

Hammersmith & Fulham's Carbon Management Programme

CREATING A CLEANER GREENER BOROUGH

Carbon Management Plan 2009-2016



Date: April 2010

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Foreword from Chief Executive and Deputy Leader (Cabinet Member for the Environment)

Climate change is, perhaps, the most significant issue for the 21st century affecting all our futures. We are committed to doing everything we possibly can to help improve our energy efficiency and the environment generally. Protecting the environment is one of the major issues of this age. Hammersmith and Fulham is playing its part in Britain moving to a low carbon economy by reducing the energy that we use as a council and by helping our residents and businesses to do the same. We have signed up to the Nottingham Declaration on Climate Change which commits us to actively tackling climate change in our area and working with others to reduce emissions country-wide. This Carbon Management Plan will help the council lead by example and to reduce carbon emissions, this plan is the first step in the council's journey to be a low carbon example, as well as avoiding future increases in the cost of energy.

Foreword from the Carbon Trust

Cutting carbon emissions as part of the fight against climate change should be a key priority for local authorities - it's all about getting your own house in order and leading by example. The UK government has identified the local authority sector as key to delivering carbon reduction across the UK inline with its Kyoto commitments and the Local Authority Carbon Management programme is designed in response to this. It assists councils in saving money on energy and putting it to good use in other areas, whilst making a positive contribution to the environment by lowering their carbon emissions.

Hammersmith & Fulham Council was selected in 2009, amidst strong competition, to take part in this ambitious programme. Hammersmith & Fulham Council partnered with the Carbon Trust on this programme in order to realise vast carbon and cost savings. This Carbon Management Plan commits the council to a target of reducing CO₂ by 40% by 2016 and underpins potential financial savings to the council of around £4.4 million.

There are those that can and those that do. Local authorities can contribute significantly to reducing CO₂ emissions. The Carbon Trust is very proud to support Hammersmith & Fulham Council in their ongoing implementation of carbon management.



Richard Rugg
Head of Public Sector, Carbon Trust

Executive Summary

In 2008/9 the council spent over £5 million on energy for its buildings and services and these costs are predicted to increase. Local authorities are also coming under increasing government pressure to reduce their carbon emissions in order to meet national targets, including the target to reduce carbon emissions by 80% by 2050, from 1990 levels. In order to meet these reduction targets the government is introducing initiatives such as the Carbon Reduction Commitment Energy Efficiency Scheme (CRC EES). This a compulsory emissions trading scheme set up to drive energy efficiency in both the private and public sectors, including local authorities. Organisations such as H&F will have to pay for carbon allowances in addition to paying for their energy; they may also have additional costs if they do not perform well in relation to other organisations and if they do not comply with the regulations.

The council and its partners recognise in their Community Strategy the importance of delivering high quality, value for money services and creating a cleaner, greener borough. To achieve these priorities we need to reduce our energy use by promoting energy conservation and efficiency in our buildings and services and to encourage and promote this in the wider community.

We demonstrated our commitment to tackling climate change by signing the Nottingham Declaration in February 2007 which requires the council to contribute, at a local level, to addressing the causes and impacts of climate change. In the last five years we have also reduced energy use by 10% in our ten largest buildings and in 2007 we achieved the Energy Efficiency Scheme accreditation. But we recognise that we now need to do much more and therefore we joined the Carbon Trust Local Authority Carbon Management Programme in May 2009 to assist us in developing a plan to reduce our energy use.

The scale of the task

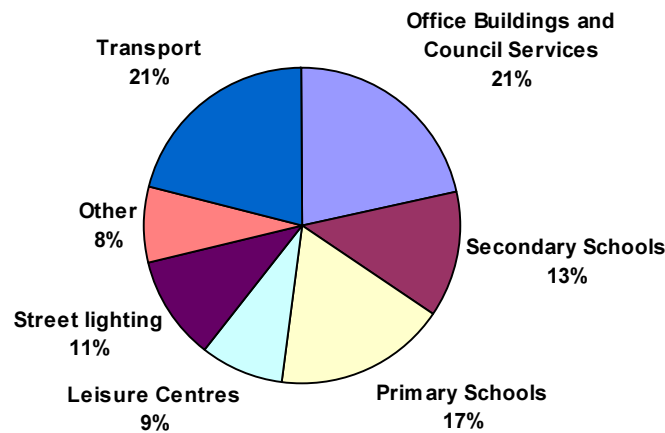
In 2008/09 Hammersmith & Fulham Council's carbon emissions were 24,443 tonnes of CO₂ and cost £5.26 million.

This is projected to increase to 25,666 tonnes of CO₂ and to cost £8.3 million per annum by 2015/16 if no action is taken to reduce emissions

Table 1. Council's energy use in 2008/9

Category	% of total carbon use	CO ₂ emission (Tonnes)	% Cost	Cost (£)
Offices and council services	26%	6,243	21 %	1,147,296
Leisure	10%	2,443	9 %	455,740
Primary Schools	19%	4,567	17 %	916,308
Secondary Schools	14%	3,375	13 %	667,555
Other	8%	2,081	8 %	409,055
Street lighting	13%	3,242	11 %	557,960
Transport	10%	2,492	21 %	1,108,843
TOTAL	100%	24,443	100%	5,262,757

Figure 1: Hammersmith & Fulham % Cost of emissions 2008/9



The carbon emissions and energy costs are based on actual data for larger council buildings, street lighting and transport, but some of the data for smaller buildings and some schools is estimated from floor space figures. The data does not include buildings or services where we do not have control of energy use – such as social housing. Council office buildings, schools, depots and street lighting make up approximately 70% of carbon emissions. It has therefore been decided to concentrate initially on carbon reduction projects within this area, then to expand the programme at a later stage to cover emissions from our outsourced services. Transport emissions relate primarily to essential car users and business miles, such as the refuse collection service, where reductions are likely to be harder to achieve.

The Solution

We have assessed the opportunities for reducing our carbon emissions and set a target to reduce Hammersmith and Fulham's carbon emissions by 40% by March 2016.

Hammersmith and Fulham Council will reduce the CO₂ from its activities by 40% by March 2016 from its 2008/09 baseline level.

Value at Stake

Energy costs are predicted to rise over the next 7 years, by just over 5% pa for buildings and street lighting and over 8.4% pa for transport. We have estimated the difference in the amount we might spend in 2016 if we do not take action to reduce our energy use and the amount that we might spend if we reach the 40% target by implementing energy efficiency schemes and by the better use of our buildings (Figure 2).

Carbon emissions will also rise but at a slower rate than costs (Figure 3), but if the council takes no action to reduce emissions this will have adverse impacts on the council in relation to carbon trading. The Carbon Reduction Commitment Energy Efficiency Scheme will penalise organisations that do not reduce emissions.

