

Carbon Management & Energy Efficiency Programme
2010-2015

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Summary

London Borough of Croydon Carbon Management & Energy Efficiency Programme (CMEEP) 2010-15

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Owner: Muhammad Ali (Carbon Reduction Officer)

Management Summary

Tackling climate change continues to be a core policy driver at both national and local government level. This includes the Climate Change Act 2008 which sets the national carbon reduction targets, and a number of policies that support the achievement of those targets. For Croydon of particular importance are the mandatory carbon trading scheme *Carbon Reduction Commitment Energy Efficiency Scheme (CRCEES)* launched in April 2010 and national indicators 185 and 186, which not only require the Council to reduce its own carbon emissions, but also to drive borough-wide reduction.

Improving energy efficiency also makes good business sense and contributes to cost reduction at a time when Local Authorities are under immense financial pressure, with budgets being cut by as much as 30%.

This Carbon Management and Energy Efficiency Programme (CMEEP) contribute directly to 'Carbon Management', one of the four core improvement areas identified in Step Change Croydon.

Our baseline

To effectively target the main sources of emissions, we first need to understand the Council's baseline.

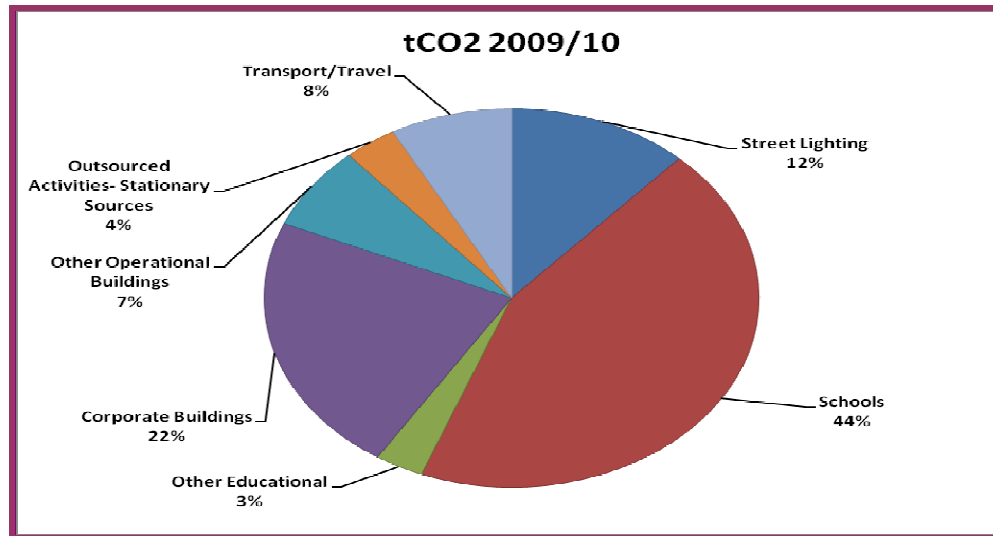
We will reduce the Council's CO₂ emissions by 25% from the 2009/ 10 baseline by 2015.

The total CO₂ emissions for the year 2009/10 from energy use in the Council's buildings, travel, street lighting and some outsourced activities is about 45,625 tonnes CO₂. Schools are the largest contributors to the council's carbon emissions with 44% share of the total carbon footprint.

Total emissions within the scope of the CRC EES are approx 34,282 tCO₂, which equates to more than 75% of the total carbon footprint. The current scope of CRC does not include transport and street lighting. While prioritising carbon reduction initiatives, we have taken the inclusion into CRC into account.

In 2009/10 the Council spent over £8 million on energy and transport

Schools account for 44% of our carbon footprint and are the largest contributor



Our vision and targets

London Borough of Croydon will reduce its carbon footprint and lead the local businesses and community by example. To support this vision, we have set an ambitious target of 25% CO₂ emissions reduction within five years.

Meeting this target over five years will result in an estimated, cumulative saving of over 42,000 tonnes CO₂ and an estimated, cumulative financial cost avoidance of £9.0m. The graphs below illustrate this carbon and financial 'Value at Stake'.

