

# Bournemouth Borough Council Carbon Management Programme

## Carbon Management Plan



## Reducing Bournemouth's Carbon Footprint

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## Foreword from Councillor Robert Lawton

Climate change is a global threat and only a step change in our behaviour including a significant reduction in carbon emissions will have the necessary impact to prevent the negative effects of a warming world. Bournemouth will not escape these effects, its coastal location will obviously make it susceptible to any sea level rises.

Increasingly, the public is becoming sensitive to the imperative of 'Sustainable Development'. This is expressed by their support for environmental initiatives. In response to public opinion, Bournemouth Council adopted 'Improving our Environment' as its top priority. Part of its work will be to reduce the Council's own carbon emissions and take a lead role in the community.

We are confident that with the support of officers across all Council services and the Carbon Trust we will meet its target of reducing its emissions by one third by 2014. This will set us on the way to our visionary ambition to be a carbon neutral Council by 2050. The Council will not use carbon offsetting as a way to meet this vision.



**Councillor Robert Lawton**

(Cabinet Member for Environment & Transport)

## Foreword from the Carbon Trust

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

Bournemouth Borough Council was selected in 2009, amidst strong competition, to take part in this ambitious programme. Bournemouth Borough Council partnered with the Carbon Trust on this programme in order to realise vast carbon and cost savings. This Carbon Management Plan commits the council to a target of reducing CO<sub>2</sub> by 1/3 by 2014 and underpins potential financial savings to the council of around £5.5 million.

There are those that can and those that do. Local authorities can contribute significantly to reducing CO<sub>2</sub> emissions. The Carbon Trust is very proud to support Bournemouth Borough Council in their ongoing implementation of carbon management.

A handwritten signature in black ink, appearing to read "Richard Rugg".

Richard Rugg  
Head of Public Sector, Carbon Trust



## Management Summary

The Council's Corporate Plan 2009/10 keeps "Improving Our Environment" at the top of the Council's five corporate priorities. Under that it says the Council will "Take an active role to respond to climate change" and "Our role in responding to climate change will be strengthened."

Bournemouth is one of a few local authority areas in the UK that have adopted within their Local Area Agreement (LAA2)<sup>1</sup> stretch targets all three Climate Change National Indicators (NI's):

- NI 185 - Reducing the CO<sub>2</sub> emissions from the Council's own operations
- NI 186 - Reducing Bournemouth CO<sub>2</sub> emissions
- NI 188 - Bournemouth Planning To Adapt To Climate Change

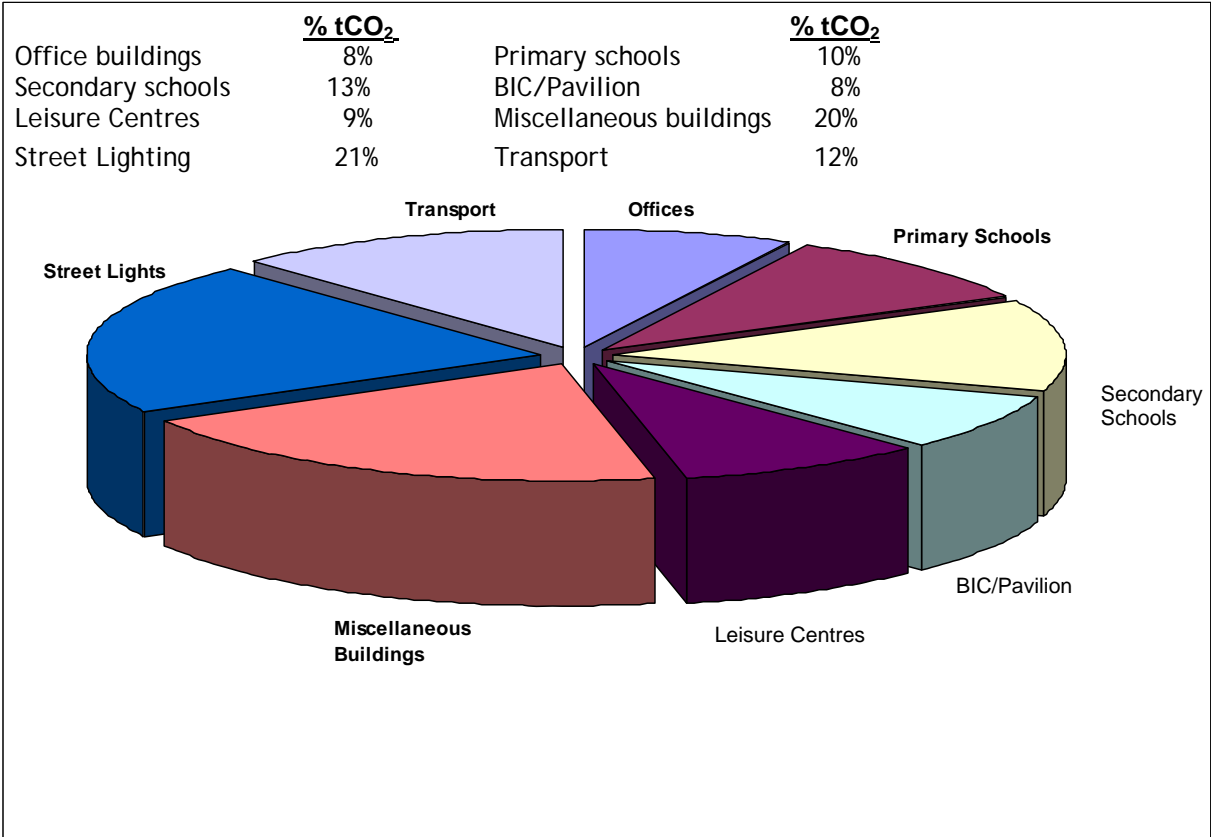
A key part of the Council's commitment to the environment is 'Reducing emissions from the Council's own operations'. This Carbon Management Plan (CMP) sets out how the Councils will do this and meet its Corporate priorities. Within this CMP the Council has committed to a stretching reduction target -

