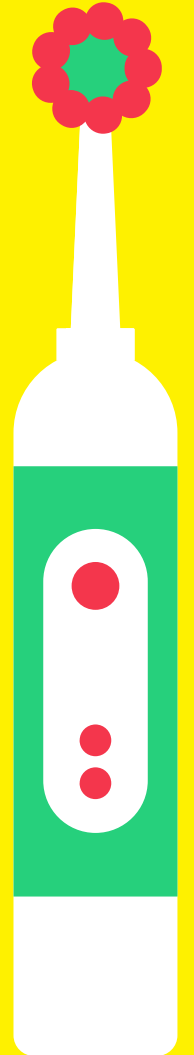
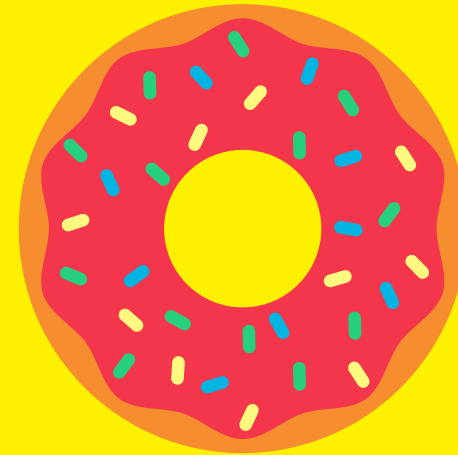




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MAYOR OF LONDON

A borough's guide to understanding and tackling consumption-based emissions

July 2024

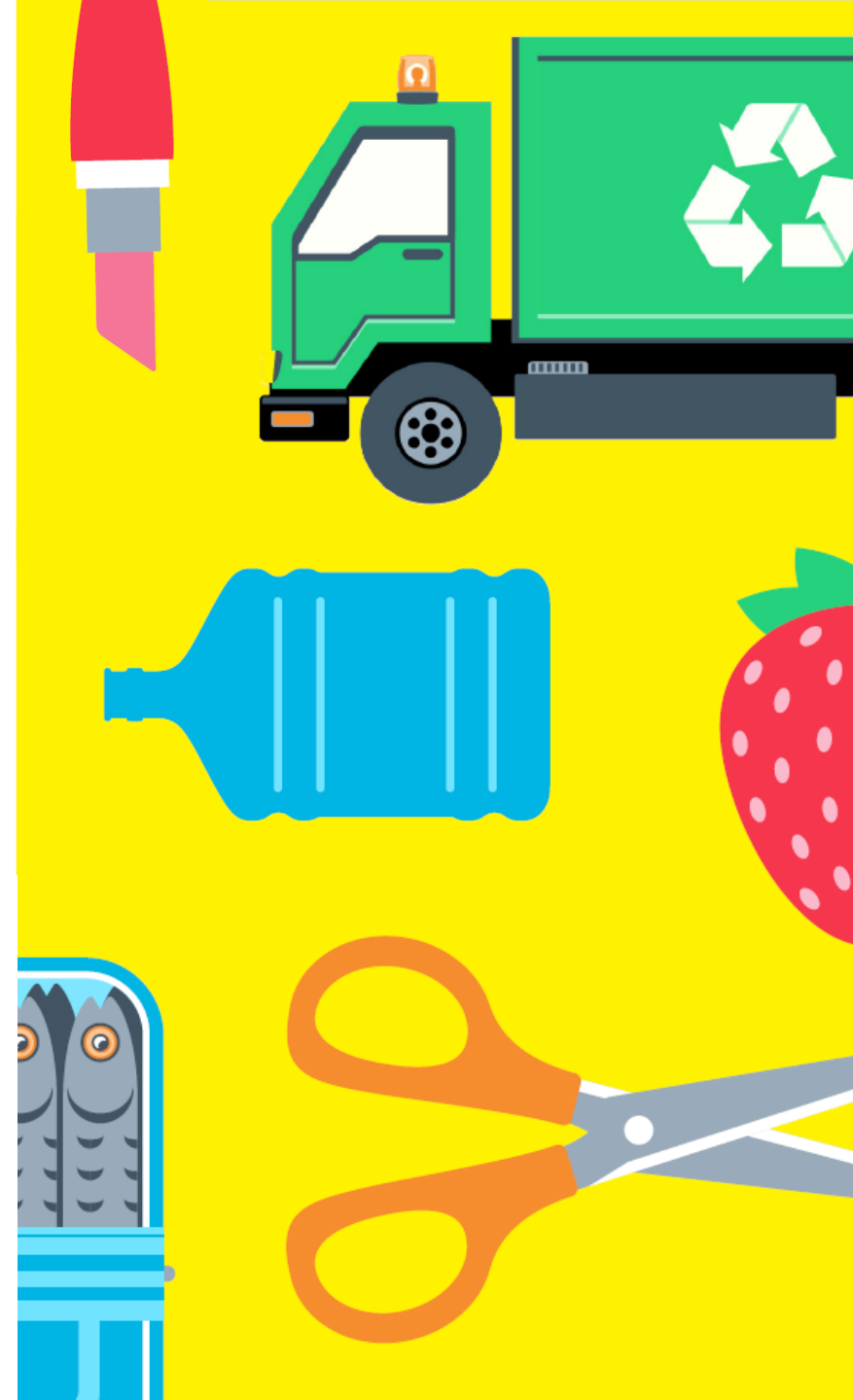


Introduction

This document aims to provide London boroughs with an understanding of:

