

Knowsley Council Carbon Management Programme

Carbon Management Plan (CMP) April 2011 to March 2016

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Foreword from the Chief Executive of Knowsley Council and Cabinet Member for Leisure, Community and Culture

At Knowsley Council we recognise that climate change is one of the greatest long term challenges facing the world today. A future of uncontrolled climate change will mean that flooding, heat waves and unpredictable weather will create upheaval in our borough, with already vulnerable residents most at risk.

Local authorities are at the forefront of the UK's efforts to cut carbon dioxide emissions locally. As a public sector body we have a position of influence and a 'duty of care' to set our own house in order and encourage the local community to follow in reducing their energy use and carbon emissions.

This plan sets out what action we are going to take to reduce carbon emissions from our own estate. Not only will this reduce our impact on climate change, but will save the Council money as we reduce the amount we spend on energy, fuel and waste. This is critical at the current time when we are facing significant cuts in spending. It will also reduce the financial burden of the Carbon Reduction Commitment, where from 2011 we will have to purchase allowances for every tonne of carbon that we emit from energy use.

Knowsley's Sustainable Community Strategy 2008 – 2023 includes a commitment to become a low carbon borough by reducing carbon emissions from households, businesses and transport. A separate Climate Change Strategy for the Borough is in development, and this Carbon Management Plan will form a key element.

Implementation of this plan and achieving the reduction target will be a significant challenge. Action and commitment from staff across the Council will be required to both implement the projects and change behaviours to ensure that we are operating as efficiently as possible. We are confident that this can be achieved.

Sheena Ramsey
Chief Executive Knowsley Council

Councillor Eddie Connor
Cabinet Member for Leisure, Community and Culture

Foreword from the Carbon Trust

Cutting carbon emissions as part of the fight against climate change should be a key priority for all public sector organisations. Carbon management is about realising efficiency savings, transparency, accountability and leading by example. The UK government has identified the public sector as key to delivering carbon reduction across the UK in line with its Climate Change Act commitments and the Local Authority Carbon Management Programme is designed in response to this. It helps organisations to save money on wasted energy and put it to better use in other areas, while making a positive contribution to the environment by lowering carbon emissions.

Knowsley Council partnered with the Carbon Trust on this programme in 2010 to realise the substantial carbon and cost savings. This Carbon Management Plan commits Knowsley Council to a target of reducing CO₂ by 22% by 2016 and underpins potential financial savings and cost avoidance to the organisation.

Public sector organisations can contribute significantly to reducing CO₂ emissions and improving efficiency. The Carbon Trust is therefore very proud to support Knowsley Council in their on-going implementation of carbon management.



Richard Rugg
Head of Public Sector, Carbon Trust



Management Summary

This Carbon Management Plan sets out our strategy for reducing our carbon emissions over the next 5 years. It is a key element of our Corporate Plan, where achieving a sustainable environment and developing a climate change action plan form part of the objective to achieve a ‘Safer and Stronger’ Knowsley. The Plan also supports the Council’s current Change and Transformation programme, a drive to achieve substantial financial savings to off set significant cuts in Government funding.

Carbon Reduction Targets

We have set 2 targets in this plan. **An interim target of a 22% reduction in carbon emissions from the 2009/10 baseline by April 2016.** We feel that the actions outlined in this plan can achieve this reduction. However, we are also confident that there are significant further opportunities that can be pursued, once decisions have been made about the future of buildings within the Council’s estate and available Government support for carbon reduction projects. We have therefore also set an **aspirational target of achieving a 41% reduction** over the same timescale. We will carry out further work during 2011/12 to progress this and update the Plan accordingly.

Baseline Emissions

Our baseline year for our carbon reduction target is 2009/10. In this year we emitted 30,329 Tonnes of CO₂ from energy, water and waste in our buildings and schools, from fleet transport and business travel. Figure 0.1 demonstrates that our highest emissions are from energy use in schools (41%) followed by energy use in corporate buildings (29%).

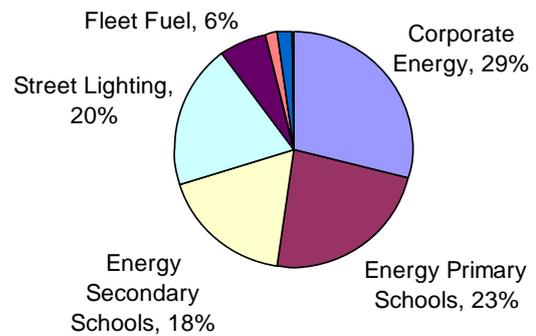


Figure 0.1 Baseline Carbon Emissions

Costs and Savings

Meeting our 22% reduction target by the end of year five will result in an annual reduction of CO₂ emissions of 6,672 tonnes and an estimated annual financial cost avoidance of £1.300m (cumulative £4.600m over the five year period). This is called the ‘Value at Stake’ (Figure 0.2 below – see section 3.4 for further explanation).

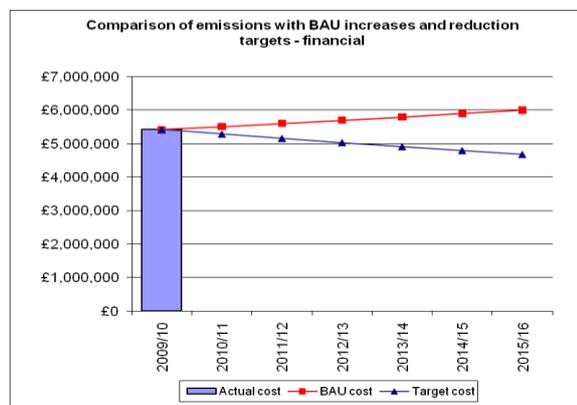


Figure 0.2. Financial Value at Stake – 22% reduction target

The costs of the Carbon Reduction Commitment (CRC) which will have an impact from 2011/12 onwards will add to this figure.

There are a number of projects identified within the plan that are already planned and funded. As such these costs have not been accounted for within the plan. The **new** projects put forward require an investment of £0.208m, of which £0.102m is yet to be identified for 2012/13 (see Section 5). Taking into account reduction in energy use and required CRC allowances, this initial investment would yield a potential net saving of £0.474m over a five year period from these new projects (Table 0.1).

Year	Estimated cost of new projects	Unallocated funding	Projected savings from reduced energy use	Projected savings from CRC allowances	Total net savings
2011/12	£0.081m	£0	£0.065m	£0.005m	-£0.011m
2012/13	£0.112m	£0.102m	£0.144m	£0.010m	£0.042m
2013/14	£0.005m	£0	£0.141m	£0.011m	£0.146m
2014/15	£0.005m	£0	£0.141m	£0.012m	£0.148m
2015/16	£0.005m	£0	£0.141m	£0.012m	£0.148m
TOTAL	£0.208m	£0.102m	£0.632m	£0.050m	£0.474m

Table 0.1 Estimated costs and savings from the NEW projects proposed as part of this plan

The implementation of **all** projects within this plan (**existing and new**) would result in a gross annual cost saving (at today's prices) of over £0.600m by 2015/16 and a total of £2.500m over the five year period. These figures exclude potential savings from the purchase of allowances under the CRC Scheme. It should be noted that as some of these financial savings result from existing projects, they may already have been accounted for in the Council's financial plans. Not all of these savings would directly benefit the Council as schools will benefit from a proportion of these savings and the benefit of reducing energy use in the learning centres will be dependant on the PFI contract. It should also be borne in mind that a proportion of the savings made may not be cashable as they may be required to off-set future budget pressures to the Council in terms of increased energy prices, which are difficult to predict (see Section 3.4).

The projects identified account for 5,320 tonnes of carbon savings which equates to 18% of our baseline and 80% towards our interim carbon reduction target of 22%. There are a number of actions with the 'Embedding Carbon Management' Section of this report that cannot be quantified but will lead to a reduction in carbon emissions and contribute to achieving the 22% target. In addition, work will continue to develop further projects which will ensure that our target is not only achieved but exceeded, to work towards our aspirational target of a 41% reduction. This will include:

- Development of further projects to reduce energy use in Council buildings, once the asset review is complete, using the Display Energy Certificate Advisory Reports as a basis for identifying improvements.
- Development of further projects to reduce energy use in schools, following confirmation of funding available for maintenance and refurbishment work.
- Development of ideas put forward in the 'Opportunities Workshop' that have not yet been taken forward as further feasibility work or research is required.
- Further brainstorming sessions with the Project Team and a staff suggestion scheme to identify additional opportunities that can be taken forward.
- Rationalisation of services and buildings as part of the Change and Transformation agenda which will lead to carbon reduction.

Carbon Management Projects

A series of strategic themes for the programme have been identified:

1. **Reducing energy use in council buildings** including schools and street lighting by improving energy efficiency and maximising the use of renewable energy
2. **Reducing water use in council buildings** including schools by improving water efficiency
3. **Reducing carbon emissions from fleet transport, staff travel and commuting** by reducing the need to travel, promoting sustainable forms of transport, encouraging smarter driving and procurement of efficient fleet vehicles
4. **Reducing the amount of waste produced in the Council** that is sent to landfill by promoting waste minimisation and improving recycling facilities
5. **Embedding carbon management across the Council** by linking carbon management to corporate strategy, business planning and performance management.

The projects identified in this plan relate to these strategic themes. They include reducing energy use in our buildings using technical solutions such as voltage optimisation or improving the energy efficiency of lighting, in addition to behaviour change schemes. There are also projects around reducing waste, fuel use in fleet transport and business mileage.

To successfully meet our carbon reduction target, we need to ensure that consideration of carbon emissions is embedded throughout the Council. Section 6 outlines the action that we will take to address this, including linking and aligning to corporate strategy and policy, ensuring effective programme management, data management, communication and training. Energy use in schools contributes to 41% of our baseline emissions and is a key area for engagement. For the Learning Centres, a Sustainable Energy Management Group has been established with Balfour Beatty Workplace and engagement with staff and pupils will take place via this group. For the primary and special schools, engagement will take place via the Schools Asset Management Working Group, whose remit includes energy conservation. An awareness-raising programme is also planned.

Management of the Programme

The Programme Board will provide strategic ownership and oversight of the programme. The Project Team will be responsible for delivering the projects. The Plan will be monitored quarterly and reviewed annually. The Board will report to the Senior Managers' Group, Economic Development and Environment Scrutiny Committee and Cabinet.

1. Introduction

This Carbon Management Plan (CMP) summarises the results of the work undertaken as part of the Carbon Trust's Carbon Management Programme during 2010/11 and sets out the action that we will take over the next five years to reduce our carbon emissions.

The document highlights the sources of Knowsley Council's carbon emissions, sets out our baseline figures for 2009/10, establishes a target to reduce emissions from this baseline and sets out a timetable of actions to achieve the desired reductions over a five year period. It also details the key internal management arrangements and reporting mechanisms that will be used to maintain the programme's presence and influence within the Council's corporate structure.

The benefits of a Carbon Management Plan are:

- Reduce costs of energy, water and fuel use, in addition to waste generation
- Demonstrate leadership to our partners and local community
- Protect the environment and limit our impact on climate change
- Comply with legislation such as the Carbon Reduction Commitment Energy Efficiency Scheme.

The programme commenced in May 2010, following a five step process as outlined in Figure 1.1 below:



Figure 1.1 – Carbon Management Programme 5 Step Process

A Programme Board and Project Team were established to drive the programme forward.

The Plan builds on existing work and commitments made by Knowsley Council. In 2000 Knowsley produced its first Environmental Policy, signed the Nottingham Declaration on Climate Change in 2007 and produced a Climate Change Strategy in 2008.

Action to reduce carbon emissions has been on-going for a number of years, for example energy efficiency schemes have been implemented, a Travel Plan is in place, recycling facilities have been extended and renewable energy is installed at the new Learning Centres. However, this Plan demonstrates that there are further opportunities that can be taken to make efficiency and carbon savings and reduce the financial burden of the Carbon Reduction Commitment, a Government scheme which the Council must participate in.

2. Carbon Management Strategy

This Section outlines our Carbon Management Strategy including our Vision, the context and drivers for Carbon Management, our targets and objectives and strategic themes.

Our Carbon Management Vision
By April 2016 Knowsley Council will be a resource efficient organisation with significantly lower carbon emissions. We will be a community leader in addressing climate change, setting an example that others will follow.

2.1 Context and drivers for Carbon Management

Climate change is one of the greatest long term challenges facing the world today. Local authorities are at the forefront of the UK's efforts to cut carbon dioxide emissions locally. Predicted effects of climate change in Knowsley include hotter/drier summers, warmer/wetter winters and more extreme weather events. This will lead to an increased risk of flooding, changes in our natural environment, increase risk of heat-related illnesses/deaths, transport disruption and infrastructure damage.

Measures to reduce carbon emissions by increasing energy efficiency will reduce energy costs, which is particularly important at this current time and for the future. Energy and fuel costs have seen a dramatic rise in recent years, with energy prices increasing by well over 50% since 2004. This trend is not expected to change and we must accept that the price we pay for our energy will continue to increase in the coming years.

