



TOAST

HERE'S TO CHANGE

**IMPACT REPORT
2022**

OUR MISSION IS TO BREW GREAT BEERS AND SPREAD BIG IDEAS THAT CAN CHANGE THE WORLD.

The food system is one of the biggest contributors to climate change and biodiversity loss, but one-third of all food is wasted.

We're here to change that.

We brew with surplus bakery bread and all our profits go to charities fixing the food system.

We empower our community of beer lovers to take positive action for people and the planet.

We hope our annual Impact Report prompts conversations, over a beer.



Read All About It!

4 - 5

IMPACT IN CONTEXT

6 - 9

IMPACT BUSINESS MODEL

10 - 13


OUR BHAG & PARTNERS

14 - 23

CARBON FOOTPRINT

24 - 26


NET ZERO STRATEGY




Waste bread from Co-op Group suppliers turned to beer under new partnership

Hazy Pale Ale, from will use half a tonne instead of barley

By Miles Hadfield 26 July 2022





UPCYCLING BREAD INTO BEER

By B Lab UK


10 great recycled products - in pictures

Tennis balls, plastic, gold, bags, jeans. Finding new life in old stuff on Global Recycling Day

Header image: Photograph: Raj Tent Club


"To change the world, you've got to throw a better party than those destroying it"

Celebrating 1,000 B Corps at the Natural History Museum, 24th November 2022



TOAST ALE SECURES £2M TO CONTINUE FOOD WASTE FIGHT IN BEER CATEGORY

By Edward Devlin | 13 December 2022



FOOD&DRINK

10 MARCH 2022

HOW TO SELL TO CONSCIOUS CONSUMERS

No longer a niche audience, conscious consumers are taking up an increasing market share, and the fine food sector is well placed to capitalise in the growth, as Rachael Perrett discovers

Value and accessibility

With an ever-expanding responsibility for the attention of shoppers today, how can you best use your knowledge and resources to attract conscious consumers without alienating others? It's all an important question to consider your target audience, keeping in mind that conscious consumers are not a homogeneous group, but rather a collection of individuals with different values and priorities.

Meet the producer

"The environmental savings are vast"

Rob Wilson and the team at Toast Ale make beer from bread that would otherwise be thrown away

"Bread is one of the biggest contributors to food waste in the UK - more than 40% of the bread made ends up going to waste," says Rob Wilson (left). "So when our founders, Tricia and Simon, who is a food waste campaigner, wanted a beer made from bread, he realised there was a great way to do something about that, and that's how Toast Ale was born."

"We get the bread from sandwich manufacturers - it's bread that they don't use, and it's actually cheaper for them to give us the bread free than to pay to dispose of it as commercial waste. The rest of the carbohydrates and so on it's just a kind of the stuff that they would usually use to feed."

"The savings it makes environmentally are vast. We're not using the barley and we're not using the malt, so we use less water, land and energy and reduce the carbon emissions."

"We know from the start that it had to be good beer, and just a good story - we're motivated by our mission. But when the beer tastes good and makes people want to come back for more, it wasn't the what we want it to be focused on making really delicious craft beer, but of course. We've won awards for our beer, and they always will be blind tastings, where people don't know the story. It's about more than just selling our beer though - if you look at the beer that's brewed in the world and all the bread that's wasted, and matched them together, you could absolutely feed most."

"We want to fundamentally change the brewing industry, so we make our recipe available to home brewers, and collaborate with other brewers around the world. There are now 100 other brewers inspired by what we've done. We want to start a conversation, and that's why we look for that over a good beer."

We would love to hear your views on our 2022 Impact Report. Please get in touch at impact@toastale.com.

OUR PLANET

Once again, 2022 served up plenty of reminders of why we do what we do, and the urgent need for big, bold action.

It was a record-breaking year of climate-related disasters - from intense flooding in Pakistan and the US, to extreme heat in Europe that caused wildfires in France, Greece, Spain and Portugal. In the UK, temperatures passed 40C for the first time.

