of the Energy Saving Obligation Scheme, non-domestic Minimum Energy Efficiency Standards, potential phaseouts of new fossil fuel heating systems, and various strengthened product standards, among other key policies. A 2019 Call for Evidence proposed an – as yet undelivered – auction mechanism for public sector support for SME building energy efficiency.

A UK Government policy gap exists around the decarbonisation of SME process equipment. Though there is support for large scale (principally non-SME) demonstrations of innovative low carbon process technologies, there is no national advice or direct funding support for SMEs wanting to make their day-to-day equipment and processes more efficient.

Policy Recommendations

There is no silver bullet in SME decarbonisation policy. The ideas below were met with wary acceptance, rather than great enthusiasm by the SMEs we spoke to. SMEs are focused on maintaining and growing their businesses. Nonetheless, the SMEs, and our policy analyses, are clear that a policy framework rooted in a joined-up approach is essential. That means ensuring support policies and regulation are planned to address the full SME customer journey from awareness to action and beyond; that support is provided that is appropriate for the SME's sector, and that support can be easily accessed by time poor SMEs through a common gateway.

> *'It needs all the things discussed to be in place: awareness and knowledge to be raised, which peer groups can help with, finance to be available and the infrastructure to be in place.'*
> (Horticulture)

A live, tactical government plan is needed to address the common challenges that apply to smaller businesses across all sectors in meeting Net Zero. This plan needs to cover how national policy will better align with activity under the UK Shared Prosperity Fund, and a clear regulatory and support framework. Political leadership could be provided by a new Net Zero [Small] Business Champion (a government appointment in the run up to COP26). Principal elements of the plan should include:

- A consistent and ongoing **awareness and enabling framework** to overcome SMEs' time and capacity barriers. An awareness campaign can build on the success of the Race to Zero and related SME Climate Hub initiatives, with **online carbon footprinting** as an initial engagement activity. A similarly branded **one-stop-shop contact point** should provide the bridge from awareness to support. A key element of support should be **subsidised SME decarbonisation advisory audits** which are regulated but sectorally adaptable. The one-stop-shop is principally a triage function: it acts as a single way in (phone/email/internet) for time-poor SMEs and provides front line advice. It then links to support provided by different organisations (on a place-based or sectoral basis), to peer networks, and financing from public or private sources.

[3] See Update to Green Finance Strategy – Call for Evidence (publishing.service.gov.uk) May 2022, P.11

- A **regulatory timeline** for SME decarbonisation. Our research shows regulation is the key driver for action. Government needs to deliver on plans for regulations for buildings (**heat decarbonisation and enhanced minimum energy efficiency standards**) with clear firm targets, not just ambitions. Future regulations could require energy monitoring and auditing for energy intensive SMEs, **minimum efficiency of process equipment** and new standards for waste handling.
- **Effective financing to support SME decarbonisation.** Public finance is needed to help SMEs decarbonise as upfront cost is a key barrier. An **auction mechanism for SME building energy efficiency support** has been proposed by the Department for Business, Energy and Industrial Strategy (BEIS) since 2019 and should be implemented. The British Business Bank should play a role in **developing the market for private sector green finance** and government should consider how to **remove credit-risk-related and other barriers** to finance offers to SMEs. Effective **fiscal incentives** need to cover the full range of decarbonisation investments.

Support needs to be effective and **relevant for different sectors** – our research emphasises how sectorally specific SME decarbonisation can be. The SME Net Zero Working Group, which was created by a BEIS policy team in preparation for COP26, bringing together sector representatives, could be a basis for ongoing public/private collaboration in building new support resources.

There is a need for **coordination and learning between national and regional initiatives** and between SMEs themselves. The results and deliverables of regional programmes should be disseminated and shared. Meanwhile, international experience shows that peer networks of SMEs can drive decarbonisation action. **Peer networks** can be delivered sectorally (particularly for specialist, energy-intensive sectors) or can be place-based, bringing together similar SMEs in a locality.

Finally, a recommendation for government policy analysis is to focus on the **leasing industries.** SMEs repeatedly cited the fact they leased buildings, vehicles, and equipment as a reason they cannot decarbonise themselves. A policy is in place for leased buildings (though it needs to be enhanced) but government policy also needs to consider how best to reduce emissions from leased vehicles and equipment.

1 Introduction

1.1 Aim and structure of this report

This report from Energy Saving Trust provides analysis to support the Climate Change Committee (CCC) in its advice to Government on business action for decarbonisation. Specifically, it will inform a report from the CCC on business action, to be issued in 2022, which will include a section on SMEs.

This report presents qualitative research from SMEs and evaluates the UK climate policies in place that currently impact on SMEs and suggests new or strengthened policies. Separately, data has been presented to the CCC summarising the actions needed from SMEs in different sectors to contribute to the Sixth Carbon Budget.

Data gathering to produce this report has consisted of, firstly, a review of actions needed for SMEs to meet the Sixth Carbon Budget. Secondly, SME decarbonisation policies were reviewed. We focused on policies in the UK, including across the devolved nations. Some international policies have also been considered, as was experience from local/regional SME decarbonisation support programmes. Thirdly, focusing on four specific SME sectors, chosen to broadly represent the range of SMEs, and corresponding to 2- and 3-digit Standard Industrial Classification groupings, we interviewed SMEs themselves as well as sector experts, to gather their views on current and potential policies. The priority sectors were as follows: horticulture; restaurants; electrical, plumbing, and other construction installation trades; and manufacturers of wearing apparel. A detailed review and analysis of the gathered data was then undertaken in order to identify gaps in current policies and to propose new, effective policies that could deliver greater levels of decarbonisation in line with the Sixth Carbon Budget.

The report is structured as follows. In the following paragraphs we set out the context and scope for the study, as well as a short review of previous research on barriers to SME decarbonisation (which is not a focus of this study). In Section 2 we present our methodology for the three areas of analysis/research work described above. In Section 3 we discuss policies in the UK/devolved nations, regional and international policies focusing on best practice and gaps identified, that has informed our recommendations. Section 3 also contains a detailed account of the policies that are particularly or specifically relevant to decarbonisation in our four priority sectors, based principally on our interviews with sector representatives/experts. In Section 4 we present a summary of the results of the research with SMEs. Section 5 sets out our policy recommendations, with supporting analysis. Appendix 1 presents review of the actions needed for decarbonising SMEs in line with the Sixth Carbon Budget, based on a sectoral analysis of the characteristics of SME businesses.

1.2 Context to this research

The CCC's advice on the Sixth Carbon Budget, which has been put into law by UK Government, sets a target for levels of GHG emissions for the period 2033-2037. The Sixth Carbon Budget analysis was the first produced by the CCC in the context of the UK Government's updated Climate Change Act target of Net Zero carbon emissions. The Sixth Carbon Budget Report was therefore the first detailed assessment of the UK trajectory for achieving Net Zero, identifying the need for significantly more ambitious policy to drive more rapid rates of carbon reduction in the UK economy. The publication of the Treasury Net Zero review (2021) provided an assessment of the economic implications of reaching Net Zero from a UK Treasury perspective (which crucially accepted the benefits of decarbonisation to the UK economy), while the UK Government's recent Net Zero Strategy (2021) set out the UK's pathway to Net Zero – the first time that a major economy had produced an overarching decarbonisation strategy of this type.

1.2.1 Definition of an SME and categories of SME decarbonisation activity considered in this study

SMEs are typically defined in the UK as businesses with under 250 employees. The European SME definition has been widely adopted in UK policy making, this sets a limit of 250 employees and sets further limits related to ownership (a small business which is a subsidiary of non-SME businesses is not an SME) and turnover (a limit of €50m/balance sheet of €43m).

The 2020 CCC report, *The Role of Business in Delivering the UK's Net Zero Ambition*,[4] identifies seven different roles for business in the transition to Net Zero:

- Decarbonising operations
- Fostering innovation
- Leveraging procurement
- Manufacturing and production
- Nudging employees and customers to make Net Zero decisions
- Building support for bold policy
- Setting international leadership

Research in this project focused on the first of these, "decarbonising operations," in other words the Scope 1 (direct emissions) and Scope 2 emissions (indirect energy-related emissions, principally from electricity use). We focus on the scope 3 emissions only in regard to our four priority SME sector groups where these sectors have a particular opportunity to influence their supply chain and customers.

Thus, we consider direct emissions from transport, building, business processes (principally manufacturing & construction or agriculture/land use); electricity use (and therefore indirect emissions) associated with building, transport, and process activities; and other categories of Scope 1 or 2 emissions where appropriate. Scope 3 emissions will be particularly important in situations where, for example, employees can be supported to change car-intensive commuting patterns, where a manufacturer might be able to select sustainable inputs (e.g., FSC paper/wood or avoid palm oil etc.) or where there is significant scope to nudge consumers to use and dispose of products differently. We were also cognisant that an increasing focus on the circular economy sees some businesses and policy makers looking across Scope 1, 2 and 3 emissions.

This research does not consider the role of SMEs in innovating low carbon products, for which a distinct set of policies will be relevant to only a subset of SME businesses. We also did not consider the role for SMEs in providing leadership for low carbon (beyond the companies' customers and suppliers) which is best considered as part of wider policies to promote awareness and social acceptance of Net Zero.

1.3 SMEs: the decarbonisation opportunity

The decarbonisation of SMEs can be framed in terms of the opportunities that it offers, both for individual businesses, and for industry sectors, cities, regions, and nations. Decarbonising SMEs and promoting energy efficiency in these businesses will be essential if the UK is to meet its Net Zero commitments. The British Business Bank estimate that between 43% and 53% of UK business emissions are from SMEs (which corresponds to as much as 36% of total UK emissions).[5]

[4] The-role-of-business-in-delivering-the-UKs-Net-Zero-ambition.pdf (theccc.org.uk)
[5] https://www.british-business-bank.co.uk/research/smaller-businesses-and-the-transition-to-net-zero/

1.3.1 Firm-level opportunities

The SME Climate Hub identifies three main reasons for joining its Climate Commitment: 'Grow your business;' 'Future-proof your business;' and 'Be part of the solution'.[6] The first two of these opportunities are consistent with conventional 'win-win' arguments, where making pro-environmental changes is presented as a way of securing economic benefits for the business. For example, the SME Climate Hub elaborates on how decarbonisation could facilitate growth opportunities by supporting cost-saving, branding, and differentiation strategies:

"It can be hard to think as far as 2030 when we're all building back from coronavirus. But cutting emissions can save your business money and give you a competitive advantage today. By joining us, you can display our logo, attracting the growing number of customers for whom climate change really matters."[7]

The argument about future-proofing is based on the idea that, by making changes early, SME owners and managers will be better-placed to respond to subsequent changes in regulations and markets (e.g., restrictions on the use of diesel and petrol vehicles; the decline of existing, carbon-intensive products and services and their replacement by low carbon alternatives). The third argument has a different emphasis. The accompanying text explains that "through this UN-backed commitment process, you're joining an international community of thousands of like-minded businesses." This kind of opportunity transcends the logic of securing short-term financial rewards. It can also be seen as an appeal to corporate social responsibility (CSR), on the part of SME owners and managers, an approach that has previously been directed primarily at larger businesses.[8] Evidence from previous studies indicates that CSR initiatives can be used by businesses to pursue a range of initiatives that combine altruistic and more narrowly commercial interests. Responses to this kind of opportunity are likely to be strongly influenced by the personal, professional, and organisational values of SMEs, and on how these are drawn upon by low carbon advisors and other intermediaries.[9]

Moving beyond the firm level, SME decarbonisation offers a variety of opportunities for industry sectors, as well as for cities, regions, and the UK nations.

1.3.2 Sector-based decarbonisation opportunities

Recent analysis by the CCC points to the next decade being critical if we are to achieve Net Zero with emissions needing to fall by almost 80% by 2035. While achieving these reductions represents a monumental challenge the same CCC analysis suggests that the falling cost of renewable energy and "a range of new low cost, low-carbon solutions in every sector" means that the cost of meeting Net Zero has now fallen to below 1% of GDP[10]. Simultaneously, 1.7m green jobs could be created this decade if the UK Government adopts the advice of the CCC in their Sixth Carbon Budget.[11]

The rapid transition to a low carbon economy presents opportunities in almost every sector. Our expert sectoral interviewees were eager to highlight the opportunities decarbonisation presented in their sector but with the caveat that for individual firms, particularly smaller SMEs, the transition could

[6] https://businessclimatehub.org/uk/#reasons_to_join

[7] ibid

[8] Spence, L.J. (2016) Small business social responsibility: Expanding core CSR theory. *Business & Society*, *55*(1): 23-55.

[9] Hampton, S., Blundel, R., Wahga, A., Fawcett, T. and Shaw, C (2022). Transforming small and medium-sized enterprises to address the climate emergency: The case for values-based engagement. *Corporate Social Responsibility and Environmental Management*. https://onlinelibrary.wiley.com/doi/pdf/10.1002/csr.2279

[10] https://www.theccc.org.uk/publication/sixth-carbon-budget/

[11] https://www.ukonward.com/reports/greening-the-giants/

prove challenging with support and financing likely required as well as efforts made to engage with businesses and encourage them to see the transition as an opportunity.

In horticulture, a new suite of government subsidies and incentives tailored towards environmental protection and land management over intensification, and paid to smaller farms and growers, could offer SME growers the opportunity to expand in new directions and see them rewarded for taking a more regenerative approach to food production. Support to replace farm vehicles and machinery with low carbon alternatives could see yields increase while reducing climate impacts. And a trend towards more local and seasonal produce was viewed by many SME interviewees as an opportunity to grow their business on a more stable footing.

For electricians and plumbers, the need to communicate the benefits of transitioning their business towards the installation of low carbon alternatives was evident. SMEs working in this sector reported being extremely busy as pent-up demand post-covid meant that they were not short of work and did not feel an economic push towards retraining. Nevertheless, many of the SMEs we spoke to recognised that they would have to change the way their business operated in time and the sector experts we spoke to were eager to frame the transition to low carbon heat and the need to retrofit homes and businesses as a significant opportunity. However, there is clearly work to do in signalling that change is coming quickly down the tracks and supporting existing workers in this and related sectors, as well as new entrants, to develop the skills needed to support the transition.

While the above examples are taken from the priority SME groups that we focused on in this research, the likelihood is that in every sector at least a degree of change is required. This need for change will present both challenges and opportunities and it is the role of sectoral intermediaries, peer networks, and each level of government to support businesses, and particularly SMEs, to overcome challenges and seize the opportunities.

1.3.3 Local, regional, and national decarbonisation opportunities

While sectors stand to benefit from the transition to a low carbon economy and society, the move towards Net Zero offers benefits to local and regional areas, something increasingly recognised by the leaders of ambitious local governments,[12] combined local authority areas,[13] the ambitions of City and Region Deals[14] and new collaborations across borders.[15]

From the examples referenced above, it is clear that local areas and regions are increasingly looking to capitalise on low carbon opportunities. In the Swansea Bay City Region, an area dominated by large, high-emitting industry such as Port Talbot steelworks and the refineries of the Milford Haven waterway, efforts are being made to make the region a leader in renewable energy, with a focus on innovative new technologies such as floating wind, wave, tidal and the production of hydrogen. The regions abundant renewable resources make it well-placed to benefit from the UK's need for renewable energy.

In the Greater Manchester Combined Authority, new devolved powers over transportation have allowed the 'Bee Network'[16] of integrated, low cost, low carbon public transport, coupled with support for active travel, to be proposed, with the first steps being taken to create a public transport system that works as effectively as Transport for London's network. If designed well, such a network could

[12] For example, 'The Preston Model' as described in Matthew Brown and Rhian E Jones' *Paint Your Town Red: How Preston Took Back Control and Your Town Can Too,* Repeater, 2021.
[13] https://www.wmca.org.uk/what-we-do/environment-and-energy/
[14] https://www.swanseabaycitydeal.wales/
[15] https://western-gateway.co.uk/
[16] https://beeactive.tfgm.com/bee-network-vision/

benefit SMEs and residents across the region, distributing the wealth and opportunities of Manchester more equitably. Taking this localised approach which capitalises on regions' existing strengths should be supported.

1.4 Barriers to decarbonising SMEs

Barriers to decarbonising SMEs have been studied extensively, and it was agreed that they would not be a primary focus for the empirical work conducted in this project. Previous SME research studies, across several policy domains, have tended to assess discrete 'barriers' and 'drivers' in terms of their capacity to deliver *firm-level* changes. Some of the key themes from this literature have been summarised below (Figure 1).

Figure 1. Improving SME performance – the 'barriers' and 'drivers' perspective[17]

Primary focus	***Common barriers***	***Common drivers***
Internal/intra-organisational-level	• Lack of awareness • Lack of specialist knowledge/technical skills • Limitations in absorptive capacity/organisational learning • Competing priorities/lack of time • Resource constraints • Access to capital • Short term tenancy agreements • Lack of strategic alignment	• Cost savings • Risk mitigation • Pro-environmental values • Staff morale
External/inter-organisational level	• Lack of trusted brokers/intermediaries • Information deficit regarding opportunities • Principal-agent/split-incentive problem	• Compliance • Competitive advantage • New market opportunities • Corporate reputation • Public subsidy

This structured approach has proved influential in earlier policy interventions, both in the UK and internationally. For example, efforts have been made to remove specific barriers, or to exploit particular drivers. Each of the barriers identified in Figure 1 has some empirical grounding and relevance to policymakers. However, the assumption that barrier-removal (or the application of drivers) will result in pro-environmental behaviour changes in SMEs remains problematic. This is because it fails to acknowledge the complexity of organisational decision-making, and the sheer heterogeneity of the SME population (i.e., almost six million separately managed enterprises with wide differences in size, sector/sub-sector, ownership structures, etc.) In practice, decision-making in SMEs tends to be less formalised than in larger corporations, more strongly influenced by personal,

[17] Adapted from: Blundel, R., & Hampton, S. (2021). How Can SMEs Contribute to Net Zero?: An Evidence Review (No. 51; State of the Art Reviews). Warwick: Enterprise Research Centre.

professional, and organisational values, and is influenced to a greater degree by local contexts.[18,19,20] Many SMEs can also be understood as having less control over their decision making than larger businesses (see further discussion on this point under Section 5 Policy recommendations below). Smaller firms also face specific challenges in relation to Net Zero targets. These include a lack of knowledge and understanding about climate change and how it relates to their own business activities (e.g., capacity to identify and quantify emissions, and willingness absorb the risks and uncertainties involved in making lower carbon choices).

In summary, while analysis of barriers (and drivers) is likely to remain an important component in Net Zero policymaking, it is important to recognise the limitations of this approach, and to acknowledge the difficulties in operationalising it at scale[21].

2 Methodology

2.1 Task 1: SME sectoral analysis

Task 1 involved, firstly, a high-level sectoral characterisation of SMEs which was then used to assess the required measures for decarbonisation for different sectors, in line with the Sixth Carbon Budget. Secondly, it involved identifying priority SME sectors for use in data gathering and analysis in the rest of the project.

2.1.1 Milestones for SME sectors to meet the Sixth Carbon Budget

To produce the broad SME groupings for this portion of Task 1 the research team consulted the top level of the UK Standard Industrial Classification (SIC) coding (see figure 2 below), and further grouped sectors based on the similarity of their operation and typical decarbonisation pathway and excluded those which had low SME representation (typically below 75%). The resultant groupings are displayed in the first column of Figure 3.

A number of 1-digit SIC groupings were not considered in this analysis. These were as follows:

- Mining and Quarrying
- Electricity, Gas and Air Conditioning Supply
- Water Supply; Sewerage, Waste Management and Remediation Activities
- Arts, Entertainment and Recreation

The first three of these groupings were excluded because SMEs represent a small proportion of the overall sector in terms of employment and turnover and the decarbonisation of these sectors will predominantly be led by the actions of larger enterprises. Arts, Entertainment and Recreation, while having strong SME representation in terms of employment as a proportion of overall sector employment has low turnover from SMEs and more significantly, has low emissions, both as a share of UK territorial emissions and per firm emissions. The typical decarbonisation pathway for most SMEs in this sector is also likely to be similar to a residential decarbonisation pathway.

[18] Fawcett, T. & Hampton, S. (2020). Why and how energy efficiency policy should address SMEs. Energy Policy 140, 111337. https://doi.org/10.1016/j.enpol.2020.111337

[19] Eadson, W. (2014). Towards a spatially and socially embedded approach to SME support for carbon reduction. *People, Place and Policy Online*, 8, 129–138.

[20] Schaefer, A. Williams, S., and Blundel, R. (2020). Individual values and SME environmental engagement. *Business and Society*, 59 (4):642-675.

[21] Smith, K.M., Wilson, S. & Hassall, M.E. (2021). Could focusing on barriers to industrial energy efficiency create a new barrier to energy efficiency? *Journal of Cleaner Production*, 310, 127387.

We identified milestones that each grouping would need to meet to align with the Sixth Carbon Budget, alongside a comparison of the policies and targets set out in the UK Government's Net Zero Strategy. This analysis was produced and submitted separately to the Climate Change Committee (an example set of milestones can be seen in Figure 4).

As well as the decarbonisation trajectory described in the CCC Sixth Carbon Budget to identify milestones we also used additional material provided by the Climate Change Committee's recent progress reports to UK and devolved governments, relevant sectoral supporting research (i.e., *Deep-Decarbonisation Pathways for UK Industry*) and recommendation letters. To identify the policies, the targets, deadlines and policies set out in the UK Government's Net Zero Strategy and other recent relevant government policy documents (e.g., Food Strategy, Industrial Decarbonisation Strategy, Transport Decarbonisation Plan, Hydrogen Strategy, British Energy Security Strategy) were incorporated.

The output of this work is a set of excel spreadsheets for each grouping charting key milestones for each sector to achieve decarbonisation at a scale and pace commensurate with achieving net zero by 2050 which were submitted to the CCC. These milestones are presented alongside the timelines described by the CCC and UK Government.

Figure 2: Standard SIC Classifications

Standard Industrial Classification (SIC) explained

The UK SIC is a 4-digit classification system for businesses and their economic activity. An SIC code tells us what a business does. While the SIC offers a 4-digit level of granularity, for the purpose of this study it was determined that a mixture of 2 and 3-digit SIC groupings provided sufficient detail and precision while allowing for robust analysis (e.g., per firm emissions are not available at the 4-digit SIC level). At the highest, 1-digit SIC level, all businesses are grouped into 20 condensed sections for emission reporting eg:

A Agriculture, forestry and fishing
B Mining and quarrying
C Manufacturing
…

Full hierarchy available here.

Figure 3: SME Groups used in this analysis and comparison to CCC Sector or theme

SME Group	Related CCC Sector or theme
Agriculture (including forestry and fishing)	Agriculture and land use
Transport	Surface transport
Construction and Manufacturing	Manufacturing and construction/waste

Business Services (including Wholesale Trade, Information and Communication, Financial and Insurance Services, Real Estate Services, Professional, Scientific and Technical Services)	Business (theme)/buildings/surface transport/waste
Human Services (including Retail Trade, Accommodation and Food Service Activities, Education, Other Services)	Business (theme)/buildings/surface transport/agriculture and land use/waste
Health and Social Work	Buildings/surface transport/waste

The targets, deadlines and policies set out in the UK Government's Net Zero Strategy and other recent relevant government policy documents (e.g., Food Strategy, Industrial Decarbonisation Strategy, Transport Decarbonisation Plan, Hydrogen Strategy, British Energy Security Strategy) were also incorporated. The output of this work is a set of excel spreadsheets for each grouping charting key milestones for each sector to achieve decarbonisation at a scale and pace commensurate with achieving Net Zero by 2050. These milestones are presented alongside the timelines described by the CCC and UK Government.

Figure 4: Example (Transport) of indicative sectoral decarbonisation milestones presented alongside timelines described by the CCC and UK Government.

