Icebreaker One

Carbon reporting solutions for UK SMEs
a landscape review

Contents

"Small businesses do a lot, often in an unstructured way. But they are incredibly well-meaning and the passion to do the right thing and create a better world is alive and kicking in the huge variety of businesses operating in the UK."[1]

Michelle Ovens CBE, Founder, Small Business Britain

"There is an urgent need to work towards improving the completeness, consistency, comparability, reliability and auditability of sustainability reporting."[3]

IOSCO Report on Sustainability-related Disclosures

"Companies need to continue to make urgent progress with ESG reporting in a way that supports their short-term and long-term business objectives. A robust sustainability reporting ecosystem can help businesses not only measure progress on executing their ESG strategies, but also support businesses in driving value, while mobilising capital markets to help support innovative and much-needed solutions to the many societal issues we face."[2]

John McCalla-Leacy, Head of Global ESG KPMG

"All models are wrong; the practical question is how wrong do they have to be to not be useful."

George Box, Empirical Model-Building and Response Surfaces

Foreword

Goals of this document

The aim of this report is to provide a market view of carbon reporting solutions available for small and medium sized enterprises (SMEs) in the UK, taking into account the vendor and customer perspective. As a wholesale finance provider, the British Business Bank primarily works through 'Delivery Partners' of which there are around 200 (e.g. banks, asset finance providers, debt funds, venture capital funds, and angel investors).

As the British Business Bank seeks to better understand its own emissions and set targets, the bank needs to be confident that there is a workable solution for smaller delivery partners and businesses to measure and report progress against any targets. This is an economy-wide challenge, as smaller businesses face requests from corporate supply chains and finance providers. In shining a light on the range, cost and quality of carbon reporting solutions available to smaller businesses, this research provides a snapshot of the state of the market and the burden of reporting.

Sources and research methodology

Icebreaker One developed the ideas, insights, and recommendations presented in this report through extensive research and stakeholder dialogues. Our research included:

- Analysis of more than 270 carbon reporting solutions
- An in depth survey of 30 suppliers of carbon reporting solutions
- In-depth interviews with 12 suppliers of carbon reporting solutions and input from 12 UK SMEs, to understand their needs and perspectives
- A review of more than 40 reports and studies, to put findings into context

A grey box or chart signifies a response from an SME

A yellow box or chart signifies a response from a carbon reporting solution provider

1 Executive Summary

1. Executive Summary

Small and medium-sized enterprises (SMEs) are vital to achieve net zero. They account for 99% of UK businesses, three-fifths of employment, and half of the private sector's total turnover.[4] Due to their size, SMEs are likely to have relatively small carbon emissions associated with their operations. However, their aggregate contribution is significant. Smaller businesses account for around half of the UK's greenhouse gas emissions from business.[5]

Accurate and consistent carbon emissions reporting for SMEs in the UK has the potential to create a significant economic opportunity.[6] The UK's net-zero transition could create up to 2 million jobs and £90 billion of economic benefits per year by 2050.[7] SMEs that can accurately measure and reduce their carbon emissions are well-positioned to benefit from a range of economic benefits, including reduced energy costs [8], increased efficiency [9], enhanced reputation [10], and new market opportunities.[11]

While interest in reporting and reducing emissions is growing among SMEs, their environmental, social and governance (ESG) reporting remains limited. An estimated 7% of UK SMEs currently report on ESG factors [12] and only 4% have calculated their emissions [13]. In contrast with large organisations, SMEs currently have little regulatory pressure to report. They also have limited capacity and capability to do so and often struggle to navigate an ever-expanding marketplace of carbon-reporting solutions with its own language, standards, methodologies, and a wide range of price points.

Our research has identified more than 270[14] carbon-reporting solutions on the market. Of the solutions we identified, 56% openly advertise that they can calculate emissions for UK SMEs across Scope 1, 2 and 3. This crowded landscape makes it challenging for SMEs to identify the right solution for their individual needs and budgets.

Two-thirds (41%) of the 30 carbon reporting solutions offered by providers we surveyed cost less than £500 annually for SME users. This suggests affordable options are available, though SMEs may struggle to find them amidst a market that is more focused on large corporates. Eight out of twelve SMEs we surveyed said they spent up to eight hours collecting data and using a carbon reporting solution. This demonstrates the time commitment required to collect data and interface with solutions, even when using more automated tools. According to a recent global survey, 65% of SMEs find current reporting standards overly complex [15] with one study finding 71% of UK SMEs were unable to recommend a single website for net zero guidance.[16]

Furthermore, significant limitations still exist in carbon accounting accuracy. The vast majority (97%) of solutions offered by the carbon reporting providers we surveyed align with the Greenhouse Gas (GHG) Protocol, a set of international standards and guidelines for measuring, reporting, and verifying greenhouse gas emissions. However, variability exists in how the Protocol is implemented. And existing research indicates that only 9% of all businesses can measure emissions comprehensively, with average error rates of 30-40%. [17]

A final finding worthy of note is that many SMEs struggle to provide complete and accurate input data across their business operations and supply chains. Carbon reporting solutions have yet to become fully automated, and so an SME will often need to manually share parts of its emissions data. Methodologies used by solutions providers vary substantially, leading to inconsistent outputs for SMEs. This hinders any market benchmarking. This has a direct impact on regulated organisations trying to find decarbonisation opportunities within their supply chains.

Summary of Recommendations

Financial institutions and regulators should take steps to simplify carbon reporting for SMEs, such as encouraging harmonisation of approaches and backing initiatives like Perseus that promote digitization and cohesion. Institutions and regulators should help SMEs identify solutions suited to their needs, continue providing educational resources, and explore subsidising adoption of automated software for resource-constrained SMEs. Accessible and verifiable carbon reporting tools for SMEs are a vital enabler of measuring and monitoring sustainability linked financial products and procurement decisions.

Carbon reporting solutions need to be transparent about methodologies, data sources, and limitations. They should offer free trials, industry-specific benchmarks to contextualise footprints, and clear advice on reduction opportunities. Open data standards can enable seamless interoperability between reporting solutions while providing flexibility to meet businesses' varied needs. By collaborating across the market on shared data infrastructure and carbon accounting improvements specifically for SMEs, solutions providers can equip organisations with actionable, accessible insights that unlock climate progress and sustainable business performance.

SMEs must consider factors other than cost when evaluating solutions, including reporting depth, data integrations, methodologies, and actionable insights provided. They should use free calculators to obtain initial estimates and supplement automated data with manual inputs. Reporting can engage staff in validating assumptions and drive learning. Sharing emissions and reduction plans can also foster accountability.

Regulated organisations and large corporate customers will increasingly request reporting from SMEs to support their own transition planning and climate-related disclosures. Regulated organisations requiring SME reporting must produce usable, granular net-zero transition reports with accessible standardised data. They must enable transparent data sharing across supply chains.