We are poorly adapted to deal with these climate events, and the consequences are felt disproportionately by communities who are the least responsible. A UK-based [study](#) found that the richest 1% are responsible for the same carbon emissions in one year that the poorest 10% are in a quarter of a century.

The UN's Intergovernmental Panel on Climate Change (IPCC) reported that humans have already permanently changed the climate but that with action we can avoid the worst impacts.

At the COP27 climate conference, an agreement was reached for a \$100 billion loss and damage fund. However, it closed with acceptance that national climate pledges, which countries are off-track delivering, won't meet the Paris Agreement's 1.5 degree target to keep temperatures below critical thresholds.

More positive news came from the COP15 biodiversity summit with a deal agreed to protect 30% of nature by 2030. We now need policies to deliver this. We must rapidly decarbonise our economies AND use natural climate solutions that also protect and restore ecosystems.

At Toast, whilst we work on reducing our scope 3 emissions, we're investing in nature-based solutions to compensate for our emissions. You can read about both strategies in this report.

However, we're part of a bigger system. Individual citizens and businesses can absolutely have a positive impact, but the biggest win will come from our collective work to change the system. Read about our support for system change campaigns and our own theory of change in this report.

OUR ECONOMY

The brewing industry has faced huge challenges over the past few years. Covid19 and the resulting lockdowns removed the on-trade market, then shortages of aluminium cans and cardboard packaging impacted the direct to consumer route.

In 2022, the Russian invasion of Ukraine hugely increased the cost of key inputs, from energy to barley. Supplies of other inputs also continued to be disrupted, including CO2 needed for carbonation (a by-product of fertiliser production) to caustic soda for cleaning (a by-product of plastic production).

Toast's brewing partners at SEB is weathering the storm, and Toast has supported them to invest in building resilience into their business. You can read more about some of the actions being taken in this report.

Our normally buoyant Christmas trading period was affected by train strikes and the cost of living crisis. We're so grateful to our customers who've continued to support our small business and big mission.

We have worked on diversifying our business, with a clear focus on our Big Hairy Audacious Goal - to prevent 1 billion slices of bread from being wasted. This will mean continuing to brew Toast beer, whilst helping others embrace the circular economy.

We closed the year by bringing in £2 million equity investment to help us do this. Investors include the National Geographic Society (the non-profit has supported Toast since its seed round in 2018) and Heineken International who have their own ambitious goals for Net Zero.

We're filled with hope for the future and excited to continue our work delivering positive impact for people and the planet.

Here's to change.

Cheers!

Louisa Ziane

Louisa, Co-founder & Chief Operating Officer

Impact Business Model

Circular Economy



Unlike linear business models that unsustainably take from nature and create waste, we use circular economy principles. We brew with surplus bakery bread that would otherwise be wasted, using 25% less malted barley than other beers. Our spent grain is fed to animals and spent hops are composted to return nutrients to the soil.

Social Enterprise



We aim to make a profit like other businesses, but we use all our profits to create positive change. Our legal constitution specifies that 100% of our distributable profits (min. of 1% of revenue) will go to charities, not shareholders, to fund systemic change.

Certified B Corp



We were the first UK brewery to become a Certified B Corp and are the highest scoring with 111.8 points. This means we meet high standards of verified social & environmental performance, public transparency, and legal accountability (our Articles hold us to our responsibility to all stakeholders).

Equity for Good



Our ownership model is based on our Equity for Good principles, created in 2018. All investors pledge to reinvest any net capital gains in businesses with an environmental mission to ensure value creation does good, not harm. All Toast employees are also owners in the business. There is a golden share to protect Toast's mission.

Carbon Neutral



We measure our full carbon footprint and compensate for emissions by investing in projects that mitigate and drawdown carbon. Most emissions occur in our supply chain so we're working with partners to reduce them as part of our commitment to be Net Zero by 2030.

Collaborative Activism



We use beer to connect people and prompt conversations over a pint. We open-source a recipe for home brewers and collaborate with breweries to inspire and support our industry. We also use our platforms to campaign with others for positive change. Read about some below.

