London Borough of Bromley
Environment and Public Protection

Bromley CO_2 Emissions Report

CO_2 Emissions within the scope of the Borough

Table of Contents

Bromley-wide Carbon Emissions

Summary

Whilst London Borough of Bromley's Net Zero Action Plan sets out our targets to reduce operational carbon emissions, it is important to know the state of Bromley's borough-wide emissions. Local authorities are directly responsible for between 2- 5% of their local area's emissions[1], but can influence around 33% of emissions in their wider area through policy decisions and service provision and occasional grants and funding opportunities. Local authorities influence local businesses, communities, and civil society[2] to reach their own net zero targets.

National carbon dioxide (CO_2) data has been released by the Department of Energy Security and Net Zero (DESNZ). The carbon emissions data used in this report is up to 2021, the latest available data for sector wide emissions.

It should be noted that the data in these reports relates to the calendar (rather than municipal) year and is expressed either as 'total' (the borough as a whole) or 'per capita' (average emissions per person) to provide more meaningful comparison.

Housing and transport infrastructure remain the highest areas of emissions in the UK, London and in the London Borough of Bromley.

This report analyses carbon emissions and trends for the following sectors:

- Domestic
- Transport
- Commercial

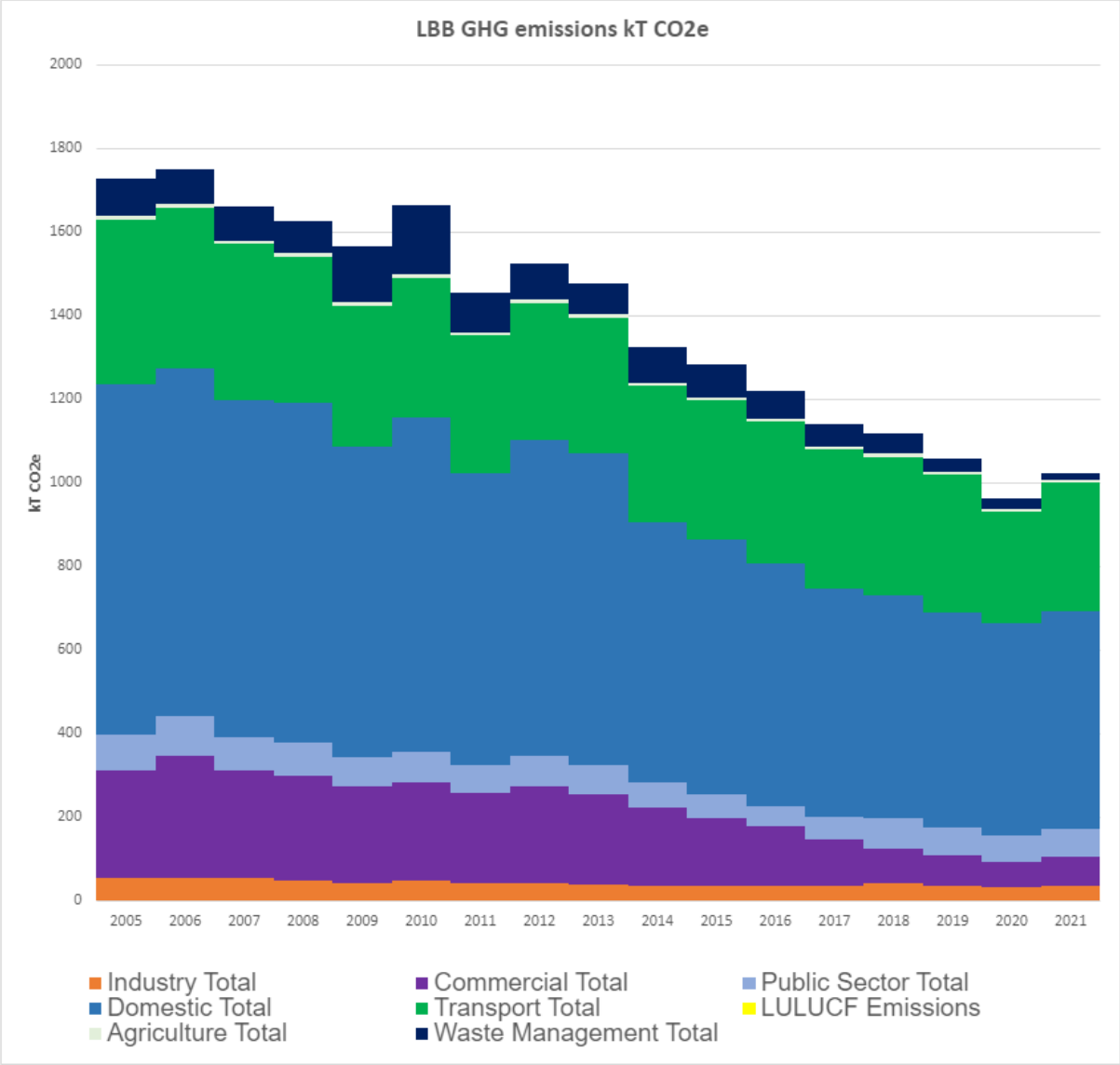
[1] Local Authorities and the 6th Carbon Budget – Committee Climate Change December 2020
[2] The role of local government in reaching net zero - House of Commons Library

1.1 Historic and Current Data

Since 2005, Bromley has seen a trending decrease in CO_2 emissions. All sector emissions are shown on the graph[3]. However, there is a 6.5% increase in Bromley's CO_2 emissions between 2020 and 2021. This is likely due to the upturn in economic and social activity following the end of the COVID-19 lockdowns.

