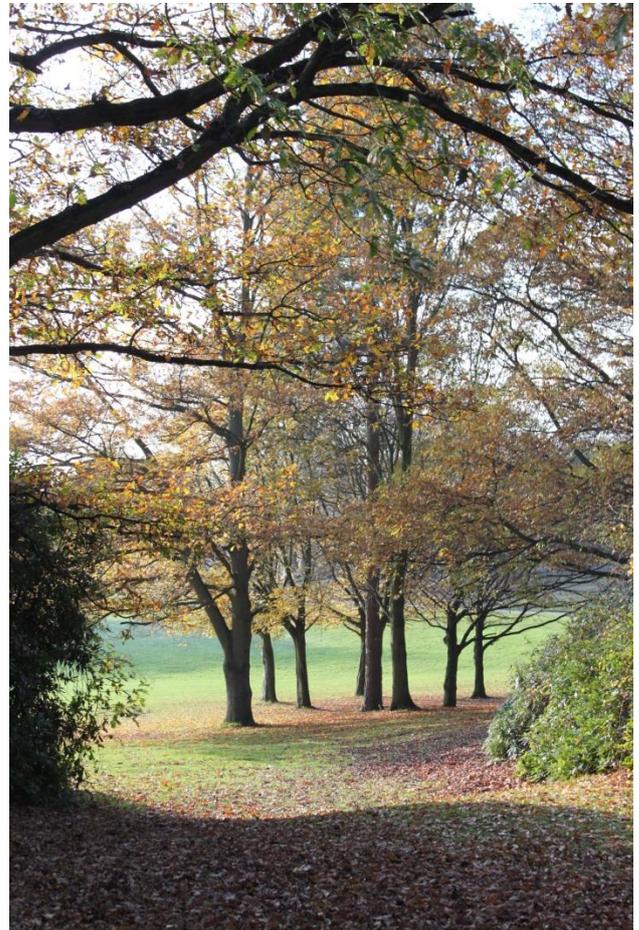


London Borough of Bromley

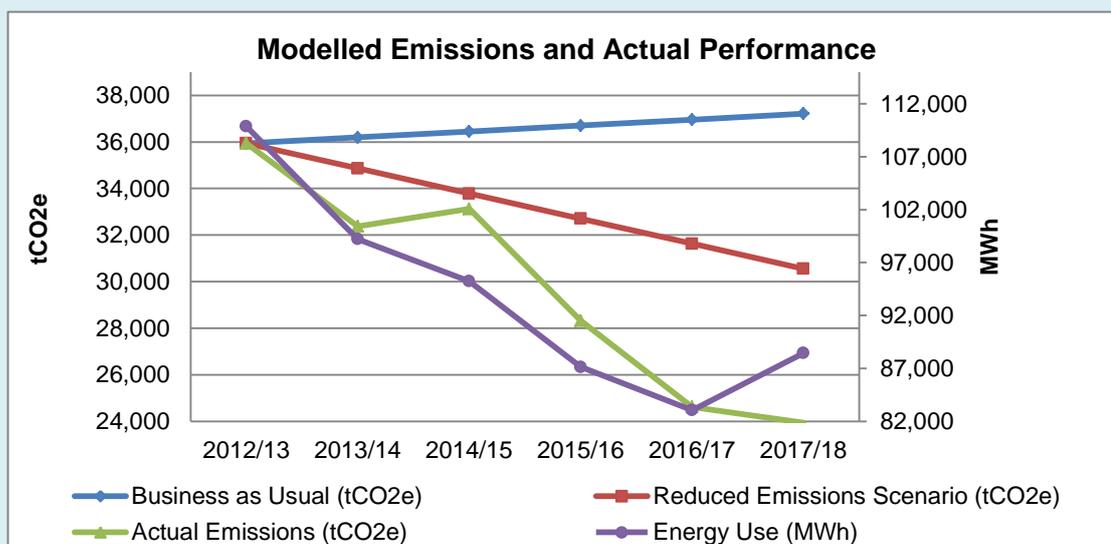
Greenhouse Gas Emissions: 2017/18 Performance Report

Carbon Management Programme 2 (2013/14 – 2017/18) – Year 5



Performance Summary

- Bromley's first Carbon Management Programme (CMP1) operated from 2008/09 to 2012/13 and resulted in a 14% reduction in the Council's Greenhouse Gas (GHG) emissions.
- A second five-year programme (CMP2) is now in effect, with the ambition to drive down emissions by a further 15% from 2013/14 to 2017/18 (relative to a recalculated 2012/13 baseline).
- CMP2 not only plays an important role in helping reduce the Council's energy consumption and carbon emissions but also helps achieve significant cost savings – money that can be better used supporting frontline services.
- In terms of 2017/18 performance, total emissions decreased by 2.8% compared with the previous year, and 33% against the 2012/13 baseline.



- Energy use, which accounts for over 90% of measured impacts, increased by 6.5% relative to 2016/17 and decreased by 19.5% compared with the 2012/13 baseline.
- The reasons for this good performance include positive actions such as the SALIX and Street Lighting Invest-to-Save programmes (but also changes due to carbon factors and weather). The slight increase can be attributed to a rise in energy use by primary schools.
- 2017/18 represents the last year of CMP2, resulting in a 33% carbon reduction, which far exceeds the overall 15% reduction target set at the beginning of the 5 year programme. Bromley Council's task now is to ensure that this work continues with the commencement of the CMP3 programme.
- The Council's Salix invest-to-save programme mitigates cost pressures and energy bills are over £300k lower each year as a result of this strategic investment programme.
- The boxes below summarise the key changes in 2017/18 performance, both year-on-year and against baseline.