	2019-2022		2025		2030
	UK Greenhouse gas emissions (MtCO2e) - 522		UK Greenhouse gas emissions (MtCO2e) - 445		UK Greenhouse gas emissions (MtCO2e) - 316
Transport			Widespread EV charging infrastructure and new EV sales accounting for XYSYSYS. 6% of the total car fleet and 2% of the total van fleet made up of ZEVs. SMEs in all sectors take up EVs as part of the natural replacement cycle utilising government financial support until EVs reach close to cost parity.		[By 2032] 100% of sales of cars and vans are fully electric. UK Government phaseout date set at 2030 (PHEVs allowed until 2035). BEVs make up 64% of all cars and 68% of all vans on the road. 24% of the total car fleet and 14% of the total van fleet made up of ZEVs. SMEs increase their uptake of EVs ahead of the 2030 phaseout of new vehicles.
		Large-scale trials for HGV alternative fuels are up and running	SMEs keen to demonstrate their commitment to decarbonisation take part in early low carbon HGV/HDV trials. Likely to be SMEs whose vehicles travel relatively short distances from a depot (e.g. bus operators) in the early stages.		9% of the total HGV fleet made up of ZEVs
	Government is identifying opportunities to reduce the substantial embodied carbon footprint of the automotive sector.				
Red = relevant CCC Balanced Pathway and related CCC recommendations	**Blue = relevant recent UK Government policy (e.g., Net Zero Strategy, Industrial Decarbonisation Strategy, Transport Decarbonisation Plan, Hydrogen Strategy, British energy security strategy**	**Black = indicative milestones for SME groupings**			

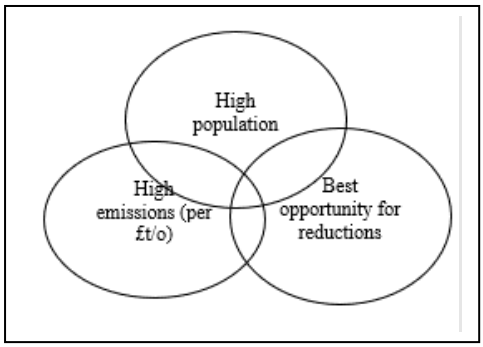
Figure 4 (cont.).

2035		2040		2045	2050
UK Greenhouse gas emissions (MtCO2e) - 191 **Grid decarbonised - unabated gas for electricity generation phased out**		**UK Greenhouse gas emissions (MtCO2e) - 105**		**UK Greenhouse gas emissions (MtCO2e) - 38**	**UK Greenhouse gas emissions (MtCO2e) - 0**
All new cars and vans must be zero emission at the tailpipe. 53% of the total car fleet and 40% of the total van fleet made up of ZEVs		End the sale of all new, non-zero emission road vehicles by 2040. Biofuels are phased out from cars and vans by 2040.		Any remaining fossil fuel vehicles operated by SMEs are replaced. Government could consider a scrappage scheme or regulation to help achieve this goal. SMEs who operate vehilces as part of longer supply chains transition to supplying goods and services more locally, shortening supply chains and the emissions associated with transport.	No fossil fuel vehicles allowed on the road. 17% reduction in overall car miles travelled.
Zero-emission vehicles (ZEVs) to make up 96% of new sales of HGVs, buses and coaches by 2035. Representing 170,000 zero-emission HGVs and coaches (approximately 33% of the fleet). 37% of the total HGV fleet made up of ZEVs	SMEs operating HGVs/HDVs now typically replace their fleet vehicles with low carbon alternatives. Increasingly SMEs are opting for electrification, hydrogen or low carbon fuels not derived from biological material ahead of the biofuel phasout in 2050.	Phaseout of diesel HGVs. Zero-emission vehicles (ZEVs) to make up almost 100% of new HGV sales by 2040. Representing 67% of the fleet by 2040.		SMEs who operate vehilces as part of longer supply chains transition to supplying goods and services more locally, shortening supply chains and the emissions associated with transport.	Biofuels are phased out in HGVs by 2050 as they are best used in other sectors.
Most (80%) existing HGVs realise efficiency savings of 13-22% due to measures including retrofitting aerodynamic improvements and eco-driving training.					

2.1.2 Identifying sectoral priority groups for study in the rest of the project

This task focused on identifying four sectoral priority groups for detailed study and survey work in the rest of the project. The aim in focusing on these priority groups was to enable a detailed assessment of typical policy opportunities for a significant number of SMEs, while recognising the heterogeneity of SMEs. As such, broadly, the aim was to identify groups of SMEs at the intersection of the Venn diagram shown in Figure 5: higher emitting SMEs, in sectors with a significant SME population and with a significant opportunity for emission reduction. We then applied a range of other criteria and sought views from the CCC before creating the final list.

Figure 5: Key criteria used in identifying sectoral priority groups



To identify the priority groups, around 100 possible second and third level SIC groupings were created. As well as applying the criteria shown in the Venn diagram (Fig 5), we also narrowed down this list by considering:

- SME groups which were less likely to have been reached through previous SME low carbon programmes (including the extent to which previous research had been undertaken on a given group). This assessment was based on both a review of the existing literature and the expertise of our academic partners.
- Whether the decarbonisation pathway for the sector was likely to be significantly aligned with either the domestic or large business sectors (e.g., we found the forestry sector tended to be a few large SMEs, who would align closely with the predominantly non-SME businesses).
- The SME group's ability to influence households and other businesses (i.e., considering scope 3 emissions – see discussion in *Context* above)
- The diversity of selection between the four groups, including ensuring that we had:
  - A representation of sole traders and micro-businesses in at least one group
  - A balance of more social and technical measures in the decarbonisation pathway.

We applied these criteria using a quantitative and qualitative scoring matrix, and – based on this - we identified 6 possible priority groups which were put forward to the CCC. From the six, the CCC selected the following priority groups – **horticulture; restaurants; electrical, plumbing, and other construction installation trades; and manufacture of wearing apparel.**

A narrative account of the rationale for selecting these four groups is provided below.

2.1.3 Rationale for choosing the four priority groups

Horticulture

Emissions from land use and agriculture more generally are significant in terms of emission share (10% in 2020)[22] and present challenges as decarbonisation pathways will be complex[23] and may differ across different sub-sectors and regions[24]. Efforts to reduce agricultural emissions have remained fairly static

[22] https://www.theccc.org.uk/publication/2021-progress-report-to-parliament/

[23] https://www.mckinsey.com/industries/agriculture/our-insights/reducing-agriculture-emissions-through-improved-farming-practices

[24] Eric Audsley, Mike Wilkinson, 2014, What is the potential for reducing national greenhouse gas emissions from crop and livestock production systems?, In: Journal of Cleaner Production, Volume 73, 2014, Pages 263-268 https://doi.org/10.1016/j.jclepro.2014.01.066

over the past decade[25]. While crop production and animal agriculture have been well-researched, less attention has been paid to horticulture.

The horticultural sector comprises three main segments, vegetables, fruit and ornamental plants and flowers. The sector is dominated by SMEs who are also responsible for a significant share of the turnover (according to the BEIS Business Population Estimates), smaller producers often operating in partnership with larger firms. This is particularly common in the case of multiple retailer supply chains, where firms coordinate home production and imported products to ensure year-round supply.

Horticultural firms operate across the UK, in specialist regions (e.g., East Anglia for field vegetables, Herefordshire and Kent for tree fruit, Scotland's Tay and Dee Valleys for berries). In addition, many horticultural businesses have been exempted from previous subsidy regimes (e.g., the European Common Agricultural Policy excluded farms under five hectares[26] and farmers receiving the Single Farm Payment cannot produce fruit, vegetables, or table potatoes). The fact these agricultural subsidy regimes are undergoing a period of significant transition following the UK's exit from the European Union, likely towards a system that rewards farmers and growers for taking climate positive actions, offered another interesting framing for our interviews with SMEs and sector experts. Technology, including AI and robotics is promising in terms of decarbonisation but there is uncertainty about the extent to which it can support SMEs in this sector in achieving Net Zero. The role of agri-robotics in reducing fertiliser and food waste, for example, is the focus of research centres such as the Lincoln Institute for Agri-Food Technology (LIAT)[27].

Restaurants

This SME group offered an opportunity to explore another sector with complex emission profiles. Restaurants have premises which must be lit and heated. Kitchens tend to rely on gas for cooking, have multiple high-energy use appliances[28] and produce significant amounts of food waste related to its storage, preparation, and consumption[29]. Restaurants are a large and geographically dispersed sector (according to the BEIS Business Population Estimates). Restaurants are also an interesting group because they engage more closely with their customers than many businesses and have the capacity to inform the public and influence decisions that are made around diet and sustainability[30]. For example, many restaurants see championing local and seasonal produce as central to their business, while others are actively promoting vegetarian and vegan menu choices (a trend identified in both our expert and SME interviews). The Sustainable Restaurant Association also report increasing interest in their Food Made Good and One Planet Plate sustainability schemes[31]. Our academic experts informed us that most restaurants rely on specialist wholesalers to supply raw ingredients, while franchised outlets are supplied directly, offering another interesting angle on the challenge of reducing Scope 3 emissions in the sector. These food supply chains are experiencing significant challenges at the present time, including large price increases and shortages[32].

[25] https://www.theccc.org.uk/wp-content/uploads/2020/12/Sector-summary-Agriculture-land-use-land-use-change-forestry.pdf Figure M.7.2

[26] https://www.gov.uk/government/news/reminder-to-smallholders-about-minimum-claim-size

[27] https://www.lincoln.ac.uk/liat/

[28] S. Mudie, E.A. Essah, A. Grandison, R. Felgate, 2016, Electricity use in the commercial kitchen, In: *International Journal of Low-Carbon Technologies*, Volume 11, Issue 1, Pages 66–74

[29] https://wrap.org.uk/resources/report/overview-waste-hospitality-and-food-service-sector

[30] https://restaurant.org/education-and-resources/resource-library/state-of-the-industry-sustainability-is-back-on-the-menu/

[31] https://thesra.org/our-work/

[32] National Restaurant Association, *2022 State of the Restaurant Industry,* https://restaurant.org/education-and-resources/resource-library/state-of-the-industry-sustainability-is-back-on-the-menu/

Electrical, plumbing, and other construction installation

Tradespeople with electrical and plumbing skills will play a critical role in communicating low carbon technologies to consumers and other businesses and installing those technologies. Most homeowners and other smaller building owners continue to receive advice on new heating systems and other retrofit improvements from tradespeople. Therefore, ensuring professionals are equipped with the right skills to advise on low carbon alternatives as well as having the skills to undertake low carbon retrofit is important. Retrofit and RMI (repair, maintenance, improvement) is largely delivered by SME builders and directly employed tradespeople.[33] A focus on this sector was also of interest as it provided a good opportunity to engage with smaller businesses, including sole traders with no employees who made up 78.7% of businesses engaged in Specialised Construction Activities, which includes electrical, plumbing and other construction activities, according to BEIS Business Population Estimates.[34] As most sole trader contractors in this sector operate on-site using hand-held equipment, with their base at home (see S3.3 below) there are limited building and process related emissions attributable solely to their business. Transport and waste are more significant: switching to electric vehicles and reducing waste are important decarbonisation steps for this sector.

Manufacture of wearing apparel

The research team were keen to include a manufacturing sector. The market share of UK-based clothing manufacturers compared to overseas manufacturers remains small with the four largest manufacturers accounting for only 6.2% of market revenue combined.[35] Despite this, the UK's fashion and textiles sector is currently in a growth phase, and with new businesses emerging, and a strong focus on sustainability[36,37]. However, the sector has not had the same level of scrutiny in terms of SME decarbonisation as other manufacturers, despite growing awareness of fashion's impact on the climate and environment.[38] Calls for greater circularity, shorter supply chains and campaigns against 'fast fashion' have drawn public attention to more locally-produced and higher-quality products.[39] Nonetheless, most clothing remains a commodity product and decarbonisation research has tended to focus on the actions of large international producers and the more prominent global brands.[40] We were keen to understand whether these same forces were in play at the SME level in the UK. As well as this focus on supply chain, waste, and circularity issues, we were also eager to explore whether reported issues in other manufacturing sectors were common to this sector. For example, a challenge for general energy audits is that they often cannot provide good advice on the opportunity to improve energy efficiency of specialist manufacturing equipment.[41]

2.2 Task 2: Policy Mapping

Task 2 involved a series of steps to review the policies in place or being considered by government that drive or significantly impact on SME decarbonisation. The review considered the following:

[33] https://www.fmb.org.uk/resource/building-on-our-strengths.html

[34] https://www.gov.uk/government/statistics/business-population-estimates-2021 (data on the numbers of businesses with no employees was not available at the 3-digit SIC level)

[35] IBIS World 2021 *Market Research Report*. Available at: https://www.ibisworld.com/united-kingdom/market-research-reports/clothing-manufacturing-industry/

[36] https://www.statista.com/outlook/cmo/apparel/united-kingdom?currency=GBP

[37] https://www.ukft.org/about/

[38] Peters, G., Li, M. and Lenzen, M., 2021. The need to decelerate fast fashion in a hot climate-A global sustainability perspective on the garment industry. *Journal of Cleaner Production*, *295*, p.126390.

[39] https://wrap.org.uk/taking-action/textiles/initiatives/textiles-2030

[40] Niinimäki, K., Peters, G., Dahlbo, H. *et al.* 2020. The environmental price of fast fashion. *Nat Rev Earth Environ* **1,** 189–200.

[41] LEAP4SME 2021. Deliverable 2.3. *Energy audits market overview and main barriers to SMEs*. https://leap4sme.eu/resources/deliverables/

- High-level policy plans of central government and the devolved nations that significantly referenced SME decarbonisation.
- National policies (either UK wide or at devolved nation level) that are targeted at or significantly impact on SME decarbonisation, affecting SME businesses in all sectors, or a large number of sectors. These may be policies that are either SME targeted or those that are targeted at all businesses. We included in this review policies that government has consulted on, but not introduced. The spending of Energy Regional Development Funding (ERDF) and replacement UK Shared Prosperity Funding as a policy in England is discussed in its own section.
- A more limited review of the SME decarbonisation policies in other European countries.
- Regional level SME support programmes, particularly those funded by the ERDF programme which have provided a range of support services. While not strictly "policies" these regional projects demonstrate approaches that could be scaled up for national delivery as part of a policy programme.
- Wider policies that affect or drive decarbonisation specifically in our four SME priority groups (e.g., food waste related policies that are relevant to our *horticulture* and *restaurants* target groups).

The following approaches were used to gather this data:

- A desk review carried out by Energy Saving Trust of policy documents from the UK Government and the three devolved governments.
- A review of European level policies based on studies undertaken in the European LEAP4SME project which focuses on knowledge sharing on policies around SME energy efficiency, and which Energy Saving Trust are currently helping to deliver.
- A review of lists of ERDF projects produced by DLUHC and reviewing websites and other information provided by those projects.
- Expert interviews with nine trade association representatives or academic researchers with insight in our four target sectors. The list of interviewees has been supplied to the CCC.

Electrical, plumbing, and other construction installation activities	**Horticulture**	**Manufacturing of apparel**	**Restaurants**
The Chartered Institute of Plumbing and Heating Engineering (CIPHE)[42]	University of Lincoln academic specialising in Retailing, Food Marketing, Supply Chain Relationships.	Academic from Nottingham Business School (NBS), Nottingham Trent University specialising in Small Business and Supply Chain Management.	UKHospitality
Federation of Master Builders	Renewable Energy and Climate Change department of the National Farmers Union		Sustainable Restaurants Association/Net Zero Now
University of Oxford academic specialising in low-carbon housing refurbishment.			Food Foundation

[42] The CIPHE is the professional body for the UK plumbing and heating industry. Its members include students, trainees, trainers, micro-SMEs, designers, consultants, and lecturers. It is a member of the Construction Industry Council (UK) and Engineering Council (UK).

2.3 Task 3: SME interviews

Task 3 comprised qualitative one-to-one telephone interviews with senior personnel in SMEs in the key target segments to explore their awareness, attitudes and actions taken regarding emissions reduction and to gauge their reaction to policy options.

A total of 24 interviews were conducted, six from each of the four priority segments. As these were qualitative interviews the intention was not to provide an aggregated view from a representative sample but rather rich qualitative data to provide an indication of key trends, concerns, opportunities, and an overview of the priority SME groups' feelings towards the policy options discussed. This approach was requested by the CCC. Such a form of analysis is not intended to provide a representative sample. Rather, the CCC noted that there have been recent large scale quantitative surveys which have been undertaken of SMEs. Our study was designed to provide the in-depth insight that can only come from qualitative research.

Figure 7: Interview conducted per sector

Interviews conducted with SMEs	
Segment	**Number of interviews conducted**
Self-employed tradespeople in the construction sector (electricians and plumbers)	6
Restaurants with 5-49 employees	6
Horticulture businesses with 5-49 employees	6
Manufacturers of apparel with 10-250 employees	6
Total	**24**

Businesses in each of the relevant sectors were sourced from business databases, such as Dun & Bradstreet.

These businesses were contacted via email and telephone to identify the most appropriate personnel to take part in the research. Respondents were required to have a good overview of their company's sustainability policy or operations. That was typically the Owner, Managing Director, or another senior Director, although in some medium sized companies the respondent was the Operations Manager.

Recruited personnel were sent a confirmation email with a policy scenario for their sector (see below).

Subsequently, interviews were conducted by telephone, lasting around 30 minutes. The interviews were exploratory in nature, although a semi-structured topic guide was employed by interviewers.

The interviews explored awareness of sustainability issues and government targets, how much SMEs prioritise carbon emissions reduction, what actions (if any) have been taken to increase energy efficiency and reduce emissions, perceived drivers of action in that area and barriers to action.

The core of the interview was a discussion of the policy scenarios. Working SME managers do not necessarily have a great deal of insight on potential government decarbonisation policies. To enable an insightful interview, therefore, a scenario document was prepared presenting a fictional example of a business in their sector that is impacted by a range of current or potential SME decarbonisation policies. One scenario was developed for each of the target sectors. The aim was to use the scenario

to stimulate discussion about how well the different policies featured might work in reality. The policies that featured in the scenarios were based on those identified from policy mapping and discussions with sector experts produced in task 2. The four finalised scenarios are presented in S4.7.

Lastly, we asked if SMEs had any of their own ideas for new policies.

In summary, the topics explored in the interviews were as follows.

Figure 8: Data collected through semi-structured interviews

Data Collected through semi-structured interviews *see policy scenarios used in interview in Section 4 below*	
Background information and opportunities for emissions reduction	Key business activities. Opportunities for emissions reduction – whether building(s) are owned, whether heating system can be changed, whether vehicles are used, energy intensive business processes. Opportunity to influence employees e.g., installation of renewables or energy efficiency measures, diet, supply chain.
Awareness	Awareness and understanding of government emissions targets. Level of prioritisation and commitment regarding sustainability issues and emissions reduction.
Actions taken in response to current policy environment	Whether the company has engaged with any low carbon/energy efficiency/electric vehicle etc support initiatives. Support provided. Whether the company is aware of having complied with any low carbon/environmental regulation recently.
Reaction to scenarios	Initial reactions to potential policy scenarios and reasons. What is liked/felt to be positive about the scenarios? What is disliked about the scenarios? How effective are the scenarios likely to be in supporting SMEs towards Net Zero emissions? Why? Would the policy be effective in driving carbon reduction in their business? Would any adjustments to the policy make it more effective? Would the policy be likely to have any unforeseen consequences?
SME ideas	Does the SME have any ideas for a new type of policy that could support Net Zero in their sector?

Interviews were conducted in April 2022.

3 The Policy Framework

3.1 National policy framework: review of policy practice from across the UK

3.1.1 UK Government Strategic Framework

No UK government has a specific SME decarbonisation plan or strategy. Instead, policies relating to SME decarbonisation are spread across a range of strategies and frameworks. Most of these policies fall broadly under decarbonisation/Net Zero or circular economy headings. Transport decarbonisation actions may be covered by air quality strategies. Other policies relevant to SME decarbonisation – particularly for specific sectors – fall under other headings. For example, the recommendations of the National Food Strategy produced by an independent committee for UK Government are highly relevant to decarbonisation of our restaurant and horticulture priority sectors.

Core relevant strategic documents from UK Government therefore include: the Net Zero Strategy; Industrial Decarbonisation Strategy; Heat and Buildings Strategy; Transport Decarbonisation Plan; the Hydrogen Strategy; Our Waste, Our Resources: A Strategy for England.

Figure 9: Strategy statements related to SMEs

Strategy	Key statements relevant to SMEs
Heat and Buildings Strategy (2021)	References the Boosting access for SMEs to energy efficiency (BASEE) competition which explores new business models to stimulate the SME energy efficiency market. An evaluation of the BASEE programme and the funded projects is due in late 2022. States, "We plan to provide targeted support to improve the energy efficiency of SME sector buildings." References existing finance products for energy efficiency in larger non-domestic buildings and notes that, for smaller properties and particularly those occupied by SMEs, the availability of finance for such projects is limited. References lenders and industry leaders (such as Bankers for NetZero and the Green Finance Institute) working to understand the types of financial products that will be most effective for businesses, particularly SMEs.
Industrial Decarbonisation Strategy (2021)	The focus of this strategy is on larger businesses in industrial clusters. Regarding businesses that do not fall in these categories, the strategy states, "We will review how small and dispersed industrial sites can adopt these solutions, with measures being considered including audit programmes, efficiency standards, expert advice and training for SMEs, expanded funding schemes and finance options." It references action to support businesses to make greener choices: "We want to help private companies combine their purchasing power by facilitating the formation of voluntary buyers' alliances." The aim is for businesses to benefit from economies of scale while supporting demand for low carbon products.
Transport Decarbonisation Plan	The Transport Decarbonisation Plan includes a commitment to encourage businesses to reduce emissions from their employees' travel journeys through Commute Zero. "We will explore the introduction of a new sustainable travel reward scheme supported by businesses, community organisations and charities."
Hydrogen Strategy	Some mention of SMEs as innovators within the hydrogen economy. By the late 2020s smaller scale and medium scale projects "in clusters and off-clusters are envisaged." A planned hydrogen town by 2030 would presumably involve the SMEs in that community.
Our Waste, Our Resources: A Strategy for England	The strategy supports models for businesses to come together to learn from each other through "resource efficiency clusters." The strategy cites the 2017 example of Leeds City Region LEP's Resource Efficiency Fund which

	provides specialist advice and financial support to help businesses with energy, water, and waste.

SME decarbonisation will also be influenced by wider UK Government policy and strategy for SME growth and investment. The UK Government has a target for increasing procurement from SMEs by government and the 2019 BEIS plan for meeting this target lists several SME-focused stakeholders within government, including, "the BEIS Small Business Minister; the Crown Representative for Small Business; the BEIS SME Champion; the Cabinet Office Small Business Policy Team; the BEIS SME Policy Team."[43]

A key consideration for the wider strategic framework for SME business support is the new, post-Brexit, UK Shared Prosperity Fund, the replacement for ERDF. This is discussed under S3.2 below.

3.1.2 Devolved nation strategic framework: example of Wales

Across all the devolved nations much of the UK government strategic framework will be relevant, though the extent of this will vary with each nation's devolution settlement. To give an example of a devolved government, in **Wales**, the passage of the Well-being of Future Generations Act 2015 and The Environment (Wales) Act 2016 (since amended following CCC advice) commit Wales and the Welsh Government to reducing emissions to Net Zero by 2050 and consider the well-being of future generations in all of their (and other public bodies') decision-making. Our policy mapping has identified the following range of strategies with relevance/reference to SME decarbonisation:

- Net Zero Wales Plan (2021) Manufacturing future for Wales: framework (2021) which encourages small businesses in Wales to use the UK Government's Together For Our Planet campaign and resources available through the UK Business Climate Hub; encourages all Welsh businesses and industry to explore how low or zero carbon transport can be incorporated within their business models and the setting of specific targets; References the transition from European Rural Development Fund (ERDF) funding for research and innovation in 2021-22, noting that it will develop new support mechanisms to build on current programmes.
- The Manufacturing future for Wales: framework (2021) which refers to Business Wales availability/support for entrepreneurs and SMEs (non-sector specific).
- Llwybr Newydd: the Wales Transport Strategy (2021) which states that the Welsh Government will work with businesses and the UK Government to create a more sustainable system of distributing goods in Wales (e.g., encouraging more freight to be moved by rail, e-bikes, and e-cargo bikes).
- Future Wales (2021). The national development framework for Wales which briefly describes SME landscape and recent changes in Wales.
- Circular economy strategy (2021) references Wales's involvement in an ERDF-funded Circular Economy for SMEs project and identifies provision of support for businesses through "Business Wales who have dedicated sustainability advisers and WRAP Cymru who provide information and support on resource efficiency. We have also established a Circular Economy Fund for businesses which supports investment in supporting the use of recycled materials in products."

3.1.3 Regulatory Framework

Regulations targeting SMEs for decarbonisation can be characterised as falling into two categories: those targeted at consumers and businesses (e.g., standards for products that are used across homes

[43] BEIS small and medium enterprises (SMEs) action plan (publishing.service.gov.uk) P.7

and offices); and regulations targeted at businesses, large and small. We did not find evidence of decarbonisation-relevant regulations targeting only SMEs (obviously there are enabling policies and incentives that are SME specific).

Some decarbonisation regulations - such as the requirement for Energy Saving Opportunities Scheme (ESOS) audits - exclude SMEs and it is important to consider the policy rationale for this exclusion; in the case of ESOS a recent consultation proposed bringing some larger or energy-intensive SMEs into scope of the regulations. Other regulatory policies are targeted at all businesses but may be more or less likely to impact on SMEs. For example, the current non-domestic minimum energy efficiency standards targeting highly inefficient rented buildings in England and Wales may be more likely to impact SMEs than non-SME businesses (because businesses with over £50m turnover may be less likely to occupy F or G-rated rented premises).