The new coalition Government has confirmed its commitment to addressing climate change, confirming that it believes that climate change is one of the gravest threats we face, and urgent action at home and abroad is required. They have stated that they will implement a full programme of measures to fulfil their joint ambitions for a low carbon and eco-friendly economy.

Action by local authorities will be critical to the achievement of national carbon emission reduction targets and renewable energy commitments as defined by the Climate Change Act 2008. The UK has a long term goal to reduce CO₂ emissions by 80% by 2050.

This has created legislative drivers for local authorities which are expected to remain in place:

- Display Energy Certificates:** As of 1 October 2008 there is a legal requirement for all public sector buildings with a total useful floor area of over 1,000m², to show a Display Energy Certificate (DEC) in a prominent place, clearly visible to the public. Our energy performance is therefore on public display along with any improvements made. Section 3.3 contains more detail on the current DEC ratings of applicable council buildings, the majority of which fall within bands D and E.

Rating	Number of DEC's
A	0
B	0
C	7
D	33
E	30
F	9
G	2

- Carbon Reduction Commitment:** The Carbon Reduction Commitment (CRC) is a mandatory scheme for organisations whose total electricity consumption is greater than 6,000MWh or approximately £0.500m. If an organisation falls within the CRC scheme **all** electricity and fuel emissions from buildings are covered. The coalition Government have proposed changes to the original scheme, and participants will now be required to purchase allowances for the carbon

emitted in 2011/12 in the summer of 2012 at a cost of £12 per Tonne. The current estimated cost to the Council is £0.250m per annum.

Under the previous Government, performance in reducing carbon emissions from our estate was assessed using National Indicator 185 'CO₂ emissions from local authority operations'. The current Government have withdrawn all National Indicators and in their place, released a draft list of data that will be required to be submitted by local councils. Included within the list is carbon emissions from the local authority estate.

In October 2007, Knowsley Council signed up to the Nottingham Declaration on Climate Change. This includes a commitment to assess our carbon emissions and put a plan in place to reduce them. This Plan will assist with meeting this commitment. It will also support the Council's Environmental Policy which was produced in 2000 and updated in 2008 to fully reflect our commitments to addressing climate change.

Addressing climate change is also a key element of our Corporate Plan, where achieving a sustainable environment and developing a climate change action plan form part of the objective to achieve a 'Safer and Stronger' Knowsley. This Carbon Management Plan also supports the Council's current Change and Transformation programme, a drive to achieve substantial financial savings to off set significant cuts in Government funding.

At their first meeting, the Programme Board identified the following as the key main drivers for the Programme:

- Cost savings and managing risk of increasing energy prices
- Community leadership in reducing carbon emissions and responding to climate change
- Demonstrating best practice and supporting partners to develop carbon management plans.

2.2 Targets and objectives

We have set the following objectives for this Carbon Management Plan:

- To reduce carbon emissions significantly from energy and water use in council buildings (including schools), street lighting, fleet transport, staff travel, commuting and waste production;
- To make significant financial efficiencies from carbon reduction and manage the risk of increasing energy prices; and
- To demonstrate that the Council is leading by example and encourage partners and the local community to reduce their carbon emissions.

At the start of this programme, the Programme Board set an aspirational target of reducing CO₂ emissions from Council operations by 41% by 31st March 2016 from 2009/10 levels. The Project Team were tasked with exploring whether this level of carbon reduction was achievable. Given the current uncertainties around government funding and potential changes to the council's building portfolio (including schools), it has been difficult to identify sufficient projects to meet this carbon reduction target. We are therefore proposing to set an interim target of 22%, whilst retaining the 41% aspirational target over the five year period. Further projects will be developed in 2011/12 as the financial situation and changes to the council's buildings and services are confirmed.

The **interim target** for this Plan is:

Knowsley Council will reduce CO₂ emissions from Council Operations by 22% by 31st March 2016 from 2009/10 levels.

The **aspirational target** for this Plan is:

Knowsley Council will aim to reduce CO₂ emissions from Council Operations by 41% by 31st March 2016 from 2009/10 levels.

2.3 Strategic themes

The Plan has been developed around 5 strategic themes. Projects have been identified under each of these themes to reduce carbon emissions. Each theme directly supports our Environmental Policy objectives.

1. **Reducing energy use in council buildings** (including schools) and street lighting by improving energy efficiency and maximising the use of renewable energy
2. **Reducing water use in council buildings**, including schools by improving water efficiency
3. **Reducing carbon emissions from fleet transport, staff travel and commuting** by reducing the need to travel, promoting sustainable forms of transport, encouraging smarter driving and procurement of efficient fleet vehicles
4. **Reducing the amount of waste produced in the Council** that is sent to landfill by promoting waste minimisation and improving recycling facilities
5. **Embedding carbon management across the Council** by linking carbon management to corporate strategy, business planning and performance management.

3. Emissions Baseline and Projections

In 2009/10 Knowsley Council was responsible for the emission of 30,329 tonnes of carbon

3.1 Scope

The scope of the Carbon Management Plan is based on the former National Indicator 185 (CO₂ reduction in local authority operations), which required all local authorities to collect data and report CO₂ emissions from the following key areas:

- Energy use in Council buildings and schools
- Energy use in street lighting
- Fleet transport
- Staff business travel
- Associated emissions from outsourced services.

However, there are other areas of the council's operations that generate CO₂ emissions, and it was decided that the following areas should also be included:

- Waste generated from Council buildings, primary and secondary schools
- Water use in Council buildings and primary schools.

Staff commuting and water use in the Learning Centres were not included in the baseline assessment due to issues with the availability of data. The Carbon Management Plan will seek to address CO₂ emissions from these areas; however, they will not count towards the reduction target.

3.2 Baseline

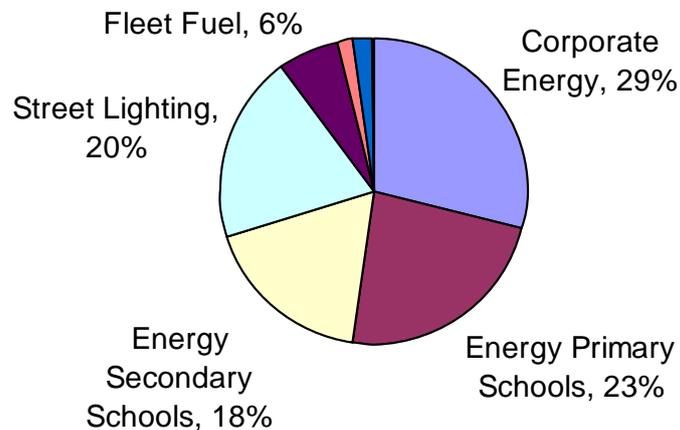
To measure our progress in reducing CO₂ emissions, it is essential to establish a comprehensive and accurate baseline. The Carbon Trust provided a carbon management tool to collate data on carbon emissions. The baseline year is 2009/10 against which performance for subsequent years will be measured. Table 3.2.1 below gives a summary of the baseline emissions for 2009/10.

Source of carbon emission	CO ₂ Emissions (Tonnes)	% of total
Energy use in corporate buildings	8,946	29
Energy use in primary and special schools	6,950	23
Energy use in secondary schools and Learning Centres	5,322	18
Energy use in street lighting	6,114	20
Fuel use in fleet transport	1,796	6
Business miles travelled in own vehicles	607	2

		working with
Staff rail travel	26	0.1
Air travel	6	0.02
Waste to landfill from corporate buildings, Schools and Learning Centre	481	1.6
Water use in corporate buildings and primary schools	80	0.3
TOTAL	30,329	

Table 3.2.1 – Carbon emissions for baseline year 2009/10

Figure 3.2.1 below shows that the highest proportion of emissions comes from energy use in buildings, with corporate buildings contributing 29% and schools 41%.



(NB Staff Travel 2.1%, Waste 1.6%, Water 0.3%)

Figure 3.2.1 – Carbon emissions for baseline year 2009/10

Data on the Council's carbon emissions has been collated from a range of sources across the organisation. In some cases, estimations or assumptions have been used. The data sources used are outlined in Appendix A and the conversion factors outlined in Appendix B.

3.3 Display Energy Certificates

The Energy Performance of Buildings Regulations introduced the requirement for Display Energy Certificates (DECs) in public buildings by 1st October 2008. From this date, a DEC has to be prominently displayed in non-domestic public buildings with a gross floor area over 1,000 m² (this is the area measured from the internal face of external walls). Each building is graded according to the score it receives for its energy use. The grades range from A to G, with A being a highly efficient building and G being a highly inefficient building.

Knowsley Council have 81 buildings, which require DECs. The grades of these buildings are outlined in Table 3.3.1 and Figure 3.3.1 below. Our highest rating is a C with the majority of our buildings graded as D (average performing building) and E (below average performing building). The projects included within this plan will assist with improving the rating of the Council's buildings.

Rating	Number of DECs
A	0
B	0
C	7
D	33
E	30
F	9
G	2

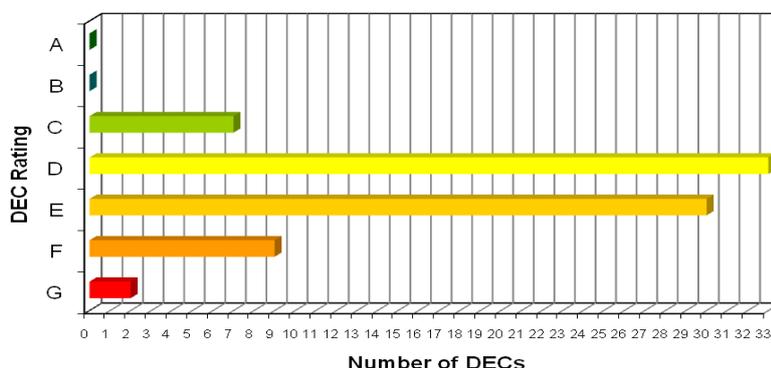


Table 3.3.1 - Summary of DEC ratings

Figure 3.3.1 – Summary of DEC ratings

3.4 Projections and Value at Stake

Not taking action to reduce our carbon emissions by 22% could cost a cumulative £4.6m by the end of 2015/16

In this section, the ‘Value at Stake’ is estimated. To calculate the Value at Stake, the financial cost to the Council of doing nothing to reduce our emissions over the next five years is estimated (Business as Usual Scenario). This is compared to the potential reduced costs by achieving the carbon reduction targets set out in this plan (Reduced Emission Scenario). The difference between the two scenarios is the Value at Stake.

Business as Usual Scenario (BAU)

Establishing baseline data allows further analysis into what the future costs and emissions could be if no carbon management measures are put in place and the council operates on a business as usual (BAU) scenario over the next five years. The analysis of future costs and carbon emissions in this section are based on the following assumptions:

- When looking at ‘Business as Usual’ scenarios, an element is built in to allow for the fact that an organisation will grow on an annual basis and energy use and emissions will automatically increase as a result of this. However, given the current economic situation, it was felt that growth was highly unlikely. As a result it has been assumed that if we ‘did nothing’ our carbon emissions would remain the same over the next five years.
- Energy prices fluctuate and it is anticipated that they will increase over the next five years. It is not known what the actual increases will be. The Government’s Department of Energy and Climate Change (DECC) produce national energy cost projections that have been used to estimate the impact of increasing energy prices over the next five years (<http://www.decc.gov.uk/en/content/cms/statistics/projections/projections.aspx>). In June 2010, DECC predicted for a ‘central scenario’ energy prices would increase by 1.7% based on inflation and price changes. This figure has been used in the scenarios below to give an indication of the Value at Stake.

Reduced Emissions Scenario (RES)

A reduced emissions scenario is an estimation of the emissions and costs when the council is operating with reduced carbon emissions. Two reduced emission scenarios have been calculated, outlining the

potential impact of achieving the interim target of a 22% carbon reduction, and one for achieving the aspirational target of 41%. This is to illustrate the potential carbon and cost savings of both scenarios.

Value at Stake (VAS)

The Value at Stake is the carbon and cost difference between a Business as Usual Scenario and a Reduced Emissions Scenario.

Carbon Value at Stake

Figures 3.4.1 and 3.4.2 below demonstrate the **carbon** Value at Stake based on reduced emissions scenarios of 22% (current target) and 41% (aspirational target).

The red line (squares) shows Business as Usual, the blue line (triangles) shows the Reduced Emission Scenario.

