



Net Zero Sheffield

Our Businesses and Economy
Decarbonisation Routemap 2024-26

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Collaborative Partners

Developed by Sheffield City Council in collaboration and with thanks to:

Aegis Energy, Advanced Forming Research Centre, AET Ltd, AML Sheffield, Arup, Broomhall Community Centre, Chimp Management, Company of Cutlers, E.ON, Feral Express Couriers Ltd, Footprint Tools, Forged Solutions, Forgemasters, Gripple, Henry Boot, Insynch Energy Services, Loxleys, Outokumpu, Ovo Spaces (S-PA), PEP, Panel Systems Ltd, Race Cottam (S-PA), Sheffield Chamber of Commerce, Sheffield College, Sheffield Hallam University, Sheffield Teaching Hospitals NHS Foundation Trust, Site Gallery, South Yorkshire Mayoral Combined Authority, South Yorkshire Sustainability Centre, Suiso Limited, The Green Estate Community Interest Company, University of Sheffield, Wolf Safety Lamp Company Ltd

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Business Decarbonisation Routemap

How to use this chapter

The Routemap has been designed to break down the actions businesses can take to help them to decarbonise. These actions are in table format and include reference to where you are on your journey (more on that soon) and the size of your business. Co-benefits are also included to enable potential wider support of sustainability action.

The first step in getting the most from the Chapter is to identify your needs.

What do you need from the Routemap?

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Businesses

- I'm a **business** wanting to take action to decarbonise. Use the profiles on the right to identify where your business is on the decarbonisation journey.
- I'm a **business** wanting to see what others have done to decarbonise. Click here to go to the first case study and scroll for more.
- I'm a **business** wanting to see how I might be supported to decarbonise. Each objective has actions for non-businesses. Click here to go to the first non-business actions.

Non-businesses

- I'm a **supporting organisation** wanting to know more about what we can do to help businesses decarbonise. Go to the objective tables for non-businesses. Click here to go to the first non-business actions.
- I'm a **policy maker** wanting to understand more about the Routemap and its development. Start with the Summary and work through the Routemap in order. Click here to go straight there.

Where is your business on the decarbonisation journey?

Use the table below to identify where your business is on the decarbonisation journey.

These stages are shown in the tables of actions in each objective to help show the most likely useful activities for those starting out, on the journey or leading the way.

1

Starting Out

Journey stage explanation: Recognise the importance of sustainability but have not yet formalised an approach.

Focus: building awareness, learning, upskilling.

Activities: small-scale or ad hoc.

Actions associated with this stage have been coloured **blue**.

Objectives:

- A. Understand options
- B. Measure emissions

2

On the Journey

Journey stage explanation: Recognise the benefits of decarbonisation, moved or moving beyond awareness.

Focus: actively developing actions and / or plans

Activities: strategic, medium to long term

Actions associated with this stage have been coloured **green**.

Objectives:

- C. Building emissions
- D. Transport emissions
- E. Industrial emissions

3

Leading the Way

Journey stage explanation: Gaining from the benefits of decarbonisation, sustainability embedded in core operations.

Focus: challenging the norm, influencing change

Activities: supporting sector decarbonisation

Actions associated with this stage have been coloured **yellow**.

Objectives:

- F. Engage supply chain
- G. Influence customers

Routemap Summary

Sheffield City Council has committed to developing detailed routemaps across seven chapters covering all of Sheffield's emissions. Importantly, this Business and Economy Chapter has been co-created with Sheffield businesses, setting out a collaborative, city-wide approach to reducing emissions. The purpose of the chapter is to support a collective transition to net zero amongst businesses, supported by organisations to provide the capability, knowledge, and tangible actions for the future. The goal of the Routemap is:

“Within 1 year, businesses in Sheffield will collectively take action and understand what they need to do to decarbonise. By 2030 emissions from businesses will be significantly reduced.”

Almost universally, businesses are operating in an increasingly volatile and uncertain market. Combine this with the speed decarbonisation needs to happen and it's not surprising that finding the time to act is difficult. It's important that this Routemap therefore reflects the real pressures facing Sheffield's businesses.

This chapter has been developed through extensive engagement; workshops, interviews, surveys and case studies, with the aim of providing practical and ambitious support to businesses on their decarbonisation journey. Businesses are central to achieving Sheffield's climate goals. It's because of this that Sheffield City Council understood that it was essential the chapter was developed with businesses, for businesses. Particular care was taken to recognise the distinct pressures, capacity constraints, and operational realities faced by SMEs, ensuring their perspectives shaped the chapter and its actions in a meaningful and proportionate way.

During engagement activities, businesses identified actions required to support them to decarbonise by non-business organisations including the Council and local business networks. These actions are essential to enabling successful decarbonisation and are included in the Routemap as 'Non-business' actions.

The engagement process identified significant benefits, including financial savings, market advantage, skills development, health improvements, and strengthened reputation, as well as barriers such as limited time, funding constraints, unclear regulations, technical complexity, and supply chain challenges. The chapter and more broadly the Routemap help to address these constraints through targeted actions and city-wide collaboration.

Where Sheffield stands today

Sheffield's 17,000+ businesses contribute significantly to the city's economy and its emissions profile. Emissions come from industrial and commercial buildings, business travel and logistics, and land-related operations. Although these emissions span several sectors, the majority fall within industrial and commercial operations, particularly from gas and electricity use.

What needs to change

To decarbonise effectively, Sheffield businesses will be encouraged to:

- Improve the fabric and efficiency of their buildings.
- Reduce energy demand and transition away from fossil fuels.
- Increase renewable energy generation.
- Transform transport, travel behaviour, and freight logistics
- Enhance carbon sequestration through land-use changes.
- Address indirect (Scope 3) emissions, particularly supply chain impacts.

This chapter, alongside the wider Routemap, provides businesses with clear guidance and targeted support to understand how they can contribute to these changes and take meaningful action as part of Sheffield's transition to net zero.

A fair and just transition

A just transition ensures the shift to a low-carbon economy is fair and inclusive, preventing job losses, inequality, and reduced access to services in sectors and communities most affected by decarbonisation.

Businesses are central to delivering this transition. By investing early in workforce skills and involving employees in decision-making, organisations can minimise disruption and maintain resilience. Collaborative approaches - such as knowledge-sharing, strengthening local supply chains, and responsible procurement - help protect local jobs and sustain economic stability. Meaningful engagement with communities builds trust and ensures the benefits of greener, healthier, and more resilient places are widely shared.

Why a Routemap was needed

The Routemap has been developed by businesses, for businesses, with ongoing support from Sheffield City Council and other key partner organisations. While the emphasis is on businesses taking action and driving change, meaningful progress will only be achieved through continued support, collaboration, and the development of new partnerships as more organisations begin their low-carbon transition. Built through collaboration, the Routemap is intended to be owned and taken forward by Sheffield's business community. Businesses are encouraged to continue engaging, implement the actions outlined, and support their peers to do the same. The Council will continue to

work alongside businesses to support upskilling and provide access to funding opportunities, including the Low Carbon Project and future funding mechanisms. The focus is on action, with each business doing something, rather than waiting to achieve perfection.

How Sheffield businesses will create this change

The Chapter is structured around seven objectives, each supported by outcomes and practical actions. The objectives start with actions that help with understanding and skill creation, moving through further skill development and into leadership.

The information in the document is comprehensive but to assist businesses to identify actions that they can take, dependant on the stage that a separate spreadsheet of actions is also available which will allow them to quickly navigate the actions that are most appropriate for them.

Looking ahead – a vision for Sheffield

The Routemap describes a vision for Sheffield where businesses take proactive, informed steps to reduce emissions, with clear support structures to guide businesses through the decarbonisation journey. Collaboration flourishes through networks, mentoring, shared resources, and innovation hubs. Emissions reductions across buildings, travel, industrial processes, and supply chains contribute significantly to Sheffield's goal of net zero.

The Routemap is designed as a living, collaborative document. It exists to support businesses, the city and its communities to transition to a resilient low-carbon future.

