Report

The Climate Impact of SMEs

Evidence from the UK and South Africa

November 2022

Sage

ICC

OXFORD ECONOMICS

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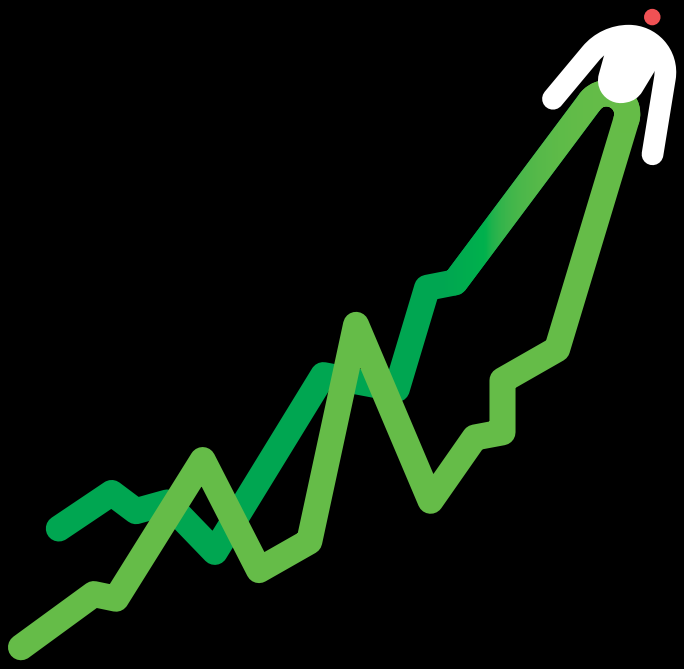

Foreword

Steve Hare
CEO, Sage

After another year of climate related disasters, it is becoming increasingly clear that the climate crisis will impact millions of small businesses globally. As nations gather in Egypt for COP27 Sage remains committed to ensuring the voice of SMEs is heard and their agility, determination and innovation is used to help us tackle the climate crisis.

I am delighted to partner with ICC and Oxford Economics to improve understanding and awareness of the critical role SMEs play in tackling climate change, looking at 2 significant economies in the Global North and Global South.

As a business serving millions of small and mid-sized businesses, partners and accountants around the world, we are already seeing a positive shift. SMEs are starting to develop solid net zero strategies, but they need our support to go further. We need to bridge the gaps between governments, investors and multinationals and a significant proportion of the economy fuelled by SMEs. Many see sustainability as central to their operations but continue to face barriers such as cash flow challenges, difficulty navigating government policies and trying to measure their impact. SMEs want guidance from government on how to engage with their suppliers to encourage them to be more sustainable, along with financial incentives.

Together we have put forward recommendations to tackle the increasingly complex issues and empower SMEs to take action in a global move towards a more sustainable future.

John W.H. Denton AO
Secretary General,
International Chamber of Commerce

For the second year running, the International Chamber of Commerce is pleased to partner with Sage to put the spotlight on the global SME community, and on its potential in helping us achieve ambitious environmental targets. As the representative of over 45 million businesses in more than 130 countries, we are proud to bring the voices of small businesses to COP27 and ensure that the business community writ large is fully engaged in this vital forum.

Given the importance of SMEs in the global economy, there is an important role for small businesses in supporting our collective commitments towards a more sustainable future. There is undoubtedly a need for greater action, but there is also an ever-growing commitment from SMEs of all sizes, in all regions and in all sectors to deliver on Net Zero targets. Crucially, more and more small businesses are realising that opportunity and sustainability are two sides of the same coin. They understand that environmental action can support their long-term resilience and success.

But taking action is not always straightforward and small businesses report myriad barriers that hinder their ability to implement measures that can significantly reduce their environmental footprint. This is precisely why the ICC and its global network is committed to supporting the SME community in practical and meaningful ways in this challenging but critically important transition. To deliver on our aspirations for a more sustainable future, we must drive sustained multistakeholder engagement and a collaborative effort between the private and public sector to create an enabling regulatory environment that is conducive to meaningful change within the SME community. We must also continue to improve the understanding and awareness of the critical importance of this transition, on the risks of not taking action, and on the benefits of sustainable models. This report is an important milestone in this effort.

The stakes are high, as are expectations, and ICC is determined to work with its global partners to empower small businesses to contribute to a more sustainable and prosperous future for the planet.

Executive summary

Small and medium-sized enterprises (SMEs) are at the heart of economies and societies around the world. They deliver products and services to consumers as well as provide employment to a large proportion of the working population.

That is why, as the world faces the challenges brought on by climate change, we must acknowledge that SMEs have a crucial part to play. SMEs have the potential to make positive improvements and support the transition towards a cleaner and more environmentally friendly future around the world both by reducing the impact of their own operations and by reducing the impacts generated in their supply chains.

Climate change is a complex and dynamic challenge, and different sectors and individual businesses must contribute to the solutions in different ways. Understanding the role that SMEs play and the support that they might require is therefore critical if they are to be enabled to collectively reduce their climate impact and that of societies in whole. Supporting SMEs will play a key role in the global move towards a more sustainable future.

This report provides an overview of the economic and climate impact of SMEs in the UK and South Africa. We have focused on two countries, one in the Global South and one in the Global North, recognizing that the impact and complexity of addressing climate change varies, across different social, political and economic contexts. Our research is underpinned by a survey of SMEs in the two countries, helping to deepen our understanding of how they view sustainability, and the measures that they are taking, or would like to take, to become more sustainable.

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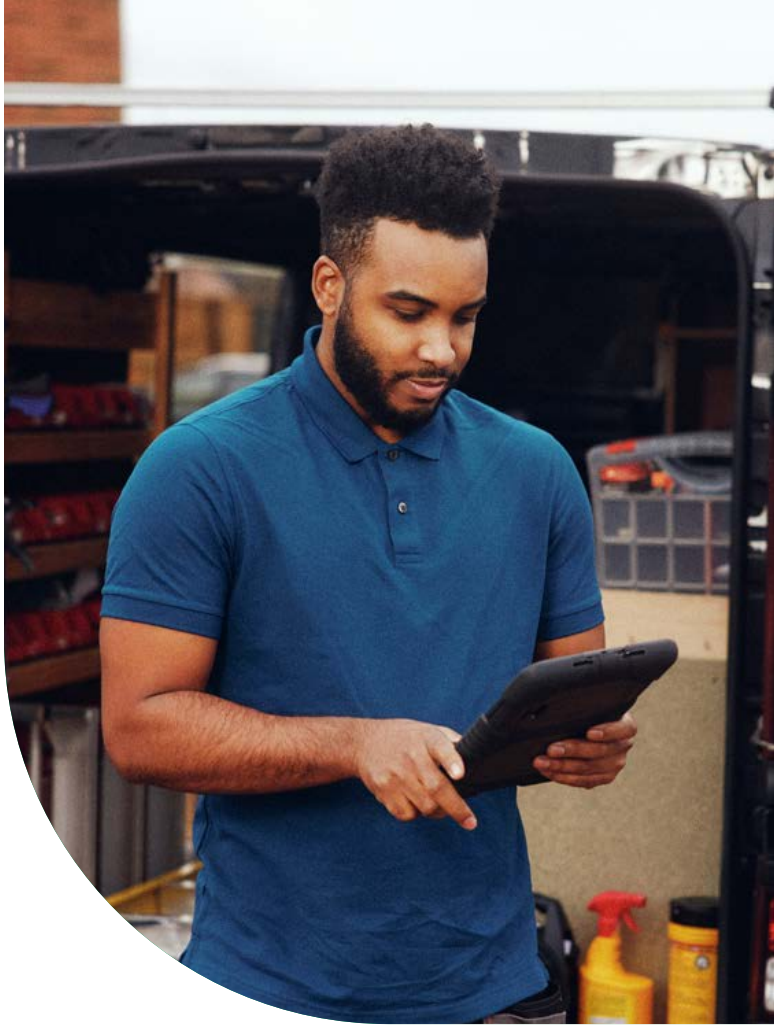
SMEs are a major part of the economy and have significant environmental impacts



Our analysis of the economic and climate impact of SMEs illustrates the significant role that they play in the UK and South African economies. This assessment has enabled us to quantify their contribution to both GDP and employment in the UK and South Africa.[1] We have also estimated their contribution to greenhouse gas (GHG) emissions. There is a trade-off with firms seeking to maximise their own economic value whilst minimising their environmental impact. We can look at their performance by comparing the impact of SMEs' own activities through their direct economic impact and Scope 1 emissions. This focuses comparison specifically on their direct business activities, rather than their broader footprint (which is inclusive of their whole supply chain, including the performance of suppliers which are large businesses). The results of this are detailed in Fig. 1.

SMEs make-up large shares of the economies of the UK and South Africa, constituting half and two-fifths of GDP respectively in 2021. The smaller share of the economy that SMEs make-up in South Africa when compared to the UK may in-part be explained by a difference in how they are defined. Whereas SMEs in the UK include all companies with fewer than 250 employees, South Africa also includes income thresholds, above which firms are no-longer considered SMEs. South Africa also has a higher share of SMEs operating in the informal economy, which would not be picked up in official statistics, potentially distorting the measured impacts of SMEs impacts.

Fig. 1: Total direct and Scope 1 economic and environmental impacts of SMEs in the UK and South Africa in 2021

	UK	South Africa
Contribution to GDP	**£1.0 trillion**	**R2.1 trillion**
Share of economy	50%	40%
Employment	**18,200,000**	**6,200,000**
Share of economy	52%	46%
GHG Emissions	**160 million tonnes**	**63 million tonnes**
Share of non-household emissions	44%	14%

Source: Oxford Economics

Focussing on the climate impacts, the results show that SMEs contribute a lower share of emissions relative to their contributions to GDP and employment. Our analysis does, however, indicate that this likely reflects the sectors that they are clustered in. The highest emitting sub-sectors, including utilities and heavy manufacturing, are dominated by larger companies, meaning that SMEs tend to cluster in lower emitting sub-sectors, subsequently constituting a smaller, but still significant, share of emissions. This is especially the case in South Africa, where emissions are more concentrated in specific sectors that SMEs are rarely involved, such as in heavy industry.

For example, half of business emissions ('non-household emissions') come from the utilities sector (largely because of its significant coal-based electricity generation), but SMEs compromise only 10% of that sector. This means that the lower emissions intensity of SMEs is largely being explained by the sectors they are in, rather than their relative performance against large business' in the same sector. This highlights that while attention has tended to be on large businesses in high emitting sectors, increased focus should be placed on supporting SMEs across all sectors as there are considerable emissions reductions that can be made by doing so, which are not always readily apparent or the centre of attention.

1. This employment includes both self-employment but excluding the informal economy.

Once we strip out the sectoral differences in play, we find evidence from the UK that SMEs spend more than large companies on energy purchases, increasing the relative size of their emissions footprint. As such, SMEs can actually be more emissions intensive than larger companies when operating in similar industries (meaning the emissions relative to the size of their contribution to the economy). Reducing the emissions associated with purchased energy (or 'Scope 2' emissions) would therefore have a proportionally larger impact on SMEs than large businesses in helping them to improve on their climate impact.

Furthermore, SMEs also generate economic and climate impact through their supply chains (known as Scope 3 upstream impacts). Once Scope 2 and Scope 3 emissions are accounted for, we find that SMEs' footprint totalled 63% of business emissions in the UK and 29% in South Africa. This again highlights how SMEs in South Africa are quite separate from the most emitting industries both in the nature of their direct activities and in their supply chains. Our analysis also shows that UK SMEs import significantly less goods and services to help produce the products and services that they sell than larger businesses, meaning that the emissions "exported" from foreign supply chains were around 40% smaller than large businesses in the UK, despite having a similar direct economic footprint. The same pattern appears to be true in South Africa, however the available data is less conclusive. This means that a higher proportion of SMEs total supply chain impact occurs within their domestic markets in comparison with larger businesses, which tend to effectively 'export' much of their supply chain impact to other countries.

In sum, SMEs collectively have a significant climate impact, although they are often clustered in less-emitting industries. The underlying environmental performance of SMEs varies, depending on factors such as the industry they work in. Understanding the specific characteristics and needs of SMEs is therefore critically important if they are to play a part in the major sustainability challenge that the world faces.

SMEs want to be more sustainable but face specific challenges and will require support

SMEs' significant contribution to the climate impact of the UK and South Africa highlights the importance of supporting them to become more sustainable, including their ability to contribute towards meeting the countries' nationally determined contributions (or carbon reductions) under the Paris Agreement. We looked at the factors that lie behind this with a comprehensive survey of more than 4,000 SMEs across the two countries.

The survey shows that, even against the backdrop of the Covid-19 recovery and rapid inflation, SMEs clearly recognise the importance of operating more sustainably. Indeed, most stated that sustainability was a priority or central to what they do and less than one-in-ten reported not having thought about it. Medium-sized firms were most likely to both see it as important and to have a sustainability plan in place. Reducing costs, for example by lowering energy consumption, was a key motivation; however, there was also a recognition that it was the right thing to do, illustrating a strong sense of purpose among SMEs.

SMEs are already taking actions to reduce their climate impact. Steps such as reducing waste and energy use are of key importance, as well as purchasing recycled or reused products and digitising to use less resources—factors that again largely point to the desire to reduce costs as a 'co-motivating' factor. More than a third of SMEs are already actively monitoring or reporting on their climate impact; however, the evidence shows that monitoring and reporting activities are skewed towards medium size businesses, with many small businesses finding it difficult to take concrete action in this space.

The research highlights that SMEs face barriers as they seek to become more sustainable, with cash flow to fund upfront investment consistently an issue. This is especially true among the smallest SMEs and those that are not prioritising sustainability. Navigating government policies is also raised as a barrier, especially amongst those most enthusiastic about sustainability. Additional challenges are also born from the difficulty SMEs face when trying to measure their impact. There is also evidence that a number of SMEs – particularly the smallest firms – have difficulty when attempting to influence their suppliers to become more sustainable.

Tackling these barriers will require support, with SMEs eager to utilise assistance from various channels. There is an important role for technology in measuring and monitoring environmental performance, as well as in facilitating the distribution of information and knowledge about how to be more sustainable. Firms also want government support, especially through guidance on how to engage with their suppliers to encourage them to be more sustainable, financial incentives, and carbon pricing systems.

SMEs often encounter different barriers to becoming more sustainable depending on their sector and size (with some evidence indicating that medium-sized companies have certain characteristics more in common with larger firms than smaller SMEs). Consequently, any actions to support their attempts to become more sustainable will need to be tailored to their different demands; there is no "one-size-fits-all" approach for SMEs to become more sustainable. For instance, previous research indicates that businesses in services sectors tended to be more likely to cite capacity and willingness to act as barriers to climate action, whereas firms in industrial sectors were more likely to cite cost and technical feasibility.[2]

2. British Business Bank, 'Smaller businesses and the transition to net zero', 2021.

Conclusions

The report findings highlight the significant climate impact of SMEs and, therefore, the substantial capacity to take positive action. However, despite their best intentions SMEs cannot be expected to behave the same way as large companies in addressing their climate impact. SMEs generally do not have the same capacity as larger businesses to hire specialists and invest in consultancy support to navigate this complex landscape. Therefore, support specific to SMEs is required to help them reach their potential. The findings indicate that support should be aligned to the following themes:

- Improved data solutions to build understanding of individual SME environmental impact.
- Government support via guidance and resources including funding for achieving environmental targets.
- Technological facilitation of access to practical information, such as via knowledge sharing on what others have done.
- Create connections to expertise and support to address specific challenges and innovations for SMEs in different sectors.
- Simplify ability to act collectively via technological support for networks, for example to influence supply chains.

Following from these themes, ICC and Sage are calling on government to help level the playing field for SMEs by

- Simplifying climate regulation and carbon reporting in a way that's proportional for SMEs
- Removing international trade barriers that inhibit SMEs ability to purchase or sell sustainable products or services
- Provide guidance and digital tools to enable SMEs to set, measure, and achieve environmental targets
- Enable greater access to and understanding of the data on SMEs' environmental footprints
- Subsidize investments to support SMEs to take more ambitious climate action and invest in climate tech.

The Climate Impact of SMEs

SMEs make up a significant part of our economies

UK
2021 contribution

£1 trillion contribution to GDP

50% of the economy

Supported **18.2 million jobs**

South Africa
2021 contribution

R2.1 trillion contribution to GDP

40% of the economy

Supported **6.2 million jobs**

SMEs also have a significant climate impact, in particular greenhouse gases

160 million tonnes

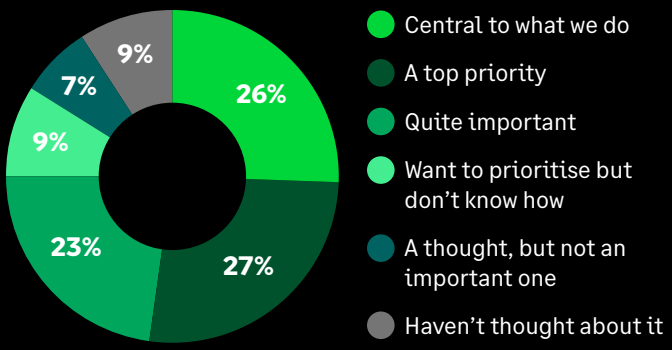
40% of total non-household emissions

63 million tonnes

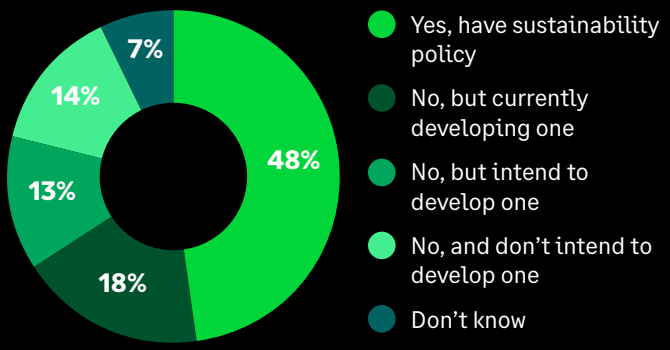
14% of total non-household emissions

SMEs have a positive attitude to sustainability...

Importance of sustainability



Sustainability policy of SMEs



...but face barriers to tackling climate impact

- Not enough cashflow to invest
- Government policies
- Difficulty finding the right solutions
- Difficulty measuring & reporting

However, SMEs can be more sustainable with the right support

- SMEs believe that technology can help them to be more sustainable
- SMEs want better guidance knowledge sharing, clear information, and tools

Findings based on survey of more than 4,000 UK and South African SMEs

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1. Introduction

Small and medium-sized enterprises (SMEs) play a critical role in economies around the world, contributing significantly to countries' gross domestic product (GDP) and employing large numbers of people. This activity also has environmental implications as firms generate emissions and consume resources. There will therefore be a significant role for SMEs as countries seek to reduce their emissions and broader environmental impacts.

However, existing research into the role of SMEs in the movement towards a more sustainable future has been limited, with no comprehensive single assessment available. Sage, ICC and Oxford Economics aim to fill this gap by analysing the climate and economic footprint of SMEs in the United Kingdom and South Africa and conducting comprehensive surveys of SMEs to understand their perspectives and what can be done to help them to become more sustainable.

How we analyse SMEs and their impacts

Definition of SMEs

In both the UK and South Africa, SMEs make up the vast majority of companies and a large share of the overall economies. However, the definition of what constitutes an SME does vary between the two countries, as well as around the world. The UK definition includes all firms with fewer than 250 employees.[3] In South Africa the definition also includes industry-specific revenue thresholds.[4] SMEs in the UK make up a larger share of the economy, accounting for 50% of the country's Gross Value Added (GVA), compared to 40% in South Africa.

Within the broad group of SMEs, we can also segment into sub-categories. The UK definition includes three of these: Micro (0 to 9 employees), Small (10 to 49 employees) and Medium (50 to 249 employees). In South Africa, data allow SMEs to be segmented into Small (0 to 49 employees) and Medium (50 to 249 employees), with income thresholds alongside this, however no Micro category exists in the available data.

The structure of economic impact

Whilst this report focuses on the environmental impacts of SMEs, our analysis is anchored in robust economic analysis of the footprint of these companies. Our analysis focuses on three main channels of economic impact: The ***direct impact*** of firms through their own in-house operations, the ***indirect impact*** contained within SME supply chains, and the ***induced impact*** that comes when employees (including of suppliers) consume out of the wages paid to them as a result of SMEs' activities. Whilst the induced impact sits within the conventional economic impact framework, it is not considered within environmental footprints.

