

INTRODUCTORY GUIDE



The journey to Net Zero for SMEs



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1. INTRODUCTION

Why Net Zero matters

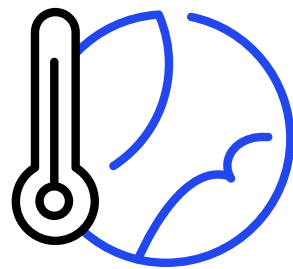
The widespread global adoption of Net Zero targets is an important lever for driving ambitious climate action. Deep cuts to emissions in line with a 1.5°C pathway and the permanent removal of any remaining greenhouse gases will be needed in order to achieve these targets – both of which are critical to addressing climate change.

The Paris Climate Agreement was approved by 197 nations at COP21 in 2015 and agreed to hold the increase in global average temperatures well-below 2°C and pursue efforts to limit the increase to 1.5°C. Presently, global temperatures have risen by 1°C since pre-industrial levels. Holding warming to 1.5°C could mean that 11 million fewer people are exposed to extreme heat, 61 million fewer people are exposed to drought and 10 million fewer people are exposed to rising sea level impacts¹ compared to 2°C warming. Governments and companies setting and achieving Net Zero targets will be key to limiting warming to 1.5°C.

1. INTRODUCTION

Net Zero meaning

There is no commonly agreed definition of what constitutes Net Zero emissions, however, the Science Based Targets initiative (SBTi) has published their definition which is the basis for their Net Zero guidance.



The SBTi definition

The SBTi states that: to reach a state of Net Zero emissions for companies implies two conditions:

1. To achieve a scale of **value-chain emission reductions** consistent with the depth of abatement achieved in pathways that **limit warming to 1.5°C** with no or limited overshoot and;
2. To neutralise the impact of any source of **residual emissions** that remains unfeasible to be eliminated by **permanently removing an equivalent amount of atmospheric carbon dioxide²**.

To limit global warming to 1.5°C:

1. Set a Net Zero target that requires reduction of emissions, aligned with pathways that limit warming to 1.5°C and;

2. Balance any remaining emissions by use of carbon removal.

1. INTRODUCTION

What is a carbon footprint?

This guidance will provide assistance for small and medium sized enterprises (SMEs) in aligning to Net Zero, providing clear information and case studies for reduction initiatives. As SMEs cover multiple sectors, this guide is designed to help on both reduction initiatives and opportunities for SMEs.

Why reduce emissions?

SMEs will need to embrace carbon reduction measures if governments are to deliver on their Net Zero targets. SMEs account for roughly 90% of global businesses and more than half of employment³. They play a crucial role in economic growth, innovation and job creation. If the UK’s Net Zero target by 2050 is to be achieved, it will be crucial that SMEs reduce their carbon emissions.

Greenhouse gases

A key step in beginning a low carbon transition is understanding your carbon footprint, otherwise known as greenhouse gas (GHG) accounting. The primary GHGs include:

- Carbon dioxide (CO₂) which arises from burning fossil fuels.

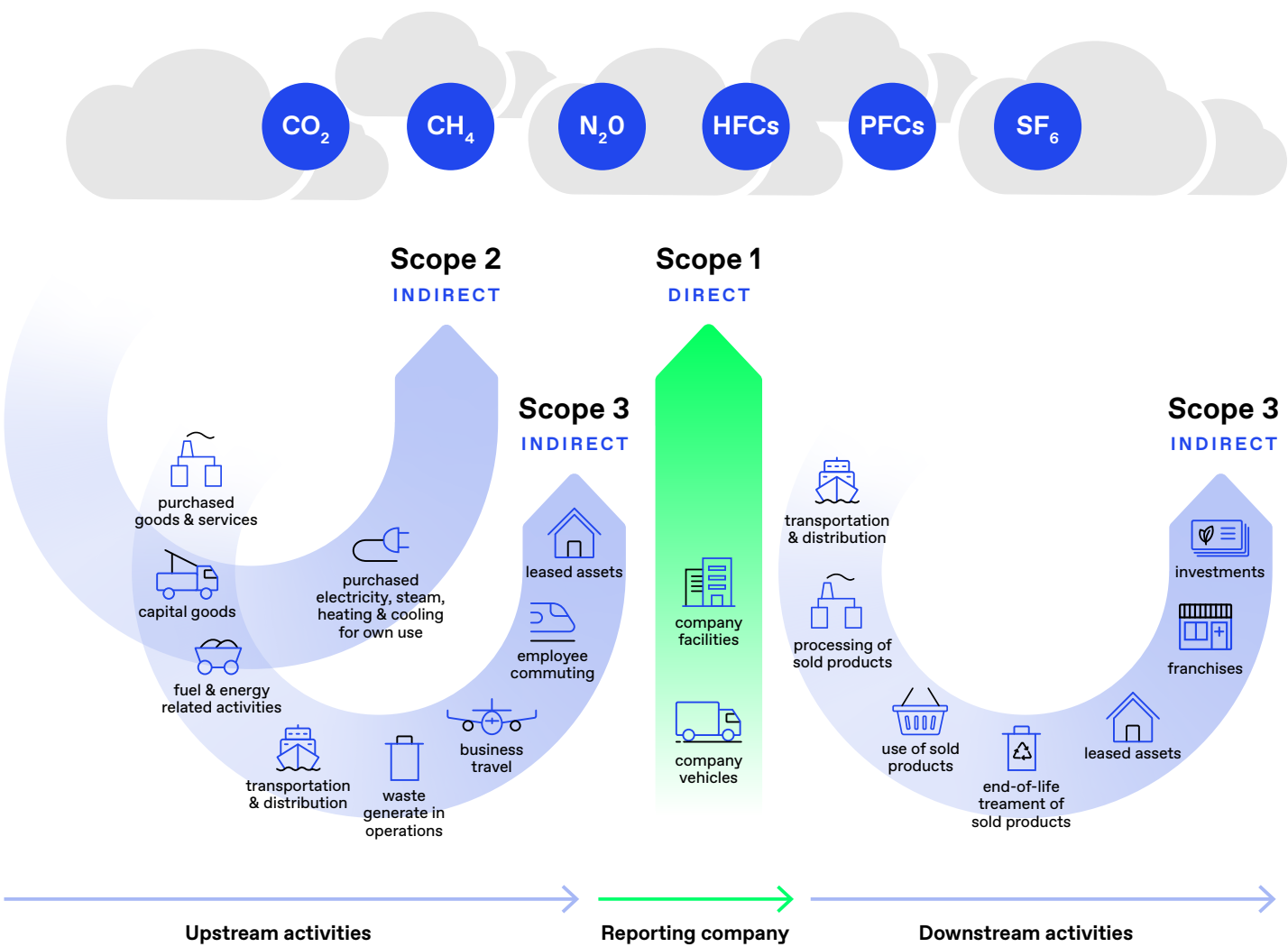
- Methane (CH₄) which arises from cattle and other ruminants, decomposing organic waste, manure, leaking natural gas, land transformation and rice.
- Nitrous oxide (N₂O) which arises from agriculture through fertilizers and crops.
- Fluorinated gases (HFCs, PFCs, SF₆) which arise primarily from refrigerant leakages and other industrial processes.
- Nitrogen trifluoride (NF₃) which is primarily produced in manufacturing.

Carbon Footprinting

The Greenhouse Gas Protocol classifies emissions sources into three “Scopes”, with Scope 1 and 2 emissions being related to own operations and Scope 3 emissions relating to the wider value chain⁴.

- Scope 1 emissions account for direct emissions that result from activities within an organisation’s control (for example, fuel combustion, company vehicles, process and fugitive emissions).
- Scope 2 emissions are indirect emissions associated with procured energy (for example, electricity, heat, or steam purchased and used).
- Scope 3 emissions are all other indirect emissions across an organisation’s value chain. There are 15 categories of emissions defined by the GHG Protocol (including, for example, purchased goods and services, business travel and end-of-life treatment of sold products).