Summary of Routemap objectives and outcomes

Objective	Summary of outcomes for Sheffield businesses
<p>A. Businesses have the support to measure their carbon emissions, understand the costs and benefits of reducing them, and take practical steps to improve efficiency.</p>	<p>Businesses stay informed about Sheffield’s carbon-reduction plans, understand their emissions across all scopes, and use trusted resources to measure, reduce, and prepare for upcoming policy. They also join peer-to-peer networks to collaborate on cutting emissions, share best practice, learn from others, and access funding and support to help reduce upfront decarbonisation costs.</p>
<p>B. Businesses measure their carbon emissions and have a plan to reduce them.</p>	<p>Businesses measure both the emissions they control (e.g. from energy, transport use) and those they influence (e.g. supply chain, pensions), and create a simple, time-bound plan outlining practical steps to reduce them.</p>
<p>C. Carbon emissions from the operation of businesses’ buildings are significantly reduced.</p>	<p>Businesses improve the performance of buildings they control, phase out fossil-fuel systems in favour of low-carbon energy sources, and build the knowledge needed to advocate for carbon-saving measures with landlords to reduce running costs and increase overall efficiency.</p>
<p>D. Carbon emissions from business travel, commuting and logistics directly within their control are significantly reduced.</p>	<p>Businesses cut emissions from logistics by reducing fossil fuel use and unnecessary journeys, helping to improve local air quality, while also lowering emissions from business travel and commuting by encouraging low-carbon and active travel options that support staff health.</p>
<p>E. Carbon emissions from directly controlled industrial or manufacturing processes are significantly reduced.</p>	<p>Industrial businesses work together to plan the shift to low-carbon energy, creating new local jobs and market opportunities while partnering with peers and universities to develop cleaner manufacturing methods that strengthen Sheffield’s reputation and attract investment.</p>
<p>F. Carbon emissions from businesses’ supply chains and other indirect sources are measured and reduced (including the local supply chain and other indirect sources such as digital and data services).</p>	<p>Businesses embed carbon-reduction requirements into procurement and use their knowledge to influence suppliers to adopt lower-carbon practices, helping them meet customer expectations for sustainable products while strengthening their brand and reputation.</p>
<p>G. Businesses influence their customers and the wider public to adopt products and services that reduce carbon emissions.</p>	<p>Businesses use their knowledge and platforms to encourage customers and the wider public to adopt low-carbon behaviours, strengthening credibility and brand reputation, while collectively reducing emissions and creating new business opportunities.</p>

GOAL: Within 1 year, businesses in Sheffield will collectively take action and understand what they need to do to decarbonise. By 2030 emissions from businesses will be significantly reduced.

Key objectives

- A. Businesses have the support to measure their carbon emissions, understand the costs and benefits of reducing them, and take practical steps to improve efficiency.
- B. Businesses measure their carbon emissions and have a plan to reduce them.
- C. Carbon emissions from the operation of businesses' buildings are significantly reduced.
- D. Carbon emissions from business travel, commuting and logistics directly within their control are significantly reduced.
- E. Carbon emissions from directly controlled industrial or manufacturing processes are significantly reduced.
- F. Carbon emissions from businesses' supply chains and other indirect sources are measured and reduced (including the local supply chain and other indirect sources such as digital and data services).
- G. Businesses influence their customers and the wider public to adopt products and services that reduce carbon emissions.

Routemap development process

The Business and Economy Decarbonisation Routemap was shaped through an extensive stakeholder engagement process, incorporating workshops, interviews, surveys, and case studies. This collaborative approach ensured the chapter was co-created with the insights and perspectives of local businesses and organisations, recognising their pivotal role in driving the city's transition to a low-carbon future.

Where does Sheffield currently stand?

In 2023 Sheffield had 16,755 businesses, creating 272,000 jobs and contributing £17.3bn in gross value added. The city's economy is driven by businesses in specialist areas such as advanced manufacturing, clean energy, health and wellbeing, creative and cultural industries, and professional and business services. This is supported by a growing tech and digital industry. With such a diverse range of businesses in the city, emissions associated with their activities span across several sectors. Businesses impact emissions not only through their factories and offices, but also through the residential properties they own, the vehicles they operate, and their involvement in agriculture and waste management.

Industry and Commercial

This is the third-largest source of emissions in Sheffield, accounting for 24% of the city's total emissions. This is made up of emissions from businesses' commercial properties and industrial processes.

Domestic (primarily homes)

Domestic energy use is one of the largest contributors to Sheffield's emissions, accounting for 29% of the total, alongside the transport

sector. Businesses contribute through emissions from residential properties owned by private landlords and domestic property businesses.

Transport

Transport is another major source of emissions in Sheffield, also responsible for 29% of the city’s total. Businesses contribute to this through emissions from business transport, freight, and agricultural vehicles.

Agriculture, Waste & Land Use

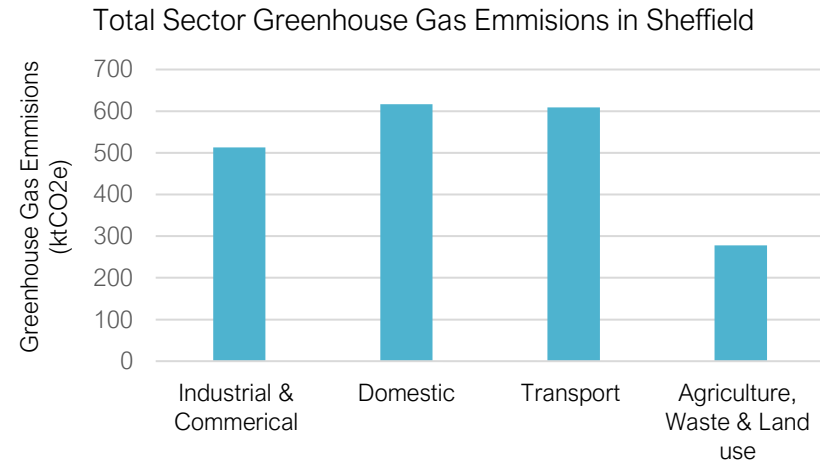
This sector accounts for a smaller share, with businesses contributing around 13% through activities linked to land-based operations and waste management.

Although businesses’ emissions are split across several sectors, it is likely that the majority of these sit within the industrial and commercial sector, where they hold sole responsibility.

Within the industrial and commercial sector, the main source of emissions from industrial activities is the use of gas. In contrast, for commercial buildings within this sector (such as offices, shops, and other non-industrial premises), electricity use is the largest contributor to emissions. Large-scale industrial processes such as steel production and incineration account for only 13% of emissions across the combined industrial and commercial sectors, meaning the majority of emissions arise from commercial electricity.

What needs to change?

Decarbonising Sheffield’s business and economy requires coordinated action across multiple sectors. Businesses influence emissions from buildings, transport, energy, and land use, and therefore have a



UK Local Authority and regional greenhouse gas emissions statistics, GOV.UK, 2023

critical role to play in creating a low-carbon city. The Pathway to Decarbonisation report (2020) highlights the following overarching actions:

- **Improve building fabric and reduce energy consumption**
- **Remove fossil fuels from buildings and industrial processes**
- **Increase renewable energy generation**
- **Transform transport and logistics**
- **Enhance land use for carbon sequestration**

These changes will require investment, collaboration, and behavioural shifts. The Council will work with businesses, trade bodies, and regional partners to remove barriers, provide guidance, and promote funding opportunities. Unlike one-off measures these are ongoing processes that demand continuous engagement.

The potential impact of decarbonisation varies by sector and action taken. For exact figures relating to the emission reductions achievable through proposed interventions see the earlier chapters of the Routemap or the Zero Carbon Pathways Report (2020).

Key benefits and barriers

Through a series of engagement activities with businesses and a comprehensive literature review a range of clear benefits associated with decarbonisation were highlighted, including:

- **Financial gains and long-term cost savings** through reduced energy bills, compliance benefits, and access to diverse funding streams.
- **Market advantage and reputational benefits**, positioning businesses as sustainability leaders and attracting customers, suppliers, and talent.
- **Collaboration opportunities** with other businesses to share knowledge, learn from best practice, and overcome challenges collectively.
- **Awareness and accessibility of funding**, supported by clear signposting and guidance to help businesses secure investment for decarbonisation projects.
- **Employment and skills growth** in carbon reduction, creating new roles and supporting workforce development.
- **Health and wellbeing improvements**, including better air quality, enhanced employee comfort, and improved workplace environments.
- **Collective endeavour for Sheffield**, fostering a sense of shared responsibility and progress towards city-wide net zero goals.

- **Ability to measure and report success**, enabling businesses to demonstrate decarbonisation achievements in tangible metrics.
- **Staff engagement and recruitment benefits**, as sustainability becomes a key factor in attracting and retaining talent.