This trend is also in line with London data and national data, where the impacts of the pandemic have been documented as cause for this change[4]. The emissions from 2021 are still lower than those from 2018, which is the baseline for operational emissions for London Borough of Bromley.[5]

Figure 1: London Borough of Bromley Greenhouse gas emissions ($ktCO_2e$) 2005 – 2021



It should be noted that the emissions which have been measured have occurred within the UK's borders, (territorial emissions), and **do not** include the emissions from the purchase or consumption

[3] UK greenhouse gas emissions: local authority and regional - Department for Energy Security and Net Zero
[4] London's consumption-based emissions account | London Councils
[5] While LBB only accounts for its own operational CO_2 emissions, it is still important to measure changes in borough-wide emissions similarly.

of products and goods manufactured from overseas. The Department for Energy Security and Net Zero (DESNZ) do review consumption-based emissions and whilst the methodology is slightly different it does give an indication as to GHG emissions and the UK's consumption-based emissions are considerably higher than its territorial emissions.

The latest CO_2 data for the borough of Bromley as of 2021 is also broken down by sector below, with Domestic and Transport emissions categories being the largest.

Figure 2: 2021 Bromley Emissions Per Sector

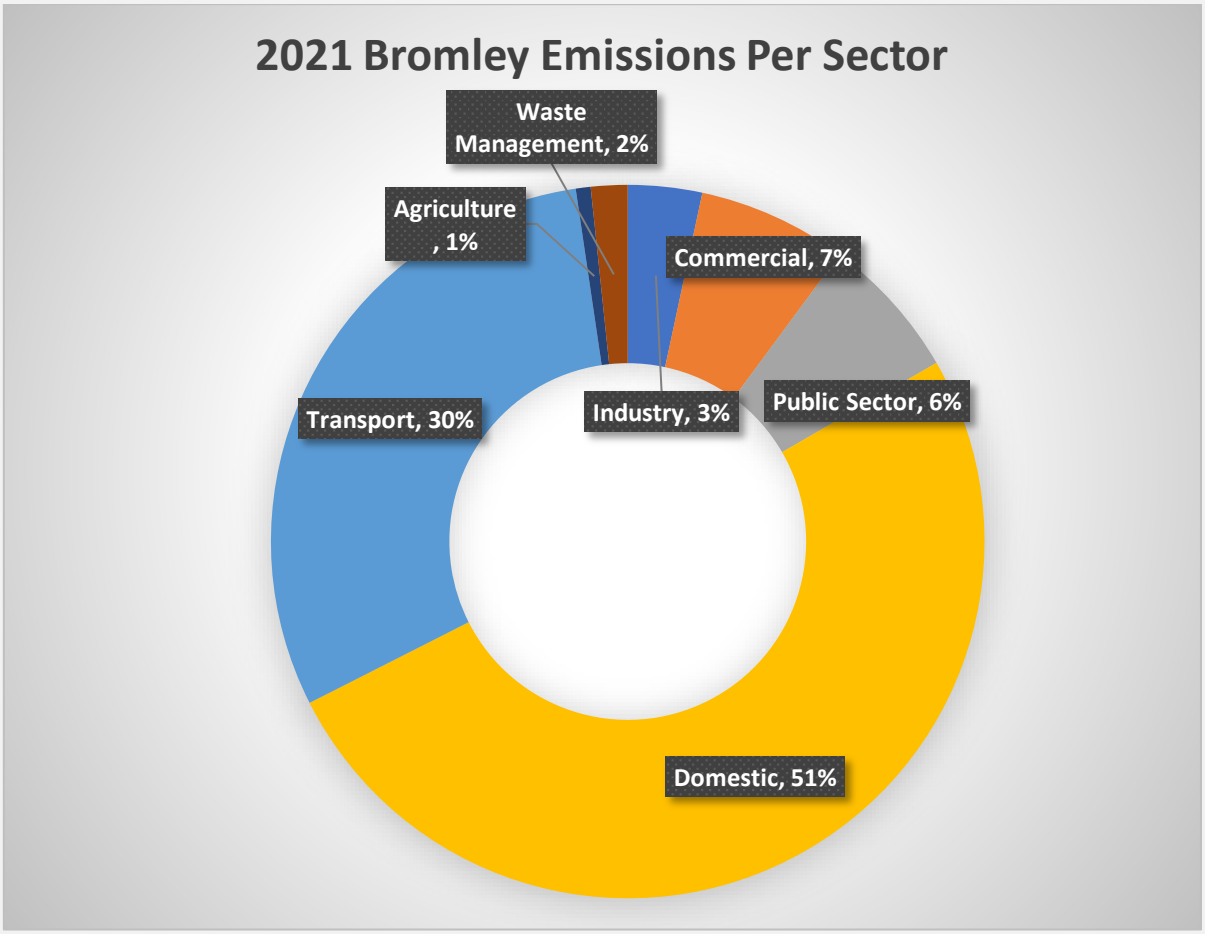


Table 1: 2021 Bromley Emissions per sector ($ktCO_2e$)

Industry Total	Commercial Total	Public Sector Total	Domestic Total	Transport Total	Agriculture Total	Waste Management Total	Grand Total
34.4	69.3	66.9	521.4	308.8	6.9	17	**1,015.80**