The structure of this report

This report is structured as follows:

- Chapter 2 outlines some of the existing literature on SMEs and their role in making economies more sustainable.
- Chapters 3 and 4 present the economic and environmental impact that SMEs have in the UK and South Africa.
- Chapter 5 introduces the findings of our survey analysis, including a discussion around the roles of SMEs and their needs.
- Chapter 6 then presents a range of policy recommendations put forward by Sage and ICC.

3. House of Commons Library, 'Business Statistics', 2021 (p.12).
4. Department of Small Business Development, 'Revised Schedule 1 of the National Definition of Small Enterprise in South Africa', 2019.

Understanding and quantifying environmental impacts
In this study, we base our assessment of SMEs' environmental footprint on the Greenhouse Gas Protocol, which provides a comprehensive international standard for measuring and managing greenhouse gases (GHGs).[5] The protocol provides a framework for companies or industries to assess their carbon footprint using three "scopes", which are defined as follows:

- **Scope 1** refers to the direct emissions from the operation of a company or industry's own facilities and assets. In large part this refers to fuel combustion such as gas boilers on industry-operated sites, or petroleum products used to fuel the company or industry's own vehicle fleet.

- **Scope 2** refers to the indirect emissions that are made by other organisations that provide electricity and heat to the company or industry, i.e., the energy sector.

- **Scope 3 value chain** refers to the indirect emissions that occur in the company or industry's supply chain as a result of the goods and services it purchases. This can be thought of as the emissions 'embedded' in the company or sector's inputs of goods and services.[6]

Our ***Global Sustainability Model*** (GSM) enables the mapping of the economic footprint into an associated environmental footprint. The mapping of the GSM from measuring the economic footprint to the three scopes is illustrated in the diagram below. Although the Greenhouse Gas Protocol was designed specifically for GHG emissions, it is also a useful approach for considering the sector's footprint as measured by energy requirements and water usage. For these metrics, we consider the sector's direct requirements, plus the requirements embedded in the purchase of goods and services (analogous to the combination of Scope 2 and Scope 3 in the emissions framework). This total Scope 1, 2 and 3 impact contains all of the direct and supply chain impacts of SMEs, making it the analytical equivalent to the direct and indirect economic impacts combined.

For each environmental indicator, we describe SMEs' direct footprint (equivalent to Scope 1 of the framework), followed by the footprint generated by the SMEs' suppliers (equivalent to Scope 2 and Scope 3 of the framework) and SMEs' total footprint.

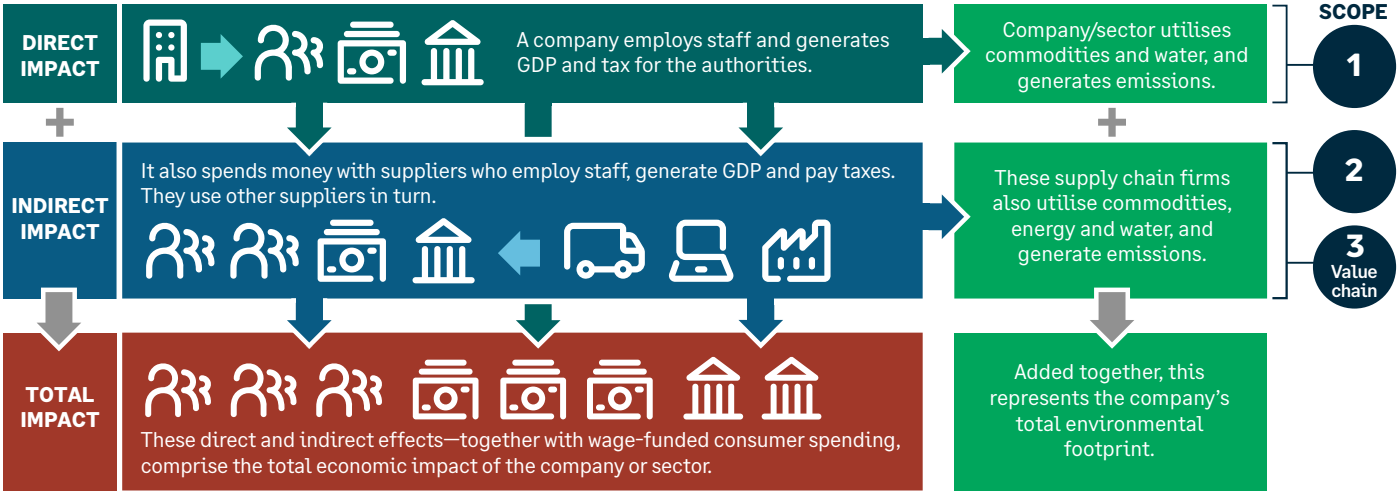
When environmental impacts are reported, we frequently reference "non-household emissions" as this limits the impact to business and public sector activity, which makes the findings comparable to the economic impact results and understand how SMEs compare to the rest of the economy. Without this, we would be left looking at the SME share of the whole country's emissions, which would lead to an distorted impression of SME impacts relative to their size of the economy.

Producing this analysis required us to model the way that different sectors were split between firms of different sizes, with this implemented into our GSM structure. This allows us to understand not just their overall share of the economy but also the way that they interact with each other, for instance through their supply chains. This also factored in information about their energy consumption and the extent to which they trade internationally.

Survey analysis of SMEs
To develop a stronger understanding of the perspectives and needs of SMEs when it comes to sustainability, we also conducted a comprehensive survey. This asked a range of questions about their views on sustainability and how it applies to their business, the measures that they have taken to become more sustainable, the challenges they face, and the support that they require to help them to become more sustainable

A total of 4,023 SMEs responded to this survey, with this split evenly across the two countries and the three sizes of SMEs (using the UK definition of the micro, small and medium size band).

Fig. 2: Measuring environmental footprints using the GSM



5. Building on a 20-year partnership between World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD), GHG Protocol works with governments, industry associations, NGOs, businesses, and other organisations. GHG Protocol supplies the world's most widely used greenhouse gas accounting standards. (GHG Protocol website)
6. It should be noted our estimates relate specifically to the upstream supply chain aspect of Scope 3. As such, it does not include the impacts of other Scope 3 categories, such as the downstream use, due to a lack of comprehensive data.

2. Existing research into SMEs and sustainability

This chapter presents a summary of the existing research into the role of SMEs in advancing environmental sustainability. Specifically, it offers insights into the role of SMEs in the climate transition, barriers to SME action for positive environmental impacts, the role of digitalisation in SMEs' climate transition, and the connections between trade and sustainability.

2.1 SMEs can make a significant contribution to the climate transition

In most OECD countries, SMEs represent a large majority of businesses—just under 99.9% of private sector companies in the UK are SMEs.[7] This is replicated in South Africa, where there are an estimated 2.4 million SMEs.[8] This presence means that SMEs account for a significant proportion of economic activity and play a vital role in the supply chains of larger companies.

Individual SMEs' environmental impact is typically relatively small. Partly, this is a consequence of their size. It also reflects SMEs' concentration in less-emitting sectors: more than half of UK SMEs operate in sectors that account for just over 3% of business-driven greenhouse gas emissions in the UK.[9] Similarly, in South Africa, the relatively low-emitting trade & accommodation, finance and business services and community services sectors account for around two-thirds of SMEs.[10] However, the large number of SMEs and their integral role in supply chains mean that in aggregate their environmental impact is significant, and therefore important as countries seek to become more sustainable.[11]

Previous research has found that SMEs recognise their important role in effective climate action. 90% of UK SMEs expect to make changes to contribute to UK Net Zero targets,[12] and 94% of UK SMEs have taken action to reduce their greenhouse gas emissions.[13] Similarly, a Flash Eurobarometer survey conducted in the first half of 2020 found that over 90% of European SMEs had adopted at least one form of environmental or social sustainability action.[14] Recent research in Europe found that 90% of SME associations reported that SMEs experienced strong or very strong external pressure to achieve climate neutrality.[15] A study by the Gordon Institute of Business Science (GIBS) examining sustainability practices amongst SMEs in South Africa's manufacturing sector also found that the majority of survey respondents indicated that they understood sustainability and supported this goal, however they were often concerned about the impact it would have on their profits.[16]

7. Department for Business, Energy & Industrial Strategy, 'Business population estimates for the UK and regions 2021: statistical release', 2021.
8. Department of Small Business Development, 'National Integrated Small Enterprise Development (NISED) Masterplan – Final Draft (Executive Summary)', 2022.
9. British Business Bank, 'Smaller businesses and the transition to net zero', 2021.
10. The Small Enterprise Development Agency (2022), 'SMME Quarterly Update, 3rd Quarter 2021', 2022.
11. European Commission, 'Annual Report on European SMEs 2021/22 – SMEs and environmental sustainability', 2022.
12. Sage, ACCA and ICC, 'Think Small First: Enabling effective climate action by Small and Medium-sized Businesses', 2021.
13.. British Business Bank, 'Smaller businesses and the transition to net zero', 2021.
14. European Commission, 'Annual Report on European SMEs 2021/22 – SMEs and environmental sustainability', 2022.
15. Ibid.
16. GIBS, 'An investigation into sustainable practices of small medium and micro manufacturing enterprises in South Africa's Gauteng Province', 2017.

2.2 There are barriers to SME climate action

However, Sage research has found that 9 out of 10 of SMEs believe that they face barriers to taking climate action.[20] These barriers can lead to a gap between SMEs' appreciation for the importance of becoming more sustainable, and their actions to become more sustainable. The British Business Bank (BBB) estimates around three-quarters of SMEs are yet to implement comprehensive decarbonisation strategies.[21] A 2021 survey by the British Chamber of Commerce in collaboration with O2 found that 9% of microbusinesses had set a target for reducing their carbon footprint, while 27% of larger firms had done so.[22] In line with these findings, the previously mentioned Flash Eurobarometer survey found that only 34% of European SMEs had a sustainability strategy or action plan while 53% of large companies did.[23]

While SMEs appear keen to reduce their environmental impact, their ability to do so is hindered by a knowledge gap and difficulties measuring their impact, funding constraints, a lack of suitable technological solutions and the focus of policy to date on larger companies. Only 5% of microbusinesses and 9% of small businesses responding to the 2021 British Chambers of Commerce and O2 survey reported that they were measuring their carbon footprint, compared to more than one-quarter of medium-sized and large firms.[24] In the absence of these data and monitoring systems, it is more difficult for SMEs to benchmark their environmental performance, set meaningful targets, and measure improvements.

With respect to physical actions to reduce greenhouse gas emissions (as opposed to monitoring and capacity-building), the extent of adoption amongst SMEs varies across types of action. Energy efficiency measures are the most widely adopted type of physical environmental measures adopted by UK SMEs, reflecting the tangible cost benefits associated with such measures.[17] The least widely adopted type of measure amongst UK SMEs was changes to production processes, reflecting the upfront investment and disruption associated with such changes.[18]

Previous research has identified a range of drivers for climate action amongst SMEs. This research suggests that financial motivations are the most important driver, but that purpose and other benefits—including resilience or staff motivation—are also significant.[19]

17. British Business Bank, 'Smaller businesses and the transition to net zero', 2021.
18. Ibid.
19. Ibid.
20. Sage, ACCA and ICC, 'Think Small First: Enabling effective climate action by Small and Medium-sized Businesses', 2021.
21. British Business Bank, 'Smaller businesses and the transition to net zero', 2021.
22. British Chambers of Commerce together with O2, 'Net Zero Survey', 2021.
23. European Commission, 'SMEs, start-ups, scale-ups and entrepreneurship: Facts from Flash Eurobarometer 486', 2020.
24. Ibid.

A survey of over 11,000 SME decision-makers conducted for Sage in 2021 found that more than one in ten SMEs said they did not know where to start to produce positive societal and environmental impact.[25] Similarly, a lack of awareness of how to integrate sustainability into their business model was one of the five most mentioned barriers to sustainability that SMEs face in the Flash Eurobarometer.[26] A knowledge gap amongst SMEs has been identified in relation to awareness of their own environmental impacts, opportunities to reduce those impact, and environmental legislation.[27] Previous research by Sage found that 21% of SMEs reported a lack of skills and knowledge as one of the biggest barriers to implementing changes for positive societal and environmental impacts.[28] As noted in Sage's *Think Small First* white paper, a recent survey by BT and Small Business Britain found that more than three-quarters of small businesses did not know how to measure carbon emissions and just under three-quarters wanted more training and education to help them understand what actions they could take to reduce their environmental impact.[29]

The ability of SMEs to take meaningful climate action is often constrained, particularly in the wake of the Covid-19 pandemic, by difficulty in accessing finance.[30] Large upfront costs and a lack of finance were the two main barriers cited by businesses (of whom 94% were SMEs) responding to the O2 and British Chamber of Commerce survey. Similarly, lack of financial resources was the second-most-mentioned barrier to sustainability in the Flash Eurobarometer survey.[31] South African SME studies also find that financial constraints are the key barrier to enacting environmental sustainability strategies, including adopting green production technologies.[32,33] Indeed, previous research by Sage found that 46% of South African SMEs cited the upfront cost as the biggest barrier to taking action towards positive societal and environmental impacts, compared to 37% of SMEs across all of the markets surveyed.[34] Nonetheless, cost was the most widely reported barrier globally in that research.[35]

As well as cost, technical feasibility – particularly in terms of the availability of an appropriate technology/infrastructure or vehicle, or lack of control over the action (without input from others, e.g. supply chain partners or landlords) – has been identified as a key barrier to SMEs reducing their greenhouse gas emissions. In a BBB survey of SMEs, the second-most reported type of barrier to net zero actions—behind costs—was feasibility.[36] This points to the need for technology tailored to the needs of SMEs and for larger firms to assist SMEs in their supply chains to take environmental action.

Previous survey evidence suggests the relative importance of these barriers varies by sector. In the BBB survey referred to above, feasibility considerations were the most commonly reported type of barrier in the agriculture/primary, manufacturing, wholesale, and retail, and transportation and storage sectors.[37] Meanwhile, cost was the most commonly reported type of barrier in the construction, accommodation, and food services, business services, and other services sectors.[38] Both cost and feasibility were, largely, less commonly reported in the business services and other services sectors than in other sectors, but capacity and willingness to act were more commonly cited barriers in these sectors than in others.[39] More generally, SMEs are highly heterogenous in terms of their size, geography, and activities, meaning that their environmental impacts can vary appreciably—as can the challenges they face in taking action.[40] Previous Sage research has found that the relative importance differs for SMEs of different sizes, with cost being a particularly significant barrier for smaller SMEs.[41]

Meanwhile, policy in relation to reducing businesses' environmental impact has to date often focused on large companies.[42] The UK, for instance, does not have a unified SME-specific strategy for decarbonisation, with policies being distributed across different frameworks and institutions.[43] This can compound some of the issues described above, with complex guidance on environmental monitoring and reporting being difficult for many time- and resource-constrained SMEs to process.[44]

25. Sage, 'Knocking Down Barriers Report: International SME perspectives', 2021.
26. European Commission, 'SMEs, start-ups, scale-ups and entrepreneurship: Facts from Flash Eurobarometer 486', 2020.
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30. Sage, ACCA and ICC, 'Think Small First: Enabling effective climate action by Small and Medium-sized Businesses',2021. European Commission, 'Annual Report on European SMEs 2021/22 – SMEs and environmental sustainability', 2022.
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32. Department of Small Business Development, 'National Integrated Small Enterprise Development (NISED) Masterplan – Final Draft (Executive Summary)', 2022.
33. GIBS, An investigation into sustainable practices of small medium and micro manufacturing enterprises in South Africa's Gauteng Province, 2017.
34. Sage, 'Knocking Down Barriers Report: International SME perspectives', 2021.
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36. British Business Bank, 'Smaller businesses and the transition to net zero', 2021.
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40. Bankers for Net Zero and Smart Data Foundry (2022), 'Scoping exercise: The role of banks in reducing GHG emissions of UK SMEs', 2022.
41. Sage, 'Knocking Down Barriers Report: International SME perspectives', 2021.
42. Johansson, I. et al., 'Designing Policies and Programmes for Improved Energy Efficiency in Industrial SMEs', 2019.
43. Bankers for Net Zero and Smart Data Foundry, 'Scoping exercise: The role of banks in reducing GHG emissions of UK SMEs', 2022.
44. Sage, ACCA and ICC, 'Think Small First: Enabling effective climate action by Small and Medium-sized Businesses', 2021.

2.3 Digitalisation can play an important role in SMEs' climate transition

Digitalisation and the climate transition are often considered together and referred to as "the twin transition", with digitalisation presenting opportunities for appreciable reductions in companies' environmental footprints.[45,46]

SMEs recognize the role of digitalising in understanding and addressing their environmental footprints. According to previous Sage research, 85% of SMEs – including 94% of SMEs in South Africa – see a role for providers of accountancy and HR software in making their businesses more sustainable.[47] Nearly half (45%) of SMEs said they would like accountancy and HR software firms to support them in creating a standard for measuring and reporting on sustainability and diversity, and more than two-fifths (42%) said that software could support them in their sustainability journey through helping to manage costs, particularly in the areas of waste and recycling.[48]

Technological developments can make SMEs reaching their net zero commitments not only feasible, but also cost effective. For instance, video conferencing tools can be used to reduce travel needs, and digitalisation can create data that can be analysed to identify potential efficiency gains. According to the Ellen MacArthur Foundation, data-rich artificial intelligence will boost the circular economy transition by informing efforts to design out waste and pollution, optimising business models, and streamlining the infrastructure needed to keep products and materials in use.[49] Digitalisation, then, can offer synergies between reducing environmental impacts and reducing costs.

Previous research has highlighted that because SMEs will often lack the capacity to develop bespoke digital solutions in-house, "off-the-shelf" solutions suitable for SMEs are important to support adoption, and that digital solutions for SMEs should align with SMEs' business models in order to mitigate costs.[50]

2.4 International trade is also a challenge for SMEs

While international trade is sometimes portrayed as a challenge for the sustainability transition – with concerns raised that companies might respond to new environmental regulations by "offshoring" activities to jurisdictions with less stringent regulations – trade can also support the transition to a more sustainable economy. For instance, trade can widen access to new technologies that help to reduce the environmental impacts of production processes (e.g., by reducing the resource inputs they require).[51]

However, SMEs are less likely than larger firms to trade internationally. For instance, in 2018, exports accounted for around 10% of UK SMEs' turnover, whereas across all UK businesses exports accounted for 16% of turnover.[52] According to OECD research, SMEs' size means they are often more susceptible to trade barriers than large companies, since they tend to have fewer resources and a lower ability to absorb risk.[53]

45. OECD, 'No net zero without SMEs: Exploring the key issues for greening SMEs and green entrepreneurship', 2021.
46. European Commission, 'Annual Report on European SMEs 2021/22 – SMEs and environmental sustainability', 2022.
47. Sage, 'Knocking Down Barriers Report: International SME perspectives', 2021.
48. Ibid.
49. Ellen MacArthur Foundation, 'Artificial intelligence and the circular economy - AI as a tool to accelerate the transition', 2019.
50. European Commission, 'Annual Report on European SMEs 2021/22 – SMEs and environmental sustainability', 2022.
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53. Fliess, B. and Busquets, C., 'The Role of Trade Barriers in SME Internationalisation', OECD Trade Policy Papers, 2006.

Case study

Sustainable packaging firm Woolcool urges governments to ‘practice what they preach’

Woolcool has always sought to be ahead of the flock when it comes to sustainability. The company, which makes insulated packaging for the shipment of food and pharmaceuticals using sheep’s wool, constantly looks for ways to use natural materials to replace less sustainable ones.

It is also determined to reduce its carbon footprint. When it moved to a new facility a year ago, it decided to shift away from gas to electricity only as its energy source. Managing Director Josie Morris says the next stage is to reduce the carbon footprint of the new facility.

“The fact that we have a product that has sustainable credentials doesn’t mean that we’re perfect as a business,” she says. “And it doesn’t mean that we don’t have the same challenges any other business has in terms of our energy usage.”

The company is working in partnership with Keele University to set targets to reduce its footprint further but has found that as an SME with some 65 employees it faces barriers when it comes to the next steps. Woolcool has looked at installing solar power to increase its renewable energy input. It worked with Keele to identify the best panels for the company and their optimal location.

But to buy and install panels will cost between £50,000 and £70,000 on top of which are costs for adaptation and installation. “The first battle is you’ve got to have funding to do it and not many SMEs would comfortably spend £100,000 in the current climate,” Ms Morris says.

Woolcool has a long lease so would be investing in a building it does not own. It is talking to its landlord, a major property owner, about the potential for co-funding the project as a collaborative business proposition. “There is an argument that landlords need to support small businesses with fitting something that’s going to essentially enhance that building,” she says.