Figure 2. Financial Value at Stake

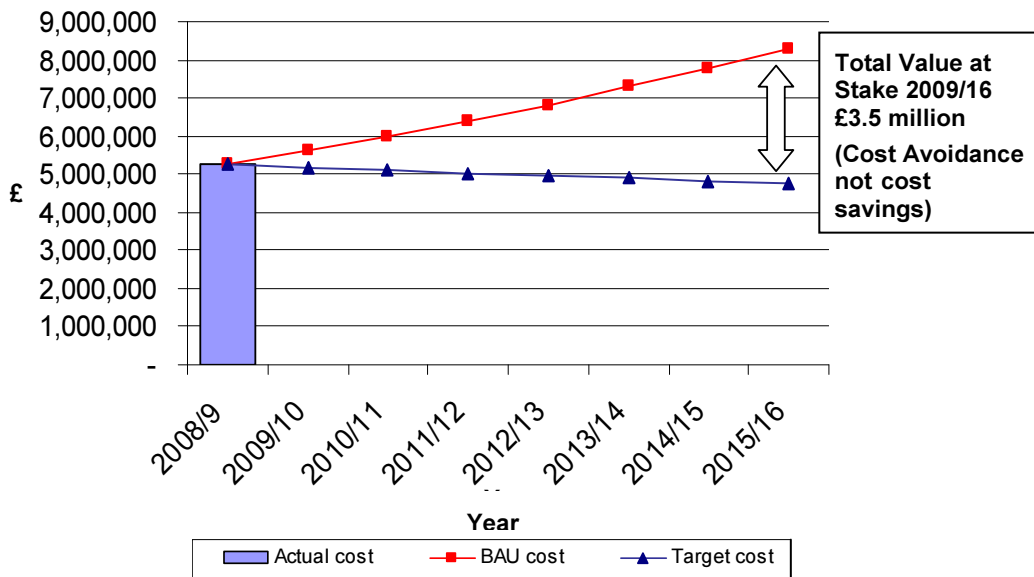
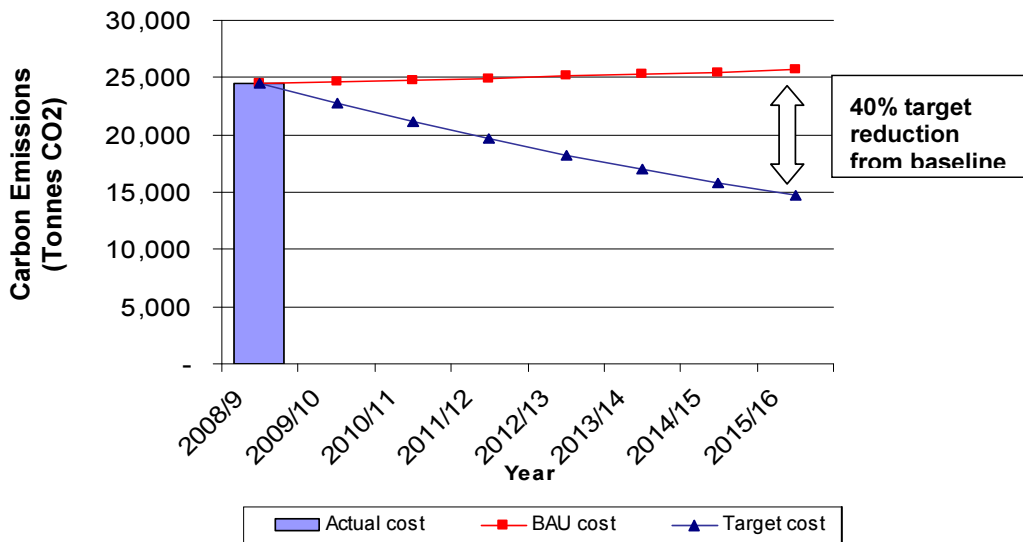


Figure 3. Carbon Value at Stake



The benefits

This Carbon Management Plan is projected to deliver an annual carbon saving of around 1,500 tonnes of CO₂, with a cumulative CO₂ saving of 10,000 tonnes by March 2016.

The Plan is projected to create a cost avoidance of over £3.5 million which would occur if business continued as usual.

This Carbon Management Plan sets out key initiatives for the council to reduce its carbon emissions and has set a carbon reduction target of 40%, to be achieved by March 2016. Based on the possible

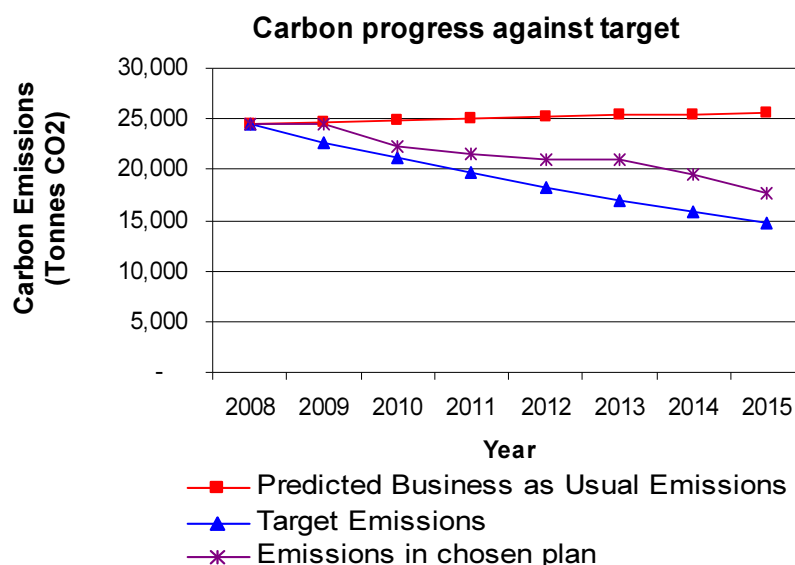
increase in energy costs from 2008/9 to 2015/16, the Carbon Trust estimate that our total energy costs could increase to nearly £8.3 million by 2015/16, if we take no action to reduce energy use. However if we achieve our target of 40% carbon reduction, we could avoid the increase in energy costs which could amount to around £3.5 million by 2015/16.

We think that we can do this by:

- Rationalising the space that the council occupies and where buildings are retained reducing their energy use;
- Improving the energy efficiency and carbon footprint of secondary schools through the Building Schools for the Future (BSF) programme and implementing energy efficiency projects in primary schools;
- Replacing and improving street lighting;
- Raising energy awareness with all council employees and schools to reduce the use of energy;

Projects have been identified and it is estimated that they will result in a 32.4% reduction from our existing energy use in 2008/09 (Fig 4). Most of these projects already have allocated budgets. Other short term projects require an investment of just over quarter million pounds. A full list of projects can be found in Section 4 of this Plan. In order to reach our aspirational target of 40% carbon reduction by 2016 we will identify additional projects as part of the implementation of this Carbon Management Plan.

Figure 4. Projection of impact of projects on meeting carbon target



Other benefits of reducing our carbon emissions include:

- Meeting government targets and Community Strategy priorities;
- Complying with the Carbon Reduction Commitment Energy Efficiency Scheme and the Display Energy Certificate requirements
- Improved reputation with our local community, partners and staff.

Implementation of the Carbon Management Plan

The Climate Change Project Management Board will be responsible for the implementation and review of this Plan and for identifying additional projects to meet the aspirational target of 40% reduction in carbon emissions by March 2016.

1. Introduction

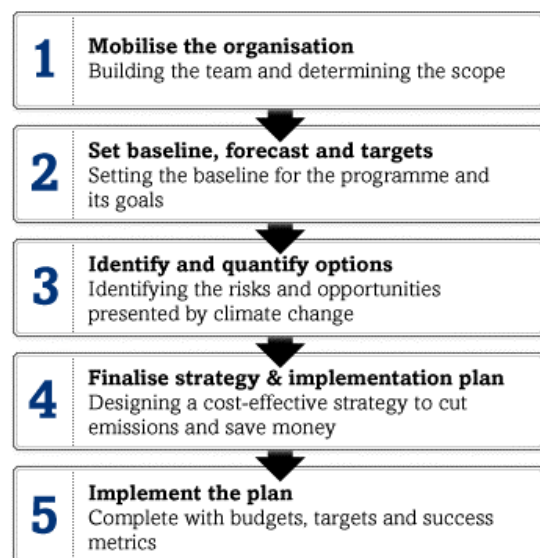
H&F recognises that as a local Authority we are a major consumer of natural resources and we have a responsibility to reduce the use of these to minimise our impact on the environment. The borough's Community Strategy priorities include delivering high quality, value for money services and creating a cleaner, greener borough. It recognises that the council must continue to promote energy conservation and efficiency in its own estate in order to effectively encourage and promote this in the wider community.