Some specific current regulatory policies and planned or proposed developments relevant to businesses that we discuss and build from on in our policy recommendations are as follows:

Figure 10: Current and planned regulations

Area of decarbonisation policy	Examples of current or planned regulation	Government proposals for extension of regulation
Operational emissions		
Overall operational energy and carbon performance	ESOS applies to large businesses requiring 4-yearly audits Climate Change Levy (CCL)/ Climate Change Agreements (CCAs) applied to energy intensive sectors.	Recent ESOS consultation discusses extending ESOS to medium sized enterprises and/or energy intensive smaller companies.
Products	With the UK's exit from the European Union there is the potential to go further with regard to product policy. This is an explicit ambition of the UK Government who stated in the 10-Point Plan[44] that they would "launch a world class energy related products policy framework. We will push for products to use less energy, resources, and materials, saving carbon and helping households and businesses to reduce their energy bills with minimum effort." The UK Government showed a desire to put this ambition into action as part of the BEIS 2020 call for evidence on energy-related products, but their response published in March 2021[45] indicated that this would be a future ambition and the UK would, for now, seek to align with the latest EU standards which were themselves updated in 2019[46].	Both the BEIS and DEFRA consultations and subsequent responses (in the case of BEIS) have referenced strengthening of product policy to include a greater focus on resource efficiency, repairability, durability and recyclability (among other circularity-focused priorities).

[44] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/936567/10_POINT_PLAN_BOOKLET.pdf

[45] https://www.gov.uk/government/consultations/draft-ecodesign-and-energy-labelling-regulations-2021

[46] https://ec.europa.eu/commission/presscorner/detail/en/QANDA_19_5889

	Separately, DEFRA have consulted on a Waste Prevention Programme for England[47] which considered product design and resource efficiency among other circularity-focused policy areas. A response has yet to be published.	
Buildings	Minimum Energy Efficiency Standards (MEES) in England focused on worst performing rented buildings. Government has consulted on new mandatory operational energy use reporting/benchmarking scheme for >1000m2 offices. As it stands this can be largely assumed to exclude SMEs, due to the scale of buildings involved.	UK Government has consulted on an extension of MEES to bring all rented premises below EPC "B" in scope. The Heat and Building Strategy discusses an extension of non-domestic MEES to owner-occupier premises. The consultation on a mandatory operational rating refers to a possible extension of the scheme to more sectors – this could bring in scope more SMEs. Though not discussed in the consultation, there would be potential to bring buildings below the 1000m2 threshold in scope.
Transport (including agricultural and construction vehicles/plant)	The 2030 ban on sales of ICE cars and vans. Removal of permission to use (tax-discounted) red diesel from some sectors. Building Regulation requirements for charge points in newbuild non-domestic construction.	Future policies (to be Net Zero compliant) will necessarily require a full abolition of red diesel. The ICE ban could be extended to agricultural and construction equipment (e.g., tractors, telehandlers) as technical developments allow these to move away from diesel.
Process energy Including heat recovery from processes (Crosses over buildings and process energy)	Energy intensive sector pay the CCL and sectoral CCAs. Air quality regulations may drive fuel switching in some areas.	Future area-based regulation (e.g., plans for a "Hydrogen Town" discussed in the Hydrogen Strategy or Industrial Clusters) could see mandatory fuel switching in certain communities.
Emissions associated with waste, supply chain and use of product/service		
Waste & Circular economy	In Scotland food businesses who consistently generate more than 5kg a week are affected by the regulations to separate food waste. Those below this threshold, or who are defined as 'rural' under the Scottish Government classification, are not currently required to separate their food waste for collection.	The 2019 Scotland Food Waste Reduction Action Plan references the need for improved measuring and monitoring of food waste. The Action Plan discusses consulting on the potential for a mandatory Food Waste Reduction Target.

[47] https://consult.defra.gov.uk/waste-and-recycling/waste-prevention-programme-for-england-2021/

3.1.4 Financing and incentives

Existing fiscal incentives

Some of the key existing financial incentives relevant to SMEs focus on capital expenditure. The Autumn Budget 2021 introduced business rate incentives that apply in England. A 100% "improvement relief" scheme is due to be introduced offering 12 months relief from higher business rate bills caused by any improvements to an existing property, depending on eligibility. This relief will run from 2023 to 2028 in the first instance. The Government will consult on the exact terms of the scheme.

The Autumn budget also introduced business rate exemptions for plant and machinery used in onsite renewable energy generation and storage (such as rooftop solar panels, wind turbines, and battery storage), and a 100% relief for eligible low-carbon heat networks with their own rates bill, to support the decarbonisation of non-domestic buildings. These schemes will also run from 2023 to 2028.

In addition, the UK government introduced a 2022/23 Retail, Hospitality and Leisure Business Rates Relief scheme in the 2021 budget which will provide eligible, occupied, retail, hospitality, and leisure properties with a 50% relief, up to a cash cap limit of £110,000 per business.

There had previously been Enhanced Capital Allowances (ECA) for energy and water efficient equipment, but this ended in April 2020. Following the ending of this policy, an action which was widely opposed by stakeholders, the list of eligible measures on the ECA list was continued as an Energy Technologies List, but without the link to the tax incentive.[48]

In addition to these recent incentives in March 2021, to help with the economic recovery from the COVID-19 pandemic, the Chancellor announced two new temporary first year allowances – the super deduction (which gives qualifying tax relief at 130%) and the SR allowance. These allow businesses' qualifying equipment[49] a much higher tax deduction in the tax year of purchase than would otherwise normally occur. Both mechanisms apply to plant and machinery. This is alongside the ongoing Annual Investment Allowance (AIA) which already gives 100% relief for costs of qualifying plant and machinery in the tax year of purchase – which is currently set at £1 million per business for businesses investing more than £200,000 in plant and machinery.

Climate Change Levy (CCL) /Climate Change Agreements (CCAs)

The CCL is a tax on commercial energy use (electricity and gas) applicable to organisations operating in various sectors and aims to promote energy efficiency across industry.

A 2020 evaluation of the CCA programme states, "The CCA scheme is a voluntary agreement (VA) scheme which aims to mitigate the effect of the Climate Change Levy (CCL) on energy- and trade-intensive industry. Firms in eligible sectors can choose to participate under sector-specific 'umbrella' CCA agreements, administered by sector associations. In addition to maintaining the competitiveness of such industry, it aims to deliver significant energy efficiency improvements. The scheme offers

[48] The 2019 report on the Government stakeholder workshops held at the time of the ending of the ECA states, "Most participants felt that the removal of the ECA will negatively impact demand for energy efficient products by removing a key incentive." The Energy Technology List: beyond the Enhanced Capital Allowance scheme (publishing.service.gov.uk) The ETL as a list was still felt to be useful: Participants generally felt that the role of the scheme as an independent, credible source of information on energy-efficient products was its most important benefit.

[49] 'Qualifying equipment' is not linked exclusively to decarbonisation with office equipment and ladders eligible as well as solar panels and EV chargepoints.
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/967202/Super_deduction_factsheet.pdf

discounts on CCL in exchange for firms meeting scheme requirements related to targets for carbon or energy efficiency improvements."

Certain energy intensive SMEs are in scope of the CCL, and SMEs may be effectively discriminated against because their limited scale and capacity makes it difficult for them to participate in CCAs. We are grateful to UCL researcher Peter Roscoe who has provided information on the bakery sector, as follows:

"Many, probably most, SME bakeries are subject to the Climate Change Levy (CCL). However, relatively few (about 100) are participating in the Climate Change Agreement (CCA) negotiated by BEIS and the Craft Bakers Association. This is down from around 300 - before the eligibility conditions (for all CCAs) were made more onerous in 2013 (the largest industrial bakery enterprises are part of a different CCA). Feedback from small bakery entrepreneurs is that the information and monitoring requirements (for instance to separate out energy use for production and other uses) are too much of a barrier, even though the 90% discount on the CCL is attractive." Source: Peter Roscoe, PhD Student, UCL Energy Institute, May 2022.

Based on this example, Mr Roscoe has made suggestions for how CCL discounts could be made more appropriate for SMEs, which we discuss in S5.6.3 below.

Grant funding

Compared to England, at national level, much greater financial support for operational decarbonisation specifically for SMEs is available in the devolved nations, particularly Northern Ireland (see country by country account in Section 3.1.6 below). Some examples of current financial support provided for different areas of SME decarbonisation are discussed below:

Building decarbonisation, including installation of more energy efficient products/equipment

- In Scotland zero interest loans of up to £100,000 are available for energy efficient improvements following completion of an audit.
- In England and Wales, owners of homes and small non-domestic properties are able to access £5-£6,000 funding through the Boiler Upgrade Scheme for installation of heat pumps in buildings.
- In Northern Ireland NISEP (the ECO equivalent programme) allocates 20% of its funding for SME energy efficiency projects.

Transport

- Support is available across the UK through the plug-in grant[50] which – for vans - offers maximum grants of £2.5k/35% (whichever is the smaller) of the purchase price for small vans and a £5k/35% grant for large vans.
- An EV infrastructure grant is available to SMEs across the UK to install electric vehicle (EV) charge point infrastructure for their operations and staff. The grant can be used alongside the Workplace Charging Scheme which covers 75% of the cost of the purchase and installation of up to 40 EV charge points.
- In Scotland, Transport Scotland offers funding for an interest-free e-bike loan scheme open to households and businesses for the purchase of e-bikes (including e-cargo bikes)[51].

[50] https://www.gov.uk/plug-in-car-van-grants

[51] https://energysavingtrust.org.uk/grants-and-loans/ebike-loan/

Industrial Process carbon saving including energy efficiency fuel switching, waste heat recovery from processes

BEIS currently have in place or have recently completed, a number of innovation projects to support innovation in industrial process energy/carbon saving: the Industrial Energy Efficiency Accelerator; the Industrial Energy Transformation Fund (IETF); the Industrial Fuel Switching competition; the (completed) Industrial Heat Recovery Scheme. However, the large scale of the supported projects, and their innovation focus, likely make them of limited application for SMEs.[52]

There is no national funding support or advice in England for companies wanting to install more energy efficient process equipment.

Waste and Circular Economy

We did not find any national UK Government policies for England supporting a circular economy, though ERDF funded programmes at regional level have supported SMEs in this area. In Scotland, administered by Zero Waste Scotland, the Circular Economy Investment Fund is a £18m funding opportunity for SMEs and organisations who have already tested their circular model, and are looking for investment to further develop this to create a more circular economy. The scheme offers £50k to £1m grants. Issues around circularity, waste, resource efficiency and product policy are all policy areas undergoing consideration and revision by the UK Government. Both DEFRA[53] and BEIS[54] have recently consulted on these issues with a series of policy announcements expected over the coming months and years. The recent interest in these policy areas has been partly initiated by the UK's exit from the European Union and a desire to 'go above and beyond' the existing EU regulations, which have themselves been recently updated.[55]

3.1.5 Other Underpinning (not directly SME targeted) policies

The UK government has supported private sector innovation in delivering SME financing and support. The Boosting Access for SMEs to Energy Efficiency (BASEE) competition ran in 2019 and 2020 with programmes funding the development of new business models that encouraged the take up of energy efficiency projects by SMEs.

3.1.6 Enabling policies and national financing policy frameworks

UK Government/England

Over the last decade, support to SMEs in England has been more piecemeal than elsewhere in the UK, with SMEs more likely to receive advice and support from local or regional initiatives (see *City Regions* below). The UK Government has tended to offer funding support through competitions focused on particular sectors, much of this geared towards innovation. There are clear and substantial policy gaps compared to the other nations, including:

- No national grant or loan programme for SME building energy efficiency beyond £5/6,000 boiler upgrade scheme.
- No free or subsidised national audit or advice service (though work through the SME Climate Hub initiated in the build up to COP26 could have the potential to build into this).
- Lack of direct funding or advice support for process energy improvements.
- No national support for SME waste reduction or circular economy projects.

[52] As beneficiaries of the process improvements, SMEs may very well participate in these projects as providers of the innovation.
[53] https://consult.defra.gov.uk/waste-and-recycling/waste-prevention-programme-for-england-2021/
[54] https://www.gov.uk/government/consultations/draft-ecodesign-and-energy-labelling-regulations-2021
[55] https://ec.europa.eu/commission/presscorner/detail/en/QANDA_19_5889

Against this it should be noted that many of these areas are delivered on a patchwork basis through ERDF-funded initiatives at local/regional level, and, hopefully going forward, will be supported in the Shared Prosperity Fund, which we discuss below. There is certainly, though, a lack of national co-ordination. While effective advice can be provided by either a regional or national programme, we believe that a system of advice provision that is centrally coordinated but works alongside regional experts to aid delivery offers the best model to support SMEs.

Across many areas of SME decarbonisation, UK Government has, in recent years, been stronger in its policy ideas than its policy delivery. A 2019 Call for Evidence[56] proposed an – as yet undelivered – auction mechanism for public sector support for SME building energy efficiency; BEIS recommitted to this support in the 2021 Heat and Building Strategy,[57] but there has been no further development. The same 2019 Call for Evidence proposed ideas for supporting the private finance market. These do not seem to have been taken forward. BEIS's July 2021 consultation on the large-company-focused Energy Saving Obligation Scheme (ESOS) discussed extending mandatory ESOS audits to medium sized SMEs but no decision has yet been taken. The 2020 Energy White Paper stated that the future trajectory for the non-domestic minimum energy efficiency standards (MEES) will be EPC B by 2030, which should affect the many SMEs that rent their premises. No announcement has yet been made to implement this. And though the planned phase out of new oil and gas heating by 2035 has been announced as an ambition there is no formal regulatory timetable in place – our research shows that this is what SMEs will pay attention to.

Wales

The Welsh Government have committed to strengthening the 'foundational economy' and have long supported business development via Business Wales, an arms-length Welsh Government and EU-funded advice service which is able to offer advice and financing for general business investment. Investments in energy efficient processes and general sustainability are eligible. However, the future of this support scheme is unclear as ERDF funding will soon come to an end. In recent years Wales has also seen the creation of several City and Region Deals and other multi-council agreements, all of these bodies state that they want to support local economies and small businesses and help the regions in question decarbonise. These City and Region Deals could prove to be an effective means of supporting SMEs to decarbonise.

As the Business Wales service is likely to soon undergo a period of change, it would be beneficial to consider whether a parallel service or a subsidiary of the Business Wales offer could be more clearly focused on SME decarbonisation (rather than more generalised support), with dedicated programmes, financing, and advice available and a dedicated awareness raising, and marketing campaign implemented to drive a wider cohort of SMEs to the service.

Scotland

In Scotland businesses are able to contact Business Energy Scotland, previously known as the Energy Efficiency Business Support Service from Zero Waste Scotland, and access free and impartial advice (including free energy audits), be signposted to further services and, if they are an SME, begin the process of receiving a Scottish Government-funded zero interest loan of up to £100,000 to pay for energy efficient upgrades. As an example of Scottish devolved transport decarbonisation support, Scottish Government funding is also available for the safe disposal of non-compliant vehicles within

[56] Energy efficiency scheme for small and medium sized businesses: call for evidence (publishing.service.gov.uk)

[57] The 2020 Heat and Building Strategy stated, "We plan to provide targeted support to improve the energy efficiency of SME sector buildings. As part of the Spring Statement 2019 we published a call for evidence on a new Business Energy Efficiency Scheme for SMEs. A summary of responses from this consultation was published in June 2020. We have commissioned further research to inform policy development."

20km of the Scottish cities which are soon to implement low emission zones (Glasgow, Edinburgh, Aberdeen, or Dundee). Grants are also available to cover up to 80% of the cost of a retrofit solution with up to £5k per light commercial vehicle.

Similarly, to Wales, a series of City and Region Growth Deals, delivered across the country through a partnership of national and local government and other regional players including higher and further education, enterprise agencies, and the voluntary and private sectors, have been implemented in Scotland aimed at strengthening local economies and supporting the transition to a low carbon economy. These growth deals have inspired the development of a growing network of new Regional Economic Partnerships across Scotland. Innovative companies and entrepreneurs can also access financing via the Scottish National Investment Bank.

Northern Ireland

In Northern Ireland businesses are able to access some support through the Northern Ireland Sustainable Energy Programme (NISEP). NISEP – Northern Ireland's equivalent to GB's Energy Company Obligation (ECO) – is funded through a small levy on electricity bills in Northern Ireland and is used to fund energy efficiency programmes. 20% of NISEP funding is available to support business energy efficiency. Invest NI is the principle economic development agency for Northern Ireland and operates as a non-departmental public body of the Department for the Economy. Invest NI is able to offer tailored support and advice through their Energy and Efficiency team[58], including funded sustainability reports and technical audits which can provide recommendations on energy, heat, waste and waster savings, signposting to further support, resource matching services and grant funding. A Resource Efficiency Capital Grant of up to £50,000 is available to help businesses invest in energy saving equipment that will drive productivity. This applies to any project that will reduce the consumption of water, raw materials, or waste production. The rate of support is based on company size – a maximum of 10% of total eligible project costs for large businesses, 20% for medium and 30% for small and micro.

Energy and climate policy has been moving at pace in Northern Ireland with the publication of a wide-ranging Energy Strategy and Energy Action Plan as well as the recent passage of a Climate Bill for Northern Ireland. The Energy Action Plan states that the Department for the Economy (DfE) intends to launch of a non-domestic energy efficiency support scheme for NI businesses (delivered with Invest NI). Separately, the Action Plan states that DfE, along with the Northern Ireland Housing Executive intends to develop low carbon heat demonstrator projects, with up to £5 million of support for the decarbonisation of heat in homes, communities, and businesses.

In Northern Ireland, the challenge will be building on the positive work of Invest NI and the NISEP programme and delivering on the commitments made as part of the Energy Strategy.

Local authorities and City Regions

As well as the ERDF-funded regional SME support programmes (see 3.2.1) local councils and City and Growth Regions have also implemented SME support. For example, in London the London Business Hub is able to offer impartial advice on a range of business issues to SMEs. As part of this offering SMEs can access support to take action on climate change through the Climate Hub.[59] Local Enterprise Partnerships have also worked to offer support to SMEs. The UK Government's announcement of the creation of Net Zero hubs in England should look to strengthen the decarbonisation-focused support on offer to SMEs. The Local Government Association supports local authorities with SME support,

[58] https://www.investni.com/support-for-business/reduce-waste-and-save-energy
[59] https://www.businesshub.london/resource/climate-hub/

reskilling, and the creation of economic development plans through their economic growth support hub.[60]

3.2 Examples of international best practice

Research undertaken by the Energy Saving Trust for the European Leap4SME project identified some of the following European best practice examples:

In both **Malta** and **Poland** companies are subsidised to buy energy auditing services from auditors who are trained to a national qualification. In both countries, awareness campaigns have been run with success to drive uptake of the auditing programme. The campaign was delivered by the national energy agency and involved extensive communications through the media. In Poland regional events are used as well as provision of guidance for SMEs. The energy professionals engaged in the programme have undertaken almost 60,000 consultations in Poland since the scheme's launch in 2017.[61]

An example of a successful incentive scheme is the Austrian AWS Investment Bonus programme. This programme provides non-repayable grants to subsidise companies' investments, with investment in environmentally friendly technologies (among other priority areas) subsidised at double the standard rate – investments in green technologies, digitization, health, and life science receive a subsidy of up to 14% of acquisition costs (versus a 7% subsidy for investments outside these areas). The scheme is open to all business types and sizes. From its launch on 1st September 2020 until the end of December 2020, 67,800 applications were received, 93% of which came from SMEs.

A new, 2022, funding programme from the government agency responsible for SME competitiveness in **Portugal** supports industrial companies of any size to: adopt low carbon processes and technologies; adopt energy efficiency in industry; and incorporate renewable energy and energy storage. There is €705 million funding, of which €200 million must be allocated to SMEs.[62] This contrasts with England where there is no funding support for SME process energy efficiency, beyond innovation competitions.

Peer Networks

Various EU countries have implemented peer networks for SMEs, with a focus on energy efficiency opportunities and eco-innovation. In Germany, 'Learning Energy Efficiency Networks' comprise 10-15 regional businesses in specific sectors (e.g., food, healthcare, metal products), and are convened by an external facilitating agency such as the state innovation agency, the Fraunhofer Institute.[63] Members receive audits and expert advice, share experiences, and best practice, and together set targets for energy reduction over a period of typically 3-4 years. Membership is not SME exclusive, and in Germany the typical threshold for membership is energy expenditure of at least €0.5 million per year, with members contributing typically €6000-8000 pa. Evaluations have found that businesses benefit substantially from financial savings, with an average of 30% IRR across 30 pilot networks in the early 2010s.[64]

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[60] https://www.local.gov.uk/our-support/financial-resilience-and-economic-recovery/economic-growth-support-hub

[61] LEAP4SME-D2.2-Mapping-SME-energy-policies-in-Europe.pdf

[62] https://www.iapmei.pt/Paginas/Descarbonizacao-da-Industria.aspx

[63] Dütschke, E., Hirzel, S., Idrissova, F., Mai, M., Mielicke, U., Nabitz, L., 2018. Energy efficiency networks—what are the processes that make them work? Energy Efficiency 11, 1177–1192. https://doi.org/10.1007/s12053-017-9606-4

[64] Koewener, D., Nabitz, L., Mielicke, U., Idrissova, F., 2014. Learning energy efficiency networks for companies – saving potentials, realization and dissemination, in: Eceee 2014 Industrial Summer Study on Energy Efficiency. Proceedings. Wohlfarth, K., Eichhammer, W., Schlomann, B., Mielicke, U., 2017. Learning networks as an enabler for informed decisions to target energy-efficiency potentials in companies. Journal of Cleaner Production, Achieving Low/no Fossil-carbon

Nonetheless, Energy Efficiency Networks (EEN) are not a stand-alone solution. A 2021 review of an industrial EEN for SMEs in Sweden found that, "the EEN cannot overcome all the major barriers with present condition," and the authors argue that wider policies are needed. The researchers found – of the EEN activities, that "the energy audit was the most favourable function among EEN participants, followed by lectures on energy efficiency, consultancy with energy experts, presentation of realized measures and network meetings for experience sharing."[65]

3.3 ERDF and the UK Shared Prosperity Fund

3.3.1 ERDF

European Regional Development Fund (EDRF) – the European Union's regional support programme aiming to achieve European cohesion through greater inter-regional wealth equality – has been the major funding route by which UK Government has provided SME decarbonisation support. With Brexit, the UK's participation in ERDF has come to an end, though projects supported under the programme will continue to run until 2023.[66] ERDF programmes focus extensively on SMEs as a key driver of regional wealth generation and since 2007 the European Commission has allowed a specific focus in such programmes on decarbonisation – both in terms of supporting SMEs to reduce their own emissions and building the products and services for a low carbon economy. In the UK, ERDF investments under the 'low carbon economy' priority axis amounted to £525.8 million (20% of the budget) between 2014 and 2022,[67] while 'Enhancing the competitiveness of SMEs' received £1.046 billion (39% of the overall budget).[68] Many of the other eight ERDF funding programmes will also have impacted positively on decarbonisation.[69]

In the UK, the ERDF Operational Programme is written by The Department for Levelling Up, Housing and Communities and its predecessor departments. Decisions about funding specific local projects is devolved to Wales, Scotland, and Northern Ireland, and in England, to Local Enterprise Partnerships. *Note, where Wales, Scotland and Northern Ireland have delivered nation-wide ERDF-funded programmes focused on SME decarbonisation we consider these as national policies, and they are considered/discussed in our "national policies" section and lists.*

ERDF funded SME decarbonisation projects often involved: working with a local university to provide technical expertise; a combination of financial and non-financial support for the SMEs to improve energy and resource efficiency; a sectoral focus, usually on a business sector concentrated in the region concerned. Projects have focused on decarbonising the SME's core operations, developing innovative low carbon goods and services, or a combination of the two (and in recent years a focus in

Economies based upon the Essential Transformations to Support them 163, 118–127. https://doi.org/10.1016/j.jclepro.2016.11.128

Dütschke, E., Hirzel, S., Idrissova, F., Mai, M., Mielicke, U., Nabitz, L., 2018. Energy efficiency networks—what are the processes that make them work? Energy Efficiency 11, 1177–1192. https://doi.org/10.1007/s12053-017-9606-4

[65] Noor Jalo, Ida Johansson, Fayas Malik Kanchiralla, Patrik Thollander,
Do energy efficiency networks help reduce barriers to energy efficiency? -A case study of a regional Swedish policy program for industrial SMEs, Renewable and Sustainable Energy Reviews, Volume 151,2021,111579, ISSN 1364-0321, https://doi.org/10.1016/j.rser.2021.111579

[66] Any unspent funding beyond this period risks being decommissioned by the EU.