2 Carbon reporting solutions landscape

2.1 Context of carbon reporting solutions for UK SMEs

Carbon reporting in the UK has rapidly evolved over the past two decades, driven by emerging climate legislation and growing demand. Early carbon reporting was spurred by the UK's participation in the Kyoto Protocol in 1997[18], which required developed countries to monitor and reduce emissions. This led large companies to begin voluntarily disclosing and lowering their carbon footprints throughout the early 2000s.[19] By 2013, annual sustainability reporting became mandatory for listed companies under the Companies Act.[20] This solidified carbon reporting as a mainstream corporate practice. Regulatory requirements within the UK and for those engaged in Europe are increasing in scope, depth and expectations of verification, in particular with International Sustainability Standards (ISSB) Board, or UK Sustainability Disclosure Standards (UKSDS) as it is known in the UK.

In tandem, recent years have seen an explosion in the carbon reporting solutions market as more businesses pursue decarbonisation. The proliferation of Software as a Service (SaaS) has enabled affordable and user-friendly carbon reporting options tailored to an organisation's needs. The number of providers has grown from just a handful in the early 2000s to hundreds of solutions today. This has been spurred by ambitious national net-zero targets, and by investors, customers and regulators expecting robust emissions data.[21] Carbon reporting has rapidly evolved from a niche corporate social responsibility (CSR) initiative to an essential business function for large enterprises, finance providers and SMEs alike. Yet a thriving market produces challenges of its own, including the ability of a business to find a tool that meets its needs.

2.2 Market size and growth

The carbon reporting market is expected to grow from £12 billion in 2023 to £50 billion by 2030.[22] However, this growth looks likely to predominantly serve complex multinational corporations, rather than small businesses with limited sustainability resources.

Investment is pouring into the carbon reporting solutions space as demand grows. In 2021 alone, startups developing emissions tracking and accounting tools raised more than $1 billion in venture capital funding globally.[23] European carbon accounting startups raised $860m in 2022.[24] Additionally, large corporations such as OneTrust [25], Accenture [26] and IBM [27] are acquiring carbon reporting startups to augment their offerings. This startup funding, alongside mergers and acquisitions (M&A) activity, reflects surging commercial interest in equipping companies with robust emissions data. It also indicates that investors recognise the value proposition of carbon reporting solutions in the net-zero transition. Given ambitious climate commitments and mounting disclosure regulations, the investment momentum into emissions accounting innovation is likely to continue.

2.3 Terminology

Carbon reporting solutions commonly feature glossary pages defining the field's intricate terminology. The specialised language adheres to precise accounting rules and standards for quantifying climate impacts across operations and supply chains.[28] However, the jargon also creates literacy barriers, especially for SMEs with limited sustainability resources and awareness. The technical jargon enables rigorous emissions tracking but risks overwhelming non-experts who lack the context behind standardised terms and methodologies.

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Trade-offs exist between precise, standardised emissions accounting, and accessible communication for the full business spectrum.

Research from the British Chambers of Commerce indicates that roughly one-fifth of businesses overall do not grasp the term 'net zero' and the figure is likely even higher for SMEs.[29] This literacy gap hinders economy-wide decarbonisation efforts and makes the task of selecting the right solution for an SME even harder to navigate.

By consolidating standards and definitions into unified frameworks, such as the United Kingdom Sustainability Disclosure Standards (UKSDS) and the International Sustainability Standards Board (ISSB), regulators aim to create more standardised sustainability reporting terminology and metrics. This reduces confusion between companies and facilitates comparability, especially around key issues such as carbon reporting. The UK Government has committed to publishing the timeline assessing and endorsing the global corporate reporting baseline of the International Financial Reporting Standards (IFRS) Sustainability Disclosure Standards in summer 2024.[30]

2.4 Types of solution

Icebreaker One's analysis of more than 270[31] carbon reporting solutions revealed ten distinct types of offering. It is common for providers to offer multiple solutions to meet clients' varying needs and budgets. The wide range of offerings underscores how carbon reporting is a complex landscape to navigate for any business. Page 11 and 12 detail the core functions of each of these 10 solutions as well as plot a snapshot of the current solutions available to UK SMEs.

Solution	Description	No
Web calculator	Estimates carbon footprint based on user inputs about activities.	37
Carbon accounting	Quantifies carbon emissions from operations and value chains utilising financial data.	39
Measure/ manage platform	Provides a way to calculate, track and reduce carbon emissions with recommendations.	160
ESG platform	Offers solutions to measure and improve environmental, social, and governance performance.	41
Consultancy	Experts advise organisations on sustainability strategies and how to meet goals.	36
Supply chain specialist	Focuses on calculating and lowering emissions across an organisation's supply chain through aggregation.	33
Product specialist	Assesses and improves the carbon footprint of specific products.	27
Institutional tool	Customised system to monitor and report emissions on behalf of a specific institution, such as a bank or an investment portfolio manager, through aggregation.	20
Engagement platform	Provides ways to inform and involve internal stakeholders, such as staff, in sustainability efforts.	8
Carbon offsetting	Compensates for emissions by funding projects that remove or avoid emissions.	23

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		Manual data collection	Automated data collection	Engage supply chain	Life cycle analysis	Calculate emissions	Track emissions over time	Generate reports for disclosure	Set and manage targets	Identify / Facilitate reduction	Tailored support
Generalist	**Web calculator**	■				■					
	Carbon accounting	■	■			■	■		■	■	
	Measure/ manage platform	■	■	■		■	■	■	■	■	■
	ESG platform	■	■			■	■	■	■	■	■
	Consultancy	■		■	■	■		■	■	■	■
Specialist	**Product specialist**	■		■	■	■				■	■
	Supply chain specialist	■		■		■	■			■	■
	Institutional Tool	■				■	■	■	■	■	■
Reduction	**Engagement platform**	■				■	■	■	■	■	■
	Carbon offsetting									■	

Carbon reporting for UK SMEs in 2024

Created by Icebreaker One. Supported by British Business Bank.

Categories shown: Web calculator, Carbon accounting, ESG Platform, Consultancy, Measure / Manage Platform, Supply chain specialist, Product specialist, Institutional tool, Engagement Platform, Carbon offsetting.

Outputs from these ten solution types can have very different levels of data portability, giving the ability for customers to easily transfer their data from one solutions provider to another. For example SMEs may be given the ability to export their carbon emissions data into a user-accessible local file, thus promoting interoperability,

1. **Unilateral**: the outputs are only shared with an SME
2. **Bilateral**: the outputs are shared with an SME alongside a specific party, such as a supplier or financial provider, for example through a platform to aggregate responses from suppliers
3. **Multilateral**: the outputs can be shared with multiple parties, with an SME having control of this.

Although the outputs of any unilateral solution can be shared with others manually, there is a distinction made between this and bilateral or multilateral solutions that have inherently been designed to support the flow of data from one organisation to another. This is important to reduce the duplication of work. It also fosters better standardisation within the market. Currently, the majority of solutions provide unilateral sharing, though it is more common to see supply chain specialists and institutional tools using bilateral or multilateral approaches with solutions designed to support the collection and aggregation of data for a sponsoring organisation.