The company is talking to the Staffordshire Business & Environment Network about a grant that is linked to the amount of energy that it uses and the amount of carbon that it would save. This will require significant research by Ms Morris to understand the proposal. “I will manage the project so there is obviously a cost to that as it takes you away from business as usual,” she says.

As an SME, Woolcool has previously experienced challenges in tender processes when up against businesss that might ship in raw materials that Woolcool would chose not to due to environmental and carbon impact. “There needs to be a way to level that out so that in a tender process you are on par because local supply is an answer rather than a problem,” Ms Morris says. She would like to see tenders for such projects give environmental factors a significant weight.

The government can also play a stronger role by providing easy access to information for business, saying it can be “daunting” and time consuming to find out about ways to reduce emissions. “But actually, if you see that someone’s done it and saved money—fantastic.”

The state can also offer incentives via the tax system such as R&D tax credits, and avoid withdrawing measures such as the Green Levy that can send the wrong signal to businesses. “If they want businesses to do these things, they probably should practice what they preach.”

3. Climate footprint of SMEs in the UK

This chapter presents the results of our analysis of the economic and environmental impacts of SMEs in the UK.

It presents UK SMEs' direct economic impact in terms of their gross value-added (GVA) contribution to GDP and employment footprint. It then considers their total economic impact, including their indirect supply chain and induced consumer spending contributions to GDP and employment. Next, it presents estimates of UK SMEs' Scope 1, 2, and 3 greenhouse gas emissions. It finally presents estimates of their impact in terms of emissions of air pollutants (namely, PM2.5 and PM10) and water abstractions; for each of these, it presents their direct footprint and their indirect supply chain footprints.

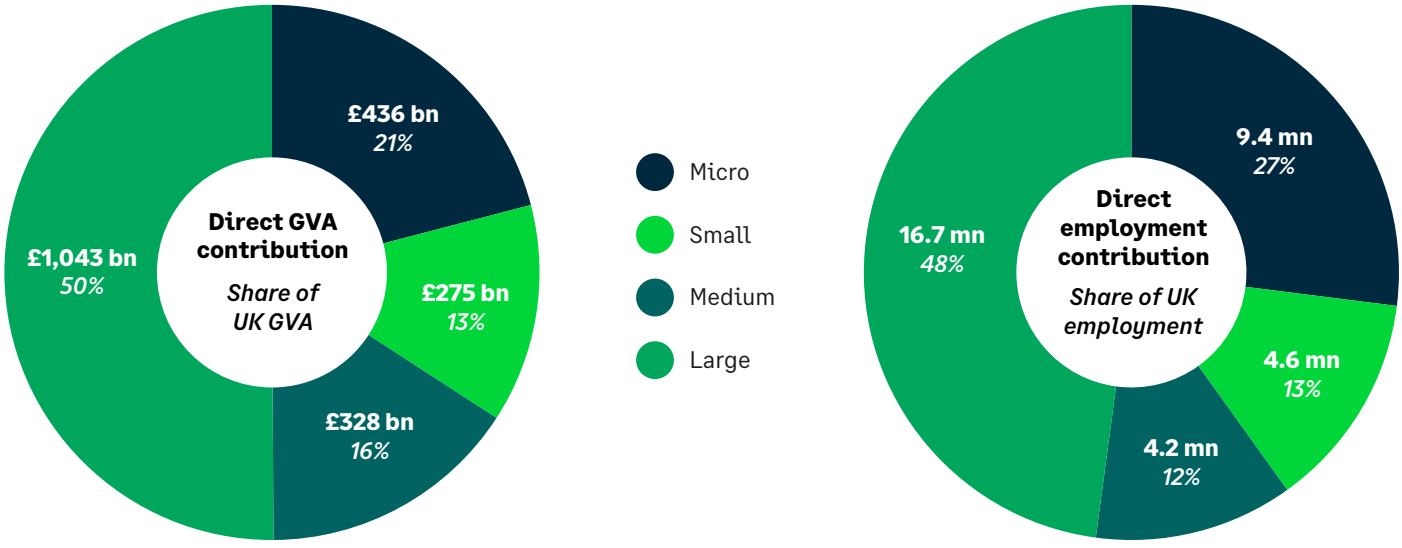
3.1 SMEs play a major role in the UK economy

3.1.1 SMEs' direct impacts make-up most of their footprint

Looking just at their direct contribution, in 2021 UK SMEs made a £1.04 trillion gross value added contribution to UK GDP and employed 18.2 million people. UK SMEs accounted for 50% of the total GVA contribution to GDP and 52% of employment, with each class of SMEs—that is, micro, small and medium companies—contributing significantly. It can be seen, therefore, that SMEs are a crucial component of the UK economy. SMEs' share of employment was slightly larger than their share of GVA, reflecting their concentration in more labour-intensive industries.

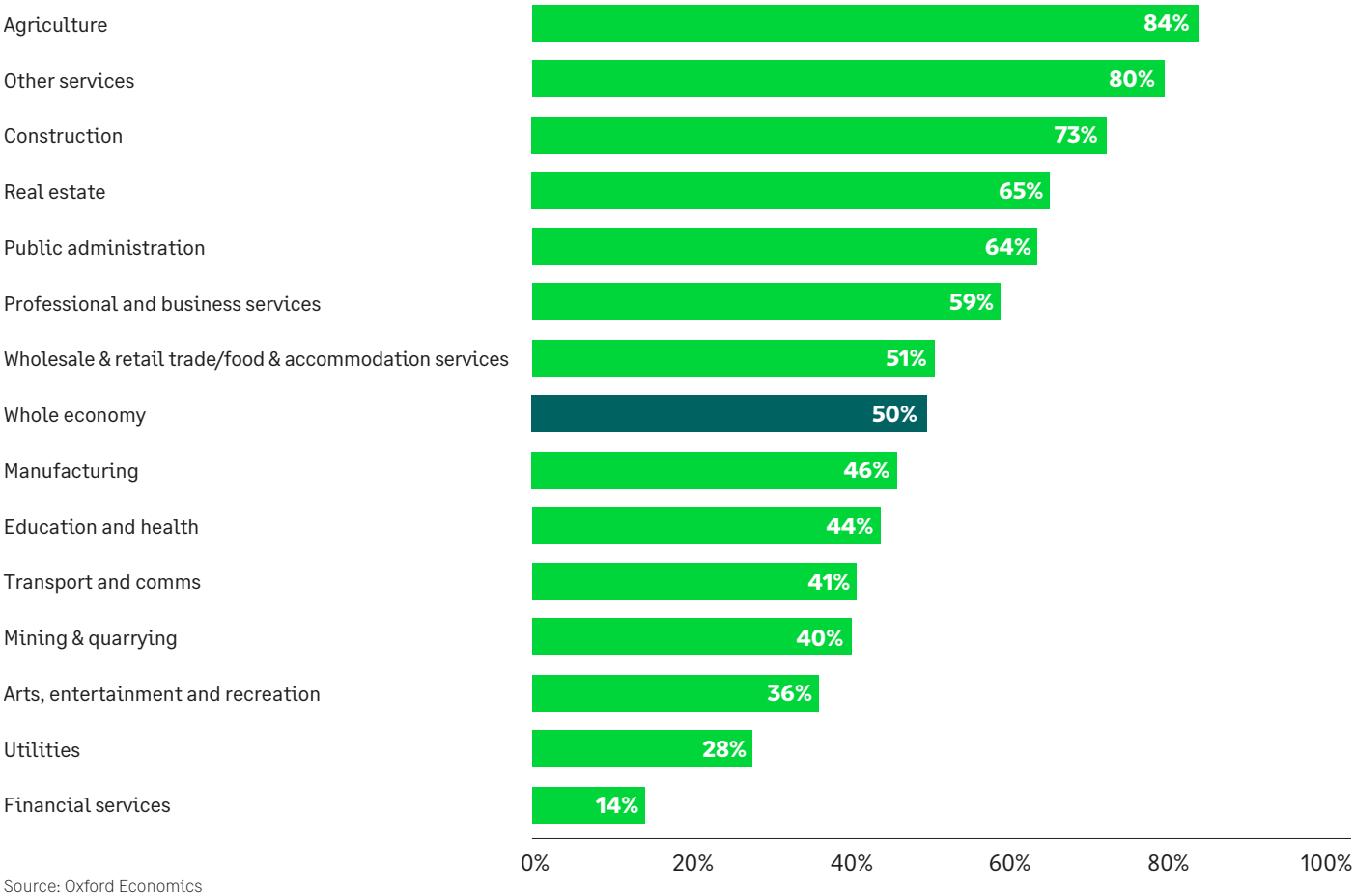
While SMEs are represented throughout the economy, their concentration varies across different sectors (Fig. 4). SMEs accounted for a particularly large share of GVA in agriculture (making up 84% of the total contribution to GDP), construction (73%), and real estate (65%). They made up the majority of a number of services sectors. In contrast, SMEs play a more limited role in financial services (14%), as well as a number of industrial sectors including utilities (28%), the mining & quarrying sector (40%), and manufacturing (46%).

Fig. 3: Direct GVA and employment contribution by business size, 2021



Source: Oxford Economics

Fig. 4: SME share of GVA by UK sector, 2021

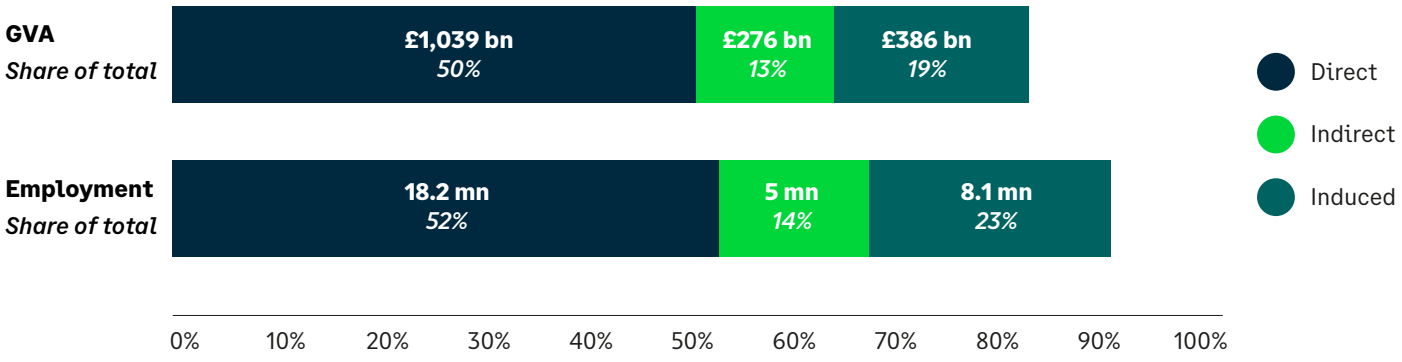


Source: Oxford Economics

3.1.2 Their total impact makes up over four fifths of the economy

We can also include the share of large businesses' economic footprint accounted for by SMEs' indirect supply chain and induced consumer spending contributions. This allows us to develop a complete understanding of the SME economic footprint, with the indirect impact especially useful as we analyse the economic and climate footprint that SMEs have through their supply chains. When we include these impacts, we find that UK SMEs' total GVA contribution to UK GDP was over £1.7 trillion and their total employment footprint in the UK was 31.2 million people. This means that UK SMEs' total economy footprint accounted for over four-fifths (82%) of GVA and nine-tenths (90%) of employment. As Fig. 5 illustrates, SMEs' induced employment impact was particularly large, including relative to their induced GVA impact. This reflects the fact that consumer spending is concentrated in labour-intensive sectors such as hospitality and retail.

Fig 5: UK SMEs' total economic impacts, 2021



Source: Oxford Economics

3.2 SMEs also have significant environmental footprints

3.2.1 Greenhouse gas emissions represent a major concern

Economic activity produces greenhouse gas emissions through a range of mechanisms, in particular the use of electricity derived from fossil fuels or the burning of fossil fuels directly and agricultural activities. Greenhouse gas (GHG) emissions are a crucial environmental impact because of their contribution to climate change. The UK has a legally binding commitment to reaching net zero GHG emissions by 2050.[54]

Moreover, it is often the case that other environmental impacts are correlated with greenhouse gas emissions. That is, highly emitting activities often have other negative environmental impacts, and reductions in emissions are often accompanied by reductions in other environmental harms. Where technology creates efficiency gains, for example, this can reduce greenhouse gas emissions as well as reducing resource use.

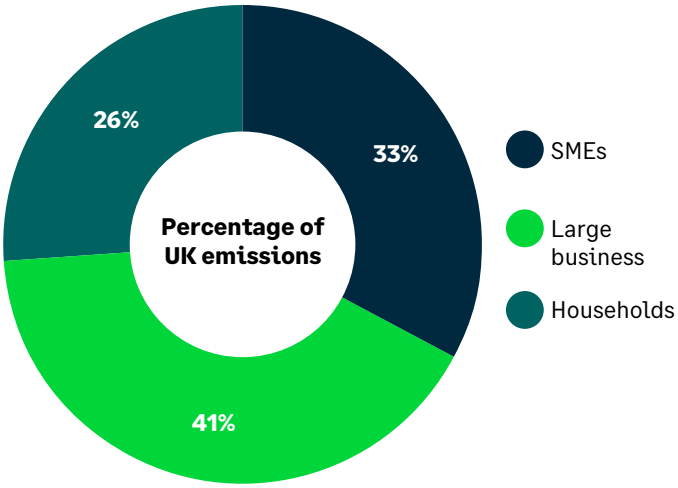
Our analysis of greenhouse gases (GHGs) considers the gases covered by the Kyoto Protocol, namely: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulphur hexafluoride (SF_6). Our analysis of GHGs is presented in carbon dioxide equivalent (CO_2e) terms, which accounts for the fact that heat absorbed by different gasses in the atmosphere, known as their "warming potential", varies across the different GHGs.

Overall Scope 1 greenhouse gas emissions

Focusing on the emissions that SMEs create from sources that they either own or control themselves, UK SMEs' Scope 1 GHG emissions totalled an estimated 160 million tonnes of CO_2e in 2021. Compared to the UK's total emissions of approximately 490 million tonnes of CO_2e in 2021, this means that SMEs accounted for 33% of all GHG emissions. Removing the role of emissions created by households (e.g. by using a motor vehicle or burning fuels for cooking and heating), we find that SMEs Scope 1 emissions accounted for 44% of non-household emissions. Focussing on Scope 1 non-household emissions share is important as it represents the emissions they generate directly through their analysis and is comparable to their direct economic activity and its share of the economy.

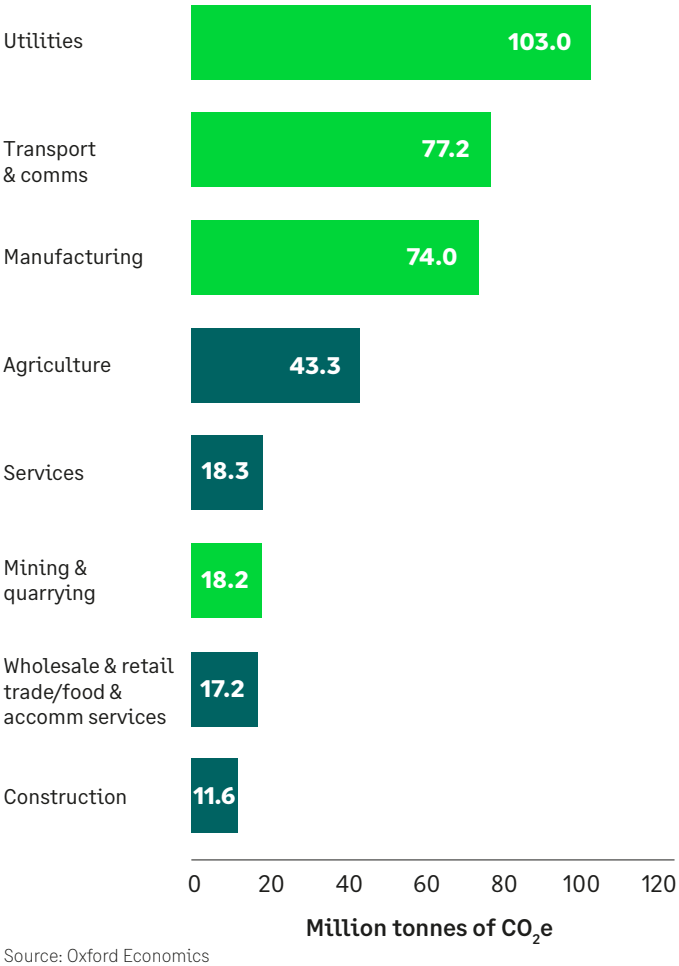
In aggregate, SMEs' 50% share of direct GVA exceeded their 44% share of Scope 1 emissions. This may give the impression that SMEs were less emissions-intensive—that is, that they emitted less GHGs to make the same contribution to GDP—than large companies. However, this economy-wide picture masks sectoral and sub-sectoral variations. The most polluting sectors—utilities, transportation, and manufacturing—are dominated by large companies (Fig. 7). SMEs, meanwhile, are concentrated in less emitting (often service-based) sectors. Understanding this is important as it explains the overall discrepancy in the size of the economic and emissions impacts. In Fig. 7, light green bars indicate that large companies contributed most of an industry's GVA; dark green bars indicate that SMEs contributed the majority of that industry's GVA.

Fig. 6: Direct shares of UK GHG emissions (CO_2e terms) for SMEs, large businesses and households, 2021



Source: Oxford Economics

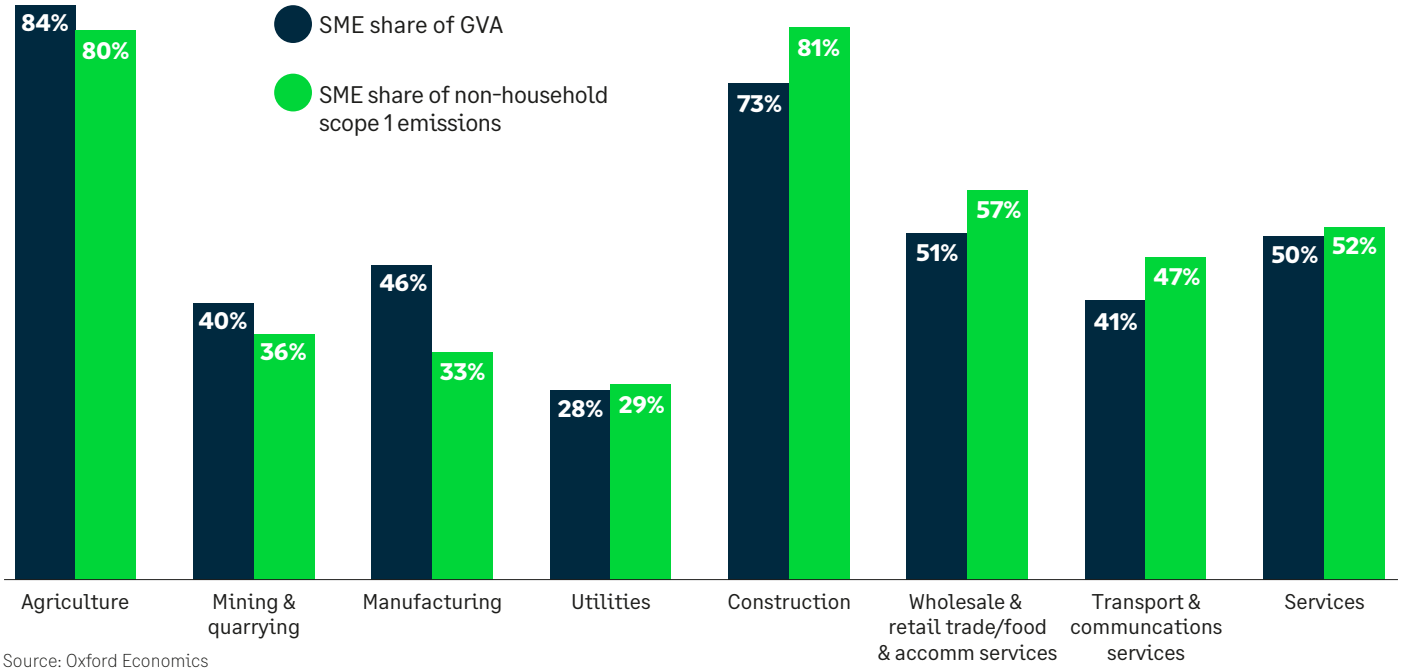
Fig. 7: Total GHG emissions (CO_2e terms) by UK sectors (dark green bars are sectors where SMEs accounted for a majority of GVA), 2021



Source: Oxford Economics

54. See, for example, UK Government (2021), 'Net Zero Strategy: Build Back Greener'. October 2021.

Fig. 8: Comparison of SME direct GVA shares and SME share of emissions by UK sector, 2021



Source: Oxford Economics

SMEs are concentrated in the least-emitting parts of key industrial sectors

In both the mining & quarrying and manufacturing sectors, SMEs were responsible for a share of emissions that is lower than their share of the gross value added (GVA) contribution to GDP.

