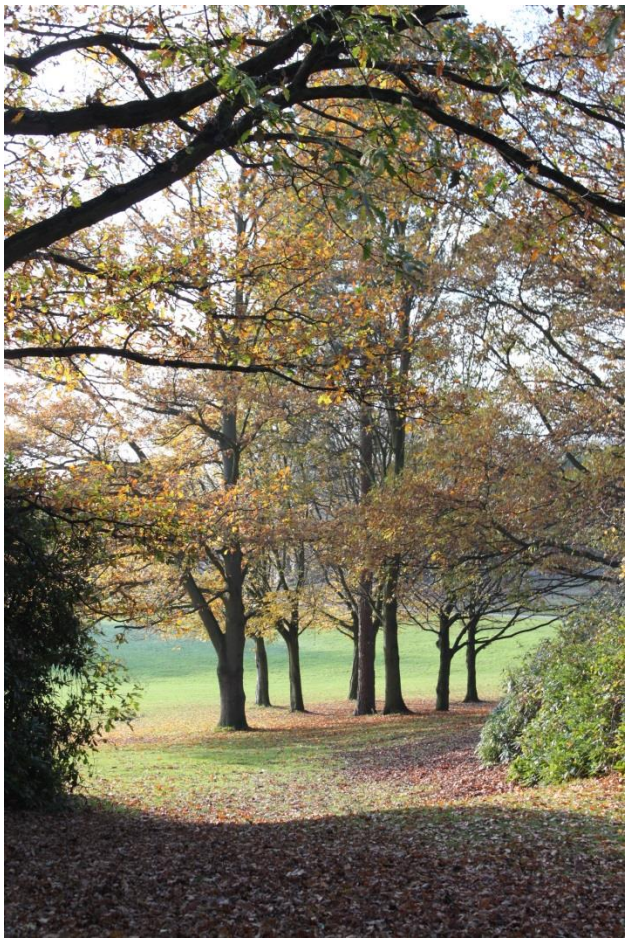
London Borough of Bromley

Greenhouse Gas Emissions: 2014/15 Performance Report

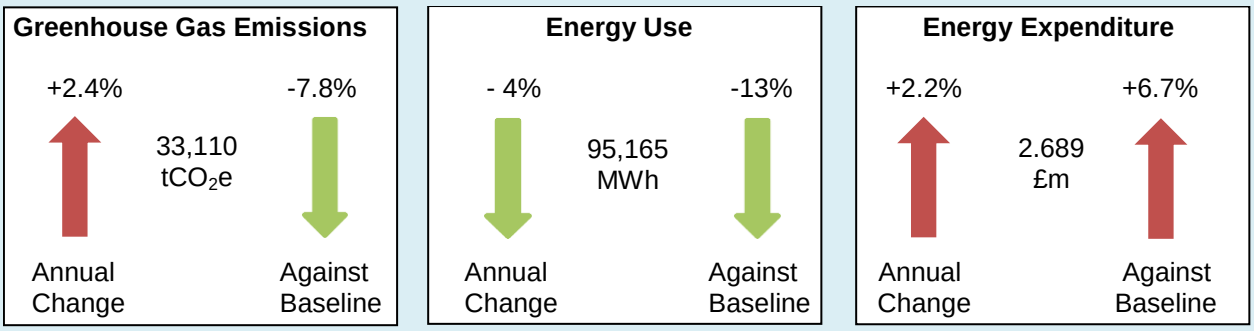
Carbon Management Programme 2 (2013/14 – 2017/18)



July 2015
Environment Development Team

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 our energy consumption and carbon emissions but also helps achieve significant cost savings – money that can be better used supporting frontline services
- In terms of 2014/15 performance, total emissions rose by 2.4% compared with the previous year, but overall are ahead of target and 7.8% less than the 2012/13 CMP2 baseline
- Energy use, which accounts for over 90% of measured impacts, decreased by 3.9% relative to 2013/14
- However emissions increased, largely due to higher electricity 2014/15 GHG conversion factors
- Bromley Council needs to reduce its emissions by a further 7.2% (against 2012/13 baseline) over the next three years to achieve its CMP2 15% reduction target
- The Council's Salix invest-to-save programme mitigates cost pressures and energy bills are at least £200k lower each year as a result of this strategic investment programme
- The boxes below summarise the key changes in 2014/15 performance, both year-on-year and against baseline. Although energy use has fallen, higher energy prices meant the Council's costs increased both annually and against baseline



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1. Introduction

Greenhouse gas emissions from human activity are the highest in history and there is clear evidence concerning our impact on the climate system. The Intergovernmental Panel on Climate Change's (IPCC) definitive 5th Assessment Report highlighted that "time is running out if the world wants to avoid potentially catastrophic climate change".

