London Borough of Bromley
Environment & Community Services

Bromley's CO_2 Emissions: 2018 Performance Report

CO_2 Emissions within the Scope of Influence of Local Authorities




July 2020
The Carbon Management Team

Contents

1. Introduction

1.1 Background

In June 2020, the Department of Business, Energy & Industrial Strategy (BEIS) released national data for 2018 carbon dioxide (CO_2) emissions by local authority. This data set is the successor to the former NI 186 requirement and is now referred to as: "*Carbon dioxide emissions within the scope of influence of Local Authorities".*

National CO_2 data has been released annually by the Department of Energy and Climate Change (DECC) since 2005 (generally 18 months after the reporting year-end). This is now done by DECC's successor, BEIS. However, the basis on which the data is compiled has changed as information capture techniques have improved. This means previous years' data has to be recast and, therefore, previous years' reports cannot be directly compared with this report.

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.

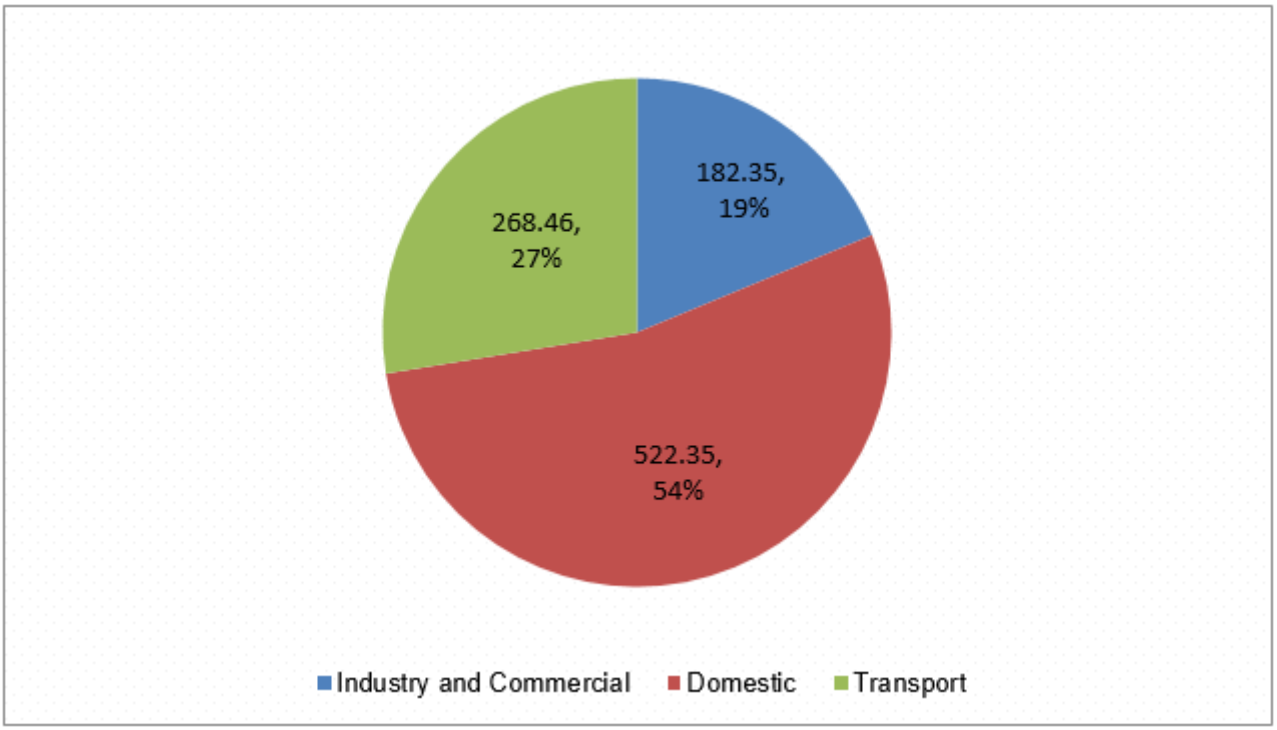
An explanation of the data sources and collection methodologies is set out in Appendix 5.1 but, in simple terms, CO_2 emissions are estimated from the following sectors:

- Industrial and Commercial (I&C): gas and electricity use in business and industry
- Domestic: gas and electricity use in residential property
- Transport: road transport (A-roads and minor roads)

1.2 Bromley Key Point Summary 2018

- In 2018, Bromley emitted a total of 973kt CO_2 comprising:
  - 522.4kt domestic emissions (54%)
  - 268.5kt road transport emissions (27%)
  - 182.4kt commercial emissions (19%)
- Total all-sector CO_2 emissions decreased by:
  - 3% (27kt) from 2017 to 2018
  - 37% (583kt) since 2005
- Per capita all-sector CO_2 emissions, (which are lower than the national and London averages) decreased by:
  - 3% (0.1t per capita) from 2017 to 2018
  - 42.3% (2.2t per capita) since 2005
- However, despite a decrease from the previous year, Bromley has higher than average per capita CO_2 emissions for the domestic sector (1.6t per capita): indeed, Bromley has dropped by one place to the second worst performer in Greater London in this sector.
- Industry & Commercial per capita CO_2 emissions are lower than the London average. Bromley is the fifth best performer in London, but this reflects the large population size and lack of industry.
- Transport emissions have fallen by 28% compared with baseline (2005) and have decreased by 4.9% since 2017.

Figure 1: Bromley's 2018 Total CO_2 Emissions by Sector: 973kt CO_2



1.3 Historic and Current Data

In 2018, Bromley experienced a decrease in total CO_2 emissions, as did most UK local authorities. Table 1 shows borough-wide total CO_2 emissions since 2005 broken down into sectoral sub-categories.

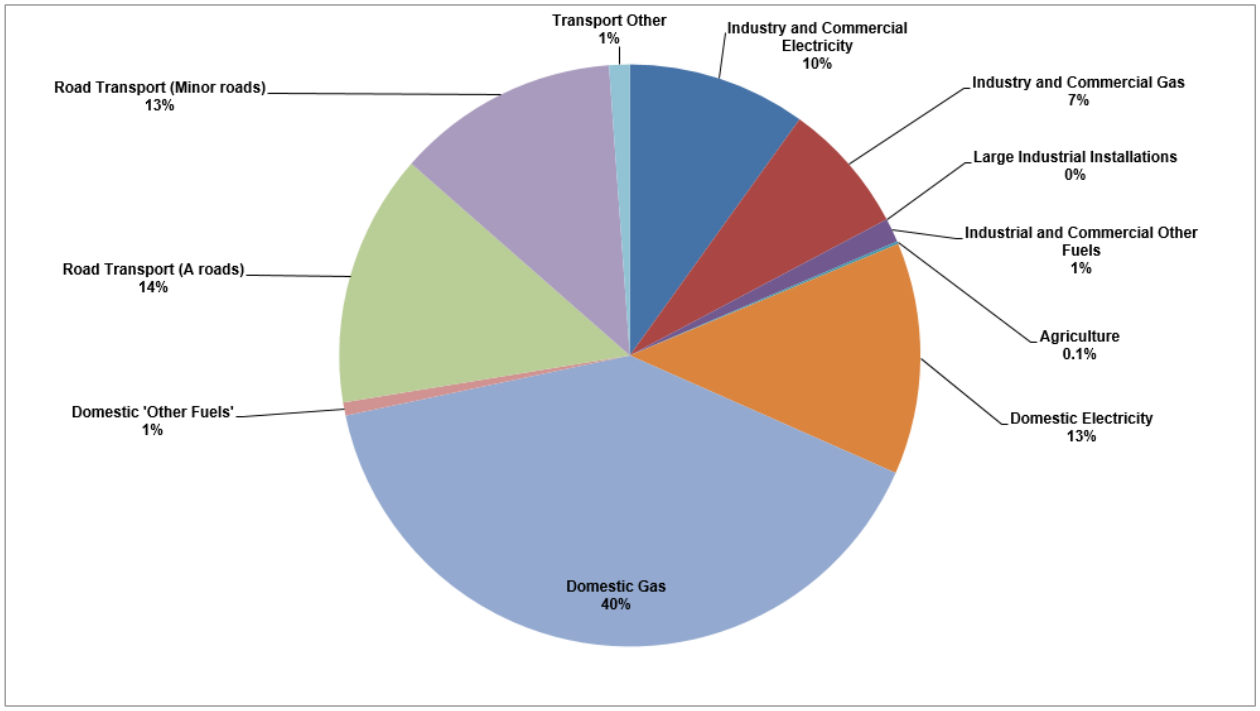
Table 1: All-Sector Emissions: 2005-2018 ($ktCO_2$) - *colour relates to sector as per Fig. 1*

