



# UK Manufacturing:

From Now to Net Zero



**BANK OF  
SCOTLAND**

By the side of business

# UK Manufacturing: From Now to Net Zero

## Net Zero in Action



Lazy Day Foods




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Mackie's of Scotland



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# Foreword



## Dave Atkinson

Head of Manufacturing,  
SME & Mid Corporates,  
Bank of Scotland

As the cradle of the industrial revolution, the UK has a long history of innovation and manufacturing. The sector is a vital provider of jobs and prosperity; almost half (45%) of all exports from the UK are manufactured goods, the sector attracts 13% of business investment and is responsible for 2.7 million high value jobs which are better paid than the economic average according to Make UK.<sup>1</sup>

We are proud to have been a supporter of UK manufacturers throughout our history and through the many challenges the sector has faced. Today, manufacturing faces a fresh challenge – the drive toward sustainability and Net Zero carbon emissions.

There can be no doubt that manufacturing faces a long journey to Net Zero, but it is not a journey that manufacturers can put off; **the time to start, is now.**

Recently we have seen a great spotlight on the sustainability journey we all face through the events, discussions and consumer reaction to COP26. This focus has shone a light on the reality that those

businesses which ignore Net Zero will fall behind their competitors. Those that embrace it and who see Net Zero as an opportunity to innovate and gain an edge over competitors, will become the manufacturing leaders of tomorrow.

I know how daunting the road to Net Zero might appear, particularly for SME manufacturers. Especially after the challenges, strain and impacts of Covid-19, alongside rising production costs and ongoing supply chain issues. But businesses need not face the journey on their own. This report aims to help manufacturers identify the challenges and potential solutions, and to recognise and help them understand how they may grasp the opportunities.

Many innovative and forward-thinking manufacturers are already making great progress and we can use those examples to share, learn and support all manufacturers to move forward – together, as a sector.

Leaders must embrace sustainability, embed it in their business culture, inspire their teams to innovate and make Net Zero an opportunity for growth.

And collaboration must extend outside the organisation. Manufacturers face significant cost pressures and are often involved in a complex network of supplier relationships. This is why sharing information and insights up and down supply chains is essential.

<sup>1</sup> <https://www.themanufacturer.com/uk-manufacturing-statistics/>

## Foreword (continued)

It is with this collaboration and information-sharing in mind that we have produced this report. It will help manufacturers understand the opportunity that sustainability represents, and offer them a guide to the practical steps they can take to make a difference, both for the future of the environment and the success of their business.

// Reaching Net Zero isn't just about doing the right thing - it's an incredible opportunity for manufacturers all over the country to achieve greater growth and resilience as they develop new skills and products.