[67] Funding under this heading has been substantially directed to SMEs in line with DLUHC ERDF priorities: "the key development needs and opportunities that will be prioritised for European Regional Development Fund are shared across territories: market opportunities in the low carbon goods sector, the need to develop holistic whole-place carbon reduction plans, localised renewable energy/micro generation and scope to develop products and services to improve energy efficiency in domestic and nondomestic buildings and within Small and Medium Sized Enterprises apply across all territories." ERDF_Operational_Programme.pdf (publishing.service.gov.uk) P.127

[68] See: CBP-8527.pdf (parliament.uk) P7

[69] Eg Research and innovation priority stream

some projects on circularity, which cuts across these categories). Financial support typically includes grants (with various eligibility criteria and match-funded requirements), while non-financial support encompasses information and advice services (in various forms), consultancy (usually including free energy audits), and knowledge sharing peer networks.

While the ERDF-funded projects develop and test a wide range of different SME decarbonisation support activities, and are able to bring benefits of regionally- and sectorally- targeted approaches, the following challenges can be identified in the delivery of these projects:

- **Short project timeframes**: These are, typically 3-4 years for the delivery of a support programme, which may lead to limited impact given the many barriers to SME decarbonisation, and the fact that projects often involve partners with limited experience in this area, particularly during the early stages of the project.[70]
- **Lack of learning between projects**: there has been very limited knowledge exchange between projects. Historically, evaluations have been ad-hoc, informal and not shared in the public domain, with little effort to extrapolate and combine results. Evaluation guidance has been updated in recent years, and project-level summative assessments are now made available. However, project-level results (e.g., CO2 saved) are not centrally combined, and idiosyncratic methodologies prevent simple calibration.[71] At a practical delivery level, resources like information and audit templates have been reinvented multiple times across multiple projects, rather than shared and built on.
- **Lack of co-ordination with other SME decarbonisation policy making**: ERDF has been managed by DLUHC regional and local government focused civil servants, and there seems to have been little co-ordination with BEIS's decarbonisation focused civil servants.[72]
- **Geographic variation and 'patchwork' support framework:** The result of multiple regional projects providing intermittent free audits and funding support for low carbon measures means that it is difficult for companies to know whether they would qualify for support, or not (similarly it was difficult for business support services to know the landscape). This is especially problematic in England, where LEP boundaries overlap.
- **Possible 'crowding-out' of private activity**: The sudden announcement of significant subsidised financing offers, or provision of free energy audits, may negatively impact commercial consultancy/auditing/footprinting services or private financing offers in that area. For example, our sectoral research identified a growing use of commercial carbon auditing/labelling services in the restaurant sector, which may find it difficult to compete with a substantial publicly funded scheme in a local area. Other ERDF programmes may be designed to grow the market for private support. The impact on private markets should be a significant focus for planning and evaluation of future "Shared Prosperity Fund" programmes.

Examples of relevant ERDF projects are discussed where relevant in our Section 5 analysis below.

[70] Britton, J., Woodman, B., 2014. Local Enterprise Partnerships and the low-carbon economy: Front runners, uncertainty and divergence. Local Economy 29, 617–634. https://doi.org/10.1177/0269094214548664

[71] Hampton, S., 2018. Policy implementation as practice? Using social practice theory to examine multi-level governance efforts to decarbonise transport in the United Kingdom. Energy Res. Soc. Sci. 38, 41–52.

[72] To give one example, BEIS's 2019 21-page *Energy efficiency scheme for small and medium sized businesses: call for evidence* makes no mention of ERDF. That's despite – at the time - ERDF being the major funding stream for SMEs to decarbonise including addressing energy efficiency. https://www.gov.uk/government/consultations/energy-efficiency-scheme-for-small-and-medium-sized-businesses-call-for-evidence

3.3.2 Beyond ERDF: The Shared Prosperity Fund

The £2.6 billion UK Shared Prosperity Fund (UKSPF) has been formally announced by the UK Government. The intention of the UKSPF (as well as the Levelling up Fund and Community Renewal Fund) is to replace the funding that was made available through EU structural funds, many of which targeted and benefited SMEs.

The UKSPF has proven controversial, especially from the perspective of the devolved nations who argue that they stand to receive less funding in the near term than they would have done through EU funding. Concerns have also been raised that the UK Government is seeking to bypass the devolved governments and instead work with local and regional policymakers, MPs, and local businesses.

The government published the prospectus for the UKSPF in April 2022: The UKSPF has three investment priorities: Communities and Place, Supporting Local Business, People and Skills which have 2, 3 and 4 subsidiary objectives, respectively. Only one of these 9 subsidiary objectives directly mentions decarbonisation, and then only in part: Under the Supporting Local Businesses heading, one of the three objectives is: "Increasing private sector investment in growth-enhancing activities, through targeted support for small and medium-sized businesses to undertake new-to-firm innovation, adopt productivity-enhancing, energy efficient and low carbon technologies and techniques, and start or grow their exports."

The next step is for lead authorities to submit investment plans in line with the prospectus which they need to do between 30 June 2022 to 1 August 2022. Plans will be assessed in the autumn, with the first projects approved in October for a funding period to run from the current financial year to FY2024/2025.

The Department for Levelling Up, Housing and Communities will oversee the Fund at UK level, working with other departments and in particular when bespoke interventions are proposed. Lead local authorities are responsible for administering the scheme at a local level (for example, in places in Scotland and Wales or the mayoral combined authorities).

3.4 Information gathered on relevant wider policies in priority sectors

This section presents the additional information on sector-specific policies relevant to decarbonisation in each of our priority sectors. This information was principally gathered through interviews with sector representatives.

3.4.1 Electrical, plumbing, and other construction installation activities

Decarbonisation challenges:

Traders in this sector are often single tradespeople without dedicated premises[73]. As such scope 1 and 2 carbon emissions – and therefore decarbonisation options – for SME operations are limited. Transport is likely to be the principal area where direct carbon reductions can be achieved, through a switch to electric vehicles. A portion of the operational emissions of SMEs in this sector can be attributed to waste (e.g., plastic offcuts), something which has not previously been considered extensively. Discussions with sector representatives focused principally on the wider influential potential in this sector, particularly to promote installation of low carbon technologies in home renovations and non-domestic buildings. Traders in these sectors have a key influencing role in persuading consumers and business owners to choose low carbon heating, and other installed low carbon systems (e.g., solar photovoltaics).

[73] According to a BEIS statistical release (May 2018), 82% of businesses with no employees in construction worked from a domestic address.

Sector experts spoke extensively on the challenges of achieving this influencing role, linking it to wider challenges in the industry. Firstly, a challenge is the perceived need for retraining and refocusing on low carbon technologies: in some parts of the country, the demand for low carbon heating systems is relatively low, and in other parts of the country, installers are in high demand and there is little need for tradespeople to look to technologies beyond those they currently install or maintain.[74] However, looking at the industry from a policy perspective, there is clearly a skills shortage among installers: ensuring installers and other tradespeople are qualified in low carbon heating options and technologies is essential for the Net Zero trajectory. There is a collective lack of trust from customers in builders/tradespeople in their advice on low carbon technologies; this has been compounded by the transient nature – and sometimes limited success – of low carbon funding schemes (e.g., the former Green Homes Grant). Standardisation of qualifications is important.[75] Wider, current operating challenges that we were told limit possibilities for developing business responses to decarbonisation opportunities include rising energy and fuel costs and supply chain shortages.

Wider policies/policy areas relevant to decarbonisation in this sector:

The wider relevant policies are therefore principally those associated with increasing the sector's capacity to drive, and meet, customer demand for low carbon technologies. Thus, relevant policies include, for example, MCS standards for fitting building integrated renewable technologies, and the PAS2035 domestic retrofit process standard. Policy supporting access to training in new technologies is also important, though achieving uptake of this training may require innovative approaches and promotion of the opportunities the training will unlock (the Scottish Government's Supply Chain Development Programme which promotes and supports businesses to meet decarbonisation needs is discussed further in S5.8 below). Regarding waste in the sector, while there was no mention of specific reporting – or other – requirements by sector representatives, the Construction (Design and Management) Regulations require construction workers to minimise waste more generally.

Decarbonisation policy recommendations:

Options for transport decarbonisation could include additional financial assistance to purchase an electric vehicle. While this support is likely to resemble previous and existing financing programmes for domestic consumers the higher price point of commercial electric vehicles means that larger sums will need to be offered and likely over a longer time period. Supporting businesses in this sector with standardised information and advice for consumers could be an opportunity. Promotion of and access to training and accreditation programmes is also key. UK Government should consider offering subsidised or fully funded training for existing tradespeople and encourage the uptake of accreditation by requiring it to work as part of government-funded schemes. This training should focus on 'soft' skills as well as more traditional training, enabling tradespeople to provide good quality advice on low carbon alternatives. In time, consideration should be given to requiring all tradespeople in this sector to acquire updated accreditation that demonstrates their proficiency in low carbon technologies and their ability to give good quality advice to consumers.

3.4.2 Horticulture

Decarbonisation challenges:

The sector is very diverse, with carbon-emissions dependent on geographies and the types of produce cultivated and the associated growing conditions, storage, and packaging requirements. Emissions from growing will vary between grower sub-sectors and be dependent on multiple factors. When it

[74] Anecdotal evidence suggests a rapidly growing demand for heat pumps over the last two years, however, further research is needed on this, and the response to the Boiler Upgrade Scheme will be a critical indicator.

[75] It was highlighted by a stakeholder that for plumbing with the minimum requirement in Scotland being an SVQ Level 3 compared to an NVQ Level 2 in England and Wales.

comes to the preservation and storage of produce, the emissions profile is dependent on when and where products are consumed and sold.

Building efficiency, heating and lighting requirements are relevant to protected crops and ornamentals – typically cultivated in glasshouses. Fossil fuel boilers are used in some parts of this sector not just for heating but also to generate CO2 which helps plants to grow. For other types of horticulture (e.g., open soft fruits, top fruit/fruit trees, root vegetables) larger scale land use means, for example, more use of larger diesel-powered agricultural equipment. Packaging use and waste, and food waste are important considerations for this sector. Comparatively large-scale low carbon technologies can be options in some parts of this sector – e.g., anaerobic digestion plants can reduce food waste and provide low carbon heating. For greenhouse-based horticulture, LED lighting and stacked growing are technologies that are increasingly adopted which can deliver lower carbon emissions.

Decarbonisation of this sector is also tied to political decisions on where we get our food from (imports, local/seasonal production) and future political decisions and trends post-Brexit. For example, interviewees highlighted relevant geo-political developments including the UK trade deal with Australia[76] and the European gas/Ukraine crisis pushing up fertiliser (as well as energy) costs.[77]

There are several trade and representative bodies (e.g., National Farmers Union (NFU), Horticultural Trades Association, Royal Horticultural Society, The Chartered Institute of Horticulture, Soil Association): we interviewed the NFU.

As with other sectors a main barrier to decarbonisation is limited access to finance, especially for investments that require a large upfront cost, and lack of time.

Wider policies/policy areas relevant to decarbonisation in this sector:

The proposed ban and phase out of gas boilers and oil heating will be a significant policy for growers growing protected crops. Carbon footprinting and auditing in this sector can be much more complex than in other sectors due to the significant diversity in the sector, both in terms of the products grown, and in terms of the diverse sources of carbon emissions in this sector (including Scope 1 emissions associated with land use, and very diverse Scope 3 emissions). Therefore, creating a standardised carbon audit (footprinting) approach is difficult. Nonetheless, commercial carbon footprinting/auditing services do target this sector which – our experts indicated – are found useful by many growers.[78]

Sector specific policy recommendations:

In this sector, much of the advice and information is provided through peer networks present at the national[79] and local/regional level in the form of growers' associations.[80] The Agriculture and Horticulture Development Board (AHDB)[81] offers advice and online resources to support growers, including, for example, in relation to high fertiliser costs.[82] Peer networks in this sector have an important dissemination and support role and are well placed to share guidance and information on available support. Because many growers interact with large retailers via aggregators (wholesalers),

[76] Brexit: UK signs free trade deal with Australia - BBC News
[77] https://eciu.net/analysis/reports/2022/farming-fertiliser-and-fossil-fuels
[78] Cool Farm Tool | An online greenhouse gas, water, and biodiversity calculator
[79] British Growers Association | Representation, Promotion & Administration
[80] West Sussex Growers' Association (wsga.co.uk)
[81] The AHDB is a statutory levy board, funded by farmers, growers and others in the supply chain to help the industry succeed in a rapidly changing world.
[82] Mitigating high fertiliser prices | AHDB

an important role for aggregators in this sector could be in setting standards for members.[83] The Institute for Agriculture and Horticulture is also exploring setting up special interest groups to support knowledge exchange between farmers.[84] More generally, peer-to-peer advice and sharing of good practice has been explored in the Sustainable Farming Incentive pilot scheme[85] (one of several government-led environmental land schemes).[86]

SMEs specialising in protected crops are likely to benefit from financial support to purchase and install low-carbon heating technologies (e.g., ground source heat pumps) or anaerobic digestion. Similar financial support to invest in growing technologies cover a broader spectrum of produce, beyond protected crops. However, further research could determine SMEs' willingness and financial ability to consider new technology (e.g., automation) and under what circumstances.

While restrictions to regulations around the use of red diesel permit its use for agricultural (and other purposes), Net Zero implies that the sector will ultimately have to switch to electric vehicles and/or biofuel options for its transport and machinery. While regulation and plans for a complete ban on red diesel is necessary in the long run, in the short to medium term it will be important to raise awareness and understanding of alternative fuel sources.

Waste created in horticulture can vary in type, frequency and in volume, depending on what is produced and how it reaches the customer. Horticulture Wales provides practical guidance and tools to support businesses in managing and reducing waste.[87] Taking one example, a large proportion of plant/flowerpots are made from a single-use plastic with black plastic posing a particular challenge – often ending up in incineration – as it cannot be identified by scanning technology used for recycling. Possible solutions in this instance could include a financial incentive or reward for reused/returned pots.[88] Still, waste reduction and recycling in the sector can be achieved by using peat-free growing media such as coir, softwood pine bark, wood fibre and composted organic wates.[89] While Defra has proposed to end the use of peat in 2028 for commercial growers,[90] the NFU, among others, consider the need for financial support or incentives to encourage the use and production of alternative growing media.[91]

While skills and training were not discussed by sector experts, it was confirmed in the Agricultural Transition Plan 2021 to 2024[92] that the [newly established] Institute for Agriculture and Horticulture[93] will provide farmers with a recognised pathway for training across agricultural and horticultural careers.

3.4.3 Manufacturing of apparel

Decarbonisation challenges:

The main challenges impacting SME decarbonisation efforts in clothing manufacture include the culture of fast fashion – generating excess waste – and the extent to which UK regulation and laws can

[83] Home - G's Growers (gs-growers.com)
[84] https://committees.parliament.uk/work/886/environmental-land-management-and-the-agricultural-transition/publications/
[85] https://www.gov.uk/guidance/sustainable-farming-incentive-pilot
[86] https://www.gov.uk/government/publications/environmental-land-management-schemes-overview
[87] Reducing waste in horticulture: A practical guide for business – horticulture Wales
[88] Blanke, M. M., & Golombek, S. D. (2021). Innovative Strategy to Reduce Single-Use Plastics in Sustainable Horticulture by a Refund Strategy for Flowerpots. *Sustainability*, *13*(15), 8532.
[89] Alternatives to horticultural peat in Scotland (climatexchange.org.uk)
[90] https://consult.defra.gov.uk/soils-and-peatlands/endingtheretailsaleofpeatinhorticulture/
[91] Phasing out peat use in horticulture: Defra call for evidence – NFUonline
[92] Agricultural Transition Plan 2021 to 2024 - GOV.UK (www.gov.uk)
[93] TIAH - The Institute for Agriculture and Horticulture

be applied given the global nature of the supply chain. A key distinctive challenge for this sector is the Scope 3 emissions associated with the input materials. Specifically, it is challenging for companies to understand the carbon emissions associated with their input materials despite efforts to develop tools to this end. Building energy use is also likely to be significant in this sector, but (according to our sector expert) leasing is typical which limits SME control. Transport and process energy use are also likely to be significant.

Textile waste is an important area for the sector with re-use and recycling at end of life listed in the Sustainable Clothing Action Plan (SCAP) 2020 final report.[94] While it is possible to compare the environmental costs of different textiles (using e.g., the Higg Materials Sustainability Index),[95] in the absence of a single consensus about the best tool to use, it is not always clear which material(s) are the most sustainable, even when subject to a full lifecycle analysis.

The Environmental Audit Committee Report *Fixing Fashion: clothing consumption and sustainability* (February 2019) notes a key challenge in the move to a more circular fashion system is the development of technology and market for recycled fibres.

The consumer, social and environmental impacts of fast fashion are increasingly studied with some organisations arguing that there are psychological issues connected with high levels of consumption.[96] Research on fast fashion also shows that awareness of sustainability does not automatically translate into economic behaviour.[97]

While desk-based research identified voluntary agreements such as WRAP's Textile 2030, Energy saving Trust researchers found it difficult to gather insight on this sector. Looking at one industry-wide action plan, again led by the charity WRAP, representation tended to consist principally of large clothing retailers.[98]

In the UK there are cities and regions where the sector is prevalent. Leicester has the second highest concentration of textile manufacturers in the country, with 700 factories employing 10,000 textile workers.[99] The sector expert we interviewed stated that these factories were often owned and run by members of the city's south Asian (Indian, Pakistani, and Bangladeshi descent) community.

Wider policies/policy areas relevant to decarbonisation in this sector:

The European Commission's Circular Economy Package includes standards that could potentially apply to any physical product.[100] The European Commission is due to confirm priority product groups as targets for the new measures, with textiles set to be among those included. The adoption of such measures in the UK context via the UK Government's Resources and Waste Strategy and Environment Act is likely should the Government seek consistency with the EU-wide approach, which is the government's short-term position in relation to energy labelling and product standards.[101]

A uniform tax on less sustainable materials is likely to disproportionately impact SMEs operating on a smaller scale compared to the largest retailers. Like other financial incentives a tax can be scaled in

[94] SCAP 2020 Final report | WRAP
[95] https://apparelcoalition.org/higg-product-tools/
[96] Written evidence - ECO AGE LTD (parliament.uk)
[97] Zhang, B., Zhang, Y., & Zhou, P. (2021). Consumer attitude towards sustainability of fast fashion products in the UK. *Sustainability*, *13*(4), 1646.
[98] Sustainable Clothing Action Plan signatories | WRAP
[99] Fixing fashion: clothing consumption and sustainability - Environmental Audit Committee (parliament.uk)
[100] These requirements cover the durability and reliability of products; their reusability, upgradability, repairability, and ability to be maintained and refurbished; the presence of substances of concern; energy and resource efficiency; and recycled content.
[101] https://www.gov.uk/government/consultations/draft-ecodesign-and-energy-labelling-regulations-2021

terms of revenue or business size. However, such an approach is likely to reinforce the trend of outsourcing apparel production with a risk of national economic and global environmental consequences.

The UK Government is due to consult on options for textiles including an Extended Producer Responsibility (EPR) by the end of 2022.[102] Part of an EPR could be a levy on clothing sales which could be used to support UK collection, sorting and processing of clothing, and R&D into new recycling processes. For example, it has been suggested that a charge of one penny per garment on producers could raise £35 million for investment in better clothing collection and sorting in the UK.[103]

Wider policies to reduce waste could include a landfill/incineration ban and separate textiles collection requirements. This would require parallel increases in recycling infrastructure.

Sector specific policy recommendations:

Supporting access to industry-wide and/or local peer support networks could expand membership to SME manufacturers (and smaller retailers), providing access to advice, guidance, and best practice among small and larger businesses. Likewise, signposting or supporting SMEs to access relevant trade associations such as the Textiles Recycling Association[104] can provide knowledge of recycling initiatives and opportunities.

Furthermore, SME manufacturers could benefit from circular economy approaches to waste, facilitated by local authority waste policies and sufficient recycling infrastructure. Resource sharing between SMEs and/or textile colleges and training institutions is a known – and useful – practice where manufacturers are concentrated in hubs and cities. Support for access to whole life costing tools could help SMEs make better informed decisions when selecting materials.

As many small manufacturers use 'Made in Britain' or 'Made in England' for marketing leverage, there is likely to be an important role for labelling policy/programmes in this sector. For SMEs focusing on improved durability and longevity of garments, commercialising these attributes could support a change in consumer attitudes to – and demand for – fast fashion.

New and alternative business models are relevant to manufacturers as they have implications for market size and the quality and durability of products produced. In particular, fashion rental schemes increase the re-use of fashion products and could reduce the demand for production of new clothes.

3.4.4 Restaurants

Decarbonisation challenges:

Sector experts cited the main challenges for decarbonisation of this sector as time and money, with SME restaurants seeking concise practical guidance in the first instance. It was noted that the option of grants to support decarbonisation investment and costs should follow a carbon audit. However, like SME manufacturers of apparel, this sector faced challenges related to the limited control on building heating and maintenance as premises are often rented.

For this sector it became clear that there is relatively more information available (e.g., online resources[105] and tools[106]) compared to some of the other sectors the research team considered (e.g., manufacture of clothing). Still, there is a need for consistency in how SME restaurants approach

[102] Consultation on the Waste Prevention Programme for England: Towards a Resource-Efficient Economy - Defra - Citizen Space
[103] Fixing fashion: clothing consumption and sustainability - Environmental Audit Committee (parliament.uk)
[104] Home - Textile Recycling Association (textile-recycling.org.uk)
[105] No Mise En Plastic - Plastic Alternatives For Chefs (nmeplastic.com)
[106] Net Zero Now

decarbonisation. SMEs engaging with the Sustainable Restaurant Association (SRA), for example, are typically owners that are "idealistically engaged" in climate change and sustainability and are therefore likely to be in a better position (financially, or otherwise) to commit to, and invest in, Net Zero.

A further challenge for this sector is that restaurants may choose to prioritise consumer-driven decarbonisation actions (e.g., installing EV charging points/offering charging facilities to clients) – that fail to address a business's operational emissions – versus less appealing or visible [to the consumer] actions (e.g., replacing gas cooking appliances with induction/electric options).

Wider policies/policy areas relevant to decarbonisation in this sector:

For this sector, opportunities for decarbonisation include energy efficiency (in terms of heating, lighting, cooking, and food storage appliances) and water efficiency, waste reduction (in terms of both food and plastic waste) and recycling and, to a lesser extent, transport (subject to the offer of food delivery services).

The consumption of red meat in particular has received attention in terms of its impact on the sector's emissions. Run by the SRA, Food Made Good is the world's largest food service sustainability programme. It provides free online resources to help restaurants create more vegetable focused menus.[107] Alongside industry-led changes, the government should provide financial support to establish mass market demand. For, example, one of the recommendations of the National Food Strategy is for government to invest in methane-reduction projects (from dairy and beef cattle) and the development of alternative proteins. Greater shares of vegetable-based dishes, alongside "dish-level data" on emissions, is likely to nudge consumers to select more environmentally friendly options.

Commercial cooking appliance lifetimes are at least 10 years. The replacement of a restaurant's appliances therefore provides an opportunity/window where financial support could incentive the purchase of new technology and/ or more energy efficient products.

Sector specific policy recommendations:

Again, whole life costing analysis tools may be appealing and useful in this sector, particularly if they combine impact labelling for individual products (e.g., Foodsteps[108]).

Another example of an emerging range of commercial services in this area is the offer to subscribe to sector-specific Net Zero protocols (including for bars and restaurants) through netzeronow. Businesses that meet the criteria becoming certified in the form of the Registered Net Zero Now Certification Mark. Like labelling, this can leverage sustainable decision-making by consumers, employees, investors, and other stakeholders[109].

Continued investment in information resources (e.g., practical guides, best practice case studies) – available online through trade associations UK Hospitality and organisations such as the SRA – are likely to help SME restaurants understand what they can do. Equally appealing to SMEs in this sector (according to our sector expert) are "light touch" engagement campaigns which tend to be cost-effective and straightforward (e.g., SRA's One Planet Plate). Consideration needs to be given as to how the government can help such activities and services.

While regulation can be unattractive to SMEs, carbon audits were viewed by interviewees as a useful engagement tool for businesses to understand the breadth of areas/scopes. What is more, footprinting can translate a theoretical framework into an action plan that can then be embedded in

[107] Make-Veg-a-Star-Toolkit-SRA-small.pdf (foodmadegood.org)
[108] Foodsteps | Start Transforming Food Sustainability
[109] About Us (netzeronow.org)

[annual] business practices. The main drawback is the challenge of explaining and balancing the operational emissions as compared to the supply chain emissions from production/growing.

The sector can benefit from local partnerships with universities and colleges, for example, to establish knowledge exchanges. This is something the Government can support. Likewise, there is also an important role for online communities/forums for similar businesses; locally and sector-based networks can facilitate practical (e.g., resource sharing) as well as virtual (e.g., information/best practice sharing) support. Support and knowledge of circular economy approaches can be fostered through such networks. Again, this is an initiative the Government can support. These might include the 'product as a service models', mentioned by our sector expert, whereby SMEs can rent apparatus or items such as furniture, to use in their business.