More than 90% of the UK mining & quarrying sector's GHG emissions were from the mining of coal and lignite. However, SMEs only accounted for around a fifth of the GVA produced by this subsector[55], while they accounted for around two-fifths of the mining & quarrying sector's total GVA. This illustrates that SMEs are concentrated in the least emitting sections of the extraction sector.

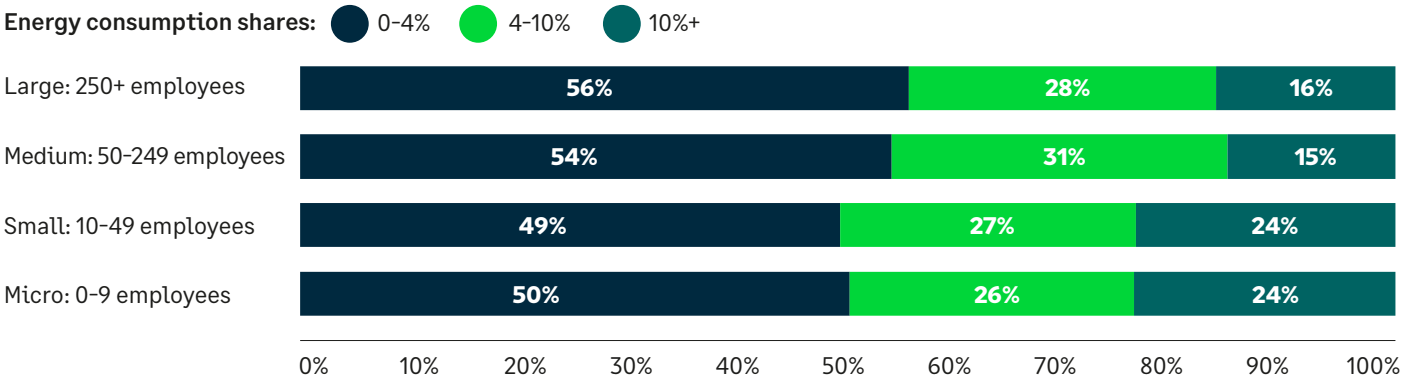
In manufacturing, GHG emissions were mostly produced by heavy industry that is dominated by large companies. For instance, manufacture of coke and refined petroleum products, manufacture of chemicals and chemical products, manufacture of other non-metallic mineral products (including glass and cement), and manufacture of basic metals and accounted for the majority of the manufacturing sector's GHG emissions. SMEs accounted for 18%, 42%, 51%, and 36% of the GVA produced by these sub-sectors respectively versus 46% of the manufacturing sector as a whole, again illustrating their smaller presence in the most emitting components.[56]

Looking at each sector individually (Fig. 8), it can be seen that there is a mixed picture. In many sectors, including the utilities, transport, and communications and services sectors, SMEs were (in aggregate) more emissions-intensive than large companies (indicated by the light green bar being taller than the dark column). This does not appear to have been the case in the agriculture, mining & quarrying, and manufacturing sectors. In the cases of mining & quarrying and manufacturing, there is important sub-sectoral variation within these sectors that is obscured when looking at the sector as a whole. The most emitting subsectors of the mining & quarrying and manufacturing sectors are dominated by large companies. The box on the following page explores this further.

Another way of assessing the emissions impact of SMEs' direct operation is to consider their purchases of energy. These purchases either taking the form of fuels that they consume themselves, producing emissions, or electricity consumption, which will have its own emissions footprint (quantified within their Scope 2 emissions). This represents the emissions over which they have the most control.

55. Office for National Statistics, 'Annual Business Survey – Special Analysis: Annual Business Survey sizebanded data 2014, 2015 and 2016', 2018.
56. Ibid.

Fig. 9: Proportion of businesses with different energy consumption shares, by size-band, 2019



Source: Oxford Economics

Focusing on energy consumption shares, measured as energy purchases as a share of total procurement expenditure, data from the UK Office for National Statistics show that the smallest firms disproportionately have the highest energy consumption intensities. As Fig. 9 illustrates, 24% of micro (0 to 9 employees) and small (10 to 49 employees) companies spend more than 10% of their total procurement expenditure on energy, compared to only 15% of medium companies and 16% of large companies. This picture is mirrored when we consider the proportion of firms with very low energy purchase intensities, with 56% of large companies spending less of 4% of their total procurement expenditure on energy, compared to closer to 50% of small companies or micro companies.

Overall, this therefore provides evidence that smaller firms do purchase, relative to size, more energy from their procurement than larger firms. This indicates that SMEs could work to improve their energy efficiency relative to larger companies, and their significant energy demands would have a lower environmental impact if they purchase from less-emitting suppliers. It also raises an interesting question regarding the role of medium-sized companies, whose purchasing behaviour looks more similar to larger companies than other SMEs.

Scope 1 greenhouse gas emissions by type

Different GHG emissions are produced at different rates, depending on the economic activity in question. Because of their differing sectoral distributions, the patterns of emissions of different GHGs differ between SMEs and large companies.

The table below splits out the emissions of different GHGs; for each GHG (or group of GHG), shows total non-household emissions, SME Scope 1 emissions and gives the share of non-household emissions accounted for by SMEs.

As this illustrates, SMEs accounted for high proportions of methane (56%) and nitrous oxide (70%) emissions, relative to their 50% share of GVA and 44% of total GHG emissions. This reflects the fact that agriculture is a major emitter of methane and nitrous oxide, and SMEs account for a large proportion of the agriculture sector (see Fig. 4). In 2019, agriculture accounted for more than half of non-household methane emissions and around three-quarters of non-household nitrous oxide emissions in the UK.[57] Ruminant livestock such as cows and sheep produce large amounts of methane, while agricultural soil management, including the use of nitrogen-based fertilisers, is a large source of nitrous oxide emissions.[58]

While SMEs account for large proportions of non-household methane and nitrous oxide emissions, carbon dioxide nonetheless accounts for just under three-quarters of SME GHG emissions on a CO_2e basis.

Fig. 10: Greenhouse gas emissions of SMEs in the UK by type, 2021

	Carbon Dioxide, CO_2	Methane, CH_4	Nitrous Oxide, N_2O	Fluorinated gases (HFC, PFC, NF_3 and SF_6)
Total non-household emissions, million tonnes CO_2e	293.4	42.0	17.9	9.6
SME Scope 1 emissions, million tonnes CO_2e	120.4	23.7	12.5	4.2
SME share of non-household emissions, %	41.0%	56.3%	69.8%	43.3%

Source: Oxford Economics

57. Office for National Statistics, 'Atmospheric emissions: greenhouse gases by industry and gas', 2022.
58. US Environmental Protection Agency, 'Greenhouse Gas Emissions: Overview of Greenhouse Gases', 2022.

Scope 2 & 3 greenhouse gas emissions

In their day-to-day operations, SMEs make purchases from large companies in their supply chains, with these purchases making an additional environmental footprint. Whilst they will also purchase from other SMEs, our assessment of Scope 1 emissions already includes all of these, so they are discounted here to prevent double counting. The environmental impact of purchases of electricity from these large suppliers are referred to as Scope 2 emissions and were worth 2% of all UK GHG emissions (Fig. 11). The GHG emissions footprint of their other UK supply chain (again only including large firms) are known as their Scope 3 emissions, were worth a further 12% of the UK's total emissions in 2021.

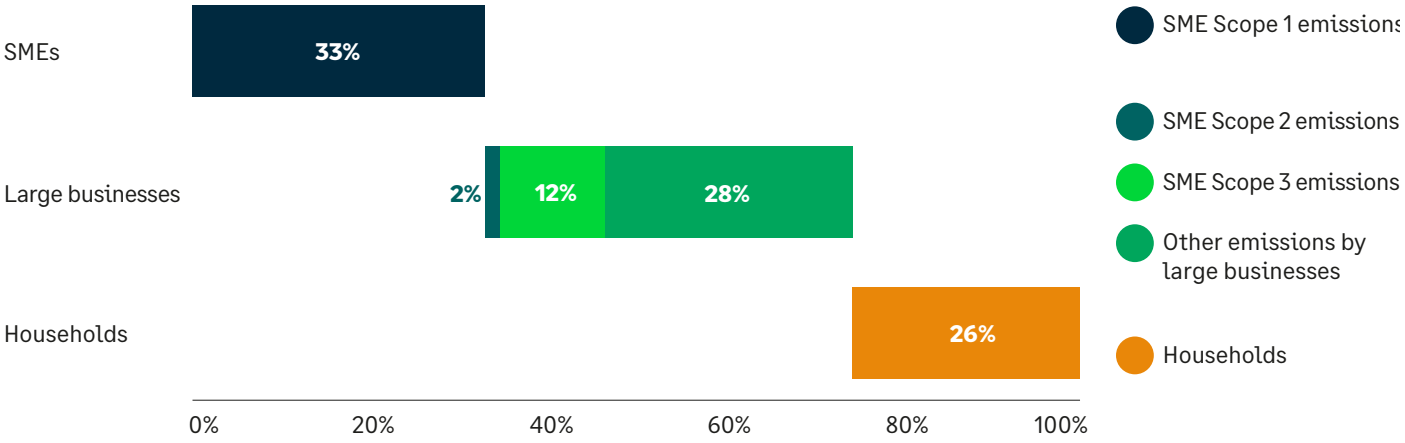
Taking into account Scope 1, 2, and 3 emissions, SMEs accounted for 63% of UK non-household GHG emissions. Similarly, SMEs' direct and indirect GVA contributions together (i.e., that created by their direct activities and supply chain) totalled 63% of UK GVA. The overall environmental footprint of SMEs when their UK supply chain is taken into account was therefore equal to their economic footprint.

Exported emissions

So far, this analysis has focused on UK territorial emissions (i.e., emissions produced in the UK). However, both SMEs and large companies import goods and services through their supply chain. There are therefore GHG emissions associated with UK SMEs' supply chains that occur outside the UK (which might be termed "exported" of "off-shored" emissions). In the case of UK SMEs, we estimate that these emissions totalled approximately 95 million tonnes of GHGs in CO_2e terms in 2021, equal to around two-fifths of their total UK territorial GHG emissions footprint (including Scope 1, 2, and 3 emissions).

For large UK companies, such "exported" emissions totalled just under 165 million tonnes of GHGs in CO2e terms. This is more than 70% higher than the figure for SMEs, despite UK SMEs and large companies making equally-sized direct contributions to UK GDP. UK large companies' "exported" emissions were relatively greater than SMEs' "exported" emissions because UK large companies are much more reliant on imports than that of SMEs, increasing their overall environmental footprint.

Fig. 11: SME Scope 1, 2, and 3 emissions amongst UK GHG emissions (CO_2e terms) for SMEs, large businesses, and households, 2021



Source: Oxford Economics

3.2.2 Economic activity also creates other pollutants

As well as producing GHG emissions, economic activity is associated with emissions of other pollutants, including PM2.5 and PM10. PM2.5 and PM10 refer to particulate matter with particles less than 2.5 and 10 micrometres in diameter. While some PM exposure is a result of naturally occurring phenomena (such as pollen and sea spray), the majority of PM exposure is the result of human activity, including the burning of fuels, construction activity, and the wearing down of brakes and tyres.[59] There is evidence of harm to health from PM2.5 and PM10 exposure, especially in vulnerable groups. PM concentrations are subject to regulation that sets limits on acceptable concentrations in the UK as well as other jurisdictions.[60] In the UK, the 2019 Clean Air Strategy recognised the role of industry, transport, and agriculture, as well as households, in reducing air pollution.[61]

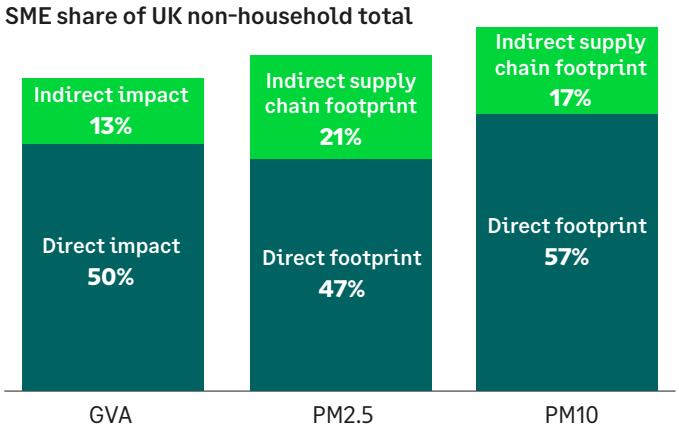
With respect to their direct footprint, SMEs were responsible for 47% of non-household PM2.5 emissions and 57% of non-household PM10 emissions in 2021, compared to the 50% of GVA that they were directly responsible for.

The majority of non-household PM2.5 emissions were attributable to the manufacturing and transportation & storage sectors, with the majority of firms in these sectors being large. However, the overall contribution of SMEs to total PM2.5 emissions was boosted by the (SME-dominated) agriculture and construction sectors. In the case of PM10, the SME-dominated construction sector and the manufacturing sector were the two biggest non-household emitters (each accounting for more than a quarter of non-household emissions), with significant contributions from the agriculture, mining, & quarrying, and transportation & storage sectors.

In the cases of both PM2.5 emissions and PM10 emissions, SMEs' indirect supply chain footprint was sizeable. This reflects substantial supply chain spending by SMEs on the manufacturing and transportation & storages sectors, which are large emitters of PM2.5 and PM10.

For both PM2.5 and PM10, SMEs' total footprint (including both their direct footprint and their indirect supply chain footprint) was relatively larger than their GVA impact (including both their direct impact and their indirect impact).

Fig. 12: Comparison of UK SMEs' GVA impact and PM2.5 and PM10 emissions footprint, 2021



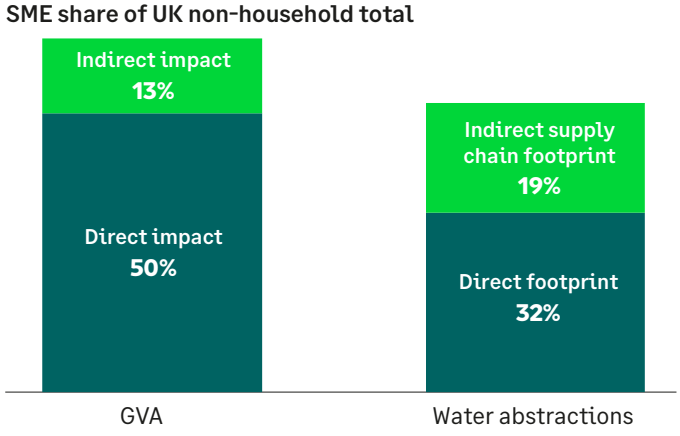
Source: Oxford Economics

3.2.3 Water consumption is relatively low among SMEs

Business' water consumption is also an important consideration in order to reduce the demands placed on the UK's water resources. SMEs' direct water abstractions footprint was relatively small, at 32% of non-household abstractions. This was significantly lower than SMEs' 50% share of GVA. This reflects the fact that the utilities sectors—especially electricity generation—are responsible for a large proportion of water abstractions and are dominated by large companies.

SMEs' indirect water abstractions footprint was more than half of the size of its direct footprint. As such, SMEs' indirect footprint was a larger part of its overall footprint in the case of water abstractions than in the case of GHG emissions and emission of other pollutants. This reflects the fact that SMEs purchase from industries that are responsible for large amounts of water abstractions—in particular, electricity generation.

Fig. 13: Comparison of UK SMEs' GVA impact and water abstractions footprint, 2021



Source: Oxford Economics

59. Department for Environment, Food & Rural Affairs, 'National Statistics: Concentrations of particulate matter (PM10 and PM2.5)', 2022.
60. Ibid.
61. Department for Environment, Food & Rural Affairs, 'Clean Air Strategy 2019', 2019.

Case study

SME looks to government and big business for help to nurture green initiatives

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It is also determined to reduce its carbon footprint. When it moved to a new facility a year ago, it decided to shift away from gas to electricity only as its energy source. Managing Director Josie Morris says the next stage is to reduce the carbon footprint of the new facility.

"The fact that we have a product that has sustainable credentials doesn't mean that we're perfect as a business," she says. "And it doesn't mean that we don't have the same challenges any other business has in terms of our energy usage."

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Woolcool has a long lease so would be investing in a building it does not own. It is talking to its landlord, a major property owner, about the potential for co-funding the project as a collaborative business proposition. "There is an argument that landlords need to support small businesses with fitting something that's going to essentially enhance that building," she says.

The company is talking to the Staffordshire Business & Environment Network about a grant that is linked to the amount of energy that it uses and the amount of carbon that it would save. This will require significant research by Ms Morris to understand the proposal. "I will manage the project so there is obviously a cost to that as it takes you away from business as usual," she says.

As an SME, Woolcool has previously experienced challenges in tender processes when up against businesss that might ship in raw materials that Woolcool would chose not to due to environmental and carbon impact. "There needs to be a way to level that out so that in a tender process you are on par because local supply is an answer rather than a problem," Ms Morris says. She would like to see tenders for such projects give environmental factors a significant weight.

The government can also play a stronger role by providing easy access to information for business, saying it can be "daunting" and time consuming to find out about ways to reduce emissions. "But actually, if you see that someone's done it and saved money—fantastic."

The state can also offer incentives via the tax system such as R&D tax credits, and avoid withdrawing measures such as the Green Levy that can send the wrong signal to businesses. "If they want businesses to do these things, they probably should practice what they preach."


CHEESE
Godminster
Farm

4. Climate footprint of SMEs in South Africa

In this chapter, we detail the results of our analysis into the economic and environmental footprint of SMEs in South Africa (SA).

Their economic footprint is detailed in terms of their gross value-added (GVA) contribution to GDP and employment, including their direct, indirect and induced impacts. It then focusses on environmental impacts, presenting estimates of their Scope 1, 2 and 3 greenhouse gas emissions, before presenting their impact in terms of water abstractions.

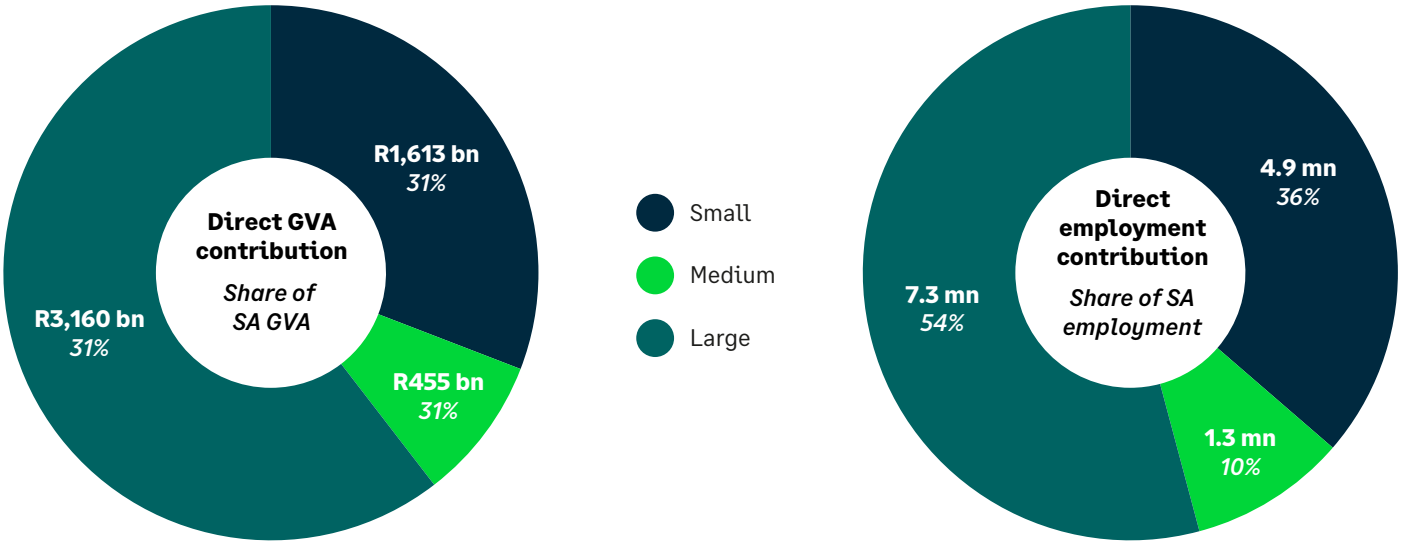
4.1 SMEs make-up a significant portion of the South African economy

4.1.1 The direct footprint of SMEs makes up the largest portion of its economic impact

Considering the value that South African SMEs make via their own activities, we find that they made a direct contribution to GDP worth R2.1 trillion and employed 6.2 million people in 2021 (Fig. 14). This means that South African SMEs account for 40% of business' GVA contribution to GDP and 46% of formal employment. SMEs are therefore a large component of the SA economy. Their concentration in more labour-intensive industries means their share of employment out-strips their GVA share.