The atmosphere and oceans have warmed, snow and ice cover has diminished, and sea levels are rising. Indeed, recent climate changes have had widespread impacts on human and natural systems and this presents national and local governments with a range of environmental, social and economic challenges.

The UK Government recognises the importance of taking action to combat climate change and the Climate Change Act 2008 was the first national legislation in the World to set legally binding targets to reduce GHG emissions (80% by 2050 compared with a 1990 baseline). The Government also has a National Adaptation Programme designed to improve the country's resilience to climate change.

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 are likely to increase with rising temperatures, and this will lead to:

- heavier rainfall – with increased risk of flooding
- higher sea levels – causing coastal flooding
- more and longer-lasting heat waves

Events such as these will impact the Council and the services it provides to residents, which is one reason the Council is taking action both to mitigate its climate impacts (by reducing energy use and therefore GHG emissions) 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. Equally, scrutinising energy use and taking effective action can identify opportunities for even greater improvement and efficiency.

Our CMP 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' (CO_2e) figure - a common metric used for quantifying impacts of Greenhouse Gases relative to one unit of CO_2.

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'). To fulfil this reporting requirement this data (see section 11) is also uploaded to the LB Bromley and DECC websites.

CMP1 operated from 2008/09 – 2012/13 and resulted in a 14% reduction (5,275 tCO_2e) in the Council's GHG emissions.

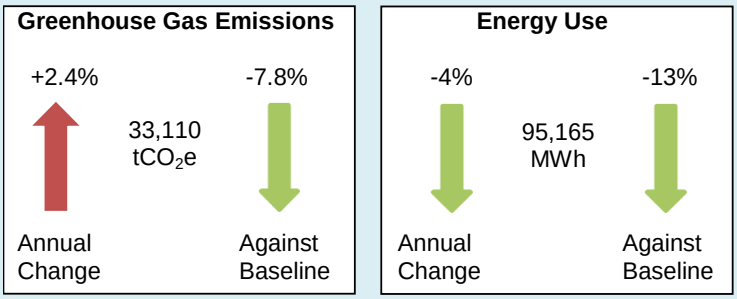
CMP2 has now commenced (2013/14 – 2017/18), with an ambition to drive down emissions and costs by a further 15% against the new 2012/13 baseline (35,907 tCO_2e), so that the Council only emits 30,520 tCO_2e by the end of 2017/18.

Bromley Council has already implemented many successful policy and technical initiatives and CMP2 builds 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 new CMP2 baseline (35,907 tCO_2e), against which CMP2's progress will be monitored annually.

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 (tCO_2e).



Energy use i.e. electricity, gas & heating oil (which makes up over 90% of the Council's measured impacts) is converted into CO_2e using GHG conversion factors established by DEFRA. These factors are updated annually reflecting changes such as how electricity is generated from a national mix of gas, coal, nuclear and renewables.

This subsequently affects our emissions performance; during 2014/15 the Council's total energy use fell significantly compared with 2013/14 (-4%), yet greenhouse gas emissions actually increased by 2.4% to 33,110 tCO_2e. This is due to the fact that some 2014/15 conversion factors were significantly higher than those used in 2013/14 – for instance, the grid electricity conversion factor was 11% higher, which can be attributed to a significant increase in coal powered electricity generation in 2012 (the inventory year for which the 2014/15 GHG emission factors are derived).