Greenhouse Gas Emissions

-2.8% -33.4%

↓ ↓

23,940 tCO₂e

Annual Change Against Baseline

Energy Use

6.5% -19.5%

↑ ↓

88,458 MWh

Annual Change Against Baseline

Energy Expenditure

12% 1%

↑ ↑

2,656 £m

Annual Change Against Baseline

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1. Introduction

Greenhouse gas emissions from human activity are the highest in history and there's clear evidence concerning our impact on the Earth's climate systems. The atmosphere and oceans have warmed, snow and ice cover has diminished, and sea levels are rising. Climate change has the potential to generate widespread impacts on human and natural systems and this presents a range of environmental, social and economic challenges.

Nine of the top ten warmest years on record have occurred since the mid-2000s. The Intergovernmental Panel on Climate Change's definitive 5th Assessment Report (2014) highlighted that "time is running out if the world wants to avoid potentially catastrophic climate change".

The UK Government recognises the importance of taking action to combat climate change and the Climate Change Act 2008 was the first national legislation to set legally binding targets to reduce GHG emissions (80% by 2050 compared with a 1990 baseline). In October 2017 the UK government set out its Clean Growth Strategy – highlighting a commitment to nurture low carbon technologies and improving energy efficiency across all sectors.

The government has stated that if global emissions are not reduced, average summer temperatures in south east England will rise by:

- over 2°C by the 2040s (hotter than the 2003 heatwave connected to 2,000 extra UK deaths)
- up to nearly 4°C by the 2080s

Extreme weather events will increase in frequency and intensity as a result of rising temperatures, and lead to:

- heavier rainfall – increasing the risk of flooding
- higher sea levels – leading coastal flooding
- more, and longer lasting, heat waves

2018 witnessed "The Beast from the East", shortly followed by England's hottest summer on record, both resulting in an increased mortality rate. Events such as these will impact the borough and the services it provides to residents, which is one reason the Council is taking action both to mitigate its own climate impacts and adapt to our changing climate.

But this challenge also presents an opportunity for achieving greater energy efficiency and financial savings. The economic benefits are clear – by using less energy and fewer resources we become more efficient as an organisation, allowing us to realise cost savings – money that can be better spent supporting frontline services.

The Council's Carbon Management Programme (CMP) plays an important role in helping achieve these objectives. In these challenging financial times our focus is on delivering projects offering the greatest financial savings. Failing to take action to control resource use and overheads presents a real risk both to the Council's finances and reputation. As such, this CMP report focuses on activities that the Council can directly influence, such as energy use in buildings, street lighting, transportation fuel use and internal waste generation, to reduce impacts and costs.

Benefits of Carbon Management Programme

- Generating significant financial savings, especially as energy and fuel prices continue to increase
- Reducing tax bills, such as the Climate Change Levy, freeing revenue for front line services
- Improving the energy efficiency of our buildings, resulting in improved working conditions
- Reducing Greenhouse Gas emissions and other environmental impacts
- Reducing risk of penalties for legislative non-compliance
- Demonstrating the Council's action to reduce costs and environmental impacts to the public
- Establishing best management practice in integrating environmental and financial efficiencies
- Helping the Council to be more resource efficient in challenging economic times

2. Reporting Bromley's GHG Emissions

In 2007/08 LB Bromley worked in partnership with the Carbon Trust to develop a 'Carbon Management Programme' (CMP1) to reduce energy use, emissions and costs. This activity led directly to a decision to reduce the Council's own carbon dioxide emissions by 25% over five years.

Bromley's approach is to monitor and report on greenhouse gas (GHG) emissions associated with the following areas/activities: buildings; fleet and business travel; street lighting; water consumption; waste production; paper use; and commuting. This data is expressed as a 'carbon equivalent' (CO₂e) figure - a common metric used for quantifying impacts of Greenhouse Gases relative to one unit of CO₂.

In March 2011, DCLG issued its [Single Data List](#) of reporting requirements. This included a mandatory requirement for local authorities to report on greenhouse gas emissions from their own estates and operations (formerly known as 'National Indicator 185').

CMP1 operated from 2008/09 – 2012/13 and resulted in a 14% reduction (5,275 tCO₂e) in the Council's GHG emissions. For CMP2 (2013/14 – 2017/18), a target was set to drive down emissions by a further 15% against the revised 2012/13 baseline (35,941 tCO₂e) by the end of 2017/18.

Bromley Council has already implemented many successful policy and technical initiatives and

CMP2 has built on that success (see Appendix: Invest to Save Projects).

As CMP2's scope includes a larger number of sites, activities and energy/water meters, and also uses different GHG conversion factors (see box below), it is not possible to directly compare performance between CMP1 and CMP2. CMP1 2012/13 data was, therefore, recalculated to provide a revised CMP2 baseline (35,941 tCO₂e), against which CMP2's progress has been monitored annually.

Note: due to improved data collection, gas consumption and associated emissions, figures have been recalculated for previous CMP2 years.

This report (2017/18) is the final year of CMP2 and will provide data for the baseline year for CMP3.

Future plans for CMP3 (2018/19 – 2022/23) include assessing the carbon impacts of Council spend. CMP1 and CMP2 have traditionally focussed on reducing scope 1 and 2 emissions, and we have therefore made a big environmental difference to a relatively small amount of spend.

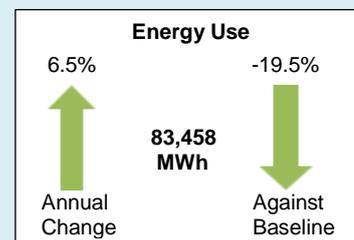
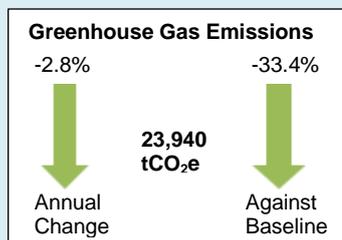
However, by far our biggest impacts are the ~£200m Bromley Council spends each year on procurement. This will present new challenges in quantifying scope 3 emissions, setting reduction targets and supplier engagement.