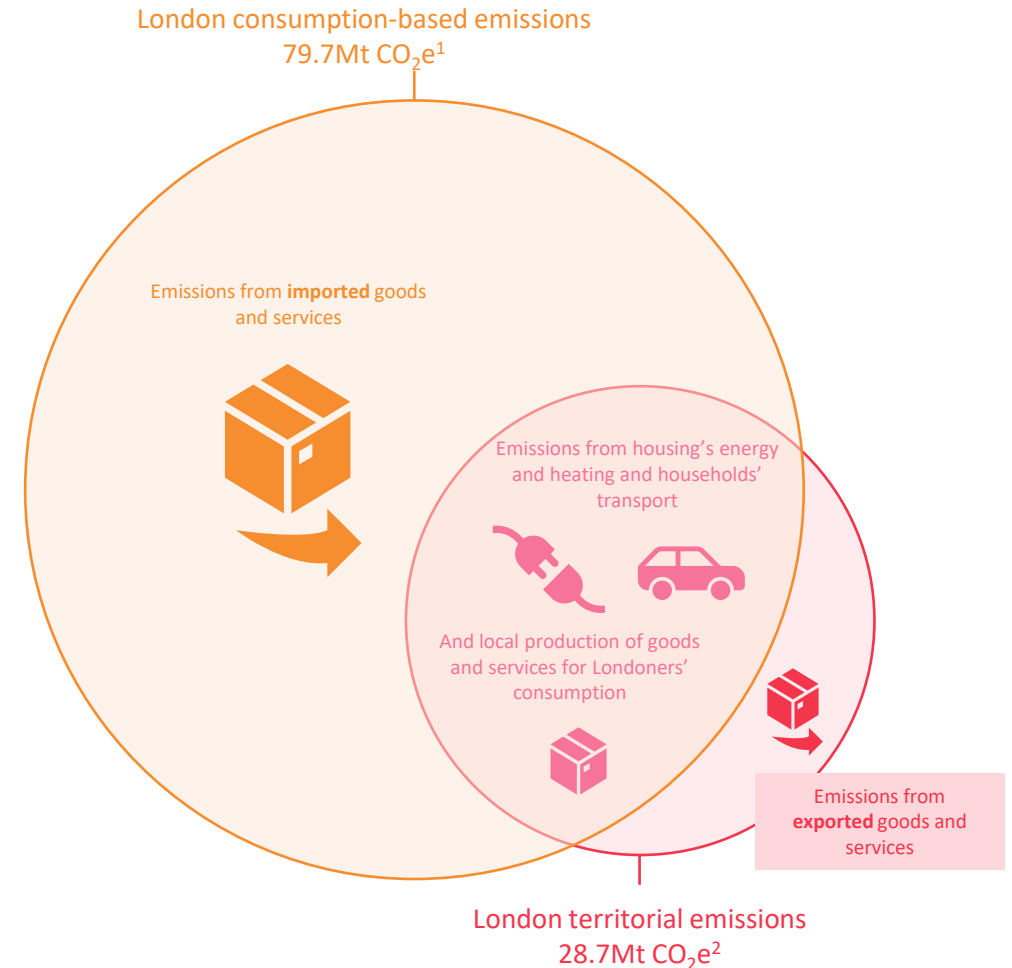
- **What consumption-based emissions (CBE) are**, and how they differ from territorial emissions – which are already reported by boroughs and governments.
- **Why boroughs should tackle CBE and the co-benefits** they can expect.
- **How CBE have evolved** in the past 20 years and a summary of the largest sources of **CBE in London**, based on the 2000-2021 CBE account.
- **Examples of actions London boroughs can take** to tackle CBE and where they can find support.

This document is published alongside a technical report produced by the University of Leeds and London and boroughs datasets.



1 – What are consumption-based emissions?

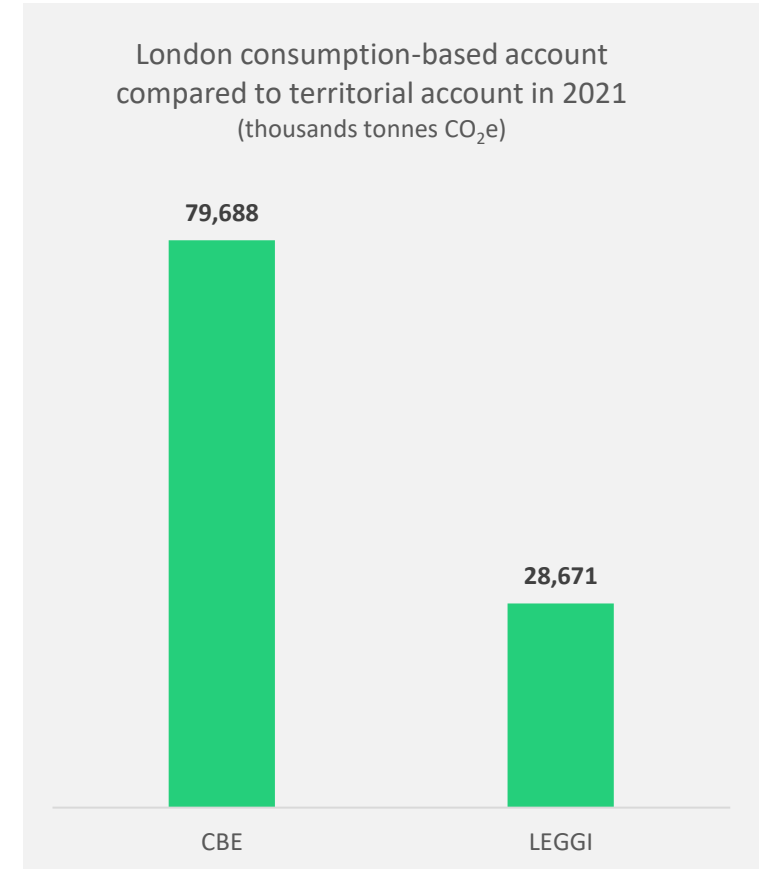
- Most 'territorial' greenhouse gas emissions accounts allocate emissions to the location the emissions are produced in. London's territorial emissions for each borough are reported in the London Energy and Greenhouse Gas Inventory (LEGGI) and are mainly from fuel and energy consumption in London.
- Consumption-based emissions (CBE) accounts allocate emissions to the final consumers of products and services, *regardless* of the location the emissions are produced in. For example, emissions produced by businesses outside of London to create goods and services bought by Londoners are considered London's CBE.
- CBE accounts reflect the climate impact of Londoners' lifestyles and include all emissions, throughout the whole supply chain, associated with the production of all goods and services consumed in London.



2 – Why should boroughs take action to tackle CBE?

The climate imperative

- The Mayor and London's boroughs have ambitious targets for reaching net zero and adapting to climate change.
 - The One World Living Program is aiming to reduce consumption-based emissions by two-thirds by 2030.
- The Mayor and London's boroughs can tackle these emissions by promoting and enabling sustainable and healthy consumption patterns: local reuse, repair, rental and sharing practices (a circular economy); and the consumption of lower carbon goods.



2 – Why should boroughs take action to tackle CBE?

Co-benefits of tackling CBE by transitioning to a circular economy



City action can tackle

~30%

of London's CBE associated with food, goods and construction¹



284,000 net

new jobs could be created by a circular economy²

£7bn

GVA could be created by a circular economy³



Increased resilience

due to less reliance on raw materials from global supply chains



Up to **90%**

savings for Londoners when accessing refurbished goods⁴

\$11,800

savings on a new flat with a material efficient construction⁵

¹ReLondon analysis based on London's material flow analyses for food and textiles (ReLondon), The future of urban consumption in a 1.5°C world (C40) and London's CBE account (London Councils, ReLondon and GLA)

²The circular economy at work: Jobs and skills for London's low carbon future (ReLondon)

³Towards a circular economy – context and opportunities (ReLondon)