We have been increasing the energy efficiency of our buildings for many years. In 2005 we set a target to save 10% of the energy use for our top ten buildings over a five year period. We are nearly at the end of this programme and are on track to meet the 10% reduction target. In 2007 we achieved accreditation under the Carbon Trust's Energy Efficiency Accreditation Scheme, the forerunner to the Carbon Trust Standard. We also signed the Nottingham Declaration in February 2007 and have undertaken a Local Climate Impact profile. However we recognise that we now have to take more co-ordinated action to significantly reduce our carbon emissions.

In order to do this we joined the Carbon Trust's Local Authority Carbon Management Programme in 2009 to assist us in preparing a Carbon Management Plan (CMP) for the borough. The Local Authority Carbon Management Programme (LACMP) provides councils with technical and change management support and guidance to help them realise carbon emissions savings. The primary focus of the work is to reduce emissions under the control of the local authority such as buildings, vehicle fleets, street lighting. This process guides authorities through a systematic analysis of their carbon footprint, establishes a baseline against which the effects of actions can be measured. It estimates the value at stake and the opportunities available to help them manage carbon emissions in a strategic manner.

Our carbon reduction plan covers a seven year timeframe (2009-2016) which will be managed by the Climate Change Project Management Board. The Board will be responsible for the regular monitoring and annual review of the Plan to assess and report on our progress in achieving the target.

Figure 5. Stages of the Carbon management Programme



2. Carbon Management Strategy

The Carbon Management Programme provides a key opportunity for us to lead by example. Not only will it help us achieve 'Value for Money', but also will allow us to contribute to the government's target to reduce carbon emissions. Measures to increase energy efficiency are particularly important for the future given the predicted increases in energy prices. Hammersmith & Fulham Council spent over £4.15 million on energy (gas and electricity) and £1.11 million fuel for transport in 2008/9. Energy and fuel costs have risen in recent years, with energy prices increasing by well over 50% since 2004. This trend is not expected to change and energy costs will continue to increase in the coming years. This programme will mainstream carbon management as a financial efficiency issue within the council.

2.1. Context and drivers for Carbon Management

The Climate Change Act 2008 sets a statutory carbon reduction target of at least 80% by 2050 for the UK. Action by Local Authorities (LAs) will be important in the achievement of this target. This has led to the EU and Government to introduce legislative drivers for LAs. The most important of these for H&F are:

i) Carbon Reduction Commitment Energy Efficiency Scheme (CRC EES): This is a mandatory "cap & trade" emissions trading scheme which applies to council buildings, amongst others, whose total electricity consumption is greater than 6,000MWh or approximately £500k. From 2011 poorly performing local authorities will be penalised depending on their position in a CRC EES league table¹.

A reduction in our carbon emissions will help to optimise the council's trading position in the Carbon Reduction Commitment Energy Efficiency Scheme, saving money and improving our position in the league table. The CRC EES will involve financial payments which are recycled back plus or minus a bonus/penalty in relation to those participants who improve their carbon performance the most/least. Cost of purchasing carbon allowances, based on 2008/09 baseline CO₂ emissions, is likely to be about £300,000². It is estimated that for Hammersmith & Fulham the net difference between being a good and a poor performer could be about £1 million over the first 3 year period and that does not include the risk of any fines. There is therefore a budget growth risk which effective carbon management can help mitigate. Our Carbon Management Plan will help us to reduce carbon emissions and to lead by example.

ii) Display Energy Certificates: There is now a legal requirement for all public sector buildings with a floor area of over 1,000m², to show a Display Energy Certificate (DEC) in a prominent place, clearly visible to the public.³ Nearly 90% of our larger buildings are rated below average when compared to buildings of a similar use and size. Energy Rating A is the most efficient and G the least efficient. Ratings A to D indicate buildings that are above average for that type of building and E to G are below the average. The poor performance of our buildings reflects the age of much of our building stock but also indicates that there is the potential to improve their energy efficiency.

Table 2. Display energy efficiency Log

Rating	Number of DEC's
A	0
B	0
C	2
D	6
E	3
F	10
G	31

¹ more info on the CRC can be found at: <http://www.defra.gov.uk/Environment/climatechange/uk/business/crc/index.htm>

² Cost to purchase carbon allowances costs £12 per tonne.

³ more information on DEC can be found at www.communities.gov.uk/planningandbuilding/theenvironment/energyperformance/certificates/displayenergycertificates

iii) **Hammersmith and Fulham's Community Strategy and Local Area Agreement.** Our Community Strategy identifies the key priorities for the borough, included in these are delivering high quality value for money services and a cleaner greener borough.⁴ The Local Area Agreement contains designated indicators and targets based on the Community Strategy priorities. The borough's performance in relation to the Local Area Agreement forms the basis of the Audit Commission's assessment of local authorities. In the most recent assessment H&F was rated as a local authority that performs 'excellently'. Some of the key indicators in this assessment relate to our use of natural resources, including:

- **NI185: Percentage CO2 reduction from local authority operations** this national indicator is included in H&F's Local Area Agreement and performance against this indicator is assessed by our reduction in CO2 emissions from the delivery of council services, including where these services have been outsourced.⁵
- **NI186: Per capita CO2 emissions in the LA area** this indicator measures the annual reduction in CO2 emissions per capita in each local authority. This will be produced by central government based on CO2 emissions in the local area from businesses, the public sector, domestic housing, and road transport.

2.2. Our Low Carbon Vision

Our Vision is to build on the action that we have already taken to make greater financial and carbon savings that will enable the council to perform well in relation to the Carbon Reduction Commitment Energy Efficiency Scheme and enable us to lead our community by example.

Targets and objectives

Hammersmith & Fulham Council aims to reduce CO2 emissions from council operations by 40% by 2016 from 2008/09 levels.

We will achieve our target by:

- Improving the management and use of the council's building stock;
- Establishing financial support for carbon reduction initiatives across the Council
- Motivating all council staff to reduce their carbon emissions by their actions and practices

2.3. Key Areas of Activity

The council have already implemented a number of energy saving projects including:

- Improved energy monitoring through an Energy Management System;
- Improved asset and facilities management which combined with Smart Working will rationalise and reduce the number of buildings used to deliver council services and improve energy management;
- Corporate Planned Maintenance Programme, which provides funds for energy initiatives;
- 84 solar photovoltaic panels on Hammersmith Town Hall;
- Carbon reduction initiatives in the council's IT strategy;
- The Building Schools for the Future programme is well underway and will incorporate carbon reduction measures in the new and refurbished schools.
- The Staff Travel Plan which will reduce the amount and impact of single vehicle occupancy use generated by the organisation, including staff travel to and from work and council business related travel;
- Assisting schools to prepare school travel plans - 74 (97.5%) of schools have school travel plans;

⁴ H&F Community Strategy 2007-2014

⁵ More information on NI185 and NI186 can be found at: www.defra.gov.uk/environment/localgovindicators/indicators.htm

3. Emissions Baseline and Projections

3.1. Scope

Our baseline includes all the data submitted for the LAA NI 185 indicator. It includes all CO₂ emissions from the delivery of local authority functions, including our own operations and outsourced services. It includes the following:

- Council owned buildings energy use (including schools and communal areas of council owned housing);
- The energy use of buildings used for outsourced council functions;
- Street lighting;
- Council owned fleet fuel use;
- Fleet and business fuel use for outsourced council functions;
- Council essential and casual car user travel;

We have excluded other business travel as we only have limited records of this due to the high use of travel and Oyster cards which mean employees often do not make claims for travel within London in the baseline data and there is very little business travel outside of the London area.