4 Headline findings from SME interviews

Task 3 comprised 24 in-depth telephone interviews with owners, directors, and other senior personnel in the priority sectors, with six conducted in each of the four sectors. In this section, we outline the key findings of those interviews. The remainder of section 4 provides a more detailed analysis of the findings of these SME interviews, the quotes in particular offer a useful insight into the opportunities, barriers, and drivers in the four priority sectors focused on as part of this study.

Detailed slides presenting the results of this work have been separately submitted to the CCC.

4.1 The business context

When looking at opportunities for carbon emissions reduction in SMEs in the priority sectors, the wider business context is important, as it can influence awareness, attitudes and behaviours relating to energy efficiency, sustainability, and the potential for emissions reduction.

4.1.1 Electrical, plumbing, and other construction installation activities

Electricians, plumbers and other similar construction installers, the majority of which are self-employed, are generally very busy and working on jobs, and therefore time-poor (‘time is money’). There is usually limited cash for investment.

4.1.2 Horticulture

Owners and managers of SMEs in the horticulture sector often have numerous roles in the business (management, HR, finance, and day-to-day operations), and so are typically time poor. This has implications if they are being asked to take part in an energy and carbon audit, or to do research on measures that can be taken to reduce emissions in their business.

Profits have been squeezed due to a rise in costs (energy, staff, fertilisers) and there is usually limited cash for investment. Having said that, some have already invested in energy efficiency and emissions reduction (such as solar panels). However, money is generally unlikely to be available for large investments (particularly by smaller businesses in the sector).

4.1.3 Manufacturers of apparel

Owners and managers in this sector also have many areas of responsibility in the business (management, HR, finance, and day-to-day operations) and so also tend to be busy and time poor. Again, profit margins are being squeezed, and costs are high (premises, staff, and energy), so there is limited cash for investment.

Businesses in this sector usually do *not* tend to own their premises and so they have limited control over refurbishing the buildings (glazing, insulation) or the heating system used – the landlord has ultimate control.

4.1.4 Restaurants

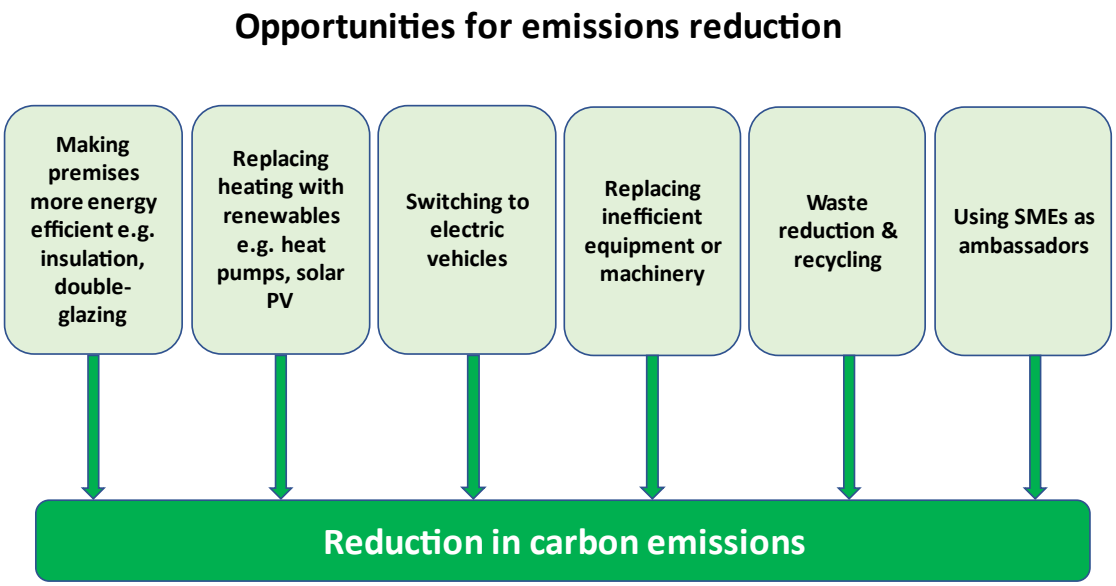
For many independent restaurants, the primary focus is on surviving. Many were badly affected by the Covid-19 pandemic, and are currently struggling with increasing costs, staff shortages and competition from other independents and particularly from chains.

As with the other sectors, restaurant owners and managers have numerous roles in the business (management, HR, finance, and day-to-day operations), and so are typically time poor. It should be noted that this was the most difficult sector to recruit for interviews and the most likely to cancel or postpone at short notice.

4.2 Opportunities for emissions reduction

There are a range of ways in which carbon emissions could be reduced.

Figure 11: Opportunities for emissions reduction



The opportunities (or perceived opportunities) to reduce emissions vary by sector. To a great extent, opportunities for emissions reduction depend on the key characteristics of businesses in each sector, as outlined in the previous section.

In the horticulture sector, SMEs are likely to own their business premises, such as storage buildings, greenhouses and processing or production space, although that is not always the case. That means that they usually have the opportunity to make changes to improve the energy efficiency of the building fabric (insulation, glazing, etc.) and to introduce a more energy efficient heating system (including the installation of renewables).

However, those opportunities are less likely to exist in other sectors. Restaurants and manufacturers of apparel tend *not* to own their business premises, and as tenants they are unlikely to be able to make major changes to the building or heating system.

> *'Due to not owning the building it would not be possible to install solar panels. I would very much like to do this, but that would be down to the property owner. Changing the whole glazed front of the shop would cost in the region of £15,000 to £20,000 but at the end of the day I do not own the premises.'* (Restaurant)

> *'We have one site, comprising two units on an industrial estate. We lease the units, and any changes to the building structure or heating system used has to be agreed with the landlord, although our landlord is fairly accommodating and will consider and discuss changes.'* (Manufacturer of apparel)

Self-employed tradespeople tend to be busy and time poor. They usually have limited cash for major investments. Having said that, they are less likely to have business premises at all, usually working in clients' premises with tools or materials often stored at home or in a garage and admin done at home.

In addition, SMEs may not run their own vehicles. Tradespeople may only run one vehicle, typically a van running on petrol or diesel. Smaller manufacturers of apparel and restaurants also may not utilise vehicles at all (or may lease them). Of the four key sectors, only horticulturists demonstrate a propensity to use multiple vehicles (lorries, vans, fork-lift trucks, tractors, and other agricultural vehicles). But even in that sector there is some scepticism over whether there are viable alternatives running on electricity.

Another potential area for emissions reduction is the machinery used, particularly in the manufacture of apparel and horticulture sectors. However, such machinery tends to be expensive, and the tendency is to keep using the current machinery as long as possible and worry about replacing it only when required by legislation.

One area of opportunity for emissions reduction is waste reduction and recycling. However, most SMEs in the research believe that their options in this area are limited (particularly tradespeople) or that they are already doing as much as they can.

> *'Apart from the introduction of electric vehicles, I don't see the relevance to my business. I don't have business premises to improve. I don't produce much waste and already recycle leftover materials, and I have little control over the source of tools and materials I use.'* (Tradesperson)

Many SMEs have an opportunity to influence their customers regarding energy efficiency and the reduction of emissions. For example, tradespeople such as plumbers and heating engineers are influential in terms of advising consumers about their heating systems. Currently that advice is more likely to be to continue using (and fixing when required) old systems rather than installing more energy efficient systems, for example heat pumps.

There is also some scepticism about more energy efficient technology in general and whether it is available, viable and affordable.

4.3 Awareness of sustainability and Net Zero targets

SMEs' awareness and knowledge of government targets for energy emissions and of options for emissions reduction available to them is mixed. Generally, across all sectors, the larger the organisation the greater the level of awareness and knowledge, often because the larger organisations are more likely to have a person responsible for sustainability in place, and a specialist is more likely to demonstrate higher awareness and knowledge than those in general management.

Micro and small businesses tend to demonstrate a superficial level of knowledge.

> *'I know about the government targets and I'm aware what the impact on our business is likely to be, such as that we will have to phase out petrol and diesel vehicles, although that is some way down the line.'* (Horticulture)
>
> *'I was aware that there were targets but I couldn't have told you what they were or the timetable.'* (Manufacturer of apparel)
>
> *'I know about the Net Zero target 2050 only from the television and newspapers. The main way it affects my business is via the vehicle which is the main energy using aspect.*' (Tradesperson)

4.4 Actions taken to reduce emissions

As already indicated, for many SMEs (particularly those in the trades, manufacturing of apparel and restaurant sectors), the perception is that many of the options for reducing carbon emissions are not available. Business premises either do not exist or are rented or leased, and vehicles are not used or are used but would cost too much to replace with electrical alternatives.

Some horticulturalists have made energy efficiency improvements to their buildings, including the installation of solar panels and insulation. However, such improvements were often supported by earlier policies, such as Feed-In Tariffs.

Generally, SMEs believe that they are effective in waste reduction and recycling of materials and packaging. Many SMEs in the horticulture sector have adopted waste reduction processes, such as arrangements with local livestock farms. In the manufacture of apparel sector, SMEs have also introduced waste reduction and recycling processes, such as using off-cuts of materials as samples they can send to customers and potential customers. There is also some evidence that restaurants are taking steps to reduce waste, and some have already signed up to waste reduction and recycling schemes, such as the 'Too Good to Go' app[110] which links surplus food to consumers.

SMEs have scored themselves, using a 1-5 scale, for how much of a priority reducing emissions is for the business and for how much they have actually done to reduce emissions.

The average scores given within each sector are given in the following table.

[110] https://toogoodtogo.co.uk/en-gb/

Figure 12: Self-scoring for prioritisation of reduction of emissions and actions taken (Average ratings using 1-5 scale for each)

Opportunities	Horticulture	Manufacturers of apparel	Restaurants	Trades
Prioritising the reduction of emissions	3.5	4	4	3.5
Actions taken to reduce emissions	3	3	3.5	3

The research is qualitative in nature and the above data should therefore be treated with caution. Nevertheless, some interesting observations can be made about these figures.

Firstly, in all sectors, the self-rating for actions taken lags slightly behind the priority rating. The implication is that the businesses have an ambition to reduce carbon emissions that is not currently backed up by actions, either because the SMEs are unsure what (else) they can actually do to reduce emissions and/or the measures to reduce emissions are unaffordable and/or can be put off to a future time.

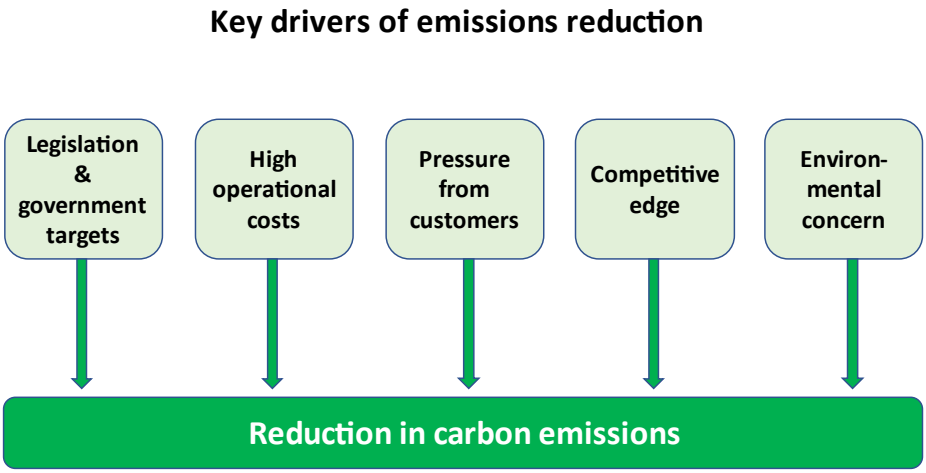
Secondly, the average self-rating is around 3 (in the middle of the scale) for all sectors, suggesting that there are further actions to be taken in all four sectors.

It should also be noted that some SMEs did rate themselves higher than these averages. In particular, some manufacturers of apparel and restaurants (the two sectors with the highest average action ratings) actually make sustainability a point of differentiation in their sectors.

4.5 Drivers

The key drivers of energy efficiency and carbon emissions reduction are illustrated below.

Figure 13: Key drivers



In more detail, those drivers are as follows.

4.5.1 Legislation and government targets

A key driver of emissions reduction is legislation introduced to facilitate emissions reduction and help ensure government targets are met.

However, legislation is not always thought to be relevant to SMEs. This is particularly the case among smaller businesses in the manufacture of apparel and restaurant sectors and among self-employed tradespeople, who are unlikely to own the work premises, so that they have limited options for improving the buildings or the heating system, and who may not run (many) vehicles that can be switched to electric alternatives.

Government targets can also be counter-productive, for example where the target is tagged to a date in the future, affording a period of grace and leading to some procrastination.

Legislation relating to waste reduction and recycling is also often considered irrelevant because sectors often perceive that appropriate practices are already in place.

4.5.2 High operational costs

A key driver is the increasing costs of operations, notably of energy for heating and running machinery, petrol and diesel for vehicles, raw materials, and staff.

> *'Everything we are doing is all of a sudden more expensive. It's now costing us a fortune to do what we've always done.'* (Horticulture)
>
> *'We are off the gas grid, so we rely on electricity plus oil for heating. We are about to install solar panels to produce some of our own electricity.'* (Horticulture)
>
> *'We have nine knitting machines that run on electricity. The electricity bill is huge, which is a big incentive to find cheaper sources of energy.'* (Manufacture of apparel)

4.5.3 Pressure from customers

Some SMEs report pressure from customers or clients on their suppliers to demonstrate environmentally friendly and sustainable practices. Such customers are high street chains, supermarkets or building contractors. An example is a manufacturer of apparel who reports their customer, a high street chain, requiring them to sign up to the Higg Index[111] and demonstrate a reduction in waste products.

4.5.4 Competitive edge

For many SMEs, particularly those in the manufacturing of apparel and restaurant sectors, being environmentally friendly or sustainable and being able to demonstrate energy efficiency gives them a point of differentiation in their sectors.

Examples are a restaurant that claims to '*sell produce and serve food that is mainly vegan and comes from land that has been farmed naturally, without chemicals or over-cultivation and that is locally sourced*' and another restaurant who sees the value in demonstrating sustainability credentials to customers and potential customers.

[111] https://apparelcoalition.org/higg-product-tools/

> *'(Recycling) would give us a competitive edge. Customers are for recycling so would be an incentive for them to be our customers. Something in the window to show we are into energy saving and it would demonstrate our commitment*.' (Restaurant)

Another example is a manufacturer that specialises in garments manufactured from sustainable, high-quality materials.

> *'We specialise in the creation of high-end premium basic garments constructed from sustainable, high-quality materials. Manufacturing in England gives us greater control over the quality and the environmental and social impact associated with manufacturing our products. This means that buyers can feel comfortable wearing their garments knowing that they are made to the highest standards, both physically and ethically.'* (Manufacturer of apparel)

4.5.5 Environmental concern

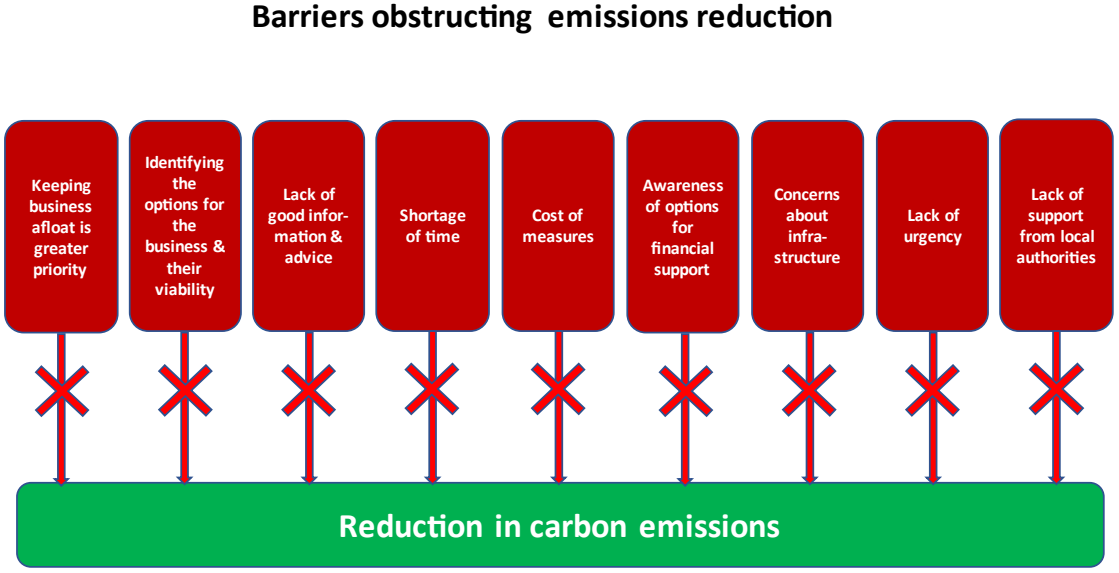
SMEs in all the priority sectors (with the possible exception of self-employed trades) often claim that they simply want to 'do the right thing' and run their businesses in a responsible and ethical way.

> *'We're living in this world, and we want the world to continue. So, ultimately, it's simple: we've got to change, and everything we can do, however small, is important.'* (Manufacturer of apparel)

4.6 Barriers

The main barriers to the introduction of energy efficiency and carbon emissions reduction steps are illustrated below.

Figure 14: Barriers



These barriers are discussed in greater detail below.

4.6.1 Focus on keeping the business afloat

A key barrier to emissions reduction is the focus on keeping the business afloat in the face of numerous challenges – the impact of Covid-19 on consumer behaviour, plus staff shortages, rising costs (energy, labour, food, and drink products).

There is an associated barrier which is a lack of prioritisation of sustainability. Sustainability is generally a lower priority than keeping the business afloat. This is particularly a concern in the manufacturing of apparel and restaurant sectors.

'Businesses at the smaller end of the SME spectrum are particularly likely to be focused on firefighting just to keep going, due to Covid, Brexit and its impact on trade, high energy prices and the likelihood of consumers having less disposable income. Our profit margins are being squeezed by the high street and online chains. We do not have the cash or the credit to afford major outlays, such as improving our premises or buying new electric vehicles.' (Manufacturer of apparel)

'Events have conspired against us: Covid, Brexit, local authority rules, a lack of skilled staff, rising costs of products sourced and of labour, the rising cost of living among the public. There is increasing competition from low-price chains.' (Restaurant)

'The life of a small business owner is taken up by work and worries, which leaves no time to look around. There is no room for that in my life. Too much is put on our own shoulders.' (Restaurant)

4.6.2 Identifying opportunities to reduce emissions

Another key barrier is the lack of informed knowledge about the options available to SMEs and the perception that not much can be done, and that some of the main options available to an SME (such as waste reduction and recycling) have already been addressed.

Self-employed people and managers of small businesses tend not to have the expertise or training they need on sustainability or the time to invest in finding out about what they can do to reduce energy use and carbon emissions.

Tradespeople, in particular, demonstrate a lack of engagement with zero carbon and emissions reduction. There is a lack of detailed awareness and understanding of the legislation relating to reduction of emissions and the options available to small businesses in the sector to satisfy legislation. There is also a perception among tradespeople that (apart from buying an electric vehicle) there is little they can do to reduce carbon emissions.

'We have one site, comprising two units on an industrial estate. We lease the units, and any changes to the building structure or heating system used has to be agreed with the landlord, although our landlord is fairly accommodating and will consider and discuss changes.' (Manufacturer of apparel)

We don't own the building and don't run our own vehicles. We do what we can. What else can we do?' (Manufacturer of apparel)

4.6.3 Lack of good information or advice

Another barrier to reducing emissions relates to the issue around identifying opportunities is a lack of good, reliable information or advice on options for SMEs.

> *'Most of my information comes from the Internet, notably GOV.UK, although I find the information to be lengthy and complicated and not terribly user friendly.'* (Manufacture of apparel)
>
> *'I could look for info on online government guidance sites. I know the info is there, but I have no time to look for it. Just give me the info but do not ask me to look for it.'* (Restaurant)

Advice and support should be as sector specific as possible.

4.6.4 Shortage of time

It has already been noted that self-employed tradespeople and owners or managers of small businesses are often multi-taskers and time poor. It is therefore often the case that the key personnel in SMEs do not have the time required to do research on their options for carbon emissions reduction, the support that might be available, or to take part in activities such as an energy and carbon audit.

4.6.5 Cost of measures

The cost of measures, particularly changes to the building or heating system or the purchase of electrical vehicles, can be prohibitive, even with finance available.

> *'Anything with a big up-front cost is a problem for us and companies like us as we do not have a lot of cash and we're not very profitable.'* (Horticulture)

Some of the key measures for emissions reduction are costly. To improve the energy efficiency of the building fabric, to install renewable energy systems, such as heat pumps and solar PV, to purchase an electric vehicle, these all require investment that may be beyond SMEs.

4.6.6 Awareness and effectiveness of financial support

Given their shortage of cash and small profit margins, SMEs would need financial support to address the cost of emission reduction measures such as making a building more energy efficient or purchasing an electric vehicle. However, financial support options are thought to be complex and piecemeal and there is only sketchy awareness and knowledge of the best options for a specific sector or business.

4.6.7 Viability of alternatives

There is also some scepticism about the viability of more energy efficient alternatives to agricultural vehicles and machinery and machinery used in the manufacture of apparel.

> *'We know that changes are coming, and we want to do the right thing, but alternatives are not there, such as growing media, or the infrastructure is not there, such as for electric vehicle charging, or the things we need to do are too expensive.'* (Horticulture)

The preference (and recommendation of advisors such as engineers) is often to run current technology and only replace when needed, by which time the options are expected to be more efficient and affordable.

4.6.8 Concerns about infrastructure

The perception among SMEs in the priority sectors is that the infrastructure for electric vehicles is currently inadequate. This is particularly a concern in the horticulture sector, with businesses often located in rural and remote areas, which are not well served by the charging networks.

There is also a time issue relating to electric vehicles, namely vehicles not operating while they charge and operators having to wait while the charging takes place.

4.6.9 Lack of urgency

Many SMEs prefer to make do with their current technologies, whether vehicles, machinery, or heating systems, until government deadlines loom. This is particularly the case in the horticulture and manufacturing of apparel sectors, which require major investment to upgrade machinery.

> *'There is a drawback to having targets in twelve- or thirteen-years' time. If the business pays now to upgrade machinery, improve the premises, or buy electric vehicles, that's a cost now for items that may need replacing again before the deadlines. So, the more financially efficient approach is to keep the current equipment, buildings and vehicles and then invest in lower carbon alternatives in 12 years' time, when the technology will be cheaper and more efficient.'* (Horticulture)
>
> *'The machines themselves are leased and we replace them from time to time, but we're limited on how much we can improve the machines themselves.'* (Manufacturer of apparel)
>
> *'Our view is that we will look at upgrading our equipment or using an electric vehicle, but that is something for the future, not for now.'* (Manufacturer of apparel)

4.6.10 Lack of support from local authorities

SMEs perceive there to be a lack of support for SMEs from local authorities, particularly for recycling, but also for general business support. This is notably the case in the restaurant sector.

> *'The local council is another obstacle. Planning regulations mean that we cannot make energy efficiency improvements to the building. The recycling of food waste is not facilitated by the council. Even the congestion and parking regulations work against the restaurant.*' (Restaurant)

4.7 Reactions to sector scenarios

The core of the interview involved discussion of policy scenarios. Working SME managers do not necessarily have a great deal of insight on potential government decarbonisation policies. To enable an insightful interview, therefore, a scenario document was prepared for each sector, presenting a fictional example of a business in that sector that is impacted by a range of current or potential SME decarbonisation policies. The aim was to use the scenario to stimulate discussion about how well the different policies featured might work. The policies that featured in the scenarios were based on those

identified from policy mapping and discussions with sector experts in task 2. All four scenarios have broadly the same structure, but the detailed content has been customised for each sector.

The scenario shown to SMEs in the horticulture sector relates to 'Fred's Growers.'

Fred's Growers Ltd – reducing energy and carbon in the horticulture sector

This is a short, fictional scenario, although it is based on a real-life example. This describes the challenges a typical business in your sector might face and different kinds of ways those challenges might be addressed.

The business and its challenges

Fred's Growers is a horticultural business with 50 staff, based in Lincolnshire. The business produces its own vegetables and also provides a packing and distribution service for other local growers. Fred, the owner-manager, would like to grow the business. He has also recently begun to consider ways in which the business could reduce its energy use and its carbon emissions.