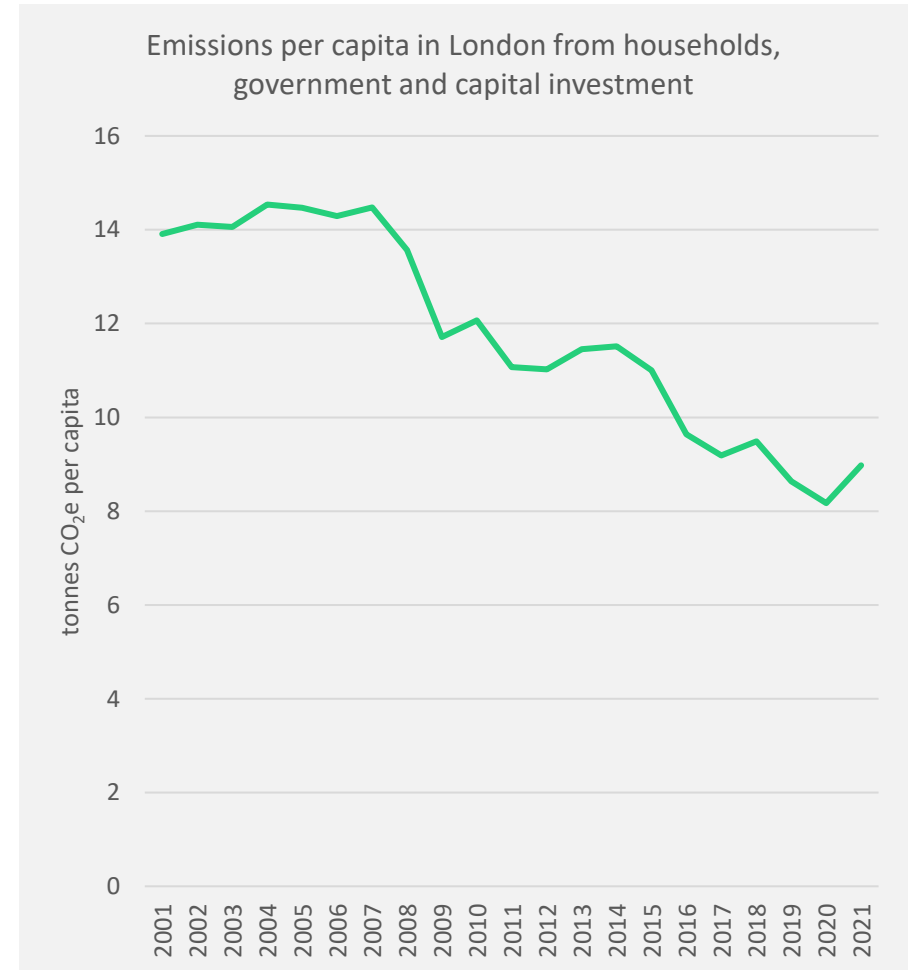
⁴Waste not, want not: rethinking waste to help low-income households access necessities (ReLondon)

⁵The future of urban consumption in a 1.5°C world (C40), initial number in \$ converted in £ using the average exchange rate for June 2019

3 – CBE accounts overview

Evolution over the past 20 years

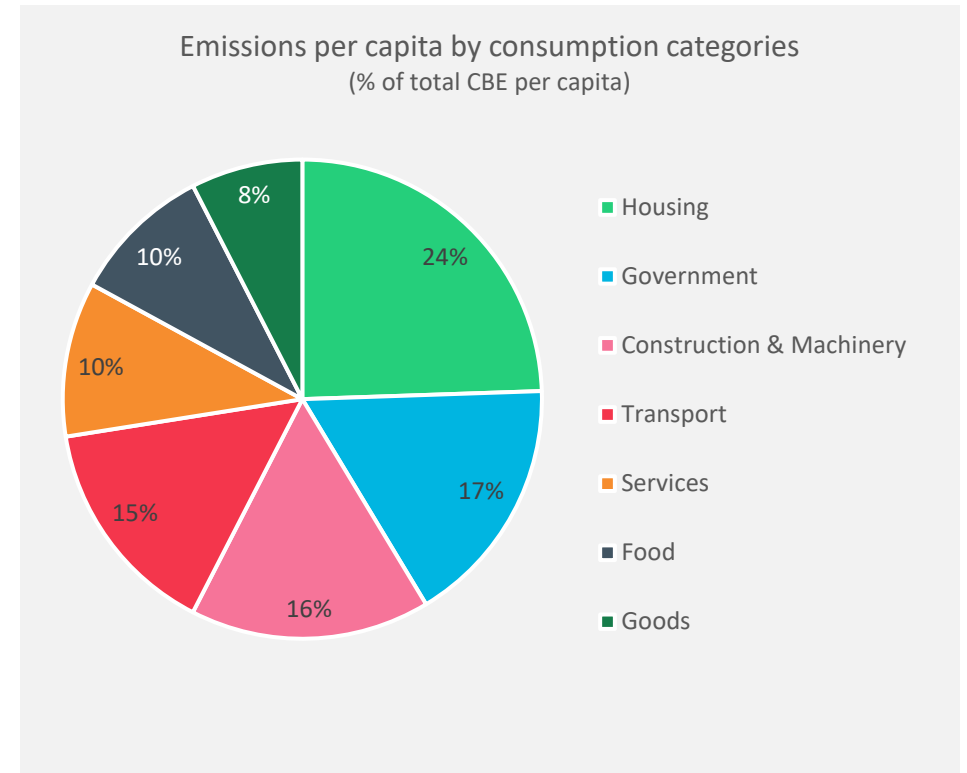
- The CBE per capita in 2021 was 8.98 tonnes CO₂e. It has reduced by 35% since 2001, when our account begins.
 - Consumption levels increased by 12% during this period, but the carbon intensity of our economy (how much carbon is emitted for the same good or service produced) decreased more rapidly, by 32%.
 - Emissions fell between 2007 and 2009 due to the recession and decreased further between 2014 and 2018 due to the decarbonisation of the UK electricity sector.
 - More recently, the reductions in 2019 and 2020 were linked to the impact of the Covid-19 pandemic and the introduction of ULEZ.
- In the shorter term, CBE increased by 10% between 2020 and 2021.
 - This rebound followed the Covid-19 pandemic and was due to: Londoners' consumption going up after the pandemic restrictions; an increase in the carbon intensity of the UK electricity grid; and an increase in some product intensities (mostly food products).
- London's CBE rebound (+10%) was lower than the UK average (+15%) due to:
 - London's private transport footprint being lower than in the rest of the UK, meaning the decrease and increase of emissions related to car use during and after the pandemic impacted London less than the rest of the UK;
 - London experiencing stricter Covid-19 restrictions in 2021 than the rest of the UK.



3 – CBE accounts overview

Hotspots

- London’s footprint is made up of 7 consumption categories:
 - Housing (24%): electricity and gas to power and heat houses, and small maintenance.
 - Government (17%): Local, regional and national government and public sector organisations’ carbon footprint, including emissions from running state school buildings and the NHS.
 - Construction and machinery (16%): Construction of buildings and infrastructure, and production of machineries used by industries.
 - Transport (15%): Public and private transport, including fuel/electricity and production of vehicles.
 - Food (10%): Production of groceries purchased by Londoners (excluding hospitality - restaurants, cafes, canteens).
 - Services (10%): Paid for services’ carbon footprint, including restaurants, hotels, banks, private schools.
 - Goods (8%): Production of goods purchased by Londoners, including clothing, furniture, homeware.