Year	Industry and Commercial Electricity	Industry and Commercial Gas	Large Industrial Installations	Industrial and Commercial Other Fuels	Agriculture	Domestic Electricity	Domestic Gas	Domestic 'Other Fuels'	Road Transport (A roads)	Road Transport (Minor roads)	Transport Other	Grand Total
2005	249.4	105.2	-	22.2	1.3	320.5	482.8	7.6	192.7	164.7	9.6	1,556.1
2006	289.7	112.3	-	21.2	1.3	335.8	465.2	7.1	191.3	158.2	9.8	1,591.8
2007	262.5	89.9	-	21.3	1.2	336.4	441.3	6.7	183.5	159.7	9.9	1,512.4
2008	254.7	90.6	-	18.1	1.2	325.3	463.4	7.1	171.4	153.8	9.7	1,495.3
2009	235.7	79.0	-	14.0	1.2	293.3	418.9	6.6	164.4	149.2	9.1	1,371.3
2010	236.1	86.5	-	15.2	1.3	300.9	466.5	6.9	160.3	146.3	8.8	1,428.7
2011	221.6	71.3	-	12.5	1.3	288.1	379.9	6.4	155.7	143.5	9.0	1,289.2
2012	237.4	81.1	-	13.8	1.3	304.9	422.8	6.3	152.3	141.4	9.0	1,370.2
2013	214.8	86.6	-	11.3	1.3	279.1	434.7	6.8	150.8	138.5	9.2	1,333.1
2014	188.7	69.7	-	12.4	1.3	232.2	357.5	6.5	148.5	141.1	9.5	1,167.5
2015	166.2	75.2	-	12.8	1.3	195.1	387.0	6.5	150.5	138.6	9.9	1,143.1
2016	118.8	74.4	-	12.3	1.4	159.8	389.7	6.8	147.1	141.0	9.9	1,061.2
2017	102.7	70.4	-	13.3	1.4	139.3	382.7	7.1	146.3	125.2	10.8	1,000.2
2018	**96.6**	**71.3**	**-**	**13.0**	**1.5**	**125.3**	**389.9**	**7.1**	**136.7**	**120.7**	**11.1**	**973.2**

On a total all-sector basis, Bromley's CO_2 emissions have fallen by 37% from 1,556kt in 2005 to 973.2kt in 2018, and decreased by 3% between 2017 and 2018.

Figure 2 shows how Bromley's 2018 emissions are broken down by sub-category. This highlights the dominance of a) domestic emissions (54% of total) and b) emissions from domestic gas use (40% of total).

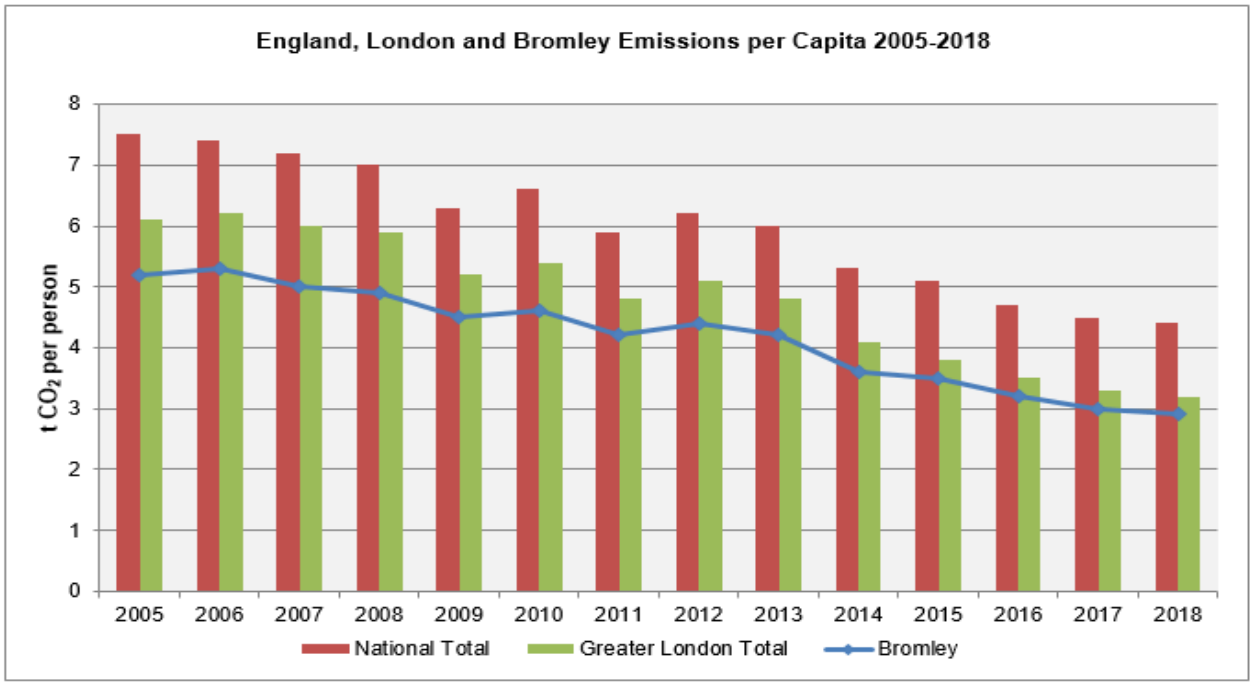
Figure 2: Total Emissions as a Percentage of Subcategory



1.4 Per Capita CO_2 Emissions

Since 2005, Bromley's (all-sector) per capita CO_2 emissions have fallen by 44.2%. Between 2017 and 2018, emissions per capita decreased by 3%. Figure 3 shows Bromley's per capita trend (blue line) compared with Greater London (green bar) and nationally (red bar) since 2005. On average, Bromley's 2018 all-sector per capita CO_2 emissions are 1.5 tonnes per capita lower than the National average and 0.3 tonnes per capita lower than the average for Greater London. In line with both national and regional trends, per capita emissions have continually declined since 2012.

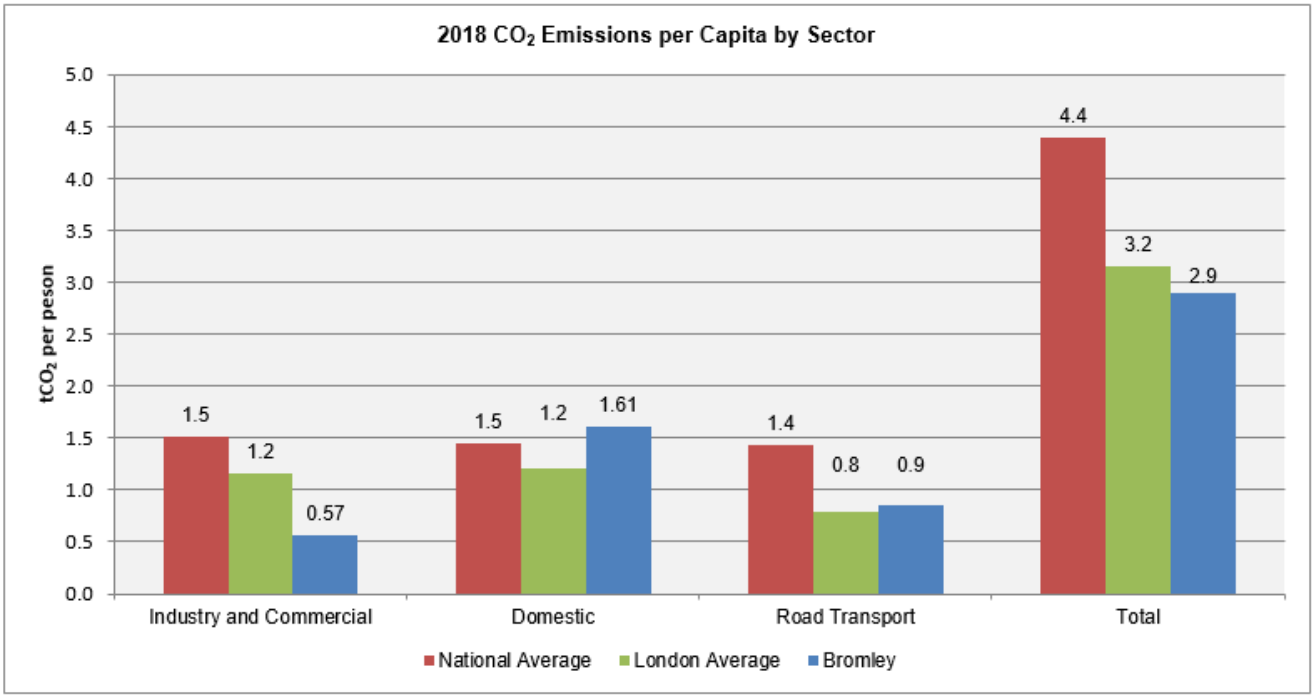
Figure 3: Per capita (all-sectors) CO_2 emissions



2. Sectoral per capita CO_2 Emissions

Figure 4 compares Bromley's sectoral (commercial, domestic, transport) per capita CO_2 emissions (blue) against Greater London (red) and National (green) averages. Independent figures are rounded up.

Figure 4: 2018 CO_2 Emissions by Sector



Bromley's per capita CO_2 emissions profile shows a marked variance with London and National averages.

- The lack of large-scale industrial and commercial installations has resulted in Bromley's commercial CO_2 emissions being much lower than the national average.
- Domestic CO_2 emissions, however, are higher than both the London and National average. This is largely due to the 'hard-to-treat' nature of the housing stock (e.g. solid wall pre-war construction) and the relative affluence of the population (See Table 3).
- Emissions from road transport are slightly above the London average but below the national average. This can be attributed to the large size of the borough, the relative lack of public transport network, and to the fact that Bromley has the largest road network of any London borough. Additionally, Bromley has relatively high rates of car ownership (See Table 5).