3.2. Baseline

Our overall emissions baseline for 2008/09 is estimated to be around 24,443 tonnes of CO₂. Costs associated with this were £5.26 million. For a number of the smaller buildings, including some primary schools there was not accurate monitoring data and therefore some data is estimated based on the building's use and floor area. Table 3 shows the carbon emissions and energy costs of different types of council buildings and services.

Table 3. Summary table of energy used, emissions and costs for baseline year 2008/09.

Category	Sub Category	% carbon Emissions	Carbon emissions (Tonnes CO ₂)	Cost (£)	Cost %
Office Buildings and Council Services	Libraries	3	616	121,305	2
	Fulham Palace	1	204	37,859	1
	Depots	3	718	138,588	3
	Town halls	6	1,402	248,834	5
	Offices	14	3,303	600,710	11
	Total	26%	6,243	1,147,296	22%
Schools	Primary schools	19	4,567	916,308	17
	Secondary schools	14	3,375	667,555	13
	Total	32%	7,942	1,583,863	30%
Leisure Centres	Leisure Centres (Dry)	4	1,006	182,312	3
	Swimming pool hall	6	1,437	455,740	9
	Total	10%	2,443	455,740	9 %
Street lighting	Street lighting	13	3,242	557,960	11
	Total	13%	3,242	557,960	11%
Other	Community Centres	6	1,476	302,357	6
	Other	2	605	106,698	2
	Total	8 %	2,081	409,055	8%
Transport	Transport	10	2,492	1,108,843	21
	Total	10%	2,492	1,108,843	21%
Total for All		100%	24,443	£5,262,757	100%

Figure 6. % Emissions baseline for categories

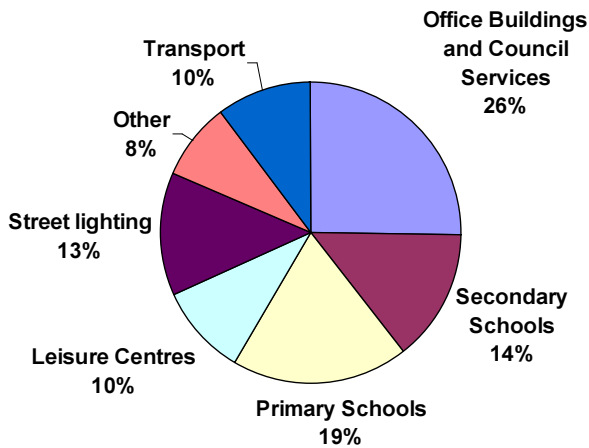
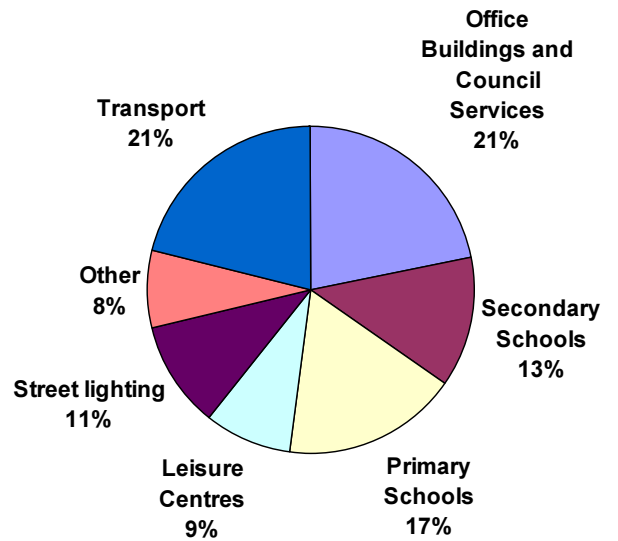


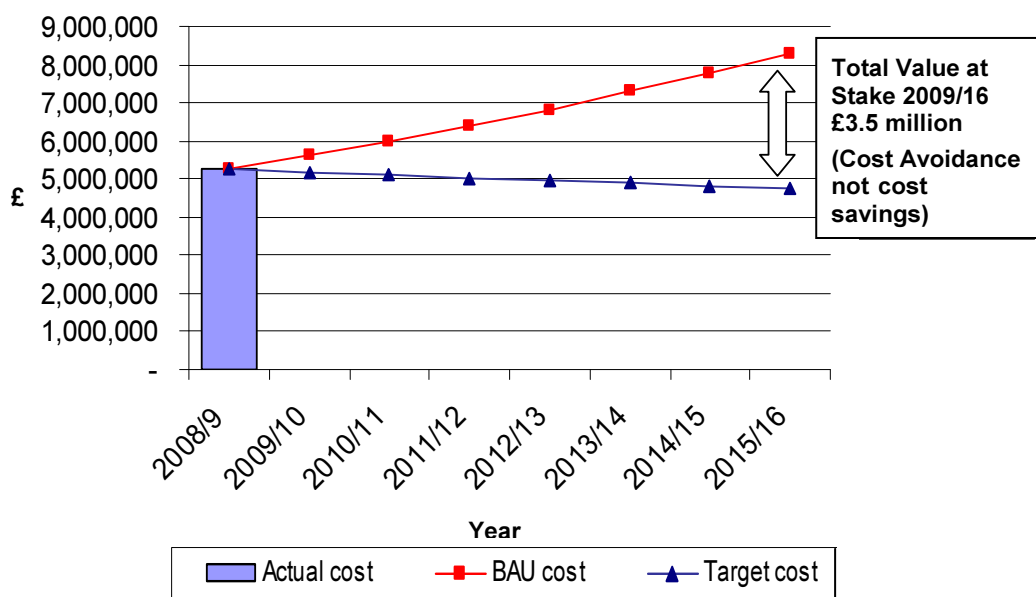
Figure 7. % Cost baseline for categories



3.3. 40% Carbon Reduction Target and Value at Stake

Business as Usual (BaU) scenario assumes that we do nothing to reduce the existing trend in energy use within the council. The cost predictions are based on the Carbon Trust's estimated cost increase of 5.3% per annum for buildings and street lighting and an 8.4% increase for transport related costs pa, which includes inflation and price changes. Reducing carbon emissions by 40%, the council would avoid paying an estimated £3.5 million which is the value at stake in Figure 8. It is important to note here that the Value at Stake (VAS) does not take into account costs required to implement carbon management initiatives nor does it take account of the possible financial penalties that we might incur as a result of the implementation of the Carbon Reduction Commitment Energy Efficiency Scheme.

Figure 8. Financial value at Stake



In Figure 9, Business as Usual (BaU) carbon emissions are calculated for all stationary sources (buildings and street lighting), and for the transport fleet assuming a 0.7% increase in emissions pa. This

has been calculated by DTI/DBERR EP68⁶. The blue line indicates our carbon emissions over the same 7 year period if we achieved our carbon reduction target 40%.