3 Market trends

3.1 Specialised solutions for industries and verticals

The carbon reporting market has witnessed a notable shift towards solutions tailored towards specific industries and verticals. For instance, solutions providers are developing industry-specific software and platforms to address the unique challenges faced by sectors such as manufacturing, agriculture, and transportation. This approach allows solutions to achieve more precise and relevant carbon reporting through a deeper understanding of how companies in a specific industry operate, and more granular emission factors can be researched and integrated into a platform. Specialised solutions may give SMEs better choice within the market, with solutions that can more accurately reflect their operations and emissions.

> **Mini case study: Altruistiq**
> Altruistiq has developed its carbon reporting solution by focusing on the agricultural sector. This has allowed Altruistiq to gain deep intelligence within the agricultural value chain, and provide granular emission factors to several businesses focused on food, beauty and cotton products. Working within one sector has lowered the bar for supplier engagement through a network effect of businesses that are closely related.

3.2 Growth in supply chain management solutions

Supply chain emissions are increasingly recognised as a crucial aspect of corporate carbon emissions reporting. As a result, there has been a significant growth in solutions that focus on supply chain emissions tracking and management.

Market data from Grand View Research indicates that the global supply chain management market is expected to grow at a compound annual growth rate (CAGR) of more than 10% from 2021 to 2028.[32] This growth is attributed to the increasing emphasis on transparency and accountability throughout the supply chain, aligning with the broader sustainability goals of organisations.

SMEs may feel pressured to adopt the same supply chain emissions calculation solutions that their larger corporate customers are using. This could lead to a situation where SMEs end up using multiple carbon reporting tools simultaneously, just to satisfy the different protocols and formats expected by their various big corporate customers.This could create inefficiencies and extra compliance burdens for SMEs. It also risks leading to vendor lock-in situations if the emissions reporting solutions don't have open and interoperable data formats. Once an SME starts using a particular vendor's platform, it may be difficult for it to switch if the data and calculations can't be easily exported.

Solutions should promote open data standards, application programming interfaces (APIs), and transparent methodologies, so that carbon reporting platforms can share and cross-check data. This interoperability and data portability will ensure that SMEs aren't locked into any particular vendor. Ideally, SMEs should be able to use a single, frictionless platform to calculate their Scope 1, 2, and 3 emissions in a way that meets the needs of all their corporate customers.

> **Mini case study: Supply Pilot**
> Supply Pilot is a platform that provides tools for collecting and analysing data from suppliers, which can help businesses deliver transparency, accountability, and continuous improvement throughout the supply chain. Its team manages engagement campaigns, including content production, change management, supplier development, and chasing up suppliers for customers.

3.3 Solutions beyond carbon

In response to a broader understanding of environmental impacts, solutions in the carbon reporting market are expanding to encompass a wider range of sustainability metrics. This includes areas such as water usage, biodiversity conservation, and waste management. A Global Corporate Survey in 2022 suggests that there is a growing interest in integrated sustainability reporting platforms that go beyond carbon emissions, reflecting a more holistic approach to corporate sustainability. [33]

These solutions may be beneficial for SMEs in the medium-to-long term, but – without getting the fundamentals of carbon reporting right first – could feel like an additional burden, with even higher complexities for a small organisation to navigate.

Mini case study: Ecometrica
The carbon reporting provider Econometrica offers integrated sustainability solutions spanning carbon as well as water and biodiversity impacts. By quantifying and connecting these environmental indicators, Econometrica provides companies with a comprehensive view of their natural capital impacts, enabling more holistic and impactful sustainability strategies.

3.4 Application of artificial intelligence

Many carbon reporting solutions are increasingly exploring or deploying artificial intelligence (AI) and machine learning capabilities for enhanced emissions modelling and insights. It can be difficult to fully understand how and to what extent AI is being used, as most carbon reporting solutions are developing their offerings in isolation as proprietary software. The use of this technology may provide closer estimates, however it does not inherently solve the core data challenges. AI is only as good as the data it receives; it cannot fix incomplete, inconsistent, or inaccurate emissions data inputs. AI may be of most use after quality data has been collected, in order to analyse and understand where the most progress can be made in reducing emissions, and help SMEs target their limited resources.

Mini case study: CO2 AI
CO2 AI uses machine learning to match emission factors with data. This helps companies to more accurately estimate their carbon footprints and identify areas where they can reduce their emissions. CO2 AI also uses machine learning to identify patterns in emissions data, which can help companies to develop more effective emissions-reduction strategies.

3.5 Whole-of-market automated solutions

As comprehensive and accurate emissions data becomes critical for reaching net zero goals, collaborative, automated data solutions that integrate information across industries and supply chains are emerging. These whole-of-market solutions aim to provide a more complete carbon footprint for both large enterprises and SMEs by drawing on numerous data sources. However, caution must be exercised if carbon estimation models based on data from large public companies are then used to predict SME emissions.

Implementing cross-industry automated data collection and sharing on emissions involves extensive multi-stakeholder collaboration and aligned incentives. The users of carbon reporting solutions benefit from benchmarking as well as streamlined footprinting, while data providers and solution developers generate value. If designed intentionally, whole-of-market frameworks could automate a significant portion of measurement work, enabling companies to concentrate on reductions rather than manual tracking.

Mini case study: Project Perseus
The UK government is working with Bankers for Net Zero and a range of industry stakeholders to automate SME carbon reporting by creating a common data-sharing platform for net zero data sharing. This builds upon both Open Banking and Open Energy and will aid SME engagement. The project aims to enable access to raw data to inform the reporting of primary Scope 1 and 2 for SMEs.

3.6 Market collaboration

A growing trend in the carbon accounting industry is a shift away from competition between organisations and toward increased collaboration and alignment to tackle the urgent climate crisis. Leaders in the space are recognising that standardised methodologies, open sharing of challenges and solutions, and collective policy advocacy will allow for more rapid advancement in the accuracy and adoption of emissions measurement tools, rather than working in silos. Ultimately, cooperation and coordination, rather than fragmentation, is viewed as the most effective path toward enabling credible and robust emissions reporting across industries.

Mini case study: Carbon Accounting Alliance
The Carbon Accounting Alliance was founded in late 2023 on the ethos of collaboration between industry partners. Its goal is to collectively solve the climate crisis by addressing inconsistencies in greenhouse gas emissions measurement and accounting. The organisation aims to provide a space for industry leaders to share challenges and learnings, identify barriers to accurate emissions measurement, and leverage collective influence to shape policy and to standardise carbon accounting methodologies, rules, and database choices. By working together in an open and respectful forum, the Alliance strives to accelerate the transition to a more sustainable world.