Figure 2 – Financial Value at Stake

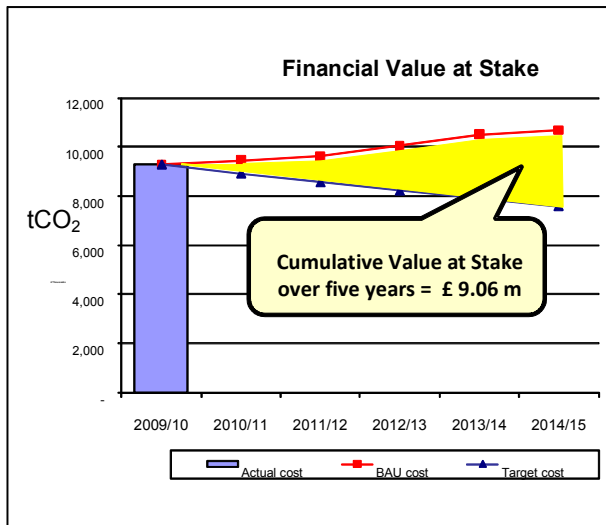
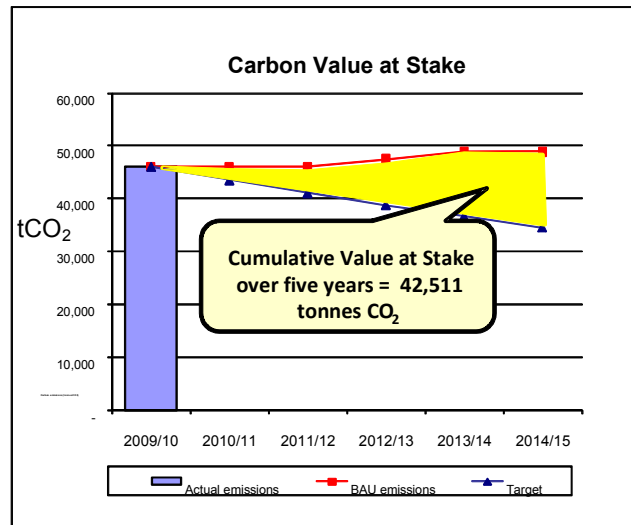


Figure – 3 Carbon Value at Stake



How will this be achieved?

The projects under this programme will be delivered in three distinct streams:

- **Stream 1 – Small scale efficiency projects with payback of up to 5 years.** This will be an on-going stream of activity subdivided into two phases activity over the course of this 5-year plan:
 - **Phase 1 (2010-2011): Costed projects with funding allocated.** So far more than 40 small scale energy efficiency projects have been identified (with a total capital cost of £260K.), some of them are already under implementation. These

projects are funded from our existing LAEF fund (Local Authority Energy Finance Scheme) and through Salix Energy Efficiency Loans. They will deliver carbon reduction of 730 tCO₂ and financial savings of approximately £110K annually, resulting in an average payback period of 2.4 years.

- **Phase 2 (2012-2015): Further energy efficiency opportunities, which require more detailed definition to develop fully costed proposals.** Scope for significant further carbon reduction has been identified through site surveys, energy audits and the Carbon Trust RAP (Rapid Assessment of Potential) tool. These projects have the potential to deliver a carbon reduction of 6,701tCO₂ annually (14% of the baseline) and will require capital investment of about £4.3 million, with an average payback of 4.3 years. Further work is needed to develop and prioritise these proposals and those initial estimates might change. Some funding for these projects will be available from the LAEF fund, but if these proposals are to be fully implemented, additional investment will be required.

This translates into 2,300 tonnes CO₂ reduction each year over five years.

- **Stream 2 - Projects undertaken through the RE:FIT scheme¹.** This will require an initial investment from the Council. Detailed business case is now being developed and will be presented in December 2010. Early estimates indicate that capital investment required will be around £1.3m, resulting in annual savings of £168K and a payback period of less than 8 years. Funding for Stream 2 has not been secured yet; the capital bids for funds for RE: FIT projects will be included in the capital bid process for 11/12 for subsequent approval by Cabinet. If approved, the scheme could go live in Q2 2011.

¹ RE:FIT formerly known as The Buildings Energy Efficiency Programme, or BEEP) is a cost neutral London Development Agency (LDA) established framework and supporting approach for energy performance contracting. A key component of the RE:FIT model is that energy savings are guaranteed by the energy service company (ESCo) awarded the contract to carry out the retrofit. This would offer a financial saving to the Council over a period of years. Croydon has already signed an MoU to start working on the initial stages of RE:FIT.

- **Stream 3 – Encompasses projects for which no additional financing is required under this CMEE Programme.** This includes initiatives across the Council that will contribute to carbon reduction, but funded from sources independent of the CMEEP. We will monitor and account for this reduction under CMEEP. These initiatives includes:

- **AMR installation and targeted awareness raising and training programme** for schools' site managers and premises managers of corporate buildings. The initial outlay of £60K has been secured and it is expected to deliver £150K saving and carbon savings of 1000 tCO₂ a year.
- **Property Rationalisation:** The current property rationalisation i.e. moving to Integrated Children Hub (ICH) and Public Service Delivery Hub (PSDH) will contribute approximately 8% (3,711 tCO₂) of the current reduction target by 2013.
- **Street lighting PFI:** installation of a Central Management System (CMS) would save 547 tCO₂ and £80K a year. Decision on this implementation is expected by April 2011.