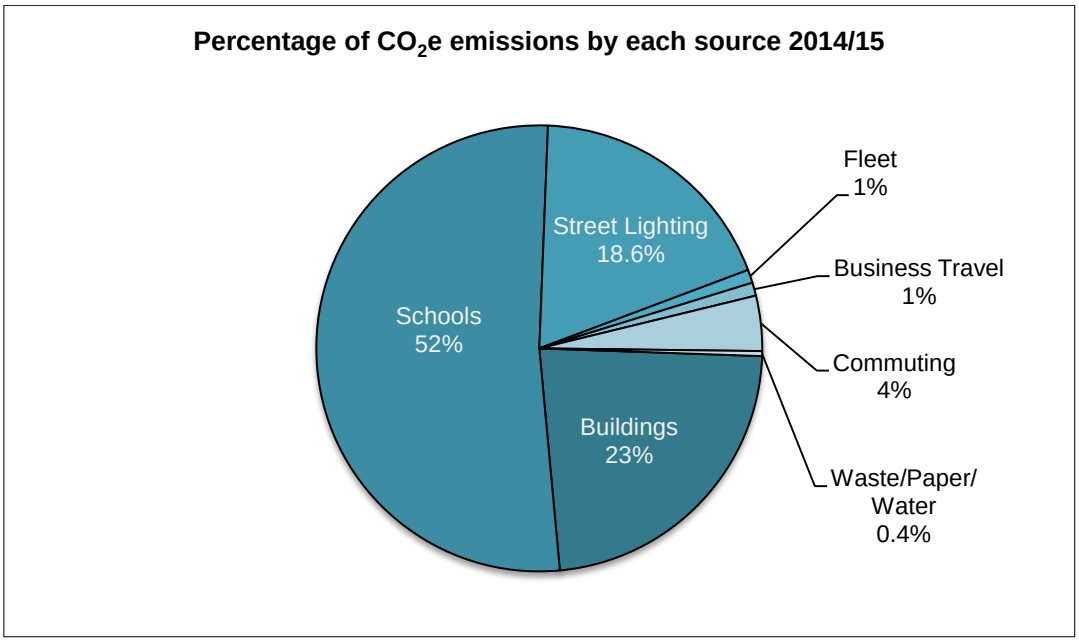
3. Scope of Activities

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
- 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 2014/15. Buildings remain the Council's largest component (75%), with schools (Academies and Maintained schools) being the largest contributor (52%) both overall and within the buildings sector. Street Lighting is the next most significant source (18.6%) followed by Commuting (4%).



As illustrated in the table below, 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 managed.

Number of monitored meters

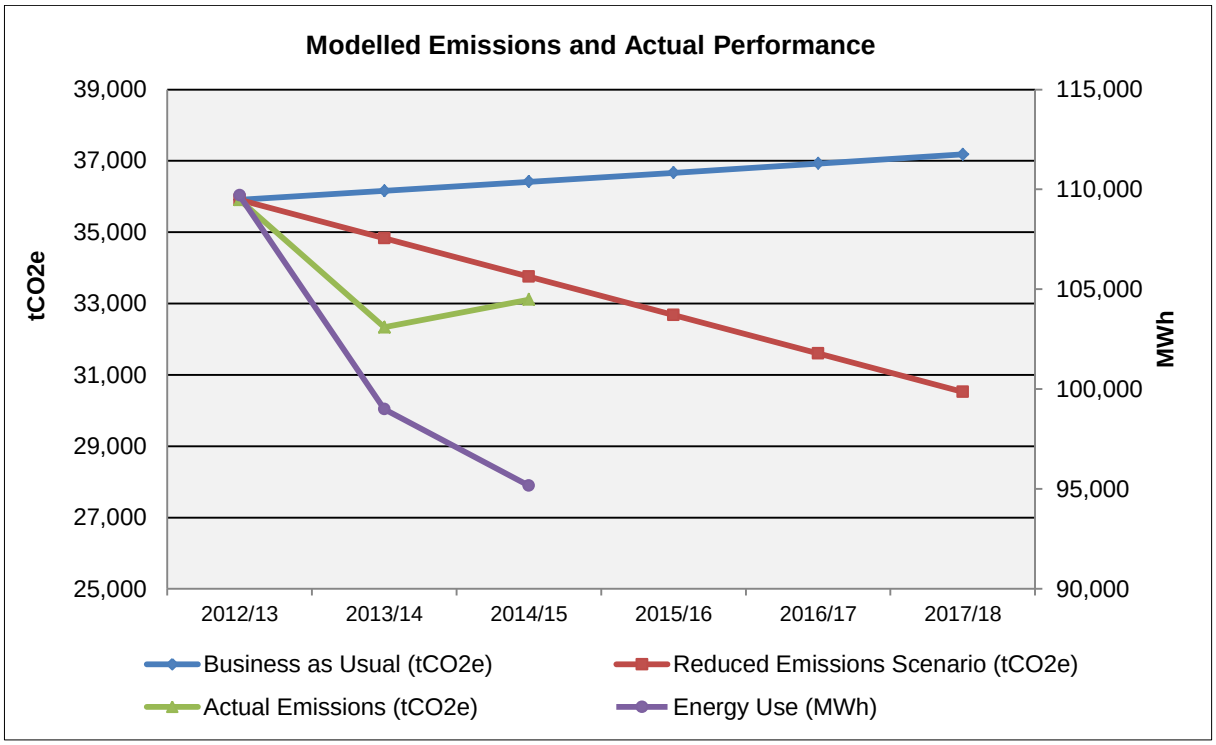
	CMP1	CMP2		
	2012/13	**2012/13**	**2013/14**	**2014/15**
Electricity sites	142	212	209	192
Electricity meters	244	329	325	315
Gas sites	124	155	155	153
Gas meters	210	253	252	250
Water sites	1	59	52	48
Water meters	2	64	52	48

4. Performance Assessment

In 2014/15 emissions were 33,110 tCO_2e - an increase of 775 tCO_2e (2.4%) compared with 2013/14. However, emissions have fallen by 2,797 tCO_2e (7.8%) against the 2012/13 baseline.

