London Borough of Bromley
Environment & Community Services

Bromley's CO_2 Emissions: 2013 Performance Report

CO_2 Emissions within the Scope of Influence of Local Authorities




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Environment Development Team

Bromley
THE LONDON BOROUGH

Contents

1. Introduction

1.1 Background

In June 2015, the Department of Energy Climate Change (DECC) released national data for 2013 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 DECC since 2005 (generally 18 months after the reporting year-end). However, the basis on which the data is compiled has changed as information capture techniques have improved. This means previous years' data have 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 2013

- In 2013, Bromley emitted a total of 1.33Mt CO_2 comprising:
  - 725kt domestic emissions (55%)
  - 286kt road transport emissions (21%)
  - 315kt commercial emissions (24%)

- Total all-sector CO_2 emissions decreased by:
  - 2.4% (33kt) from 2012 to 2013
  - 14% (213kt) since 2005

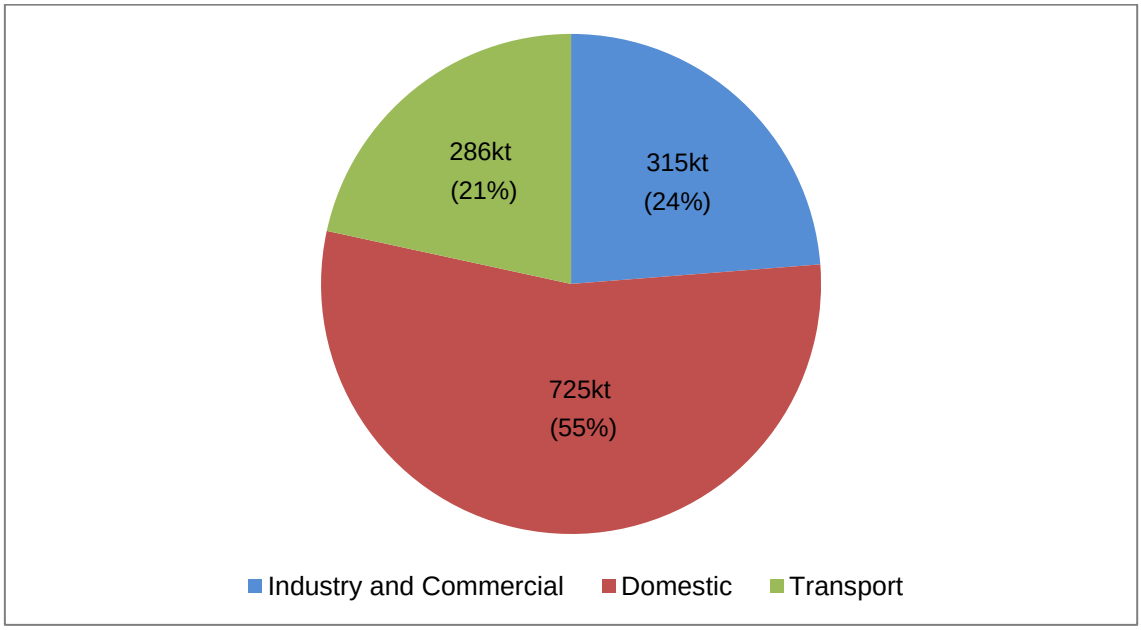
- Per capita all-sector CO_2 emissions (which are lower than the national and London averages) decreased by:
  - 2% from 2012 to 2013 (to 4.2t)
  - 18% since 2005 for 2013

- However, Bromley has a higher than average per capita CO_2 emissions for the domestic sector (2.3t per capita): indeed, Bromley is the third worst performer in London

- Industry & Commercial per capita CO_2 emissions are lower than the London average, Bromley is the fifth best performer in London

- Transport emissions have fallen by 11% compared with baseline (2005) and 10% since 2012

Figure 1: Bromley's 2013 Total CO_2 Emissions by Sector



1.3 Historic and Current Data

In 2013, Bromley experienced a decrease in total CO_2 emissions, as did 358 of the 406 UK local authorities (88%). Table 1 shows borough-wide total CO_2 emissions since 2005 broken down into sectoral sub-categories.

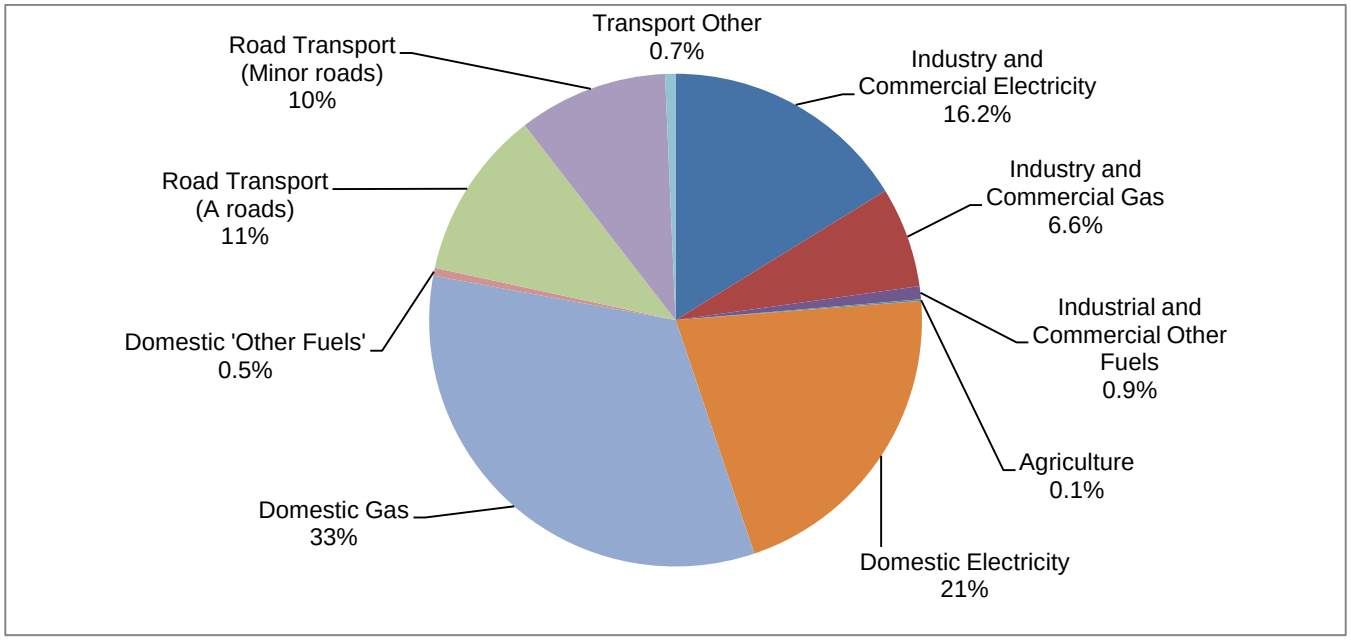
Table 1: All-Sector Emissions: 2005-2013 ($ktCO_2$) - *colour relates to sector as per Fig. 1*

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	105	-	22	1	320	484	8	186	154	9	**1,539**
2006	290	112	-	21	1	336	466	7	184	148	10	**1,575**
2007	262	90	-	21	1	336	443	7	177	149	10	**1,497**
2008	255	91	-	18	1	325	464	7	166	144	9	**1,480**
2009	236	79	-	14	1	293	421	7	159	139	9	**1,358**
2010	235	87	-	15	1	300	468	7	155	137	9	**1,415**
2011	221	72	-	13	1	288	382	6	151	134	9	**1,278**
2012	237	81	-	13	1	305	423	6	149	133	9	**1,359**
2013	**215**	**87**	**-**	**11**	**1**	**279**	**438**	**7**	**147**	**130**	**9**	**1,326**

On a total all-sector basis, Bromley's CO_2 emissions have fallen by 14% from 1,539kt in 2005 to 1,326kt in 2013, and decreased by 2.4% over the latest recorded year (2013).

Figure 2 shows how the Bromley's 2013 emissions are broken down by sub-category. This highlights the dominance of a) domestic emissions (55% of total) and b) emissions from the use of domestic gas (33% of total).

Figure 2: Total Emissions as a percentage of sub-category



1.4 Per Capita CO_2 Emissions

Since 2005, Bromley's (all-sector) per capita CO_2 emissions have fallen by 18%. Between 2012 and 2013, emissions per capita decreased by 2%. Figure 3 shows Bromley's per capita trend (blue line) compared with Greater London (green bar) and nationally (red bar) since 2005. On average, 2013 all-sector per capita CO_2 emissions in Bromley are 2 tonnes per capita lower than the National average and 0.8 tonnes per capita lower than the average for Greater London.