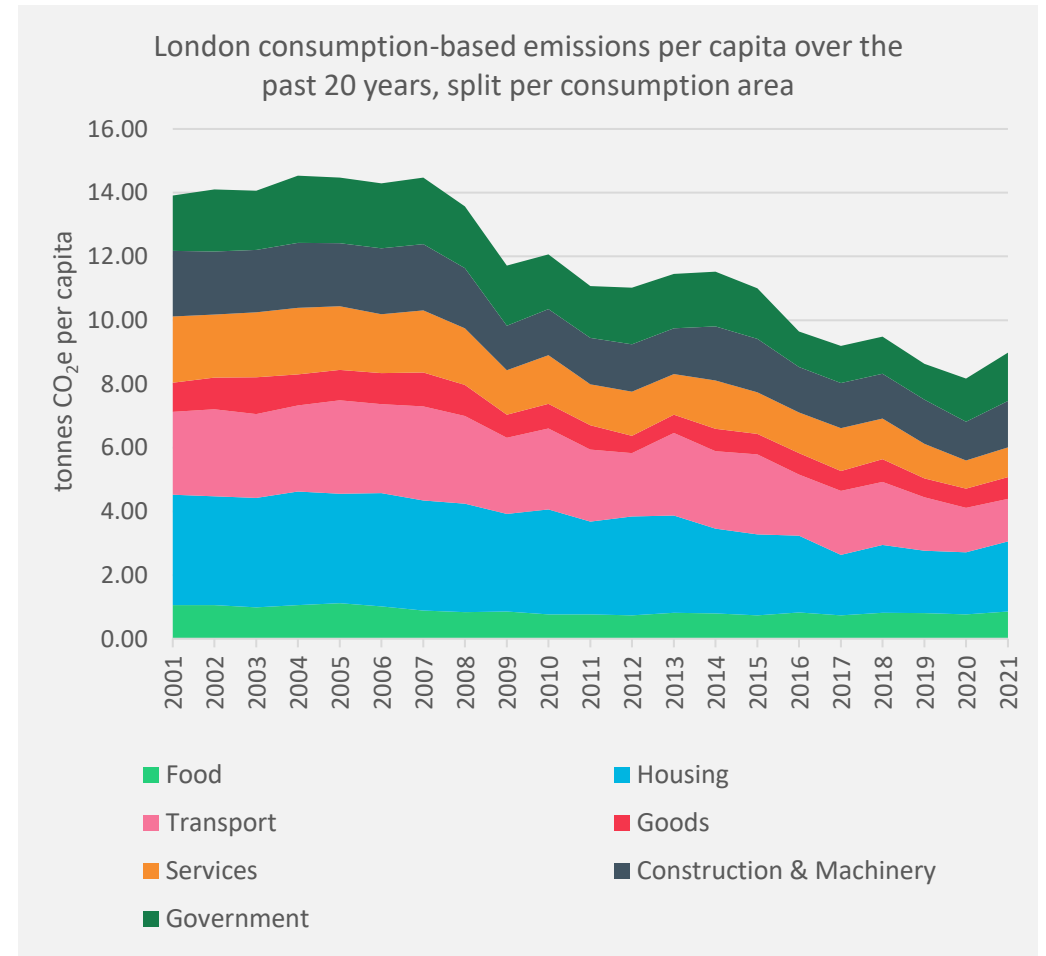


- Deep dives into food, goods, housing, transport, and services emissions are available in the following section. ‘Government’ and ‘Construction and machinery’ emissions are estimated based on total UK emissions for these categories allocated per region on a population-weighted basis. This means every local authority will have the same per capita emissions associated with these two categories, and London-specific trends for these categories cannot be analysed based on this dataset.

3 – CBE accounts overview

Evolution by consumption area

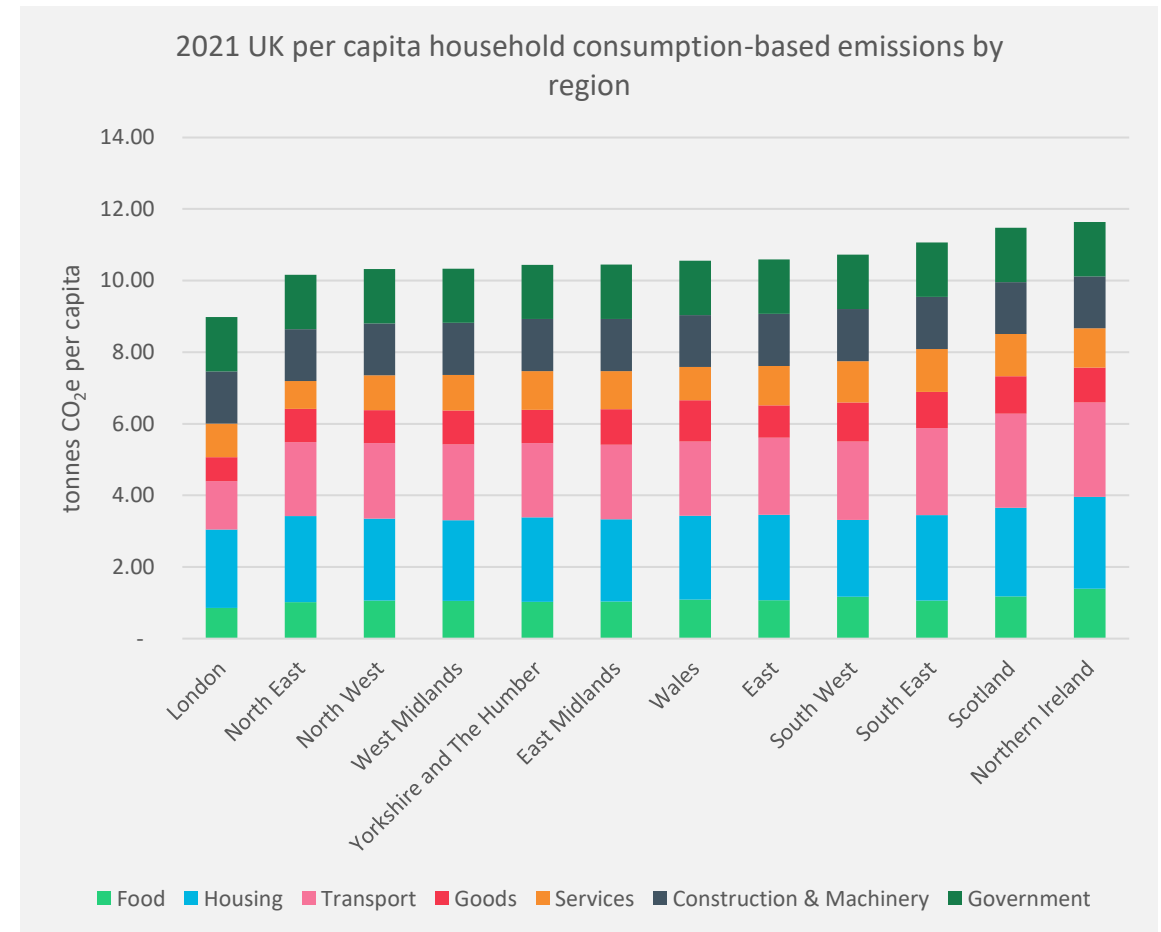
- There have been different patterns in the CBE categories in London over the years, driven by changes in consumption patterns and the carbon intensity of different sectors.
- The Services and Transport categories have reduced the most since 2001, respectively by 55% and 49%.
 - Housing has decreased by 37%, Goods by 25% and Food by 19%.
 - Further analysis per category is available in the following slides.
- Between 2020 and 2021, as COVID-19 restrictions eased, emissions increased across all categories except for Transport (-4%).
 - Housing and Goods increased the most (+13%), followed by Food (+12%), and Services (+6%).