Despite these benefits, businesses also face a number of barriers that can slow or limit progress if not addressed:

- **Limited understanding and capacity**, particularly among SMEs, which often lack dedicated sustainability roles and focus on short-term planning.
- **Building and infrastructure challenges**, including older or complex properties, operational constraints, and fragmented ownership structures.
- **Financial and resource constraints**, with high upfront costs, short funding windows, and competing priorities limiting investment.
- **Policy and planning misalignment**, where unclear or conflicting regulations add complexity and cost to projects.
- **Technical complexity**, such as uncertainty over viable solutions (e.g. heat pumps, hydrogen) and inconsistent supplier quotes.
- **Sector-specific barriers**, including manufacturers' concerns over accreditation and healthcare organisations balancing decarbonisation with service delivery.
- **Supply chain and customer dependencies**, where limited availability of skilled contractors and the need for customer buy-in slow progress.
- **Insufficient organisational leadership and employee engagement**, where unclear strategic direction and low staff buy-in reduce the ability to drive change.

Co-benefits

In addition to the direct benefits of emissions reduction, there are also a number of co-benefits of taking action to decarbonise. Co-benefits have been suggested by businesses who collaborated on the Routemap to foster potential wider support for sustainability action. Co-benefits are included in the various action tables for each objective and are summarised below.



Social – Benefits that strengthen relationships and reputation within society.



Health – Benefits that improve physical and mental wellbeing for employees and communities.



Economic – Benefits that enhance financial resilience and competitiveness without being direct cost savings.



Biodiversity – Benefits that support ecosystems and natural habitats indirectly through business actions.



Resilience – Benefits that strengthen an organisation's ability to anticipate, withstand, and adapt to disruptions, ensuring continuity and long-term stability.

Actions

It is important to note that the actions set out in the Routemap for non-businesses should be viewed as areas for consideration rather than firm commitments. Not all actions will be deliverable within existing resources. However, their inclusion in the Routemap, and the fact that businesses have identified a need for them, provides valuable insight and will help to inform future planning, prioritisation and funding decisions.

OBJECTIVE A: Businesses have the support to measure their carbon emissions, understand the costs and benefits of reducing them, and take practical steps to improve efficiency.



OUTCOMES

1. Businesses actively engage with Sheffield's carbon reduction plans and targets, staying up to date with the latest developments and how these may affect their operations.
2. Businesses understand (throughout their organisation) what carbon emissions are and why reduction supports their business and the community.
3. Businesses are involved in peer-to-peer development and upskilling that supports carbon emission reduction, sharing best practice and learning from existing progress.
4. Businesses will have a trusted point of contact or source of truth (online hub) to direct them to the right resources for measuring and reducing their carbon emissions, reducing uncertainty and risk around upcoming policy and legislation.
5. Businesses can identify sources of their carbon emissions across all scopes and understand which are within their control or influence.
6. Businesses know how to unlock funding and support for carbon emission reduction that is relevant to them, reducing upfront costs.

Why we need businesses to understand carbon emission reduction

The Zero Carbon Pathways Report identifies significant potential to reduce emissions by up to 801 ktCO₂e by decarbonising the commercial and industrial sector. Realising this potential depends on businesses understanding why it matters, what it involves, and the benefits for both their organisation and the wider community.

Businesses also need practical support to measure and reduce emissions. Despite available information, 24% of surveyed businesses report little or no awareness of government and local authority carbon-reduction schemes, highlighting a gap between information availability and actionable guidance.

Collaboration will be essential, enabling organisations to share expertise and best practice, while improved awareness of and access to funding will help businesses overcome barriers and take meaningful action towards decarbonisation.









What does the future look like?

- ✓ Businesses understand the sources of their carbon emissions, and recognise the benefits and risks of carbon reduction to support informed decision-making.
- ✓ Clear guidance and support are available to help businesses measure and reduce emissions, including access to advice, funding opportunities, and resources for all sectors.
- ✓ Peer-to-peer learning and collaboration are embedded across Sheffield's business community, enabling organisations to share knowledge, build capability, and progress together on decarbonisation.

OBJECTIVE A: Businesses have the support to measure their carbon emissions, understand the costs and benefits of reducing them, and take practical steps to improve efficiency.

Actions for businesses









 Social  Health  Economic  Biodiversity  Resilience








Outcome	Actions	Owner	Mapping the Action	Co-benefits
Businesses actively engage with Sheffield's carbon reduction plans and targets, staying up to date with the latest developments and how these may affect their operations.	Review Sheffield's carbon reduction targets alongside the business's goals and future plans to align ambitions and understand the risks, benefits, and role in the net zero transition.	Business	On the journey	
Businesses understand (throughout their organisation) what carbon emissions are and why reduction supports their business and the community.	Embed carbon emission reduction across the business by upskilling staff, particularly leaders, through training and guidance, and by routinely integrating carbon reduction topics into meetings, internal communications, and day-to-day conversations.	Business	Starting out	
	Identify senior individuals within the business to act as champions and drive action on carbon emission reduction.	Business	Starting out (Larger businesses)	
	Celebrate staff who take a lead on/advocate for reducing carbon emissions within the business.	Business	Starting out (Larger businesses)	
Businesses are involved in peer-to-peer development and upskilling that supports carbon emission reduction, sharing best practice and learning from existing progress.	Seek out opportunities to learn from peers through networking, mentoring and business groups. Use these opportunities to ask others about their decarbonisation journey, their successes, failures and lessons learnt.	Business	Starting out (All sizes / SMEs)	
	Join established networks that support carbon reduction in Sheffield and participate in online discussion groups or LinkedIn communities around carbon emission reduction. Use these opportunities to learn from businesses that are leading the way and support organisations that are starting out.	Business	On the Journey (All sizes, mostly SMEs)	
Businesses will have a trusted point of contact or source of truth (online hub) to direct them to the right resources for measuring and reducing their carbon emissions, reducing uncertainty and risk around upcoming policy and legislation.	Join the online hub to support your business to decarbonise. Use the hub to access tools, guidance, funding opportunities, and suppliers to help you measure and reduce your carbon emissions in line with Sheffield's carbon reduction plans.	Business	Starting out (All sizes / SMEs)	
Businesses can identify sources of their carbon emissions across all scopes and understand which are within their control or influence.	Map out potential sources of scope 1, 2, and 3 emissions within the business and identify areas of control and influence.	Business	Starting out	

OBJECTIVE A: Businesses have the support to measure their carbon emissions, understand the costs and benefits of reducing them, and take practical steps to improve efficiency.

Actions for non-businesses

 Social  Health  Economic  Biodiversity  Resilience

Outcome	Actions (non-business)	Owner	Mapping the Action	Co-benefits
Businesses actively engage with Sheffield's carbon reduction plans and targets, staying up to date with the latest developments and how these may affect their operations.	Create an awareness campaign to launch the Routemap and engage with businesses about Sheffield's carbon reduction plans (e.g. LAEP) and targets, and how they may impact them. This may include identifying sector leaders to advocate for carbon emission reduction amongst their peers.	Non-business (Local Authority)	On the Journey	
	Promote and celebrate businesses who take a lead on carbon emission reduction, such as by creating dedicated business award categories, or a platform for businesses to pledge carbon reduction targets and demonstrate their commitment.	Non-business	Leading the Way	
Businesses understand (throughout their organisation) what carbon emissions are and why reduction supports their business and the community.	Work with educational institutions and industry experts to understand the free and paid training options for businesses, providing a simple online directory so they can find a course that suits them.	Non-business (Local Authority, Chamber / Member Organisations)	On the Journey	
Businesses are involved in peer-to-peer development and upskilling that supports carbon emission reduction, sharing best practice and learning from existing progress.	Signpost to established carbon reduction networks.	Non-business	Starting out	
	Create and maintain networks and mentoring initiatives that enable businesses to learn from each other's decarbonisation actions across sectors.	Non-business	Leading the Way	
Businesses will have a trusted point of contact or source of truth (online hub) to direct them to the right resources for measuring and reducing their carbon emissions, reducing uncertainty and risk around upcoming policy and legislation.	Conduct a review of existing resources to identify gaps in knowledge and support, and develop a targeted plan to address them.	Non-business	Starting Out	
	Create an online hub to support Sheffield businesses to decarbonise. Include resources for helping to measure and reduce carbon emissions, information about Sheffield's carbon reduction plans and any support opportunities including potential funding streams and a library of case studies demonstrating the benefits of action. Use the hub to share with businesses how they can find suppliers that will support their carbon reduction plans.	Non-business (Local Authority, Business Sheffield)	On the Journey	
	Where already available, create a sector-specific framework of benefits (and risks) of carbon emission reduction, including the risk of inaction.	Non-business	On the Journey	

