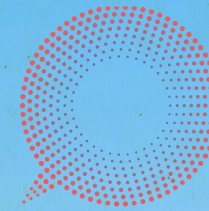


# Net Zero

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## The Guide for the Brewing and Hospitality Sector.

Matching your net zero ambition with a credible strategy



**ZERO  
CARBON  
FORUM**

In association with



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*Roadmap  
to  
Change*

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**As the impacts of climate change unfold, the time for talk is over. There's no time to waste when it comes to decarbonising our industry, our economy, and society as a whole. That's why we created the Zero Carbon Forum (ZCF), bringing together the UK's leading hospitality and brewing operators to collaborate, share ideas, create solutions, innovate, and work towards a common goal: our future.**

To identify key emission areas and direct our actions, we've developed the Zero Carbon Forum's Guide for the Brewing and Hospitality Sector to reach net zero emissions. Funded by our members, our report is based on aggregate member data, supplemented with industry data from Carbon Intelligence, CDP, (formerly known as Carbon Disclosure Project) and Carbon Architecture. Analysed by a team of experts at Carbon Intelligence and experts on our strategic advisory board, we've built reduction pathways for each sub-sector of hospitality and brewing.

Our pathways outline ambitious net zero targets: to eliminate our operational emissions by 2030, then achieve net zero across our supply chains by 2040. Decarbonising agriculture, food, and other crucial elements of our supply chains will involve close collaboration with our suppliers, partners, other sectors, and customers. It won't be easy, but our businesses, and indeed our lives, depend on it.

Crucially, we're focused on meaningful reductions our members can take right now in 2021, and every month and year after that. We aim to continuously pull forward our dates as we progress. We and our members know that rapid decarbonisation is not only possible; it makes business sense.

This year, we've set up our supplier engagement strategy, and our current collaborative energy initiatives are projected to deliver savings of over 350,000tCO<sub>2</sub> per year. Just by minimising overnight equipment usage, operators have saved 10tCO<sub>2</sub> and £4,900 annually, per outlet.

We know it seems daunting and complex. That's why we're here – to demystify the world of emissions and cut a path to not only survive, but to thrive. We're not hiding behind far off pledges or carbon offsets -- we're turning talk into actions. Our members are here to create change and lead the way, fundamentally evolving business as usual, and making sure we have a planet on which to do business.



**Mark Chapman**  
CEO, Zero Carbon Forum





**Our mission is to help business play its part in building a zero carbon world. Partnerships are critical to this mission and to our work helping companies achieve net zero in their own operations and across their value chains.**

The Zero Carbon Forum and its members have recognised that solving the climate crisis requires collaboration to define and achieve a common goal. The forum's roadmap sets out a bold commitment for the hospitality sector. It demonstrates the sort of leadership and ambition that is required if we are to reach net zero and limit warming to 1.5°C.

We are delighted to have worked with the forum and its members to lay out the pathway to achieving net zero. We hope that by explaining where the sector is now and where it needs to get to, we have played a part in accelerating progress to a net zero future.

The UN has labelled the 2020s the 'decade of action'. Now, more than ever, we need business to work together and accelerate action on the climate crisis.



**Will Jenkins**

Director of Strategic Services, Carbon Intelligence





**Britain's brewing and pub industries are amongst the oldest and most revered around the world.**

To maintain this reputation, it is now more important than ever for us to brew world class beer and operate in an innovative and sustainable way in order to meet the United Nations Sustainable Development Goals. From improving energy efficiency and reducing CO2, to lowering water consumption, cutting down on waste and supporting local businesses and agriculture, Britain's breweries and pubs are determined to make Britain a world leader for environmental sustainability.

We are excited to support this roadmap, which includes distinct ambitions for the brewing and pub sectors in the UK to become net-zero carbon emitting sectors in advance of the Government's own 2050 target for a carbon zero future and as part of the wider, green recovery.



**Emma McClarkin**  
CEO, BBPA



**This Government has been clear about its climate change agenda and has ambitious expectations of business.**

Many hospitality businesses have already shown great commitment to reducing their carbon footprint and have been at the forefront of reduction initiatives demonstrating how the hospitality sector can become an industry leader in reducing emissions. However, with a strong step change in political and public opinion we recognise the sector will need to move faster and further in order to secure the future of the sector, wider economy and country.

UKHospitality has worked extremely closely with the Zero Carbon Forum to pioneer what we believe to be a foundational document for the sector as it rises to the challenge of climate change. We will continue to work with Government to see that the sector is supported in its efforts in becoming carbon net zero and beyond.



**Kate Nicholls**  
CEO, UKHospitality

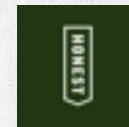


# Zero Carbon Forum Members.

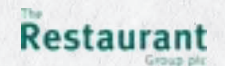
As the impacts of climate change unfold, the time for talk is over. The world needs action, and hospitality is stepping up to the plate. The Zero Carbon Forum is a non-profit, non-competitive collaboration of restaurants, pubs, breweries, and quick-service restaurants. What unites us all is a fierce commitment to eliminate our carbon footprint. We recognise that to create change at the scale and the pace we need, we have to work together.

Our members include the industry's biggest names, structured into working groups to drive decarbonisation as quickly as possible. Backed by industry leaders and trade associations, and supported by our expert consultants, we've collected, aggregated, and analysed member data to carve out our key shared emission areas and decarbonisation pathways. This roadmap sets the direction, scope, and pace for our journey.

These Zero Carbon Forum members supported and enabled the creation of this roadmap:



Stonegate Group



## Leading the way: Roadmap commitment.

Our roadmap highlights the urgency with which bold action is needed, across our operations and supply chains. We've set ambitious decarbonisation targets:

**2030:** Abating all avoidable emissions from our direct operations (scopes 1 and 2).

**2040:** Abating all avoidable emissions across our supply chains (scope 3) and credibly offsetting residuals to achieve net zero.

Working to or ahead of the pace outlined in this report, these members have already committed to achieving net zero emissions by the dates above, or earlier:

**Adnams Southwold**

**Azzurri Group**

**Brewdog**

**Boparan Restaurant Group**

**Burger King UK**

**Fuller's**

**KFC UK and Ireland**

**Marston's**

**Mitchells & Butlers**

**Nando's UK and Ireland**

**Pizza Hut Restaurants UK**

**Revolution Bars**

**The Restaurant Group**

More members will join these leaders in the coming months. Guided by this roadmap, all our members will have completed their own decarbonisation roadmaps and publicly announced their individual



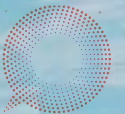


# Introduction: Business as the solution, sustainability as the standard.

## Climate emergency.

To limit the worst impacts of climate change, we must strive to prevent warming beyond 1.5°C. To do this, we need to drive deep reductions in greenhouse gas (GHG) emissions across all sectors of the economy over the next 10 years, and globally we must reach a state of net zero emissions by no later than 2050.

The global transition to net zero emissions brings new challenges and opportunities for businesses across all sectors of the economy. For hospitality and brewing businesses, the changes that need to take place cover many of the defining decarbonisation challenges the world faces today. The potential for innovation and impact is significant, as hospitality and brewing businesses look to influence diner behaviour, decarbonise menus, drive out food waste, adopt a zero emissions logistics solution that takes food from farm to fork, reduce water and energy use in beer production, and drive improvements in agriculture so food production becomes lower carbon and more sustainable.



## **The role of the Zero Carbon Forum (ZCF).**

Our ambition is to be the best collaboration of any industry anywhere to reach net zero together at pace.

The Zero Carbon Forum (ZCF) is a non-competitive industry collaboration, comprised of some of the best brands in brewing and hospitality. Members benefit from sharing best practice, insights and thought leadership to drive progress toward addressing some of the biggest challenges facing the sector. The Zero Carbon Forum enables members to take action, drive impact, and reach their net zero targets faster, more efficiently and more cost effectively than acting alone.

## **Purpose of the net zero roadmap for brewing and hospitality.**

In response to the growing concern on climate change and the UK Government's eagerness to position itself as a world leader on climate change. With radical plans for businesses, the forum is supported by BBPA and UKHospitality to pioneer a roadmap for all sectors of the UK's brewing and hospitality industry to support efforts in becoming net zero.

Members of the forum worked together to quantify the carbon impact across the hospitality industry and define a pathway for net zero. The resulting roadmap communicates the actions that hospitality and brewing companies can take on their journey to net zero.

The roadmap was developed in the context of the latest climate science, and through extensive consultation with forum members and industry representatives. This gives the roadmap credibility. The action it calls for is consistent with limiting warming to 1.5°C and is feasible for a wide range of businesses across the sector.



# Net zero roadmap for brewing and hospitality.

This roadmap is designed to provide ZCF members with guidance on the steps they can take to decarbonise their businesses and set net zero strategies. Within the roadmap, there are seven areas where the forum will collaborate to ensure the hospitality industry accelerates progress towards net zero.

Forum members should focus on accelerating deep decarbonisation across their value chains, before looking to neutralise residual emissions with credible carbon removal offsets. Further guidance on net zero principles can be found on page 28.



# Net zero milestones.

		2022	2025	2028	Net zero ambition 90% Scope 1&2 emissions 2030	2035	Net zero ambition 60%-78% Scope 3 emissions 2040
+	<b>STRATEGY &amp; DATA</b>	Baseline across Scopes 1,2&3 Approved SBTs Commit to Net zero Commit to RE100 Invest in emissions reporting platform	Update ZCF Roadmap at a minimum every 5 years leading up to 2040 Public reporting Scopes 1,2&3 Update baseline to align with best practice guidelines, e.g. the World Resources Institute (WRI) Forest, Land, and Agriculture accounting guidance	Adopt internal carbon price. More information on how to do this can be found on page 71.	Update ZCF Roadmap to 2040	Update ZCF Roadmap to 2040	
+	<b>BUILDINGS</b>	Net zero plan for all buildings	Smart controls in major sites 100% LEDs in new buildings Low Global Warming Potential (GWP) for all new refrigerants. Phase out gas oil fuels Kitchen retrofits	Low GWP for all refrig. Whole life assessment for new & retrofit buildings Heat pumps or zero carbon fuels for all new buildings	100% LED in all buildings Natural refrig. for all systems Insulation & building fabric retrofit on all buildings Kitchen vent. heat recovery	Heat pumps or zero carbon fuels for all buildings	
+	<b>RENEWABLE ENERGY</b>	Renewable energy sourcing strategy	100% renewable electricity for direct operations	On-site generation & battery storage where feasible	Franchises source 100% renewable electricity		
+	<b>SOURCING FOOD &amp; BEVERAGE</b>	Supplier engagement plan developed live sustainable and low carbon agriculture strategy Develop a zero deforestation policy and assess annual deforestation risk in supply chain Start engaging with suppliers to set SBTs.	Zero deforestation from high risk commodity groups Collaboration to decarbonise meat and dairy production, for example, engaging with key industry initiatives and suppliers.	Prioritise (by emissions/spend/risk) suppliers with SBTs	95% suppliers by emissions with SBTs Verified priority supplier emission reductions	Verified supplier emission reductions for 95% of suppliers	Net zero suppliers
+	<b>SOURCING (OTHER)</b>	Supplier engagement plan developed live compostable or biodegradable packaging >30% recycled in plastic	Sustainable sourcing and recycling of staff uniforms LCAs on all packaging Packaging from low carbon suppliers	Priority (by emissions/spend/risk) suppliers with SBTs	95% suppliers by emissions with SBTs Verified priority supplier emission reductions	Verified supplier emission reductions for 95% of suppliers	Net zero suppliers
+	<b>TRANSPORT</b>	Fuel efficiency for owned fleets (e.g. more sustainable fuel types or fleet optimisation tools / techniques such as route optimisation) CHG reporting on all logistics	100% electric company cars	100% zero carbon light commercial vehicles		100% HCVs zero carbon 100% upstream logistics zero carbon 100% zero carbon deliveries from engagement with delivery companies	
+	<b>CARBON REMOVALS</b>	Carbon removals quality criteria and principles agreed	Set up investment model	Projects identified and volumes secured	Residual Scopes 1&2 emissions neutralised with carbon removals		Residual Scope 3 emissions neutralised with carbon removals



# Call to action.

## **Need for urgent action and ambition.**

Members of the forum recognise that the climate crisis requires urgent and transformative action. Globally, in the next ten years we need to halve greenhouse gas emissions. To deliver this change, we need to collaborate across industries to overcome challenges and scale up decarbonisation solutions.

## **Unique opportunity for the sector.**

The forum's vision is for this industry-led net zero roadmap to inform the actions driven by individual businesses and by the sector as a whole. Our ambition will allow us to support members to make the case for change. We'll act as a lighthouse for hospitality and brewing companies investing to become lower carbon, more resilient, and more efficient.

At the heart of this industry-led approach is the need to collaborate across value chains to adopt and scale solutions that accelerate the transition to net zero. This way, the forum can maximise the economic, social, and environmental benefits for all that work within the sector.

## **Join the Zero Carbon Forum.**

We invite hospitality and brewing businesses to join the forum and collaborate to accelerate the sector towards net zero. All ZCF members have committed to setting their own net zero pathways by summer 2022, and many already align with the pace and pathways outlined in this roadmap. In the coming months and years, the forum working groups will advance the decarbonisation strategies of individual members, driving decarbonisation across the sector as a whole. If you're interested in joining the forum, please get in touch at <https://zerocarbonforum.com/#contact>.



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# Climate change emergency.

The latest climate science has shown that human influence has unequivocally warmed the planet at an unprecedented rate. Climate change presents one of the greatest threats that modern humanity has ever faced, to people, nature, and global stability. In 2015, world leaders signed the Paris Climate Agreement, committing countries to transition to a lower carbon economy and limit the global average temperature rise to 2°C above pre-industrial times. We now understand that to limit the worst impacts of climate change, we must strive to prevent warming beyond 1.5°C.

To do this, all sectors of the economy will require deep reductions in greenhouse gas (GHG) emissions over the next 10 years, and globally we must reach a state of net zero emissions by no later than 2050.



# Response from UK government and businesses.

In 2019, the UK became the first major economy to legislate and commit to achieving net zero carbon emissions by 2050. To support this long term commitment, in 2021 the UK government set a new target to reduce national emissions 78% by 2035 compared to 1990 levels. These ambitious targets will inform the direction of government policy and business over the coming decades. Businesses of all sizes and across all sectors will play a crucial role in the transition to net zero. For many it will present significant challenges, but with that comes opportunity, and the possibility of developing new business models, driving new technologies, and creating efficiencies.

Many businesses are rising to the challenge of climate change and showing leadership by setting ambitious corporate-level net zero commitments. To remain credible and aligned to the latest climate science, net zero commitments are increasingly backed by

science-based emission reduction targets. This is to focus efforts on ambitious decarbonisation to stop the accumulation of emissions in the atmosphere. Alongside individual efforts, there is widespread recognition across the business community that collaboration is key to tackling the interconnected challenges around climate change and reaching net zero. Some examples of UK sectoral initiatives relevant to hospitality and brewing value chains include:

- **British Retail Consortium** - developed a roadmap and key milestones for the British retail industry to reach net zero.
- **Food and Drink Federation** - developed commitments to deliver absolute emission reductions from UK manufacturing operations.
- **National Farmers Union** - developed an agricultural sector commitment laying out plans to reach net zero emissions by 2040.





# Business case for going net zero.

The case for businesses to build a net zero strategy has never been stronger.

## **Brand reputation.**

Businesses who do not have a plan for how to thrive in a net zero economy will fall behind their competitors and face reputational risk. Maintaining a leading position by setting a credible net zero strategy ensures that your stakeholders, employees, and clients recognise your company's contribution to the global emissions reduction challenge. In addition, improving confidence with investors by demonstrating strong sustainability credentials could attract new sources of green investment.

## **Customer & employee expectations.**

Increasingly, stakeholders at every level are putting pressure on businesses to take action toward reducing their waste, emissions, and environmental impact. Present and future employees expect companies to show leadership and bold action on climate change mitigation, biodiversity protection, emissions reductions, and environmental stewardship.

## **Risk mitigation.**

Business will be exposed to physical and transitional climate-related risks now and in the future. Setting a net zero strategy encourages businesses to explore their emissions impact and potential sources of climate-related risk across the value chain. Building plans to reduce emissions and engage supply chains reduces overall risks and helps to ensure future security of supply. This is particularly relevant for the hospitality and brewing sector, which has a high reliance on supply chains exposed to physical climate risks (e.g. agriculture).

## **Forward-thinking future business strategy.**

Tackling and reducing your emissions now will not only prepare your business for the transition to a zero carbon economy; it will also help minimise future climate-change related disruptions to your business while allowing you to take full advantage of technical innovations and cost-saving opportunities. Companies also have the opportunity to explore new revenue streams and commercial offerings, improve their business' performance, and reduce costs associated with carbon pricing in the future.



# About this roadmap.

We've compiled this report with insights, interviews, and data from businesses and industry associations. This has been bolstered by collaborative efforts, cross-functional thinking, and knowledge-sharing in numerous thought leadership sessions and workshops in partnership with Carbon Intelligence. To ensure a depth of analysis and guidance, the research focuses on five sub-sectors of the hospitality and brewing industry: restaurants, quick service restaurants (franchise business model), pubs, breweries, and hotels.

This report is the first iteration of the ZCF Net Zero Roadmap for Hospitality and Brewing, and outlines current trends, sector emissions hotspots, decarbonisation opportunities, and practical steps for setting net zero goals.



# How to use this roadmap.

The roadmap is designed to provide ZCF members, as well as businesses across the wider hospitality and brewing sector, with guidance on the steps they can take to decarbonise their businesses and set credible net zero strategies. It is expected that every individual business will need to build on this, and plot their own net zero journey focused on their specific business models and the priorities and expectations of their stakeholders.



# Hospitality and brewing sector emissions profiles.

For this report, we've created emission profiles for five sub-sectors of the hospitality and brewing industry. This has enabled us to build a net zero roadmap which focuses on the decarbonisation initiatives that are most relevant to each type of business. The emissions profiles provide a basis for businesses within the sector to understand the emission impact of their activities. Exact emission profiles will vary depending on specific business models and emission related activities.



# Introduction to Scope 1, 2 & 3 emissions.

**We've broken emissions reporting down into three 'scopes', as defined by the Greenhouse Gas Protocol Corporate Accounting and Reporting Standard.**

## **Scope 1:**

All direct emissions produced by a reporting company, such as emissions from fuel combustion on site for heating or cooking, and emissions from fuel used in company owned vehicles.

## **Scope 2:**

Indirect emissions from purchased electricity, steam, heating, or cooling a company uses across its facilities. These emissions are considered indirect, because they are generated off-site to produce energy that is then consumed by the reporting company.

## **Scope 3:**

Represents all other indirect emissions that are a result of activities that occur in the value chain. This includes 15 categories across both upstream activities, such as purchased goods and services, capital goods, business travel, and employee commuting, and downstream activities, including downstream transportation and distribution, use of sold products, and franchises. For example, Scope 3 includes emissions associated with agricultural activities to produce ingredients in meals sold at a restaurant, and emissions from the disposal of packaging waste. More information on Scope 3 can be found on the [Greenhouse Gas Protocol's website](#).

Whilst Scopes 1 and 2 emissions can be relatively easy to measure, Scope 3 emissions present a greater challenge across all sectors. For hospitality and brewing businesses, Scope 3 can represent anywhere between 60 to 90% of overall emissions. In order to build credible net zero strategies, businesses must fully understand their Scope 3 impact and include these emission sources in their decarbonisation roadmap.



# Emission profiles by sub-sector.






Segmenting the brewing and hospitality sector into sub-sectors has enabled us to craft 5 distinct pathways to net zero, accounting for differences in business type while also uncovering similarities.

We collated Scopes 1, 2 and 3 emissions data from a number of sources including ZCF members, the British Beer and Pub Association (BBPA), Carbon Intelligence, Carbon Architecture, and the Carbon Disclosure Project (CDP). We converted emissions data into an intensity figure using revenue data (i.e. tCO<sub>2</sub>e / £m revenue) to allow for comparison between sub-sectors.