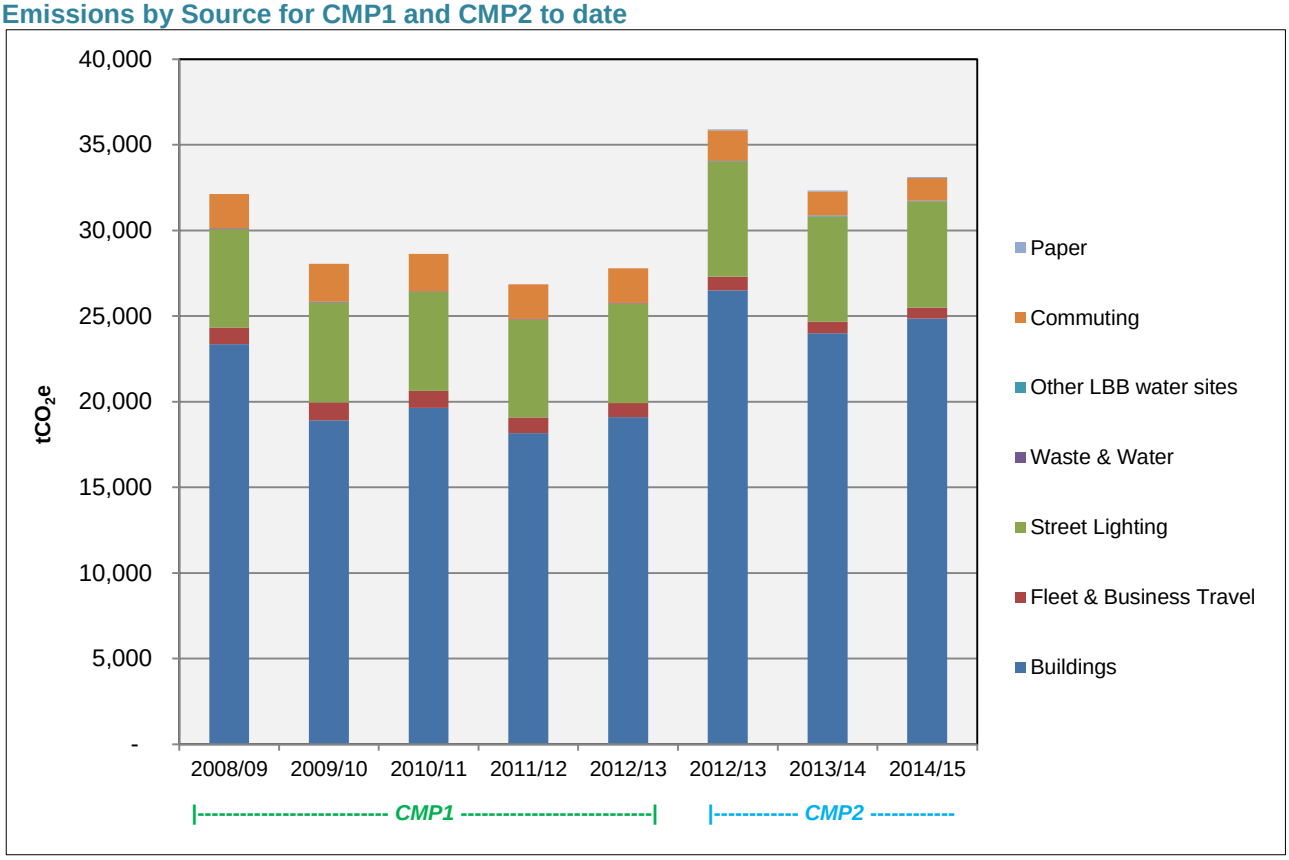
The graph below shows our progress to date alongside two modelled scenarios: 'Business as Usual'- where no action is taken to reduce carbon emissions (resulting in emissions rising to more than 37,000 tCO_2e over five years) and a 'Reduced Emissions Scenario'- where emissions are actively reduced by 3% per annum to 30,520 tCO_2e by 2017/18.

During 2014/15, energy use fell significantly compared with both baseline (13%) and 2013/14 (4%). Despite this reduction in energy use, because the 2014/15 electricity GHG conversion factors were higher than those used in 2013/14 (see box on page 5), our total emissions actually increased on last year to 33,110 tCO_2e.