Outcome	Actions (non-business)	Owner	Mapping the Action	Co-benefits
	Create an awareness campaign, to share new/existing resources for measuring and reducing carbon emissions with businesses.	Non-business (Local Authority)	On the Journey	
Businesses can identify sources of their carbon emissions across all scopes, and understand which are within their control or influence.	Explore options for the creation of a self-assessment tool to support businesses in identifying their sources of scope 1, 2 and 3 emissions.	Non-business	Starting Out	
	Provide businesses with simple, practical guidance on scope 1, 2 and 3 carbon emissions (or signpost to existing tool if available), reduction opportunities, and associated benefits, supported by real-life examples for different business types.	Non-business (Local Authority and/or larger businesses)	On the Journey	
	Work with educational institutions and industry experts to understand the free and paid training options for businesses, providing a simple online directory so they can find a course that suits them.	Non-business (Local Authority, Chamber / Member Organisations)	On the Journey	
Businesses know how to unlock funding and support for carbon emission reduction that is relevant to them, reducing upfront costs.	Host interactive webinars with funding bodies and grant providers to give businesses direct access to experts and clear guidance on the application process.	Non-business	Starting out	
	Maintain an up-to-date directory of funding and support opportunities, including eligibility criteria (e.g. sector, business size), application deadlines and help available to apply.	Non-business	On the Journey	
	Create guidance/provide support for completing funding applications. This may include examples of successful applications, identifying peer-to-peer support, and providing one-to-one application support.	Non-business	On the Journey	

Panel Systems

Panel Systems Ltd is an SME based in Sheffield, operating two manufacturing sites with 60 staff. For over 50 years, the company has built a reputation for creating innovative, bespoke panels for a diverse range of markets including leisure, playground equipment, caravans, truck bodies, the window industry, and construction.

Decarbonisation actions taken

- A third-party energy audit was conducted at the Parkwood Springs factory, arranged through the UKSPF Low Carbon Project. The audit provided a comprehensive overview of energy use across the business and identified a number of potential energy-saving improvements.
- The company selected the replacement of one of their existing air compressors with a new high-efficiency variable speed compressor.

Direct benefits

- **58,000 kWh** reduction in electricity consumption at the Parkwood Springs site during the first 12 months.
- **11.22 tonnes CO₂e** reduction in the first year
- **30%** reduction in electrical energy bills - equivalent to **£16,200** saved compared with the previous year

Indirect benefits

- Integrated compressor monitoring enabled identification of excessive air consumption by a key piece of equipment, which was then corrected - resulting in substantial additional energy savings.
- Significantly lower noise levels on the factory floor from the new compressor.
- Reduced maintenance costs due to modernised equipment.

Barriers and lessons learnt

- Importance of accessing half-hourly energy data from suppliers to understand baseline performance.
- Necessity of reviewing data across multiple time frames – yearly, weekly, daily – to spot different consumption patterns.
- Highlighted that suppliers may not always prioritise efficiency – businesses must critically assess product specifications.
- Reinforced that equipment should not be over-specified without clear need; or if the business has downsized, or equipment suitability should be removed.

Key factors that made the decarbonisation journey possible

- Access to high-quality third-party auditing through the UKSPF Low Carbon Project.
- Internal willingness to challenge existing processes and invest in long-term operational improvements.
- Strong supplier engagement and technical assessments to select appropriate equipment.

Barkers Furniture - Energy Audit and Decarbonisation Actions

Barkers Furniture is a long-established, family-run furniture retailer based in Sheffield, with a history dating back to 1915. As part of its commitment to long-term sustainability, Barkers Furniture has begun taking practical steps to reduce energy use and carbon emissions from its premises, supported by the UK Shared Prosperity Fund (UKSPF) Low Carbon Project. Barkers undertook an energy audit to identify cost-effective and practical measures to reduce resource use and associated operating costs.

Recommended Investment Opportunities

A range of investment opportunities were identified that could help reduce resource impacts while generating potential cost savings for the business. At the time of the audit, the Low Carbon Project was available to support local businesses by contributing towards the costs of implementing these recommended measures.

Recommendation & Description	Potential Annual Savings		Estimated Annual Savings
	TCO ₂	kWh	
<p>Install Roof Insulation Above the Suspended Ceiling - YBS Airtec Single-Sided Reflective Insulation</p> <p>At current, there is no insulation in the void above the suspended ceiling. This initiative considers the installation of a 4mm-thick layer of YBS Airtec Single-Sided Reflective Insulation, as detailed in the Pro Insulation UK quote provided to PEP. This insulation has a significantly lower U value than the mineral wool insulation. Despite this, the payback time is significantly lower as it provides a more cost-effective solution. Estimated energy savings, costs, payback periods and implementation timescales can be found in the tables above.</p> <p>ROI = 5.92%</p>	0.88	4,822	£224.84
<p>Install Photovoltaic Solar Panels on the Roof</p> <p>Currently there is no PV installation located on site. It is proposed that a 28.28 kWp photovoltaic solar array be installed on the roof. A structural survey would need to be completed beforehand to determine whether the structure could handle the additional weight. The estimated cost is based on the quote provided to PEP. The figures used are based on the BEN Energy Solar PV quote provided to PEP. It should be noted that there is also scope to reduce the size of the solar array in order to use a higher percentage of the electricity generated by the solar array on site. However, if an air source heat pump is installed then the larger solar array would be more beneficial.</p> <p>ROI = 27.56%</p>	2.47	12,793	£6,583.98

Barkers Furniture

Decarbonisation actions taken

- Installation of solar photovoltaic panels at the Fitzwilliam Street showroom.
- Installation of ceiling insulation to improve temperature regulation within the large retail premises.

Direct benefits

- Improved thermal comfort within the showroom as a result of ceiling insulation.
- Anticipated reduction in electricity consumption through on-site renewable energy generation.

Indirect benefits

- Increased confidence in the business's ability to manage energy use more efficiently.
- Enhanced business resilience through reduced exposure to energy price volatility.
- Positive visibility as a local business acting on sustainability.

Drivers to decarbonise

- Recognition of high energy use associated with heating and temperature regulation in a large retail premises.
- Availability of external support through the UKSPF Low Carbon Project.
- Motivation to improve comfort for customers and staff within the showroom.

Key factors that made the decarbonisation journey possible

- Barkers Furniture's commitment to sustainability.
- Access to grant funding (£19,000) through the UKSPF Low Carbon Project.

OBJECTIVE B: Businesses measure their carbon emissions and have a plan to reduce them.



OUTCOMES

1. Businesses measure emissions directly within their control (e.g. from energy, transport use) and outside of their direct control, but within their influence (e.g. supply chain, pensions) to enable efficiency improvements and cost savings.
2. Businesses have a plan (simple or detailed) which provides tangible steps and outlines timeframes to reduce their carbon emissions.

Why do businesses need to measure their carbon emissions and have a plan to reduce them?

Businesses need to identify where their greatest impacts occur, whether in operations or energy use, to enable targeted and effective actions. As the UK progresses towards its net zero goals, compliance and regulatory requirements are expected to increase, with governments and regulators mandating carbon reporting and reduction plans.

Having a carbon reduction plan is also strategically important. It can help businesses secure contracts and improve access to financing, as lenders increasingly favour organisations with credible sustainability strategies. Furthermore, demonstrating transparency on climate action builds investor confidence and strengthens stakeholder trust.








What does the future look like?

Businesses will have a deeper understanding of the energy they use, by improving energy metering. This will enable them to identify areas where efficiencies can be made, reducing operational costs. They will go beyond this to measure all types of carbon emissions related to their business, setting targets and a plan for reduction. They will measure their emissions annually, reporting internally on progress towards their targets.

OBJECTIVE B: Businesses measure their carbon emissions and have a plan to reduce them.