Greenhouse Gas Conversion Factors

Different GHG conversion factors are used each year to convert fuel use, energy consumption, waste and water into tonnes of carbon dioxide equivalent (tCO₂e).

Energy use i.e. electricity, gas & heating oil (which makes up over 90% of the Council's measured impacts) is converted into CO₂e using GHG conversion factors established by [BEIS](#). These factors are updated annually reflecting changes such as how electricity is generated from a national mix of gas, coal, nuclear and renewables.

The reduction in LBB's 2017/18 GHG emissions was largely down to lower transportation use and street lighting but was also partly due to some lower emission factors in 2017/18 compared with 2016/17.



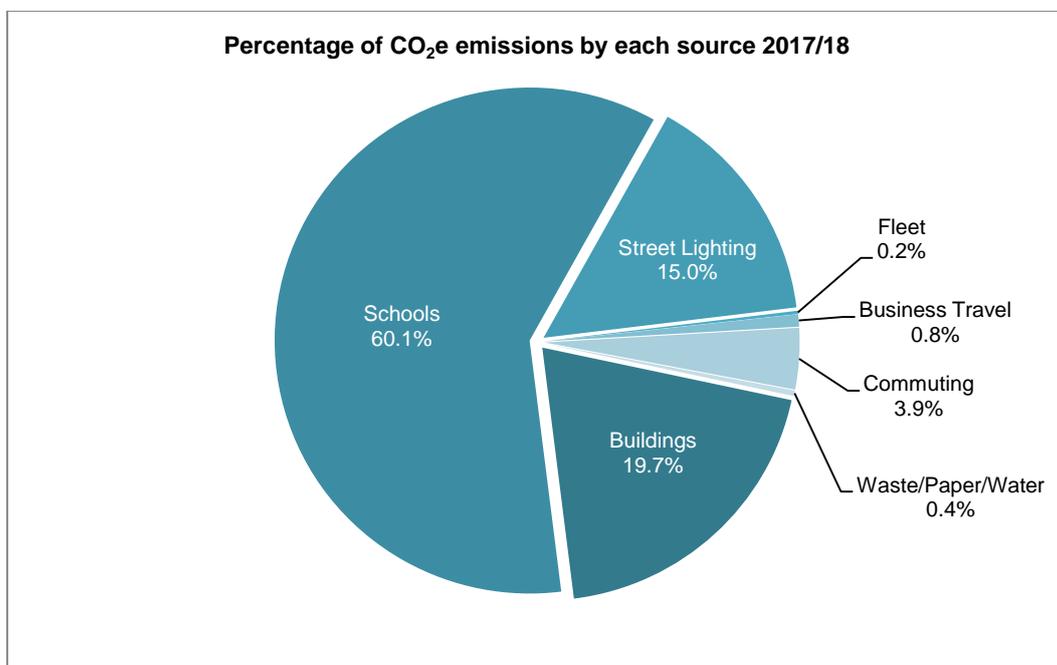
3. Scope of Activities

Bromley's CMP2 scope takes a number of different sites / activities into account, including:

- Buildings: energy (gas / electricity / heating oil) used by the Council and schools (academies and maintained schools)
- Street Lighting: electricity associated with street lights, lit signs, bollards, and crossing beacons
- Commuting: journeys to/from work by rail, bus travel, car and motorbike
- Fleet and Business travel: transport used on Council business
- Civic Centre waste production (landfill and incinerated waste)
- Water consumption (certain LB Bromley operational buildings)
- Paper consumption (Civic Centre)

Fugitive emissions (e.g. refrigeration or air conditioning gases) were excluded due to lack of available data.

The chart below shows the percentage contribution made by each source to the Council's GHG emissions for 2016/17. Buildings remain the Council's largest component (79.8%), with schools (Academies and Maintained) being the largest contributor (60.1%) both overall and within the buildings sector. Street Lighting is the next most significant source (15.0%) followed by Commuting (3.9%).



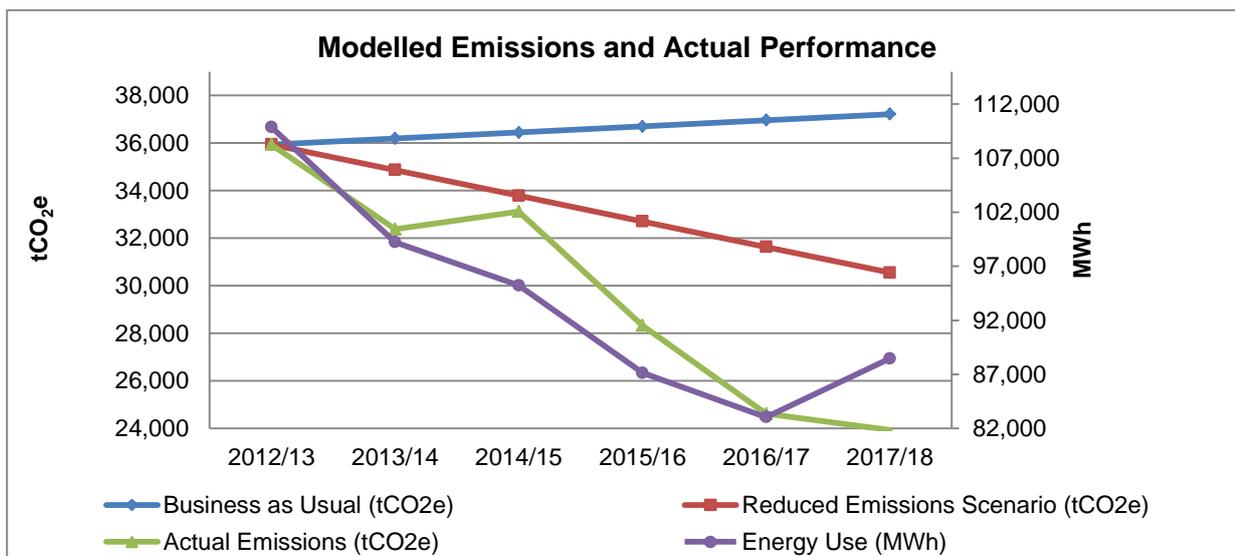
A greater number of sites, energy and water meters, and activities are recorded in CMP2 compared with CMP1, providing a more complete picture of LB Bromley's environmental impacts. The Council's use of the online energy management system 'SystemsLink' allows a greater number of sites and meters (e.g. water consumption) to be monitored and managed.