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

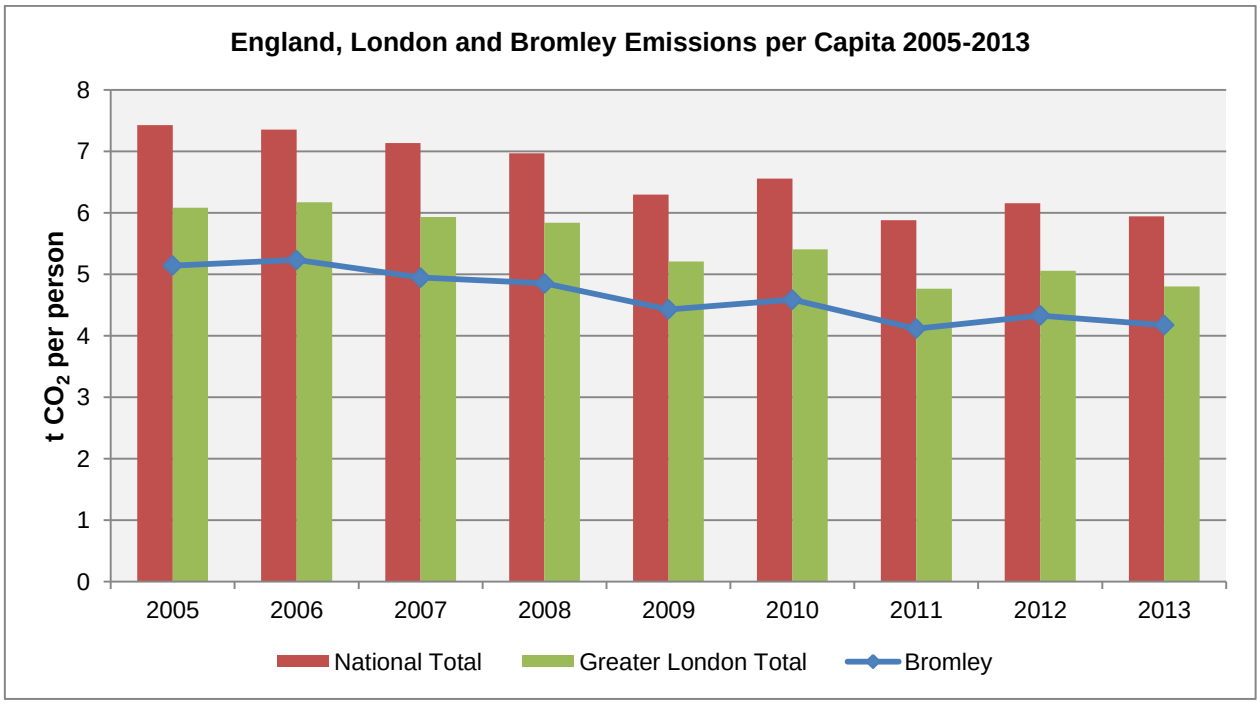


Figure 4: Per Capita Emissions across each sector 2005-2013

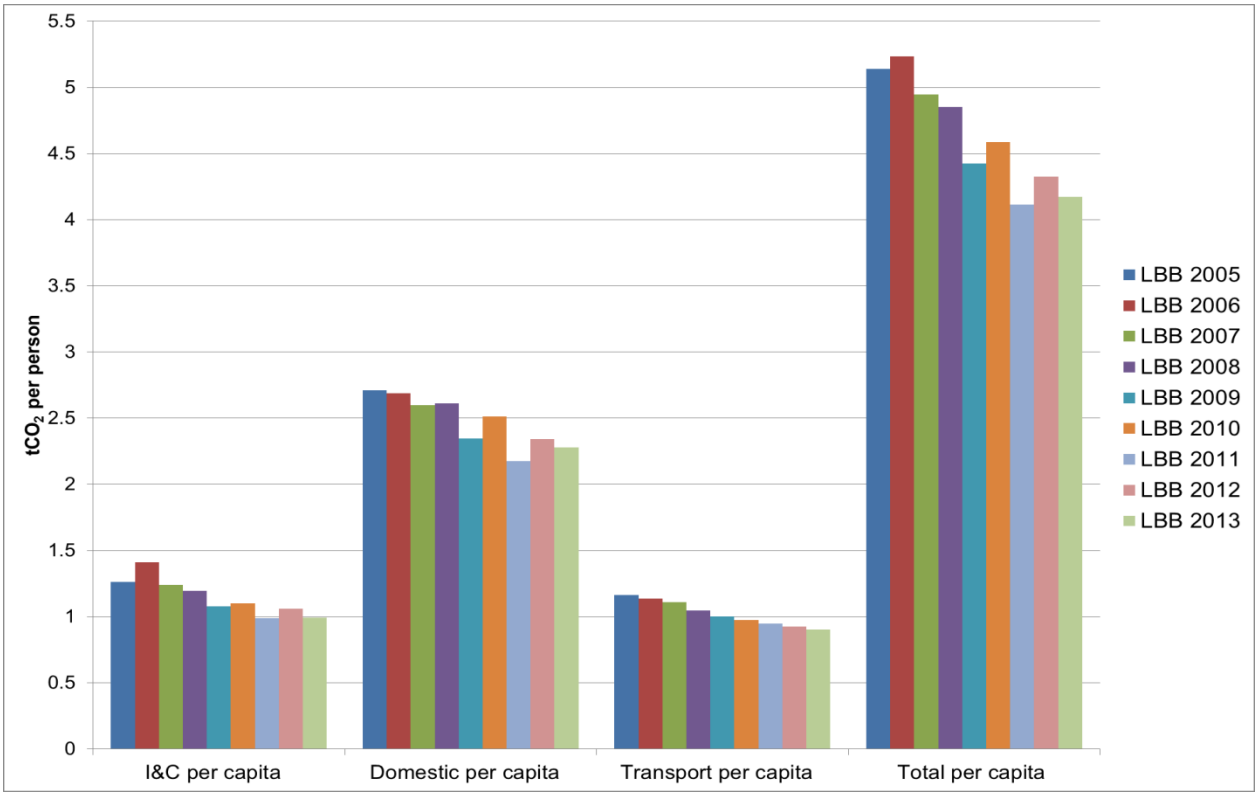
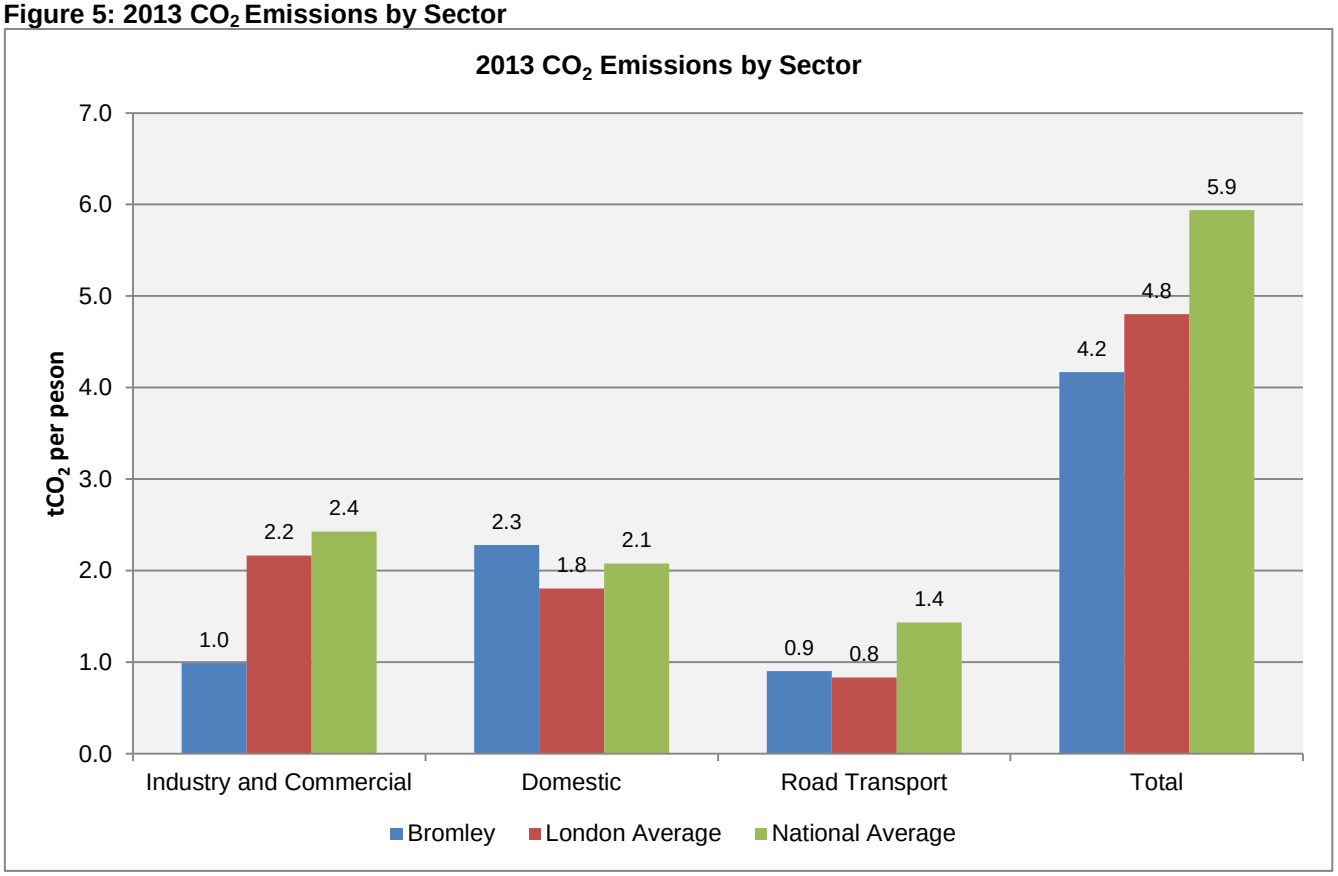


Figure 4 shows that there has been a general downward trend in per capita emissions since 2005 across all sectors. Although 2012 saw an annual increase in 'I&C', 'domestic' and 'total' per capita emissions, 2013 saw a return to the downward trend and reductions across all sectors.

2. Sectoral per capita CO_2 Emissions

Figure 5 compares Bromley's sectoral (commercial, domestic, transport) per capita CO_2 emissions (blue) against Greater London (red) and National (green) averages.