Figure 1: The Greenhouse Gas Protocol: Corporate Value Chain (Scope 3) Standard



There are two types of carbon footprints: an organisational footprint (Scope 1 and 2) which covers a company’s own operations and a value chain footprint which covers all direct and indirect emissions (Scope 1, 2 and 3).

2. THE JOURNEY TO NET ZERO

What are the drivers to achieving Net Zero?

There are various challenges facing SMEs across specific sectors and geographies, but there are also some common obstacles. SMEs may not have the in-house sustainability expertise, time or resources to tackle their carbon footprint, and may find it difficult to measure and reduce value-chain emission reductions in line with limiting warming to 1.5°C. Therefore, the focus for SMEs should be to understand their emissions, set interim science-based targets and then focus on implementing the most straight forward carbon reduction opportunities before tackling longer-term, more complex initiatives.

The easiest way to get ahead of the curve and start your journey to Net Zero is by committing and setting a mid-term science-based target covering the next five to 15 years.

Having a milestone by 2030 to achieve this aim can help push the business case for implementing efficiency opportunities, get your stakeholders on board and generate new ideas for improving resource use.

Key drivers for starting your journey to Net Zero include:

Cutting costs and increasing profits

Costs can be reduced through measures such as introducing energy management practices, installing smart meters, energy-efficient lighting and heating systems, re-designing products that require fewer inputs without sacrificing utility, reducing volume of packaging and switching to local suppliers to decrease shipping distances, switching to recycled materials, and reusing waste products for other purposes or by selling it onto other companies.

Larger companies expecting their suppliers to take action

SMEs need to engage in this process to avoid missing out on future contracts and growth opportunities, as the wider supply chain increasingly demand low carbon products and services, being able to respond to this demand will give your company a competitive advantage.

Customer expectation

Customers expect companies to make ethical decisions on their behalf, and “going green” can attract new customers, business partners and talent.

Opening new markets

Offering innovative “green” products, services or business models may open low carbon business opportunities.

Enhancing reputation

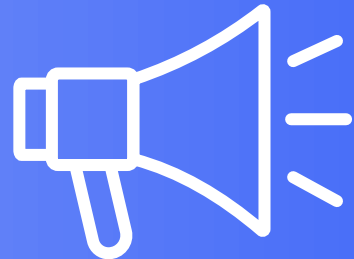
Cutting carbon emissions and helping to combat climate change demonstrates a degree of corporate social responsibility to



What can you do now?

The first step in the journey to Net Zero begins by **making a commitment** to reduce emissions. This can be done through organisations such as the Science Based Targets initiative (SBTi) or the SME Climate Hub. However, a commitment can also be made independently. Once commitments have been publicly communicated the next step is to **calculate your baseline emissions**, beginning with calculating emissions arising from your own operations (Scope 1 and 2) and then onto the wider value chain (Scope 3).

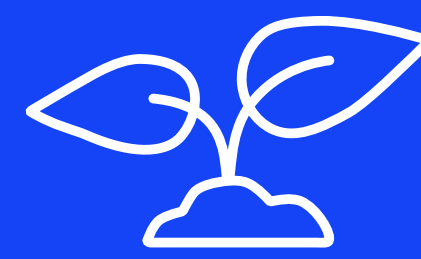
A simple way to reduce emissions is by procuring renewable electricity and switching to a green tariff. Once your business has a good understanding of the emission sources, the next step is to make a plan to reduce further.



**Make a
commitment**



**Calculate your
baseline emissions**



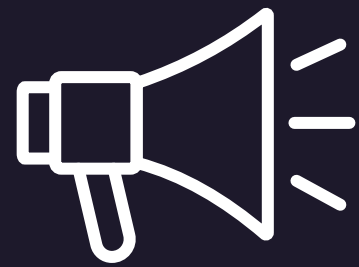
**Switch to a
green tariff**



**Make a plan
to reduce**

2. THE JOURNEY TO NET ZERO

What can you do now?



1. Make a commitment

SMEs have many options when deciding to make a commitment:

- The SBTi has created a streamlined process for SMEs who want to set a science-based target for their Scope 1 and 2 emissions by 2030 and also commit to reducing Scope 3.⁵

The SME Climate Hub asks SMEs to commit to halving emissions before 2030, achieving Net Zero by 2050 and disclosing emissions annually.⁶

Once committed, the SME Climate Hub has tools available to support SMEs to measure and reduce emissions, and once committed the SME is recognised by the United Nations Race to Zero campaign.⁷

Race to Zero is a UNFCCC-led campaign that aims to rally leadership from business, investors and local governments to encourage more ambitious Net Zero targets. Unlike many other campaigns, Race to Zero organisers stated that to join you must meet the following minimum criteria: (1) Pledge to reach Net Zero as soon as possible. (2) Plan by setting an interim science-based target. (3) Proceed by taking immediate action toward achieving Net Zero. (4) Publish your results and commit to report progress against interim and long-term targets.

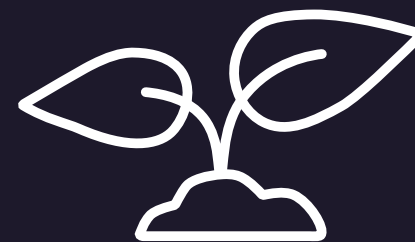


2. Calculate your baseline emissions

There are free tools available to help your business understand the emissions from its own operations:

- The Carbon Trust's SME Carbon Footprint Calculator⁸
- The SME Climate Hub's Cool Climate Calculator⁹

Measuring Scope 3 emissions can be more difficult for SMEs. The GHG Protocol has a free Scope 3 Evaluator tool which helps identify areas in which to pursue a more accurate inventory and focus reduction efforts.¹⁰



3. Switch to a green tariff

A simple carbon reduction opportunity with a high impact is to move to a green electricity tariff that is backed with Renewable Energy Guarantee of Origin (REGO) certificates. The associated emissions can be reported as zero¹¹ and help contribute to achieving a science-based target. However, energy efficiency also has a role to play to limit the increase in future electricity demand and drive cost efficiency.



4. Make a plan to reduce

Once you have a good understanding of your baseline emissions, creating a reduction plan or roadmap to a target year is key to achieving reductions. A reduction plan should be built around a robust business case so that it can be adopted easily throughout the organisation. The Carbon Trust have free resources available for SMEs:

- SME Energy Benchmark Tool
- Lighting Business Case Tool
- Fleet Upgrade Tool
- Guides and webinars covering a range of energy efficiency topics

The SME Climate Hub's website has interactive tools and guides to help reduce own and value chain emissions.

3. CARBON REDUCTION OPPORTUNITIES

SMEs

By taking a positive and proactive approach to carbon reduction and implementing energy efficiency measures, SMEs can control and reduce their energy use. Saving energy improves environmental performance, and can help achieve the environmental standards ISO 14001 and ISO 50001, demonstrating a degree of corporate social responsibility to stakeholders.

Figure 2 shows the range of energy use by system typically seen by SMEs. The pattern will vary significantly by business sector. Table 1 shows end uses of energy that dominate in particular sectors. This will help you identify areas with the most energy saving opportunity for your organisation. Some common areas of high energy wastage include lighting, heating and cooling. Cost effective savings are achievable across all sectors.

Businesses can often save around 20% through improvements to key systems, and in some cases much more.

With help from the Carbon Trust, one manufacturer in Scotland saved £170,000/year (equivalent to 2,000 tonnes of emissions per year) on ventilation costs. This was achieved by reducing fan speeds, installing non-return dampers and reducing chiller loading.