Figure 9. Carbon Value at Stake

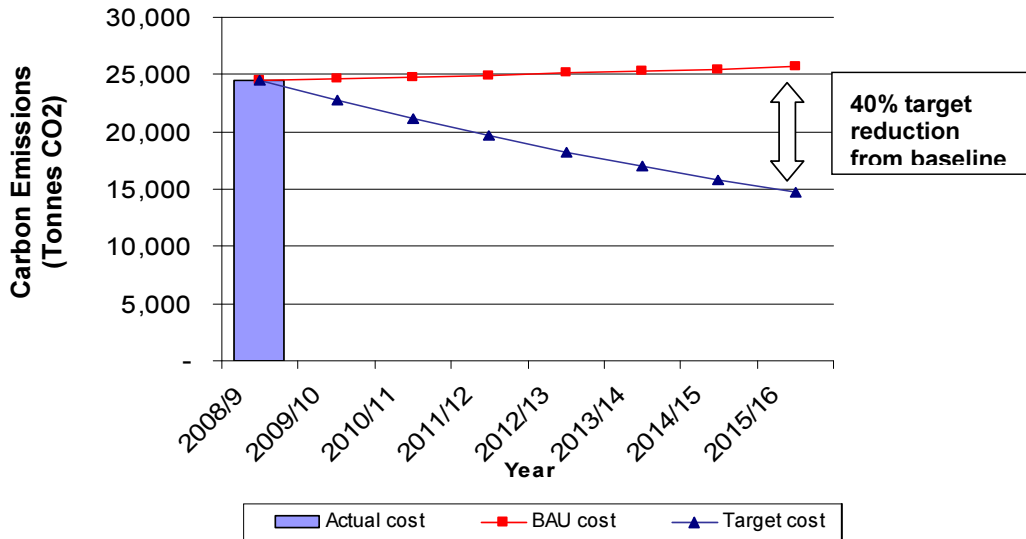


Table 4 below summarises the figures used for the diagrams above. The Value at Stake columns show the difference between a Business as Usual approach and a carbon reduction programme that will achieve our proposed target of 40% emissions reduction by 2016.

Table 4. Summary table of Value at Stake, including figures for target emissions and cost.

Target years	Carbon (Tonnes/co ₂)			Financial (£)		
	Predicted Business as usual Carbon (Tonnes/ co ₂)	Target emissions Carbon (Tonnes/co ₂)	Value at Stake Carbon (Tonnes/co ₂)	Predicted Business as usual Cost (£)	Target Emissions Scenario (£)	Value at Stake (£)
08/09 (Baseline year)	24,443	24,443	-	5,262,756	5,262,756	-
09/10	24,614	22,723	1,891	5,615,089	5,183,636	431,453
10/11	24,786	21,124	3,663	5,991,863	5,106,432	885,431
11/12	24,960	19,637	5,323	6,394,842	5,031,106	1,363,737
12/13	25,135	18,255	6,880	6,825,929	4,957,620	1,868,310
13/14	25,311	16,970	8,340	7,287,165	4,885,937	2,401,228
14/15	25,488	15,776	9,712	7,780,746	4,816,021	2,964,725
15/16	25,666	14,666	11,000	8,309,039	4,747,837	3,561,203

⁶ http://www.dti.gov.uk/energy/inform/energy_projections

4. Carbon Management Projects

The council has had a programme of energy efficiency initiatives (Section 2.3) which has reduced our carbon emissions over the years. We now aim to further reduce our carbon emissions and reduce our energy costs by implementing projects to achieve a 40% carbon reduction on our baseline year of 2008/9. The projects listed below have been grouped into:

- Existing projects that are currently programmed. Some of these projects started in 2008/9 but the carbon savings will be realised in 2009/10. Other projects such as building closures and street lighting projects will be implemented over several years and will not be completed until 2016. This has been taken into account in assessing the carbon reduction and financial savings. It is estimated that these projects will reduce our CO₂ emissions by nearly 11%
- Planned/funded projects have been identified and funding allocated but will not commence until 2010/11 or later. These projects will save a further 16.5% of our carbon emissions. Much of this energy reduction will be from the proposed closure and rationalisation of council buildings, including the replacement of Hammersmith Town Hall Extension with a new civic building. It is estimated that the Building Schools for the Future Programme will improve the energy efficiency of our secondary schools and it is estimated that they will reduce CO₂ emissions by almost 7%. However it is recognised that the greater use of these schools and their facilities by the wider community may result in an absolute increase in energy use, but this will be balanced by better services to the community and/or a more efficient use of the council's building stock.
- Near term projects have mainly been identified through the carbon management programme. It is estimated that these projects will reduce carbon emissions by about 5%. Although the carbon savings of the proposed primary school projects are relatively small in relation to the council's total CO₂ emissions, the reduction in carbon emissions for individual schools are significant ranging from 21% to 40% pa. Also if the initial programme is successful energy reduction projects will be extended to more schools.
- Medium to long term projects are those that will come forward and will be developed as part of the implementation of the carbon management plan. It is not possible to assess their feasibility or quantify the carbon savings at this stage but all or some of these medium to long term projects will contribute to meeting our carbon reduction target.

4.1 Existing projects

Table 5. Existing Projects 08/09

Ref	Year	Project	Project Owner	Cap'l Cost (£)	Annual Saving		Pay back	% CO2 saving on baseline total	Funding Source
					Fin (£)	CO ₂ (Tonnes)			
01-Aug	2008/10	Council Buildings - Boiler Replacements	Building Technical Services (BTS)	£207,412	-	55.6	-	0.23	Funded
09-Dec	2008/10	Heating upgrades	BTS	£80,575	-	5.6	-	0.02	Funded
13-21	2008/10	Efficient lighting systems installed	BTS	£118,800	-	39	-	0.16	Funded
22-26	2008/10	Window Replacement	BTS	£52,552	-	1.9	-	0.01	Funded
27-29	2008/10	Roof Replacement - Including insulation to Building Regulation standards	BTS	£17,000	-	1.1	-	0.00	Funded
30-31	2008/10	Air Conditioning upgrades	BTS	£87,693	-	2.4	-	0.01	Funded
32-33	2008/10	Schools - window replacement Projects	BTS	£150,000	-	2.2	-	0.01	Funded
34-37	2008/10	School - Roofing projects- Including insulation to the Building Regulations standards	BTS	£400,000	-	6	-	0.02	Funded
38	2009/10	IT - reduction of printers/scanners	Matt Dodds	-	£12,395	83.2	-	0.34	Funded
39	2009/10	IT - Automatic switch off	Matt Dodds	-	£11,129	66.3	-	0.27	Funded
40	2009/10	Building Closures 51 Glenthorne Road	BTS	-	£36,509	203.5	-	0.83	Funded
41	2009/10	Riverview Hose	BTS	-	£96,992	509.3	-	2.08	Funded
42	2009/10	Community centre - The Hut	BTS	-	£12,393	59.8	-	0.24	Funded
43	2009/10	Community centre - Dawes road	BTS	-	£11,973	57	-	0.23	Funded
44	2009/10	Depots - Stowe Road Depot	BTS	-	£20,536	123.2	-	0.50	Funded
45	2009/10	132 Wandsworth Bridge Road	BTS	-	£6,241	32.1	-	0.13	Funded
46	2009/10	Energy Management System	BTS	£14,160	£319,292	1222	-	5.00	Funded
47	2009/10	Street lighting LED Flashing Beacons	David Kiteley	£1,720	£449	2.4	3.8	0.01	Funded
48	2009/16	Trimming Street lights	David Kiteley	£34,000	£12,476	66.9	3	0.27	Funded
49	2009/16	Electronic Control boxes	David Kiteley	£170,000	£24,953	133.9	7	0.55	Funded
		TOTAL		£1,333,912	£565,338	2,673		10.91	