ZERO HOUR
Support the CEE Bill

better business
act



We support the Climate and Ecology Bill to enshrine in law the need to limit warming to 1.5°C and to halt and reverse nature loss by 2030.

Sign up as a business supporter or ask your MP to back the bill at ceebill.uk/askyourmp

We support the Better Business Act to remove shareholder primacy and ensure all UK companies align their interests with those of wider society and the environment.

Join the Coalition at betterbusinessact.org

We support the Fossil Fuel Non-Proliferation Treaty to end expansion of any new oil, gas and coal extraction, and phase out existing production in a manner that is fair.

Sign up at fossilfuel treaty.org

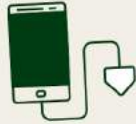
We support Stop Ecocide International's call for the legal recognition of ecocide as an international crime to deter destructive practices, protect Earth's vital ecosystems and catalyse positive system change.

Join at stopecocide.earth

Impact Ripples

SINCE 2016

Our Operations



61 tCO2e
emissions avoided
22.6 million
phones charged



260,000 m2
land freed up
1,330
tennis courts



382,000 Ltrs
water saved
23 years
of daily showers



3,039,204
SLICES OF SURPLUS BREAD

Our Profits



26.8 tCO2
sequestered in
regen ag trials

£106,000
DONATED TO CHANGE
FOOD & LAND SYSTEMS



**RAINFOREST
TRUST®**
·UK·

3 MILLION
trees protected in
endangered forests

Our Influence



14 MILLION
people reached
on social media

1,400
media mentions

3.1 MILLION
PINTS SPREADING
PLANET-
SAVING MESSAGES.



87 BREWERY
collaborations
in 10 countries



3.5 MILLION
slices saved by 70
inspired breweries

85,000
home brewers,
0.7 million slices



What's with all the bread?

Bread is one of the most wasted foods in the UK. About 280,000 tonnes of bread are wasted in the UK every year, approximately 44% of the bread produced.

Sandwich factories discard the loaf heel ends, bakeries overproduce to meet unpredictable demand, supermarkets overstock to keep shelves looking full and hospitality often treats bread as an unvalued garnish.

It is symbolic of a much bigger food waste problem. Globally we waste one-third of all food, about 1.3 billion tonnes, despite the huge amount of land, water and energy used to produce it. In the UK, we waste 15 million tonnes (7.3 billion slices).

Food waste has a carbon footprint of 3.3Gt CO₂e (if compared to countries, it would be the 3rd top emitter after the USA and China), a water footprint of 250 km³ (3 times the volume of Lake Geneva) and a land footprint of 1.4bn hectares (28% of the world's agricultural land area).

And there is growing demand for more land to grow crops for food and animal feed. This is changing land use, from forests that act as carbon sinks to intensively farmed monocultures that pollute soils, water and the air.

We have to reduce overproduction, then redistribute or repurpose any surplus into other foods. Bread is ideal to focus on due to the huge amount of waste and short shelf life making waste prevention difficult. For many industries, including brewing, it's a great replacement for the grains typically used.



What are we doing about it?

So, in 2016 we set ourselves a Big Hairy Audacious Goal:

Prevent 1 billion slices of surplus bread from being wasted.

Typically we use 1 slice per pint, replacing purposely-grown and malted barley, so it was an ambitious goal.

As a micro SME, the goal is not something we can achieve alone. We have always open sourced our recipe, shared our insight to inspire others and collaborated directly with breweries all over the world.

We want to do more to help our industry and other food producers to embrace the circular economy.

We believe we can halve bread waste in line with Sustainable Development Goal 12.3. In the UK, we produce 4 billion litres of beer every year. Replacing 10% of the malt with surplus bread would reduce waste by almost 4 billion slices.

In 2022 we raised equity funding to invest in research and development towards this ambition.