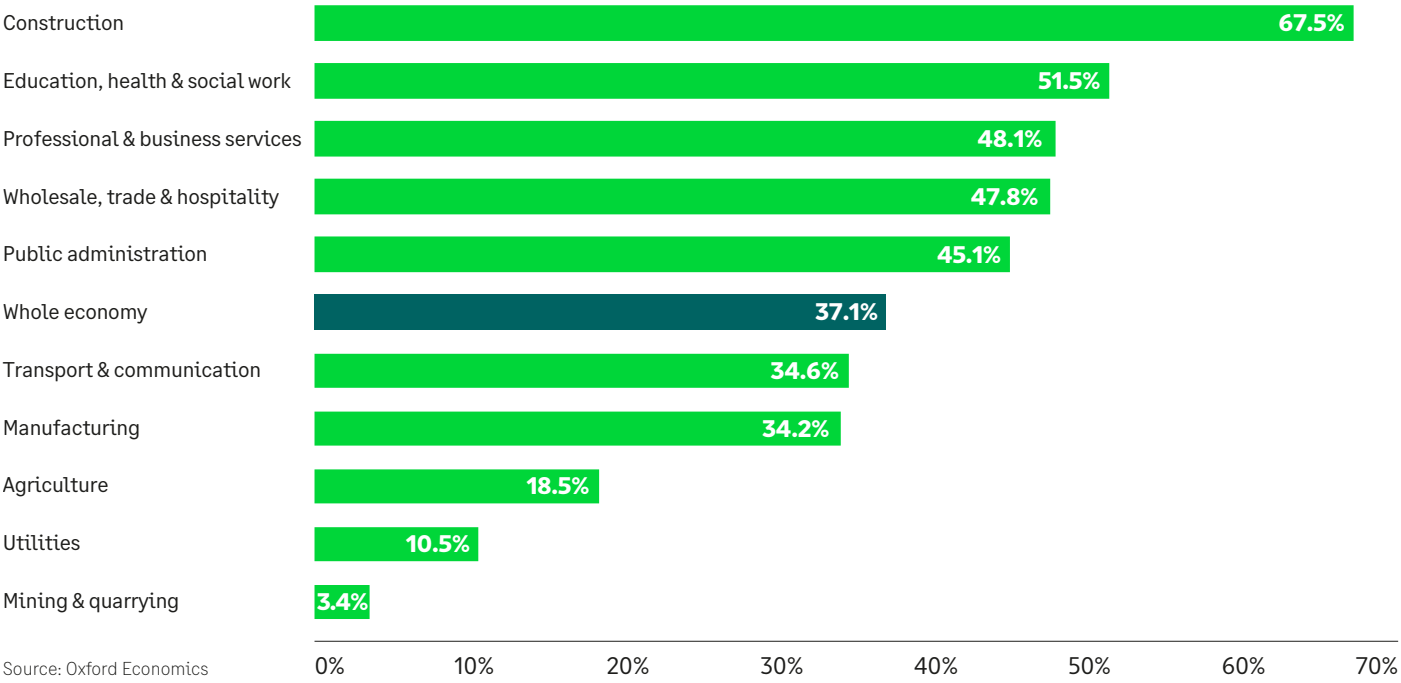
The role of SMEs in the SA economy varies significantly by sector (Fig. 15). The sectors most dominated by SMEs are construction (in which SMEs directly accounted for 67.5% of the sector's contribution to GDP in 2021) and education, health & social work (51.5%). However, SMEs form a smaller part of the agriculture sector (accounting directly for 18.5% of the sector's GVA), as well as some industrial sectors including utilities (10.5%) and mining & quarrying (3.4%).

Fig. 14: Direct GVA and employment contribution by business size, 2021



Source: Oxford Economics

Fig. 15: SME share of GVA by SA sector, 2021



Source: Oxford Economics

Many SMEs in agriculture are not analysed because they are in the informal sector

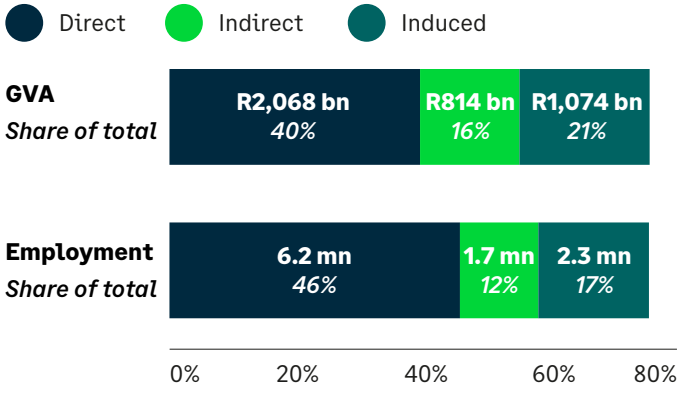
When we consider the agriculture sector in South Africa, it is important to recognise the specific way that it is analysed, because of the incomplete data on the sector. In South Africa, a significant amount of economic activity is considered *"informal"*. This usually means that the companies and employees involved are unregistered and not subject to the same legislation, taxation or social protection that companies in the formal sector would be.

A large amount of economic activity in South African agriculture is informal, however data for this portion of the economy is poor. A consequence of this is that this informal activity is not available in our analysis, meaning that a portion of the agriculture sector is missing. Our analysis indicates that these missing firms are disproportionately small companies, with larger companies more likely to be registered. This process has resulted in the low estimated SME-share of agriculture sector's contribution to GDP. Whilst this could be rectified with robust data on the activities of informal economic activity within the sector, suitable data has not been available.

4.1.2 The overall footprint of SMEs is three quarters of the economy

As well as these direct impacts, SMEs also generate an economic footprint through their indirect supply chain and induced consumer spending contributions. Taking into account these impacts, we find that South African SMEs' total GVA contribution to SA GDP in 2021 was approximately R4.0 trillion and their total employment footprint in South Africa was over 10.2 million people. This means that South African SMEs' total economic footprint totalled just over three-quarters of GVA and employment.

Fig. 16: South African SMEs' total economic impact, 2021



Source: Oxford Economics

4.2 SMEs' activities in South Africa also have a climate impact

4.2.1 Greenhouse gas emissions are a primary concern

In South Africa, business activity produces greenhouse gas (GHG) emissions through a range of mechanisms, especially coal-based electricity production, industrial processes and agricultural activities. The government has set a goal to reach net zero GHG emissions by 2050.[62]

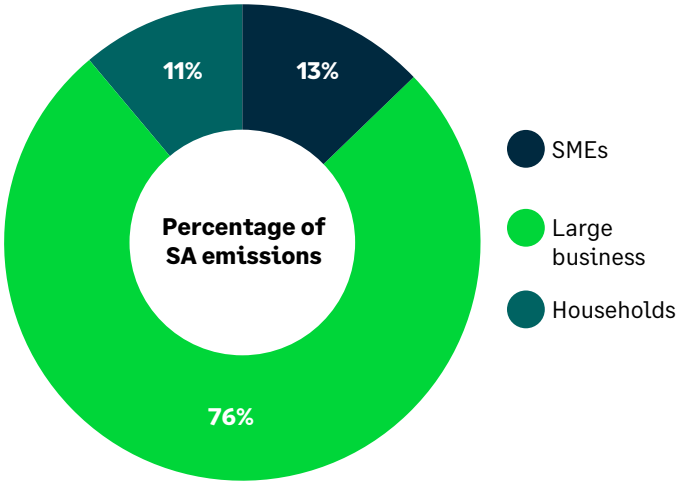
As described in earlier sections, environmental impacts are often correlated with GHG emissions, with high emitting activities often having other negative environmental impacts. Along with their importance in connection to climate change, this makes GHG emissions an important environmental impact to analyse.

As with the UK analysis, the following analysis of GHGs considers the gases covered by the Kyoto Protocol, namely: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and fluorinated gases. Results are presented in carbon dioxide equivalent (CO_2e) terms, accounting for the different potency of these gases as GHGs.

Overall Scope 1 greenhouse gas emissions

South African SMEs' Scope 1 GHG emissions – those created from sources they own or control – totalled an estimated 61 million tonnes of CO_2e in 2021, accounting for 13% of SA's total GHG emissions of approximately 479 million tonnes of CO_2e (Fig. 17). Removing the role of emissions created by households (e.g., by burning fuels for cooking and heating), we find that SMEs Scope 1 emissions accounted for more than 14% of non-household emissions.

Fig. 17: Direct shares of SA GHG emissions (CO_2e terms) for SMEs, large businesses and households, 2021



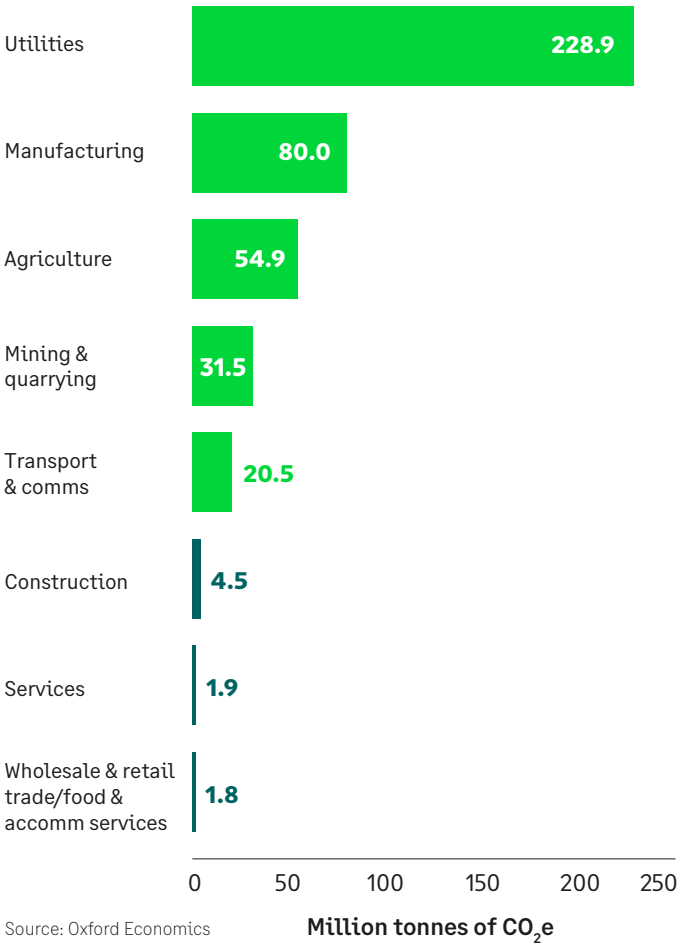
Source: Oxford Economics

SMEs' 13% share of emissions was appreciably smaller than their 40% share of direct GVA. As in the UK, this appears to suggest that SMEs are less emissions-intensive –emitting less GHGs relative to their contribution to GDP – than large companies. However, this aggregated picture is influenced by the sectors in which SMEs are, and are not, concentrated. SMEs are relatively underrepresented in the most emitting sectors but are most concentrated in the least emitting sectors (Fig. 18).

In Fig. 18, dark green bars indicate that SMEs accounted for a greater share of GVA in that industry than in the economy as a whole; light green bars indicate they accounted for a smaller share of GVA in that industry than in the economy as a whole.

The utilities sector is by far the largest contributor to total GHG emissions in South Africa, as a result of the extensive use of coal for electricity generation in the country. Over 85% of the country's electricity is still produced from coal.[63] SMEs account for a very small proportion of this sector in South Africa.

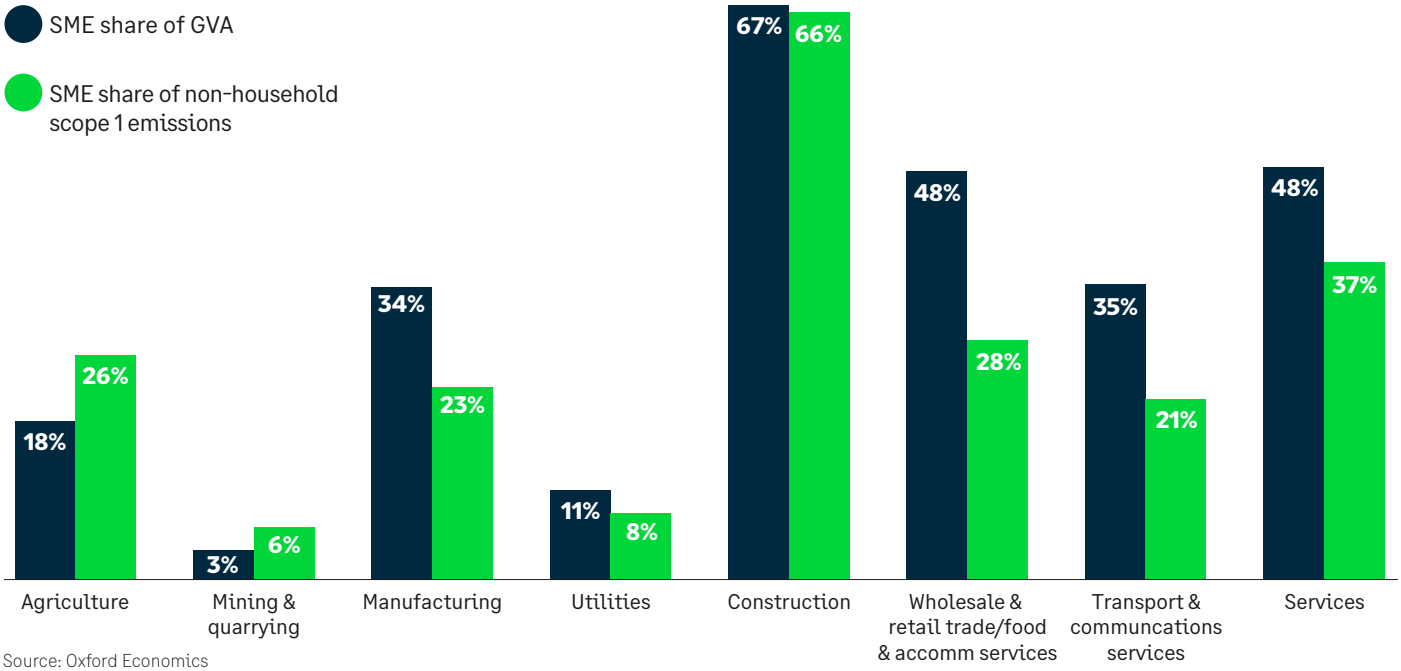
Fig. 18: Total GHG emissions (CO_2e terms) by SA sectors (dark green bars are sectors where SMEs' GVA share was higher than their whole economy GVA share), 2021



Source: Oxford Economics

62. Department of Forestry, Fisheries & the Environment. 'South Africa's Low-Emission Development Strategy 2050', 2020.
63. Climate Transparency (2020). Climate Transparency Report 2020: South Africa Profile.

Fig. 19: Comparison of SME direct GVA shares and SME share of emissions by SA sector, 2021



Source: Oxford Economics

The industry-level emissions picture is more complex (Fig. 19). In the agriculture and mining & quarrying industries, SMEs were more pollution-intensive than large companies (i.e., they polluted more than large companies relative to the amount of GVA they contributed; this is indicated by the light blue bar being taller than the dark blue bar). While SMEs were generally less emissions-intensive in the other sectors, the difference between the GVA share and the emissions share is generally smaller than seen at the economy-wide level.

Scope 1 greenhouse gas emissions by type

As discussed in Chapter 3, different types of greenhouse gases are emitted at varying rates by different economic activities.

The table below splits out the emissions of different GHGs; for each GHG (or group of GHGs), shows total non-household emissions, SME Scope 1 emissions and gives the share of non-household emissions accounted for by SMEs.

SMEs accounted for a high proportion of non-household nitrous oxide (23.1%) and methane (15.9%) emissions relative to carbon dioxide emissions (13.7%) in South Africa. The significant nitrous oxide and methane emissions are driven by activity in the agriculture sector and reflect the extensive use of nitrogen-based fertilisers within the agricultural sector as well as a strong livestock subsector in South Africa. According to data from the FAO[64], manure and digestive processes in animals (enteric fermentation) account for 36% and 41% of SA non-energy agricultural emissions, respectively, with synthetic fertilisers contributing a further 9%.

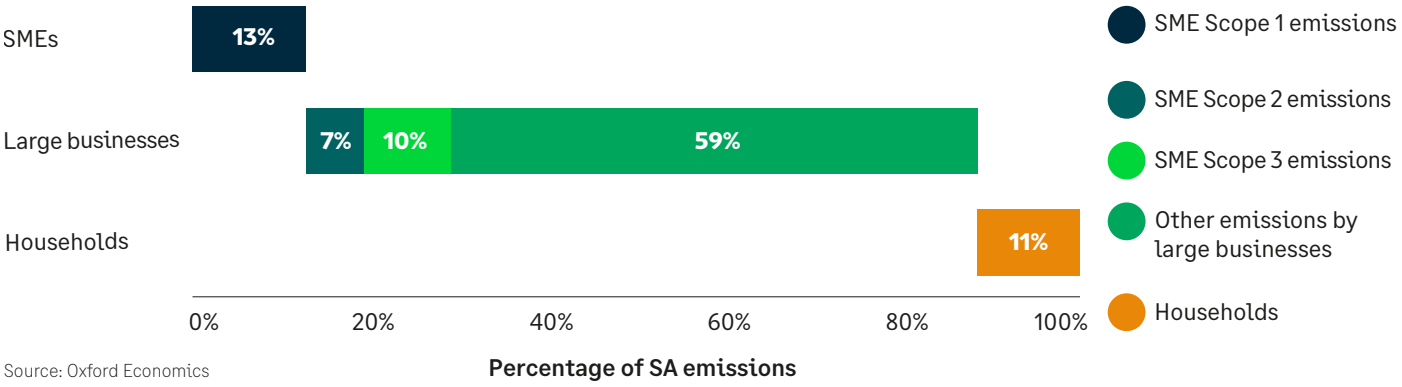
Fig. 20: Greenhouse gas emissions of SMEs in South Africa by type, 2021

	Carbon Dioxide, CO_2	Methane, CH_4	Nitrous Oxide, N_2O	Fluorinated gases (HFC, PFC, NF_3 and SF_6)
Total non-household emissions, million tonnes CO_2e	343.4	54.0	20.9	5.6
SME Scope 1 emissions, million tonnes CO_2e	47.0	8.6	4.8	0.7
SME share of non-household emissions, %	13.7%	15.9%	23.1%	11.8%

Source: Oxford Economics

64. Food and Agriculture Organisation (FAO), 'FAOSTAT: Agriculture Total', 2019.

Fig. 21: SME Scope 1, 2 and 3 emissions amongst SA GHG emissions (CO2e terms) for SMEs, large businesses and households, 2021



Source: Oxford Economics

Scope 2 & 3 greenhouse gas emissions

An additional environmental footprint is associated with SMEs' purchases from large companies in their supply chains. Whilst they will also purchase from other SMEs, our assessment of Scope 1 emissions already includes all of these, so they are discounted here to prevent double counting.

The emissions associated with electricity purchases by SMEs from these large businesses – their Scope 2 emissions –were equivalent to 7% of all South African GHG emissions (Fig. 21). Worth noting is the difference between the Scope 2 emissions share of South Africa (7%) and the UK (2%) as a result of the higher electricity sector emissions factor in South Africa due to the fact that South Africa still produces a larger share (more than 85%) of its electricity from coal.

South African SMEs' domestic supply chain (again only including large firms) has a GHG emissions footprint – their Scope 3 emissions – that accounts for a further 10% of South Africa's total emissions. A large proportion of these Scope 3 emissions are associated with purchases of manufacturing and transportation & storage sectors.

In total – considering Scope 1, 2 and 3 emissions – SMEs accounted for 29% of South African non-household GHG emissions. Meanwhile, SMEs' direct and indirect GVA contribution together (i.e., that is created by their direct activities and supply chain) accounts for 55% of GVA. The overall environmental footprint of SMEs when their South African supply chain is taken into account was therefore smaller than their economic footprint, reflecting their concentrating in low-emitting sectors. Nonetheless, SMEs' total footprint represents a substantial proportion of South African GHG emissions.