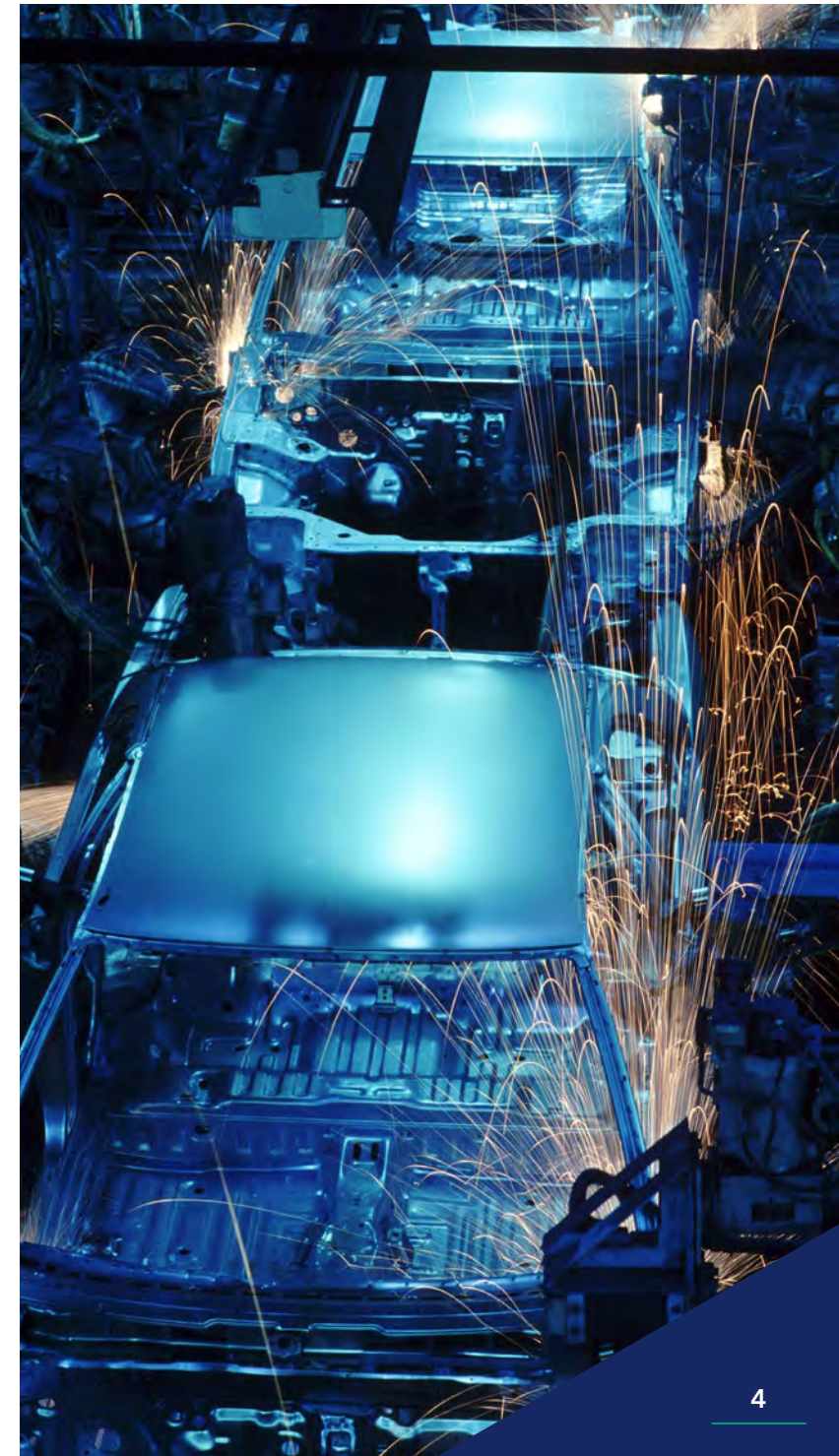
When considering how to move forward in becoming more sustainable, collaboration is key, and can only make our industry stronger in the long term. //

**James Selka,**  
CEO, Manufacturing Technologies Association



// I was delighted to be invited to contribute towards this important piece of work, not least as the opportunities and challenges of Net Zero are increasingly central to our work here at the MTC. Manufacturers, both large and small, will have a key role to play in delivering this agenda and we will play our part both in the debate and in its delivery. //

**Clive Hickman OBE, Chief Executive,**  
Manufacturing Technology Centre



# Executive Summary

Reducing carbon emissions is one of the cornerstones of sustainability and the Scottish Government has set a target for reaching Net Zero by 2045. Every business in Scotland must rise to the challenge of Net Zero and we need to do it together.

We are fully committed to this target, have set other targets of our own and want to help other businesses to not only meet the challenge of Net Zero but to turn it into an opportunity for growth and innovation.

Our report **From Now to Net Zero**, based on research and conversations with SMEs across the UK, explores the progress already made by SMEs towards Net Zero. It examines the valuable lessons already learnt, the obstacles firms face, and the potential for sustainability to be not just a problem to solve, but an engine for growth. To assess progress, we did a further survey of 1,000 SMEs in 2022 to monitor where they are on their sustainability journey today, identify the benefits of reaching the Net Zero target and understand how to overcome the barriers.

This report builds on that, focusing on the specific issues and opportunities facing SME manufacturers and providing them with a roadmap to Net Zero.