Figure 5: 2013 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 (See Table 2).
- 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 4).
- Emissions from road transport are above the London average but below the national average. This can be attributed to the large relative 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

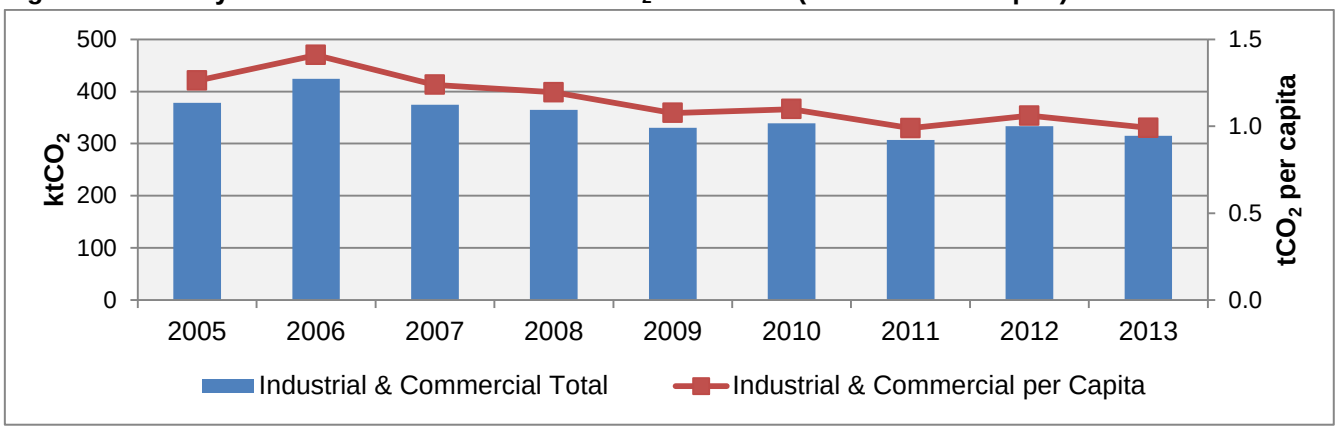
Industry and commercial CO_2 emissions are responsible for 24% of Bromley's carbon footprint, well below the Greater London and national average of 45% and 41% respectively. Table 2 sets out some factors relating to this.

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 had relatively low total and per capita commercial CO_2 emissions. Figure 6 shows commercial CO_2 per capita emissions plotted against total commercial emissions for 2005-2013.

Figure 6: Bromley's Industrial and Commercial CO_2 Emissions (Total and Per capita)



In 2013, total I&C emissions decreased by 17% since 2005 and 5% since 2012. Further examination of the decrease in commercial CO_2 emissions shows a 21% reduction in gas emissions since 2005, but a 7% increase since 2012. There was a decrease of 16% in electricity since 2005 and 10% since 2012. The commercial sector also saw a 92% decrease in emissions from "other fuels" (e.g. oil) since 2005 and 17% since 2012.

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 2.5% 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 tCO2e) 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. As of 2014/15, emissions have fallen by 2,797 tCO2e (7.8%), indicating the Council is on track and making progress towards achieving this reduction target. CMP2 progress is also reported annually; see the 2014/15 CMP2 report.

2.3 Domestic CO_2 Emissions

Domestic emissions are responsible for 55% of Bromley's all-sector emissions: a much greater proportion than the figure nationally (36%) 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 Boroughs. 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
- Over 18% of residents have incomes above £60,000 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
- Over 73% 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
- 47% 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 2013, total domestic CO_2 emissions have fallen by 11% since 2005 and 10% since 2012.

Per capita performance remains poor and emissions (2.3t/capita) continue to be higher than both the London average (1.8t/capita) and national average (2.1t/capita).

Figure 7: Bromley's Domestic CO_2 Emissions 2005-2013 (per capita and total)

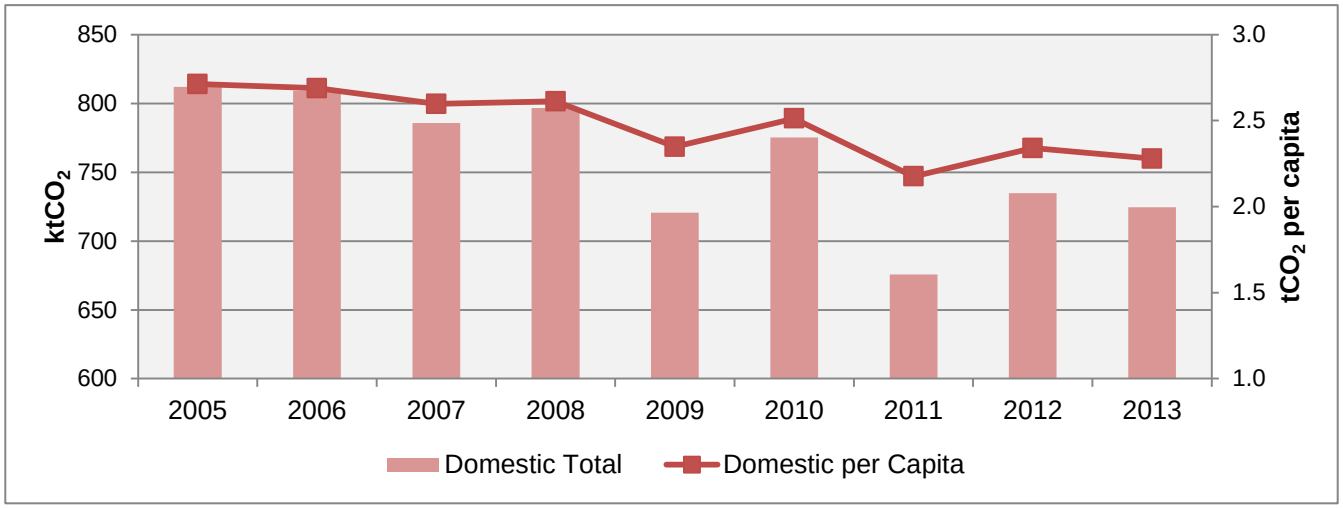
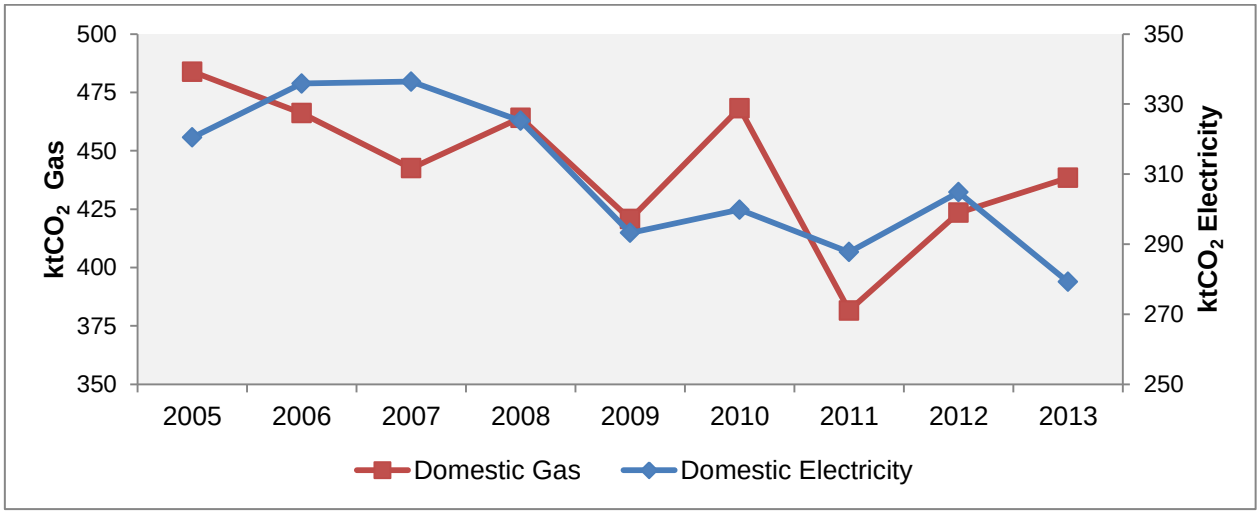


Figure 8 shows domestic electricity and gas consumption for 2005-2013. There has been a steady decline in electricity consumption since 2005, which may be attributable to better energy efficiency and behavioural change. Gas usage has also decreased, although is extremely weather dependant. There are clear spikes in years where there was a particular cold and long winter resulting in more energy use and higher CO_2 emissions.

Figure 8: Domestic Gas and Electricity Consumption 2005-2013



Since 2005, emissions from domestic electricity use decreased by 15% and domestic gas emissions fell by 10%. Since 2012, emissions decreased by 9% for electricity and increased by 3% for gas.

Reducing domestic emissions is difficult due to the lack of Council resources being devoted to this area and a lack of any specific statutory requirements for property owners to attain or meet specific standards in this respect. 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
- The introduction of the 'Green Deal' and ECO in 2012, was heralded as a major initiative and boosts the funding and carrying out of energy efficiency improvement works for residential properties of all tenures as well as for business premises, but has to date proved ineffectual due to the complexities of the scheme, lack of support and lack of incentives involved resulting in minimal interest or take up. Recent revisions may lead to some increased installation of measures, together with a continuing investment and installation of measures under the associated ECO (Energy Company Obligation).
- Other government schemes such as the Feed in Tariff, Renewable Heat Premium / Incentive, Zero Carbon Homes and Energy Performance Certificates (EPC) have all been promoted. However, the Council does not own or manage any substantive housing stock and therefore has limited influence (also see 2015 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 2012/13 winter period. The Council continues to address the issue and aims to implement best practice through undertaking gap analysis, following *NICE* national guidance on Excess Winter Deaths and working with local partners to address seasonal health issues.

2.4 Transport Emissions

Road transport emissions are responsible for 21% of LBB's total emissions, slightly below the national average of 24% but above the Greater London average of 17%.