Actions for businesses






 Social
  Health
  Economic
  Biodiversity
  Resilience

Outcome	Actions (Business)	Owner	Mapping the Action	Co-benefits
Businesses measure emissions directly within their control (e.g. from energy, transport use) and outside of their direct control, but within their influence (e.g. supply chain, pensions) to enable efficiency improvements and cost savings.	Improve energy metering, to enable tracking of energy consumption. This may include installation of smart meters, and sub-metering to help businesses understand where energy is being used (e.g. hot water generation, cooking, space heating)	Business	Starting Out (All sizes / Mostly SMEs)	
	Use guidance and support available from, for example, the Council, Chamber of Commerce and others to decide and implement the best approach to measuring carbon emissions, creating an emission baseline.	Business	On the Journey (All sizes / Mostly SMEs)	
	Continue to monitor and internally report emissions, tracking changes and progress toward goals.	Business	Leading the Way	
Businesses have a plan (simple or detailed) which provides tangible steps and outlines timeframes to reduce their carbon emissions.	Conduct an energy audit, to understand where energy is being used and identify actions to improve efficiency.	Business	Starting Out (Mostly SMEs)	
	Set short- and long-term carbon emission reduction goals (with timelines), aligned with business objectives and Sheffield's city-wide targets and plans.	Business	On the Journey	
	Identify measures required to meet short- and long-term carbon emission reduction goals, developing a timeline of interventions and possible costs/savings.	Business	On the Journey	
	Assign responsibilities for implementing different activities and embed identified measures into other business plans such as annual budgets and long-term maintenance plans.	Business	Leading the Way	

OBJECTIVE B: Businesses measure their carbon emissions and have a plan to reduce them.

Actions for non-businesses

 Social  Health  Economic  Biodiversity  Resilience

Outcome	Actions (Non-business)	Owner	Mapping the Action	Co-benefits
<p>Businesses measure emissions directly within their control (e.g. from energy, transport use) and outside of their direct control, but within their influence (e.g. supply chain, pensions) to enable efficiency improvements and cost savings.</p>	<p>Provide businesses with clear guidance on how to measure carbon emissions, including sector-specific guidance where applicable. Guidance may include sign-posting to self-assessment tools, service providers who can carry out carbon emissions assessments and funding/support available.</p>	<p>Non-business (SCC and partners, Chamber, Universities, Consultants)</p>	<p>Starting Out (Mostly SMEs)</p>	
	<p>Provide a template for standardised reporting of business emissions that enable them to track progress against reduction targets.</p>	<p>Non-business (SCC and partners)</p>	<p>On the Journey (All sizes / Mostly SMEs)</p>	
<p>Businesses have a plan (simple or detailed) which provides tangible steps and outlines timeframes to reduce their carbon emissions.</p>	<p>Provide supporting resources for businesses such as examples of carbon reduction plans, downloadable templates and "quick wins" that businesses can implement while a longer-term plan is being created. Showcase businesses who have implemented quick wins with case studies.</p>	<p>Non-business (Coordination Universities and Trade Bodies)</p>	<p>Starting Out (Mostly SMEs)</p>	
	<p>Set up a peer-to-peer support group within the Carbon Reduction Business Network to support the development of businesses' plans.</p>	<p>Non-business (Coordination Universities and Trade Bodies)</p>	<p>On the Journey</p>	
	<p>Host interactive webinars with consultancies and businesses that have successfully developed carbon emission reduction plans, providing opportunities for businesses to learn from their experiences and receive support in creating their own plans.</p>	<p>Non-business (Universities, Chamber, Support Groups (SSBN))</p>	<p>Leading the Way</p>	

Four Tree Design



Four Tree Design is a landscape architecture and environmental design consultancy. The business provides landscape design, planning, technical delivery and project support services, working with consultancies, developers and individual clients.

Decarbonisation actions taken

- Walk, cycle or use other active travel for meetings and site visits within 10 miles.
- Reduce home-office heating by lowering the thermostat by 1°C.
- Choose ethical, local and community-interest suppliers, prioritising those based in the Sheffield region to reduce travel distances and support the local economy.
- Use local subcontractors to reduce travel distances (e.g. hiring Penrith-based surveyors for Lake District work).
- Move the company pension to an ethical, fossil-free fund.
- Use ethical banking through a fossil-free certified provider, avoiding industries like arms or unsustainable forestry.

Indirect benefits

- Improved fitness and some weight loss from using active travel.
- Less stress due to being able to work on the train instead of driving.

Drivers to decarbonise

- Recognition that individual action has limited impact at a systemic level, aside from choices such as voting, how money is saved or invested, and removing banking links to fossil fuels (except for a fixed mortgage). Therefore, a focus is placed on small, practical actions that are within everyday control. These included using local suppliers, low-carbon travel, dietary changes, and low-carbon design choices.

Barriers and lessons learnt

- Cycling is often the best option – it is predictable, avoids delays, and is manageable even with hills if using flatter routes.
- Travelling across Sheffield without going through the city centre is difficult.
- Home heating costs increased by around 20% when working from home, even at 17°C.
- Working from home is positive for wellbeing in some ways but can also feel lonely and isolating, particularly in the early stages of running the business.

Next steps

- Explore moving into a shared office space in Sheffield city centre to support active travel and benefit from more energy-efficient buildings.
- Grow the network of local subcontractors to support UK-wide work while reducing travel distances from Sheffield.

OBJECTIVE C: Carbon emissions from the operation of businesses buildings are significantly reduced.



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OUTCOMES

1. Businesses enhance building performance (where it is within their control) to increase operational efficiency and staff comfort.
2. Businesses remove fossil fuels from their buildings and transition to low-carbon energy sources.
3. Businesses have the knowledge to advocate for carbon reduction measures with landlords to increase efficiency and reduce running costs.

Why do businesses need to reduce carbon emissions from their buildings?

It is essential that businesses reduce carbon emissions from their operations, as analysis suggests this could achieve a reduction of approximately 50 ktCO₂e. In Sheffield, operational emissions from businesses account for a significant proportion of the city's total carbon emissions. According to the Local Area Energy Plan data, most of these emissions arise from energy used for heating, domestic hot water, cooling, and equipment, shown in the charts on the next page. This is driven in part by the fact that a large proportion of Sheffield's non-domestic buildings still rely on natural gas for heating and many were built before the 1940s, resulting in lower energy efficiency and higher heating demand.









What does the future look like?

Businesses have significantly reduced the carbon emissions from the operation of their buildings by reducing their energy demands and removing fossil fuels. They have improved their energy efficiency by improving the performance of their building fabric, upgrading building systems/controls and changing user behaviour. Energy-efficient buildings help cut operational costs and improve resilience against rising energy prices. Additionally, reducing emissions by removing the fossil fuel combustion often enhances indoor air quality and thermal comfort, supporting employee wellbeing and productivity.

OBJECTIVE C: Carbon emissions from the operation of businesses buildings are significantly reduced.

Actions for businesses

 Social
  Health
  Economic
  Biodiversity
  Resilience

Outcome	Actions (Business)	Owner	Mapping the Action	Co-benefits
Businesses enhance building performance (where it is within their control) to increase operational efficiency and staff comfort.	Guidance is provided for building users on how they can change their behaviour to reduce energy consumption, and this behaviour is incentivised.	Business	Starting Out	
	Building equipment/systems are upgraded to improve efficiency, for example replacing lighting with LED (this may be done in line with their planned maintenance schedule).	Business	Starting Out	
	Building systems are optimised to improve efficiency and reduce energy demand. This may include introducing or upgrading controls (e.g. heating timer, lighting sensors) and implementing enhanced maintenance regimes.	Business	On the Journey	
	Proposed building improvements outlined in an energy audit and decarbonisation plan, are reviewed and a long-term implementation plan created (and executed) for the building. This may include things like glazing replacements, increasing insulation and improving air tightness.	Business	On the Journey	
	Resources such as funding application guidance are used to support implementation of building performance enhancements.	Business	Leading the Way	
Businesses remove fossil fuels from their buildings and transition to low-carbon energy sources.	Resources such as funding application guidance are used to support removing fossil fuels for the business.	Business	On the Journey	
	Proposed interventions outlined in a carbon reduction plan are reviewed and a long-term implementation plan created (and executed) for the building. This may include things like installing electric cooking equipment, moving to a low carbon heat source and purchasing or producing low-carbon electricity.	Business	On the Journey	
	The feasibility of low-carbon heat options are explored in detail for the building (using the decarbonisation plan as a starting point). This may include options such as the installation of a heat pump or biomass boiler, or connection to a heat network.	Business	On the Journey	

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Outcome	Actions (Business)	Owner	Mapping the Action	Co-benefits
	The feasibility of low-carbon electricity options are explored in detail for the building (using the decarbonisation plan as a starting point). This may include options such as purchasing renewable energy (PPA in line with UKGBC renewable energy procurement guidance), or the installation of on-site renewables such as photovoltaics (PV) (potential locations for this have been identified in the LAEP).	Business	Leading the Way	
Businesses have the knowledge to advocate for carbon reduction measures with landlords to increase efficiency and reduce running costs.	Use the landlord engagement toolkit to start a conversation with the landlord around carbon emission reduction, and possible building improvements that could be implemented.	Business	On the Journey	
	Share lessons learnt and examples of successful landlord-tenant collaborations by engaging in networks or producing a case study for the online hub.	Business	Leading the Way	

OBJECTIVE C: Carbon emissions from the operation of businesses buildings are significantly reduced.