Figure 2: Percentage of overall energy use by system for typical SMEs. Source: The Carbon Trust

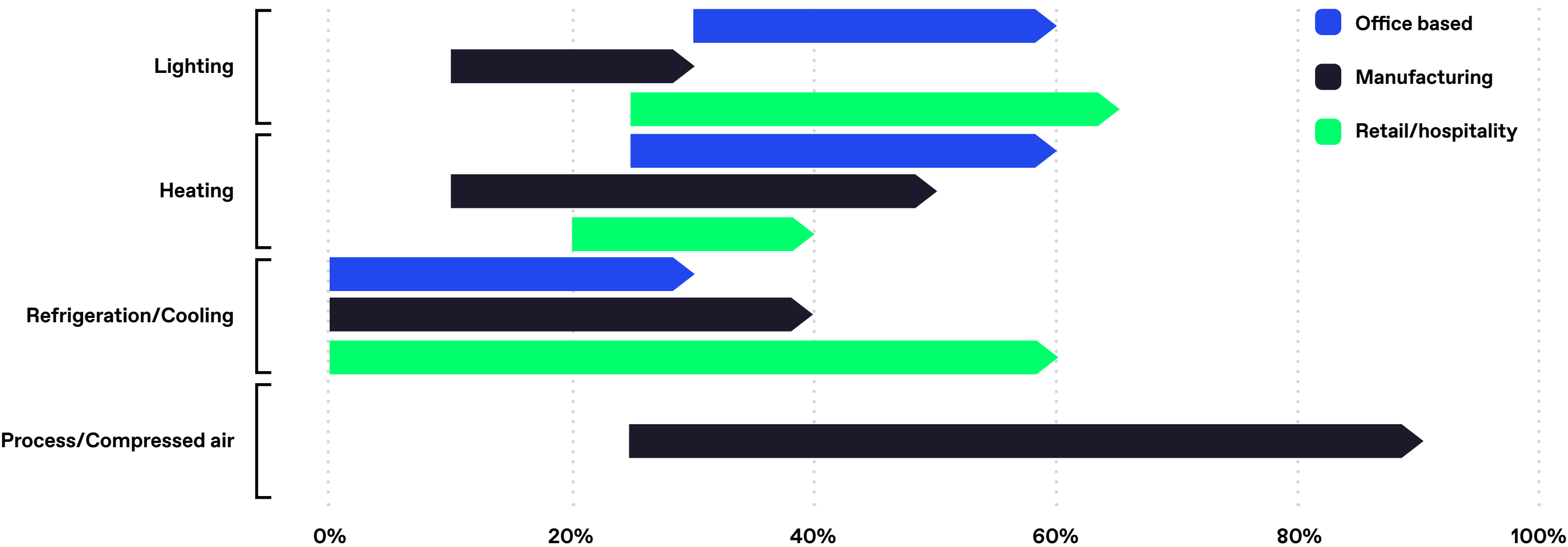


Table 1: Summary of energy saving potential by sector

Business sector	Systems with energy saving potential
Food manufacturing	Lighting, refrigeration, motor-driven processes and compressed air
General manufacturing/engineering	Lighting, industrial systems, motor-driven processes and space heating
Office based	Lighting, heating and IT systems
Retail	Lighting, heating and refrigeration
Hospitality	Lighting, heating and catering equipment.
Construction	Compressed air, mobile plant

3. CARBON REDUCTION OPPORTUNITIES

Lighting

Install low energy lighting

If you haven't done so already, upgrade to low energy LED lighting, now. Upgrading from conventional lighting to LED luminaires could deliver cost savings of up to 80% for your business.

LED luminaires use less energy, last much longer and reduce maintenance costs compared to regular lighting systems, meaning you'll make back the cost and more. You can save more money by installing lighting controls that automatically switch or dim lighting.

Lighting is a significant energy cost for most business sectors and good savings can be achieved both through upgrades and improved control and management.



'Switch off' policy:

Involve staff and increase awareness of the importance of switching off lighting through emails, web-based reminders, staff meetings, placing stickers above light switches and putting posters around the building. Light switches should also be clearly labelled to help staff to select only the lights they need. A good night time shut down routine is also beneficial.

Utilise timers and automatic controls:

Set timers to match lighting operation to occupancy hours and consider the use of daylight dimming sensors or presence detection to switch off or dim lighting when not required.

Maintenance:

Savings will be achieved by moving to longer life LED solutions. With legacy systems regular maintenance and re-lamping is required to maintain office/workspace appearance and light levels, which adds to running costs.

CASE STUDY 1

A hotel group in Manchester replaced hundreds of halogen spotlights with LED or similar low-energy alternatives. This project had a payback period of less than eight months and saved an estimated £17,400 and 133 tonnes of emissions per year.

CASE STUDY 2

A manufacturer of industrial sealing technologies replaced older lighting with high frequency, energy efficient T5 fluorescents. The new lighting is also controlled by movement and daylight sensors to reduce excess use of light when they are not needed. This has saved an estimated £4,400 and 23 tonnes of emissions per year.

CASE STUDY 3

A business centre that leases office space to starter businesses has recently been awarded grant funding from the Business Energy Efficiency (BEE) Anglia project for LED lighting throughout their building. Following an independent energy audit, they successfully applied for a grant of £1,055. This saved an estimated £760 and 3.3 tonnes of emissions per year.

3. CARBON REDUCTION OPPORTUNITIES

Heating

Space heating can account for as much as 40% of energy costs in many businesses. This means that there are big opportunities to make savings. It is possible to minimise the cost of heating, regardless of which system is in place, through measures including:

Obtaining feedback from staff, considering comfort and temperature:

Encourage staff to report areas that are too hot, cold or draughty. Look for trends and investigate problem areas. Encourage staff to dress for the conditions and ensure workspaces are shielded from draughts and direct sunlight. The Carbon Trust would recommend that offices are heated to around 19°C and cooled to 23°C to avoid energy wastage. In less frequently occupied spaces heating set points should be lower (as low as 13°C in warehouses) with localised heating used as required.

Match working hours:

Use inexpensive time controls to automatically switch off the heating at the end of a typical work day.

Controlling systems

It is recommended to not rely solely on controls, but to ensure settings are reviewed every month to check that they are correct for the office usage and the season.

Upgrades in controls can save hundreds or thousands of pounds and can pay back their investment in a matter of months. Weather compensation can be used to automatically regulate the heating temperature based on the external temperatures. An optimum start controller learns how quickly the building reaches the desired temperature and brings the heating on at the optimum time prior to building occupancy, again depending on the weather.

Maintain boilers and pipe work:

A regularly serviced boiler can save as much as 10% on annual heating costs. Boilers, hot water tanks, pipes and valves should be insulated to prevent heat escaping. Payback can usually be expected within a few months of installation, with additional savings in subsequent years.

Can you move away from fossil fuels?

Whilst the efficiency of natural gas and oil based heating systems should be improved as much as possible, often significant emissions remain. By investing in solutions such as air-source heat pumps, powered by renewable electricity sources, a positive step change in emissions can be made.



CASE STUDY 1

A timber merchants installed a biomass boiler to replace the mains gas. The payback period was around five years, and saved £2,270 and 48 tonnes of emissions per year.

CASE STUDY 2

The Chinese Centre for Contemporary Art based in Manchester installed a £100 timer to its existing heating system saving £4,363 and 18 tonnes of emissions per year.

CASE STUDY 3

WJ Sutton are a jewellers based in Birmingham. They have upgraded their heating system by installing an 'A' rated boiler (as listed on the UK government's Energy Technology List), weather compensation included in boiler controls and internal radiators fitted with thermostatic radiator valves. These measures have saved an estimated £1,000 and 7 tonnes of emissions per year.

CASE STUDY 4

A telecommunications integration company installed an air source heat pump system to provide space heating for their new extension. In preference to direct electrical heating, this saved approximately £989 and 6 tonnes of emissions per year.

3. CARBON REDUCTION OPPORTUNITIES

Cooling

Cooling is required in a variety of forms by many small businesses. Air-conditioning, refrigeration and process cooling would be the most common and are considered here. There are common approaches which can enhance performance and efficiency of these systems.