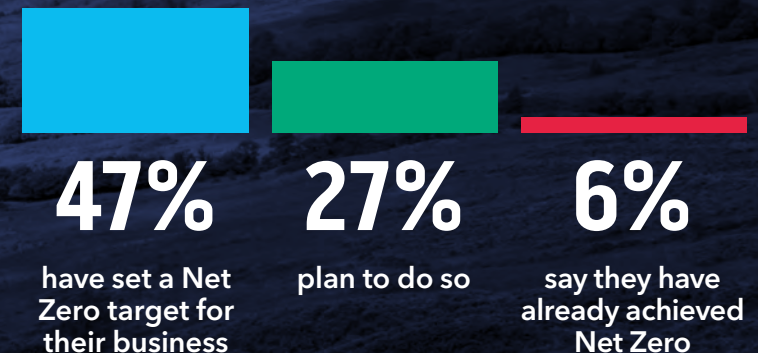
## Where are SME manufacturers on the road to Net Zero?

The importance of manufacturing's role in decarbonisation cannot be overstated. The Climate Change Committee's (CCC) **Sixth Carbon Budget** published in 2020, found that UK manufacturing emitted the equivalent of **60 million cubic tonnes of CO<sub>2</sub> in 2018, almost 11% of the UK total.**<sup>2</sup>

Awareness and understanding of Net Zero among SME manufacturers is high



Many have already begun their journey:



But many SME manufacturers can also see obstacles in their path. A lack of information and guidance, a lack of support from policymakers, the sheer complexity of their supply chains, and the cost of investment are all commonly cited challenges.

<sup>2</sup> <https://www.theccc.org.uk/publication/sixth-carbon-budget/>

## Executive Summary (continued)

### The value in Net Zero

The most obvious benefits to becoming Net Zero are protecting the environment and meeting regulatory requirements.

**But there are also commercial benefits.**



The financial sector has a crucial role to play in helping manufacturers get to Net Zero. Investment is key, along with analysis, understanding and practical tools and guidance.

This report provides further details of our research findings and the insights drawn from our conversations with manufacturers. It also includes a stage-by-stage guide to the practical steps firms can take toward Net Zero.

# Industry Perspectives



Sharing understanding across the sector is regarded by manufacturers as an essential part of their Net Zero journey, with business networks (25%), membership bodies (24%) and other businesses (15%) all cited as key sources of information and insights.

To support this need for sharing and to gain a deeper understanding of the issues SME manufacturers face, during quarter four of 2021, alongside the Manufacturing Technology Centre, Advanced Manufacturing Research Centre and High Value Manufacturing Catapults, supported by the Manufacturing Technologies Association and the Engineering and Manufacturing Alliance, we hosted a number of roundtable events with senior leaders from SME manufacturing and engineering businesses across the UK.

During these events, we explored the challenges, barriers and opportunities they face as they work towards achieving Net Zero and we have drawn together the top five take-aways.

## Industry Perspectives (continued)

### 1. Building A Net Zero Culture

SME manufacturers know sustainability is important, but find it difficult to prioritise it over the day-to-day operations of their businesses - 17% of SME manufacturers cite other priorities taking precedence and distracting management from committing to sustainable strategies. The impact of Covid-19 has only heightened the need for short-term thinking. The result is that where action is being taken, it can often take a short-term or localised, rather than strategic approach. Making changes to product design to take into account specific new regulations or technical specifications is an example of this.

But manufacturers felt a road to overcoming this is to build sustainability into the culture of their business. SME leaders who create a company environment where sustainability is everyone's responsibility have found that implementing change and delivering innovation have been more effective. And if a workforce is engaged, they are more committed to the sustainability journey. In turn, those firms become more attractive to skilled employees.

// With rising energy and utilities costs, it's become imperative that any business should focus on reducing its energy usage. The more we reduce waste and find efficiencies in energy the more likely we are to succeed and survive as a business. In terms of culture, it has to be about the lean principles and reducing waste streams and finding efficiencies. But that same focus and drive will help us all get to Net Zero as they are in truth one and the same. //

**Ashley Harbert,**  
Manufacturing Director, AW Hainsworth



// By investing in the latest manufacturing technologies and continually upskilling their entire workforce, manufacturers will see increased productivity and efficiency through waste reduction, increased use of sustainable materials, and reduced energy usage. It is an enormous opportunity for manufacturers to be more competitive and therefore grow their business post COP26, post Brexit Britain. Arguably it's not a choice, as companies who cannot adapt to driving a Net Zero agenda will find it increasingly difficult to operate.