Heineken was one of our investors, and we are working with them to look at the operational implications at scale, and the positive environmental impacts, particularly from a carbon perspective (they aim to be net zero across scope 1 and 2 by 2030, and scope 3 by 2040).

We will publish the results for others to learn from, and will offer solutions that are low-carbon and cost-effective.



BHAG
1 Billion Slices

Charity: Rainforest Trust

We donated over £20,000 to Rainforest Trust UK from our Companion Series in 2021/22. Thanks to everyone who supported that campaign.

The Rainforest Trust and their local partner, Panthera, have established a new 949,290 acre park in the Republic of the Congo. The Ogooué-Leketi National Park will help to protect the forests and grasslands, and provide safety for many iconic species.

Our donation provided funding for the protection of over 3 million trees.

It is critical that we end deforestation this decade to avoid the catastrophic impacts of climate breakdown as well as protecting biodiversity. Protecting this carbon rich forest will positively impact the climate by safely storing over 113 million tons of CO₂e.

We'll continue to root for those protecting our ancient, biodiverse forests.



**RAINFOREST
TRUST®**
·UK·

Find out more at
rainforesttrust.org



Impact Partner: Soil Heroes

We also donated over £20,000 to Soil Heroes and Weston Park Farm in Hertfordshire from our Companion Series in 2021/22.

The donation funded a trial of companion cropping - the sowing of legumes (beans) and wheat together - at a commercial scale. Would harvesting them together as cash crops avoid the need for expensive machinery and extra labour? Would the legumes provide free nitrogen to the wheat, replacing artificial fertilisers? Would the different root lengths taking water at different levels in the soil improve the yield?

The trial plot showed positive results. We sequestered 26.8 tonnes of CO₂ and avoided emissions of 6.3 tonnes CO₂. Biomass and yield increased by 20% and there was a 64% boost in naturally available nitrogen levels. We also saw a greater diversity of habitat for insects and birds, and an overall healthier soil biology.

By working with nature, the farmer was rewarded with lower costs and a higher yield. This case study is now being shared to inspire the transition to regenerative farming.

We'll continue to advocate for positive change from the ground up.



Find out more at soilheroes.com



Our Carbon Footprint

Our 2022 carbon footprint is 215 tCO₂e (604gCO₂e/Litre).

We measure emissions from grain to glass using the GHG Protocol. Scope 1 and 2 emissions (sources we own or control) are only 0.2% of our footprint.

Most scope 3 emissions are from suppliers who brew and distribute our beer. We work with them to measure and manage these emissions.

We include emissions from producing bread. However, because the bread would otherwise be wasted we account for only part of the emissions.

This is based on a methodology called 'economic allocation'. The % is based on the price we pay compared to the market value.

Our net footprint, deducting emissions avoided by preventing waste is 206 tCO₂e.

Using surplus bread also reduces demand for malt, saving energy, water and land that would have been needed to produce it,



Our carbon footprint has been audited by ClimatePartner.

Whilst we work to reduce our footprint, we've supported certified carbon offset projects.

This funds projects to protect forests in Brazil and plant mixed, native forests in the Lake District, UK, mitigating and removing the equivalent carbon to our footprint.

Emission Sources

From Grain to Glass

INGREDIENTS



Farm grows, harvests and pelletises dried hops.



Farm grows, harvests & dries cereal crops.

BARLEY



Maltster steeps the grains in water to start germination.



Kilning dries the grains & they're roasted for flavour.

WHEAT



Mills turn grains into flour.



Bakeries use flour to bake bread.



Surplus bread is dried to avoid waste

Spent grains go to animal feed and spent hops are composted.

BREWING



Grains & bread added to mash tun with warm water.



Liquid wort boiled in kettle with hops.



Cooled wort is fermented with yeast to produce beer.

PACKAGING



Beer packed into cans, bottles and kegs.



Chill, drink and please recycle.

CUSTOMER



Transported to customers.