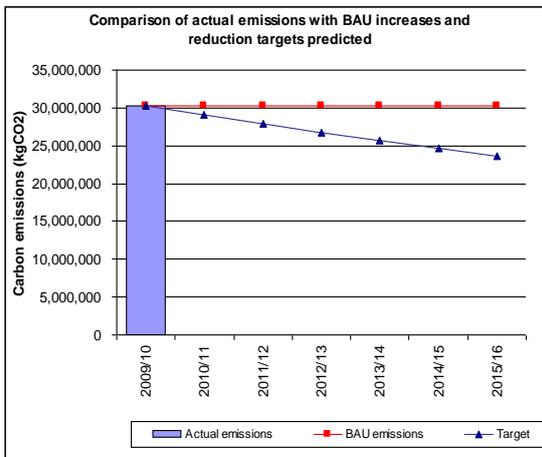


Fig 3.4.1. 22% reduction target

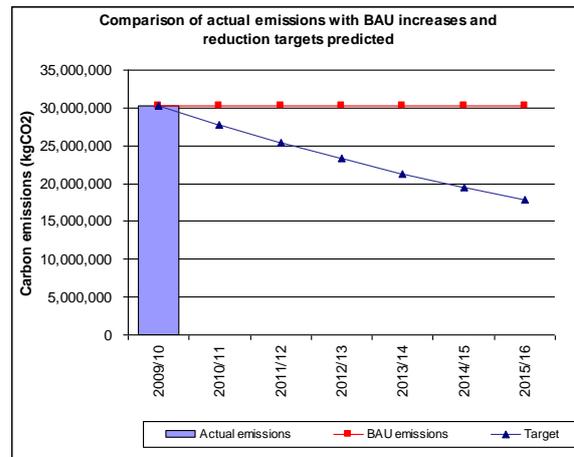


Fig 3.4.2 41% reduction target

Based on a reduced emissions scenario of 22% by 2015/16, the carbon value at stake is 6,672 tonnes of CO₂. With a reduced emissions scenario of 41% the carbon value at stake is 12,435 tonnes of CO₂ for the same period.

Financial Value at Stake

Figures 3.4.3 and 3.4.4 below demonstrates the **financial** Value at Stake based on reduced emissions scenarios of 22% (current target) and 41% (aspirational target). The red line (squares) shows Business as Usual, the blue line (triangles) shows the Reduced Emission Scenario.

Knowsley Council Carbon Management Programme
Carbon Management Plan

working with

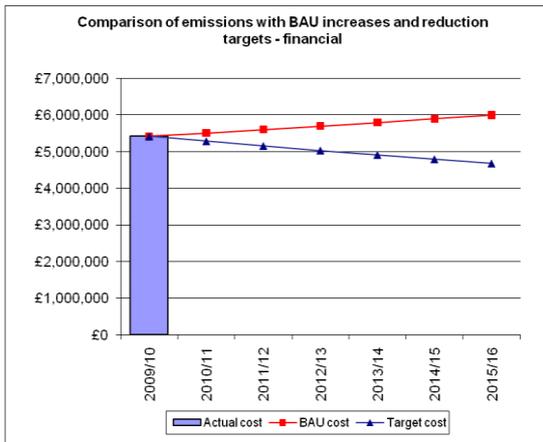


Fig 3.4.3. 22% reduction target

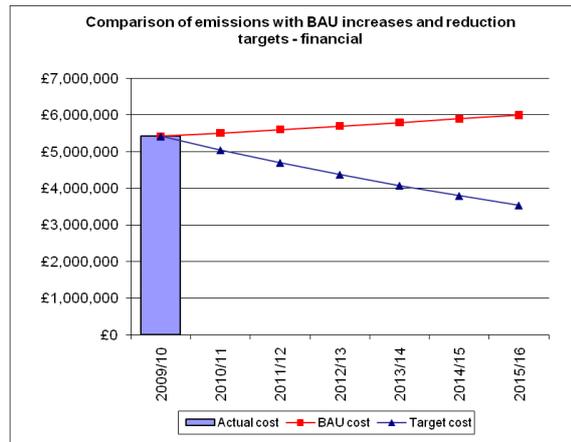


Fig. 3.4.4 41% reduction target

The graphs show that if energy prices were to increase by 1.7% and we do nothing to reduce our carbon emissions, by 2015/16 our total cost of energy use in the Council could have increased to almost £6m .

By reducing our emissions by 22% our energy costs in 2015/16 could be reduced to £4.7m (£3.5m for a 41% reduction). This is a potential saving in that year of £1.3m (£2.5m for a 41% reduction) and represents the Value at Stake.

It should be noted that the graphs do not take into account the cost of implementing the carbon management projects, which means some initial capital will be needed in order to invest to save and annual revenue will be required to maintain the savings. In addition the graphs partially demonstrate cost avoidance (e.g. the reductions are offset against future increases).

4. Carbon Management Projects

This section lists the individual actions and projects that will be undertaken. Existing projects were identified by the Project Team and the potential for new projects explored at an ‘Opportunities Workshop’.

This programme builds on previous progress that the Council has made in respect of carbon management which is evidenced by the number of existing projects identified.

The ‘Opportunities Workshop’ generated many new ideas, however, given the current uncertainties around potential changes to the council’s building portfolio (including schools), it has not been possible to put forward a full range of projects at this time. Potential opportunities will be explored further as the position is clarified, and it is anticipated that additional carbon reduction projects will be put forward in 2011/12. This plan will be updated accordingly.

The tables below indicate the project reference (allocated as projects are entered in the Project Register), the officer who is leading on implementation, the costs of the project, financial and carbon savings. An indication of the percentage that the project contributes towards our carbon reduction target of 22% (N.B. this is different to the percentage of the baseline) is also given. Dates specified in the column indicated as ‘Year’ relate to the first full year that the project will deliver the CO2 savings indicated and is not the date of implementation of the project.

Further information in relation to the projects and assumptions made in quantifying carbon reduction is available in the Project Definition Forms at Appendix D.

4.1 Existing projects

These projects have already been implemented as new projects in 2010/11 and will therefore make carbon savings against the baseline year of 2009/10. The costs of these existing projects have not been included for the following reasons:

- Funding for the projects has already been allocated
- For a number of the projects, the costs do not solely relate to the cost of carbon reduction and it has not been possible to calculate the additional cost of the carbon saving feature.

The potential annual savings have been calculated by the Project Register Tool based on the predicted reduction in energy/fuel use. As these are existing projects these potential savings may already have been taken into account in the Council's financial planning.

Ref	Project	Lead	Cost		Annual Saving		Pay back	% of Target	Year
			Capital	Operational	Financial	CO ₂			
001	Recycling in Council office buildings	John Eves DNS	N/A	N/A	N/A	52	N/A	0.78%	2011/12
002	Fleet replacement	Damian Walshe DNS	N/A	N/A	£867	2	N/A	0.03%	2011/12
003	IT infrastructure optimization strategy*	Graham Powell DCR	N/A	N/A	£96,410	586	N/A	8.78%	2011/12
004	Fleet fuel management	Richard Jones DNS	N/A	N/A	£7,829	18	N/A	0.27%	2011/12
005	Smarter driver training	Patience Jones DCR	N/A	N/A	£9,346	21.5	N/A	0.32%	2011/12
026	Staff Travel Plan	Patience Jones DCR	N/A	N/A	£33,287	69	N/A	1.03%	Full savings by 2015/16
014	New SUN IT servers	Sam Maiden DCR	N/A	N/A	£1,007	6	N/A	0.09%	2011/12
015	Voltage optimization Yorkon Building	Andy Lawman DCR	N/A	N/A	£1,367	8	N/A	0.12%	2011/12
016	Condensing boilers at Central and Eastcroft Primary Schools	Ian Lynch DCR	N/A	N/A	£1,897	14	N/A	0.22%	2011/12
017	Double glazing at former St Edmund Arrowsmith School	Ian Lynch DCR	N/A	N/A	£897	7	N/A	0.10%	2011/12
018	Roof insulation at Huyton Library	Ian Lynch DCR	N/A	N/A	£310	2.4	N/A	0.04%	2011/12

Ref	Project	Lead	Cost		Annual Saving		Pay back	% of Target	Year
			Capital	Operational	Financial	CO ₂			
020	Installation of AMR across Council sites	John Burns DCR	N/A	N/A	N/A	Supports carbon reduction from awareness raising	N/A	N/A	2011/12
021	Automatic shutdown of PC's	Wayne Wiegand DCR	N/A	N/A	N/A	Supports carbon reduction from awareness raising	N/A	N/A	2011/12
	Total				£153,217	786	N/A	11.8%	

*This project is under review and the projected savings are subject to change

4.2 Planned / funded projects

The following projects are definitely planned and funding has been identified from budget allocations already set aside to address climate change. This includes the Environmental Sustainability Service revenue budget in addition a one-off allocation.

Ref	Project	Lead	Cost		Annual Saving		Pay back	% of Target	Year
			Capital	Operational	Financial	CO ₂			
006	Smarter driver training for new starters	Patience Jones DCR		£270	£3,115	7		0.11%	Annually 2011 - 2016
007	Voltage optimization corporate sites Phase 1	John Burns DCR	£66,004	£0	£26,062	158	2.5 yrs	2.37%	2012/13
010	Staff awareness raising programme	Natalie Naisbitt DNS		£2,000	£35,309	240	0 yrs	3.59%	Annually 2011 - 16
011	Green Champions programme	Natalie Naisbitt DNS		£1,000	£20,126	137	0 yrs	2.05%	Annually 2011 - 16
012	Primary Schools awareness raising programme	John Eves DNS		£2,000	£25,426	172	0 yrs	2.57%	Annually 2011 - 16
013	Lighting upgrade Yorkon building	John Burns DCR	£3,400	£0	£1,048	6	3.2 yrs	0.10%	2012/13
032	Sustainable Energy Management Plan Centres for Learning	Paul Mullen DCFS	£0	£0	£132,460	827	0 yrs	12.39%	Programme complete by April 2016
022	Lighting upgrade Huyton	John Burns DCR	£490	£0	£180	1	2.7 yrs	0.02%	2012/13

Ref	Project	Lead	Cost		Annual Saving		Pay back	% of Target	Year
			Capital	Operational	Financial	CO ₂			
	Library								
023	Lighting upgrade Stretton Way	John Burns DCR	£6,317	£0	£696	4	9 yrs	0.06%	2012/13
	Total		£76,211	£5,270	£244,422	1552		23.26%	

4.3 Near term projects

These are projects that are planned to be taken forward, however funding has not yet been allocated. This will be addressed in 2011/12.

Ref	Project	Lead	Cost		Annual Saving		Pay back	% of Target	Year
			Capital	Operational	Financial	CO ₂			
008	Street lighting replacement PFI	Susan Callister DRES	N/A		£201,311	1223	N/A	18.33%	Programme complete by April 2016
024	Voltage optimization phase 2	John Burns DCR	£104,472		£22,714	138	4.6 yrs	2.07%	2013/14
025	Lighting upgrade Page Moss Library	John Burns DCR	£2,163		£1,134	7	1.9 yrs	0.10%	2013/14
	Total		£106,635		£225,159	1368		20.5%	

4.4 Projected achievement towards target

Energy / Carbon saving from building closures and new build

In addition to the above projects, a programme of building closures, refurbishments and new builds is underway and this will impact on our carbon emissions. The reduction in carbon emissions from building closures has to be balanced against the additional carbon emissions from new buildings. For example Huyton and Scotchbarn Leisure Centres will close but will be replaced by new leisure facilities in Huyton and Prescot. Therefore, in order to calculate the impact that this will have, it is necessary to establish the predicted energy use of the new facility. The situation is the same for the primary schools, where a number are closing but being replaced with new centres.

To incorporate this within the plan, the predicted energy use and carbon emissions from new builds has been estimated using data supplied in the Renewable Energy Statements required as part of the planning process or from floor area and benchmark figures where this was not available.

For the refurbishment of the Huyton Municipal Complex it is understood that three buildings will close and staff relocated to the refurbished buildings. The energy use from these building closures has therefore been counted as carbon savings. No data is available in relation to the predicted energy use of the refurbished buildings. Although more staff will be accommodated at the Huyton Municipal Complex, which could increase emissions from those buildings, this will be offset by the energy saving measures incorporated within the refurbishment. For example, the seven storey Municipal building will

now include energy efficient lighting, condensing boilers and voltage optimisation. In the absence of any data on the predicted energy use of the re-furbished building, it has been assumed that the energy use will be unchanged.

The table below indicates the predicted reduction in carbon emissions from known building closures:

Predicted CO ₂ from new buildings April 2011 – March 2013	1366 Tonnes
Predicted reduction in CO ₂ from known closures	2988 Tonnes
Total predicted reduction in CO ₂ emissions	1622 Tonnes
% reduction against target	24%

Summary of estimated CO₂ reduction from all projects

The table below summarises the carbon savings identified from all projects and building closures to date and progress towards achieving the target reduction:

Project	Estimated CO ₂ reduction (Tonnes)	% of baseline	% of target
Existing Projects	786	2.6%	11.8%
Planned/funded Projects	1552	5.1%	23.3%
Near Term Projects	1368	4.5%	20.5%
Building closures	1622	5.4%	24.3%
TOTAL	5328	18%	80%

The table shows that we have so far identified carbon savings of 5,328 Tonnes, which equates to 18% of our baseline and 80% towards our interim carbon reduction target of 22%.

There are a number of actions within the 'Embedding Carbon Management' Section of this report that cannot be quantified but will lead to a reduction in carbon emissions and contribute to achieving the 22% target. In addition, work will continue to develop further projects which will ensure that our target is not only achieved but exceeded. The Council has an aspirational target of achieving a 41% reduction in carbon emissions from the 2009/10 baseline by March 2016.