4. Performance Assessment

In 2017/18 emissions were 23,940 tCO₂e - a decrease of 678 tCO₂e (2.8%) compared with 2016/17, and 12,001 tCO₂e (33.4%) against the 2012/13 baseline.

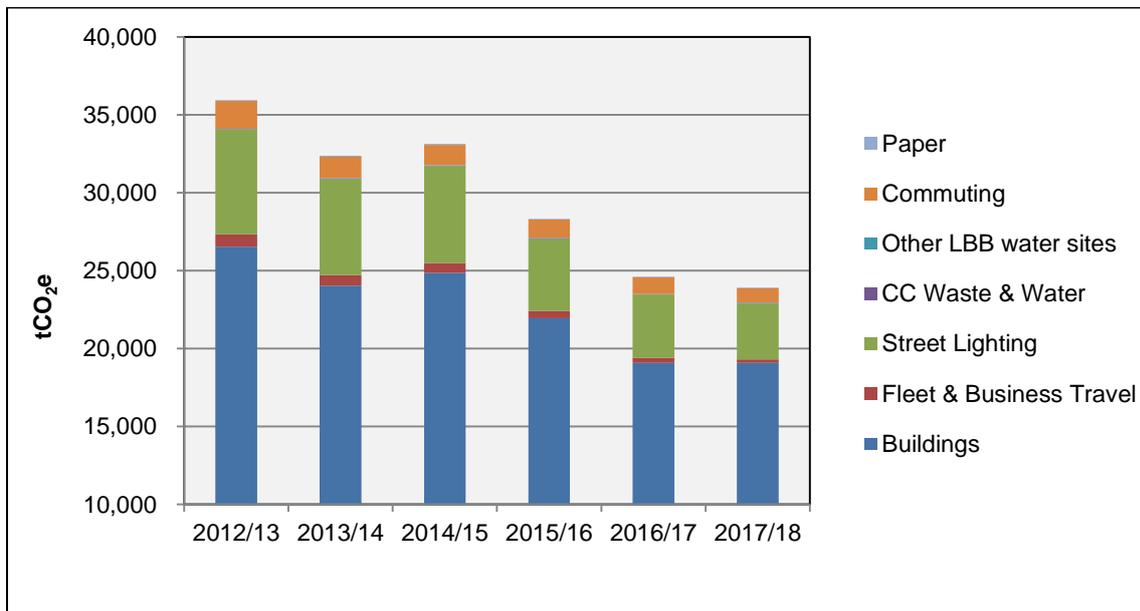
The graph below shows our progress to date alongside two modelled scenarios: 'Business as Usual'- where no action is taken to reduce GHG emissions (resulting in emissions rising to more than 37,000 tCO₂e over five years) and a 'Reduced Emissions Scenario'- where emissions are actively reduced by 3% per annum to 30,550 tCO₂e by 2017/18.

During 2017/18, energy use fell against the baseline (19.5%) but rose by 6.5% compared to 2016/17. Despite this rise, Bromley's CMP2 has successfully mitigated an additional 6,610 tCO₂e under the 30,550 tCO₂e 2017/18 target.



Compared with the 2012/13 baseline, gas consumption has reduced by 15%, but increased 7% since 2016/17. This increase can be attributed to the particularly cold winter in the first quarter of 2018, requiring more gas to heat buildings compared the milder previous four winters.

CMP2 Emissions by Source – Chart



The above chart shows emissions performance by source, in tCO₂e terms. 2017/18 emissions have fallen significantly by 33% against baseline, and 2.8% compared to 2016/17 emissions. Most notably:

- Buildings emissions (incl. schools) have fallen by 28% against baseline.
- Street Lighting emissions have fallen by 46% against baseline and 11% compared with last year.
- Council owned fleet emissions decreased by 28% compared to 2016/17.
- Employee commuting emissions saw a 11% reduction in 2017/18.