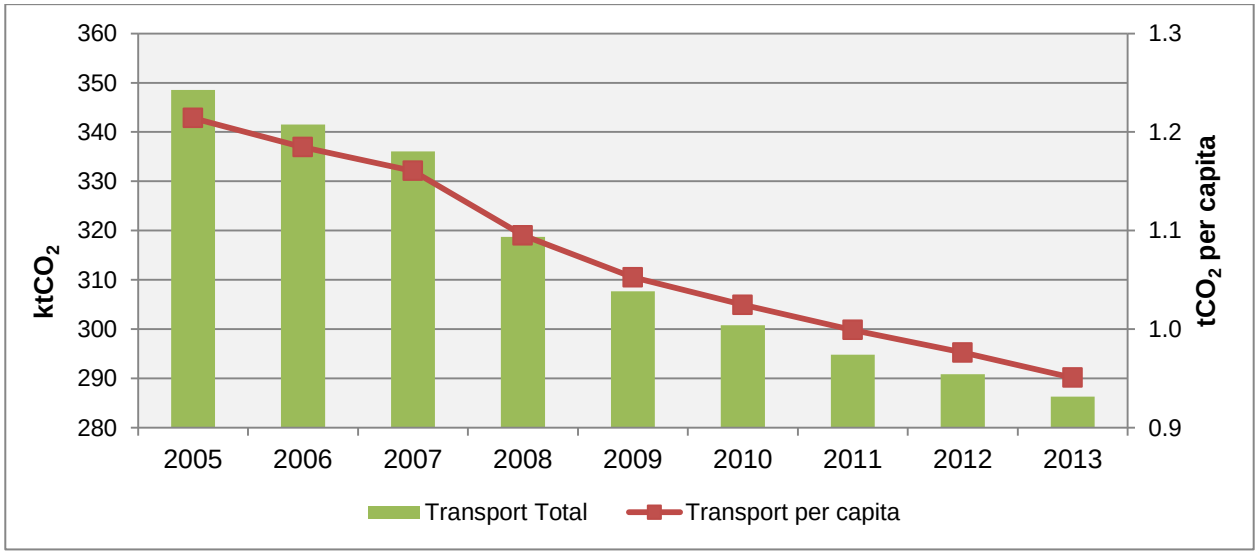
On a per capita basis, Bromley's transport emissions (0.9t) are just above Greater London's but significantly lower than the national figure of 1.4t per capita. Bromley ranks 30th of all London Boroughs for transport emissions. Table 5 sets out the factors that contribute to Bromley's transport related 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 800km 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 third 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 2013, total Transport emissions decreased by 18% since 2005 and 2% since 2012.

Figure 9: 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 that may help to reduce transport emissions.

Table 6: Bromley Transport Emissions Reduction Initiatives

- The Council encourages residents to make real choices about how they travel. Measures to address this include :
  - School and workplace travel plans
  - Station Access schemes
  - Provision of cycle routes and cycle parking
  - Bus priority measures and improved facilities for passengers
  - Reducing emissions from the Council's own and its contractors' vehicle fleets
- The Council is currently examining the viability of significantly increasing the presence of car clubs in the borough.

3. Comparing Bromley's Emissions

In line with national (406 local authorities in England, Scotland and Wales) and London data, Bromley's total CO_2 emissions decreased by 14% (213kt) between 2005–2013, and by 2.4% (33kt) between 2012–2013.

Figure 10: Bromley, London & National Per Capita Emissions 2005-2013

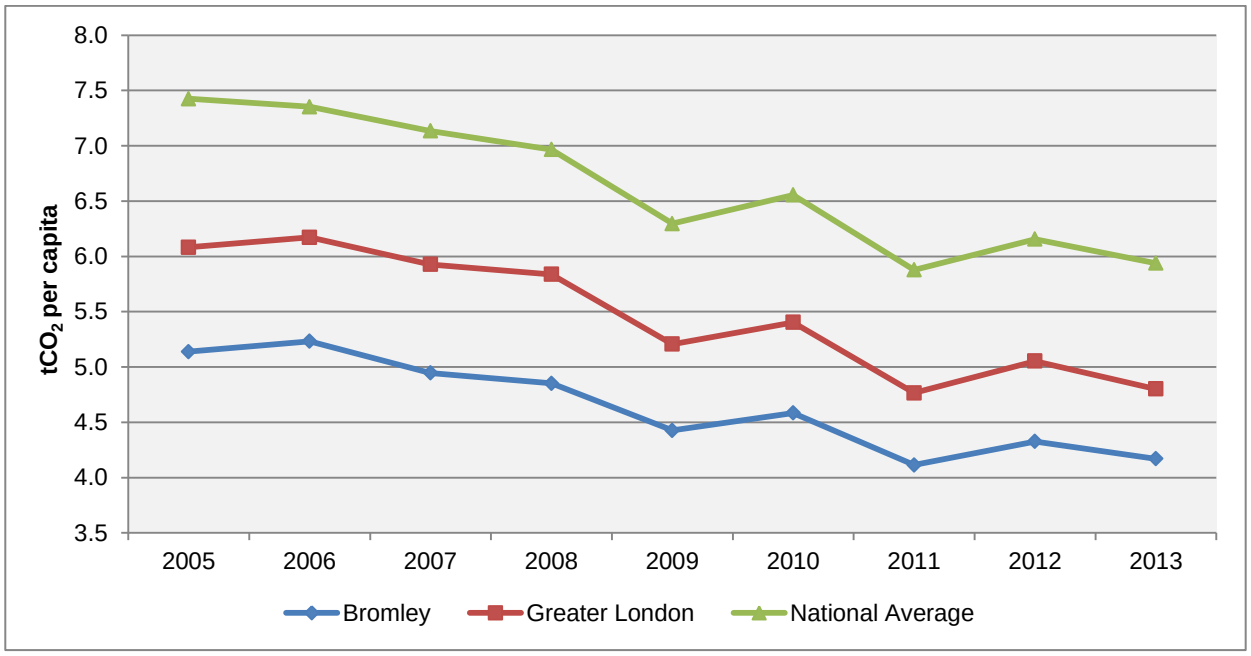
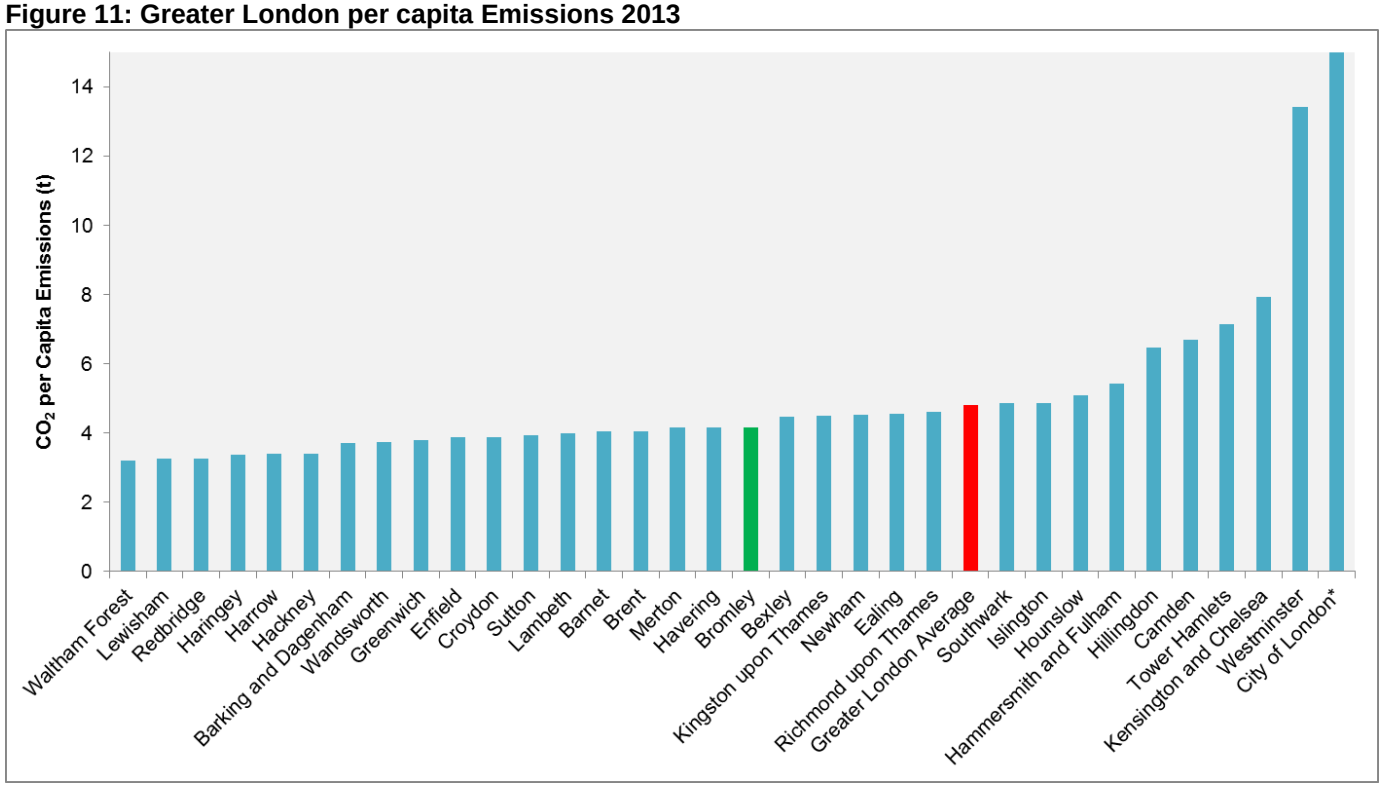


Figure 10 shows that all-sector per capita emissions in Bromley are lower than both the Greater London and national averages. It is also evident that Bromley, Greater London and national per capita emissions follow similar annual trends, with an overall downward trajectory relative to the 2005 baseline.

Figure 11: Greater London per capita Emissions 2013



**City of London per capita emissions (185.3t) not fully illustrated in Figure 11 due to scale (y axis)*

Figure 11 shows Bromley's per capita emissions compared with all the London boroughs for 2013. LB Waltham Forest had the lowest per capita emissions at 3.2t, while the City of London had the highest per capita emissions at 185t, due to its high commercial emissions and low population. LB Bromley (indicated in green) had the 18th lowest per capita emissions (4.2t) out of the 33 London boroughs in 2013, 6t per capita less than the Greater London Average (indicated in red). In 2013, Bromley was the 18th lowest ranked out of the 33 London Councils, having been the 17th lowest ranked borough in 2012.

