



London Bridge Business Improvement District's Carbon Neutral Routemap

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Context

Businesses in the London Bridge Business Improvement District (BID) and Team London Bridge (TLB) have made an ambitious commitment: to make London Bridge part of a Carbon Neutral Southwark by 2030. This forms an important part of the vision to become one of the most sustainable, culturally innovative and compelling place for businesses and tourism in the world. Building on existing projects, this Routemap is a first step in mapping an approach for the various businesses, landlords and stakeholders in the BID area to decarbonise and reach their net zero target(s).

Carbon Neutral by 2030

Southwark Council has committed to becoming carbon neutral by 2030, and uses carbon neutral and net zero interchangeably since there is not a globally recognised definition of a 'Net Zero' city, region or BID.

Businesses in the London Bridge BID have also made their own net zero and/or carbon neutral commitments. The guidance for reaching Net Zero for individual businesses is much clearer, with a rigorous distinction being drawn between carbon neutral and net zero.

This Routemap is unique in that it needs to align with both Southwark Council's Climate Change Strategy, **and** the definition of net zero for the businesses within the BID area.

This Routemap sets out how the London Bridge BID can achieve a **carbon neutral by 2030 target**, in alignment with Southwark Council. This Routemap also recommends that all businesses within the BID, including TLB, set **science-based targets**.

Proposed Approach to Decarbonise London Bridge's BID

Three types of actions are proposed in this Routemap:

Enabling Mechanisms: Transitioning to carbon neutrality requires an investment in enabling mechanisms. This will build the area's and individual organisations' capacity to accelerate decarbonisation and implement more complex project. Five types of enablers are presented in this Routemap.

Communal Projects: Five large-scale projects are proposed, addressing the area's largest sources of carbon emissions. These projects require multi-stakeholder collaboration in order to be effectively delivered.

Business-led Interventions : A series of interventions have been proposed for each different business type explored in this document: offices, food and drink businesses, retail, hospitality, healthcare and theatre. These interventions will help them reach net zero carbon.

For the BID to achieve carbon neutrality by 2030, a combination of these three types of actions will be required, as well as some level of offsetting once carbon emissions have been reduced as much as possible. It is why the creation of a **Sustainable Transition Fund** is also recommended, which would be administered and spent on local sustainable projects to deliver local benefits.

Carbon Baseline Key Findings

The carbon baseline, produced by xtonnes, follows the internationally-recognised carbon accounting methodology set by the Greenhouse Gas Protocol.

In 2019, the businesses, including landlords, in the London Bridge BID were responsible for **130,000 tonnes of CO2e**. This is equivalent to powering 25,295 homes a year, which is almost a fifth of the London Borough of Southwark's total homes.

65% of the area's carbon footprint is associated with heating, cooling and powering buildings.

Offices in the London Bridge BID account for **49%** of the area's carbon emissions, which is not surprising as they are the most represented business type in the area.

Proposed Actions Key Findings

Enabling Mechanisms	Communal Projects	Business-Led Interventions
<p>Five types of enabling mechanisms are proposed:</p> <ul style="list-style-type: none"> – Governance mechanisms such as setting up working groups. – Capacity building mechanisms such as upskilling staff members. – Financial capital mechanisms such as divesting pension funds from fossil fuels. – Data and information mechanisms such as measuring an organisation’s or an area’s carbon footprint and setting science-based targets. – Policies and strategies mechanisms such as changing procurement practices. 	<p>Five communal large-scale projects are proposed:</p> <ul style="list-style-type: none"> – Setting up a health and cooling district network. – Investing in solar panels across the area. – Rolling out a programme to change refrigerants to low-carbon alternatives. – Investing in mobility and consolidation hubs. – Investing in waste infrastructure and consolidated waste collection services, and promoting the circular economy. 	<p>Each business type will find a range of interventions they can undertake based on what they have already implemented, their level of ambition and resources available.</p> <p>These interventions target different sources of carbon emissions and include measures around energy efficiency, waste reduction or collaborating with suppliers and customers.</p>

Decarbonisation Pathways

Indicative decarbonisation pathways were produced for two scenarios: a conservative and an ambitious one. With the conservative scenario, a 30% reduction in carbon emissions across all Scopes is achieved by 2030 and a 41% reduction by 2050. With the ambitious scenario, a 62% reduction in carbon emissions across all Scopes is achieved by 2030 and a 91% reduction by 2050. These pathways also demonstrate that the delivery of the proposed communal projects can significantly reduce Scope 1 and 2 emissions and therefore help the BID achieve its carbon neutral by 2030 target.

Our Recommendations

Collaboration between landlords, tenants and local businesses in the BID area is critical to accelerate a transition to net zero. The more businesses commit to reducing their carbon emissions, the faster the area can reach its net zero target. Each member business should select enabling mechanisms and interventions that are most appropriate to their organisation.

We also recommend that businesses and landlords in the BID area, alongside Team London Bridge:

- 1. Collectively contribute to the communal projects.**
- 2. Continue to measure and report on their carbon emissions in order to inform decision-making processes, coordinate collective action and monitor progress.**
- 3. Support the creation and contribute to an area-wide Sustainable Transition Fund.**
- 4. Establish a governance framework to help deliver the actions set in this Routemap.**

The possible benefits are wide-ranging: from attracting more businesses, staff and visitors, building a global reputation for sustainable business practices, achieving better rents, increasing footfall, becoming more competitive and climate resilient, to freeing up more public spaces, improving the quality of the public realm, enhancing health, well-being and productivity, and delivering more services for the area. This Routemap goes beyond decarbonisation; by acting now and collectively, London Bridge BID can become a leader in sustainable place-shaping and the place to be for world-leading low-carbon businesses.

Active Travel

Journeys made by physically-active means like walking or cycling.

Carbon baseline

A carbon baseline is an inventory of sources of emissions from different business activities, typically from a specific year.

Carbon dioxide equivalent (CO₂e)

A term to describe the emissions of different greenhouse gases with a common unit.

Carbon Neutrality

According to the [PAS 2060 Standard](#), carbon neutrality means not adding new greenhouse gas emissions (measured in carbon dioxide equivalents) to the atmosphere. Where emissions continue, they must be offset by absorbing an equivalent amount from the atmosphere, for example through carbon capture and reforestation that is supported by carbon credit schemes. The basic principle of carbon neutrality is to reduce emissions as much as possible before offsetting. Carbon neutrality has a minimum requirement of covering Scope 1 and 2 emissions with Scope 3 encouraged.

Community Interest Company (CIC)

A community interest company is a limited liability company created with the specific aim of providing benefit to a community.

Embodied carbon

Embodied carbon means all the CO₂ emitted in producing materials. It's estimated from the energy used to extract and transport raw materials as well as emissions from manufacturing processes.

Global Warming Potential (GWP)

The global warming potential of a greenhouse gas is a figure used to describe amount of heat it absorbs in the atmosphere, thereby contributing to the greenhouse effect. The GWP of CO₂ is 1, other gases' GWPs depend on their ability to absorb energy and how long they stay in the atmosphere.

Insetting

Insetting means evaluating, reducing and offsetting the climate and environmental footprint of a company by developing impactful socio-environmental projects within its value chain, and using them to build a sustainable society.

Net Zero Carbon

The [Science-Based Target Initiative Net-Zero Standard](#) defines corporate net zero carbon as reducing Scope 1, 2, and 3 emissions to zero or to a residual level that is consistent with reaching net zero emissions at the global or sector level in eligible 1.5°C aligned pathways, and neutralising any residual emissions as the net zero target year and any greenhouse gas emissions released into the atmosphere thereafter.

Offsetting

A carbon offset is defined as any activity that compensates for the emission of carbon dioxide or other greenhouse gases (measured in carbon dioxide equivalents) by providing for an emission reduction elsewhere. Organisations or individuals can compensate for their carbon emissions through the support of certified emission reduction projects that absorb and/or reduce carbon emissions.

Operational carbon

Operational carbon relates to the amount of carbon emitted during the in-use phase of a building.

Passive Cooling

Passive measures use the local environment to heat or cool buildings to improve indoor thermal comfort with little to no energy consumption.

Passive Design

The design of a building that utilises natural forms of heating, cooling and ventilation using its layout, fabric and form to reduce or remove the need for mechanical heating, cooling or ventilation.

Power Purchase Agreement (PPA)

Power Purchase Agreements are long term contracts between a utility company and a customer, guaranteeing electricity from a specific supply. In the case of renewable energy, this type of long-term agreement the supplier often arranges the design, gains the necessary permissions and manages the installation of a solar PV system on the customer's property at little to no cost.

Product as Service

Product as a service is the concept of selling the services and outcomes a product can provide rather than the product itself.

Science-Based Targets

Carbon targets are considered science-based when they are in line with what the latest climate science deems necessary to meet the goals of the Paris Agreement, which include limiting global warming to well-below 2C above pre-industrial levels and pursuing efforts to limit warming to 1.5C.

Scope 1 Emissions

Greenhouse gas emissions directly from operations that are owned or controlled by the reporting company.

Scope 2 Emissions

Indirect greenhouse gas emissions from the generation of purchased or acquired electricity, steam, heating, or cooling consumed by the reporting company.

Scope 3 Emissions

All indirect emissions (not included in Scope 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions.

Special Purpose Vehicle (SPV)

A special purpose vehicle is a subsidiary company created to fulfil a narrow purpose. SPVs are often organised by the seller under PPAs to own the generating facility.

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Introduction

Supported by its member businesses' ambitions, Team London Bridge has set an aspiring vision to be one of the most sustainable, culturally innovative and compelling places for business and tourism in the world. To achieve part of this vision, Team London Bridge has appointed Useful Projects and xtonnes to help them develop a Carbon Neutral Routemap for the London Bridge Business Improvement District.



Figure 1: London Bridge Business Improvement District Boundary

This Routemap is one of the first of its kind and focuses on how the businesses within the London Bridge Business Improvement District (BID) (See Figure 1) can collectively, and individually, decarbonise. In particular, this document addresses the role businesses and landlords in the BID have in reducing carbon emissions associated with their own commercial operations, their buildings and their supply chains.

Businesses have an integral role to play in decarbonising the London Bridge area. They are already at the forefront of innovative initiatives, products and services that aim to tackle the climate crisis and pave a way for a more sustainable future. Businesses in the area have already started to lead and innovate; from measuring their carbon footprint, partnering to deliver ambitious active travel interventions, to reducing their waste and encouraging more eco-conscious behaviours. This Routemap aims to celebrate these achievements and map a collective way forward.

For the purpose of this report, carbon neutrality is defined as a state when the amount of carbon dioxide emissions emitted into the atmosphere by human activities is balanced by removing the same amount through human

or natural endeavour over a specified period. It is not the same as net zero carbon. The main differences and purpose for this document are explored on page 7.

This Routemap focuses on operational carbon, although recommendations around addressing embodied carbon are included. Additionally, this report targets businesses' commercial operations and buildings' carbon emissions.

The interventions proposed are informed by the carbon footprinting and modelling undertaken by xtonnes, as well as by engagement with local businesses, landlords, Southwark Borough Council and Team London Bridge.

The total carbon footprint of Team London Bridge's member businesses and an in-depth analysis of six different business types in the area (offices, food and drink, retail, hospitality, healthcare and theatres) are presented in this document. Large-scale communal projects, requiring multi-stakeholder involvements are then proposed as well as individual business interventions for each different business type.

Transitioning to carbon neutrality requires investment into enabling mechanisms such as collaborative governance systems, platforms and mechanisms to rapidly share data and knowledge, as well as changing procurement policies. This is further explored in this Routemap to encourage a holistic approach to decarbonisation.

Although this Routemap focuses on carbon emissions, the wider sustainability context remains critical. Decarbonising the BID area should be framed within a wider transition to sustainability and aligned with Environmental Social and Governance (ESG) strategies, which in turn will deliver co-benefits to local communities and businesses.

A transition to carbon neutrality will deliver several commercial benefits for the London Bridge BID businesses, which will be explored in this Routemap. With London Bridge already being home to world-leading innovative businesses, their clients and consumers will expect nothing less than best practice in the future and this Routemap will help pave the way to do so.

Overview

A policy analysis was conducted to ensure this Routemap aligns with key policy, regulations and strategic priorities or projects. A summary diagram is presented on page 4 (See Fig. 2) and a review of key policies is shown on pages 5-6 (See Table 1).

The policy analysis looks at key documents at the global, national and local level as well as those produced by Team London Bridge. Additional documents such as best practice guidance and useful advice for specific interventions and/or types of businesses have also been included in the Additional Resource section.

This is not an exhaustive policy analysis, instead focusing on key regulations and policies that will impact the projects and interventions proposed in this Routemap.

Key points

- Businesses have a role to play in helping central and local governments meet their carbon neutral and net zero carbon targets.
- New policies and regulations are coming into effect which will create additional incentives for businesses to decarbonise their operations. This includes new requirements set by the Future Homes Standard.
- Reducing building and energy systems' carbon emissions is critical to meet the UK government's 2050 net zero carbon target.
- Decarbonisation should be seen as part of a wider transition to sustainability. The United Nations Sustainable Development Goals can help organisations frame decarbonisation plans and contribute to the delivery of wider co-benefits.
- Team London Bridge has already made commitments to sustainability and delivered several projects. This Routemap will build on this previous work.

A note on embodied carbon

The scope of this project is operational carbon. However, it is crucial that embodied carbon is also considered, especially when it comes new developments in the area and to the renovation/ refurbishment of existing buildings. All new developments in the area should aim to reduce whole-life carbon emissions, targeting zero carbon, with limited allowance for offsetting. This Routemap encourages businesses to follow the embodied carbon targets and requirements set by the London Plan and the new Southwark Plan, as well as best practice guidance produced by [RIBA](#) and [LETI](#).

Policy Analysis: Summary Diagram

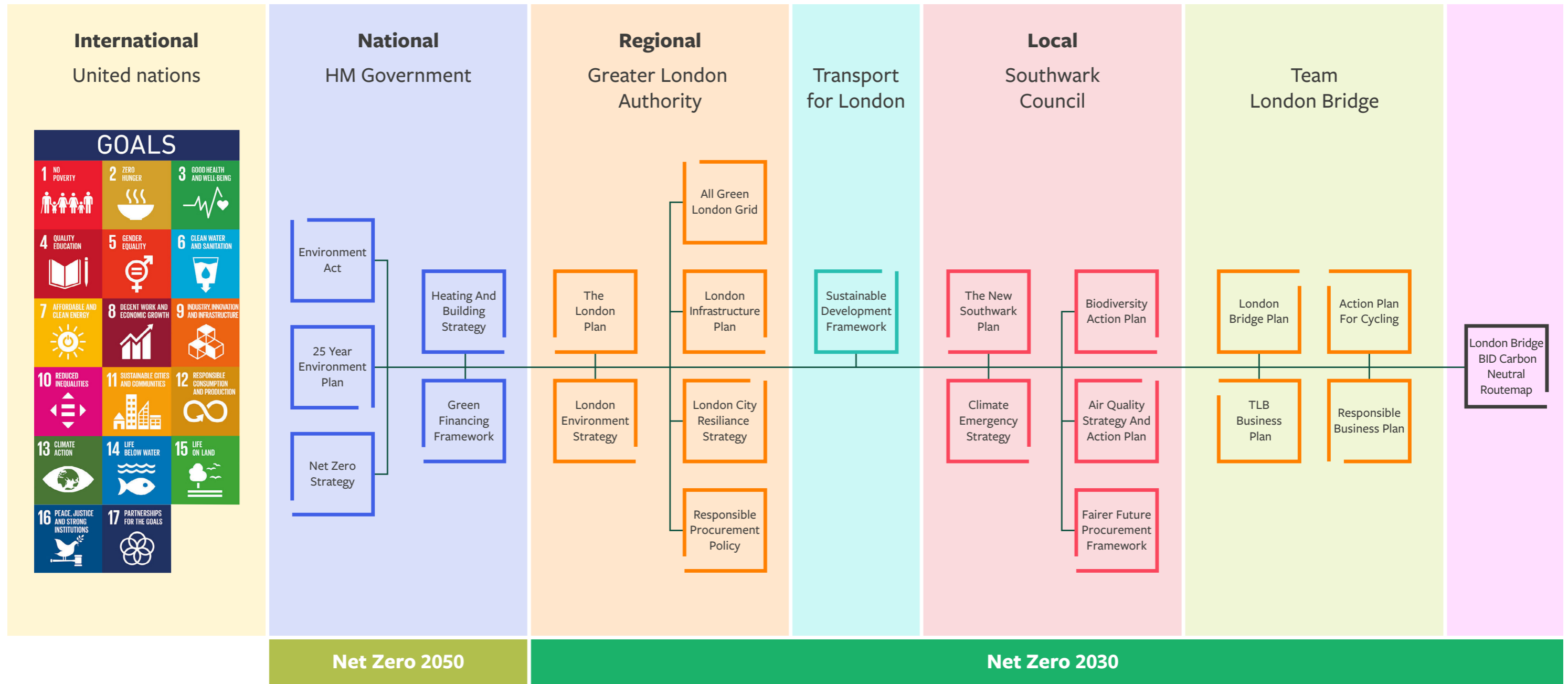


Figure 2. Summary Policy Analysis Diagram

Organisation	Policy	Date	Key Points	Relevance for London Bridge BID's Carbon Neutral Routemap
United Nations	Sustainable Development Goals (SDGs)	2015	17 interconnected global goals aimed at ensuring a sustainable future for all. Intended to be achieved by 2030. Goals that are particularly relevant to Team London Bridge: <ul style="list-style-type: none"> - Goal 7: Affordable and clean energy. - Goal 9: Industry, Innovation and Infrastructure. - Goal 11: Sustainable cities and communities. - Goal 12: Responsible consumption and production. - Goal 13: Climate action. 	<ul style="list-style-type: none"> - Businesses in the private sector are key in delivering the SDGs. - The SDGs foster innovation and collaboration. By aligning their actions with the SDGs, organisations can ensure their operations are resilient to future changes in the world. - Although this Routemap focuses on decarbonising the London Bridge BID, implementing interventions from this Routemap will deliver wider sustainability co-benefits and help contribute to the SDGs.
UK National Government	Net Zero Strategy	2021	Sets out policies and proposals for decarbonising all sectors of the UK economy to meet the target of net zero by 2050. Submitted to the UNFCCC as the UK's second Long-Term Low Greenhouse Gas Emission Development Strategy under the Paris Agreement.	<ul style="list-style-type: none"> - With a legally binding commitment by the UK to be net zero by 2050, businesses from all sectors have an incentive to decarbonise their own operations. - Setting science-based targets for decarbonising will help businesses meet the targets set under the Paris Agreement and limit global warming to well-below 2C above pre-industrial levels and pursue efforts to limit warming to 1.5C. These targets help future-proof growth, save money, provide resilience against regulations, boost investor confidence, spur innovation and demonstrate concrete, robust sustainability commitments.
Greater London Authority	The London Plan	2021	Policy framework coordinating London's evolution and development over a 20–25-year period. Provides a summary of key policies and their requirements for: <ul style="list-style-type: none"> - Air Quality. - Carbon Emissions and Energy Reduction. - Green Infrastructure. - Waste and a Circular Economy. - Fire and Life Safety. - Noise. 	<ul style="list-style-type: none"> - Any new developments within the London Bridge BID must align with the carbon reduction requirements set out in The London Plan. This includes embodied carbon considerations. - Decarbonising the London Bridge area will deliver wider benefits for the area which aligns with other key policies set by the Greater London Authority (GLA) (such as green infrastructure, noise and air pollution).
	Analysis of a Net Zero 2030 Target for Greater London	2022	Identifies four pathways of varying ambition to reach net zero 2030 target: <ul style="list-style-type: none"> - High Electrification. - High Hydrogen. - Accelerated Green. - No Constraints. 	<ul style="list-style-type: none"> - Addressing buildings and energy systems emissions are critical to decarbonise the London Bridge area. This will require multi-stakeholder engagement and cooperation across the public and the private sector. This will be explored further in the communal projects section.

Organisation	Policy	Date	Key Points	Relevance for London Bridge BID's Carbon Neutral Routemap
London Borough of Southwark Council	Southwark Climate Emergency Strategy	2021	<p>Declaration of a climate emergency and becoming carbon neutral by 2030. Decarbonisation pathways produced and based on chosen interventions, a 57% reduction in emissions by 2030 can be achieved, with the gap to net zero carbon closed by offsetting and insetting. Confirmed the establishment of a Citizens' Jury in climate change. Identified priorities include:</p> <ul style="list-style-type: none"> - Greener buildings. - Active and sustainable travel. - Thriving natural environment. - Circular economy. - Renewable energy. <p>Programmes to reduce Council's direct carbon emissions:</p> <ul style="list-style-type: none"> - Reduction in vehicle mileage. - Switch to EV for all vehicles. - Energy efficient lights and appliances. - Retrofit council buildings. - Transition away from natural gas heating. - Local renewable. - Offsetting. 	<ul style="list-style-type: none"> - This Routemap aligns with Southwark Council's goal to be carbon neutral by 2030. - This Routemap's proposed projects and interventions align with Southwark's priorities and programme of work. - The Strategy identifies that businesses have a crucial role to play in decarbonising the borough, with the council only being responsible for 12% of the emissions in the borough. - By collaborating with Southwark Council, Team London Bridge and local businesses can accelerate their decarbonisation and access support to deliver specific interventions. - TLB can act as a catalyst for business engagement across the borough. Business engagement was set as a priority by the Citizen Jury. - This Routemap also aligns with the Council's new Climate Change Strategy which will soon be published. This offers further opportunity for joint efforts and coordinated actions.
Team London Bridge	Team London Bridge Business Plan 2021-2026	2021	<p>Describes how the BID levy will be spent over the following 5 years and re-aligns its vision to put sustainable values at the core of decision-making processes. Commitments include:</p> <ul style="list-style-type: none"> - Provide added resilience to future economic and social shocks - Make London Bridge part of a Carbon Neutral Southwark by 2030. - Make London Bridge a 'front stage' for London culture. - Make London Bridge the most enjoyable, safe, and convenient place to work in London. - Make a green and healthy street environment that puts walking and cycling first, providing an exemplar for London. - Make London Bridge the premier location for responsible businesses and ethically conscious employees. 	<ul style="list-style-type: none"> - The ambition and interventions proposed in this Routemap will align with the commitments made in Team London Bridge's Business Plan. - The Routemap and its subsequent delivery will be key in achieving these commitments with quick wins identified for 2025. - Interventions suggested in the Routemap will support London Bridge becoming a premier location for responsible businesses and employees. - This Routemap will help set up priorities for the next business plan period to 2030.
	Responsible Business Plan	2021	<p>Details a framework for achieving social, environmental and economic success. Identifies how Team London Bridge can support businesses in making a positive impact on people, planet and place, and how small decisions by their businesses contribute to global goals. The Plan includes:</p> <ul style="list-style-type: none"> - Commitment to support the UNSDGs. - Work with businesses to improve business performance. - Use a joint consolidation centre. - Expand cargo bike use. - Support projects that promote the circular economy. 	<ul style="list-style-type: none"> - The Routemap aligns with the commitments made as part of the Responsible Business Plan. - In particular it echoes calls for a joint consolidation centre, projects to promote the circular economy and working with local businesses. - Decarbonisation is part of a wider sustainability agenda including ESG and Corporate Social Responsibility policies, which are already a priority for TLB.

Table 1: Summary Policy Table

Context

The UK Government has established a legally binding target to be Net Zero by 2050, which covers all emissions (Scope 1, 2 and 3).

There isn't a globally recognised definition of a 'Net Zero' city, region or Business Improvement District. Local Authorities tend to use the terms 'Net Zero' and 'Carbon Neutral' interchangeably, and their targets relate to Scope 1 and 2 emissions only. For reference, the Mayor of London's target is Net Zero by 2030 (Scope 1 and 2).

The guidance for reaching Net Zero for individual businesses is much clearer, and there is a distinction between the definitions of 'Net Zero' and 'Carbon Neutral', with the former being aligned to climate science and more rigorous. This is explained further below.

This Routemap for the Team London Bridge BID is unique in that it needs to align with both Southwark Council's Climate Change Strategy, **and** the definition of net zero for the businesses within the BID area.

Southwark Council's Carbon Neutral Target

Following their declaration of a climate emergency in March 2019, Southwark Council committed to bring forward its target of making Southwark carbon neutral from 2050 to 2030. In July 2021 the council published a Climate Change Strategy outlining their approach to achieving the updated target. Southwark's strategy covers Scope 1 and 2 emissions (excluding, Scope 3), and requires offsetting and insetting to reach their 2030 target. In their Climate Change Strategy, Southwark Council use the terms 'carbon neutral' and 'net zero' interchangeably. Their target aligns with the PAS 2060 Standard definition of carbon neutral.

Science-Based Targets Initiative's Corporate Standard

In October 2021, the Science-Based Targets Initiative (SBTi) published the Corporate Net Zero Standard for businesses, which defines net zero as:

- Reducing Scope 1, 2, and 3 emissions to zero or to a residual level that is consistent with reaching net zero emissions at the global or sector level in eligible 1.5°C-aligned pathways (90% emissions reduction through 'reduction').
- Neutralizing any residual emissions at the net zero target year and any GHG emissions released into the atmosphere thereafter (10% emissions reduction through offsetting).

The SBTi Corporate Standard requires near-term science-based targets for 2030, and long-term science-based targets for 2050. It is well regarded as being the best practice definition and methodology for achieving net zero, as it is aligned to climate science and focuses on reduction before offsetting.

PAS 2060 Carbon Neutrality

PAS 2060 is the specification for carbon neutrality, and focuses on Scope 1 and 2 emissions. The PAS 2060 standard was initially launched by the British Standards Institution in 2010 (and updated in 2014) with the objective of increasing transparency of carbon neutrality claims by providing a common definition and recognised method of achieving carbon neutral status. It sets out requirements for quantification, reduction and offsetting of greenhouse gas (GHG) emissions for organisations, products and events.

Carbon Neutral	Net Zero
Alignment with the PAS 2060 Standard.	Alignment with the SBTi's Net Zero Standard.
<p>Key principles:</p> <ul style="list-style-type: none"> - Reduction plan required for Scope 1 and 2 emissions. - Scope 3 emissions not mandatory but encouraged - Residual emissions offset. 	<p>Key principles:</p> <ul style="list-style-type: none"> - 90%+ reduction must be achieved in Scope 1, 2 and 3 emissions. - Final 5-10% residual emissions neutralised through carbon removal (technical removal or nature-based solutions).
Target for the London Bridge BID area in alignment with Southwark Council.	Recommended target for the London Bridge BID business members, in alignment with recognised best practice.

