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DATE: 30th December 2010

EXECUTIVE AND RESOURCES PDS COMMITTEE
5TH JANUARY 2011

ENVIRONMENT PDS COMMITTEE
11TH JANUARY 2011

EXECUTIVE
12TH JANUARY 2011

Please see the attached reports to be considered at the above meetings.

Members are requested to bring their copy of the reports with them to any of the above meetings considering this item.

CARBON MANAGEMENT PROGRAMME: PROGRESS REPORT 2009/10 (Pages 3 - 28)

CARBON REDUCTION COMMITMENT (CRC) SCHEME: 2010 ANNUAL REPORT (Pages 29 - 46)

Copies of the documents referred to below can be obtained from www.bromley.gov.uk/meetings

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Report No.
ES10188

London Borough of Bromley

Agenda Item No.

PART 1 - PUBLIC

Decision Maker:	**Executive** **For pre-decision scrutiny by Environment PDS (11th January 2011) and Executive & Resources PDS (5th January 2011)**
Date:	**12th January 2011**
Decision Type:	Non-Urgent Executive Non-Key
Title:	**CARBON MANAGEMENT PROGRAMME: PROGRESS REPORT 2009/10**
Contact Officer:	Alastair Baillie, Environmental Development Manager Tel: 020 8313 4915 E-mail: alastair.baillie@bromley.gov.uk
Chief Officer:	Paul Dale: Deputy Chief Executive and Director Resources Nigel Davies: Director Environmental Services
Ward:	All

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1. Reason for report

1.1. In October 2008 the Executive endorsed (ED08067 Minute 69) the Council's Carbon Management Programme and the establishment of a ring-fenced Carbon Management Fund as making good business sense and a positive environmental contribution.

1.2. The Executive requested that annual carbon management reports should be submitted. This second annual progress report presents the Council's progress in reducing its energy consumption and carbon footprint. This report also details progress against the Council's 25% CO_2 reduction target (also see Annexe).

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2. RECOMMENDATIONS

That the Executive:

2.1 Notes the work carried out by all departments in achieving a 12.9% (4,773t) reduction in carbon emissions in 2009/10 (compared with 2008/09) and a 14.5% (5,466t) reduction in emissions against baseline (2006/07);

2.2 Approves continued action for the reduction in carbon emissions and energy costs, with a view to achieving the Council's carbon reduction target of 25% by March 2013;

2.3 Receives a further annual progress report in one year's time, detailing progress in 2010/11 and carbon reduction plans for 2011/12.

Corporate Policy

1. Policy Status: Existing policy.
2. BBB Priority: Quality Environment.

Financial

1. Cost of proposal: Estimated cost £363k
2. Ongoing costs: Recurring cost. Estimated avoided spend per annum: 2011/12 - £40k; 2012/13 - £89k; 2013/14 - £145; 2014/15 - £180k; 2015/16 - £193k
3. Budget head/performance centre: Carbon Management Programme within Capital Programme
4. Total current budget for this head: £285k current uncommitted balance (plus £62.5k due from Salix)
5. Source of funding: Capital Programme (£250k) and Carbon Trust / Salix (£250k)

Staff

1. Number of staff (current and additional): 1 FTE
2. If from existing staff resources, number of staff hours:

Legal

1. Legal Requirement: No statutory requirement or Government guidance.
2. Call-in: Call-in is applicable

Customer Impact

1. Estimated number of users/beneficiaries (current and projected): N/A

Ward Councillor Views

1. Have Ward Councillors been asked for comments? N/A.
2. Summary of Ward Councillors comments: N/A

3. COMMENTARY

Background

3.1 This report details progress made during 2009/10 on the Council's energy demand and carbon management programme. It also informs Members of progress made since it began in 2006/07.

3.2 Bromley Council worked in partnership with the Carbon Trust during 2007/08 to produce a five-year 'Strategy and Implementation Plan', which was endorsed by the Executive in October 2008 (ED08067, minute 69). The plan identified a suite of energy efficiency initiatives designed to reduce the Council's carbon emissions and mitigate increasing energy costs.

3.3 The Carbon Trust has worked with 538 public authorities (including 263 councils) on carbon management initiatives and continues to provide the Council with support for its programme.

3.4 Bromley's aim is to reduce its carbon emissions by 25% (by end 2012/13) with an ultimate aim of establishing Bromley as a low carbon Council with the potential to become carbon neutral.

3.5 It is interesting to note that the emissions reduction targets of public authorities working with the Carbon Trust continues to rise: the average target for the 2010/11 cohort is 33% over five years.

3.6 To complement the Council's planned measures, our 'Salix' invest-to-save Carbon Management Fund has provided internal loans for the installation of a number of proven energy-saving technologies across the Council estate and street lighting stock. Each loan is repaid into the ring-fenced fund through agreed energy budget savings (December 2009 IE&E report ES09102 and also January 2011 IE&E report ES10198).

3.7 In addition to taking action (see sections 3.18 to 3.22) to reduce energy consumption (and therefore avoid unnecessary costs), carbon emissions are monitored to assess progress (both annually and against baseline).

3.8 This report focuses on the Council's 2009/10 progress towards the overall reduction target of 25% by March 2013. As in previous reports, the term 'carbon' is used, for brevity, to describe 'carbon dioxide and other greenhouse gases' (measured in 'carbon dioxide equivalents', expressed in tonnes, and generally abbreviated to tCO_2e).

3.9 The Executive should note that the Carbon Management Programme (delivered by a cross-departmental group) has also underpinned delivery of:

- NI 185 (carbon emissions from local authority operations) and NI 186 (borough-wide carbon emissions - public sector element only)
- The Carbon Reduction Commitment, which will require carbon allowances to be purchased, initially at £12/tCO_2e (also see Executive Report ES10189 January 2011)
- LPSA2 'operational property' carbon reduction, local target

These targets are currently under review pending revision of the national indicator set.

3.10 Highlights to date include:

- Installing voltage optimisation equipment at the Civic Centre and a number of Bromley Mytime sites
- Fitting equipment to lit-signs around the borough, so that they are no longer operational in hours of daylight

- Changing the behaviour of staff (e.g. encouraging lights and equipment to be switched off when appropriate) through the Environmental Champions Network.

- Improving Civic Centre operational property including insulation and glazing in East and West Wings and St Blaise.

- Improving recycling rates at the Civic Centre

- Achieving the Carbon Trust Standard in recognition of having embedded good carbon management processes across Council operations and an actual reduction in carbon

- Continually improving the Council's data quality in respect of metering

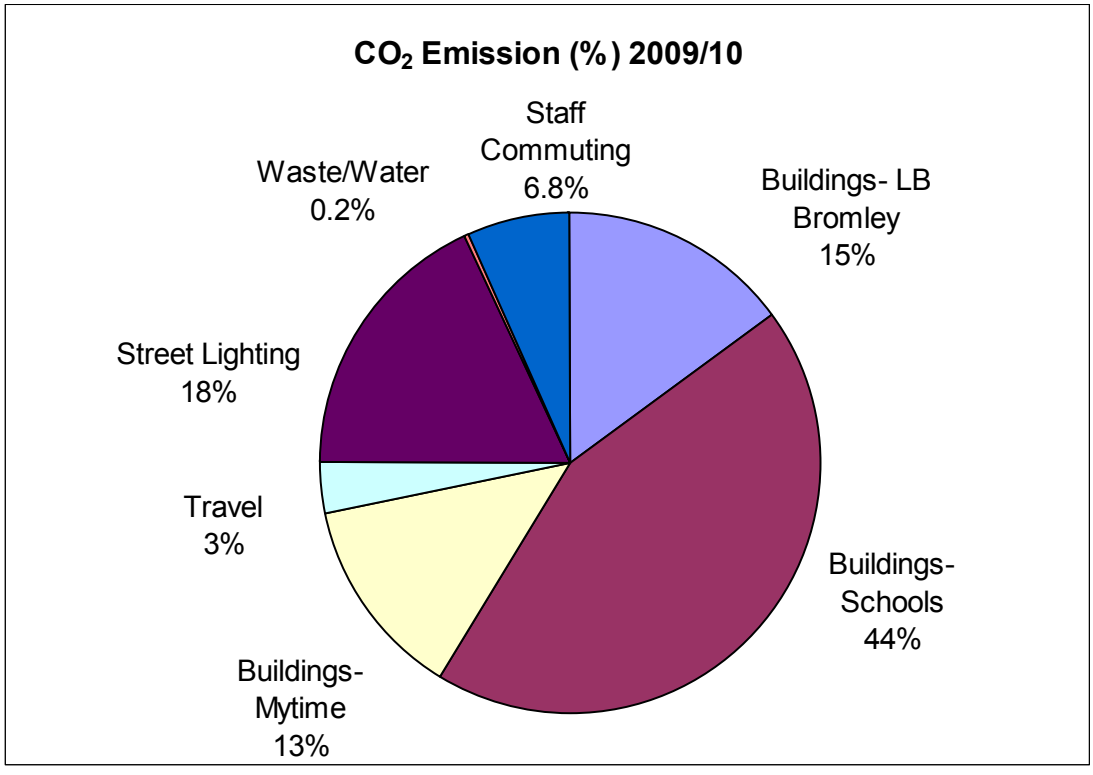
Carbon Footprint Reporting

3.11 The Council aims to reduce its carbon emissions by 25% by the end of 2012/13 (compared with 2006/07). In practice, this means reducing our carbon emissions from 37,780t (2006/07 baseline) to 28,335t CO_2e by March 2013.

3.12 Our 2009/10 carbon footprint was 32,314t CO_2e, which is a 4,773t (12.9%) reduction on 2008/09 and a 5,466t (14.5%) reduction on 2006/07 (baseline).

3.13 Bromley's footprint comes from a number of different sources: Energy used by Council, school and Bromley Mytime buildings, energy used for street lighting and also the carbon associated with fleet/business travel, commuting and (Civic Centre) water use and waste production. Figure 1 (below) shows the 2009/10 carbon emission sources. Buildings are the main carbon emitter (72% of the total), with schools (44%) being the largest contributor both overall and within the building sector. Street lighting is the next most significant carbon source at 18%.

Figure 1: 2009/10 CO_2e emissions



2009/10 Progress

3.14 During 2009/10, significant action was taken, through a range of projects, to reduce the Council's use of natural resources and environmental impacts. These included a mixture of technical, behavioural and policy actions (see paragraphs 3.18 to 3.22 and the Annexe).

3.15 Table 1 (below) shows progress (in both tonnage and percentage terms) comparing 2009/10 data with the previous year's (2008/09) data. It can be seen that the Council has reduced its overall carbon emissions by 12.9% (rounded to 13% in tables and graphs) or 4,773t. This overall reduction is the result of very good progress in the Buildings sector, offsetting relatively modest rises in emissions from other sectors. These sectoral changes are discussed in paragraphs 3.18 to 3.22.

Table 1: Annual Change (2009/10 compared with 2008/09)

Sector	2008/09 (tCO_2e)	2009/10 (tCO_2e)	Tonnage change	Percentage change
Buildings	28,329	23,186	-5,143	-18%
Fleet & Business Travel	971	1,042	+71	+7%
Street Lighting	5,729	5,841	+112	+2%
Waste/ Water	56	56	0	0%
Commuting	2,002	2,189	+187	+9%
TOTAL	**37,087**	**32,314**	**-4,773**	**-13%**

3.16 Table 2 (below) shows progress (in both tonnage and percentage terms) comparing 2009/10 data with the baseline year (2006/07). It can be seen that, overall, the Council has reduced its carbon emissions by 14.5% (rounded to 14% in tables and graphs). These figures demonstrate significant progress since the start of the Carbon Management Programme in the Buildings and Waste/Water sectors, modest progress in the Commuting sector and slight increases in the Fleet & Business Travel and Street Lighting sectors. In tonnage terms, the Council has reduced its carbon emissions by 5,466 tonnes against baseline (2006/07), with the vast majority of this progress being in the buildings sector (5,424t).

Table 2: Change against Baseline (2009/10 compared with baseline year 2006/07)

Sector	2006/07 (tCO_2e)	2009/10 (tCO_2e)	Tonnage change	Percentage change
Buildings	28,610	23,186	-5,424	-19%
Fleet & Business Travel	1,001	1,042	+41	+4%
Street Lighting	5,791	5,841	+50	+1%
Waste/ Water	104	56	-48	-46%
Commuting	2,274	2,189	-85	-4%
TOTAL	**37,780**	**32,314**	**-5,466**	**-14%**

3.17 Bromley is now fourteen percentage points towards its 25% reduction target and ahead of target for the first time. The following paragraphs describe progress in reducing carbon emissions in each sector. For more detailed information on data acquisition and progress, please see the annexed Carbon Footprint Report.