//  
**James Selka, CEO,**  
Manufacturing Technologies Association



## Industry Perspectives (continued)



### 2. Creating Sustainability Skills

As well as attracting a skilled workforce, manufacturers need to refine the existing skillsets in their organisations, with a lack of relevant skills or employees for sustainability being cited by 22% of SME manufacturers as a challenge - it is an area with work to be done.

Talking to manufacturers, it is clear that the sector can be a leader in skills development, leveraging its innovative streak and ability to evolve to make this happen. Now is the time for an evolution of these skill sets at every level, from the boardroom to the factory floor, to integrate sustainability.



“ There needs to be a roadmap, with nationally recognised measurement tools, so employees can be trained to a set standard of competence. ”

Chris Greenough, COO, SDE Technology

## Industry Perspectives (continued)

### 3. Industry Collaboration

The road to Net Zero can feel lonely, but the potential for collaboration among manufacturers is huge. SMEs are keen to hear each other's experiences and explore how they can work together to capitalise on the well-recognised opportunity for collaboration and knowledge-sharing.

**Many SME manufacturers in our survey said they had used industry sources for help with Net Zero:**



Collaboration on sustainability could lead to the creation of new business networks, such as local collaborations of manufacturers to tackle common challenges, or vertical collaborations in manufacturing sub-sectors. Trade bodies have an important role to play in supporting the building of networks, creating introductions and supporting a collaborative environment within the sector.

// We work with local partners and other textiles manufacturers to get the most efficient uses of our plant and equipment, but much more can be done collaboratively to support UK PLC and business. //

Ashley Harbert, Manufacturing Director,  
AW Hainsworth

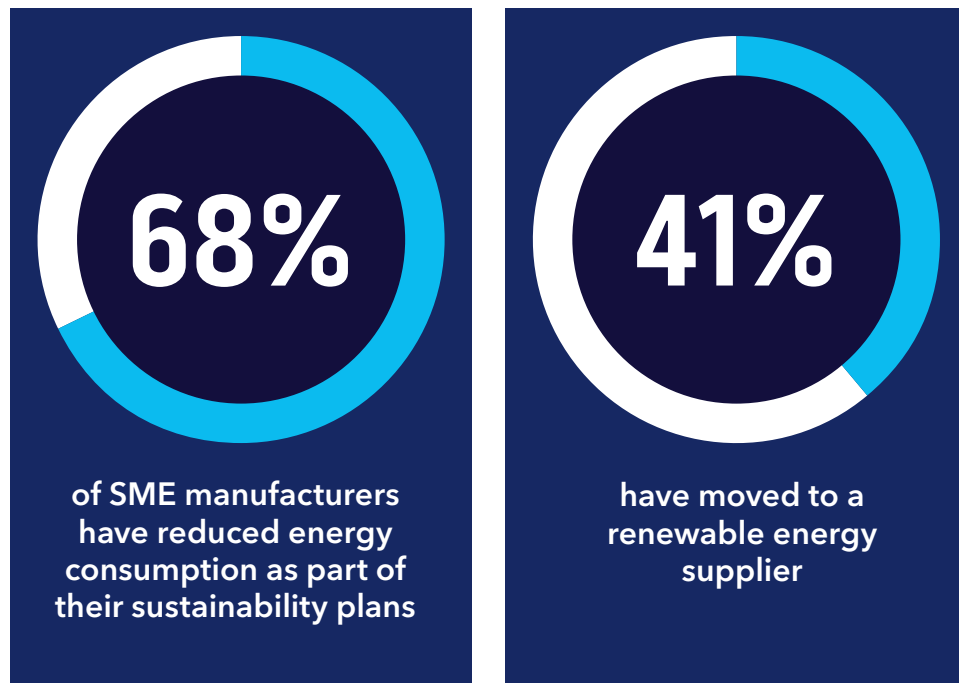
// Using the experience and competence of others, rather than trying to learn everything quickly, is the way to go for smaller businesses. //

Chris Greenough, COO, SDE Technology

## Industry Perspectives (continued)

### 4. Buildings & Energy

Energy is usually one of the first factors that manufacturers consider in their Net Zero journey.



With energy consumption making up an increasingly significant percentage of costs for manufacturers and significant price increases impacting this too, they have an appetite to go further and consider more sophisticated

solutions. For example ‘smart’ analytics could predict when process areas or buildings can be turned off, help manufacturers know when to plug in, when to operate, or even (for those with energy generation as a by-product of their own process) when to sell back to the grid.