5. Carbon Management Plan Financing

The new projects identified to date as part of this programme require an estimated £0.208m of funding to yield savings of £0.474m over the five year period of the plan. Of this sum, £0.342m would be savings to the Council, and £0.132m to schools (this includes savings from purchases of allowances under the Carbon Reduction Commitment which have been calculated using an estimate of £12 per Tonne of Carbon).

There is an existing £0.010m revenue budget for climate change work which can be allocated to this programme, in addition to a one-off allocation of £0.040m already agreed. An additional £0.031m will be provided from the Council's Transformation Fund as the projects are 'invest to save', in order to fund all of the projects put forward for 2011/12.

The predicted cost of new projects put forward for 2012/13 currently total approximately £0.112m. This again could be partially funded by the existing climate change revenue budget of £0.010m, but there would be a shortfall of £0.102m.

External funding will be investigated during 2011/12 as Government funding streams for energy efficiency measures are clarified (for example Salix Funding and the Green Investment Bank).

If external support does not become available, the Council will consider re-establishing the Energy Recycling 'Invest to Save' fund. Requests for additional funding will be supported by a business case demonstrating that the projects require an additional investment to yield savings over future years, with payback periods of no more than 5 to 6 years. The Project Sponsor and Financial Sponsor will be responsible for presenting the business case for future investment in energy reduction, as agreed by the Programme Board.

Projects currently identified for 2012/13 to 2015/16 can be funded from the £0.010m climate change revenue budget.

5.1 Assumptions

The calculations for the financial savings are based on the following assumptions:

- Cost of grid electricity is 9 pence per kWh (Price charged 2010 – 11)
- Cost of natural gas is 2.42 pence per kWh (Weighted average of prices charged 2010 – 11)
- Cost of petrol is £1.17 per litre (<http://www.whatprice.co.uk/petrol-prices/> December 2010)
- Cost of diesel is £1.19 per litre (<http://www.whatprice.co.uk/petrol-prices/> December 2010)
- Financial savings from staff travel have been calculated using the costs of petrol and diesel and not the costs associated with travel allowances. The financial savings from this source will therefore be underestimated in this plan.

5.2 Benefits / savings

The table below is generated from the Carbon Trust's Project Register Tool. It indicates the potential **gross** annual savings from all projects outlined in Chapter 4 of this Plan, arising from a reduction in energy and fuel use. Potential savings from a reduction in the number of carbon allowances required under the Carbon Reduction Commitment is not taken account in the figures presented. **It should be noted that the savings identified below include those from existing and planned projects (for example IT server virtualisation, street lighting replacement), where the savings have already been accounted for in the Council's financial plans.**

It should also be borne in mind that a proportion of the savings made may not be cashable as they may be required to off-set future budget pressures to the Council in terms of increased energy prices, which are difficult to predict (see Section 3.4).

	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16
Annual cost saving	£5,832	£238,830	£503,336	£559,164	£591,036	£622,799
Annual CO ₂ saving	0	12	1,455	3,032	3,353	3,706*
% of target achieved	0%	22%	45%	50%	53%	56%*

*An additional CO₂ reduction of 1622 Tonnes (24% of target) is expected from proposed building closures over the five year period.

Separate calculations have been undertaken to establish the potential savings from the new projects identified to date as part of this programme. These projects require an estimated £0.208m of funding to yield savings of £0.474m over the five year period of the plan. Of this sum, £0.342m would be savings to the Council, and £0.132m to schools (this includes savings from purchases of allowances under the Carbon Reduction Commitment).

Unquantified benefits from the Programme include improving the Council's reputation in terms of carbon reduction and leading by example to encourage partners, local businesses and residents to reduce their own carbon emissions. We will also be reducing our environmental impact in accordance with our Environmental Policy and doing our bit to address climate change and minimise our use of natural resources.

5.3 Additional resources

The projects identified within this Plan will be implemented by the staff resources within each relevant Directorate of the Council as identified in Section 4 above.

5.4 Financial costs and sources of funding

The table below indicates the cost of the new projects that are proposed in Section 4 of this plan. **The cost of projects that have been implemented in 2010/11 or are already planned with funding identified (as outlined in Section 4.1) have not been included here.**

figures in £ 1000's	2011/12	2012/13	2013/14	2014/15	2015/16
Annual costs:					
Total annual capital cost	£76k	£107k	£0	£0	£0
Total annual revenue cost	£5k	£5k	£5k	£5k	£5k
Total costs	£81k	£112k	£5k	£5k	£5k
Committed funding:					
Committed annual capital	£76k	£5k	N/A	N/A	N/A
Committed annual revenue	£5k	£5k	£5k	£5k	£5k
Total funded	£81k	£10k	£5k	£5k	£5k
Unallocated funding					
Unallocated annual capital	£0	£102k	£0	£0	£0
Unallocated annual revenue	£0	£0	£0	£0	£0
Total unfunded	£0	£102k	£0	£0	£0

The committed funding is sourced from a budget held by the Directorate of Neighbourhood Services (DNS) for climate change work (£0.010m annual and £0.040m one-off allocation), in addition to an allocation in 2011/12 of £31k from the Council's Transformation Fund.

6. Actions to Embed Carbon Management in Our Organisation

To successfully meet our carbon reduction target, we need to ensure that consideration of carbon emissions is embedded throughout the Council.

The Carbon Trust have provided a self-assessment matrix so that we can benchmark our progress in this area (Appendix A). Scores in the matrix range from one (start level) to five (mature). An assessment has been undertaken and the table below indicates Knowsley's current scores, with justification regarding how we have met the required criteria:

Element	Current Level	Criteria met
Corporate Strategy	3	<ul style="list-style-type: none"> Vision for CO₂ reduction stated and published (Nottingham Declaration 2007) Climate Change Strategy produced 2008
Programme Management	2	<ul style="list-style-type: none"> Ad hoc reviews of progress of carbon management actions
Responsibility	3	<ul style="list-style-type: none"> Climate Change and Sustainability Manager in place Key individuals have responsibility for carbon reduction (Energy Officer, Travel Plan Officer, Environment Officers) Service Directors in DNS and DCR sponsor Carbon Management and CRC and are actively engaged
Data Management	4	<ul style="list-style-type: none"> Annual collation of CO₂ emissions for buildings, street lighting, transport/travel Data internally reviewed
Communication & Training	2	<ul style="list-style-type: none"> Ad-hoc awareness campaigns and provision of information to staff on carbon management
Finance & Investment	3	<ul style="list-style-type: none"> Financing of carbon reduction is ad-hoc Finance represented on Programme Board
Policy Alignment	2	<ul style="list-style-type: none"> Sustainability Impact Assessment of key policies undertaken which includes climate change impacts
Engagement of Schools	2	<ul style="list-style-type: none"> Ad-hoc projects in schools have taken place to specifically reduce energy and CO₂ emissions

Knowsley is aiming to achieve Level five in all areas within the five year lifespan of this plan. Actions to achieve this in each area are outlined in the following sections. Progress will be monitored on a quarterly basis by the Project Team and Programme Board and reviewed annually.

6.1 Corporate Strategy – embedding CO₂ saving across our Local Authority

Current Level: 3

Ref	Action	Level	Lead	Timescale
E01	Ensure that the Carbon Management Plan sets a top level target, is endorsed by the Senior Managers Group, approved by Cabinet and publicised to staff	4	Project Sponsor DNS	July 2011
E02	Include the Council's commitment to carbon management and reduction target within the next revision of the Corporate Plan	4	Environmental Sustainability DNS	April 2011

			Corporate Policy CED	
E03	Review Carbon Management Plan annually	4	Environmental Sustainability DNS	April 2012 and annually thereafter
E04	Disaggregate top level target, allocate to Directorates across the organisation and incorporate into Business Plans	5	Environmental Sustainability DNS Corporate Policy CED	April 2012
E05	Review progress with implementation of this action plan to embed carbon management	5	Environmental Sustainability DNS	July 2011 Quarterly thereafter

6.2 Programme Management – bringing it all together effectively

Current Level: 2

Ref	Action	Level	Lead	Timescale
E06	Ensure that the Project Team continues to meet regularly to review progress on actions, meeting targets and identification of new opportunities	3	Environmental Sustainability DNS	July 2011 Quarterly thereafter
E07	Ensure that the Programme Board continues to meet regularly to review progress, remove blockages, and report progress to the Senior Management Group (SMG)	4	Project Sponsor DNS	July 2011 Quarterly thereafter
E08	SMG review progress against targets on quarterly basis	5	Project Sponsor DNS	July 2011 Quarterly thereafter
E09	Cabinet review progress against targets on an annual basis	5	Project Sponsor DNS	April 2013 Annually thereafter
E10	Regular diagnostic reports provided to Directorates	5	Environmental Sustainability DNS	July 2012 Quarterly thereafter
E11	Progress report compiled annually which includes progress against targets and published via the Council web-site	5	Environmental Sustainability DNS	Sept 2013 Annually thereafter

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

Current Level: 3

Ref	Action	Level	Lead	Timescale
E11	Integrate Carbon Management into Job Descriptions of Senior Managers	4	Human Resources DCR Environmental Sustainability DNS	April 2012
E12	Set up Green Champion network to engage staff	4	Environmental Sustainability DNS	Sept 2011
E13	Integrate Carbon Management into Job Descriptions of all staff	5	Human Resources DCR Environmental Sustainability DNS	April 2012
E14	Review current Performance Review and Development (PRD) documentation with respect to carbon management and investigate feasibility of setting carbon saving objectives for staff	5	Human Resources DCR Environmental Sustainability DNS	April 2012
E15	Provide central CO ₂ reduction advice via the Environmental Sustainability Service, signposting to other services (e.g. Asset Management, Travel Planning, Waste etc.) where appropriate.	5	Environmental Sustainability DNS	April 2011
E16	Ensure that Green Champions lead local action on carbon reduction	5	Environmental Sustainability DNS	April 2012

6.4 Data Management – measuring the difference, measuring the benefit

Current Level: 4

Ref	Action	Level	Lead	Timescale
E17	Set up systems for the regular collation of CO ₂ emissions for all sources including energy use, transport, waste, water	5	Environmental Sustainability DNS	April 2011
E18	Install AMR in all Council buildings to improve accuracy of energy data	5	Asset Management DCR	April 2011
E19	Investigate feasibility of obtaining external verification of data	5	Environmental Sustainability DNS Asset Management	April 2013

Ref	Action	Level	Lead	Timescale
			DCR	
E20	Set target reductions in each area covered by the plan	5	Environmental Sustainability DNS	April 2011

6.5 Communication and Training – ensuring everyone is aware

Current Level: 2

Ref	Action	Level	Lead	Timescale
E21	Provide training to key groups of staff e.g. cleaners, security	3	Facilities Management DNS Environmental Sustainability DNS	April 2012
E22	Undertake environmental audits of Council buildings with Green Champions and Site Managers, develop site action plans and signpost support	3	Environmental Sustainability DNS Asset Management DCR	April 2012
E23	Communicate Carbon Management successes to external community via press releases, residents newsletters, Council web-site, Carbon Trust and Liverpool City Region Climate Change Network	4	Communications CED Environmental Sustainability DNS	April 2011 onwards
E24	Develop a staff carbon management communications programme including staff attitude surveys and awareness raising via the Council's intranet site, internal newsletters and Chief Executive's Briefing	4	Communications CED Environmental Sustainability DNS	April 2011
E25	Review and update information supplied on Knowsley's 'low carbon culture' at induction training and the Knowsley Manager's Course	5	Human Resources DCR Environmental Sustainability DNS	April 2012
E26	Issue joint carbon management communications with key partners where appropriate	5	Communications CED Environmental Sustainability DNS	April 2012

6.6 Finance and Investment – the money to match the commitment

Ref	Action	Level	Lead	Timescale
E27	Carbon Management projects submitted to Programme Board to ensure co-ordinated financing for carbon management	4	ALL	Ongoing
E28	Agree funding principles and processes for carbon management projects	4	Knowsley Solutions DCR	April 2011
E29	Finances committed for 2011/12 projects	4	Project Sponsor DNS Knowsley Solutions DCR	March 2011
E30	Finances committed for future years projects 1 year ahead	4	Knowsley Solutions DCR	March 2012 onwards
E31	Investigate and identify sources of external financing as funding becomes available (e.g. Salix, Green Investment Bank)	4	Knowsley Solutions DCR Environmental Sustainability DNS	April 2011 onwards
E32	Ensure finances are committed for 2+ years of programme, once available council resources are confirmed and sources of external funding are accessible	5	Knowsley Solutions DCR	April 2012
E33	Routinely obtain external funding, once sources are known	5	Knowsley Solutions DCR Environmental Sustainability DNS Lynn Anders	April 2012 onwards
E34	Investigate feasibility of setting up a ring-fenced 'invest to save' fund for carbon reduction initiatives	5	Knowsley Solutions DCR	March 2011