3.18 Buildings Sector:

Annual progress: CO_2e emissions from buildings decreased by 5,143t (18%) from 28,329t (2008/09) to 23,186t (2009/10). This significant reduction was achieved through a number of initiatives including:

- Centralised kitchen programme completion
- Property Planned Maintenance Programme 2009/10

- St. Blaise thermal refurbishment (window replacements, cavity wall and roof insulation)
- Continued implementation of projects from School audits
- Mytime energy efficiency projects
- Continuing behavioural change initiatives through the Environmental Champions' Network
- Roof insulation and window replacement programme at Civic Centre
- Solar Hot Water installation

Further buildings projects are detailed in the Annexe to this report.

This year, with prospect of financial penalties for poor data management under the Carbon Reduction Commitment, we have been able to get more accurate data from schools which had previously been less than cooperative. In the past we have had to benchmark some schools' consumption based on Gross Internal Areas (this is in line with best-practice guidance but is not a prefect science especially for larger buildings). The actual consumption figures have proved to be more modest. This is most pronounced in a fall of nearly one third in carbon emissions associated with gas use in the secondary school sector (see Annexe).

Building sector progress against baseline: Overall, emissions have decreased by 5,424t (19%) from 28,610t (2006/07) to 23,186t (2009/10).

3.19 Street Lighting Sector:

Annual progress: CO_2 emissions from street lighting increased by 112t (2%) from 5,729t (2008/09) to 5,841t (2009/10). This has been despite a number of initiatives including:

- Dimming trials
- Lit-sign conversion project (sensors fitted to 2x8 watt lit-signs - now only lit when dark)

This increase is thought to be from three main sources:

- The negative carbon impact of lighting new traffic schemes
- LBB's commitment to upgrading old (orange) sodium lighting with better quality, but higher consuming, white light.
- An EdF audit prompted a further review of the assets recorded in the Confirm system. This identified that there were more illuminated signs in our inventory than previously registered.

Although this increase is in line with government projections (the aforementioned drive for better lighting will increase emissions for this sector) we are hopeful that the trend can be reversed in coming years.

Progress against baseline: Emissions have increased by 50t (1%) from 5,791t (2006/07) to 5,841t (2009/10).

3.20 Commuting Sector:

Annual progress: The latest Staff Travel Survey showed that carbon emissions associated with staff commuting increased by 187t (9%) from 2,002t (2008/09) to 2,189t (2009/10).

A combination of better raw data (both in quality and quantity) and comparison of datasets have enabled the identification of some historic errors.

The change in statistical significance can be seen most dramatically in rail travel:

- 2008: 3 of 471 of responders (1%) selected rail as their commute transport
- 2010: 94 of 1,004 of responders (9%) selected rail as their commute transport

It is highly unlikely that the increase is due to a large-scale modal change but rather that 2008 survey sample was not representative of rail users.

Progress against baseline: Emissions have decreased by 85t (4%) from 2,274t (2006/07) to 2,189t (2009/10).

3.21 Fleet & Business Travel Sector:

Annual progress*:* Carbon from this sector increased by 71t (7%) compared with 2008/09.

Fleet emissions increased by 80t (18%). This is likely to be due to the increased number of fleet vehicles, the continuing replacement of LPG vehicles with diesel vehicles, and the fact that Day Centre closures have increased the amount of miles Adult & Community Services has travelled.

Business Travel (use of private cars on Council business) emissions decreased by 9t (1.5%). Increased fuel prices and the need to protect budgets contributed to staff driving less and planning their work more effectively (e.g. combining visits etc). The three pool cars also mean fewer people are using their own cars for business travel.

Fleet & Business Travel sector progress against baseline: Carbon emissions increased by 4% (41t) compared with 2006/07 baseline data.

- Fleet emissions increased by 100t (22%) from 347t (2006/07) to 447t (2009/10).
- Business Travel emissions decreased by 59t (9%) from 654t (2006/07) to 595t (2009/10).

3.22 Water & Waste Sector:

Annual progress: Carbon from this sector has not change significantly since 2008/09, remaining at 56t.

Carbon emissions associated with Civic Centre waste management were stable; in 2009/10, 73% of Civic Centre waste was recycled compared with 72% in 2008/09.

Carbon emissions associated with Civic Centre water management were also stable at 2.5t.

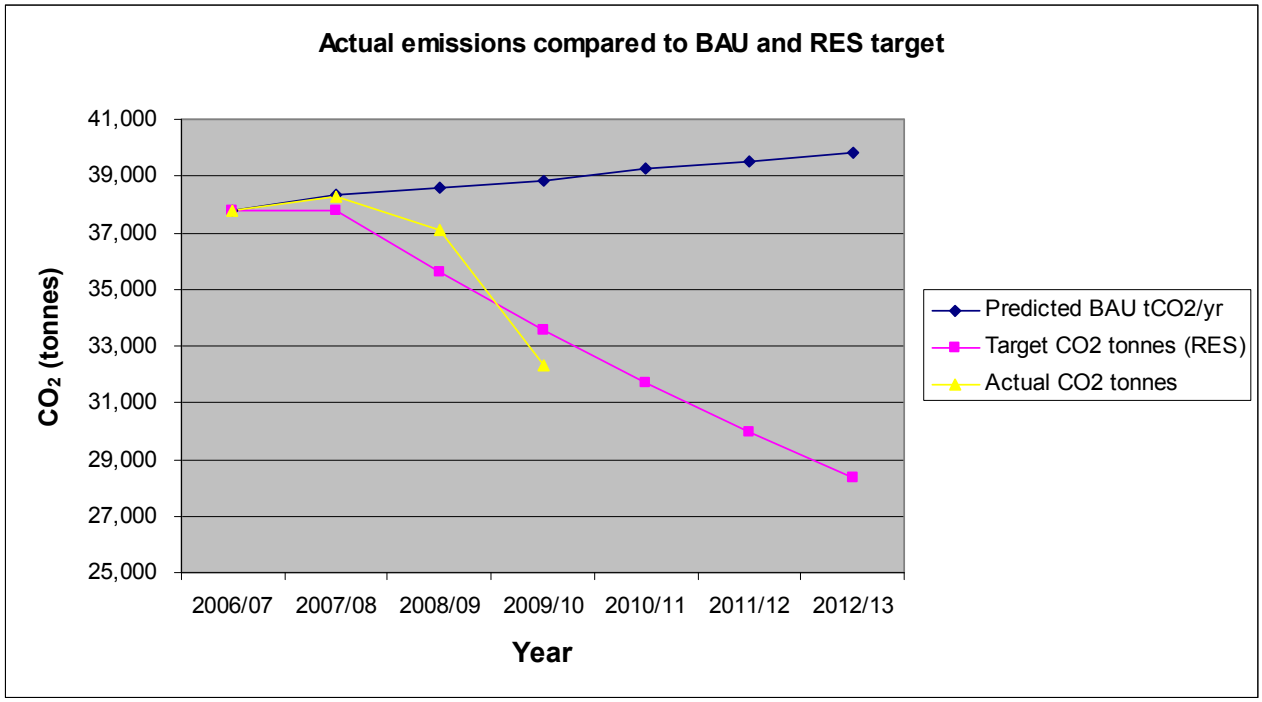
Water & Waste sector progress against baseline: Carbon emissions decreased by 46% (48t) compared with 2006/07:

- Waste emissions decreased by 43t (45%) from 97t (2006/07) to 54t (2009/10).
- Water emissions decreased by 5t (65%) from 7t (2006/07) to 2.5t (2009/10).

3.23 Figure 2 (below) shows two scenarios and the actual reported level of carbon emissions:

- Business-as-usual (BAU) scenario, shows how emissions would continue to rise in the absence of sustained action (Carbon Trust model)
- Reduced emissions scenario (RES), is a straight line projection showing the 25% carbon reduction plan and
- Actual level of reported carbon emissions.

Figure 2: Two scenarios and actual carbon emissions



3.24 Figure 2 shows that, in 2009/10, the Council significantly reduced its total annual emissions compared with the BAU scenario: we have avoided emitting 4,773t of carbon. With this year's progress, we are actually ahead of our RES target by 1,248t.

3.25 It should be noted that emissions rose slightly (as predicted in the BAU scenario) in 2007/08. This was because 2007/08 was the preparatory year during which only limited energy saving/carbon reduction projects were actually implemented. Naturally this made the first year (2008/09) target more difficult to achieve. Emissions in 2008/09 did decline as projects began to be implemented (but not as quickly as projected) but 2009/10 shows the best reduction to date. Indeed, indeed, we are now ahead of target. This is in part attributable to improved data from the secondary school sector (see para. 3.18) but is also the product of a number of carbon management initiatives bearing fruit. Table 3 (below) summarises the above graph as figures.

Table 3: Summary of progress towards target

Year		BAU (tCO_2e)	RES (tCO_2e)	Actual emissions (tCO_2e)	Annual change in actual emissions	Progress towards 25% target
2006/07	Baseline	37,780	37,780	37,780	-	-
2007/08	Preparatory Year	38,314	37,780	38,264	Increase: 1.25% (484t)	Increase: 1.25% (484t)
2008/09	1st Year	38,581	35,590	37,087	Decrease: 3% (1,177t)	Decrease: 2% (693t)
2009/10	2nd Year	38,849	33,562	32,314	Decrease: 13% (4,773t)	Decrease: 14% (5,466t)
2010/11	3rd Year	39,251	31,685			
2011/12	4th Year	39,525	29,946			
2012/13	5th Year	39,801	28,335			

3.26 2007/08 (preparatory year) emissions increased slightly due to delays in commencing the programme, more robust data acquisition methods (less reliance on estimated data), new street lighting developments, and changes in operational property profile.

3.27 2008/09 (our first reporting year) emissions decreased slightly (3% against 2007/08 and 2% against baseline) but not as quickly as projected in the RES. This is due to:

- the abandonment of the Civic Centre draught-proofing and Central Library voltage optimisation projects (due to changes in asset management priorities).
- weather-related heating demand being greater than in either of the past two years (measures taken to improve the thermal performance of buildings are having a positive effect but this was masked, in this reporting year, by increased weather-related demand)

3.28 2009/10 (our second reporting year) emissions decreased significantly (13% against 2008/09 and 14% against baseline) and more quickly than projected in the RES. This is mainly due to:

- more accurate emissions data from the Secondary school sector (see paragraph 3.18)
- an 8% reduction in emissions from the Council's own operational property
- a 7% reduction in emissions from Primary school gas consumption
- a 34% reduction in emissions from Mytime gas consumption

It is interesting to note that as part of the "10:10 Campaign", many Local Authorities and all central government departments pledged to cut their emissions by 10% in 2010. Although this is a calendar year figure, and we report on financial years, our 13% decrease on 08/09 figures makes it highly likely that LB Bromley would have exceeded that campaign's target.

Future projects

3.29 A number of projects are underway and planned for future years, which will further reduce our emissions and help to progress the Council towards its 25% reduction target. The data associated with these projects are provisional estimates and it should be noted that identified projects may change (due to, say, cost changes, resource availability, changing priorities etc.) or be replaced by new projects, as this is a living plan. The uncertainty over the Council's asset management strategy, particularly regarding the future of the Civic Centre site, may have a bearing.

3.30 The Carbon Management Programme Board and the Carbon Management Group will continue to meet throughout 2010/11 to identify and progress new carbon reduction projects, as well as minimising risks which could impact on delivery of the target.

3.31 Certain actions taken to reduce emissions will be funded from the Council's Carbon Management Fund, which is an invest-to-save pot designed to provide internal loans for the installation of proven energy saving technologies. These initiatives will be reported to IE&E sub-committee on 19 January 2011 (ES10198). Table 4 (below) shows potential third tranche Salix projects. These projects, which won't all necessarily start in 20010/11 but will be progressed as resources allow, will save a projected 783t of carbon.