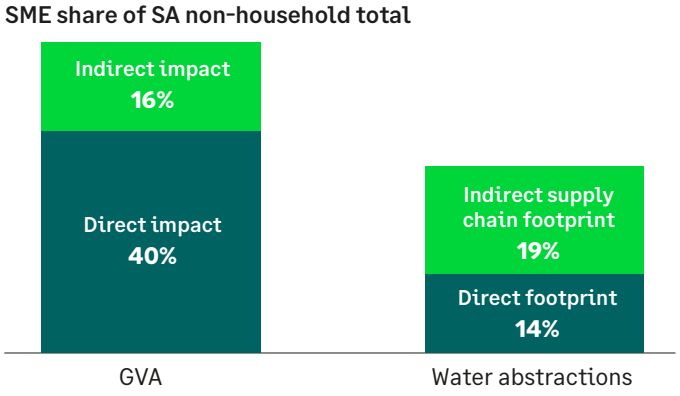
4.2.2 SME consumption of water is low

Businesses consume water for a range of purposes, including cooling, irrigation, washing and diluting, amongst other uses. Businesses' water consumption is an important part of their environmental footprint, especially in regions where water is scarce. South Africa receives a relatively small amount of rainfall,[65] and in recent years the city of Cape Town has faced severe water shortages as droughts saw dam water levels fall to low levels.[66]

At 14.1% of non-household abstractions, South African SMEs' direct water abstractions footprint was small and was significantly lower than SMEs' 40% share of GVA (Fig. 22). This is due to the fact that the agriculture and utilities sectors are responsible for a large proportion of these direct water abstractions and in South Africa these sectors are dominated by large companies (Fig. 15).

South African SMEs' indirect water abstractions footprint was larger than their direct footprint, reflecting that SMEs purchase from industries that are responsible for a large proportion of water abstractions. Purchases from agriculture accounted for a large proportion of South African SMEs' indirect water abstractions.

Fig. 22: Comparison of SA SMEs' GVA impact and water abstractions footprint, 2021



Source: Oxford Economics

65. Our World in Data, 'Average annual precipitation', 2022.
66. Fell, J. and Carden, K., 'Lessons from the Cape Town water crisis and the need for a renewed technical agenda', *Brookings Institute*, 2022.

Case study

Small firms such as GTS can pick low-hanging fruit, but need help with the higher goals

Louise Wiggett, founder and managing director of Global Trade Solution (GTS), is “incredibly passionate” about reducing her firm’s environmental footprint but finds that enthusiasm much less evident in both larger companies—although some exceptions exist—and the government in South Africa.

GTS, a consulting and software company that works in the international supply chain based in Cape Town with fewer than 50 employees and an annual turnover below the SME threshold, has strived to limit its own impact on climate change.

She has had success in targeting the low-hanging fruit. This includes a internal drive to reduce use of paper, a programme to separate and recycle the waste it produces, and a campaign to encourage employees to reduce water and electricity consumption by 50% at work and at home—in a city that four years ago came close to running out of water.

But these efforts highlight that behavioural change is hard to achieve, a factor she puts down to a failure by national and local governments to embed an understanding of the climate challenge in schools and universities. “It is not embedded in our educational programmes, and that kind of behaviour is not a component mixed into the fibre of our society,” she says. “We live in one of the most beautiful cities in the world and it is heart breaking to see the degradation of the environment on so many fronts and we must take a stand now and drive the behaviour and societal change as a matter of urgency.”

But the barriers to achieving changes that are outside her direct control. Electricity generation is heavily reliant on coal and the country suffers from frequent interruptions in service from Eskom that controls all of the power supply. “Our energy generation capacity is vested in the state and it’s very tightly controlled,” Ms Wiggett says.

While organisations can generate some of their own energy generation capacity the liberalisation is slow and complex. Renewable energy such as from wind and solar is very tightly regulated in what she describes as a “nightmarish” process.

She says both the cost and bureaucracy are challenges, but that the red tape is the real barrier. “Companies that we know that submitted energy applications three years ago haven’t even had acknowledgement of their application.”

The third area for government reform is environmental taxation. While South Africa has imposed a plastic bag tax and a recycling levy on tyre production that have raised billions of rand, there is little evidence the money has been directed towards climate reduction or educational programmes. “It has just gone into some big pot and cannot be found,” she says.

Businesses also need to raise their game. GTS counts a number of retailers and manufacturers in the country as its clients but when it asked whether they had environmental evaluation scorecards—similar to ones used for Black Economic Empowerment (BEE)—in most instance the answer was no. “If we can get the bigger companies to drive the environmental story as hard as they are driving BEE, then we will be on a winning track but it’s low down on the priority list,” she says. There are however some highlights where environmental matters are visible and driven as strategic imperatives. For example on entering one retailer’s head office the environmental scorecard was open, visible and transparent and obviously deemed of strategic importance.

SMEs could also benefit from technical solutions such as digitalisation to monitor their footprint. “To make that part of their process would be an absolute winner,” she says. “But at the moment, they struggle to allocate sufficient time and space to deal with it as they are already dealing with a fast array of red tape.”

5. Understanding how SMEs can become more sustainable

This section discusses some of the characteristics of SMEs identified in Chapters 4 and 5, and examines findings from our survey of over 4,000 SMEs in the UK and South Africa.

5.1 Key characteristics of SMEs in the UK and South Africa

As the previous two chapters illustrate, SMEs in the UK and South Africa share a number of similar characteristics, but there are also differences between the two countries that are important to highlight.

Overall, we find that SMEs tend to be clustered in less-emitting sectors in the economy, with some of the most polluting parts (e.g., electricity generation, heavy manufacturing and transportation) dominated by larger companies. This is the key factor that drives their lower emissions relative to larger firms, however, in doing so, it makes like-for-like comparisons between SMEs and larger firms difficult to understand. These sectoral differences also reaffirm how diverse SMEs are, with different environmental impacts generated, and therefore support required, depending on what sector they are based in. There is also some variation according to size, with medium-sized firms sometimes appearing more similar to larger companies than smaller SMEs.

Despite the important role of the sectors that SMEs are in, the evidence from the UK indicates that they do consume energy relatively intensively. This indicates that there is significant scope for SMEs to play a role in helping economies to become more sustainable.

The differences between SMEs in the UK and South Africa appear to be because of a combination of structural differences and their definition. Focussing on the latter, the inclusion of a turnover threshold means that some companies will no-longer be considered SMEs, with this most likely in capital-intensive industrial sectors. However, there are also structural differences in the economy, with SMEs far less likely to be involved in the most polluting industries than they are in the UK. This is especially the case in electricity generation, which is still primarily based on burning coal. This makes the utilities sector highly emitting, making up half of non-household emissions, but only one tenth of its economic output is accounted for by SMEs.

The implication of this is that, whilst SMEs in South Africa emit significantly less than larger companies relative to their economic impact, their sectoral distribution is more skewed than in the UK. This needs to be taken into account rather than assuming that SMEs' climate impacts don't have much room for improvement.

5.2 How SMEs can reduce their climate impacts

The findings of our analysis (see Chapters 3 and 4 above) reinforce the point made in Chapter 2 that despite their small sizes individually, SMEs collectively have significant environmental impacts. There are number of ways that SMEs could reduce their environmental footprint. We explore these theoretical options here, before examining what the survey reveals about the perspectives of SMEs when it comes to sustainability, the actions they are taking, the challenges they face and what would support them.

SMEs generate significant Scope 1 environmental impacts through their own activities. Broadly speaking, reducing Scope 1 impacts requires changing internal processes away from polluting activities (e.g., having their vehicles take fewer journeys) or reducing the emissions intensity of these activities (e.g., switching to more fuel-efficient options such as electric vehicles). Previous research[67] has found that energy efficiency measures are the most widely adopted measure aimed at reducing emissions from SMEs' activities, while changing production processes is the least widely adopted measure, because of the associated disruption and upfront cost. Measuring environmental impacts is a key enabler of sustainability. The ability to measure energy use, emissions, and other metrics can help SMEs to benchmark impacts, set targets, and evaluate the impact of sustainability measures.

As well as their own activities, SMEs can seek to reduce the size of their Scope 2 and 3 impacts by minimising the emissions generated in their supply chains. The results presented in Chapters 4 and 5 imply that these channels are significantly smaller than the Scope 1 emissions from SMEs. However, this reflects the fact that the environmental impacts of SMEs as part of other SMEs' supply chains were not included amongst the measured impacts, to avoid double-counting. For an individual SME, supply chain impacts could be very significant indeed. SMEs can seek to reduce these impacts by reducing their procurement (e.g., reducing their electricity consumption, or reducing the frequency with which they replace equipment) or choosing more sustainable alternatives (e.g., switching to a clean electricity provider, or sourcing recycled products instead of new ones).

67. British Business Bank, 'Smaller businesses and the transition to net zero', 2021.

5.3 Findings from our survey of SMEs in the UK and South Africa

SMEs see sustainability as important but face high barriers to improving their environmental impacts. Their limited resources make it difficult to develop bespoke solutions to the challenge, and current policy has not yet enabled the "off the shelf" frameworks that could accelerate the adoption of sustainability measures. A key takeaway from our survey is the importance of technologies that track environmental outcomes. The "twin transition" of sustainability and digitalisation could help SMEs benchmark their impacts, set targets, and measure progress across different sustainability measures.

The remainder of this chapter details how SMEs are thinking about and acting on sustainability, the barriers they face, and the support they think would be most helpful in supporting their environmental goals. The results from South Africa and the UK were generally similar. As a result, all results detailed here include respondents both the UK and South Africa.

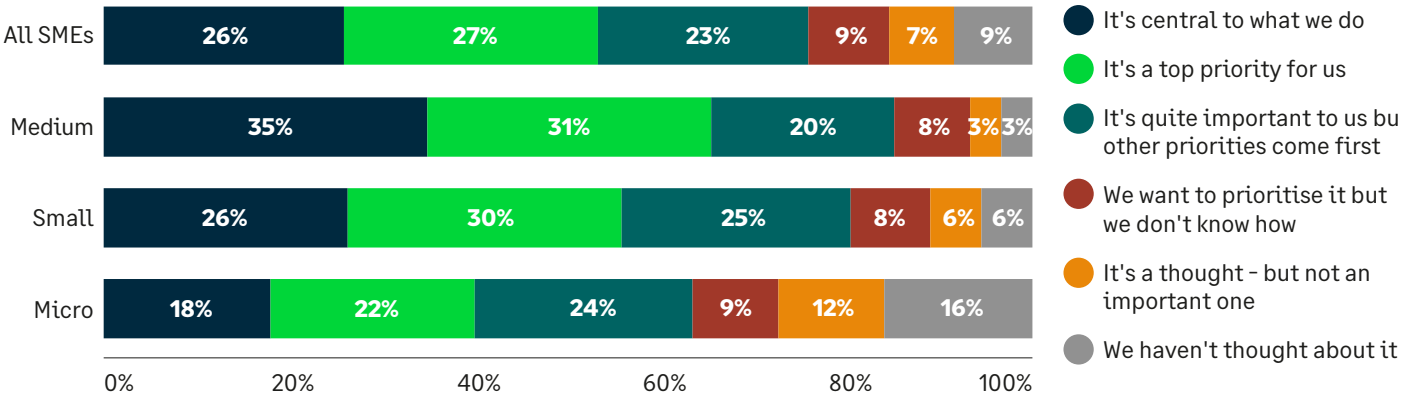
5.3.1 SMEs in the UK and South Africa see sustainability as highly important

Many SMEs state that they take sustainability seriously: a majority describe it as either a "top priority" or "central to what they do" (Fig. 23). Fewer than one-in-10 have not yet thought about it. However, it appears that sustainability is a higher priority amongst larger SMEs than amongst smaller ones.

Nearly two-thirds (65%) of medium-sized businesses described sustainability as either a central or top priority, compared to 56% of small businesses and 40% of microbusinesses.

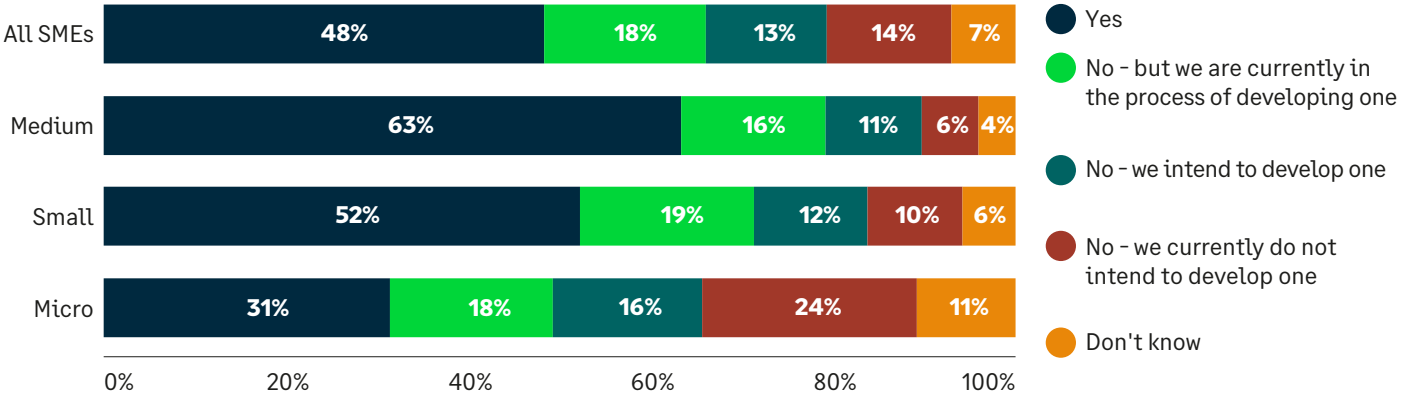
A similar story is observed with respect to sustainability policies. Two-thirds (66%) of SMEs responding to our survey either have or are currently in the process of developing an environmental, social, or sustainability-related policy. A further 13% intend to develop one; only 14% do not have one and do not intend to develop one. However, the proportion of SMEs who have or are developing a sustainability policy is higher for medium-sized companies than for small companies, which is in turn higher than for microbusinesses. Nearly a quarter of microbusinesses responding to our survey do not currently intend to develop a sustainability policy.

Fig. 23: Split of responses to "Currently, which of the following best describes how your business is thinking about sustainability?" by size of business (n = 4,023)



Source: Oxford Economics

Fig. 24: Split of responses to "Does your business have an environmental, social or sustainability-related policy for how your business activities are conducted?" by size of business (n = 4,023)



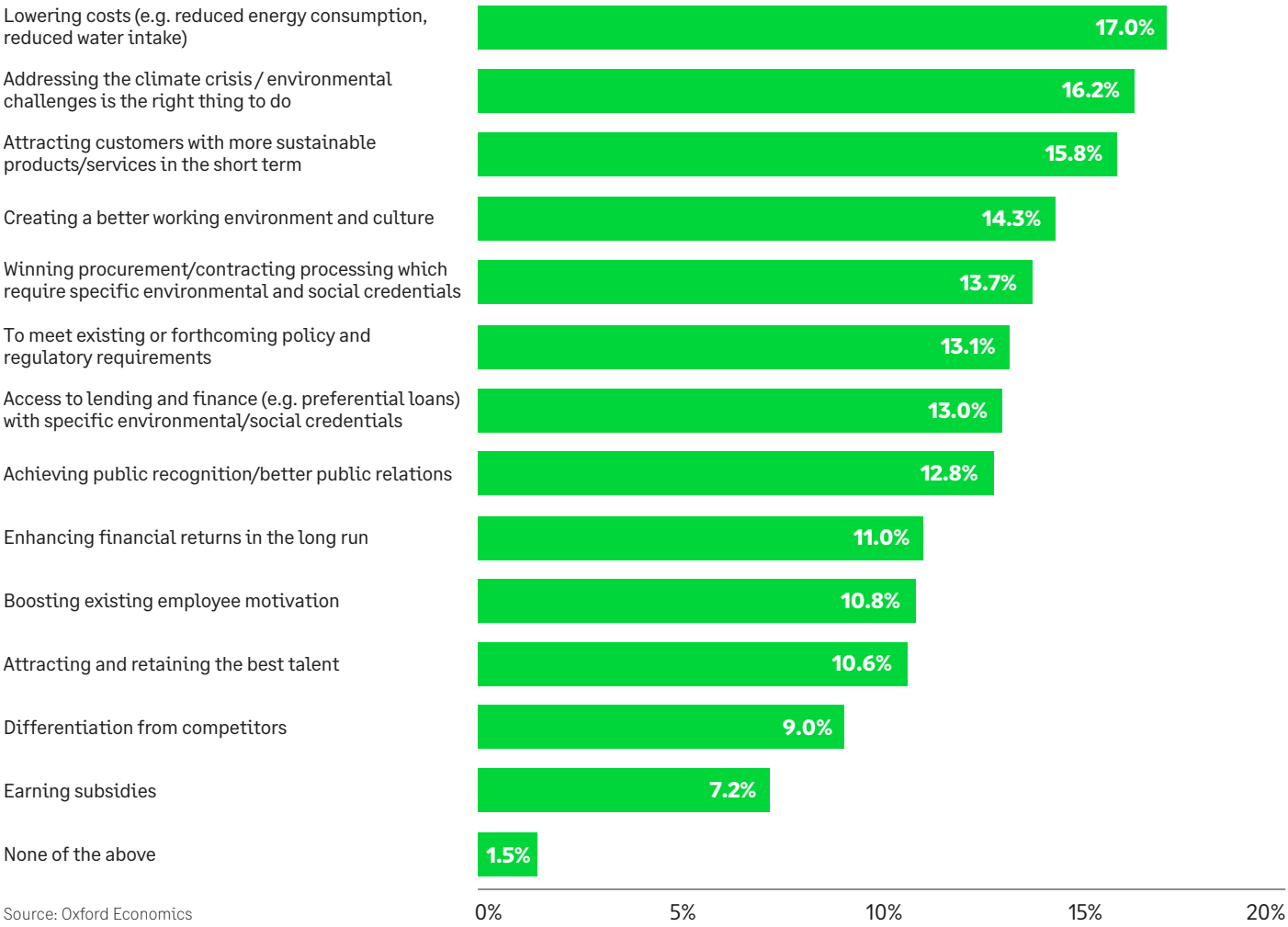
Source: Oxford Economics

Looking forward, 77% of the SMEs we surveyed either have a policy to improve their business' environmental impact, are working on one or intend to make improvements in the near future. A further 9% would like to but face many barriers.

SMEs see a range of benefits to pursuing sustainability measures. Financial considerations are a key driver of sustainability actions amongst SMEs, as was identified in previous work by the British Business Bank (see Chapter 2 above). Lowering costs—through reduced energy and water consumption, for example—was the most widely reported perceived benefit of sustainability amongst the SMEs we surveyed, irrespective of the importance they placed on sustainability (Fig. 25).[68] Attracting consumers with more sustainable products and services was also a widely reported perceived benefit. Factors such as earning subsidies, differentiating from competitors, and enhancing long-term financial returns were the most common among those who regarded sustainability as less important.

Alongside financial considerations, the second most widely reported perceive benefit was that taking action to address the climate crisis is the right thing to do. As found in previous research, a sense of purpose is a key driver of sustainability actions amongst SMEs.

Fig. 25: Proportion of SMEs identifying particular benefits as one of the top three biggest benefits of sustainability actions in the next year (n=4,023)



Source: Oxford Economics

68. British Business Bank, 'Smaller businesses and the transition to net zero', 2021.

5.3.2 What actions are SMEs taking to become more sustainable?

SMEs in the UK and South Africa are already taking a range of sustainability actions. Fig. 26 shows that the top three sustainability actions that SMEs are already taking are reducing waste, purchasing more reused or recycled products, and reducing energy consumption. Digitalising to use less resources was also a commonly reported action. This highlights the importance of efficiency and cost considerations in SMEs' sustainability strategies.