6.7 Policy Alignment – saving CO₂ across our operations

Current Level: 2

Ref	Action	Level	Lead	Timescale
E35	Undertake a review of the Policy Library to ensure that it is complete and up to date, identify and review key policies with respect to carbon management	3	Corporate Policy CED (& Policy Leads) Environmental Sustainability DNS	Sept 2011
E36	Obtain approval for changes proposed to key policies as a result of the review that will result in carbon savings	3	Corporate Policy CED (& Policy Leads) Environmental Sustainability DNS	Apr 2012

Ref	Action	Level	Lead	Timescale
E37	Complete comprehensive review of all council policies	4	Corporate Policy CED (& Policy Leads) Environmental Sustainability DNS	Sept 2012
E38	Incorporate requirement to assess carbon implications when new policies are developed or reviews take place via the Policy Protocol	5	Corporate Policy CED (& Policy Leads) Environmental Sustainability DNS	March 2012
E39	Incorporate a paragraph within the Council's Standard Report Template to ensure that the carbon implications of decisions are addressed	5	Environmental Sustainability DNS	March 2011
E40	Environmental Sustainability Service provide advice on carbon management aspects of policies and review when requested	5	Environmental Sustainability DNS	In place
E41	Programme Board consider barriers to CO2 reduction routinely at quarterly meetings and take action to remove.	5	Project Sponsor DNS	Quarterly

6.8 Engagement of Schools – working with Schools to reduce our carbon footprint

Current Level: 2

Ref	Action	Level	Lead	Timescale
E42	Identify key teams/personnel with responsibility for leading on carbon reduction in schools	3	Asset Management DCR Environmental Sustainability DNS	April 2011
E43	Develop schools carbon reduction projects for 2011/12 taking into account the situation regarding Government funding, required essential maintenance and planned maintenance	3	Asset Management DCR	April 2011
E44	Engage with education stakeholders via the Schools Asset Management Working Group and the Learning Centres Energy Efficiency Group	4	Asset Management DCR Environmental Sustainability DNS Future Schooling DCFS	Oct 2010 – Mar 2016

Ref	Action	Level	Lead	Timescale
E45	Undertake an awareness-raising programme in schools, develop the Eco-schools programme and work with schools to identify carbon reduction projects	4	Asset Management DCR Environmental Sustainability DNS Future Schooling DCFS	April 2011 – Mar 2016
E46	Identify potential funding sources for carbon management projects within schools	4	Asset Management DCR Environmental Sustainability DNS Future Schooling DCFS	April 2011 – Mar 2015
E47	Ensure wide engagement of schools in carbon reduction via existing fora, awareness-raising programmes and Eco-schools programme, including integrating carbon management into the curriculum and demonstrating a wider community impact (for example ensuring that the programme extends to community use of the schools and pupils continuing with low carbon behaviours at home)	5	Asset Management DCR Environmental Sustainability DNS Future Schooling DCFS	April 2011 – Mar 2016

6.9 Engagement of Suppliers

Suppliers and contractors will be engaged on carbon management via the tender process and when contracts are renewed. They will be made aware of the Council's carbon reduction target and will be required to demonstrate how they will contribute to achieving this target, where relevant. Requirements will then be managed via contract management meetings. Guidance to officers on the tender process will be updated accordingly to address this.

7. Management of the Carbon Management Programme

To ensure success of the Carbon Management Programme and achievement of our carbon reduction target, good programme governance is essential. This includes:

- Senior, strategic ownership of the carbon reduction target
- Bringing together a diverse set of projects from across the council in one place
- A Board with oversight of the Programme to aid delivery by the identification and removal of blockages
- Project owners coming together to ensure coherence and co-ordination of carbon reduction activity

This section of the plan outlines how this will be achieved.

7.1 The Programme Board – strategic ownership and oversight

The following officers sit on the Programme Board which is chaired by John Flaherty, Service Director for Neighbourhood Delivery:

Name	Position	Area	Role
John Flaherty	Service Director Neighbourhood Delivery	Neighbourhood Delivery	Project Sponsor and Chair of the Project Board
Councillor Connor	Cabinet Member for Leisure Community and Culture	Leisure, community and culture (including climate change)	Councillor Sponsor
Rupert Casey	Head of Sustainable Resources	Waste management, fleet management, environmental sustainability	Deputy Project Sponsor and Chair of the Project Team
Natalie Naisbitt	Climate Change and Sustainability Manager	Climate change	Project Leader
Kelly Paes	Environment Officer	Climate Change	Deputy Project Leader
Lynn Anders	Knowsley Solutions Business Advisor	Finance	Finance Representative
Philip Monaghan	Head of Environmental Sustainability	Climate change, green spaces and Environmental behaviour change	Co-sponsor
Ian Capper	Head of Asset Management	Asset management – corporate and schools, energy conservation, construction procurement	Co-sponsor
Robert O'Connor	Senior Project Management	Asset management - Leisure	Co-sponsor
Shamim Chaudhry	Organisational Development Manager	Staff travel, HR	Co-sponsor
Wendy Clarke	Corporate Procurement Manager	Corporate procurement	Co-sponsor

Name	Position	Area	Role
Sue Callister	PFI Project Manager	Street lighting	Co-sponsor
Andrew Garden	Head of IT	IT	Co-sponsor
Cathy Sheel	DNS Communications Manager	Internal communications	Co-sponsor

The Board will meet quarterly and will:

- Review progress of projects
- Review progress towards achieving the carbon reduction target
- Address overall risks to the programme
- Identify and remove blockages
- Provide a quarterly report of progress to the Senior Managers' Group

7.2 The Carbon Management Team – delivering the projects

The following officers sit on the Project Team which is chaired by Rupert Casey, Head of Sustainable Resources:

Name	Position	Area	Role
Rupert Casey	Head of Sustainable Resources	Waste management, fleet management, environmental sustainability	Deputy Project Sponsor and Chair of the Project Team
Natalie Naisbitt	Climate Change and Sustainability Manager	Climate change	Project Leader
Kelly Paes	Environment Officer	Climate Change	Deputy Project Leader
Philip Monaghan	Head of Environmental Sustainability	Climate change, green spaces and Environmental behaviour change	Team member
John Burns	Senior Energy Officer	Energy management	Team member
Patience Jones	Travel Plan Co-ordinator	Staff travel	Team member
Richard Jones	Fleet and Logistics Utilisation Manager	Fleet transport	Team member
Stewart Martin	Corporate Procurement Officer	Corporate Procurement	Team member
Lewis Worthington	Highways Contract Manager	Street lighting	Team member
Anthony Holland	Contract Management Officer	Learning Centres	Team member
Graham Powell	IT Infrastructure Delivery Manager	IT	Team member
Cathy Sheel	DNS Communications	Communications	Team member

Name	Position	Area	Role
	Manager		
John Eves	Environment Strategy Manager	Recycling	Team member

The Team will meet at least quarterly prior to the Board meeting and more regularly if deemed necessary by the Programme Board or Project Leader. The role of the team will be to:

- Review progress of projects
- Review progress towards achieving the carbon reduction target
- Identify blockages
- Bring forward further carbon reduction opportunities
- Provide a quarterly report of progress to the Programme Board

7.3 Succession planning for key roles

In the event that the Project Sponsor or Project Leader are no longer able to continue their roles within the programme:

- The Sponsor role will be taken over by the Head of Sustainable Resources who is currently the Deputy Sponsor and actively engaged in the programme
- The Project Leader role will be taken over by the Deputy Project Leader with support from the Head of Environment Sustainability

The Project Sponsor will take responsibility for ensuring continuity of key roles.

7.4 Ongoing stakeholder management

There are a number of stakeholders that we will need to be kept informed of progress with the programme. This is set out in the table below:

Individual or Group	Their interest or issues	Means of Communication
Borough Treasurer	Cost / budgets Efficiency savings	Quarterly reports to the Senior Managers Group
Senior Managers Group	Financial efficiencies Environmental Performance Reputation	Quarterly reports to the Senior Managers Group
Economic Development and Environment Scrutiny Committee	Environmental Performance Reputation	Reports to Scrutiny Committee

Individual or Group	Their interest or issues	Means of Communication
Travel Plan Steering Group	Reducing business miles Encouraging more forms of sustainable travel to/from/during work	Project Leader to give updates and feedback when appropriate to Steering Group.
CRC working group	CO2 reduction in terms of energy from buildings. Efficiency Savings Compliance/impact on CRC	Project Leader to give updates and feedback when appropriate to CRC Group.
Out sourced services	Satisfying the needs of the council to retain future contracts Reputation	Meetings with service providers
Communications Team	Communicating environmental messages to staff and community	Communications Manager to give updates and feedback when appropriate.
Residents	Their surrounding environment. How the council is leading by example, reducing environmental impact and providing value for money.	Residents will be kept informed of the programme through media releases such as press articles and updates on the Knowsley Council website.
Partners/businesses	Council leading by example and providing support to partners and other businesses to develop their own Carbon Management Plans	Via LSP and development of the LSP Climate Change Strategy, Knowsley Business Environment Club
Knowsley NHS	Good corporate citizenship strategy Shared building Shared travel plan Shared resources (staff)	Project Leader to give updates and feedback when appropriate to NHS Good Corporate Citizenship Group.

The Project Leader will review that the required stakeholder engagement is taking place on a quarterly basis and report to the Programme Board.

7.5 Annual progress review

A report of progress on project implementation, financial savings and progress towards meeting the carbon reduction target will be prepared by the Project Leader in May each year for presentation to the Project Team in June, and the Programme Board the same month.

The annual report will be presented to the Senior Managers Group and Cabinet, and made available to the public on request and via the Council's web-site.

The following performance indicators will be used:

- % of projects planned for that year completed
- % CO2 reduction in each area

Knowsley Council Carbon Management Programme
Carbon Management Plan

- Cost savings
- No. of new projects identified



working with

Appendix A: Sources of Baseline Data

Energy use in corporate buildings, primary, special and secondary schools

Energy data obtained for 2009/10 was provided by the Council's Corporate Energy Team. The primary source of this data was energy bills, but this was supplemented with information from other energy management tools, such as eco warrior and automatic meter readings (AMR's) where data was deemed to be inaccurate or not available from energy bills. For a small number of sites estimates were made using averages from previous years data or using benchmark figures.

Energy use in learning centres

Knowsley's Learning Centres were opened in 2009 and 2010 to replace the existing secondary schools under the Building Schools for the Future programme. The carbon emissions identified in the baseline as 'secondary schools' are a combination of energy data from the old secondary schools up to their point of closure and energy data from the new Learning Centres from their point of opening. The data obtained was supplied by Balfour Beatty Workplace who are responsible for the management of the buildings. Some estimates have been used due to some initial problems with billing and the AMR's.

Energy use in street lighting

This data was collated from energy bills supplied by the Corporate Energy Team.

Fuel use in fleet transport

The Council has a fuelling station at the Huyton depot site, where fuel is supplied to fleet vehicles and equipment. Data on fuel use was supplied by the Transport Section's fuel management records. In addition, the council has an account with Shell UK so that drivers located in other parts of the borough are able to purchase fuel without returning to the depot. In this case, fuel use was derived from invoices provided by Shell. Vehicles are also hired and on occasions are supplied with fuel. The amount of fuel used was taken from invoices supplied by the hire company.

Business miles travelled in own vehicles

An electronic system called E-Claims is used within the council to collate information on vehicle data and business mileage undertaken by staff. The Corporate Procurement Team provide annual reports from this system for use in the baseline tool. Inaccuracies may occur where staff submit late claims or fail to make claims for the mileage undertaken.

Staff rail and air travel

The majority of business rail travel is booked through an external travel company. Monthly reports are supplied to the Council's Procurement Team and data such as rail mileage is extracted from this. Local rail travel is not included in the baseline as staff purchase tickets themselves and are reimbursed via the E Claims system. It is not currently feasible to extract this specific data from the E Claims system.

Air travel is booked through the same company as rail travel. Monthly reports are supplied to the councils procurement team and a website called www.webflyer.com is used to calculate the air mileage from the journeys undertaken.

Waste to landfill from corporate buildings, schools and learning centres

There are no weighing mechanisms on the council's fleet vehicles, so a variety of calculations have been undertaken in order to calculate a CO₂ estimation for waste to landfill. The calculations have been based on the capacity of the bin available and the frequency of the collections. In order that the calculations can be made, it is necessary to use an average weight of waste from a 1100 litre bin. The average weight figure used is 45.77kg from HEEIP (Higher Education Environmental Improvement Performance).

Water use in corporate buildings and primary schools

Data on water use is obtained through the councils utility bills, which are collected by the Corporate Energy Team. As with energy data, there may be some billing inaccuracies. Water data from Learning Centres is not included in the baseline data due to issues with the data.

Appendix B: Conversion Factors

The conversion factors used are those supplied by the Carbon Trust in the baseline tool and although based on factors supplied by Defra/DECC may differ slightly from their current published figures.

The tables below indicate the conversion factors used for calculations within this Carbon Management Plan.