Domestic refers to energy use in the domestic sector, whereas public sector not only includes local authorities but also schools, the NHS etc.

Industry refers to industrial processes and activities that generate emissions of pollutants such as nitrogen oxide, ammonia, carbon dioxide.

Transport emissions refer to emissions from aviation, shipping, electric and diesel railways, and all road transport.

Agriculture emissions refers to emissions from agricultural activities such as animal husbandry, land cultivation etc.

LULUCF refers to land use, land use change and forestry, which consists of emissions and removals from forests, cropland, grassland, peatland, and settlements.

Greenhouse gas emissions (GHG) in line with the GHG protocol are reported in units of carbon dioxide equivalents (CO_2e). This allows the impact of each of the seven main greenhouse gasses to be expressed in terms of the amount of CO_2 that would create the same amount of warming, allowing easy comparison of the impact of different emission types. Throughout this report, all greenhouse gas emissions are given in terms of kilotonnes of carbon dioxide equivalent ($ktCO_2e$).

2.1 Domestic emissions

Figure 3: 2021 Bromley Domestic GHG Emissions

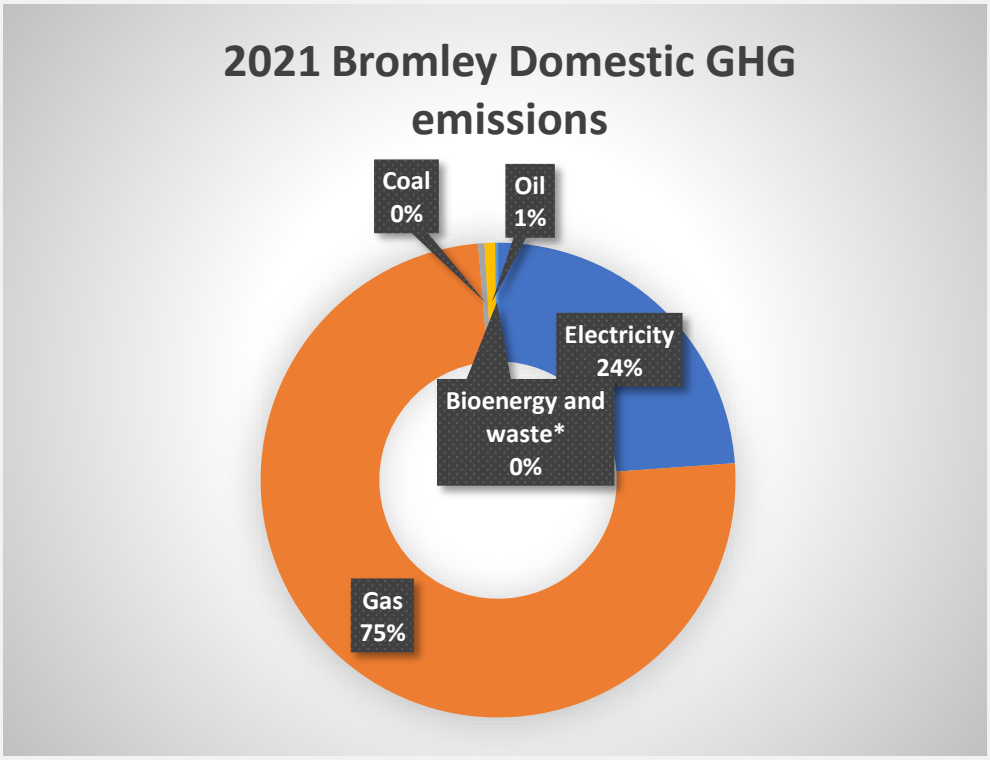


Table 2: 2021 Bromley Domestic Emissions ($ktCO_2e$)

Electricity	Gas	Coal	Oil	Bioenergy and waste*	Total
118	370	2	4	1	494

Overview summary figure 2 and 3:

Domestic emissions make up 51% of Bromley's CO_2 emissions. This is much higher than the national average of 30% and the Greater London average of 38%. In 2021, gas made up the largest portion of domestic CO_2 emissions at 75% and electricity use made up 24% of domestic CO_2 emissions.