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 Actions for non-businesses

Social Health Economic Biodiversity Resilience

Outcome	Actions (Non-business)	Owner	Mapping the Action	Co-benefits
Businesses enhance building performance (where it is within their control) to increase operational efficiency and staff comfort.	Create (or share existing) guidance on types of building performance improvements, which buildings these are suitable for, and their benefits.	Non-business (SCC)	Starting Out	
Businesses have a plan (simple or detailed) which provides tangible steps and outlines timeframes to reduce their carbon emissions.	Clear guidance on future plans for Sheffield's heat networks are shared with businesses, so they can make an informed decision on low carbon heat options.	Non-business (SCC)	Starting Out	
	Create (or share existing) guidance on low carbon heat and energy options for businesses in Sheffield, which buildings these are suitable for, and their benefits.	Non-business	Starting Out	
Businesses have the knowledge to advocate for carbon reduction measures with landlords to increase efficiency and reduce running costs.	Create a landlord engagement toolkit that identifies possible interventions/actions they can take to reduce carbon emissions from their buildings, signposting to support and incentives available, and outlining the benefits these actions may bring.	Non-business (SCC)	On the Journey	



ALD Print

Established in 1988, the business provides bespoke graphic design and commercial printing services from its digital hub in Sheffield, now expanded to include 3D printing and laser cutting.

Decarbonisation actions taken

- The business installed solar panels three years ago and upgraded to LED lighting four years ago, achieving approximately 30% energy savings.

Direct benefits of decarbonisation interventions

- Staff reported that the new LED lighting provides a better working environment.
- Lower energy bills have helped reduce overall business costs.
- Improvements have strengthened the company's green credentials with customers.

Indirect benefits

- Funding support made the payback period more attractive and reduced financial risk.

Drivers to decarbonise

- Desire to reduce operating costs and improve environmental performance for customers.

Barriers and lessons learnt

- Supplier reliability was poor, and getting quotations took longer than expected.
- Some suppliers were not very professional, which made the process harder for a small business.

Key factors that made decarbonisation journey possible

- Availability of funding support significantly reduced the financial risk and improved the payback period.

Next steps

- Considering installing additional solar panels.
- Exploring replacing gas heating with a heat pump to reduce emissions further.

OBJECTIVE D: Carbon emissions from business travel, commuting and logistics directly within their control are significantly reduced.



OUTCOMES

1. Businesses reduce their carbon emissions related to logistics, by reducing fossil fuel consumption and number of journeys, improving local air quality.
2. Businesses reduce their carbon emissions related to business travel and commuting, encouraging low carbon and active travel and promoting better health among staff.

Why do businesses need to reduce carbon emissions from travel and logistics?

Business travel and logistics can account for a significant share of a company's carbon emissions. According to the Pathways to Decarbonisation report, logistics-related travel such as light and heavy goods vehicles contributes approximately 184 ktCO₂e, representing 29% of emissions from the transport sector. In addition, the movement of people for business purposes such as business trips, meetings, and conferences also plays a major role in carbon emissions. These are within a business's direct control and offer a significant opportunity for carbon emission reduction.

What does the future look like?



















For businesses operating vehicle fleets that are used for deliveries, consolidating freight is essential for cutting carbon emissions, particularly as retail trends shift towards online shopping and door-to-door deliveries. Where possible, they should also look to low-carbon vehicles such as bike couriers or electric vehicles to further reduce emissions.

To reduce emissions from business travel and commuting, alternatives to private car journeys should be encouraged, such as public transport, active travel or car sharing. Beyond this, businesses should promote the use of electric vehicles (EVs) to replace petrol and diesel cars. This can be supported by rolling out EV charging infrastructure and, where possible, making chargers publicly accessible. Providing inclusive solutions for employees who cannot install chargers at home and helping to offset costs will create a fairer environment for all.

OBJECTIVE D: Carbon emissions from business travel, commuting and logistics directly within their control are significantly reduced.






Actions for businesses

 Social  Health  Economic  Biodiversity  Resilience

Outcome	Actions (Business)	Owner	Mapping the Action	Co-benefits
Businesses reduce their carbon emissions related to logistics, by reducing fossil fuel consumption and number of journeys, improving local air quality.	Driving behaviours that reduce fuel consumption are incentivised, which may also require reducing operational pressures that currently encourage drivers to rush rather than drive efficiently.	Business	Starting Out	  
	The feasibility of low-carbon transport options are explored in detail, such as using bike couriers for local journeys or purchasing/leasing electric vehicles.	Business	Starting Out	   
	Logistics plans are reviewed and journeys reduced where possible through freight consolidation, using smarter routing and shared hubs.	Business	On the Journey	  
Businesses reduce their carbon emissions related to business travel and commuting, encouraging low carbon and active travel and promoting better health among staff.	Sustainable travel options for staff are encouraged through incentives such as the BetterPoints app, initiatives like the Cycle to Work scheme, car clubs and the provision of cycling facilities (e.g. changing rooms, lockers, secure storage). Where appropriate, flexible start times could also be considered to enable the use of public transport for commuting.	Business	Starting Out	  
	Company travel policy is reviewed and updated to favour low-carbon modes of transport, encourage active travel and reduce non-essential journeys.	Business	Starting Out	  
	Targets for reducing business travel are set, and progress reported internally.	Business	On the Journey	
	The feasibility of installing electric vehicle charging on site is explored, to enable staff to confidently commute using an electric vehicle (including e-bikes).	Business	On the Journey	

Actions for non-businesses

 Social  Health  Economic  Biodiversity  Resilience

Outcome	Actions (Non-business)	Owner	Mapping the Action	Co-benefits
Businesses reduce their carbon emissions related to logistics, by reducing fossil fuel consumption and number of journeys, improving local air quality.	The electric vehicle charging network is expanded, to enable faster adoption by businesses.	Non-business (SCC, SYMCA)	On the Journey	 
Businesses reduce their carbon emissions related to business travel and commuting, encouraging low carbon and active travel and promoting better health among staff.	Walking and cycle infrastructure within the city continue to be invested in to create safe, connected routes.	Non-business	Leading the Way	  

OBJECTIVE E: Carbon emissions from directly controlled industrial or manufacturing processes are significantly reduced.



OUTCOMES

1. Industrial businesses work with others to assess feasibility and develop a plan to move industrial processes to low-carbon energy sources (e.g. hydrogen, battery storage, electrification), increasing local employment and market opportunities.
2. Businesses innovate with each other and educational institutions to identify new ways for Sheffield to reduce carbon emissions in industrial and manufacturing processes, improving the reputation and investment opportunities for businesses in Sheffield.

Why do carbon emissions from directly controlled industrial or manufacturing processes need to be reduced?

Industrial and manufacturing processes account for an estimated 57% of emissions within the commercial and industrial sector. While much of the commercial sector can transition to electrification, this is far more challenging for industry. Some industrial processes require extremely high temperatures, which are currently achieved using fossil fuels. Several industrial subsectors in Sheffield still depend heavily on gas, and these high-temperature processes remain among the largest contributors to sector-wide emissions.


Although research is progressing on alternatives such as hydrogen, businesses cannot afford to wait. Immediate action is possible through operational improvements such as streamlining processes, adopting lean manufacturing principles, and implementing automation and smart controls. These measures minimise waste, improve efficiency, and reduce energy use, which in turn lowers carbon emissions and cuts energy costs when applied effectively.





What does the future look like?