4 – Geographical comparison

London vs the rest of the UK

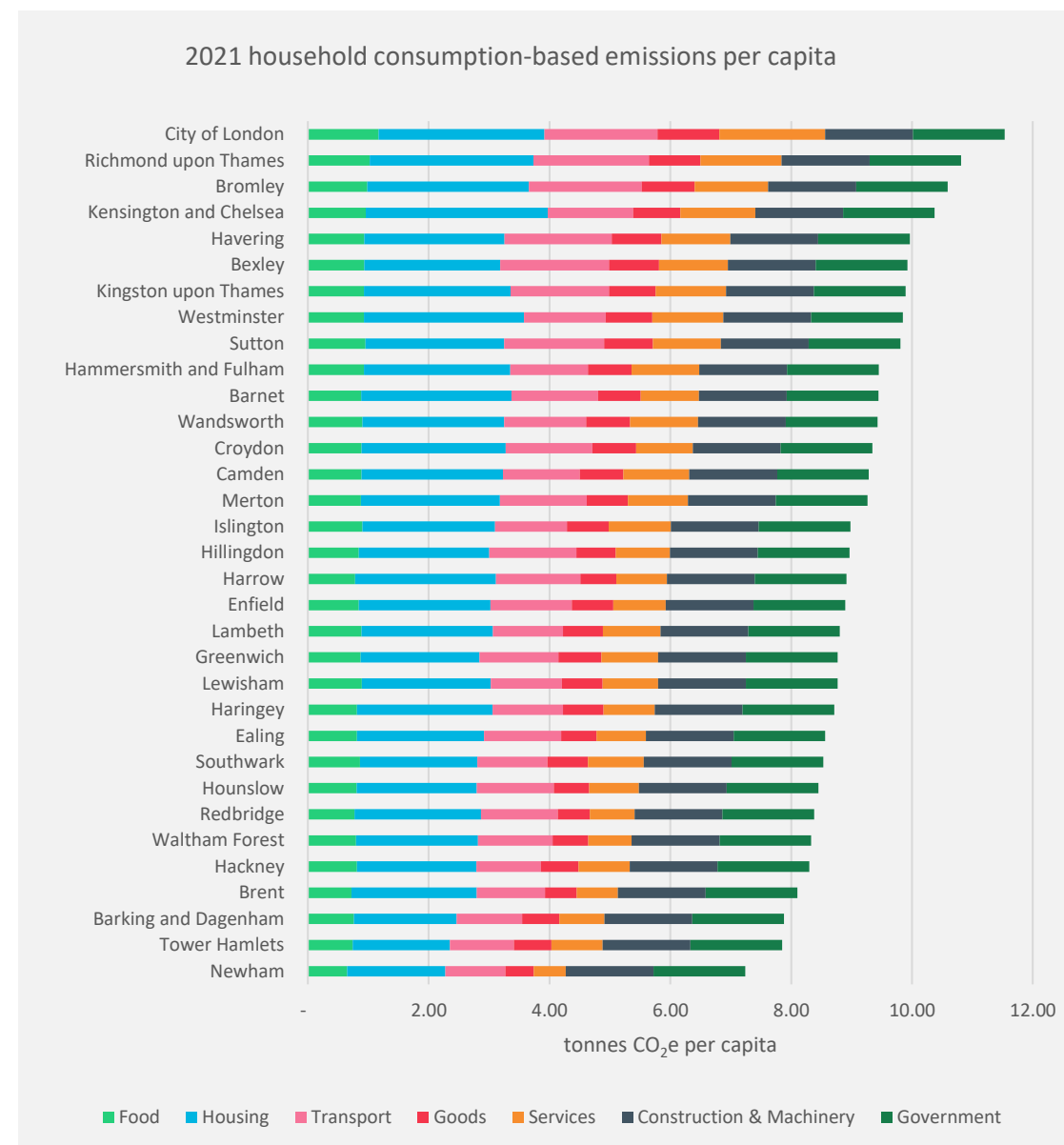
- In 2001, the average Londoner had a carbon footprint of 13.80 tonnes CO₂e. This was around the average for the UK.
- Since 2016, London has the lowest per capita emissions in the UK and has experienced the greatest reduction in per capita emissions from consumption between 2001 and 2021.
- This has been driven by reductions in CBE categories like housing and transport, as illustrated in the previous section.



4 – Geographical comparison

Boroughs' CBE

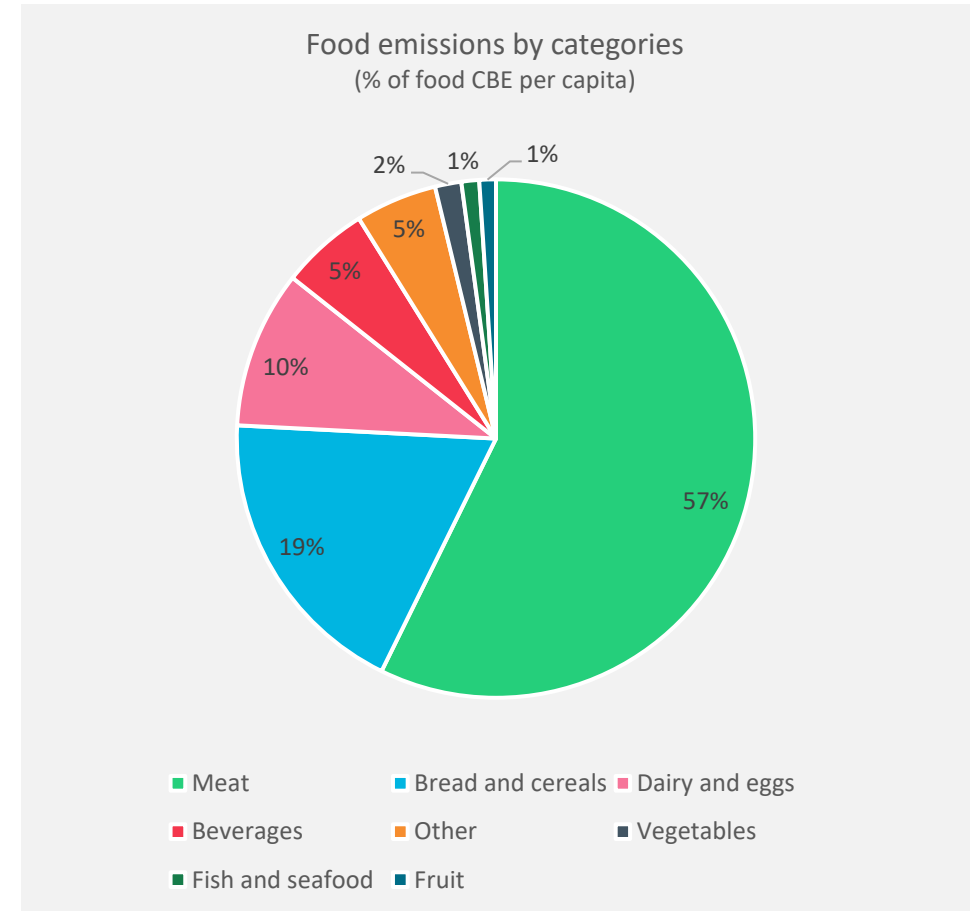
- In 2021, the City of London has the highest per capita footprint (11.53 tCO₂e), and Newham the lowest (7.24 tCO₂e).
 - The differences between the boroughs with the highest and smallest CBE per capita have reduced between 2001 and 2021
- In every borough, the category with the largest impact is housing. In the wealthier areas, a greater footprint associated with categories such as restaurants, clothing, air travel, and recreation is seen compared to the average.
- Every London borough has seen a reduction in their CBE per capita between 2001 – 2021, with Barking and Dagenham seeing the largest reductions (41%) and the City of London the smallest (29%).