**The final intensity figures are sub-sector level averages to help forum members understand potential emission hotspots and decarbonisation opportunities. Exact emissions profiles will vary depending on individual business models and the resulting emission activities.**

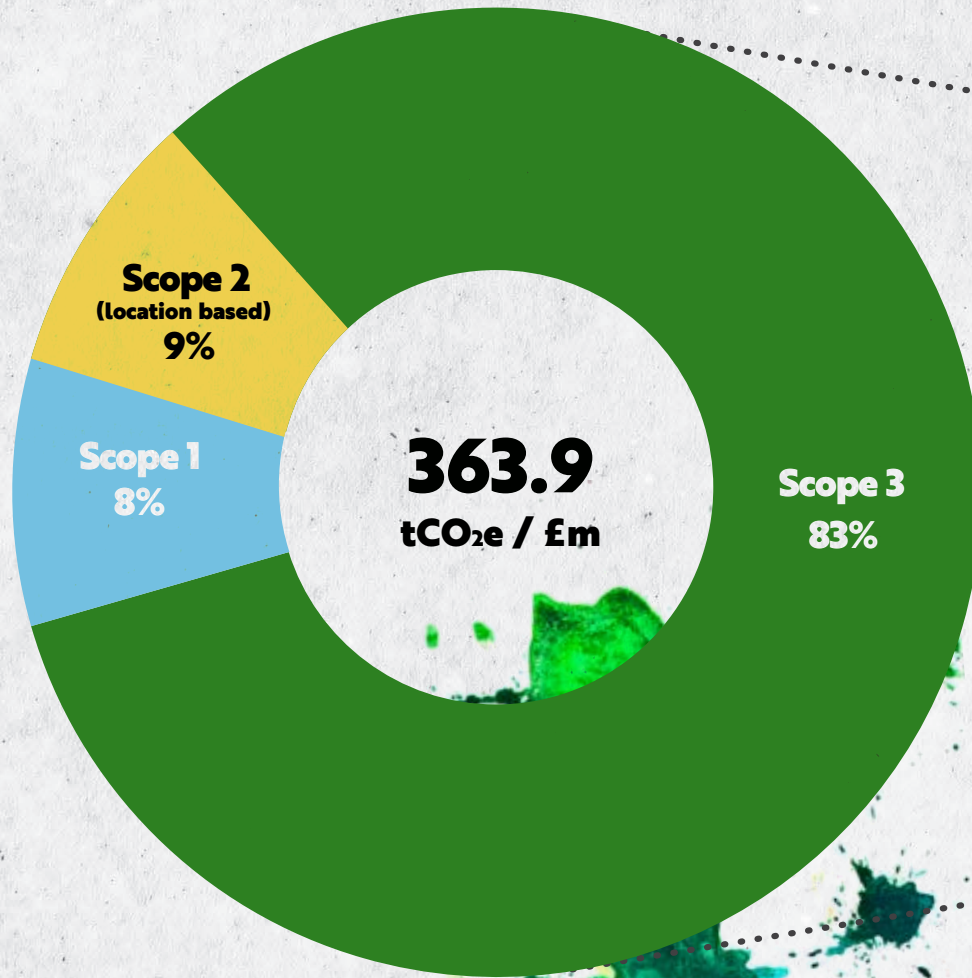
More details on the methodology can be found in the Appendix.

# Sector summary.

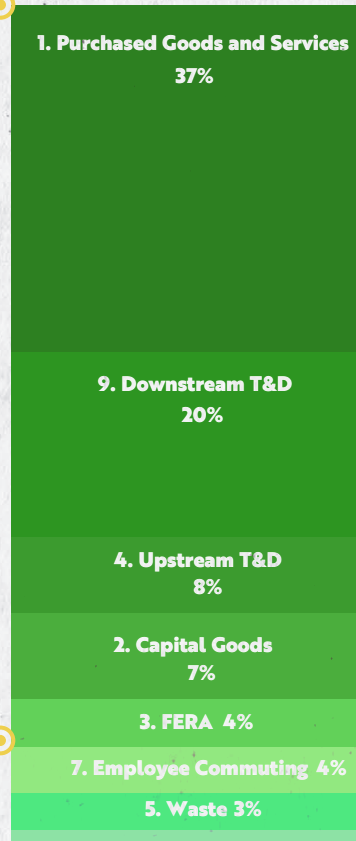
Sub-sector	Scopes 1, 2 & 3 Intensity (market-based)	Scopes 1 & 2 Contribution	Scope 3 Contribution	Scope 1 & 2 modelled reduction	Scope 3 modelled reduction	Emission Hotspots
 <b>Pubs</b>	<b>363.9 tCO<sub>2e</sub> / £m</b>	<b>17%</b>	<b>83%</b>	<b>90%</b>	<b>78%</b>	<ul style="list-style-type: none"> <li>• Purchased goods &amp; services</li> <li>• Logistics</li> <li>• Capital goods</li> </ul>
 <b>Restaurants</b>	<b>376.9 tCO<sub>2e</sub> / £m</b>	<b>11%</b>	<b>89%</b>	<b>90%</b>	<b>69%</b>	<ul style="list-style-type: none"> <li>• Purchased goods &amp; services (key categories include - dairy, beef, poultry, pork, seafood, drinks, and grains/cereals)</li> <li>• Logistics (note, that majority of logistics data came from CDP)</li> <li>• Capital goods (key categories include - facilities and equipment)</li> </ul>
 <b>Quick Service Restaurants</b> <small>(Franchise Business Model)</small>	<b>570.7 tCO<sub>2e</sub> / £m</b>	<b>3%</b>	<b>97%</b>	<b>90%</b>	<b>67%</b>	<ul style="list-style-type: none"> <li>• Franchises</li> <li>• Purchased goods &amp; services (key categories include - beef, dairy, frying oil, poultry)</li> <li>• Logistics</li> </ul>
 <b>Hotels</b>	<b>579.1 tCO<sub>2e</sub> / £m</b>	<b>39%</b>	<b>61%</b>	<b>90%</b>	<b>70.50%</b>	<ul style="list-style-type: none"> <li>• Direct energy consumption (electricity)</li> <li>• Franchises</li> <li>• Purchased goods &amp; services (key categories include - food and beverages, cleaning and chemical supplies and maintenance)</li> </ul>
 <b>Breweries</b>	<b>832.9 tCO<sub>2e</sub> / £m</b>	<b>11%</b>	<b>89%</b>	<b>90%</b>	<b>60%</b>	<ul style="list-style-type: none"> <li>• Purchased goods &amp; services</li> <li>• Use of sold products (e.g. downstream refrigeration of products by customers)</li> <li>• Logistics</li> <li>• Brewing process energy use</li> </ul>



# Pubs emissions profile.



## Scope 3 Breakdown



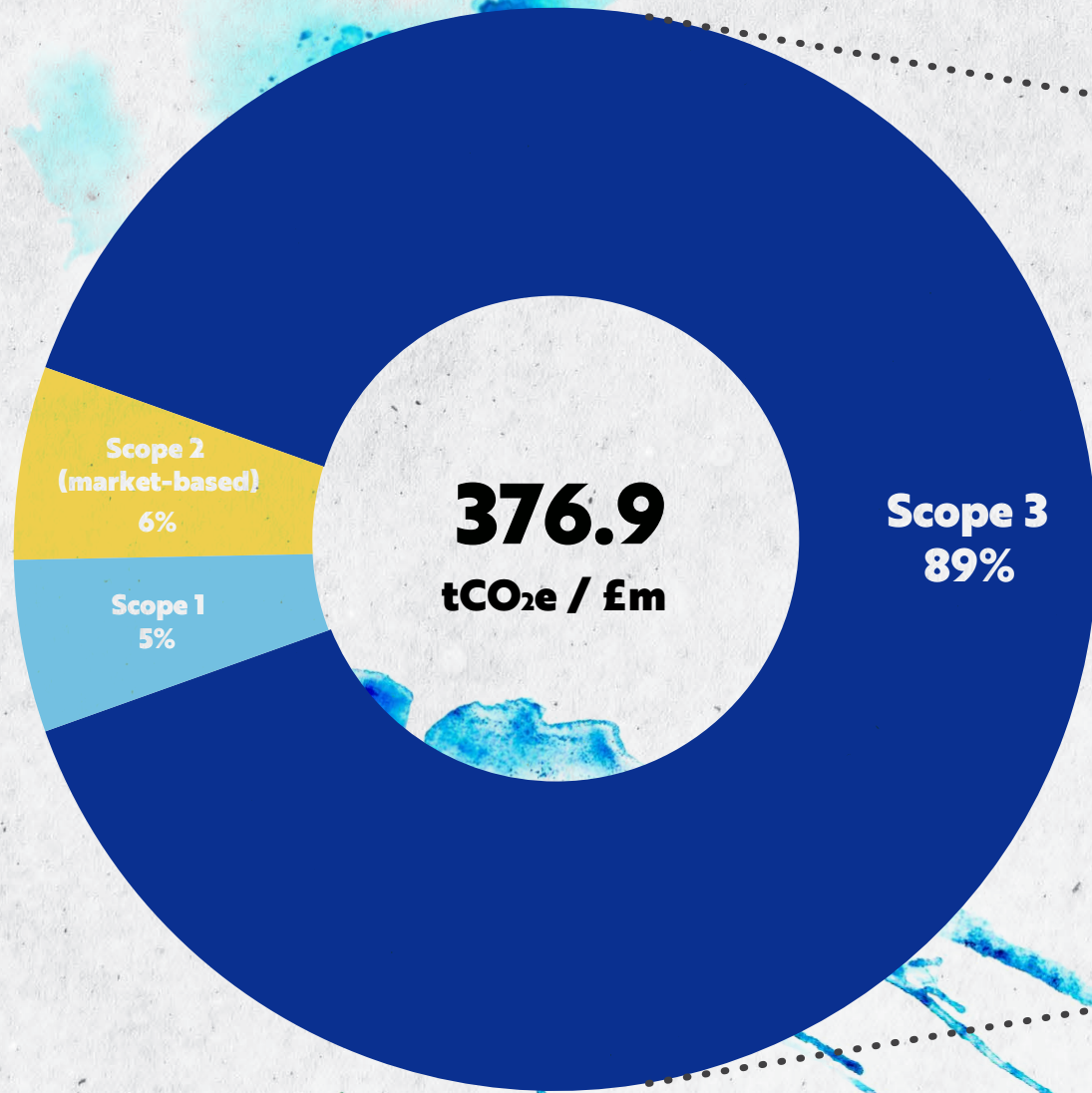
Other S3 Categories 1%







# Restaurants emissions profile.

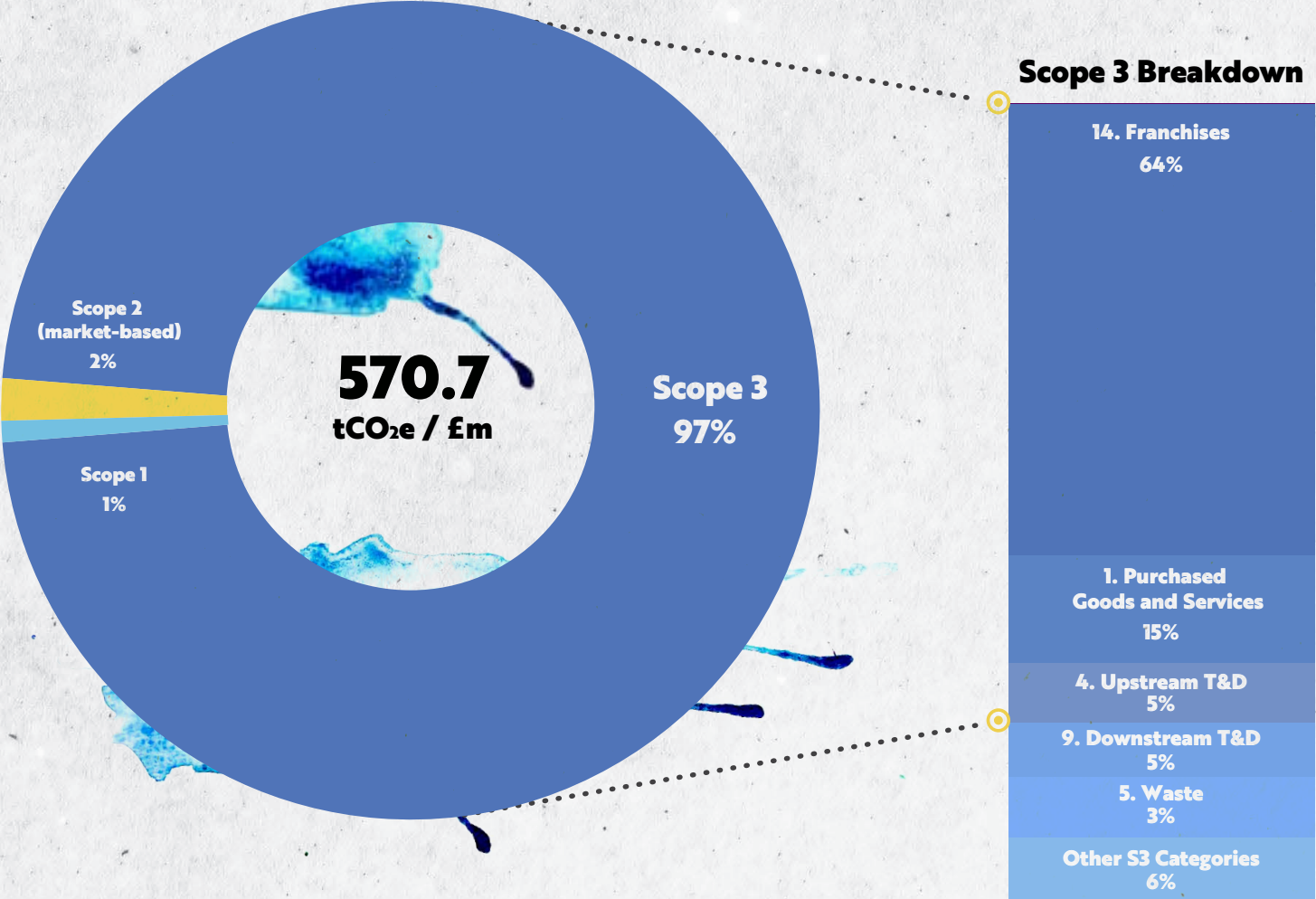
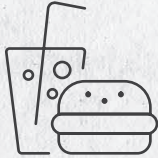


## Scope 3 Breakdown

1. Purchased Goods and Services	51%
9. Downstream T&D	11%
4. Upstream T&D	9%
2. Capital Goods	9%
7. Employee Commuting	4%
Other S3 Categories	5%



# Quick service restaurants (franchise business model) emissions profile.

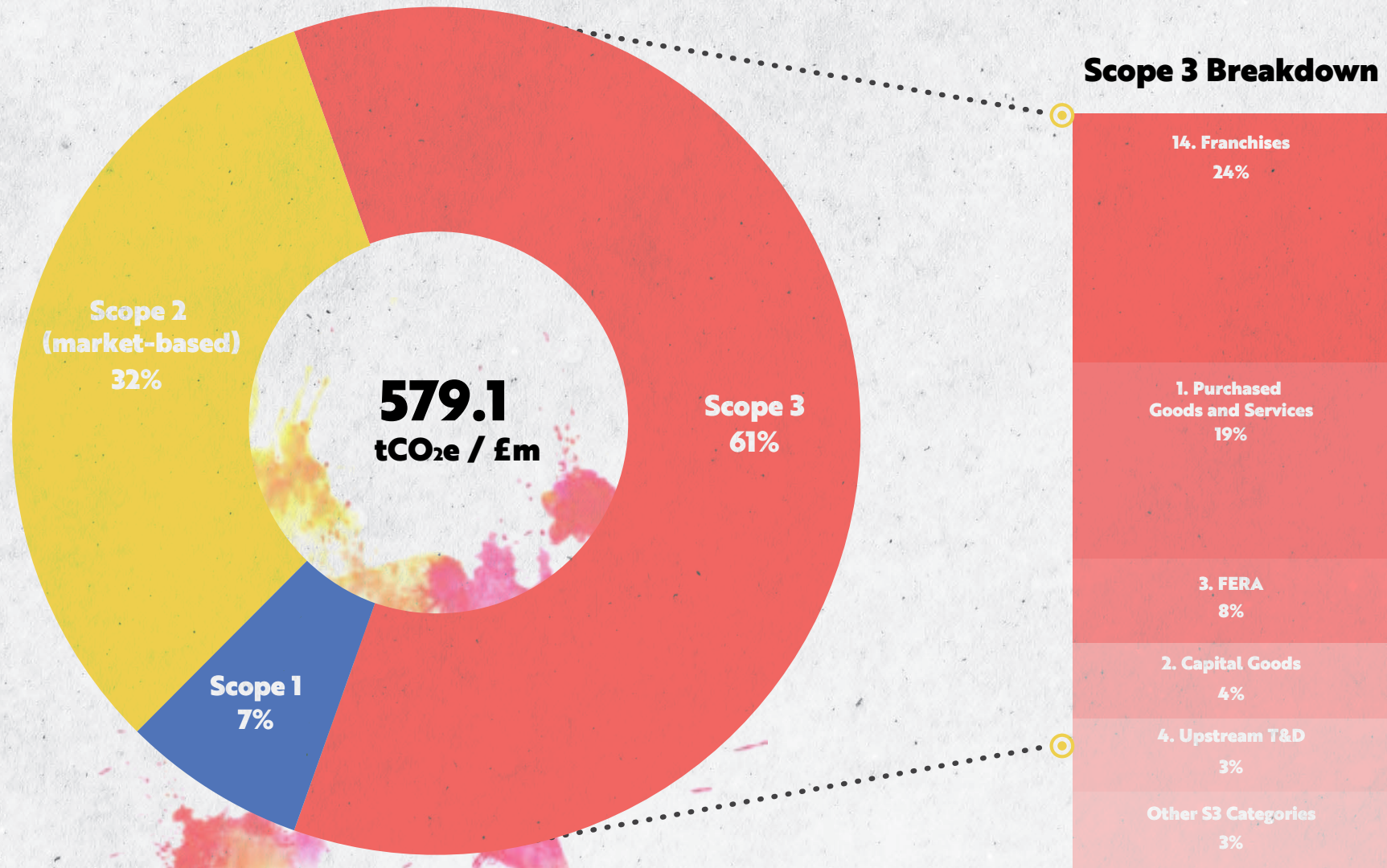


Note:  
 The QSR sub-sector emissions profile only uses data from forum members with a franchise business model. For Scope 1 and 2 emissions, the emissions profile and decarbonisation initiatives for restaurants and QSRs would be the same irrespective of whether the business has franchises.

For Scope 3, QSR with franchises should use the Quick Service Restaurant (franchise business model) decarbonisation pathway and encourage franchisees to implement the same operational initiatives as outlined in the Scope 1 & 2 pathways for Restaurants and QSRs. Quick Service Restaurant members without franchises should use the Restaurant Scope 3 decarbonisation pathways to guide their net zero journey.