Energy type	Conversion factor (kgCO ₂ e/kWh)	Reference / note
Electricity (grid)	0.54667	Defra / DECC Sept 2009 Table 3c
Natural gas	0.18396	Defra / DECC Sept 2009 Table 1b (gross CV basis)
Gas oil	0.27652	Defra / DECC Sept 2009 Table 1b (gross CV basis)

Conversion factors energy use in buildings

Fuel or vehicle type	Units	Conversion factor (net kgCO ₂ e/unit specified)	Reference
Petrol	litres	2.3307	Defra / DECC, 2009, Table 1a (net CV basis)
Diesel	litres	2.6694	Defra / DECC, 2009, Table 1a (net CV basis)
Small petrol car, up to 1.4 litre engine	km	0.1820	Defra / DECC, 2009, Table 6b
Medium petrol car, from 1.4 - 2.0 litres	km	0.2149	Defra / DECC, 2009, Table 6b
Large petrol cars, above 2.0 litres	km	0.2976	Defra / DECC, 2009, Table 6b
Average petrol car	km	0.2078	Defra / DECC, 2009, Table 6b
Small diesel car, up to 1.7 litre or under	km	0.1528	Defra / DECC, 2009, Table 6c
Medium diesel car, from 1.7 to 2.0 litre	km	0.1894	Defra / DECC, 2009, Table 6c
Large diesel car, over 2.0 litre	km	0.2576	Defra / DECC, 2009, Table 6c
Large petrol hybrid car	km	0.2260	Defra / DECC, 2009, Table 6d
Rail - national rail	Passenger km	0.0611	Defra / DECC, 2009, Table 6k
Air - long haul international, average	Passenger km	0.1133	Defra / DECC, 2009, Table 6l
Air - short haul international, average	Passenger km	0.0992	Defra / DECC, 2009, Table 6l
Refuse trucks or road sweepers (rigid size)	litres	2.6694	Defra / DECC, 2009, Table 1a (net CV basis)
Gardening and Grounds Maintenance - petrol	litres	2.3307	Defra / DECC, 2009, Table 1a (net CV basis)
Gardening and Grounds Maintenance - Diesel	litres	2.6694	Defra / DECC, 2009, Table 1a (net CV basis)

Conversion factors - transport

Emission type (unit)	Factor	CO2 units
Waste collected (tonnes)	447	kgCO2e/tonne
Water consumed (m3)	0.404	kgCO2/m3

Conversion factors – waste and water

Appendix C: Carbon Management Matrix – Embedding

	CORPORATE STRATEGY	PROGRAMME MANAGEMENT	RESPONSIBILITY	DATA MANAGEMENT	COMMUNICATION & TRAINING	FINANCE & INVESTMENT	POLICY ALIGNMENT *	ENGAGEMENT OF SCHOOLS
Mature 5	<ul style="list-style-type: none"> Top level target allocated across organisation CO₂ reduction targets in Directorate Business Plans Action plans in place to embed strategy. Progress routinely reviewed 	<ul style="list-style-type: none"> Cabinet / SMT review progress against targets on quarterly basis Regular diagnostic reports provided to Directorates Progress against target published externally 	<ul style="list-style-type: none"> CM integrated in responsibilities of senior managers CM part of all contracts / Ts & Cs Central CO₂ reduction advice available Green Champions leading local action groups 	<ul style="list-style-type: none"> Regular collation of CO₂ emissions for all sources Data externally verified Monitoring & Targeting in place for: <ul style="list-style-type: none"> buildings street lighting transport/travel 	<ul style="list-style-type: none"> All staff given formalised CO₂: <ul style="list-style-type: none"> induction and training communications Joint CM communications with key partners Staff awareness tested through surveys 	<ul style="list-style-type: none"> Finance committed for 2+yrs of Programme External funding being routinely obtained Ring-fenced fund for carbon reduction initiatives 	<ul style="list-style-type: none"> CO₂ friendly operating procedure in place Central team provide advice and review, when requested Barriers to CO₂ reduction routinely considered and removed 	<ul style="list-style-type: none"> A 'whole school approach' including curriculum Mature programme of engagement in place CO₂ saving in schools having a wider community impact
4	<ul style="list-style-type: none"> CO₂ reduction commitment in Corporate Strategy Top level targets set for CO₂ reduction Climate Change Strategy reviewed annually 	<ul style="list-style-type: none"> Sponsor reviews progress and removes blockages through regular Programme Boards Progress against targets routinely reported to Senior Mgt Team 	<ul style="list-style-type: none"> CM integrated in to responsibilities of department heads Cabinet / SMT regularly updated Staff engaged though Green Champion network 	<ul style="list-style-type: none"> Annual collation of CO₂ emissions for: <ul style="list-style-type: none"> buildings street lighting transport/travel Data internally reviewed 	<ul style="list-style-type: none"> All staff given CO₂ reduction: <ul style="list-style-type: none"> induction communications CM matters – communicated to external community 	<ul style="list-style-type: none"> Co-ordinated financing for CO₂ reduction projects via Programme Board Funding principles and processes agreed Finances committed 1year ahead Some external financing 	<ul style="list-style-type: none"> Comprehensive review of policies complete Lower level policies reviewed locally Unpopular changes being considered 	<ul style="list-style-type: none"> A clear emphasis on energy / CO₂ reduction in schools Council activities fully co-ordinated Broad set of education stakeholders engaged Funding in place
3	<ul style="list-style-type: none"> Vision for CO₂ reduction clearly stated and published Climate Change Strategy endorsed by Cabinet and publicised with staff 	<ul style="list-style-type: none"> Core team regularly review CM progress: <ul style="list-style-type: none"> actions profile & targets new opportunities 	<ul style="list-style-type: none"> An individual provides full time focus for CO₂ reduction Key individuals have accountability for carbon reduction Senior Sponsor actively engaged 	<ul style="list-style-type: none"> Collation of CO₂ emissions for limited scope i.e. buildings only 	<ul style="list-style-type: none"> Environmental / energy group(s) given ad hoc: <ul style="list-style-type: none"> training communications 	<ul style="list-style-type: none"> A view of the cost of CO₂ reduction is developing, but finance remains ad-hoc Some centralised resource allocated Finance representation on CM Team 	<ul style="list-style-type: none"> All high level and some mid level policies reviewed, irregularly Substantial changes made, showing CO₂ savings 	<ul style="list-style-type: none"> A person has responsibility for Schools CO₂ reduction Schools CO₂ reduction projects co-ordinated Ad-hoc funding
2	<ul style="list-style-type: none"> Draft Climate Change Policy Climate Change references in other strategies 	<ul style="list-style-type: none"> Ad hoc reviews of CM actions progress 	<ul style="list-style-type: none"> CO₂ reduction a part-time responsibility of a few department champions 	<ul style="list-style-type: none"> No CO₂ emissions data compiled Energy data compiled on a regular basis 	<ul style="list-style-type: none"> Regular awareness campaigns Staff given CM information on ad-hoc basis 	<ul style="list-style-type: none"> Ad hoc financing for CO₂ reduction projects 	<ul style="list-style-type: none"> Partial review of key, high level policies Some financial quick wins made 	<ul style="list-style-type: none"> Ad-hoc schools projects to specifically reduce energy / CO₂
Start 1	<ul style="list-style-type: none"> No policy No Climate Change reference 	<ul style="list-style-type: none"> No CM monitoring 	<ul style="list-style-type: none"> No recognised CO₂ reduction responsibility 	<ul style="list-style-type: none"> No CO₂ emissions data compiled Estimated billing 	<ul style="list-style-type: none"> No communication or training 	<ul style="list-style-type: none"> No specific funding for CO₂ reduction projects 	<ul style="list-style-type: none"> No alignment of policies for CO₂ reduction 	<ul style="list-style-type: none"> No CO₂ / energy reduction policy for schools

Appendix D: Definition of Projects

Project:	Recycling in Council Office Buildings
Reference:	CMP/001
Owner (person)	John Eves/Ian Capper
Department	Directorate of Neighbourhood Services/Directorate of Corporate Resources
Description	Delivery of centralised recycling and waste stations across council offices to facilitate both increased recycling and waste reduction as well as a reduction in cleaning requirements.
Benefits	<ul style="list-style-type: none"> • Financial savings: £60,000 annual cleaning efficiency target + £6,661 carbon saving (based on £51 per tonne of CO₂) associated in waste reduction/recycling • Payback period: 1 year to realise full cleaning efficiency savings • CO₂ Emissions reduction: 52 tonnes of CO₂ • 0.17% reduction from the baseline emissions
Funding	<ul style="list-style-type: none"> • Project cost - £0.016m in capital costs • Operational costs – Waste collection costs will be contained within existing budget provision • Source of funding: £0.005m funding from ReAL network, remaining £0.011m from cleaning efficiency savings •
Resources	<ul style="list-style-type: none"> • Delivery of recycling collection services from 17 offices will be undertaken through current resources.
Ensuring Success	<ul style="list-style-type: none"> • Key success factors – Clear communications to staff to ensure engagement and participation. The system is monitored. Cleaning and building staff provide an effective delivery service • Principal risks: Staff don't engage, the system is not managed effectively.
Measuring Success	<ul style="list-style-type: none"> • Tonnes/kg diverted for recycling • The number of bin "lifts" will be monitored over a 2 month period once in situ. This will then be equated to an average tonnage based on typical bulk densities.
Timing	<ul style="list-style-type: none"> • Milestones / key dates e.g. <ul style="list-style-type: none"> ○ start date: Roll out starts August 2010 ○ completion date (when it will deliver savings): Roll out will be completed by October 2010
Notes	Estimated that 117 Tonnes of waste will be diverted from landfill, based on the bin capacity and frequency of collection. Average weight of 45.77kg used for 1100 litre bin (ref: Higher Education Environmental Improvement Performance)

Project:	Street scene fleet replacement
Reference:	CMP/002
Owner (person)	Damian Walshe
Department	Directorate of Neighbourhood Services
Description	<p>The council currently hire vehicles in order to deliver street scene services operations. It is proposed that the council purchase their own vehicles as follows;</p> <ul style="list-style-type: none"> • 39 x 3.5 tonne tipper vehicles • 7 x 2.0 tonne transporter trailers. <p>The new fleet will have a range of specifications in order to reduce CO2 emissions. These will include speed limiters, and will have optimum gear change indicators.</p> <p>Operating the proposed new fleet will reduce the CO2 emissions as an improved mpg rating will result in less fuel being used.</p>
Benefits	<p>Financial savings: The cost of implementing the new fleet will be greater than the current budget and therefore it is unlikely that there will be any significant financial savings once all elements of the project have been taken into consideration.</p> <p>Predicted annual CO₂ Emissions reduction: 2 tonnes 0.007% reduction from the baseline</p>
Funding	The project is already scheduled to go ahead and funding for the project has already been approved.
Resources	The project will be delivered within existing resources. The fleet and logistics team will lead and implement the programme of new fleet.
Ensuring Success	The project has been implemented
Measuring Success	If the mpg is increased through the environmental specifications of the vehicles, then the fuel used for the vehicles should be reduced. This can be measured annually by comparing 2010/11 fleet fuel usage against fuel used for fleet in 2009/10.
Timing	The completion date will be mid November 2010

Project: Reference:	IT Infrastructure Optimisation Strategy (NB. Project under review and savings projected below are subject to change) CMP/003
Owner (person)	Sam Maiden/ Graham Powell
Department	Directorate of Corporate Resources
Description	<p>Server consolidation (virtualisation) represents an opportunity to dramatically reduce the number of computers required to deliver the Council's IT systems. In addition to modernising, streamlining and simplifying the management of the Council's Data Centre, implementation will have the additional benefits of significantly reducing the power consumption associated with the operation of the server estate and thus also reducing related costs and CO₂ emissions.</p> <p>In summary, virtualisation of the Council's IT server infrastructure will embrace the ethos of server consolidation and by utilising the latest technologies will consolidate in excess of 164 physical servers onto 13 'virtual server hosts'. The majority of the physical servers will then be decommissioned but a small number will be retained as not all servers/applications are suitable for this technology.</p>
Benefits	<ul style="list-style-type: none"> • Cost avoidance of circa £720k (on a TCO of circa £530k compared with a physical replacement cycle over 5 years) • Payback period: 2 years • CO₂ Emissions reduction: circa 583 Tonnes of CO₂ • Reduced electricity consumption due to the reduced number of servers and reduced cooling requirements for the remaining servers • 1.9% reduction from the baseline
Funding	<ul style="list-style-type: none"> • Project cost: Circa £530k • Operational costs: annual hardware maintenance £37k (total for years 4 & 5, years 1 – 3 included in purchase cost) • Source of funding: internal within existing budgets previously used for physical server replacements
Resources	<ul style="list-style-type: none"> • Project will be delivered within current resources
Ensuring Success	<ul style="list-style-type: none"> • Project is two thirds complete and is well on the way to delivering the benefits identified above but full power savings will only be maximised once all redundant servers are fully decommissioned. • Principal risks: financial - doesn't achieve resource savings anticipated due to exchange rate and pricing fluctuations. Technical - performance issues on virtualized servers.
Measuring Success	<ul style="list-style-type: none"> • Cost savings resulting from reduced power consumption • Lower reduce CO₂ Emissions
Timing	<ul style="list-style-type: none"> • Milestones / key dates <ul style="list-style-type: none"> ○ start date: 01/08/2010 ○ completion date (when it will deliver savings): 30/11/2010