Overall, within streams 1 - 3 we have identified projects that could deliver savings of 30% of our baseline.

Cost and funding requirements

Overall, within phases 1 - 3 we have identified projects that could deliver savings of 30% of our baseline, in excess of the 25% carbon emissions target.

We estimate that to fully implement these projects, additional capital investment of approx £ 5 m will be required over and above already committed funding sources. The average payback period for projects identified under the three streams is 2.8 years.

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Carbon Management & Energy Efficiency Programme- Detail 2010-2015									
Category	Costs (£)			Savings			% of total baseline	Implementation Year	Funding Status
	Capital Cost * (£)	Operating Cost (£)	£'s/year	tCO2	Payback (Years)				
Stream 1	Stream 1-Phase 1:Local Authority Energy Finance Scheme (LAEF)	264,813	0	110,597	730	2.4	1.6%	2010	Funded
Stream 1	Stream 1-Phase 2: SALIX Energy Efficiency Loan Scheme (SEELS)	26,000	0	5,917	37	4.4	0.1%	2012	Funded
Stream 1	Stream 1-Phase 3:Energy Efficiency Rapid Assessment of Potential *(RAP tool) recommendations	4,096,938	0	1,030,423	6,534	4.0	14.2%	2012	Unfunded
Stream 1	Stream 1-Phase 3:Energy Efficiency (Site Surveys Recommendation)	115,212	0	12,805	85	9.0	0.2%	2012	Funded
Stream 2	Stream 2-Phase 1: REFIT Programme	1,300,000	0	168,223	1,089	7.7	2.4%	2011	Unfunded
Stream 3	Stream 3-Phase 1: Awareness and Automatic Meter Readings (AMR)	110,000	43,220	151,941	1,002	1.0	2.2%	2011	Funded
Stream 3	Stream 3-Phase 2:Street Lighting (Standard Solution)	Part of Street Lighting PFI	0	40,000	273	0.0	0.6%	2012	No funding required under the CMEEP
Stream 3	Stream 3-Phase 2:Street Lighting (Additional from CMS likely)	Part of Street Lighting PFI	0	80,000	547	0.0	1.2%	2012	No funding required under the CMEEP
Stream 3	Stream 3-Phase 3:Property Rationalisation	Part of Property Rationalization	0	560,370	3,711	0.0	8.1%	2014	No funding required under the CMEEP
		5,912,964	43,220	2,160,276	14,008	2.8 (average)	30%		

The existing *Local Authority Energy Finance (LAEF) Scheme* can support some of the small scale energy efficiency projects identified under this programme (£264k available for 2010/11). However most large scale projects (e.g. REFIT) will require greater capital investment.

Capital required for the successful implementation of this programme in 2011/12 and beyond will be dependent on viable business cases and will be subject to future report submissions and capital bids.

***Rapid Assessment of Potential (RAP) recommendations:**

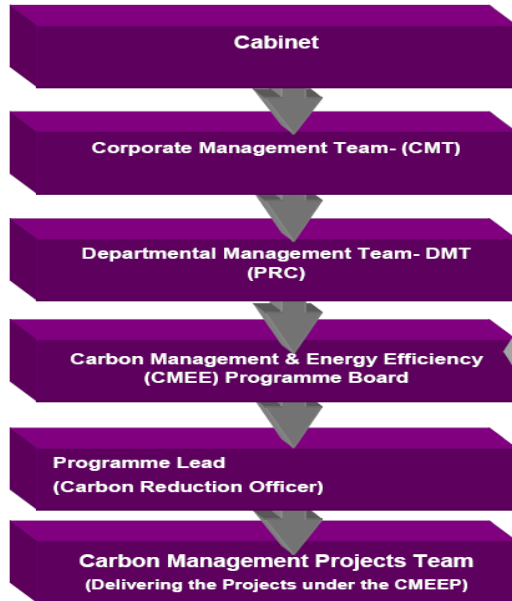
The purpose of the RAP tool is to get the common carbon saving opportunities highlighted with estimates of carbon savings based on the baseline data and estimates of applicability. Further work will be required to replace the original RAP Tool estimate with the new calculations

Governance and reporting

The achievement of the objectives of this programme will be underpinned by solid governance, programme management and monitoring of results.

The existing CRC project board will be replaced by a CMEEP Board. The CMEEP board will be chaired by the Director of Economy and Sustainability. The Board will have a wider remit not only to ensure compliance with the CRC EES but also to oversee the implementation of energy efficiency projects identified under this programme.

The Programme Board – strategic ownership and oversight



For further information about CMEEP please contact the Sustainable Development and Energy Team at sustainability@croydon.gov.uk