2.1 Industry and Commercial CO_2 Emissions

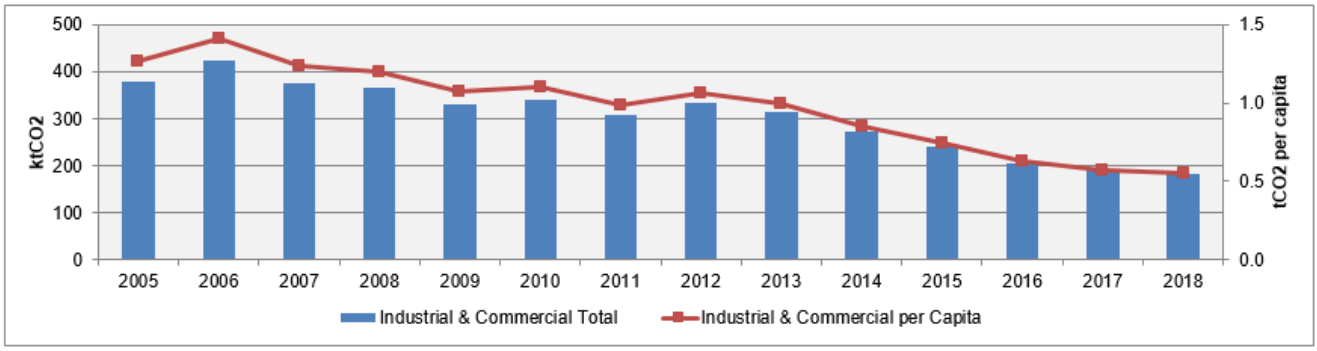
Industry and commercial CO_2 emissions are responsible for 19% of Bromley's carbon footprint, well below the Greater London and national average of 37% and 35% respectively. Table 2 sets out some factors relating to this.

Table 2: Bromley's Commercial Emissions: Factors

- Relatively few industrial installations in the borough
- Effects of slow economic growth on business energy consumption
- Energy intensive businesses being concentrated in other London boroughs

The borough has relatively low total and per capita commercial CO_2 emissions. Figure 5 shows commercial CO_2 per capita emissions plotted against total commercial emissions for 2005-2018.

Figure 5: Bromley's Industrial and Commercial CO_2 Emissions (Total and Per capita)



In 2018, total I&C emissions decreased by 52% since 2005 and 3% since 2017. Further examination of the decrease in commercial CO_2 emissions shows a 32% reduction in gas emissions since 2005, but an increase of 1% since 2017. There was a decrease of 61% in electricity since 2005 and 6% since 2017. The commercial sector also saw a 41% decrease in emissions from "other fuels" (e.g. oil) since 2005, and a decrease of 2% since 2017.

2.2 LB Bromley's Carbon Management Programme

The Council's Carbon Management Programme (CMP) is the main initiative designed to help reduce the organisation's energy consumption and carbon emissions, and provides an opportunity for the Council to achieve significant cost savings by becoming more resource efficient. The CMP focuses on activities that the Council can directly influence, such as energy use in Council buildings, street lighting, transportation fuel use, water consumption and office waste generation, which together contribute to approximately 1% of the borough's total annual emissions.

The CMP's first phase (CMP1) ran from 2008/09 to 2012/13 and resulted in a 14% reduction (5,275 tCO_2e) in the Council's own GHG emissions. A second five-year phase (CMP2) commenced in 2013/14, with an ambition to drive down emissions by a further 15% against a revised (2012/13) baseline by 2017/18. 2017/18 marks the final year of the second phase. To meet the Council's commitment to achieve net zero organisational emissions by 2029; a third CMP is currently being baselined and will last ten years. This will enable a longer-term strategy to be implemented and will allow the Council to consider longer payback times for carbon reduction projects.

2.3 Domestic CO_2 Emissions

Domestic emissions are responsible for 54% of Bromley's all-sector emissions: a much greater proportion than the figure nationally (33%) and Greater London (38%) reflecting the nature of the borough which is predominately residential with relatively little commercial activity. Since Bromley has less industrial and commercial emissions a greater proportion of "total" emissions emanate from residential property or from residents travelling to or from their homes.

The nature of housing stock, relative affluence of the population and age profile of residents all influence domestic sector emissions in Bromley. Table 3 sets out various factors for the comparatively high emissions in this sector.

Table 3: Bromley's Domestic Emissions: Factors

- Bromley has the largest elderly population of any London Borough, with 17% of the total Bromley population (2011 census). Typically, over 65's stay at home more than those of working age and may live in under-occupied private housing, requiring more energy to heat and keep warm
- The average GLA Household Income Estimate for Bromley in 2015 was £55k and affluent households generally spend more on energy
- Since the 1980s there has been a limited supply of new housing (although this has increased since 2003) meaning that the borough has relatively few energy efficient properties
- Approximately 70% of housing in Bromley is owner-occupied, which is often less energy efficient than Housing Association stock
- 50% of private rented sector dwellings were built before 1919 and a further 38% were built between 1919 and 1944, making it more energy intensive and difficult to improve
- 48% of housing is detached or semi-detached, which leads to wasted energy through solid walls, high ceilings and large windows
- Bromley is an outer London borough and typically has a slightly lower temperature than inner London, meaning comparatively more energy is used to heat homes

In 2018, total domestic CO_2 emissions have fallen by 36% since 2005 and 1% since 2017.

Per capita performance remains poor and emissions (1.6t/capita) continue to be higher than both the London average (1.2t/capita) and national average (1.5t/capita).

Figure 6: Bromley's Domestic CO_2 Emissions 2005-2018 (per capita and total)

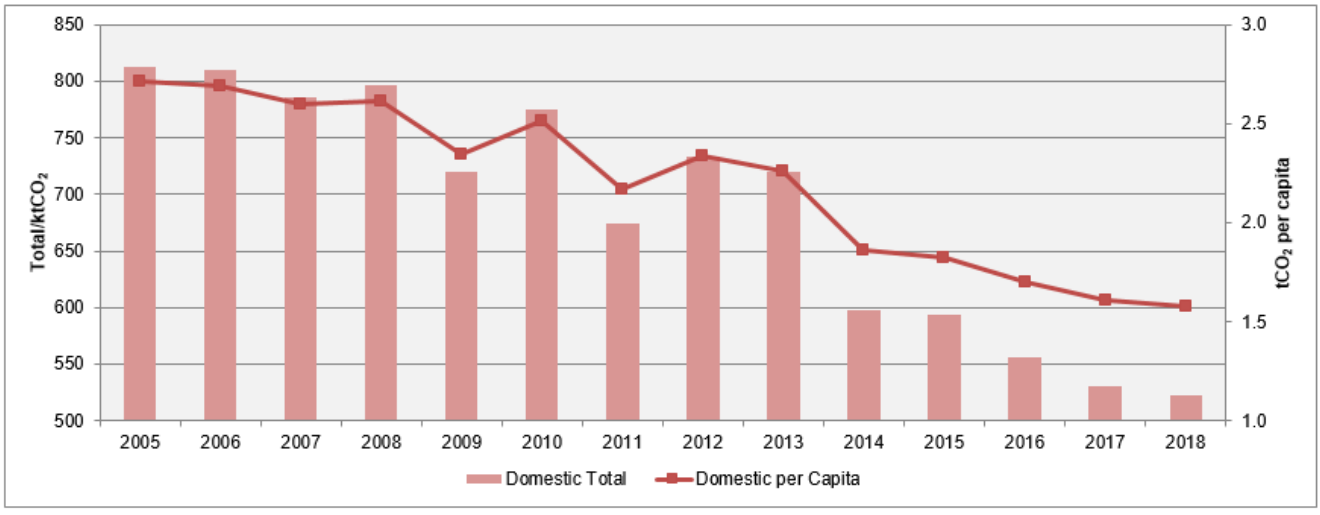
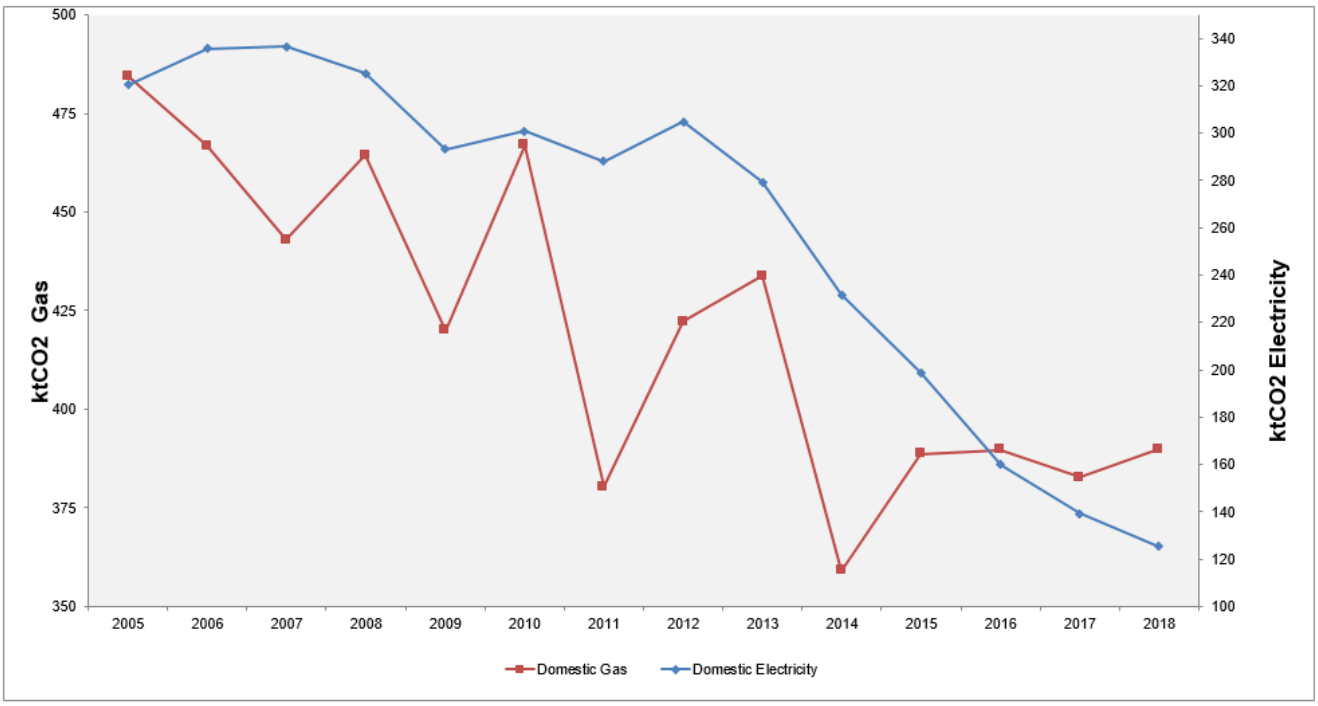


Figure 7 shows domestic electricity and gas consumption for 2005-2018. There has been a steady decline in electricity consumption since 2005, which may be attributable to better energy efficiency and behavioural change. Gas usage has also decreased, although is particularly weather dependant. There are clear spikes in years where there was a cold and long winter resulting in more energy use and higher CO_2 emissions.