Bromley is largely residential and is the largest London borough by area. Domestic emissions also include people travelling to and from their homes as well as (wider distances comparatively than most Londoners) people running their homes.

The nature of housing stock, relative affluence of the population and age profile of the residents are also influences to consider.

Bromley has the largest elderly population of any London Borough. Typically, over 65's stay at home more than those in younger age categories and may live in under-occupied private housing. Some may also use heating for longer due to health concerns, resulting in more energy being used.

The average household income estimate for Bromley is £57,256 (2018), and affluent households generally spend more on energy.

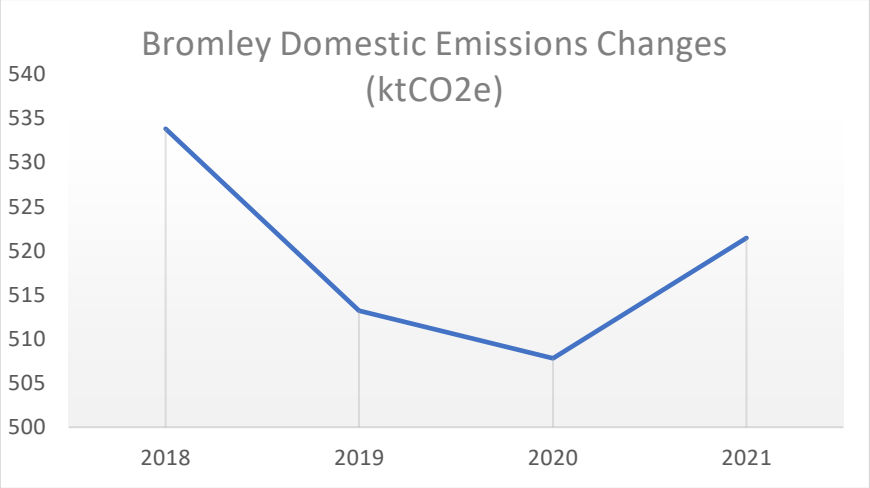
The limited supply of newer housing stock and housing association stock in the area also means that homes are likely to be less energy efficient.

50% of the private rented sector dwellings in the area were built before 1919 and a further 38% were built between 1919 and 1944, making them more energy intensive and potentially falling into the 'hard-to-treat' category. 48% of housing is detached or semi-detached, which leads to wasted energy through solid walls, high ceilings and large windows. Bromley also has a slightly lower average temperature than inner London, meaning that more energy use to heat homes is expected.

Improving the energy efficiency of the borough's buildings will be essential to reducing energy bills, tackling fuel poverty, improving energy security, and reducing carbon emissions[6].

2.2 Domestic emissions initiatives

Figure 4: Bromley Domestic Emissions Changes 2018 - 2021



Whilst Bromley has high domestic emissions compared to most London Boroughs, there has been a 2% decrease in domestic emissions since 2018 from 533.8 $kTCO_2e$ to 521.4 $kTCO_2e$ in 2021. As with other emissions data, a significant decrease is noted between 2019 and 2020 due to the impacts of the coronavirus pandemic. Between 2020 and 2021 emissions had risen again and were above the 2019 levels.

Further reductions will be required if the target of net zero by 2050 is to be met. However, reducing domestic emissions is challenging due to the lack of funding available for this area and a lack of any specific statutory requirements for property owners to attain or meet specific standards in this respect. This has, however, changed for the private rented sector, from April 2023 properties are required to reach a Minimum Energy Efficiency Standard (MEES), stipulated by an Energy Performance Certificate (EPC).

Enforcement of the MEES on the private rented sector is a responsibility of the Local Authority and sector compliance is largely dependent upon resources made available. This may change as regional schemes attempt to tackle issues of fuel poverty and climate change.

[6] Energy Efficiency: Building towards Net Zero, House of Commons, 2017-2019.

The initiatives underway that may help residents to better heat their homes and reduce domestic emissions include:

- Signposting residents to energy efficiency advice through the London Borough of Bromley website.

On the London Borough of Bromley webpage, residents are signposted to relevant energy advice platforms such as:

Energy Advice London - Energy Saving Trust
Gov.uk website
Ofgem

- Signposting residents to energy upgrade grants

Where grants are available, the London Borough of Bromley webpage also signposts grants and eligibility requirements for residents. As of the time of this report, some of the grants that may be available to eligible residents are:

- Home Upgrade Grant

This grant allows residents to have free energy saving improvements made to their home is they are a homeowner with an off-gas heating system and a low energy performance certificate rating. There is also a maximum household income threshold of £36000 for this grant.