Table 2: Summary Points Carbon Neutral and Net Zero

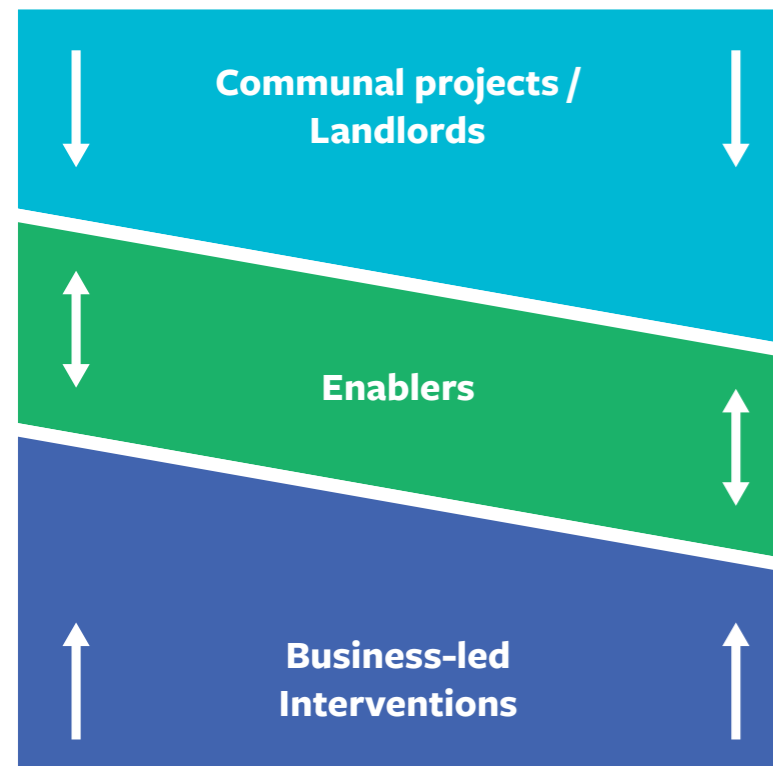
Below is a summary of the difference between carbon neutral (as defined by PAS 2060) and Net Zero Carbon as defined by the SBTi and their use in this Routemap (See Table 2).

Conclusion on Terminology for this Routemap

In conclusion, the London Bridge Carbon Neutral Routemap uses the terms:

- 'Carbon neutral' in relation to the emissions reduction approach for the BID as an area, in line with Southwark Council's focus on Scope 1 and 2 emissions (See page 10 for more information on Scopes used).
- 'Net zero' in relation to the approach for individual businesses (Scope 1, 2 and 3), who are also encouraged to sign up to the SBTi.

For the London Bridge BID to achieve carbon neutrality by 2030, a combination of interventions is required. It is why, this Routemap proposes four types of interventions to be delivered by BID businesses, landlords, tenants, developers and TLB. The delivery of this combination of interventions will also help individual businesses meet their net zero targets.



How the Different Types of Interventions Work Together



Enabling Mechanisms

Decarbonising business operations is easier if businesses have invested in enabling mechanisms. Although these enablers lead to small and/or indirect carbon savings, they help organisations accelerate the delivery of more complex projects and help build a communal vision and path forward. Enablers are explored on page 19. Team London Bridge must play a leadership role in helping deliver these enablers.



Communal Projects

This Routemap proposes five large-scale projects that require multi-stakeholder collaboration, in particular Southwark Borough Council and landlords, in order to be effectively delivered. These projects focus on carbon hotspots, namely energy-related and building-related emissions. We recommend that Team London Bridge galvanises and coordinates support to collectively deliver these projects. These are explained from pages 26-32.



Business-led Interventions

A series of interventions have been proposed for each different business type. These interventions span from working with their supply chains to changing LED lighting, and many can be facilitated by landlords and tenants working co-operatively. We recommend businesses identify which interventions are most relevant to them, based on what they have already done. These interventions are presented from pages 33 to 65.



A Sustainable Transition Fund

The interventions mapped above will achieve carbon savings. Yet, a gap will remain to achieve carbon neutrality, which will need to be offset. It is why we are proposing a communal Sustainable Transition Fund, which would be administered and spent on local sustainable projects to deliver local benefits. The Transition Fund is covered on page 23.



Potters Fields Park



London Bridge's Coffee Cup Recycling Bins

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Carbon Baseline

Process

xt tonnes quantified the London Bridge BID members' carbon footprint in two stages:

1. They created a carbon footprint for over 40 individual participating businesses on their platform. These 40 businesses account for 11% of the total number of businesses in the area, cover 41% of the total square metre area in the BID, represent a wide-range of business types and contribute to 63% of the BID area's total carbon footprint. Businesses with multiple offices/locations only submitted data for London Bridge-based buildings and operations.
2. They combined this with public and private data sources to model the remaining businesses based on key characteristics. The combination of quality data from local businesses with publicly available data, and tuning this with local norms, provides accuracy and reliability to estimate the area's carbon hotspots.

The year 2019 was chosen as a baseline to measure the businesses' carbon footprint for several reasons. This year avoids distortions from the COVID-19 pandemic, and is recent enough to make it easier for businesses to find the data, especially those newer to the area. It is also close to the SBTi's suggested baseline year of 2018.

There is always some uncertainty when measuring carbon emissions. For this reason a range has been included in the analysis. This reflects the fact that those businesses with less available data may be performing particularly well or poorly in terms of their carbon intensity. Whilst the range is quite large, the data analysed provides sufficient information to inform recommendations made in this Routemap. The scope of the carbon assessment was aligned with the Greenhouse Gas Protocol (GHGP) and limited to the sources of emissions listed below.

A methodology for the carbon baseline can be found on pages 73-74. See Table 3 for a definition of each emission source.

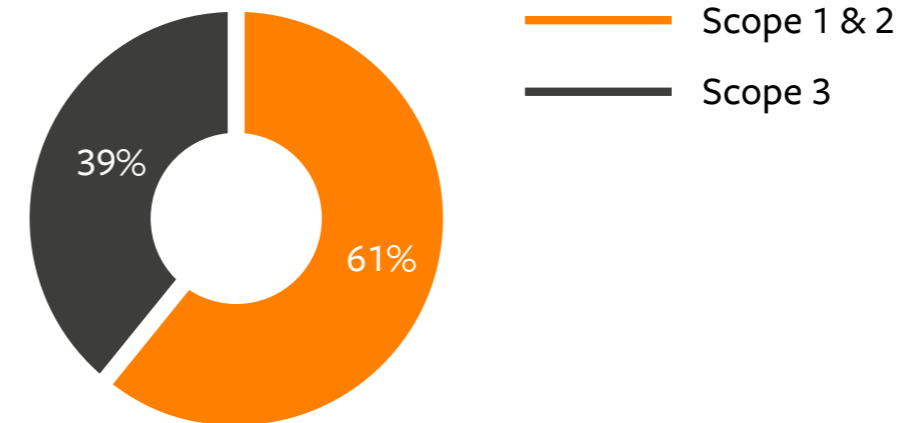


Figure 3: London Bridge BID's Carbon Footprint by Scope

Scope 1 and 2

- Buildings (fuel, purchased electricity, heat and refrigerants).
- Vehicles (fuel & refrigerants).

Scope 3

- **Category 1** – Purchased goods and services.
- **Category 3** – Fuel and energy-related activities.
- **Category 4** – Upstream transportation.
- **Category 5** – Waste generated in operations.
- **Category 6** – Business travel.
- **Category 7** – Employee commuting.

Emissions Source		Scope	Description
Buildings	Heat	1 or 2	Emissions released in processes relating to heating buildings, including burning of fossil fuels and electrified heating systems.
	Power	2	Emissions created by the generation of electricity that the company consumes.
	Refrigerants	1	Emissions associated with the leakage of refrigerant gases used in cooling appliances such as fridges and air conditioning units. These gases normally have a global warming potential (GWP) several order of magnitudes larger than CO2.
	Well-to-Tank (WTT)	3	Emissions from the extraction, refining and transportation of fuels before they are used in electricity generation.
	Transmission and Distribution (T&D)	3	Emissions of electricity, steam, heating, and cooling consumed (i.e., lost) in their transmission and distribution before they reach the user.
Upstream & Downstream Water	3	Emissions associated with the extraction, processing and transportation of water before and after it is used by the customer.	
Commutes	3	Emissions associated with the transportation of employees between their homes and the workplaces.	
Business Travel	3	Emissions associated with the transportation of employees for business related activities.	
Downstream Waste	3	Emissions associated with the disposal and treatment of waste generated by the company.	
Goods for Resale	3	Emissions associated with the extraction, production and transportation of goods whose purpose is to be sold on to a customer. Examples include a retailer's stock items.	
Consumables	3	Emissions associated with the extraction, production and transportation of goods whose purpose is to be consumed by the company's own operations. Examples include paper and stationary.	

Table 3: Emissions Sources Definition Derived from the [GHGP categorisation](#)

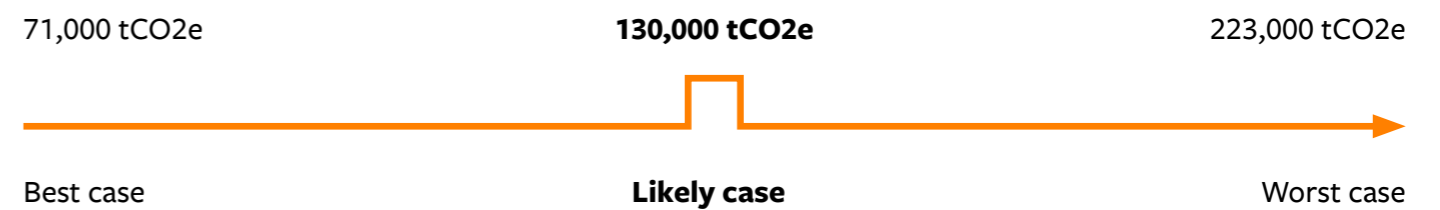
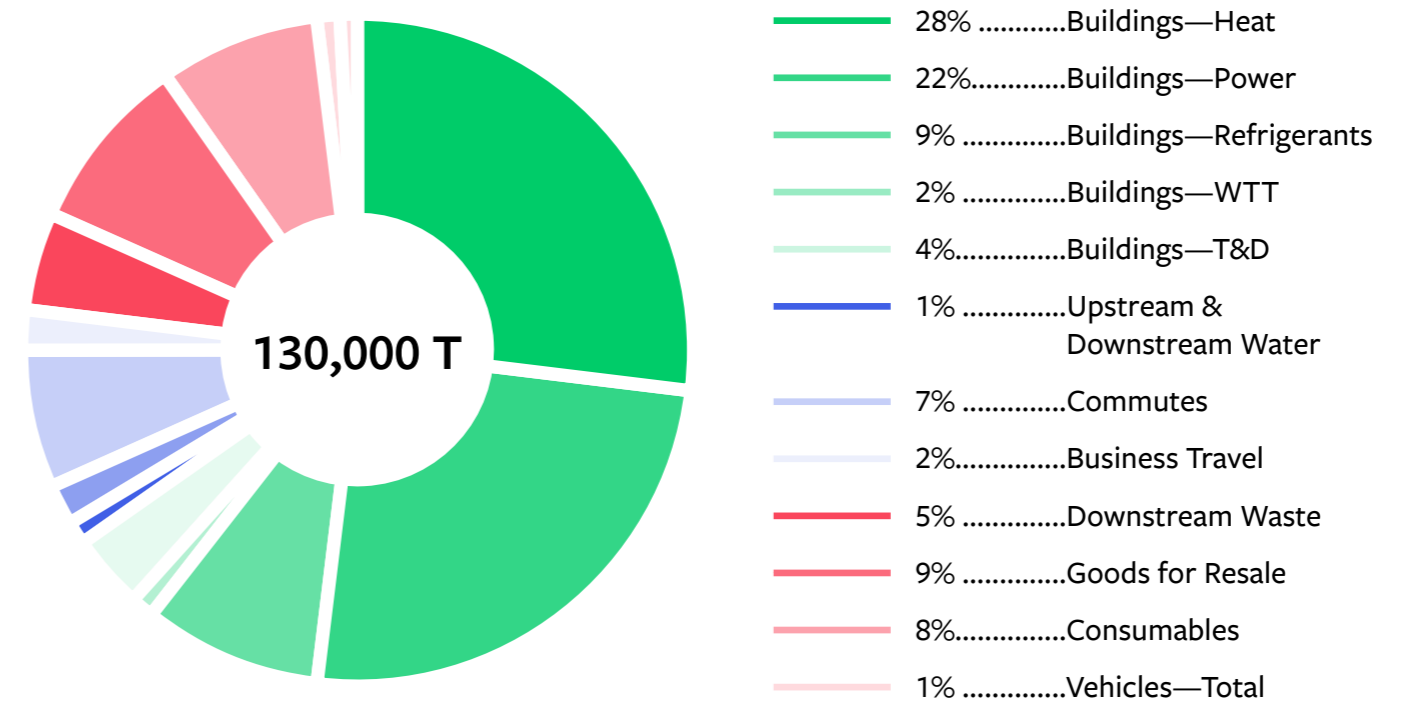


Figure 4: Carbon Footprint for the London Bridge BID Area in 2019

Analysis

In 2019, the businesses, including landlords, in the London Bridge BID, were responsible for 130,000 tonnes of carbon dioxide equivalent emissions (CO₂e) (See Fig. 3 and 4). Please note that 130,000 tCO₂e is the most likely carbon footprint for the businesses in the London Bridge BID area. We have provided a range with a best case carbon footprint of 71,000 tCO₂e and a worst case scenario of 223,000 tCO₂e.

Carbon emissions associated with buildings account for 65% of the area's carbon footprint (84,500 tCO₂e). The majority of these emissions (65,000 tCO₂e) come from heating and powering buildings with gas and electricity. These emissions also account for 50% of the BID area's total carbon footprint, representing a significant carbon hotspot for the area. 5,200 tCO₂e are associated with Building Transport and Distribution (T&D) and 2,600 tCO₂e are associated with Well-to-Tank (WTT). These sources are negligible and/or can be addressed through other building interventions.

Building refrigerants and Goods for Resale are the third highest source of carbon emissions, each accounting for 11,700tCO₂e. Building refrigerants are emissions associated with cooling buildings, and stem from the cooling agents that are used. These emissions represent another carbon hotspot for the area and will be addressed in this Routemap.

Goods for Resale are an estimate of all the goods businesses in the area purchased from their suppliers to resell to their customers. These goods will vary depending on the type of business. Given this variation, we are proposing different interventions for each type of business within the area.

Consumables account for 8% of the area's carbon footprint (10,400 tCO₂e). These represent goods that are consumed directly by businesses on-site, rather than being sold to customers (e.g. stationary). Given the variety of consumables involved in the area, a series of interventions is proposed for each business type in this Routemap.

Looking at transport emissions, the London Bridge area is already best-in-class with a great public transport network and various active travel options. It is therefore not surprising that transport related emissions are low (vehicles, business travel and commutes account for 10% of the area's carbon footprint). The majority of these emissions come from commutes (7% representing 9,100 tCO₂e). There is little individual businesses can do on their own but they can work together to reduce this source of emissions.

Indeed, to target these emissions, the London Bridge area will have to implement ambitious interventions that aim to eliminate remaining car-led movements and to switch necessary car movements to electric vehicles. This will be explored in the communal project section. Vehicle emissions (1%) are those associated with company fleets, whereas business travel (2%) accounts for individuals that travel by rail or road.

It is worth noting that the London Bridge BID area still has diesel trains coming and going from the London Bridge station, as well as diesel boats (such as the Thames Clippers). Plans and targets have already been set to phase out diesel trains and boats. Tackling emissions from these trains and boats is out of scope for this Routemap but more information can be found [here](#).

Downstream waste, which is the waste produced by local businesses, accounts for 5% of the emissions in the area (6,500 tCO₂e). Reducing these emissions can be addressed through a combination of larger-scale communal projects and individual business interventions, which will be explored in this Routemap.

Finally, upstream and downstream water emissions equal to 1,300 tCO₂e in the area. Businesses can adopt various techniques to reduce their water usage, eliminate leaks and thereby reduce emissions associated with water, which will be explored in this Routemap.

Comparison with Neighbours

We have also compared the London Bridge BID's carbon footprint with that of the London Borough of Southwark (entire borough, not just the Council's direct emissions) and of the City of London (See Table 4).

Looking at Scope 1 and 2 emissions, the City of London's emissions are much lower than those of London Bridge, despite covering a larger area. This suggests that the City of London has more energy efficient buildings, procures green electricity and gas, and has reduced other emissions associated with their buildings. Given London Bridge BID's portion of Scope 1 and 2 emissions, targeting buildings and reducing emissions associated with their operations is critical to decarbonise the area.

Compared to the Borough of Southwark and the City of London, Scope 3 emissions for the London Bridge BID were not higher than Scope 1 and 2 emissions. This is probably because the London Bridge BID area is much smaller than the two other areas studied and therefore has smaller supply chains, resulting in lower carbon emissions.

Finally, since the three regions cover different areas, it is interesting to see that per meter square the City of London is more carbon intensive than the London Bridge BID and the London Borough of Southwark. This confirms that decarbonising supply chains is also critical to achieve carbon neutrality, and especially net zero carbon emissions.

Discrepancy will inevitably be caused by different data collection and carbon accounting approaches. More information about the methodology used for benchmarking the BID's carbon footprint can be found on page 73.

What does 130,000 tonnes of CO2e mean?

130,000 tCO2e represents the same amount of carbon emissions produced by:

- Flying from London to Sydney and back again 21,311 times.
- Driving a petrol car around the M25 2,758,006 times.
- Powering 25,295 homes for a year.
- Charging 15,813,544,018 smartphones.

Region	Scope 1 and 2 Carbon Footprint (tCO2e)	Scope 3 Carbon Footprint (tCO2e)	Total Carbon Footprint (tCO2e)	Area (km ²)	Carbon Emissions per sqm (tCO2e)
London Bridge Business Improvement District	71,500	58,500	130,000	0.5	0.26
London Borough of Southwark	1,288,000	2,194,000	3,482,000	28.9	0.12
City of London (Square Mile)	36,000	1,520,000	1,556,000	2.9	0.54

Table 4: Comparing the BID's Carbon Footprint with Neighbouring Areas

A breakdown of carbon emissions per business type in the area has been produced (See Fig.5 and Table 5).

Offices in the London Bridge BID account for 49% of the area's carbon emissions. This is unsurprising as it is the most represented business type in this area, making up half of Team London Bridge's member businesses and two-thirds of the area's employees.

The business type responsible for the second highest emissions is Healthcare, representing 23% of the carbon footprint. Healthcare businesses (eight organisations that include hospitals, dental practices and therapy clinics) represent a quarter of the BID's net internal surface area.

Of the other defined business types, Food & Drink businesses were the third largest emitters, accounting for 9% of the area's footprint. These restaurants, cafés and bars provide food and drink for London Bridge's huge worker and visitor population.

Comprising 9 hotels and gyms, Hospitality accounts for 4% of the area's carbon footprint.

The 44 Retail businesses emitted 3% of the 130,000 tCO2e. Making up 12% of the BID's 363 members, the retailers only cover 1% of the total internal floor area.

The two theatres in the area were responsible for 1% of the BID's emissions, which is unsurprising considering they account for less than 1% of the area's businesses, internal area, and employees.

The Other section includes businesses that did not fit into the categories outlined above. This includes the area's universities, hair-salons, barbers, museums, escape rooms and mechanics. These businesses are responsible for 11% of the area's carbon emissions.

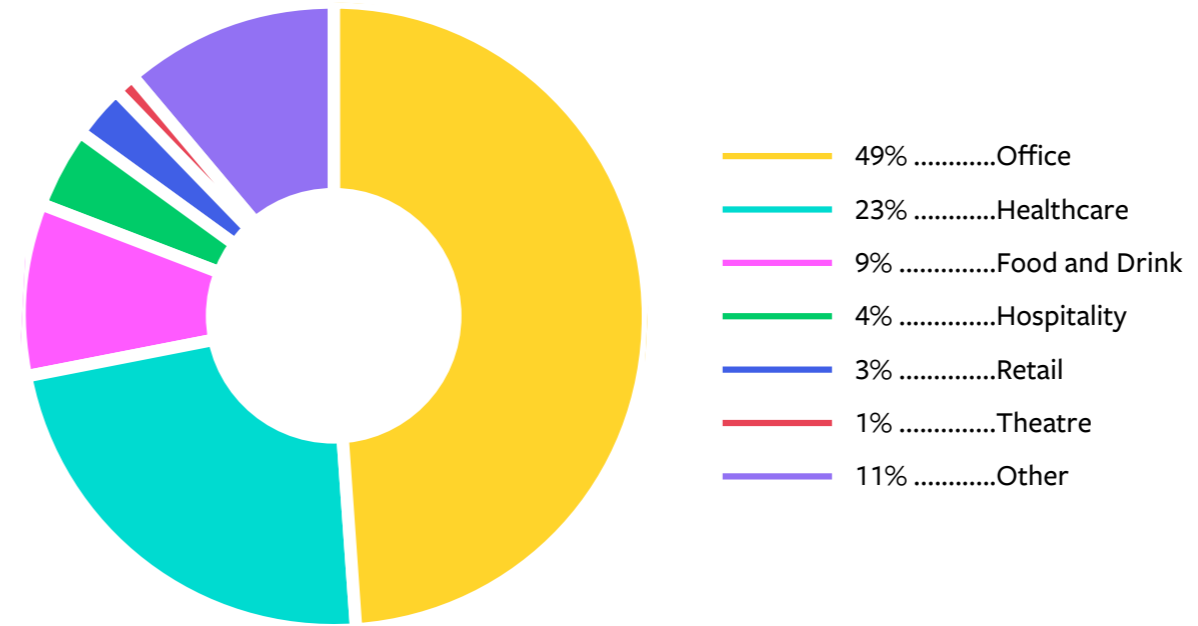
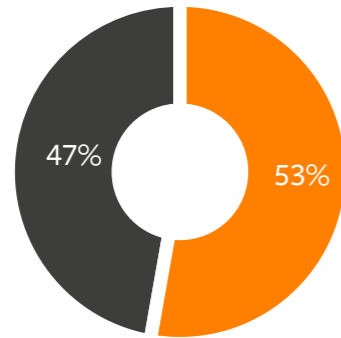


Figure 5: Carbon Footprint Proportion of Total BID's Carbon Footprint by Business Type

Type	Number of Businesses	Business Type Proportion (%)	Area of BID Covered (%)	Full Time Equivalent (FTEs) (%)
Office	177	49%	46%	66%
Healthcare	8	2%	26%	17%
Food & Drink	98	27%	3%	6%
Hospitality	9	2%	5%	2%
Retail	44	12%	1%	2%
Theatre	2	<1%	<1%	<1%
Other	24	17%	17%	6%
TOTAL	363	100%	100%	100%

Table 5: Information on each Business Type



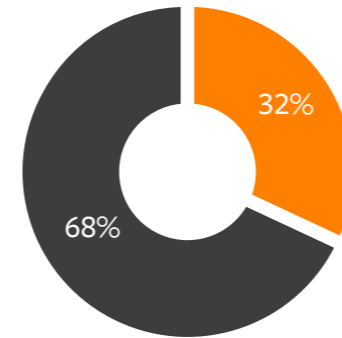
— Scope 1 & 2
— Scope 3

Figure 6: Offices' Carbon Footprint by Scope

Offices

For offices located in the London Bridge's BID, 53% of their carbon emissions come from Scope 1 and 2 emissions. This includes carbon emissions associated with purchased electricity and gas. The majority of carbon emissions from offices is associated with lighting, cooling, heating, computing and other loads.

Offices also have high Scope 3 emissions (47%) which is associated with their upstream and downstream supply chains. Scope 3 emissions includes carbon emissions associated with purchasing goods, transporting goods and supply chain operations. Supply chain emissions only cover those directly linked to the businesses in the London Bridge BID area, not those associated with national or global operations.



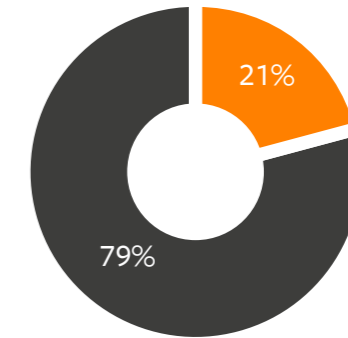
— Scope 1 & 2
— Scope 3

Figure 7: Food and Drink Businesses' Carbon Footprint by Scope

Food & Drink

Food and drink businesses' Scope 1 and 2 emissions represent 32% of their carbon footprint. These emissions are associated with heating, cooling and powering buildings, including powering kitchen equipment and refrigerators.

Scope 3 emissions for food and drink businesses in the London Bridge BID account for 68% of their total carbon footprint. These are emissions associated with their upstream and downstream supply chains (e.g. transporting food that is subsequently cooked/prepared on site, or delivering food to customers off-site).



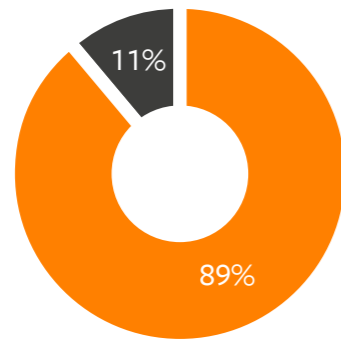
— Scope 1 & 2
— Scope 3

Figure 8: Retail's Carbon Footprint by Scope

Retail

Retail businesses' Scope 1 and 2 emissions are lower than other businesses because retailers have few operational demands beyond lighting and heating.

Scope 3 emissions for retail businesses in the London Bridge BID area account for 79% of their carbon footprint. Retail businesses have high Scope 3 emissions because of the nature of their business. Instead of preparing their goods on-site, they procure them from their supply chains and resell them to customers. The substantial Scope 3 proportion associated with retailers stems from emissions associated with the manufacturing, transportation, and packaging of these goods.



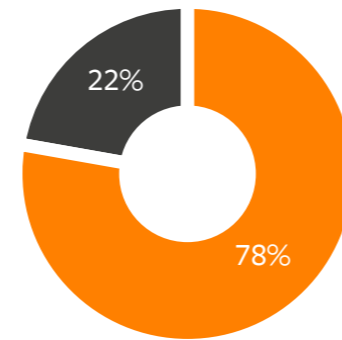
— Scope 1 & 2
— Scope 3

Figure 9: Healthcare Organisations' Carbon Footprint by Scope

Healthcare

The majority of Healthcare businesses' carbon footprint is from Scope 1 and 2. These emissions are caused by powering energy-intensive equipment and by the heating and cooling of rooms for the thermal comfort of patients and employees.

Scope 3 emissions come from their supply chains. Products like medical supplies and pharmaceuticals are typically disposable and require extensive packaging and careful transportation, resulting in a substantial carbon footprint.



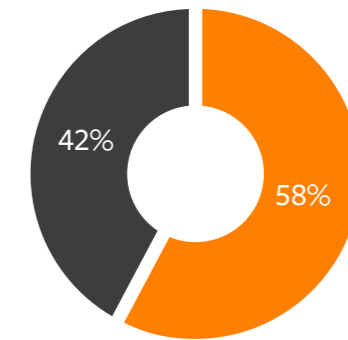
— Scope 1 & 2
— Scope 3

Figure 10: Hospitality's Carbon Footprint by Scope

Hospitality

Hospitality's carbon footprint is predominantly associated with Scope 1 and 2. These are emissions associated with buildings. In the case of a hotel, large amounts of energy are required to ensure the guest rooms are adequately heated or cooled, while gyms require energy to power equipment and air conditioning units.