DISTRIBUTION

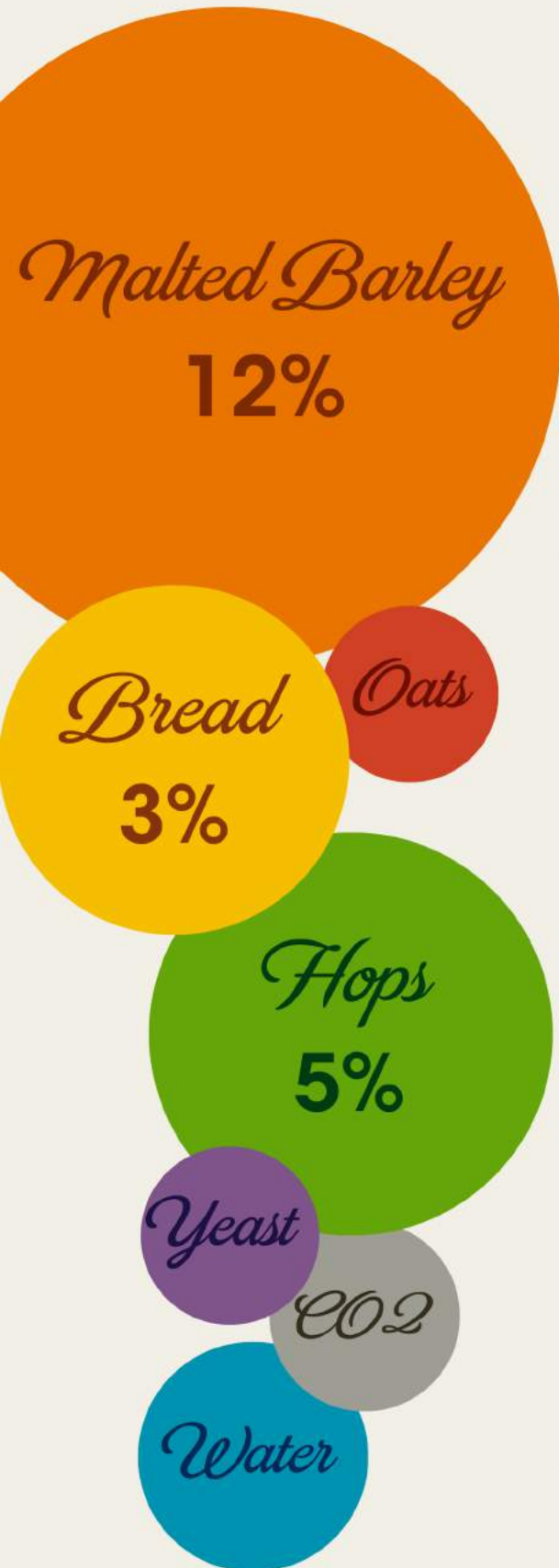


**BREAD
QUARTERS**

Brew Your Own

Join our home brew club and download our bread beer recipe!
<https://bit.ly/3vkQttz>

Ingredients



Malt provides nutrients for the yeast and enzymes (that break down starches into fermentable sugars). The malt also affects the colour and flavour of the beer. However malt has a high carbon footprint due to the land required to grow barley and the energy used for malting.

We brew with 1/4 less malt by replacing it with dried surplus bakery bread. We extract sugars from it (with the remainder going to animal feed).

Oats are used to add a soft mouthfeel to the beer - we use them in our Session IPA.

Hops add aroma and bitterness, and act as a natural preservative. Our Pale Ale uses all-English hops which have a small water footprint, are bred to be more disease resistant and use less pesticides or herbicides, and don't travel far.

Yeast converts the sugars from the grains into alcohol and carbon dioxide (CO₂). CO₂ is also used for additional carbonation.

Water makes up the majority of a pint, and is also used in the brewhouse for cleaning the tanks. Emissions relate to mains supply and treatment of wastewater.

Share of total carbon footprint
(ingredients with no value are below 1%)

Brewing

We partner with breweries to use existing capacity in the industry and minimise our land and capital equipment footprint. In 2022, we continued to work with SEB in Broadstairs, Kent.