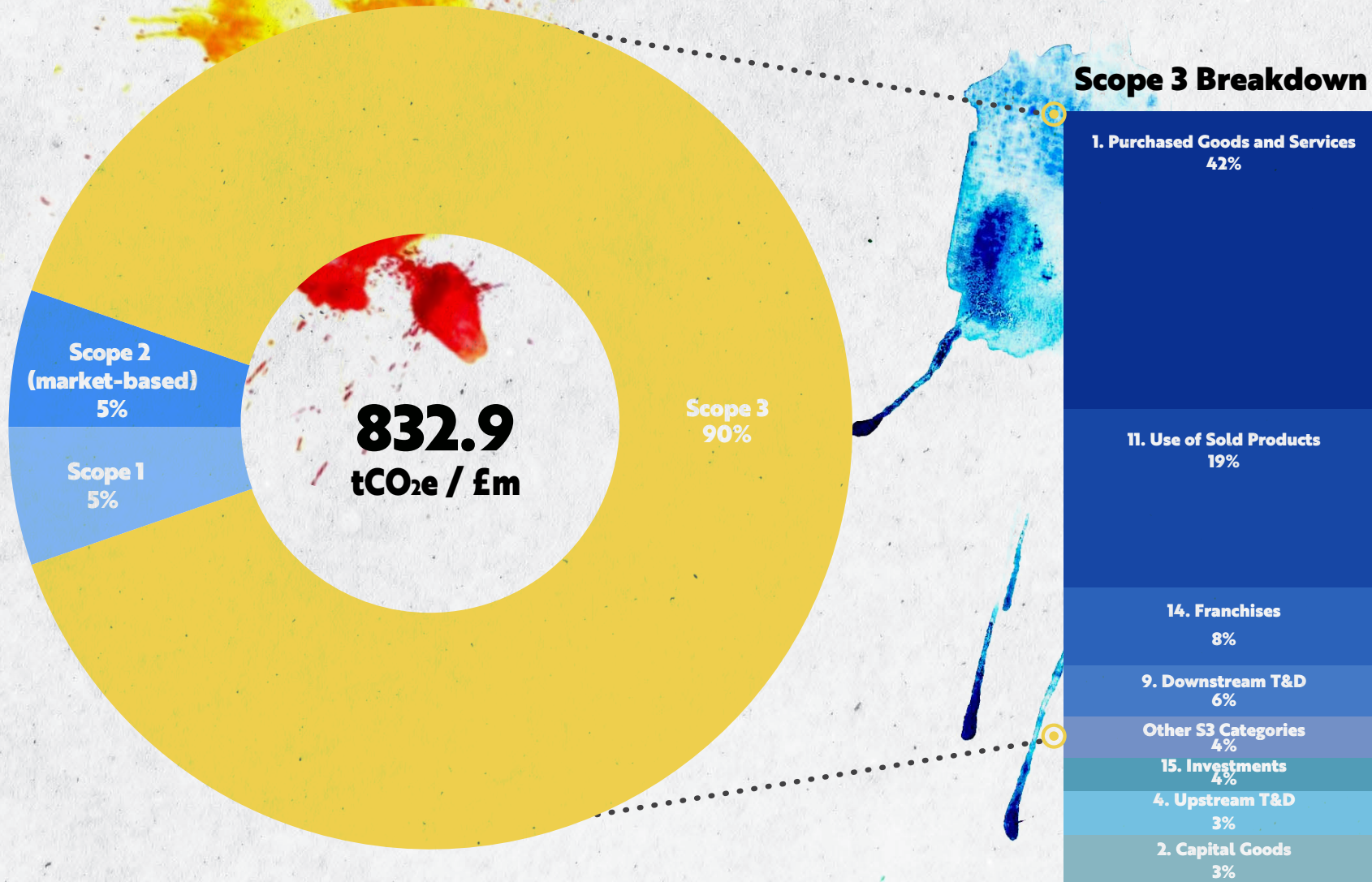


# Hotels emissions profile.





# Breweries emissions profile.

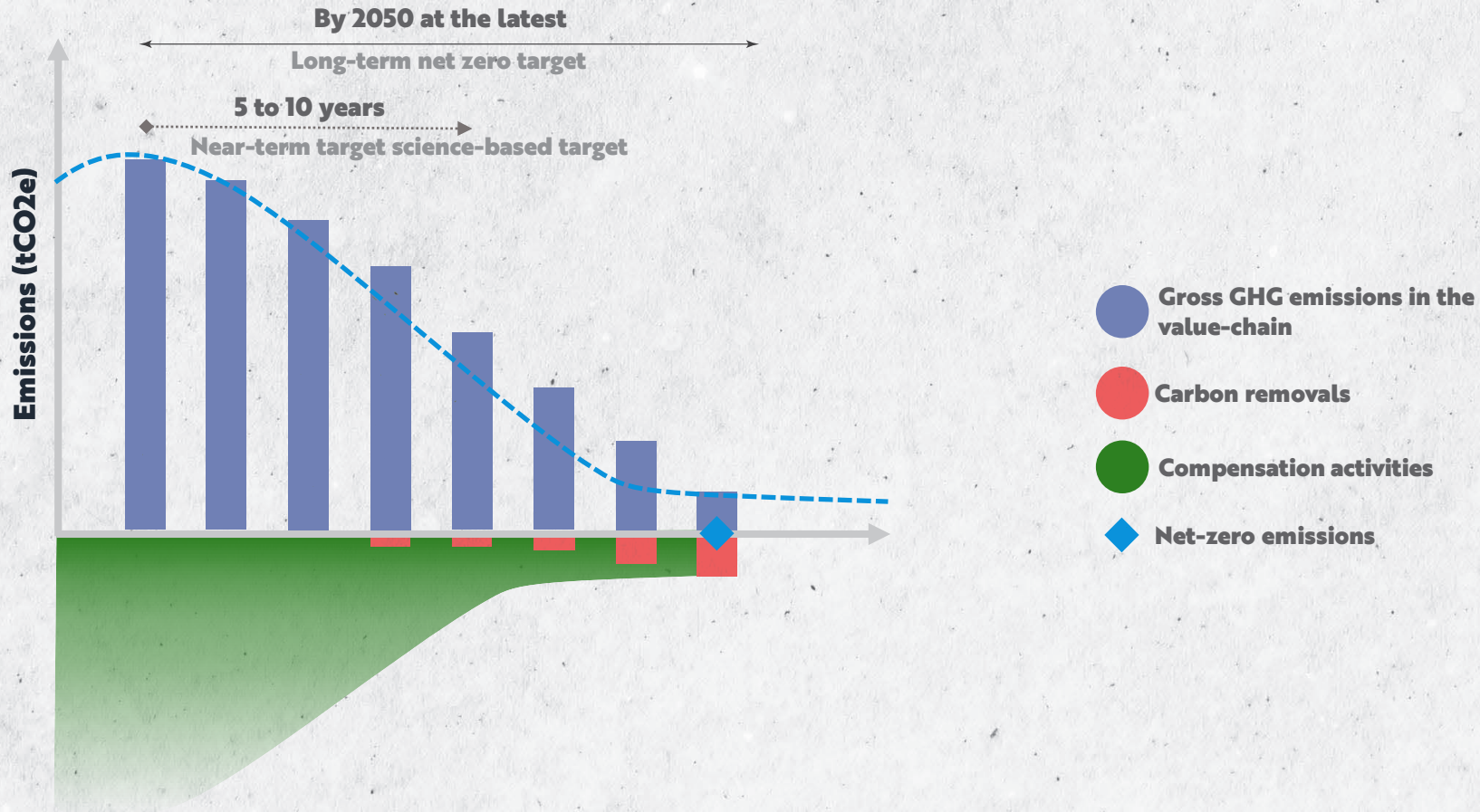


# Roadmap to net zero.

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# What do we mean by net zero?



Source: Science Based Targets initiative, annotated by Carbon Intelligence.



There are two elements to a net zero strategy: a reductions pathway and a removals pathway. These pathways can be delivered in parallel, but the priority should be on reductions first. The reductions pathway defines the rate of decarbonisation in line with science-based trajectories. The removals pathway provides further mitigation to neutralise unavoidable residual emissions where reductions aren't sufficient to meet Paris-aligned climate goals.

Thus, a credible net zero target (1) covers all relevant emissions across 3 scopes, (2) prioritises a reduction in emissions in line with climate science, and (3) neutralises the residual balance of emissions through carbon removals.

Companies should take a phased approach to build their net zero pathways:

1. Establish a baseline: Calculate a full value chain (Scopes 1, 2 & 3) emissions baseline.
2. The reduction pathway: Develop a Science-Based Targets initiative (SBTi) - approved target to deliver absolute reductions in Scopes 1, 2 and 3 emissions.
3. The removal pathway: Develop a credible emission removal strategy to offset residual emissions.

## Science-based targets.

Science-based targets translate the level of climate action needed globally down to a corporate level. A greenhouse gas emissions target can be considered 'science-based' if the emissions reductions it requires are in line with keeping global temperature increase below 1.5°C compared to pre-industrial temperatures.

A science-based target must cover company-wide Scopes 1 and 2 greenhouse gas emissions, as defined by the GHG Protocol Corporate Standard. If Scope 3 emissions make up over 40% of total emissions, then at least two-thirds of your Scope 3 emissions must be included in the target in the short term (5 - 10 years), with this increasing to 95% in the long term.

The SBTi defines and promotes best practice in corporate science-based target setting. They independently assess and approve companies' targets in line with strict criteria. The SBTi is currently developing the first global net zero standard for businesses aligned to the latest climate science. We've used insights from this new standard to develop the ZCF Net Zero Roadmap. We recommend hospitality and brewing businesses stay up to date with developments in net zero resources and guidance to ensure their net zero strategies remain credible.



# Roadmap & milestones to net zero.

This roadmap is designed to provide ZCF members with guidance on the steps they can take to decarbonise their businesses and set net zero strategies. Within the roadmap, there are 7 key areas to focus on: strategy and data, buildings, renewable energy, sourcing - food and beverage, sourcing - other, transport, and carbon removals. The below section focuses on each of these key pillars and provides key detail and milestones for the initiatives that ZCF members should prioritise when implementing their business's decarbonisation strategy.





# Decarbonisation priorities.

While the opportunities and challenges vary across sub-sectors, there are several cross cutting priorities that the sector needs to tackle collectively. These priorities have been summarised into 7 workstreams.

## + STRATEGY & DATA

Ambitious and science-based carbon targets, with reliable and granular data across Scopes 1, 2 & 3 that is used to track progress.

## + BUILDINGS

Green refurbishments of existing buildings and new building designs that deliver net zero carbon buildings.

## + RENEWABLE ENERGY

Sourcing 100% renewable energy across owned and franchised sites.

## + SOURCING & BEVERAGE

Collaborating with suppliers to accelerate sustainable agriculture and low carbon food and beverage production.

## + SOURCING (OTHER)

Collaborating with suppliers to reduce emissions from purchased goods and services and capital goods.

## + TRANSPORT

Transitioning to low and zero carbon transport throughout the value chain.

## + CARBON REMOVALS

Investing in high quality projects that remove carbon dioxide from the atmosphere to neutralise residual emissions.



# Decarbonisation opportunities for hospitality and brewing.

The tables below outline the top decarbonisation opportunities for the hospitality sector. Each initiative has been assessed to determine relevance for hospitality sub-sectors, carbon reduction potential, potential barriers, cost, and implementation timeframes. Hospitality businesses can use these tables as a checklist to help build their own decarbonisation strategies.




Cost assumptions are indicative and relative to each initiative to allow high-level comparison. For example, moving to green energy is relatively low cost (£) as businesses can quickly and cheaply purchase renewable energy certificates. By comparison, engaging your suppliers






is relatively medium cost (££) as it will require more internal resources in the long term and may mean selecting high ESG performing and potentially more expensive suppliers in the future. Investing in major capital projects to replace natural gas boilers with heat pumps would be relatively high cost (£££). Specific costs and payback periods will vary by business and project.






Initiatives have been categorised into quick wins that can be budgeted for and implemented over the next 1-2 years, and longer term strategic projects that can be considered beyond that.



## STRATEGY & DATA

Initiative	Description	Scope	Quick win or strategic?	Barriers to consider	Implementation year	Cost implication	Alignment with other initiatives	Sub-sector				
								 Pubs	 Restaurants	 Hotels	 Breweries	 Quick Service Restaurants
Baseline GHG Data Across All Scopes	Establish GHG baseline across Scopes 1, 2, 3 to understand GHG emission hotspots and prepare for SBT setting.	All	Quick win	Sources and quality of data.	2022	£	SBTi	Y	Y	Y	Y	Y
Publicly Report GHG Data Across All Scopes	Disclose GHG emissions in external reporting documents (Annual report / Sustainable business report / online).	All	Quick win	Adding GHG reporting into regular reporting cycle.  Deciding where and how to disclose data.	2025	£	Streamlined energy and carbon reporting (SECR)	Y	Y	Y	Y	Y
RE100	Commit to using 100% renewable electricity across your business.	2, 3	Quick win	How to procure renewable electricity.  Cost of renewable electricity to business.	2022	£	RE100	Y	Y	Y	Y	Y






Initiative	Description	Scope	Quick win or strategic?	Barriers to consider	Implementation year	Cost implication	Alignment with other initiatives	Sub-sector				
								 Pubs	 Restaurants	 Hotels	 Breweries	 Quick Service Restaurants
Update Strategy	Reassess and update decarbonisation strategy at minimum every 5 years at both an individual company level and at ZCF level.	All	Strategic	Keeping informed on environmental, political and technological changes in your sector to ensure strategy is optimal.	Every 5 Years	£		Y	Y	Y	Y	Y
Reporting Platform	<p>Having a reporting platform to collect, store and analyse sustainability data is essential for understanding GHG hot spots and prioritising decarbonisation actions.</p> <p>The ability to accurately track and report Scope 3 emissions will be critical given their contribution to overall emissions, particularly the ability to request and collate data from suppliers.</p>	All	Strategic	<p>Selecting an appropriate reporting platform.</p> <p>Assigning roles and responsibilities to internal stakeholders.</p> <p>Internal training / upskilling.</p>	2022	£	Streamlined energy and carbon reporting (SECR)	Y	Y	Y	Y	Y
Commit to Net Zero	Agree to GHG emission reduction and removal targets that are required to achieve net zero in line with SBT requirements.	All	Strategic	<p>Implications of achieving net zero for your business.</p> <p>Long term challenges in areas which are difficult to decarbonise.</p> <p>Implementing a removal strategy.</p>	2022	£	SBTi	Y	Y	Y	Y	Y

Initiative	Description	Scope	Quick win or strategic?	Barriers to consider	Implementation year	Cost implication	Alignment with other initiatives	Sub-sector				
								 Pubs	 Restaurants	 Hotels	 Breweries	 Quick Service Restaurants
Adopt an Internal Carbon Price	<p>Implement an internal carbon price to manage transition risk, improve investment decision making and support sustainability initiatives.</p> <p>Find more guidance on setting an internal carbon price on page 71.</p>	All	Strategic	<p>Selecting an appropriate carbon price for your business.</p> <p>Effectively implementing carbon pricing into business decision making.</p>	2022	£		Y	Y	Y	Y	Y
Approved Science Based Targets	<p>Submit GHG emission reduction targets to SBTi for approval to provide the credibility that your strategy is aligned to the latest climate science.</p>	All	Strategic	<p>Engagement and buy-in from key stakeholders.</p> <p>Understanding requirements needed to be approved by SBTi.</p> <p>Understanding key steps required to accomplish targets once approved.</p>	2022	£	SBTi	Y	Y	Y	Y	Y

## BUILDINGS

Initiative	Description	Scope	Direct carbon reduction potential	Quick win or strategic?	Barriers to consider	Implementation year	Cost implication	Alignment with other initiatives	Sub-sector				
									 Pubs	 Restaurants	 Hotels	 Breweries	 Quick Service Restaurants
Net zero plan for all buildings	Develop a net zero plan with actions, timelines, business cases & accountability.	1, 2	N/A	N/A	Not always clear which net zero framework or guidance to align with.	2022-25	£		Y	Y	Y	Y	Y
Insulation & fabric	Building fabric and/or insulation upgrades to reduce heat loss.	1	Low	Strategic	Disruption to operations, potentially long payback.	2022-35	££	BRC Climate Action Roadmap	Y	Y	Y	N	Y
Power grid	Reduction in grid emission factor due to use of renewables.	2	High	N/A (no action required)	N/A	2022-35	N/A	N/A	Y	Y	Y	Y	Y
Solar PV	On-site solar installation, with battery storage if beneficial.	1	Medium	Strategic	Roof condition, space, slope, shading.	2025-35	£ to £££ (depending on ownership model)	RE100, BRC Climate Action Roadmap	Y	Y	Y	Y	Y
Electric heat pumps	Air or water source heat pumps for space and hot water heating.	1, 2	Medium	Strategic	Available space and transformer capacity; high temperature requirements for breweries.	2025-35	£££	BRC Climate Action Roadmap	Y	Y	Y	Y	Y

Initiative	Description	Scope	Direct carbon reduction potential	Quick win or strategic?	Barriers to consider	Implementation year	Cost implication	Alignment with other initiatives	Sub-sector				
									 Pubs	 Restaurants	 Hotels	 Breweries	 Quick Service Restaurants
Induction cooking	Electric induction technology to replace gas cooking.	1, 2	Medium	Strategic	Available space and transformer capacity; desired cooking technique.	2022-35	£££		Y	Y	Y	N	Y
Low GWP refrigerants	Systems with GWP < 150.	1	Medium	Strategic	Ammonia (R717) toxicity, CO2 (R744) high pressure.	2025-30	£££	BRC Climate Action Roadmap	Y	Y	Y	N	Y
Efficient appliances	Upgrade to low-energy appliances where possible and when required (i.e. when equipment is due for replacement, not before).  (inc. low -flow water fixtures).	2	Low	Quick win	Higher cost vs alternatives.	Ongoing (as replacement is required)	££		Y	Y	Y	N	Y
Renewable electricity tariff	PPA or REGO-backed electricity with zero carbon footprint.	2	High	Quick win	Credibility of REGOs; availability, volume and term length of PPA contracts.	2022-25	£	RE100, BRC Climate Action Roadmap	Y	Y	Y	Y	Y






Initiative	Description	Scope	Direct carbon reduction potential	Quick win or strategic?	Barriers to consider	Implementation year	Cost implication	Alignment with other initiatives	Sub-sector				
									 Pubs	 Restaurants	 Hotels	 Breweries	 Quick Service Restaurants
Avoid gas-burning patio heaters	No more fossil fuels for outdoor heating.	1	Low	Quick win	Guest comfort if electric alternatives not available.	Immediate	£	France climate change legislation	Y	Y	N	N	N
Building control optimisation	BMS monitoring, analytics, optimisation and reporting.	1, 2	Medium	Quick win	Positive changes can be overridden / reverted if not managed properly.	Ongoing	£		Y	Y	Y	N	Y
Energy monitoring systems	Monitoring and analytics of key building performance indicators.	1, 2	Medium	Quick win	Connectivity across siloed building data systems; IoT security considerations.	2022-25	££		Y	Y	Y	Y	Y
Staff training & awareness	Training & awareness programmes that focus on areas where all levels of staff have influence on energy use.	1, 2	Low	Quick win	Staff turnover, competing priorities e.g. customer service.	Ongoing	£	BRC Climate Action Roadmap	Y	Y	Y	Y	Y








## BUILDINGS BREWERY SPECIFIC




Initiative	Description	Scope	Direct carbon reduction potential	Quick win or strategic?	Barriers to consider	Implementation year	Cost implication	Alignment with other initiatives
CIP Wash temperature	Reduction of CIP wash temperatures and use of cold CIP where possible	1	Low	Quick Win	Correct validation to ensure zero quality impacts	2022-2030	£	
Reductions in extract losses	Optimisation of process to reduce extract losses and reduce product wastage	1,2	Low	Quick Win	Ease of implementation depends on level of process automation	2022-2030	££	
Optimisation of hot liquor use	Ensure no hot liquor is wasted and that hot liquor is recovered at a usable temperature	1	Low	Quick Win	May require modifications to process control or wort cooler	2022-2030	£	
Kettle vapour heat recovery	Recovery of heat from kettle boil-off. Ideally recovered into a closed loop system and used to preheat wort entering the kettle	1	Medium	Strategic	Requires space in the brewhouse and modifications to brew stream	2022-35	££	
Refrigeration waste heat – heat pump	Use of a heat pump to raise low temperature hot water from the refrigeration waste heat. This can be used for a variety of heat loads including CIP and pasteurisation	1,2	High	Strategic	Requires significant electrical capacity. Will require some changes to process and installation of a heat network	2022-35	£££	
Clean filling	Switching from tunnel pasteurisation to cold sterile filtration and / or clean filling	1	High	Strategic	Significant process change and large capital requirement	2022-35	£££	
Anaerobic digester bio gas	Treatment of effluent and / or spent grains to produce bio gas	1	Medium / High	Strategic	Significant space requirement and potential odour issues	2022-35	££ / £££	