Measure and monitor:

Installing sub-meters to see how much electricity individual cooling processes use will help to identify areas where energy savings can be made. Monitoring will identify any deterioration in system performance, show the effects of operational changes and confirm the level of savings resulting from any actions taken.

Implement effective control:

Review target temperatures for rooms, areas, refrigeration systems and processes. Monitor the actual temperatures achieved under normal working conditions and identify if there is any overcooling (or underperformance). Overcooling could be reduced by simply increasing set-points, reviewing controls or making operational changes.

Plan a programme of maintenance:

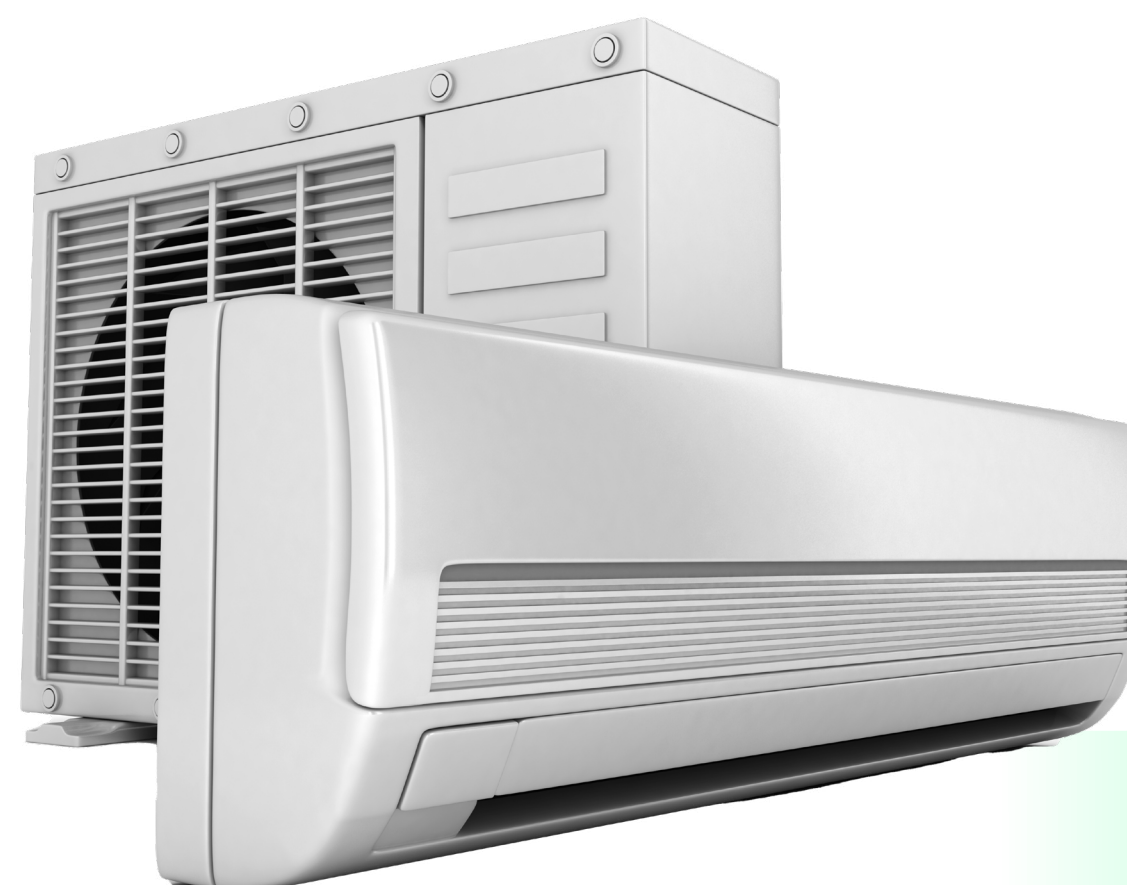
Ensure that the cooling systems operates efficiently by carrying out planned, preventive maintenance. Focus on the four key areas below:

Fans and grills: Ensure that external air-conditioning and refrigeration systems are kept clean and free from debris or obstruction.

Pipework and controls: Check for leaks, poor insulation, scale formation, sensors drifting and control valves sticking.

Water treatment: Necessary to meet health and safety requirements, and to prevent corrosion and fouling.

Pumps: Inspect regularly, replace worn parts and clean filters. When motors fail, consider replacing them with higher efficiency motors and make sure that the motor is not oversized. Consider installing a variable speed drive.



CASE STUDY 1

Plastube manufacture and supply high quality cable management products. They have overcome cooling issues by replacing seven chillers with a single unit. The new system takes advantage of 'free cooling' using cool air from outside the factory to minimise the need for mechanical cooling. The project cost £21,500 with a payback of around 2 years, saving an estimated 88MWh of energy, £10,500 and an estimated 25 tonnes of emissions per year.

CASE STUDY 2

Cleone are a food production company. They partnered with Smartcool Systems, a clean technology company, to reduce the energy consumption of compressors in air conditioning, refrigeration and heat pump systems. The improved technology was applied to two Copeland scroll compressors, providing cooling to freezers at the food processors' main plant. This reduced energy consumption by 19.5% and saved an estimated £18,000 and 43 tonnes of emissions per year.

CASE STUDY 3

A convenience store chain replaced old fridge units with newer, more energy efficient models that incorporated double glazed doors to reduce heat loss. This upgrade saved an estimated £1,485 and 6 tonnes of emissions annually.

3. CARBON REDUCTION OPPORTUNITIES

Compressed air

For many manufacturers, compressed air is common place. However, it is also a major source of energy wastage. Improving compressed air systems can typically save as much as 30% where systems have not been well maintained. Typical areas of waste are through leaks in the distribution system and through inappropriate compressed air use.

Eliminate unnecessary compressed air usage:

Industrial sites often ‘misuse’ compressed air through habit or ease of access. Using low-pressure blowers is a more energy efficient way to dry components for example, than using an ‘air-knife’ which runs on compressed air. Another common misuse is cleaning machinery. Brushes and vacuum systems are often much cheaper alternatives.

Reduce air pressure:

Ask equipment and tool manufacturers to specify the minimum air pressure necessary to drive the machinery and then ensure that the system meets, and does not exceed, the requirements. For large facilities operating separate systems at different pressures can be economical to minimise widespread use of higher pressure air.

Check frequently for leaks:

Industrial sites often have compressed air leakage rates of up to 30%, wasting considerable amounts of energy and money. A systematic and regular leak detection programme should be put in place to check for leaks with follow up repair as quickly as possible.

Bring in air from outside:

Colder air is denser so if the intake air is cooler, the compressor does not need to work as hard because the air requires less compression. Bringing in cooler intake air from outside can therefore produce substantial savings.

Question if any parts of the system are not needed:

With operational changes occurring over time, review if there are parts of the compressed air distribution network that are no longer needed. Isolate areas that are not in use and remove unnecessary pipework. This will increase the efficiency of the compressed air system.

Utilise waste heat:

Up to 90% of the electrical energy used by a compressor generates heat. This waste heat can be of benefit to help heat adjacent factory or warehouse spaces or in larger systems can be used to heat water.

CASE STUDY 1

An engineering firm installed ultrasound leak detector equipment, from which they were able to identify 103 leaks in total. Fixing the leaks saved an estimated £16,000 and 73 tonnes of emissions per year.

CASE STUDY 2

A surface manufacturing company replaced a large compressor that was being used for air agitation in the factory, with a 60-Watt air pump. The single pump cost £130 to install and has significantly reduced both maintenance and operating costs, saving an estimated £5,200 and 52 tonnes emissions per year.

CASE STUDY 3

A shower tray manufacturer installed a new, lubricated screw L75RS regulated speed compressor, which produces the right amount of air for the fluctuating requirements, meaning the compressor is always running at optimum efficiency, saving an estimated £15,000 and a 100 tonnes of emissions per annum.