4 Navigating the market as an SME

4.1 Finding the right solution

Of the SMEs interviewed, ten out of twelve searched online to find or research the carbon reporting solution that they used. Often a recommendation was made by a colleague or via a certification body such as B Corp. Top results while searching for carbon reporting for SMEs typically include a plethora of free web calculators, enterprise grade solutions, and advice from business or government entities. Responses from our research below indicate the difficulty experienced finding a solution.
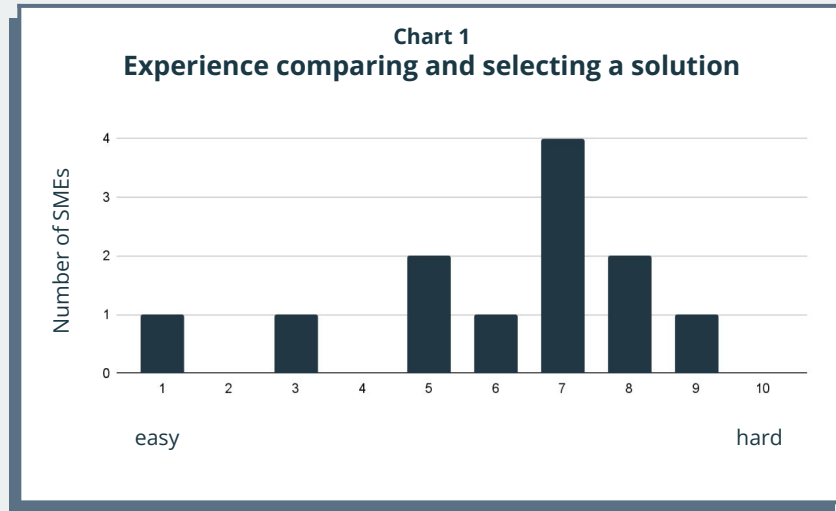
There is a perceived lack of centralised resources or directories to visit in order to guide decision making. In fact, research from Broadway Initiative found that 71% of SMEs could not recommend a single web source for help on getting to net zero.[34]

Once several potential solutions have been identified by an SME, our research suggests that **a significant amount of research and expertise is necessary to fully comprehend the functionalities and benefits of each.** The intricate landscape of solutions, coupled with the diverse range of reporting standards and methodologies, poses a challenge for businesses of all sizes. However, this burden is particularly acute for SMEs, which often lack in-house ESG or sustainability specialists. In fact, one global study found that 65% of SMEs find current reporting standards to be overly complex.[35] This underscores the need for SMEs to have at least a baseline understanding of ESG principles to effectively navigate the plethora of available solutions and select the one best suited to their needs.

Chart 1
Experience comparing and selecting a solution

"There are so many options out there it was impossible to know which one was right for our business." — Textiles Manufacturer

"The market is oversaturated and it is hard to find good providers that really work for businesses of different sizes." — Daria Lipatova, Founder, offsetted

Of the 270+ carbon reporting solutions we identified, 56% openly advertise themselves as being able to calculate Scope 1, 2 and 3 for SMEs, though the vast majority do not go into depth on which categories of Scope 3 are covered. **This is particularly important as Scope 3 emissions can account for more than 70% of a business's carbon footprint.**[36]

Of the 30 carbon reporting solutions providers that completed the Icebreaker One survey, 77% of solutions offer Scope 1 and 2 coverage with parts of Scope 3 reporting, whilst 50% of solutions offer full Scope 1, 2 and 3 coverage including all 15 Scope 3 categories. 64% of solutions serve any type of business vs 36% that offer specialisation within finance, water, built world, transport, agriculture, chemicals, or manufacturing.

The sheer size of the market may create decision-paralysis for smaller businesses who lack confidence as well as comparable information to choose an appropriate reporting solution. Meanwhile, the carbon emissions calculations offered by carbon reporting solutions span a wide spectrum of maturity, from high-level estimations to detailed, customised greenhouse gas accounting. To illustrate the wide variety in the options available (and the price points), we have spotlighted three carbon solution providers, each offering an SME the ability to calculate carbon emissions to differing degrees.

> **...the carbon emissions calculations offered by carbon reporting solutions span a wide spectrum of maturity, from high-level estimations to detailed, customised greenhouse gas accounting.**

Platform	Carbon Trust	Sage Earth	Watershed
Annual Cost	Free	£108	£15k+ for Essential SME package
Solution Type	Web calculator	Carbon accounting	Measure/Manage platform, Carbon removal
Coverage	Scope 1, 2	Scope 1, 2 and 3	Scope 1, 2 and 3
Data Input method and sources	Manual spreadsheet covering fuel, energy and air conditioning	Integrates with financial accounting software for spend based data. Activity based data is uploaded manually.	Upload data and integrate into multiple other platforms for hybrid model
Emission Factors	Users can apply their own emission factors, or use a default factor for the country selected. No mention of where default factors come from.	DESNZ (Department for Energy Security and Net Zero), Small World Consulting and various other sources.	US Environmental Protection Agency (EPA) or UK Department for Environment, Food & Rural Affairs (DEFRA) emission factors for Scope 1, a range of location-based emission factors including UK government emission factors for Scope 2, and US Environmentally extended input-output (EEIO) and Centre for Environmental Data Analysis (CEDA) for Scope 3.
Additional Support	Resource hub	Resource hub, text based chat	Resource hub, account manager available

4.2 Understanding costs

Carbon reporting solutions span a wide cost spectrum, from free to tens of thousands of pounds, presenting challenges for SMEs to identify the right fit. Many free web calculators require manual data input, while more expensive SaaS solutions tout automated data integrations. Mid-range options from £100-£5,000 per year offer varying levels of automation tailored for SMEs. However, search engines mix free, SME-focused and enterprise-grade solutions together in results. This risks scepticism over the robustness of free tools, and the impression that carbon reporting remains out of financial reach for SMEs. A detailed vendor comparison on automation, methodology and output may clarify the true value for SMEs.

> *"We are not large enough to pay a lot of money, but we're small enough to still care."*
>
> Service Design Consultancy

While, according to one study, 73% of SMEs express concern about the upfront costs of carbon reporting [37], affordable options do exist. In fact 41% of solutions offered by the 30 providers we surveyed cost less than £500 annually for SME users. Chart 2 gives a breakdown of costs, with multiple options often available from a single solutions provider. Additionally, many free calculators are available. Most are open to any SME, while others are offered through affiliated financial institutions. Six of the nine largest banks in the UK provide free carbon reporting solutions to their customers, either through a partnership with a third-party carbon reporting solution or with an in-house solution [38]. Similarly, accounting software providers such as Quickbooks [39] and Xero [40] promote and subsidise free carbon reporting solutions for their customers.

However, SMEs may lack awareness of low- and no-cost carbon reporting tools that meet their budget constraints. Better visibility of the solutions that are priced appropriately for smaller businesses could alleviate perceived cost barriers to adoption. This visibility could come from market comparison sites or government.

Chart 2
Cost of solutions for SMEs

After cost, many SMEs we spoke to told us that they would welcome information on the accuracy and ease of use of carbon reporting solutions to help inform their choice of which one to use. However, up-front details on these factors are hard to come by. And, as we outline in the next section, our research shows that in practice both accuracy and ease of use can vary significantly – especially when it comes to the collection and processing of data.