Energy is used to heat water during the mash and boil stages (gas - 5% of our total footprint), and to cool the beer for fermentation (electricity - 1%). CO₂ is also used to purge the tanks and prepare packaging (2%). The fermentation process releases CO₂ emissions however as this is biogenic it's not included in the footprint under current GHG Protocol guidance.

After brewing, spent grains go to a local farm, whose animals get fibre, proteins and minerals from the grain after we've used the sugars. This circular approach avoids waste and reduces the demand for crops grown specifically for animal feed - often soya from deforested land. Spent hops are used for compost, returning nutrients to the soil.



Packaging

Our lowest emission format is reusable steel kegs - there's no single use packaging when serving beer on tap! We're excited to be opening our own taproom in 2023 to increase this format.

We also sell packaged beer in 100% recyclable aluminium cans and glass bottles with steel caps.

The polypropylene labels on cans and bottle can be recycled if removed, but don't need to be - recycling plants remove them when extracting glass and aluminium. As our production volumes recover in 2023, we will move to printed cans and pack less into bottles.



We are nudging customer to choose our cans, which have a lower footprint because:

- The 85% can recycling rate in the UK provides manufacturers with aluminium, so recycled content is 70-80%. Using recycled aluminium hugely reduces the emissions to produce a can.
- Cans are light and compact so take up less space in vehicles and need less fuel to transport.
- The compact size of cans and lower risk of breakage means we need less card for packing boxes (we use 100% recycled and recyclable FSC certified board).



Share of total carbon footprint (the embodied emissions of the material)



Distribution

Distribution emissions depend on the weight transported, the distance travelled and the vehicle used.

We measure inbound deliveries of ingredients and packaging arriving at the brewery, and outbound for finished beer moving to our fulfilment partners and direct customers.

From our website we distribute beer across the UK so distribute centrally from Manchester. As most of our trade customers are based in the South, we distribute from just outside of London.

We have a policy against export and instead collaborate with breweries around the world who can produce locally.



Share of total carbon footprint

Chilling & Waste

Our beer can be stored under ambient conditions in our warehouses, through distribution and with our customers.

However, it needs to be chilled before drinking so we account for refrigeration energy. For kegged beer, we account for the energy used to store and dispense on draught.

After drinking, single-use empty packaging is disposed of (2% of total carbon footprint). Aluminium and glass are infinitely recyclable, retaining the materials and energy used to make it, and reducing the need to incur the high energy and carbon costs of primary production. In the UK, 82% of aluminium cans are recycled, and 68% of glass.

Our kegs are collected for cleaning and refilling, ready to go back out again full of fresh beer.



Bread Quarters

Our office moved during 2022, from fellow B Corp X&Why to the British Land site at Regents Place where we'll also have our taproom in 2023. All electricity is from renewable sources.

The team also regularly work from home under our flexible working policy, so we measure home-working emissions. We're individually on tariffs with renewable electricity providers.



Most emissions in this category relate to commuting and business travel. We have a policy to prioritise public transport to minimise emissions, however this is not always possible.

There is some private car use (0.6%), including early starts for our brewer travelling to our brewery partner in Kent, and for our events team transporting materials.

We also visited a supplier in Southern Europe in 2022. That one economy flight contributed 0.3% of our entire carbon footprint.



A few things we're doing as a responsible employer ...



glassdoor

4.9 ★★★★★

All employees receive share equity options to become co-owners of the business.

We pay above London Living Wage and have a pay ratio of 2:1.

We offer 2 paid days per year for volunteering or environmental activism.

We have a team coaching programme with Everyday Impact.

We encourage work-life balance with flexible hours and remote working.

We promote equal opportunities in recruitment and have diverse leadership.

We support learning and development with paid study leave and training.

We foster an inclusive culture, encouraging everyone to bring their whole self to work.