Figure 12: London Borough Comparison (2013 per Capita emissions)

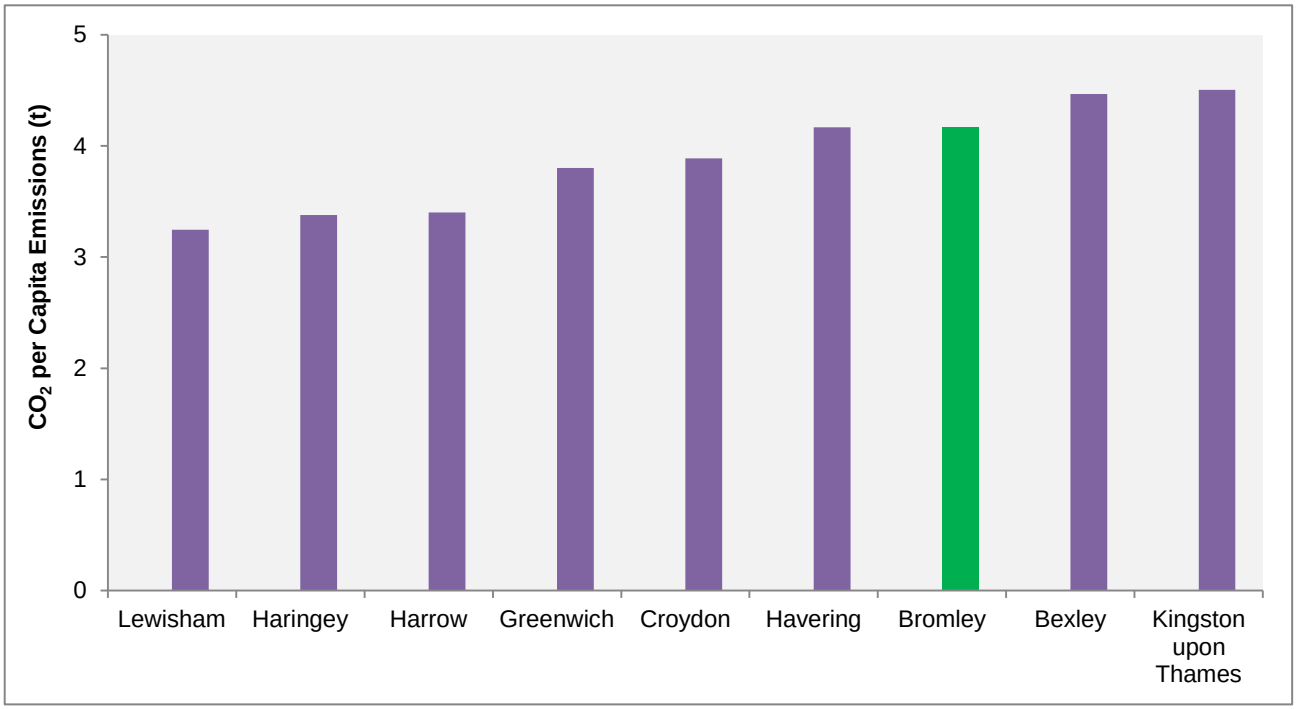


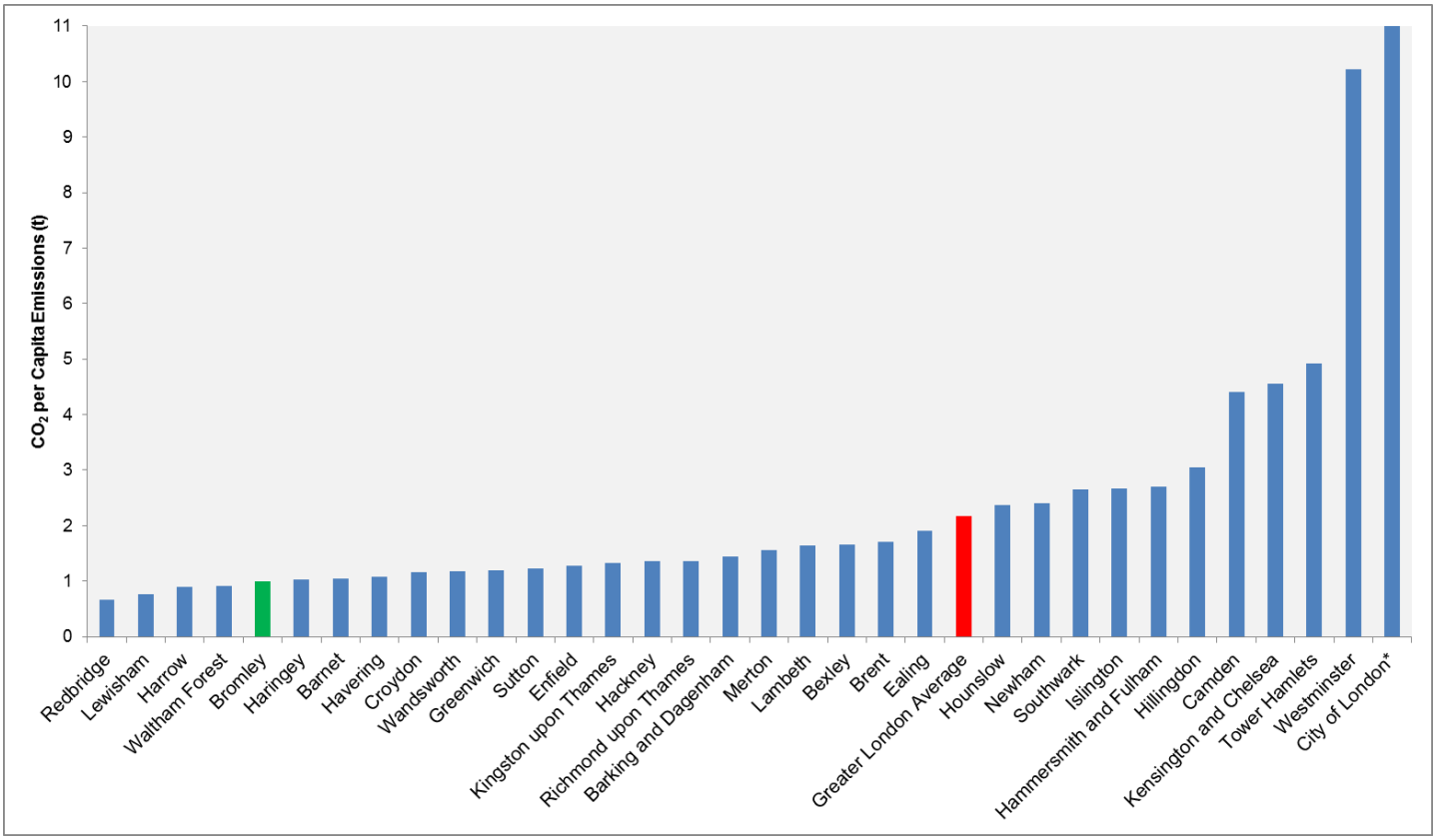
Figure 12 compares Bromley's per capita emissions (in green) with boroughs that either share similar attributes or are in close geographical proximity. Of those selected, Bromley has the 7th highest per capita emissions but is broadly in line with the other comparable boroughs.

3.1 Industry and Commercial Emissions

LB Bromley's Industry and Commercial emissions per capita were 1.0t in 2013, much lower than the London and national averages of 2.2t and 2.4t per capita respectively.

As evident in Figure 13, 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 13: London Borough's Industrial & Commercial per capita Emissions 2013



** City of London per capita emissions (176t) not fully illustrated in Figure 13 for visualisation reasons*

Table 7: Industry & Commercial Emissions Comparison

	2005 (Baseline)	2012	2013	% Change since 2005 (Baseline)	% Change since 2012
Bromley	378	333	315	-17%	-5%
Greater London	20,222	19,354	18,229	-10%	-6%
National Total	189,868	162,213	155,497	-18%	-4%

Table 7 shows Bromley, Greater London and National 2012 and 2013 total emissions compared with the 2005 baseline. Since 2005, emissions in Bromley and nationally have fallen by 17% and 18% respectively. However, in Greater London emissions have fallen by only 10%. The smaller reduction in Greater London is due to the large concentration of commercial businesses with the region.

In terms of annual change, Bromley saw a 5% reduction in emissions in the I&C sector between 2012 and 2013, which is more than the national decrease of 4% but less than the Greater London decrease of 6% for the same period.

3.2 Domestic Emissions

Bromley's domestic emissions (2.3t per capita) were above the national and London average of 2.1t and 1.8t respectively in 2013. It is worth noting that there was a 5% (0.1t) decrease in per capita domestic emissions in Bromley in 2013 compared to 2012, and a 10% decrease in total emissions.

Figure 14 shows that Bromley continues to have the 3rd highest domestic per capita emissions of all the London boroughs.