The following chart shows emissions performance by source, in tCO_2e terms, since 2008/9 (the first year of CMP1). As stated, CMP1 and CMP2 emissions cannot be directly compared because more sites, meters and activities are recorded under CMP2 (leading to more emissions being quantified than in CMP1). Performance should instead be measured relative to the respective baselines and progress within each programme.

Emissions by Source for CMP1 and CMP2 to date



Although 2014/15 emissions have fallen by 7.8% against baseline, they have risen since 2013/14 by 2.4%. This rise is due to a change in GHG conversion factors rather than an increase in energy use (which fell).

- Buildings emissions (incl. schools) have fallen by 6.2% against baseline but rose by 3.6% year-on-year
- Street Lighting emissions have fallen by 7.6% against baseline but rose by 0.8% compared with last year despite there being a 9.4% decrease in electricity use illustrating the impact of the change in electricity GHG conversion factors
- Commuting emissions has fallen by 26.3% since baseline and 5.6% annually, reflecting fewer staff
- Fleet / Business travel has similarly fallen (20.8% against baseline and 4.7% annually), reflecting fewer Council vehicles and trips

CMP2 Emissions by Source

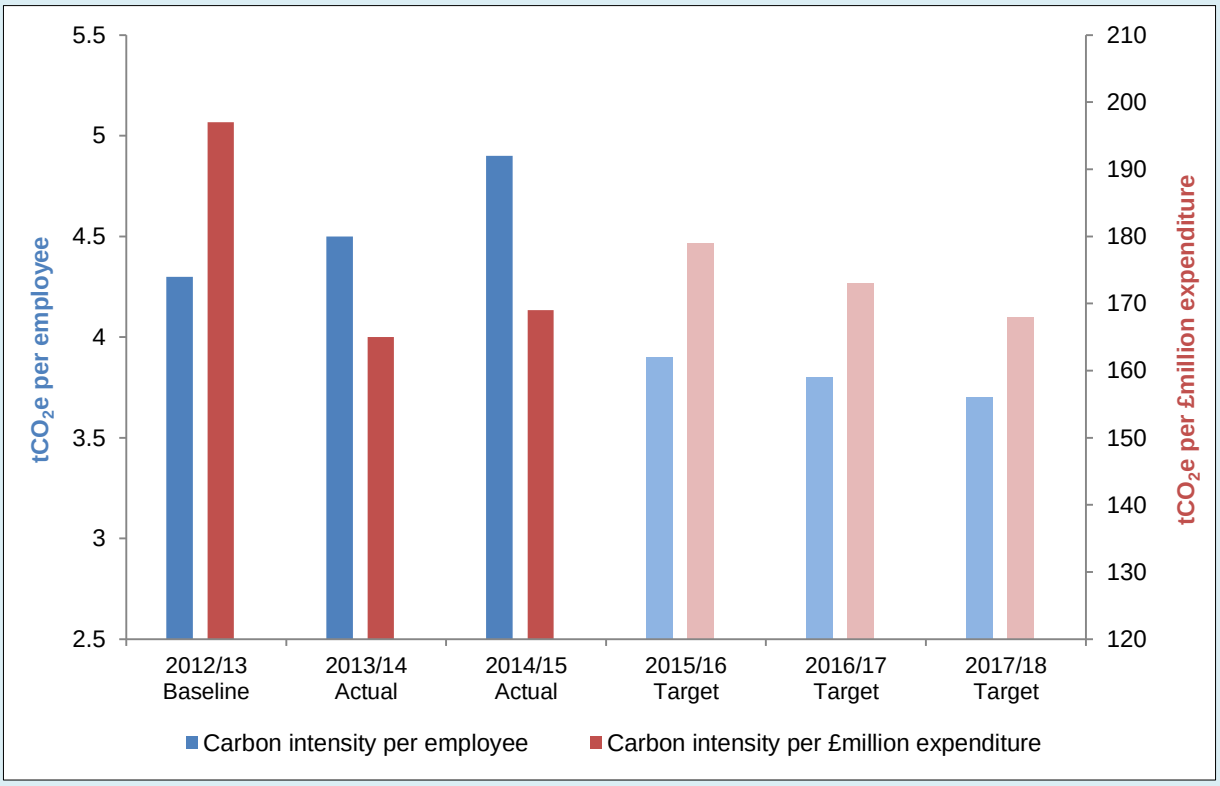
Scope of Activity	2012/13 Baseline (tCO_2e)	2013/14 Year One (tCO_2e)	2014/15 Year Two (tCO_2e)	Annual Change	Change Against Baseline
Buildings (Schools)	18,762	16,706	17,248	+3%	-8%
Street Lighting	6,683	6,132	6,178	+1%	-8%
Buildings (LBB)	7,742	7,290	7,606	+4%	-2%
Staff Commuting	1,794	1,402	1,324	-6%	-26%
Business Travel	388	356	316	-11%	-19%
Fleet	414	310	318	+3%	-23%
Waste/Water/Paper	124	139	120	-14%	-3%
TOTAL	**35,907**	**32,335**	**33,110**	**+2%**	**-8%**