Scope 3 emissions for hospitality will come from their supply chains and the procurement of goods and services including food, drinks and cleaning supplies.



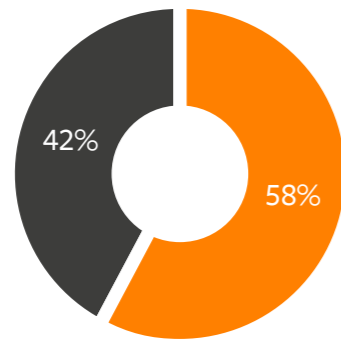
— Scope 1 & 2
— Scope 3

Figure 11: Theatres' Carbon Footprint by Scope

Theatres

Theatre's scope 1 and 2 emissions are higher than its Scope 3 emissions. This is because theatres require a lot of energy to heat and cool large spaces (such as their auditorium) as well as to power equipment such as lighting

Stage productions will contribute heavily to these businesses' Scope 3 emissions. This includes procuring sets, props, decorations and costumes. Scope 3 carbon emissions are also associated with procuring food and drinks sold on-site..



— Scope 1 & 2
— Scope 3

Figure 12: Other Business Types' Carbon Footprint by Scope



Cargo Bikes in London Bridge



Sustainable Urban Drainage Systems in Snowfields

Other Business Types

Businesses in the Other category include universities, hair-salons, barbers, museums, theatres, escape rooms, mechanics, car parks, and other various businesses.

As the activities of these businesses are so varied, no meaningful conclusions can be drawn from the split of their Scopes, other than the split between Scope 1 and 2 emissions compared to Scope 3 emissions are similar as those observed for the entire area.



Paper Round Bins in London Bridge



View of the Shard in London Bridge



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Enabling a Carbon Neutral Transition



Decarbonisation requires an initial investment in enabling mechanisms. These mechanisms will help build BID members' capacity to deliver carbon saving projects and will create a positive culture of change in the area, which will accelerate the area's transition to carbon neutrality.

There are numerous enabling mechanisms that can support organisations' transition to carbon neutrality. This Routemap has identified several actions under each enabling mechanism that businesses in the area can take forward. We have also identified specific interventions that Team London Bridge can deliver in order to support its members, and the wider area, in reaching carbon neutrality. The delivery of these enablers could be supported by business support programmes or with grants funding, for example through programmes such as the Southwark's Pioneers Fund which supports entrepreneurs to start and grow their businesses and reduce their carbon emissions.



Gardening in London Bridge

In this report, we explore five different enabling mechanisms:



Governance

Collaboration, partnerships and effective organisational structures are required to deliver carbon neutral interventions. For example, this includes setting up forums, working groups or public-private partnerships.



Capacity-building

Decarbonisation is a complex topic and an organisation or group of organisations can accelerate their low-carbon transition by increasing their knowledge, upskilling and supporting knowledge-sharing.



Financial Capital

New financial mechanisms and delivery models can facilitate the delivery of carbon neutral projects. This includes setting up offsetting or inssetting funds or adopting a shadow carbon price.



Data and Information

Collecting, analysing and sharing accurate data about carbon performance and carbon neutral projects' success is key to inform future interventions and evaluate progress.



Policy and Strategies

Organisations benefit from having clear policies setting shared vision and goals to transition to carbon neutrality. Strategy documents, from action plans, charters to routemaps, are useful in mapping a communal pathway and in galvanising wider support.

Governance

Set Up Working Groups

Businesses, tenants and landlords in the BID area should build on existing groups and forums, which can be helpful to encourage more conversation and collaboration, as well as develop a new forum to take forward the aims of this report. We have identified below key groups and opportunities for specific stakeholders:

- **Landlords and developers:** Major landlords and developers should use the existing London Bridge Stakeholders Group to address carbon emissions associated with buildings and to embed sustainability considerations on future large-scale developments (See page 65 for relevant topics). This group is particularly well-placed to develop major community schemes in partnership with Southwark Council and the GLA.
- **Tenants and landlords:** Tenants should work as closely as possible amongst themselves and with landlords, through specific landlord fora, to monitor assets' performance and address sustainability issues. A good example is the London Bridge City Sustainability Forum. TLB can provide experts where smaller-scale and/or topic-specific fora are needed.
- **Cross-sector businesses:** It is key that businesses continue to work together and share information. We encourage that interested businesses also create working groups amongst themselves.

Appoint Sustainability Champions

All member organisations of the London Bridge BID area and estates should appoint a sustainability and/or net zero champion or ambassador (if they have not done so yet). This 'point person' can maintain momentum, share best practice and attend key events as a business representative.

Create a Sustainability Champion Working Group

Sustainability and/or Net Zero Champions should create a specific working group to help implement the actions outlined in this Routemap.

Capacity-Building

Upskill your Workforce on Sustainability

Upskilling employees is crucial to accelerate a transition to carbon neutrality and embed sustainability within a company's processes and culture. It is why we recommend that member organisations invest in a sustainability training programme such as the Climate Literacy Project.

We also recommend that relevant member organisations offer specific training for facilities managers (to maximise resource efficiency within buildings).

Waste management training should also be provided for all employees of member organisations in the area.

There is a wealth of expertise in the area and businesses should be encouraged to share their experience and expertise, as well as best practice and lessons learnt.

Embed Sustainability in Marketing and Communications

Member organisations should use external and internal communications to bring employees, supply chain, customers and other stakeholders with them on their journey to carbon neutrality and/or net zero carbon. We would encourage businesses to share sustainability ambitions, carbon neutral and/or net zero targets, information about projects, strategies and plans as well as a 'call to action'. This is also a great way to share information and learnings with others.

Financial Capital

Divest Pension Funds from Fossil Fuels

In 2019, UK pensions alone were invested in assets worth £3 trillion, making it the second largest pension market in the world. Sadly, a lot of that money is investing in companies that are contributing to climate change. We recommend that employers in the London Bridge BID area work with their pension providers to request divestment from fossil fuel industries.

Adopt Whole-Life Costing

We recommend that any organisation working in the built environment (such as developers, architects, building managers) use whole-life costing when assessing different interventions and/or options. It would also be beneficial to pair whole-life costing with whole-life carbon assessment, where possible and appropriate.

Adopt a Shadow Carbon Price

We recommend that businesses adopt a shadow carbon price, following guidance and prices set by the GLA. A shadow carbon price will inform decision-making processes and allow organisations to determine what the impact of various actions are on carbon emissions.

Quantify Sustainability's Co-Benefits

Decarbonising an organisation's operations delivers tangible co-benefits to a business, its stakeholders and local communities (e.g. air pollution reduction, wellbeing and health benefits, biodiversity increase etc.). Quantifying and reporting on these co-benefits can help businesses in developing the business case for carbon neutral projects and wider sustainability interventions.

Data and Information

Measure your Carbon Footprint and Set Targets

We strongly recommend that all BID member businesses measure (or continue to measure) their carbon footprint, using the xtonnes platform (or OAK Network, or their own platforms if they already have one).

Additionally, we would encourage businesses to agree to share their carbon performance with Team London Bridge. The latter can then collate carbon footprints to evaluate the area's overall carbon performance on an annual basis.

Moreover, we recommend that businesses set science-based targets to inform their decarbonisation. Setting science-based targets makes business sense: it future-proofs growth, saves money, provides resilience against regulation, boosts investor confidence, spurs innovation and competitiveness, and demonstrates concrete sustainability commitments to increasingly eco-conscious consumers.

Maximise Information-Sharing

We strongly recommend that businesses share information with one another on a regular basis. This can be done via the Team London Bridge's website, or through other platforms businesses may prefer to use.

Digitise your Operations

Digitalising an organisation's operations provides several benefits from helping them go paperless, facilitating information sharing, to increasing productivity. Uploading data to the 'cloud' can also help reduce carbon emissions.

We also recommend that the BID businesses delete any unnecessary data, as doing so will make them GDPR compliant and will lead to carbon savings.

Policies and Strategies

Develop and Implement Environmental or Sustainability Policy

Many organisations in the area already have some form of environmental policy or sustainability strategy. We recommend that:

- Any organisation that does not yet have such policy should develop one. There are many good examples amongst Team London Bridge's member businesses that can serve as best practice.
- That all organisations align their environmental policies and/or strategies to other relevant policies and strategies (such as ESG or Corporate Social Responsibility (CSR)).
- That all organisations communicate their policies' main goals and requirements to their suppliers.

Embed Carbon Neutrality and Sustainability Requirements in Procurement Processes

Changing procurement policies to include clear carbon considerations will help businesses reduce Scope 3 carbon emissions. We recommend that:

- Organisations conduct a hotspot analysis to determine which parts of their supply chains are responsible for the largest carbon emissions.
- Organisations work with their suppliers, bringing them along on their decarbonisation journey.
- Organisations implement carbon assessments and requirements within their procurement process. These requirements should at a minimum target operational carbon, with ambitious organisations also adding embodied carbon targets. We also recommend organisations adopt performance-based contracting around carbon with their suppliers (for example for M&E or lighting).



London Bridge: An Action Plan for Cycling

#londonbridgecycling

TEAM
LONDON
BRIDGE

An Example of a Sustainable Policy: TLB's London Bridge: An Action Plan for Cycling

In addition to reducing its own carbon emissions, Team London Bridge can assist member organisations in accelerating their decarbonisation by helping with the delivery of different enabling mechanisms.

Enabling Intervention	Details	Outcomes	Previous Work to Build Upon
Create a Sustainability Champions Working Group	Team London Bridge can set up a working group comprised of the Sustainability Champions appointed by member businesses and landlords. This group will help coordinate the work outlined in this Routemap and help maintain momentum.	<ul style="list-style-type: none"> - Track progress across the area. - Coordinate efforts to deliver communal projects. - Manage funding. 	<ul style="list-style-type: none"> - Green Network. - Freight Forum Green Grid Workgroup.
Leverage partnerships with governmental bodies	Team London Bridge can leverage its position to improve collaboration with local and national government organisation, as well as with other large-scale organisations that can help with the delivery of strategic projects in the area. This includes organisations such as: other neighbouring BIDs, Southwark Council, the GLA, national governmental bodies such as BEIS and funders such as UKRI or Innovate UK. To do so, we would recommend Team London Bridge produce a list of 'ask' for specific projects which can serve as an initial point of discussion with these organisations.	<ul style="list-style-type: none"> - Build on existing collaboration with local and national government. - Access to funding. - Collaborate with other Business Improvement Districts to deliver larger scale projects. 	<ul style="list-style-type: none"> - Brokering local connections.
Organise carbon neutral themed events.	Team London Bridge is ideally placed to gather businesses and convene experts around various sustainability topics. We recommend Team London Bridge organise a number of themed events throughout the next five years. We recommend these events take place in-person and build on planned events such as the Eco-Festival. These events are an opportunity for businesses to network, to collaborate around shared challenges, and to enhance joint working including with governmental bodies such as Southwark Council or the GLA.	<ul style="list-style-type: none"> - Networking opportunities for businesses, brokering local partnerships and connections. - Opportunity to share knowledge and solutions to common challenges. - Communal upskilling and learning. 	<ul style="list-style-type: none"> - Participatory events. - Green Network. - Culture programme. - London Bridge Hive.
Provide training on various carbon neutral themes and sustainability.	Team London Bridge could explore opportunities to provide training to member organisations (through collaboration with local universities, access to subsidised programmes and contribution to CPD).	<ul style="list-style-type: none"> - Opportunity to share knowledge and solutions to common challenges. - Communal upskilling and learning. - Improve delivery of climate projects. 	<ul style="list-style-type: none"> - Mental health training. - Security training.
Organise peer to peer business coaching.	Team London Bridge could work with supportive member organisations to set up a peer to peer business coaching system for local businesses to work and learn from one another. This could be done as part of the existing Green Network.	<ul style="list-style-type: none"> - Networking opportunities for businesses, brokering local partnerships and connections. - Opportunity to share knowledge and solutions to common challenges. - Communal upskilling and learning. 	<ul style="list-style-type: none"> - Green Network.

Enabling Intervention	Details	Outcomes	Previous Work to Build Upon
Launch a sustainability communications campaign.	Team London Bridge could launch a year-long multi-media communications campaign to raise awareness, share updates about project and galvanise support and action. This campaign could be thematic (building, transport, nature), and could include contributions from sustainability experts. This should build on work already being done for the launch of the Routemap.	<ul style="list-style-type: none"> – Position the London Bridge area as the top area where low-carbon, ambitious businesses set up. – Publicise the area's decarbonisation efforts, raise awareness, share knowledge and success stories. 	<ul style="list-style-type: none"> – Christmas campaign.
Set up a Transition Fund.	We strongly recommend that Team London Bridge investigates setting up a Transition Fund (or Community Carbon Fund). Businesses would offset and/or inset their emissions by contributing to the fund, using the carbon price set by the GLA. This money would be re-invested locally on sustainability projects that benefit local businesses and communities. Next steps include determining how the fund would be administered and what the process would be to select appropriate projects (in the BID area, in Southwark Borough and/or wider London).	<ul style="list-style-type: none"> – Opportunities to work with supply chain to reduce their carbon emissions (as a form of carbon insetting). – Invest in local projects that benefit local communities. 	<ul style="list-style-type: none"> – Community grants.
Create a repository of information on net zero suppliers.	We recommend that Team London Bridge creates an interactive repository of information for its member organisations. This repository should at a minimum include information about trusted, recommended carbon neutral and/or net zero suppliers. Local suppliers could be highlighted to encourage local businesses working together. This could resemble the Green Guide produced by Canary Wharf. The repository could also include information about government subsidies and grants available to businesses (such as the Climate Change Levy).	<ul style="list-style-type: none"> – Reduce emissions associated with supply chains (Scope 3). – Promoting local partnerships and working with local businesses. 	<ul style="list-style-type: none"> – Preferred eco-suppliers. – Recycling Suppliers. – Bikes for Businesses.
Facilitate information-sharing.	We recommend that the Team London Bridge's website includes a new section that allows businesses to share advice, tips, information, and success stories. Team London Bridge could also regularly remind member organisations to share information. This can also support the content of TLB's communications campaign.	<ul style="list-style-type: none"> – Opportunity to share knowledge and solutions to common challenges. – Communal upskilling and learning. – Improve delivery of climate projects. 	<ul style="list-style-type: none"> – Green Network.
Measure your carbon footprint and set targets.	We recommend that Team London Bridge explores opportunities to subsidise businesses using the xtonnes platform. Team London Bridge could also collate on an annual basis the carbon footprints of all businesses in the area in order to evaluate the BID's overall carbon performance and monitor progress towards reaching its carbon neutral target.	<ul style="list-style-type: none"> – Monitor and measure progress to better inform future projects. – Set common targets and trajectory. 	<ul style="list-style-type: none"> – Subsidised recycling.
Commit to a common net zero charter or pledge.	Team London Bridge could use the development and launch of this Routemap as an opportunity to create a net zero pledge or charter that local businesses can sign up to. Before doing so, we would recommend Team London Bridge reviews existing pledges taken by businesses to showcase the area's ambition and avoid duplication.	<ul style="list-style-type: none"> – Embedding sustainability into the Welcome Guide for member businesses. – Communicate the right message and a shared vision for the area. 	<ul style="list-style-type: none"> – Green Network.

Table 6: TLB's Role and Actions in Helping the BID Decarbonise



[SME Climate Hub](#)

Governance: The SME Climate Hub

The SME Climate Hub brings together multinational companies, financial institutions, and governments, to create clear incentives and opportunities for SMEs that commit to climate action. It provides small and medium-sized businesses with a one-stop-shop to make a climate commitment and access best-in-class tools and resources to mitigate their environmental impact and build business resilience.

Taking climate action through the SME Climate Hub helps small businesses accelerate business growth, build supply chain resilience, align with shifting governmental policy and consumer expectations and strengthen marketing and branding efforts. The initiative supports SMEs with fewer than 500 employees in developing a strategy to halve emissions by 2030 in line with the Paris Agreement and reach net zero emissions by 2050 or sooner. Businesses which commit to the SME Climate Hub will be globally recognised by the United Nations Race to Zero campaign.

The SME Climate Hub is an initiative founded by the We Mean Business Coalition, Exponential Roadmap Initiative and the United Nations Race to Zero campaign in collaboration with Oxford University and Normative.



[Carbon Literacy Project's Workshop](#)

Capacity Building: The Carbon Literacy Project

The [Carbon Literacy Project](#) is an organisation that offers carbon literacy training to individuals, organisations and communities creating carbon literate citizens that understand how climate change will affect them.

The project provides individuals with the knowledge and skills to reduce their carbon footprint, typically resulting in 5-15% carbon savings per person.

By becoming a Carbon Literate Organisation, companies can have a profound effect on the carbon footprint of their employees both in the workplace and in their wider lives, greatly reducing their impact on the planet.

All organisations within the BID area could pledge to sign up to become a Carbon Literate Organisation, giving their employees the knowledge and tools needed to drive their decarbonisation.



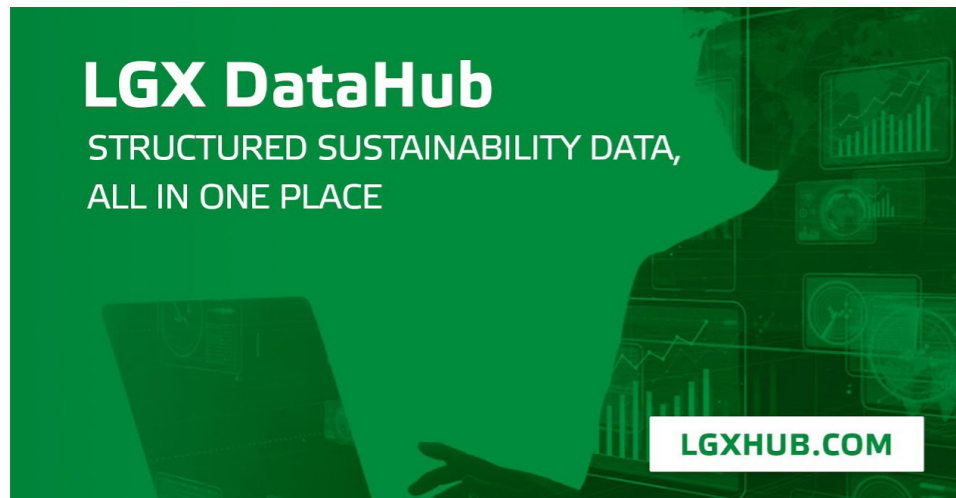
[Burberry's Insetting Fund](#)

Financial Capital: Burberry's Regeneration Fund

In 2020, Burberry create a specified 'regeneration' [fund](#) to support a new portfolio of "carbon insetting projects" that aim to deliver regenerative agriculture practices across its supply chain.

Insetting projects are different from offsetting. Instead of investing money in distant projects, the money collected through this fund is invested in projects that are carried out directly within the company's supply chain. This allows them to work directly with their local communities to be climate resilient, to promote biodiversity, to restore ecosystems and to support the livelihoods of local producers.

A London Bridge BID area Transition Fund could deliver similar projects and provide a mechanism to invest local money into decarbonising local supply chains and to deliver benefits to the local community.



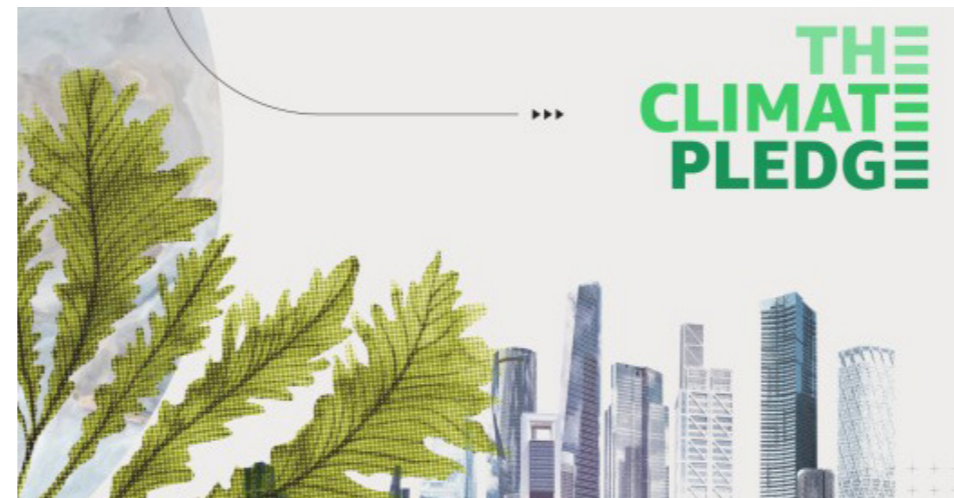
The Luxembourg Stock Exchange Sustainable [Data Hub](#)

Data and Information: LGX Data Hub

The Luxembourg Stock Exchange (LuxSE) launched LGX DataHub, a unique centralised database of structured data on a vast range of green, social and sustainable securities. The platform is aimed at helping asset managers and investors in building sustainable investment strategies and reporting on their investments. Issuers of sustainable securities disclose an extensive amount of sustainability data points. These data points are made available in different and often incompatible formats and the data is spread over multiple sources. Identifying, extracting and structuring this data is a time-consuming and resource-intensive exercise.

By providing a centralised repository where relevant data has been aggregated in a consistent manner, the LGX Data Hub facilitates analysis and reporting, as well as comparisons of the impact of different sustainable investments. Such an initiative improves and increases trust and confidence amongst investors, which in turns accelerates sustainable finance.

These types of interactive, digital platforms could be set up amongst the London Bridge BID members to share data on carbon performance, advice on specific projects and other relevant information.



Amazon and Global Optimism's [Climate Pledge](#)

Policy and Strategies: The Climate Pledge

In 2019, Amazon and Global Optimism co-founded the climate pledge, a commitment to achieve net zero carbon by 2040.

The Climate Pledge is a cross-sector community of companies and organisations working together to crack the climate crisis and solve the challenges of decarbonising the economy.

The 314 signatories have all committed to:

- Regular reporting: measuring and reporting greenhouse gas emissions on a regular basis.
- Eliminating carbon: implementing decarbonisation strategies in line with the Paris Agreement.
- Offsetting remaining emissions: choosing quantifiable, real, permanent and socially beneficial offsets.

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Communal Projects

Heating and Cooling District Network

Carbon Hotspots Targeted: Heating, cooling and powering buildings is responsible for 65% of the BID's carbon footprint. The energy used to heat buildings accounts for a third of these emissions. This project aims to reduce emissions associated with heating and cooling buildings.

Project Details: There are two ways to reduce carbon emissions associated with heating and cooling of buildings:

1. All buildings move away from fossil fuel-based heating systems and use technologies like heat pumps. This should be combined with purchasing renewable energy.
2. A heating and cooling network is built in the London Bridge area. This network would use low-carbon heat as a primary source of energy (from a combination of sewer, ground, aquifer, the River Thames, etc.). An aquifer-type system operates close to the Tate Modern and other small river-based systems exist, including on the River Thames.

Both options would be appropriate for the London Bridge BID area. We recommend the heating and cooling network as it can be more cost-efficient than a building by building approach. Regardless of the option chosen, the first step will be to invest in a retrofit programme for existing buildings. This retrofit programme should improve buildings' fabric, ideally to passive standard levels, and deliver other energy efficiency measures (smart controls, LEDs, centralised Building Management System etc.). Doing so will reduce energy demand, energy costs, associated carbon emissions, and the size of the heating and cooling network.

Implementation Considerations: The London Bridge area meets a number of conditions that make it appropriate for a heating and cooling network including existing potential sources of low-carbon heat, major potential customers with large office blocks and the hospital campus, and high-density developments within a small geographical area. The first step is to develop an initial Strategic Outline Case (SOC), which if successful would lead to a detailed outline business case. The cost is likely to be between £150-250k for each case.

A possible constraint could be finding room in the road network for pipes. An early investigation of constraints could be commissioned, potentially working with the Infrastructure Team at the GLA to identify if it is possible to install a network. It may also be more feasible for specific businesses that are co-located to work together to set up their own network.

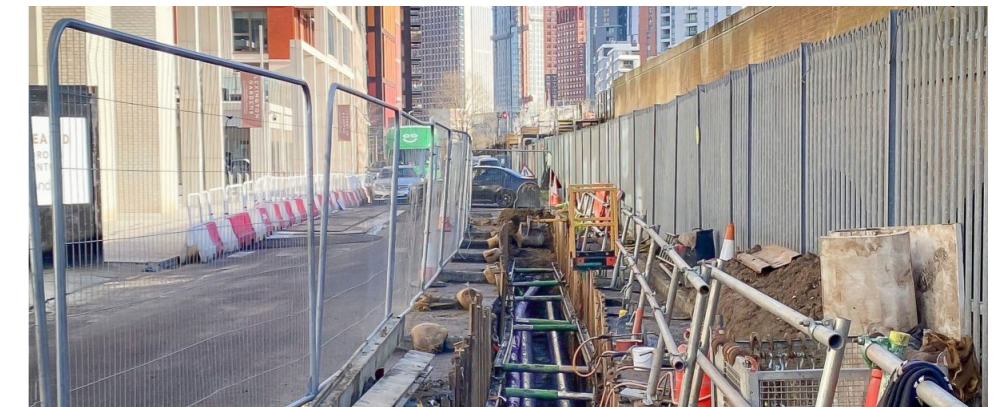
Potential Funding Sources: This project has the potential to attract third party grant funding. The SOC and business case could help secure funding from an infrastructure investor or heat network operator. Funding could also be available through the BEIS Green Heat Network Fund, through S106 planning contributions from new development, through connection charges, as well as from major landlords and other private sector actors (in return for long-term revenue potential). Funds may also be available from national government, Southwark Council or the GLA. Southwark Council could further support by suggesting zoning areas for heat networks and by assisting with the feasibility study and business case.

Benefits for Businesses:

- Access to local, clean energy.
- Reduction in carbon emissions associated with buildings.
- Opportunities for mixed use ventilation.
- Reduction in energy costs.
- Improved health and well-being of building occupiers.
- Opportunity for developers to take part in pioneering scheme and develop best practice.

Our Ask of Local Businesses: To collectively support the initiative by (at a minimum) funding a detailed energy mapping and SOC to determine the viability of a heating and cooling network. We also recommend that Team London Bridge works with Southwark Council and the GLA to obtain support for this scheme.

UNSDGs Alignment



Preparation to Install [Network of Pipes](#) for District Heating System

Case Study: Citigen, City of London

Around 8,000 people live in and 480,000 individuals commute daily to the City of London, all demanding a reliable source of energy. The challenge for this area is supplying reliable, cost-effective energy, whilst trying to reach its ambitious carbon reduction targets. Busy streets also make laying new pipes a challenge; a challenge the London Bridge area also faces.

It is why the City of London has been working with E-on to develop [Citigen](#). This hidden power station buried in the heart of London supplies decentralized district energy, a lower carbon and cost-efficient source of energy, right into the heart of The City.

Using a modern tri-generation system with internal combustion engines, Citigen provides district heating, electricity and cooling to this highly populated part of London. The network covers over 6km of heating and over 4.5km of cooling to commercial and residential property from the Guildhall to the Barbican Centre, providing heating and cooling for the equivalent of 11,300 homes.