Figure 14: London 2013 Domestic per capita Emissions

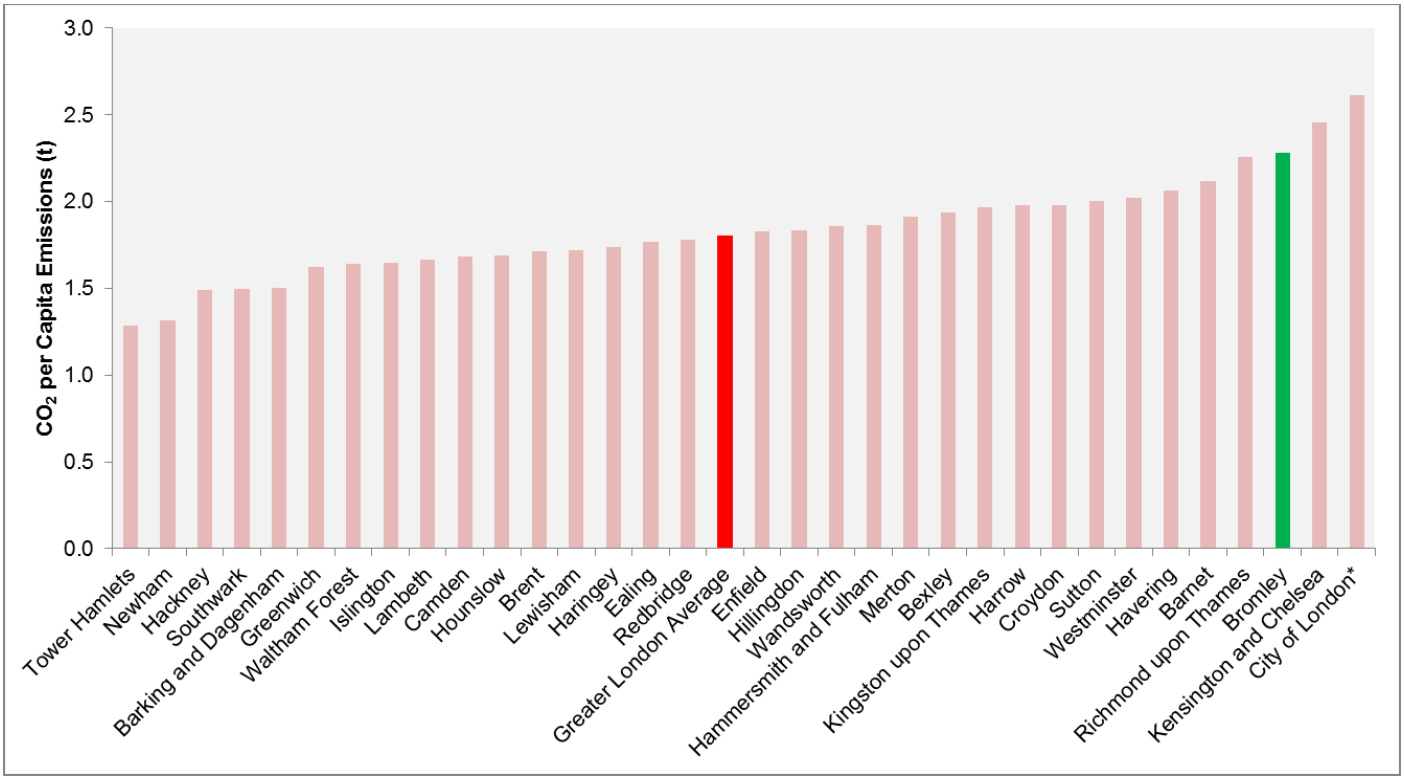


Table 8 shows Bromley, Greater London and National 2013 total domestic emissions compared with 2005 and 2012.

Table 8: Domestic Emissions Comparison

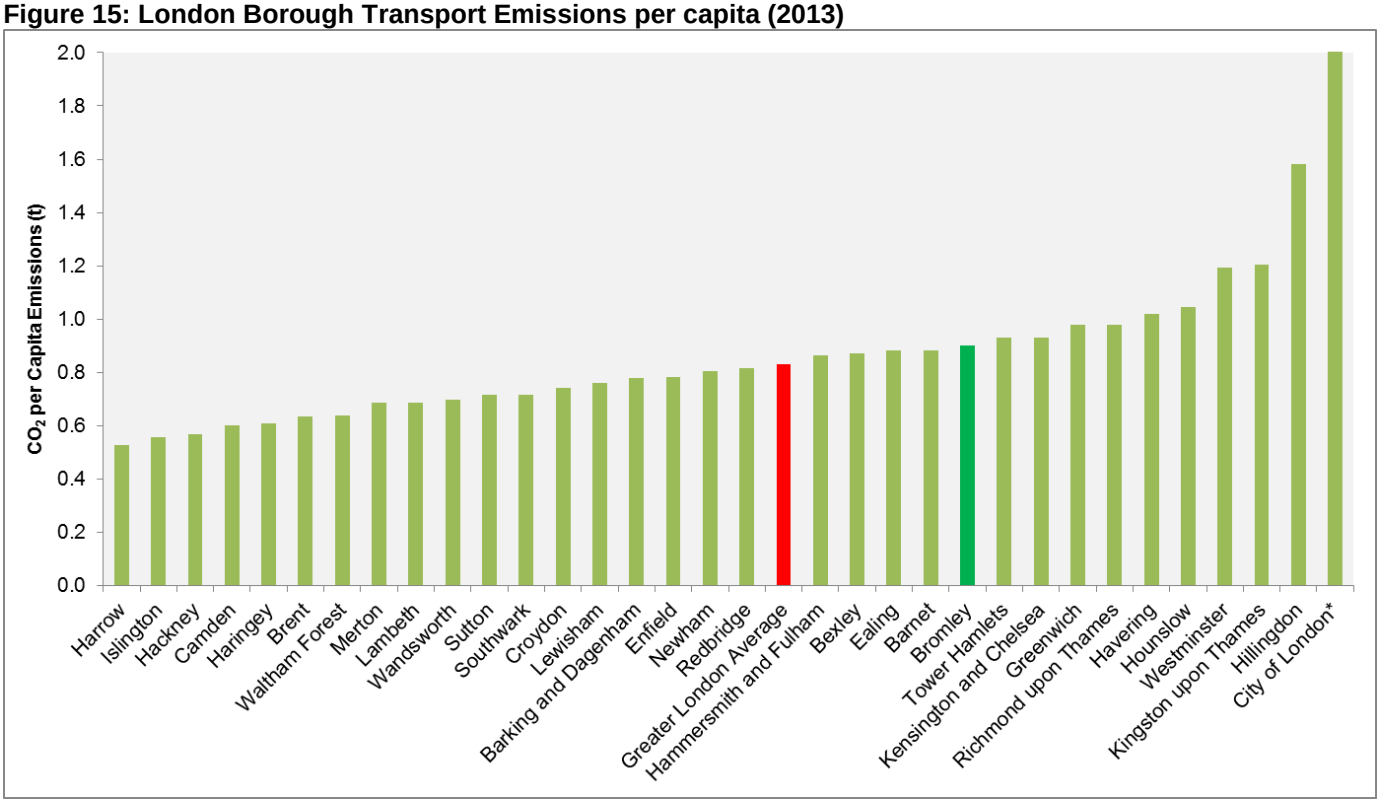
	2005 (Baseline)	2012	2013	% Change since 2005 (Baseline)	% Change since 2012
Bromley	812	735	725	-11%	-1%
Greater London	17,142	15,491	15,184	-11%	-2%
National Total	153,713	136,654	133,270	-13%	-2%

There was a 1% decrease in Bromley's total domestic emissions in 2013 compared with 2012, in line with Greater London and National reductions of 2% in the same period. It is worth noting that Bromley's emissions from 'domestic gas' and 'other fuels' actually increased by 3% and 7% respectively in 2013 compared with 2012, but an 8% fall in 'domestic electricity' emissions offset these increases. Bromley's total domestic emissions were 11% less in 2013 than the 2005 baseline, showing good progress.

3.3 Bromley Transport Emissions

Car ownership rates in Bromley are high and, on a total basis, Bromley has the 4th highest emissions from road transport in the Greater London area in 2013. However, on a per capita basis, Bromley ranks 11th highest of the London councils at 0.90t/capita (see below).

Figure 15: London Borough Transport Emissions per capita (2013)



** City of London per capita emissions (6.7t) not fully illustrated in Figure 15 for visualisation reasons*

Bromley's road transport emissions per capita (dark green) are slightly higher than the London average (0.8t/capita-red above) but are 0.5t per capita lower than the national average.

Table 9: Transport Emissions Comparison

	2005 (Baseline)	2012	2013	% Change since Baseline	% Change since 2012
Bromley	349	291	286	-18%	-2%
Greater London	8,367	7,141	6,994	-16%	-2%
National Total	104,981	93,275	91,952	-12%	-1%

Table 9 shows Bromley, Greater London and National 2013 total transport emissions compared with 2005 and 2012. Bromley has experienced an 18% drop in transport emissions compared to 2005 baseline, which is slightly better than Greater London (16%) and National (12%) reductions in the same period. There has been a 2% reduction in transport emissions in Bromley compared with 2012, broadly in line with Greater London and National performance.

3.4 All Sectors Comparison (per capita)

Table 10 shows the relative positions between Bromley and the other 33 London councils 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
Industry & Commercial	3	8	5	3	5	4	5	5	**5**
Domestic	32	32	32	32	31	31	31	31	**31**
Road Transport	23	23	23	23	23	23	23	23	**23**
All sectors	13	15	15	13	17	16	17	17	**18**

Figure 16: Bromley rankings over time for each emissions category relative to 33 London Councils

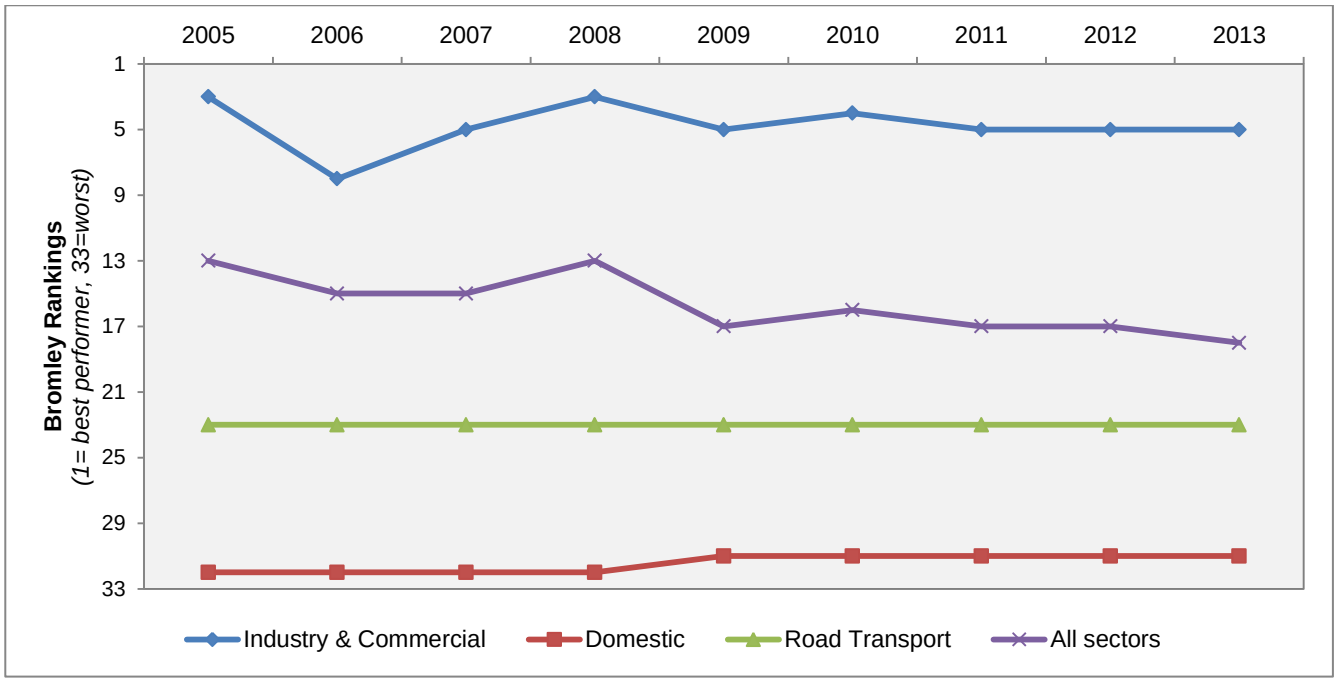


Figure 16 is a visual representation of the ranking data in table 10. Bromley has remained towards the bottom of the league table for domestic emissions (red) and close to the top of the table for commercial emissions (blue). Emissions for transport have remained relatively steady at 23rd position since 2005. In 2013, LB Bromley's 'All sectors' ranking moved down one position to 18th due to LB Havering's fractionally better emissions per capita performance in 2013 (see Figure 11). Despite a slight downward trend since 2005 across 'All Sectors' (purple), Bromley remains 'mid-table' with all categories considered.