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 CO_2e per £1 million net expenditure, excluding schools), with a low figure indicating carbon efficiency from a financial point of view
- employees (tonnes CO_2e 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 relative to staff numbers has increased by 14% against baseline and by 9% compared with 2013/14, due to a combination of the change in GHG conversion factors and the fact that energy consumption and operational building stock has yet to decrease in line with the reduction in staff numbers. Carbon intensity relative to expenditure fell by 14% against baseline but has increased by 2.4% in comparison with 2013/14; however, this was largely due to the change in 2014/15 GHG conversion factors. 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 Target**	**2016/17 Target**	**2017/18 Target**
Net Portfolio Expenditure (£million)	182.2	195.9	195.5	-	-	-
Number of employees	2,408	2,118	1,958	-	-	-
Total tCO_2e	35,907	32,335	33,110	<32,675	<31,598	<30,520
tCO_2e per £million pound expenditure	197	165	169	<179	<173	<168
tCO_2e per employee	4.3	4.5	4.9	3.9	3.8	3.7

5. Buildings Emissions

Background: Buildings account for 75% of the Council's 2014/15 footprint and comprise operational property (e.g. Civic Centre, depots and libraries), and schools. Schools comprise the largest element of Bromley's overall emissions (52%), with operational property comprising the additional 23%. 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 48% of its footprint – effectively doubling the scale of the challenge.

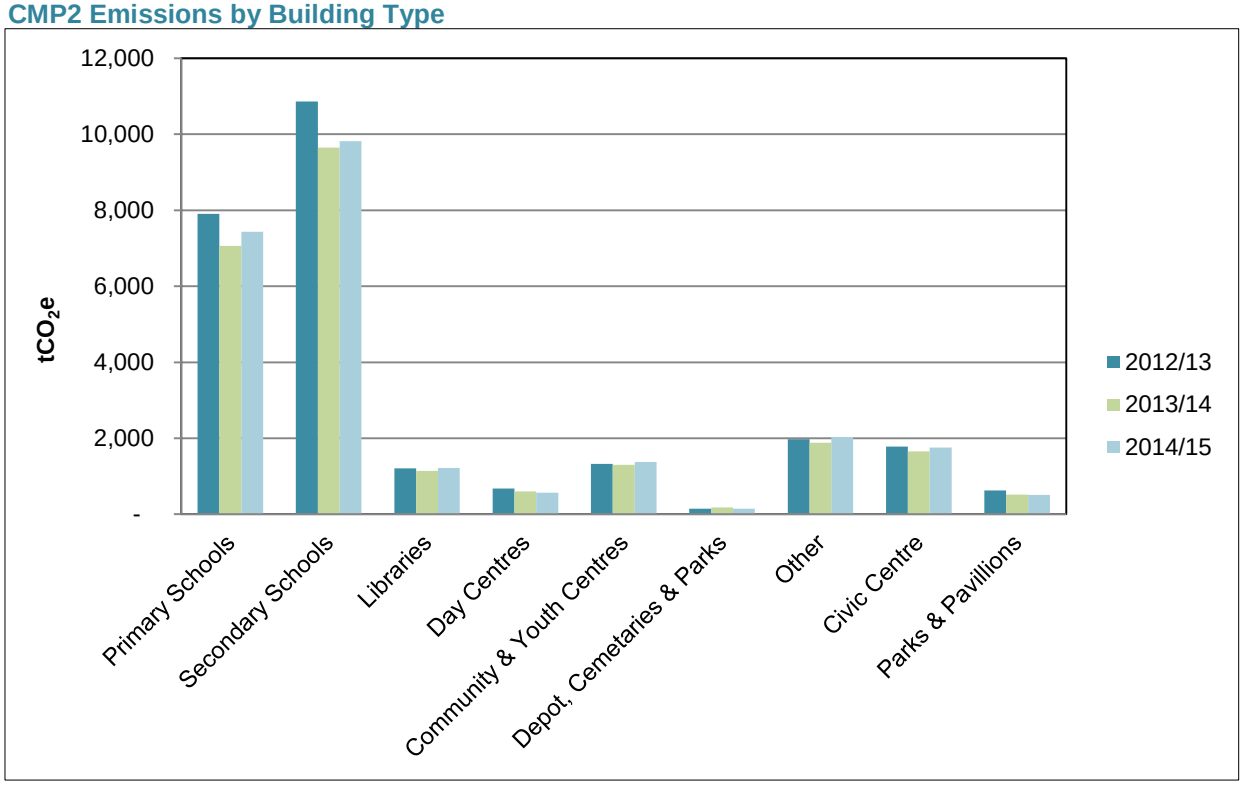
Data: Gas and oil are used for space-heating and hot water. Electricity is used for lighting, cooling, and electrical equipment. Gas, electricity and heating-oil consumption data were provided by the energy suppliers and the LASER Bureau Service (the Council's energy management and procurement service) and this data was converted into CO_2e emissions using DEFRA's GHG conversion factors.