CMP2 Emissions by Source – Data

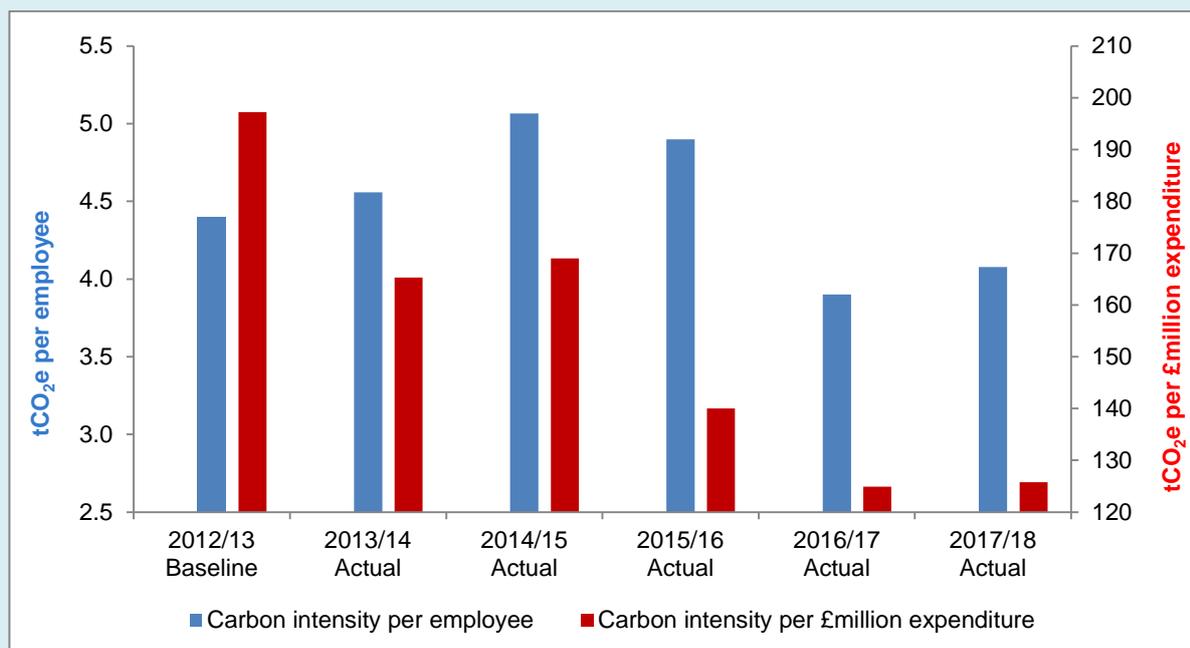
Scope of Activity	2012/13 Baseline (tCO ₂ e)	2013/14 Year One (tCO ₂ e)	2014/15 Year Two (tCO ₂ e)	2015/16 Year Three (tCO ₂ e)	2016/17 Year Four (tCO ₂ e)	2017/18 Year Five (tCO ₂ e)	Annual tonnage change	Annual percentage change	Change Against Baseline
Buildings (Schools)	18,461	16,592	17,025	14,985	14,223	14,382	159	1%	-22%
Street Lighting	6,683	6,132	6,178	4,624	4,053	3,588	-465	-11%	-46%
Buildings (LBB)	8,078	7,447	7,842	6,962	4,848	4,712	-136	-3%	-42%
Staff Commuting	1,794	1,402	1,324	1,167	1,055	937	-118	-11%	-48%
Business Travel	388	356	316	288	245	187	-58	-24%	-52%
Fleet	414	310	318	178	85	51	-34	-41%	-88%
Waste/Water/Paper	123	139	120	123	104	84	-20	-19%	-32%
TOTAL	35,941	32,378	33,123	28,327	24,613	23,940	-673	-2.73%	-33%

Carbon Intensity Measures

Carbon intensity provides a measure of how efficiently emissions are generated by an organisation relative to chosen metrics. Two metrics are considered here to show our carbon intensity:

- expenditure (tonnes CO₂e per £million net expenditure, excluding schools), with a low figure indicating carbon efficiency from a financial point of view;
- employees (tonnes CO₂e per full-time employee, excluding schools and street lighting), again with a low figure indicating carbon efficiency from a staffing point of view.

CMP2 Carbon Intensity per employee & per £million expenditure



Carbon intensity per employee has increased by 4.5% compared with 2016/17, largely due to a 9% fall in the number of employed staff. However, 2017/18 figures have reduced by 6% against the baseline year.

Carbon intensity relative to expenditure fell by 36% against baseline and increased by 1% in comparison with 2016/17; this slight increase can be attributed to a reduction in the Council's

spend. Despite this increase, this figure is still considerably below the projected target.

The table below shows a breakdown of key Council data and future targets in relation to its carbon intensity (intensity targets were set in line with CMP2 targets, i.e. a 3% annual reduction against baseline).

	CMP2					
	2012/13 Baseline	2013/14 Actual	2014/15 Actual	2015/16 Actual	2016/17 Actual	2017/18 Actual
Net Portfolio Expenditure (£million)	182,212,000	195,892,000	195,474,000	189,603,000	197,052,000	190,391,000
Number of employees (FTE)	2,408	2,118	1,958	1,771	1,610	1,464
Total tCO ₂ e	35,941	32,378	33,123	28,327	24,618	23,940
tCO ₂ e per £million expenditure	197	165	169	149	125	126
tCO ₂ e per employee	4.4	4.6	5.1	4.9	3.9	4.1

5. Buildings Emissions



Background: Buildings account for 79.8% of the Council’s 2017/18 footprint and comprise operational property (e.g. Civic Centre, depots and libraries), and schools. Schools comprise the largest element of Bromley’s overall emissions (60.1%), with operational property comprising the additional 19.7%. However the Council is limited in its ability to directly control schools’ energy consumption; in practice the Council is attempting to achieve its 15% reduction target from activities relating to just 40% of its footprint – effectively doubling the scale of the challenge.