Investment in Solar Energy

Carbon Hotspot Targeted: Powering buildings in the London Bridge BID area is responsible for 22% of CO2e emissions.

Project Details: Reducing carbon emissions from the energy supply is a critical element of the strategy. Every available and appropriate roof that can incorporate solar panels should do so.

To do so, several options are available, two of which are set out below:

1. Individual asset owners can install solar panel and agree a power purchase agreement with their tenants.
2. An investor or community owned company could be set up to install solar panels and sell the renewable energy at an agreed price to occupiers or to a major energy user on a long term Power Purchasing Agreement (PPA).

The goal should be to generate and use as much power locally and directly as possible, keeping in mind limitations caused by the nature of buildings in the area. Solar energy is a great investment and is becoming increasingly efficient. For example, Oxford Solar is developing a solar panel system that could be 40-50% more efficient, which would significantly increase the amount of renewable energy that could be generated locally.

The national grid is slowly decarbonising, and to help this along, businesses across the BID area could also look at group renewable energy buying initiatives via a long term PPA with a 3rd party on the condition that the power purchased would come from a renewably generating plant, ideally close to London.

Implementation Considerations: We recommend the following steps:

- Fund a feasibility study and develop a solar map for the area.
- Secure funding to develop a solar strategy. This will require an analysis of existing buildings and will require agreement from assets owners.

- Develop a delivery and funding strategy. Three options are available: self-funded by asset owners, funded through long-term lease holders, funded by third party investment that sells energy to local businesses.
- Procure an installer to carry out the work and set up long-term monitoring and management of the contract. This is essential to ensure energy is used and benefits local businesses and communities.

Potential Funding Sources: Funding is required to carry out the initial analysis, develop a strategic case and agree a delivery route. We recommend a mixed funding approach with some funds coming from asset owners and others from external funding such as the GLA's Local Energy Accelerator (LEA) or the Mayor's Energy Efficiency Fund.

Ideally, a Special Purpose Vehicle (SPV) could be set up to finance, install and distribute energy locally. This could be done with an energy provider partner (e.g. Octopus Energy). Alternatively, asset owners could fund the scheme on their own buildings and charge their tenants for the energy provided. This could be paired with a community interest company (CIC) or a group-buying scheme. TLB could help in selecting the most appropriate delivery model and partners.

Benefits for Businesses:

- Access to local, clean energy and energy resilience by securing long-term green energy. Additional resilience can be achieved if storage is also installed.
- Contribution to ESG goals.
- Reduction in carbon emissions associated with buildings.
- Visible and symbolic action for staff located in tall buildings.

Our Ask of Local Businesses: It is key that asset owners, landlords and long-term tenants collectively support this project. This also offers an opportunity for Team London Bridge to collaborate with Southwark Council and the GLA.

UNSDGs Alignment:



Installation of Solar Panels by [Network Rail](#)

Case Study: Solar-Powered Railway

[Riding Sunbeams](#), a social enterprise, is using a £2.5 million government grant to build a community-owned solar farm that will help power trains between the southern seaside town of Eastbourne and London. Once the 3.75 megawatt Cuckmere solar farm is complete, ownership will be given to the local community and commuters.

The project is a partnership with Network Rail and aims to demonstrate the UK railway sector's innovation potential. Renewable energy is already used to power some of the country's railways, and Network Rail estimates that solar energy could provide 10% of the energy needed to run its trains, mostly on tracks in southeast England. The HS1 railway link between London and the Channel Tunnel became the country's first train line to run entirely on renewable energy through a combination of wind and solar powered trains.

If this project is successful, Riding Sunbeams aims to replicate similar schemes across the Network Rail network.

Changing Refrigerants

Carbon Hotspot Targeted: 9% of the BID area's total carbon emissions result from the use of refrigerant gases with a very high global warming potential (GWP) for cooling of office and other non-domestic spaces. These refrigerants leak from refrigeration systems over time and are released into the atmosphere, contributing to global warming.

Project Details: There are several solutions that can be adopted to reduce the impact of refrigerants including using gases with low GWPs, like CO₂, propane or ammonia. Switching gases can have a big impact. CO₂, propane and ammonia have a GWP between 0 and 1. Commonly used refrigerants, like hydrofluorocarbons, have GWPs ranging between 1,500 and 15,000.

Compared with other proposed communal projects, this scheme can be achieved relatively quickly as servicing of air conditioning units occurs annually. When buildings are being serviced and mechanical and electrical systems replaced, the use of alternative low carbon gases should be explored. Advice on how this could work could be procured centrally across the area to reduce consultancy costs.

To further reduce the impact of cooling in the area, businesses, and in particular landlords, could collectively fund a consultant to undertake a cooling, health and well-being assessment across the area. This would provide detailed advice on current building performance, on future performance and on measures to reduce carbon emissions and enhance occupiers' health and well-being.

Implementation Considerations: A survey of existing buildings should be commissioned to assess current cooling systems, to ensure they are running efficiently, to undertake a detailed carbon assessment of the cooling in each building and to prescribe measures to reduce carbon emissions and increase efficiency.

In parallel, a carbon retrofit service should be rolled out to all buildings in order to look at their performance. This includes assessing their cooling requirements and providing advice on how cooling demand could be improved through fabric and façade/roof first interventions.

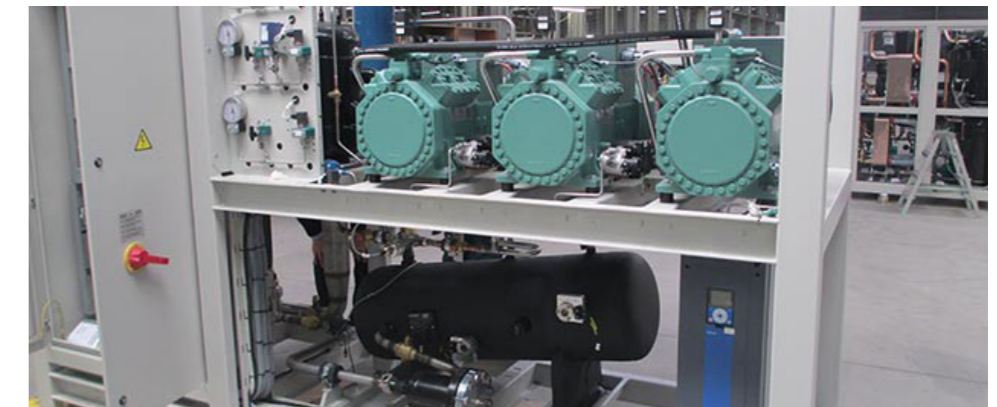
Potential Funding Sources: A group purchasing agreement could be arranged across the area. This would drive down the costs of servicing refrigeration units and of procuring low-GWP gas alternatives. Subsidised programmes and economies of scale will bring cost savings.

Benefits for Businesses:

- Landlords will also benefit from improving their buildings' performance and the quality of their indoor environment. Doing so will increase the long-term value of their asset and will future-proof their assets.
- Reduction in carbon emissions associated with cooling buildings.
- Health and well-being improvements for building occupiers, which can result in increased productivity.
- Increased thermal comfort.
- Contribution to businesses' ESG commitments.

Our Ask of Local Businesses: Businesses in the BID areas, including landlords and tenants, should work with Team London Bridge to procure a consultant to review cooling systems and building performance.

UNSDGs Alignment



CO₂- Cooled Units Used in Supermarkets

Case Study: Supermarkets Switching Refrigerants

Supermarkets in the UK have started to phase out refrigerant gases with high global warming potential, including Tesco, Sainsbury's and Waitrose.

[Aldi](#) has also committed to convert all of its UK stores to CO₂ refrigeration. 100 of its stores were converted by the end of 2018, which costed around £20 million.

The move resulted in a 99% reduction of its refrigerant gas carbon emissions. Aldi plans to convert over 1,000 by 2022.

[Waitrose](#) has adopted a different approach. Instead of using CO₂-cooled units, it has developed an alternative system based on the design of domestic fridges and using a mixture of chilled water and propane.

The cooling industry is continuing to innovate, offering new opportunities for an increasingly warm world.

Mobility Hubs

Carbon Hotspot Targeted: Commuting, business travel, waste management and deliveries collectively account for over 10% of the BID area's total carbon emissions.

Project Details: London Bridge is already one of the best locations in London for public transport, with the majority of people commuting to work by public transport (or cycling and walking). Given the area's leading position, implementing ambitious transport measures will generate place-shaping benefits, as well as carbon savings.

One such measure would be to gradually ban all non-electric cars and taxis from the majority of the area, with the exception of blue badge holders, electric taxis, and buses. To further reduce congestion as well as noise and air pollution, a consolidated delivery hub could be built, using cargo bikes and electric vehicles only.

Increasingly, neighbourhoods and new developments across the country are experimenting with a range of mobility hubs that bring together parking, car sharing, taxi, bike and e-mobility solutions. Investing in 2 to 3 strategically-placed hubs in the London Bridge BID area could help reduce the remaining emissions associated with private vehicle use, provide infrastructure for a consolidated delivery hub, and deliver wider co-benefits to local communities.

This scheme would build on existing successful projects such as Team London Bridge's successful cargo bikes project (Bikes for Businesses). The consolidated delivery hub could also support the consolidated collection of waste and enhance waste recycling (See communal project 5).

Implementation Considerations: There are numerous examples London Bridge can learn from and a first step should be to review existing schemes, including Low Traffic Neighbourhoods, to determine success factors and potential challenges to overcome. Southwark Council can support this project through its planning power by increasing pedestrianisation and reducing fossil fuel powered vehicle usage in the area.

A ban on non-electric vehicles can be achieved either through an absolute ban or through market incentives (higher charges for combustion engine vehicles, parking for electric cars only, investment in cycling and walking infrastructure).

It will also be key to determine the appropriate location for these mobility hubs (and the consolidation hub). This will help determine participating members, delivery routes and therefore funding opportunities. This scheme will require local business commitment and collaborative working to be successfully implemented.

Potential Funding Sources: A consolidated hub could be funded through contributions from participating members. Additional funding could be obtained through the GLA or Southwark Council as part of their wider investment into low-carbon mobility and active travel.

Benefits for Businesses:

- Health and well-being improvements through promotion of active modes of transport and reduction in air and noise pollution.
- Reduction in carbon emissions associated with transport.
- Improvements in the quality of the public realm (with more space for trees, rain gardens, pocket play areas etc.), which in turn increases the value of the area, increases footfall and the value of assets.
- Improved reputation for visitors and ability to attract new businesses and talent to the area.
- Contribution to climate resilience.
- Making mixed mode and naturally ventilated buildings more viable as cleaner and quieter streets mean that office workers and residents can open windows to help cool their spaces.

Our Ask of Local Businesses: Businesses interested in a consolidated hub should work together to determine the best delivery route. Team London Bridge should also talk with Southwark Council and the GLA about supporting and potentially funding a mobility hub.

UNSDGs Alignment:



Regent Street's Delivery Consolidation [Van](#)

Case Study: Regent Street Delivery Consolidation, London

Working with multiple retailer tenants of its Regent Street properties, The Crown Estate created a single delivery consolidation centre, resulting in a reduction of 74,412 delivery van miles per year.

Consolidating multiple deliveries into fewer combined journeys resulted in an increase in retail efficiency, an improvement of local air quality, and a reduction in traffic congestion. The reduction in delivery vehicles also facilitated widening of pavements, leading to increased footfall and sales.

Furthermore, by locating the consolidation centre outside of London, additional savings were realised due to fewer vehicles having to pay congestion and ULEZ charges.

In 2022, the Crown Estate has partnered with Volta to trial using fully electric vans for the area, which would effectively eliminate the scheme's operative emissions entirely.

Promoting the Circular Economy

Carbon Hotspot Targeted: Waste is responsible for 5% of the area's carbon emissions.

Project Details: The circular economy offers numerous benefits to local businesses (which are explored in the business-led intervention section from page 33 onward). To complement these initiatives, communal actions promoting the circular economy would help reduce remaining emissions associated with waste. These communal actions could include:

- Investment in waste infrastructure including better waste segregation across the London Bridge BID area (bins, signage and collection processes).
- Implement consolidated waste collection (this is linked with Communal Project 4). For example, the area may wish to look at opportunities to install an Envac system which has been adopted in cities like Paris, Amsterdam and Copenhagen as well as London and has been successful in improving waste management, reducing vehicle movements and enhancing the quality of the public realm.
- Investment in a local Circular Economy Hub which could include a repair hub, a storage hub, a swap shop, a 'library of things'.
- Invest in a platform or system to allow local businesses to trade unwanted products and/or waste that can be re-used as a productive resource.
- Offer area-wide circular economy training, workshops and events (for example at the Circular Economy Hub).
- Work to become a Low-Plastic Zone and eliminate all single-use plastic across the area.
- Switch across the entire BID area to biodegradable packaging only using group procurement options.

These actions would build on existing programmes in the area to reduce waste and increase recycling and re-using.

Implementation Considerations: This scheme could be delivered on a smaller scale by individual businesses, but we do recommend that a collective approach is adopted. A collective approach will also allow for a

more holistic approach, deliver cost-savings, reduce duplication of efforts and maximise re-use opportunities between different businesses and sectors (a key factor for creating a more circular economy).

This scheme will also require working closely with Southwark Council and their waste officers. This waste could also be used as part of a wider social programme to support food banks and organisations fighting homelessness.

Potential Funding Sources: Funding for large-scale initiatives could be obtained through national government funding and by working with the GLA and Southwark Council. Additionally, organisations such as WRAP, may be interested in supporting specific local projects that align with their own objectives. Business-led funding could also be used to deliver specific programmes such as a circular economy platform or waste management training. It is also worth looking at innovation funding which could help with delivering more innovative approaches to waste management and re-use opportunities.

Benefits for Businesses:

- Reduction in carbon emissions associated with waste, consumables and goods for resale.
- Reduction in waste generated.
- Implementation of new business models with new products and services.
- Staff members benefit from reducing their own personal waste at work.
- Reduction in air, water and land pollution resulting in biodiversity improvements and health and well-being improvements.
- Enhancement in the quality of the public realm.

Our Ask of Local Businesses: For businesses to collectively support and fund consolidated waste deliveries and a Circular Economy Hub.

UNSDGs Alignment:



[Envac System in Barking Riverside](#)

Case Study: Envac System, Barking Riverside London

An automated underground waste collection system is now operational at the [Barking Riverside](#) development in London. 460 'inlets' replace the 19,000 traditional bins that would usually be installed on the 178-hectare site. These inlets are connected to a network of subterranean pipes which suck waste to a single collection point on the periphery of the development, from which local authority vehicles pick up the waste. Pairs of inlets are installed in front of flats at Barking Riverside. One inlet takes residual waste, whilst the other is used for commingled recycling. To use them, people scan a fob to open the inlet and deposit their waste inside. The system can also separate food waste collections, which is likely to be mandated by the government in the future.

The inlets are half a metre wide and waste drops down nine feet to the pipe. Each pair will be emptied into the main pipe twice a day. In total this means waste for just under 10,000 homes will be collected in eight hours. Waste collection vehicles pick up the waste 16 times per week, an improvement since a site of this size would have resulted in collection lorries being an almost constant presence.

Process

The communal projects presented in this Routemap target the carbon hotspots of the London Bridge BID. They were selected due to their ability to significantly reduce Scope 1 and 2 emissions, which support the BID's target to be carbon neutral by 2030.

To visualise the impact of these projects, xtonnes, in collaboration with Expedition Engineering (Useful Projects' sister engineering company), have developed two modelling scenarios to produce decarbonisation pathways: a conservative and an ambitious scenario (See Tables 6 and 7).

These decarbonisation pathways are further expanded on (See methodology used on pages 73-74) to show the potential impact of all interventions and projects presented in this Routemap (See Fig. 13).

Analysis

With the conservative scenario, a 26% reduction, mostly in Scope 1 and 2 emissions, could be achieved by 2030, and a 31% reduction by 2050. The ambitious scenario could lead to a 45% reduction, mainly in Scope 1 and 2 emissions, by 2030, and a 48% reduction by 2050.

Delivering these communal projects will help the London Bridge BID in meeting their carbon neutral by 2030 target as they specifically target carbon hotspots for Scope 1 and 2 emissions.

To meet the reduction rates achieved with the ambitious scenario, TLB, businesses and governmental bodies, such as Southwark Council and the GLA, will need to work together. The more businesses support and participate in the delivery of these communal projects the more carbon emissions can be reduced.

It is worth noting that the model projections provide a destination but not the precision of exactly what is reduced and when. These pathways are for indicative purposes only and to provide a guiding trajectory to the BID members. More detailed carbon projections and modelling exercises should be conducted once specific project details are confirmed.



Figure 13: Decarbonisation Pathways for Communal Projects for Conservative and Ambitious Scenarios

Conservative Scenario	2019	2030	2050
Residual Carbon Emissions (tCO2e)	130,000	95,136	89,701
Percentage Change for Scope 1 and 2 Emissions (%)	-	-26	-31

Table 6: Conservative Scenario's Residual Emissions and Percentage Change

Ambitious Scenario	2019	2030	2050
Residual Carbon Emissions (tCO2e)	130,000	71,351	67,503
Percentage Change for Scope 1 and 2 Emissions (%)	-	-45	-48

Table 7: Ambitious Scenario's Residual Emissions and Percentage Change

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Business Led Interventions

Offices represent [20%](#) of non-residential buildings in the UK, accounting for 4% of the built environment’s annual operational carbon emissions, which is equivalent to 4.7 million tonnes of CO2e emitted per year.



Offices in London Bridge

When compared with residential and public buildings, reducing emissions associated with commercial buildings, including offices, has proven to be [difficult](#), even though retrofitting commercial buildings can be easier than retrofitting homes. In the past this difficulty has been attributed to uncertainty surrounding whether or not [tenants](#) would be willing to pay more for highly energy efficient buildings (the so called [green premium](#)). This points to a wider set of issues including a lack of communication and collaboration between landlords and tenants when it comes to implementing sustainable and/or decarbonisation measures.

There are 177 office-based businesses in the London Bridge BID area, ranging from small businesses with fewer than ten employees to large organisations with thousands of employees. Some offices are solely based in London Bridge whereas others have multiple offices across the UK and globally.

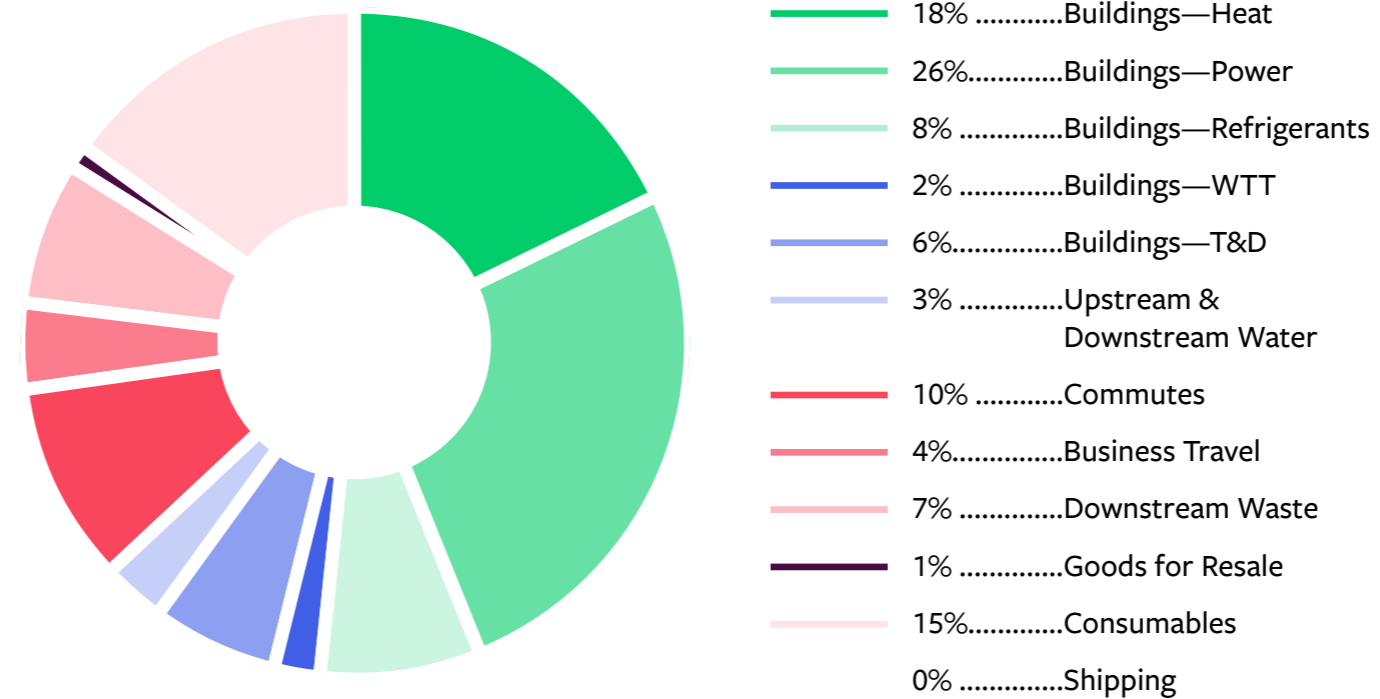


Figure 14: London Bridge BID's Offices' Total Carbon Footprint in 2019

Representing two-thirds of the London Bridge BID area’s workforce, it is hardly surprising that offices are responsible for 49% of the BID area’s annual carbon emissions (63,700 tCO2e) (See Fig. 14). A typical (median) office in the BID area emits 100 tCO2e every year. This is equivalent to the carbon emissions associated with powering 13 homes for a year.

The buildings themselves are responsible for 60% of offices’ emissions. The highest source of emissions from buildings is associated with electrical power (16,562 tCO2e come from powering buildings), which is used for lighting, office equipment, etc. A 2016 [study](#) found that the UK’s office building stock consumed over 27,000 Gwh of electricity annually. As a benchmark, a coal-fired power plant would take three years to produce the same amount of energy. Heating buildings is the second largest source of emissions for offices in the BID area, accounting for 11,466 tCO2e.

The third largest source of emissions for offices are consumables, accounting for 15% of the footprint, which equals to 9,555 tCO2e. Consumables are goods offices are using themselves for their operations. This would for example include paper, ink cartridges, stationary or any other office supplies.

Once disposed of, along with any other waste such as plastics and recyclables, consumables become downstream waste, which makes up 7% of offices’ carbon emissions (equivalent to 4,459 tCO2e) and is the fifth largest source of carbon emissions for offices.

The fourth largest source of emissions for offices is commutes accounting for 6,370 tCO2e. These emissions include employees travelling to and from the office.

Offices can take easy steps to start reducing their carbon footprints. This includes:

1. Improve energy efficiency: To address their first and second largest source of carbon emissions, offices can:

- **Review office space’s design:** Doing so can help offices rationalise their space and uncover any wastage in terms of energy or water usage. Adopting zoning for office space, paired with light sensors, can maximise occupancy and reduce energy use.
- **Maximise energy efficiency:** Offices should upgrade fabric insulation and change windows to double or triple glazing, working with their landlord. Offices should switch all lights to LEDs. When compared to a normal 40w incandescent bulb, a 13w LED light emits [68% less carbon dioxide](#). Offices should use smart lighting system with occupancy/daylight sensors, and use appliances (from monitors to fridges) that have a high energy rating. Consider lowering offices’ thermostat temperature. Keeping the thermostat down by just 1C could reduce energy consumption by 13% and save money. Offices could even consider personal comfort system devices (See the case study on page 37). It is key to monitor energy consumption to identify hotspots and see where improvements can be made. Offices should also train staff to encourage energy efficient behaviours.
- **Invest in renewable energy:** As mentioned with communal projects, switching to renewable source of energy and investing in on-site renewable energy generation will help decarbonise offices’ operations.
- **Reduce cooling needs:** Offices should promote passive ventilation (opening windows and doors) over the use of air conditioning, and consider using natural daylight when/where possible. Offices should service air conditioning units regularly, and enquire about low-carbon cooling agents (See communal projects). It is worth noting that this is easier to achieve with low-traffic, which results in lower levels of air and noise pollution.
- **Go digital:** Offices should switch all online operations to cloud-based servers. By moving to the cloud alone, offices can reduce their energy consumption associated with IT by up to 60%. They should also consider investing into an aggregation software if offices have multiple offices/branches.

2. Be mindful of consumption patterns: To address their third largest source of emissions, offices can:

- **Change procurement policies** to favour low-carbon products and/or products from recycled/recyclable sources.
- **Work with supply chains** to reduce their carbon emissions and offices’ Scope 3 emissions. We recommend setting carbon requirements and targets in partnerships with suppliers for best results. Offices may also wish to conduct a hotspot analysis to determine which parts of their supply chain are more carbon intensive.

3. Promote sustainable transport options: To address their fourth largest source of emissions, offices can:

- **Incentivise active travel** with perks for employees such as bike leasing scheme, public transport subsidies and promotion of schemes such as the Government’s Cycle to Work.
- **Encourage employees to choose low-carbon travel options** when going on holiday and/or on business travel by offering ‘paid journey days’ or through schemes like Climate Perks.
- **Invest in hybrid working** technologies and adopt flexible working policies.
- **Travel by plane only when absolutely needed.** Opt for a train option when it is available. Endeavour to consolidate business trips. Opt for online meetings where possible to reduce other business travel emissions. Adopt a consolidated travel booking system to collect data and inform future policies on business travel. Money from offsetting plane travel could for example be collected through the Transition Fund.
- **Switch fleets to EVs** and invest in electric charging points on-site. If offices’ employees require a private car, provide incentives to switch to an EV and/or to cycle (if possible).
- **Use cargo bikes** when possible to make deliveries and work with delivery companies that use EVs. Consolidating deliveries will also help reduce transport-related emissions.

4. Reduce waste: To address their fifth largest source of emissions, offices can:

- **Go paperless:** Offices should remove all paper if possible. If not, offices should ensure paper is properly recycled. A ton of recycled paper can save 17 trees from deforestation, as well as 7,000 gallons of water, 380 gallons of oil, 4,000 kWh energy, and 3 cubic yards of landfill space. Going paperless also saves physical space in an office.
- **Reduce packaging:** Offices should encourage employees to choose restaurants that offer sustainable take-away options, such as re-usable or compostable containers.
- **Eliminate plastics:** Offices can make a pledge to become a zero-waste office. They should also remove all disposable items, offer branded re-usable options, and explore bio-degradable options.
- **Waste reduction:** Offices should invest in proper waste segregation infrastructure, and use clear, simple signage on bins. They should provide a waste management training to all employees. They can also remove unnecessary office supplies such as notepads from meeting rooms. They should also ensure proper collection of food waste and invest in compost bins.
- **Promote the circular economy:** Offices should procure office supplies from suppliers that offer recycled, re-used products. They should also use recycled materials such as recycled paper and pens. They should prioritise working with sustainable suppliers who are ISO14001 certified, as well as work with local suppliers where possible. They could also buy second-hand furniture, re-sell/upcycle existing furniture, look into products as services, explore options to rent/lease equipment (See the light as service case study on page 37) rather than purchasing.