Commentary: Buildings' emissions, including schools, have fallen by 6.2% against baseline but rose by 3.6% compared with 2013/14. This is due to the 2014/15 electricity GHG conversion factors increasing, resulting in slightly higher emissions across most building types compared with 2013/14 (see graph below).

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

- Multi Storey Car Parks - LED Lighting Upgrade
- Civic Centre- Stockwell building LED Lighting Upgrade
- Renewable energy installation (e.g. rooftop solar PV)

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 CO_2e emissions. Street Lighting energy use is now metered and the data is captured on our energy management system.

Commentary: Emissions from street lighting increased by 46 tCO_2e from 6,132 tCO_2e (2013/14) to 6,178 tCO_2e (2014/15), despite electricity use falling by 9% compared with 2013/14 (due to the change in conversion factors). The reduction in energy use in 2014/15 was due to:

- 1,570 SON lamps replaced with LED lanterns (570 Salix project / 1,000 SEELS project)
- 6,658 lighting columns being replaced during 2014/15 for lanterns fitted with dimmable LEDS (Invest-to-save 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 official 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) and, therefore, this data is based on the June 2014 staff survey results.

Commentary: Absolute emissions from staff commuting reduced by 79 tCO_2e (6%) from 1,402 tCO_2e (2013/14) to 1,323 tCO_2e (2014/15). The reduction was largely due to a 7.5% 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 by a further 26 spaces
- Advertising 'Dr Bike' servicing sessions and bike-marking events throughout the year
- Making pool push and electric bikes available to all 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 CO_2e 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 31 tCO_2e (5%) since 2013/14 and by 167 tCO_2e (21%) compared with 2012/13 baseline.

Fleet emissions increased by 8 tCO_2e (3%) since 2013/14, but have reduced by 95 tCO_2e (23%) since 2012/13 baseline.

Business Travel emissions have decreased by 39 tCO_2e (11%) since 2013/14 and by 72 tCO_2e (19%) 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), selecting fuel efficient vehicles where possible
- Maintain two pool cars, meaning fewer staff will use their own cars for business travel
- Explore the use of Car Clubs to reduce grey fleet mileage

9. Water, Waste & Paper Emissions

Background: The emissions associated with waste production and paper use at the Civic Centre, together with water consumption (across 48 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 CO_2e emissions. The number of paper reams is converted into tonnes and then into a carbon emissions figure.

Commentary: Total emissions from this sector decreased by 19tCO_2e (-14%) compared with 2013/14. Carbon emissions associated with Civic Centre waste management (landfill and incineration) has remained at the same level as 2013/14 (8.3tCO_2e) - an 11% reduction against the 2012/13 baseline.

During CMP1 water emissions were previously only recorded for Civic Centre usage, but data is now being captured for 48 sites. 2014/15 water consumption emissions were 60.7 tCO_2e; a 14.9% decrease against 2013/14.

Carbon emissions associated with paper use decreased by 14% (8 tCO_2e) against 2013/14 and by 3 tCO_2e (6%) 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, and 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 tCO_2e) in the Council's GHG emissions. A second five-year phase (CMP2) has now commenced, with an ambition to drive down emissions and costs by a further 15% from 2013/14 to 2017/18. The table below summarises performance for the whole of CMP1 and the first two years 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 2014/15 performance with the CMP2 (2012/13) baseline. This shows that in 2014/15, emissions fell by 2,797 tCO_2e (8%) compared with 2012/13.