## RENEWABLE ENERGY

Initiative	Description	Scope	Carbon reduction potential	Quick win or strategic?	Barriers to consider	Implementation year	Cost implication	Alignment with other initiatives	Sub-sector				
									 Pubs	 Restaurants	 Hotels	 Breweries	 Quick Service Restaurants
Other green energy sources	Longer term, explore the feasibility of biomass, biogas and hydrogen solutions for low carbon energy within business.	1, 3	High	Strategic	Origin and reliable supply of biomass sources. Limited supply of biogas. Hydrogen solutions are unproven, and speculative, and are 10-15 years away from commercialisation.	2030-2035	££		Y	Y	Y	Y	N
Directly source 100% renewable electricity via a power purchase agreement (PPA)	Consider a PPA and/or onsite generation and storage to increase credibility, and business resilience.	2, 3	High	Strategic	Longer term contracts for PPA and cost. Uncertainty in market energy prices.	2028	££	RE100	Y	Y	Y	Y	Y
Indirectly source 100% renewable electricity with your energy provider	Purchase renewable energy tariffs from your energy provider at head office, owned and franchise locations.	2	High	Quick win	Longer term challenges of availability of renewable energy certificates.	2022 Franchises - 2030	£	RE100	Y	Y	Y	Y	Y

## SOURCING & BEVERAGE


Initiative	Description	Scope	Carbon reduction potential	Quick win or strategic?	Barriers to consider	Implementation year	Cost implication	Alignment with other initiatives	Sub-sector				
									 Pubs	 Restaurants	 Hotels	 Breweries	 Quick Service Restaurants
Afforestation agro-forestry, and restoring peatlands	Engage suppliers on increasing woodlands, planting trees on existing agricultural land, and restoring peatlands.	3	High	Strategic	Supplier maturity on sustainability initiatives.  Establishing clear requirements with suppliers and measuring progress.	2025	£	WeForest REDD REDD+	Y	Y	Y	Y	Y
Zero deforestation commitments in supply chains for key commodities	Work with supplier partners to eliminate deforestation from the supply chain for commodities at highest risk of deforestation (soy, palm oil, rubber, cocoa, cattle, maize, and coffee).	3	High	Strategic	Supplier maturity on sustainability initiatives.  Establishing clear requirements with suppliers and measuring progress.	2025	££	REDD REDD+	Y	Y	Y	Y	Y






Initiative	Description	Scope	Carbon reduction potential	Quick win or strategic?	Barriers to consider	Implementation year	Cost implication	Alignment with other initiatives	Sub-sector				
									 Pubs	 Restaurants	 Hotels	 Breweries	 Quick Service Restaurants
Support sustainable low-carbon farming	<p>Work with suppliers to identify GHG reduction and removal opportunities such as:</p> <p>Controlled release fertilisers;</p> <p>Improving livestock health;</p> <p>Slurry acidification;</p> <p>Manure management practices.</p>	3	High	Strategic	Supplier maturity on sustainability initiatives.	2022	£		Y	Y	Y	Y	Y
Supplier Engagement Programme	<p>Develop a supplier engagement programme to:</p> <p>Embed sustainability metrics into procurement process and decision making;</p> <p>Engage with key suppliers in your supply chain to set their own science based targets.</p> <p>See Appendix for example letter to share with suppliers.</p>	1, 2, 3	High	Strategic	<p>Supplier data quality and management of data.</p> <p>Supplier maturity on sustainability initiatives.</p> <p>Tracking supplier progress once engagement programme begins.</p>	2022	££		Y	Y	Y	Y	Y

Initiative	Description	Scope	Carbon reduction potential	Quick win or strategic?	Barriers to consider	Implementation year	Cost implication	Alignment with other initiatives	Sub-sector				
									 Pubs	 Restaurants	 Hotels	 Breweries	 Quick Service Restaurants
Implement menu changes to support low carbon food options	Engage suppliers to source low carbon food alternatives for menus. Work with marketing teams to drive sales and highlight low impact dishes.	3	High	Strategic	Consumer preferences. Cost.	2022	£	WWF Livewell plate, WWF plant based diets	Y	Y	Y	Y	Y

For more information: <https://www.theccc.org.uk/publication/land-use-policies-for-a-net-zero-uk/>

## SOURCING (OTHER)

Initiative	Description	Scope	Carbon Reduction Potential	Quick win or strategic?	Barriers to consider	Implementation year	Cost implication	Alignment with other initiatives	Sub-sector				
									 Pubs	 Restaurants	 Hotels	 Breweries	 Quick Service Restaurants
Life cycle analysis (LCA) on packaging	Conduct LCAs on all packaging options and work with packaging suppliers to source low carbon options.	3	High	Strategic	LCAs are complex and would likely require external support to complete.	2025	£££	WRAP, UK Plastics Pact	Y	Y	Y	Y	Y
Source plastic products with 30% or more recycled content	Source products that have 30% or more recycled plastic incorporated to reduce carbon footprint, waste, and to avoid UK plastic tax from April 2022.	3	Medium	Strategic	Possible challenge for all suppliers to incorporate recycled content into plastic packaging due to cost and availability.	2022	£	Ellen Macarthur Foundation WRAP	Y	Y	Y	Y	Y






Initiative	Description	Scope	Carbon Reduction Potential	Quick win or strategic?	Barriers to consider	Implementation year	Cost implication	Alignment with other initiatives	Sub-sector				
									 Pubs	 Restaurants	 Hotels	 Breweries	 Quick Service Restaurants
Supplier engagement programme	<p>Develop a supplier engagement programme to:</p> <ul style="list-style-type: none"> <li>Embed sustainability metrics into procurement process and decision making;</li> <li>Engage with key suppliers in your supply chain to set their own science based targets;</li> <li>Work with suppliers to identify GHG reduction and removal opportunities.</li> </ul> <p>See Appendix for example letter to share with suppliers.</p>	3	High	Strategic	<p>Supplier data quality and management of data.</p> <p>Supplier maturity on sustainability initiatives.</p> <p>Tracking supplier progress one engagement programme begins.</p>	2022	£		Y	Y	Y	Y	Y
Sustainable staff uniforms	<p>Design and source staff uniforms that are durable and use environmentally friendly raw materials,</p> <p>Implement a recycle / reuse programme to reduce garment waste.</p>	3	Low	Strategic	<p>Supplier maturity on sustainability initiatives</p> <p>Clear specifications to support sustainability requirements.</p>	2025	£	Ellen Macarthur Foundation, Textiles 2030 of WRAP	Y	Y	Y	Y	Y






Initiative	Description	Scope	Carbon Reduction Potential	Quick win or strategic?	Barriers to consider	Implementation year	Cost implication	Alignment with other initiatives	Sub-sector				
									 Pubs	 Restaurants	 Hotels	 Breweries	 Quick Service Restaurants
<p>Reduce materials use and waste</p> <p>Design for reusability e.g. remove single use plastics</p> <p>Design for recyclability e.g. compostable and biodegradable packaging</p>	<p>Designing packaging optimised for the Circular Economy:</p> <p>Reducing waste at the design stage, lightweighting and material substitutions;</p> <p>Optimisation of pack format so it is fit for recycling and recycled materials being incorporated in new products;</p> <p>Where possible, closed loop refillable, reusable packaging systems should be put in place.</p> <p>See Appendix for more details on the resources, food and waste hierarchy.</p>	3	Medium	Strategic	Supplier maturity and willingness to invest in innovative, new materials. Maturity of current recycling / compostability capacity and alignment of retailer's materials with the current capacity.	2030	££	WRAP, The UK Plastics Pact, Global Plastics Pacts, Ellen MacArthur Foundation	Y	Y	Y	Y	Y

For more information: <https://wrap.org.uk/sites/default/files/2020-08/WRAP-Sustainable-Clothing-Guide-2017.pdf>



# TRANSPORT

Initiative	Description	Scope	Carbon Reduction Potential	Quick win or strategic?	Barriers to consider	Implementation year	Cost implication	Alignment with other initiatives	Sub-sector				
									 Pubs	 Restaurants	 Hotels	 Breweries	 Quick Service Restaurants
Reducing travel emissions from guests	Encouraging the use of public transport, cycling, walking, as well as electric vehicles and improving access to charging infrastructure, will decrease the reliance on fossil fuels and lower emissions.	3	Low	Strategic	Location of hospitality site.  The way your customers currently travel to your site.  Available space for charging infrastructure.	2022	£	Count Us In	Y	Y	Y	Y	Y
100% deliveries are zero carbon	By incorporating walking, cycling, public transit, and electric vehicles, zero emission deliveries for takeaways can be accomplished.	1, 3	Medium	Strategic	All new L-Category vehicles to be fully zero emissions at the tailpipe by 2035.  Cycling infrastructure in the area of operation.	2040	£		Y	Y	Y	Y	Y
100% zero emissions HGVs	HGVs account for 18% of road transport emissions in the UK.  Implementing a plan to transition to zero emissions LCVs is key to removing tailpipe emissions and decarbonising transport.	1, 3	High	Strategic	Government policy and technological development of zero carbon transport options for HGVs.  Timeline to retire existing HGVs.  UK Gov ban of all non-zero emission HGVs in 2040.	2040	£££		Y	Y	Y	Y	Y

Initiative	Description	Scope	Carbon Reduction Potential	Quick win or strategic?	Barriers to consider	Implementation year	Cost implication	Alignment with other initiatives	Sub-sector				
									 Pubs	 Restaurants	 Hotels	 Breweries	 Quick Service Restaurants
100% zero emission light commercial vehicles	Light vehicles account for 17% of transport emissions in the UK.  Implementing a plan to transition to zero emissions LCVs is key to removing tailpipe emissions and decarbonising transport.	1,3	High	Strategic	Government policy and technological development of zero carbon transport options.  Timeline to retire existing fleet of fuel LCVs.  Sale ban of new petrol and diesel vans in 2030.	2035	££		Y	Y	Y	Y	Y
Transition company cars to 100% electric or other low / zero carbon options	Encourage and/or incentivise employees to drive electric vehicles.  Make charging infrastructure available onsite.  Consider where cycling or public transport could be further utilised.	1	Medium	Strategic	The timeline to retire the existing fleet of fuel cars.  Space for charging infrastructure.	2022-2025	££	EV100	Y	Y	Y	Y	Y
Improved fuel efficiency for owned fleet	Implement a programme to reduce GHG emissions from owned fleet through:  Ecodriving training programmes and staff engagement;  Collecting fuel data such as MPCs;  Setting efficiency targets.	1,3	Medium	Strategic	Data collection and measuring progress against targets.	2022	£		Y	Y	Y	Y	Y

Initiative	Description	Scope	Carbon Reduction Potential	Quick win or strategic?	Barriers to consider	Implementation year	Cost implication	Alignment with other initiatives	Sub-sector				
									 Pubs	 Restaurants	 Hotels	 Breweries	 Quick Service Restaurants
Improved fuel efficiency for owned fleet	Implement a programme to reduce GHG emissions from owned fleet through: Ecodriving training programmes and staff engagement; Collecting fuel data such as MPGs; Setting efficiency targets.	1, 3	Medium	Strategic	Data collection and measuring progress against targets.	2022	£		Y	Y	Y	Y	Y
GHG reporting on all logistics	As part of capturing and reporting on scope 3 emissions, ensure inclusion of all GHG reporting for all company logistics.	1, 3	High	Strategic	Mapping entire logistic network. Establishing sources of data and how to collect and analyse. How/where to disclose.	2022	£		Y	Y	Y	Y	Y

For more information:

<https://energysavingtrust.org.uk/service/maximise-fuel-economy-and-encourage-efficient-driving/>

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/509972/efficient-driving-rapid-evidence-assessment.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/509972/efficient-driving-rapid-evidence-assessment.pdf)

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## CARBON REMOVALS

Initiative	Description	Scope	Quick win or strategic?	Barriers to consider	Implementation year	Cost implication	Alignment with other initiatives	Sub-sector				
								 Pubs	 Restaurants	 Hotels	 Breweries	 Quick Service Restaurants
Retiring of credits from Registry to neutralise your Scope 1, 2 and 3 emissions	To ensure no double counting on projects.	1, 2, 3	Strategic	Physical risk of project's lifespan.	2040	££		Y	Y	Y	Y	Y
Identify and secure removal projects	Choose projects based on criteria and certification by Carbon Registries (e.g. Gold Standard, VCS).	1, 2, 3	Strategic	Availability of projects.	2030	££	Alignment of projects to SDGs	Y	Y	Y	Y	Y
Choose project developer	Select a project developer aligned to criteria.	1, 2, 3	Strategic	Availability of projects.	2025	N/A		Y	Y	Y	Y	Y
Agree strategy and quality criteria for use of Carbon Removals	Alignment of company values to project criteria and importance of location.	1, 2, 3	Strategic	Implementation costs. Availability of projects. Time taken for projects to sequester carbon (10 years plus).	2022	£		Y	Y	Y	Y	Y

# Decarbonisation pathways by sub-sector.

Using the initiatives identified above, we have developed sub-sector specific decarbonisation pathways across Scopes 1, 2 and 3. The waterfall charts in the following section show the potential decarbonisation opportunities for businesses, split into quick-win and longer term strategic projects. The initiatives build upon each other but do not have to follow the sequence outlined in charts below. The relative investment cost is also shown for each reduction initiative, in addition to offsetting activities. As per the decarbonisation initiatives tables, the cost assumptions are indicative and relative to each initiative to allow high-level comparison. Specific costs and payback periods will vary by business and project. Relative investment has not been applied to Scope 3 decarbonisation initiatives as they are often dependent on supplier or customer engagement, making them more difficult to quantify at this time.

Scope 1 and 2 emissions present a key priority area for individual hospitality and brewing businesses and the emissions in this area can be tackled now. Emerging technology and Government funding are needed to close the gap to net zero.

It is worth noting that the SBTi will publish guidance near the end of 2021 to clarify the absolute reduction targets needed for Purchased Goods and Services (PG&S) emissions for categories such as meat, dairy and other commodities with emission factors that are influenced by forestry, land-use and agricultural activities. The most influential factors for achieving these Scope 3 emission reductions are the extent of low-carbon menu changes that can be implemented, transport and distribution and the reductions achievable by PG&S suppliers. Three of the strategic projects to reduce Scope 3 emissions (supplier engagement & commitments, menu changes, and local & sustainable sourcing) all impact the same Scope 3 emissions from PG&S. As shown in the Scope 3 charts below, the carbon reduction from the latter 2 projects are shown with a lower reduction than what these projects would achieve in isolation to avoid any double counting or overlapping effects. This may give the appearance that carbon reduction from menu changes and local and sustainable sourcing is relatively low, when in fact these projects are very important and would achieve greater carbon reduction if the former project (supplier engagement & commitments) is not pursued. Therefore, it is best to consider the combined carbon reduction from all three of these projects together, rather than in isolation.

**This is applicable to all hospitality sub-sectors with the exception of menu changes for breweries.**



# Key.

## Baseline

emissions

## Quick wins

initiatives to invest now (next 1-2 years)

## Strategic

initiatives to consider now, for future investment plans (2+years)

## Offsets

residual emissions to be balanced with carbon removals

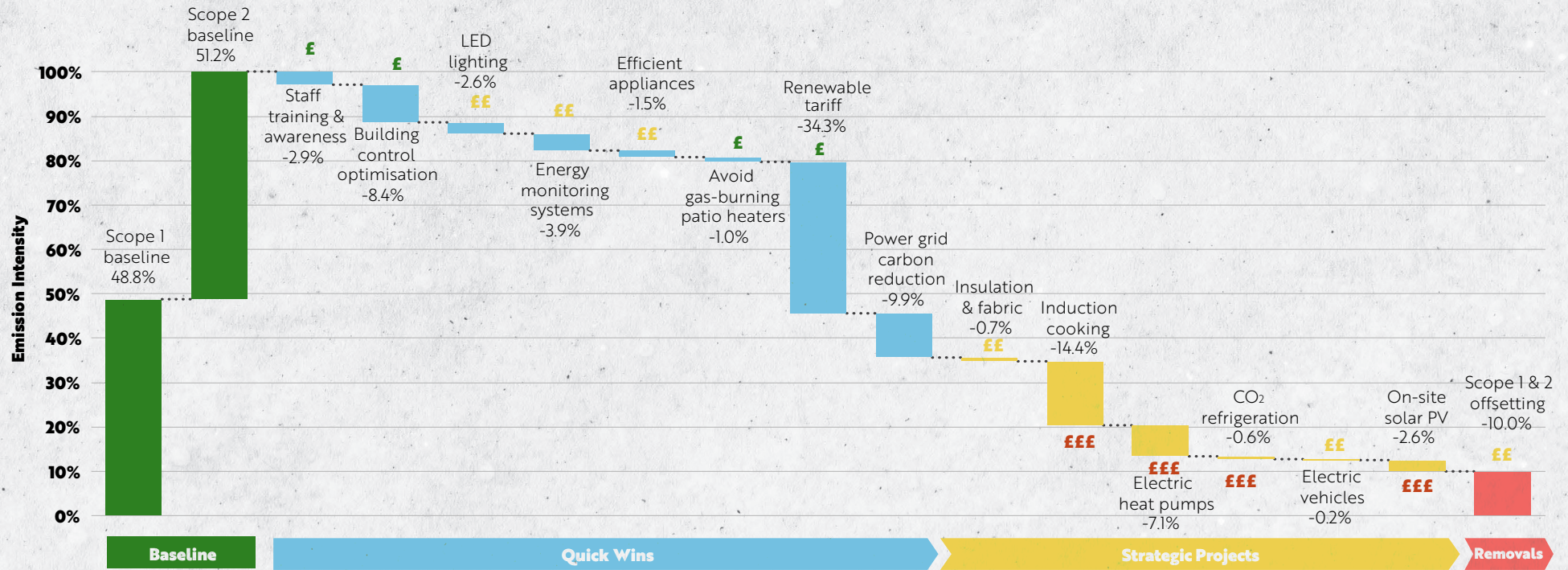
**£** - Low investment

**££** - Medium investment

**£££** - High investment



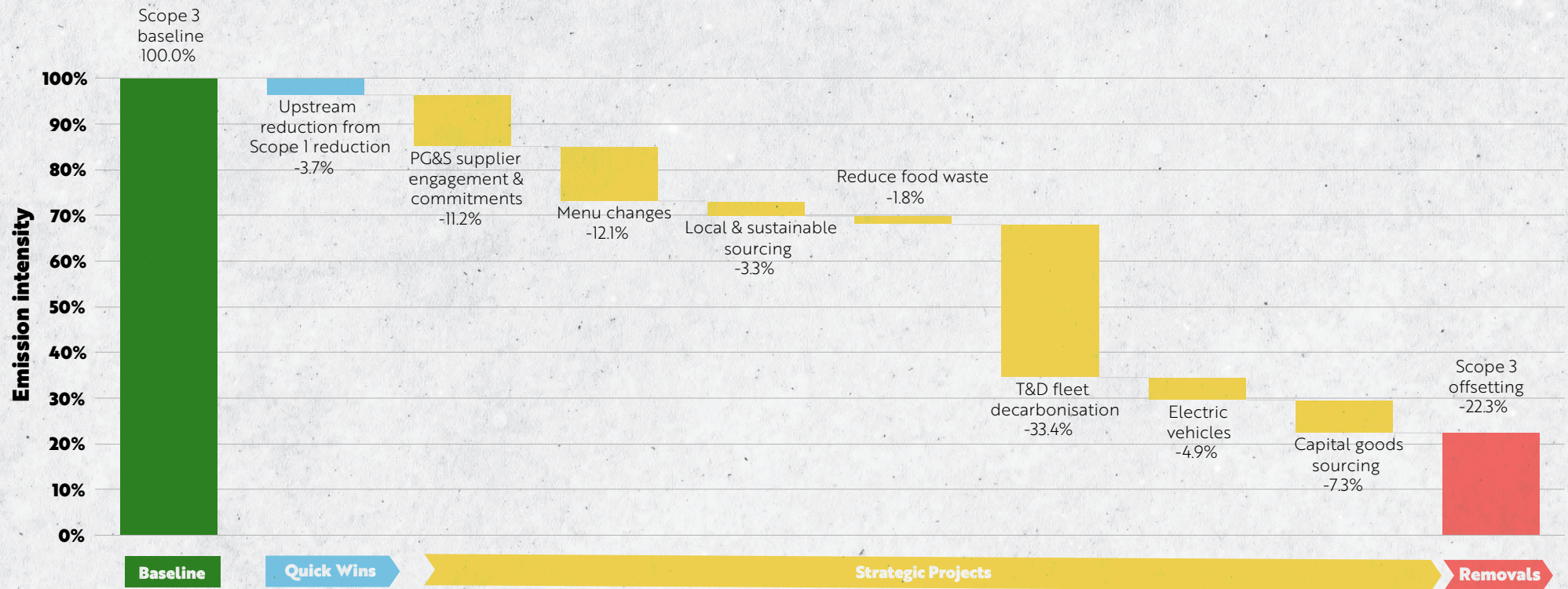
# Pub decarbonisation pathway: Scopes 1 & 2 (market-based).