Figure 7: Domestic Gas and Electricity Consumption 2005-2018



Since 2005, emissions from domestic electricity use decreased by 61% and domestic gas emissions fell by 20%. Since 2017, emissions decreased by 10% for electricity whilst gas increased by 2%.

Reducing domestic emissions is difficult due to the lack of Council resources made available to 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 as properties are now required to reach a minimum energy efficiency standard, stipulated by an energy performance certificate (EPC). Enforcement 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. Table 4 lists the initiatives underway that may help reduce domestic emissions.

Table 4: Domestic Emissions Initiatives

- Providing a residents' Helpline through the Energy Saving Trust.
- Regionally, the GLA's Energy for Londoners programme aims to make the cost of heating homes more affordable. Several schemes include Warmer Homes (£4000 available per household); Fuel Poverty Support Fund (Advice and referral scheme for fuel poor households, facilitated by Lewisham), RE:NEW (retrofit works), Fuel Poverty Partnership.
- In October 2018 the Department for Business, Energy and Industrial Strategy published its policy paper *Clean Growth Strategy*. A cornerstone to this policy is a commitment to improving the efficiency of UK homes, including £3.6 billion of investment for domestic efficiency improvements through ECO and extending current levels of funding to 2028. An offer to all households to install a smart meter to help save energy and money by the end of 2020 was also implemented.
- Other government schemes such as, Renewable Heat Premium / Incentive, Zero Carbon Homes and Energy Performance Certificates (EPC) have all been promoted. BEIS have stated in the Clean Growth Strategy that they will undertake a consultation process on how social housing can meet similar standards over this period. However, the Council does not own or manage any substantive housing stock and therefore has limited influence (also see 2019 HECA Further Report).
- Bromley's "Excess Winter Deaths" parameter is above regional and national averages and 'significantly worse' than the average for England. The Winter Health Project was developed to address the high rates of ill health and deaths due to people living in cold homes in Bromley, and included an action plan to deliver energy efficiency and heating improvements and advice for the most vulnerable people in the borough over the February 2018 period. The government has also announced several schemes to reduce fuel poverty and mitigate health risks posed by serious weather. This includes the Affordable Warmth Obligation, a second Cold Weather Payment and the Warm Home Discount Scheme. There have also been changes to the Renewable Heat Incentive, with a further £4.5 billion to support low carbon heat technologies in homes and businesses.

2.4 Transport Emissions

Road transport emissions are responsible for 27% of LBB's total emissions, below the national average of 32% but above the Greater London average of 25%.

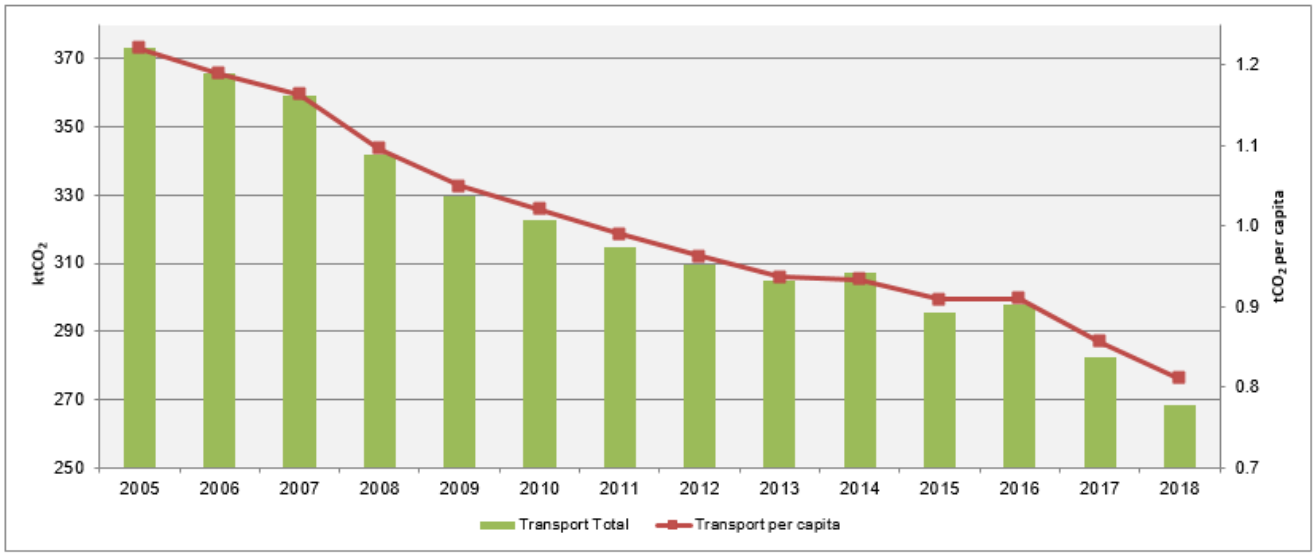
On a per capita basis, Bromley's transport emissions (0.8t) are equal to Greater London's but significantly lower than the national figure of 1.4t per capita. Bromley ranks 18th of all London Boroughs for transport emissions - an improvement from 20th in 2017. Table 5 sets out the factors that contribute to Bromley's transport related emissions.

Table 5: Bromley's Transport Emissions: Factors

- Bromley has one of the least dense populations of any London Boroughs (1,992 people per km^2 in 2006), which leads to greater car use.
- Bromley is London's largest borough in terms of area and has over 840km of road network. Resulting in Bromley residents having the longest average, and the longest total, journey length compared with other London boroughs.
- Bromley has the fifth highest car ownership levels in London.
- Bromley lacks a secondary public transport network, with no underground or DLR service and limited access to Tramlink services.
- Apart from Bromley town centre, public transport accessibility levels are relatively low, particularly for orbital journeys.

In 2018, total Transport emissions decreased by 28% since 2005 and decreased by 5% since 2017. Per capita emissions, 0.9 tCO_2, have virtually stayed the same since 2013, dropping 0.05 tCO_2 from 2017-2018.

Figure 8: Bromley Transport Emissions (Total and Per Capita)



Reducing road transport emissions in Bromley is a difficult task as it requires large-scale behavioural change (e.g. encouraging modal shift). However, Table 6 highlights initiatives underway in the transport sector.

Table 6: Bromley Transport Emissions Reduction Initiatives

- The Council encourages residents to make real choices about how they travel. Measures include:
  - School and workplace travel plans
  - Provision of cycle routes and cycle parking
  - Reducing emissions from the Council's own and its contractors' vehicle fleets
- An anti-idling campaign to offer advice and education was launched, targeting areas such as schools
- The Council is currently examining the viability of significantly increasing the presence of electric charging points in the borough.

3. Comparing Bromley's Emission

Broadly in line with national (406 local authorities in England, Scotland and Wales) and London data, Bromley's total CO_2 emissions decreased by 37% (583kt) 2005–2018, and by 3% (27kt) 2017–2018.