Industrial and manufacturing businesses in Sheffield have successfully implemented advanced technologies where possible and best practices to minimise carbon emissions from processes under their direct control. These organisations routinely monitor, report, and optimise their operations to ensure emissions are kept as low as possible. As a result, carbon reduction is embedded in day-to-day operations, with measurable progress towards net zero targets. This leadership not only supports city-wide climate ambitions but also enhances business competitiveness, resilience, and reputation in a low-carbon economy.

OBJECTIVE E: Carbon emissions from directly controlled industrial or manufacturing processes are significantly reduced.

Actions for businesses






 Social  Health  Economic  Biodiversity  Resilience




Outcome	Actions (Business)	Owner	Mapping the Action	Co-benefits
<p>Industrial businesses work with others to assess feasibility and develop a plan to move industrial processes to low-carbon energy sources (e.g. hydrogen, battery storage, electrification), increasing local employment and market opportunities.</p>	<p>Explore in detail the feasibility of different low-carbon options for industry in Sheffield, with practical and quantified next steps defined. This should include investigation into the role of fuels such as hydrogen and biomethane.</p>	<p>Business and non-business</p>	<p>On the Journey</p>	
	<p>Maximise efficiency of industrial processes to reduce emissions in the short term, for example by improving furnace insulation or upgrading burners (where a transition to low-carbon energy is not yet possible).</p>	<p>Business</p>	<p>On the Journey</p>	
	<p>Share lessons learnt and examples of successful investment and collaborations by engaging in networks to offer peer-to-peer support or producing a case study for the online hub. This will enable others to create a better business case for investment.</p>	<p>Business</p>	<p>Leading the Way</p>	
<p>Businesses innovate with each other and educational institutions to identify new ways for Sheffield to reduce carbon emissions in industrial and manufacturing processes, improving the reputation and investment opportunities for businesses in Sheffield.</p>	<p>Share challenges and ideas in collaborative forums such as innovation hubs and business networks.</p>	<p>Business</p>	<p>Leading the Way</p>	

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OBJECTIVE E: Carbon emissions from directly controlled industrial or manufacturing processes are significantly reduced.

Actions for non-businesses

 Social
  Health
  Economic
  Biodiversity
  Resilience

Outcome	Actions (non-business)	Owner	Mapping the Action	Co-benefits
Industrial businesses work with others to assess feasibility and develop a plan to move industrial processes to low-carbon energy sources (e.g. hydrogen, battery storage, electrification), increasing local employment and market opportunities.	Explore in detail the feasibility of different low-carbon options for industry in Sheffield, with practical and quantified next steps defined. This should include investigation into the role of fuels such as hydrogen and biomethane.	Business and non-business	On the Journey	
Businesses innovate with each other and educational institutions to identify new ways for Sheffield to reduce carbon emissions in industrial and manufacturing processes, improving the reputation and investment opportunities for businesses in Sheffield.	Raise awareness of existing innovation hubs and research centres that are developing low-carbon solutions for industry, such as the Sheffield Innovation Spine, Advanced Manufacturing Research Centre, Translational Energy Research Centre. Ensure SMEs and start-ups have access to new innovations, infrastructure and technology.	Non-business (SCC, SYMCA)	Starting Out	
	Create the collaboration vehicle for businesses, educational institutions and utility providers to connect and innovate on the topic of decarbonisation of industrial/manufacturing processes (e.g. Consult Uni and Sustainability Centres).	Non-business	Leading the Way	

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Wolf Safety is a leading UK manufacturer of hazardous-area lighting for portable, temporary and fixed applications. Wolf produce most of their products in Sheffield, where almost 50 staff support operations. With annual sales of around £9 million and a heritage dating back to 1916, Wolf began formally focusing on decarbonisation in 2022.

Decarbonisation actions taken

- Full LED lighting upgrade: Replaced around 160 fluorescent tubes across the site at low cost.
- Fleet decarbonisation: Transitioned the entire fleet to electric vehicles or plug-in hybrids over three years.
- Destratification fans: Installed five fans in the manufacturing space to reduce gas consumption and improve heat distribution.
- Solar PV installation: Installed a 44 kWp solar array (101 panels) on the warehouse roof.
- Compressed air system improvements: Conducted a leak survey, carried out repairs, lowered compressor pressure, and reduced operating hours.

Direct benefits

- The LED lighting upgrade has a short payback due to low installation cost and clear efficiency gains.
- EVs cost more upfront but have shown lower maintenance costs, reduced emissions, and tax advantages.
- Solar panels generated 33,186 kWh in FY 2023-24, avoiding 6.9 tCO₂e, with a 4-5-year payback despite grid-connection challenges.
- Destratification fans are expected to cut gas use by up to 30%.
- Fixing air-compressor leaks and reducing compressor hours lowered electricity demand, though savings are hard to quantify.

Barriers and lessons learned in decarbonisation

- As an SME, time and capacity were major constraints. Progress was made only by deliberately prioritising decarbonisation.
- The subject initially felt daunting, but starting with simple, high-impact actions made it manageable.
- Early wins are easy, but sustaining reductions becomes harder; Wolf now holds regular carbon-focused meetings within its ISO14001 environmental management system.
- The company wishes it had begun sooner, as the business case for action is strong.

Key factors that made the decarbonisation journey possible

- Strong internal leadership: The Finance Director led the programme and took on the additional role of Chief Sustainability Officer.
- Long-term investment mindset: As a family-owned SME, Wolf was able to make decisions based on long-term value rather than short payback alone.
- Availability of capital: Most projects were funded from reserves, with two supported by Sheffield City Council grants.
- Quality advice: A mix of paid and unpaid advisors provided valuable support and helped build confidence.

OBJECTIVE F: Carbon emissions from businesses' supply chains and other indirect sources are measured and reduced (including the local supply chain and other indirect sources such as digital and data services)



OUTCOMES

1. Businesses have embedded carbon reduction statements within their procurement processes demonstrating the ability to meet customer demands for sustainable products.
2. Businesses have the knowledge to influence their supply chain where appropriate to adopt carbon reduction practices, supporting their brand and reputation to partners and customers.

Why do carbon emissions from the businesses supply chain and other indirect sources need to be measured and reduced?

Carbon emissions from the supply chain and other indirect sources (scope 3) typically represent the largest share of a company's total emissions, often far exceeding operational emissions (scope 1 and 2). Measuring these emissions is essential for businesses to gain a full understanding of their carbon footprint. With supply chains often being remote, reducing scope 3 emissions may not lower emissions within Sheffield but these efforts contribute to reducing global emissions.

Stakeholders, including investors, customers, and regulators are increasingly demanding transparency on indirect emissions. Failure to address these can result in:

- Loss of competitive advantage
- Reduced investor confidence
- Non-compliance with emerging climate disclosure regulations

Greater visibility of supply chain emissions is critical to decarbonising Sheffield's economy. It enables informed decisions on procurement, product design, research and development, and financial strategies.





What does the future look like?

Industrial and manufacturing businesses in Sheffield have successfully implemented advanced technologies and best practices to minimise carbon emissions from processes under their direct control. They monitor, report, and optimise their operations to ensure emissions are kept as low as possible meaning carbon reduction is business as usual with measurable progress towards net zero targets. This leadership supports city-wide climate ambitions and enhances business competitiveness, resilience, and reputation in a low-carbon economy.

OBJECTIVE F: Carbon emissions from businesses supply chain and other indirect sources are measured and reduced (including the local supply chain and other indirect sources such as digital and data services)

Actions for businesses



 Social  Health  Economic  Biodiversity  Resilience

Outcome	Actions (Business)	Owner	Mapping the Action	Co-benefits
Businesses have embedded carbon reduction statements within their procurement processes demonstrating the ability to meet customer demands for sustainable products.	Provide training to staff on sustainable purchasing, including how to evaluate a supplier’s sustainability and carry out supplier audits.	Business	Starting Out	
	Update procurement policies & processes to include carbon reduction criteria (e.g. integrate into supplier scorecards, carry out supplier audits).	Business	On the Journey	
Businesses have the knowledge to influence their supply chain where appropriate to adopt carbon reduction practices, supporting their brand and reputation to partners and customers.	Develop supplier engagement programmes to discuss carbon emission reduction. This may include surveying suppliers on their approach to carbon reduction, sharing best practice guides, and engaging suppliers in discussions about business carbon-reduction goals.	Business	Leading the Way	
	Share lessons learnt and examples of successful collaborations across the supply chain by engaging in networks or producing a case study for the online hub.	Business	Leading the Way	

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Actions for non-businesses

 Social  Health  Economic  Biodiversity  Resilience

Outcome	Actions (Non-business)	Owner	Mapping the Action	Co-benefits
Businesses have embedded carbon reduction statements within their procurement processes demonstrating the ability to meet customer demands for sustainable products.	Create (or share existing) templates for sustainable procurement policies, and contracts for businesses to adopt.	Non-business (Trade Associations)	Starting Out	
Businesses have the knowledge to influence their supply chain where appropriate to adopt carbon reduction practices, supporting their brand and reputation to partners and customers.	Create a supplier engagement toolkit that identifies possible interventions/actions they can take to reduce carbon emissions, signposting to support and incentives available, and outlining the benefits these actions may bring.	Non-business	Leading the Way	

OBJECTIVE G: Businesses influence their customers and the wider public to adopt products and services that reduce carbon emissions.