**To reduce CO<sub>2</sub> emissions from its own operations by one third by 2014, from the 2008/09 baseline figure.**

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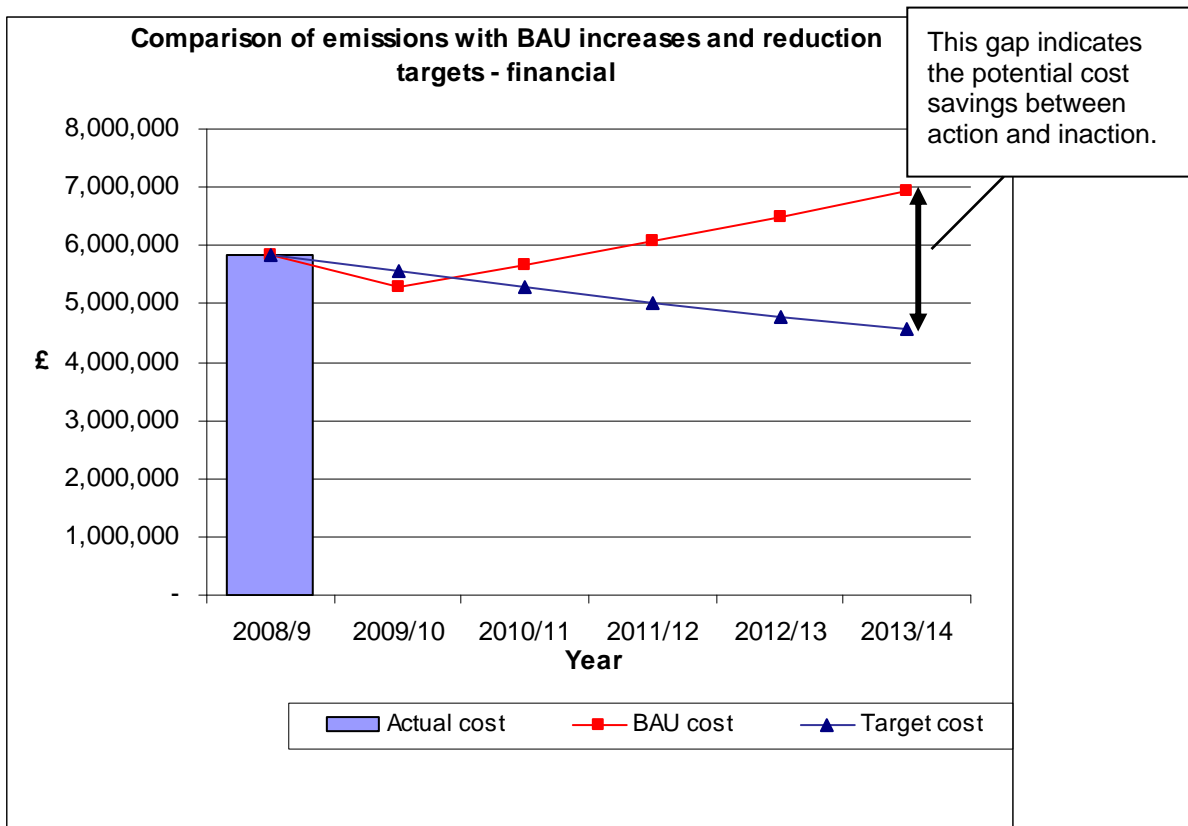
<sup>1</sup> Local Area Agreements (LAA's) set out the priorities for a local area agreed between central government and a local area (the local authority and Local Strategic Partnership) and other key partners at the local level. More information can be found at - <http://www.communities.gov.uk/localgovernment/performanceframeworkpartnerships/localareaagreements/>

Chart below gives a breakdown of the Councils CO<sub>2</sub> emissions for 2008/09



**Note:**  
Miscellaneous Buildings - includes Libraries, Car parks, Public Conveniences, Depots, and park pavilions.

The link between Carbon and costs savings means that a reduction of one third will achieve significant financial savings for the Council. This is demonstrated by the Value at Stake graph below which shows over the five years the overall cost benefit of taking action compared to a Business as Usual (BAU) course is in the region of £5.5million -



### Meeting the Challenge

Reducing the Councils carbon emissions from the baseline figure of around 27,000 tonnes by 1/3 (9,000 tonnes) is no doubt a challenge. This plan (section 4) sets out the projects and measures that take us to the target. Although the projects identified are both small and large scale, to meet the target, Council wide projects will be required. An example of this is to convert all fluorescent lighting to the latest more energy efficient type.

The projects and measures identified in this plan (section 4) make up around 70% of the required CO<sub>2</sub> savings required assuming the projects are implemented. This 30% shortfall will be tackled in two ways -

- Continuous development and identifying further projects and measures.
- Group Project - any shortfall will be met by a group project worked on by the Carbon Reduction Team (CRT). This group project will be made up of a push to increase the number of renewable energy installations within the Council and large scale energy efficiency projects.

The details of the above points are set out in the following sections of the Carbon Management Plan.

## 1 Introduction

The Council and its partners faced up to the climate change facts back in 2002, when Bournemouth became one of the first Towns to sign up to the Nottingham Declaration\*. Soon after that we adopted our first Climate Change strategy in March 2003. This helped the Council and its partners to take early action in the face of increasing local and national concern over climate change.

In October 2007 the Council and its partners reviewed the Climate Change strategy. This identified that the Council had been successful in meeting the majority of its targets, with CO<sub>2</sub> emissions reduced by five times the target set, and was on course to meet all targets. The Council then called on its partners and the community to work together in identifying the local priorities for dealing with climate change. The result is Bournemouth being one of few areas in the UK to have adopted all three of the Climate Change indicators in its second Local Area Agreement.

This means we have set very high expectations and tough targets for speeding up our transition towards a low carbon Bournemouth which has adapted successfully to climate change and is sustainable in every way. The Town has been fully involved in setting these tougher targets through consultation with partners in developing a new Climate Change and Sustainable Bournemouth Community Action Plan for Bournemouth.

As an important contribution towards meeting these targets, the Carbon Management Plan will allow the Council to build on previous achievements and make significant reduction in its own carbon emissions with a coordinated approach across all services.

The Carbon Management Plan sets out how Bournemouth Borough Council will limit its effect on the environment through carbon reduction over the next five years. Key to reducing the Councils Carbon emissions will be to embed carbon management at all levels and across all services.

\* See 2.1 for explanation.