He is aware of regulations that are likely to affect his business. ***These include the following types of regulation, some of which are already in place and some of which are likely to be in place at some stage.***

Buildings & processes	• Fred is currently using LPG boilers to produce heat but, by 2035, government regulation is likely to ban the sale of gas or oil heating for buildings, greenhouses and processing. • Fred is considering whether in future he will use heating from a heat pump or an anaerobic digestion system (which could also reduce the waste produced from his site). • Fred is aware of new technologies and processes that could reduce his energy use and increase productivity e.g. using LED low-energy lighting and vertical growing in greenhouses.
Vehicles & fuel	• He is also aware that by 2030 the sale of petrol and diesel cars and vans will be prohibited, so at some stage electric vehicles will need to be purchased. • There is a strong possibility that the government will ban the use of red diesel at a further date and that, in time, all types of work vehicles, such as tractors and loaders, will be required to run on clean fuels (biofuels or electric).
Waste & recycling	• In future, the government is likely to ban single-use plastics, which could affect the business's use of plastic containers. • Future policies could require wider monitoring and reporting and reduction of levels of non-recycled waste.

Addressing the business's challenges

There are different ways in which Fred could address the challenges faced by his business.

Audit offer	• Fred's business could take up an energy and carbon audit from a government-backed scheme that would measure the energy and carbon of buildings and vehicles, give some indication of other emissions (e.g. from fertilisers) and suggest next steps.
Financial support	• Having spoken to an expert, Fred knows that the changes to the heating system will cost around £40,000, with an estimated payback in six years. • Because Fred's Growers consulted an expert who could sign off on the work needed to the heating system, the business qualifies for a government grant of 20% (£8,000) towards the changes in the heating system. • Other options available to cover the work needed are private finance in exchange for an equity stake in the company and affordable government-backed loans. • The government is offering a feasibility grant to try new low carbon growing technologies, but Fred is wary of the time involved. • A new electric van will cost around £50,000 – grants and tax relief are available to help with those costs.
Support networks	• Fred found out about a support network for small horticulture businesses co-ordinated by a local university. • Participating in online meetings and sharing information by email allows him to find out from similar companies how they estimate and cut emissions from their businesses. • The university partnership also provides an opportunity for businesses to host a student as part of a work-based learning module, with the student helping to provide advice and information to support the businesses decarbonisation journey. • A further feature of the support the network provides is to help companies club together to buy solar panels and share the energy saving benefits - this could deliver major energy bill savings. • Fred is also a member of an independent producer organisation supplying retailers with his – and other local growers' produce. Members are committed to manage land and water resources for future generations and achieve net zero by 2035.
Voluntary waste scheme	• There is a voluntary scheme which requires the business to report annually on the amount of waste produced and packaging used by material or process, with reduced targets for smaller producers.

The scenario shown to manufacturers of apparel related to 'BL Apparel.'

BL Apparel Ltd – reducing energy and carbon in the manufacturing sector

This is a short, fictional scenario, although it is based on a real-life example. This describes the challenges a typical business in your sector might face and different ways in which those challenges might be addressed.

The business and its challenges

Jenny owns and runs BL Apparel Ltd, a company selling high quality, specialist work wear for use in professional kitchens, butchery and related trades. She has an office and workshop with 10 staff finishing, customising and distributing the products. Her small marketing and admin team mostly work from home.

Jenny would like to grow the business and has also recently begun to think about ways in which the business could reduce waste and carbon emissions. She is aware of regulations that are likely to affect her business - ***these include the following types of regulation, some of which are already in place and some of which are likely to be so in future.***

Heat and buildings	• Jenny is aware that government regulations will require her to make the business's buildings more energy efficient by improving insulation and fitting double glazing - this will save on energy bills, but also incur cost. • She also knows that in future she is likely to have to change her heating systems to a heat pump when her boiler next needs replacing.
Vehicles and distribution	• Jenny is also aware that by 2030 the sale of petrol and diesel cars and vans will be prohibited, so at some stage electric vehicles will need to be purchased for delivery and distribution of garments.
Waste and recycling	• The UK Government's Resource and Waste Strategy now requires larger apparel manufacturers to report on their supply chains and reduce the emissions associated with their products by, for example, sourcing more local materials and improving the durability of their products. For smaller businesses like Jenny's this is not mandatory but could be in future. • New government rules will add costs to businesses that use less sustainable input materials and processes and/or a financial benefit for businesses that re-use or upcycle textile waste.

Addressing the business's challenges

There are several ways in which Jenny could address the challenges faced by her business.

Energy and carbon audit	• The business can access a free energy and carbon audit to measure the company's carbon footprint, including the energy used in the workshop and office, the production equipment, and in delivery – this is a government-supported programme and delivered by a local advisor with experience in the manufacturing sector. • The audit takes a day of Jenny's time providing information about the firm and its processes, and junior staff show the auditor around the premises, provide the firm's energy and water bills and describe their production process and waste management procedures. • The audit recommends installation of solar PV panels and / or a heat pump, improved insulation for the building and phased replacement of the business's diesel vans with electric vans. • The audit gives advice around the machinery used by the business and how process efficiency could be improved, including an indication of whether it would be more cost effective to replace machinery now or wait until the machines reach the end of their natural life before replacing with more efficient models. • The audit also recommends cutting waste and increasing recycling, including increased use of leftover materials and recycled fibres – this helps to meet Resource and Waste Strategy requirements
Financial support	• The work on the building will cost £40,000 with an estimated payback in six years. • Because BL Apparel had undertaken the audit, they qualify for a government grant of 20% (£8,000) to cover the installation of renewables and insulation of the buildings. • There are also partial grants for new more efficient machinery. • Other options available to the business to help address the upfront cost were private finance, government-backed interest free loans and pay-as-you-save finance. • A new electric van will cost around £50,000 - grants and tax relief are available for the purchase of electric vehicles.
Support networks	• Jenny found out about a support network for small manufacturing businesses co-ordinated by a local university which linked them with academics and students interested in the industry and sustainability. • The network provides information about the funding available to support her in following the audit recommendations. Jenny was also able to learn more about sustainable manufacturing processes and how to better engage with the supply chain around sustainability. • Jenny has also considered signing up to a UK-wide industry collaboration, with participants agreeing to using more sustainable suppliers, reducing waste, ensuring clothes are long lasting and informing customers about the need for greater circularity. This involves a voluntary labelling scheme to indicate a commitment to sustainability and a materials exchange, so that surplus materials are available to another business, either free or for a reduced cost.

The scenario shown to SMEs in the restaurant sector related to 'The Orangery.'

The Orangery – reducing energy and carbon in the hospitality sector

This is a short, fictional scenario, although it is based on a real-life example. This describes the challenges a typical business in your sector might face and different kinds of ways those challenges might be addressed.

The business and its challenges

Julia is the owner/manager of The Orangery, a cafe/food delivery service with two premises and 15 staff. In the past year or two the business also launched a new food delivery service. The business uses two diesel vans to collect products and make deliveries. Julia would like to grow the business and expand the delivery service but, as her business has a "green" image, she is concerned about increasing its transport carbon footprint.

She is aware of regulations that are likely to affect her business. ***These include the following types of regulation, some of which are already in place and some of which are likely to be in place at some stage.***

Heat and buildings	• Julia is aware that government regulations will require her to make the business's buildings more energy efficient by improving insulation and fitting double glazing. She is also aware of a likely ban on the sale of gas boilers and is considering whether a heat pump might be a worthwhile investment – this will save on energy bills, but also incur cost. • Julia is also aware of government plans to introduce targets to phase out gas hobs and cookers.
Vehicles and fuel	• She is aware that by 2030 the sale of petrol and diesel cars and vans will be prohibited, so at some stage electric vehicles will need to be purchased.
Waste and recycling	• Julia has heard that the government is considering setting targets for food waste and recycling. For example, its Food Waste Reduction Action Plan targets a reduction in food waste by 33% by 2025. Julia wants to think now about how such targets will impact on her business.

Addressing the business's challenges

There are different ways in which Julia could address the challenges faced by her business.

Footprinting & information	• The business accessed a free energy and carbon audit to measure the company's carbon footprint, offered by a government supported programme and delivered by a local auditor who worked for a national hospitality trade body. • The audit took a day of Julia's time providing information about the firm and its processes; junior staff showed the auditor around, provided the firm's energy and water bills and described their waste management procedures. • The audit recommended installation of solar PV panels and/ or a heat pump, improved insulation in the buildings and a phased replacement of the company's diesel vans with electric vans. • As the audit was conducted by an organisation that understood the sector well, the report was able to provide facts about the impact of making more holistic changes could have e.g. the potential carbon reduction of meals being more plant-based, of sourcing more produce locally and seasonally, and of reducing food and plastic waste.
Financial support	• Building works and a new heating system will cost £40,000 with an estimated payback in six years -because The Orangery has undertaken the audit, they qualify for a government grant of 20% (£8,000) to cover the installation of renewables and insulation of the buildings. • A new electric van will cost around £50,000 - grants and tax relief are available for the purchase of electric vehicles. • Other options available to cover the remainder of the upfront cost are private finance through a high street lender, government-backed interest free loans and pay-as-you-save finance.
Support networks	• Julia found out about a support network for small cafes and restaurants co-ordinated by the local university. Attending online meetings allows her to find out from similar companies how they are managing local delivery and how to find new local suppliers with lower carbon and lower waste. • Through this group Julia has been made aware of a reduction in business rates for local businesses that commit to sustainability. The scheme also provides certification, enabling Julia to better brand the business as 'green' locally. • Also, the network provides is to help businesses club together to buy solar panels and share the energy saving benefits - this could deliver major savings to energy bills.
Voluntary waste scheme	• Julia finds out about a voluntary scheme which requires participating businesses to report on the amount of food waste produced and packaging used. • Also, businesses that consistently generate more than 5kg of food waste need to have separate collection of that waste.

The scenario shown to tradespeople related to ‘PE Electrical,’ a self-employed electrician.

PE Electrical – reducing energy and carbon in the electrical and plumbing sectors

This is a short, fictional scenario, although it is based on a real-life example. This describes the challenges a typical business in your sector might face and different ways in which those challenges might be addressed.

The business and its challenges

Paul is a self-employed electrician, trading as PE Electrical, and offers services to local homes and letting agencies. He works from home and keeps his tools and materials in his garage. He has one diesel van.

Paul would like to grow the business. He has also recently begun to consider ways in which the business could reduce its energy use and its carbon emissions.

However, he is aware of a range of regulation that is likely to affect his business. ***The following types of regulation include some that are already in place and some that are likely to be in place in some form in the future.***

Heat and buildings	• Paul is aware that government regulations will require businesses to make buildings more energy efficient by installing low carbon heating systems - this will save on energy bills, but also incur costs for both Paul and his clients. • Having noticed an uptick in queries about heat pumps, Paul feels he would benefit from additional training in this area.
Vehicles and fuel	• He is also aware that by 2030 the sale of petrol and diesel cars and vans will be prohibited, so at some stage an electric van will need to be purchased.
Waste and recycling	• Government regulation requires Paul to minimise the business’s waste, with sector-wide waste reduction targets – including for small businesses like Paul’s – expected to come in further down the line.

Addressing the business’s challenges

There are different ways in which Paul could address the challenges faced by his business.

Energy and carbon audit	• The business can access a free carbon audit to measure the company’s carbon footprint. The audit is offered by a government supported programme and delivered by a local advice service. • The audit will take 1-2 days of Paul’s time providing information about the firm, its processes, the firm’s transport/ travel footprint and waste management procedures. • The finalised audit recommends purchasing more energy efficient materials, tools and equipment, and a phased replacement of the company’s diesel van with a fully electric van. The audit also recommended possible ways waste could be reduced. • In time, these kinds of audit could become mandatory for all businesses.
Financial support	• Because Paul has undertaken the audit, he qualifies for a government grant of up to 20% of the purchase price (£8,000) for the purchase of a new electric van. • Tax relief and other incentives are also available. • A subsidised government training programme offers Paul the opportunity to undertake additional training in low carbon technologies and services that he can offer his customers.
Support networks	• Paul found out about a support network for small self-employed tradespeople, co-ordinated by local colleges and a university. • Paul has been told about a Shared Apprentice Scheme which would allow him to take on an apprentice for a minimum of 3 months. The scheme allows employers to support and benefit from apprentices through, for example, knowledge sharing. • Participating in a number of online meetings and sharing information by email allow him to find out from similar companies how they are managing to reduce carbon emissions, in some cases by using electric vehicles. • A new government funded service provides electricians and plumbers with information, leaflets and web-resources that they can use with their clients to explain low carbon technologies, such as heat pumps, to their clients. • Another aspect of this peer-to-peer support was to encourage companies to find new local suppliers with lower carbon and lower waste, including through group purchasing (e.g. of heat pumps).

When presented with the sector scenarios, Horticulturists generally identify with the sector scenario presented to them. It describes a situation that they are familiar with in terms of challenges.

However, SMEs in the manufacturing of apparel and restaurant sectors are less likely than those in the horticulture sector to identify with their scenarios. Most of the SMEs in the manufacturing of apparel and restaurant sectors did not own their premises and few ran vehicles. So, the only feature of the regulation they recognised was related to waste and recycling, which most believed they were on top of anyway.

Self-employed tradespeople tend not to have work premises. They are usually based out of their home and mainly work in their customers' or clients' sites. So, again, the regulation relating to heating and buildings is not thought to be relevant. Also, tradespeople are not convinced that the regulation relating to waste and recycling is relevant to them, because they claim not to create a great deal of waste products, the waste that is produced is already recycled or it may be out of their control. The legislation relating to vehicles *is* relevant, as most tradespeople use a van for work. However, the cost of switching to an electric vehicle is currently prohibitive, and the government deadline does not engender urgency in this area.

The next five sub-sections provide more detailed reactions to the specific aspects of these policy scenarios: legislation; energy and carbon audits; finance; peer networks; waste reduction and recycling, including some sector-specific comments.

4.7.1 Legislation

SMEs in the four priority groups tend to have a fairly superficial awareness and knowledge of regulations relating to improving the energy efficiency of buildings, using renewable energy sources, or switching to electric vehicles. However, medium sized businesses are more likely to have personnel with a specific responsibility for sustainability or emissions reduction, so that knowledge tends to be greater.

Broadly speaking, SMEs recognise that reducing emissions is going to require a combination of carrot (such as financial support) and stick (targets and legislation). Having said that, there is some scepticism regarding the legislative levers.

Firstly, not all legislation is perceived to be relevant. As indicated above, smaller SMEs in the manufacture of apparel, restaurant and trades sectors often do not own their premises, and in such cases, legislation relating to the improvement of the building fabric and heating systems are thought to be irrelevant. Some SMEs renting or leasing their property from a landlord might discuss relevant changes with the landlord, but the final decision is likely to be the landlord's. In addition, there are concerns that any changes to the building will have to be undone at the end of the rental or lease period, should the SME move out.

> *'We'd have to get the landlord's permission to do things like installing insulation or solar panels. And if we moved out, we'd have to uninstall those things and return the building to the condition it was in when we moved in.'* (Manufacturer of apparel)

SMEs may not own vehicles, and so legislation relating to the switch to electric vehicles may not be relevant. This is particularly the case with smaller businesses and with those in the restaurant and manufacture of apparel sectors.

Even among SMEs in the horticulture sector, who are likely to have a range of vehicles, there is some concern over using electric vehicles. This is partly due to perceptions that the charging infrastructure

is currently inadequate and concern that drivers will spend too much time looking for charging points (if on the road) or waiting for vehicles to charge (if on the road or back at base).

There is also concern that electric options of agricultural vehicles, such as lorries and tractors, and indeed other agricultural machinery, are not currently viable.

> *'We don't have a clue what to do. I don't believe that there is the equipment, knowledge, or machinery out there to help them (reduce emissions).'* (Horticulture)

In the manufacturer of apparel sector, there is also scepticism about whether machinery can be easily replaced, even when leased.

> *'We have nine knitting machines that run on electricity. The electricity bill is huge, which is a big incentive to find cheaper sources of energy. The machines themselves are leased and we replace them from time to time, but we're limited on how much we can improve the machines themselves.'* (Manufacturer of apparel)

Also, the legislative deadlines do not engender urgency, with SMEs often preferring to procrastinate rather than acting now.

> *'I know about the government targets and I'm aware what the impact on our business is likely to be, such as that we will have to phase out petrol and diesel vehicles, although that is some way down the line.'* (Horticulture)

4.7.2 Energy and carbon audit

There is some interest in the proposition of an energy and carbon audit, particularly among SMEs in the horticulture, manufacture of apparel and restaurant sectors. There is recognition that measuring improvement and demonstrating to customers that improvement is taking place, requires a baseline to be set.

> *'If you don't know where you are, or have a baseline, you don't know what you still have to do and whether you're getting there.'* (Horticulture)

Tradespeople are the *least* likely to express interest in an audit.

> *'I pretty much know what the audit would say - switch to an electric van. Otherwise, there's not much they could recommend.'* (Tradesperson)

Another challenge is the time required for the audit. SMEs tend to be time-poor and might struggle to find the time required. Again, this is particularly the case for micro and very small businesses.

Tradespeople are particularly sceptical whether 1-2 days would be required to audit what are generally very straightforward jobs with (perceived) limited opportunities for emissions reduction.

Preference is expressed in this sector for an alternative online option that can be completed when the tradesperson has time.

There are generally concerns about whether the audit would be too generic and not take account of the characteristics specific to a sector. In the horticulture sector, for example, there is concern that an audit might not take account of agricultural or horticultural practices such as the growing media or fertilizers used, land usage and tree planting.

Generally, SMEs are reluctant to pay for an energy and carbon audit and, if they have to pay, they expect some kind of government contribution to costs.

4.7.3 Finance

Financial support is crucial for SMEs.

SMEs in all four sectors (particularly those at the smaller end of the SME range) tend to be cash-poor, often live hand-to-mouth and have struggled during the Covid-19 pandemic (notably those in the restaurant sector). Businesses may be currently paying back Covid-related loans and so may not have the appetite or ability to make further repayments.

> *'Small firms do need government financial support to stand any chance of getting to Net Zero emissions as they do not have the upfront cash, and they don't necessarily have the credit to borrow.'* (Horticulture)
>
> *'If we want to invest in improvements, we would need help. A grant of around 30% would be useful and then we'd need to look at finance options for the remaining amount. We are still struggling to recover from the impact of Covid on the business, so we do not have a lot of spare cash, and we have to be careful about expenditure*.' (Manufacturer of apparel)
>
> *'We struggle to make a profit and we're reluctant to take on further loans - we are still paying back debt taken on during the pandemic.'* (Restaurant)
>
> *'I have considered switching from my diesel van to an electric one, yes absolutely. The problem is the upfront cost. I recently bought a second-hand van, it was around 3 years old, for £7k. Even if I could find a second-hand electric van, I'd be looking at £25k-30k. That's a huge stumbling block.'* (Tradesperson)

Grants tend to be preferred to loans, but grants of 20% still leave a significant sum to be paid by the business, and most businesses would be looking for a grant of at least 30%-40%. Even then, the outstanding sum may not be affordable.

The range of financing options presented in the scenarios tends to complicate matters, with SMEs often sceptical about private finance options and confused by the other options likely to be available.

SMEs would therefore value independent advice on the most appropriate financing options for the specific business. Such advice might be part of the energy and carbon audit.

4.7.4 Peer networks

There is some interest expressed in the concept of peer networks, by which local groups of small businesses, ideally in the same sector, pool their knowledge, experiences and, possibly, their buying power.

> *'Businesses can always learn from each other, particularly from businesses who have 'been there and done that' - similar businesses that have already taken*

> *steps to reduce carbon emissions. So, the concept of a peer network is an attractive one.'* (Manufacturer of apparel)

Some sectors lend themselves particularly well to local peer networks. Restaurants, for example, are often clustered in close physical proximity in town centres or shopping centres (although they are, of course, also often competing for the same consumers).

An option proposed by some SMEs is that trade bodies, such as the Horticulture Trades Association, NFU, the UK Fashion and Textile Association, the Soil Association and Sustainable Restaurant Association, might facilitate local networking within a sector.

There are, however, concerns that being part of a network would require too much time. This is particularly a concern among self-employed tradespeople.

> *'This is good for the person who has time. There are meetings already in place in the industry that are like this but most of the time I am so squeezed for time that this would go by the wayside.'* (Tradesperson)

4.7.5 Waste reduction and recycling

Waste reduction and recycling are areas that SMEs in the horticulture, manufacturing of apparel and restaurant sectors can identify with.

However, most SMEs in the priority sectors believe that they already conform to the requirements of likely legislation. Some horticulture businesses, for example, have arrangements to pass on food waste to local livestock farms.

> *'We are committed to reducing waste. For example, we use cut off material from bulk production to make fabric samples that can be sent to customers and potential customers, thus reducing waste and the amount we have to send to landfill.'* (Manufacturer of apparel)
>
> *'We already try and do our bit regarding recycling. We have a company that picks up left over materials and wrapping and recycles it. We also try to source materials locally as much as we can.'* (Manufacturer of apparel)

An example is a manufacturer of apparel that offers a recycling scheme by which consumers can post their clothing back to the company, who will recycle it and give the consumer £5 credit to spend in their online shop.

> *'One of the best ways that we can reduce our impact on the environment is to buy quality clothing that will last more than just a few months and to recycle it when it isn't in a wearable condition anymore.'* (Manufacturer of apparel)

Once the garments are returned, the business sends them to a Material Recovery Facility (MRF), where the garments are sorted into two main categories; those made from 100% natural fibres and those made from artificial fibres. Natural fibre products are pulled apart into their separate fibres and cleaned. The next step is to spin them back into yarn, ready to knit into new fabric. This yarn is commonly called regenerated cotton. Polyester products are shredded into polyester chips, which are then melted and used to create new polyester fibres. This material is commonly called recycled polyester.

Another example is a restauranteur who, while he had not heard of the government setting targets for food waste and recycling, believes that his restaurant already does their very best in this area. He claims that he questions the pre-order customers occasionally to make sure that they are not over ordering on food, explaining their portion sizes, although it is down to the customer how much they order. 'Nobody likes to see food go in the bin'. More than half their menu is already plant-based. They re-use everything they possibly can to reduce food waste, grow their own flowers and herbs for display in the restaurant and return cardboard egg cartons. He felt that when Covid happened the use of plastic increased and, as they became more of a takeaway restaurant during that period, they used Vegware for the hot takeaway food. He did not know whether that was contributing to reducing his emissions but supposed it was. They ask their customers to return the boxes if they are unable to recycle them so that they themselves can recycle this packaging. They have purchased a £250 hot composter which they use for composting packaging and vegetable waste.

There are a number of waste or recycling schemes that SMEs already work with, including a food app called 'Too Good to Go', which connects consumers with leftover food. Local authorities have the potential to offer support to small businesses with their recycling of packaging, but they are generally thought to fall short in this area.

4.8 Summary and recommendations

There is a widespread perception among SMEs, particularly among micro and smaller businesses, that measures to reduce carbon emissions are either out of their control (they do not have work premises, or own their work premises, or they do not run vehicles), or are likely to require an upfront expenditure (or debt repayment) that the business cannot afford.

> *The kind of support we would value is help that would keep the restaurant in business. What would be particularly useful and supportive are ongoing incentives for restaurants that can demonstrate their sustainable practices. Incentives might include capping of energy charges, a reduction of VAT…and at a local council level, better recycling processes, relaxation of parking rules and congestion charging.'* (Restaurant)

Many SMEs also feel that they have already done as much as is within their control to reduce emissions.

> *'We do what we can. The boxes and wrapping we use are biodegradable, we recycle or leftover materials and other waste, such as oil from the knitting machines. We are moving towards being paperless, we ensure that lights are turned off in rooms not being used. We are discussing improving the building's insulation and installing solar power with the landlord'.* (Manufacturer of apparel)
>
> *'It's just me. It would be different if I had staff and a big fleet of vans. However, I just run one diesel van and that's probably the one thing I could change to reduce my (carbon) footprint. I work from home and from my van. I buy materials as I need them, mainly online. I do a bit of recycling of leftover materials, like metal and cardboard packaging. Otherwise, my job doesn't produce a lot of emissions. To be honest, I haven't really changed the way I do things in the last ten years.'* (Tradesperson)

SME personnel are often also time poor. They often multi-task and struggle to find the time to increase their awareness and knowledge of sustainability and emission reduction, the actions that might be taken and the advice and financial support that might be available. This also has implications regarding an energy and carbon audit, with many SMEs unlikely to be able to invest the time required for such an exercise, however useful it might be.

There is also a concern across the sectors that support available to SMEs may be too generic and not take into account the specific characteristics and challenges of the sector. For example, horticulturists express concern that an energy and carbon audit might not factor in land use or offsetting measures such as tree planting.

To address such concerns, trade organisations may have a part to play, and bodies mentioned in this context include the Horticulture Trades Association, Horticulture Forum NI, and the Chambers of Commerce. However, evidence of that currently happening is short.