Data: Gas and oil are used for space-heating and hot water. Electricity is used for lighting, cooling, and electrical equipment. Gas, electricity and heating-oil consumption data were provided by the energy suppliers and LASER Bureau Service (the Council’s energy data and procurement service) and this data

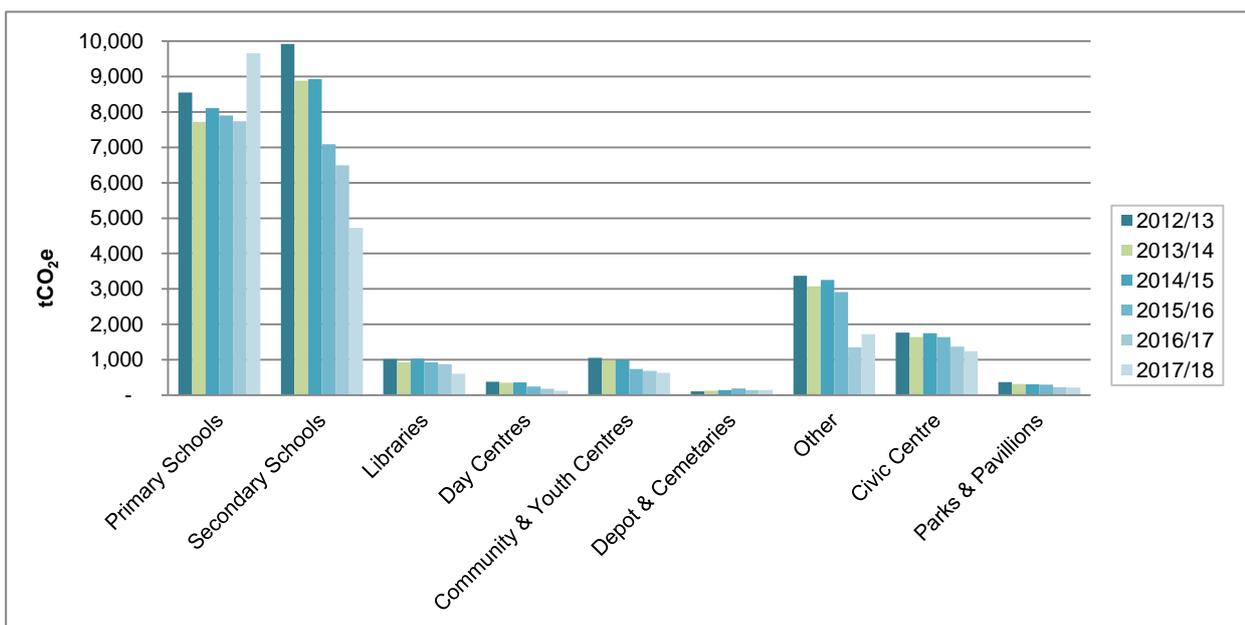
was converted into CO₂e emissions using DEFRA’s GHG conversion factors.

Commentary: Buildings’ emissions (including schools), have fallen by 28% against baseline. Compared with 2016/17, emissions rose by 0.1% due to a 13% increase of usage by primary schools. Since baseline, the Council has effectively abated nearly 7,500 tonnes of greenhouse gasses. Part of this reduction can be attributed to there being fewer staff in employment and therefore less electricity use.

Future Opportunities: Building energy efficiency measures and initiatives which have been commissioned, or are being considered, include:

- Civic Centre Stockwell Building LED Lighting Upgrade
- Renewable energy installation
- Central Library energy efficiency measures

CMP2 Emissions by Building Type



6. Street Lighting Emissions

Background: Street lighting is the second largest component of Bromley's carbon footprint (after buildings). LB Bromley owns and maintains a range of street lighting and illuminated street furniture including over 27,000 street-lights, some 3,000 lit-signs, 1,600 illuminated bollards, and another 900 items of illuminated street furniture.



Data: Electricity consumption figures from street lighting and street furniture were collected from the energy supplier and converted into CO₂e emissions. Street Lighting energy use is now metered and the data is captured on our energy management system.

Commentary: Emissions from street lighting decreased by 465 tCO₂e from 4,058 tCO₂e (2016/17) to 3,588 tCO₂e (2017/18). This significant saving was achieved through the completion of the following energy efficiency works:

- 1,570 SON lamps replaced with LED lanterns (570 Salix project / 1,000 SEELS project)
- Since 2013/14, 12,886 street lamps have been replaced with dimmable LED lanterns under the Street Lighting Invest-to-Save programme (this is in addition to the Salix/SEELS project).
- All centre island posts no longer lit 24 hours a day
- Crossing bollards no longer lit 24 hours a day

Future Opportunities: Street Lighting Projects that could continue to provide financial, energy and emissions related savings include:

- Replacing 150w SON lanterns with LED equivalents
- Replacing lit signs with reflective signs
- Variety of lower wattage residential street lighting improvements

7. Commuting Emissions

Background: Commuting is the third largest component of the Council's emissions after buildings and street lighting. The commuting footprint covers how Council staff (most of whom are based at the Civic Centre site) travel to work.

Data: Data is extrapolated from the biennial Staff Travel Survey, which gives information on the mode of transport (i.e. car, bus and train) and distance travelled from a sample of staff. This data is then converted into carbon by assigning each mode of transport with the relevant GHG conversion factor and multiplying the mileage. This data is adjusted on a pro-rata basis to reflect the carbon impact of the entire Council workforce. The survey is conducted every two years (to minimise survey fatigue); this data is based on the May 2018 staff survey results.



Commentary: Absolute emissions from staff commuting reduced by 118 tCO₂e (11%) from 1,055 tCO₂e (2016/17) to 937 tCO₂e (2017/18). The reduction was largely due to a 9% reduction in staff numbers.

Future Opportunities: The Council will continue to encourage staff to reduce their commuting footprint through:

- Offering free cycle training and maintenance courses to all staff
- Promoting a 'Cycle to Work' scheme, including tax-free bike purchasing initiatives
- Increasing cycle storage on the Civic Centre
- Advertising 'Dr Bike' servicing sessions and bike-marking events throughout the year
- Making pool push and electric bikes available to all staff
- Promoting a new 'Car-Sharing' scheme for all Council staff

These initiatives may also help to decrease emissions from business travel (e.g. if a bicycle is used for commuting, it may also be used for business travel).

8. Fleet & Business Travel Emissions



Background: The fleet is defined as vehicles directly managed by the Council but not vehicles used by the Council's contractors (e.g. *Veolia* for Waste Services). Business Travel is exclusively defined as the use of (staff) private cars for Council business.