**5** Using a carbon reporting solution as an SME

5.1 Data collection

How emission data is collected can range widely, depending on the solution used. With carbon accounting software, collection can be as straightforward as connecting your bank account in a few simple steps. Other solutions, such as free calculators or other measurement platforms, may place a significant burden on an SME. This burden will typically fall on the finance director, business owner, or another role that is likely to lack the required sustainability knowledge. Limited staffing and budgets often constrain an SME's ability to compile emissions data, as this process can be time intensive. With fewer employees, SMEs must balance competing priorities.
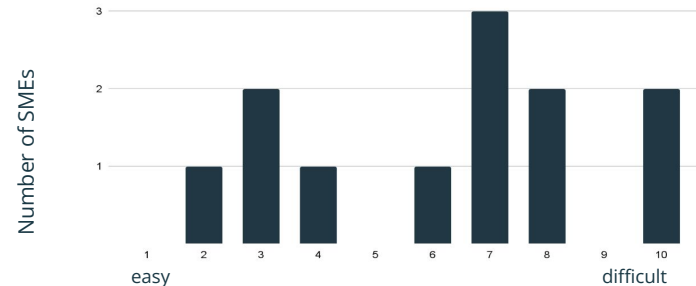
Data required for comprehensive carbon accounting can also reside in organisational silos, spanning various documents, spreadsheets, and software systems. Integrating these fragmented and disparate sources to create a unified

view of SME emissions can be time-consuming and challenging.[40] Supplier-related Scope 3 data can also be difficult to obtain, as SMEs have little leverage to ensure that value chain partners are engaged and share emissions information voluntarily.[41] Many SMEs are also only just beginning to measure emissions, so lack historical data to set a baseline and track performance over time. As chart 3 shows, the SMEs we spoke to regarded data collection and accuracy as the biggest challenge they faced when measuring their emissions. While some automated solutions estimate emissions based on spend, many SMEs will be asked to supplement this with additional activity-based calculations to ensure a representative outcome (see table below for further explanation). This granular activity data provides clarity but requires more manual data collection across all scopes. Even solutions touting automation often depend on manual inputs for a complete picture. Obtaining robust data remains burdensome for SMEs that lack dedicated sustainability staff. More than half of SMEs we spoke to rated their experience of providing the required data for carbon reporting solutions as at least moderately difficult.

Chart 3
Biggest challenge facing SME customers

- Data accuracy
- Engagement
- Knowledge
- Time
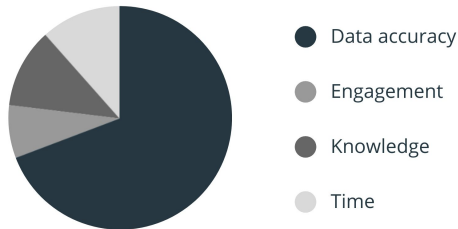
Chart 4
SMEs experience providing the required data

A comparison of methods used to calculate emissions

Method	Spend-based	Activity-based	Hybrid
Data used	Uses financial expenditure data	Uses specific operations data	Combines financial & operational data
Benefits	Relies on readily available financial data, making it simple and efficient to implement. Useful for firms with large, complex supply chains that lack emissions data.	Provides a more precise and complete view of emissions based on granular data collection. Generally encompasses a wider range of direct and indirect emission sources.	Balances accuracy through activity based data with limiting gaps via spend based data. Allows optimisation of precision where detailed data exists
Challenges	Less accurate than activity-based methods since it uses industry averages rather than organisation specific data. May not cover all emissions sources within the company's scope due to reliance on financial data.	More complex and time consuming to compile data from various sources. May struggle to procure all necessary data from third party suppliers, leading to gaps.	Still relatively complex given the need to combine both activity and financial data sources.

> *"In one word, it's tedious. The data needed is all over the place and it takes a lot of time to chase colleagues for it."*

Law Firm

95% of the carbon reporting solutions require organisations to supply data in a quantitative manner. Of all the data collected, 74% of solutions collect at least some data in an automated way, connecting to banks or accounting software. Carbon reporting solutions estimated that on average 17% of effort is spent by customers cleaning and preparing data for analysis. Time is mostly spent by SMEs actually locating the data. As seen in Chart 5 most carbon reporting solutions use an API to collect data but this is typically then augmented with other more manual methods. Of the solutions providers we surveyed, only 10% had fully automated data collection.
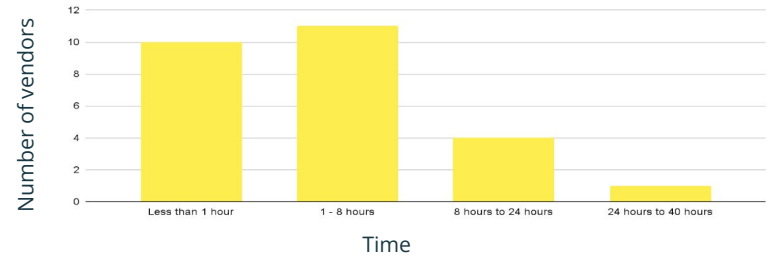
> *"We want to build partnerships within industry, connecting data from our customers in order to reap the synergies and network effects. This allows scalability in a more uniform, transparent and comparable way."*

Alexander Schmidt, Head of Science, Sustainability and Climate Research

Normative

As shown in chart 6, the vast majority of carbon reporting solutions surveyed estimate that an SME would typically spend less than eight hours using their solution to calculate their carbon emissions. This aligns with the SMEs experience as 80% surveyed reported it taking up to eight hours.

Chart 5
How data is collected by carbon reporting solutions

Bar chart — Number of vendors vs Data collection method:
- Direct data entry: 2
- PDF files: 10
- Machine-readable files: 14
- Spreadsheets: 18
- Via APIs: 23

Chart 6
Vendors estimated time for SMEs to calculate their emissions

Bar chart — Number of vendors vs Time:
- Less than 1 hour: 10
- 1 - 8 hours: 11
- 8 hours to 24 hours: 4
- 24 hours to 40 hours: 1

> *"It took a lot of running around to gather all the information up and put it in the right formatting. I'd estimate a few days at least in total. Some data was not possible to collect for us so we gave our best estimate. Especially when it came to certain suppliers."*

Film and Post Production Studio

Although 79% of surveyed carbon reporting solutions stated that no prior knowledge was required to use their solution, many solutions still provide one-on-one calls (72%), have a resource hub (66%), and provide group training and workshops (48%).