There are many benefits for office businesses that decarbonise their operations and transition to more sustainable processes. Benefits include:

Lowering operating costs

By reducing their energy consumption, offices will see massive savings in the running costs of their buildings.

This also brings benefits for landlords. According to [EnergyStar](#), for a 500,000 square foot office, an energy reduction of just 7% over 3 years can result in savings of around £100,000. This has an added benefit of increasing an asset's value by over £800,000.

Attracting talent

A recent study carried out by [Anthesis](#) showed that over half (53%) of the UK's workforce see sustainability as a key factor in choosing the company they work for. This is even higher with Gen Z (16-24-year-olds) and Millennials (25-30-year-olds), two-thirds of whom say it is important to them.

As these younger generations increasingly make up a greater proportion of the workforce (which is the case in the London Bridge area), having good sustainability credentials will aid with recruitment, with attracting talent and retaining the best employees.

Appealing to investors and clients demands

As with job-seekers, sustainability is becoming a key factor for investors. Decarbonisation is seen as a future-proofing activity and failing to do so can bring reputational risks. While financial returns are still prioritised by most investors, [investors at all levels](#) are increasingly choosing companies that embed sustainability, have strong ESG credentials, and demonstrate resilience to a changing world.

Clients too, are increasingly requiring companies to demonstrate their sustainability credentials. Doing so could help businesses win new contracts.

Improving employee wellbeing

Employee engagement with their company's sustainability agenda has been [shown](#) to have a positive effect on their wellbeing. And greater employee wellbeing leads to greater retention rates. This in turn reduces recruitment costs.

It is also worth noting that 'greener' offices have a positive impact on employee's health and productivity levels.

Complying with regulations

New regulatory requirements will increasingly require all businesses to reduce their carbon footprint. By starting to decarbonise early, businesses ensure they meet current and future, stricter regulations.

In doing so, businesses also increase their climate resilience and reduce insurance costs, as well as costs associated with future climatic disruptions.



Process Used by [Collecteco](#)

Collecteco

[Collecteco](#) provides a service that allows businesses to donate furniture, equipment, and materials to charitable organisations and other good causes, diverting them from landfill.

This brings benefits to both parties. Charitable organisations can acquire high-quality furniture and other items at no extra cost, allowing them to spend their budget on delivering crucial services to local communities.

Businesses donating unwanted items receive a report detailing the impact in terms of carbon savings and social value. This can then be shared with stakeholders to show commitment and progress, which in turn increases brand reputation.

[Zurich Insurance Group](#) has partnered with Collecteco frequently over several refurbishments of their UK offices. To date, this has resulted in £708,042 in value donated to the community and 139,523kg CO₂e avoided.



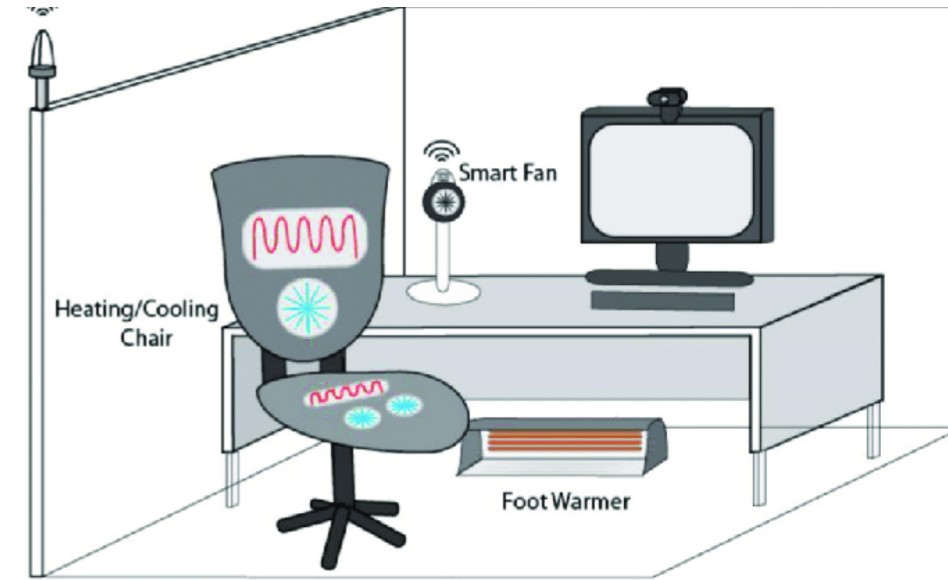
[Lighting as a Service](#)

Lighting as a Service (LaaSS)

[LaaS](#) is a new emerging service in which lighting is charged on a subscription fee rather than a one-time payment. The commercial business does not own the LED light, paying instead for the lighting they use. The light supplier remains accountable for monitoring and maintaining the lighting systems (including replacements), upholding new legal requirements and dealing with recycling the product at the end of its life.

LaaS can be particularly beneficial for LED retrofit. Indeed, complete LED retrofits can be economically challenging for landlords who incur the installation costs but do not reap the benefits from lower energy costs (typically paid by tenants). Tenants may be put off from investing in an LED retrofit due to a short lease term that will prevent them from seeing a return on their investment.

LaaS provides a different financing mechanism by removing the need to pay a large upfront cost. Instead, the installation cost is gradually repaid from the energy savings achieved across several years. Once the full amount has been repaid, businesses benefit from additional cost savings. This releases funds that can be re-invested into other sustainability initiatives.



How [Personal Comfort System Devices](#) Work

Personal Comfort System Devices

Recent [research](#) into personal comfort system (PCS) devices (desk fans, foot-warmers, heating/cooling chairs, etc.) has found that they are much more efficient than conventional heating, ventilation and air-conditioning (HVAC) systems, which are designed to condition the entire building.

Researchers in Berkeley California found that using foot-warmers in offices reduced heating energy consumption by up to [75%](#). By focusing energy to a smaller, personalised area, building HVAC systems can operate at a lower intensity to condition communal areas.

As hybrid working becomes the norm for many employees, office occupancy is less consistent and not always maximised. This means that heating or cooling an entire office building may not be necessary or efficient. Instead, investing in PCS devices could improve employees' thermal comfort, increase energy efficiency and reduce energy bills.

dRMM Architects is one of the BID's Net Zero Champions and are already taking action.

“dRMM is an award-winning architecture practice based on Tooley Street, with an EU studio in Berlin. We are an SME with a team of over 40 people.

Our studio's 2019 baseline year market-based business operations impact was measured to be 31.85tnCO₂, including Scope 1, 2 emissions and some Scope 3 items (e.g. commuting, home-working). Therefore our biggest environmental impact arises from the buildings we design.

Construction and the built environment are responsible for c. 40% of global carbon emissions, and c. 20% of UK emissions. A typical new building measures 1tnCO₂ embodied carbon per sqm of construction. This does not include energy used during the life of the building. dRMM's projects can be upwards of 10,000sqm, or potentially 10,000 tnCO₂ if built with 'business-as-usual' methods of construction. We recognise our ability to reduce emissions arising from the built environment and construction, as well as wider factors affecting biodiversity loss and quality of life. We always seek to reduce the carbon of what we design, for example our recently complete Wintringham Primary Academy bettered the RIBA's 2030 targets for Embodied Carbon by 10%, a 51% reduction compared to 'business as usual'.


We are also founding signatories of Architects Declare UK, that has grown into a now global climate emergency initiative that has over 6000 signatories from the Built Environment sector working to effect change and share knowledge. We have signed up to Race to Zero through the SME Climate Hub, committing to reducing our carbon footprint by 50% by 2030, and to reach net zero by 2050. We are now calculating emissions for 2020 and 2021 (which will be interesting due to COVID impacts). We will undertake these calculations on an annual basis and seek to make reductions. We will offset our impacts until we meet net zero.

We have already identified opportunities to reduce our business emissions, including moving from a physical IT server to a cloud-based server, offering energy savings of up to 97% according to our supplier. This will also mean we need to purchase less hardware in the future, reducing finite virgin material use.

As a commercial tenant, we are somewhat constrained in what we can do to reduce impacts of our studio facilities, e.g. emissions from our gas powered heating and hot water supply. Another challenge is travel; we try to use public transport and avoid aviation wherever we can, however aviation sometimes is unavoidable for us. Challenges like these illustrate why it is so important to collaborate through initiatives such as Team London Bridge. We would encourage other companies to measure not only at their Scope 1 and 2 impacts but to consider those under Scope 3 and the wider impacts arising from the services they provide. We would encourage businesses in other sectors starting their decarbonisation journey to consider joining a relevant organisation such as Business Declares to support their effort and learn from like-minded businesses and individuals. To move to net zero we all need to work together to find solutions.”



Wintringham Primary Academy by [dRMM](#)

“We believe it is important to reduce our business operations emissions in parallel with decarbonising the buildings we design, even if they are relatively small. As Greta Thunberg says, every kilo of carbon saved counts.” 

News UK is also one of the BID's Net Zero Champions and below they explain what they are doing at The News Building.

“At The News Building, we take our approach to waste seriously and when tendering for waste service providers, we look for “recycling partners” who can divert our waste streams from landfill. We have worked with Paper Round, a local recycling expert, for several years, recycling our paper, food and office waste.

We are proud to say that none of our waste goes to landfill - any non-recyclable items are sent to an Energy from Waste (EfW) facility while our food waste is sent for anaerobic digestion. However, we continue to work hard with Paper Round to increase the number of waste streams that we recycle as well as to increase the recycling rate, as recycling has a huge impact on continuing to reduce our carbon emissions. In 2019, having already collected waste coffee grounds for several years, we started to collect coffee cups and lids for specialist recycling as part of our efforts to reduce the amount of waste we send to EfW, as well as providing everyone in the building with a reusable coffee cup and a reduced beverage price as an incentive for using it.

In the last 12 months our recycling rate was 82%, saving a total of 296,855kg of CO2.

Our waste is converted to value: for example, for every food collection made, Paper Round donate 25p to food charity, Fareshare, while our coffee grounds are turned into biomass and other products by biobean.

We haven't stopped there - several initiatives spearheaded by our Facilities teams help us reduce the production of waste overall. For example, our food sales are analysed to help tailor production to demand, while our cleaning teams use washable microfibre cloths. We're also looking at switching our general waste compactor to a mixed recycling compactor to limit the number of collection visits, therefore reducing CO2 emissions.”



The News [Building](#)

News UK are excited to take part in Team London Bridge's decarbonisation efforts and look forward to working with local businesses to achieve them.

According to the United Nations, the food sector accounts for 30% of the world’s total energy consumption and 22% of the total Greenhouse gas emissions (which include carbon). The food sector goes beyond food and drink businesses such as bars or restaurants, and significant changes are required to decarbonise its entire supply chain.



Vinegar Yard in London Bridge

Unfortunately, the current restaurant model is far from sustainable. Waste is a particular issue with 1.1 million tonnes of food waste each year in the UK alone within the hospitality and food service industry, of which 75% is avoidable and could have been eaten. The restaurant industry is also responsible for a staggering 1.3 million tonnes of packaging and 0.66 million tonnes of other non-food waste. Emissions of course do not solely stem from waste; they occur along the entire farm to fork supply chain.

In the London Bridge BID area, there are 98 food and drink businesses, ranging from restaurants, pubs, bars, to take-aways. These businesses only cover 3% of the area yet are responsible for 12,000 tCO₂e emissions every year (See Fig. 15).

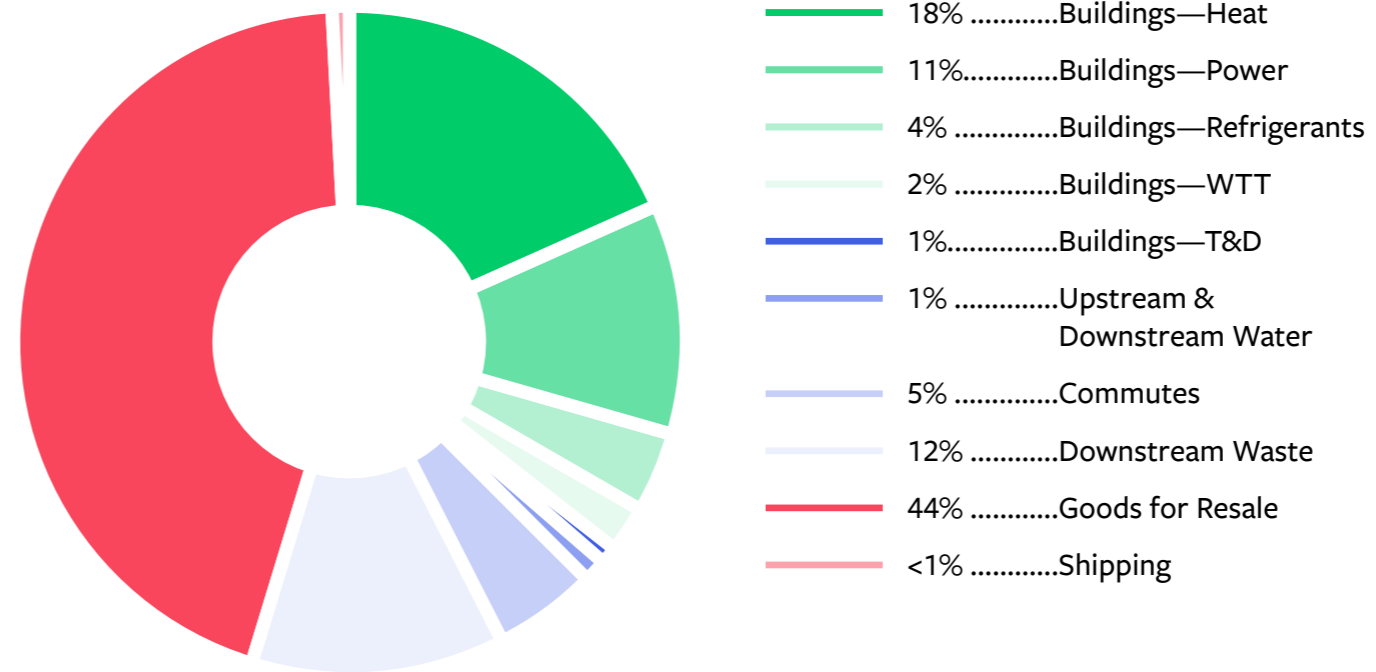


Figure 15: London Bridge BID’s Food and Drink Businesses’ Total Carbon Footprint in 2019

This represents 9% of the BID area’s total carbon emissions. A typical (median size) food and drink business in the area would emit about 60 tCO₂e every year. This is equivalent to the carbon emissions associated with powering 8 homes for a year.

These businesses’ largest source of emissions stems from Goods for Resale (goods acquired by a food and drink business for the purpose of reselling them to their customers). This would for example include meals and beverages sold on the premises. This is not surprising as this is the main commodity of a food and drink business and on average, 8kg of CO₂ is emitted for every meal prepared in restaurants.

Combined together, emissions stemming from buildings (from the gas used to heat the building, the electricity used to power the building to the refrigerants) represent 36% of the food and drink businesses’ carbon footprint.

Finally, the third largest source of emissions stems from downstream waste (12%) which includes emissions associated with the waste these businesses dispose of.

Food and drink businesses can take easy steps to start reducing their carbon footprints. This includes:

1. Adapt the menu: To address their largest source of emissions, food and drink businesses can:

- **Write the carbon impact** of their dishes on their menu to encourage better consumer choices, by using software such as Klimato.
- **Change menus to include more vegetarian and vegan** options. To be ambitious, food and drink businesses should aim for their menu to include 50% vegetarian and vegan options.
- **Use local and seasonal products** including meat and fish, and know the provenance of all of their products.
- **Prioritise sourcing food from local farmers**, fishermen and producers.
- **Look into by-products** to see what high-carbon menu item they can swap: for example swapping aquafaba with egg white, or using seasonal non-citrus fruit.
- **Don't waste anything.** Focus on using all of their food items, whether it is a fruit or an animal.

2. Audit the kitchen: To address their second largest source of emissions, food and drink businesses can:

- **Identify wastage and inefficiency** in resource and energy use.
- **Explore opportunity to fully switch to 100% renewable energy** and switch off gas.
- **Design their kitchen** (and their building) to maximise energy efficiency. For example, some restaurants are using heat produced by their refrigerators to heat water.
- **Train staff members on reducing energy** and water.
- **Switch all their lights to LED** and buy energy efficient kitchen appliances.
- **Maximise their use of ice**, as it takes a lot of energy to make it.

3. Eliminate waste: To address their third largest source of emissions, food and drink businesses can:

- **Use stock control software** to track ingredient loss after each service in order to cut down waste.
- **Highlight expiration dates**, offer sustainable 'doggy-bags', donate food surplus to local food banks.
- **Separate food waste**, using it for energy generation or as compost.
- **Use preservation methods** like fermentation or pickling.
- **Grow their own food** if they can.
- **Swap plastic straws with alternatives** such as paper, bamboo or pasta straws, and review which drinks need a straw. They should also switch to reusable coasters and napkins.
- **Buy from suppliers** who minimise single-use plastic.
- **Focus on using only 100% reusable or compostable** items and commit to sending zero waste to landfill.
- **Re-use and recycle** as much as possible, especially glass, plastic, paper and cardboard.
- **Adopt re-usable containers** for take-aways. For example, they can join schemes like [Caulibox](#).
- **Work with their suppliers** to eliminate packaging waste.

4. Food and drink businesses should also collaborate and communicate. This includes:

- **Seek accreditations** for their decarbonisation efforts.
- **Communicate their carbon neutral** and wider sustainability ambition to their suppliers and their customers.
- **Buy from suppliers** (ideally local suppliers) who have set decarbonisation targets.
- **Work with other local food and drink businesses** to share products and reduce waste.
- **Collaborate with their local community** to offset their remaining emissions by investing in local sustainable projects.

We have also identified a series of additional interventions and recommendations for food and drink businesses. They can:

- **Complete the Sustainable Restaurant Association survey** to assess their baseline position and to obtain a list of potential actions.
- **Digitise operations**, including having a digital inventory management tool.
- **Reduce shipment to once a week** to cut down on fuel emissions.
- **Join local or regional networks/associations** of fellow food and drink businesses that can offer advice. Examples include: Food Made Good UK, Sustainable Restaurant Association.
- **Source furniture**, fittings, crockery, lamps, dishes and other items from re-use shops or upcycling schemes. Donate any unwanted furniture or items to re-use shops and/or upcycling schemes.

There are many benefits for food and drink businesses that decarbonise their operations and transition to more sustainable processes. Benefits include:

Taking advantage of seasonal products

Food in season is freshest and tends to attract better reviews from customers.

New menus attract new customers.

Food and drink businesses can charge a premium for farm fresh products.

Using seasonal products can actually save food and drink businesses money, because these items are in abundance during their natural harvesting season, which drives their costs down.

Making conscious seafood choices and swapping to vegan options

Sustainable seafood can be more expensive, but shopping what's in season or what's available locally can help keep costs down.

Meat and dairy aren't just some of the least sustainable ingredients on a menu, they're also some of the most expensive. Since vegan produce costs significantly less than meat, vegetarian and vegan menu items can have higher profit margins than meat dishes, meaning this may save businesses money.

Reducing waste

This improves businesses' profit margins as they are not spending money on products they do not actually use/sell to their customers.

Greening supply chains

Local vendors may not be the cheapest available, but they might offer bulk deals on local goods that allow businesses to save on staples and large orders. Buying locally should also save food and drink businesses money on shipping costs.

Buying top quality appliances and consuming less water and electricity

Newer, higher quality appliances cost more up front than older, used or cheap ones. But quality lasts, and new appliances cost less in energy usage. The return on investment (ROI) on more expensive, new appliances is higher over time.

Additionally, there may be an upfront cost if businesses choose to install energy- and water-saving methods like light timers, LED lightbulbs and low-flow sinks and toilets, but the savings on future energy and water bills will offset those costs.

Winning new customers

More and more customers are looking for ethical, sustainable dining options.

They are also often willing to pay a premium for sustainable food items.

By providing more sustainable food options, businesses can win new ethical customers and grow their market share.



Wahaca in South Bank

Wahaca, South Bank London

Wahaca, located in South Bank, was one of the first restaurant group to become Carbon Neutral certified in 2016.

Their restaurant takes various steps to reduce resource use from the chosen built for the design to using heat from their fridges to heat water.

Their menu is over 50% vegetarian, focuses on seasonal, local products and uses free-range chicken, beef and pork. They have also worked with Klimato to measure and display the carbon impact of each of their dishes on their menu.

They offset the remainder of their emissions by supporting projects in Mexico.



HIMKOK: Example of a Seasonal Cocktail

HIMKOK, Oslo

HIMKOK in Oslo opened in 2016 and won the Ketel One Sustainable Bar Award in 2018.

They focus on local sourcing and manage to get all of their ingredients, even if Norway only has one 'growing' month. One of the keys to their success is swapping ingredients and working with other local restaurants.

For example, they have swapped egg white with aquafaba (water from chickpea) which lasts longer. They obtain the aquafaba from neighbouring Turkish and Indian restaurants, sharing products to avoid waste.

They aim to minimise waste and cut their energy use as much as possible. They have set up their own distillery powered by renewable hydrogen energy and re-use bottles for their own spirits.

Their number one recommendation is to look into by-products to see what can be done them and replace them with a local product.



Examples of Meals at Silo

Silo, London

Silo is a restaurant in London which was created with zero waste at the heart of its concept and design.

To achieve their zero waste objective, the restaurant creates everything from its whole-form, which in turn cuts food waste, avoids over-processing, as well as preserves nutrients and the integrity of ingredients.

They have set up their own flour mill, churn their own butter, make their own oak milk and roll their own oats. They serve meat and have adopted a nose to tail ideology, using every parts of the animal.

Their fittings are re-used, plates are formed from plastic bags and tables reconstituted from food packaging. Lightshades are made from mycelium grown on used brewery grains and their crockery is made from crushed wine bottles. They also have an on-site brewery, furniture.

All take-away products come in re-usable vessels such as crates, pail, urns or containers. They compost all other packaging.

Y Hear from Your Net Zero Champions

Nine Lives and Electric Shuffle have already started to embrace sustainability and decarbonise their operations.

Nine Lives is one of London Bridge BID's Net Zero Champions. Their goal to become the most sustainable neighbourhood bar. They have embraced the benefits of the circular economy and of sustainability. Most of their furniture is second-hand and locally sourced. Their menu is seasonal and sustainably sourced. They aim to produce no waste; whether it is through creative cocktail recipes or working with like-minded suppliers.

Electric Shuffle have completely switched off gas and are in the process of measuring their carbon footprint to better understand how they can continue to have an impact whilst offering a unique experience to their customers.



Nine Lives: London Bridge's Neighbourhood Bar



Electric Shuffle in London Bridge

As an industry, retail faces tough challenges in addressing sustainability. Carbon emissions are associated with various aspects of the retail industry from its manufacturing, packaging and delivery. The fast-moving nature of this industry creates additional pressures and can often feel at odds with sustainability measures.



Retail Businesses in the London Bridge Station

The industry has also been deeply impacted by changing consumer habits, new sales channels, and the global pandemic. Online shopping was already increasingly popular (e-commerce is [17%](#) more carbon-efficient than visiting traditional stores), but the ban of all physical retail experiences propelled online shopping to new heights. This is creating additional pressure, particularly for retail stores that are relying more heavily on physical stores.

Despite these challenges, retail businesses have already risen to the challenge; from start-ups, SMEs to larger international brands. With consumers becoming increasingly conscious of their environmental impact, action in retail is needed more than ever.

In the London Bridge BID area, there are a minimum of 44 retail businesses, ranging in size and type, and representing 12% of the businesses in the area.

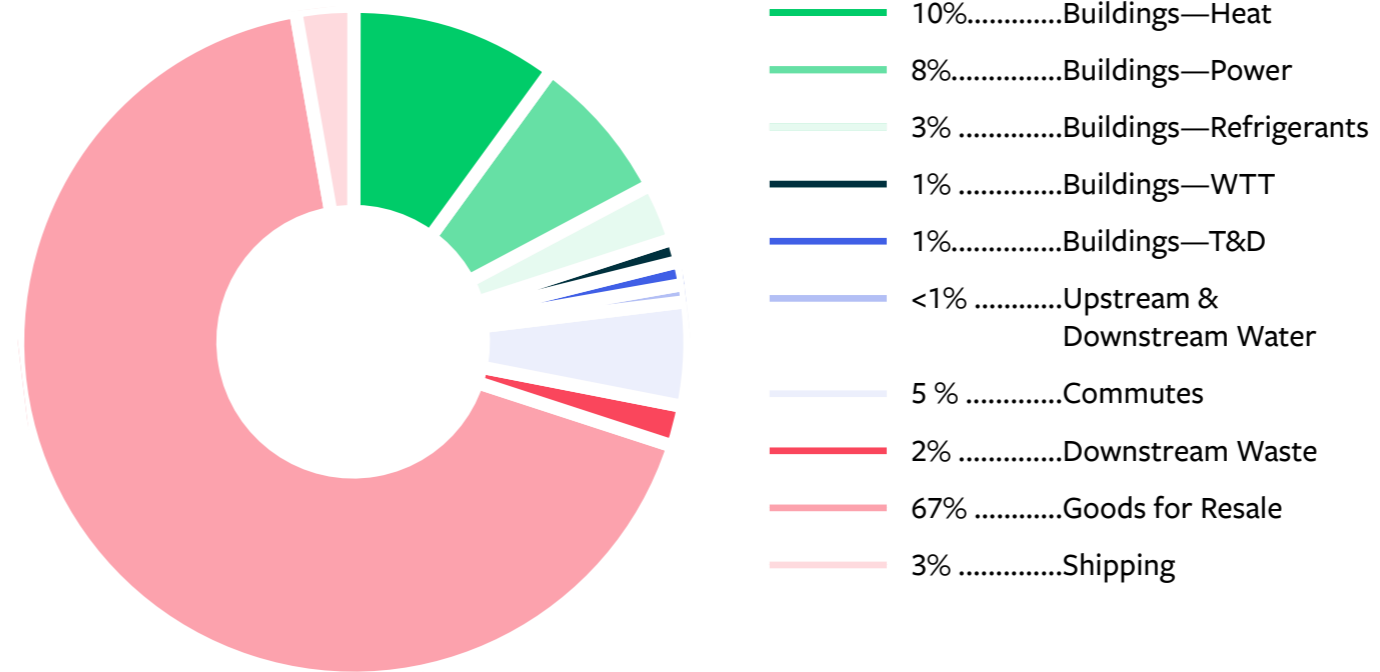


Figure 16: London Bridge BID's Retail's Total Carbon Footprint in 2019

They are responsible for 4,000 tCO₂e per year, which represents 3% of the BID area's total carbon footprint (See Fig. 16). A typical (median size) retail business in the area would emit about 40 tCO₂e every year. This is equivalent to the carbon emissions associated with powering 5 homes for a year.

Retail businesses' largest source of emissions stems from the products that they sell to customers, with Goods for Resale accounting for 67% of their carbon emissions. This is not surprising since it is the main function of a retail store. Different types of retail stores will have different options to continue to grow whilst reducing the carbon footprint of their operations. This will be explored in this Routemap.