Table 4: Potential New 'Salix' Carbon Management Fund Projects

Project Description	Estimated Costs (£)	Estimated CO_2 Savings (t/pa)	Estimated Avoided Spend (£/pa)	Estimated Payback (years)
Voltage Optimisation: Walnuts Offices	4,468	5	1,180	4.47
Voltage Optimisation: EDC Princes Plain	4,468	5	1,217	4.47
Voltage Optimisation: Anerley Town Hall	4,468	5	1,084	4.47
Overhaul of Civic Centre heating system	90,000	300	46,500	1.94
Oil-gas conversion: Beckenham Library	45,000	10	9,000	5
Electric-gas hot water conversion: Beckenham Library	30,000	10	10,000	3
Server room evaporative cooling (to replace air conditioning)	23,000	172	25,229	0.9
Heat recovery to Great Hall ventilation	11,000	27	3,332	3.3
VSD controls Civic North block burners and pumps	17,000	44	6,432	2.6
Lowering return temperature to Boilers North Block	1,300	9.4	1,180	1.1
Reducing flow rates of heating pumps to North Block	4,800	27	4,044	1.2
Areas of Civic Centre replace electric heating with gas	6,900	27	4,440	1.55
Civic Centre lighting upgrades	44,500	71	10,400	4.3
'Nightwatchman' smart IT management software	tbc	tbc	tbc	tbc
Fit electronic gear to MI26 Lanterns	76,169	71	16,943	4.5
Totals	**363,073**	**783**	**140,981**	**3.06**

3.32 Table 5 (below) sets out some of the proposed non-Carbon Management Fund projects (which may be done for a variety of purposes) and are generally met from existing or external budgets.

Table 5: Potential Non-Carbon Management Fund projects for 2010/11

Project Description
• Major refurbishment of North Block
• Implementation non-compliant Carbon Management Fund projects identified in the Civic Centre site survey
• Flexible working initiatives (e.g. improved staff-to-desk ratio, starting in St.Blaise)
• Civic Centre Site rationalisation (loss of X and Y blocks)
• Expansion of the LED office lighting trial
• Conduct energy surveys of Libraries and implement 'quick wins'
• Government's Automatic Meter Reading roll-out
• Property Planned Maintenance Programme 2010/11
• Continuing behaviour change initiatives through the Environmental Champions Network
• Continued implementation of projects from School audits
• Greater imperative for schools to reduce emissions under the Carbon Reduction Commitment scheme (if the schools-element of the scheme cost is to be met by schools)
• Mytime external audits of their ISO 14001 Environmental Management System
• Mytime energy efficiency initiatives (more pool covers [liquid and solid], installation of smart meters, lighting surveys)
• Walnuts boiler plant replacement
• Extension of street lighting dimming project
• Conversion of mechanical to electronic start-up gear on appropriate street lamps

• Retroflecting street sign replacements
• Retroflecting bollard replacements
• Expansion of biodiesel capacity at Central Depot
• Staff parking permit rationalisation (encouraging non-essential users to use public transport)
• Introduction of team Oyster cards

3.33 It should be noted that while all these carbon savings will benefit the Council's emissions reduction target, some of the associated avoided spend will benefit schools and Mytime rather than the Council.

4. POLICY IMPLICATIONS

4.1 The Quality Environment section of the Council's Building a Better Bromley 2020 Vision states that 'we are also determined to work together in reducing energy consumption' and 'reducing energy use' is also identified as an issue to be tackled and how we will judge success.

4.2 Undertaking this work will place the Council in an improved position with regard to the Carbon Reduction Commitment: see Executive Reports ES09101 (December 2009) and ES10189 (January 2011).

5. FINANCIAL IMPLICATIONS

5.1 The Council can't control energy prices but we can and must attempt to control consumption. The Carbon Management Programme is crucial to protecting the Council from increasing energy costs and this programme will help to protect budgets over the coming years.

5.2 The term 'avoided spend' has been used throughout this report rather than 'saving'. This is because the financial benefit of energy efficiency will appear in one of two ways, depending on a number of variables:

- If overall energy costs have risen due to, for example; increased site activity / service provision or opening hours, increased energy prices or poor weather, then energy efficiency measures help to mitigate these negative factors and avoid the true increase in energy costs that would have been incurred without undertaking them.

- However, if the reduction in energy consumption from efficiency measures outweighs negative factors such as those named above, or those variables remain stable, then a true saving can be seen.

The rest of Section 5 elaborates on this further in the context of LBB's recent performance:

5.3 This report shows that carbon emissions have been reduced by 4,773t in 2009/10. Members should be aware that this includes carbon savings associated with transport fuel and water use – not just operational property and street lighting. The carbon savings in this report also include energy used by schools and Bromley Mytime and so not all the avoided spend will accrue to LB Bromley.

5.4 That said, the carbon savings set out in this report which relate to operational property and street lighting will have helped to protect the Council from additional spend and this will help to ease revenue budget pressures.

5.5 Electricity prices remain around 18% higher than they were in 2007/08 at an average of 10p/kWh. Action to reduce consumption has limited the impact of these price rises and helped protect the Council from having to meet additional energy costs.

5.6 It should be noted that the majority of the carbon savings made from the operational property stock were from gas, which is less than a third of the price of electricity.

5.7 It should also be noted that the amount billed is not always consistent with the amount of energy consumed. This disparity is largely caused by the lag between estimated reads and actual reads. The national roll-out of advanced meters planned by the government will help to eliminate this issue, as will any metering reading programme the Council initiates.

5.8 Taking the Council's Operational Property as an example, the reduction in gas consumption approximately equates to avoided spend of £30,135 compared with 2008/09.

5.9 This should be balanced against the fact that street lighting electricity consumption grew from 2008/09, despite a number of initiatives (which would have avoided additional spend). See 3.19 (above) and particularly Annexe 5.3.1 for details on this change in consumption.

Carbon Management Fund (Salix) projects

5.10 Certain actions taken to reduce emissions will be funded from the Council's aforementioned Carbon Management Fund. This is an invest-to-save pot is designed to provide internal loans for the installation of proven energy saving technologies. This fund was established by the Executive with 50% contribution from Salix and 50% contribution from LBB's Capital Programme. The specific projects funded in this way are detailed in an annual report to IE&E Sub Committee (Dec. 2009 report ES09102 and also Jan. 2011 report ES10198).Table 6 (below) shows the projects undertaken to date, including the projected savings (once the fund has been fully paid back).

5.11 Carbon Management Funded projects being technical rather than behavioural are quantifiable and can show avoided spend. It should be stressed that they are quantifiable as *individual projects*, since on a large site (such as the Civic Centre) there are many factors at play which can affect the site's overall consumption. Whilst the projects themselves assume a fixed price in the internal loan agreement, the actual energy consumption and therefore spend-avoidance may vary due to, for example, weather, usage and energy price fluctuation (this can have either a positive or negative impact). Irrespective of these variable factors, the benefits of such projects will always be positive when compared to the do-nothing business-as-usual option.

5.12 Carbon Management Fund (CMF) projects represent a win-win financial situation for the Council, regardless of whether future energy prices rise or fall. Price-sensitivity analysis demonstrates that a fall in energy prices means that although the project savings will be slightly reduced, there will be an overall financial benefit to the Council as energy bills will be lower (outweighing the reduced project savings). Conversely, analysis demonstrates that an increase in energy prices means that the projects will save even more than originally projected, thus helping to mitigate the financial impact of any future energy price increases.

Table 6: Avoided Spend from existing CMF projects (projected once fully paid back into fund)

SCHEME Tranches 1 & 2	2010/11 £	2011/12 £	2012/13 £	2013/14 £	2014/15 £
Convert street-signage from 24hrs to dusk-to-dawn switching	0	23,673	26,862	26,862	26,862
Voltage optimisation (Civic Centre)	0	15,835	40,123	40,123	40,123
1st tranche project avoided spend	**0**	**39,508**	**66,985**	**66,985**	**66,985**
Cumulative 1st tranche project avoided spend	**0**	**39,508**	**106,494**	**173,479**	**240,464**
Convert street-signage from 24hrs to dusk-to-dawn switching Phase 2	0	0	2,337	14,434	14,434
Convert central island columns /	0	0	5,470	7,197	7,197

bollards to dusk-to-dawn switching					
2nd tranche project avoided spend	**0**	**0**	**7,807**	**21,631**	**21,631**
Cumulative 2nd tranche project avoided spend	**0**	**0**	**7,807**	**29,438**	**51,069**
Cumulative total (tranche 1 and 2) CMF project avoided spend	**0**	**39,508**	**114,301**	**202,917**	**291,533**

5.13 Table 7 shows potential new Carbon Management Funded projects, including provisional avoided spend (once the project has been fully repaid). The estimated investment cost of these projects is £363,073 – see table 4). It should be noted that not all of these projects are fully quantified and so figures are indicative only (and payback dates will reflect project start dates). Once an internal loan agreement has been signed, they then become fixed.

Table 7: Avoided Spend from new CMF projects (projected once fully paid back into fund)

SCHEME* Tranche 3	2011/12 £	2012/13 £	2013/14 £	2014/15 £	2015/16 £	2016/17 £
Voltage Optimisation: Walnuts Offices	0	0	0	0	744	1,180
Voltage Optimisation: EDC Princes Plain	0	0	0	0	907	1,217
Voltage Optimisation: Anerley Town Hall	0	0	0	0	320	1,084
Overhaul of Civic Centre heating system	0	0	22,375	46,500	46,500	46,500
Oil-gas conversion: Beckenham Library	0	0	0	0	0	3,750
Electric-gas hot water conversion: Beckenham Library	0	0	0	4,167	10,000	10,000
Server room evaporative cooling (to replace air con.)	0	12,741	25,229	25,229	25,229	25,229
Heat recovery to Great Hall ventilation	0	0	0	384	3,332	3,332
VSD controls Civic North block burners and pumps	0	0	0	4,976	6,432	6,432
Lowering return temperature to Boilers North Block	0	372	1,180	1,180	1,180	1,180
Reducing flow rates of heating pumps to North Block	0	929	4,044	4,044	4,044	4,044
Areas of Civic Centre replace electric heating with gas	0	0	3,830	4,440	4,440	4,440
Civic Centre lighting upgrades	0	0	0	0	1,433	10,400
'Nightwatchman' smart IT management software	tbc	tbc	tbc	tbc	tbc	tbc
Fit electronic gear to MI26 Lanterns	0	0	0	0	0	15,606
Provisional 3rd tranche project avoided spend	**0**	**14,042**	**56,658**	**90,920**	**104,561**	**134,394**
Cumulative 3rd tranche project avoided spend	**0**	**14,042**	**70,700**	**161,620**	**266,181**	**400,574**

** Assumption that all projects are implemented by 1 November 2011 (i.e. 5 months of repayments into CMF in 2011/12)*

5.14 All avoided spend in the table above, once fund repayments are completed, will benefit the Council.

Non-carbon management funded projects

5.15 Executive report ES09100 set out a list of 2008/09 non-carbon management funded projects and their associated indicative savings, including:

- Centralised kitchen programme completion
- Property Planned Maintenance Programme 2009/10
- St. Blaise thermal refurbishment (window replacements, cavity wall and roof insulation)
- Continued implementation of projects from School audits
- Mytime energy efficiency projects
- Continuing behavioural change initiatives through the Environmental Champions' Network
- Roof insulation and window replacement programme at Civic Centre

5.16 Action has been taken on all of the above projects. It is impossible to ascribe a saving directly to any individual project since they formed part of planned programmes of works. They were not subject to the same degree of rigour in quantifying their energy saving potential as Carbon Management Fund projects but collectively they will have contributed to avoided energy spend.

5.17 The potential savings from the 2010/11Non-Carbon Management Fund projects (Table 5) will vary widely because of a range of factors such as occupancy rates, behaviour, weather, prices and asset management programmes. Therefore they cannot be quantified in absolute terms. As noted in 3.30, while all carbon savings will benefit the Council's reduction target, some of the associated energy cost savings will benefit schools and Mytime rather than the Council.

5.18 Table 8 summarises the overall financial benefit to the Council from taking action (on Carbon Management Funded projects) to reduce emissions and therefore avoid unnecessary spending on energy. This financial benefit will manifest itself either in actual budget savings (if all variables remain unchanged) or as avoided costs against what energy consumption and corresponding energy bills would have been had they been not installed.

Table 8: Summary Table: Carbon Management Funded Projects: Avoided Spend

SCHEME All Tranches	2011/12 £	2012/13 £	2013/14 £	2014/15 £	2015/16 £
1st Tranche Carbon Management Fund (2008/09) projects	39,508	66,985	66,985	66,985	66,985
2nd Tranche Carbon Management Fund (2009/10) projects	0	7,807	21,631	21,631	21,631
3rd Tranche Carbon Management Fund (2010/11) proposed projects	0	14,042	56,658	90,920	104,561
Total Avoided Spend per annum	**39,508**	**88,834**	**145,274**	**179,536**	**193,177**
Cumulative Avoided Spend	**39,508**	**128,343**	**273,617**	**453,153**	**646,330**

5.19 The Carbon Reduction Commitment scheme (also see Executive Reports ES09101 and ES10189) places an additional significant financial liability on avoidable carbon, reinforcing the need for continued focus on the energy demand management measures set out in this report.