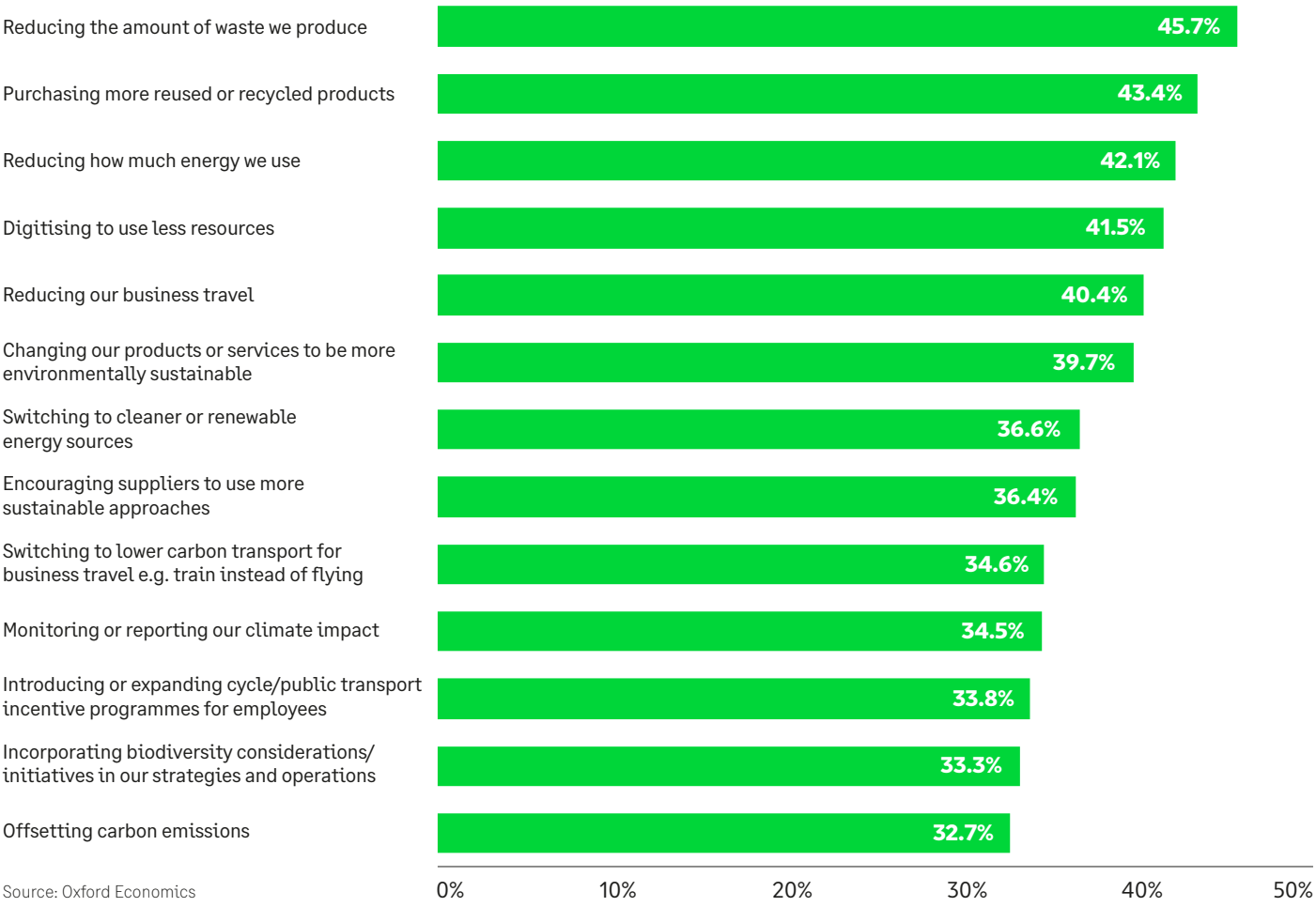
Our survey reveals that SMEs are trying to promote sustainable approaches within their supply chain but are having difficulty in achieving changes. Encouraging suppliers to use more sustainable approaches was the third most reported action that SMEs had tried by not yet succeeded in, while being only the eighth most reported action that SMEs had already implemented. This aligns with the British Business Bank finding (see Chapter 2 above) that a lack of cooperation from supply chain partners and other actors is an important barrier to climate action by SMEs.[69]

Smaller businesses, especially microbusinesses, were less likely than medium-sized companies to be able to influence their suppliers (and more likely to report a low ability to do so).

One of the actions that SMEs were least likely to report having tried is monitoring their climate impact. Especially given the importance of monitoring for benchmarking and goal-setting, increasing awareness and action in these areas may represent "low hanging fruit".

Businesses that see sustainability as central to their business are more likely to be engaging with a range of sustainability initiatives than those that only view it as "a thought". Fig. 27 compares the uptake of sustainability actions amongst SMEs who describe sustainability as central to what they do to those who say sustainability is "a thought" but not an important one. The differential varies across actions. Whilst 50% to 60% of SMEs that view sustainability as central are engaged with every single initiative, uptake varies significantly among those viewing it as "a thought", from only 10% looking to encourage employees to less-polluting forms of transport to 32% reducing the waste that they produce. Some SMEs therefore seem likely to embrace any option, whilst others might require improved incentives to engage with less well-known or less attractive options.

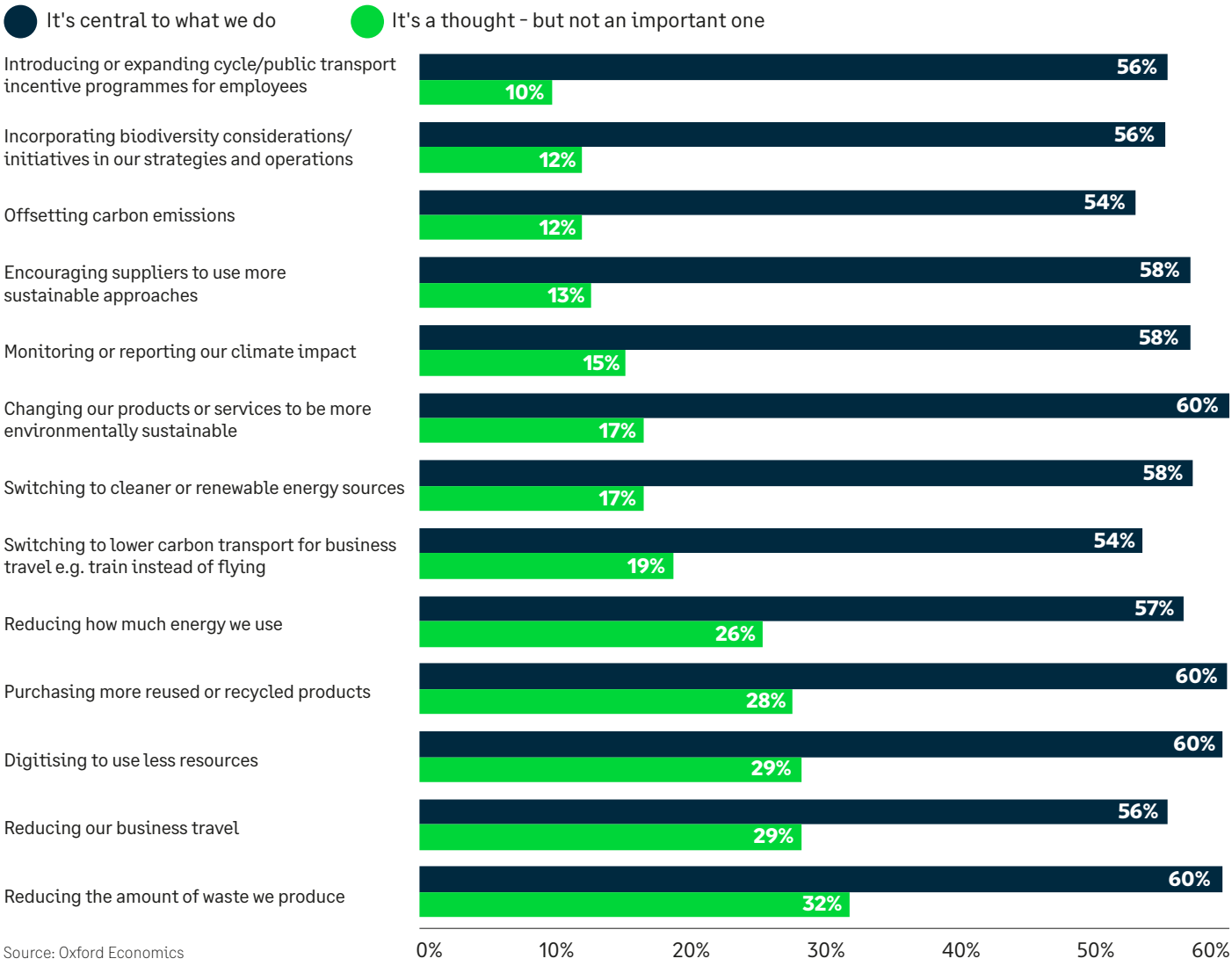
Fig. 26: Percentage of SMEs reporting that they are already taking sustainability actions (n=4,023)



Source: Oxford Economics

69. British Business Bank, 'Smaller businesses and the transition to net zero', 2021.

Fig. 27: Percentage of SMEs reporting that they are already taking sustainability actions, amongst SMEs that say sustainability is central to what they do and those that say it is a thought but not an important one



Source: Oxford Economics

5.3.3 What do SMEs perceive as challenges to them becoming more sustainable?

A lack of cash or cash flow to make the requisite investments was the most reported barrier to future sustainability action across all surveyed SMEs. This finding aligns with evidence from previous surveys in the UK and the EU (see Section 2.2). The prominence of this barrier varied across different sized businesses; cash flow was particularly challenging for microbusinesses, while for small and medium-sized businesses government policies such as certifications restricting SMEs' ability to innovate or to introduce new products were the most frequently reported barrier. The next most reported future barriers across all SMEs were difficulty finding the right solutions and difficulty in measuring and reporting on environmental and sustainability issues. This points to barriers in the forms of access to products, services, and information.

The perceived barriers to environmental improvement vary according to the importance SMEs place on sustainability. Lack of cash or cash flow to invest was the most important consideration for all SMEs—except those who said sustainability was a top or central priority. For those SMEs, government policy barriers were more important—indeed, for those who said sustainability was central to what they do, lack of cash or cash flow was only the fifth most cited barrier.

Barriers to financial resources, information, and capabilities are particularly important for firms who would like to improve their environmental impact but feel that they face many barriers. Amongst this group, the top three barriers were too little cash or cash flow to invest, difficulties finding the right solutions to improve their impact, and lack of skills or knowledge within their organisation. This suggests that measures to address these issues could be particularly impactful in helping SMEs adopt sustainability measures.

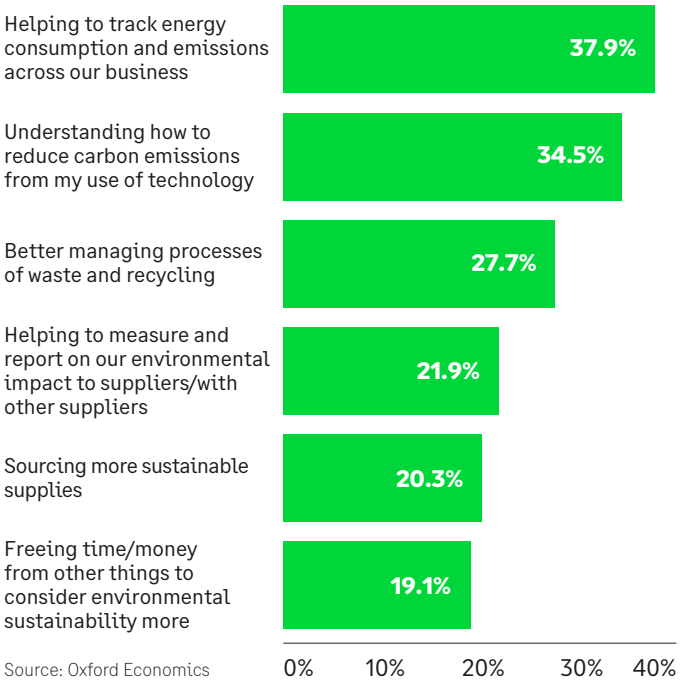
Fig. 28: Proportion of SMEs identifying particular challenges as one of the top three biggest challenges to becoming more environmentally sustainable in the future (n=4,023)

Source: Oxford Economics

5.3.4 How do SMEs think technology could best support their business in becoming more sustainable?

SMEs see a range of key ways that technology could support their sustainability efforts by filling information gaps (Fig. 29). The two most commonly perceived roles for technology, across all different sizes of SMEs, were helping to track energy consumption and emissions and understanding how to reduce carbon emissions from their use of technology. Previous research has noted the importance of readily available "off-the-shelf" tools that align with the business models of SMEs, who often lack the capacity to develop their own tools and will allow them to engage with this transition.[70] Our results support the notion that digitalisation and sustainability are a "twin transition", with SMEs having the potential to move towards both goals simultaneously.

Fig. 29: Proportion of SMEs identifying different ways that technology could support their sustainability when asked to highlight their top three (n=4,023)



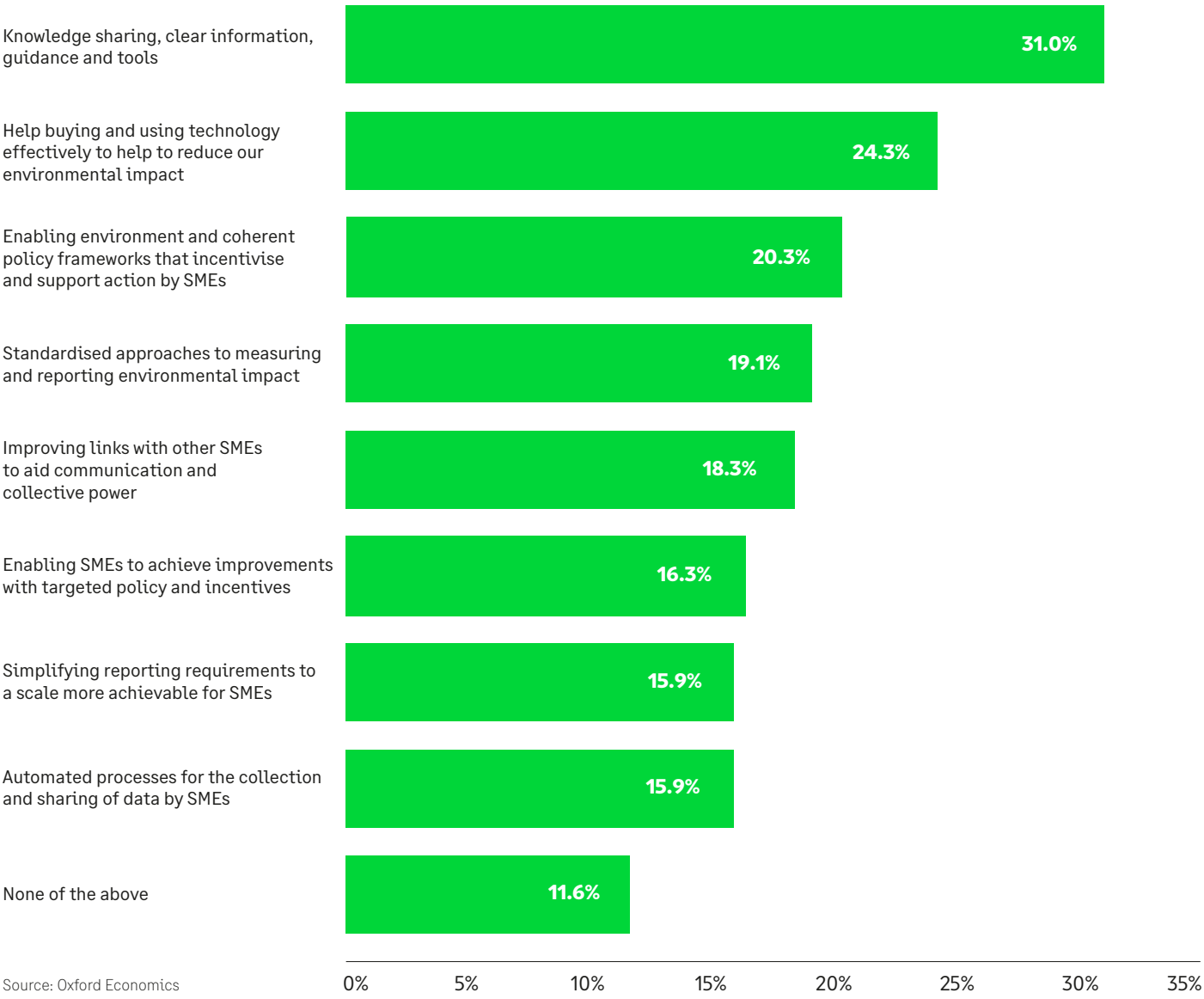
Source: Oxford Economics

70. European Commission, 'SMEs, start-ups, scale-ups and entrepreneurship: Facts from Flash Eurobarometer 486', 2020.

5.3.5 What external and government support do SMEs think would be most helpful for them in becoming more sustainable?

The most important forms of external support for all SMEs are knowledge sharing, clear information, guidance, and tools (Fig. 30). Knowledge sharing and guidance could come from other SMEs, government or larger companies, particularly those buying from SMEs. Help buying and making effective use of technology to reduce environmental impacts was the second-most important form of external support, underlining the point made in previous research[71] that SMEs may lack the capacity to develop and use in-house digital tools.

Fig. 30: Percentage of SMEs identifying a form of external support as amongst the three most helpful ways to help their business in becoming more sustainable (n=4,023)



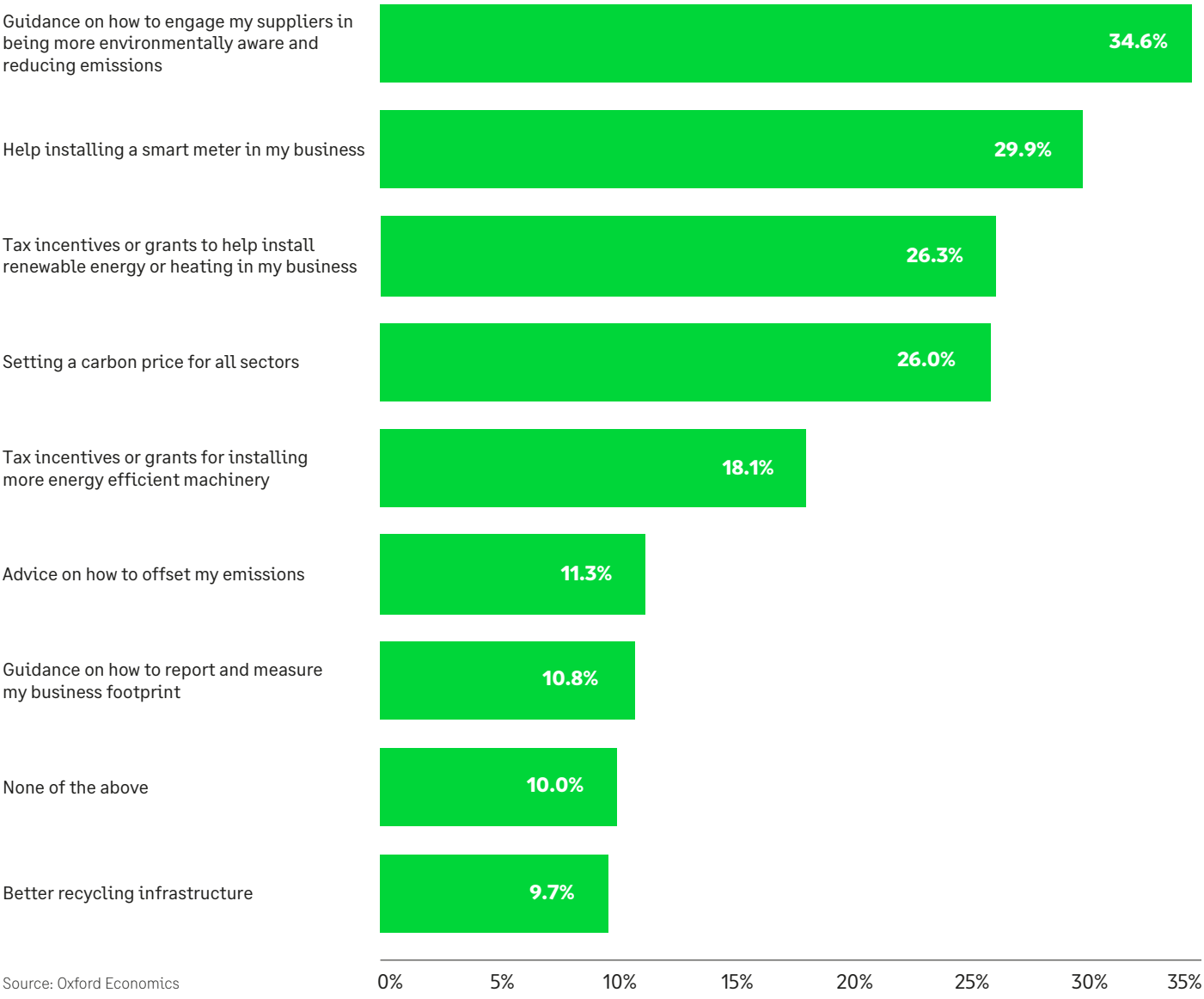
Source: Oxford Economics

71. European Commission, 'Annual Report on European SMEs 2021/22 – SMEs and environmental sustainability', 2022.

Coherent government policies to incentivise and enable action and standardised monitoring and reporting are important forms of external support for SMEs. This highlights the importance of policy and regulations that are sensitive to the needs of SMEs. Previous research has noted that policy and regulatory requirements to date have often focused on large companies, offering limited guidance for smaller businesses with fewer resources and capabilities.