The second largest source of emissions for retail businesses associated with the heating, cooling and powering of their stores. Building related emissions account for 23% of carbon emissions.

It is worth noting that retail store owners and employees will not always be able to influence these emissions and will need to work with their landlords to do so.

The third source of emissions are associated with 'transport' emissions including staff members commuting (5% of emissions) and with shipping (3% of total emissions).

It is worth noting that a lot of retail units are located within London Bridge station. The emissions of these units have been included in the carbon baseline for this report. The emissions associated directly with London Bridge station (such as platform power etc.) are not included, since the station is not a member business of Team London Bridge. Nevertheless, as a landlord, Network Rail can implement interventions which are described on page 65.

Retail businesses can take easy steps to start reducing their carbon footprints. This includes:

1. Change products and packaging: To address their largest source of emissions, retail businesses can:

- **Explore alternatives materials** to make their products. This could include using more recycled and reusable materials, committing to using fewer and less virgin materials, using waste to make products (for example food waste can be used to make textile fabrics).
- **Work with designers** to design products that are more circular, that can be disassembled, re-purposed and/or re-used.
- **Remove unnecessary packaging.**
- **Change their packaging.** Different options are available from fully recyclable, fully bio-degradable or fully re-usable packaging.
- **Commit to eliminating single-use plastic.**

2. Maximise energy efficiency: To address their second largest source of emissions, retail businesses can:

- **Switch lights to LED.**
- **Choose energy-efficient equipment,** lights and appliances.
- **Adopt sensor lighting.**
- **Maximise the use of natural light** in window displays.
- **Encourage the use of passive ventilation** and reduce their use of air conditioning.
- **Switch to more energy efficient point-of-sale** devices (for example, iPad paired with Square Reader).
- **Talk with their landlords** to upgrade their building's fabric performance and switch to 100% renewable energy.

3. Enhance delivery processes: To address their third largest source of emissions, retail businesses can:

- **Use stock control software** to track the sales of products, increase delivery efficiency and reduce the need for on-site storage.
- **Work with delivery companies** that offer 100% electric fleet
- **Use cargo bikes** for delivery where possible.
- **Work with other businesses** in the area to set up a consolidated delivery hub (See communal projects section).

4. Work with eco-conscious suppliers: To address supply chains emissions, retail businesses can:

- **Engage with their suppliers** to set common carbon reduction goals and create a shared roadmap. The British Retail Consortium's Climate Action Roadmap can serve as a blueprint for their own roadmap.
- **Introduce new carbon requirements** as part of their procurement process.
- **Work with local suppliers** and local makers which in turn encourages the local economy.
- **Shorten their supply chain** if they can.

5. Embrace circularity and reduce their waste: To address waste-related emissions, retail businesses can:

- **Design their store's internal space to be flexible** and cater to various display needs.
- **Upcycle** unwanted items and/or furniture and buy second-hand furniture including for displays. Donate surplus items to charity.
- **Explore leasing and rental options,** as well as 'products as services' options.
- **Lengthen their product's lifespan** by offering free returns and/or launching a repair programme.
- **Encourage customers to return** no longer wanted items which can then be re-used and/or re-purposed.
- **Set up a customer swap-shop** or collection points for no longer wanted items. This could be done in partnership with other local businesses in the area.

We have also identified a series of additional interventions and recommendations for retail businesses. They can:

- **Set up a carbon offset fund** and re-invest money into local projects. They could also provide their customers with options to offset their own emissions associated with their purchase.
- **Use marketing to share their ambitions** and progress with customers. But they should be careful to avoid greenwashing.
- **Go paperless,** if they have not done so already, including using digital receipts .
- **Join organisations** like [Better Retail Better World](#) which is mobilising the retail industry to tackle global sustainable challenges, or the British Independent Retailers Association ([BIRA](#)).
- Digitise their inventory management procedures.

We understand that numerous retailers in the London Bridge BID area are a chain store and may have little to no control over implementing some of the actions listed above. These businesses still have an important role to play from working with franchise/brand managers to adopt sustainable, low-carbon measures to volunteering to become a pioneer outlet for sustainable, low-carbon operations. Simply training staff members can also help improve 'green' operations, increase productivity and achieve cost-savings.

There are many benefits for retail businesses that decarbonise their operations and transition to more sustainable processes. Benefits include:

Switching to sustainable products

According to a research undertaken by [Accenture](#) across 6,000 customers in 11 countries, 81% of customers plan to buy more eco-friendly products over the next five years. By offering these products, retail businesses could help grow their organisation's consumer base and attract a new, loyal clientele.

Embracing the circular economy and swapping packaging

According to the Accenture study, 83% of customers think it is important for companies to design products that can be re-used, recycled and never go to landfill, and 50% are willing to pay more for a product designed to be re-used or recycled. By re-using material and products, retail businesses reduce their costs and build patronage from their customers, increasing their loyalty to their brand.

According to a study by [Trivium Packaging](#), almost $\frac{3}{4}$ of customers are willing to pay more for sustainable packaging, which in turn helps businesses' bottom line and/or can help businesses offset any increases in costs associated with using sustainable packaging.

Gain new customers

The Accenture study also flagged that 62% of customers want companies to take a public and passionate stance on social, cultural, environmental, and political issues.

Therefore, by doing so businesses can gain more customers and increase their brand reputation. Moreover, UK customers' expectations are changing, leaving companies not acting on climate change exposed to reputational risks.

Team London Bridge's [Retail Strategy](#) identifies ethical business practices as a way to earn new customers. The retail strategy also mentions the convenience of shopping in the London Bridge area as a commercial benefit for retailers. A lot of customers shop 'en-route', as part of their journey, reducing the need to make additional trips.

Collecting data and digitising operations

Data is key to get a better understanding of retail businesses' supply chains, to monitor their energy use, to measure their carbon footprint and to inform decision-making process.

The cloud enables a strong data foundation that allows information to be collected, processed, managed, and analysed in one place. The reduction of silos and the availability of a single database of data creates the end-to-end visibility needed to drive change across your entire supply chain.

Migrating to a sustainable cloud can also reduce CO2 emissions by 59 million tons a year, which is the equivalent to taking 22 million cars off the road.

Future-proofing supply chains

By working with their suppliers and shortening their supply chains, businesses build their resilience to future, adverse climate change impacts, including extreme weather events or price volatility. Businesses will create a more resilient eco-system in which their company/brand will thrive.

Climate change will increasingly pose operational challenges to retailers, with changing weather patterns requiring adjustments to retail buildings, logistics and infrastructure. Sea level rise and increased extreme weather events place retail and supply chain infrastructure in vulnerable areas at greater risk of flooding and increase the cost of insurance.

Sourcing sustainable products

In addition to reducing their carbon emissions, sourcing local, renewable, non-virgin materials helps increase businesses' resilience.

Changes to climate patterns and more extreme weather events are forcing adaptations to agricultural practices and technologies, causing adjustments to sourcing arrangements, and threatening the longer-term security of supply of key commodities.

With these issues accelerating, the implications for quality, price and availability of goods are growing yearly.



Reformation's 'Carbon is Canceled' [Campaign](#)

RefRecycling, Reformation

In order to reduce the 97% of textiles that end up in landfills, US fashion brand Reformation run a clothes recycling service, [RefRecycling](#).

Once customers have worn their Reformation garments for as long as they can, they are able to send their clothes back free of charge, earning credit for everything they recycle.

Reformation then re-use the old fabrics and material in the production of new items, increasing the circularity of all their products.

By rewarding those that recycle their clothes with credit to spend in their online store, Reformation are not only encouraging sustainable behaviour, but also ensuring continued patronage from these customers. It is a win- win situation.



[Gucci's Sustainable Packaging](#)

Sustainable Packaging, Gucci

In 2020, luxury brand Gucci re-designed their packaging with sustainability in mind.

Sourcing all paper and cardboard from sustainable sources, the packaging's green colour was chosen to reduce the amount of ink needed throughout the production process. The uncoated paper used means the packaging is fully recyclable.

Having already eliminated single use plastics from its e-commerce and retail packaging, any remaining plastic components used in their new designs are from recycled sources.

As well as reducing their carbon due to the materials chosen, Gucci optimised packaging for transportation through clever re-design. This further helped them reduce the number of vehicles needed for transportation and thus reduce their carbon footprint.



Patagonia's 'Don't Buy this Jacket' [Campaign](#)

Don't Buy this Jacket, Patagonia

Patagonia has long been known as a retail brand with strong environmental credentials, having contributed and launched various climate activism campaigns. Many decisions Patagonia has made run counter to what we would expect from a profit-driven business. From their choice of materials to their repair commitments and donating 100% of their tax savings to environmental organisations, Patagonia has fully embraced the benefits of taking climate actions. For Patagonia, saving the planet is their purpose. It goes above and beyond their strategy and is not just an ad.

One of their most controversial and ambitious campaigns was launched in 2011 when the company was trying to figure out how to handle Black Friday in the United States of America. They launched their 'Don't Buy' campaign encouraging consumers not to buy a new Patagonia jacket. In doing so, they sought to fight what they call 'mindless consumerism' and encourage people to re-use, repair and only buy what they need.

In 2020, the company made headlines again when they announced they would not sell to Wall Street or Silicon Valley companies. The company decided they would no longer sell co-branded fleeces into companies that do not share their purpose of saving the planet.

Retail businesses in the London Bridge BID are already taking a lead.

Body Shop takes social and environmental sustainability seriously, building their brand and company around it. They have launched various schemes including:

Refill scheme

In 2019, the company rolled out refill stations in two stores and aim to have them in all of their stores by the end of 2022 in order to reduce plastic.

Community Fair Trade

In 2019, the company launched their recycled plastic programme. They source plastic from marginalised waste pickers in India, offering a steady income and better working conditions to participants. In a year, they have purchased 250 tonnes of recycled plastic which they have used to produce their bottles.

Recycled Materials in Packaging

They are seeking to eliminate virgin plastic from their product. In 2020, 29% of their plastics were from recycled materials. They have also partnered with MYGroup and Scan2Recycle to help consumers properly recycle and re-purpose their packaging, although this feature is not yet available at the London Bridge store.

Vegan Products

Body Shop aims to become 100% vegan, changing its beauty ingredients. It currently is 100% vegetarian and has been fighting for animal rights and cruelty-free products since 1989.

B-Corp

In 2019, the company became a certified B-Corp, one of the largest global B-Corps in the world. In doing so, they further demonstrated their commitment to the highest social and environmental standards.



Body Shop's [Refill Station](#)



Worldwide, the hospitality industry accounts for 1% of global carbon emissions, and this is set to increase. Based on a study conducted by the [International Tourism Partnership](#), the hotel industry alone must reduce its carbon emissions by 66% by 2030 and by 90% by 2050 to stay within the 2C threshold agreed at COP21.



The [London Bridge Hotel](#)

The good news is that the hospitality industry has started to take action. Indeed, a study undertaken by [Greenview](#) in 2018 concluded that carbon emissions per square metre of hotels around the world have decreased by 10% since 2015, with the greatest reduction seen in the UK (a 23.4% drop).

The hospitality industry will need to continue to decarbonise their buildings and their operations, as well as work with their suppliers and customers to encourage eco-conscious behaviours. Doing so, will be challenging as the hospitality industry recovers from the COVID-19 pandemic. Collaboration, including with the food and drink industry, will be critical.

For the purpose of this report, hospitality refers to the 9 hotels and gyms in the London Bridge BID. These businesses employ over 900 people in total and are responsible for 6,000 tCO₂e per year, accounting for 5% of the BID

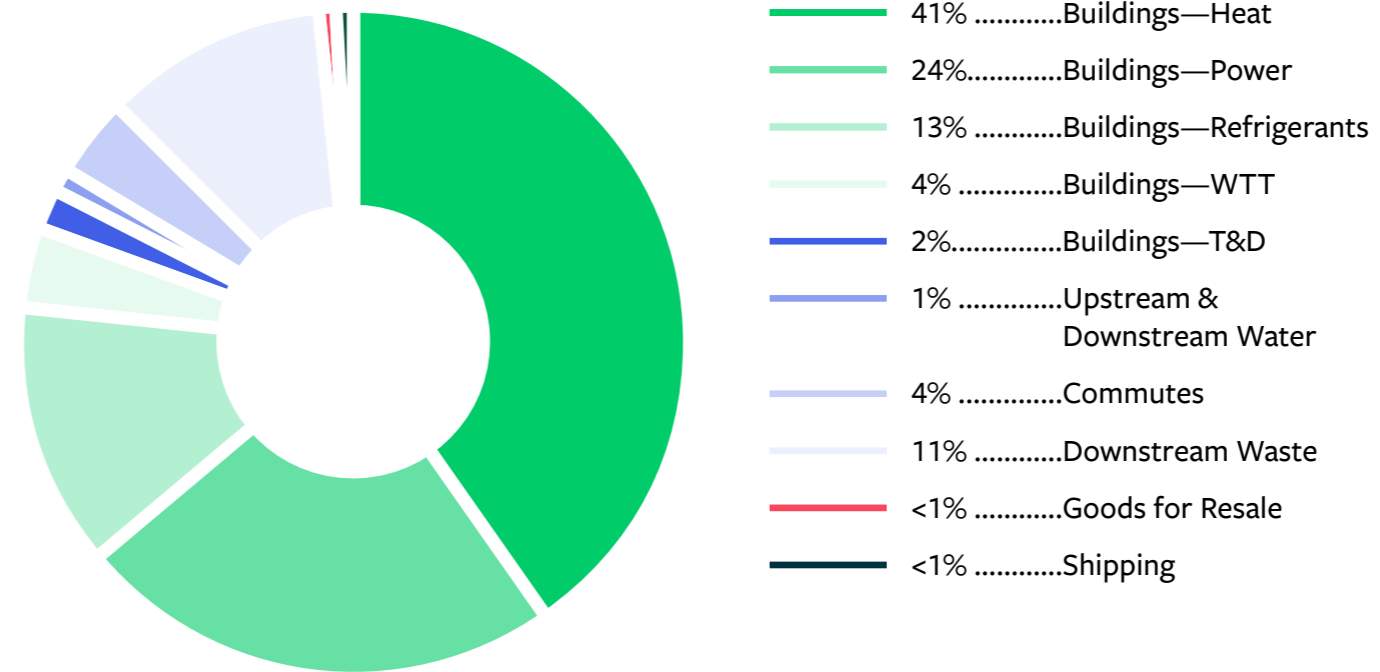


Figure 17: London Bridge BID's Hospitality's Total Carbon Footprint in 2019

area's total carbon footprint. A typical (median size) hospitality business in the area would emit about 210 tCO₂e every year, the second largest median footprint for businesses in the area. This is equivalent to the carbon emissions associated with powering 27 homes for a year.

The largest source of carbon emissions for the hospitality sector comes from the heating, powering and cooling of their buildings. When taken together, these buildings' carbon emissions are responsible for 84% of these businesses' emissions. The energy required to heat hotels and gyms is by far the largest source of emissions, accounting for 41% of these businesses carbon emissions. This is not surprising as hotels and gyms have long opening hours, with some facilities remaining opened for 24/7. [75%](#) of hotels' environmental impacts can be directly related to excessive energy consumption.

The second largest source of emissions is downstream waste, which accounts for 11% of these businesses' emissions. This fits with the hospitality industry's business requirements. Many hotels and gyms offer customers disposable items. On average a single hotel guest generates about two pounds of waste per night (paper, plastic, cardboard account for half of that waste).

The third largest source of emission is commutes, which represent 4% of their carbon footprint. This source of emission can be addressed through the communal projects, such as the Low Traffic Neighbourhood proposition and other incentives explored in this Routemap.

Hospitality businesses looking to reduce their carbon emissions can focus on different areas. Please note some actions will be more appropriate for hotels whilst others will target gyms. Moreover, some actions may also be more appropriate depending on the organisation's brand or size.

1. Improve buildings' performance: To address their largest source of carbon emissions, hospitality businesses can:

- **Improve the fabric performance of their buildings:** This includes installing double or triple glazed windows or upgrading building insulation. Embodied carbon should be considered as part of these interventions.
- **Increase their energy efficiency:** To do so, they can: switch to LED lighting, install smart ventilation, install solar film on windows, install automated lighting controls (for example, occupancy/daylight controls), switch to key card controlled electricity systems in rooms, install a more efficient chiller and boiler (ideally an electric one), install induction hobs in kitchens, reconsider the layouts of kitchens so that ovens and heaters are not next to fridges or freezers, and install draught excluders on doors. Consider light pollution and switch off light where possible. It is also important to communicate guidance on reducing energy use to guests to encourage positive behavioural change.
- **Invest in renewable energy:** Install on-site renewable energy sources such as solar panels or wind turbines (See communal projects section). They should also consider purchasing renewable electricity and/or gas from the grid, or via a Power Purchase Agreement (PPA).
- **Choose energy efficient cardio equipment for a gym:** If possible, obtain machines that do not use external power and instead rely on human power. It is worth noting that 45 minutes on a non-electric machine can save 0.8 kWh of energy, the same as running 7 miles. They can also explore opportunities to use energy generated through cardio work-outs to power their buildings (See case studies for inspiration). One example is SportsArt's ECO-POWR technology which captures 74% of energy per workout, which is then fed back to the electrical grid.

2. Reduce waste: To address their second largest source of carbon emissions, hospitality businesses can:

- **Use their purchasing power:** They can purchase goods, furniture and fittings made from low-carbon, recycled and/or re-purposed materials. They can source local products and set a target for using local goods. They can consider using second-hand and/or upcycled items. They should donate any unwanted furniture/fitting to charities or second-hand shops, including used towels and linens. They can recycle or donate part-used soaps. For gyms and fitness studios, businesses can select mats, barbells, and other equipment made from recycled products. They can partner with organisations that fight fast fashion and offer sustainable gear and clothing.
- **Help their customers reduce their waste:** They can provide guests with clear information, labels and signage to dispose and recycle their waste, and add recycling bins to guest's room. They can incentivise guests to opt out of room cleaning, and/or implement a guestroom linen re-use programme. Laundry and dry-cleaning can also be transported off-site using cargo bikes. It is worth noting that these interventions should be paired with adequate team training.
- **Eliminate single use plastic:** They can replace single-use plastic toiletry bottles with bulk dispensers or solid alternatives. They can replace single-use tableware and cups with re-usable ones, and switch to reusable storage options in kitchen. They should not offer single-use plastic bottles and instead install refill stations for drinking water. They can offer other disposable items on request only. They should work with suppliers to reduce and re-use packaging.
- **Deal with food waste:** They can monitor food waste, install a food waste composter, join a food waste programme to donate any surplus food. The British firm Olleco, for example, collects food waste from restaurants and hotels and turns it into biofuel. Check out the food and drink section on page 41 for more interventions.
- **Go digital and eliminate printing:** They can eliminate printing. [85%](#) of ink cartridges and toners purchased in the UK end up going to landfill.

3. Reducing transport-related emissions: To address their third largest source of carbon emissions, hospitality businesses can:

- **Promote public transport and active travel options:** They can highlight public transport options for their guests, offer guests access to a bike rental scheme and share information about any other low carbon transport options.
- **Switch to electric vehicles:** They should switch all company cars to electric vehicles, and provide on-site electric charging points. They can also provide incentives for employees to switch to EVs if they have/need a car for work purposes. They should work with taxi companies and suppliers that have electric vehicles.

We have also identified a series of additional interventions and recommendations. Hospitality businesses can:

- **Include carbon requirements** in their procurement processes and considerations, and work with their suppliers to reduce carbon emissions.
- **Purchase environmentally friendly cleaning products.**
- **Invest in carbon sequestration projects** (locally preferably), and offer guests an option to offset their own carbon footprint.
- **Launch a training for employees** to encourage eco-conscious behaviours.
- **Food: Introduce meat-free days** and options in restaurants/catering services. Offer vegetarian and plant-based foods, showcasing them within menus. For gyms, if they have nutritional services, businesses can encourage organic and/or paleo meal plans.
- **Water: Reduce and monitor their water consumption.** Install low-flow taps, water-efficient appliances, water displacement devices in toilets and check regularly for leaks. They may also wish to investigate options for rainwater harvesting or other water recycling systems. They should consider signing up to digital platforms like Aguardio which allows guests to measure their own water use.
- **Join the UK Hospitality Carbon Reduction Forum**, which published a Roadmap to Net Zero, and/or the Sustainable Hospitality Alliance and/or seek to achieve the [Green Key](#) eco-label, like Hilton Hotels have.

There are many benefits for hospitality businesses that decarbonise their operations and transition to more sustainable processes. Benefits include:

Enhancing your reputation

With customers increasingly concerned about the environment, reducing a hospitality business' carbon emissions and embedding sustainability within their brand can have several benefits, including attracting new customers, retaining existing customers and increasing brand loyalty.

There are reputational benefits for helping customers reduce their own carbon footprints, including helping them not feel guilty about their waste.

For gyms, going green is a great way to attract a younger clientele.

Reducing energy and water use

By reducing energy and water consumption, hospitality businesses can reduce their utility bills.

On average, efficiency upgrades pay for themselves in less than three years and generate energy savings of 5 to 15%.

Going digital

In addition to improving data collection and increasing productivity, contactless check-ins, keyless entry and guest messaging platforms are more convenient, provide guests with seamless ways to access various services, and are COVID-19 compliant. It reduces paper and plastic, and saves space.

For example, guest room tablets can reduce the need for paper menus, flyers and in-room directories. Hilton uses [Connected Room](#) which enables guests to personalize and control every aspect of their stay from their smart phones. This helps reduce energy consumption, particularly when guests are not in their rooms, and saves money.

Reducing food waste

By growing food on-site, sourcing food locally, reducing plate waste and increasing the plant-based offering on menus, businesses can reduce their carbon emissions, save money and attract new eco-conscious customers.

Reducing plastic

“Disposable” plastic is on customers' mind. Over [50%](#) of Booking.com respondents stated they want to reduce their plastic consumption when they travel again.

Simply replacing plastic keycards can make a large impact on businesses' waste production and also helps with COVID-19 security guidelines.



[room2 Rooms in Chiswick](#)

room2, London

Hospitality brand Room2 has opened the first hotel to reach net zero emissions across its entire lifespan, from construction to demolition.

Designed by Project Orange, the new build is in Chiswick and features 86 rooms powered by solar panels and ground source heat pumps. The interior fit outs are made from locally FSC-certified timber.

Thorough insulation, energy-efficient appliances and lighting activated by motion sensors allow the building to use 89% less energy per square metre than a typical UK hotel.

Room2 says it worked to reduce both the hotel's operational and embodied emissions, ultimately amounting to an estimated carbon footprint of 10,800 tonnes over the building's 60-year lifespan. These emissions were then offset by investing in a verified bamboo afforestation programme in Nicaragua.



The [Terra Hale Fitness Studio](#) in London

Melia Hotel, Worldwide

Meliá Hotels International has been recognized for several years as a leader in sustainability in the hotel industry. This includes ranking first in 2019 and 2020 in the S&P Global Corporate Sustainability Assessment, which is the most comprehensive assessment of the performance in sustainability of more than 10,000 companies across all industries.

Since 2015, they have changed how they design and build new hotels to reduce both embodied and operational carbon. They have also launched several carbon reduction projects around the world, including CO2PERATE, a project to improve energy and water management in hotels. 61% of the hotel portfolio uses renewable energy (100% for its Spain, France, Italy, Germany and UK hotels). It has launched a roadmap to eliminate single-use plastics and is participating in a pilot project to create a circular hotel economy in Mallorca, transforming organic waste into compost to be donated to local farmers and later buying produce from them. To reduce food waste, Meliá is using technologies such as Leanpath, which allows the registration and monitoring of organic waste and the adoption of measures to reduce food waste by up to 30%. Meliá also became first International hotel chain to make use of [environmental blockchain technology](#) to offset its carbon footprint. In collaboration with Spanish start-up Climatetrade, it allows guests to spend their credits on initiatives against climate change.

Terra Hale Fitness Studio, London

Terra Hale is London's first eco-friendly human-powered gym. It will be the first studio to harness member's energy to power its facilities, as well as its neighbours' facilities. Any excess energy is fed back into the grid.

Terra Hale takes a holistic approach. It is a no-contract, pay-as-you-go studio which is entirely made from recycled materials from its doors handles to its yoga mats, to its rubber floor. All other items have been upcycled or obtained from second-hand and/or vintage shops. The walls are made from reclaimed wood and covered with plants that have air-filtering qualities. At Terra Hale, it is not the number of calories or miles a client covers that count. It is all about the number of watts they generate. They offer a prize at the end of the month for the biggest energy generator.

Eco Gym, Lancing and Brighton

Paul Crane and Andy Little founded Eco Gym in 2011 (originally called Beach Fit). They opened a pilot gym in Lancing in 2016 before opening up a second Eco Gym in Brighton in 2017. With funding from the European Development Funds (2014-2020) they are launching similar gyms across the UK and exploring new business development models.

At Eco Gym, members generate electricity whilst exercising on specially adapted equipment. The excess power is sent back to the grid.

Their equipment is combined with eco-focused policies such as using recycled products and water-saving showers.

Since opening its Brighton location, Eco Gym has grown to an 89% usage rate with a 4% attrition rate. And it has attracted a loyal, young demographic: 72% of the club's membership is between 18-35 years old.

Other similar examples include [Energym](#) and the [Green Microgym](#).

Hospitality businesses in the London Bridge BID have already made efforts to reduce their carbon footprints.

The LaLiT Hotel illustrates what can be achieved in terms of sustainability on a refurbishment project. Sustainability was at the heart of this project, with 89.4% of the existing structure retained (which in turn leads to great embodied carbon savings).

The ambitious restoration programme looked at replacing or restoring rotten timber, cracked plaster ceiling panels and the roof as well as damaged brickwork, whilst retaining as much of the existing building as possible.

The original plaster cornices and dado mouldings were kept throughout and refurbished, as were all the windows and doors, with non-original windows being replaced with new timber windows that replicated the original design.

Since its opening, the LaLiT hotel has also embedded sustainability in its operation. They have gone digital, relying on electronic medium for communication. They recycle paper. They have installed LED lights and sensor light options. They use smart air conditioning units and have invested in on-site solar panels.

They also avoid food waste by working with organisations such as Robin Hood Army to donate surplus food to under-served communities.



The [LaLiT Hotel](#): A Sustainable Refurbishment Project

The climate crisis is a health crisis. The linkages between climate change and the health and well-being of local communities has long been studied, yet only recently formally acknowledged. One example is how global rising temperatures are causing more heat waves which in turn lead to excess deaths. In the summer of 2020, there were [2,556 excess deaths](#) (not associated with COVID-19) in the UK due to heat waves.



The Guy's and St Thomas' Hospital

Climate change's health impacts are also putting additional pressure on an already stretched National Health System (NHS). Investing in climate resilience as well as in mitigation and adaptation measures is critical to reduce this burden. Decarbonising healthcare will contribute to building resilience and future-proofing the sector, as well as helping mitigate climate change's adverse impacts on health and well-being.