Net Zero Strategy

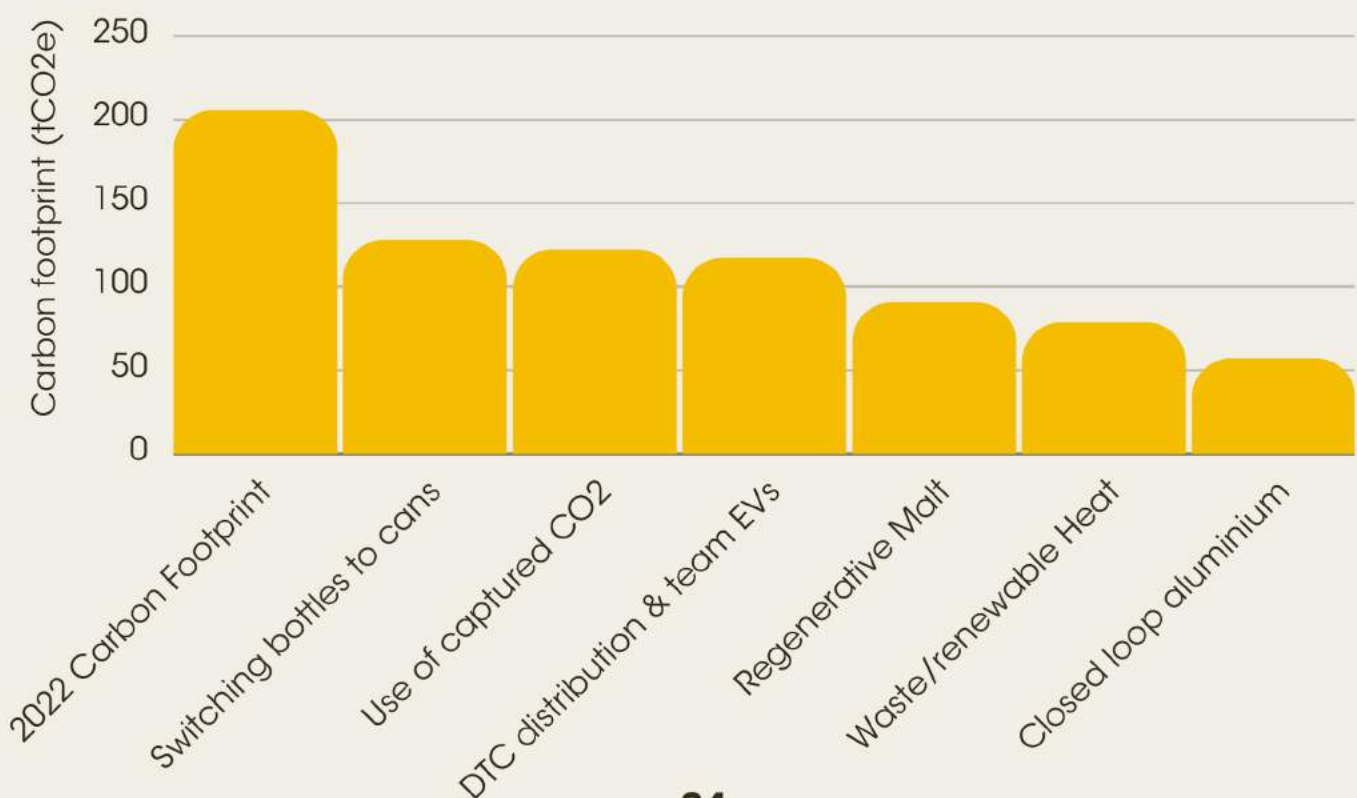
This final section sets out emission reduction activities in our value chain as part of our commitment to be Net Zero by 2030.

We have a good understanding of our full value chain carbon footprint. We first measured emissions in 2019 and have improved coverage and accuracy of data every year.

Most of our emissions are scope 3, so as a small business we have limited control. We must work with suppliers to support their efforts, and consider net zero in our supplier selection policies.

The actions we have measured will reduce emissions by approx. 72%. We are aiming for reductions of at least 90% with investment in removals to cover any remaining.

Beyond our value chain, we also advocate for system change. We need stronger, more ambitious net-zero targets and action at a national and international level.