- Green Homes Grant Local Authority Delivery Fund (LAD)

The LAD funding scheme aims to raise the energy efficiency of low EPC rated homes (those with band E, F or G). The scheme gives homeowners a £10,000 grant and landlords £5000 to pay for energy efficiency improvements such as low carbon heating systems, insulation, and smart heating controls.

- Boiler Upgrade Scheme

The Boiler Upgrade Scheme provides up to £7500 towards the cost of replacing fossil fuel heating systems with a heat pump. Approved installers will apply for the scheme on residents' behalf.

- Signposting small, medium enterprises (SMEs) and landlords to available energy efficiency funding.

Where available, the LBB website also lists available grants to landlords looking to add energy efficiency improvements to their property. Landlords are also encouraged to apply where their tenants may meet certain eligibility requirements for example, income thresholds.

- Advice service platforms:

- South London Healthy Homes

The South London Healthy Homes program is a free service accessible to Bromley residents along with 12 other London boroughs to help vulnerable residents stay warm and healthy. Anyone eligible can access help to keep their home warm in the winter including energy efficiency advice, installation of energy saving devices and support for home improvement grants. The telephone advice service is facilitated by Charlton Athletic Football Club (CACT).

- South East London Community Energy partnership (SELCE)

SELCE offers energy advice for residents in South London. SELCE delivers a diverse set of services such as 1:1 phone advice, drop-in energy cafes, community workshops as well as home visits where necessary. Residents can self-refer to SELCE or be referred by colleagues.

2.3 Domestic emissions and addressing fuel poverty nationally.

- Winter Fuel Payments

The Winter Fuel Payment is a tax-free annual payment to help older people meet the cost of their fuel bills. There was a total of 54,830 Winter Fuel Payment recipients in Bromley between 2021 and 2022 (DWP,2022).

- Cold weather payments

Cold Weather Payments are made from the Social Fund to certain recipients of Income Support, income-based Jobseeker's allowance, and Pension Credit etc. To 'trigger' the payments, the average temperature at a specified weather station must be recorded as, or forecast to be, 0 degrees Celsius for seven consecutive days. These payments will vary in frequency, depending on the severity of the winter.

3.1 Transport emissions

Figure 5: 2021 Bromley Transport Emissions

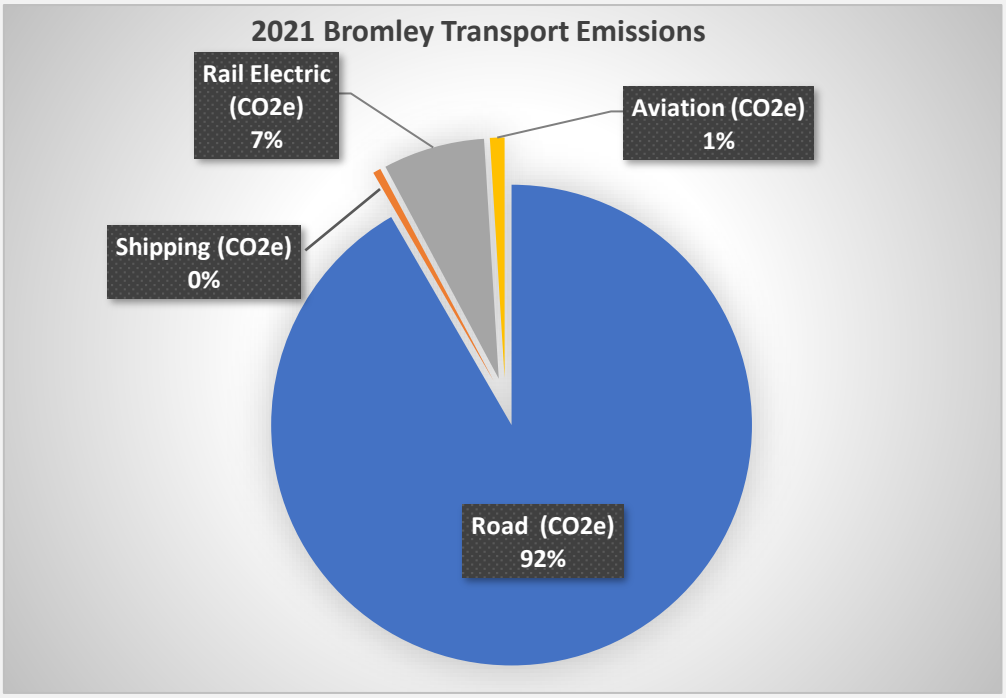
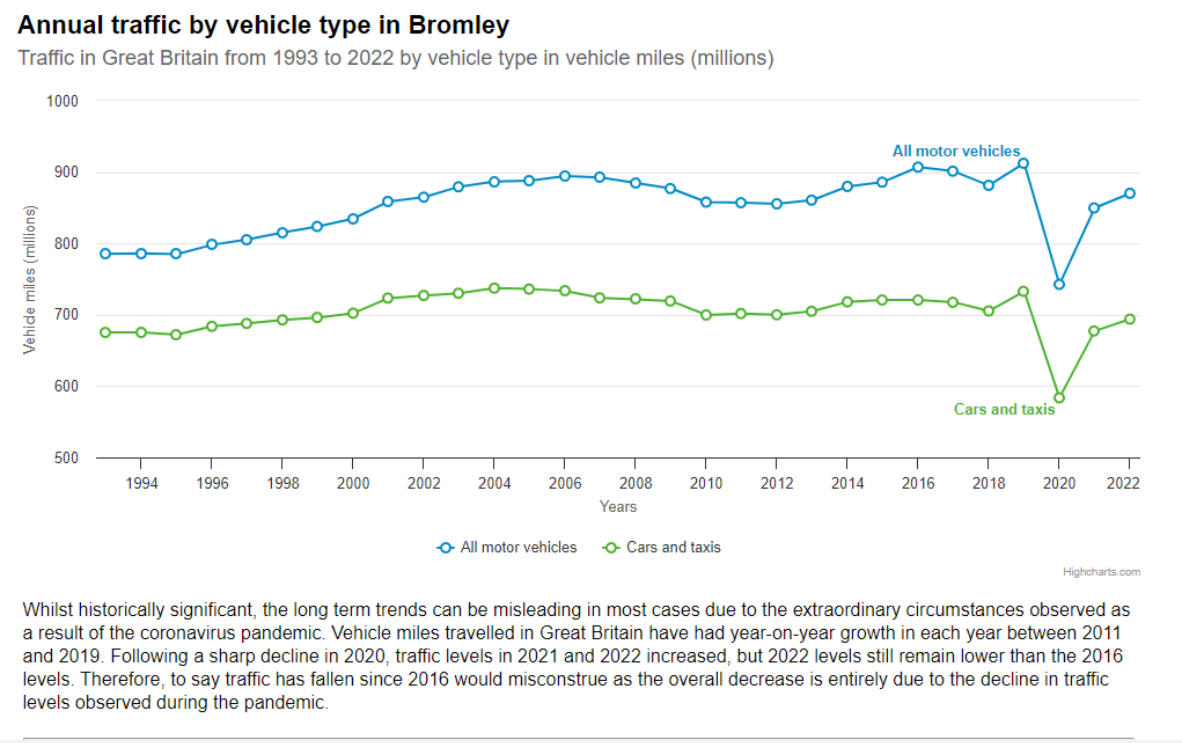