Data: Business Travel data is derived from reimbursed car mileage claims collected by Human Resources. Figures are converted into CO₂e emissions. It should be noted that mileage is not always claimed by officers, so there will be a degree of under-reporting. Fleet emissions are calculated from fuel (litres) used by Council vehicles.

Commentary: Overall, emissions from this sector have decreased by 93 tCO₂e (20%) since 2016/17 and by 564 tCO₂e (70%) compared with 2012/13 baseline.

Fleet emissions decreased by 34 tCO₂e (41%) since 2016/17, largely due to the outsourcing of services and the consequential reduction of LBB fleet. Compared with the 2012/13 baseline, emissions have fallen by 363 tCO₂e (88%).

Business Travel emissions have decreased by 58 tCO₂e (24%) since 2016/17 and by 201 tCO₂e (52%) since 2012/13 baseline. Increased fuel prices, fewer staff numbers and the need to reduce budgets contributed to staff driving less and planning their work more effectively (e.g. combining visits etc.).

Future Opportunities: The Council will continue to:

- Restructure its fleet to improve vehicle use (e.g. moving to smaller vans or reducing numbers), and selecting fuel efficient vehicles where possible
- Maintain two pool cars, meaning fewer staff will use their own cars for business travel

9. Water, Waste & Paper Emissions



Background: The emissions associated with waste production and paper use at the Civic Centre together with water consumption (across 47 sites) is the smallest component of our carbon footprint.

Data: The tonnage of waste is divided according to the disposal route (i.e. landfill or incineration) and then converted into a carbon figure. Note that recycled waste (80% of Civic Centre waste) is excluded from our calculations. Metered water consumption data is converted directly into CO₂e emissions. The reams of paper used is converted into tonnes and then into a carbon emissions figure.

Commentary: Total emissions from this sector decreased by 20 tCO₂e (19%) compared with 2016/17.

Carbon emissions associated with Civic Centre waste management (landfill and incineration) has reduced by 5 tCO₂e (63%) compared to 2016/17.

During CMP1 water emissions were previously only recorded for Civic Centre use, but data is now being captured for nearly 50 sites. In 2017/18 water consumption emissions were 47 tCO₂e; no change since 2016/17.

Carbon emissions associated with paper use decreased by 15 tCO₂e (63%) against 2016/17 and decreased by 20 tCO₂e (38%) against 2012/13 baseline.

Future Opportunities: the Council will continue to record water consumption data on its energy management system in order to identify:

- Demand management opportunities
- Possible billing errors
- Leaks
- Metering issues
- Abatement opportunities.

10. Carbon Management Programme: Progress to Date

The Carbon Management Programme (CMP) is the main initiative specifically designed to reduce the Council's direct environmental impacts and costs. The CMP's first phase (CMP1) ran from 2008/09 – 2012/13 and resulted in a 14% reduction (5,275 tCO₂e) in the Council's GHG emissions. With the ambition to drive down emissions and costs by a further 15% from 2013/14 to 2017/18, a second five-year phase (CMP2) was introduced. This has now finalised and the table below summarises the performance of CMP2. It is not possible to directly compare performance between the phases for the following reasons:

- A greater number of sites, energy and water meters, and activities are recorded under CMP2
- Different GHG conversion factors are now used to measure energy consumption and resource use in carbon dioxide equivalent terms
- Electricity emissions are now sub-divided into 'generation' and 'transmission/distribution' losses

These changes required CMP1 2012/13 data to be recalculated to provide a new baseline for CMP2. A better assessment is to compare 2017/18 performance with the CMP2 (2012/13) baseline. This shows that in 2017/18 emissions fell by 12,001 tCO₂e (33%) compared with 2012/13. This has significantly exceeded the 15% reduction target that was set for the programme.

2017/18 Progress: compared with 2017/18 and against the 2012/13 baseline

Sector	CMP2 2012/13 – 2017/18						Annual Progress		Progress Against Baseline	
	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2016/17 - 2017/18		2012/13 - 2017/18	
	(tCO ₂ e)	(tCO ₂ e)	(tCO ₂ e)	(tCO ₂ e)	(tCO ₂ e)	(tCO ₂ e)	(tCO ₂ e)		(tCO ₂ e)	
	Baseline Year	First Year	Second Year	Third Year	Fourth Year	Fifth Year	Tonnage Change	Percentage Change	Tonnage Change	Percentage Change
Buildings	26,539	24,039	24,867	21,947	19,071	19,094	23	0%	-7,445	-28%
<i>Buildings – Council</i>	8,078	7,447	7,842	6,962	4,848	4,712	-136	-3%	-3,366	-42%
<i>Buildings – Schools</i>	18,461	16,592	17,025	14,985	14,223	14,382	159	1%	-4,079	-22%
<i>Buildings – Mytime</i>	-	-	-	-	-	-	-	-	-	-
Fleet / Business Travel	801	666	634	466	330	237	-93	-28%	-564	-70%
Street Lighting	6,683	6,132	6,178	4,624	4,058	3,588	-470	-12%	-3,095	-46%
Waste/Water/Paper	124	139	120	123	104	84	-20	-19%	-40	-32%
Commuting	1,794	1,402	1,324	1,167	1,055	937	-118	-11%	-857	-48%
TOTAL	35,941	32,378	33,123	28,327	24,618	23,940	-678	-2.8%	-12,001	-33%

11. Local Authority Emissions: Own Estate & Operations

Producing a GHG report forms part of the [DCLG single data list](#), which sets out all of the data requirements that central government requires of local government. BEIS mandates that Local Authorities should measure and report their GHG emissions by following UK guidance which is aligned with international guidance on GHG reporting – the GHG Protocol. Activities are grouped into three different categories ('scopes'):

- Scope 1 (Direct emissions): activities owned or controlled by the organisation that release emissions straight into the atmosphere
- Scope 2 (Energy indirect): emissions released into the atmosphere associated with the consumption of purchased electricity/heat/steam/cooling
- Scope 3 (Other indirect): emissions that are a consequence of your actions, occurring at sources not owned or controlled by the organisation

Reporting Scope 1 and Scope 2 emissions is recommended, but reporting Scope 3 emissions is discretionary. The organisational boundary of the GHG Report is something for each Local Authority to decide – see section 3 of this report for Bromley's scope.