3.5 Comparison with Previous Years

Figure 17: Per Capita % Change – 2013 emissions compared with 2005 Baseline

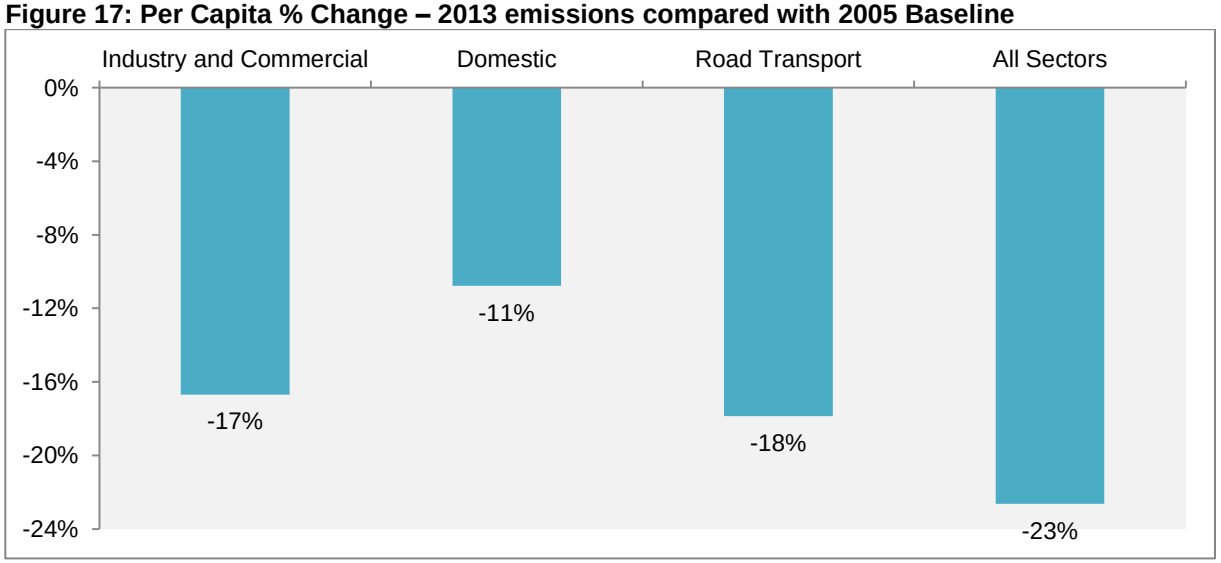


Figure 17 shows that per capita emissions since the baseline year (2005) have fallen across all sectors. The largest percentage drop has been in 'All Sectors' per capita emissions, at -23% since the baseline year. The smallest decrease has been in the domestic sector with a fall of 11% since baseline.

Figure 18: Per Capita % Change - 2013 emissions compared with 2012

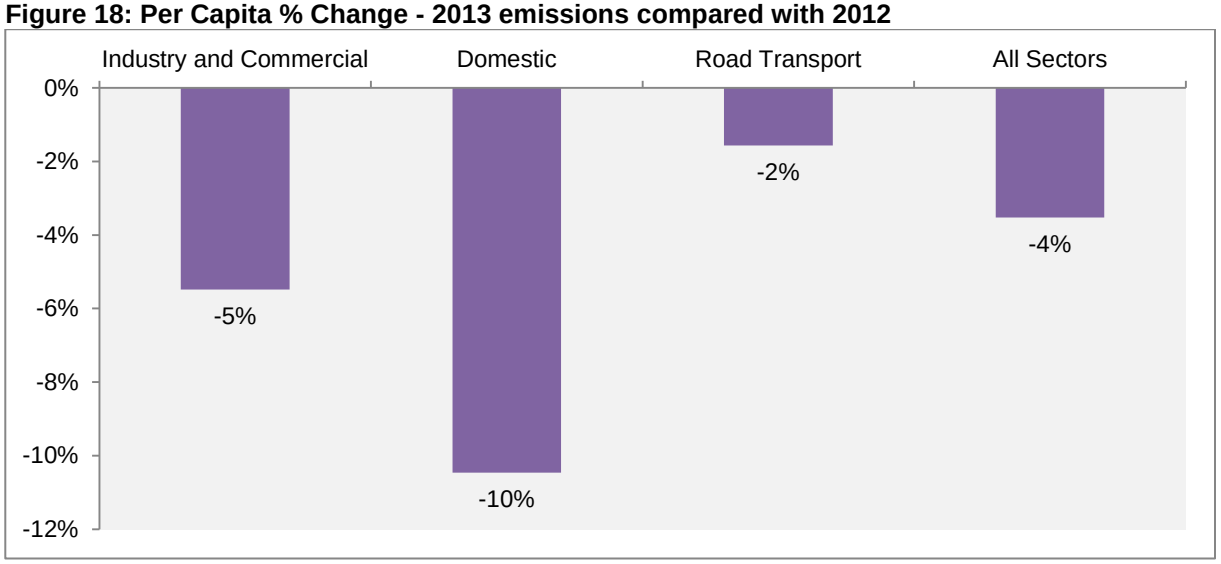


Figure 18 shows the difference in emissions experienced between 2012 and 2013. The Road Transport sector achieved a reduction in emissions of -2% whilst Industry and Commercial and Domestic emissions reduced by 5% and 10% respectively compared with 2012.

Figure 19: Total Emissions Historical Comparison; Bromley's Annual Carbon Dioxide emissions by sector 2005-2013

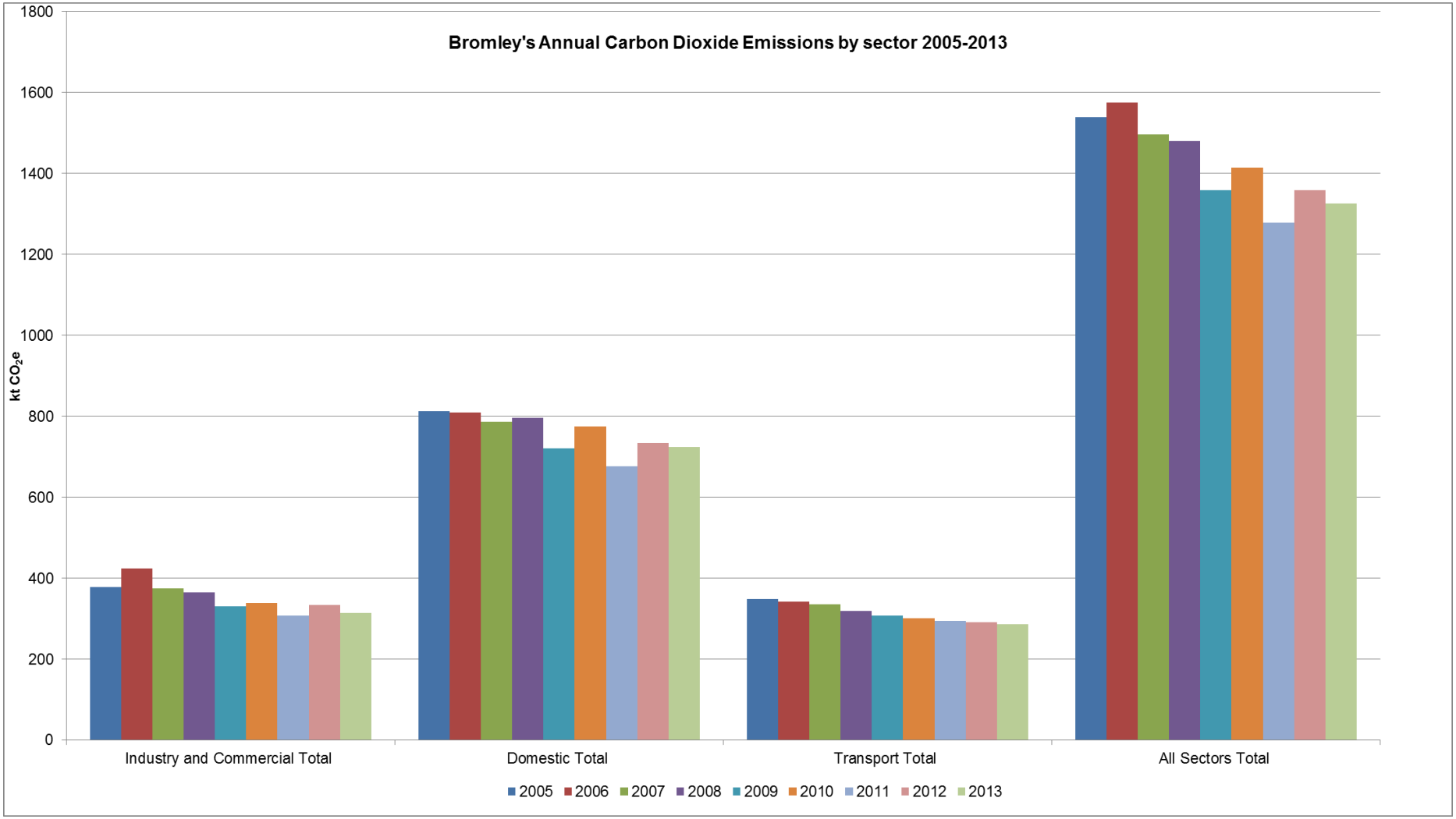


Figure 19 reflects the trend that emissions are gradually reducing over time in Bromley across the three major sectors in which emissions are quantified. 2012 saw increases in Industry & Commercial, Domestic and All-Sector emissions relative to the previous year, but in 2013 emissions decreased relative to 2012 emissions across all three sectors. 2013 emissions have not fallen below the low point of 2011 in the I&C, Domestic and All Sectors totals, yet emissions are lower than 2012 in all sectors across all sectors. Domestic emissions continue to take up the biggest proportion of total emissions in Bromley, followed by Industry and Commercial and then Transport (See Figure 1).