Net Zero Packaging & Distribution

Switching to cans & closing the loop

We're registered as a producer with the Scottish Deposit Return Scheme. This aims to increase recycling and so also the availability of recycled feedstock for glass and aluminium plants.

We're educating our customers about the lower impact of cans to nudge them away from bottles (sharing analysis with trade, on our website, and through social. We'll also adjust prices of bottles relative to cans in 2023 (this also reflects higher storage and delivery costs for us). We believe this approach is more powerful than immediate choice editing.

We're also reviewing our range to push volume into fewer SKUs, improving operational efficiency and meeting minimum order quantities for printed cans.

Transport Electrification

Our website orders are delivered by DPD, who offset emissions and are moving towards an all-electric fleet by 2025. Our London trade delivery partner has invested in their first electric vehicle, with more planned. Ultimately we need the entire transport sector to move towards electrification, supported by EV charging infrastructure.

Net Zero Ingredients



Regenerative Malt

We're continuing to explore sourcing and malting regeneratively grown barley, funding research with UK farmers via Soil Heroes (read about the trials on p13). This work was delayed in 2022 due to cost pressures and team capacity, but we are seeing much more interest across our industry and are looking for collaborative projects we can work on with other breweries.



Efficient use of Bread

We're working with our brewery partner to improve the efficiency of brewing with bread, meaning we get more beer for less ingredients. This includes assessing how to use more surplus bread in our own beers and how to support others with different kit to use it.



Avoided Emissions

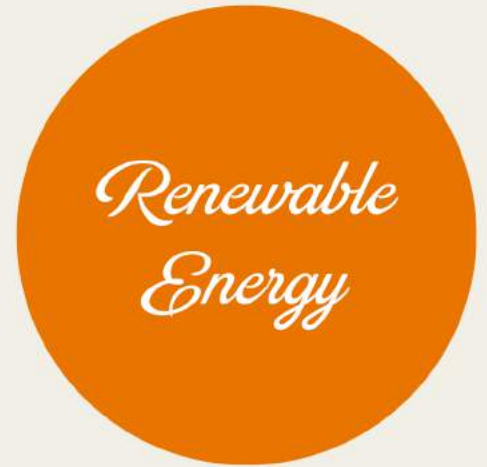
We are working on measuring the positive carbon impact of using surplus bread at scale. This depends on the carbon footprint of different breads from different bakery partners and the processing energy. While this work is ongoing, we haven't yet included avoided emissions in our net zero calculations.

Net Zero Brewing

We'll buy Renewable Energy Guarantees of Origin (REGOs) to cover power use until our brewery is on a renewable tariff. This means funding the addition of renewable power generation to the grid, making the electricity zero carbon (except transmission and distribution). Read more at [Simplyswitch.com](https://www.simplyswitch.com). We will be working on alternatives to gas for renewable heat.

Technology is now available for small breweries to capture CO₂ from fermentation that is usually vented to the atmosphere. You can read about the Ramsgate Brewery trial: [Gaddsbeershop.blogspot.com](https://gaddsbeershop.blogspot.com). From 2023, SEB is buying captured CO₂ from Ramsgate for carbonation and cleaning, reducing fossil emissions, costs and dependency on chemical companies. They will also invest in the technology for their brewhouse.

SEB is replacing caustic-based cleaning agents with enzyme technology for cleaning the brewhouse, tank farm vessels, filters and filling machines. Enzyme cleaners are biodegradable and non-toxic, and trials have shown that vessels can be cleaned at ambient temperature, saving energy. We do not yet have data on the carbon impact so haven't yet included in our net zero calculations.





TOAST

HERE'S TO CHANGE

*To change the world, you
have to throw a better party
than those destroying it.*

See you at the bar.



toastale.com
[@ToastAle](https://twitter.com/ToastAle)
[#HeresToChange](https://twitter.com/ToastAle)

Certified



Corporation

This company meets the
highest standards of social
and environmental impact