Guidance on engaging suppliers in sustainability efforts was the most commonly desired form of government support across SMEs as a whole (Fig. 31), ahead of tax incentives and other financial measures. Tax incentives or grants to install renewable energy or heating was, though, the most cited form of government support amongst microbusinesses.

Fig. 31: Percentage of SMEs identifying a form of government support as amongst the three they would most like to see to help their business in becoming more sustainable (n=4,023)



Source: Oxford Economics

Case study

One-woman accountancy firm shows giant leaps start with small steps

As the owner of a one-woman accounting practice for small- to medium-sized owner-managed businesses that want a personal service, Andrea Graham has focused on taking small steps to reduce her environmental footprint.

QACR—short for Quality Accounting Complete Reporting—deals with monthly or annual accounting work for around 45 companies and personal tax submissions for 120 people in the part of KwaZulu-Natal, South Africa, where she has her home-office.

The initiatives she has taken include buying a second monitor for her laptop and PC to reduce the need for printing out documents as part of a move to shift her operations to working fully online. As a result, she has virtually eliminated travel and the emissions that transportation produces. She is in the process of changing all lights to LED bulbs.

While she has been effective in seizing the low-hanging fruit in terms of reducing environmental emissions, she finds that her size is an obstacle to delivering more impactful changes. “Because I am essentially a one-woman practice, I don’t have much impact,” she says.

She says that it is costly to change systems and implement technology and while she does not have the time needed to research fully to identify the best solution out of the range of options on offer, making it overwhelming to take a final decision. While there would be potential gains from obtaining a green electricity supply, that is a difficult option in a country where power generation is heavily reliant on coal.

In terms of obtaining governmental advice, South Africa is very far behind on environmental issues—there is not much out there and if someone wants to make a difference, they have to look for options themselves, Ms Graham says.

In fact, one of prime sources of useful information turned out to be the preschool that her children attended, where the principal was very focused on the environment. From that school she has gained practical information about recycling, water filtration, rainwater harvesting, and storage tank solutions, as well as worm farms and home veggie gardens.

“But you have to be willing to do your part—have a paper bin and arrange collection, keep glass for recycling, and go drop it off, and so on,” she says.

However, she has found a common voice with her suppliers, many of whom are software companies, such as Sage, that she says have done an “amazing job” at setting an example to follow.

Like other SMEs in South Africa, Ms Graham would be keen to take further steps if she could get the support. There is currently little support from the public sector and some initiative—such as recycling collections for paper and plastic waste—have ceased.

But she is determined to continue finding ways to reduce her environmental impact, if for no other reason than to know I am doing my part for my children’s future. “Even a small change makes a difference.”


Red Split Lentils
Green Lentils
Red Whole Lentils
Brown Lentils
Mung Beans
Green Split Peas
ORGANIC Chickpeas
Wheat Flour
20
Stoneground
Cake Flour 59

6. Conclusions and policy recommendations

Sage and ICC, in commissioning this work, have called attention to both the critical role SMEs play in reducing the climate impact of the economy, and the particular set of challenges that they face. The effects of environmental impact, with climate change amongst the foremost, are already being felt at a global scale today, and are forecasted to intensify in the coming decades. Addressing these vastly complex and dynamic issues will require contributions from all sections of society.

This report has presented evidence explicitly highlighting the significant climate impact of SMEs and therefore their substantial capacity in enabling countries to meet their societal environmental targets, including countries' nationally determined contributions under the Paris Agreement. However, this impact has not yet been accounted for and SMEs will need further support to achieve their potential.

Unsurprisingly, many of the challenges faced by SMEs are ultimately a function of their small size. This is exacerbated by their limited access to resources, data and expertise compared to larger companies which are more readily able to act on climate ambitions once targets are agreed. Despite their best intentions it would not be reasonable or feasible to expect SMEs to act in the same way as large companies in regard to addressing their environmental footprint. The smaller the SME, the more challenging and relatively expensive (as a proportion of revenue) it can be to identify and progress towards realistic environmental targets.

Similarly, the diversity amongst SMEs – in terms of size and activity – means that a "one-size-fits-all" approach to SME sustainability is unlikely to be appropriate. Support is available, including from technological solutions and government policy, but must go further in considering the specific context of SME's. Digitisation appears to be an effective mean to addressing many of the SME-specific challenges and in facilitating their climate impact reduction activities.

This study has identified the scale of impact SMEs have using available datasets and economic modelling of business and supply chain activity. It has also collected information directly from SME stakeholders to better understand their experiences via a broad survey and more focused case studies. While informative in and of itself, the fundamental value in generating this evidence is to help point the direction for support to facilitate SMEs in reducing their environmental impact, with digital tools and government policy amongst the most important sources of this support. In general, this support should seek to address the following key themes:

- Improved data solutions to build understanding of individual SME environmental impact.
- Government support via guidance and resources including funding for achieving environmental targets.
- Technological facilitation of access to practical information, such as via knowledge sharing on what others have done.
- Create connections to expertise and support to address specific challenges and innovations for SMEs in different sectors.
- Simplify ability to act collectively via technological support for networks, for example to influence supply chains.

Aligned with the findings of the study, ICC have produced specific policy recommendations to support SMEs on reducing their climate impact, outlined below.

6.1 ICC policy recommendations

Governments and large businesses have a vital role to play in enabling SMEs to take further climate action. Building on this research, ICC have outlined below several key policy recommendations that can help empower SMEs and create an enabling environment that is conducive to meaningful change.

Adapt standards and reporting requirements Tailoring and calibrating future GHG and sustainability standards and reporting requirements to the specific characteristics of SMEs. This must take into account the diversity of the SME community and avoid complex or costly reporting frameworks.

Promote the use of self-assessment tools: The public and private sector can help SMEs by developing and making available self-assessment tools based on standards and reporting frameworks that are tailored to the SME community and facilitating access to these tools.

Provide tailored guidance and training: Governments and large businesses should provide SMEs with adequate guidance and training in order to ensure that SMEs can take proactive and concrete actions to reduce their environmental footprint. A multistakeholder approach including collaboration with chambers of commerce and civil society is critical in this effort for greater capacity building and knowledge sharing within local SME communities.

Support from larger organisations: The complexity of environmental questionnaires that large companies send to suppliers can sometimes be exceedingly challenging for SMEs. These should be streamlined, with consistent year-on-year data and information key for tracking performance so engaging and guiding suppliers on the exact reporting requirements is key.

Promote greater collaboration within supply chains: Many SMEs struggle to effectively address scope 2 and scope 3 emissions, and the lack of cooperation from supply chain partners and other actors is an important barrier to climate action by SMEs. It is therefore essential that businesses of all sizes, and large businesses in particular, actively promote sustainable practices within their extended supply chain and provide the tools and resources SMEs require to take meaningful action.

Foster sector-specific initiatives: This research has shown significant sectoral and sub-sectoral differences in the environmental footprint of SMEs. Governments must be mindful of the sector-specific challenges associated with environmental action and work in in partnership with the private sector to promote sector initiatives that enable SMEs to reduce their environmental footprint in a way that recognises the characteristics.

Address trade barriers: International trade is a vital tool to enable businesses to provide and access more sustainable goods and services – with significant untapped potential to accelerate decarbonization of the economy – as suggested most recently by the T20 in Towards a More Open, Fairer and Greener Trade.[72] Governments should actively identify key trade barriers or frictions that restrict SMEs' ability to sell and access environmentally friendly goods and services – such as punitive tariffs or inconsistent standards.

Enable access to sustainable finance: Cash constraints and the inability to make the requisite investments to adapt businesses processes are the most reported barriers to future sustainability action across all surveyed SMEs. Governments can help address this barrier by working alongside the financial sector to tailor and make available sustainable finance opportunities that can empower the SME community to invest in products, solutions and processes that reduce their environmental footprint.

Implement well-calibrated fiscal interventions: In order to further reduce costs associated with SMEs' environmental transition, governments should explore a comprehensive suite of fiscal interventions, including tax credits, that can support SMEs to take more ambitious climate action and to invest in net zero emissions technologies This should include tailored support mechanisms for SMEs that directly or indirectly engage in research and development that aims to develop more sustainable technologies, products or services.

Implement SME-friendly carbon-pricing instruments: Governments should implement efficient and cost-effective SME-friendly carbon-pricing instruments that support SME climate action, and governments should use the proceeds of such interventions to bolster a holistic and comprehensive strategy to reduce GHG emissions.

Foster the use of digital technologies: Digital technologies offer powerful tools for SMEs to take concrete environmental action. The "twin transition" of sustainability and digitalisation can help SMEs benchmark their impacts, set targets, and measure progress across different sustainability measures. Governments and large corporates must support SMEs by developing and deploying at scale and pace these technologies and ensure that all SMEs can unlock the full potential of these innovative tools.

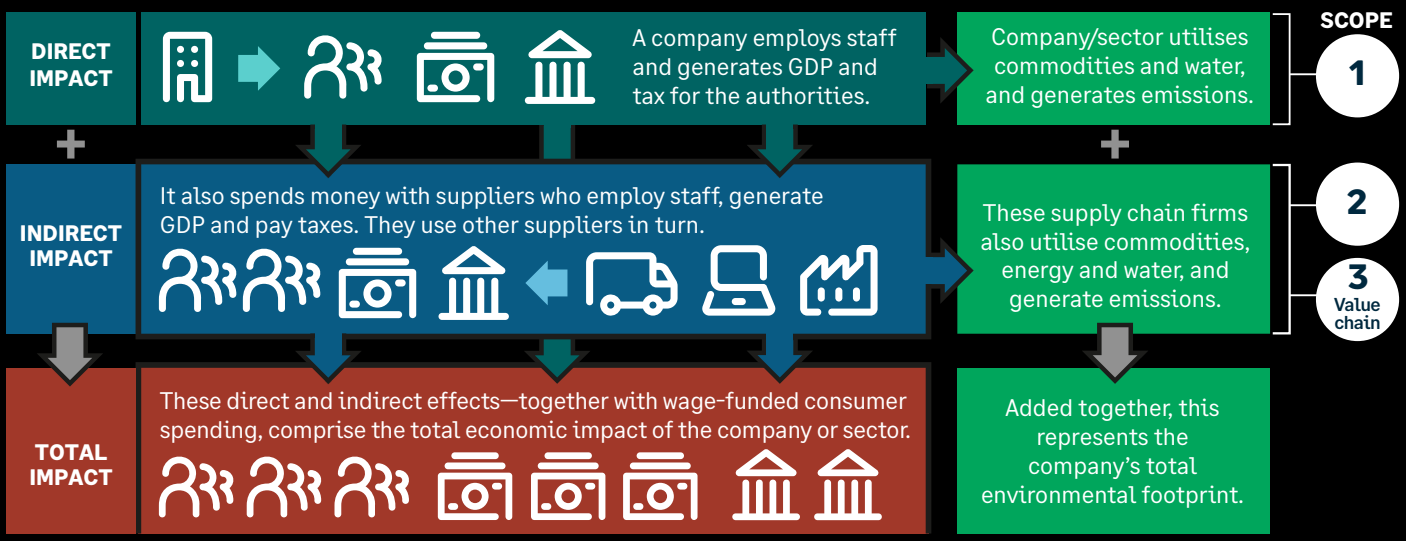
72. T20, Towards a more open, fairer and greener trade: reducing barriers, mainstreaming the green agenda, 2022

Appendix: Methodology

This study used Oxford Economics' *Global Sustainability Model* (GSM) to produce a robust picture of the economic footprint of SMEs in the UK and South Africa and map this to an associated environmental footprint. The figure below illustrates this mapping.

The rest of this appendix explains in detail the methodology and data used to derive the estimates of UK and South African SMEs' economic and environmental footprints.

Fig. 32: Measuring environmental footprints using the GSM



Economic footprint analysis

Our analysis focuses on three main channels of economic impact: The direct impact of firms through their own (i.e., in-house) activities, the indirect impact associated with purchases in supply chains, and the induced impact that arises as employees (including of suppliers) purchase goods and services out of their earnings.

To estimate these effects, we produced detailed input-output (IO) models for both the UK and South Africa that capture how businesses of different sizes and in different sectors interact with each other. An IO model is a detailed representation of an economy that shows the major interactions and spending flows between different industries, households, government, and the external sector.

In the UK, we extended the ONS's 2018 IO table (the most recent one available at the time of writing) to include sizeband breakdowns, using financial data by business size from the Annual Business Survey. We then rescaled the model using ONS data on sectoral output and GVA in 2021 to so that it best captured the structure of the UK economy in 2021. The same process was followed in South Africa, using a 2018 IO table from StatsSA.

These IO tables were used to estimate SMEs' economic impacts through the direct, indirect and induced channels in the two countries. The estimates of indirect and induced channels considered only SMEs' indirect and induced impacts on large firms, not on other SMEs, to avoid double-counting. If one SME (SME A) purchases from another SME (SME B), that will stimulate activity in the SME B. However, when assessing SMEs' overall economic footprint, SME B's activity will already be included in its direct footprint, so including it also in the indirect footprint would entail double-counting. The GSM's mapping of global supply chains allowed us to account for the stimulus SMEs provide to domestic large companies when they purchase from foreign suppliers who in turn purchase inputs from domestic large companies. Employment impact estimates were derived from the GVA estimates from the IO using estimates of labour productivity by sector and sizeband. For the UK, these estimates were derived from data from the ONS and our databanks; for South Africa, they were derived from data from our databanks, which are based on data from StatsSA.

Environmental footprint analysis

Greenhouse gas emissions

Our assessment of SMEs' footprint in terms of greenhouse gas (GHG) emissions is based on the Greenhouse Gas Protocol, which provides a comprehensive international standard for measuring and managing greenhouse gases.[73] The protocol provides a framework for companies or industries to assess their carbon footprint using three "scopes", which are defined as follows:

- **Scope 1** refers to the direct emissions from the operation of a company or industry's own facilities and assets. In large part this refers to fuel combustion such as gas boilers on industry-operated sites, or petroleum products used to fuel the company or industry's own vehicle fleet.

- **Scope 2** refers to the indirect emissions that are made by other organisations that provide electricity and heat to the company or industry, i.e., the energy sector.

- **Scope 3 value chain** refers to the indirect emissions that occur in the company or industry's supply chain as a result of the goods and services it purchases. This can be thought of as the emissions 'embedded' in the company or sector's inputs of goods and services.[74]

SMEs' Scope 1 GHG emissions were estimated by apportioning out each sector's emissions according to the share of that sector's expenditure on fuels accounted for by the different sizebands. For the UK, each sector's GHG emissions in 2021 were estimated by taking 2019[75] emissions by sector from the ONS's environmental accounts and uprating these to 2021 based on the growth in total CO_2e emissions in the UK between 2019 and 2021 in BP Statistical Review of World Energy June 2022 data. The share of each sector's expenditure on fuels accounted for by the different sizebands was estimated using data on the value and energy intensity of purchases by sector and sizeband from the Annual Business Survey. In South Africa, sector emissions were estimated using 2020 data[76] from the Department of Forestry, Fisheries and the Environment's National GHG Inventory Report for 2000 - 2020, uprated to 2021 values using the aforementioned BP data. The share of each sector's expenditure on fuels accounted for by the different sizebands in South Africa was based on UK data in the absence of South Africa data.

To derive a breakdown of GHG emissions by type of GHG, the estimates of Scope 1 emissions were divided between the Kyoto Protocol GHGs (carbon dioxide, methane, nitrous oxide, hydro-fluorocarbons, perfluorocarbons, nitrogen trifluoride and sulfur hexafluoride[77]) according to their shares of each sector's emissions. In the UK, these shares were calculated from ONS environmental accounts data; in South Africa, they were calculated from the National GHG Inventory Report for 2000 – 2020.

Scope 2 emissions were estimated by applying grid-average emissions factors to estimates of electricity consumption by sizeband. Electricity consumption by sizeband was estimated using data on electricity consumption by sector and apportioning it out based on the share of energy purchases in each sector accounted for by the different sizebands. The share of a sector's energy purchases accounted for businesses in each sizeband were estimated using data on the total value and the energy intensity of purchases by businesses in each sizeband. The estimates of electricity consumption were scaled according to the proportion of SMEs' purchases from the energy sector that were from large companies, to avoid double-counting of emissions from SMEs in the energy sector. For the UK, data on energy consumption by final user and grid-average emissions factors are published by the Department for Business, Energy & Industrial Strategy, while data on the total value and energy intensity of purchases by businesses in each sizeband in each sector were sourced from the Annual Business Survey. For South Africa electricity consumption by sector was sourced from the Department of Energy, and grid-average emissions factors were derived from data from the Department of Forestry, Fisheries, & Environment. The share of each sector's energy purchases accounted for businesses in each sizeband was based on UK data in the absence of data for South Africa.

Scope 3 emissions were calculated by multiplying the estimates of the Scope 1 emissions of large companies in each sector (other than the energy sector, which was accounted for in the Scope 2 estimates) by the share of those companies' output that, based on our economic footprint analysis, is attributable to purchases from SMEs.

The emission estimates described above relate just to territorial emissions in the UK and South Africa. The GSM allowed us to use information on UK SMEs' procurement to map their global supply chains and quantify the emissions associated with their suppliers outside the UK to estimate "offshored" emissions.

73. Building on a 20-year partnership between World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD), GHG Protocol works with governments, industry associations, NGOs, businesses, and other organisations. GHG Protocol supplies the world's most widely used greenhouse gas accounting standards. (GHG Protocol website)

74. It should be noted our estimates relate specifically to the upstream supply chain aspect of Scope 3. As such, it does not include the impacts of other Scope 3 categories, such as the downstream use, due to a lack of comprehensive data.

75. While data was available for 2020, we used 2019 as the year from which to uprate values to mitigate COVID-19 related distortions.

76. Since before 2020, the most recent data available was for 2017 – several years ago.

77. Hydro-fluorocarbons, perfluorocarbons, nitrogen trifluoride and sulfur hexafluoride were grouped together under 'fluorinated gases' for the purposes of reporting.

Pollutants

Estimates of UK SMEs' footprint in terms of (non-GHG) air pollution were derived using ONS data on emissions of PM2.5 and PM10 by sector. As with GHG emissions, 2019 data was uprated to 2021 values using data on CO_2e emissions from the BP Statistical Review of World Energy June 2022. Data was not available to perform this analysis in South Africa.

Within each sector, PM2.5 and PM10 emissions were apportioned between sizebands according to our estimates of the share of each sector's fuel purchases accounted for by each sizeband. SMEs' indirect footprint was estimated by calculating how much of large companies' emissions of pollutants was associated with SMEs' purchases from those large companies.

Water use

To estimate SMEs' water abstractions footprint, we begin with data on water abstractions broken down by their purpose. For the UK, this was available from the Department for the Environment, Food and Rural Affairs[78], and for South Africa it was available from the Water Research Commission of South Africa and StatsSA. Some purposes – such as cooling in electricity generation – were clearly associated with individual sectors. Abstractions for the public water supply (and other, smaller amounts) were not clearly associated with one sector; these were apportioned to different sectors and households according to the value of each sector's and households' purchases from the water sector.

Abstractions within sectors were apportioned out between sizebands based on the pattern of sizebands' purchases from the water sector in our sizebanded IO table. SMEs' water abstractions indirect footprint was estimated by calculating how much of large companies' water abstractions was attributable to SMEs' purchases from those large companies.

78. This data was for England in 2018, so we scaled it to a UK 2021 value using regional data from our databanks.

Sage exists to knock down barriers so everyone can thrive, starting with the millions of small- and mid-sized businesses served by us, our partners and accountants. Customers trust our finance, HR and payroll software to make work and money flow. By digitising business processes and relationships with customers, suppliers, employees, banks and governments, our digital network connects SMEs, removing friction and delivering insights. Knocking down barriers also means we use our time, technology, and experience to tackle digital inequality, economic inequality and the climate crisis.

Sage has pledged to fight climate change by halving its own emissions by 2030 and becoming net zero by 2040, by supporting SMBs to get to net zero, and by advocating for policy and regulatory frameworks to support the transition to a low carbon economy. Sage has acquired Spherics, a carbon accounting solution to help businesses easily understand and reduce their environmental impact. This reinforces Sage's commitment to sustainability.

Find out more at www.sage.com/en-gb/

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