> *"We support SMEs through the journey with content and relevant tips. We focus on language that they will understand."*

Nika Safonova, SME Product Specialist

cogo

5.2 Accuracy of outcomes

97% of carbon reporting solutions providers we surveyed aligned their methodology with the GHG Protocol. However, some variability and room for interpretation exist when implementing the GHG Protocol in practice, meaning that there is no guarantee two solutions providers would give any given SME the same results. One area of flexibility is when calculating Scope 3 emissions. It is not always clear who 'owns' or is responsible for these emissions, so there is some freedom when setting the boundaries of what does and does not get included. Scope 3 emissions also rely heavily on estimations and supplier data quality, so the process also involves greater subjectivity. [43]

The difficulty of measuring Scope 3 emissions forced the GHG Protocol standard-setters to allow businesses the option to use industry and regional averages, rather than measure the specific emissions produced by their actual suppliers, distributors, and customers.[44] Although the Protocol expresses a preference for 'primary data', defined as 'provided by suppliers or other value chain partners related to specific activities in the reporting company's value chain', it allows the use of secondary data 'in some cases, when primary data may not be available or may not be of sufficient quality'. Secondary data is defined as 'industry-average data (e.g. from published databases, government statistics, literature studies, and industry associations), financial data, proxy data, and other generic data'. [45]

> *"While our emissions are measured, they may not be completely accurate. We have accepted that in the knowledge that using the same tools for measurement year on year will give an acceptable comparison for improvement."*

Service Design Consultancy

Businesses can apply judgement in choosing emissions factors, particularly for purchased goods and services where multiple data sources may provide different averages. Based on the 30 survey responses from carbon reporting solutions providers, emission factors are taken from a wide range of sources, as shown in chart 7.

Chart 7
Sources of emission factors
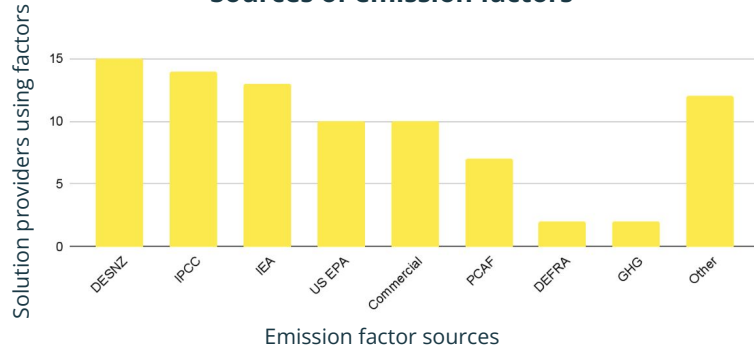
The difficulty in collecting primary data, combined with the range of emissions factors that can be applied, means that there is a high degree of estimation. Boston Consulting Group's 2021 survey of 1,290 organisations found that only 9% of firms were able to measure their carbon emissions comprehensively. Respondents estimated an average error rate of 30% to 40% in measuring their emissions.[46] In another study, comparing carbon footprint calculations for 17 websites, the results were found to vary more than threefold depending upon the site used, and even more between different methods.[47]

Some solution providers are open about the limitations of their products. With time, many of the solutions are refining their emission factors. This means that, year-on-year even if the operations of a business stay exactly the same, a higher or lower amount of emissions may be calculated based on the same tool.

"We collected over 7,000 global corporate reports and tried to compare A to B but it was like comparing apples to oranges as they all used different methodologies with different assumptions."

Nick Carmont,
CTO & co-founder

Connect Earth

"Certain tools using spend-based methodology can be off by plus or minus 70%. That's a big swing."

Jamie Dujardin,
Head of Product
Delivery

ALTRUISTIQ

"We have a short Q&A for organisations at the beginning of their carbon accounting journey, which, with the right information to hand, can be completed within just 30 minutes. It provides a great starting point for calculating a footprint using low quality proxies. The purpose of this 'rough and ready' modelling is to provide organisations with a hotspot analysis to identify where time and effort should be spent when it comes to collecting better carbon data. We give an indication of data quality and uncertainty throughout our software. The goal for us together with our customers is to drill down on data quality and narrow the range of uncertainty over time. The bottom line... you've got to start somewhere and then build on that."

Andy Hale, Founder

xtonnes™

5.3 Confidence in results

From an SME's perspective, trust in the carbon reporting process and outcomes relies heavily on the reputation and capabilities of the solutions provider, which will often align with accrediting bodies. SMEs depend on vendors to guide them through accounting methodologies and provide credible emissions calculations.

However, there is a tension between the caveats made by solutions providers on the accuracy of their calculations, and the reality of what SMEs are able to provide in terms of data. Solutions providers often underscore that the quality of their carbon reporting reflects the quality of the data input. Yet there are many barriers an SME may face in providing comprehensive, accurate emissions data across Scopes 1, 2 and 3. This interdependency reveals a joint responsibility between solutions providers and their SME clients to enable robust and actionable carbon reporting.

> *"SMEs don't have knowledge of carbon standards and frameworks. We select the standards for them. SMEs get confidence from an external company doing this as they have outsourced it and so responsibility then sits with the solution provider."*

Rob Smallcombe, Founder

EC°HEDGE

As chart 8 shows, among the 12 SMEs we interviewed, confidence in the carbon reporting outcomes varied dramatically. This may, in part, be indicative of the wide range of solutions that they used. Those with higher confidence could often point to a certification, such as B Corp, as proof of an accurate and sufficiently-robust outcome.

Chart 8
What is your confidence level in your carbon reporting solution to produce an accurate representation of your business
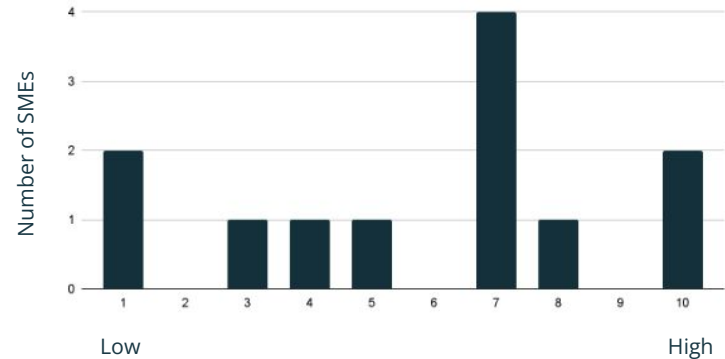
> *"For most companies having complete confidence in the process and results will be extremely hard."*

Education Platform

> *"Having B Corp sign off on our calculations gave me confidence in what we have done."*

Film and Post Production Studio

Some solution providers focus less on the absolute accuracy of results, and more on giving SMEs confidence to take action on the information they have been supplied with.

> *"We want to provide small businesses with enough confidence to simply start doing something about their carbon emissions. Our solution is not the most accurate and we know this. But it's quick, and time is something that many of these smaller companies just don't have a lot of."*
>
> Adam Bastock, Founder
>
> Small99

> *"The objective of emission computation is not to be as precise as in financial reporting. Instead, it is to concentrate your decarbonization efforts where they matter. What is crucial is to be precise about emission hotspots. Collectively, we need to spend less time counting and more time transforming our businesses."*
>
> Corinne Bach, Co-CEO
>
> Carbometrix

5.4 Actionable Insights

For SMEs, the value of carbon reporting lies not just in measuring carbon emissions, but in enabling emissions reduction action. **With limited staffing and budgets, SMEs are seeking carbon solutions that move beyond basic footprinting to provide tailored, actionable insights.**

These solutions need to diagnose the most impactful decarbonisation opportunities across an SME's operations and value chain. They should also benchmark performance against peers to showcase incremental progress.