2014/15 Progress against 2012/13 baseline (and historic reference to CMP1 reporting years)

	CMP1 2008/09 – 2012/13							CMP2 2013/14 – 2017/18			Annual Progress	
Sector	**2006/07**	**2007/08**	**2008/09**	**2009/10**	**2010/11**	**2011/12**	**2012/13**	**2012/13**	**2013/14**	**2014/15**	**2014/15**	
	(tCO_2e)	**(tCO_2e)**	**(tCO_2e)**	**(tCO_2e)**	**(tCO_2e)**	**(tCO_2e)**	**(tCO_2e)**	**(tCO_2e)**	**(tCO_2e)**	**(tCO_2e)**	**(tCO_2e)**	**(tCO_2e)**
	Baseline Year	**Prep. Year**	**First Year**	**Second Year**	**Third Year**	**Fourth Year**	**Fifth Year**	**Baseline Year**	**First Year**	**Second Year**	**Tonnage Change**	**Percentage Change**
Buildings	28,610	29,260	28,329	23,186	23,648	22,448	23,811	26,504	23,996	24,854	858	4%
Buildings – Council	5,688	5,275	5,317	4,887	5,150	4,462	4,408	7,742	7,290	7,606	316	4%
Buildings – Schools	17,216	18,160	18,049	14,025	14,486	13,695	14,684	18,762	16,706	17,248	542	3%
Buildings – Mytime	5,706	5,825	4,963	4,274	4,011	4,291	4,719	-	-	-	-	-
Fleet / Business Travel	1,001	997	971	1,042	991	917	827	802	666	635	-31	-5%
Street Lighting	5,791	5,908	5,729	5,841	5,769	5,699	5,790	6,683	6,132	6,178	46	1%
Waste/Water/ Paper	104	97	56	56	48	50	48	124	139	120	-19	-14%
Commuting	2,274	2,002	2,002	2,189	2,189	2,029	2,029	1,794	1,402	1,324	-78	-6%
TOTAL	**37,780**	**38,264**	**37,087**	**32,314**	**32,645**	**31,143**	**32,505**	**35,907**	**32,335**	**33,110**	775	2%

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. DECC 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 Scope 3 emissions reporting is discretionary. The organisational boundary of the GHG Report is something for each Local Authority to decide.

The table below splits LB Bromley's (CMP2) 2012/13 baseline, 2013/14 and 2014/15 GHG emissions data according to scope:

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

	GHG emissions 2012/13 tCO_2e	GHG emissions 2013/14 tCO_2e	GHG emissions 2014/15 tCO_2e
Scope 1			
Fossil Fuel consumption (Gas and Oil)	12,976	11,186	10,803
Owned transport (Green fleet)	413	310	318
Process emissions	not calculated	not calculated	not calculated
Fugitive emissions	not calculated	not calculated	not calculated
Total scope 1	**13,389**	**11,496**	**11,121**
Scope 2			
Purchased electricity (inc. Street Lighting)	18,732	17,450	18,603
Total scope 2	**18,732**	**17,450**	**18,603**
Scope 3			
Business travel (Grey fleet)	388	356	316
Employee commuting	1,794	1,402	1,324
Electricity (T&D losses)	1,480	1,492	1,627
Waste (Civic Centre)	9	8	8
Water	60	71	61
Paper	54	59	51
Product in use	not calculated	not calculated	not calculated
Total significant scope 3	**3,786**	**3,389**	**3,386**
TOTAL	**35,907**	**32,335**	**33,110**

12. 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, which was made up of:

- £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 paid back 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.

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	-	-	-	-	-	-	-	-
	Multi Storey Car Parks - LED Lighting Upgrade	LED Lighting	250,001	24/11/15	01/04/17	242.0	50,000	2,420.0	500,000	5.0
Subtotal			**262,228**			**242.0**	**50,000**	**2,420.0**	**500,000**	
Commissioned	Beckenham Library - heat control and insulation	Multiple project	6,386	01/04/14	01/06/19	5.8	1,275	84.4	18,621	5.0
	Civic Centre canteen and Great Hall lighting	LED Lighting	9,495	01/04/15	01/01/20	11.1	2,064	166.5	30,966	4.6
	North Block Lighting (full)	Lighting - Upgrades	83,920	01/12/11	01/11/16	77.3	17,001	1,047.9	230,606	4.9
	Fitting electronic gear to MI26 lanterns	Street lighting	93,436	01/11/11	01/05/16	87.2	20,784	1,150.6	274,351	4.5
	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
Subtotal			**480,425**			**457.7**	**106,972**	**7,976.4**	**1,871,501**	
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
Subtotal			**250,385**			**602.7**	**112,010**	**7,447.8**	**1,376,298**	
Report Total (excl. Pipeline)			**730,810**			**1,060**	**218,982**	**15,424**	**3,247,799**	

* *Pipeline figures are all approximate*

** *Based on energy prices at time of project*