This pathway aligns with SBTi net zero guidance by achieving a 90% reduction in Scopes 1 & 2 emissions without the use of carbon removal offsets. The most influential factor for achieving these reductions is the extent to which gas cooking and space heating systems can be converted to electric. To reach net zero after achieving these reductions, 10% of the Scopes 1 & 2 footprint would need to be offset.



## Pub decarbonisation pathway: Scope 3.

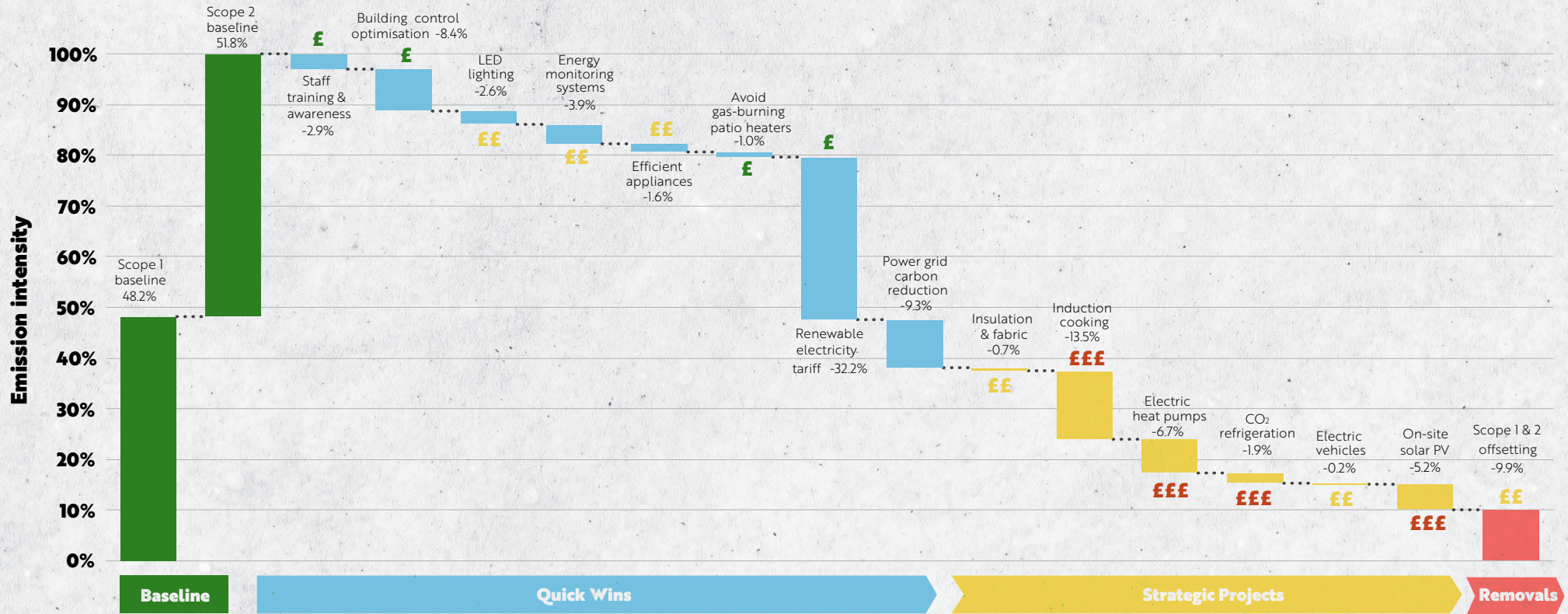


A 'high ambition' Scope 3 net zero pathway for pubs achieves a 78% reduction in Scope 3 emissions without the use of carbon removal offsets. In general a pub should be aiming for c. 60-90% reduction in Scope 3 emissions from the measures proposed above. To reach net zero after achieving these reductions, 22% of the Scope 3 footprint would need to be offset.





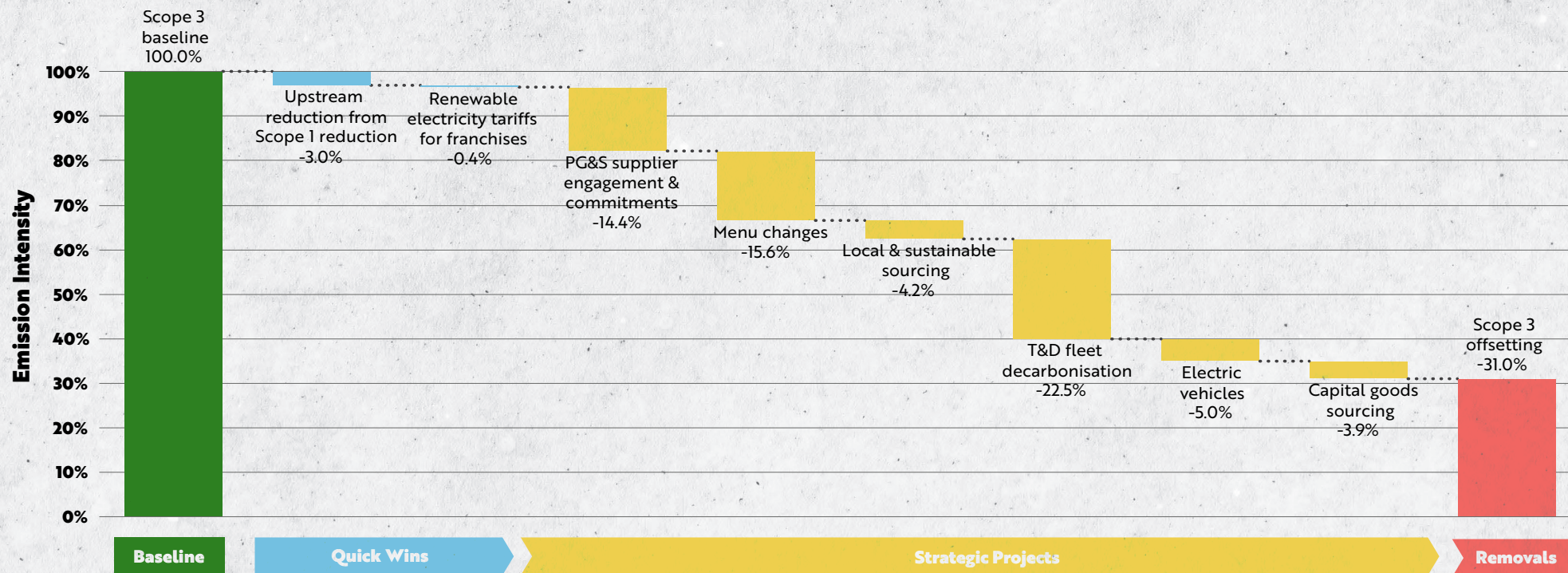
# Restaurant decarbonisation pathway: Scopes 1& 2 (market-based).



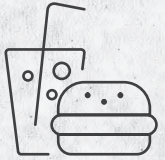
This restaurant decarbonisation pathway aligns with SBTi net zero guidance by achieving a 90% reduction in Scopes 1 & 2 emissions without the use of carbon removal offsets. The most influential factor for achieving these reductions is the extent to which gas cooking and space heating systems can be converted to electric.



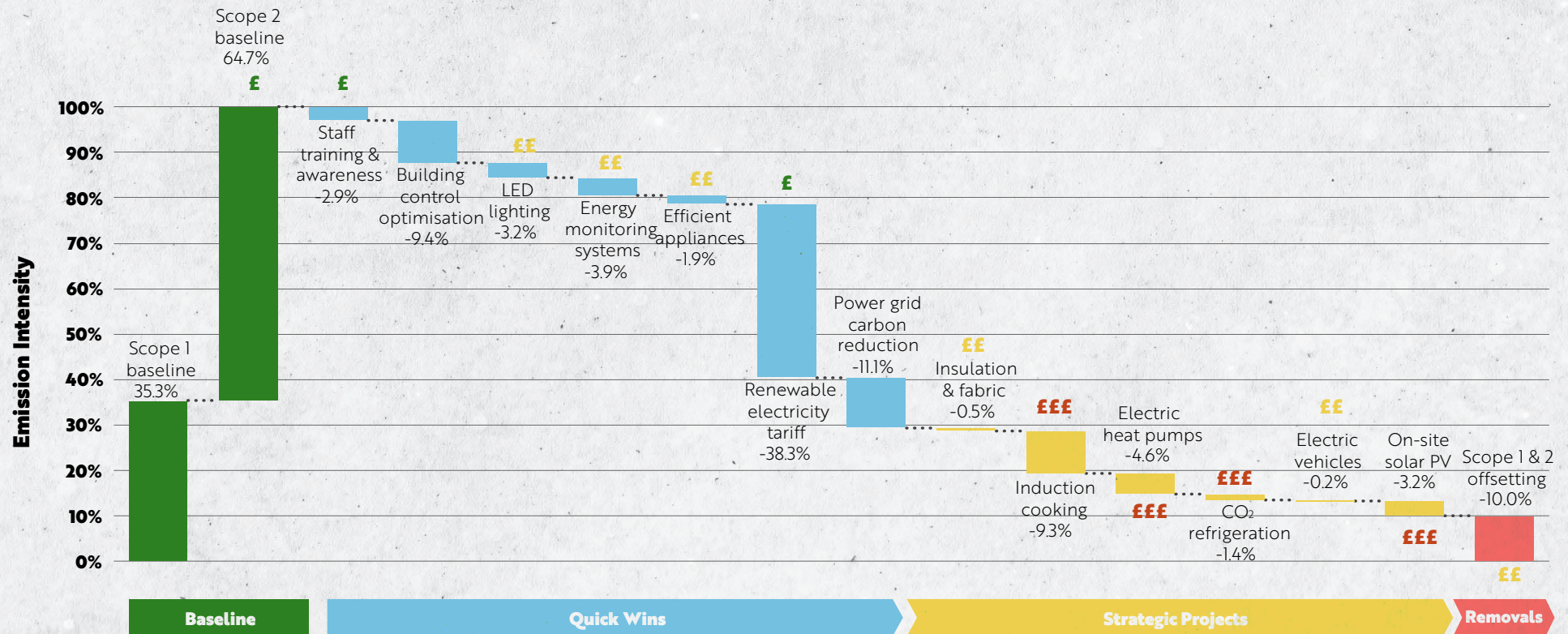
## Restaurant decarbonisation pathway: Scope 3.



The Scope 3 emission reduction pathway for restaurants achieves a 69% reduction in Scope 3 emissions without the use of carbon removal offsets. In general a restaurant should be aiming for c. 60-90% reduction in Scope 3 emissions from the measures proposed above. The most influential factors for achieving these Scope 3 emission reductions are the extent of low-carbon menu changes that can be implemented, and the reductions achievable by PG&S suppliers. To reach net zero after achieving these reductions, 31% of the Scope 3 footprint would need to be offset.



# Quick services restaurants (franchise business model) decarbonisation pathway: Scopes 1 & 2 (market-based).

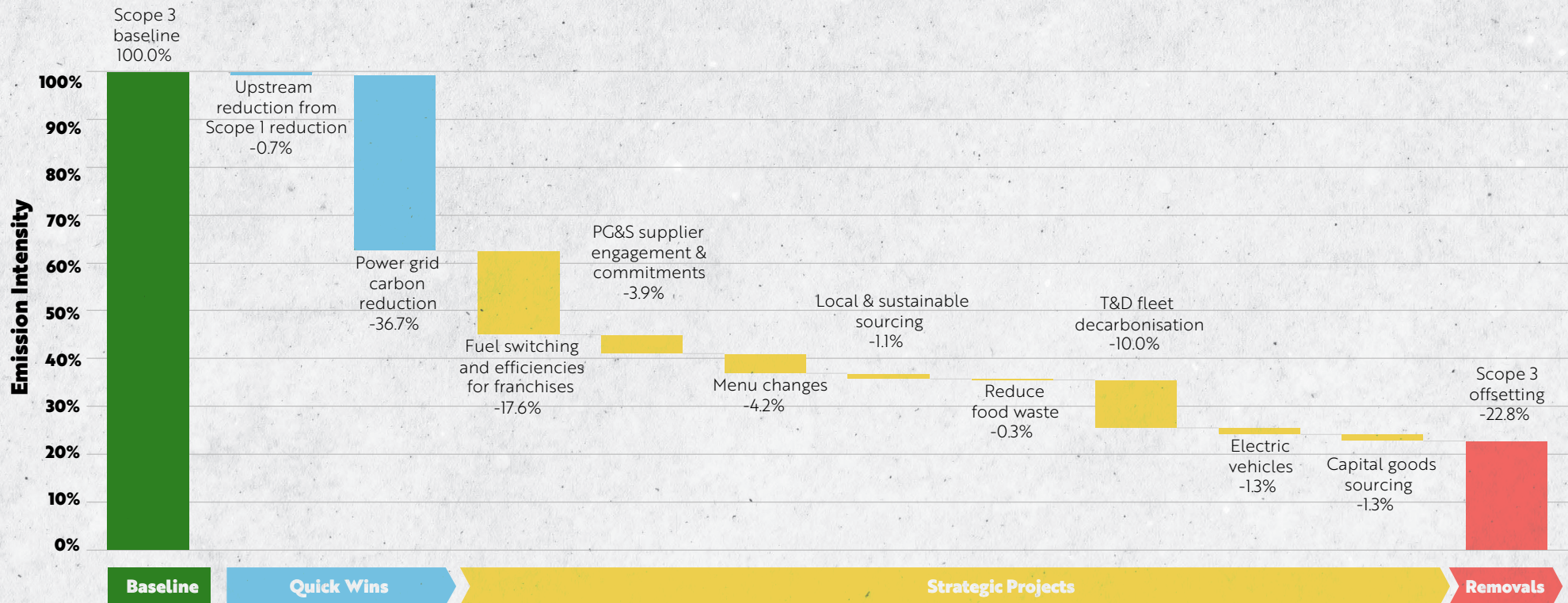


This QSR pathway aligns with SBTi net zero guidance by achieving a 90% reduction in Scopes 1 & 2 emissions without the use of carbon removal offsets. The most influential factor for achieving these reductions is the extent to which gas cooking and space heating systems can be converted to electric. To reach net zero after achieving these reductions, 10% of the Scopes 1 & 2 footprint would need to be offset.



## Quick service restaurants (franchise business model)

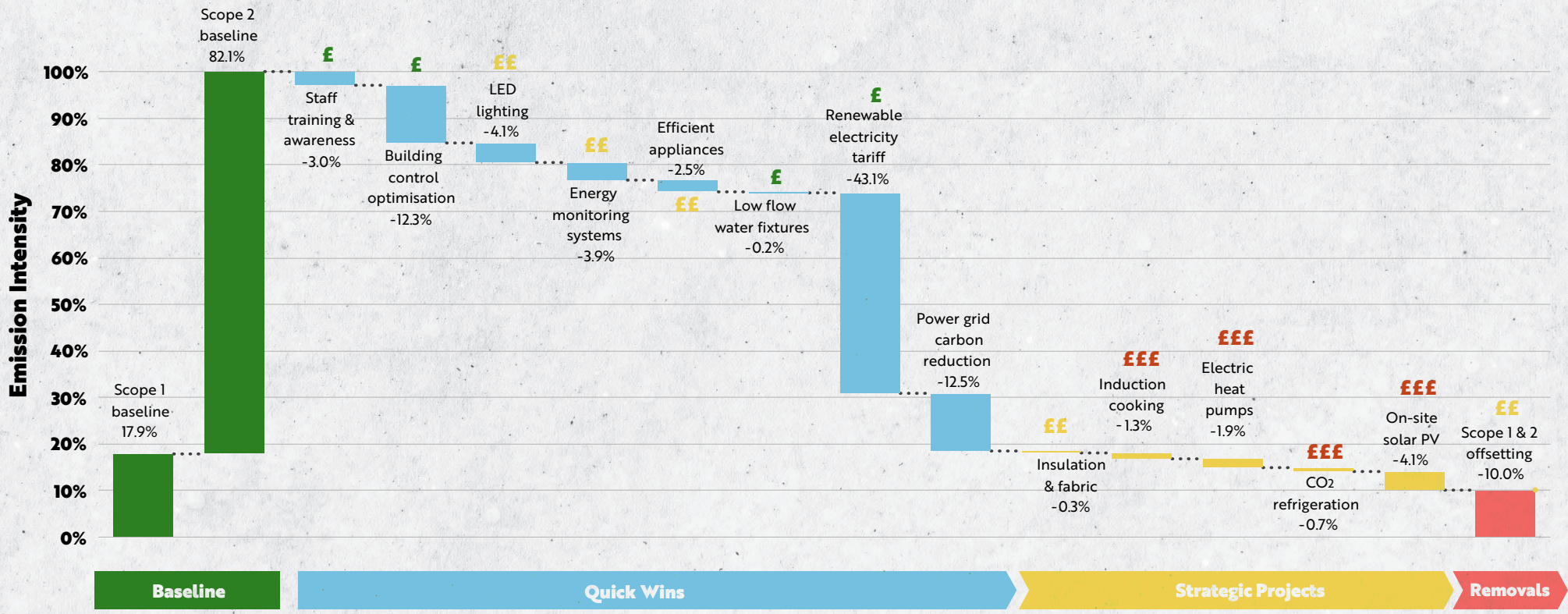
### decarbonisation pathway: Scope 3.



A 'high ambition' Scope 3 net zero pathway for quick service restaurants achieves a 77% reduction in Scope 3 emissions without the use of carbon removal offsets. In general, a quick service restaurant should aim for c. 60-90% reduction in Scope 3 emissions from the measures proposed above. The most influential factor for achieving these Scope 3 emission reductions is the extent of fuel switching and efficiencies in franchises (e.g. induction cooking, and electric heat pumps). The QSR data used in this decarbonisation pathway is based on a franchise business model. For QSR businesses without franchises, we recommend using the restaurant decarbonisation pathway. To reach net zero after achieving these reductions, 23% of the Scope 3 footprint would need to be offset.



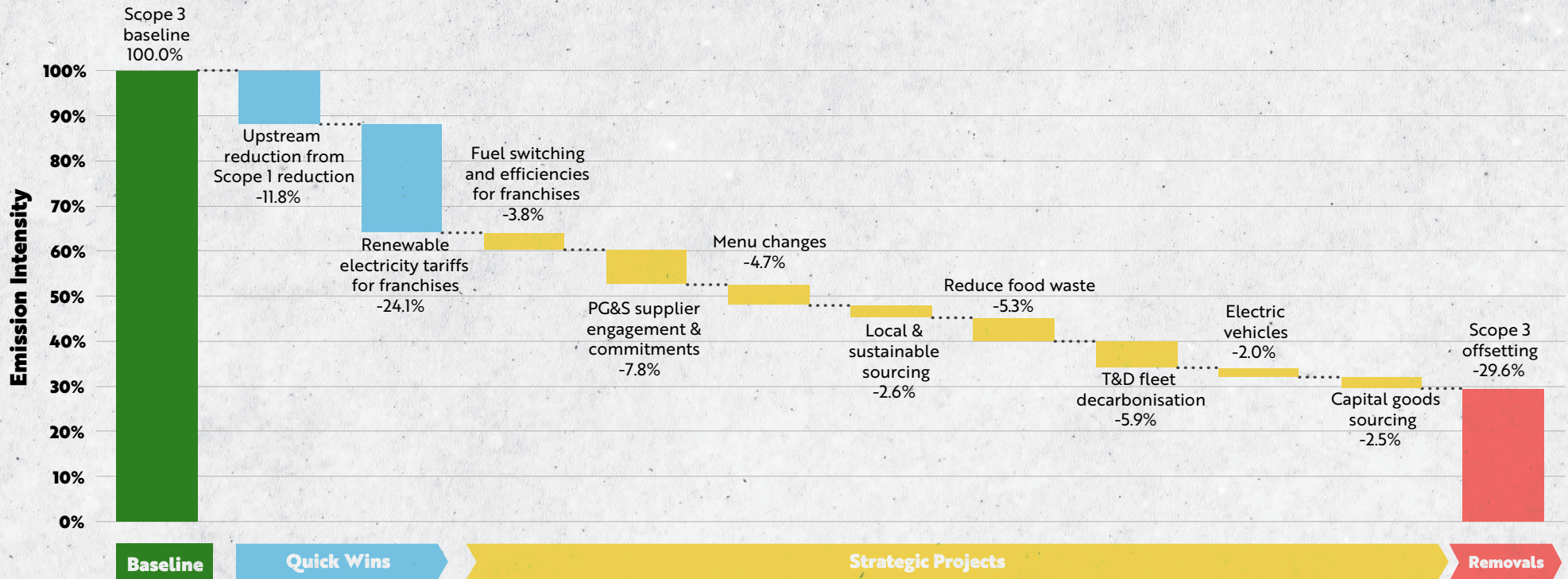
# Hotel decarbonisation pathway: Scopes 1 & 2 (market-based).