As well as managing energy consumption, manufacturers are aware of the need to make their buildings as efficient as possible.

The Bank of Scotland **Green Buildings Tool** is a good place to start for SMEs looking at the impact of their buildings. Our roundtable discussions highlighted an appetite for regulation to play a role and the need for greater investment in this area.

// We track all of our energy consumption and equipment constantly looking at energy reduction and process improvements. The main challenges we personally face are around the age of our plant and buildings and this is a difficult issue. //

**Ashley Harbert, Manufacturing Director, AW Hainsworth**

// We have been able to reduce our energy usage by upgrading windows, heating controllers and of course, reducing the need to heat the offices as we have hybrid working due to the pandemic. //

**James Selka, CEO, Manufacturing Technologies Association**

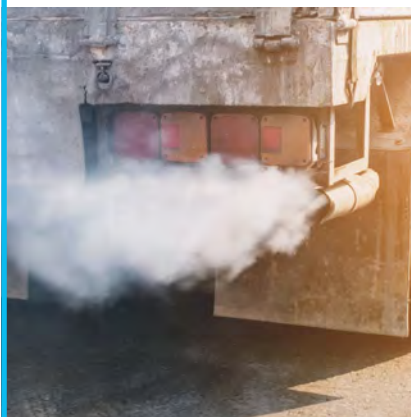
## Industry Perspectives (continued)

### 5. Transport & Supply Chains

Transport and supply chains expose manufacturers to the emissions of others.

#### Scope 1

refers to direct emissions, such as manufacturer-owned boilers, furnaces or vehicles.



#### Scope 2

refers to indirect emissions, such as when a business buys electricity whose generation causes emissions.



#### Scope 3

covers other indirect emissions, such as those generated by a supplier in the making or delivery of raw materials or components.



There are easier wins in this space such as embedding electric vehicles into fleets, smarter scheduling of 'last-mile' deliveries and shortening geographical distance in supply chains. Local sourcing where possible, could in turn support regional or local 'clusters' where collaboration drives mutual savings.

// The challenge is that our products go to various customers around the UK and Europe, and these products have a wide range of suppliers. Unless the end user is willing to invest and support a shorter, more local supply chain, the change will not happen organically. //

Chris Greenough, COO, SDE Technology

// We have 8 electric vehicles in the fleet. We recently did an exercise where we installed a tracker on a pallet which needed to be shipped by our courier to Newcastle upon Tyne - a distance of 75 miles. The pallet actually travelled 307 miles as it passed through our courier's hub in Leicester... not sure what we can do about that... but it's on our radar.

//  
Neil Crowther, Managing Director, Ardent Group



# Roadmap to Manufacturing Net Zero – A practical five-step guide

The road to Net Zero will not be the same for every SME manufacturer. The challenges and opportunities will vary depending on a wide range of factors, from the materials employed to the energy intensity of operations, and their position in the supply chain.

But while everyone's journey is unique, our research shows us that there are distinct steps on the path to Net Zero. We have developed a five-step plan to help businesses move from being aware of the challenge and opportunity of Net Zero, to developing a strategy and taking action.

## Five steps to Manufacturing Net Zero



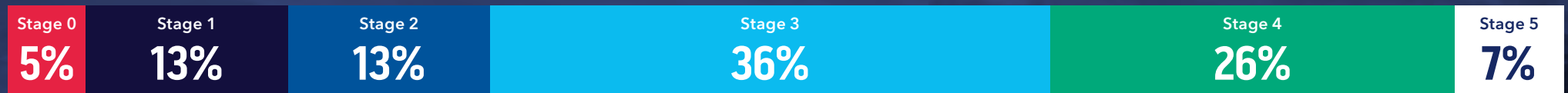
## Roadmap to Manufacturing Net Zero (continued)

Building on the identification of the five-step guide, we surveyed an additional 117 Manufacturing SMEs in 2022 to understand where they are on their sustainability journey today. Wherever you are on the journey, you can dive into our guide at the appropriate step and find ideas and guidance. We have also included links to other resources that can help on the road, from both Bank of Scotland and other organisations.