Table 3: 2021 Bromley Transport Emissions ($kTCO_2e$)

Road (CO_2e)	Rail Diesel (CO_2e)	Rail Electric (CO_2e)	Aviation (CO_2e)	Shipping (CO_2e)
234,312	1,358	17,477	2,503	0

Transport is responsible for 30% of Bromley's overall annual emissions for 2021. This is higher than the national average, where transport is responsible for 24% of the UK's total emissions[7]. Road transport dominates this category at 92% of the transport emissions and includes cars, lorries busses etc.

Figure 6: 1993 – 2022 annual traffic by vehicle type in Bromley



Traffic by vehicle type in Bromley from 1994 - 2022[8]

Most of Bromley's Road transport emissions are derived from cars and taxis as these make up most of the traffic according to road traffic statistics (2022).

It should also be noted that travel to and from the home is also features in domestic emissions, which indicates that transport, specifically cars are a key emission source for the London Borough Bromley.

Bromley has one of the least dense populations of any London Borough (22 people per hectare in 2019), compared to the London average of 57 people per hectare, which leads to greater car use.

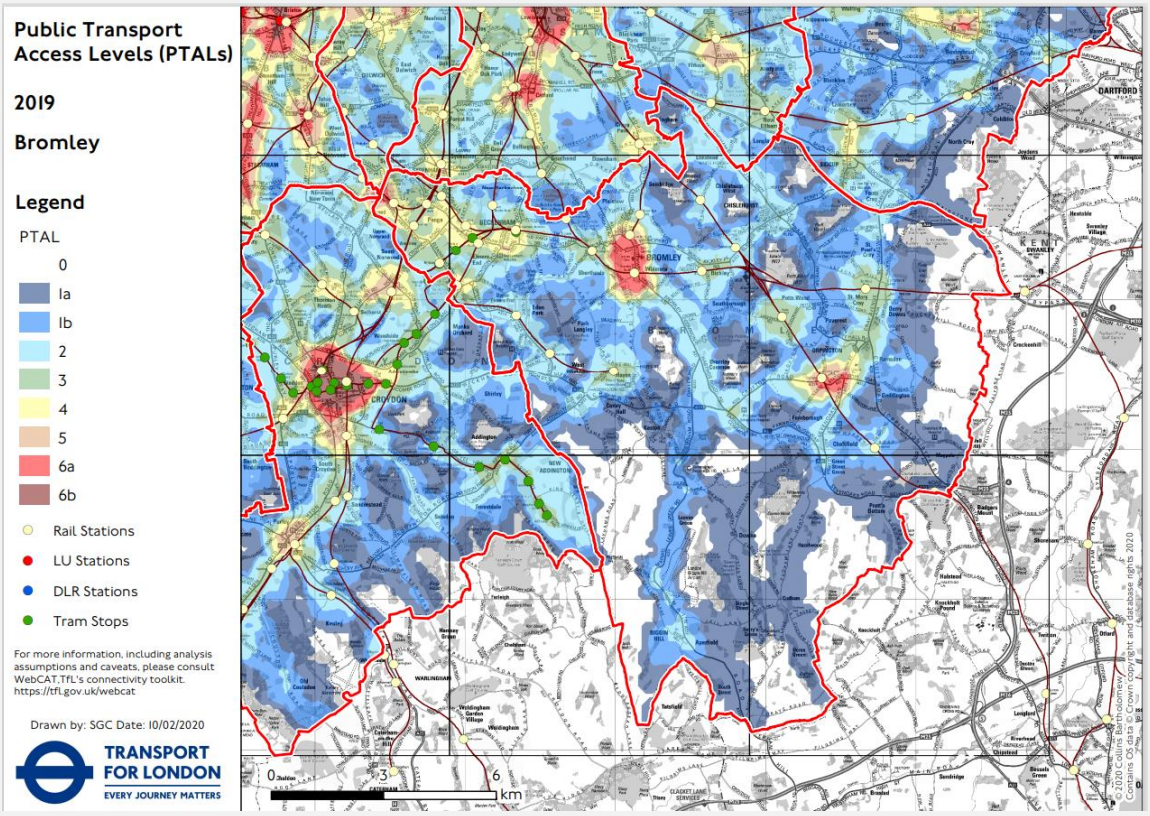
Bromley is the largest London borough in terms of area, and has 840 km of road network, resulting in Bromley residents having the longest average, and the longest total, journey length compared with other London boroughs.

70% of Bromley households have access to a car, compared to 39% of inner London households and 64% of outer London households[9].

Apart from the Bromley town centre, public transport accessibility levels are relatively low, particularly for orbital journeys. Bromley lacks a secondary public transport network, with no underground or Docklands Light Railway (DLR) service and limited access to London Tram services.

[7] Transport and environment statistics 2022 - GOV.UK
[8] Road traffic statistics - GOV.UK
[9] Technical Note 12 - How many cars are there in London and who owns them? (TfL)

Figure 7: Bromley Public Transport Access Levels Heatmap



2019 Bromley Public Transport Access Levels (TfL)[10]

3.2 Transport emissions reduction initiatives

Reducing road transport emissions in Bromley is more challenging and will require large-scale behaviour and infrastructure changes.

The council encourages residents to make choices towards sustainable travel. Measures include:

- School and workplace travel plans

LBB's school travel team works with most schools in Bromley to support them to develop a school travel plan. The main objectives of a school travel plan are to promote active travel, reduce congestion and improve safety outside schools.

- Cycling

There are over 100 miles of cycle routes in Bromley which have been installed to make it easier to cycle. Cycle routes vary from off road to residential and high street cycle routes. There are also several footways converted to accommodate pedestrians and cyclists, with clear signage. The LBB website signposts residents to resources encouraging safe active travel.

- Electric Vehicles

The UK governments target to end the sale of new petrol and diesel vehicles has been pushed back from 2030 to 2035[11].

[10] Public Transport Access Levels - Bromley
[11] UK electric vehicle infrastructure strategy - GOV.UK

Fleet directly operated by the Council comprises of light vehicles, minibuses, and several pool cars. Our gritters are owned by the Council but operated by our contractor as part of a Highways contract.