Non-Applicable Sections:	Legal Implications Personnel Implications
Background Documents: (Access via Contact Officer)	• ED08067 Carbon Management Programme (Executive Report, October 2008) • ES09100 Carbon Management Programme (Executive Report, October 2009) • ES09101 Carbon Reduction Commitment (Executive Report, December 2009) and ES10189 Carbon Reduction Commitment (Executive Report, January 2011)

Bromley's Carbon Footprint 2009/10 Progress Report

Annexe to Executive Report ES10188
Carbon Management Programme:
Progress Report 2009/10

Date: December 2010

Owner: Sustainable Development Team

Version 2

BROMLEY'S CARBON FOOTPRINT
PROGRESS REPORT: 2009/10

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Section 7: Fleet & Business Travel Sector

Section 8: Waste & Water Sector

Section 9: Future Challenges & Targets

1. Reporting Bromley's 2009/10 Carbon Footprint

1.1. Bromley Council's policy (ED08067, Minute 69) is to reduce its direct carbon dioxide emissions by 25% over five years.

1.2. Officers have written this (2009/10) annual summary report to show what action the Council has taken and how the Council is progressing towards its (2012/13) target.

1.3. In 2006/07, the Council established its carbon footprint[1] for the first time. The carbon baseline (which covers a number of sectors – see Section 2) was calculated as 37,780 tonnes (t) carbon dioxide equivalent (CO_2e)[2].

1.4. In 2007/08, the preparatory year during which the action plans were drawn up, Bromley's carbon footprint increased by 484t (1.25%) to 38,264t. This illustrates the importance of taking sustained action to reduce carbon.

1.5. In 2008/09, the first action year, there was a reduction of 1,177t CO_2e (3%) in the Council's environmental footprint: strong evidence of positive outcomes (across the board) resulting from a comprehensive approach to reducing use of natural resources and environmental impacts.

1.6. In 2009/10, there was a more significant reduction of 4,773t CO_2e

1.7. During 2009/10, significant action has been taken, through a range of projects, to reduce the Council's use of natural resources and environmental impacts. These have included physical measures such as window replacements, insulation, pool covers and centralising IT (replacing printers, scanners and photocopiers with multifunctional devices), and softer measures such as the continuation of the staff Environmental Champions' Network, environmental management system auditing and taking further action to improve our data collection and monitoring approach.

1.8. Bromley's approach is to monitor and report on the effectiveness of such initiatives by measuring energy/fuel/water consumption and waste production, and expressing this data as a 'carbon equivalent' (CO_2e) figure. In this way, much more than just energy use gets measured, providing a more rounded assessment of the Council's environmental impacts.

1.9. Section 3 of this report provides more detail on which sectors have been included in Bromley's carbon footprint. Section 4 discusses both annual progress and progress against 2006/07baseline. Sections 5-8 provide more detailed, sectoral, analysis including how the data was obtained, what action has been taken, and what the carbon outcome has been.

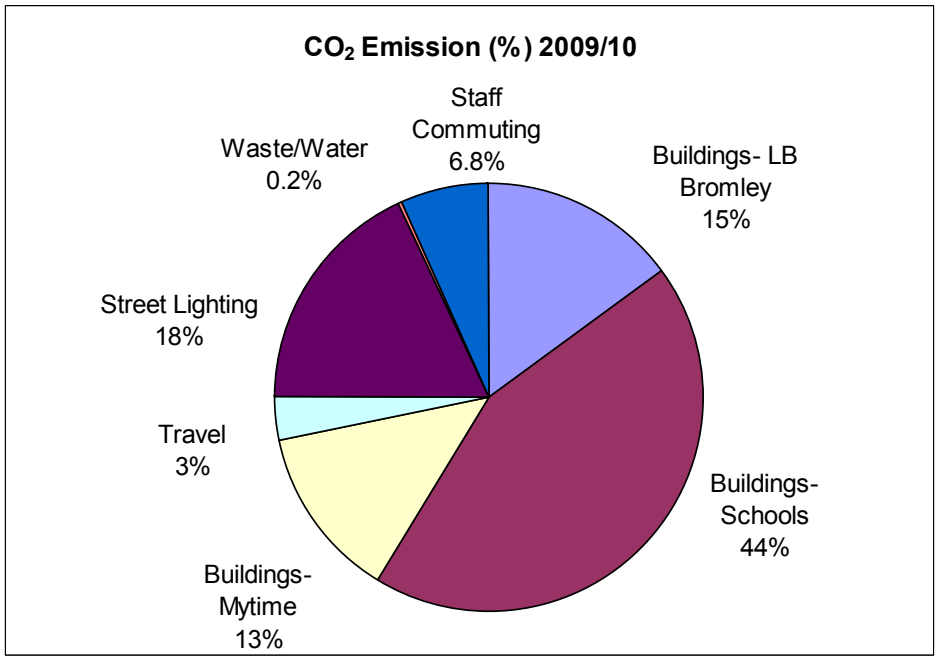
2. Sectoral Analysis

2.1. Bromley's carbon footprint comes from a number of different sources including the energy (gas / electricity / oil) used by the Council, schools and Mytime and also the carbon associated with the Council's fleet, business travel, commuting, and street lighting, as well as water use and waste production at the Civic Centre.

[1] A '**carbon footprint'** measures an organisation's contribution to climate change and is usually expressed in tonnes of carbon dioxide equivalent (CO_2e). Most reporting currently concerns the 'primary footprint', which measures direct CO_2 emissions from energy consumption and transportation.

[2] **CO_2 Equivalent (CO_2e):** Six main greenhouse gases contribute to climate change and are currently controlled under the Kyoto Protocol. Each has a different 'global warming potential' with distinct atmospheric lifespan and heat-trapping strength. For reporting, the mass of each gas is translated into a carbon dioxide equivalent (CO_2e) amount, allowing the impact from all sources (say, methane from waste) to be shown as one common measurement.

Figure 1: What sectors did our carbon come from in 2009/10?



2.2. The (above) pie chart shows the main sources of carbon emissions in 2009/10. It can be seen that buildings are the Council's main source of carbon, with schools (44%) being the largest contributor both overall and within the building sector (72%). Street lighting is the next most significant source (18%) of Bromley's carbon emissions.

3. Making progress

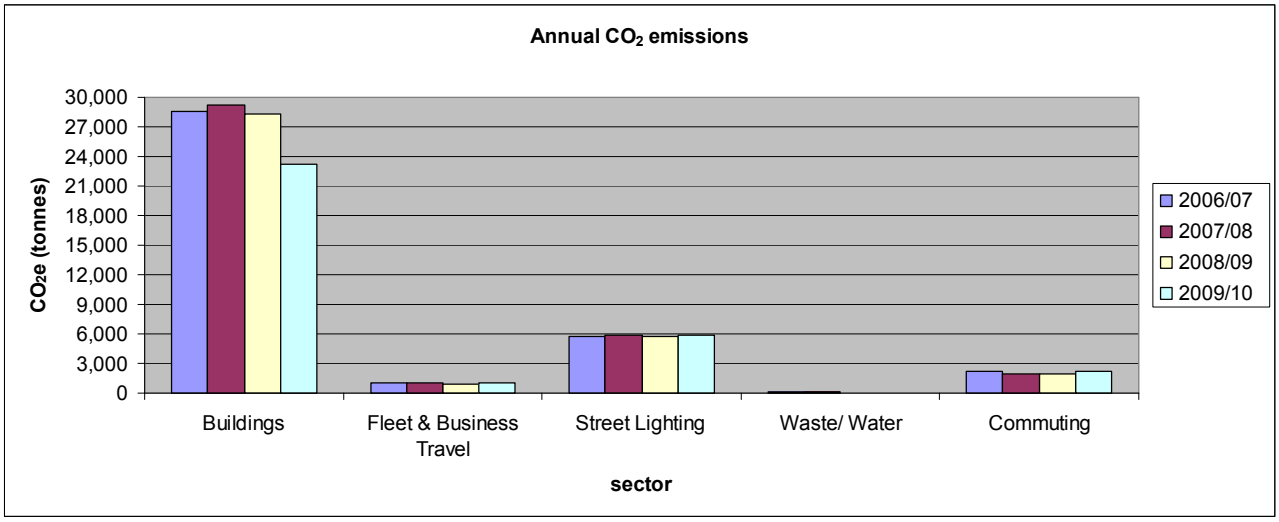
3.1. Table 1 (below) shows progress (in both tonnage and percentage terms) comparing 2009/10 data with the previous year's (2008/09) performance. It can be seen that the Council has reduced its overall carbon emissions by 12.9% (rounded to 13% in tables and graphs) or 4,773t. This overall reduction is the result of very good progress in the Buildings sector, offsetting relatively modest rises in emissions from other sectors.

Table 1: Annual Change (2009/10 compared with 2008/09)

Sector	2008/09 (tCO_2e)	2009/10 (tCO_2e)	Tonnage change	Percentage change
Buildings	28,329	23,186	-5,143	-18%
Fleet & Business Travel	971	1,042	+71	+7%
Street Lighting	5,729	5,841	+112	+2%
Waste/Water	56	56	0	0%
Commuting	2,002	2,189	+187	+9%
TOTAL	**37,087**	**32,314**	**-4,773**	**-13%**

3.2. Figure 2 (below) shows progress in tonnage terms since the baseline year (2006/07):

Figure 2: Carbon emissions by sector since baseline year



3.3. Table 2 (below) shows progress (in both tonnage and percentage terms) between the baseline year (2006/07) and the previous year (2009/10). It can be seen that, overall, the Council has reduced its carbon emissions by 14% (emissions rose by 1% in 2007/08). Significant progress has been made in the building sector (which of course has the largest footprint to attack) and the waste & water sector, with commuting also showing a modest reduction. However, emissions from fleet & business travel and street lighting have grown slightly. In tonnage terms, the Council has reduced its carbon emissions by 5,466 tonnes against baseline, with the greatest progress being in the buildings sector (5,424t).

Table 2: Change against Baseline (2009/10 compared with 2006/07)

Sector	Baseline 2006/07 (tCO_2e)	2009/10 (tCO_2e)	Tonnage change	Percentage change
Buildings	28,610	23,186	-5,424	-19%
Fleet & Business Travel	1,001	1,042	+41	+4%
Street Lighting	5,791	5,841	+50	+1%
Waste/Water	104	56	-48	-46%
Commuting	2,274	2,189	-85	-4%
TOTAL	**37,780**	**32,314**	**-5,466**	**-14%**

3.4. Bromley is now fourteen percentage points towards its 25% (2012/13) target; with three years to go. If we can maintain this rate of progress we could hope to meet, and perhaps exceed, our target.

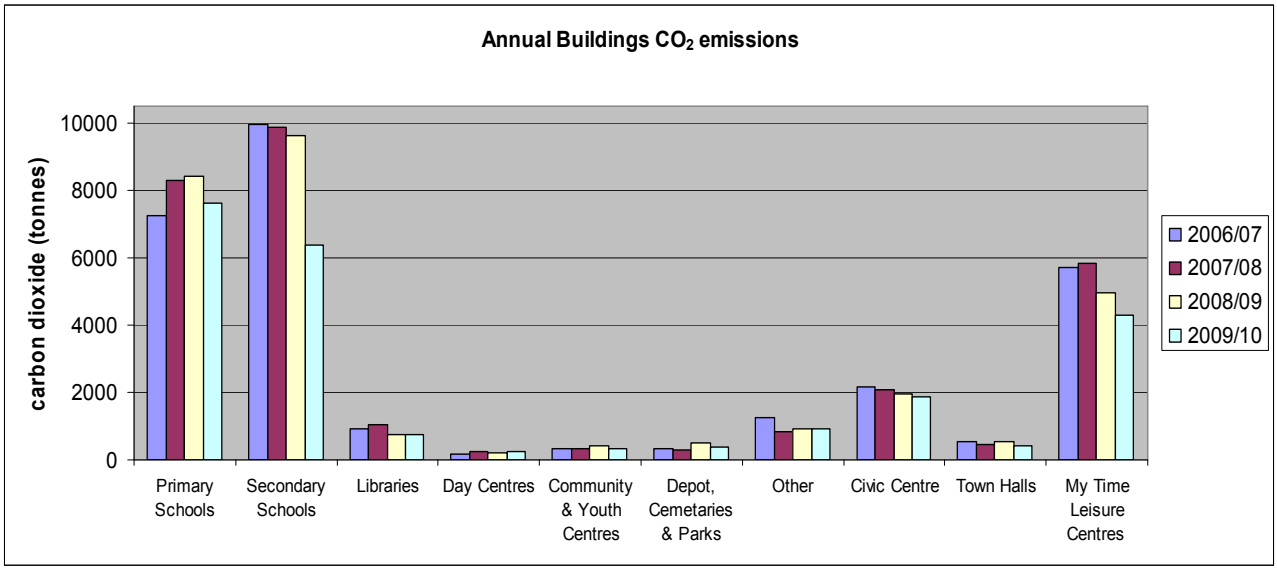
4. Building Sector

4.1. Background: Buildings comprise properties directly operated by the Council (e.g. Civic Centre, Exchequer House, and the Libraries), local authority-funded schools, and the leisure facilities operated by Bromley Mytime. Schools comprise much the largest element of Bromley's property-related carbon emissions (44%), followed by Council operational property (15%) and Mytime's leisure facilities (13%).

