

Cities going circular: how London can cut its emissions from food consumption by 31%

COP26—hailed the most important meeting on climate of the last five years—has come and gone, and the season leading up to it has not been without its ups and downs: from gut-wrenching revelations that governments have been lobbying to downplay the seriousness of climate breakdown to promising ambitions from some of the world's superpowers.

The resounding message remains clear: a sharp decrease in emissions is imperative. The circular economy provides an answer to this call—and with a set of robust strategies proven to slash emissions, create jobs, support resilient, just communities and provide a slew of other environmental benefits, it's increasingly recognised as the way forward.

Globally, our food systems are a massive contributor to climate breakdown, producing 33% of global emissions. And of all the food we produce, a staggering 80% is consumed by the world's activity hotspots: cities. Epicentres of culture, innovation and—inevitably—consumption, cities have a crucial role to play in the global race to net-zero. Up first is London: a city of over 9 million

people, the British capital—and one of Europe’s largest cities—is now pioneering a methodology that could cut the city’s food-related consumption-based emissions by up to 31%: the Circle Carbon Scan, developed by [*Circle Economy*](#) in collaboration with [*ReLondon*](#). The tool found that consumption-based emissions for food in the city top 15.4 million tonnes of carbon dioxide equivalents—on average, every Londoner is responsible for 1,730 tonnes of carbon dioxide equivalents emitted per year, from food consumption alone. Offsetting these emissions would be no easy feat; in fact, the total amount would require [*770 million trees to capture*](#) from the atmosphere. The scan also found that food-based emissions per person surpassed the UK average, despite Londoners consuming markedly less food. Why is this—and how can the city reach the 31% figure modeled by the Circle Carbon Scan?

Food’s journey along the value chain—and how it racks up embodied emissions in the process

The food we pluck from a grocery shop shelf, or that is delivered to us within minutes when we take a seat in a restaurant, doesn’t appear out of thin air: the industry’s supply chain is complex and spans geographies and sectors. From imports and farming, processing and manufacturing, wholesale and retail to exports, food service, household consumption, redistribution, and finally waste collection and management, the life of various food products can look vastly different—both in terms of their physical journeys and their emissions footprints. The Circle Carbon Scan—a tool that can be used to garner the consumption-based emissions of materials and products—highlights which supply chain steps contribute the most emissions in the production of the 6.3 million tonnes of food fulfilling London’s food system’s demand each year.

The majority of emissions—about three-quarters—are embodied in the food itself and are released on-farm, largely outside of the city bounds, according to the research: unsurprisingly, less than 1% of London’s food supply is grown within city limits. Looking at what Londoners are eating provides further insights: highly emissions-intensive foods, like meat and dairy, make up just 23% of food consumed but account for nearly half of emissions. Conversely, fruits and vegetables are eaten in nearly equal proportions but represent a mere 4% of emissions from household consumption.

Londoners’ fruit and veggie consumption only contributes 4% of household food consumption emissions. Photo by [*Alexandr Podvalny*](#) on [*Unsplash*](#)

The solution? A circular economy for food—plant-based and no-waste

Such emissions hotspots are clear—but what can be done to make the most of this data? And how can the circular economy help? The analysis uncovered three key leverage points: simply put, Londoners could shift to more healthy, sustainable diets, slash food loss and waste, and put their waste to better use—practicable actions with huge impact. If pursued wholeheartedly, the circular strategies discussed could bring emissions reductions of 31%: boosting the consumption of fruits and veggies while significantly cutting the amount of meat eaten, bringing down avoidable food waste within city bounds through prevention, redistribution and incorporation into animal feed, and scaling anaerobic digestion to create biofuels, thereby diminishing dependence on fossil fuels.

London's not all talk and no action: this research will be used to inform programmes such as the Food Flagship Initiative, a three-year partnership between ReLondon, the Greater London Authority and the Ellen MacArthur Foundation, to design high impact, data-driven policy interventions to cut consumption-based emissions from food. And while London may be the first to participate in a Circle Carbon Scan and analyse its food system as a whole, they have a wealth of cases to draw inspiration from around the world. New York City, for example, is making strides in *promoting plant-based eating habits* as part of its Green New Deal, with plans to phase out all processed meat and cut beef purchase in half in city-managed facilities—like schools, prisons and hospitals. Porto's range of programmes—from *Refood*, which redistributes edible food waste to the *Fruta Feia* (Ugly Fruit) Cooperative, that sells only fruit with visual imperfections—show the city's commitment to cutting food waste by half, with estimated emissions savings of *92,600 tonnes of carbon dioxide equivalents* per year—and economic benefits to the order of €79 million to boot. The impact of the way we grow, eat and get rid of food is increasingly placed front and centre in climate talks, and finally having a seat at the table, the sector is being flooded with initiatives—the combined effect of which will be powerful.

Initiatives like Fruta Feia give ugly fruit a chance at being eaten. Photo by *Benigno Hoyuela* on *Unsplash*

Cities, your time is now: take action on

climate breakdown with circular strategies

Cities are the future: their populations have grown rapidly over the last 50 years, and now, they hold more than half the world's people. And this growth rate isn't slowing any time soon—projections show that by 2050, more than two-thirds of people will live in urban areas. Especially vulnerable to the effects of climate breakdown—as more than 90% are in coastal areas, which will increasingly suffer the consequences of floods and storms—cities have a crucial opportunity (and responsibility) to spearhead change in the environmental sphere. And as centres of innovation, they are well positioned to do so: more agile than national governments, cities can take immediate action with impact by galvanising local actors and bolstering participation.

'Our work with ReLondon has paved the way for London to slash consumption-based emissions for food through circular strategies. The tool we've developed can also support other cities in their efforts to fight climate change—and we hope London will be the first of many in stepping up to the plate and making good on its climate commitments,' says Jordi Pascual Torner, one of the creators of the Circle Carbon Scan methodology.

London is leading the way—but it won't be the last to overhaul its food system. Cities around the globe have lots to gain and nothing to lose from going circular. And before they can manage, they must measure: data and analysis is key to making informed decisions and knowing exactly at which hotspots emissions are accumulating. Are you eager to drive change, and become a frontrunner in the global race to zero? Consider commissioning a Circle Carbon Scan for any sector in your city.

About the Circle Carbon Scan

How can cities make the most of the circular economy to tackle their carbon footprints? How can they gain a better understanding of which activities generate the most emissions, and how those emissions relate to consumption? The Circle Carbon Scan, piloted in the city of London, supports cities in answering these questions and taking action in fighting climate change—using circular interventions to close material loops, cut consumption and reduce emissions. How?

Mapping the material flows throughout a given sector's supply chain (from imports to waste treatment)

Using a model to convert these mass flows to their associated emissions

Ultimately creating an urban map that can be used to pinpoint material flows—and their associated emissions—at any point in the supply chain

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