Figure 9: Bromley, London & National per Capita Emissions 2005-2018

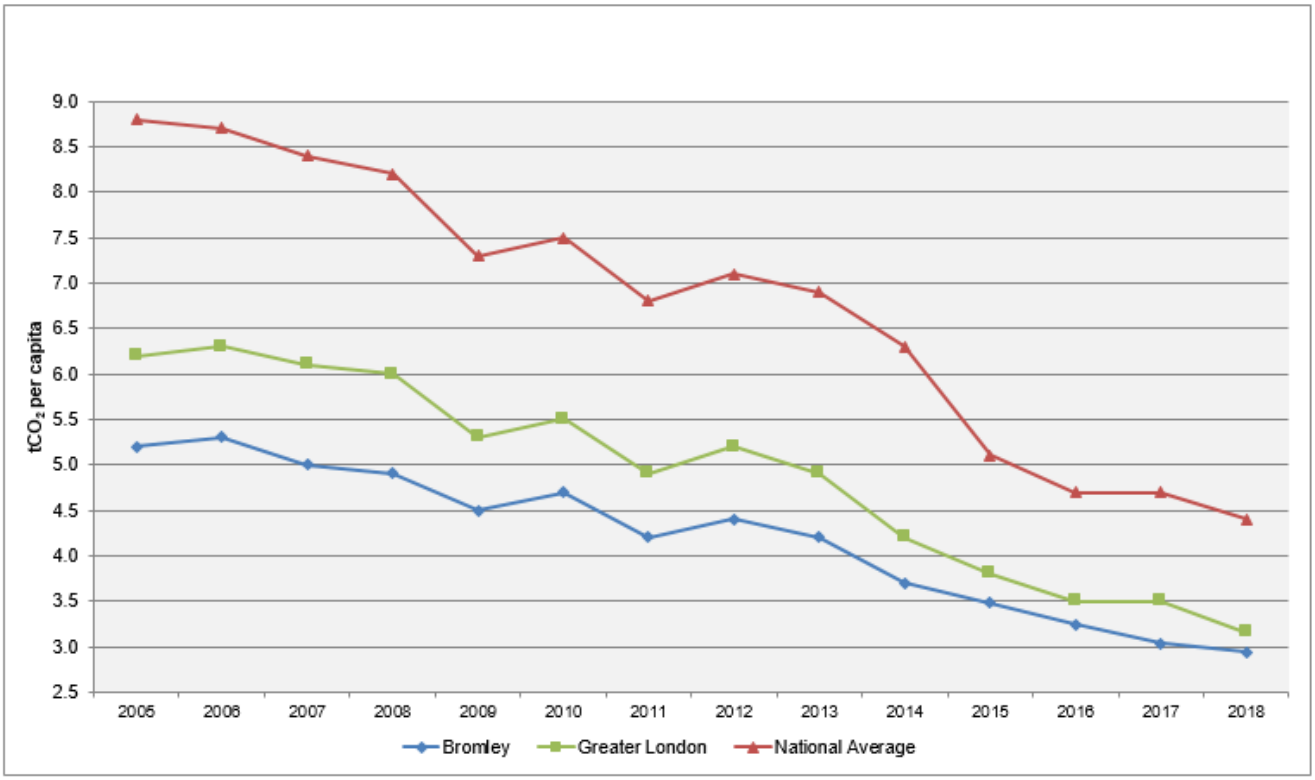
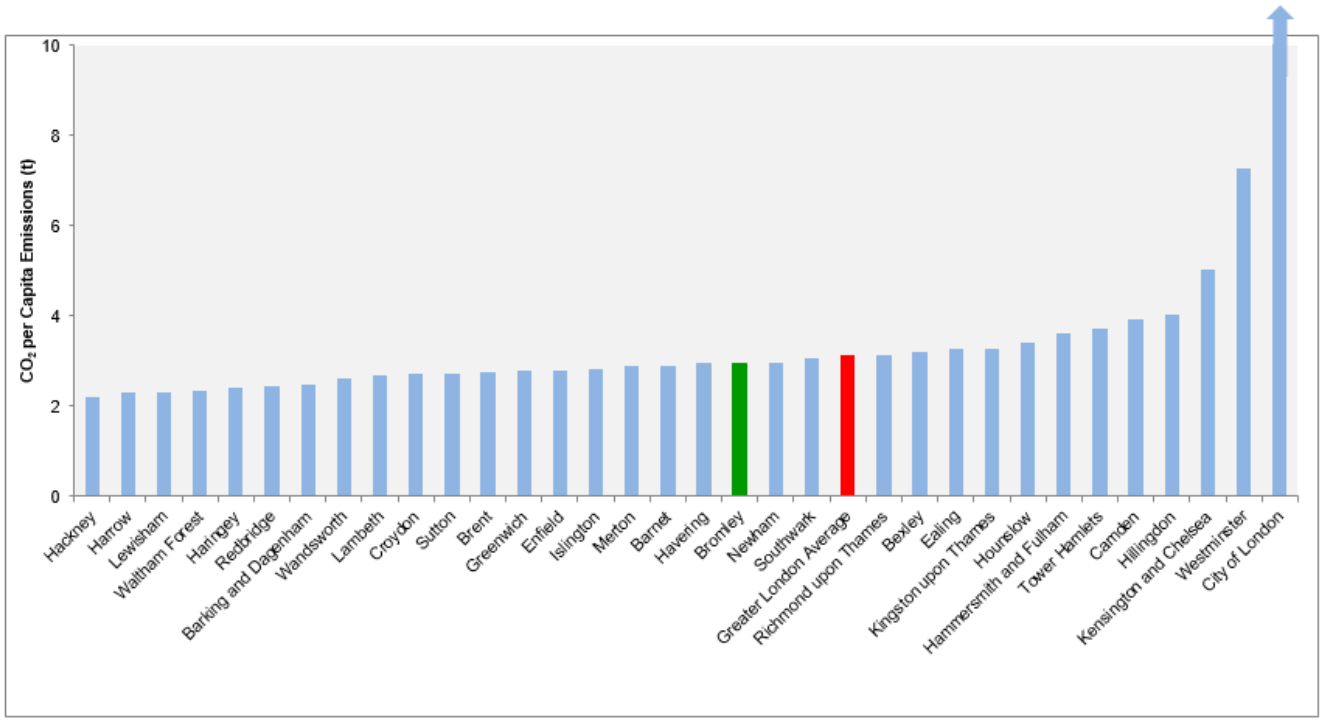


Figure 9 shows that all-sector per capita emissions in Bromley are lower than both the Greater London and national averages. It is also evident that Bromley, Greater London and national per capita emissions follow similar annual trends, with an overall downward trajectory relative to the 2005 baseline.

Figure 10: Greater London per capita Emissions 2018



**City of London per capita emissions (98t) not fully illustrated in Figure 10 due to scale (y axis)*

Figure 10 shows Bromley's per capita emissions compared with all the London boroughs for 2018. Hackney had the lowest emissions per capita at 2.2t per capita. The City of London had the highest per capita emissions at 82.3t per capita, due to its high commercial emissions and low population. LB Bromley (indicated in green) had the 19th lowest per capita emissions out of the 33 London boroughs in 2018, 0.3t per capita less than the Greater London Average (indicated in red).

Figure 11: London Borough Comparison (2018) per Capita emissions

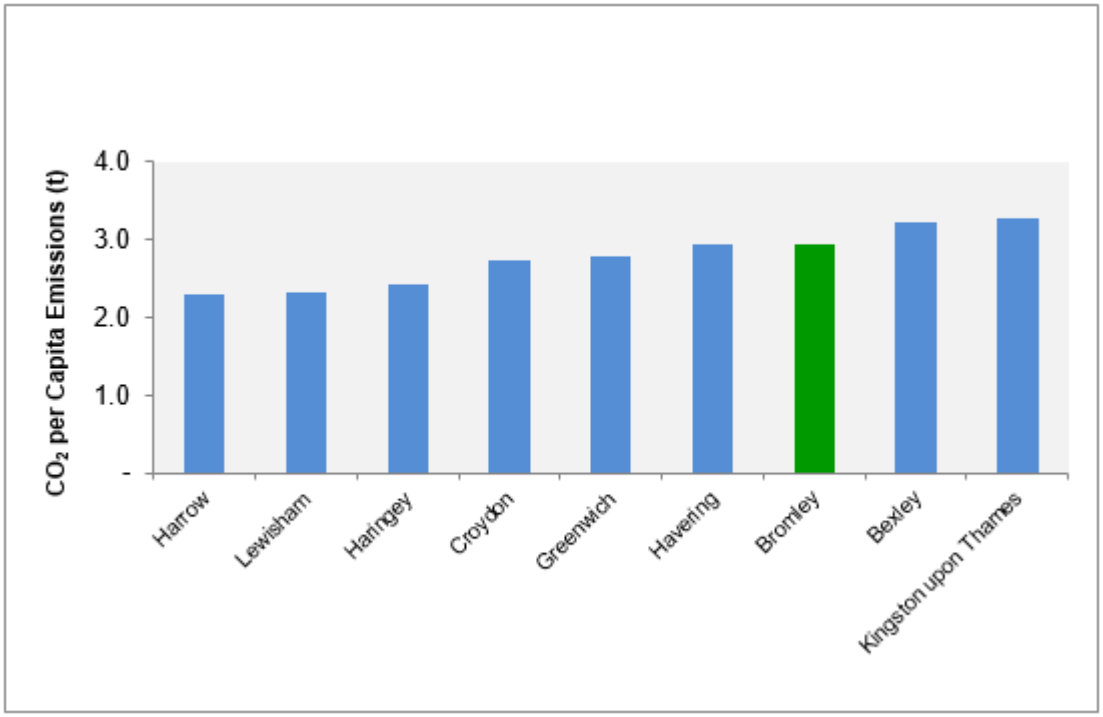
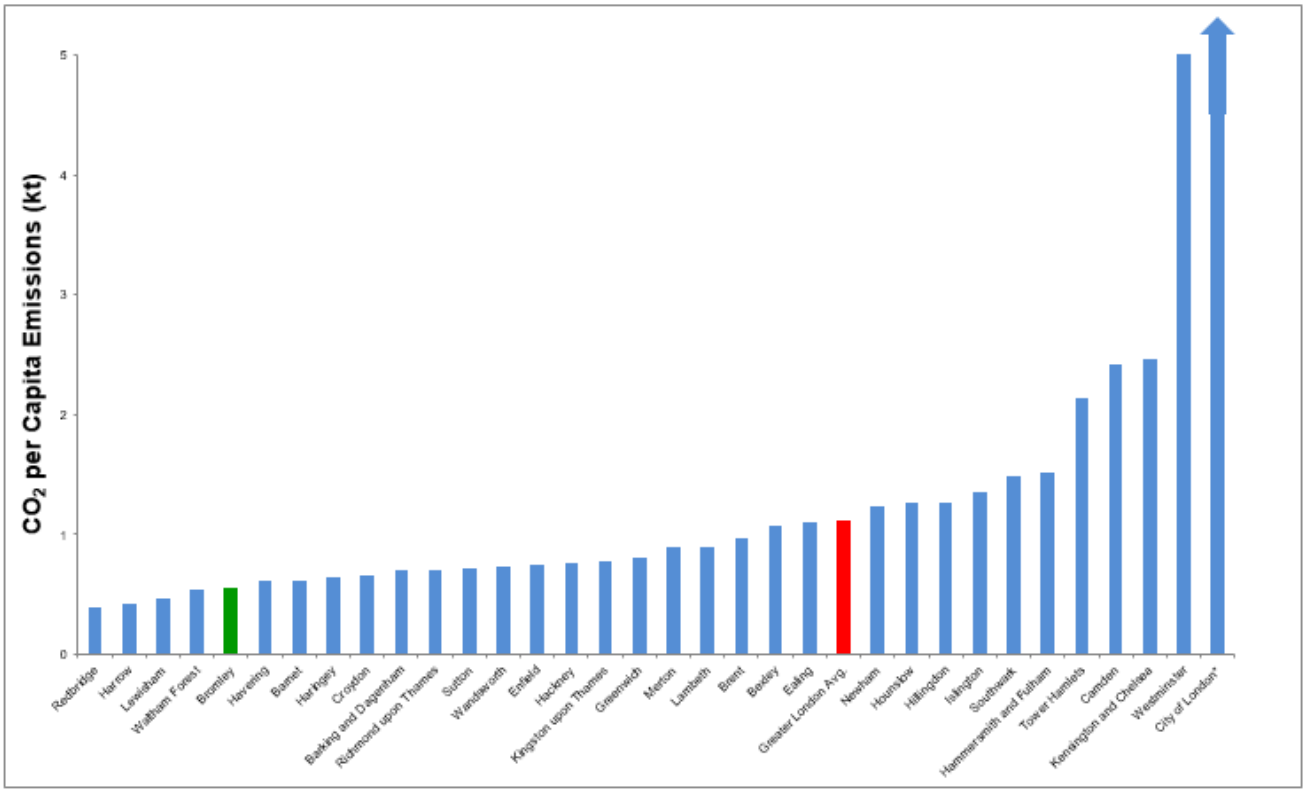