4.2. Planned Projects

Table 6. Planned Projects

Ref	Year	Projects	Project Owner	Cap'l cost (£)	Annual Saving		Pay back	% CO2 saving on baseline total	Funding Source
					Fin (£)	CO ₂ (Tonnes)			
50-51	2010/12	Council Buildings - Boiler upgrades	BTS	£175,000	-	33.9	-	0.14	Funded
52-57	2010/12	Lighting Upgrades	BTS	£595,000	-	33.7	-	0.14	Funded
58-62	2010/13	Heating Upgrades	BTS	£325,000	-	23.6	-	0.1	Funded
63	2010/13	Installation of Automatic Meter Readers	BTS	£80,000	-	-	-	-	Funded
64	2010/13	Boiler Replacement	BTS	£150,000	-	33.9	-	0.14	Funded
65	2010/11	Building Closures - Bradmore centre	BTS	-	£4,223	21.23	-	0.09	Funded
66	2010/11	145 Hammersmith Road	BTS	-	£5,087	27.08	-	0.10	Funded
67	2011/12	1 Brackenbury Road	BTS	-	£2,241	11.3	-	0.05	Funded
68	2011/12	Barclay House	BTS	-	£18,240	104.4	-	0.43	Funded
69	2013/14	40a Cromwell Avenue	BTS	-	£6,383	31.33	-	0.13	Funded
70	2013/14	Building Schools for the Future	Andy Rennison	-	-	1691.5	-	6.92	Funded
71	2014/15	Cambridge House	BTS	-	£24,489	129.5	-	0.53	Funded
72	2014/15	77 Glenthorne road	BTS	-	£57,431	305.8	-	1.25	Funded
73	2015/16	Rationalisation of council office buildings	BTS	-	£325,976	1589.6	-	6.5	Funded
		TOTAL		£1,325,000	£444,070	4,037		16.52	

4.3. Near Term Projects

Table 7. Near Term Projects (Proposed Projects)

Ref	Year	Project	Project Owner	Cap'l Cost (£)	Annual Saving		Pay back	% CO2 saving on baseline total	Funding Source
					Fin (£)	CO ₂ (Tonnes)			

74	2010/11	Dynamic Half Hourly Billing	David Kiteley	-	£13,949	50.3	-	0.2	Funded
75	2010/11	Awareness raising campaign	Policy and Spatial Planning	£20,000	£87,707	441.9	3.2	1.81	EnvD
76-80	2010/11	Fulham Primary School	Andy Rennison	£39,400	£7,068	47.2	-	0.19	Primary Capital Programme (PCP)
81-84	2010/11	Melcombe Primary School	Andy Rennison	£60,457	£17,745	70.01	-	0.29	PCP
85-88	2010/11	New Kings Primary School	Andy Rennison	£40,769	£9,345	37.3	-	0.15	PCP
89-93	2010/11	All Saints Primary School	Andy Rennison	£39,312	£5,763	30.2	-	0.12	PCP
94	2011/12	77 Glenthorne road – Replace boilers	BTS	£21,000	£7,921	16.2	2.7	0.07	Projects without funding
95	2011/12	145 King Street – Voltage Optimisation	BTS	£14,931	£6,790	35	5	0.14	Projects without funding
96	2011/12	Linford Christie Stadium – Condensing Boiler	BTS	£39,935	£7,203	497.3	5.5	2.03	Projects without funding
97	2010/11	Staff Travel Plan	Highways and Engineering	N/A	N/A	N/A	N/A	N/A	Highways & Engineering
TOTAL				£275,804	£163,491	1,225.4		5.0	

4.4. Medium to Long Term Projects

In addition to the projects listed above other projects will come forward during the life of the Plan.

We have commissioned energy surveys of 50 council buildings, including schools to identify potential energy saving projects. When these surveys are complete they will provide the basis for further CO2 reduction projects.

Two voltage optimisation projects have been included in the near term projects, if these achieve the energy savings predicted then additional buildings where will be identified where the technology can be installed..

Four primary schools have been selected as pilot schools for a more extensive programme of primary school improvements. The pilot schools have been selected on the basis of

- their above average energy consumption for the size of school;
- and as examples of different types of school buildings.

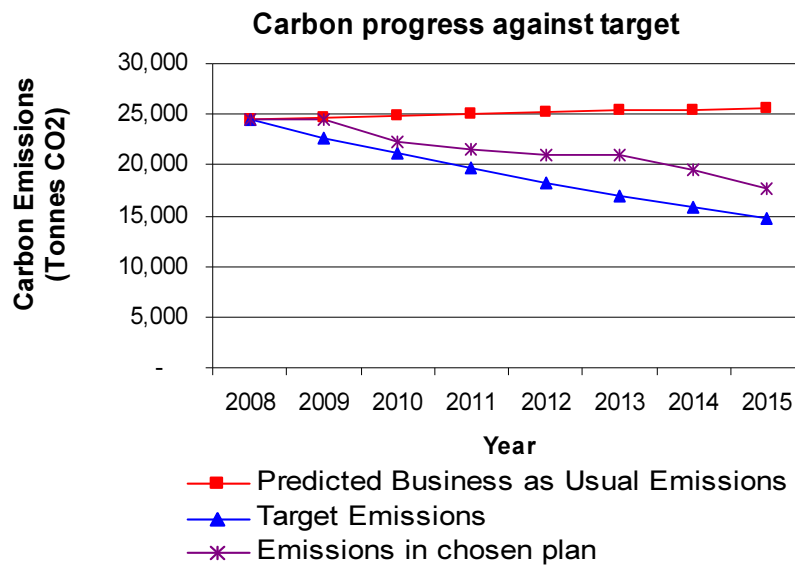
If these pilots achieve the projected energy savings and pay back periods, the programme could be rolled out to more primary and nursery schools. If an average of 0.1% carbon reduction is assumed per school, all the primary schools could contribute to a 4% reduction to the council's total carbon emissions.

Hammersmith Town Hall is a Grade 2 listed building which significantly increases the costs of implementing CO2 reduction projects. A number of projects have been implemented but to further reduce the energy use of the building will require major investment. The feasibility/viability of window repairs and draught stripping and/or window replacements should be assessed as part of the medium to long term projects, as well as the feasibility of replacing the electric heating system, particularly in relation to the wider project of rebuilding and rationalising council buildings.

4.5. Projected achievement towards target

The graph below shows that the existing, planned/funded and near term projects will achieve a saving of 32.4% on our 2008/09 carbon emissions compared to our target of 40% reduction. The implementation of the Carbon Management Plan will need to continue to bring forward viable medium to long term projects to meet the 40% emissions reduction target

Figure 10. Projection of impact of projects on meeting carbon target



5. Carbon Management Plan Financing

The financial benefits accruing to the council from implementing the Carbon Management Plan are significant. Energy costs are predicted to rise over the next few years. This has been effectively demonstrated by cost increases experienced by the council for gas and electricity during recent years. This rise, coupled with industry predictions of possible shortfalls in both gas and electricity supplies provides a significant incentive to reduce energy use. Increases in fossil fuel costs will also have a major effect on transport costs.