5 – CBE accounts deep dives

Food

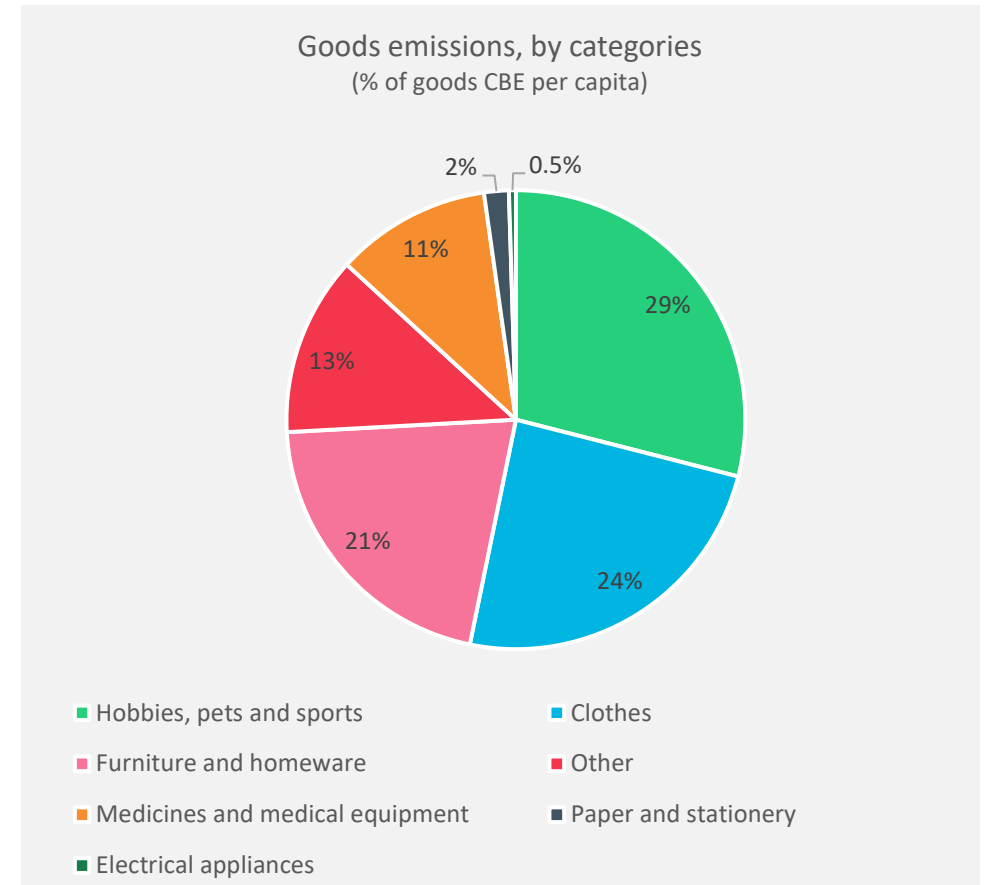
- The food category includes emissions associated with producing, transporting and selling food products to consumers, but excludes food services (e.g restaurants, canteens...), which are included in the services category.
- Almost 60% of the average Londoner food footprint comes from meat consumption.
 - 'Breads and cereals', and 'Dairy and eggs' come second and third respectively, with 19% and 10% of emissions
- Compared to 2020, Londoners' food footprint increased by 12% in 2021. This was mainly due to increased emissions intensities for imported food products. This pattern is observable in all UK regions.
- Compared to other regions in the UK, Londoners spend less on meat, which means that the per capita food footprint in London is lower than in the rest of the UK.



5 – CBE accounts deep dives

Goods

- The goods category includes the emissions associated with making and transporting items used by Londoners like clothes, electricals, furniture and more.
- Hobbies, pets and sports goods represent the biggest share of this category (29%), closely followed by clothes (24%), and furniture and homeware (21%).
- Compared to 2020, Londoners' goods footprint increased by 13% in 2021, mainly driven by increased in the furniture and clothing categories.
- London has the lowest average goods footprint in the country. Londoners' total spend on hobbies, pets and sports is particularly low.

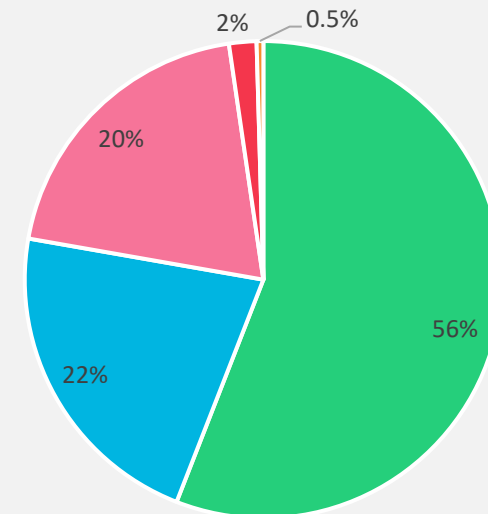


5 – CBE accounts deep dives

Housing

- The housing category includes emissions associated with heating and powering the home, dealing with waste and products, and maintenance.
- The vast majority of housing footprint comes from fuel and energy use.
 - Gas and other fuels use represent 56% of the housing footprint, and Electricity 22%.
- Compared to 2020, Londoners' housing footprint increased by 13% in 2021, mainly due to increases in the carbon intensity of the UK electricity grid. This trend, combined with higher working-from-home practices than pre-pandemic, might explain why 2021 housing emissions were the highest they had been since 2016.
- Compared to most other regions in the UK, Londoners have a lower housing footprint, mostly because of increased household occupancy rather than lower energy consumption or more efficient homes.