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OUTCOMES

1. Businesses have the knowledge to influence their customers and wider public where appropriate to adopt carbon reduction practices, improving their credibility with customers.
2. Businesses use their platform to educate customers and the wider public on low-carbon choices, and incentivise these actions, supporting their brand and reputation.
3. Businesses build collective emissions reduction and potential new business opportunities.

Why should businesses influence their customers and the wider public to adopt products and services that reduce carbon emissions?

Businesses play a powerful role in shaping consumer behaviour. By encouraging customers and the wider public to choose lower-carbon products and services, businesses can extend their impact far beyond their own operations. This helps drive down emissions across entire value chains, accelerates progress toward regional and national net zero goals, and supports the shift to a low-carbon economy.






Influencing customer choices also strengthens business competitiveness. Customers are increasingly seeking sustainable options, and businesses that lead in this space enhance their credibility, improve brand reputation, and create opportunities for innovation and new markets. By educating and inspiring customers to make low-carbon choices, businesses can build loyalty, future-proof their offerings, and contribute to long-term emissions reduction at scale.

What does this mean for the future?

Businesses across Sheffield confidently use their influence to help customers and the wider public make lower-carbon choices as part of everyday life. Products and services that reduce carbon become the norm rather than the exception, supported by clear information, simple guidance, and positive incentives that make sustainable decisions easy and accessible for all. Businesses routinely review and improve their offerings, embedding circular economy principles and low-carbon design across products and services.

Through leadership, education, and innovation, Sheffield's business community becomes a catalyst for city-wide climate action and a more resilient, low-carbon economy.

Actions for businesses

Outcome	Actions (Business)	Owner	Mapping the Action	Co-benefits
<p>Businesses have the knowledge to influence their customers and wider public where appropriate to adopt carbon reduction practices, improving their credibility with customers.</p>	<p>Review products or services offered to understand if improvements could be made to offer a lower-carbon choice to customers. This may include incorporating circular economy principles (e.g. designing products for repair and offering take-back/refurbishment schemes), moving to low-carbon materials, or creating zero-waste products.</p>	Business	Leading the Way	
	<p>Evaluate products or services offered to understand the impacts throughout their lifecycle (incorporating findings from Objective G), how they should be used to reduce impacts, and how they may enable customers to lead a lower-carbon lifestyle (e.g. reduced carbon emissions compared to alternatives).</p>	Business	Leading the Way	
<p>Businesses use their platform to educate customers and the wider public on low-carbon choices, and incentivise these actions, supporting their brand and reputation.</p>	<p>Review communications with customers (e.g. branding, website, newsletters, adverts) to see how they could be improved/developed to educate customers and empower them to make lower-carbon choices. This may include introducing things like simple labels or scores on products (similar to energy efficiency ratings) to enable customers to understand impacts at a glance.</p>	Business	Leading the Way	
	<p>Where possible, make lower-carbon choices the default (e.g. paperless communications) and introduce incentives for customers who take further action to reduce their impact (e.g. loyalty points or exclusive offers).</p>	Business	Leading the Way	
<p>Businesses build collective emissions reduction and potential new business opportunities.</p>	<p>Following the implementation of decarbonisation actions, consider where there are customer needs that the processes/practices implemented might help meet. Identify possible new business opportunities (or changes to current practices) that will continue to support collective emissions reduction (e.g. you may find that your business emissions are reduced by implementing a carbon education programme across your workplace and decide to provide this type of education to your customers).</p>	Business	Leading the Way	

From Routemap to Action

Supporting the success of the Routemap

In the development of the Routemap, four workshops were held with Sheffield businesses, whose time, insight and expertise were invaluable to shaping this work. The final workshop was used to help define what may come next and what might be needed to make the Routemap a success.

During this final workshop a number of insights were shared that included what businesses could do to ensure success (take action, make a pledge) and what supporting organisations could do to ensure success (have a launch event, create a pledge tracking system). These insights have been collated and will inform the development of effective engagement mechanisms, helping to support implementation and ensure the successful delivery of the Routemap.

The insights from this workshop were used to determine a set of initial 'next steps' by the Council and business network stakeholders. The focus of initial next steps being to determine the best means of communicating to businesses that the Routemap exists and how they can start, continue and support others to take action. The emphasis is that all businesses can do something, and the Routemap is a resource to help them to determine what those actions may be.

Measuring the impact of this activity is just as important, and the Council have agreed a set of measures to do so:

- Carbon tonnage reduction, as measured through the Low Carbon support programme.
- Overall reduction in emissions from the business sector, measured by Local Authority Greenhouse Gas reporting.
- Businesses' engagement in networks, either new or already established.

Existing resources

There are a wide range of valuable resources available to support Sheffield businesses on their decarbonisation journey, from local services to national guidance, funding, and training opportunities. In particular the Low Carbon Project funded by the UK Shared Prosperity Fund has been instrumental to reducing carbon emissions and energy costs for businesses in Sheffield. In 2026, the Local Growth Fund will support this programme.

As part of finalising the Routemap, Sheffield City Council will work with partner organisations that already signpost to these online resources to ensure consistency and avoid duplication.

Green skills / Economy

Sheffield's Employment and Skills Strategic Plan highlights the transition to a net zero economy as a major driver of growing demand for skills in green technologies. It recognises that new job roles are emerging, linked to green investment, whilst workers in carbon-intensive industries will need to adapt or reskill to remain viable. To support this, the education and training provision needs to evolve to meet new skills requirements. To reflect this, the third mission of the Strategic Plan is to develop skills for a sustainable future which will involve: investing in skills for the green economy; embracing opportunities and building resilience; and reskilling the workforce.

The Sheffield Chamber of Commerce and Industry has been identified as the lead organisation to implement the below actions to support this:

- Skills diagnostics & workforce development plans for SMEs.
- Support for employers to navigate training, reskilling and upskilling.
- A green economy training offer for businesses.

Just transition

A Just Transition ensures that the shift to a low-carbon economy is fair, inclusive, and supports the people and communities affected by change. It recognises that different businesses, sectors, and workforces face different challenges, and that decarbonisation must be approached in a way that does not leave anyone behind. Without a fair transition, communities risk facing job losses, widening inequality, reduced access to services, and increased resistance to change, particularly in places where businesses lack the capacity or support to adapt.

Businesses can play a key role in ensuring these negative impacts do not materialise. By investing early in training and upskilling, businesses help employees adapt to new technologies and avoid skills gaps or job losses. Being transparent about upcoming changes and involving staff in decision-making builds trust and engagement, helping avoid frustration or mistrust that often accompanies poorly managed transitions. For organisations at an earlier stage in the decarbonisation journey, sharing knowledge, collaborating with peers, or joining local networks helps spread the burden, ensuring no business is disproportionately affected.

Strengthening responsible procurement and supply chain practices further supports a fair transition. Prioritising local suppliers and supporting smaller contractors helps prevent supply-chain fragility, reducing the risk that disruption harms local jobs, raises costs for consumers, or limits the resilience of local businesses serving the community.

Community engagement is equally important. It ensures a diverse range of voices are heard and work together to address shared needs. By proactively involving residents, customers, and partners, organisations can build trust, strengthen public confidence, and reduce the risk of resistance to change.

This collaborative approach helps prevent transitions from deepening the inequalities that exist and instead ensures that the benefits of healthier places, lower operating costs, new opportunities, and improved resilience are shared widely.