This pathway aligns with SBTi net zero guidance by achieving a 91% reduction in Scopes 1 & 2 emissions without the use of carbon removal offsets. To reach net zero after achieving these reductions, 10% of the Scopes 1 & 2 footprint would need to be offset.



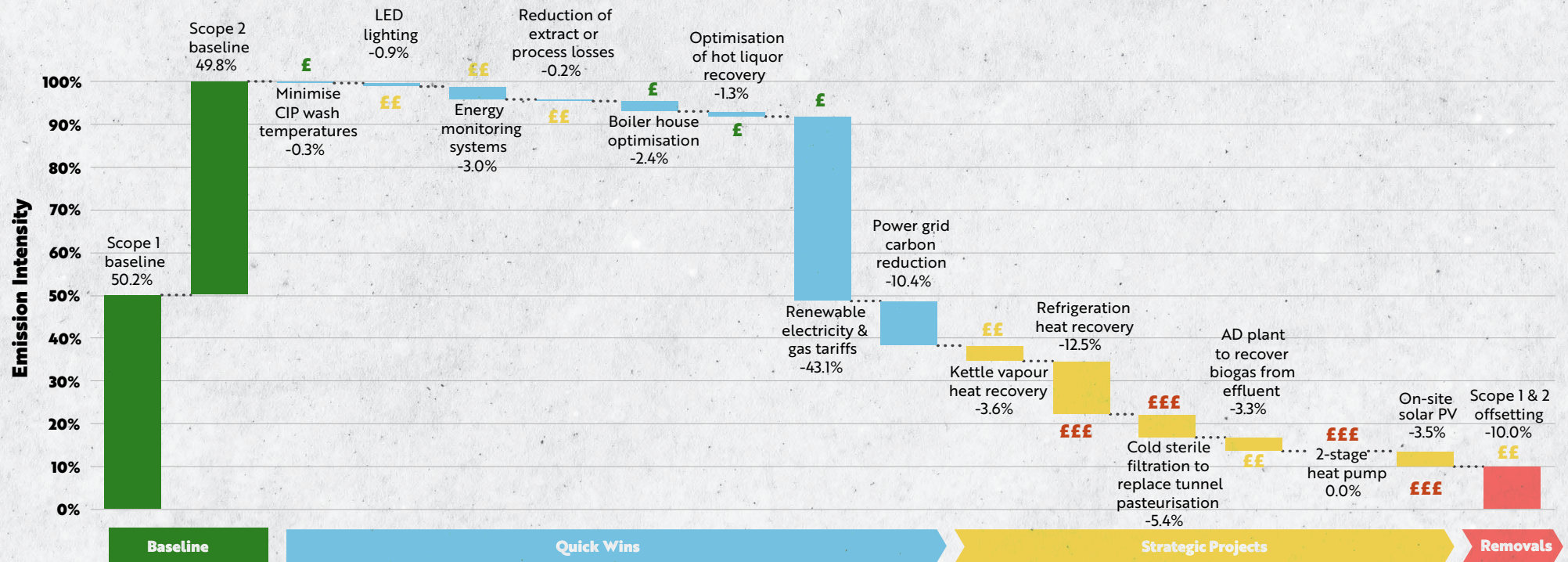
## Hotel decarbonisation pathway: Scope 3.



A 'high ambition' Scope 3 net zero pathway for hotels achieves a 70.5% reduction in Scope 3 emissions without the use of carbon removal offsets. In general a hotel should be aiming for c. 60-90% reduction in Scope 3 emissions from the measures proposed above. To reach net zero after achieving these reductions, 29.6% of the Scope 3 footprint would need to be offset.



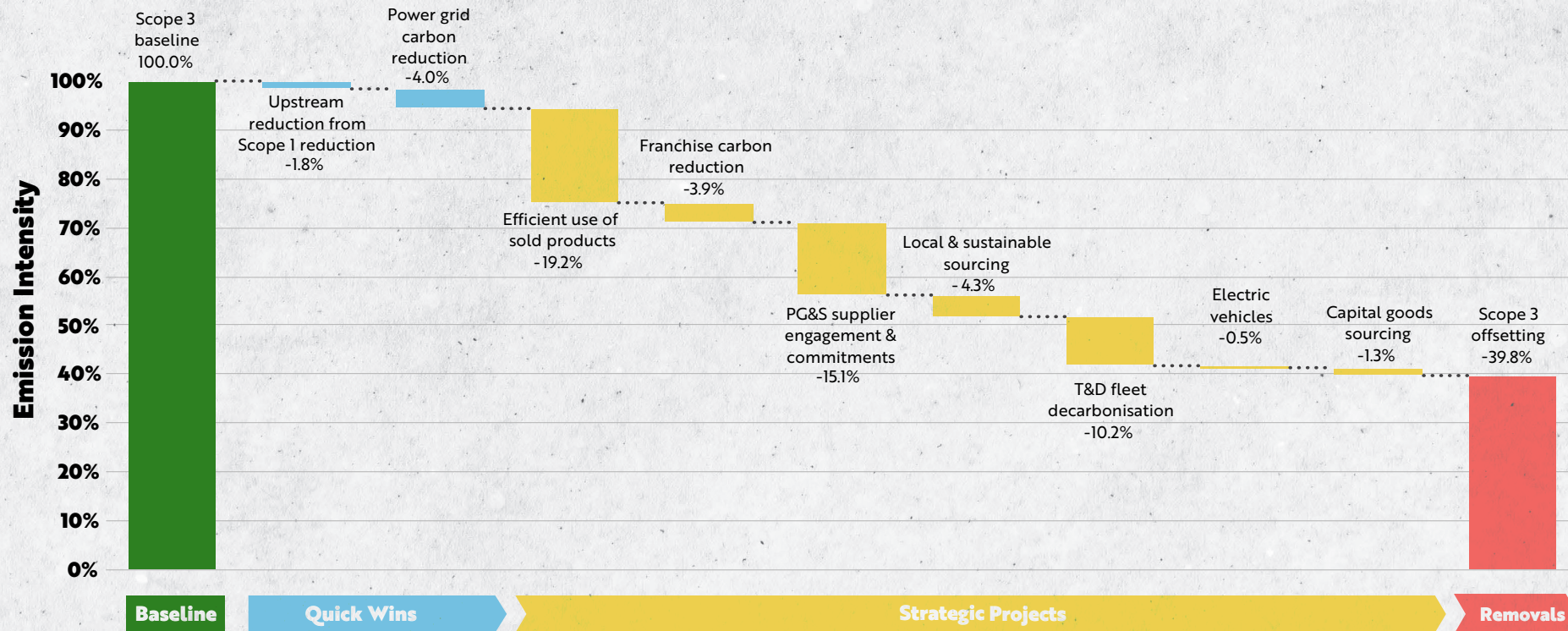
## Brewery decarbonisation pathway: Scopes 1 & 2 (market-based).



This pathway aligns with SBTi net zero guidance by achieving a 90% reduction in Scopes 1 & 2 emissions without the use of carbon removal offsets. The most influential factor for achieving these reductions is the extent to which renewable gas tariffs can be secured to cover the thermal energy demands of the brewing process. To reach net zero after achieving these reductions, 10% of the Scopes 1 & 2 footprint would need to be offset.

An alternative 'all-electric' technology pathway is possible by serving high-temperature heat loads with a 2-stage heat pump (10.0% savings). In this case there would be no need for an AD plant to recover biogas from effluent (3.3% savings) or boiler house optimisation (2.4%) savings; instead the 2-stage heat pump and associated green power procurement would result in a 97% reduction in Scopes 1 & 2 emissions (rather than 90% in the biogas scenario). To reach net zero after achieving these reductions, only 3% of the Scope 1 & 2 footprint would need to be offset.

# Brewery decarbonisation pathway: Scope 3



A 'high ambition' Scope 3 net zero pathway achieves a 60% reduction in Scope 3 emissions without the use of carbon removal offsets. In general a brewery should be aiming for c. 60-90% reduction in Scope 3 emissions from the measures proposed above. To reach net zero after achieving these reductions, 40% of the Scope 3 footprint would need to be offset.



# How to get started.

Future  
→  
Further.  
=



# Your programme for net zero.

Net zero is about more than reducing emissions; it's about transforming the hospitality industry and how we work, play, eat, and do business. And we can't do it alone. The Zero Carbon Forum brings businesses together from across the sector in a non-competitive collaboration to drive and create the change we need.

In addition to outlining our decarbonisation pathways in this report, we help member businesses to build holistic, integrated strategies to decarbonise quickly, credibly, and consistently. As a collective industry voice, we're able to create economies of scale, influence our supply chains, shift customer behaviour, and lobby government for the right incentives and regulatory framework for action. We can also follow, enable, and empower future technology on which our successful decarbonisation depends.



When it comes to setting individual net zero strategies, we recommend hospitality and brewing businesses use the six dimensions outlined below as the building blocks of their net zero strategy.

### **Direction.**

Ambitious and science-based greenhouse gas emissions targets and milestones that set the direction for your net zero strategy. The strategy must include a strong business case for change which is aligned with and will influence the wider business strategy.



### **Engagement.**

As net zero is a transition, change management is a core part of the process and can often be overlooked. There are a range of stakeholders from inside and outside the business who will be essential to your success.



### **Governance.**

Strategic programmes require a strong governance structure to oversee their execution. The climate related risks and opportunities that your organisation faces need to be understood and quantified, including accountability and ownership for dealing with them.



### **Performance.**

At the heart of your net zero programme will be the changes you need to make to decarbonise your business. These carbon performance improvements must be integrated into the other dimensions of your programme for it to be a success.



### **Data.**

Net zero programmes rely on data for evidence-based decision making. The collection, aggregation, and analysis of complex data sets should be automated wherever possible. This will free up time for stakeholders to act on data insights.



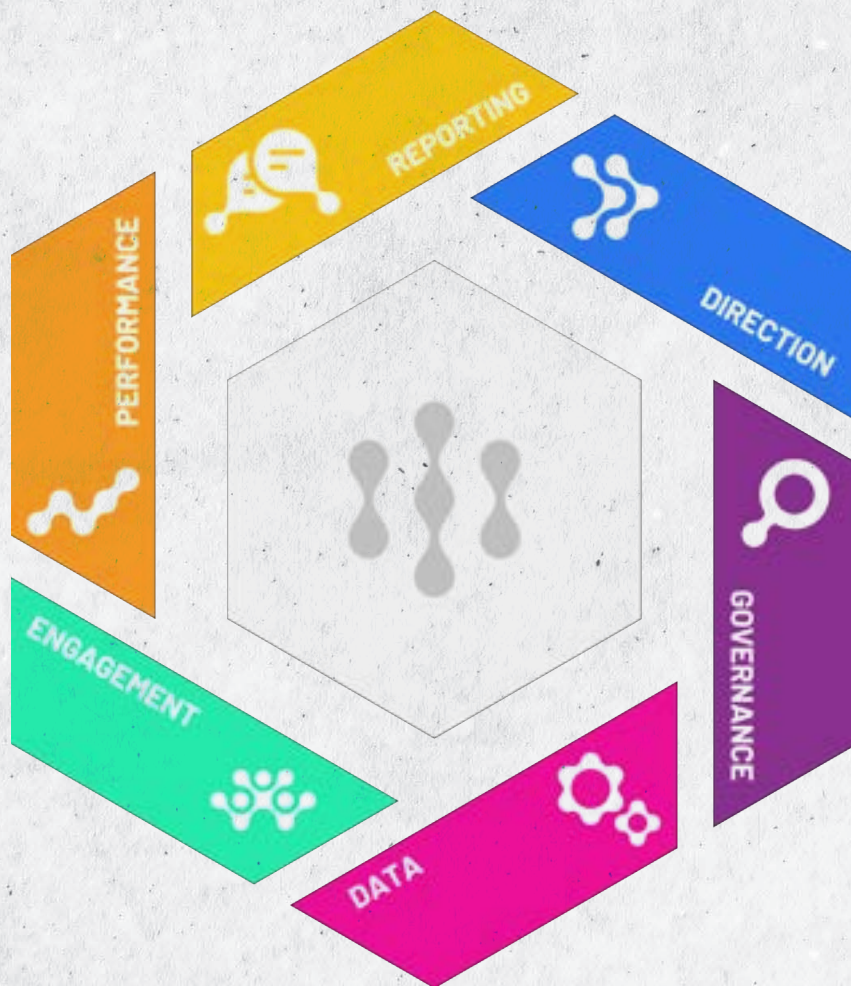
### **Reporting.**

As your net zero programme begins to deliver results, it's important that you improve disclosure on climate related risks and opportunities. Leading companies will embrace transparency and use it to enhance their reputation and drive engagement with customers, investors and employees.



Source: Carbon Intelligence





The insights from ZCF's Net Zero Roadmap for Brewing and Hospitality can be used by individual businesses to plot their own net zero journey. The next section of the guide provides practical steps and guidance for how to get started. We've split the approach into six phases:

- 1. Measure your emissions footprint:** Determine your emissions boundary and calculate your Scopes 1, 2 and 3 emissions footprint.
- 2. Set your ambition:** Set an ambitious science-based decarbonisation target, aligned to 1.5C with 'quick-win' and 'strategic milestones.'
- 3. Build a decarbonisation roadmap:** Use the ZCF net zero roadmap and your customised member action plans to identify initiatives to achieve your target.
- 4. Collaborate:** Work together with organisations across the sector to drive change at scale, share best practice, and collaborate to achieve net zero faster, and drive greater impact.
- 5. Develop a credible removals strategy:** Develop a strategy to compensate or remove residual carbon emissions on your journey towards net zero.
- 6. Approval, validation & launch:** Engage your stakeholders to announce your net zero commitment and roadmap.

Source: Carbon Intelligence



# Measuring your emissions footprint.

The first step in developing a net zero strategy is to measure your business' emissions footprint and define the emissions activities to include in your net zero targets. The boundary should be ambitious and aligned to established standards as a minimum, such as the SBTi's requirements. It is important to note that the definition of corporate net zero targets is evolving simultaneously with climate science to increase ambition levels and reflect the urgency of the climate crisis.

Businesses should look to include 100% of Scopes 1, 2 and 3 emissions in their net zero boundary when confidence in emissions data is sufficient. At a minimum, we would expect to see 100% of company-wide Scopes 1 and 2 emissions and at least 67-95% of Scope 3 emissions, which is inline with the current criteria for science-based targets.



## How to get started:

In addition to engaging with and driving action through the Zero Carbon Forum, individual member companies can further tailor and implement your own strategies. We'd recommend you:

- + Join the forum to align on how to measure and report GHG emissions.
- + Define your organisational GHG emissions boundary.
- + Define your operational GHG emissions boundary by including all Scopes 1 and 2 GHG emissions and carrying out a Scope 3 gap analysis exercise.

- + The Scope 3 gap analysis exercise should involve the following:
  - A screening exercise to assess the relevance of each of the 15 Scope 3 emissions categories;
  - This is typically based on five criteria - size of emissions, influence, risk, stakeholder interest, and sector guidance;
  - Estimation of Scope 3 emission categories deemed to be relevant, using benchmarks and proxy data where accurate data is not available;
  - Identification of next steps to improve data quality and completeness for relevant emissions sources.
- + Calculate Scopes 1, 2 and 3 emissions for all six greenhouse gases in tonnes of CO<sub>2</sub>e.
- + Invest in data management systems to streamline data collection and reporting of emissions on a quarterly basis.



## Overcoming Data Barriers.

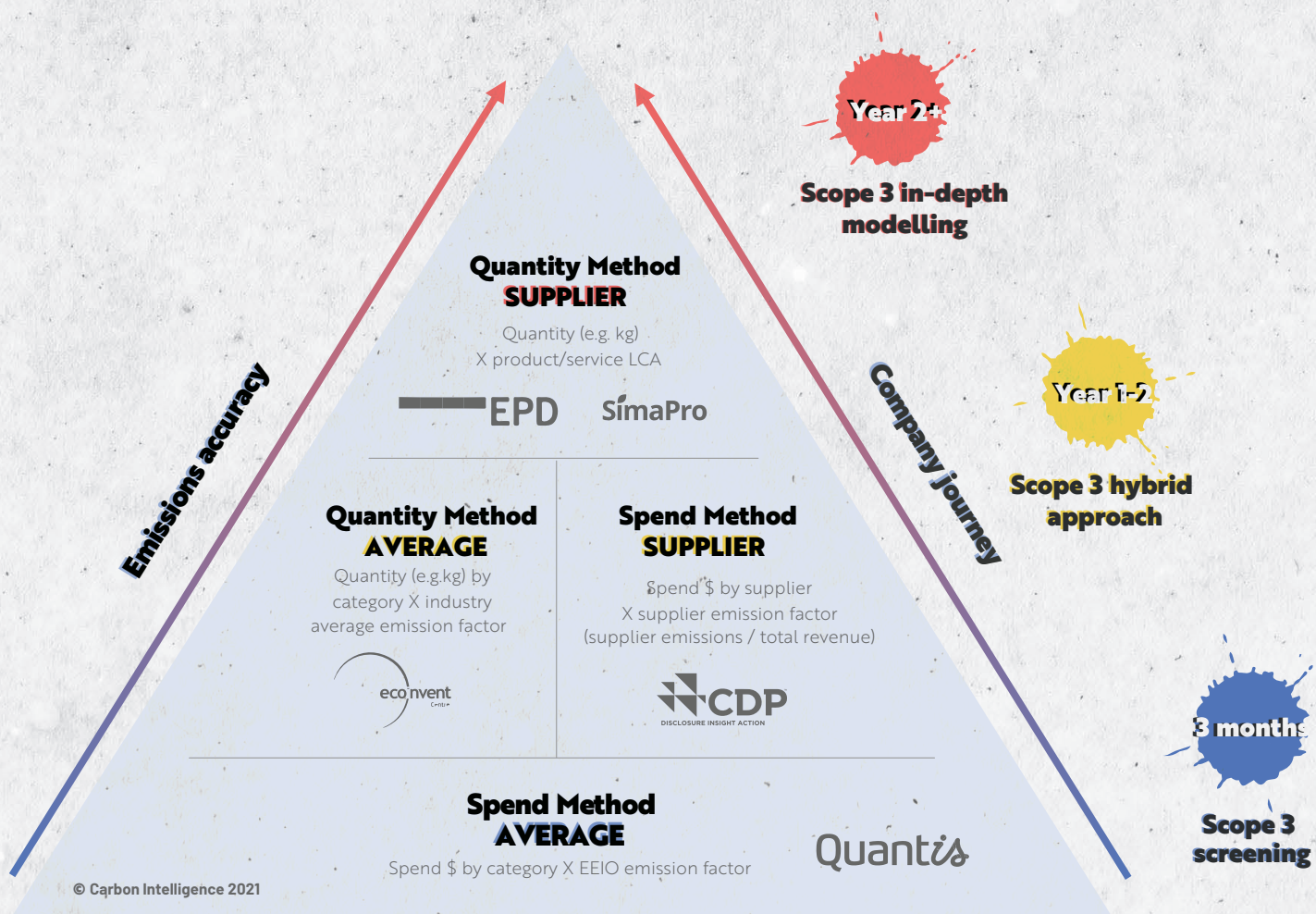
Many businesses who are starting on their net zero journey may lack the data needed in order to build a robust emissions footprint. Some of the common challenges to overcome include:

- + Knowledge gaps on emissions reporting internally and across the supply chain;
- + Lack of resources internally to manage data collection;
- + Heavy reliance on estimates for Scope 3 emissions.