As part of the Carbon Management Programme the Council has been through a range of steps since May 2009 to implement Carbon Management across the organisation. These steps have included -



The above steps are not definitive. From the very start of the programme we have been implementing CO<sub>2</sub> reduction measures. It is vital that we have a process to review previous steps and ensure that the Plan can adapt and proceed in the event of organisational changes that could occur. Potential changes to the organisation such as Incremental Partnering and Leisure sites becoming Trusts (see section 3.2) are planned to take place in 2010.

## 2 Carbon Management Strategy

### 2.1 Context and drivers for Carbon Management

The UK Government has placed an emphasis on councils setting a leading example on Climate Change. Action by councils will be critical to the achievement of the Government's climate change objectives, such as the long term goal to reduce CO<sub>2</sub> emissions by 80% by 2050 in the Climate Change Act.

This has created a number of legislative drivers:

- **CRC Energy Efficiency Scheme:**

Is a mandatory "cap & trade" emissions trading scheme for organisations whose total annual electricity consumption for its half hourly metered sites is greater than 6,000MWh or approximately £500k. If an organisation falls within the CRC scheme all their electricity and fuel, such as gas and oil, emissions are covered. Transport is not included. From 2010 organisations will receive bonuses or penalties depending on their position in a CRC league table<sup>2</sup>.

- **Display Energy Certificates:**

From 1<sup>st</sup> October 2008 all public sector buildings with a total useful floor area of over 1,000m<sup>2</sup> require a Display Energy Certificate (DEC) - in a prominent place, clearly visible to the public.<sup>3</sup> The certificate shows the performance of the building in terms of energy use. It gives a rating of A to G, 'A' being good performance, 'G' being a poor performing building.

- **Nottingham Declaration**

By signing the Nottingham Declaration<sup>4</sup> councils confirm their acknowledgement that Climate Change is occurring and pledge to systematically address the causes of climate change and to prepare their community for its impacts.

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<sup>2</sup> more info on the CRC can be found at: <http://www.defra.gov.uk/Environment/climatechange/uk/business/crc/index.htm>

<sup>3</sup> more information on DEC can be found at [www.communities.gov.uk/planningandbuilding/theenvironment/energyperformance/certificates/displayenergycertificates](http://www.communities.gov.uk/planningandbuilding/theenvironment/energyperformance/certificates/displayenergycertificates)

<sup>4</sup> a formal commitment by Local Authorities and their partners, pledging to address the causes of climate change and to prepare their community for its impacts. more information can be found at <http://www.energysavingtrust.org.uk/nottingham>

- Defra has created two National Indicators<sup>5</sup> specific to CO<sub>2</sub> reduction:

**NI185 - percentage CO<sub>2</sub> reduction from Local Authority operations:**

The public sector is in a key position to lead on efforts to reduce CO<sub>2</sub> emissions by setting a behavioural and strategic example to the private sector and the communities they serve. Measurement against this indicator requires each council to calculate its CO<sub>2</sub> emissions from analysis of the energy and fuel use in their relevant buildings and transport, including where these services have been outsourced.

**NI186 - per capita CO<sub>2</sub> emissions in the Local Authority area:**

Councils are uniquely placed to provide vision and leadership to local communities by raising awareness and to influence behaviour change. The percentage reduction in CO<sub>2</sub> per capita in each council will be reported annually. This will be produced by Central Government based on CO<sub>2</sub> emissions in the Local Area from business and Public Sector, domestic housing, and road transport.

- **Energy Costs:**

Measures to increase energy efficiency will reduce energy costs, which is particularly important for the future given the predicted increases in energy prices. Energy and fuel costs have increased and decreased dramatically in recent years. Despite recent falls we must accept that the price we pay for our energy will increase in the coming years. The Councils energy costs have increased from approximately £2m in 2004/05 to £5m in 2008/09.

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<sup>4</sup> more information on NI185 and NI186 can be found at: [www.defra.gov.uk/environment/localgovindicators/indicators.htm](http://www.defra.gov.uk/environment/localgovindicators/indicators.htm)

## 2.2 Carbon Vision

It is our ambition to -

**Be a carbon neutral Council by 2050 and provide the community leadership needed to deliver a zero carbon Bournemouth**

Carbon Offsetting<sup>6</sup> will not be used as a method of obtaining our vision.

It is our belief that on the journey towards this vision significant savings in carbon will be realised. This will require a number of key actions -

- Ensure carbon reduction is a priority at every level within the Council and the impact of its operations is considered as a matter of course.
- Implement a continuous improvement programme to reduce carbon well into the future.
- We will engage staff and partners to learn, support and implement new carbon reduction initiatives.
- Take the lead so that the community embraces carbon reduction.

## 2.3 Strategic themes

- Carbon management by the Council is embedded into the Climate Change & Sustainable Bournemouth Community Action Plan.
- Carbon reduction is a feature of an environmental impact checklist which applies to all Cabinet decisions made.
- Carbon Management is embedded in all aspects of the Council's operations. Green Champions for buildings, services and community engagement have been identified throughout the Council and are working to ensure that carbon management is operating at all levels across our services.
- Energy used in buildings makes up the largest proportion of emissions. A planned improvement of energy efficiency in all buildings including schools will be key to achieving the Council's objectives.
- The emerging Travel Plan is introducing a strategic approach to the Council's travel and transport emissions and will require a step change in all aspects including -
  - Staff business travel
  - Fleet transport
  - Contracted out services

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<sup>6</sup> Carbon Offsets can be used to compensate for the emissions produced by funding an equivalent carbon dioxide saving somewhere else. For example - funding the planting of trees to offset an increase in energy consumption.

## 2.4 Targets and objectives

**Bournemouth Borough Council will reduce CO<sub>2</sub> emissions from its operations by one third by 2014, from the 08/09 baseline figure.**

This target clearly demonstrates the Council's high expectations in reducing its carbon emissions. Meeting the target will be a challenge and will need the whole Council to act, it is this Council wide participation which will drive us towards our goal.

**Note** - In line with the baseline year (April 2008 to March 2009), the target date is by the end of March 2014.

## 3 Emissions Baseline and Projections

### 3.1 Scope

To meet Carbon reduction targets as set out in this document it is essential to have a starting point or baseline of carbon emissions that occur from Council activities.