The table below sets out LB Bromley's (CMP2) 2012/13 baseline, 2013/14, 2014/15, 2015/16, 2016/17 and 2017/18 GHG emissions data according to scope:

Emissions from local authority own estate and operations (Former NI 185)

	GHG emissions 2012/13 tCO ₂ e	GHG emissions 2013/14 tCO ₂ e	GHG emissions 2014/15 tCO ₂ e	GHG emissions 2015/16 tCO ₂ e	GHG emissions 2016/17 tCO ₂ e	GHG emissions 2017/18 tCO ₂ e
Scope 1						
Fossil Fuel consumption (Gas and Oil)	13,011	11,229	10,815	9,992	9,881	10,550
Owned transport (Green fleet)	413	310	318	178	85	51
Process emissions	not calculated					
Fugitive emissions	not calculated					
Total scope 1	13,424	11,540	11,134	10,171	9,966	10,600
Scope 2						
Purchased electricity (inc. Street Lighting)	18,732	17,450	18,603	15,314	12,149	11,095
Total scope 2	18,732	17,450	18,603	15,314	12,149	11,095
Scope 3						
Business travel (Grey fleet)	388	356	316	288	245	187
Employee commuting	1,794	1,402	1,324	1,167	1,055	937
Electricity (T&D losses)	1,480	1,492	1,627	1,264	1,099	1,037
Waste (Civic Centre)	9	8	8	8	8	3
Water	60	71	61	68	47	47
Paper	54	59	51	47	49	34
Product in use	not calculated					
Total significant scope 3	3,785	3,388	3,386	2,842	2,503	2,245
TOTAL	35,941	32,378	33,123	28,327	24,618	23,940

Appendix: Invest to Save Projects

To mobilise the invest-to-save CMP initiatives, an internal ring-fenced Carbon Management Fund (CMF) was created in 2008, comprising:

- £250,000 Salix interest-free conditional grant
- £250,000 of match-funded council investment

The CMF essentially doubles the Council's available carbon management capital and significantly increases the amount available for investment over the term of the programme, since savings are repaid into the fund for reinvestment until fully paid back. The Council's £250k capital is fully protected as each loan is repaid to the internal fund from savings made to energy budgets, reflecting the reduced energy consumption and costs. In this way, the Council's Fund is continually replenished for re-investment in new projects. Almost £1m has been invested in energy saving projects leading to annual financial savings of more than £275k and annual carbon savings of more than 1,300t CO₂e.

Project Status	Project Title	Project Type	Loan £	Project Start Date	Project Fully Paid Back on	Annual Savings		Lifetime savings		Payback
						CO ₂ Tonnes	£ Saved	CO ₂ Tonnes	£ Saved**	Years
Pipeline*	Civic Centre - Stockwell building LED	LED Lighting	-	-	-	-	-	-	-	-
	Street Lighting Phase II LED	Street Lighting	-	-	-	-	-	-	-	-
Subtotal										
Fully Paid	Voltage Optimisation Civic Centre	Voltage Management	89,827	09/02/09	09/01/12	141.7	30,691	2,085.8	451,777	2.9
	Retrofit lit signs with PECUs	Street lighting	43,482	01/10/09	01/05/11	123.8	26,865	1,275.1	276,706	1.6
	Retrofit PECUs to lit signs phase 2	Street lighting	49,385	01/11/10	01/04/14	94.8	14,434	1,251.1	190,526	3.4
	Centre Island Posts - Fit Photoelectric Cell Units	Street lighting	17,920	01/01/11	01/07/13	47.4	7,197	421.2	63,984	2.5
	PECU Controlling Crossing Bollards	Street lighting	19,928	01/02/12	01/11/13	52.8	11,631	469.8	103,396	1.7
	Server room - evaporative cooling	Cooling	29,843	01/04/12	01/03/14	142.2	21,192	1,944.9	289,909	1.4
	Beckenham Library - heat control and insulation	Multiple project	6,386	01/04/14	30/03/15	5.8	1,275	84.4	18,621	5.0
	Civic Centre canteen LED lighting upgrade	LED Lighting	9,495	01/04/15	30/03/16	11.1	2,064	166.5	30,966	4.6
	North Block Lighting (full)	Lighting - Upgrades	83,920	01/12/11	30/03/16	77.3	17,001	1,047.9	230,606	4.9
	Fitting electronic gear to MI26 lanterns	Street lighting	93,436	01/11/11	30/03/16	87.2	20,784	1,150.6	274,351	4.5
	Civic Centre underground staff car park	LED Lighting	4,630	26/03/16	31/03/16	7.5	1,502	75.0	15,020	3.1
	SON Replacement & Dimming LED	Street lighting	303,069	01/01/13	01/08/17	276.4	65,848	5,527.0	1,316,958	4.6
	Multi Storey Car Parks - LED Lighting Upgrade	LED Lighting	205,587	01/02/16	01/02/20	279.1	55,775	4,186.1	836,619	3.7
Subtotal			956,908			1,346.9	276,258	19,685.3	4,099,438	
Report Total (excl. Pipeline)			956,908			1,347	276,258	19,685	4,099,438	

* Pipeline figures are all approximate

** Based on energy prices at time of project