Health Care Without Harm found that the health sector is responsible for [4.4%](#) of global net emissions (2 gigatonnes of CO₂e), the equivalent amount of carbon produced by 535 coal powered power stations every year. In the UK, the healthcare industry is responsible for [3.2%](#) of national emissions; emissions from the NHS alone are [greater](#) than those associated with all the airplanes departing Heathrow Airport annually. The NHS has already committed to reaching net zero by 2040, with an 80% reduction by 2028-2032. They acknowledge that this will require action from all levels and they hope it will encourage those in the private sector to follow and act.

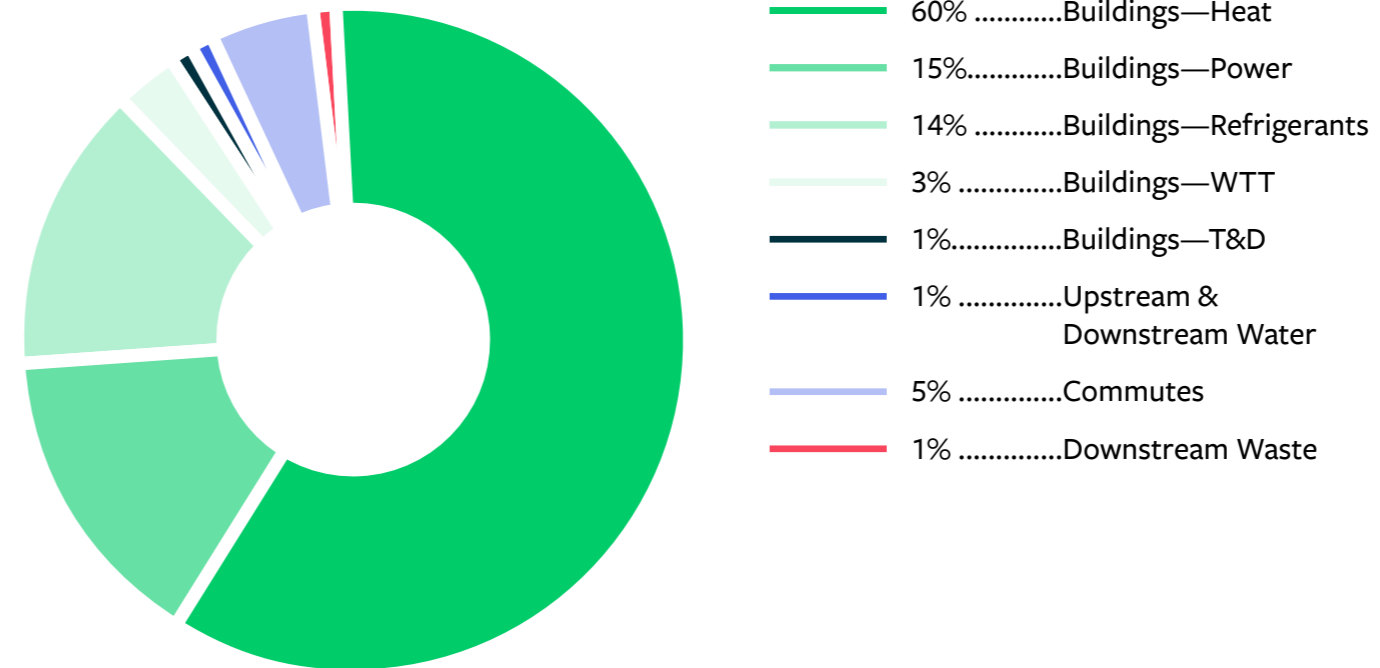


Figure 18: London Bridge BID's Healthcare Organisations' Total Carbon Footprint in 2019

In the London Bridge BID, there are 8 health organisations, including hospitals, dental practices and therapy clinics. Covering a quarter of the BID's net internal area, healthcare accounts for 23% of the area's annual carbon dioxide emissions, emitting 29,900 tCO₂e a year (See Fig. 18).

The largest source of emissions for these businesses are those associated with heating, cooling and powering buildings and associated specialist equipment. When taken together, they are responsible for 93% of the healthcare businesses' carbon footprint (27,807 tCO₂e). Demanding such high levels of energy consumption for heating, cooling, lighting and powering equipment, energy conservation in hospitals is a crucial way to reduce carbon emissions associated with buildings.

The second largest source of carbon emissions come from employee commutes, accounting for 1,495 tCO₂e per year. This source of emissions can be addressed through the communal projects recommended, as well as through specific interventions explored on page 56. It is worth noting that

some hospitals in the London Bridge BID area are recognised as international leaders in [medical tourism](#), which requires patients to fly from abroad and will increase as hospital campuses in the area grow. These emissions will be hard to target in this specific context, but can be offset by taking actions in other areas.

The third largest source of emissions is associated with downstream waste, with 299 tCO₂e emitted every year. This includes emissions associated with any waste these businesses disposed of, such as plastics and recyclables.

This can be addressed through improving waste management and procurement practices (it is worth noting that for the NHS as a whole, [60%](#) of its carbon emissions occur in its supply chain). Doing so, will deliver other financial benefits, which will be explore in this Routemap.

Healthcare organisations can take several steps to start reducing their carbon footprints. This includes:

1. Maximise energy efficiency: To address their largest source of emissions, healthcare organisations can:

- **Switch to LED lights** to achieve up to a 68% reduction in lighting-related emissions.
- **Encourage the use of natural ventilation** for cooling.
- **Explore and implement passive design** considerations to their buildings, especially for new developments. Passive design for hospitals brings additional benefits around air quality and patients' thermal comfort (See the case study on page 58).
- **Upgrade their fabric performance**, including investing in double or triple glazed windows and increasing insulation.
- **Conduct an energy survey** to identify causes of excess consumption. By conducting an energy survey (or audit) alone, one hospital improved their energy efficiency by [33%](#), amounting to £200,000 of savings annually.
- **Turn off non-essential equipment** over long periods of non-use. For example, University College London Hospitals have predicted an annual saving of [£100,000](#) by installing software that automatically shuts down office computers over weekends.
- **Invest in on-site renewable energy generation** and ensure they are procuring green/low-carbon energy.
- **Train their employees** to teach them energy efficiency measures and encourage a culture shift.

2. Reduce emissions associated with travel: To address their second largest source of emissions, healthcare organisations can:

- **Reduce business mileage claims** by collaborating with local authorities to improve local walking and cycling routes, providing secure cycle storage, promoting car sharing schemes, or signing up to the Guy's and St Thomas' Trust off-site consolidate centre. Bristol City Council's Health and Social Care directorate saw a 20% reduction in business mileage claims, resulting in estimated savings of £100,000.
- **Communicate to their patients** the benefit of using public transport to access their facilities.
- **Work with suppliers that use electric vehicle** and invest in on-site charging points.
- **Provide incentives and perks** to their employees to use public transport and active travel modes of transport (including e-bikes).
- **Use cargo bikes** to deliver blood and other medical supplies (this aligns with Team London Bridge's Bikes for Business scheme).

3. Reduce waste: To address their third largest source of emissions, healthcare organisations can:

- **Reduce operating room waste** (responsible on average for 30% of hospital waste). This can be done by switching from one-use suppliers to reusable options, improving recycling programs and reducing medical supply waste by identifying the biggest culprits. Training their staff members will also help reduce waste.
- **Eliminate any single-use plastics** from staff and patient canteens, opting instead for reusable or recyclable alternatives. Please see the food and drink section for more ideas on how to reduce emissions associated with the provision of catering services.
- **Minimise wastage of medicines** due to inappropriate prescription and inadequate stock management. Small changes can have a drastic impact due to the volumes involved.

We have also identified other interventions for the healthcare sector. They can:

- **Engage with their supply chain.**
- **Use their purchasing power** to work with eco-responsible suppliers. This will require updating their procurement policy and adding carbon requirements. This should be done in partnership with the NHS as they update their national purchasing platform.
- **Increase efficiency of deliveries**, encouraging the use of consolidation centres to reduce the number of trips required. This is explored in the communal project section.
- **Encourage more carbon friendly delivery practices** such as using electric vehicles for last mile delivery, which reduces carbon emissions and improves local air quality.
- **Consider clinical gas usage and use clinical gases with lower global warming potential.** The emissions produced by one bottle of desflurane, a therapeutic gas used for anaesthesia, is equivalent to burning 440kg of coal. Switching to suitable low-carbon alternatives such as sevoflurane reduces the global warming potential of such gases by over [90%](#).
- **Reduce wastage of clinical gases.** The [NHS](#), for example, was able to cut the usage of many gases by up to 50%, saving 17,000 tCO₂e per year by engaging with anaesthetists.
- **Work with local communities** to communicate the benefits of sustainable living (active travel, reduced pollution, health diets). For example, just 30 minutes of walking a day can reduce carbon emissions and increase a patient's heart and lung fitness, while reducing risk of chronic and cardiovascular disease. This can also be linked to healthcare organisations' wider campaign to promote holistic, preventive and/or community-based medicine.

There are many benefits for healthcare businesses that decarbonise their operations and transition to more sustainable processes. Benefits include:

Reducing their operational costs

Buildings in the healthcare sector are extremely energy demanding, with energy costs making up a large portion of their spending.

By monitoring energy usage and adopting energy efficiency measures, huge cost savings can be delivered.

Future-proofing their operations

Climate change is already having impacts on health and well-being and it will get worse. The [World Health Organisation](#) estimates that climate change will cause 250,000 additional deaths per year between 2030 and 2050, causing pressure on the healthcare sector.

Adapting healthcare organisations' operations now will future-proof their business and build resilience, reducing insurance costs and future (more costly) required investments in low-carbon measures and infrastructure.

Saving lives

The [NHS](#) calculated that their transition to net zero by 2040 would entail significant health benefits.

Their trajectory would see around 5,700 lives saved per year due to reductions in air pollution and 38,000 lives saved per year from increased levels of physical activity.

Embracing innovation

By decarbonising their operations, healthcare organisations have an opportunity to test new technologies, to invest in cutting-edge software, and to trial innovative energy systems.

These can in turn increase their productivity, the quality of their service and their reputation.

Sustainability will also enhance London Bridge's innovation pull, attracting new businesses, funding and talented individuals.



The [KFH Hospital](#) is Designed Using Passive House Principles

Klinikum Frankfurt Hörchst Hospital

Due to open in late 2022, [Klinikum Frankfurt Hörchst](#) (KFH) has been designed using passivhaus (Passive House) principles (which are: no thermal bridging, superior windows, mechanical ventilation with heat recovery, quality insulation, and airtight construction). Building with passive standards in mind yields several benefits for hospitals. Indeed, a hospital being constructed with high-level energy efficiency measures is estimated to save up to 40-60% in energy compared with a conventional hospital.

As the world's first passive designed hospital, the KFH hospital building's airtightness and energy conservation techniques will save energy costs, while maintaining the high temperatures required for a hospital with minimal active heating. Thanks to the passive standard ventilation requirements, the building will also be more sterile and odour-free compared to a conventional hospital. The same principles that will keep the building warm will also work to keep it cool, providing it with further resilience as global temperatures increase due to climate change.

Being some of the most energy-demanding buildings, energy efficiency measures such as these can provide a high return on investment to hospitals.



The Yorkshire Ambulance Service [Plastic Free Canteen](#)

Guy's and St Thomas NHS Foundation Trust

By engaging with their supply chain, Guy's and St Thomas' NHS Foundation Trust were able to deliver a cost saving of 15% while ensuring social value and net zero requirements were also taken into account by the supplier.

The Trust held a mini competition when tendering for their office supplies. Suppliers were required to evidence how a set of targets related to decarbonisation and social value would be reached if they were given the contract. In line with the competition's requirements, the winning supplier committed to:

- Procuring electric delivery vehicles to be utilised for all deliveries;
- Minimising deliveries and moving delivery times out of peak times; and
- Consolidating deliveries for fewer drops, generating fewer carbon emissions.

This is a great example of an organisation using their purchasing power and procurement policy to decarbonise their operations, as well as those of their supply chains.

Yorkshire Ambulance Service Plastic-Free Canteen

[Yorkshire Ambulance Service NHS Trust](#) removed 200,000 single-use plastic items from its waste stream in 2019/20; saving four tonnes of waste per year and over £12,000 a year in packaging, delivery and disposal costs.

Conducting a hotspot analysis, the Trust identified 15 products of interest after reviewing the single-use plastics in use in their staff cafeteria, such as sandwich bags, plastic lined cups and stirrers, and carefully selected more appropriate eco-responsible replacements.

The practicalities of disposing of the non-single-use plastics items were also considered. Due to the lack of food waste facilities in the area, reusable plates and cutlery were chosen over compostable alternatives.

The project was part of the NHS's Plastic Pledge to reduce single use plastics related to its catering service.

Newham University Hospital Retrofit

Using the Mayor of London's RE:FIT Framework, [Newham University Hospital](#) invested in a range of energy and environmental improvements.

By replacing and upgrading their air handling, the 379-bed hospital reduced their carbon emissions and enhanced the healing environment for their patients.

Over 4 years the hospital saved 2,130 tCO₂ from being emitted, the equivalent carbon emissions of over 500 average sized homes. During this period, the hospital also saved £234,000.

King's College London has been taking action on climate change and reducing emissions for many years and is one of the BID's Net Zero Champions.

“Sustainability is one of the enabling foundations of King's Strategic Vision 2029, which aims to make the world a better place. In 2010, we set the target to reduce our Scope 1 and 2 emissions by 43% from 2005-06 to 2020. Since then, we have more than halved our emissions despite university growth.

Our carbon reduction is the result of many energy efficiency projects taking place across our campuses. These include switching to LED lights and insulating pipework, which can have a significant impact when carried out across our buildings. At Guy's Campus, we are in the process of upgrading our Building Management System, which will give us greater control over energy use in our buildings and enable us to make targeted changes. At the Wolfson Wing, located off Newcomen Street, works on the building's ventilation system will reduce energy consumption and improve efficiency.

Our students and staff have played a key role in our carbon reduction progress. Guy's Campus is home to our medical school and many of the university's laboratories. Laboratories are energy- and resource-intensive spaces, and can consume up to 3-10 times as much energy as non-lab areas. To reduce this impact, we take part in the Laboratory Efficiency Assessment Framework (LEAF), which supports lab managers and users to reduce carbon emissions in their labs by taking actions such as closing fume cupboard sashes, efficiently managing space in ultra-low temperature freezers, and sharing equipment. Lab teams are awarded Bronze, Silver or Gold Awards for taking part in the scheme and carrying out actions. At Guy's Campus, 13 teams currently take part in the scheme.



[King's College London](#) at Guy's Campus

Students and staff have also been involved in developing our future climate plans as part of the King's Climate Action Network, and open, interdisciplinary forum supporting King's in addressing climate change. The King's Community has taken part in this by sharing ideas for future projects, shaping King's ambition on climate change, and developing their own initiatives such as cycling events, podcast series and re-use schemes.”

Although King's College London is not included in the healthcare business type in this Routemap, they are located in the Guy's campus in London Bridge. Their efforts to decarbonise should inspire other educational institutions, including working with neighbouring organisations to reduce carbon emissions.

▣ *Laboratories are energy- and resource-intensive spaces, and can consume up to 3-10 times as much energy as non-lab areas. To reduce this impact, we take part in the Laboratory Efficiency Assessment Framework (LEAF), which supports lab managers and users to reduce carbon emissions in their labs by taking actions such as closing fume cupboard sashes, efficiently managing space in ultra-low temperature freezers, and sharing equipment. ▣*

Theatres are part of London’s cultural fabric, and have long been recognised for the role they play in addressing the climate crisis. As early as 2008, a first action plan was launched encouraging London theatres to reduce their energy use to reduce their carbon footprints.



The Bridge Theatre in London Bridge

The [action plan](#) estimated that London’s theatre industry was responsible for 50,000 tonnes of carbon emissions every year, the equivalent emissions from 9,000 homes. Since then, many theatres have worked to reduce their energy use and associated carbon emissions.

Since then, the Theatre Green Book was launched. Divided into three different volumes, it sets standards for making production, theatre buildings and operations more sustainable. These documents provide theatres with a common pathway to decarbonise their operations. This Routemap explores some of these interventions, whilst recommending that all theatres within the BID area use the three volumes to decarbonise their operations (if they are not already doing so).

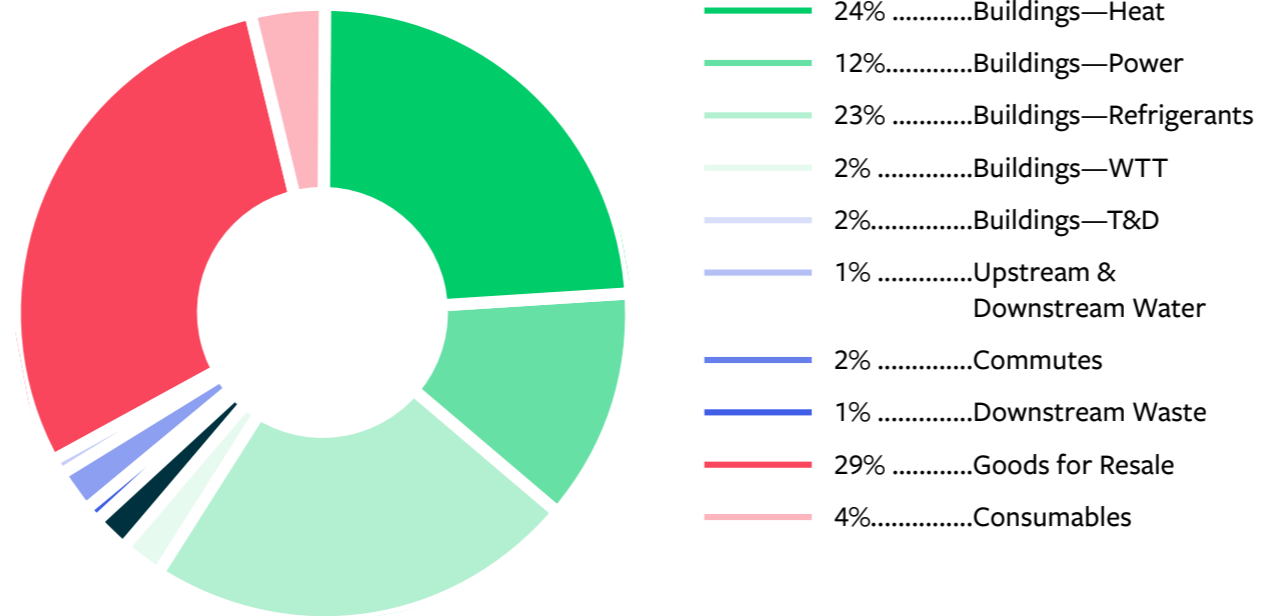


Figure 19: London Bridge BID’s Theatres’ Total Carbon Footprint in 2019

Theatres in the London Bridge BID account for 900 tCO₂e per year, which represents less than 1% of the BID area’s total carbon footprint. Therefore, reducing theatres’ carbon footprint in the area is important to decarbonise the BID.

The largest source of carbon emissions for theatres comes from the heating, powering and cooling of their buildings. Buildings emissions account for 63% of theatres’ carbon footprint, with heating (24%) and refrigerants (23%) accounting for more than two thirds of those emissions. It is not surprising that buildings would account for theatres’ largest source of carbon emissions, as a lot of energy is expended through lighting, sound and stage ancillary. These emissions are covered by the Theatre Green Book Volume 2.

The second largest source of emissions is goods for resale. For a theatre this includes any products or materials used in production (costumes, furniture etc.) as well as goods sold to their customers (brochures, tickets, catalogues, food). Goods for resale account for 29% of theatres’ carbon footprint, the largest single source of carbon. These emissions are covered by the Theatre Green Book Volume 1.

The third largest source of emission is consumables which account for 4% of these businesses’ carbon footprint. Consumables include all products and raw materials that are consumed on-site by staff members, such as food items. These emissions are covered by the Theatre Green Book Volume 3.

Theatres looking to reduce their carbon emissions can focus on different areas. For consistency, proposed interventions are aligned with the three volumes of the Theatre Green Book.

1. Production-led carbon emissions (volume 1): To address emissions associated with goods for resale and associated waste, theatres can:

- **Use materials that come from re-used, recycled sources** or are low-carbon for their stage productions.
- **Re-use, re-purpose and/or donate/upcycle any unwanted items.** We recommend partnering with a local charity or a second-hand shop. We would also encourage theatres to look at ways to re-use materials for multiple productions and to adequately store and maintain their costume and scenic stocks.
- **Expand ongoing collaborations** and develop new partnerships with schools, universities, high-schools and theatre organisations to more easily share resources and recycle production materials.
- **Explore options to lease/rent furniture** and other items for stage production. This can also apply to large equipment and to specific period outfits/décor.
- **Consolidate deliveries** to reduce transport-associated emissions. This will require working with their suppliers (See the communal projects section for more information on consolidated deliveries).
- **Create a shared vision** and work with the entire production team to set and subsequently meet targets. This may require setting up a training for their employees and partners to encourage more eco-responsible behaviours.

2. Building emissions (volume 2): To address Scope 1 and 2 emissions, theatres can:

- **Improve the fabric performance of their building:** This includes installing double or triple glazed windows or upgrade building insulation (for example installing insulation on internal appliances and on external walls, windows and roofs). Embodied carbon should be considered as part of these interventions. This will require collaboration with their landlords.
- **Increase their energy efficiency:** To do so, theatres can:
 - **Use heating and cooling for less amount of time.**
 - **Switch to LED lighting,** install smart ventilation, install automated lighting controls (e.g. occupancy/daylight controls), or install a more efficient chiller and boiler (ideally an electric one). Investing in energy efficient appliances is also highly recommended.
 - **Explore opportunities to re-use heat** produced by technical equipment to heat other rooms in their buildings (avoid running cooling at the same time as heating), or innovation opportunities (for example Arcola and its hydrogen fuel cell). They can also heat their auditorium later and reduce their thermostat temperature.
 - **Audit how different rooms in their building are currently being used and occupied** in order to maximise occupancy throughout the day and reduce the need to heat/cool the entire building.
 - **Reduce external lighting** by reducing hours of operations (take into account seasonal variations) and ensure they are using energy-efficient bulbs.
 - **Invest in renewable energy** such as installing on-site renewable energy sources (See the communal projects section). They should also consider purchasing renewable electricity and/or gas from the grid, or via a PPA.

3. Operational emissions (volume 3): To address emissions associated with consumables and waste, theatres can:

- **Go digital** and eliminate printing where possible including using e-tickets.
- **Use marketing to bring encourage their customers to adopt eco-responsible behaviours** (for example using public transport, avoiding printing tickets). This is also a great way to share their own carbon neutral journey and any progress or success stories. We also encourage theatres to seek a carbon neutral or sustainability accreditation from trusted bodies.
- **Update their procurement policy** to include carbon requirements. We recommend they work with their supply chain in setting realistic targets.
- **Upskill their employees** to create a cultural shift towards sustainability and encourage more eco-responsible day-to-day behaviours.
- **Food:** If they are serving food, theatres should consider introducing more vegan and vegetarian options, adding the carbon impact of meals on menus, removing unnecessary packaging and eliminating disposable plastics and other items. They can also explore opportunities to work with local suppliers and/or grow their own food.
- **Water:** Monitor their water consumption. They can install low-flow taps, water-efficient appliances, water displacement devices in toilets and check regularly for leaks.

There are many benefits for theatres that decarbonise their operations and transition to more sustainable processes. Benefits include:

Reducing their energy use

By investing in energy efficiency measures, theatres can reduce their energy bills.

It is worth noting that the same applies to water use and water utility bills.

Influencing others

Beyond reducing their own carbon footprints, theatres, and the wider creative and cultural industries, have an important role to play in encouraging others, including suppliers and consumers, to play their part. This can be done by communicating their vision, ambitions, existing and future projects.

Theatres are ideally placed to inspire and advocate for eco-responsible behaviours. In doing so, theatres can enhance their brand reputation and retain more loyal customers.

Attracting talent

The climate crisis is not just on customers' mind. Artists, directors, production staff and suppliers are all working towards reducing their own impact.

By taking the lead, theatres, and other cultural organisations, can attract, and retain, the best talent.

Reducing external lighting

In addition to reducing energy bills, reducing external lighting decreases light pollution which has a positive impact on biodiversity.

Biodiversity plays an important role in our lives and can have a positive impact on an area's climate resilience and adaptation to future adverse weather impacts.

Avoiding reputational risk

With more and more pressure from the public to address the climate crisis, a failure to decarbonise their operations represents a reputational risk.

Investing today in decarbonisation will help future-proof their organisation and alleviate future, more-costly and necessary investments.

National Theatre, London

The National Theatre is committed to reducing its carbon impact. They worked with Philips to replace their external lighting, delivering a 70% reduction in the energy needed to illuminate the building's fly towers. The move saved the theatre an estimated £100,000 a year. Environmentally friendly bulbs have also been installed throughout the building.

All energy that powers the theatre comes from wind or solar energy. They also generate some of their own electricity thanks to their on-site CHP.

In 2013, they constructed a new production building, which is heated and cooled by a ground source heat pump. From 2016 to 2019 they have reduced the energy carbon impact of their building by 25%. Their building has achieved a DEC B.

They currently recycle 67% of their commercial waste and seek to reach 75% by 2022 and reduce non-recyclable waste. They use new reusable cups in their bars and have saved over 200,000 single use plastic cups in the first three months alone. Coffee grounds are also collected and turned into eco-heating briquettes. Every six months, they collect 5 tonnes of coffee grounds which make 4,200 briquettes.

They work with the Sustainable Restaurant Association to review and update their food and drink policy. As part of their new policy, 60% of fruit and vegetables must be from the UK. Any products from outside the UK must be Fairtrade or Rainforest Alliance.

They are currently working towards the baseline standard for the Theatre Green Book for their productions.

More information about their Paradise production is provided [here](#).

Arcola, London

The Arcola Theatre in Dalston, East London, has been leading the way since 2007 in reducing their carbon emissions. They set an ambitious goal: to become the world's first carbon-neutral theatre.

To do so, in 2007, they established Arcola Energy Project. In 2010, they set up Arcola Energy Ltd to take forward technology development and commercial elements, specialising in the integration of hydrogen and fuel cells.

To that end, Arcola Theatre installed an environmentally friendly hydrogen fuel cell to generate electricity and clean water to run the theatre's café-bar and selected main house productions. The 5kW fuel cell system was installed in the theatre's foyer. The first show to use it had a peak power consumption of 4.5kW, a 60% reduction compared to comparable lighting installations.

Additionally, Arcola has installed solar panels, solar thermal panels to heat the water, a DC microgrid, LED lights, and a waste wood fired heating system. They have also renovated the Colourworks building and re-used over 10,000 bricks, saving waste emissions and more than £13,000. They have also formed strong local partnerships, with 90% of the beer sold at the Arcola bar coming from within 4 miles.

Since 2012, they have reduced their carbon footprint by more than 25%.



[The National Theatre](#)



[The Arcola Theatre](#)

The Unicorn Theatre has been leading the way in reducing its carbon footprint and inspiring other arts organisation to do the same. As one of the BID's Net Zero Champion, they share their experience below.