The investments identified in the Carbon Management Plan for the period 2009 – 2016 will mostly be recouped in less than 5 years from savings in reduced energy consumption. This will enable savings to be re-invested into more schemes for accelerated reduction of carbon emissions. In effectively managing carbon emissions, the council will mitigate some of the anticipated increases in energy costs. It also enables the council to consider borrowing to fund many of the initiatives. Projects identified within the Corporate Planned Maintenance Programme which are energy saving initiatives have been included in this Carbon Management Programme. These projects have had carbon and financial savings attributed, and so far consist of a cost of £2,439,032 (more may be added if future proposed schemes result in carbon savings).

Carbon reduction projects within the schools will be funded from the Primary Capital Programme. A further source of funding could be a dedicated Carbon Management fund which has yet to be approved for the use for projects identified. The remainder will be sought from a mixture of SALIX funding and council internal budgets. Salix Finance is a government-backed organisation that provides loans or

recycling funds to the public sector for energy efficiency projects. Recycling funds are funds that must be match funded by the recipient to create a ring-fenced. The combined fund must be spent on proven energy efficiency projects with a specified project payback period or a carbon cost of less than £100 per tonne covering the lifetime of the carbon reduction project. Financial savings made from Salix-funded projects are returned to the ring-fenced fund until the original project investment is repaid. Repayment of the original Salix funding is normally not required as long as the ring-fenced fund is still operational and financing new energy efficiency projects meeting the payback and lifetime carbon cost funding thresholds.

5.1. Benefits / savings – quantified and un-quantified

Table 8. Cost and Carbon Savings

	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16
Annual cost saving	£0	£534,145	£685,032	£727,427	£727,427	£1,209,561	£1,617,457
Annual tCO₂ saving	113	2,506	3,307	4,047	4,122	5,879	7,935
% of baseline CO₂ saving	0.4	10.2	13.5	16.5	16.8	24.1	32.4

5.2. Unquantified benefits:

- Meeting the priorities of the Community Strategy, particularly value for money services and creating a cleaner greener borough;
- Preparing for and ensuring compliance with CRC EES requirements by monitoring and reducing CO₂ emissions and reducing the council's expenditure in relation to purchasing carbon allowances and better performance and therefore a higher bonus or lower penalty payment
- Better performance in relation to our designated Local Area Agreement target NI 185 (reduction in Local Authority Authority CO₂ emissions) contributing to maintaining the council's excellent performance rating and the efficient use of resources,

5.3. Financial costs and sources of funding

Table 9. Costs and Sources of funding

	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	TOTAL
Annual costs:	£1,114,032	£219,880	£666,604	£807,532	£126,666	£0	£0	£0	£2,934,714
Committed funding:	£1,114,032	£219,880	£618,604	£731,666	£126,666	£0	£0	£0	£2,810,848
Projects without funding	£0	£0	£48,000	£75,866	£0	£0	£0	£0	£123,866

6. Actions to Embed Carbon Management in H&F

We recognise that to meet our 40% carbon reduction target will involve changes to the way that we manage energy and carbon emissions across the council. As part of the Carbon Trust programme, the importance of change management was stressed to ensure that carbon management is embedded across the council. At the start of the programme the Project Board and the Carbon Management Team ranked H&F's current performance at the beginning of the programme and where they expected the council to be at the end of the programme (Carbon Management Embedding Matrix Appendix A).

The key management actions to embed carbon management across the council are listed in the table below, together with year in which they should be implemented as part of this carbon management plan.

6.1. Corporate Strategy – embedding CO₂ saving across the council

To ensure that carbon reduction is a corporate priority and is embedded across the organisation the Climate Change Project Management Board will be responsible for managing the implementation of the following actions.

Table 10. Corporate Strategy

	Corporate Actions	Potential Start Date
Corporate Strategy	Carbon Management Plan adopted and CO ₂ reduction target adopted All departments responsible for meeting the carbon reduction target; CO ₂ targets included in departmental business plans; Action plans in place which are regularly reviewed;	2009/10 2011/12 2011/12 2011/12
Programme Management	EMT to review progress against targets quarterly and Cabinet on an annual basis; Regular diagnostic reports to departments; Progress against targets published externally	2011/12 2102/13 2011/12
Responsibility	Carbon management integrated in responsibilities of senior managers; CO ₂ reduction advice available to all departments and employees	2011/12 2010/11
Data Management	Regular monitoring and analysis of CO ₂ emissions/energy use for all council buildings and services;	2010/11
Communications and Training	All staff given CO ₂ /energy awareness training and included in new starter packs; Staff awareness monitored through surveys;	2011/12 2010/11
Finance and Investment	Co-ordinated financing for CO ₂ reduction projects via Climate Change Project Management Board; Funding principles and processes agreed; Appropriate external funding sought to progress CO ₂ reduction projects;	2011/12 2011/12 2010/11
Policy Alignment e.g. Procurement, OD, business travel	Comprehensive review of policies completed; Central team provide advice and review, when requested; Barriers to CO ₂ reduction routinely considered and removed;	2010/11 2011/12 2011/12
Engagement of Schools	A person with responsibility for CO ₂ reduction in schools; Schools CO ₂ reduction projects co-ordinated; A clear emphasis on energy/CO ₂ reduction in schools; A 'whole school' approach including curriculum and CO ₂ saving having a wider community impact;	2009/10 2010/11 2010/11 2011/12 2011/12

6.2. Programme Management – bringing it all together effectively

Programme management will continue to be the responsibility of the Climate Change Project Management Board. The re-organisation of the council's asset and facilities management teams and the appointment of EC Harris to implement projects, together with the proposed appointment of a carbon reduction manager will improve energy management in the council.

6.3. Responsibility – being clear that saving CO₂ is everyone's job

This is an important area to progress particularly with the Carbon Reduction Commitment Energy Efficiency Scheme starting in April 2010. It will be important to develop management systems that will make senior managers and individual schools responsible for contributing to meeting the CO₂ reduction target. The new energy management system and the installation of Automatic Meter Readers in all larger council buildings will enable more effective monitoring against targets but the feasibility of including carbon reduction targets in senior managers performance targets will need to be investigated.

We will initiate an internal awareness raising campaign when the CMP is signed off by Cabinet. Staff will be informed about the CMP and the carbon reduction target. The communication campaign will raise awareness and educate employees about the importance of carbon management.

6.4. Data Management – measuring the difference, measuring the benefit

The council has commissioned an energy management system which should be fully operational by the start of 2010/11. This energy management system provided by TEAM Bureau provides the council with a tool to report on energy use within its building portfolio. Centralising energy monitoring, consumption, bill validation and bill paying will allow reporting on all elements of utilities expenditure and usage. There is a programme of planned installation of automated meter reading (AMR) meters within council owned stock and larger schools which will significantly improve energy monitoring. In Phase 1 of the programme 53 electricity AMR's and 40 gas AMR's will be installed. Energy monitoring will in particular help facilitate behavioural changes concerning the use of energy. This will be communicated to staff every 6 months through a rolling internal communications campaign described below.

6.5. Communication and Training – ensuring everyone is aware

As there has been little awareness raising training it is important to assess employees understanding of the issues and their present behaviour so we can set a baseline against which improvements can be measured. Staff attitudes to carbon saving will be monitored via online surveys conducted on the intranet. These surveys will be specifically tailored to brief employees about the Carbon Management Plan and the council's carbon reduction targets. The survey will also test knowledge regarding energy saving, as well as highlighting the amount of savings each person could make by taking part in different tasks, competition will be encouraged between departments. The results will be evaluated and fed into a reporting programme which will be communicated to staff every 6 months.