There are some major barriers to engagement by SMEs in the priority groups, including the cost of major initiatives (making the building fabric more energy efficient, switching to electric vehicles), limited or confusing options for financial support to meet those costs and scepticism about the viability of alternatives.

There is clearly no one 'silver bullet' and SMEs express a need for multiple kinds of support: information and advice and/or financial support and/or peer networks.

> *'It needs all the things discussed to be in place: awareness and knowledge to be raised, which peer groups can help with, finance to be available and the infrastructure to be in place.'* (Horticulture)

Apart from their own premises, vehicles and activities, SMEs have an important potential role as advisers to their customers.

Tradespeople, in particular, have the potential to offer energy efficiency advice and services. Some indeed do that.

> *'I am attending a course on how to install electric vehicle charging points as this is the way the future will be.'* (Tradesperson)

However, there is a need for further support to ensure that this opportunity to promote energy efficiency and a reduction in emissions is not missed.

> *'I did qualify to be an installer of solar panels, but the government kept changing the Feed-in Tariff and it was not as attractive to people.'* (Tradesperson)
>
> *'There is a need for more support from government, but I do not get any. I go to hundreds of houses a year so also need to pass on information, but I do not always have the time. If the government sends out information, it is usually too much and it needs to be easily digestible information.'* (Tradesperson)

There is a great (currently untapped) potential for tradespeople, and indeed SMEs in other sectors, to act as ambassadors for emission reduction and ways to achieve emissions reduction. But that will first require greater engagement with SMEs to bring them up to scratch on the sources of emissions,

options available to reduce those emissions and support available to help facilitate the measures available.

5 Policy Recommendations

5.1 Introduction

These policy recommendations are for policies targeted specifically or principally at SMEs. SMEs are of course also significantly affected by decarbonisation policies designed for wide impact across consumers, large and small businesses.

5.1.1 The limits of policy making for SME decarbonisation

SMEs can be understood as having less decision-making control than larger businesses. Compared to large companies, SMEs are more likely to be competing to win market-share through marginal differences in approach (e.g., through slightly lower prices) against other businesses operating in broadly the same way in the same market. They have much less scope to shape markets and supply chains and to raise capital than large companies.[112] They may be less likely to own, rather than lease, their operating assets. While regulatory policies can be targeted at SMEs in order to create a level playing field between companies based in the UK, many UK SMEs operate in global markets.

To a large extent, SME decarbonisation will therefore need to be driven indirectly, by policies that target practices, businesses, or consumers upstream or downstream of the SMEs themselves. Such policies will, for example, include: global agreements affecting the embodied carbon content of cotton or cotton-substitute input materials (relevant for our clothing manufacturers priority group); minimum energy efficiency standards applied to rented buildings/landlords (of our priority groups, relevant particularly to our clothing manufacturer and restaurant sectors); public-health led policies promoting less red meat consumption (relevant for our SME restaurants priority group).

Nonetheless, the research undertaken, and evidence reviewed in this study provides strong indications that policy can achieve major impacts on SME decarbonisation. A joined-up approach – both in terms of policy design and in terms of how SMEs interface with the policy framework – is key. This is something that comes across strongly from all the perspectives we have used in this research: from the SMEs themselves (see S4.9 above); from sector experts; from international best practice, and from reviews of the current UK policy landscape.

5.1.2 Presentation of this section

We describe the recommended policies in terms of whether they operate as the strategic framework, as enablers, incentives, or regulation (or, in many cases, a combination of two or three of these categories). We also consider underpinning policies to create the market conditions, financing and infrastructure that will facilitate SME decarbonisation at scale, within the required Net Zero policy timeframe.

The different strands of research made it clear that a policy approach that provides intermittent support without a clear view of the journey that SMEs need to take is unlikely to be effective. For this reason, we have presented our recommendations in a narrative form, which charts a typical SME owner's journey from awareness of the Net Zero challenge/opportunity through to the installation of measures and adoption of sustainable practices (Section 5.3). In the later subsections, we discuss issues and options for implementation of the policies we recommend according to whether they are principally enablers, incentives, or regulations. A complete list is provided at the end of this section

[112] See Harvard Business Review, 2013, What Makes Strategic Decisions Different (hbr.org)

along with descriptions, the gap they address, and whether they are classed as an enabler, incentive or regulation, or a combination of two or more of these.

5.2 Summary of policy recommendations

A live, tactical Government plan is needed to address the common, distinct challenges that apply to smaller businesses across all sectors in meeting Net Zero. This needs to provide a clear regulatory and support framework, and ensure policy alignment, including with the UK Shared Prosperity Fund. Political weight to this plan could be given through a new UK Net Zero [Small] Business Champion, a role given to an MP in the run up to COP26.[113] It could build on the already-existing cross government framework focused on government procurement from SMEs. Principal elements of the plan should include:

- A consistent and ongoing awareness and enabling framework to overcome SME's time and capacity barriers. An **awareness campaign** can build on the success of the Race to Zero and related SME Climate Hub initiatives, with online **carbon footprinting** as an initial engagement activity. A similarly branded **one-stop-shop** contact point should provide the bridge from awareness to support. A key element of support should be subsidised **SME decarbonisation advisory audits** which are standardised but sectorally adaptable. The one stop shop is principally a triage function: it acts as a single way in (phone/email/internet) for time-poor SMEs and provides front line advice. It then links to support provided by different organisations on specific areas of decarbonisation (on a place based or sectoral basis). This also includes peer networks (see below) and to financing from public or private sources.
- Clear statement of the regulatory timelines for principal areas of SME decarbonisation. The petrol and diesel car/van phase out is already in place and our research shows is understood and recognised by SMEs. Government needs to set a clearer regulatory marker for its 2035 phase out date for fossil fuel heating and deliver strengthened non-domestic minimum energy efficiency standards (for both owner-occupied and rented buildings). Future regulations could require energy monitoring and auditing for energy intensive SMEs, minimum efficiency of process equipment and waste handling.
- Effective financing to support SME decarbonisation. Public finance is needed to help SMEs decarbonise as upfront cost is a key barrier. An **auction mechanism for SME building energy efficiency** support has been discussed by BEIS since 2019 and should be implemented. The British Business Bank should play a role in **developing the market for private sector green finance** and government should consider how to remove credit-risk-related and other barriers to finance offers to SMEs. Effective **fiscal incentives** need to cover the full range of decarbonisation investments, and to be maintained through the 2020s.

Alongside the national policy framework there is need to address sectoral diversity in support provision – our research emphasises how sectorally specific SME decarbonisation opportunities are; resources to date have often been too generic. The **SME Net Zero Working Group**, which was created by a BEIS policy team in preparation for COP26, bringing together sector representatives, could provide a model for a more detailed and ongoing public/private co-creation activity of support resources.

[113] UK appoints champion to spur business on to net zero emissions - GOV.UK (www.gov.uk)

Similarly, there is a need for **co-ordination and knowledge sharing between sub-national support programmes** and between SMEs themselves. Particularly important is that Shared Prosperity Fund projects share learnings and resources and not constantly reinvent materials and processes. Local/regional programmes should be frequently evaluated, and the results and deliverables shared widely.

At the firm level, national and international experience shows that **peer networks of SMEs** can effectively drive decarbonisation action. Peer networks can be delivered sectorally (particularly for specialist, energy-intensive sectors) or can be place-based, bringing together similar SMEs in a locality. Peer networks could be provided through one-stop-shops

Finally, a recommendation for government policy analysis, is to **focus on the leasing industries**. SMEs repeatedly cited the fact they leased buildings, vehicles and equipment as a reason they cannot decarbonise themselves. A policy is in place for leased buildings (though it needs to be enhanced) but government policy also needs to consider how best to reduce emissions from leased vehicles and equipment.

5.3 A possible journey through relevant policies: SME perspective

This narrative has been drafted from the perspective of SME owners/managers, to illustrate their experience of navigating a decarbonisation journey with our proposed integrated set of policies in place. Specific policy recommendations are highlighted in bold text when they are first discussed.

With their interest sparked by an integrated UK and devolved Government **awareness raising campaign**, an SME business owner-manager is looking for a better understanding of their current emissions and what a pathway to Net Zero could look like for their business. One of their staff members has completed a free **online carbon literacy course** targeted at their sector; the employee has fed back information, mostly on the opportunities but also on coming regulations and business incentives that are available. The owner-manager now want to learn more about the specific issues and opportunities for their business. The owner-manager therefore contact the national Low Carbon Business one stop shop, which had been widely advertised, initially through an online portal.

On initial online registration with the one stop shop the owner-manager is given access to **an online carbon footprinting tool** which. The footprinting gives them an estimated baseline of their current emissions (with the owner's consent, it also provides data to help build the UK-wide picture of SME decarbonisation potential and progress).

As a next step the SME owner-manager is encouraged to speak to an advisor at the one stop shop either by email or over the phone. A primary offering of the one stop shop is access to a **sector specific Net Zero advisory audit** based on an on-site survey, with a detailed roadmap: the owner-manager is encouraged to take advantage of this service. This on-site audit is government subsidised but not free, and the promotional material convinces them that it has been designed and tested by industry/sector experts and is likely to be a useful tool for their business. While engaging with the low carbon advisor/auditor, who has technical expertise and good 'people skills,' the SME owner-manager also begin to recognise the wider implications of decarbonisation and start connecting it to values and issues that they see as particularly important. The audit will also provide a roadmap for the business through to key carbon regulations that will impact them in the coming decade: depending on their business, these might include **enhanced Minimum Energy Efficiency Standards**, the **ICE vehicle phase out, a fossil fuel fired heating phase out**, a **mandatory audit requirement for energy intensive SMEs** and a **requirement to measure and benchmark building energy use** for companies with premises over 500m^2. The audit focuses on operational emissions, but also scope 3 emissions that are particularly relevant for their sector (e.g., around reducing red meat consumption for restaurants).

The next step is advice for the SME to make low carbon improvements, whether those are measures they choose to take or those that are required for regulatory compliance. The one stop shop can put the owners/managers in touch with local or national providers of the equipment required for operational decarbonisation using a verified **supplier finder service, this will also help them find suppliers of input products and services with low embodied carbon**. Some of those suppliers may be able to **access government grant funding** to help them pay for measures that are installed in advance of regulatory requirements. For other measures, or to work alongside the grant, the one stop shop will also be able to direct the manager towards **low cost or pay as you save private finance on a range of terms** for other measures. The SME is now trading profitably but it has suffered in the past due to an occasionally poor credit rating. However, the owners/managers have been able to apply for a **government-backed credit guarantee specifically designed to unlock low carbon financing** that will enable them to access this private finance.

Finally, the one stop shop provides the SME with links to wider, local, sectoral, and voluntary initiatives that they may find helpful. Particularly important are **peer networks** enabling sharing of experience and learnings about the required steps to Net Zero. The service is able to identify a selection of sectoral and local peer networks. In this instance, because their business is in a small, specialised sector, our owners/managers choose to participate in a UK-wide peer network of similar companies. Their business has now received the targeted information, resources and support it needs to make more rapid progress on its journey to Net Zero.

5.4 Strategic Perspective

The strategic aim of the policymaking behind the customer journey we describe above would be to:

a) make Net Zero straightforward and accessible for cash and time poor SMEs, enabling a step change in the scale, scope, and pace of change.

b) Provide a joined-up framework - there is an extensive and dispiriting body of evidence across all the individual policy mechanisms for SME decarbonisation, showing that at best they work only partially. There is no silver bullet – or rather the silver bullet may well be the integrated, long term policy approach.

c) Enable a growing private sector SME decarbonisation support industry (which will itself be principally made up of SMEs) by providing a clear regulatory framework for, and supporting the growth of, the necessary supply chain of goods and services. These range from carbon footprinting services, to financing, through to bespoke, highly energy efficient industrial equipment.

Our SME interviews and detailed sectoral reviews across four diverse sectors have highlighted the need for sectorally specific support. Business owners and managers told us that they find current support too generic. To address this, government should look to work with sector experts to ensure that the SME advice and support service enables all businesses to capitalise on decarbonisation opportunities, regardless of sector or location.

Financing needs to be addressed through public funding support, and by building a private finance market. An underpinning system to enable grants. Meanwhile government needs to prime the market for private finance. The British Business Bank is well-placed to begin this work. Standardisation and aggregation of fundable measures in SMEs is key to bringing in private finance. Robust audits will be critical for this to be effective.

Further, targeted policies to develop the supply chain for required decarbonisation measures/support will be essential. This includes the training and development of an effective national corps of low carbon advisors/auditors serving different sectors, plus a development programme for the suppliers

– to the SMEs – of low carbon improvement measures. SMEs may be more likely to lease their operating assets – buildings, vehicles, and equipment: a programme with the leasing supply chain is needed.

5.5 Enabling Policies

5.5.1 Awareness raising

While both public and SME awareness of the issue of climate change is high[114] and recent polling points to a desire from small businesses to do more to improve their sustainability, there remains a significant lack of understanding in terms of which actions will be most effective, especially in sectors with more complex emission profiles, and of what support is available and where to go for advice[115]. To address this, we recommend that the UK Government, in collaboration with devolved and local government and business groups should fund a large-scale awareness raising campaign targeted at SMEs, who tend to be overlooked as part of campaigns in favour of households (while larger businesses are engaged by government directly or through industry initiatives). There is evidence of some existing cross-nation collaboration in terms of signposting small businesses to information campaigns. The Welsh Government's[116] recent Net Zero Wales Plan encouraged small businesses in Wales to engage with the UK Government's 'Together For Our Planet' campaign and use resources available through the UK SME Climate Hub. A future awareness raising campaign must build on this collaborative effort and focus on the critical role SMEs will play in helping to reach Net Zero,[117] highlight the practical steps that can be taken to reduce emissions and improve sustainability. The campaign should direct SMEs of all sectors to engage with the national one stop shop.

The campaign should look to mobilise the considerable number of people and businesses who want to do more by creating 'climate culture champions' in workplaces. The UK Government could look to provide funding for online carbon literacy courses for SME decision makers and climate champions, delivered through Gov.uk.

In the run up to COP26, BEIS gave support to the UN's SME Climate Hub, creating a landing page for UK businesses with limited sector-specific guidance and a strong push to make a Net Zero pledge. Just over 3,000 SMEs have committed to date, which suggests that the campaign has had limited success. However, this level of response is also understood[118] to be the highest amongst global participants in the UN's Race to Zero campaign. A future awareness raising campaign must learn the lessons of the SME Climate Hub by maintaining momentum and being placed on a secure, long-term footing helping to ensure that the information conveyed, and resources provided are trusted by SMEs.

Our key recommendation in this area is therefore: an awareness campaign set on a secure long-term footing, building from the work of the UK SME Climate Hub.

5.5.2 The one stop shop

The concept of a one stop shop is not new. Energy and carbon related one stop shops have tended to be primarily focused on the residential sector to date; but there is a long history of business support one stop shops for SMEs covering other areas of operation/change (e.g., digital transformation), or providing general support for growth and investment.

[114] https://natwestbusinesshub.com/articles/sustainable-business-tracker-january-2022-smes-less-likely-to-prioritise-climate-action-in-2022
[115] https://www.futurenetzero.com/2022/04/22/uk-smes-overwhelmed-with-tackling-climate-change/
[116] https://gov.wales/net-zero-wales-carbon-budget-2-2021-2025
[117] NatWest Group's *Springboard to Sustainability Report*. https://natwestbusinesshub.com/articles/springboard-to-sustainability-160bn-opportunity-for-smes-tackling-climate-change
[118] By our research team who have been involved in the initiative.

In the UK, Home Energy Scotland and Business Energy Scotland offer the most developed examples of a carbon/energy one stop shop approach but Northern Ireland has also committed to a residential one stop shop and a network of physical one stop shops aimed at household retrofit is being developed in the Republic of Ireland. Considering a one stop shops focus on wider SME business support, the long-running Business Link network offered many similar services to a one stop shop as have many of the series of ERDF-funded local schemes.

Where possible, specific advice around decarbonisation for a given SME should be offered via a web portal using strong data and linking to further support and advice via pre-agreed referral pathways. Telephone advisors should be available to any SME who wants or needs one to one support with in-person advice possible for particularly challenging SME circumstances. While it is critical that an SME engages with the one stop shop through one entry point and from their perspective views the one stop shop as a single entity, though behind the scenes a triaging process should direct them to specific sources of information and further support tailored to their needs. The one stop shop needs to link to the work of business advisors (who may be more broadly focused than decarbonisation), who will need to promote the service: the experience of many SME engagement projects is that the business advisors have to go out and generate interest. Very few SMEs came to ERDF-funded support services themselves.

In summary our recommendation is that across UK nations there is a SME decarbonisation one stop shop service. The one stop shop may be delivered for different SMEs by local, or even sectorally-based entities, but it is vital that:

- government ensures similar standards of service and a single ‘way in’ (phone number and website/email) for all SMEs
- government invests in some core underpinning infrastructure (e.g., common information about the funding and financing options)
- the service is integrated with wider business support provided by government or regional bodies, eg under the UK Shared Prosperity Fund
- government ensures that all areas of the country/ all types of business are covered with at least a minimal one stop shop service offering the core services (a national backstop).

5.5.3 Footprinting tools and audits

A wide range of carbon footprinting and advisory decarbonisation auditing services for SMEs are emerging from public and private initiatives. Research – including our own SME interviews – consistently shows that auditing is a key service that SMEs themselves want.

Audits and footprinting are not a standalone solution. We suggest a policy focus needs to be on ensuring that: (a) footprinting services meet minimum standards in the information they provide; (b) low carbon advisors/auditors have the appropriate skills, including soft skills; (c) audits are sectorally appropriate, particularly for more complex sectors (e.g., manufacturing); and (d) audit systems are integrated with wider support, particularly access to financing and peer support through a one stop shop.

We do not recommend the provision of free SME decarbonisation audits, as such provision may have devalued the currency of carbon and energy efficiency audits in the eyes of many SME

owner/managers.[119] Instead, we suggest subsidised provision, which could be offered on a sliding scale for micro/small/medium businesses. The audits should be delivered in close collaboration with sectoral bodies, local actors, and existing providers of these services.

Private and public sector providers have already developed a wide range of audit services that could be integrated into a much stronger government programme for SME decarbonisation. Targeted government activity to improve the standardisation and integration of audits with wider support could deliver a step change in this growing industry.

Footprinting

A carbon footprint is an essential first step for any SME embarking on reducing its emissions or working towards Net Zero. However, carbon footprint methodologies and standards can be complex and confusing and have been developed primarily for large businesses and specialist consultants[120].

A key development in footprinting services which some of our authors have been involved with is – with support from BEIS, Google, and the SME Climate Hub – the development of an online tool which has been developed specifically for SMEs.[121] This reduces the need for technical knowledge and detailed operational data.

Despite this important development, private sector footprinting offerings will continue to be developed by a range of actors; this is an emerging green industry. There are existing standards for such tools/services: the GHG Protocol and various ISO/PAS standards exist. A list of tools meeting appropriate standards could be maintained and discussed with SMEs as part of a one stop shop service.

SME decarbonisation advisory audits

Advisory energy saving or decarbonisation audits, involving a site visit from an expert and providing guidance on potential energy/carbon saving options and their costs and payback, have long been a feature of the SME support landscape. Usually these are provided outside of formal auditing and environmental management frameworks such as the ISO14000 set of environmental management processes, or the ISO50002 energy audit procedure.[122] SME decarbonisation advisory audits in different formats may often be provided by auditors who – for other clients - provide Energy Saving Opportunity Scheme audits for large businesses or non-domestic Energy Performance Certificates when buildings are sold or rented out.

We recommend standardising these SME decarbonisation audits and/or the role of the auditors that produce them. This may be either through creation of a wholly new role/process or by building from ISO14000, ISO50002, NDEA or ESOS processes/roles.

The output of an SME decarbonisation advisory audit should be tailored to an SME's unique circumstances, and – we recommend – should consider direct emissions as well as principal indirect

[119] Our research team are not aware of any research on perceptions of value around free energy or carbon audits. However, the practical experience of our researchers, who have worked on SME decarbonisation projects, is that the fact of an audit being free does reduce its perceived value for some customers; moreover, SMEs sometimes do not want advisory decarbonisation audits because they know they are typically a free offer "from the government" and therefore assume they are not valuable. There is a literature on this topic in relation to free educational resources where the same effects have been observed – see Samuel Abramovich, Mark McBride, Open education resources and perceptions of financial value, *The Internet and Higher Education,* Volume 39, 2018, Pages 33-38, ISSN 1096-7516, https://doi.org/10.1016/j.iheduc.2018.06.002.

[120] Hampton, S., 2019. Making sense of energy management practice: reflections on providing low carbon support to three SMEs in the UK. Energy Efficiency 12, 1473–1490. https://doi.org/10.1007/s12053-018-9750-5

[121] Business Carbon Calculator. See: https://smeclimatehub.org/normative-launches-carbon-calculator-sme-climate-hub/

[122] Which in turn relates to the ISO50001 Energy Management process. The ISO5005 energy management process is a light touch energy management procedure suitable for SMEs discussed in S5.8 below.

emissions for that sector resulting from the supply chain, waste, or consumer choice. Outputs should be presented in a clear way which references the regulatory timeline and with actionable next steps provided which will take an SME on a journey towards Net Zero.

An audit should give directions to further support via local peer networks and a one stop shop, particularly routes to proceed with planning and financing measures. It is important that both quick wins and longer-term goals are presented.

While many previous SME support programmes have delivered free audits, SMEs who contribute to the cost of an audit may be more likely to engage with the auditing process and its outcomes (see footnote 116 above).

Previous audits provided by SME support programmes have tended to focus narrowly on building and process energy efficiency, and some transport emissions – we suggest government should support the development of widely accessible audits for SMEs that have a wider focus. For example, manufacturers of apparel and restaurants interviewed as part of this work felt that a wider-ranging and more sector specific audit would be useful, with clear next steps provided, an indication of whether machinery should be replaced now or later, and an indication of the impact supply chain or scope 3 emissions could be having and how they could begin to be addressed. Not all Scope 3 emissions can be covered: the focus should be on those that are particularly relevant to the sector e.g., for restaurants, advice on the typical carbon and water savings that could be achieved by switching a quarter of their menu to plant-based alternatives.

Audits are not just technical processes. Work undertaken by the research team[123] involved in this project has repeatedly identified that – as well as technical skills – it is equally essential to ensure auditors have adequate soft skills to be able to present recommendations clearly in writing, and to be able to discuss recommendations with clients. Public-funded audit programmes have often failed to address this aspect, and it is likely a major contributing factor to, for example, low uptake of ESOS recommendations in the larger business sector.[124]

In summary, key steps that we recommend in relation to audits and footprinting are:

- A government-supported SME decarbonisation advisory audit specification and/or training/qualification/accreditation regime for an SME decarbonisation advisor and auditor role, with a strong equal focus on technical and communication skills within the role. This may be wholly new or building from current ISO14000, ISO50002, Non-Domestic Energy Assessor or ESOS processes and auditor roles (Government discusses in its 2021 ESOS consultation the evolution of that audit towards a net zero assessment).[125]
- Consider a subsidy regime for access to these audits, based on the different needs of micro- small- and medium- enterprises
- Use government's convening power to develop, with sectoral associations and representative bodies, sectorally appropriate auditing regimes based around the new specification
- Promote sharing of best practice in audits and ensure audits are conducted to the new standard by publicly funded advisory programmes, rather than having advisory audits constantly reinvented (see Shared Prosperity Fund discussion at S5.4 above).

[123] Hampton, S., 2018. 'It's the soft stuff that's hard': Investigating the role played by low carbon small- and medium-sized enterprise advisors in sustainability transitions. Local Economy 33, 384–404. https://doi.org/10.1177/0269094218778526
See also a course for auditors here: https://www.open.edu/openlearncreate/course/view.php?id=3798

[124] The 2021 ESOS consultation stated that one of the aims of proposed reforms to ESOS was, "To increase the number of ESOS participants that take action to reduce energy use by raising the quality of their ESOS audit." Strengthening the Energy Savings Opportunity Scheme (ESOS) - GOV.UK (www.gov.uk)

[125] Ibid. P38.

- Fully integrate the provision of audits and footprinting tools within one stop shops

5.5.4 Peer networks[126]

Business networks appear in multiple forms, and there is potential to integrate sustainability themes into existing networks, create new green business networks, or convene specialist energy efficiency groups, such as in the examples from Germany discussed above (see section 3.2).

The existing landscape for business networks is geographically variable, with some areas such as Buckinghamshire benefitting from a well-established, general purpose business network, Buckinghamshire Business First, representing over 13,000 businesses. Here, a 'Net Zero Collaboration Circle' was recently created, while the network is also used by the local ERDF programme to promote its audit and grant offer.

In other cases, public money can be used to set up new green business networks. Oxfordshire Greentech was established using funding from the local ERDF project, *OxFutures,* and it is seeking to become financially sustainable. However, evidence from around the UK suggests that green business networks struggle to survive on membership subscriptions alone, and in many cases, they close when public funding ceases. Cambridgeshire Cleantech is an exception however, combining membership income with a range of consultancy offers, and diverse sources of public funding.