It is important to remember that emissions accounting practices are relatively immature compared to other forms of accounting e.g. financial. Therefore the forum expects high levels of estimations initially, particularly in Scope 3, as awareness and data processes improve.

When embarking on calculating your company's emissions footprint, we recommend prioritising those categories that are known to be relevant for your sector. For example, use the ZCF sub-sector emissions profiles to identify emission hotspots and build data collection and calculation processes to improve the coverage and accuracy of data in these areas.





**Example data hierarchy for purchased goods & services**

Source: Carbon Intelligence

A category that is material for all hospitality and brewing sector businesses is purchased goods & services. The diagram below shows the typical data journey a business may take to improve data accuracy for this category.

In the beginning, we expect forum members to conduct analyses with spend-based procurement data, starting at the least granular level of the data hierarchy. This allows companies to quickly identify and prioritise the greatest sources of emissions within purchased goods and services.

As members identify key suppliers and engage with them to source supplier-specific data, this will facilitate more granular visibility of their Scope 3 footprint and allow them to move up the data hierarchy.

Many members may feel like they are behind on their Scope 3 emissions accounting, but the entire industry is grappling with the same data challenges. Collectively, we can overcome these challenges by engaging across our shared supply chains, supporting suppliers to provide better data, and set their own net zero ambitions.





# Set your ambition.

Once your business has a robust emission baseline, the next priority is to reduce Scopes 1 and 2 emissions on an absolute basis as quickly and comprehensively as possible. Then you'll want to engage with your organisation's supply chain and customers to reduce Scope 3 emissions.

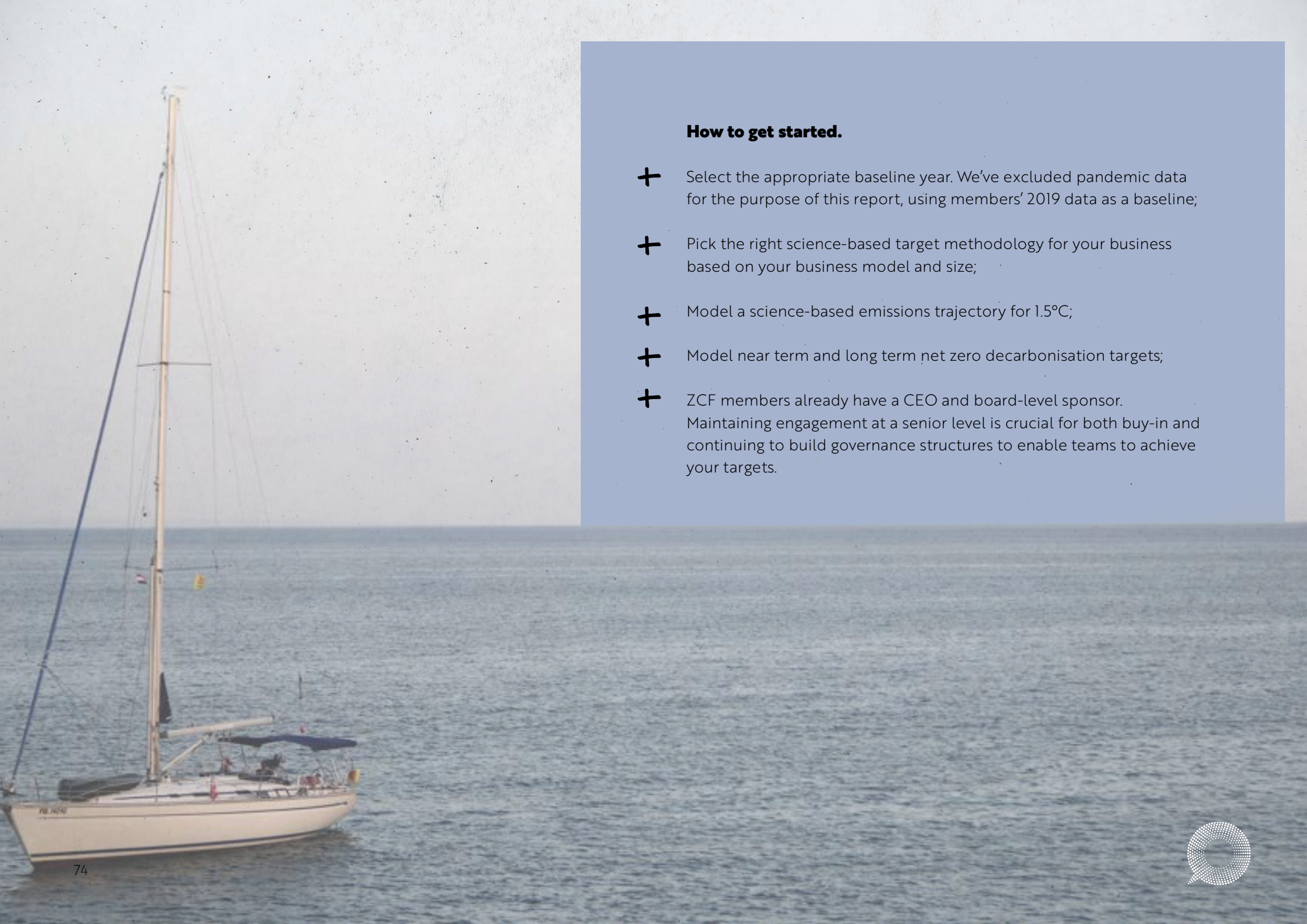
The level of decarbonisation recommended in this report for the brewing and hospitality sector is 90% absolute reduction in Scopes 1 & 2 emissions by 2030, and between 57% - 78% absolute reduction in Scope 3 emissions by 2040. The lower reduction required in Scope 3 emissions reflects the complexities of reducing value chain emissions where the level of influence can vary and supply chain sectors may be harder to abate, like agricultural related emissions.

Businesses can choose to split these targets into short-term milestones to create momentum and internal accountability. For example, splitting the 90% Scope 1 & 2 reduction into a ~10% absolute reduction year on year goal. Short-term milestones will vary depending on your business plans and timing of decarbonisation initiatives.

These reduction targets are aligned with the latest net zero corporate guidance which is under development by the Science Based Targets initiative. The hospitality sector can use them as a guide for the level and speed of decarbonisation required to set ambitious net zero strategies.

To continue to stay aligned with the latest climate science, we recommend that individual businesses within the hospitality and brewing sector set corporate level science-based decarbonisation targets, aligned with a 1.5C trajectory, including near term and long term milestones.





### **How to get started.**

- + Select the appropriate baseline year. We've excluded pandemic data for the purpose of this report, using members' 2019 data as a baseline;
- + Pick the right science-based target methodology for your business based on your business model and size;
- + Model a science-based emissions trajectory for 1.5°C;
- + Model near term and long term net zero decarbonisation targets;
- + ZCF members already have a CEO and board-level sponsor. Maintaining engagement at a senior level is crucial for both buy-in and continuing to build governance structures to enable teams to achieve your targets.



# Build a decarbonisation strategy.

After setting your ambition and the level of decarbonisation required, the next step is to build a roadmap of emission reduction initiatives.

## Financing net zero.

Achieving net zero through investments in emission reduction projects can present significant costs to a business. Setting an internal carbon price is becoming the new normal for businesses to help fund the transition to net zero. In 2020, more than 2000 companies were using an internal carbon price, an increase of 80% in the last 5 years. An internal carbon price can act as a useful decision making tool to help companies realise cost savings, manage risks, drive innovation, and demonstrate readiness for net zero.

**Example:** Unilever has implemented an internal carbon price which acts as a tax on each business division, holding them financially responsible for reducing corporate carbon emissions. The internal carbon fee has risen from \$30 to \$50 per tCO<sub>2</sub>e over the past few years. The tax is applied to manufacturing operations and subtracted from the capital budgets allocated to each business division at the start of the year. That money goes towards a Clean Technology Fund - worth about 50 million euros - which is used to support installation of clean technologies at Unilever sites. Business divisions can bid for projects that meet defined emission reducing criteria and the best projects go ahead. Unilever has found that by applying the internal carbon tax and engaging teams on applying for funding, they have uncovered new technologies they haven't previously considered or were aware of. For example, a new type of biomass boiler or advanced refrigeration technology.



### **How to get started:**

- + Review the ZCF Net Zero roadmap for your sub-sector;
- + Assess current emission reduction projects and identify potential new projects;
- + Collaborate and align across the sector to create economies of scale and identify efficiencies;
- + Build investment business cases for quick-wins and longer term strategic projects;
- + Assign responsibility for emission reduction projects and create governance structures to oversee progress;
- + Invest in a data management system to track emission reductions at project level, and overall progress towards net zero;
- + Implement a carbon pricing mechanism to help fund emission reduction activities.



# Collaborate.

Achieving net zero is too complex to tackle alone, collaboration will be crucial. We need to work with our peers, industry experts, policy makers, suppliers and our customers to innovate and drive change. Together, we can revolutionize hospitality and make net zero a reality.

## How to get started:

- + Join the forum;
- + Share learnings and successes with peers;
- + Collaborate to innovate and act on key emission hotspots.



# Develop a credible removals strategy.

Once the emission reduction pathway has been defined, the extent of the carbon removals required to neutralise remaining emissions to zero will become clear. It is vital that companies first aim for deep decarbonisation across Scopes 1, 2 and 3 before turning to carbon removals.

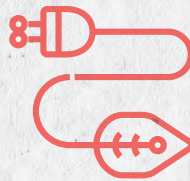
**There are four areas to consider when building a credible removal strategy:**

## Geography:



- + **Local vs international;**
- + **Areas of operation or location of key suppliers;**
- + **Developing vs developed.**

## Project Type:



- + **Removal or avoidance/reduction projects;**
- + **Verification standard.**

## Co-benefits



- + **Alignment to the UN Sustainable Development Goals;**
- + **Societal or environmental benefits;**
- + **Promotion innovation;**
- + **Mitigation and adaptation against climate change.**

## Cost



- + **Current prices;**
- + **Funding options;**
- + **Setting an internal carbon price.**

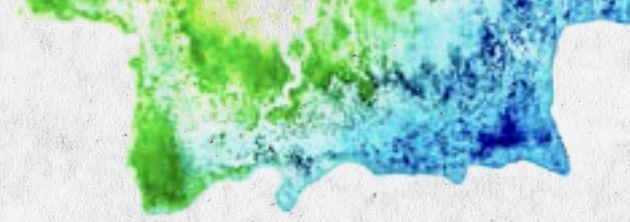


## **The difference between carbon removal and carbon avoidance or reduction offsetting credits.**

To achieve net zero at the corporate level, businesses must first reduce value chain emissions in line with levels of reduction required to limit warming to 1.5C. This is the reductions pathway. Organisations must then neutralise the impact of residual, or unavoidable emissions by permanently removing an equivalent volume of atmospheric carbon. This is a business' removals pathway. A net zero strategy must consist of both.

The table below outlines the carbon removal measures which are currently available to hospitality sector businesses to achieve net zero. The second half of the table describes carbon avoidance and reduction offsetting measures that businesses can use to compensate for emissions on the journey towards net zero.





Project Type	Project Category	Activity	Description	Current Average Price (USD \$/tCO <sub>2</sub> e) <sup>1</sup>	Net Zero Alignment
<b>Carbon Removal</b>	Nature based	Nature-Based Solutions (NBS)	Activities that naturally sequester carbon, such as tree planting through afforestation or reforestation. Most widely available and commonly used in corporate strategies.	\$10 - \$30 - depending on location	To achieve net zero businesses must neutralise residual emissions with equivalent carbon removals.
	Technology based	Bioenergy with Carbon Capture Storage (BECCS)	Harvesting the carbon and storing it geologically by burning the plants to produce bioenergy combined with carbon capture and storage.	\$600 - \$1000 - technology is in early stages. It is expected that this cost will come down to \$100-300 in the future.	
		Direct Air Carbon Capture (DACCS)	Direct Air Capture is a technology that captures carbon dioxide directly from the air with an engineered, mechanical system.	\$600 - \$1000 - technology is in early stages. It is expected that this cost will come down to \$100-300 in the future.	
<b>Carbon Avoidance / Reduction</b>	Nature based	Avoided deforestation (REDD+)	Protect and conserve existing forest land threatened by deforestation.	~\$4	On the journey towards net zero, businesses can choose to compensate for residual emissions by investing in offsetting projects that help avoid or reduce emissions outside the company's value chain.
		Other nature-based such as blue carbon	Conservation and restoration of coastal ecosystems.	~\$4	
	Technology based	Energy efficiency or fuel switching	Implement energy saving measures and replace fossil fuels with sustainable energy sources.	~\$3.5	
		Renewable energy generation	Renewable power infrastructure that contributes to decarbonise the local power grid, avoiding GHGs.	~\$2	
		Land or waste management	Reduction in landfill gas or methane through interventions.	~\$4	

<https://www.greenpeace.org.uk/wp-content/uploads/2021/01/Net-Expectations-Greenpeace-CDR-Briefing-updated2.pdf>  
<https://www.forest-trends.org/wp-content/uploads/2019/12/SOVCM2019.pdf>





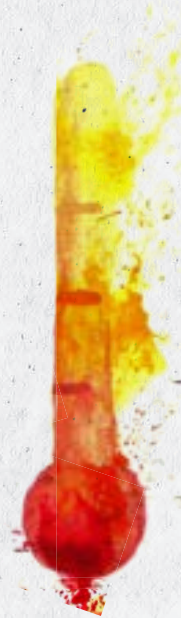
## Offsetting vs insetting.

Insetting is the term used to describe a carbon reduction project, verified by an offset standard, which occurs within a company's supply chain<sup>4</sup>. Companies who choose to invest in insetting within their supply chains are able to capture carbon and other socio-economic and environmental benefits that can improve supply chain resilience. However, project set-up and ongoing verification can require significant investment.

The definitions of insetting vary, as do the accounting approaches, making it difficult for businesses to understand how to incorporate insetting within their net zero strategies. Because of this, the SBTi recommends businesses take a conservative approach in relation to insetting whilst work is going on to standardise the definition and develop clear accounting methodologies. The SBTi recommends to only include emission reductions or removals from insetting projects that use a corporate accounting approach and are wholly contained within the reporting company's supply chains.

<sup>4</sup><https://www.icroa.org/Insetting>

Action!



## Credible offsetting approach.

We recommend businesses use the principles defined by The [University of Oxford](#), [The GHG Management Institute](#), [SBTi](#), and [WWF](#) for ensuring a credible offsetting approach.

### Summary of key credibility principles:

- + A robust determination of the GHG emissions' impact on the project.
  - The project can prove that the mitigation activity wouldn't have taken place in the absence of carbon credits and the added incentive created by the carbon credits led to implementation of the mitigation activity.
  - Robust quantification to a internationally recognised standard e.g. VCS or Gold Standard.
- + Strong institutional arrangements and processes of the crediting program.
- + Good overall programme governance with transparent processes.
  - Robust 3rd party auditing.
  - Stakeholder consultations to ensure transparent decision making.

- + Avoidance of double counting.
  - Avoiding that the same emission reduction or removal is used more than once to achieve climate targets or goals.
- + Addressing non-permanence.
  - Avoiding or compensating for a situation where the emissions reductions or removals generated by the project activity are later reversed, for example due to a natural disaster or project mismanagement.
  - Ensuring risk assessments and established liability for reversal will stop non-permanence.
- + Engaging positive environmental and social impacts.
  - Projects that avoid adverse environmental or social impacts on local stakeholders and communities, such as violations of human rights, and generate benefits beyond reducing GHG emissions, such as reducing air pollution.
  - Projects will ensure adaptation and resilience to support the poorest and most vulnerable.



## How will the cost of offsetting change?

Offsetting projects will often have a range of attributes that will influence their price. Since the current market pricing is extremely opaque, the average price of an offset on the voluntary market is only visible on an annual basis. In 2019, carbon prices on the voluntary market ranged from \$1/tCO<sub>2</sub>e to over \$70 / tCO<sub>2</sub>e, with an average price of \$3-6 / tCO<sub>2</sub>e for all offsets including reduction and avoidance projects<sup>5</sup>. The current price of offsets are unsustainably low, due to an excess of supply built up over several years, and need to increase significantly to encourage greater investment in new projects that remove carbon from the atmosphere.<sup>6</sup>

<sup>5</sup> Voluntary Carbon Market Insights: 2018 Outlook and First-Quarter Trends - Forest Trends (forest-trends.org) The Only Constant is Change, State of the Voluntary Carbon Markets 2020, December 2020, Ecosystem Marketplace

<sup>6</sup> <https://trove-research.com/wp-content/uploads/2021/06/Trove-Research-Carbon-Credit-Demand-Supply-and-Prices-1-June-2021.pdf>



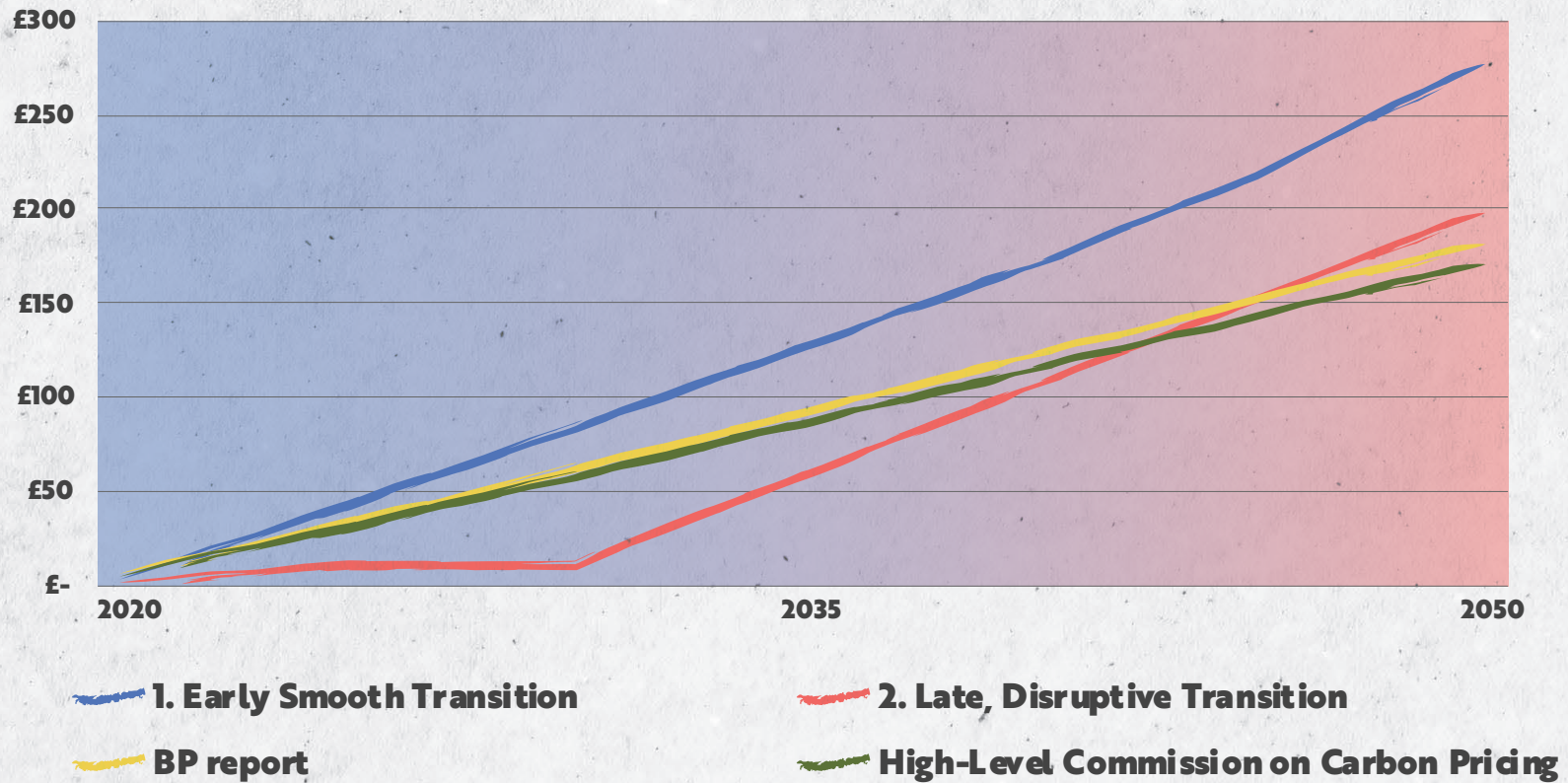
## Attributes that affect offsetting price:

<b>Value beyond carbon</b>	Prices of projects that contribute to a broader range of sustainable development goals can be higher to allow for additional certification investment. For example, the Gold Standard Fairtrade Scheme.
<b>Size and location</b>	Size and location play a role in project pricing. For example, smaller projects may be more expensive to implement per tCO <sub>2</sub> e. In addition, some countries may also find it more difficult to implement projects resulting in higher prices.
<b>Quality</b>	High quality offsets certified to credible standards tend to be more expensive due to extra costs for robust validation checks.
<b>Economies of scale</b>	Purchasing large quantities of carbon credits in one go can reduce prices, as project developers are able to sell at a discounted price.
<b>Partner fee</b>	Procuring offsets through a partner or broker will impact price. For example, some partner companies charge higher % admin fees.