**Stage 0:** SMEs not considering or taking any action towards reaching Net Zero

**Stage 1 Getting Started:** SMEs considering, researching and planning the steps they will take on their Net Zero journeys/they recognise the importance of reaching Net Zero

**Stage 2 Short-Term Wins and Employee Engagement:** SMEs that recognise the benefits of being Net Zero and are taking actions - such as recycling and reducing waste, and reducing energy consumption in this area. They are yet to start measuring greenhouse gas emissions



**Stage 3 Measure, Mobilise, Monitor:** SMEs that have begun the process of measuring greenhouse gas emissions and are planning for how to reach Net Zero

**Stage 4 Navigating the Road Ahead:** SMEs that have measured their greenhouse gas emissions and have a plan in place to reach Net Zero

**Stage 5 Heroes of Net Zero:** SMEs that are already at Net Zero greenhouse gas emissions

The research shows 96% of Manufacturing SMEs are aware of the 2045 Net Zero target and 87% know what it means for their business. However, 19% of SMEs in the manufacturing sector have measured their greenhouse gas emissions and have a plan in place to reach Net Zero - a further 25% have measured their greenhouse gas emissions and are currently planning for how they reach Net Zero. Events contributing to rising energy costs (79%) have had a negative impact on the progress of SMEs in the manufacturing sector on their journey to Net Zero.

[Read the SME Net Zero Monitor >](#)

# 1. Getting Started

Information is key. Even before SME manufacturers face the challenges of investment or strategy, a lack of information creates an immediate obstacle. Lack of knowledge was cited by almost a quarter (23%) of SME manufacturers. Lack of skills and lack of access to expert guidance were also named as obstacles by around one in five manufacturing SMEs.

Getting started means becoming knowledgeable. Manufacturing trade bodies and business networks are valuable sources of information along with information-sharing with peers and along supply chains.

The key questions are:

- ▶ What information resources tailored to your specific sector are already available?
- ▶ What initiatives are already underway across manufacturing or within your own sub-sector?
- ▶ What regulatory requirements and targets are coming down the track?

Bank of Scotland has built its own suite of resources to help all types of business get their Net Zero journey underway.

Once equipped with the key information about what Net Zero means for your business, you can start taking action. The good news is that some benefits can be delivered quickly.



View our useful resources 

## 2. Short-Term Wins and Employee Engagement

Step two combines some immediate actions that can improve sustainability and deliver business benefits, with others that lay longer-term foundations for a Net Zero strategy.

Immediate actions include:

- ▶ Consider switching to a renewable energy provider and seek advice from energy consultants
- ▶ Eradicating waste in production processes

Cutting costs and waste are the most well-recognised benefits of Net Zero with 42% of firms expecting cost reductions and 35% expecting to reduce waste.

One of the easiest ways to address waste is to ask for employee input as they often know best where systems can be improved. At the same time, this will help with employee engagement, which will be vital in the long run. Many firms set up teams dedicated to investigating sustainability and Net Zero initiatives.

The initiatives listed, and others that might emerge from employee engagement (for example, cycle to work schemes, recycling facilities on site), will often deliver immediate benefits, including staff well-being. These, however, are only the start. At this stage, manufacturers need to combine these individual initiatives with a Net Zero strategy.

How Bank of Scotland can help 

Further guidance can be found from these organisations 



# 3. Measure, Mobilise, Monitor

The fundamental driver of a Net Zero strategy will be measuring and assessing your business's carbon footprint. Once you have the measure of the carbon emissions throughout your business, it is possible to implement a comprehensive reduction strategy.

A significant number of SME manufacturers (43%) are already measuring and monitoring their environmental impact. Getting a detailed understanding of your carbon footprint will be one of the most important stages on the road to Net Zero.

At this stage, target-setting becomes a reality. The Scottish government's target of Net Zero by 2045 may seem very distant, but reaching that target will require steady progress over a long period. Having a measuring and monitoring system in place will allow you to:

- ▶ Set your own interim targets
- ▶ Identify areas of your business where carbon-cutting initiatives will have the most impact
- ▶ Demonstrate your carbon-cutting credentials to your employees, suppliers and customers

Measuring and monitoring carbon impact may require outside expertise or consultancy. External advice and assessment will bring new insights into possible carbon-reducing actions and provide valuable independent third-party verification for your carbon-cutting credentials.