The scope includes the following -

- Stationary Sources - Energy
  - All Council run buildings including all schools
  - Street lighting
- Transport
  - Council fleet vehicles
  - Business mileage employee own vehicles, public transport
  - Outsourced services transport

The scope does not extend to activities such as Council staff commuting or private business operating from Council owned buildings.

### 3.2 Baseline

For the purpose of this Carbon Management Plan the baseline is calculated for the financial year April 2008 to March 2009. This is in line with the data collected and submitted for National Indicator 185. Reporting for the CRC Energy Efficiency Scheme will also be based on the financial year.

Emission Factors -

Although the Council has a policy to purchase 'green' electricity no allowances have been made for this hence standard grid emission factors have been used.

Emission factors are used to determine the amount of CO<sub>2</sub> emitted (usually in kg) per unit of fuel/activity, for example - for every litre of petrol used in a vehicle, 2.32kg of CO<sub>2</sub> will be released into the atmosphere.

Emission factors used for calculating baseline (source: Defra 2008) -

| Energy type                     | Factor (kg CO <sub>2</sub> /kWh gross)       |
|---------------------------------|--|
| Electricity (grid)              | 0.523  |
| Electricity (CHP)               | 0.295  |
| Electricity (onsite renewables) | 0.000  |
| Natural gas                     | 0.185  |
| Fuel or vehicle type            | CO <sub>2</sub> factor (kg/litres specified) |
| Petrol (litres)                 | 2.32   |
| Diesel (litres)                 | 2.63   |

Data Collection -

Energy & Water data is collected centrally from bills and entered onto an energy database which provides the majority of the data.

Transport data is collected from various services or outside contractors. This includes a large proportion of the data from our mileage claims team and also the fleet transport depot where fuel withdrawals are recorded.

Making assumptions has been unavoidable and this has predominantly occurred with the transport figures. Supporting information including service specific data and a record of any assumptions made have been recorded and filed electronically in the Building Services 'Energy & Sustainability' drive under 'LACMP'.

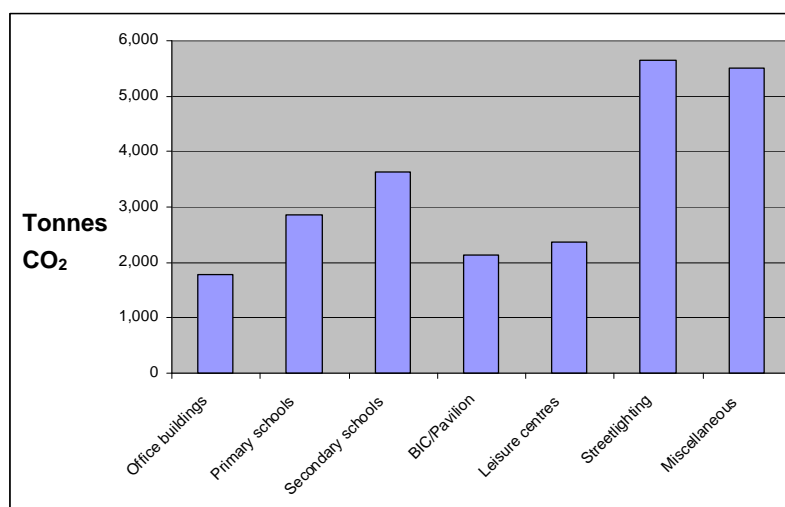
It should also be noted that although energy data is comprehensive it relies on the accuracy of bills which are often estimated - this issue will be addressed as part of this plan.

The graphs and tables below show the baseline energy consumption and CO<sub>2</sub> emissions figures. Figure 3.2 demonstrates that transport makes up 12% of the carbon emissions. The remainder are from energy use in the Council buildings.

| Category          | Total Fossil kWh  | Total Electric kWh | CO <sub>2</sub> (Tonnes) |
|-------------------|-------------------|--------------------|--------------------------|
| Office buildings  | 1,743,184         | 2,799,109          | 1,786                    |
| Primary schools   | 7,970,663         | 2,628,171          | 2,849                    |
| Secondary schools | 10,507,289        | 3,241,142          | 3,639                    |
| BIC/Pavilion      | 3,328,150         | 2,892,549          | 2,129                    |
| Leisure Centres   | 3,896,423         | 3,141,050          | 2,364                    |
| Streetlighting    | 0                 | 10,811,745         | 5,655                    |
| Miscellaneous     | 11,475,312        | 6,483,031          | 5,514                    |
| <b>TOTAL</b>      | <b>38,921,021</b> | <b>31,996,797</b>  | <b>23,935</b>            |

**Table 3.1 – Summary table of emissions for baseline year 2008/09**

Note: Miscellaneous Buildings includes Libraries, Car parks, Public Conveniences, Depots, and park pavilions.



**Figure 3.2 Summary of emissions for baseline year 2008/09**

## Trust Status Sites

It should be noted that a number of Council services are applying for Trust Status, and likely transition of these sites is planned to take place in April 2010. Any Bournemouth Borough Council services that do become Trusts will not be included in the Councils Carbon Management Programme. Once the status of the services in question is confirmed then the baseline figures will be adjusted by removing the particular sites. No carbon savings will be recorded as this is not seen as a carbon reduction measure. The details of the services affected and the impact of removing these services from the Councils overall baseline are detailed below -

|                        | 08/09 Baseline emissions (tCO <sub>2</sub> /yr) |
|------------------------|---|
| <b>BIC/Pavilion</b>    | 2,169.0   |
| <b>Leisure Centres</b> | 2,407.5   |
| <b>TOTALS</b>          | <b>4,576.5</b>                                  |

Removing the trust status sites from the baseline figure will see an overall reduction in this figure of around 20%. This brings the total baseline emissions for 2008/09 from 27,428 to 22,447 tonnes of CO<sub>2</sub>. This will impact on our ability to meet our target as these services offer large potential in a relatively small number of buildings.