4.2. Data acquisition: Gas and oil are used for space-heating, hot water, swimming pools and electricity is generally used for lighting and electrical equipment. Gas, electricity and heating-oil consumption data were provided by the Council's energy suppliers (and also by Bromley Mytime) and this data was converted into CO_2 emissions (using CO_2 conversion factors[3]).

[3] **Carbon conversion factors:** Energy use (electricity, gas, heating oil, or vehicle fuel) is converted into CO_2 using DEFRA's greenhouse gas conversion factors. These factors convert energy (e.g. kWh) into CO_2 (kg): energy used being multiplied by the relevant conversion factor. Factors vary between energy types and reflect their global warming potential. Factors are updated annually reflecting change: e.g. how electricity is generated (national mix of gas, coal, nuclear and renewables).

Figure 3: Carbon emissions from buildings



4.3. Commentary

4.3.1. *Annual progress:* CO_2 emissions from all buildings decreased by 5,143t (18%) from 28,329t (2008/09) to 23,186t (2009/10).

This reduction has been achieved through a number of initiatives including:

Council Operational Buildings

- Centralised kitchen programme completion
- Property Planned Maintenance Programme 2009/10
- Centralised IT (Multifunctional devices rather than separate printers, faxes, copiers)
- St. Blaise thermal refurbishment (window replacements, cavity wall and roof insulation)
- Continuing behavioural change initiatives through the Environmental Champions' Network
- Solar Hot Water installation
- Strict control of the BMS time & temperature settings
- Installation of Variable Speed Driver pumps
- The removal of a redundant large hot water cylinder (North Block)
- New insulated roofs on Civic Centre East, West and Old Palace Blocks
- New double glazed windows to Civic Centre East, West and Old Palace Blocks

Schools

- Continued implementation of projects from School audits
- Bromley Sustainable School Forum
- Planned LBB maintenance programme action
- Improved data acquisition

Mytime

- ISO14001 Environmental Management System is directing operational housekeeping standards
- Two new teaching pool covers and one liquid pool cover
- Nine Smart Metres (six electric and three gas)

This carbon emissions reduction from buildings (for 2009/10 compared with 2008/09) might have actually have been even greater had not the number of degree days[4] for 2009/10 (2,062) been significantly higher than both the previous year and the 20-year average (1,828).

[4] **Degree-day data** shows how hot or cold the weather has been as a single index number for a particular region and period of time. The greater the value, the colder it's been and the more energy (usually gas) will have been used for heating. This tool can be used to weather-correct gas consumption data and ensure footprint commentaries reflect the past year's weather.

4.3.2. *Progress against baseline:* Overall, emissions have decreased by 5,424t (19%) from 28,610t (2006/07) to 23,186t (2009/10).

5. Street Lighting Sector

5.1. 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, 3,000 sign-lights and illuminated signposts, 1,600 illuminated bollards, and another 900 items of illuminated street furniture. With such a large stock of street lighting and associated energy use, it is clear that carbon emissions in this sector must be managed accordingly.

5.2. Data acquisition: Electricity consumption figures from street lighting and street furniture were converted into CO_2 emissions. It should be noted that street lighting is an 'un-metered supply' and, therefore, this carbon data is extrapolated from the Bromley inventory (number, condition and hours of operation) coupled with operational hours data from the photoelectric cell unit array on a Civic Centre roof.

5.3. Commentary

5.3.1. *Annual progress:* CO_2 emissions from street lighting increased by 112t (2%) from 5,729t (2008/09) to 5,841t (2009/10). This has been despite a number of initiatives including:

- Dimming trials
- Lit-sign conversion project (sensors fitted to 2x8 watt lit-signs - now only lit when dark)

This increase is thought to be from three main sources:

- The negative carbon impact of lighting new traffic schemes
- LBB's commitment to upgrading old sodium lighting with better quality, but higher consuming white light. The Street Lighting Replacement Programme upgrades old columns from the old orange-coloured low-pressure sodium lamps to the new white lamps. Whilst the new lamps are far better in terms of colour-rendering (essential for improved safety, ability for CCTV to distinguish objects better etc.), they are also more energy intensive to run[5]. This is balanced out where possible by spacing the new lamps further apart (possible because of the better light quality) but overall, energy consumption is likely to rise from this swap-out.
- An EdF audit also prompted a further review of the assets recorded in the Confirm system; this uncovered that there were more illuminated signposts in our inventory than previously registered

Although this increase is in line with government projections that the aforementioned drive for better lighting will increase emissions for this sector, we are hopeful that the trend can be reversed in coming years.

5.3.2. *Progress against baseline*: Emissions have increased by 50t (1%) from 5,791t (2006/07) to 5,841t (2009/10).

6. Commuting Sector

6.1. Background: Commuting is the third largest component of our carbon footprint (after buildings and street lighting). The commuting footprint covers how Council staff travel to work (most of whom are based at the Civic Centre site) and not commuting by school or Bromley Mytime staff.

6.2. Data acquisition: Data is usually extrapolated from the annual 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 CO_2 conversion factor and multiplying the mileage. This is factored up to reflect the carbon impact of the entire Council workforce. The first Staff Travel Survey was associated with staff commuting was undertaken in 2006/07 (2,285 staff – 787 returned surveys). A follow-up survey was conducted in 2007/08 (2,556 staff – 472 returns) but the declining response rate contributed to a decision not to repeat the survey in 2008/09 (2,700 staff). The survey (heavily incentivised) was reinstated to

[5] The **British Standard** recommendation is for all new street lighting to have a colour-rendering index greater than 20; low-pressure sodium lamps have a colour-rendering of 0.

capture 2009/10 data and a far better response rate was achieved (over a third of the total of 2,704 staff responded)

6.3. Commentary:

6.3.1. *Annual progress:* The latest Staff Travel Survey showed that carbon emissions associated with staff commuting increased by 187t (9%) from 2,002t (2008/09) to 2,189t (2009/10).

6.3.2. *Progress against baseline:* Emissions have decreased by 85t (4%) from 2,274t (2006/07) to 2,189t (2009/10).

6.3.3. *Detailed explanation:*
The 2007/08 staff travel survey was the first full scale survey of LBB staff modal patterns as such there was no previous data to compare against. The 2009/10 staff travel survey had some variations in wording and possible response selection. The number of responses to the 2010 survey was over double the response to the 2008 survey, and hence statistical significance has increased dramatically:

- 2008: 18% of staff responded
- 2010: 37% of staff responded

A combination of better raw data (both in quality and quantity) and comparison of datasets have enabled the identification of some historic errors. The change in statistical significance can be seen most dramatically in rail travel:

- 2008 – 3 of 471 responders (1%) selected rail as their commute transport
- 2010 – 94 of 1004 responders (9%) selected rail as their commute transport

It is highly unlikely that this is due to a large-scale modal change; rather that 2008 survey sample was not representative of rail users. Similarly a large proportion of the sample in 2008 who travelled by bicycle gave the distance travelled as greater than 10 miles, this fell substantially in the 2010 survey and is likely to be due to sample anomaly.

For direct comparison:

- Incomplete survey responses were removed from sample population
- Transport modals were aligned (2008 did not differentiate between driver and passenger in car share)
- The same value for 'over 10 miles' commute was used (15 miles rather than 23)
- Multi-modal responses were removed from the sample population

The overall workforce had increased in real terms

- 2008: 2,556 staff
- 2010: 2,704 staff

Excluding bicycles and walking (carbon neutral), the average commuting distance per person has increased by 0.5km. The large increase in rail commutes skews the figures for the other modal trends.

7. Fleet & Business Travel Sector

7.1. Background: The fleet is defined as vehicles directly managed by the Council but not vehicles used by our contractors (e.g. Veolia for Waste Services).

7.2. Data acquisition: Business Travel data is derived from reimbursed mileage claims collected by Human Resources. Figures were converted (using carbon factors) into CO_2 emissions. It should be noted that mileage is not always claimed by officers, so there will be a degree of under-reporting. Fleet emissions were calculated from fuel (litres) used by Council vehicles.

7.3. Commentary:

7.3.1. *Annual progress:* Carbon from this sector increased by 71t (7%) compared with 2008/09.
Fleet emissions increased by 80t (18%). This is likely to be due to the increased number of fleet vehicles, the continuing replacement of LPG vehicles with diesel vehicles and the fact that the closure of day centres has increased the amount of miles Adult & Community Services has travelled.
Business Travel (use of private cars on Council business) emissions decreased by 9t (1.5%). Increased fuel prices and the need to protect budgets contributed to staff driving less and planning

their work more effectively (e.g. combining visits etc). The three pool cars also mean fewer people are using their own cars for business travel.

7.3.2. *Progress against baseline:* Carbon emissions from this sector increased by 4% (41t) compared with 2006/07 baseline data.

- Fleet emissions 100t (22%) from 347t (2006/07) to 447t (2009/10)
- Business Travel emissions decreased by 59t (9%) from 654t (2006/07) to 595t (2009/10)

8. Water & Waste Sector

8.1. Background: The emissions associated with waste production and water consumption at the Civic Centre site is the smallest component to our carbon footprint. It was decided to restrict reporting for this sector to the Civic Centre due to data quality issues which are being addressed.

8.2. Data acquisition: The amount of waste (calculated by taking the number of large outdoor waste collection containers, their weight, and emptying frequency) is converted into a tonnage figure (and then into a carbon figure). Metered water consumption figures at the Civic Centre were converted into CO_2 emissions.

8.3. Commentary

8.3.1. *Annual progress:* Carbon from this sector did not change significantly since 2008/09, remaining at 56t. Carbon emissions associated with Civic Centre waste management were stable; in 2009/10, 72.55% of Civic Centre waste was recycled compared with 71.83% in 2008/09.
Carbon emissions associated with Civic Centre water management was also stable at 2.5t

8.3.2. *Progress against baseline:* Carbon emissions from this sector decreased by 46% (48t) compared with 2006/07 baseline data.

- Waste emissions have decreased by 43t (45%) from 97t (2006/07) to 54t (2009/10). In 2009/10, 72% of Civic Centre waste was recycled; this compares to 54% in 2008/09. This achievement is due to a number of ongoing initiatives including:
- Environmental Champions Network: 75 staff encouraging their colleagues to 'waste less and recycle more' including a special meeting dedicated to 'reuse and recycling'. The Champions have a Handbook (including information on recycling and waste avoidance) and access to a dedicated website (including a discussion forum).
- Dedicated website on the staff intranet explaining, to all staff, what can be recycled and where. This was necessary for the relaunch of the in-house recycling scheme.
- Two Chief Executive 'all-staff' emails to recruit Environmental Champions and raise awareness of the new in-house recycling scheme.
- Re-launch of the in-house recycling scheme: scheme expanded to include green bins in centralised kitchens areas for glass, plastics and cans and also containers for batteries. New cleaning contractor is supporting the expanded recycling service.
- Compost bins have been sited at the Civic Centre to allow staff to compost putrescible material (e.g. tea bags etc)
- Tidy Friday & Clutter Free Friday events to encourage staff to identify what materials they no longer need and to make these items available for reuse (by other teams) or recycling.

- Water emissions decreased by 5t (65%) from 7t (2006/07 baseline) to 2.5t (2009/10). This reduced consumption may be ascribed to a meter change, leakage control, and conservation measures. The Council also has had 'Aquafund' reporting since August 2008 (e.g. monthly benchmarking/validation reports).