Unfortunately, current solutions often lack context and recommendations targeted to SMEs' needs, instead providing data without prescriptive next steps. **Bridging this gap between measurement and management is crucial** so that SMEs can leverage reporting to implement and track reduction strategies. **More solutions must guide SMEs on translating emissions data into meaningful emissions cuts.**

> **More solutions must guide SMEs on translating emissions data into meaningful emissions cuts.**

> *"The online calculator gave me no way to compare with others and gave no insights as to what to do next. What is viable, and what will cost us money."*
>
> Textiles Manufacturer

When asked how carbon reporting solutions should ideally impact their business, SMEs' top three answers were:

- **Help the organisation be more sustainable**
- **Enable other organisations to assess us**
- **Help with decision making.**

By contextualising their carbon emissions and giving clear next steps, solutions providers can empower SMEs to accelerate towards net zero.

6 Accelerating the market for net zero

IB1 Icebreaker One

6.1. What carbon reporting solution providers want

Solution providers emphasised that to accelerate positive climate action through carbon reporting, there is a need for enhanced emissions data automation, greater granularity of data, and standardisation. With more granular emissions data unlocked, companies can identify more targeted decarbonisation opportunities and business value. Automating Scope 1 and 2 data collection was cited as a feasible near-term priority to ease reporting burdens, especially for resource-constrained SMEs.

However, retrofitting existing enterprise tools is unlikely to deliver the changes needed to support SMEs and deliver on these opportunities. Instead, centralised data protocols and methodologies tailored specifically to SMEs are required. Open data standards would enable seamless interoperability between reporting solutions while providing flexibility to meet businesses' varied needs. Overall, by collaborating across the market on shared data infrastructure and carbon accounting improvements, solutions will be able to equip their customers with actionable, accessible insights that unlock climate progress and sustainable business performance.

What would you like to see change in the market in the next 3-5 years?

"What is needed is automation of Scope 1 and 2 data, which very much feels doable and takes the burden off of small businesses."

Adam Bastock, Founder **Small99**

"There is a huge economic opportunity for business if we can get to more granular data. It's been proven time and again that sustainable businesses perform better. Better data unlocks better business."

Jen Brown, Product Marketing Lead **Watershed**

"What is needed is a standardised communication protocol in order for automation to happen at any scale, so that machines can just get on with it in the background. And it has to be interoperable."

Duncan Oswald, Climate Science Lead **Sage Earth**

"Standards that SMEs will be expected to report against need to set reasonable expectations of SMEs, be clear and achievable given their limitations around expertise and time, and focus on progress and comparability."

Nika Safonova, SME Product Specialist **Cogo**

"If we could get two things that would accelerate our progress, they would be more granular data and more standardisation."

Mathijs van der Mars, Climate Solutions **Coolset**

"There is a confusing web of standards and regulations that need to be consolidated and made to be more uniform. More sharing of data is also vital."

Alexander Schmidt, Head of Science, Sustainability **Normative**

"We need to have a standard classification of assumptions and methodologies to provide a consistent way to compare one report with another."

Nick Carmont, CTO and Co-founder **Connect Earth**

7.2 What SMEs want

SMEs emphasised demystifying carbon reporting while cautioning against over-simplification. The learning curve is steep without advisor support, given the broad, technical nature of emissions accounting.

Methodologies must be distilled into straightforward concepts and plain language for SMEs, without undermining rigour. The process also needs more automation to ease the burden on resource-constrained SMEs that are genuinely committed to climate action.

However, SMEs want more than just emissions data. They require tailored insights and recommendations to enable targeted decarbonisation. Solutions should provide guidance for translating footprints into reduction strategies suitable for each SME's business model and goals. User-friendly, automated reporting tailored to SMEs' limited bandwidth would empower these small but critical businesses to pursue impactful climate progress.

| How would you improve the experience for SMEs using carbon reporting solutions?	
"There's a gap between accurately tracking our emissions versus understanding what to actually do about them. I want insights, not just data."	*Law Firm*
"The subject is broad, requires a deep dive into your business, and will be a steep learning curve. I worry that if the process is simplified it will undermine its efficaciousness."	*Film and Post Production Studio*
"There's lots of terminology and methodology confusion. I'd like to see carbon reporting demystified into straightforward language and concepts."	*Service Design Consultancy*
"The process needs to be automated badly, so it's less burdensome on a company that just wants to do the right thing."	*Textile Manufacturer*
"It would be great to have a central hub to compare fees and all the different solutions out there."	*Software Developer*