## Academy Schools

There is the potential that two Council operated schools will become academy type schools. Academy schools are independently operated. This will affect the Councils control and hence ability to reduce the CO<sub>2</sub> emissions from these schools. How the Academy schools will be dealt with in relation to this Plan will need to be addressed once the status of the schools is known. The schools carbon emissions are detailed below -

|                                    | Baseline emissions (tCO <sub>2</sub> /yr) |
|------------------------------------|---|
| <b>Bishop of Winchester School</b> | 405                                       |
| <b>Kings High School</b>           | 354                                       |
| <b>TOTALS</b>                      | <b>759</b>                                |



### 3.3 Projections and Value at Stake

The Value at Stake uses the baseline data that has been collected to demonstrate the effect on both action and inaction (Business As Usual (BAU)) in terms of cost and CO<sub>2</sub> emissions. BAU is a prediction of the outcome if no action is taken, in this case no reduction in CO<sub>2</sub> is made.

Based on our target year of 2014 it can be seen from the graph below that the difference in cost between achieving the target and a BAU scenario is approximately £3 million in 2014. Over the five years the overall cost benefit is in the region of £5.5 million. Clearly there is a very strong business case for action.

The BAU figures for both transport and energy cost increases (year on year) have been predicted using the following factors: -

- BAU Increase in Demand for all stationary sources (Buildings energy), 0.7%.  
*Source DTI/DBERR EP68*
- BAU increase in demand for Fleet, 0.7%.  
*Source DTI/DBERR EP68*
- BAU increase in demand for Commuting, 1%.  
*Source 2005 and 2006 internal commuting survey*

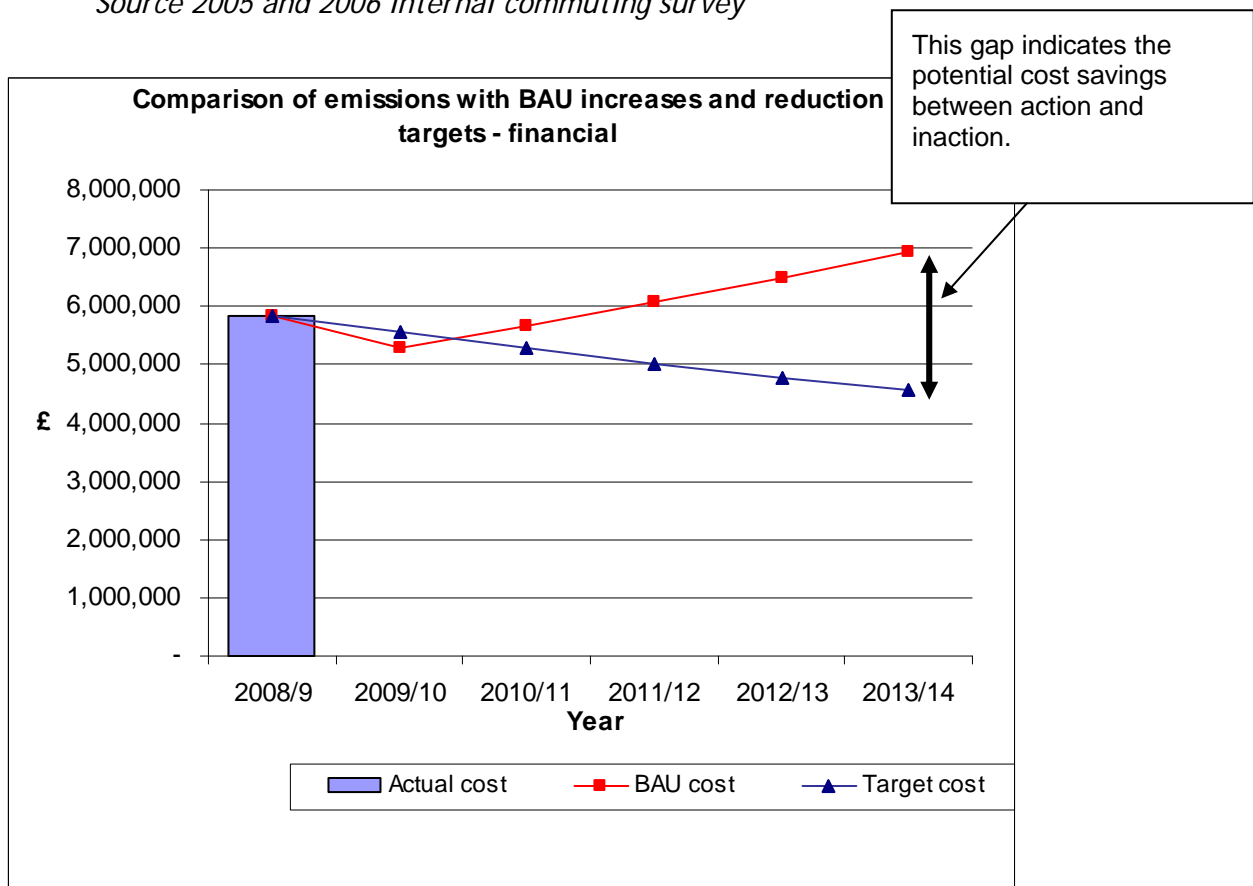


Figure 3-3 Financial Value at Stake from Inaction.

**NOTE** – The graph is a guide to demonstrate the possible costs savings. Energy costs are subject to changes which can often be significant, and so it may not represent the actual cost savings in the future.

## 4 Carbon Management Projects

This section details the measures that will achieve the reduction in carbon required to meet the target. It includes projects already carried out since the baseline year and those identified for implementation over the next five years. Key to our success is prioritising projects in terms of ease to produce carbon savings and cost effectiveness.

### 4.1 Existing projects

These projects are funded and at some stage of implementation.