9. Future Challenges and Targets

9.1. Despite this positive environmental financial and environmental outcome, the Council is not complacent and has identified where it needs to take further action to ensure continued progress is made. The foundation of this plan is the five-year Carbon Management Programme[6] which aims to reduce the Council's carbon footprint, by 25% over five years, through a range of initiatives (see Executive Report, October 2008, ED08067). These actions will help to mitigate our climate impacts and reduce revenue costs and will be reported annually to the Executive.

9.2. In addition to this, the Carbon Reduction Commitment (CRC) scheme means that, in future, the Council will have to purchase allowances for the carbon it emits, at an initial £12 per tonne (also see Executive Report ES10189 Carbon Reduction Commitment - January 2011). Naturally, the less carbon the Council emits, the lower will be the cost of purchasing the carbon allowances. There will also be an annual published performance league table and, therefore, the potential for reputational damage. Sustained progress on the Carbon Management Programme should benefit the Council's compliance with, and performance under, the CRC scheme.

9.3. We need to manage with care the gradual synchronisation of historic Carbon Management Programme emission data with the fast-improving data from the Carbon Reduction Commitment data workstream.

9.4. The aforementioned Carbon Reduction Commitment scheme is solely geared towards emissions from buildings (including schools) and street lighting. Naturally this has concentrated minds in that direction. A key challenge going forward is to reignite momentum in harder-to-target areas, such as commuting, business travel, and fleet emissions.

9.5. It is also worth noting that 'Scope 3' emissions (from our procurement of services and goods) may also be targeted in the future and carbon reporting (as part of Financial Reporting) in the business sector and central government is fast becoming the norm.

[6] During 2007/08, the council's Sustainability Team led a cross-departmental initiative (in partnership with the Carbon Trust's *Local Authority Carbon Management Programme)* to develop a five-year Strategy and Implementation Plan (SIP) to tackle emissions from the council estate (and schools and Mytime properties). The SIP included a set of action plans outlining both technical and behavioural measures to be implemented over five years with a view to reducing the council's carbon footprint by 25%.

Table 3: 2009/10 Progress (against 2006/07 baseline and previous reporting years)

Sector	2006/07 (tCO_2e) Baseline Year	2007/08 (tCO_2e) Preparatory Year	2008/09 (tCO_2e) First Year	2009/10 (tCO_2e) Second Year	2009/10 Progress Against Baseline		2009/10 Annual Progress (compared with 2008/09)	
					Tonnage Change	Percentage Change	Tonnage Change	Percentage Change
Buildings	28,610	29,260	28,329	23,186	-5,424	-19%	-5,143	-18%
(Buildings – Council)	*5,688*	*5,275*	*5,317*	*4,887*	*-801*	*-14%*	*-430*	*-8%*
(Buildings – Schools)	*17,216*	*18,160*	*18,049*	*14,025*	*-3,191*	*-19%*	*-4,024*	*-22%*
(Buildings – Mytime)	*5,706*	*5,825*	*4,963*	*4,274*	*-1,432*	*-25%*	*-689*	*-14%*
Fleet/Business Travel	1,001	997	971	1,042	41	4%	71	7%
Street Lighting	5,791	5,908	5,729	5,841	50	1%	112	2%
Waste/Water	104	97	56	56	-48	-46%	0	0%
Commuting	2,274	2,002	2,002	2,189	-85	-4%	187	9%
TOTAL	**37,780**	**38,264**	**37,087**	**32,314**	**-5,466**	**-14%**	**-4,773**	**-13%**

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Report No. ES10189	**London Borough of Bromley**	Agenda Item No.

PART 1 - PUBLIC

Decision Maker:	**Executive** **For pre-decision scrutiny by Environment PDS (11th January 2011) and Executive & Resources PDS (5th January 2011)**
Date:	**12th January 2011**
Decision Type:	Non-Urgent Executive Non-Key
Title:	**CARBON REDUCTION COMMITMENT (CRC) SCHEME: 2010 ANNUAL REPORT**
Contact Officer:	Alastair Baillie, Environmental Development Manager Tel: 020 8313 4915 E-mail: alastair.baillie@bromley.gov.uk
Chief Officer:	Paul Dale: Deputy Chief Executive and Director, Resources Nigel Davies: Director, Environmental Services
Ward:	All

1. Reason for report

1.1. The Executive received a report (ES 09101) on the Carbon Reduction Commitment at its December 2009 meeting. The report identified significant corporate implications, including financial liabilities.

1.2. The Executive endorsed the need for sustained action to reduce the Council's carbon emissions and requested that annual progress reports should be submitted to ensure the Council, as a whole, was kept informed of developments and performance.

1.3. The coalition government no longer intends to redistribute allowance revenue among participants but will retain the revenue to support the public finances. The scheme has effectively become a carbon tax and this has significantly increased the Council's projected financial liabilities.

2. RECOMMENDATIONS

That the Executive:

2.1 Notes the statutory duty on LB Bromley to comply with the CRC scheme, the likely costs arising from this 'tax', and the potential for civil and criminal penalties;

2.2 Endorses the need for sustained action to reduce energy use and carbon emissions and improve data management to minimise the Council's financial liabilities under the scheme;

2.3 Receives a further report setting out the Council's progress under the scheme and a forecast of its future financial liabilities in one year's time.

Corporate Policy

1. Policy Status: New policy.
2. BBB Priority: Quality Environment.

Financial

1. Cost of proposal: Estimated cost £353,743 in 2011/12
2. Ongoing costs: Recurring cost. Rising by more than £100k per annum (see para 5.14 for future costs)
3. Budget head/performance centre: Central Contingency
4. Total current budget for this head: £ None at this stage
5. Source of funding: To be determined in setting 2011/12 budget

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Staff

1. Number of staff (current and additional): 2 fte
2. If from existing staff resources, number of staff hours:

Legal

1. Legal Requirement: Statutory requirement.
2. Call-in: Call-in is applicable

Customer Impact

1. Estimated number of users/beneficiaries (current and projected): N/A

Ward Councillor Views

1. Have Ward Councillors been asked for comments? N/A.
2. Summary of Ward Councillors comments: N/A

3. COMMENTARY

Background

3.1 The Carbon Reduction Commitment (CRC) scheme remains central to the Government's strategy for delivering the targets set out in the Climate Change Act 2008. The CRC, which started in April 2010, is a statutory carbon emissions reduction and energy efficiency scheme regulated by the Environment Agency.

3.2 All central government departments and the NHS, police, colleges, larger companies and local authorities are required to register. About 3,000 organisations are currently (December 2010) registered with the Environment Agency, of which about 200 are local authorities.

3.3 The scheme was first reported to the Executive in December 2009 (ES 09101) and preparations continue to be made to ensure compliance. Because the Council has an active energy demand management programme (Executive report ES 10188: January 2011), measures are already being taken to reduce our carbon emissions and hence our projected financial liabilities.

3.4 It should be noted that the scheme has turned out to be a major work commitment and proved much more complex and time-consuming than anticipated in the government's October 2009 regulatory impact assessment.

3.5 As a result of the Council's existing Carbon Management Programme (CMP), it is possible to estimate the amount of carbon to be reported under the scheme. Based on our CMP data, the Council's 2009/10 CRC footprint would be 31,952 tonnes. Using a Council model (see para 5.4) developed for the purpose, we have projected this data and calculated a 2011/12 CRC footprint of 32,152 tonnes.

Table 1: Projected LB Bromley CRC Emission (tonnes CO_2)

Year	**2009/10**	**2010/11**	**2011/12**
Schools' Emissions (tCO_2)	17,222 (54%)	17,394 (54%)	17,568 (55%)
Street Lighting Emissions (tCO_2)	7,389 (23%)	7,389 (23%)	7,389 (23%)
Operational Property Emissions (tCO_2)	7,341 (23%)	7,268 (23%)	7,195 (22%)
Total LBB Emissions (tCO_2)	**31,952 (100%)**	**32,051 (100%)**	**32,152 (100%)**

'Carbon dioxide' may be termed 'carbon' or 'CO_2' for brevity in this report (and expressed in tonnes as tCO_2)

3.6 The scheme requires carbon data to be accurately recorded and reported, and allowances to be purchased (initially at £12/tonne CO_2) retrospectively to cover the carbon emissions associated with the Council's operational property, schools and street lighting. A cost of £353,743, rising by more than £100k per annum, is currently being projected (see para 5.14).

3.7 Maintained schools are projected to be the largest single element of the Council's carbon. As matters currently stand, the Council is required to both administer the scheme and to purchase allowances on schools' behalf (also see para 3.27).

3.8 The CRC, which was initially designed as a 'cap and trade' scheme, has been radically altered by the Comprehensive Spending Review. The scheme will continue as a key plank of government policy but it is now more akin to a tax and changes have also been made to the timetable. Further changes may be proposed to simplify the scheme.

Recent Changes

3.9 The October 2010 Comprehensive Spending Review (CSR10) announced that:

- revenue raised from the sale of CRC allowances will not be recycled back to participants but will be used to support the public finances;
- the first sale of CRC allowances, accounting for 2011/12 emissions, is to be held in July 2012 rather than in April 2011;
- the requirement to report on 2010/11 emissions remains.

3.10 The removal of the Recycling Payment element of the scheme significantly increases the Council's costs. In addition, the Early Action Metrics (such as meeting the Carbon Trust Standard or installing monitoring systems) no longer attract a CRC financial benefit, though they will still be used in the league table and can have benefits in their own right.

Current Consultation

3.11 The government is currently consulting on delaying Phase 2 to consider how to simplify the scheme. The consultation proposes an additional year (2013/14) at the end of the Introductory Phase and that the Phase 2 registration period and footprint year is put back from 2011/12 to 2013/14.

Possible Future Changes

3.12 The issues in this section are under consideration but may not take effect until Phase 2.

3.13 The scheme, as currently constituted, is rather onerous. Considerable amounts of data acquisition and reporting are required and significant penalties apply to data errors and omissions, and for failing to report on time. It is anticipated that proposals will be made to simplify the scheme to concentrate effort on carbon reduction.

3.14 The Government's independent advisor on the CRC scheme (the Committee on Climate Change) recommended that Government scrap the proposed emissions cap which is supposed to start in Phase 2. The future of this cap is currently under review, as is the trading system element. It therefore remains unclear what price allowances will be in future phases of the CRC, and how prices will be determined.

3.15 In the medium term the CRC could become less complex. For instance, if the trading element is removed, the risks associated with purchasing allowances will reduce. However, forecasting the levels of likely emissions would remain essential for budgeting purposes.

3.16 The requirement to produce Footprint Reports, Annual Reports and Evidence Packs is unlikely to be scrapped; however, it is to be hoped that they will be simplified. A consultation is due to be announced before the 31st December 2010.

3.17 The scheme assigns liability for school academies to the Council. This may be reviewed.

Scheme Timetable

3.18 The table below shows the post-CSR10 timetable, including the delay in the first sale/purchase of allowances (now July 2012) and the extension of each phase of the scheme by one year.

Table 2: CRC Timetable (reflecting changes)

Year	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16
Phase	**Phase 1 (Introductory phase: 2010/11 2013/14)**					
				Phase 2 (2014/15 to 2018/19)		
Registration	Phase 1 Registration (April-Sept 2010)			Phase 2 Registration (April-Sept 2013)		
Footprint Year (baseline for phase)	Phase 1 Footprint Year →	Submit Phase 1 Footprint Report (July 2011)		Phase 2 Footprint Year →	Submit Phase 2 Footprint Report (July 2014)	
Annual Reporting	Annual Report 10/11	Annual Report 11/12 (Submitted July 2011)	Annual Report 12/13 (Submitted July 2012)	Annual Report 13/14 (Submitted July 2013)	Annual Report 14/15 (Submitted July 2014)	Annual Report 15/16 (Submitted July 2015)
Original Allowance Purchase Schedule		April 2011 for (2011/12)	April 2012 for (2012/13)	April 2013 for (2013/14)	April 2014 for (2014/15)	April 2015 for (2015/16)
New Allowance Purchase / Surrender Schedule			Purchase & Surrender of Allowances for 2011/12 (July 2012)	Purchase & Surrender of Allowances for 2012/13 (July 2013)	Purchase & Surrender of Allowances for 2013/14 (July 2014)	Purchase / Surrender of Allowances for 2014/15 (July 2015)

Most aspects are now retrospective e.g. allowances are purchased in July 2012 in respect of 2011/12 emissions

3.19 Certain tasks still have to be completed in preparation for each scheme phase. For the Introductory Phase, the relevant dates are:

- Qualification period (2008): organisations establish whether they meet the qualification criteria (Bromley does)
- Registration period (April to Sept 2010): organisations register as a scheme participant (which LBB has done)
- Footprint year (April 2010 to March 2011): participants calculate and report on their baseline emissions.