Sector-specific peer networks are likely to be valuable for businesses whose environmental impact is complex and difficult to quantify (such as food producers), or where mitigation efforts require specific expertise (e.g., industrial, and chemical processes). In these cases, we recommend that industry associations are involved either as network coordinators or convenors, or by providing links to experts and policy stakeholders. These actors might also employ specialist advisors who could provide expert support (e.g., audits) to network members.

In summary our policy recommendations in relation to peer networks are:

- Government needs to identify peer networks as an important policy tool in this area, as part of an SME decarbonisation plan. This is one of the best evidenced effective approaches, internationally.
- Government should convene sectoral organisations particularly in the more complex sectors to identify how a peer decarbonisation network could work in their sector
- As part of local programmes (whether funded by UKSPF or other mechanism) local peer networks should be encouraged – particularly for more "standard" sectors – office based, and retail
- Access to peer networks should be integrated as a key offering of a one stop shop

5.6 Financing, fiscal incentives and penalties

Public financing is required for two reasons:

1) Short-term: To provide funding for cost-effective measures that in time can be funded by a stronger private sector finance market in this area – the role of public funding will be to demonstrate the potential, and build the systems, that can be taken forward by private finance.

2) Medium to Long-term: To finance measures that deliver socially cost-effective carbon savings, where, at firm level, the energy or other savings are not cost effective.

Building a private financing market will be achieved by demonstrating that there is demand amongst SMEs and that financing packages can be offered that are competitively priced to incentivise SME take

[126] Mallaburn, P., 2016. A new approach to non-domestic energy efficiency policy.https://www.theccc.org.uk/wp-content/uploads/2016/10/A-new-approach-to-non-domestic-energy-efficiency.pdf

up but still profitable for lenders. The effective development and demonstration of investment-grade audit mechanisms that can provide effective aggregation and standardisation of a wide variety of measures are also required.

Public Financing

The potential to receive a grant to undertake certain decarbonisation measures was – unsurprisingly – well received by SMEs we interviewed as part of this research. We discussed a partial grant which – while welcome – was seen as still leaving the problem of the remaining upfront cost: accessing finance has also proven a consistently reported barrier throughout the literature.

We recommend that public financing should be offered across all sectors, rather than being targeted on a particular sector (there has in recent years been a marked movement towards offering financing to particular 'priority' sectors or through competitive funding pots). The scale and pace of decarbonisation required means that all SMEs must decarbonise regardless of sector or ability to bid into competitive funding pots.

We recommend that a set of government-funded grants are made available for measures recommended through an audit process (and will therefore be cost-effective and deliver significant carbon savings).

Government needs to fulfil its commitment in the Heat and Building Strategy to "Provide targeted support to improve the energy efficiency of SME sector buildings"[127] taking forward the ideas in its 2019 call for evidence for SME energy efficiency support. This proposed **an energy efficiency auction** model that could be a powerful model for government investment in the most cost-effective SME operational energy improvement opportunities and would help build the supply chain.

We suggest there could be a two-part approach: 1) a smaller, partial grant available to all businesses that need them for measures identified in an audit; 2) More generous funding for building decarbonisation indirectly awarded through the auction mechanisms as already proposed by BEIS. All financing offers should be integrated and made available through the one stop shop framework: this ensures that SMEs access financing alongside advice and wider support and are helped to find relevant installers/suppliers (this approach is based on the long-running and successful EST-managed Home Energy Scotland one stop shop model, where homeowners access Scottish Government funding programmes through the national one stop shop service).

5.6.1 Private finance

The British Business Bank should prime the market and help to create the market conditions for private companies to offer competitive financing to SMEs.

That can be achieved in part by demonstrating that there is demand amongst SMEs and that financing packages can be offered that are competitively priced to incentivise SME take up but still profitable for lenders. Audit mechanisms that can provide effective aggregation and standardisation of measures are also required.

When considering the private finance offer the British Business Bank, private lenders could look to the delivery of the Low Carbon Innovation Fund (LCIF)[128] which is an ERDF-funded investment programme open to eligible SMEs providing low carbon/GHG reduction services. It operates in Local Enterprise Partnership areas in the East of England. The funding is available for both early and late-stage investors, and is only available where the SMEs have co-investors, though as part of the support

[127] See f**Error! Bookmark not defined.** above
[128] https://lcif.vc/

provided, the LCIF will help find co-investors. While green innovator SMEs are not typical SMEs, the delivery of the programme could offer useful lessons in how to engage with SMEs and offer competitive financing which has an element of co-financing with other funders.

The 2019 BEIS Call for Evidence referenced the fact that, private finance from loans and Energy Service Companies (ESCOs) could be further supported by government. To unlock the potential for this financing therefore the Call for Evidence discussed, "Whether there would be any value in a Government guarantee to underpin loans to SMEs from ESCOs, financial institutions, energy efficiency lenders (e.g. banks, building societies) and partner organisations, to de-risk these [ESCO and Green Loan] products. In particular, we want to understand whether a Government guarantee could enable faster mobilisation of green mortgage products, helping the market to deliver energy efficiency, carbon, and bill savings without the need for long-term Government subsidy."[129]

This idea was also referenced in the Green Finance Strategy. As far as our research team is aware, there has been no further government action on this proposal.

5.6.2 Fiscal Incentives and penalties

British Business Bank survey data on enablers shows there was a clear consensus (64%) across all kinds of smaller businesses that an intervention through the tax system would encourage action.[130]

The landscape of fiscal incentives for businesses making investments and improvements – including specifically low carbon improvements – is complex, with the complexity compounded by generous, time-limited incentives for investment provided as part of HMT's covid relief package.

The detail and potential costs and benefits of different fiscal incentives goes far beyond the scope of this report, and we would note only that they are an important part of the landscape. Government needs to provide effective incentives for the full range of business low carbon investments: energy efficiency in buildings and process equipment, installed low carbon systems. The business rates changes announced in October 2021 address installed low carbon building systems but there would seem to be a gap around energy efficiency equipment and process energy measures.

We would highlight that – once special covid relief allowances cease (which currently make such an approach redundant) – an Enhanced Capital Allowance (ECA) approach to drive low carbon investment should be reviewed. This may be particularly important for process energy improvements for which there is currently no other incentive regime. We do not have the data to say that ECAs are the best approach to incentivise low carbon SME investment (as opposed to a grant or even advice measures), but it is important to note that stakeholders were widely unhappy with the axing of this incentive in 2020 (see section 3.1.4 above).

A further consideration for an incentive for SME building energy improvements could be a stamp-duty linked incentive. This has been widely discussed for the domestic sector[131] to stimulate improvements to the fabric performance of homes. This incentive could work by providing a cost neutral adjustment to stamp duty relative to any increase in energy performance of a building, with Energy-adjusted Stamp Duty Land Tax (SDLT) providing a proportionate financial incentive to install energy efficiency measures and also act as a long-term driver of demand.

[129] Energy efficiency scheme for small and medium sized businesses: call for evidence - GOV.UK (www.gov.uk) 2019, P18
[130] https://www.british-business-bank.co.uk/wp-content/uploads/2021/10/J0026_Net_Zero_Report_AW.pdf
[131] UKGBC https://www.ukgbc.org/ukgbc-work/a-housing-market-catalyst-to-drive-carbon-emission-reductions/

5.6.3 Climate Change Levy/Agreements

We cite evidence from UCL research in section 3.1.4 that the current system of CCLs/CCAs may discriminate against SMEs who have less capacity to participate in programmes than larger businesses. An option here (proposed by Peter Roscoe from UCL) could be to give SMEs discounts against CCL when they install energy monitoring equipment on energy intensive plants. Energy monitoring could be a step towards participation in a full CCA but, beyond this, it should lead to greater awareness and can inform audits and other assessments of the potential for energy and carbon saving on the site.

5.7 Regulation

5.7.1 Introduction – principles for regulating SMEs

Government is often reluctant to regulate SMEs for fear of stifling business growth through bureaucracy and compliance costs. That is the reason why SMEs are excluded from some regulatory decarbonisation policies that affect large businesses.

For SMEs, to minimise the regulatory burden, it is essential that regulations are introduced if they are technically and economically feasible. Thus, for example, extension to BEIS's proposed mandatory operational rating scheme, to bring more buildings in scope (beyond the very largest offices), will require wider development and uptake of effective building energy monitoring systems suitable for use by SMEs.[132]

Nonetheless, several options for additional regulation that is likely to particularly affect SMEs have been put forward with varying degrees of formality by UK Government, particularly in the buildings sector. We would encourage the government to explore these regulations:

Overall energy and carbon performance

An extension of ESOS to cover mandatory audits for energy intensive and/or medium sized SME businesses.

Buildings

An extension to Minimum Energy Efficiency Standard (MEES) regulations to a) put the regulatory threshold at EPC B rather than E (as has already been consulted on) and an extension of the regulations to owner occupier buildings (as discussed in the Heat and Buildings Strategy).

The planned operational rating system for large office buildings[133] could be extended to a range of smaller building sizes (eg reduced from a minimum of 1000m^2 to a minimum of 500m^2) once monitoring equipment and approaches are readily available and affordable for SMEs.

Transport (including construction/agricultural vehicles) –

The existing ICE regulatory phase out plan for cars and vans provides a clear timetable for SMEs as it does for individuals and large businesses. Going beyond this, there is potential to extend the phase out to construction and agricultural plant/vehicles as electric or other low carbon technologies become more viable as diesel replacements. A full phase out of red diesel across all sectors is essential for Net Zero as a parallel action.

Process energy use

There is a gap in support and advice around process energy use for SMEs. Regulatory action in this area may be more challenging given that industrial and other business processes are diverse. One approach could be to require mandatory action on audit recommendations within a timeline where

[132] The development of the ISO50005 standard is an important development here.

[133] Introducing a performance-based policy framework in large commercial and industrial buildings in England and Wales (publishing.service.gov.uk)

specific processes are (a) energy intensive and (b) show a reasonable cost-effective potential for upgrade as identified through an ESOS (or alternative government accredited) audit.

Product standards

Product durability, repairability, recyclability, energy, and resource efficiency (among other considerations) – are increasingly being considered by the UK and devolved governments. BEIS[134] and DEFRA[135] have both recently consulted on elements of product policy with the intention of going further than the relevant EU regulations and move towards a more circular economy. The final policy outcomes in many of these areas will not be decided in the short term but it is likely that by 2030 more stringent regulation regarding the production and disposal of products will be in force in the UK which will impact upon SMEs.

5.8 Underpinning Policies

Addressing the leasing industries

The SMEs we interviewed repeatedly identified that they often did not own their buildings, or equipment. Leasing of vehicles is also common. UK Government, through its non-domestic Minimum Energy Efficiency Standards policy has addressed the energy efficiency of rented buildings in England and Wales; similar policies are planned in Scotland. Increasing the standard of MEES from minimum EPC E to minimum EPC B, as government has proposed, is vital to bring a much larger number of SME buildings into scope. Leasing of equipment is much less well understood, and we suggest this is an important area for government to research and plan effective policies.

Support with procurement, waste and working towards the circular economy

Across some of the sectors we spoke to – particularly clothing manufacturers and restaurants –we found a strong recognition of the need and potential to source lower-carbon input materials. Waste is also a high-profile issue where SMEs are aware of significant customer pressure. As part of enabling policies and government/sectoral collaborations (see S5.5 above), new advice and guidance frameworks could be developed to guide SMEs in buying lower carbon supplies and in reducing waste as part of circular economy approaches. This work is often best delivered through place-based initiatives: this should be a key area where national government works with and learns from UKSPF projects in a structured way.

Energy Monitoring

The roll out of energy monitoring technology and systems is key to enabling SMEs to reduce carbon emissions and can link to – and provide much more accurate – footprints and audits. Energy monitoring technology enables tracking of the performance of principal energy using systems and can therefore help unlock green financing, by providing an accurate estimate of how much energy and carbon will be saved from a more energy efficient version of the system concerned.

The government has supported the development of a monitoring approach for smaller companies which the British Standards Institute describes below:

“The BS EN ISO 50001: 2018 Energy management systems is an overarching standard for business energy monitoring. This standard is widely used by larger organizations, including those who use it as a route to compliance to the UK’s Energy Savings Opportunity Scheme (ESOS). Smaller organizations, that may not have the resources to implement an Energy Management System to ISO 50001 from the

[134] https://www.gov.uk/government/consultations/draft-ecodesign-and-energy-labelling-regulations-2021
[135] https://consult.defra.gov.uk/waste-and-recycling/waste-prevention-programme-for-england-2021/

start, can benefit from the phased approach provided by the new BS ISO 50005: 2021 Energy management systems. Guidelines for a phased implementation."[136]

To support SMEs in accessing ISO 50005:2021, BEIS and BSI working with the Race to Zero campaign have supported the distribution of 100,000 free copies of this standard. Further government support could include support for expert advice to implement the systems and for the required monitoring equipment.

Innovation

Boosting access for SMEs to energy efficiency (BASEE) was a BEIS funding programme from 2019-21 supporting innovative private sector decarbonisation financing and support services for SMEs. The evaluation of BASEE will be published later in 2022. Based on the experience of our research team (two of whom were involved in a BASEE project) the programme provided much needed support for new integrated approaches to delivering support to SMEs. Challenges for BASEE were the covid crisis and the confusing national landscape of ERDF support against which the private sector initiatives had to be delivered. Nonetheless, BASEE was an important policy programme supporting the development of private sector models to achieve the type of joined-up delivery that this research report indicates is key.

Supply Chain Development

SME decarbonisation necessitates the training of low carbon heating system and energy efficiency retrofit installers, EV charge point installers and maintenance crews and a host of other professionals whose role is to service SMEs as well as households and larger businesses.

It is important to distinguish between a supply chain (consisting of both large and small businesses) that will meet SME's operational decarbonisation requirements and the role of SMEs in acting as this supply chain, for other SMEs, as well as big businesses and households. Nonetheless, clearly the fact that so much of the potential supply chain are SMEs themselves, at the coalface of delivering the transition, gives them a role as peer influencers.

The model of Scottish Government's supply chain development programme – delivered by Energy Saving Trust – is an important one here, and it is worth quoting at length a recent Energy Saving Trust report which describes the approach:

"Since 2013 Energy Saving Trust has delivered a programme for the Scottish Government which supports small and medium-sized enterprises (SMEs) and local suppliers to maximise their share of spend from Scottish Government programmes, ECO (Energy Company Obligation), the RHI (Renewable Heat Incentive), and other large-scale sustainable energy investment programmes to the significant benefit of both the overall and the low carbon economies in all areas of Scotland.

The focus of this programme is to help businesses in the 'downstream' supply chain, i.e., those who are involved in the process of installing measures, including installers, designers, assessors, and architects. The programme also engages with merchants and distributors as they act as a channel for engaging with the wider industry.

Key areas of focus for the programme this year (2021-22) include the provision of extensive direct support to the sector to incentivise training and upskilling of installers, helping with accreditation costs for the Microgeneration Certification Scheme, supporting the costs of attending professional and vocational courses and offsetting the capital cost faced by colleges in the north of Scotland to ensure

[136] https://pages.bsigroup.com/l/35972/2021-12-09/37s8jtn/35972/1639067516EQYR3kTi/A_Guide_to_BS_ISO_50005_2021.pdf

training rigs for low and zero carbon heating systems are available for trainees to experience first-hand."[137]

Key recommendations:

- Continue to support the uptake by SMEs of the ISO50005 energy monitoring standard.
- Based on the evaluation findings, consider a repeat of the BASEE private sector innovation programme, supporting development of joined up solutions.
- As part of an SME plan, develop policies targeted at the leasing supply chain – for buildings, vehicles, and industrial equipment.
- As part of an SME plan, identify the key areas of supply chain development that will be required to decarbonise the UK's SMEs. In many cases these will already have been mapped in building, transport, and industrial/agricultural decarbonisation policy analyses, but there needs to be an assessment of the areas/decarbonisation opportunities and challenges where SMEs may be particularly heavily represented (e.g. SMEs are probably particularly likely to occupy older, urban mixed-use buildings).
- Consider the Scottish model of supply chain development to drive SME decarbonisation.

5.9 Table of policies recommended, and gaps being addressed

Note policy recommendations are targeted at UK Government.

No.	Policy recommendation	Description/how delivered	Gap being addressed – which source the gap was identified from
Strategic Level			
1	A **government cross-cutting workstream & plan** to address Net Zero for SMEs and ensure inter-departmental co-ordination, championed politically by a new UK Net Zero Small Business Champion.	A live, tactical Government plan to address the distinct challenges that apply to smaller businesses in meeting Net Zero involving all relevant government departments. This could draw on the existing (procurement-focused) cross-departmental system of SME action plans. Political weight could come from a new UK Net Zero [small] Business Champion, as was in place in the run up to COP26.	Policy mapping shows problems of alignment between departmental activity. Joined-up activity is noted as the key policy gap.
2	**Ensure the UKSPF supports decarbonisation in line with UK government Net Zero plans, through co-ordination, sharing best practice**	Dialogue with and support to authorities putting investment plans into the UKSPF to ensure these (a) align with Net Zero needs of SMEs and (b) local authorities are aware of and drawing on best practice developed in earlier ERDF funded programmes. An ongoing UKSPF sharing and learning programme focused on SME	Alignment of ERDF (UKSPF predecessor programme) funded programmes with BEIS policies may have often been poor. There was very limited sharing of learnings, resources and best practice between ERDF SME decarbonisation focused programmes.

[137] Energy-Saving-Trust-programmes-in-Scotland-Report-2021_FINAL_24Jan22.pdf (energysavingtrust.org.uk) P20

		decarbonisation should be put in place by DLUHC and BEIS once the programmes are underway. One area of decarbonisation which needs to be place based is waste and development of circular economies and this should be a focus for national/regional/local co-learning and development.	
Enabling Measures			
3	**An ongoing awareness campaign**	The recent COP26-linked Climate Hub/Race to Zero campaign had some success. An ongoing initiative must maintain momentum and be placed on a secure, long-term footing helping to ensure that the information and resources provided are trusted by SMEs.	Research shows that levels of awareness and trust, and knowledge of what a business can do remains low.
4	**Invest in the design, delivery, and quality assurance of carbon footprinting tools**	Carbon footprinting tools are a first stage engagement tool. They also provide a key public dataset on SME performance. Government could promote their provision as part of awareness campaigns and a OSS service.	The available literature and our own SME expert and business interviews point to the fact that SMEs and policymakers do not have a clear understanding of emissions by firm or by sector which prevents informed action.
5	**Co-create support mechanisms with sectoral, and place-based representatives** building from the COP26 focused BEIS SME Net Zero Working Group.	The SME Net Zero Working Group, which was created by a BEIS policy team in preparation for COP26, could provide a basis for a more ongoing and detailed co-creation activity to develop engagement and advice programmes, which would engage a network of external partners, including trade bodies, other industry representatives, universities.	SMEs told us that current audits and advice is often too generic and does not cover all areas of emissions.
6	**Develop, promote and subsidise a standardised SME decarbonisation advisory audit process**	This may be a development of existing low carbon audit/assessor roles (e.g., NDEA, ESOS). The role needs to have a strong focus on communication and engagement skills. The role needs to be (see box above) designed and structured to allow provision of different types of advice and data gathering, based on sectoral needs. Subsidies could be provided to auditors, through their accreditation bodies, or through vouchers allocated to SMEs themselves. One way of setting the level of the subsidy could be the size of the business (micro-, small- or medium- enterprises).	Need for more relevant/focused advice (see box above); audit processes are often re-invented in ERDF programmes; also, research shows current auditors often lack key soft skills required to engage SMEs with the next steps. Subsidies are required to enable access, but evidence suggests the audits should not be free.

7	**Launch a Low Carbon Business one stop shop for SME decarbonisation**	A OSS provides a common access route to advice and support that might be provided by multiple local and sectoral actors, triaging SMEs based on their needs, signposting them to further support, tools, financing, or local partners. Government provides underpinning resources and infrastructure and ensures a basic level of provision across the country.	SMEs (and the literature) told us that SMEs are often time poor and do not have time or resources to negotiate complex offers.
8	**Support the development of sectoral and place-based peer networks**	Government needs to identify peer networks as an important policy tool in this area, as part of an SME decarbonisation plan. Government should convene sectoral organisations particularly in the more complex sectors (manuf., agric.) to identify how sectoral peer networks could work As part of local programmes (whether funded by UKSPF or other mechanism) place-based peer networks should be encouraged – particularly for more "standard" sectors – office based, and retail.	International best practice shows peer-networks are one of the most effective SME decarbonisation enabling actions. SMEs we spoke to responded generally positively to this idea.
		Regulation and Product Standards	
9	**Signal an incremental extension of relevant regulatory frameworks**, within a clean timeline and with a parallel timeline to ensure availability of the technologies (e.g., energy monitoring systems) and support to enable compliance	A more clearly flagged government commitment, not just an "ambition" for the 2035 phase out date for gas/oil boilers. Other regulatory frameworks that could be extended to cover more SMEs include: • MEES to cover non-domestic owner occupier buildings (also finalise regs for 2030 "B" standard for rented buildings) • ESOS requirements to cover some energy intensive and/or medium sized SMEs • ESOS (or other audits) could require action on inefficient energy-intensive process equipment	Regulation was accepted by many of the SMEs spoke to, if flagged significantly in advance. Policy analysis shows that there is very limited policy framework for process energy efficiency upgrades.
10	At a minimum meet and ideally exceed durability, repairability, recyclability, energy, and resource efficiency (among other considerations) set by the EU in **product standards**,	See left.	Decarbonisation for SMEs (particularly in the apparel manufacture sector) is highly dependent on the embodied carbon of input products. SMEs are increasingly aware of this.

	including for key non-energy using products such as textiles, with large carbon footprint.		
Financing and fiscal incentives/penalties			
11	**Develop an effective financing strategy to support SME decarbonisation:** Provide **public funding** for SME decarbonisation	Delivery on BEIS proposals in 2019 for an SME energy efficiency financing programme is an urgent priority. Beyond this, we recommend a programme to part-finance measures identified through audits. Access to finance should be through the one stop shop.	Unsurprisingly, SMEs cited cost as a barrier. SMEs like other businesses have a short payback horizon, which is often exceeded by the payback length of decarbonisation measures.
12	**Develop an effective financing strategy to support SME decarbonisation:** Support the development of **private financing**, including innovative development of joined up financing and support solutions	The British Business Bank should play a key enabling role to develop the market for SME private finance. Government should revisit 2019 proposals to drive the private green finance (inc. ESCOs) market for SME decarbonisation in its energy efficiency financing call for evidence and the responses to that. A further round of the BASEE funding programme should be considered to support innovative technology-based financing and support offers to SMEs.	There is a policy gap in support for private financing for SME decarbonisation, as BEIS's 2019 call for evidence recognised.
13	**Consider reforms to CCA/CCL** to enable greater participation, linking this to ongoing **support for SME energy monitoring**	An option here (proposed by Peter Roscoe from UCL) could be to give SMEs discounts against CCL when they install energy monitoring equipment on energy intensive plants. **Energy monitoring** under the ISO50005 or other standard could be a step towards participation in a full CCA. Existing government support for ISO50005 energy monitoring standard (a standard designed for accessible, low cost uptake) should be built on.	Evidence supplied to our research team (see S3.1.4) suggests that in some sectors, SMEs struggle to participate in, and gain the benefits of CCAs. Government has existing support activities for energy monitoring under the ISO50005 standard.
14	Ensure **effective fiscal incentives** are available through the 2020s to support SMEs in making investments in energy efficiency and process energy improvements, as well as renewable energy plant	A review of fiscal incentives for decarbonisation investment, particularly as covid-related generous capital allowances are phased out.	Business rates reforms in October 2021 focused on low carbon installed systems in buildings. While (all, not just low carbon) investment is currently incentivised under Covid recovery capital allowances.
Underpinning Policies			
15	**Research and policy design for the leasing industries**	SMEs often do not own their principal operational assets. There	One of the most repeatedly cited barriers to action by SMEs is that

		has been limited policy attention to decarbonising leasing, beyond the MEES regulations. Government should extend non-domestic MEES to EPC "B" as it has consulted on and should undertake more analysis of how to influence the energy performance of products provided to SMEs in other leasing markets, for vehicles and equipment.	they do not own their key operational assets.
16	As part of an SME plan, identify the key areas of **supply chain development** that will be required to decarbonise the UK's SMEs	Consider adoption of the Scottish model of a systematic support programme of supply chain development to support decarbonisation. Note a double benefit of this approach is that the supply chain is also principally SMEs.	We found little evidence of policy attention on the supply chain needs of the industries that will deliver SME decarbonisation.
17	Support greater **energy monitoring** by SMEs.	*See point 13 above.*	