Project:	Fleet Fuel Management Project
Reference:	CMP/004
Owner (person)	Richard Jones
Department	Fleet and Logistics Management Service, Directorate of Neighbourhood Services
Description	Collate fuel usage in terms of cost and quantity and calculate fuel consumptions per vehicle/driver against distance or time. Performances ranked in a league table and provided to operational managers to highlight the best and worst performing vehicles/drivers. This will inform management action to target improvements. Initially reports will be developed for Directorate of Neighbourhood Services as they are greatest users of road fuel, and then rolled out across all Council departments.
Benefits	<ul style="list-style-type: none"> • Financial savings: £5777 p.a. based on 2009/10 fuel costs and usage. Aim is to improve total fleet fuel consumption by a minimum of 1% (in terms of Miles per Gallon or Litres per Hour). The size of the reduction in expenditure will depend on prevailing fuel costs and distances covered. • Payback period: almost immediate. • CO₂ Emissions reduction: 18 tonnes of CO₂ • 0.06% reduction from baseline
Funding	<ul style="list-style-type: none"> • Source of funding: None anticipated to be required.
Resources	<ul style="list-style-type: none"> • There will be a requirement for existing staff involvement. • Project to be delivered within current resources.
Ensuring Success	<ul style="list-style-type: none"> • Require operational managers to act on data provided to investigate poor performance and take action. If deemed to be issue with vehicle this will be investigated and action taken. • Requires sufficient staff time and support from managers to achieve projected savings.
Measuring Success	<ul style="list-style-type: none"> • Improvement in miles per gallon which in turn will mean that there is a reduction in Carbon output and expenditure. • Fuel consumption reports will be produced on a monthly basis, however significant success and progress are likely to take longer to achieve. This is because the reports will inform managers to allow them to make appropriate management interventions and influences upon driver behaviour and activity which in turn will take time to produce the desired results.
Timing	<ul style="list-style-type: none"> ○ start date: 01/10/2010 ○ completion date (when it will deliver savings): Ongoing from start date.
Notes	The fuel usage data for Financial Year 2009/10 was derived from Merridale Fuel Management System for supplies drawn from the bulk tanks at Stretton Way. The quantity of fuel was derived from Shell Fuel Card Statements for fuel purchased using fuel cards by Arbour Lane Street Scene Services operatives. A target of 1% reduction in fuel use is used for

	quantification
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Project:	Smarter Driver Training for Fleet Drivers (Existing Project)
Reference:	CMP/005
Owner (person)	Patience Jones/Kelly Paes
Department	DCR/DNS
Description	Smarter driver training was offered by the Energy Saving Trust and delivered by Drive Sense. The training programme aimed to teach new driving techniques to drivers, which deliver environmental, financial and safety benefits by reducing fuel consumption. This phase of smarter driver training was delivered to 58 Knowlsey Council fleet drivers in February 2010.
Benefits	<ul style="list-style-type: none"> • Potential financial savings: £9,346 based on 58 participants who were trained. Average cost saving of £170 per person. • CO₂ Emissions reduction: 21.5 tonnes – 0.363 tonnes per person on average. • 0.07% of baseline
Funding	<ul style="list-style-type: none"> • Funding for this phase was provided by the Energy Saving Trust.
Resources	<ul style="list-style-type: none"> • The project was delivered by external agencies so no additional resources were required. The Workforce Development Team coordinated the training.
Ensuring Success	<ul style="list-style-type: none"> • The success of this project depends on the trainee's ability to incorporate the training into their way of driving. If this is done, full financial and environmental benefits will be achieved. However not adopting the smart driving techniques could result in no savings being made.
Measuring Success	<ul style="list-style-type: none"> • Performance can be measured by assessing the MPG on each vehicle. It can also be measured against how much fuel was previously used pre and post training as well as assessing the cost spent on fuel.
Timing	Start date and completion date: Jan - February 2010
Notes	The savings were calculated by Drive Sense, who were employed by the Energy Saving Trust to deliver the training. Further reports are available to demonstrate the quantification.

Project:	Smarter Driver Training for Fleet Drivers (Proposed project)
Reference:	CMP/006
Owner (person)	Patience Jones/Kelly Paes
Department	DCR/DNS
Description	Smarter driver training to be provided to 19 current fleet drivers who have not yet completed the training utilising the Energy Saving Trust funded programme by the end of March 2011. Subsequently, one session a year is proposed with Drive Sense for new drivers or refresher training where a need is established via the fuel management project.
Benefits	<ul style="list-style-type: none"> Financial savings: estimated at £3115 per year based on the 19 additional participants identified. Annual training thereafter will maintain the savings from this and previous Smarter Driver projects Payback period: under 1 year CO₂ Emissions reduction: 7.2 tonnes 0.11% reduction from the baseline
Funding	<ul style="list-style-type: none"> Cost of training £250 per year (directly with Drive Sense) for nine participants. This will be funded from the Climate Change budget.
Resources	<ul style="list-style-type: none"> As the project will be delivered by external agencies, no additional resources will be required. The Workforce Development Team will co ordinate the training with the travel Plan Co-ordinator.
Ensuring Success	<ul style="list-style-type: none"> The success of this project will depend on the trainee's ability to incorporate the training into their way of driving. If this is done, full financial and environmental benefits will be achieved. However not adopting the smart driving techniques could result in no savings being made. The fuel management project will assist with identification of drivers not adopting smarter driving techniques.
Measuring Success	<ul style="list-style-type: none"> Performance can be measured by assessing the MPG on each vehicle. It can also be measured against how much fuel was previously used pre and post training as well as assessing the cost spent on fuel.
Timing	<ul style="list-style-type: none"> 19 outstanding fleet drivers to be trained by 31 march 2011 One session to be arranged annually thereafter
Notes	Quantification is based on information on average savings provided by Drive Sense

Project:	Voltage Optimisation Phase 1
Reference:	CMP/007
Owner (person)	John Burns
Department	DCR
Description	Installing voltage optimisation units to reduce electrical energy consumption at the following sites: Council Depot, Stretton Way Kirkby Leisure Centre Nutgrove Villa Halewood Leisure Centre
Benefits	Potential combined annual saving of £26,062 per annum, with annual carbon savings of 158 Tonnes 0.52 % reduction from baseline
Funding	The funding for the voltage optimisation units will be secured from the Climate Change budget.
Resources	Asset Management DCR to co-ordinate procurement and installation of the units
Ensuring Success	<ul style="list-style-type: none"> The level of funding is key to implementing the projects. In addition, achieving the levels of the predicted savings is also key to reaching the target. If the predicted savings can not be achieved by up to 80% of what was predicted, the units come with a guarantee to which a refund can be given.
Measuring Success	<ul style="list-style-type: none"> The reduced electrical consumption will be measured on a yearly basis through AMR's.
Timing	<ul style="list-style-type: none"> <i>start date: 01/04/2011</i> <i>completion date (when it will deliver savings): 30/09/2011</i>
Notes	Quantification based on predicted energy savings from supplier of units.

Project:	Street lighting replacement programme
Reference:	CMP/008
Owner (person)	Sue Callister
Department	Directorate of Regeneration, Economy and Skills
Description	Replacement of Knowlsey's street lights over a five year period which will include energy efficiency measures.
Benefits	<ul style="list-style-type: none"> • CO₂ Emissions reduction: 1,223 Tonnes of CO₂ (TBC) • This equates to a 4% reduction from the total baseline
Funding	<ul style="list-style-type: none"> • Proposed funding for the project is via PFI (confirmation awaited)
Resources	<ul style="list-style-type: none"> • To be delivered by staff within DRES
Ensuring Success	<ul style="list-style-type: none"> • Awaiting confirmation of PFI funding
Measuring Success	<ul style="list-style-type: none"> • Success will be measured via the monitoring of street lighting energy consumption.
Timing	<ul style="list-style-type: none"> • <i>Milestones / key dates e.g.</i> <ul style="list-style-type: none"> ○ <i>start date: dd/mm/yyyy</i> ○ <i>completion date (when it will deliver savings): dd/mm/yyyy</i> ○ <i>interim deliverable / decision points</i> <p>TBC</p>
Notes	<p>Predicted reduction based on an estimation from the PFI providers that the project will potentially achieve a 20% reduction in carbon emissions from street lighting by the end of the five year implementation period (April 2016)</p> <p>TBC once preferred bidder announced</p> <p>Current street lighting energy use = 11,183,941 kwh 6,113,925 kg CO₂</p> <p>20% = 1, 222, 785 kg CO₂</p>

Project:	Staff Awareness Raising
Reference:	CMP/010
Owner (person)	Kelly Paes
Department	DNS
Description	A comprehensive annual campaign will be instigated to reduce CO2 emissions through different sources such as energy, waste, water, travel. This will include promotion of key messages via standard communication channels, on-site audits and support, training and awareness sessions with key staff, promotion of AMR to monitor and target energy usage, corporate heating and cooling policy, green staff surgeries.
Benefits	Reduction in energy costs of £35,000 per annum Reduction in CO2 emissions by 240 Tonnes per annum 0.79% reduction from baseline emissions (NB. Savings based on reduction in gas and electricity use. The campaign will also target water and waste reduction, but this has not been quantified).
Funding	<ul style="list-style-type: none"> • The cost of the campaign will be £2000 per year which will be funded from the existing Climate Change budget.
Resources	<ul style="list-style-type: none"> • The climate change and sustainability team will lead on the project and will work in partnership with the DNS communications manager to disseminate the messages.
Ensuring Success	Key to the success of the project is ensuring all staff are aware of the campaign and take on board the messages promoted.
Measuring Success	Success will be measured via staff surveys and monitoring the reduction in energy use.
Timing	<ul style="list-style-type: none"> • Milestones / key dates e.g. <ul style="list-style-type: none"> ○ start date: 01/04/2011 and will run continually
Notes	Quantified using Carbon Trust guidance that an effective awareness raising campaign can result in a 5% reduction in a building's energy use. Energy use in buildings across the five year period has been mapped out taking into account planned energy efficiency measures and building closures before the 5% figure has been applied. The potential reduction has not been applied to the newly re-furbished Huyton Municipal complex where a range of automatic energy saving measures have been installed, reducing the potential for reductions from awareness raising.

Project: Reference:	Staff Green Champions Scheme CMP/011
Owner (person)	Kelly Paes
Department	DNS
Description	A Green Champions scheme is where volunteers or delegated people become advocates, leaders and facilitators in disseminating environmental information to their colleagues. A range of employees from all directorates across the council, will be trained to deliver environmental education and advice to their fellow colleagues.
Benefits	Annual financial saving of £20,000 Reduction in CO2 emissions of 137 Tonnes per annum 0.45% reduction from baseline emissions
Funding	£1,000 per annum from the existing Climate Change budget.
Resources	The Environmental Sustainability Service will co-ordinate the project utilising existing staff resources. Other members of staff will require some time to participate in the scheme.
Ensuring Success	Top level management approval will be required in order to deliver this project. This is essential as staff who join the scheme will be required to participate in working hours and will need permission to attend training sessions and act as a mentor to their colleagues. The scheme is also dependant on staff members volunteering for the scheme.
Measuring Success	The green champions will be able to feed back how successful they have been in disseminating information to staff and encouraging them to change their behaviour. Ultimately the comparison of data collected will be an effective way to assess any reduction in resources. This will be done on a yearly basis.
Timing	o <i>start date: 01/04/2011</i>
Notes	An estimated reduction of 3% in gas and electricity use has been used for quantification. This is based on Carbon Trust guidance that an additional 5% reduction of a buildings energy use can be achieved by a Green Champions Scheme on top of an awareness raising scheme. A conservative estimate of 3% has been used given the Council's current Change and Transformation agenda. Energy use in buildings across the five year period has been mapped out taking into account planned energy efficiency measures and building closures before the 5% figure has been applied. The potential reduction has not been applied to the newly re-furnished Huyton Municipal complex where a range of automatic energy saving measures have been installed, reducing the potential for reductions from awareness raising.

Project:	Awareness Raising in Primary and Special Schools
Reference:	CMP/ 012
Owner (person)	John Eves
Department	DNS
Description	Awareness-raising programme on carbon reduction in primary and special schools including promotional material, school sessions and support for the Eco-schools programme.
Benefits	<ul style="list-style-type: none"> • Financial savings: £ 25,400 per annum • CO₂ Emissions reduction: 172 tonnes of CO₂ • 0.57% reduction from the baseline
Funding	<ul style="list-style-type: none"> • £2,000 per annum from the existing Climate Change Budget
Resources	The project will require input from a variety of teams across the Council and engagement with the Schools Asset Management Working Group
Ensuring Success	<ul style="list-style-type: none"> • To be successful the project will require engagement from schools.
Measuring Success	<ul style="list-style-type: none"> • Success will be measured by energy consumption from the schools
Timing	<ul style="list-style-type: none"> ○ start date: 01/04/2011 and annually
Notes	Quantified using Carbon Trust guidance that an effective awareness raising campaign can result in a 5% reduction in a building's energy use. However a conservative figure of 3% has used given that engagement of all schools may be difficult. Energy use in buildings across the five year period has been mapped out taking into account planned energy efficiency measures and building closures before the 3% figure has been applied.