Housing emissions, by categories
(% of housing CBE per capita)

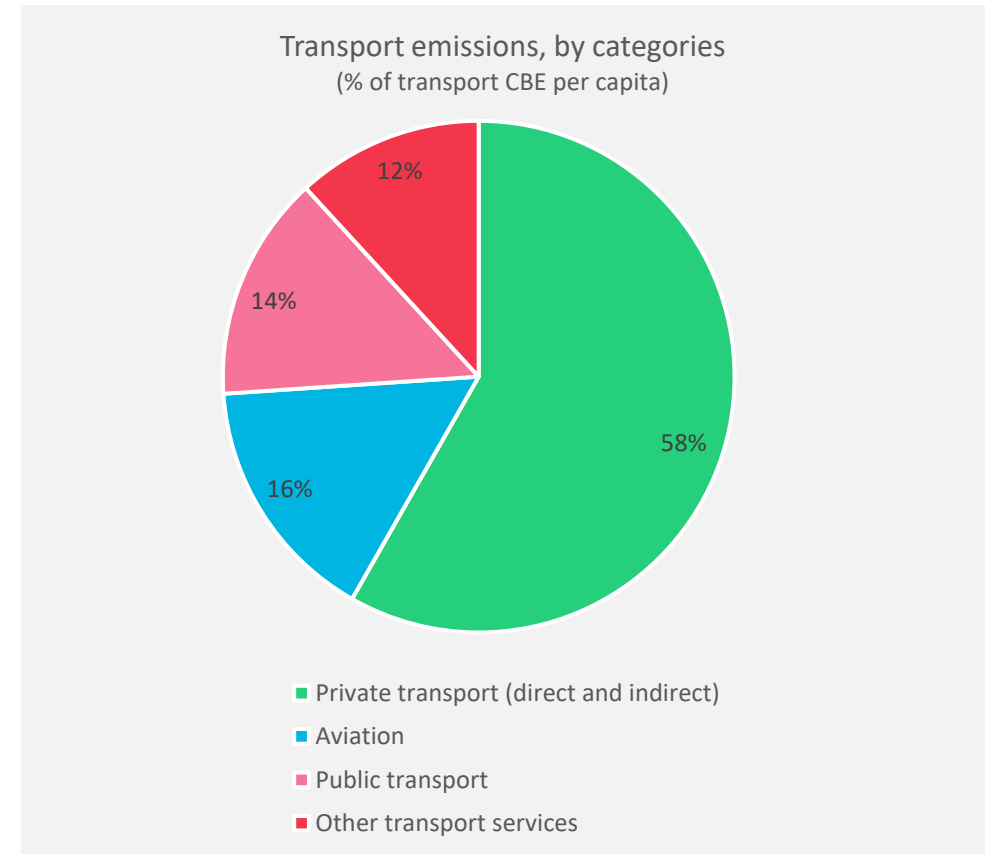


- Gas and other fuels (direct & indirect)
- Electricity
- Other (includes rental fees which may include energy bills)
- Water and waste
- Maintenance and repair of the dwelling

5 – CBE accounts deep dives

Transport

- The transport category includes emissions linked to the production, maintenance and use of cars (including fuel consumption), as well as emissions from using public transport and air travel.
- Over half (58%) of the transport footprint comes from private transport (e.g. owning and using cars).
- Compared to 2020, Londoners' transport footprint decreased slightly by 4% in 2021, driven by a combination of spending and emissions intensity changes in different sectors.
- Londoners' use of transport is unlike any other region in the UK. Private transport emissions per capita are much lower than in other regions, and public transport emissions are the highest in the country. Overall per capita transport emissions in London are lower than the rest of the UK.