| Ref           | Project   | Project Cost      | Annual Saving  |                  | Pay back | % of Target |
|---------------|---|-------------------|----------------|------------------|----------|-------------|
|               |   |                   | Financial      | tCO <sub>2</sub> |          |             |
| 1             | Bournemouth School Solar PV                     | £91,810           | £948           | 5.7              | 96.0     | 0.06%       |
| 2             | Moordown St Johns School solar PV               | £52,000           | £716           | 4.3              | 72.0     | 0.05%       |
| 3             | Parkway House lighting Controls                 | £1,249            | £757           | 4.5              | 1.6      | 0.05%       |
| 4             | Portchester School Lighting (T5 PIR)            | £25,000           | £9,270         | 55.3             | 2.7      | 0.61%       |
| 8             | Town Hall Lighting Upgrades                     | £50,000           | £8,654         | 51.6             | 5.8      | 0.57%       |
| 25            | Boscombe Day Centre lighting                    | £500              | £94            | 0.6              | 5.3      | 0.01%       |
| 10            | Street Lighting Dimming                         | £14,700           | £4,636         | 27.7             | 3.2      | 0.31%       |
| 11            | Bollard lamp removal                            | £20,000           | £1,892         | 11.3             | 10.6     | 0.12%       |
| 18            | St Peters Upper Boiler upgrade to Gas           | £250,000          | £24,000        | 148.             | 10.4     | 1.63%       |
| 21            | Office Rationalisation (move from Dorset House) | £800,000          | £34,760        | 207.5            | 23.0     | 2.29%       |
| 51            | Bath Hill LED trial                             | £2,500            | £248           | 1.5              | 10.0     | 0.02%       |
| 30            | Passenger transport Driver training             | £2,250            | £4,429         | 10.1             | 0.5      | 0.11%       |
| <b>TOTALS</b> |   | <b>£1,210,009</b> | <b>£90,404</b> | <b>527.6</b>     |          |             |

## 4.2 Planned / funded projects

These projects are planned to take place and have agreed funding.

| Ref           | Project                           | Project Cost    | Annual Saving  |                  | Pay back | % of Target |
|---------------|-----------------------------------|-----------------|----------------|------------------|----------|-------------|
|               |                                   |                 | Financial      | tCO <sub>2</sub> |          |             |
| 16            | St Marks Lighting T8 to T5        | £4,000          | £1,928         | 11.5             | 2.1      | 0.13%       |
| 17            | Kings Park Nursery Biomass boiler | £155,000        | £9,900         | 61.0             | 15.7     | 0.67%       |
| 43            | AMR Offices                       | £7,500          | £18,253        | 109.5            | 0.4      | 1.21%       |
| 44            | AMR Day Centres                   | £5,200          | £7,404         | 44.9             | 0.7      | 0.50%       |
| 49            | Town Hall BMS Upgrades            | £34,000         | £20,100        | 120.5            | 1.7      | 1.33%       |
| <b>TOTALS</b> |                                   | <b>£205,700</b> | <b>£57,585</b> | <b>347.4</b>     |          |             |

## 4.3 Near term projects

These projects are those that have been identified and are planned to take place but may require a completed business case and funding allocated to proceed.

| Ref           | Project                                    | Project Cost    | Annual Saving   |                  | Pay back | % of Target |
|---------------|--|-----------------|-----------------|------------------|----------|-------------|
|               |  |                 | Financial       | tCO <sub>2</sub> |          |             |
| 19            | St Peters Upper Solar water Heating        | £29,755         | £750            | 5.0              | 40.0     | 0.10%       |
| 22            | Boscombe Children's Centre Lighting        | £1,500          | £716            | 4.3              | 2.1      | 0.05%       |
| 27            | St Michaels Boiler upgrades                | £75,000         | £1,700          | 10.5             | 44.0     | 0.12%       |
| 31            | Hillview Primary Lighting upgrades         | £6,000          | £2,065          | 12.3             | 2.9      | 0.14%       |
| 38            | Awareness raising Schools                  | TBC             | £61,355         | 372.             | 0.0      | 4.11%       |
| 39            | Awareness Raising Offices                  | TBC             | £18,253         | 109.5            | 0.0      | 1.21%       |
| 40            | Awareness Raising Day Centres              | TBC             | £7,404          | 44.9             | 0.0      | 0.50%       |
| 41            | Awareness Training Miscellaneous buildings | TBC             | £8,589          | 51.9             | 0.0      | 0.57%       |
| 46            | Thin Client                                | £100,000        | £23,400         | 34.0             | 4.0      | 1.54%       |
| 50            | Street lighting electronic photo cells     | £400,000        | £8,672          | 51.7             | 0.0      | 0.57%       |
| 52            | Street lighting lamp change                | £80,000         | £21,600         | 128.9            | 3.7      | 1.42%       |
| 56            | Upgrading Fleet transport vehicles         | TBC             | £32,395         | 71               | TBC      | 0.70%       |
| <b>TOTALS</b> |  | <b>£692,255</b> | <b>£170,906</b> | <b>895.5</b>     |          |             |

## 4.4 Medium to long term projects

These projects have been identified in terms of estimated carbon savings. They will require further feasibility work to completely quantify costs and savings in order to build business cases for funding. The figures below are estimates.

| Ref           | Project   | Project Cost      | Annual Saving   |                  | Pay back | % of Target |
|---------------|---|-------------------|-----------------|------------------|----------|-------------|
|               |   |                   | Financial       | tCO <sub>2</sub> |          |             |
| 12            | Switch off Wessex Way Street Lighting                                       | £16,300           | £16,491         | 98.4             | 1.0      | 1.09%       |
| 14            | Boiler heating controls   | £238,650          | £80,851         | 498.5            | 3.0      | 5.51%       |
| 15            | Green Fleet review (Fleet)  | TBC               | £74,797         | 171              | TBC      | 1.89%       |
| 20            | Town Centre CHP   | £1,300,000        | TBC             | 164              | TBC      | 0.3%        |
| 26            | Crematorium heat recovery   | TBC               | £3,655          | 22.5             | 0.0      | 0.25%       |
| 32            | Stourfield Junior Wind Turbine  | £55,000           | £2,736          | 16.0             | 20.1     | 0.18%       |
| 33            | Automatic lighting controls could apply to 90% of our Primary schools       | £186,726          | £26,078         | 155.6            | 7.2      | 1.72%       |
| 34            | Retrofit/replace lighting to T5 could apply to 90% of our Primary schools   | £22,514           | £5,961          | 35.6             | 3.8      | 0.39%       |
| 35            | Automatic lighting controls could apply to 90% of our Secondary schools     | £230,276          | £32,160         | 191.9            | 7.2      | 2.12%       |
| 36            | Retrofit/replace lighting to T5 could apply to 90% of our Secondary schools | £27,765           | £7,351          | 43.9             | 3.8      | 0.48%       |
| 42            | AMR Schools   | £40,000           | £61,355         | 372              | 0.7      | 4.11%       |
| 45            | AMR Miscellaneous buildings   | £15,000           | £8,589          | 51.9             | 1.7      | 0.57%       |
| 47            | Voltage Optimisation 19 buildings   | £95,000           | £44,713         | 266.8            | 2.5      | 2.95%       |
| 48            | Richmond Hill CP lighting   |                   | £9,082          | 54.2             | 0.0      | 0.60%       |
| 53            | Auto shut off PC's  | TBC               | £55,440         | 330.8            | 0.0      | 3.65%       |
| 54            | Biomass boiler top 5 gas sites  | £1,000,000        | £189,048        | 1165.6           | 5.3      | 12.88%      |
| 55            | Replace boilers with high efficiency type                                   | TBC               | £102,605        | 632.6            | 0.0      | 6.99%       |
| <b>TOTALS</b> |   | <b>£3,227,231</b> | <b>£720,912</b> | <b>4271.3</b>    |          |             |