Figure 11 compares Bromley's per capita emissions (in green) with boroughs that either share similar attributes or are in close geographical proximity. Of those selected, Bromley is joint 3rd highest per capita emissions but is broadly in line with the other comparable boroughs.

3.1 Industry and Commercial Emissions

LB Bromley's Industry and Commercial emissions per capita were 0.6t in 2018, significantly lower than the London average of 1.2t. As evident in Figure 12, Bromley (green) has the 5th lowest commercial emissions per capita. This is attributable to the lack of large industrial installations – Bromley's commercial sector is typified by smaller service-related and retail businesses.

Figure 12: London Borough's Industrial & Commercial per capita Emissions 2018



** City of London per capita emissions (108.7t) not fully illustrated in Figure 12 for visualisation reasons*

Table 7: Industry & Commercial Emissions Comparison

	2005 (Baseline)	2013	2014	2015	2016	2017	2018	% Change since 2005 (Baseline)	% Change since 2017
Bromley	379	316	274	243	207	188	182	-52%	-3%
Greater London	20,321	18,328	15,307	13,559	11,621	10,716	10,349	-49%	-3%
National Total	244,650	198,238	178,229	163,791	143,010	104,254	100,793	-59%	-3%

Table 7 shows Bromley, Greater London and National recent annual total emissions compared with the 2005 baseline. Since 2005, emissions in Bromley and nationally have fallen by 52% and 59% respectively. In Greater London emissions have fallen by 49%. In terms of annual change, Bromley saw a 3% reduction in emissions in the I&C sector between 2017 and 2018, the same experienced nationally and regionally.

3.2 Domestic Emissions

Bromley's domestic emissions (1.6t per capita) were above the London average of 1.2t in 2018. There was a 3% decrease in total domestic emissions in Bromley in 2018 compared with 2017.

Figure 13 shows that Bromley has the joint 3rd highest (along with Richmond upon Thames) domestic per capita emissions of all the London boroughs.

Figure 13: London 2018 Domestic per capita Emissions

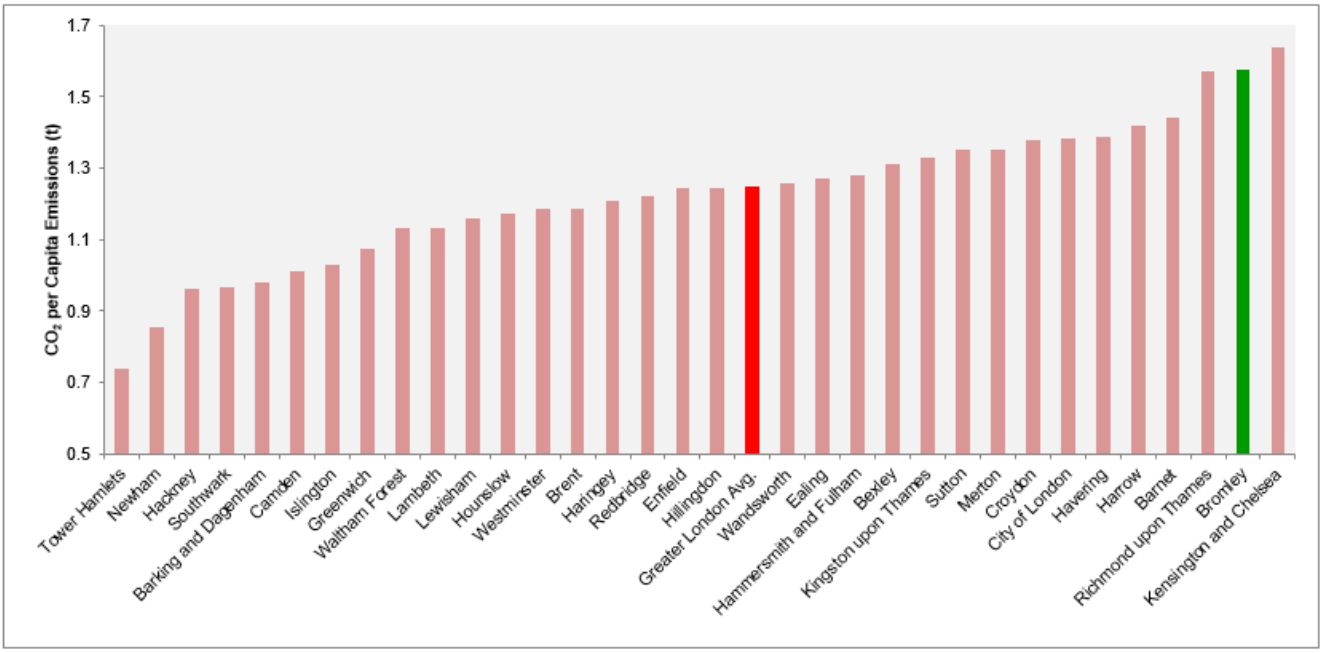


Table 8 shows Bromley, Greater London and National 2018 total domestic emissions compared with 2005 and 2017.

Table 8: Domestic Emissions Comparison

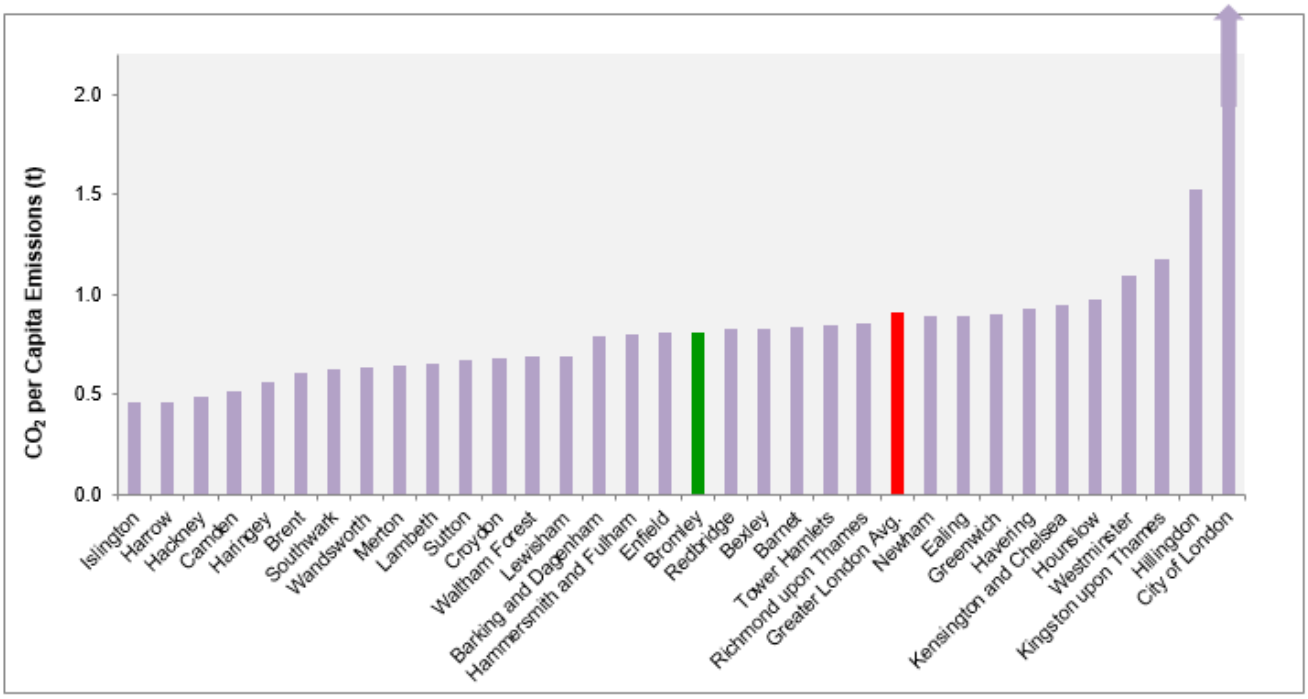
	2005 (Baseline)	2013	2014	2015	2016	2017	2018	% Change since 2005 (Baseline)	% Change since 2017
Bromley	812	720	597	594	556	530	522	-36%	-2%
Greater London	17,148	15,094	12,557	12,259	11,540	10,970	10,780	-37%	-2%
National Total	153,731	133,045	111,987	108,596	102,432	98,101	96,430	-37%	-2%

There was a 2% decrease in Bromley's total domestic emissions in 2018 compared with 2017, in line with both Greater London and National reductions of 2% in the same period.