In the future, the price of offsetting is expected to increase significantly due to increased demand for removal offsets from businesses looking to meet their net zero commitments. This will help incentivise investment in climate action to support the protection of existing forests and restore degraded habitats, whilst scaling up other technologies that can remove carbon from the atmosphere. Hospitality and brewing businesses should plan for substantially higher carbon offsetting prices in the future and therefore double down on efforts to reduce absolute emissions to near zero as a priority.



## Future cost of carbon.



Created by Carbon Intelligence, data is sourced from industry research.

Sources:

<https://www.ngfs.net/en>,

<https://www.bp.com/en/global/corporate/energy-economics/energy-outlook/introduction/overview.html>

[https://static1.squarespace.com/static/54ff9c5ce4b0a53deccfb4c/t/59244eed17bffc0ac256cf16/1495551740633/CarbonPricing\\_Final\\_May29.pdf](https://static1.squarespace.com/static/54ff9c5ce4b0a53deccfb4c/t/59244eed17bffc0ac256cf16/1495551740633/CarbonPricing_Final_May29.pdf)



### **How to get started:**

- + Confirm the volume of GHG emissions that you'll need to offset at the end of your reductions pathway, to achieve net zero;
- + Agree on the timelines for investing in carbon removals;
- + Identify the potential for insetting in your value chain;
- + Using the considerations listed above, establish criteria that will be used to assess and prioritise options for carbon removals;
- + Implement carbon pricing mechanism to help fund carbon offsetting / insetting activities.



# Approval, validation and launch.

The final steps in developing a credible net zero strategy are to:

- Obtain internal approval from senior management for the proposed net zero ambition and decarbonisation roadmap;
- Optionally seek external validation of the decarbonisation target. For example, from the SBTi. More guidance on how to do this is available from the [SBTi website](#);
- Publicly announce your net zero strategy to your investors, suppliers, customers, and employees.



# Case studies.

While many businesses are just starting out on their net zero journey, some companies within the Zero Carbon Forum have been forging paths that others can follow. Below you will find some examples of companies leading the way in the UK brewing and hospitality sector, whose experience, learnings, and expertise are a part of the Zero Carbon Forum. They all have joined forces with each other in the forum to work together, learn from each other, and collaborate to do better.

NO<sup>23</sup> EARTH  
NO business.





# Nando's: Every meal counts.



## **Nando's objectives:**

Nando's has committed to ambitious science-based targets while improving chicken welfare; a first for the restaurant industry. Nando's will achieve this goal through an absolute reduction in emissions, as opposed to through carbon offsetting.

## **Nando's project:**

The restaurant chain will commit to reducing direct emissions to absolute zero by 2030, building on a 40% reduction in its carbon footprint since 2015. A large part of their target-setting process involved modelling various future scenarios of what would happen to Scope 3 emissions if the Nando's team made certain business decisions. For example, switching some of the menu to plant-based options, moving to a higher welfare chicken, or working with their suppliers to encourage them to set SBTs.

The team held modelling workshops with senior management to agree on the level of ambition for their SBT. This stage was crucial to educating and equipping the team at Nando's with the tools needed to drive the programme forward and achieve success. The targets were then finalised and submitted to the SBTi for approval.

## **Nando's Impact:**

The footprint of a Nando's meal will be reduced by almost 50% by 2030 through increasing plant-based menu options and supporting suppliers to reduce their carbon footprint and set science-based targets. Nando's will also commit to 100% renewable gas in all restaurants by 2022 and have signed up to the Better Chicken Commitment to improve long-term chicken welfare.



# St. Austell: Brewery decarbonisation.

## **St Austell's objectives:**

The objective of St Austell is to become one of the UK's greenest brewers.

## **St Austell's project:**

St Austell's has partnered with supplier Bio Carbonics and managed to secure a local, renewable CO2 supply for their beer production. Bio Carbonics generates green CO2 from maize grown in the southwest - they break down maize naturally via a process called anaerobic digestion to produce the gas needed.

## **St Austell's Impact:**

The new supply of green CO2 is not only renewable but also sourced within the proximity of the brewery, therefore having a double impact: fewer road miles and clean CO2 as opposed to relying on ammonia or other chemical processes that burn fossil fuels.





# Burger King UK: Supplier engagement.

## **Burger King UK's objectives:**

Burger King UK has committed to reducing absolute Scopes 1 and 2 greenhouse gas emissions 100% by 2030 from a 2019 base year and Scope 3 greenhouse gas emissions from purchased goods and services, capital goods, upstream transportation and distribution, waste and franchises 41% per restaurant by 2030 from a 2019 base year.

## **Burger King UK's project and impact:**

Burger King UK has outlined a three-fold collaborative approach to achieving their target. They've pledged to work with their suppliers, supporting them to reduce their own carbon footprints.





# Pizza Hut Restaurants: Reducing food waste and increasing plant-based choices.

## Pizza Hut Impact:

Every little bit counts for an effective GHG reduction strategy. This is true for Pizza Hut Restaurants, who have seen an 80% reduction in kitchen and operational food waste since 2010, about a 99% ratio of waste diversion from landfill segregated into glass, mixed recycling, and food waste.

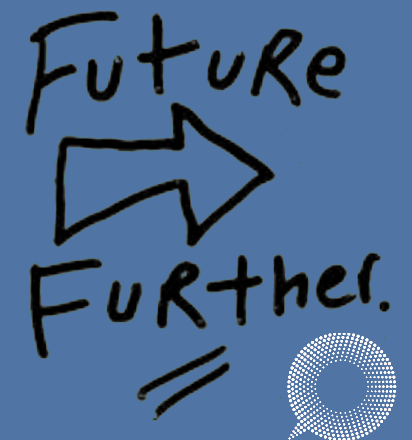
Below are just a few of the examples of small changes that Pizza Hut Restaurants have implemented that have contributed to their overall reduction in emissions:

- Since 2011, Pizza Hut Restaurants has seen a 23% reduction in gas kWh per restaurant "hut" per year, amounting to 45% in absolute gas tCO<sub>2</sub>e reductions. This has been thanks to the replacement of equipment, while also outfitting 25% of their estates with heat pumps for water heating and electric air conditioning instead of gas boilers. They plan to convert as much of the estate as possible over the next decade.
- Pizza Hut Restaurants has purchased renewable electricity since 2012, and over that time have replaced all lighting with LEDs. Where necessary, equipment has been updated to more energy efficient models. These changes have run in parallel to operational policies, furthering energy reductions.

- To minimise inbound purchasing supply, the company removed plastic straws and reduced packaging, while also switching from glass to 100% recycled PET Belu bottles to reduce emissions.
- Pizza Hut Restaurants has committed to increasing plant-based items and options on their menu. For example, cheesecake no longer includes dairy, and their partnership with Violife since 2017 gives customers the opinion to top pizza with a non-dairy cheese. In 2019 they launched 'Pepperphoni', a meat-alternative pepperoni. Pizza Hut Restaurants continue to develop plant-forward choices for their menus.
- Further, Pizza Hut Restaurants has removed almost all need for palm oil in food products and purchase only RSPO certified segregated palm oil if required.
- Pizza Hut Restaurants is making a concerted effort to source ingredients locally from the UK. All Pizza Hut Restaurant dairy is from the UK, and they have actively engaged dairy suppliers in on-farm emissions reductions.



# Appendix.



# Glossary.

For a condensed guide on the terms used throughout this document, plus applicable terms that will be encountered on your net zero journey, we recommend reading the UN's Race to Zero glossary which you can find [here](#).

The UN Race To Zero is a global campaign to rally leadership and support from businesses, cities, regions and investors towards net zero. The glossary has been developed by the Race to Zero Expert Peer Review Group, which comprises scientific and technical net zero experts and practitioners from around the world.



# Methodology.

## Emissions profiles.

**Data collection:** Activity data for 2019 reporting year was captured from volunteer members across the five hospitality sub-sectors. Standard data collection templates were used to capture data across Scopes 1, 2 and 3 emission sources. Follow up calls were held with members to answer questions and support the data gathering process.

**Member emissions calculations:** All emissions calculations follow the GHG Protocol Corporate Standard, which is the most widely used international standard for GHG reporting. The team at Carbon Intelligence applied the best available emission factors based on the activity data provided to calculate Scopes 1, 2 and 3 emissions. In total, 12 ZCF member companies provided raw data across the 5 sub-sectors. In addition, Carbon Architecture provided aggregated Scopes 1 and 2 data for Pubs and Breweries. The quality and coverage of the data provided by members varied considerably. This was expected as ZCF members are at different stages in their net zero journey. Any significant anomalies in the data were identified and queried with volunteer members.

**Aggregated sector averages:** To allow for comparisons between sub-sectors, a weighted emissions intensity based on revenue was calculated for Scope 1, 2 and 3 using a combination of the member emissions data and CDP emission data sets. The CDP emission data provides emissions intensities by company and sector. The data has been cleaned by CDP to increase accuracy and reliability. For example, they apply various estimation methodologies for missing emission data that is known to be relevant for a particular sector. The CDP data was used to supplement the member data to increase the sample size or reported emissions and provide a more representative view of the emission profile of the different hospitality sub-sectors.



## Emissions profiles.

Emission Category	Emission Factor Source (for Member data only)
Scope 1 & 2	
Scope 1	UK Government GHG Conversion Factors
Scope 2 - Location Based	UK Government GHG Conversion Factors
Scope 2 - Market Based	Supplier specific emission factors
Scope 3	
Category 1 Purchased Goods & Services	Multiple sources depending on emission source and activity data provided Spend data - Scope 3 Evaluator / Quantis Quantity data - Ecoinvent 3.7.1, WRI Cool Food Tool, UK Government GHG Conversion Factors, 3rd party research
Category 2 - Capital goods	Scope 3 Evaluator / Quantis
Category 3 - Fuel- and energy-related activities	UK Government GHG Conversion Factors
Category 4 - Upstream transportation and distribution	UK Government GHG Conversion Factors
Category 5 - Waste generated in operations	UK Government GHG Conversion Factors
Category 6 - Business travel	UK Government GHG Conversion Factors
Category 7 - Employee commuting	UK Government GHG Conversion Factors
Category 8 - Upstream leased assets	Not applicable for members
Category 9 - Downstream transportation and distribution	UK Government GHG Conversion Factors
Category 10 - Processing of sold products	3rd party research for used cooking oil (only relevant to two members)
Category 11 - Use of sold products	Not applicable for members
Category 12 - End-of-life treatment of sold products	UK Government GHG Conversion Factors
Category 13 - Downstream leased assets	UK Government GHG Conversion Factors
Category 14 - Franchises	UK Government GHG Conversion Factors
Category 15 - Investments	Not applicable for members





## **Decarbonisation projects & sub-sector pathways:**

Workshops were held with ZCF members to explore emission reduction opportunities across Scopes 1, 2 and 3 emission sources. The feedback from these sessions was combined with desk-based research from Carbon Intelligence to develop a comprehensive list of potential emission reduction projects for the brewing and hospitality sector. Reductions have been grouped into short-term quick wins that can be implemented relatively easily, and long-term strategic projects that will require more planning and effort. The relative investment cost is also shown for each reduction: low (£), medium (££) and high (£££). Some reductions have interactive effects, for example local/sustainable food sourcing can impact the reduction from menu changes. These interactions are accounted for to ensure no double-counting.

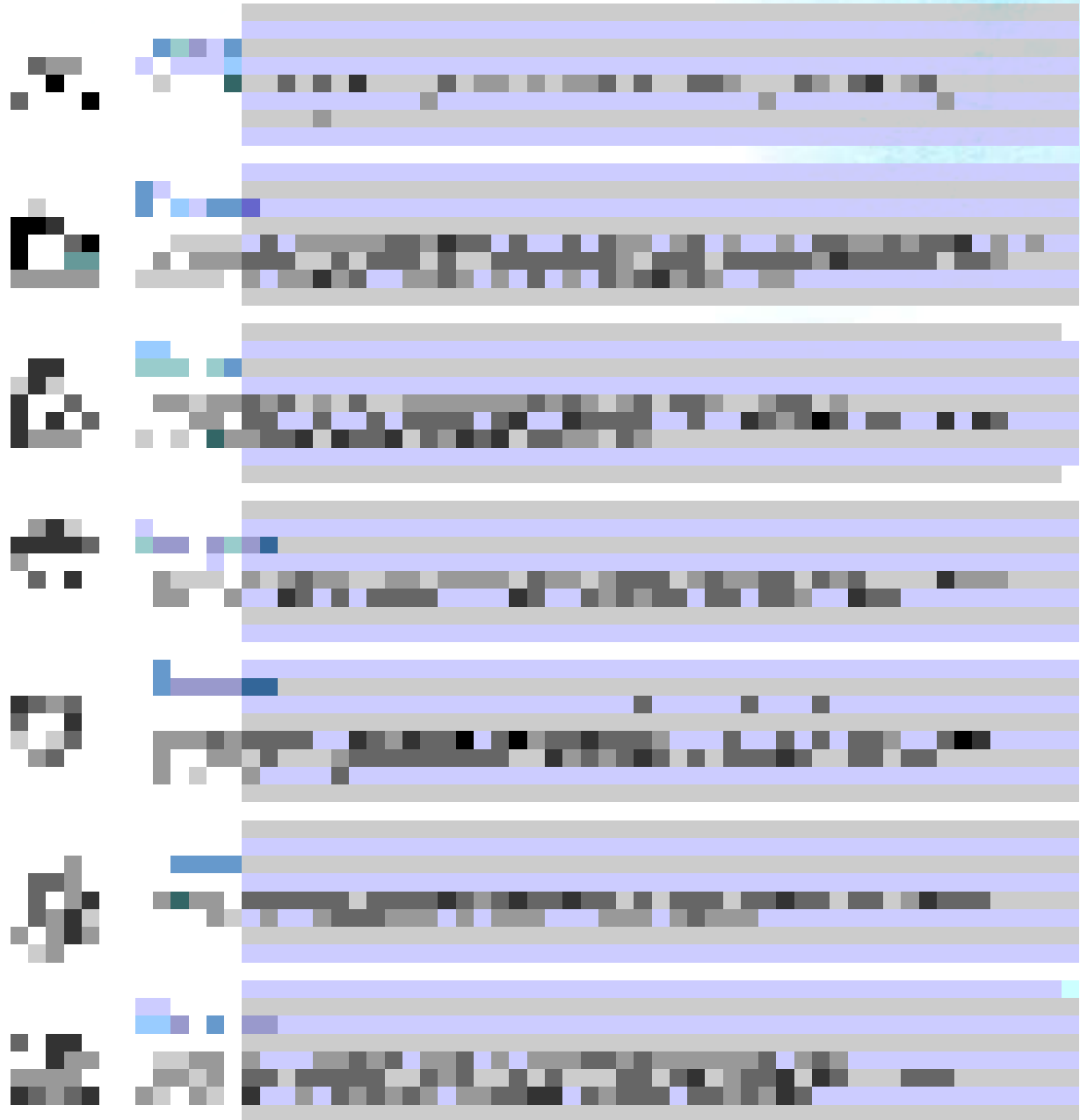
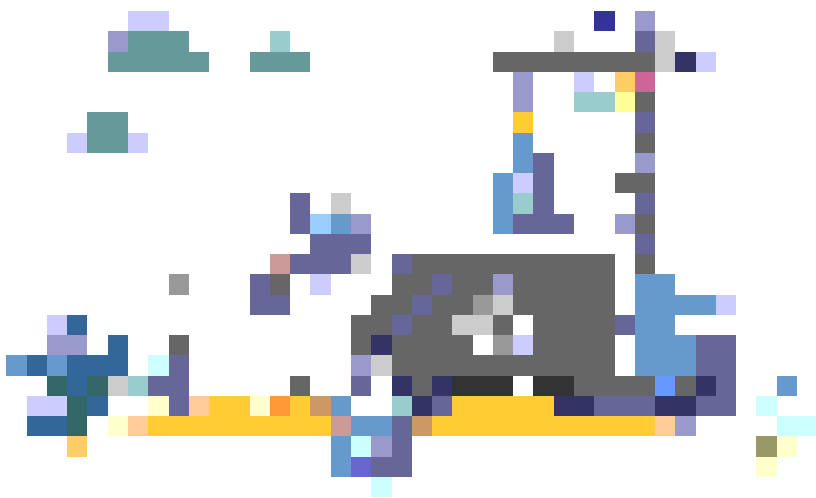


Food and drink  
Food and drink

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**References:**

EPA Food Hierarchy <https://www.epa.gov/sustainable-management-food/food-recovery-hierarchy>

Applying the waste hierarchy: A guide to Business, WRAP, 2017: <https://www.wmba.co.uk/app/uploads/2017/06/wrap-applying-waste-hierarchy.pdf>

'Upstream Innovation: a guide to packaging solutions': Ellen MacArthur Foundation: <https://plastics.ellenmacarthurfoundation.org/upstream>

# Example letter for approaching suppliers on net zero.

If you are just getting started on your net zero supplier engagement journey, the template below can be used to make the connection with your suppliers to inform them of your plans whilst helping them understand what information your business needs.

"Dear [Supplier],

We are delighted to inform you that [Company Name] has committed to reducing our in-house (Scope 1 and 2) and supply-chain based (Scope 3) emissions to reach Net Zero in line with SBTi best practice and the GHG Protocol. Our commitment will result in a reduction in our overall environmental impact, improved stakeholder satisfaction, and a more sustainable and efficient business model leading to better outcomes for our employees, customers and the environment.

We have found that much of our emissions sources come from our supply chain, and specifically, from many of our suppliers. We would like to work with [Supplier] to better understand how we can work together to tackle our emissions by collaborating to reduce your business' carbon footprint as well. We hope that you will be willing to help us reduce waste, emissions, and energy consumption wherever possible, which could also lead to improved processes and reduced costs. We see a mutual benefit for both parties, and feel confident that this collaboration will result in more sustainable practices and strong relationships between our companies.

Specifically, we would like to better understand:

- Any initiatives your company has taken to reduce waste or emissions, and any future plans?
- Are you willing to collaborate with us on our emissions reduction journey to Net Zero?
- Has your company ever calculated its greenhouse gas (GHG) emissions?
- Are you able to provide us with your Scope 1 and 2 emissions data?
- Are you able to provide us with any of your Scope 3 emissions data?
- Have you committed to a Science-Based Target to reduce your GHG emissions?
- Do you report to CDP?

If you would like to join us on this journey, we would be happy to speak with you about this mutually beneficial opportunity.

Thank you for helping us reduce our environmental impact. Please do get in contact if you have any questions.

Sincerely,  
[Company Name]"



**“The future will be green, or not at all.”**

**- Sir Jonathon Espie Porritt**