7 | Recommendations
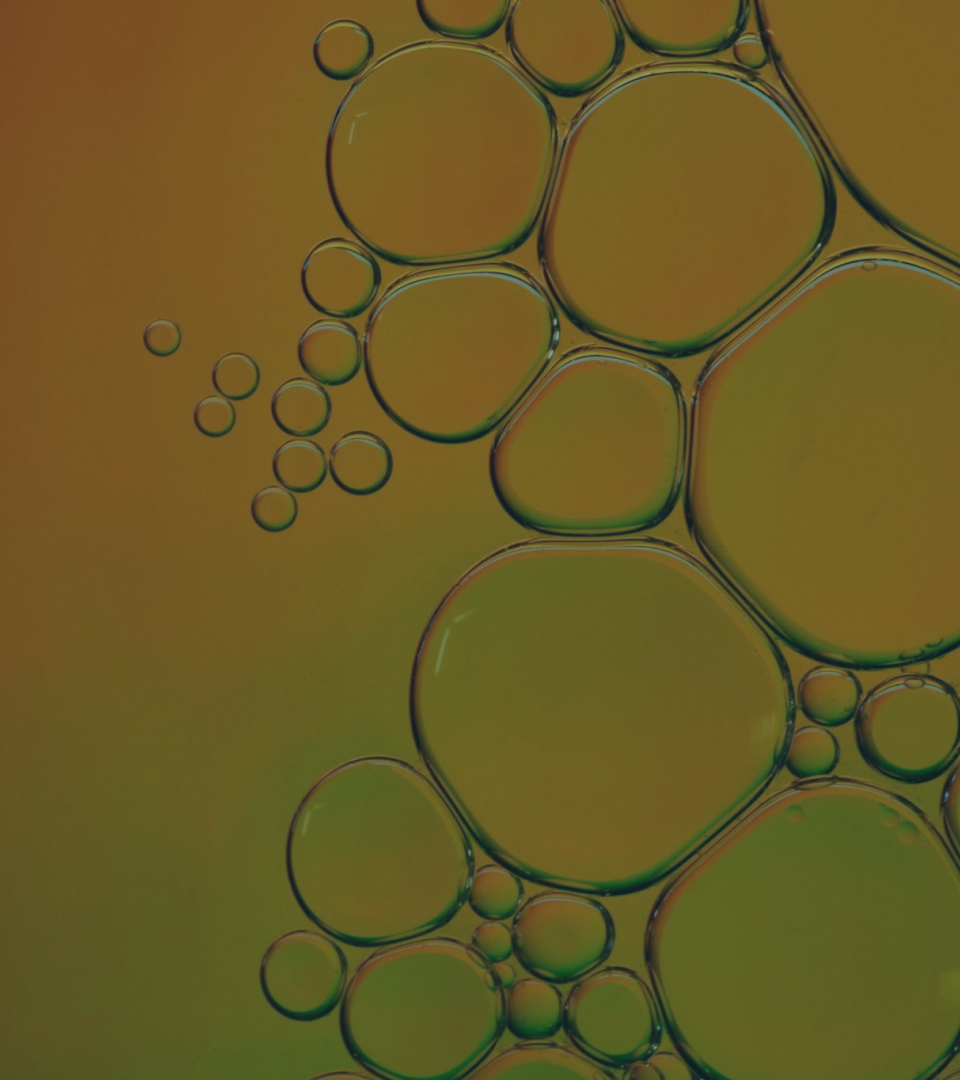
8. Recommendations

The transition to net zero requires collaboration between carbon reporting solutions, policymakers, financial institutions, SMEs and the organisations that require SME reporting to unlock emissions reductions at scale. Each stakeholder across and along the value chain has a crucial role to play in enabling robust and actionable carbon reporting for businesses of any size. To accelerate progress, we have made targeted recommendations for carbon reporting solutions, the British Business Bank, SMEs themselves, and the regulated organisations that require SME reporting. By working together to address barriers around solution literacy, data automation, tailored methodologies, and clear emissions reduction pathways, these stakeholders can enable all sizes of business to effectively account for and reduce their climate impacts.

> **By working together to address barriers around solution literacy, data automation, tailored methodologies, and clear emissions reduction pathways... stakeholders can enable all sizes of business to effectively account for and reduce their climate impacts.**

8.1 The British Business Bank

- Should encourage government and standards bodies to harmonise approaches, methodologies and applications to simplify the carbon reporting 'ecosystem', including by backing initiatives such as Perseus that drive digitisation and cohesion.
- Should encourage independent comparison platforms to benchmark carbon reporting solutions' features, methods, and pricing tiers, and to recommend the types of organisation that each solution would work well for, in order to enable SMEs to find solutions that meet their needs.
- Should continue to share educational resources demystifying carbon accounting concepts and standards for SMEs as the market evolves.
- Should encourage financial institutions to consider an SME's decarbonisation strategies and progress against them, alongside its carbon reporting, when making decisions on sustainability-linked loans.

8.2 Carbon reporting solutions

- Must be fully transparent about methodologies, data sources for emission factors, and accuracy limitations.
- Should offer free trials and demo versions for SMEs to test before purchasing.
- Should provide industry-specific benchmarking to help SMEs contextualise their footprint.
- Should give clear advice on reduction opportunities that are suitable for an SME's operations.
- Could develop partnerships with financial institutions to bundle reporting with SME decarbonisation lending products.

8.3 SMEs

- Must consider factors other than cost when evaluating solutions, including reporting depth, data integrations, methodologies, and actionable insights provided.
- Should leverage free calculators to obtain initial estimates and build foundational knowledge before purchasing more advanced software.
- Should supplement automated data with manual inputs where possible, especially for employee commuting, waste, and other Scope 3 emissions.
- Could use carbon reporting as an opportunity to engage staff and validate assumptions on operations, turning the process into a team-learning experience.
- Could share emissions and reduction plans with customers and suppliers for additional accountability and awareness.

8.4 Regulated organisations that require SME reporting

- Must produce discoverable and usable digital reports of their transition to net zero.
- Must publish the data behind reports in machine-readable formats.
- Must improve the granularity of data in reports.
- Must demand data-backed, standardised reports from their supply chains.
- Should enable SMEs in their supply chains to share their data multilaterally.
- Should explore subsidising adoption of automated carbon reporting software for resource-constrained SMEs

8 References

9. References

1. Small Business Britain Insights and Implications
2. KPMG Get ready for the next wave of ESG reporting
3. IOSCO endorsement assessment of the ISSB Standards for sustainability-related disclosures
4. Bank of Scotland, From now to net zero – a practical guide for SMEs.
5. British Business Bank, Smaller businesses and the transition to net zero.
6. HM Treasury, Net Zero Review: Final Report
7. Positive Planet Net Zero: Unlocking the Potential of the UK's Green Economy
8. Climate Change Committee, Progress in reducing emissions
9. Carbon Trust, The business benefits of reducing carbon emissions
10. Edelman, Trust Barometer 2022
11. World Economic Forum, Future of Jobs Report 2020
12. Strand Partners, Greenprint for Growth: Making sustainability reporting work for SMEs
13. Small Business Britain Small Business Sustainability: Insights and Implications
14. Icebreaker One Longlist of 270 solutions
15. Strand Partners Greenprint for Growth: Making sustainability reporting work for SMEs
16. Broadway Initiative Small Business Advice on Net Zero: Discovery Phase
17. Boston Consulting Group Press release
18. UNFCCC Kyoto Protocol to the United Nations Framework Convention on Climate Change.
19. European accounting review Corporate responses in an emerging climate regime: The institutionalisation and commensuration of carbon disclosure
20. The Companies Act 2006 (Strategic Report and Directors' Report) Regulations
21. Gov.uk UK becomes first major economy to pass net zero emissions law.
22. Fortune Business Insights Carbon Accounting Software Market Size
23. Investment Report for Carbon Accounting Startups
24. Sifted The big carbon accounting acquisition spree begins
25. One Trust Press release OneTrust acquires Planetly
26. Accenture press release Accenture acquires Carbon Intelligence
27. IBM press release IBM acquires Envizi
28. GHG Protocol Standards
29. British Chamber of Commerce Action on Net Zero held back by lack of understanding
30. Gov.uk UK Sustainability Disclosure Standards
31. Icebreaker One Longlist of 270 solutions
32. GrandView Research Supply Chain Management Market Size
33. Verdantix Global Corporate Survey 2022: ESG & Sustainability Budgets, Priorities And Tech Preferences
34. Broadway Initiative Small Business Advice on Net Zero: Discovery Phase
35. Strand Partners Greenprint for Growth: Making sustainability reporting work for SMEs
36. UN Global Compact Scope 3 Emissions
37. Strand Partners Greenprint for Growth: Making sustainability reporting work for SMEs
38. Icebreaker One research on CMA9 banks carbon reporting tools
39. Quickbooks partnership with SME Climatehub
40. Xero partners with Cogo
41. NLM Barriers to improve carbon footprint calculations in construction project management
42. Business strategy and the environment Corporate carbon strategies and supply chain engagement.
43. Business strategy and the environment Being 'Green and Competitive': The Impact of Environmental Actions and Collaborations on Firm Performance
44. GHG Protocol Scope 3 Guidelines
45. Harvard Business Review We Need better Carbon Accounting
46. Boston Consulting Group Press release
47. International Journal of Sustainable Engineering Applying CES to assembly and comparing carbon footprints

Published
March 2024

More information
Email: hello@ib1.org
Website: ib1.org