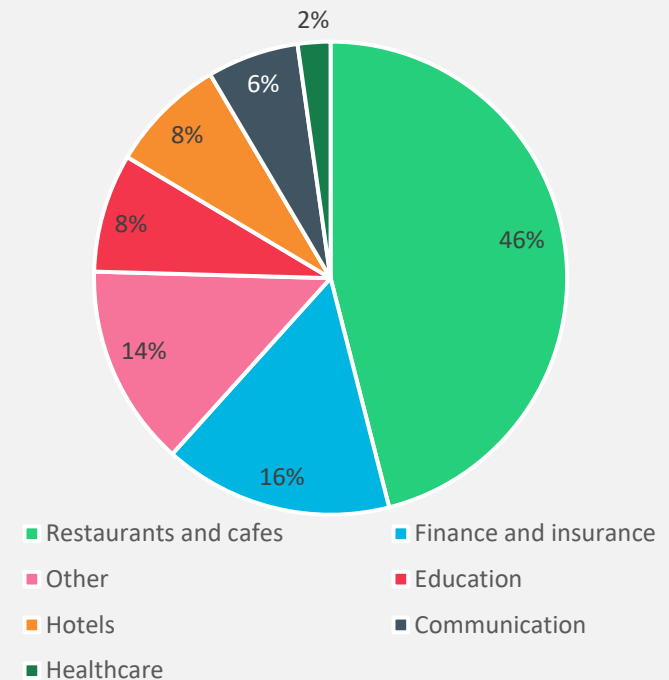


5 – CBE accounts deep dives

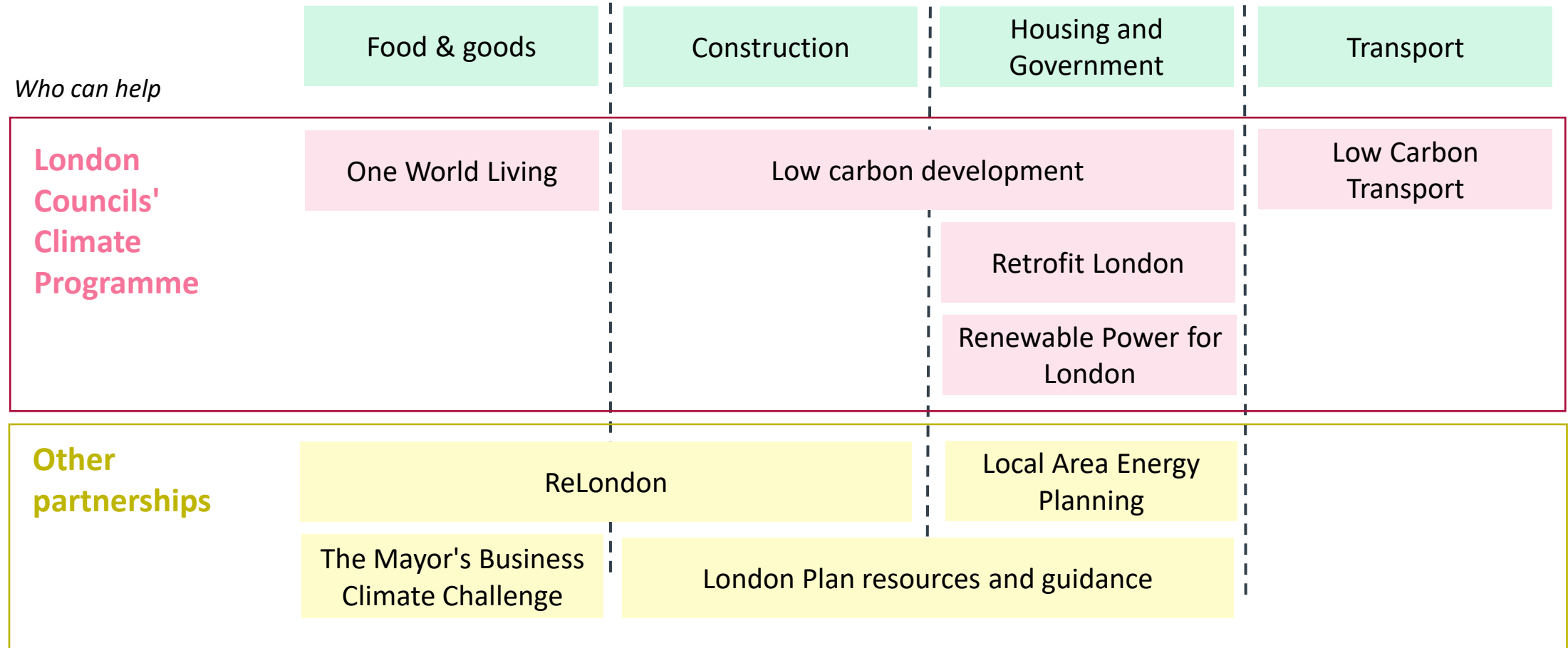
Services

- The services category includes all emissions associated with Londoners' paying for services like eating out, financial services and health and education provision.
- Almost half of Londoners' services footprint is from eating out in restaurant and cafes. This includes emissions related to food consumption – and waste as well as restaurants' and cafes' energy use.
- Compared to 2020, when COVID-19 lockdown restrictions were highest, Londoners' services footprint increased by 6% in 2021.
- London's spend on services is usually one of the highest in the UK but it was one of the lower in 2021, which might be due to greater lockdown restrictions than other areas.

Services emissions, by categories
(% of services CBE per capita)



6 – Who can support boroughs to tackle emissions?



7 – What can boroughs do?

Food and goods

Strategy development

Examples of what boroughs can do:

- Develop a consumption-based emissions and/or circular economy **strategy and targets**

Existing resources

- Sustainable Neighbourhood visualisation (upcoming)

Engaging with communities and business

Examples of what boroughs can do:

- Support community-facing engagement/education campaigns:
 - [Eat like a Londoner](#)
 - [Love Not Landfill](#)
- Engage with schools and their students:
 - [OWL textiles education packs](#)
 - [Blog on Pupils Profit Eco-refill scheme](#)
- Support local SMEs to adopt more circular business models:
 - [ReLondon's Business Support Programme](#)
- Develop place-based initiatives (circular neighbourhoods or hubs):
 - [Circular neighbourhood network](#)

Our organisations

Examples of what boroughs can do:

- Reduce the council's own consumption-based emissions through the food and goods procurement:
 - [OWL Food Purchasing Commitment](#)
 - [OWL Plastics Pledge](#) (Pledge launching early 2025)
 - OWL textiles and electricals procurement guidance coming 2025

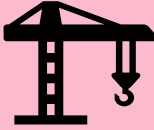

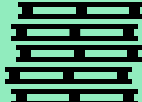
To find out more, please contact
ravina.singh@londoncouncils.gov.uk



7 – What can boroughs do?

Construction

Examples of what boroughs can do:

 <p>Planning</p>	<p>Extend and normalize the Circular Economy Statement Policy across the majority of new developments</p> <p>Establish a retrofit-first approach across the majority of new developments</p> <p>Embed circularity metrics into the planning process</p>
 <p>Procurement</p>	<p>Commit to embed CE principles in own construction works</p> <p>Engage with circular SMEs to develop novel and alternative business models</p>
 <p>Infrastructure</p>	<p>Build the user base for reuse platforms and support the cocreation of material reuse business models</p> <p>Pilot the development of physical reuse hubs</p>

Resources

- Access the **award-winning London Councils Low Carbon Development Toolkit**. Specifically focussing on the Officer checklist for Circular Economy and Whole Life Carbon.
- Access the CIRCuIT project's [Final Report](#), Chapter 5 focuses on city policies.
- Review soon to be released [Net Zero Neighbourhood Circularity Feasibility Study](#) commissioned by London Borough of Hounslow. It outlines how local authorities can apply circular economy principles to residential retrofits, including a review of the circular innovations currently available on the market.
- Join GLA's MMC buyer's group to discuss large scale procurement of sustainable MMC for social housing: Michael.Gozo@london.gov.uk
- Join the cross authority collaboration group hosted by ReLondon, driving listed actions and currently focusing on piloting of digital reuse platforms and physical reuse hubs. tessa.devreese@relondon.gov.uk
- To find out more about the Low Carbon Development theme or to join the Low Carbon Materials workstream working group or please contact: Alice.Addison@londoncouncils.gov.uk



7 – What can boroughs do?

Housing and Government (public sector estate)

Examples of what boroughs can do:

Retrofit London

Engage with award winning programme that is accelerating the pace and scale of retrofit in London. This knowledge hub sharing for officers is has a steady stream of working groups that are generating practical tool kits to support officers. The programme is currently coordinating a pan London Social Housing Decarbonisation Fund Strategic Partnership and all boroughs are welcome.

Low Carbon Development

To engage with the [award-winning London Councils Low Carbon Development Toolkit](#). Specifically focusing on the Officer checklist for Energy statements

ReLondon

Embed learnings from the Net Zero Neighbourhood Circularity Feasibility Study commissioned by London Borough of Hounslow into residential energy retrofit works. It outlines how local authorities can apply circular economy principles to residential retrofits, including a review of the circular innovations currently available on the market.

To find out more please contact isabelle.nest-coleman@londoncouncils.gov.uk.

7 – What can boroughs do?

Transport

Examples of what boroughs can do:

- Ensure climate change is a key component of your borough's transport strategy, Local Implementation Plan and planning policies.
- Support residents to walk and cycle rather than using polluting modes, through policies, infrastructure and community engagement.
- Support clean freight and install public electric vehicle charging points.
- Work with TfL on improving access to public transport and decarbonising buses.

Peer learning and London Councils support

- Engage with Low Carbon Transport theme of London Councils' Climate Programme, led by RB Kingston and City of Westminster.
- Join one of our five workstreams tackling key borough levers (below).
- To find out more please contact Caelan.Knight@londoncouncils.gov.uk



Data



Active travel



Parking and kerbside



Freight



Electric vehicles