Measure resources



Mobilise resources



## 4. Navigating the Road Ahead

Manufacturers that have reached this stage will already be seeing clear business benefits. With a commitment to Net Zero, your own roadmap to achieve your targets, and a system of measuring and monitoring, your business will have established a reputation as a sustainability leader.

Your products will be more attractive to end-users concerned to meet their own environmental targets, and other businesses will be eager to partner with you. You may also find that other businesses are looking to you for sustainability guidance and mentoring. Improved reputation, brand image and trust are seen by 23% of SME manufacturers as one of the potential benefits of Net Zero.

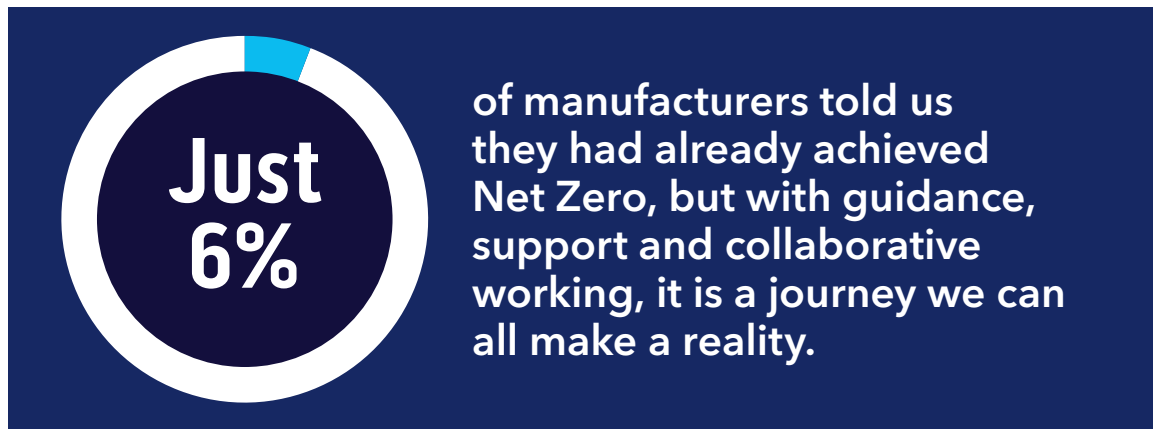
It is also important to avoid complacency. Your focus on the journey to Net Zero must be maintained at this stage. Measuring and monitoring carbon emissions must continue and may need to be refined - the easiest carbon reductions have probably been achieved and new initiatives will still be needed to maintain progress.

And, of course, there is always the unforeseen. Brexit and the pandemic have required flexibility from businesses and such unexpected events are always possible. In the context of Net Zero, this may also include new regulations, industry standards or new targets being issued by regulators or government. The need to be plugged in to up-to-date sources of information is as vital as ever.

Find out more by clicking on the resources below 

## 5. Heroes of Net Zero

Those businesses most advanced on their road to Net Zero will have stand-out reputations and a major lead over rivals as sustainability increasingly becomes a vital business credential.



# How Government Can Support SME Manufacturers

While manufacturers are doing much to navigate their own journeys to Net Zero, policy interventions will be required to support them in reaching the target. Many of the businesses we spoke to have ideas for how regulation can help and they welcome formal support from Government. They see it as playing an essential part in helping them to make a difference and drive real change.

The following are recommendations for Government action, set against the key areas where momentum is required - as identified by SME manufacturers.

## Building a Net Zero culture

- ▶ Introduce policies for employees and suppliers that demonstrate a company-wide commitment to sustainability, for example attaching carbon calculations to all staff travel
- ▶ Introduce a compulsory sustainability accreditation scheme which makes a business's sustainability credentials clear and comparable with other businesses

## Creating sustainability skills

- ▶ Deliver more education and policy advice. There is a demand for people who can cascade emerging thinking in every sector

## Industry collaboration

- ▶ Establish central advice hubs and 'one stop green ambassadors' that understand the sector and can provide advice and plans that are relevant for SME manufacturers
- ▶ Creating a Charter, like the Prompt Payment Code, to address SME concerns about disconnects in large corporations' public commitments to sustainability, and their business practice day-to-day