Project:	Energy Efficient Lighting in Yorkon Building
Reference:	CMP/013
Owner (person)	John Burns
Department	DCR
Description	The ecological range of products will replace the current lighting at the Yorkon building. The lights will be replaced with T8 lamps and will reduce electrical consumption.
Benefits	<ul style="list-style-type: none"> • Financial savings: £1000 per year • CO₂ Emissions reduction: 6.4 tonnes per year. • 0.02% of baseline
Funding	<ul style="list-style-type: none"> • Funding will be allocated from the 2011/12 budget allocated for climate change work.
Resources	<ul style="list-style-type: none"> • The project will be co-ordinated by Asset Management.
Ensuring Success	<ul style="list-style-type: none"> • Asset Management will co-ordinate the project
Measuring Success	<ul style="list-style-type: none"> • The reduction in electricity can be measured through monitoring the automatic meter readings.
Timing	<ul style="list-style-type: none"> ○ start date: 01/04/11 ○ completion date (when it will deliver savings): 30/09/11
Notes	Quantified using data provided by the supplier with respect to potential energy reduction.

Project:	Installation of IT SUN Servers
Reference:	CMP/ 014
Owner (person)	Sam Maiden
Department	DCR
Description	Server replacement with more energy efficient SUN servers
Benefits	<ul style="list-style-type: none"> • Financial savings: £ 1,000 pa • CO₂ Emissions reduction: 6.1 tonnes of CO₂ • 0.02 % reduction from the baseline
Funding	<ul style="list-style-type: none"> • Funding in place
Resources	<ul style="list-style-type: none"> • Co-ordinated by IT, DCR
Ensuring Success	<ul style="list-style-type: none"> • Effective implementation by DCR
Measuring Success	<ul style="list-style-type: none"> • Reduced energy use
Timing	<ul style="list-style-type: none"> ○ completion date (when it will deliver savings): 01/04/2011
Notes	Quantified using data supplied by the supplier

Project:	Voltage Optimisation in Yorkon Building
Reference:	CMP/ 015
Owner (person)	Andy Lawman
Department	DCR
Description	Voltage optimisation unit being fitted to Huyton Municipal complex as part of refurbishment will also service Yorkon building
Benefits	<ul style="list-style-type: none"> • Financial savings: £1,300 • CO₂ Emissions reduction: 8.3 tonnes of CO₂ • 0.03% of baseline
Funding	<ul style="list-style-type: none"> • Funded via the Huyton Re-furbishment project
Resources	<ul style="list-style-type: none"> • Delivered within existing resources
Ensuring Success	
Measuring Success	<ul style="list-style-type: none"> • Energy consumption for that building
Timing	Implemented
Notes	Quantified using data provided by previous quote for voltage optimisation

Project:	Installation of Condensing Boilers at Central and Eastcroft Primary Schools
Reference:	CMP/ 016
Owner (person)	Ian Lynch
Department	DCR
Description	Replacement of boilers at Central and Eastcroft primary Schools with condensing boilers
Benefits	<ul style="list-style-type: none"> • Financial savings: £ 1,897 pa • CO₂ Emissions reduction: 14.4 tonnes of CO₂ • 0.05% reduction from baseline carbon emissions
Funding	<ul style="list-style-type: none"> • N/A – already implemented
Resources	<ul style="list-style-type: none"> • Delivered within current resources
Ensuring Success	<ul style="list-style-type: none"> • N/A – already implemented
Measuring Success	<ul style="list-style-type: none"> • CO₂ emissions from gas use at each site evaluated 2011/12
Timing	N/A – already implemented
Notes	Potential reduction quantified using Carbon Trust quantification guidance. Conservative estimate of 15% reduction used.

Project:	Double Glazing at former St Edmund Arrowsmith School
Reference:	CMP/ 017
Owner (person)	Ian Lynch
Department	DCR
Description	Installation of double glazing at the former St Edmund Arrowsmith school which will be used as office accomodation
Benefits	<ul style="list-style-type: none"> • Financial savings: £ 897 pa • CO₂ Emissions reduction: 6.8 tonnes of CO₂ • 0.02% reduction from baseline carbon emissions
Funding	<ul style="list-style-type: none"> • Funding from existing budget
Resources	<ul style="list-style-type: none"> • Project will be delivered within current resources
Ensuring Success	<ul style="list-style-type: none"> • N/A
Measuring Success	<ul style="list-style-type: none"> • CO₂ emissions from gas use at the site
Timing	To be completed by March 2011
Notes	Potential reduction quantified using Carbon Trust quantification guidance. Conservative estimate of 5% reduction used.

Project:	Roof insulation at Huyton Library
Reference:	CMP/ 018
Owner (person)	Ian Lynch
Department	DCR
Description	Roof replacement at Huyton Library incorporating roof insulation
Benefits	<ul style="list-style-type: none"> • Financial savings: £ 310 pa • CO₂ Emissions reduction: 2.4 tonnes of CO₂ • 0.01% reduction from baseline CO₂ emissions
Funding	<ul style="list-style-type: none"> • Funded from existing budgets
Resources	<ul style="list-style-type: none"> • Delivered within current resources
Ensuring Success	<ul style="list-style-type: none"> • N/A - completed
Measuring Success	<ul style="list-style-type: none"> • CO₂ emissions from gas use in the building
Timing	Completed
Notes	Potential reduction quantified using Carbon Trust quantification guidance. Conservative estimate of 10% reduction used.

Project:	Installation of AMR
Reference:	CMP/ 020
Owner (person)	John Burns
Department	DCR
Description	Installation of AMR across all Council sites
Benefits	Although the installation of AMR will not in itself reduce energy use, it is a tool that can be used to monitor energy use and target reduction measures. This will assist with achieving the energy/carbon reductions estimated for the awareness raising programme.
Funding	<ul style="list-style-type: none"> Funded from existing budgets
Resources	<ul style="list-style-type: none"> Project will be delivered within current resources
Ensuring Success	<ul style="list-style-type: none"> Implementation in progress
Measuring Success	<ul style="list-style-type: none"> Reduction in energy use and CO2 emissions from council sites
Timing	To be completed by the end of March 2011
Notes	N/A

Project:	IT Power Management
Reference:	CMP/021
Owner (person)	John Burns/Wayne Wiegand
Department	DCR
Description	Energy Active P.C auto shutdown designed by the IT team to automatically shut down PC equipment at 20.00. For those who need to use the equipment, a warning appears on the computer providing an option to cancel the shutdown. The shut down will ensure that all PC's are not left on overnight or at the weekend unnecessarily.
Benefits	The project will reduce carbon emissions but this is difficult to quantify as savings will be dependant on the number of PC's currently left on overnight, which is not known. The project will complement the awareness-raising programme.
Funding	<ul style="list-style-type: none"> The software was designed internally so there are no costs attached.
Resources	The project will be delivered by IT
Ensuring	<ul style="list-style-type: none"> Implemented across the Council December 2010
Measuring Success	<ul style="list-style-type: none"> The project will be evaluated through energy monitoring tools such as eco warrior and AMR's. However it may be difficult to attribute any savings to the project if other projects are implemented at the same time to save energy.
Timing	Implemented across the Council December 2010
Notes	It is estimated that on average, 18% of those who use PC's leave them on overnight or at weekends. However as no accurate data was available, this project has not been separately quantified in this plan. Savings will contribute to the savings projected for the awareness raising project.

Project:	Energy Efficient Lighting, Huyton Library
Reference:	CMP/ 022
Owner (person)	John Burns
Department	DCR
Description	Partial upgrade of lighting at Huyton Library. The existing T8 lamps will be replaced by Calex T5 adaptor kits.
Benefits	<ul style="list-style-type: none"> • Financial savings: £180 per year • Payback period: 2.7 years • CO₂ Emissions reduction: 1.1 Tonnes • 0.004% reduction from baseline
Funding	<ul style="list-style-type: none"> • Cost £490 to be funded from existing climate change budget
Resources	<ul style="list-style-type: none"> • Delivered within current resources
Measuring Success	<ul style="list-style-type: none"> • The reduced electrical consumption can be measured through the AMR's. • The project will be measured on a yearly basis.
Timing	<ul style="list-style-type: none"> ○ start date: 01/04/2011 ○ completion date (when it will deliver savings): 30/09/11
Notes	Quantified using data from the supplier. Pilot project to establish effectiveness/ suitability of using adaptor kits to improve the energy efficiency of existing lights as an alternative to replacing the whole light fitting.

Project:	Voltage Optimisation Phase 2
Reference:	CMP/ 024
Owner (person)	John Burns
Department	DCR
Description	Installation of voltage optimisation to a further 12 council sites
Benefits	<ul style="list-style-type: none"> • Financial savings: £ 22,714 pa • CO₂ Emissions reduction:138 tonnes of CO₂ • 0.5% reduction from baseline carbon emissions
Funding	<ul style="list-style-type: none"> • Project cost £104,472 • Funding not yet identified. Options to be explored in 2011/12 include Salix, government grant/loan schemes, Council invest to save fund.
Resources	<ul style="list-style-type: none"> • Will be delivered within current staff resources
Ensuring	<ul style="list-style-type: none"> • Identification of funding
Measuring Success	<ul style="list-style-type: none"> • Energy use at sites
Timing	Detailed quotes to be obtained and funding identified in 2011/12 to enable project to commence at start of 2012/13.
Notes	Quantified using supplier data.

Project:	Energy Efficient Lighting, Page Moss Library
Reference:	CMP/ 025
Owner (person)	John Burns
Department	DCR
Description	Upgrade of lighting at Page Moss Library. The existing T8 lamps will be replaced by Calex T5 adapter kits.
Benefits	<ul style="list-style-type: none"> • Financial savings: £1,134 per year • CO₂ Emissions reduction: 6.9 Tonnes • 0.02% reduction from baseline
Funding	<ul style="list-style-type: none"> • Cost £2,163 • Funding not yet identified. Options to be explored in 2011/12 include Salix, government grant/loan schemes, Council invest to save fund.
Resources	<ul style="list-style-type: none"> • Delivered within current staff resources
Ensuring Success	<ul style="list-style-type: none"> • N/A
Measuring Success	<ul style="list-style-type: none"> • The reduced electrical consumption can be measured through the AMR's. • The project will be measured on a yearly basis.
Timing	<ul style="list-style-type: none"> ○ funding to be identified in 2011/12 to enable project to commence at start of 2012/13.
Notes	Quantified using data from the supplier. Project dependant on success of pilot project at Huyton Library to establish the effectiveness and suitability of using adaptor kits to improve the energy efficiency of existing lighting as an alternative to replacing the whole lighting fitting.

Project:	Knowsley Council/NHS Knowsley Corporate Travel Plan
Reference:	CMP/026
Owner (person)	Patience Jones, Travel Plan Co-ordinator
Department	DCR
Description	A joint strategy aimed at reducing car journeys made by staff, both for commuting and business purposes. This will be done by encouraging cycling, walking, bus and train use, car sharing and flexible workstyles.
Benefits	<ul style="list-style-type: none"> • CO₂ Emissions reduction: 12 tonnes of CO₂ per annum • 0.04% of baseline emissions
Funding	<ul style="list-style-type: none"> • Funded by existing budgets
Resources	<ul style="list-style-type: none"> • Travel Plan Co-ordinator in place
Ensuring	<ul style="list-style-type: none"> • Continued support and funding for programme
Measuring Success	<ul style="list-style-type: none"> • Annual mileage claim figures
Timing	<ul style="list-style-type: none"> ○ Annual programme
Notes	Quantified using targets in Travel Plan/emission factors in the Baseline Tool

Project:	Sustainable Energy Management Plan for Learning Centres
Reference:	CMP/032
Owner (person)	Paul Mullen
Department	DCFS
Description	A working group has been established to develop an Energy Management Plan for the Borough's Learning Centres. The group consists of members of the Council and Balfour Beatty Workplace who are responsible for energy management. A target of a 15% reduction over a five year period has been set
Benefits	<ul style="list-style-type: none"> • CO₂ Emissions reduction: 165 tonnes of CO₂ per annum over the five year period • 2.7% reduction from baseline emissions by the end of the five year period
Funding	<ul style="list-style-type: none"> • Part of the existing contract
Resources	<ul style="list-style-type: none"> • Project will be delivered within current resources
Ensuring Success	<ul style="list-style-type: none"> • Continued liaison and co-operation between the Council, Learning Centre staff and Balfour Beatty Workplace
Measuring Success	<ul style="list-style-type: none"> • Energy use in the Learning Centres
Timing	To commence April 2011/12 and ongoing to March 2016
Notes	Quantification based on the target reduction