3.3 Bromley Transport Emissions

Car ownership rates in Bromley are high and, on a per capita basis, Bromley's road transport emissions are above average in the Greater London area in 2018 (see below).

Figure 14: London Borough Transport Emissions per capita (2018)



** City of London per capita emissions (6.5t) not fully illustrated in Figure 14 for visualisation reasons*

Bromley's road transport emissions per capita (dark green) are the same as the London average (0.8t/capita), this is an improvement to last year where Bromley was above the London average. Bromley is also 0.6t per capita lower than the national average (1.4/capita).

Table 9: Transport Emissions Comparison

	2005 (Baseline)	2015	2016	2017	2018	% Change since Basline	% Change since 2017
Bromley	373	296	298	282	268	-28%	-4.9%
Greater London	9,414	7,288	7,334	7,275	6,999	-26%	-3.8%
National Total	106,175	95,850	97,834	96,258	94,923	-11%	-1.4%

Table 9 shows Bromley, Greater London and National total transport emissions compared with 2005 baseline and the previous year. Bromley has experienced a 28% drop in transport emissions compared to 2005, which is better than Greater London (26%), and the National Total (11%) reductions in the same period. There has been a decrease of 4.9% in transport emissions in Bromley compared with 2017, Greater London (3.8%) and National Total (1.4%) also experienced improved performance.

3.4 All Sectors Comparison (per capita)

Table 10 shows the relative positions between Bromley and the other 32 London boroughs in ascending order (i.e. the higher the ranking – with '1' being highest – the better comparative performance).

Table 10: London Borough Comparative Rankings (1= best performer and 33=worst)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Industry & Commercial	3	8	5	3	5	4	5	5	5	5	5	5	5	**5**
Domestic	32	32	32	32	31	31	31	31	31	31	31	31	31	**32**
Road Transport	23	23	23	23	23	23	23	23	23	22	18	24	20	**18**
All sectors	13	15	15	13	17	16	17	17	18	14	18	24	24	**24**

Figure 15: Bromley rankings over time for each emissions category relative to 33 London Councils

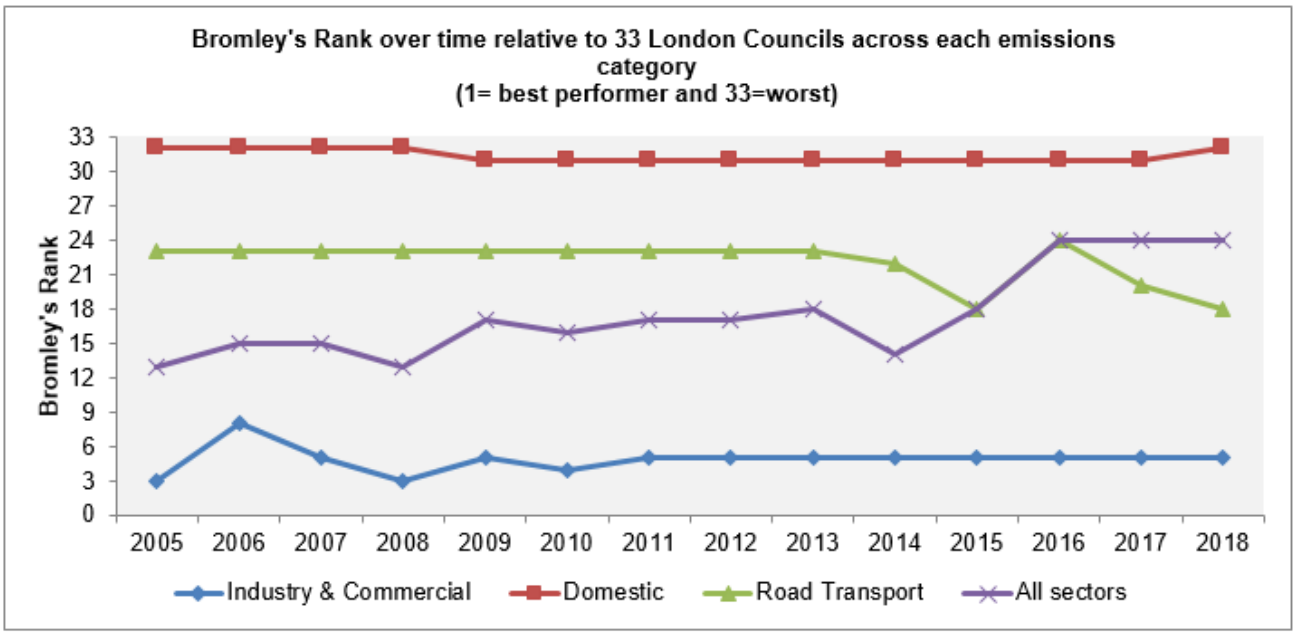


Figure 15 is a visual representation of the ranking data in table 10. Bromley has remained towards the bottom of the league table for domestic emissions (red) and close to the top of the table for commercial emissions (blue). Emissions for 2018 have decreased in all areas. In 2018, LB Bromley's 'All sectors' ranking is 24th, the same position held since 2016. This reflects the general lack of significant reductions made in total emissions and small growth in local population.

3.5 Comparison with Previous Years

Figure 16: Per Capita % Change – 2018 emissions compared with 2005 Baseline

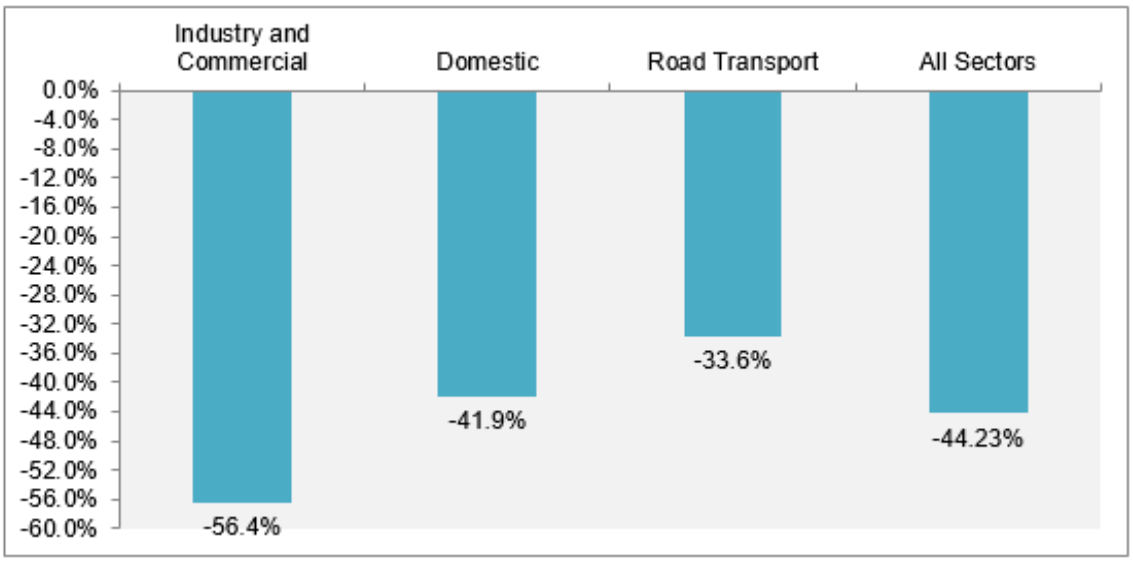


Figure 16 shows that per capita emissions since the baseline year (2005) have fallen across all sectors. The largest percentage drop has been in 'Industry and Commercial' per capita emissions, at 56.4% since the baseline year. The smallest decrease has been in the road transport sector with a fall of 33.6% since baseline.