3. CARBON REDUCTION OPPORTUNITIES

Process

Every business is different and those engaged in manufacturing will have significant process related energy use the extent of which will vary from company to company. Some consideration for common systems are included below.

Production process:

Many manufacturing processes rely on automated systems for example, CNC machines, conveyor lines, plastic injection moulding or extrusion, systems to name a few. The biggest influence in energy performance can be made at the design stage, however a review of control strategies, operating times and shut down procedures can yield savings.

Motors and drives:

Electric motors are often at the heart of industrial processes. The cost of buying an electric motor is just a fraction of its lifetime running cost. In a single year a running motor can cost up to ten times its purchase cost in energy. This emphasises the importance of good procurement practices to purchase high efficiency motors as a starting point. In addition good maintenance practices can keep overall system efficiency high.

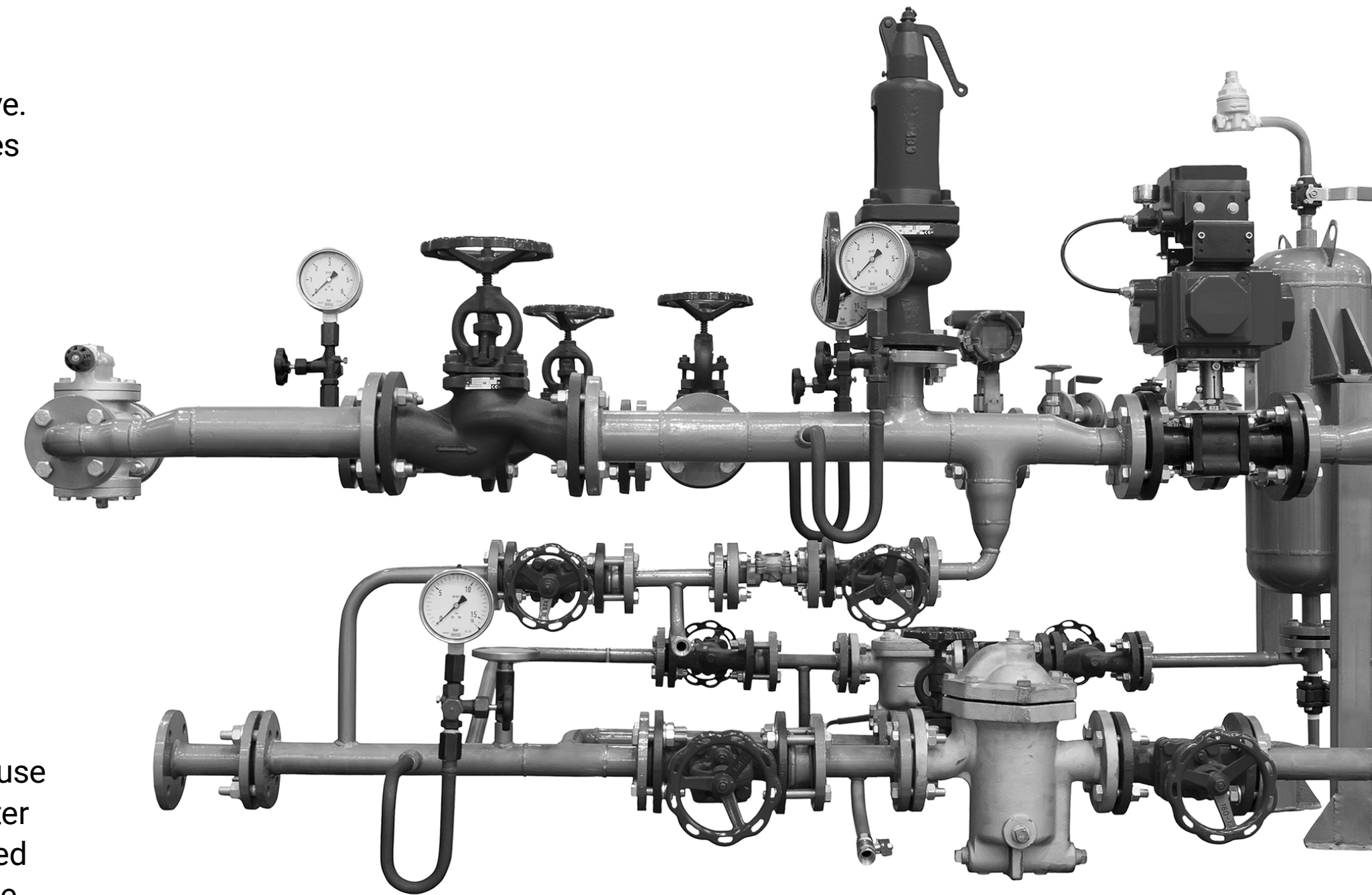
Steam:

Where steam systems are required they are energy intensive. There are a range of short, medium and long term measures which can be deployed to improve energy performance, including:

- Leak detection and repair
- Insulation
- Improved condensate return
- Blowdown improvements
- Improved water treatment
- Combustion air pre-heat

Hot water:

For food manufacturing businesses in particular hot water use can be significant. The use of lower temperatures, cold water wash techniques, improved temperature control and reduced wash volumes will save cost and resources. Additionally, the recovery of waste heat from refrigeration or other processes can be a useful way to heat or partially heat wash water.



3. CARBON REDUCTION OPPORTUNITIES

Offices

As detailed in this guide there are many low and no-cost solutions that will reduce consumption. For a typical office the split of energy use is shown below with opportunities already detailed in many of the key areas.

Office equipment:

Office equipment is the fastest growing energy user in the business world; the electricity it consumes represents ~25% of total energy consumption in offices.

Modern IT equipment however is showing improved energy performance year on year. Companies should review their IT procurement policies to ensure they are purchasing equipment with the highest energy performance possible.

Day to day staff should ensure that all equipment is switched off when not in use and ensure power down modes are set. As well as reducing energy consumption, less use also reduces the heat produced by equipment which in turn, lowers cooling costs. Staff should know about switch-off policies and be informed of the savings and improvements to working conditions they can achieve.

Understand your energy use

Look at your office and identify the major areas of energy consumption.

Identify opportunities

Walk around your office and complete the checklist at different times of day to identify where energy savings can be made.

Prioritise your actions

Draw up an action plan detailing a schedule of improvements that need to be made.