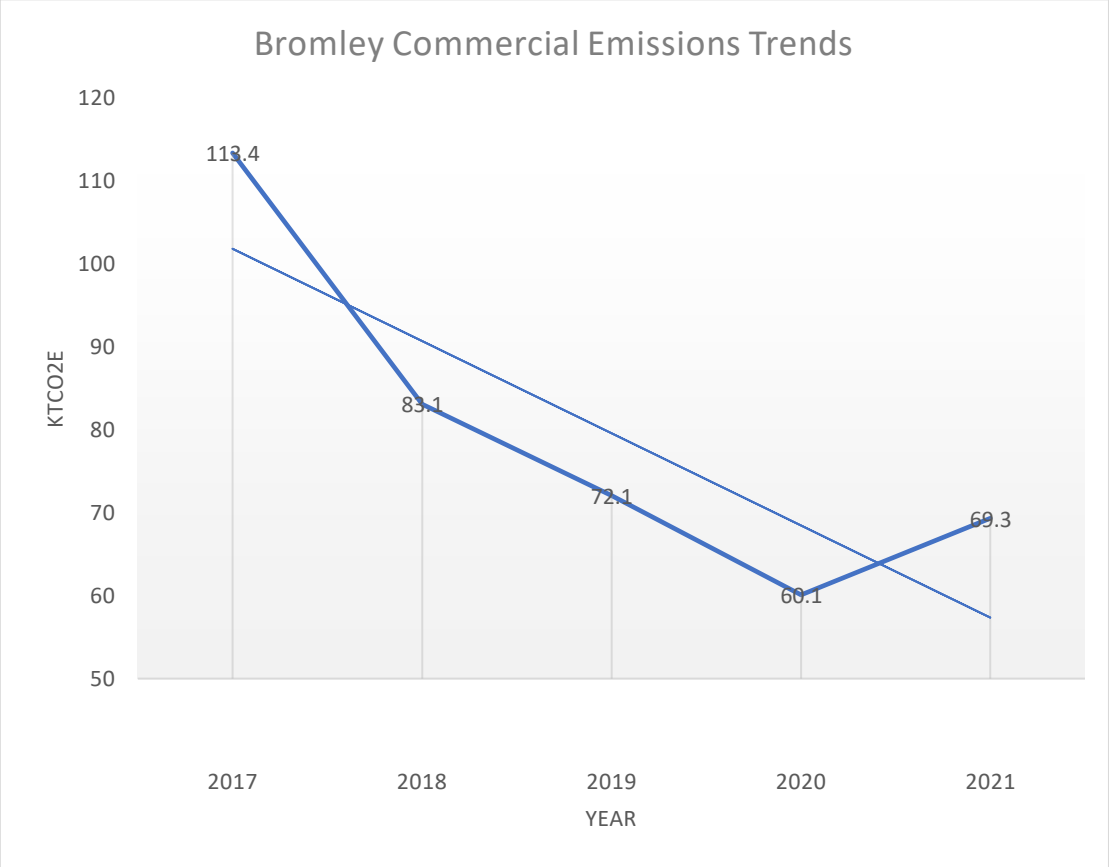
Other activities relating to reducing emissions from cars include: -.

- Anti-idling campaigns
- Increasing the availability of electric vehicle charge points and the trialling of the Gul-e solution, by providing a secure cable gully fitted into the pavement to enable EV charging while removing potential pedestrian trip hazards.

4.1 Commercial emissions

Industry and commercial CO_2 emissions are responsible for 7% of Bromley's carbon footprint. Since 2017 there has been a 39% drop in these emissions, with a slight increase post COVID 19. This drop in industry and commercial emissions is higher than the London average decrease of 12% between 2017 and 2021[12]. Bromley's commercial emissions are comparatively lower than the London average, with a year-on-year decrease observed.

Figure 8: Bromley Commercial Emissions Trends from 2017 - 2021



4.2 Commercial emissions initiatives

Whilst a reduction of emissions is ideal, it is important to note the reason for the fall in the commercial sector will to some extend be due to a gradual decline of business. Between 2019 and 2020, Bromley saw a net decrease in the number of SMEs[13].

LBB currently signposts local SMEs to grants, advice and networking platforms to encourage their growth. Skills training is also an important part of stimulating the local economy, through LBB's economic development team.

[12] UK greenhouse gas emissions: local authority and regional - Department for Energy Security and Net Zero
[13] Bromley Economic Development Strategy 2021 - 2031

5.1 Consumption data

So far, the carbon-emissions discussed in this report account for emissions from within the borough of Bromley, London, or UK territorial context. Consumption-based emissions, however, account for the wider context by including imported goods and services. Consumption emissions currently include international aviation, production of goods and services the UK imports from other countries. A population weighted share of the UK consumption-based emissions is calculated and thus shown on a per capita basis. This means consumption emissions are measure per person rather than area wide.

Figure 9: Percentage reduction in per capita consumption based emissions for London Boroughs 2001 - 2020[14]

As shown in the figure above from London Councils (2021), Bromley has seen per capita consumption based emissions decrease since 2001. This, however, is still on the lower end in comparison to reductions made by other boroughs and further reductions will be required.

[14] Consumption Based Green House Gas Emissions for London and its Boroughs, University of Leeds, June 2023

Data Sources

- Local Authorities and the 6th Carbon Budget – Committee Climate Change December 2020
- The role of local government in reaching net zero - House of Commons Library
- UK greenhouse gas emissions: local authority and regional - Department for Energy Security and Net Zero
- Energy Efficiency: Building towards Net Zero, House of Commons, 2017-2019
- London's consumption-based emissions account | London Councils
- Transport and environment statistics 2022 – (GOV.UK)
- Road traffic statistics – (GOV.UK)
- Technical Note 12 - How many cars are there in London and who owns them? (tfl.gov.uk)
- Public Transport Access Levels - Bromley (tfl.gov.uk)
- UK electric vehicle infrastructure strategy – (GOV.UK)
- Bromley Economic Development Strategy 2021 – 2031
- Consumption Based Green House Gas Emissions for London and its Boroughs, University of Leeds, June 2023