“Production & Technical Director Jenn Taillefer has a lifelong passion for sustainability issues, and the drive to make practical change in every field she’s worked in across her career. In 2020, Jenn attended Carbon Literacy training, and was galvanised to become a certified trainer in the subject. As part of her role at the Unicorn (and alongside production managing most of our work on stage and on screen!) she developed a training package specifically angled towards the theatre sector. She began to roll out this training to Unicorn staff in Autumn 2021.

We all know that knowledge and education drive change; on average, a person’s carbon footprint lowers by 5 – 15% after undertaking the training. Its impact goes beyond individual commitments, and flows through into professional lives and other networks. At the Unicorn, we have seen new commitments to:

- Work to Theatre Green Book Standards across all our productions (Executive and all staff).
- Replace auditorium lighting with LED bulbs (Technical).
- Remove use of disposable tape (Technical).
- Use only water-based paints and remove use of aerosol paints as far as possible (Technical).
- Induct visiting crews and hires into our sustainable practices via ‘toolbox talks’ (Technical).
- Continued adjustment of the building’s heating / cooling system, timed to match scheduled activities (Facilities).
- Integrate sustainability training into usher team training (Front of House).
- Assess all café and shop suppliers to move to more sustainable products and suppliers who share our values (Front of House).
- Clear out unnecessary digital storage (Marketing).
- Move to non-PVC vinyl for our window displays (Marketing).




The Unicorn Theatre's Sustainability Training

- Make information on pensions investments, including ethical options, regularly available to staff (Finance).
- A login / download system for payslips, moving away from emailing hundreds of attachments weekly (Finance).

Interest from other theatres was strong from the outset, with organisations across the UK contacting us to book training for their staff. Jenn has delivered theatre-specific Carbon Literacy Training for National Theatre Scotland, National Theatre Wales and the London Theatre Consortium, with more sessions planned with organisations across the country. All Unicorn employees underwent Carbon Literacy Training by Spring 2022, as well as some members of our casual team, and one of our Trustees. Our next goal is to extend the training to our full Board of Trustees, and our casual staff (our Ushers, Box Office and Stage Door teams).”

Read more about the Unicorn’s sustainable actions and goals [here](#).

▣ *We all know that knowledge and education drive change; on average, a person’s carbon footprint lowers by 5 – 15% after undertaking the training. Its impact goes beyond individual commitments, and flows through into professional lives and other networks.* 

Landlords

The drive to decarbonise raises important questions about the landlord-tenant relationship. Landlords and tenants must work together to decarbonise the London Bridge BID area.

As asset owners, landlords can help in the following ways:

- Improve the fabric performance of their buildings.
- Invest in energy efficiency measures and appliances, working with tenants to encourage eco-conscious behaviours.
- Switch to low-carbon source of heating and replace boilers (under the current proposals new gas boilers or replacements may be banned in existing properties as of 2035).
- Retrofit assets to an electric-led system.
- Invest in renewable energy generation on-site.
- Switch to a fully renewable energy supply.
- Support the transition to low-GWP refrigerant gas during TM44 inspections.
- Install a Building Management System and share data about the building's performance with tenants.
- Improve communication with tenants and work together to reduce carbon emissions.

Landlords have several incentives to retrofit their assets, reduce carbon emissions and improve energy efficiency. One of these incentives is the [Heat and Building Strategy](#) which sets out how the UK will reduce carbon emissions from buildings. The Strategy is accompanied by a commitment to invest £3.9 billion over the coming years.

With new energy efficiency laws also coming into effect, investing now in decarbonising assets will allow landlords to reduce operational costs, future-proof their assets and comply with future regulations. The energy efficiency of a building may very well determine a landlords' ability to rent it in the future. Moreover, with an increased demand for sustainable office space, adopting high sustainability standards will help landlords meet future clients and occupiers' demands.

Developers

Developers also have a critical role to play in ensuring new commercial and residential buildings are as low-carbon as possible, from an operational and embodied carbon perspective. New developments offer opportunities to reduce carbon emissions and meet wider sustainability targets. This includes:

- Embed sustainability considerations from the onset of the project as this will reduce the cost associated with decarbonisation measures.
- Opt for a passive approach to heating and cooling combined with high fabric performance standards.
- Conduct a whole-life carbon assessment of design proposals;
- Adopt circular design principles.
- Consider carbon when choosing materials.
- Invest in low-carbon heat systems.
- Consider adopting an electric-led system.
- Consider on-site renewable energy generation.
- Invest in bike storage and parking as well as Electric Vehicle (EV) charging points.
- Reduce and/or eliminate private parking on-site.
- Support efforts to use carbon bike deliveries.
- Invest in a robust Building Management System and smart metres;
- Use construction methods that reduce environmental impacts such as Modern Methods of Construction.
- Reduce on-site waste for example by adopting a Construction, Demolition and Excavation Waste Strategy.
- Invest in green and blue infrastructure, as well as climate resilient infrastructure (Sustainable Urban Drainage Systems etc.).
- Conduct Soft Landings and Post Occupancy Evaluation.

With new large-scale developments planned in London Bridge, the surface area of the BID will grow substantially. These developments must contribute to the BID's decarbonisation efforts by setting high carbon requirements (net zero to zero carbon), by minimising their carbon impact and by providing a catalyst for communal projects. We recommend developers use the targets set by LETI or RIBA, which are considered best practice in the built environment.



[Chapter London Bridge](#) by Greystar

Case Study: Chapter London Bridge

Greystar is ensuring that their latest development is at the forefront of sustainable innovation. Chapter London Bridge, situated on the former site of Capital House on Weston Street, will be a 39-storey mixed-use tower delivering over 900 units of student accommodation as well as flexible and commercial space that incorporates best practice for environmental performance throughout the building's design, creating an environment where students can thrive.

A key aspect of this is down to the state-of-the-art building management system developed in partnership with MEP consultants Sweco. While the building will be 100% electric, with a 100% certified renewable energy supply and rooftop solar, Greystar also understood the need to keep Chapter London Bridge's energy use down over its operational life. For this reason, each room will have 6 points of metering - small power, lighting, heating, cooling, hot water and cold water. This level of granularity will allow students to monitor how much energy and they are using in real time, raising awareness of their personal carbon footprints. It is also hoped that this level of data collection will also facilitate preventative maintenance.

By integrating sustainability early into the design process and embracing Modern Methods of Construction, Greystar is minimising the disruption this project will cause to its neighbours as well as reduce construction time, waste, material used, noise and congestion levels.

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Conclusion

Process

This Routemap presents four types of actions that businesses, landlords, and TLB can undertake to reach the BID's carbon neutral target. Since this Routemap is the BID's first step in its decarbonisation journey, the decarbonisation pathways are for indicative purposes only.

Once communal projects are confirmed and businesses commit to deliver specific interventions, more detailed and accurate pathways can be produced.

An integrated approach was used to reduce emissions across all Scopes for the enabling mechanisms and the business-led interventions. It is therefore not possible at this stage to determine which proportion of Scope 1, 2 and 3 emissions the enabling mechanisms and the business-led interventions would help reduce.

More information about the assumptions used can be found on pages 73- 74. Below, we first summarise the conservative scenario, followed by the ambitious scenario.

Conservative Scenario

In the conservative scenario, it is forecasted that a 26% reduction, mostly in Scope 1 and 2 emissions, could be achieved by 2030 through the delivery of the communal projects. A further 4% reduction could be achieved across Scope 1, 2 and 3 emissions by implementing enabling mechanisms and business-led interventions (See Fig. 20 and Table 8).

By 2050, it is forecasted that a 31% reduction could be achieved through communal projects, mainly for Scope 1 and 2 emissions, and an additional 10% reduction could be delivered through enablers and business-led interventions across all Scopes.

To achieve carbon neutrality, the BID would need to pay £4.2 million by 2030 to offset the remaining 44,436 tCO₂e from Scope 1 and 2 emissions, and £3.7 million by 2050 to offset the residual 39,001 tCO₂e from Scope 1 and 2 emissions. These calculations are based on the GLA's [carbon offset price](#) of £95 per tCO₂e.

To offset all emissions, including Scope 3 emissions, the BID would need to pay £8.5 million to offset 90,136 tCO₂e by 2030 and £7.3 million to offset 76,701 tCO₂e by 2050.

Conservative Scenario			
Year	2019	2030	2050
Reduction from Enablers	-	1,000	4,000
Reduction from Communal Projects	-	34,864	40,299
Reduction from Business-led Interventions	-	4,000	9,000
Residual Carbon Emissions (tCO ₂ e)	130,000	90,136	76,701
Total Carbon Savings (%)	-	-30	-41

Table 8: Conservative Scenario's Carbon Savings Achieved for Different Action Types

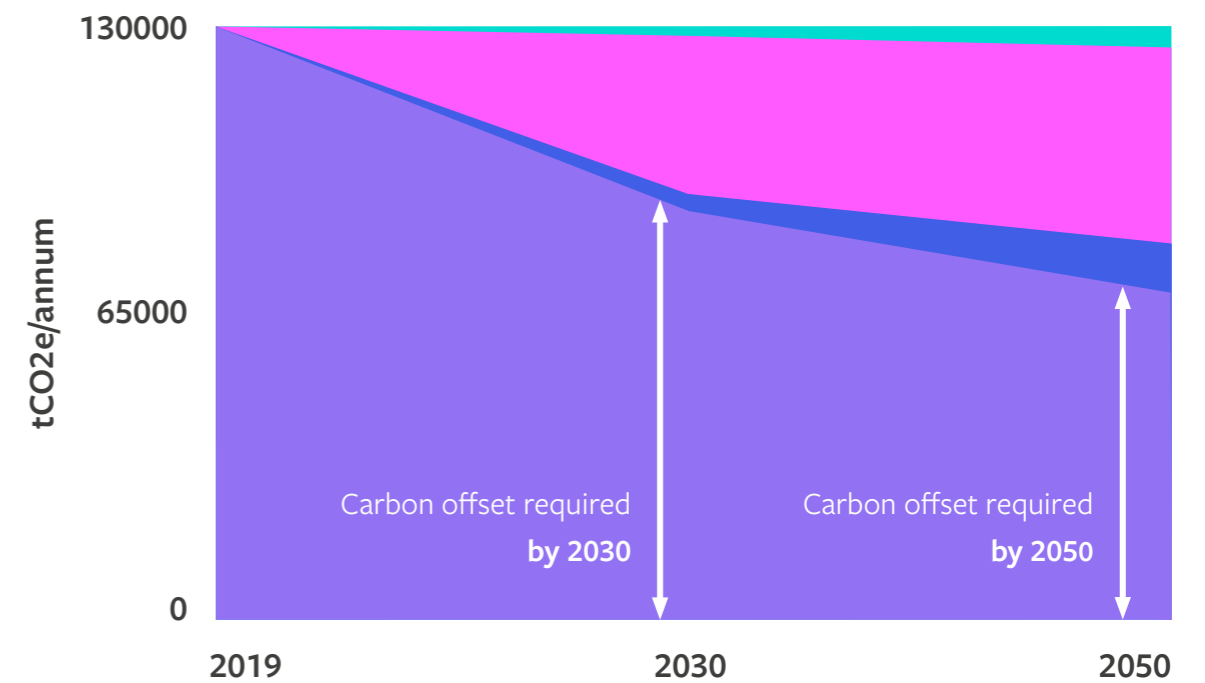


Figure 21: Ambitious Scenario's Decarbonisation Pathways across all Scopes

Ambitious Scenario

In the ambitious scenario, it is forecasted that a 45% reduction, mostly in Scope 1 and 2 emissions, could be achieved by 2030 through the delivery of the communal projects. A further 17% reduction could be achieved across Scope 1, 2 and 3 emissions by implementing enabling mechanisms and business-led interventions (See Fig. 21 and Table 9).

By 2050, a 48% reduction is forecasted through communal projects, mainly for Scope 1 and 2 emissions, and an additional 43% reduction could be delivered through enablers and business-led interventions across all Scopes.

This could result in a 91% total reduction by 2050 across all Scopes, which aligns with the science-based targets requirements to achieve net zero.

To be carbon neutral, the BID would need to pay £1.9 million by 2030 to offset the remaining 20,651 tCO₂e from Scope 1 and 2 emissions, and £1.6 million by 2050 to offset the residual 16,803 tCO₂e from Scope 1 and 2 emissions.

To offset all emissions, including Scope 3 emissions, the BID would need to pay £4.7 million to offset 49,901 tCO₂e by 2030 and £1.1 million to offset 11,733 tCO₂e by 2050.

Conclusion

By working together and delivering enabling mechanisms, communal projects and business-led interventions, businesses, landlords and Team London Bridge can accelerate their decarbonisation, reduce the amount needed to offset residual emissions, as well as reach a more ambitious net zero carbon target.

To achieve carbon neutrality, the London Bridge BID will need to reduce its Scope 1 and 2 emissions as much as possible. Based on the modelling above, the best way for the BID to do so is to invest in the communal projects proposed in this Routemap.

Moreover, it is worth noting that the enabling mechanisms and business-led interventions would deliver additional carbon savings for Scope 1 and 2 emissions, however those cannot be quantified at this stage. Nevertheless, it is reasonable to assume that the cost of offsetting Scope 1 and 2 emissions would be lower than those presented above.

Ambitious Scenario			
Year	2019	2030	2050
Reduction from Enablers	-	4,290	17,160
Reduction from Communal Projects	-	58,649	62,497
Reduction from Business-led Interventions	-	17,160	38,610
Residual Carbon Emissions (tCO ₂ e)	130,000	49,901	11,733
Total Carbon Savings (%)	-	-62	-91

Table 9: Ambitious Scenario's Carbon Savings Achieved for Different Action Type

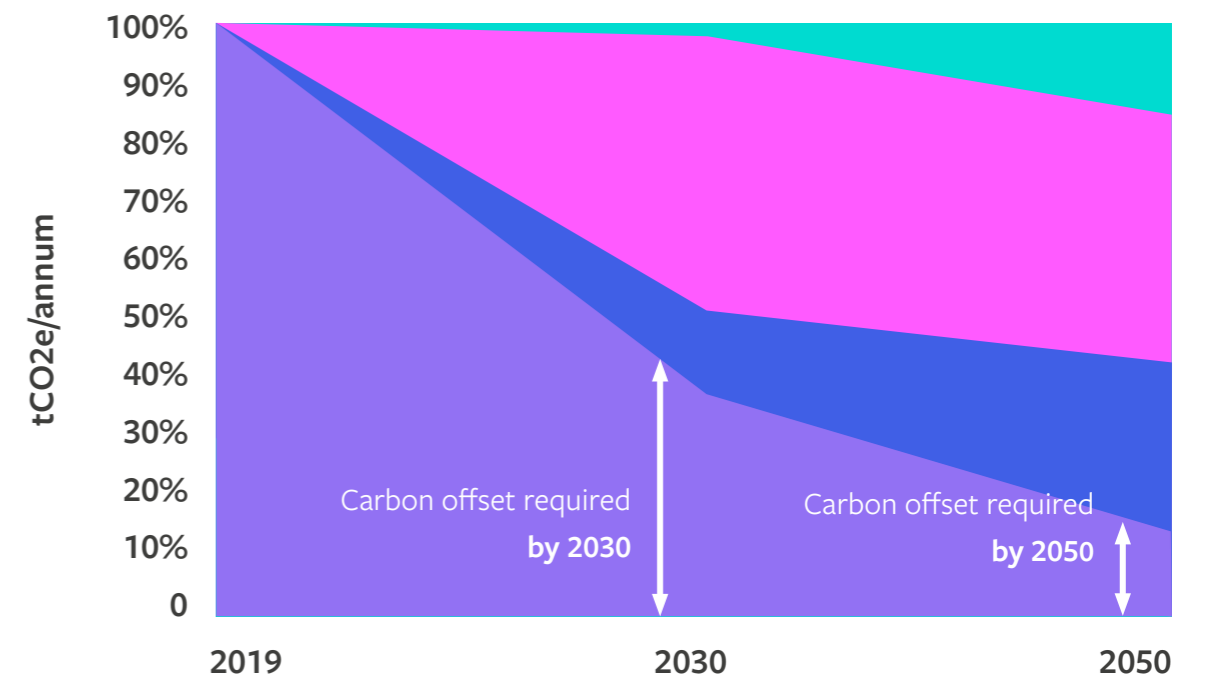


Figure 21: Ambitious Scenario's Decarbonisation Pathways across all Scopes

Conclusion

As one of the first BIDs to aim to become carbon neutral, this Routemap is the first, necessary step to guide TLB and its members on their carbon neutral journey.

Decarbonising will require collaboration between the 363 member businesses of the BID area as well as with government agencies and regulatory organisations. TLB plays an important role in fostering this collaborative spirit and bringing businesses and other stakeholders together. In doing so, businesses will have a better chance of effectively addressing the climate emergency.

Beyond reducing carbon emissions, this Routemap, and its associated projects and interventions, provide a perfect opportunity for sustainable place-making. Indeed, this Routemap will help Team London Bridge, its member businesses and wider partners, such as the GLA and Southwark Council, to deliver additional, wider co-benefits to local communities and involved businesses.

The possible benefits are wide-ranging: from attracting more businesses, staff and visitors, building a global reputation for sustainable business practices, achieving better rents, increasing footfall, becoming more competitive and climate resilient, to freeing up more public spaces, improving the quality of the public realm, enhancing health, well-being and productivity, and delivering more services for the area. This Routemap goes beyond decarbonisation; by acting now and collectively, London Bridge BID can become a leader in sustainable place-shaping and the place to be for world-leading low-carbon businesses.

London Bridge BID has an opportunity to lead the way and inspire other BIDs to make similar commitments and strategies. As more BID make carbon neutral commitments, there is also an opportunity for the BIDs to work collectively, through the coordination of ideas and effort via the BID network.

Our Recommendations

Our first recommendation is that you collectively contribute to the communal projects, supporting in the development of funding proposals and business cases as well as assisting in their subsequent implementation. These projects will significantly reduce Scope 1 and 2 emissions, which must be addressed to achieve carbon neutrality.

Our second recommendation is for you to continue to measure your carbon footprint, to commit to reduction targets (preferably science-based targets) and to report on your emissions annually.

Our third recommendation is that you support the creation and contribute to an area-wide Transition Fund that can be re-invested in local, sustainable projects.

Our fourth recommendation is that a governance framework is established to deliver the enabling mechanisms, projects and interventions outlined in this Routemap as well as the recommendations above. Governance must be supported by the significant sustainability expertise in the area, and potentially from external support to maintain momentum and ensure effective use of resource.



Gibbons Rent in London Bridge



Pub near the London Bridge Station

Thank you

The production of this Routemap would not have been possible without the comments and inputs from BID members.

We would like to thank all businesses who submitted data to xtonnes which allowed the production of the carbon baseline.

We would also like to thank all the businesses who participate in our stakeholder engagement interviews and workshops. The ideas, feedback and support received has been captured in this document.

We also want to thank the BID's Net Zero Champions who provided guidance, best practice and case studies for this Routemap.

Authors

The London Bridge Business Improvement District's Carbon Neutral Routemap was produced by Useful Projects and xtonnes between January 2022 and June 2022. Authors include:

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Photo Credits

Images in this report are courtesy of Team London Bridge. All other images used are publicly available and royalty free and have been properly referenced.

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Appendices

General

B Corporation – Net Zero 2030 <https://www.bcorpclimatecollective.org/net-zero-2030>

BITC <https://www.bitc.org.uk/wp-content/uploads/2020/06/bitc-environment-factsheet-getstartedonnetzerojourney.pdf>

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Case study: Queen Elizabeth Olympic Park <https://www.climate-kic.org/success-stories/london-queen-elizabeth-park/>

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Zero Carbon Forum <https://zerocarbonforum.com/>

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Theatres

ABTT – Sustainability in Live Performance <https://www.abtt.org.uk/resources-guidance/industry-resources/sustainability/>

Theatre Green Book <https://theatregreenbook.com/>

Carbon Baseline Methodology

A total of 363 businesses were assessed for the financial year of 2019. The footprint comprised two distinct footprints, a primary footprint, and a secondary footprint.

The 'primary footprint' comprised 40 businesses and three landlords all actively participating and providing primary data on their assets and activities. This was done through a combination of the xtonnes platform, excel-based surveys, and general correspondence. Although this only represents 11% of the businesses, the 'primary footprint' made up 63% of the total carbon footprint of the London Bridge BID in 2019.

The 'secondary footprint' comprised the remaining 323 businesses, all estimated using a comprehensive emissions quantification model to compensate for the lack of primary data. In the absence of primary data, the model required two inputs, the number of full-time equivalents (FTEs), and net internal area (NIA) of business premises. These two inputs were collected for all 323 businesses which enabled xtonnes to scale assets and activities used in the carbon quantification. A full categorisation process was undertaken for all the businesses to establish common business types. Extensive secondary research and data collection was conducted into these business types, which led to the development of the benchmarking model that quantifies carbon emissions based on the two inputs mentioned above.

The secondary footprint model was then further refined using the primary footprint data collected from participating businesses and landlords. Calibrating the data in this way improved the specificity of the model to the London Bridge BID, helping to validate or tune assumptions and improve upon the carbon outputs.

The methodology used for quantifying the Scope 1, 2, and 3 emissions of the businesses aligns with the GHGP (Corporate Standard), assuming data quality allowed for it.

Due to the uncertainties associated with this undertaking, data and methodological quality were monitored carefully throughout the process. This ensured methodological transparency, as well as being able to inform

prioritisation efforts for future data collection. In conjunction, stress testing of the conclusions was performed to validate the robustness of the modelling.

Benchmarking the Carbon Baseline Methodology

The FY2019 footprint of the London Bridge BID was compared with those of the London Borough of Southwark and the City of London Square Mile, the baseline years of which were 2017 and FY2018, respectively.

Due to the three area's difference in size, carbon baseline year and carbon accounting methodology, benchmarking is for indicative purposes and should be used with caution.

The methodology for calculating the London Bridge BID carbon baseline is explained in this report. It is worth noting that the London Bridge BID carbon baseline is also expressed as a range and therefore prevents any conclusive comparison with the other areas.

The carbon emissions of the London Borough of Southwark were calculated using the [SCATTER](#) Inventory Tool, a recognised tool which uses the GHGP to report on local authorities' carbon footprint across Scope 1, 2 and 3 emissions. This aligns with the methodology used to measure London Bridge BID's carbon footprint.

Due to the GHGP reporting requirements, comparison between the two areas' Scope 1 and 2 emissions can be made with reasonable certainty. More categories may have been included in the London Borough of Southwark's Scope 3 emissions and are not provided by SCATTER., Therefore, Scope 3 emissions between the two areas is constrained.

The emissions for the City of London were derived from their [Climate Action Strategy](#). It is unclear what categories they have included and the exact methodology used. Their document states alignment with the GHGP thereby providing a consistent methodology with the one used in this Routemap.

The City of London's low Scope 1 and 2 emissions could be explained by recent investment in energy efficiency measures and procurement of green, renewable energy, as well as early efforts to embed sustainability standards, such as BREEAM for new developments in the area. Without a clear breakdown of their methodology, it is not possible to determine exactly why their Scope 1 and 2 emissions are lower than those of the London Bridge BID.

Nevertheless, a ratio of carbon emissions per meter square has been provided for each of the three areas and represent a good measure of the carbon intensity of each area, allowing for a useful indicative comparison for this Routemap.

Decarbonisation Pathways

This Routemap is a high-level document representing the first step for the London Bridge BID in reaching its 2030 carbon neutral target. Due to the diversity of businesses in the BID, it is difficult at this stage to develop a detailed and precise decarbonisation pathway. Without knowing which enabling mechanisms will be implemented, which interventions businesses will undertake or when/if communal projects will be delivered, decarbonisation rates had to be estimated based on case studies, and best practice.

To account for this uncertainty, a range was provided by modelling two scenarios: a 'Conservative' and an 'Ambitious' scenario. Carbon savings were modelled from 2019 to 2030 and from 2030 to 2050 to account for greater and/or faster decarbonisation from 2030 onward. Indeed, it is assumed that by 2030, more low-carbon technologies, policies, regulations and incentives will be in place, allowing businesses, landlords and developers to more easily achieve carbon neutrality.

For the communal projects, xtonnes and Expedition Engineering used previous projects, industry-wide carbon factors and best practice case studies to determine the likely reduction range for the conservation and ambitious scenarios. For the first three communal projects, both demand-side reductions (e.g. through efficiency drives) and supply-side reductions (e.g. from technology changes) were factored for greater accuracy.

For building-related interventions, the demand-side and supply-side percentage reductions for each scenario was established by considering the baseline building stock characteristics and its capacity for improvement. These reductions were tracked linearly across two time-steps of 2030 and 2050, to model the projection of carbon emissions over this period.

Grid decarbonisation was also included into this projection in conjunction with the demand and supply reductions.

Carbon savings associated with enabling mechanisms were based on reports by the Carbon Literacy Project that organisations that invest in capacity-building measures can achieve carbon savings between 5-15%. The business uptake was estimated based on engagement during this project, as well as other project. It is worth noting that if more businesses adopt enabling interventions, larger carbon savings can be achieved.

Finally, business-led interventions could not be modelled individually given the sheer scope of measures proposed and the different types of businesses covered in this Routemap. To map potential decarbonisation pathways, a business uptake percentage and a carbon reduction percentage were assumed for each scenarios. These are indicative only and should be viewed as a call to action. Indeed, the more businesses implement their own interventions the more carbon savings can be achieved and the less amount of carbon will need to be removed via offset.

Projects and Interventions	Scenarios	Assumptions	Carbon Reduction by 2030 (tCO2e)	Carbon Reduction by 2050 (tCO2e)
Heating and Cooling District Network	Conservative	Demand reduction heating: 10% Supply switch reduction: 10% Demand reduction cooling: 10%	7,110	7,707
	Ambitious	Demand reduction heating: 70% Supply switch reduction: 30% Demand reduction cooling: 40%	21,640	22,538
Investment in Solar Energy	Conservative	Demand reduction: 10% Supply switch: 60%	20,600	24,410
	Ambitious	Demand reduction: 70% Supply switch: 80%	23,900	24,850
Changing Refrigerants	Conservative	Demand reduction: 40% Supply switch: 50%	5,800	5,800
	Ambitious	Demand reduction: 60% Supply switch: 100%	9,700	9,700
Mobility Hubs	Conservative	Private car journeys eliminated by half	655	982
	Ambitious	All private car journeys are eliminated	1,309	1,309
Promoting the Circular Economy	Conservative	Demand reduction: 80% Business uptake: 25%	700	1,400
	Ambitious	Demand reduction: 80% Business uptake: 75%	2,100	4,100
Enabling Mechanisms	Conservative	Business Uptake: 15% Carbon Reduction: 5% by 2030, 10% by 2050	1,000	4,000
	Ambitious	Business Uptake: 65% Carbon Reduction: 5% by 2030, 10% by 2050	4,290	17,160
Individual Business Interventions	Conservative	Business Uptake: 15% Carbon Reduction: 20% by 2030, 45% by 2050	4,000	9,000
	Ambitious	Business Uptake: 65% Carbon Reduction: 20% by 2030, 45% by 2050	17,160	38,610

Table 10: Assumptions for Decarbonisation Pathway Modelling

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