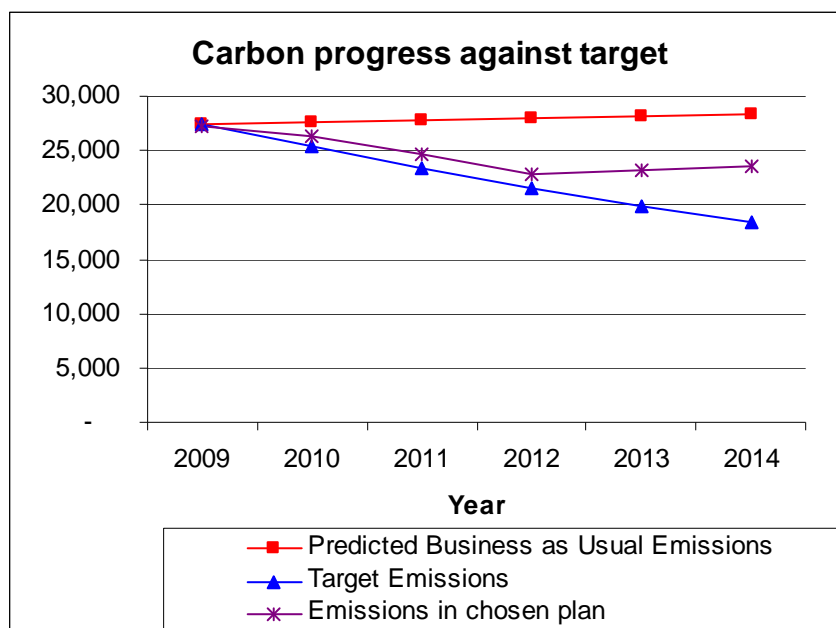
## The Future

It should be noted that identifying and implementing carbon management projects is an on going process and all Council services via the Carbon Reduction Team and Programme board will be working to find new ways to reduce carbon in future years. As part of this work a group project for the Carbon Reduction Team will be a key way in which any shortfall in meeting the target will be met.

For example, schools have been asked to sign a pledge to reduce their energy consumption by 10% based on 08/09 base year. Much of this reduction can be achieved with little or no investment such as good house keeping. This reduction would equate to some 280 tonnes of CO<sub>2</sub> and 3% of the target over the five years, assuming all schools achieved the reduction.

### 4.5 Projected achievement towards target

The tables of projects in sections 4.1 to 4.4 represent a reduction in Carbon of 70%<sup>7</sup>. The graph below demonstrates the figures in terms of progress over the years towards the target. It considers the start date for projects and clearly shows the gap between target and the current achievement of the projects identified so far and the need for continuation of the work to identify projects.



<sup>7</sup> If the Trust Status sites are excluded from the baseline (see page 16) then the % of target achieved through the projects identified is approximately 80%.

## 5 Carbon Management Plan Financing

This section sets out the financial benefits, implementation costs and funding arrangements. The financial gains of achieving our target reduction is considerable assuming funding is available to carry out the measures required.

The Council has committed funding to reducing carbon emissions and this is set out below, clearly this will continue to fund carbon reduction measures -

**Salix funding** - The Council has matched funded this loan from the Carbon Trust, giving a total available fund of £220,000. The loan is repaid with the savings in energy costs from the project carried out. Re-investing the savings back into this fund has meant that we have been able to undertake the following schemes since 2006:-

| Project                  | Project Description            | Project Cost    | Annual Savings (tonnes CO <sub>2</sub> ) | Annual Cost Savings | Payback (Years) | Commission Date |
|--------------------------|--------------------------------|-----------------|--|---------------------|-----------------|-----------------|
| Glenmore School          | Lighting and controls upgrades | £9,952          | 16.2                                     | £3,393              | 2.9             | Oct-06          |
| BIC                      | Fan Control                    | £2,264          | 5.8                                      | £810                | 2.8             | Jun-06          |
| Pavilion                 | AHU Controls                   | £3,129          | 12.9                                     | £1,768              | 1.8             | Apr-06          |
| Epithany Primary School  | Lighting Controls              | £6,493          | 6.47                                     | £1,399              | 4.6             | Jul-06          |
| Winton Boys School       | Lighting upgrades              | £16,000         | 26.7                                     | £3,737              | 4.3             | Jul-06          |
| Kings Park Primary       | Upgrade Lighting and Controls  | £13,169         | 14.5                                     | £3,142              | 4.2             | Jul-06          |
| Southcote Rd             | Upgrade Lighting/control       | £4,263          | 8  | £1,199              | 3.6             | Apr-06          |
|                          | Local Boiler for hot water     | £3,500          | 7.41                                     | £1,053              | 3.3             | Feb-07          |
|                          | Lighting Upgrades              | £6,986          | 10.11                                    | £2,101              | 3.7             | Feb-07          |
| Littledown Sports Centre | Upgrade Lighting               | £35,598         | 34.4                                     | £7,201              | 2.8             | Apr-07          |
|                          | VSD                            | £13,750         | 19.2                                     | £14,769             | 0.9             | May-07          |
|                          | Upgrade Lighting               | £8,080          | 8.41                                     | £1,761              | 4.6             | Sep-07          |
| Town Hall                | Lighting and controls upgrade  | £29,123         | 28.43                                    | £5,950              | 4.8             | Apr-08          |
|                          | Pipework Insulation            | £5,826          | 14.14                                    | £1,853              | 4.0             | May-08          |
|                          | Lighting and controls upgrade  | £30,664         | 30                                       | £8,500              | 4.2             | Jan-09          |
|                          | Lighting and controls upgrade  | £32,000         | 28                                       | £9,000              | 4.0             | May-09          |
| BIC                      | Install gas fired water heater | £10,000         | 22.4                                     | £2,420              | 4.9             | Aug-08          |
| Winton Primary School    | Lighting and controls upgrade  | £6,864          | 7.34                                     | £1,381              | 4.9             | Apr-08          |
| Stourfield Junior        | Lighting controls              | £6,056          | 6.45                                     | £1,213              | 4.9             | Apr-08          |
| Kingsleigh Primary       | Lighting Controls              | £6,152          | 7  | £1,607              | 4.0             | Nov-08          |
| Parkway House            | Lighting Controls              | £1,500          | 4.5                                      | £1,000              | 4.0             | Jan-09          |
| <b>Totals</b>            |                                | <b>£255,536</b> | <b>326</b>                               | <b>£77,080</b>      |                 |                 |