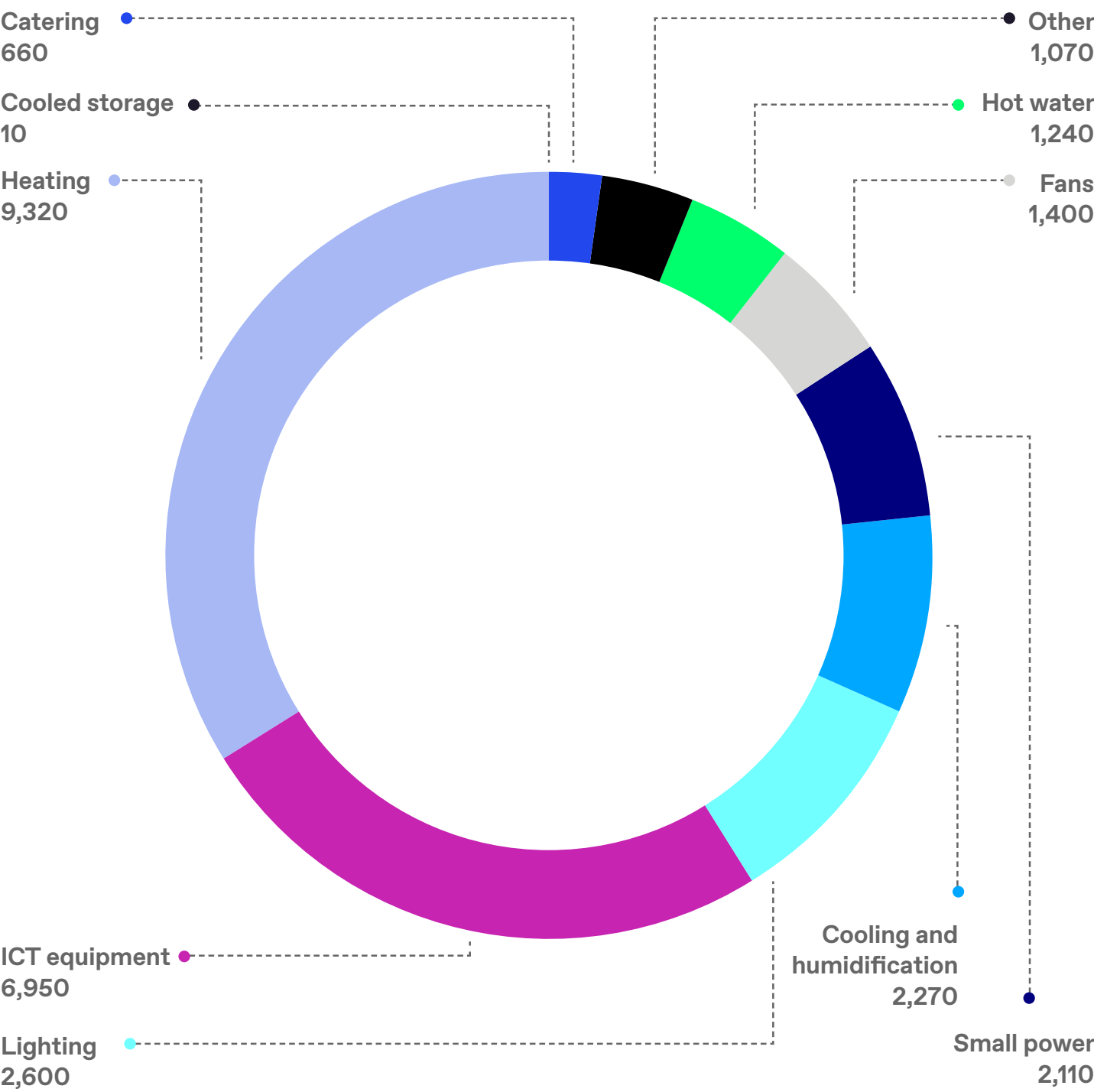
Seek specialist help

It may be possible to implement some energy saving measures in-house but others may require specialist assistance.

Make the changes and measure the savings

Implement your energy saving actions and measure against original consumption figures.

Figure 3: Breakdown of energy consumption (GWh per year) by end use in offices in 2014–15. Source: BEIS, Building Energy Efficiency Survey, 2016



3. CARBON REDUCTION OPPORTUNITIES

Fleet

Making your business travel more sustainable can help you save money and reduce your carbon footprint. Business travel includes travel to and from meetings and other out-of-office appointments, whether this is by car, plane or train, journeys that employees make to and from work and the way your business makes and receives deliveries. The following advice can help you find ways to travel more sustainably:

Install telematics in all fleet vehicles:

Collecting data on each vehicle’s daily mileage and the location and duration of stops helps identify which vehicles can be easily replaced with electric vehicles and where charging points can be installed.

Lessen your demand:

Consider alternatives to travel to reduce your emissions.

CASE STUDY

A London based delivery service specialising in sustainably delivering fresh fruit, vegetables and other produce to offices and homes identified that using electric vans saved them £2,625 on London Congestion Charge and 20 tonnes of emissions in one year.

Invest in driver training:

Improving driver behaviour to increase fuel efficiency and reduce costs. Businesses can save 10-20% in fuel consumption, whilst also encouraging more careful driving to cut down vehicle wear and tear.

Select the right technology:

The right technology in your fleet can improve your fuel economy and reduce your impact on the environment. For instance, adaptive cruise control improves fuel economy and reduces speeding.

Heavy Duty Vehicle Fund: A £10million Heavy Duty Vehicle (HDV) Fund has been established to support SMEs to get ready for the Clean Air Zone In Birmingham

Collaboration opportunities:

WeKnowGroup, a SME travel services business, collaborated with Heathrow and Jaguar to sign a deal that will see a fleet of 200 fully-electric Jaguar I-PACE vehicles available to travel to and from Heathrow. WeKnowGroup will also be installing a dedicated charging hub at Heathrow, the largest in the UK.

Embracing electrification:

Electric vehicle technology is constantly evolving. Go Ultra low have a selection of tools that can help your business work out which government incentives are available for your business, potential

savings on fuel, tax and road charges, which vehicle is right for your business, how far it can travel and the location of your nearest charging points. Go Ultra Low published that almost 435,000 SMEs could save up to £1,440 a year by switching to their first electric car.¹² If using whole life costs to assess their fleet purchases there is £625m of potential savings to offer to UK businesses. SME businesses such as Eco-Friendly Taxis and Battersea Property Maintenance have joined and become Go Ultra Low companies.

SUPPORT AVAILABLE

The government offers several grants which can help offset the initial costs.

The Plug-in Car Grant provides a saving of £4,500 off the price of an eligible new 100% electric car, £2,500 off an eligible plug-in hybrid car.

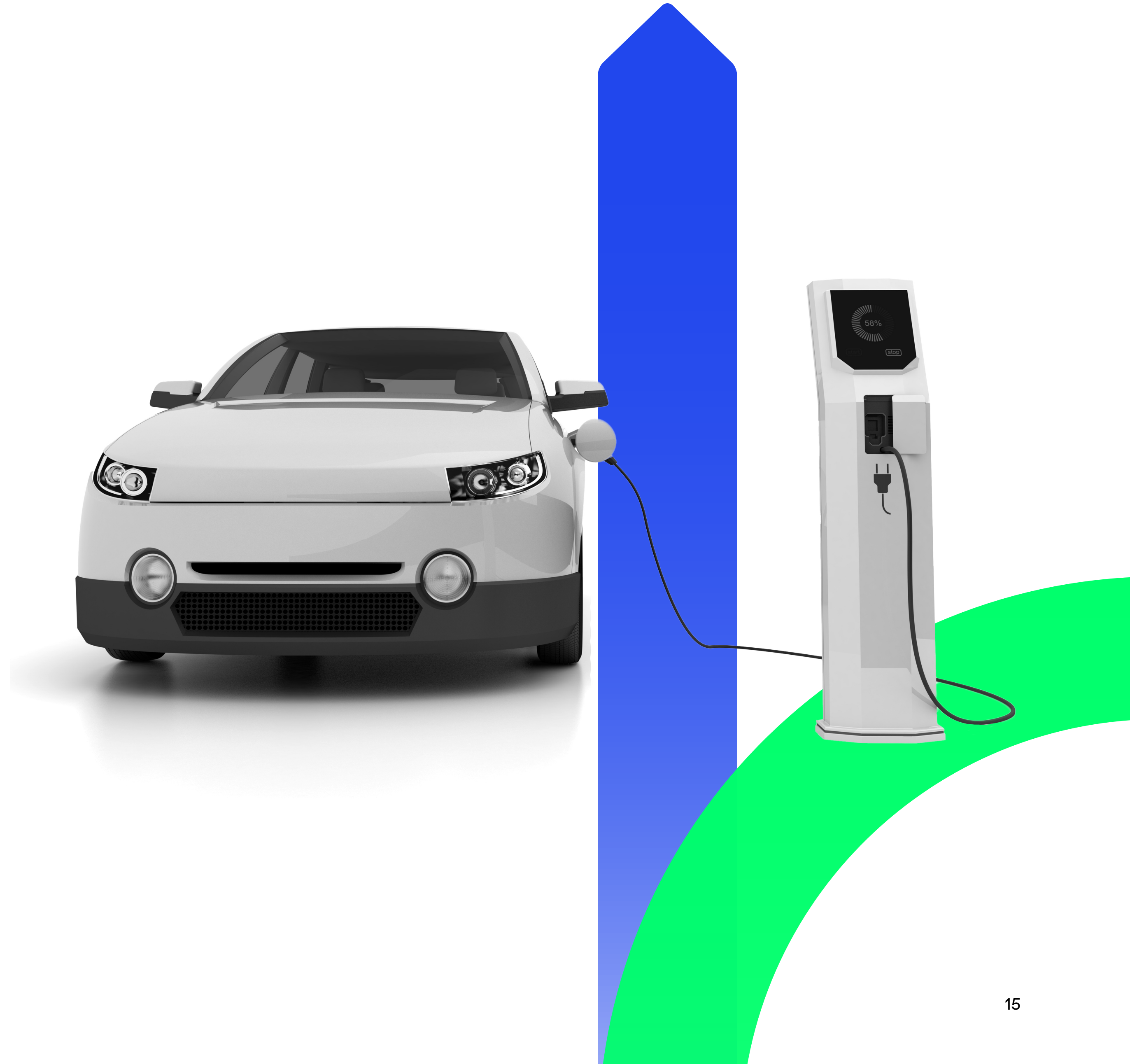
The Plug-in Van Grant offers up to £8,000 off the price of an eligible new electric van.