We will also ensure that new starters with the council are also made aware of the importance of saving energy and of their individual responsibility.

The council will produce a Green Guide for local residents which will outline what actions the council is taking to reduce carbon emissions and will include information and actions that local residents can take to reduce their carbon emissions and energy bills.

6.6. Finance and Investment – the money to match the commitment

This element of embedding carbon management is covered in section five of this Plan.

6.7. Policy Alignment – saving CO₂ across your operations

The council already has carbon reduction policies in some areas such as planning and transport policies, staff travel policies, in the council's Green Procurement Code, but in other areas there is no policy alignment. We will therefore work with the Carbon Management Team to review other key policy areas to determine where strategies and policies should be better aligned with the Carbon reduction strategy.

6.8. Engagement of Schools – influencing Schools to reduce their carbon footprint

The Childrens Services Directorate is represented on both the Climate Change Project Management Board and the Carbon Management Team. Eight primary schools have taken part in a pilot study which involved an energy survey and the identification and quantification of carbon reduction projects. On the basis of these surveys and the need for schools that represent the variety of school buildings, four schools have been selected to implement carbon reduction projects. Providing this pilot is successful additional primary schools will be identified for the implementation of carbon reduction projects.

All secondary schools are participating in the Building Schools for the Future programme and as part of this programme schools are being demolished and/ or refurbished which will improve the energy performance of the buildings.

Groundwork West London has worked with three primary schools in the borough on "One World Schools" programme and this will be extended to more schools in 2010/11. This programme engages schools on a range of sustainability issues including energy and resource efficiency. The Urban Studies Centre also works with local schools on environmental education.

6.9. Engagement of your Suppliers – working with suppliers to reduce your carbon footprint

The Council is a signatory of the Mayor of London's Green Procurement Code. Through this code the council is committed to reducing environmental impacts through procurement. The council is aiming to engage our suppliers in year 2 of the Carbon Management Plan. We will be contacting them to collate and report energy costs and emissions to us within the next year. We have not included them this year within the programme as we wanted to get our own house in order first and then approach suppliers when we will have more resources as the preparation of this Plan will have been completed,

7. Programme Management of the CM Programme

7.1. The Programme Board – strategic ownership and oversight

Good programme management is fundamental to the success of the Carbon Management Plan to ensure that the Plan is implemented and that the necessary management changes take place and resources are made available to implement the Plan

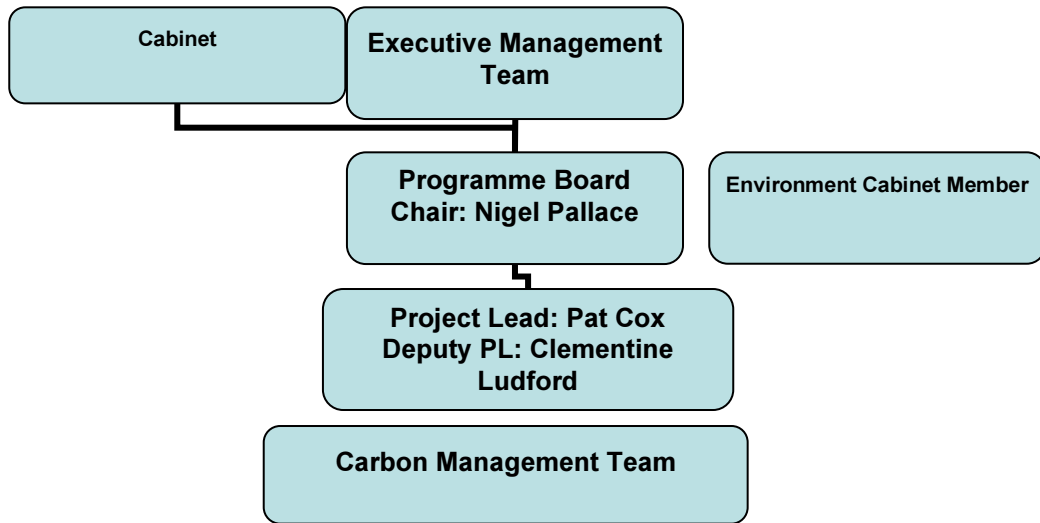
The Project Lead for the Carbon Management Plan is in the Policy and Spatial Planning Group in the Environment. It is the responsibility of the Programme Lead to work with project owners to help develop and support Carbon Reduction projects as well as drive forward the Programme as a whole.

The Programme Board for the Carbon Management Plan is Climate Change Project Management Board which was set up by the Executive Management Team to prepare a carbon management strategy and implementation plan and to take responsibility for the council's response to the wider issues of climate change.

The Climate Change Project Management Board meets at least once every two months and comprises;

- Chair: *Nigel Pallace, Director Environment Services*
- Finance Champion: *Jane West, Director Finance and Corporate Services*
- **Co-sponsors** to cover the main areas of the organisation carrying out CM work: Assistant Director Building and Property Management; *Andy Rennison, Assistant Director, Children's*

Services Department; Camilla Guage NHS H&F representative, Ben Coles Groundwork West



London

7.2. The Carbon Management Team – delivering the projects

The Carbon Management team is a group of key officers from across the council whose role it is to deliver the projects and improvements identified within this Carbon Management Plan.

Table 11. Carbon management Team

Role	Name and position in the LA
Project Leader	Pat Cox Head of Policy and Spatial Planning, Planning Division
Deputy Project Leader	Clementine Ludford Carbon Reduction Officer, Planning Division
Carbon Management Team members	Gary Ironmonger Principal Revenue Accountant Environment Finance
	Mike Cosgrave Practice Manager, Building Technical Services
	Chris Simpkins Works Manager mechanical and Electrical, Building Technical Services
	Mike Fatyga Building Engineering Services Manager, Building Technical Services
	Ed Parry Assistant Energy Manager, Building Technical Services
	Chris Bainbridge Head of Transport Planning

	Chris Bunting Community Sports Manager, Residents Services
	Susan Rossam Hammersmith & Fulham Bridge Partnership Service Director
	Becky Roberts Business Transformation -Communications
	Dave Newman Head of Waste Management Resident Services, Waste Recycling and Transport
	Roy Finan Transport Manager, Fleet Management
	David Kiteley Principle Street Lighting Engineer
	Howell Huws Head of Corporate Programmes
	Matt Dodds Business Delivery partner
	Jacqui Hudson, Head of IT Strategy
	Paul Hopkinson Director of Property Services, HMS Technical & Support Services Unit, H&F Homes
	Mick Stone Asset Management Officer, Children's Services
	Tracey Coventry Building Schools for the Future, Estates Strategy Lead
	Steve Foster, Principal Consultant Procurement and Contracts, Finance and Corporate Services
	HR representatives to be brought in as and when required

7.3. Succession planning for key roles

No formal succession planning has been undertaken but the programme will continue to be managed by the Climate Change Project Management Board working to their Terms of Reference.

7.4. Ongoing stakeholder management

Ongoing stakeholder management will be through the Project Management Board and the Executive Management Team of the council. The Carbon Management Team and Project Management Board will meet regularly to monitor implementation of the Plan.

7.5. Annual progress review

The progress of achieving the targets and the Carbon Management Plan will be reviewed by the Climate Change Project Management Board and EMT on an annual basis. This review will normally take place in July after the submission of NI 185 data and will aim to include:

- The progress towards meeting the target;
- The cost and benefits from the Plan;

- Financial savings;
- Update and roll forward the plan to include additional carbon reduction projects.



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