Figure 20: Bromley's Total Annual Carbon Dioxide emissions by sub-category 2005-2013

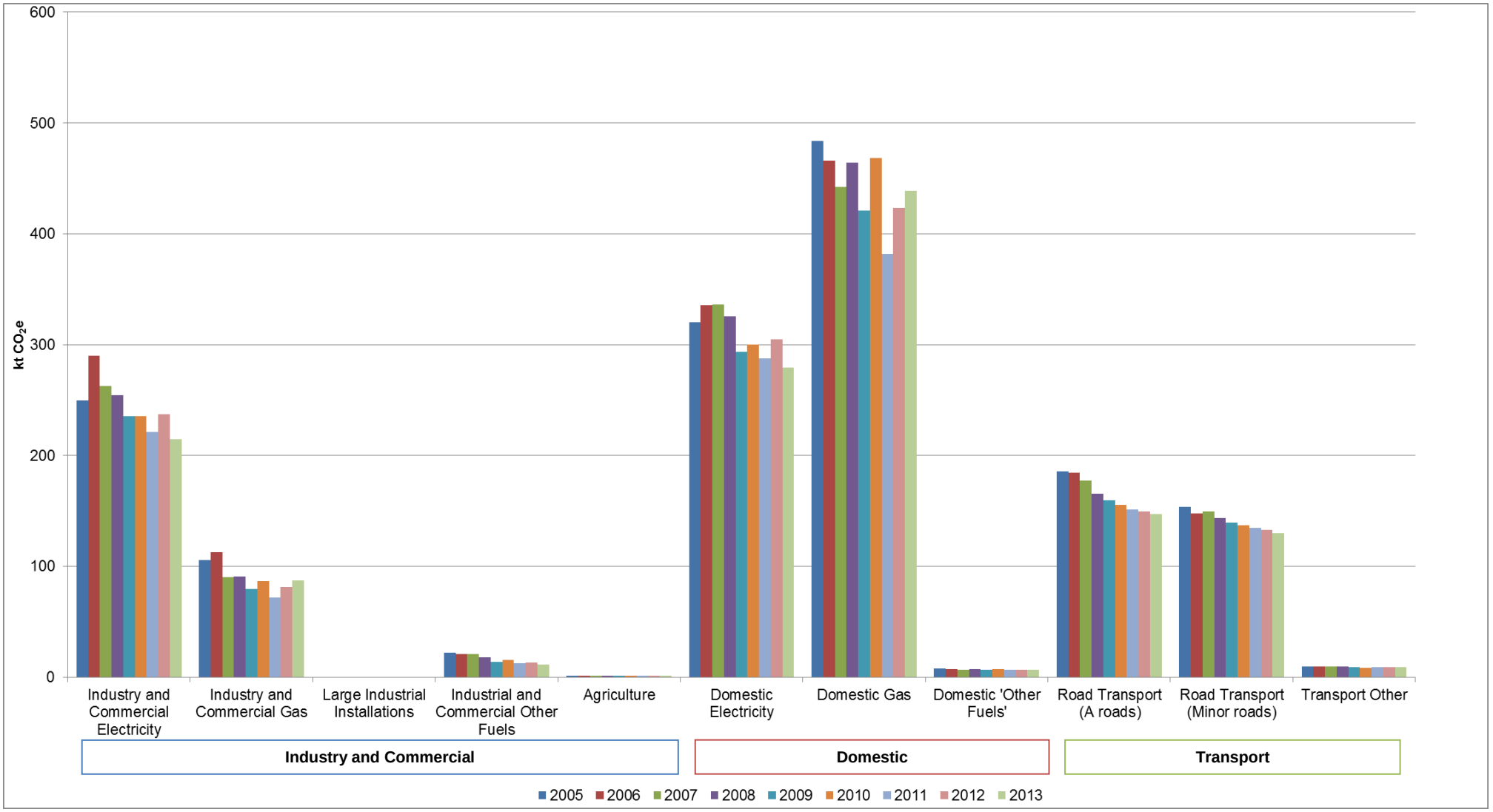


Figure 20 shows the emissions from Industry & Commercial, Domestic and Transport sectors broken down into their constituents. This reveals that in Bromley, 'Industry & Commercial electricity use' is the biggest source of emissions within the I&C sector, 'Domestic Gas' is the biggest in the Domestic sector, and 'Road Transport (A roads') is the biggest in the Transport sector. There is a downward trend amongst most of the sub-categories since 2005, although 2013 saw small increases in relation to 2012 in 'Industry and Commercial Gas', 'Domestic Gas', 'Domestic Other Fuels' and 'Transport: Other' categories.

4. Summary and Conclusions

Bromley's 2013 CO_2 emissions data are encouraging given the notable 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. 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 2013, Bromley emitted 1.325Mt CO_2: 55% of emissions were from the domestic sector: 21% came from road transport and 24% emanated from industrial and commercial facilities. Overall, per capita emissions are slightly 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 slightly higher than the London average and industrial/commercial emissions are below average.

Table 11: 2013 Outcome Analysis

Positive Outcomes	Negative Outcomes
• Total all-sector CO_2 emissions for Bromley have reduced by 14% (213kt) since the 2005 baseline, and by 2.4% (33kt) from 2012 to 2013 • Per capita all-sector CO_2 emissions have fallen by 18% since 2005 and by 3.5% from 2012 to 2013, and remain below the national and London averages • Per capita CO_2 emissions are lower than the London average for Industry & Commercial emissions and Road Transport emissions • Per capita road transport emissions have decreased by 22.5% since 2005 and by 2% compared with 2012	• Bromley has higher than average per capita CO_2 emissions for the domestic sector (2.3t) and continues to be the 3rd worst performer in London (as has been the case since 2009). • In terms of per capita ranking across all sectors, Bromley has fallen one place to 18th out of 33 London Councils • Although transport emissions have reduced, there has been no improvement relative to other boroughs • Domestic gas emissions increased in 2013 compared with 2012

To reduce emissions on a borough-wide basis, further efforts need to be made, especially regarding domestic energy and road transport. As the local economy emerges from recession, care needs to be taken to ensure that any economic growth is carbon efficient (de-coupling emissions growth from economic growth).

Table 12: Historical Sectoral summary and 2013 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 ($ktCO_2$)	/ capita (tCO_2)
LBB 2005	378.0	1.3	812.1	2.7	348.5	1.2	1,538.6	5.1
LBB 2006	424.2	1.4	809.2	2.7	341.5	1.1	1,575.0	5.2
LBB 2007	374.8	1.2	785.8	2.6	336.1	1.1	1,496.6	4.9
LBB 2008	364.6	1.2	796.6	2.6	318.7	1.0	1,479.9	4.9
LBB 2009	330.2	1.1	720.6	2.3	307.7	1.0	1,358.5	4.4
LBB 2010	338.9	1.1	775.2	2.5	300.8	1.0	1,414.9	4.6
LBB 2011	307.1	1.0	675.8	2.2	294.8	0.9	1,277.6	4.1
LBB 2012	333.2	1.1	734.8	2.3	290.9	0.9	1,358.8	4.3
LBB 2013	**314.9**	**1.0**	**724.5**	**2.3**	**286.3**	**0.9**	**1,325.8**	**4.2**
London 2013	18,228.8	2.2	15,184.5	1.8	6,993.9	0.8	40,407.2	4.8
National 2013	155,496.7	2.4	133,269.6	2.1	91,952.1	1.4	380,718.3	5.9

5. Appendix

5.1 Methodology summary for CO_2 reporting

	Sector	Data source / method summary
A	Industrial, Commercial and Agriculture Electricity	DECC GB regional energy statistics and DECC NI non domestic electricity statistics
B	Industrial, Commercial and Agriculture Gas	DECC 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	DECC regional energy statistics and DECC NI domestic electricity statistics
G	Domestic Gas	DECC 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 DECC 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 2013 UK local and regional CO2 emissions methodology summary'*

5.2 Relevant DECC Statistics

- UK local authority and regional carbon dioxide emissions national statistics: 2005-2013
- 2005 to 2013 UK local and regional CO_2 emissions: statistical release
- 2005 to 2013 UK local and regional CO_2 emissions full dataset
- 2005 to 2013 UK local and regional CO_2 emissions subset dataset
- 2005 to 2013 UK local and regional CO_2 emissions methodology summary
- 2005 to 2013 UK local and regional CO_2 emissions technical report
- An introduction to the UK's greenhouse gas inventory
- UK emissions statistics: frequently asked questions
- Sub-national emissions statistics: frequently asked questions

5.3 Bromley Council Strategy and Plans influencing GHG emissions

Sector	Council Report	Description
All sectors	Carbon Management Programme Report 2014/15	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
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'
	Environment Portfolio Plan 2015/18	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	Building a Better 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 2015	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