The Workplace Charging Scheme (WCS) provides eligible businesses up to £300 towards the purchase and installation cost of each charging connection.

Fleet

Benefits:

- Lower servicing and maintenance costs.
- Zero rate of vehicle excise duty.
- Cheaper to refuel than petrol or diesel vehicles.
- There are fewer mechanical components in an electric vehicle compared with conventional vehicles, which often results in lower servicing and maintenance costs.
- Plug-in cars emitting 75g/km CO₂e or less, which meet the Euro 6 emission standard and have at least 20 miles zero-emission range, are eligible for a 100 per cent discount from the London congestion charge. A regular user of this zone could be saving over £2,000 a year.



Value chain

To achieve Net Zero, a scale of value chain emission reductions consistent with pathways that limit warming to 1.5°C is required. However, setting quantified targets to reduce value chain emissions and monitor progress against them often goes beyond the resources available for smaller companies. SMEs are required to only commit to measure and reduce emissions in Scope 3. A first step for SMEs is therefore to reduce value chain emissions associated with the disposal and treatment of waste generated in operations, business travel and employee commuting.



Reducing waste

Through effective waste prevention techniques and responsible recycling, you can use less energy and reduce emissions

Going paperless: one of the quickest and easiest ways to reduce waste is by going paperless and switching to digital processes.

A UK based barrister chambers introduced a paperless system. This system is estimated to save the firm up to £350,000 per year and reduce its carbon footprint by an estimated 680 tonnes of emissions per year.

Treating your waste: composting can be a fantastic solution to managing organic waste, which can then be re-used in its treated form.

Business travel

The first question to ask is whether you really need to travel or can tele- or video-conference? Meeting virtually with your employees or clients using phone or video technology is the best way to reduce your emissions associated with travel.

If you do need to travel consider how you fly:

Fly in economy class: as business class seats take up more space, the emissions generated while flying in business class is around three times as much as when you travel in economy class.¹³

Choose a fuel-efficient airline: not all airlines are created equal. They operate different routes and aircraft, which both contribute to their overall fuel efficiency as does the age of their fleet (newer aircraft produce fewer emissions).

3. CARBON REDUCTION OPPORTUNITIES

Value chain

Staff engagement

Talk to your staff, find out what matters to them and get their input. Draw up a sustainability policy as part of the staff handbook so people know what is expected of them.

Employee commuting

Allowing employees to work from home typically reduces emissions associated with travelling to work and reduces energy consumption within the office.

Introduce a cycle to work scheme: support your employees to cycle to work through a salary sacrifice scheme. The cycle to work scheme is a tax-efficient, salary-sacrifice employee benefit. You can also save on reduced National Insurance Contributions on the cost of cycle hire.

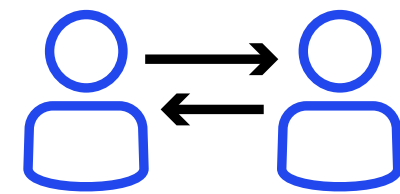
- Dave Mellor Cycles offer a scheme to local small businesses who don't want to sign up to a large scheme for a smaller work force.
- The green commute initiative: for SMEs its recommended to use the GCI instant scheme, which is a pay-as-you-go option.

Grey fleet management: understand the needs of staff and offer more efficient alternatives.

Mileage reduction strategies: implement a travel hierarchy to reduce mileage and look at alternatives such as daily rental, pool cars, car clubs and public transport.

Decarbonising supply chains

Supplier emissions are usually several times larger than a company's own operations, and therefore on the journey to Net Zero, it is vital to consider how sustainable your suppliers are.



Supplier incentives: offers of long-term buying contracts can be used as an incentive for suppliers to begin longer-term sustainability projects.

Knowledge-sharing: share environmental best practices and resources across the industry and across suppliers.

GHG related procurement standards: incorporate sustainability performance as core criteria in procurement assessments.

Ranked supplier programmes: collect emissions data from multiple suppliers and score them to encourage positive action.

Engaging with customers: understanding your customer desire for 'greener' products can help push the business case for product design.

Offsetting and greenhouse gas removals

Types of offsets

There are different types of offsets which either avoid emissions from being produced or remove emissions from the atmosphere.

Avoided emission offsets are generally projects which involve efficiencies through reduced energy consumption and therefore lower emissions, renewable energy production projects, and fuel emission reduction.

Greenhouse gas removal (GGR) offsets come from either nature-based projects such as reforestation and soil management, or through engineered methods like carbon capture and storage (CCS). However, the engineered methods are under development.

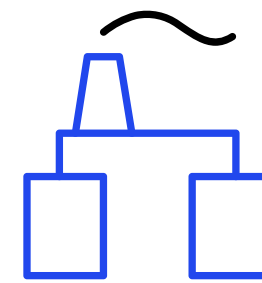
Achieving Net Zero

Once a company's Scopes 1, 2 and 3 emissions have been reduced in line with a 1.5°C science-based target, any hard to decarbonise emissions need to be neutralised to achieve Net Zero. The SBTi's definition of Net Zero states that these remaining emissions should be neutralised with greenhouse gas removal (GGR) offsets only.

The discussion around carbon removals and offsetting to achieve Net Zero is continuously evolving but the initial focus of SMEs should be on achieving carbon reductions in the short-term aligned to a science-based target.

Carbon neutrality

Offsetting can be used to make an organisation or product carbon neutral, where the sum of greenhouse gas emissions produced is compensated for by carbon offsets, also called carbon credits. An offset is a verifiable emission reduction from a certified climate action project. An organisation can become certified carbon neutral through the PAS 2060.



Carbon neutrality definition

PAS 2060:2014 defines being carbon neutral as a 'condition in which during a specified period there has been no net increase in the global emission of greenhouse gases to the atmosphere as a result of the greenhouse gas emissions associated with the subject during the same period'. The key steps are:

- Define the 'subject' (boundary) of the carbon neutrality claim.
- Develop a carbon management plan and take action to reduce.
- Introduce offset programme to balance out the residual emissions.

4. FUTURE CONSIDERATIONS

SMEs

This guidance is designed to help SMEs begin their journey to Net Zero. Due to resource constraints for SMEs, carbon reduction opportunities within the value chain will be difficult to achieve. Therefore, we recommend starting with measuring operational emissions, committing to a mid-term science-based target aligned to a 1.5°C pathway, making a plan to reduce emissions taking from the opportunities highlighted in this guidance and then focusing on the rest of the value chain.

Reaching Net Zero

As stated previously, being Net Zero means that all value chain emissions have been reduced aligned with reaching pathways that limit warming to 1.5°C, and any residual emissions that remain unfeasible to be eliminated should be offset using GGRs.

GGRs are not currently available in large quantities but the aim is that by the time organisations have reduced major aspects of their value chain emissions the GGRs will be more readily available. An additional option in the interim is to achieve carbon neutrality on an annual basis.