3.20 For each compliance year participants must have monitored their energy use during the preceding year and:

- produce an annual emissions report to the Environment Agency and
- purchase and surrender sufficient allowances to cover their previous year's carbon emissions.

Scheme Compliance

3.21 The Council's approach has been to establish the CRC Scheme as a formal programme comprising several projects. This was to enable an overview at the programme level and effective management at the project level. The Programme Plan was developed in the early stages of the scheme's introduction. It has been amended to reflect changes to the scheme in accordance with Environment Agency guidance. The most recent amendments reflect the

changes made by the Comprehensive Spending Review in October 2010. Draft project plans are being been produced for Compliance, Finance, the Carbon Trust Standard, and Schools. The Council will be audited at least once in the scheme's first five years, so evidence of sound governance will benefit the Council and also help to mitigate the risk of significant fines.

Data Management

3.22 The Council does not currently have an energy management system and the lack of a central system meant that information about meters, locations and consumption had to be obtained from a variety of sources including Property records, the Oracle financial system, schools, energy suppliers and energy agencies. This initial work will now enable the LASER Bureau Service develop a comprehensive database of the entire energy meter estate. This will hold historic information to enable trends and forecasts in energy use to be established. The service will allow regular energy meter reads to be uploaded by schools and other consumers, and will also allow data validation at this input stage, greatly improving the data captured. The key benefit of the Bureau Service will be its ability to produce the full estate meter dataset ('Source Tool') for the Annual Report. Another benefit of the system is the auditable maintenance of energy meter consumption and billing information, which is necessary to comply with the Council's statutory obligations and, in particular, to mitigate potential penalties and fines.

Evidence Pack

3.23 A key element of the CRC Scheme is the Evidence Pack. This is the comprehensive collection of all information and data on the scheme, including the participants' organisational structure, energy consumption, meter and property information, landlord/tenant agreements, exclusions and supplier contract information. It must be ready for audit from August 2011.

3.24 Concerns have been raised by councils that the Evidence Pack is unnecessarily burdensome, especially given diminishing resources. Furthermore, the level of reporting on exclusions and individual meter estimation techniques is such that it will significantly divert effort away from the business of carbon and cost reduction.

3.25 For Bromley, the accommodation review will involve significant work as we must detail all elements of the refurbishment, including consumption relating to building works and recording changes to properties being sold, vacated and temporarily occupied. There will also need to be copies of landlord/tenant agreements made with partners using Council sites. Ideally these agreements should incorporate the cost of associated carbon allowances, including increases in the allowance costs over time. Similarly much work must be done to document all agreements regarding shared occupancy sites and clubs, to ensure Bromley is not paying the cost of allowances for other users.

Performance League Table

3.26 The scheme, as originally devised, would have rewarded or penalised participants according to their relative performance and presented in a league table. This league table will be retained but will no longer be used for the purpose of revenue recycling, since the scheme is now effectively a tax. The league table will now function principally as a reputational driver. Being the worst performer would widely signal a failure to take effective action and poor financial management (paying inflated energy bills and purchasing unnecessary CRC allowances).

Maintained Schools

3.27 The CRC scheme applies to all maintained schools irrespective of whether they make their own energy procurement arrangements. The scheme currently includes Academy schools, which raises the issue of cost apportionment and energy efficiency investment.

3.28 Schools are under a duty to provide reasonable assistance to the Council. In practice, schools need to provide regular, accurate, energy consumption data. The Council will be fined if inaccurate data is submitted and a 10% 'uplift' is applied to allowance purchase costs if estimated data is used. The LASER Bureau Service will include a facility to allow schools to upload their data directly.

3.29 LB Bromley's 2009/10 CRC-related carbon emissions show that maintained schools currently account for 54% of CRC emissions. The table below models estimated emissions and costs for maintained schools.

Table 3: Schools' Carbon and Costs

Year	2011/12	2012/13	2013/14	2014/15	2015/16
LBB Schools CO_2 (t)	17,568	17,744	17,922	18,101	18,282
LBB Schools Cost (£)	210,816	283,904	358,440	434,424	511,896

3.30 The Council is required to bear the cost of administering the scheme and purchasing the carbon allowances on behalf of maintained schools. Under the scheme as originally developed, the draft Schools Finance Regulations 2011 proposed a mechanism for passing on the schools' share of any penalty cost – either at the level of the overall Schools' Budget or at an individual school level.

3.31 As the law currently stands the Council cannot pass on the cost of purchasing allowances to schools. However, the Department for Energy and Climate Change is in discussions with the Department for Education and it is possible that councils will be allowed to use their Dedicated Schools Grants to fund the purchase of carbon allowances.

3.32 Every tonne of CO_2 which a Bromley school emits costs about £150: the price of buying the electricity and gas from the supplier. The CRC scheme will initially add another £12/tonne to this cost. Action needs to be taken to reduce energy consumption and hence ongoing costs. However, there is no dedicated budget to install energy efficiency / carbon reduction measures in schools. A number of options are currently under investigation.

4. POLICY IMPLICATIONS

4.1 The CRC is a statutory scheme and one of two Council carbon-related programmes: the other being the Carbon Management Programme. The Carbon Management Programme (see ES 10188) has helped with preparations for the CRC by defining the Council's carbon footprint and in reducing costs through a successful programme of energy projects.

4.2 It is likely that climate change mitigation and adaptation will be retained in some form in the new national indicator set.

5. FINANCIAL IMPLICATIONS

5.1 Since 2006/07, LB Bromley has been taking concerted action on energy demand management (see January 2011 Executive Report ES10188 'Carbon Management Programme Annual Report 2009/10') because reducing energy consumption reduces revenue costs. The Carbon Management Programme has proved useful in developing the performance management systems necessary for complying with the CRC scheme and also in reducing carbon emissions and hence the Council's potential CRC financial liabilities.

Changes to CRC Scheme

5.2 Executive Report ES 09101 (9 December 2009) projected costs (Table 4) based on the scheme rules then proposed. Under the original proposals, allowance costs would be offset against a returned share of the national pot (the money used to purchase allowances) based on performance relative to that of other participants. The cost projection was the difference between the cost of purchasing allowances and the anticipated worse case recycling payment.

Table 4: Cost Projections

Year	2011/12	2012/13	2013/14	2014/15
Reported to Executive: 9 December 2009	£77,472	£116,208	£154,944	£193,680
Reported to Executive 8 December 2010: Update on Council Financial Position	£400,000	£400,000	£500,000	£600,000

5.3 However, the 2010 Comprehensive Spending Review fundamentally changed the scheme's rules. It effectively turned the scheme into a tax on carbon emissions – the proceeds being retained by the government. The cost projection Table 4 (bottom row) shows the general financial impact of Government retaining the recycling payment and was reported to the Executive on 8 December 2010.

Financial Illustration

5.4 A new financial model has been developed and Table 5 (below) shows projected carbon emissions and associated costs for the Council's:

- operational property (23% of our CRC emissions)
- maintained schools (54% of our CRC emissions) and
- street lighting (23% of our CRC emissions).

The current model allows for a number of variables and the figures in Table 5 are based on the following assumptions:

- our 2009/10 CRC footprint of 31,952t will grow to 32,152t by 2011/12 as:
    - operation property consumption/emissions reduce by 1% per annum (due to the CMP)
    - schools consumption/emissions increase by 1% per annum (due to more electrical equipment being used)
    - street lighting consumption/ emissions remaining constant (and is included)
- 2011/12 price of carbon being £12/t (known)
- 2012/13 price of carbon being £16/t (known) and
- the price of carbon thereafter increasing by £4/tonne per year (this is unknown)

Table 5: Detailed Tonnage and Cost Projections post-CSR10

Year	2011/12	2012/13	2013/14	2014/15	2015/16
Operational Property CO_2 (t)	7,195	7,123	7,052	6,981	6,911
Operational Property Cost (£)	£86,340	£113,968	£141,040	£167,544	£193,508
Schools CO_2 (t)	17,568	17,744	17,922	18,101	18,282
Schools Cost (£)	£210,816	£283,904	£358,440	£434,424	£511,896
Street Lighting CO_2 (t)	7,389	7,389	7,389	7,389	7,389
Street Lighting Cost (£)	£88,668	£118,224	£147,780	£177,336	£206,892
Total LBB CO_2 (t)	**32,152**	**32,256**	**32,362**	**32,471**	**32,582**
Total LBB Cost (£)	**£385,824**	**£516,096**	**£647,240**	**£779,304**	**£912,296**

5.5 The data used in this report is based on operational property, schools and street lighting being included in our reporting and liabilities. However, we are waiting for clarification from the Environment Agency concerning the position regarding both schools and street lighting.

- The issue relating to schools is that the council must purchase the allowances on schools' behalf but it is possible that we will be allowed to use the Dedicated Schools Grant
- The issue relating to Street Lighting is that by changing from dynamic to passive supply it may be possible to remove street lighting-related carbon liabilities entirely.

5.6 Under the scheme's current rules, participants are allowed (provided certain mandatory emissions are reported) to remove 10% of their emissions under a *de minimis* rule (e.g. from low-consuming meters presenting data collection issues). If this were the case, the figures shown in bold in Table 6 would represent the Council's likely financial liability. It should be borne in mind that the scheme's rules continue to change and at least two further consultations are expected.

Table 6: Tonnage and Cost Projections post-CSR10: *de minimis* applied

Year	2011/12	2012/13	2013/14	2014/15	2015/16
Total LBB CO_2 (t)	32,152	32,256	32,362	32,471	32,582
Total LBB Cost (£)	£385,824	£516,096	£647,240	£779,304	£912,396
CO_2 post-10% *de minimis* (t)	28,937	29,031	29,126	29,224	29,324
Cost post-10% *de minimis* (£)	**£347,244**	**£464,496**	**£582,520**	**£701,376**	**£821,072**

5.7 Looking forward, it is not possible to be certain about the financial impact of the CRC scheme after 2012/13. The post-2012/13 costs (above) are an assumption based on modelling a £4 per tonne per annum increase but there are a number of other possibilities including:

- the price remaining fixed at £16/tonne
- the price increasing
- a trading system being introduced and the price of carbon floating
- the CRC scheme becoming more closely aligned with the EU Emissions Trading Scheme

Second 'capped' phase costs

5.8 It is not clear how the changes introduced in the CSR will affect the second phase (now proposed to start 2014/15). In particular, it is not known whether, the scheme might revert to its original intention of being a 'cap and trade' scheme with a limit (cap) being put on the availability of carbon allowances and the price floating reflecting trading. Nor is it clear whether in 2014/15 the council would have to purchase two lots of allowances: for the year past and the year to come.

Allowance Purchasing and Accrual

5.9 CSR10 altered the timing of allowance purchasing. The first allowances will now be purchased in July 2012 retrospectively for financial year 2011/12. CIPFA advises that although the cost occurs in 2012/13, an accrual needs to be made in respect of 2011/12 and therefore the cost needs to appear in the 2011/12 budget. This will also apply to subsequent (Phase 1) years.

Non-compliance Penalties

5.10 There are significant fines for non-compliance and also penalties for poor data reporting. The scale of the data-related penalties varies according to the tonnage of 'missed carbon' and the length of time the error existed. In practice, it is likely that costs will be imposed on a case-by-case basis.

Table 7: Non-compliance penalties

Non compliance	Penalty
Failure to register	£5,000 + £500 per day
Failure to disclose information	£500 per settled half-hour meter
Failure to provide annual or footprint report	£5,000 + £500 per day (max 40 days after due date) or £45,000 (more than 40 days late or not provided)
Incorrect reporting	£40/tCO_2 for emissions incorrectly reported
Failure to keep adequate records	£40/tCO_2 for emissions in most recent reporting year
Falsification, deception and non-compliance with enforcement	Criminal penalties

5.11 Fines for incorrect reporting and failure to keep adequate records can be backdated for a maximum of five years.

5.12 It should be noted that the Evidence Pack requires continuous and extremely detailed reporting, not only on energy consumption of individual meters but also property maintenance records, financial records, organisational changes and responsibilities, suppler changes and exemptions and exclusions. Maintaining the Evidence Pack is an on-going requirement of the scheme and adequate resource to ensure compliance, data accuracy, and timely-reporting of data will be needed to avoid any financial penalties.

5.13 Adding the CRC Scheme to the LBB internal audit schedule would help to ensure the robustness of the data reported and minimise the Council's exposure to any fines or penalties.