Figure 17: Per Capita % Change - 2018 emissions compared with 2017

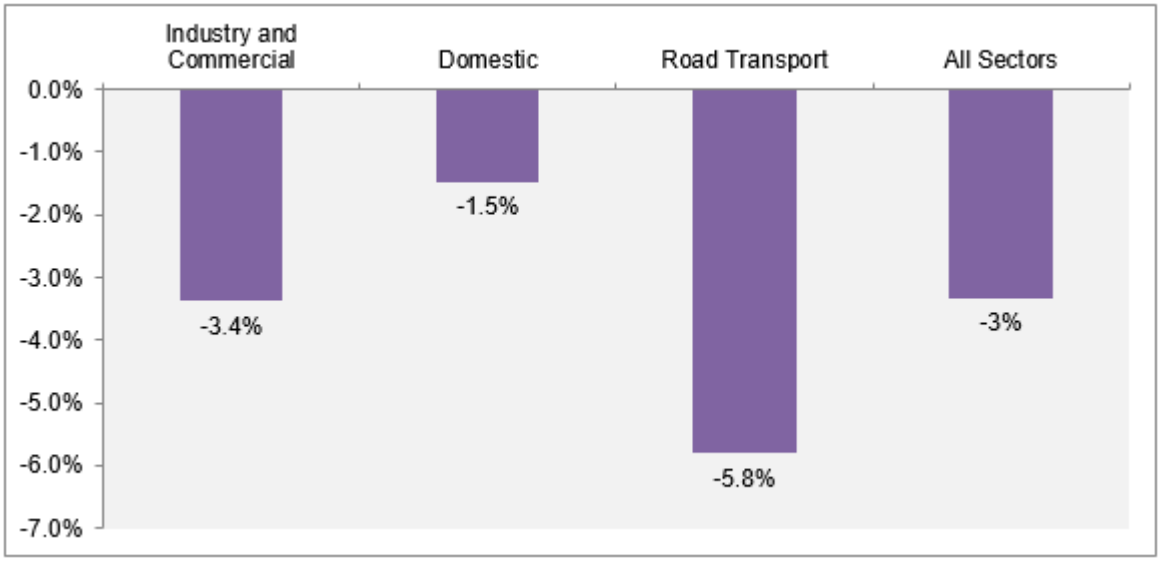


Figure 17 shows the difference in emissions between 2017 and 2018. All sectors saw a decrease in emissions per capita: I&C, Domestic and Road Transport saw a 3.4%, 1.5%, 5.8% reduction respectively. Overall, all sectors saw an average of a 3% reduction per capita change.

4. Summary and Conclusions

Bromley's 2018 CO_2 emissions data are encouraging given the continued reductions outlined above. However, these reductions appear to be part of an overall national trend and, therefore, cannot be credited to any particular action undertaken by LB Bromley or Bromley residents. The rate of reductions also seems to be slowing down. While the Council can influence local CO_2 emissions (e.g. through encouraging energy efficiency in the housing sector or modal shift in the transport sector to reduce emissions and costs), it has little direct control (for instance housing is outsourced to Affinity Sutton) other than over its own emissions. Indeed macro-economic trends, such as the state of the economy or whether it was a particularly cold year, are more likely to be material factors.

In 2018, Bromley emitted 973kt CO_2: 54% of emissions were from the domestic sector; 27% came from road transport and 19% from industrial and commercial facilities. Overall, per capita emissions are significantly lower (i.e. better) than both the national and London borough average but *per capita* domestic emissions remain one of the highest (i.e. worst) in London. Road transport emissions are the same as the London average and industrial/commercial emissions are significantly below average.

Table 11: 2018 Outcome Analysis

Positive Outcomes	Negative Outcomes
• Total all-sector CO_2 emissions for Bromley have reduced by 37% (583kt) since the 2005 baseline, and by 3% (27kt) from 2017 to 2018 • Per capita all-sector CO_2 emissions have fallen by 44.23% since 2005 and by 3% from 2017 to 2018, and remain below the national and London averages • Domestic electricity emissions have decreased (36%) since 2005 whilst gas emissions have reversed last year's slight decrease with a 2% increase. • Bromley has improved its ranking in the transport sector, from 20th place to 18th	• Bromley has higher than average per capita CO_2 emissions for the domestic sector (1.6t) and has dropped to the 2nd worst performer in London from 3rd worst in 2017). • Improvements are marginal and appear to be products of national trends rather than direct action from Council initiatives. • Significant resources are required if the Council is to influence and reduce domestic gas consumption levels.

Table 12: Historical Sectoral summary and 2018 comparative data

Area/Year	Ind. & Commercial		Domestic		Transport		Total	
	total ($ktCO_2$)	/ capita (tCO_2)	total ($ktCO_2$)	/ capita (tCO_2)	total ($ktCO_2$)	/ capita (tCO_2)	total ($ktCO_2$)	p/capita (tCO_2)
LBB 2005	378.5	1.3	812.4	2.7	365.6	1.2	1,556.4	5.2
LBB 2006	424.7	1.4	809.6	2.7	358.0	1.2	1,592.3	5.3
LBB 2007	375.3	1.2	786.0	2.6	351.8	1.2	1,513.1	5.0
LBB 2008	364.9	1.2	796.6	2.6	334.3	1.1	1,495.9	4.9
LBB 2009	330.3	1.1	719.8	2.3	322.1	1.0	1,372.2	4.5
LBB 2010	339.3	1.1	774.8	2.5	314.9	1.0	1,429.0	4.6
LBB 2011	306.9	1.0	674.8	2.2	307.5	1.0	1,289.2	4.2
LBB 2012	333.5	1.1	733.4	2.3	302.1	1.0	1,369.1	4.4
LBB 2013	316.2	1.0	719.9	2.3	297.8	0.9	1,333.9	4.2
LBB 2014	273.9	0.9	597.1	1.9	299.9	0.9	1,170.9	3.6
LBB 2015	242.3	0.7	594.2	1.8	295.6	0.9	1,132.1	3.5
LBB 2016	206.9	0.6	556.4	1.7	298.0	0.9	1,061.2	3.2
LBB 2017	187.7	0.6	530.2	1.6	282.3	0.9	1,000.2	3.0
LBB 2018	182.3	0.6	522.3	1.6	268.5	0.8	973.2	2.9
London 2018	10,348.7	1.2	10,779.6	1.2	6,999.4	0.8	28,127.7	3.2
National 2018	100,792.5	1.5	96,429.8	1.5	94,922.8	1.4	292,145.1	4.4

5. Appendix

5.1 Methodology summary for CO_2 reporting

	Sector	Data source / method summary
A	Industrial, Commercial and Agriculture Electricity	BEIS GB regional energy statistics and BEIS NI non domestic electricity statistics
B	Industrial, Commercial and Agriculture Gas	BEIS regional energy statistics. Further data for Northern Ireland from energy providers
C	Large Industrial Installations	Point source emissions for large industrial installations
D	Industrial and Commercial Other Fuels	Remaining emissions (all fuels – excluding electricity and gas and large industrial installations emissions from old sectors D to I) distributed using high resolution (1km) emissions distribution of fuel use based in employment distributions and fuel intensity by sector
E	Agricultural Combustion	High resolution (1km) emissions distribution maps developed under the NAEI programme
F	Domestic Electricity	BEIS regional energy statistics and DECC NI domestic electricity statistics
G	Domestic Gas	BEIS regional energy statistics; Further data for Northern Ireland from energy providers
H	Domestic 'Other Fuels'	High resolution emissions distribution maps developed under the NAEI programme
I	Road Transport (A roads)	Based on the NAEI data used to compile the BEIS road transport fuel estimates. Emissions from fuel combustion in the road transport sector based on detailed DfT traffic census data and NAEI emissions factors. *Motorway data excluded from dataset used in this report, as not under influence of local authority.*
J	Road Transport (Motorways)	
K	Road Transport (Minor roads)	
L	Diesel Railways	High resolution emissions distribution maps developed under the NAEI programme. *Diesel Railway data excluded from dataset used in this report, as not under influence of local authority*
M	Transport Other	High resolution emissions distribution maps developed under the NAEI programme

Source: *DECC '2005 to 2018 UK local and regional CO2 emissions methodology summary'*

5.2 Relevant BEIS Statistics

- UK local authority and regional carbon dioxide emissions national statistics: 2005-2018
- 2005 to 2018 UK local and regional CO2 emissions: statistical summary
- 2005 to 2018 UK local and regional CO_2 emissions: statistical release
- 2005 to 2018 UK local and regional CO2 emissions – data tables
- 2005 to 2018 UK local and regional CO2 emissions technical report
- Employment based energy consumption in the UK
- Mapping carbon emissions and removals for land use, land use change and forestry sector

5.3 Bromley Council Strategy and Plans influencing GHG emissions

Sector	Council Report	Description
All sectors	Carbon Management Programme Report	Reports annual progress of the Council's second five-year Carbon Management Programme (CMP2) in aiming to reduce energy consumption and carbon emissions as an organisation
	Air Quality Action Plan	Reports on Bromley's air quality and proposes action plan to reduce pollution and emissions in the borough
	Environment Portfolio Plan 2019/20	Bromley has outlined its 2029 net zero organisational emissions target, one of the most ambitious in London.
Transport	Local Implementation Plan (LIP)	Sets out how Bromley intends to implement the Mayor's Transport Strategy, including aims of 'reducing transport's contribution to climate change' and 'reducing CO_2 emissions' (currently under review following the appointment of a new Mayor in May 2017)
	Environment Portfolio Plan 2019/2020	Outcome 5 includes the aim 'To reduce congestion and carbon emissions by promoting cycling, walking and public transport journeys'
	Bromley Cycling Strategy (March 2015)	Three-year delivery plan aiming to improve cycling facilities, promotion, and training to increase cycling locally and reduce Bromley's road transport emissions.
Industry & Commercial	Transforming Bromley	Sets out vision of 'Vibrant, Thriving Town Centres' whilst striving towards a 'Quality Environment', with residents 'living in a more sustainable way'.
Domestic	Home Energy Conservation Act 1995 Progress Report 2019	Biennial report on action taken and proposals to improve domestic energy efficiency in the borough
	Bromley's Draft Development Control Plan	Vision and objectives for the Borough in 2030 and the strategic and more detailed policies relating to planning in the Borough
	Bromley's Joint Strategic Needs Strategy 2015	To include analysis on Excess Winter Deaths in Bromley and Council strategy relating to this