Longer term opportunities

Once an SME has completed all cost-effective carbon reduction opportunities, the next longer-term opportunities for reduction will be more difficult to achieve but should be brought into the discussion:

Electric vehicles:

The use of ULEVs (ultra-low emission vehicles) in the UK has been increasing rapidly over the past few years. This has been facilitated by ever improving battery technology, expansion of charging infrastructure, and continued government support. For businesses, however, the switch to ULEVs is driven by seeing real cost savings, improving service offerings and reducing the environmental impact of their business. An additional benefit is improved air quality, which is a strong driver in cities, particularly with the broadening of low emission zones.

Alternative heat sources:

Two options for moving away from fossil fuel-based heating are using an alternative fuel such as hydrogen or switching to electric. One of the UK's options for achieving the 2050 Net Zero target is to switch natural gas for hydrogen as it can be distributed through existing infrastructure with minimal adjustments. An SME moving to green hydrogen, generated from using renewable electricity, could eliminate large portions of their heating emissions but this switch would require an investment into a hydrogen-capable heating system and would only be reliable if the UK government rolls out hydrogen-based heating across the national grid. The second option is fully electrifying a heating system, although this is likely to be more costly and would require considerable investment in older buildings.

Communicating commitments

Publicly communicating your commitment to reduce emissions is a key step in aligning to Net Zero. Many organisations have communicated targets which seem to be aligned to Net Zero but do not give enough information to make this claim transparently. A Net Zero target will be challenging to achieve for a SME and therefore communicating interim science-based targets in the short-term should be prioritised as well as communicating any longer-term Net Zero target. The box below gives an example of how a target could typically be worded.

Targeting your own operations

Setting a GHG emission reduction target for your own operations (Scope 1 and 2) is the simplest target to achieve for the majority of companies. Having direct control over GHG emission sources and procurement of energy means making a plan to reduce easier. A commitment that your organisation can achieve means a lot more than an uncertain longer-term target covering the entire value chain.

Targeting your value chain

For SMEs, actually reaching zero or close to zero GHG emissions across the entire value chain would be currently very difficult due to a lack of resources and complexity of value chains. For this reason, starting with short-term value chain reduction targets should be a priority over a long-term target.

2030	2050
Company X commits to reduce Scope 1 and 2 GHG emissions in half by 2030 from a 2018 baseline.	Company X also commits to measure and reduce Scope 3 GHG emissions and by 2050 Company X will be Net Zero.

1.

Make a Net Zero commitment and set a science-based target covering your own operations (Scope 1 and 2)

2.

Measure your value chain emissions (Scope 3) and start taking actions to reduce in key areas

3.

Set science-based target for your value chain emissions (Scope 3) and develop a comprehensive strategy to

Other support tools available

CDP supply chain

<https://www.cdp.net/en/supplychain>

The Carbon Trust website

<https://www.carbontrust.com/resources>

Courtauld commitment

<https://wrap.org.uk/>

Meat in Net Zero World

<https://wrap.org.uk/taking-action/food-drink/initiatives/courtauld-commitment-2025>

FSB

<https://www.fsb.org.uk/campaign/small-business-sustainability-hub.html>

British Retail Consortium

<https://www.brc.org.uk/>

Make UK

<https://www.makeuk.org/services>

ISO standards

<https://www.iso.org/iso-14001-environmental-management.html>

EV100

<https://www.theclimategroup.org/ev100>

RE100

https://www.theclimategroup.org/about_re100

Chancery Lane Project

<https://chancerylaneproject.org/model-clauses/>

Green Building Council

<https://www.ukgbc.org/ukgbc-work/advancing-net-zero/>

5. MORE INFORMATION

Opportunities for SMEs

National opportunities

New funding opportunities are frequently announced so it's useful to keep track of the following:

[The Energy Technology List \(ETL\)](#)

The ETL is a government approved list of approximately 14,000 energy efficient products. It's a free-to-use list that provides organisations with the confidence that they are buying plant and machinery that demonstrates a high standard of energy efficiency. The ETL can be paired with accelerated tax relief, such as the Annual Investment Allowance (AIA), enabling businesses investing in new plant and machinery equipment to be able to claim through their AIA.

[Energy Technology List \(etl.beis.gov.uk\)](https://www.etl.beis.gov.uk)

[Small business research initiative](#)

The SBRI, through the Department of Business, Innovation and Skills (BIS) is specifically aimed at increasing SME access to Government contracts. Through the SBRI, government departments run competitions to seek solutions to specific issues. Competitions generally have different themes and opening dates and deadlines vary throughout the year.

[SBRI: the Small Business Research Initiative \(www.gov.uk\)](https://www.gov.uk)

Local opportunities

It is important to be aware that a lot of grants are only available for a year and then they close, so keep up to date by asking your local council and authorities to make yourself aware of which opportunities are available. Some examples are as follows:

[Business Energy Efficiency \(BEE Anglia\)](#)

The scheme helps businesses in Norfolk and Suffolk to cut their carbon emissions. Improvements can include lighting and heating upgrades, electric vehicles and new machinery. Grants of up to £10,000 are up for grabs from BEE Anglia with a typical intervention rate of 30%, but it can be up to 40%. Grants over £5,000 will only be given to very strong applications.

[Grant Funding | BEE Anglia](#)

[Low Carbon Workspaces](#)

Supplying funds between £1,000 and £5,000 for businesses to take on green initiatives like double glazing, LED lighting and smart heating. It's open to SMEs in Hertfordshire, Buckinghamshire, Bedfordshire, Berkshire, Milton Keynes and Northamptonshire.

[Low Carbon Workspaces](#)

[Energy Efficiency Grants: East Sussex](#)

Grants of up to £10,000 are available to SMEs and social enterprises in East Sussex to invest in projects that will reduce your energy bills and cut your carbon footprint.

[Green business – East Sussex County Council](#)

[GC Business Growth Hub](#)

If you're an SME in Greater Manchester, you may be eligible for an Energy Efficiency Grant between £1,000 and £12,500, to help with up to 50% of the costs of your energy efficiency improvements. The Access to Finance (A2F) service provides SMEs in Greater Manchester and Lancashire with bespoke funding support.

[GC Business Growth Hub: Resources to support and grow your business | GC Business Growth Hub](#)

[Coventry and Warwickshire Green Business Programme](#)

Provides grants and free energy and resource efficiency audits to help identify where energy, water and waste savings can be made, as well as low carbon product development.

[Coventry and Warwickshire Green Business Programme | Coventry City Council](#)

Bibliography

- 1 SBTi <https://sciencebasedtargets.org/blog/1-5-c-vs-2-c-a-world-of-difference>
- 2 SBTi <https://sciencebasedtargets.org/resources/files/Net-Zero-Criteria-Draft-for-Public-Consultation-v1-0.pdf>
- 3 The World Bank <https://www.worldbank.org/en/topic/smefinance>
- 4 A company's value chain includes all the activities that it takes to create a product from start to finish, including all upstream and downstream activities to the end customer.
- 5 SBTi <https://sciencebasedtargets.org/>
- 6 SME Climate Hub <https://smeclimatehub.org/about-us/>
- 7 Race to Zero <https://unfccc.int/climate-action/race-to-zero-campaign>
- 8 The Carbon Trust <https://www.carbontrust.com/resources/sme-carbon-footprint-calculator>
- 9 The SME Climate <https://smeclimatehub.org/tools/>
- 10 GHG Protocol <https://ghgprotocol.org/scope-3-evaluator>
- 11 Using the market-based approach specified in the GHG Protocol Scope 2 Guidance https://ghgprotocol.org/scope_2_guidance
- 12 Go Ultra Low <https://www.goultralow.com/press-releases/uk-businesses-urged-go-electric-save-625-million/>
- 13 The World Bank <http://documents1.worldbank.org/curated/en/141851468168853188/pdf/WPS6471.pdf>



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