Summary of Financial Costs

5.14 The table below summarises the scheme's estimated total cost and is based on current knowledge and is exclusive of preparatory costs already incurred, annual subsistence fee (already budgeted), staff costs, and any possible fines (which cannot be calculated in advance but can be mitigated).

Table 8: Finance Summary

Activity	2011/12 £	2012/13 £	2013/14 £	2014/15 £	2015/16 £
Allowance purchase costs*	£347,244	£464,496	£582,520	£701,376	£821,072
Predicted 'uplift costs'**	£5,209	£4,645	£2,913	£2,805	£2,463
Subsistence costs (EA fee)	£1,290	£1,290	£1,290	£1,290	£1,290
Total Costs	**£353,743**	**£470,431**	**£586,723**	**£705,471**	**£824,825**

** based on Table 6 de minimis costs (i.e. 90% of emissions)*

*** additional allowances that must be purchased if estimated data rather than actual meter reads are used*

5.15 It should be noted that the costs detailed in the tables above:

- relate solely to the cost of the CRC scheme and are in addition to energy bills
- are being used to update the 2011/12 budget and financial forecast

6. LEGAL IMPLICATIONS

6.1 The CRC is a statutory scheme introduced under the Climate Change Act 2008 to help give effect to the government's national carbon targets. LB Bromley is a full participant in the scheme and is responsible for data reporting and purchasing carbon allowances to cover its carbon emissions, including from maintained schools but not from parties such as Bromley Mytime.

6.2 This statutory duty will be enforced through:

- criminal penalties (imprisonment and fines) for falsification of data and non-compliance
- civil penalties (fines) for late or inaccurate reporting

6.3 A consultation is currently underway in relation to changing the implementation timetable. A further consultation may be expected when the government has determined what further changes it considers necessary to simplify the scheme.

6.4 The nominated Senior Officer (Nigel Davies) for the CRC Scheme must sign-off all components of the Evidence Pack in an annual audit certificate.

Non-Applicable Sections:	Personnel Implications
Background Documents: (Access via Contact Officer)	• ED08067 Carbon Management Programme (Executive Report, October 2008) • ES09100 Carbon Management Programme (Executive Report, October 2009) • ES10188 Carbon Management Programme (Executive Report, January 2011) • ES09101 Carbon Reduction Commitment (Executive Report, December 2009) • Regulations / Formal Guidance: see annexe to this report

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LONDON BOROUGH OF BROMLEY
ANNEXE TO EXECUTIVE REPORT ES10189

CARBON REDUCTION COMMITMENT TRACKER
12 JANUARY 2011

Guidance

Environment Agency (EA CRC site) **Environment Agency Guidance at-a-glance (lists all formal guidance)**	**London Energy Project (LEP)**
Department of Energy and Climate Change (DECC)	**EA CRC Help Desk (Email link)**

DATE	LINK / SOURCE	DETAILS
25 Oct 2010	CRC changes announced in CSR10 October 2010.pdf (LEP)	London Energy Project commentary on possible implications of changes to CRC scheme
21 Oct 2010	Spending Review Policy Costings (Treasury)	£12 t/CO_2 in 1st phase, rising to £16 t/CO_2 in the 2nd phase (see page 21 for details)
20 Oct 2010	Government Spending Review (Treasury)	Changes to the CRC Energy Efficiency Scheme have been announced as part of the Government's Spending Review. The main changes are that the scheme will become a tax and allowances do not have to be purchased until 2012. The EA will be working with the Government to understand the implications of these changes and will provide further information as it becomes available. Please refer to link: CRC on page 62
24 Sept 2010	The CRC Energy Efficiency Scheme - advice to Government on the second phase (Committee on Climate Change)	The Committee on Climate Change has recommended that the Government re-designs the Carbon Reduction Commitment (CRC) energy efficiency scheme prior to the start of the second phase (2013-2017), in order to reduce its complexity. The Committee's main recommendations are that: • The sale of an unlimited number of allowances at fixed price should be extended from the first phase into the second phase, rather than introducing a second phase cap and auctioning scheme. • Separate league tables and revenue recycling should be established for the public and private sectors, and public sector financial budgets should be set to allow upfront investments in energy efficiency improvements (the current scheme risks transferring funds from public to private sector). • Participants should have to purchase CRC allowances to cover renewable energy generation, including heat. This is a departure from the current scheme whereby companies could receive double incentives for use of renewable energy. Financial incentives for renewable heat are important but should be introduced through the renewable heat incentive. League tables should be extended to cover renewable heat and renewable electricity.

DATE	LINK / SOURCE	DETAILS
27 Aug 2010	Improved Source List Tool (EA)	In this updated version it is no longer possible to delete the first row under each fuel type (electricity, gas and other fuels) across the work sheets labelled `Primary member' and `Undertaking 1 - 10' as this then enables the workbook to carry data across to the `Whole group summary' worksheet. Another update is that the `Meter number' field for (electricity, gas and other) has been formatted to display a meter reference with up to 21 characters.
14 July 2010	Supply rules for fuel	You must measure emissions from the energy supplies for which you are responsible according to the relevant conversion factors.
29 June 2010	Registration concerns and delays CRC Registry: changing contact details	Many organisations are delaying their registration due to concerns over how data errors will be handled. How to change contact details in the Registry after you have registered or made an information disclosure.
29 June 2010	Carbon Trust Standard (CTS) and Equivalent Residual Measurement List (RML) Updates to guidance and FAQ's View who has registered:	Which standards are equivalent, calculating the percentage of CRC emissions and how to match the certification with reporting. How to prepare, submit and decide if you need a RML. How and when to change a RML if your organisation structure changes View updates List of CRC registrants
3 June 2010	Early Action Metric (EAM) and the recognition of automatic metering (AMR) Useful tool for Facilities Managers and Energy Managers (presentation)	How benefits can only be gained under the EAM for supplies through AMR after it is installed A useful tool to convey the scheme and its benefits to senior managers in your organisation
6 April 2010	CRC online Registry now open	The online Registry is open and can be accessed from the Environment Agency website. Organisations which qualify for the CRC need to either register as a Participant or make an Information Disclosure via the Registry. Registration closes on 30 September 2010. Organisations must register by this date.

DATE	LINK / SOURCE	DETAILS
6 April 2010	Registration guidance	Registration guidance released in November and updated in March is available from the Environment Agency website. This helps organisations understand if they qualify for the Scheme and whether they need to register as a Participant or make an Information Disclosure. New information is also available which organisations may find helpful: § Webcast on Registration as a CRC Participant, private sector. § Presentation on Registration as a CRC Agent.
6 April 2010	Reporting guidance, supporting tools and the overarching rules	New guidance documents explaining the reporting requirements under CRC, the scheme rules and some practical tools to enable Information Declarers and Participants to meet their obligations under CRC are also now available on the Environment Agency website.
26 March 2010	CRC Energy Efficiency Scheme Order 2010	The CRC Energy Efficiency Scheme will begin on 1 April 2010. The final order can be found on the Office of Public Sector Information: CRC Energy Efficiency Order 2010 website.
26 March 2010	Presentations from the Environment Agency CRC Conferences	Presentations from the CRC conferences held in Manchester (24 February 2010) and London (4 March 2010) are now available. These cover: § Policy position: Department of Energy & Climate Change; § CRC guidance overview; § Registration as a CRC participant private sector; § Registration as a CRC participant public sector; § CRC footprint and annual reporting; § CRC auditing and enforcement; § Revenue recycling and league tables.
26 March 2010	New Guidance notes on reporting	§ Guidance on preparing and submitting an Annual Report and Footprint Report are available from the Environment Agency website.
26 March 2010	New Supporting guidance and overarching rules	Documents which explain the overarching rules of CRC and how these apply to Participants and Information Declarers are available from the Environment Agency website. They cover areas such as organisational change, estimation techniques and supply rules. The following tools are available: § Source List Tool: a voluntary spreadsheet tool that allows the storage (in a single file) of energy supply data that supports the Footprint and Annual Reports. § Guidance and templates for setting up and maintaining an Evidence Pack.

DATE	LINK / SOURCE	DETAILS
26 March 2010	Carbon Trust Standard Equivalent Application Form	The application form for a carbon reduction and management certification scheme to be approved as equivalent to the Carbon Trust Standard under the CRC Energy Efficiency Scheme.
19 Feb 2010	Guidance on the Early Action Metric under the CRC Energy Efficiency Scheme (Carbon Trust Standard (CTS) Equivalent Schemes)	The purpose of this guidance is to set out the criteria that equivalent schemes to the Carbon Trust Standard must meet in order for them to fulfil the role under the Early Action Metric in the CRC Scheme. We are therefore approving equivalent schemes for CRC purposes hence references in the document to CRC participants as users of equivalent schemes.
19 Feb 2010	Policy Note on the Draft Allocation regulations for the CRC Energy Efficiency Scheme The CRC Energy Efficiency Scheme (Allocation of Allowances for Payment) Regulations [2010]	The allocation regulations will make provision for the sale of CRC allowances, and as such it must come into force by April 2011 as this is when the first sale will be held. Two types of allowances sale are provided for, an annual Government sale (main allocation) and monthly safety valve sales (additional allocations).
5 Feb 2010	Managing the Carbon Reduction Commitment (CRC) as a business opportunity (CTL081)	Download this guide to learn how the Carbon Trust can help you prepare for – and profit from – the business opportunities available.
26 Jan 2010	Draft CRC Energy Efficiency Scheme Order 2010	On the 19th January, the draft CRC Energy Efficiency Scheme Order 2010 was laid in the UK and Scottish Parliaments and in the National Assembly for Wales and Northern Ireland Assembly. It is subject to the approval of all four Administrations before it comes into force from April 2010.
26 Jan 2010	Revised DECC CRC User Guide now available	This DECC User Guide • Provides a concise summary of all aspects of the CRC • Reflects the changes implemented in the Government Response to the Consultation on the draft order to implement the CRC • Reflects the legal detail of the final Draft Order to implement the CRC, which was laid in the four Parliaments/Assemblies on 19th January.
26 Jan 2010	Addendum to the Government Response now available.	This addendum reflects some minor policy changes to the CRC Order since its publication in October 2009.
JAN 2010	The CRC Energy Efficiency Scheme Order 2010: Office of Public Sector Information: UK Statutory Instruments	• The draft CRC Order which was laid in Parliament on 19 January 2010 • It reflects the changes implemented in the government response to the Consultation on the draft order to implement the Carbon Reduction Commitment.

DATE	LINK / SOURCE	DETAILS
DEC 2009	Briefing note: The CRC Energy Efficiency Scheme: Coverage, Abatement and Future Caps (PDF, 75KB) Full report: The CRC Energy Efficiency Scheme: Coverage, Abatement and Future Caps (PDF, 1.3MB) Summary: The CRC Energy Efficiency Scheme: Coverage, Abatement and Future Caps (PDF, 40KB) A short introduction to CRC Energy Efficiency Scheme; Am I in? A guide to qualification and organisational structure; Registering as a CRC participant Making an information disclosure Glossary of Terms	• This report from the Environment Agency concerns provides the first independent quantification of the potential national carbon emissions savings possible under the CRC
NOV 2009	Carbon Reduction Commitment: government response and policy decisions Consultation on the draft order to implement the Carbon Reduction Commitment (CRC): analysis of consultation responses	Government response to, and policy decisions on, the third consultation and draft order to implement the Carbon Reduction Commitment (7 October 2009).
	CT Press Release: 100 not out as Carbon Trust Standard reaches a low carbon century	The Carbon Trust Standard will give participants a major boost in the CRC for the first two years. Uptake is low (only 100 certified so far) and the Carbon Trust only expect to double this figure over the next year. Given that it's worth up to half a participant's score (as an EAM), if LBB can be one of only 200 with the Standard (out of 5,000) - we should be in a strong position.
OCT 2009	Government takes action to tackle VAT fraud on emissions allowances	A change in law, taking effect from 31 July 2009, means that supplies of emission allowances in the UK will be subject to the zero-rate of VAT (i.e. will be VATable but at 0%).
AUG. 2009	Combined CRC Consultation Workshop Report (DECC)	As part of the process of ongoing stakeholder engagement on CRC, DECC held two workshops to tie in with the third period of consultation on the forthcoming legislation. The aim of the two workshops, held in London and Manchester, was to provide Government with informed feedback on specific aspects of the proposals set out in the CRC Draft Order and consultation document.
	CRC Video by Amanda de Swarte	Amanda De Swarte manages the London Energy Project. In this video, she sets out what CRC is and what it will mean for councils.

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