## How Government Can Support SME Manufacturers (continued)

### Buildings and energy

- ▶ Create one stop shops for all grants and incentives to promote green investment
- ▶ Regulate for roofs to generate solar power and reduce the cost of solar panels
- ▶ Review solar panel regulation and feed-in tariffs to address anomalies and stop businesses being penalised for increasing sustainable sourcing behaviour
- ▶ Amend the land remediation policy to remove barriers e.g. businesses currently receive tax relief for removing asbestos roofing correctly, but no tax relief on replacing the roof
- ▶ Widen access to green building support schemes so that SMEs can make improvements themselves rather than using approved contractors

### Transport & supply chains

- ▶ Deploy policies that promote re-using ahead of recycling by following circular economy principles
- ▶ Actively promote the official '**Made in Britain**' mark and the organisation that is helping British SME and larger manufacturers to sell more here at home and overseas

### Incentivisation

- ▶ Set up 'one stop shops' with information on all grants, incentives and capital allowances, making finding the right information easy for SME manufacturers
- ▶ Promote new technologies based on their productivity benefits as well as sustainability credentials
- ▶ Incentivise green consumer behaviour as well as product manufacture - creating a more virtuous circle of purchasing and production

### Measuring success

- ▶ Create tools to make it easy for SME manufacturers to measure their carbon footprint
- ▶ Develop approved proxy data or a series of sector specific calculations for SMEs to draw on
- ▶ Enable better data sharing for AI calculations
- ▶ Create better awareness of existing government tools

# Conclusion

Achieving Net Zero is an urgent challenge for all businesses. But it is also a journey with huge opportunities. As a sector, manufacturing is an intense user of raw materials and of energy, and its supply chains and distribution networks are among the most complex. It is vital that manufacturers address the challenges head on and grasp the opportunities with both hands.

Those that ignore Net Zero will find themselves being left behind, and ultimately will find their business is not just environmentally unsustainable, but commercially unsustainable too. Those that embrace Net Zero will gain a competitive edge; their reputations will be enhanced; partners, customers and skilled employees will be drawn to their business and as Net Zero becomes an essential part of every enterprise, they may find whole new commercial opportunities.

Our research and roundtable discussions with SME manufacturers found that most manufacturers recognise both the challenge and the opportunity, and understand that collaboration is key. Net Zero is not just about a single organisation taking action, vital though that is. Rather, it is about sustainable supply chains and sustainable business communities.

While manufacturers can do much to help themselves, they also need more support. The finance and investment required is often daunting and many manufacturers (30%) told us they would like to see more support from policymakers in the shape of incentives, loans or grants.

Manufacturing is a vital part of the Scottish economy and faces distinct challenges on the road to Net Zero. But with the right information, guidance and support, manufacturing can make Net Zero an opportunity for renewal and for future success.



# Methodology

In 2021, Bank of Scotland commissioned Yonder to understand the perspectives of SMEs on sustainability issues and the challenges they face on their road to Net Zero. The research approach included four distinct stages, combining expert insight from industry and academia as well as the viewpoints of SMEs themselves. It covered a survey of more than 1,000 SME business leaders undertaken between April and May 2021; in-depth interviews with 10 sustainability experts; six focus groups with SME business leaders and follow-up conversations with individual business leaders. Alongside the formal research we also interviewed our sustainability-trained relationship managers and our customers. In 2022, we surveyed a further 1,000 SMEs to look at progress that has been made.

This manufacturing focused report focuses on the data of the 128 manufacturing business respondents from across the UK. It additionally leverages the insights from the manufacturing and engineering businesses who attended our sustainability roundtables in Q4 2021 to discuss the unique sustainability journeys they are on.

## With thanks

Through the kind support of Dr Clive Hickman OBE and Professor Chris White, the roundtables were held in partnership with the High Value Manufacturing Catapults (HVMCs) at the National Composite Centre in Bristol (NCC), the Manufacturing Technology Centre (MTC) in Coventry, and the Advanced Manufacturing Research Centre (AMRC) in Sheffield. Without the help and input from these organisations, this report would not have been possible and we thank them for their participation. Additional thanks goes to all of the SME business leaders, alongside James Selka, CEO representing the Manufacturing Technologies Association and Jack Semple representing the Engineering and Manufacturing Alliance who attended and freely shared their experience and perspectives.



## Important information

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