**One-off fund** - Bournemouth Borough Council has allocated £155,000 for one-off projects that will assist to reduce the CO<sub>2</sub> emissions.

|              |                 |
|--------------|-----------------|
| Allocated    | £144,029        |
| Unallocated  | £10,971         |
| <b>Total</b> | <b>£155,000</b> |

## 5.1 Assumptions

A number of assumptions, which are identified below, have been made when calculating the savings -

- **Assumption 1**

The identified savings for each project are estimates based on energy costs available. It is possible that the financial benefits will change over time due to changes in energy costs or even the capital cost to implement projects. This may affect the viability of some projects but given the long term view that energy costs will increase it is likely that the benefits of projects in terms of financial will be positive.

- **Assumption 2**

CRC Energy Efficiency Scheme - The financial benefits of good performance under this scheme have not been included in the calculations. Any reduction in carbon emissions will enable the Council to purchase fewer allowances, have a higher league table position and in turn positive financial gains

- **Assumption 3**

In addition to the projects identified as carbon saving there are projects within the Capital Programme that are likely to increase the Councils overall carbon emissions and costs. This effect has not been measured as part of the Councils Carbon Management Plan. Although as part of the Programme the Council will consider Carbon at every level and ensure that the impacts in terms of CO<sub>2</sub> are considered for all new projects.

## 5.2 Benefits / savings - quantified and un-quantified

|                                     | 2010     | 2011     | 2012     | 2013     | 2014     |
|-------------------------------------|----------|----------|----------|----------|----------|
| <b>Annual cost saving</b>           | £201,055 | £566,229 | £872,891 | £839,167 | £806,742 |
| <b>Annual CO<sub>2</sub> saving</b> | 1227.30  | 3233.21  | 5111.88  | 4962.99  | 4818.44  |
| <b>% of target achieved</b>         | 14%      | 36%      | 56%      | 55%      | 53%      |

**Note – If the Trust Status sites are excluded from the baseline (see page 16) then the % of target achieved through the projects identified is approximately 80%.**

### 5.3 Additional resources

Apart from the two funding sources identified at the start of this section the Council does not have sources identified specifically for Carbon reduction. However there are several funding streams available internally and externally which can be used to fund carbon reduction. An overview is given below -

#### Innovation Fund

The contribution from the fund is 50% of the estimated project cost

#### Borrow To Invest To Save

Individual services are allowed to borrow-to-invest-to-save for a period of up to four years in order to fund capital schemes that will ultimately reduce costs/expenditure

#### Prudential Borrowing

Service Units will pay back the loans and interest over a period they have set which is affordable, prudent and sustainable.

#### External funding

Salix Energy Efficiency Loan Scheme (SEELS) was a sum of money made available in 2009 to all public sector organisations. The £50m will be available until it is fully allocated which is likely to be the early part of 2010.

Some of projects already identified have been funded from the Governments renewable grant Low Carbon Building Programme (LCBP Phase 2). There is also Lottery funding for projects again some projects have already been implemented using this grant.

The Council will also seek to identify funding from other schemes such as those offered by energy suppliers.

### 5.4 Financial costs and sources of funding

Implementing projects as early as possible is vital to meeting the target and will need financing from the outset. Salix financing (see below) will play a major role throughout the five years although there will be a need for additional funding as covered in 5.3.

- 2010/11 the Salix loan scheme will be key to financing the projects. The available funding for the year will be £87,735 but is like to increase to £134,193 due to repayment of loans from sites that become Trusts.
- An initial application for £238,000 has been made for the SEELS Funding but will require further work to commit the funding which is for boiler controls (See Section 4.4 Project No. 14)



## 6 Actions to Embed Carbon Management in Our Organisation

This section sets out how carbon reduction will be considered at every level across the whole of the Council. It highlights key areas such as schools and procurement. Some of the points have been covered in section two.

### 6.1 Data Management - measuring the difference, measuring the benefit

Although energy and fuel data is held centrally there will be a need to ensure individual sites take ownership of their consumption and progress against the target.

This will be initially carried out through the Carbon Reduction Team where services periodically report their emissions. It will also require the following actions -

- Training site managers to take regular meter reads which they can both eliminate estimated invoices and monitor energy use in buildings.
- Green Building Champions actively monitor energy use of their particular site.
- A programme to install Automatic Meter Reading (AMR) has begun and this will also offer energy saving opportunities (see project tables, section 4).
- Monitor and measure the predicted benefits against the actual achievements of individual measures, to ensure only measures that work are used in the future.

The Project Leader with support from the Carbon Reduction Team will be tasked to monitor progress towards the target.

### 6.2 Communication and Training - ensuring everyone is aware

Communicating the message across all services at all levels is essential. The communication team are represented on the Carbon Reduction Team monthly meetings. They are crucial to achieving cross service participation.

To date the Communication team have -

- Carried out a Staff Energy Survey.
- Worked on the Go Green At Work Campaign.

The communication team will be tasked with promoting the Carbon Management Plan through Internal communication channels like 'Insider', the Council's staff magazine. They will continue to play an important part in the raising awareness throughout the five year plan.

### 6.3 Engagement of Schools - influencing Schools to reduce their carbon footprint

Both the Sustainable Schools Officer and the Planning and Development Officer attend the Carbon Reduction Team meetings. As outlined below they have been working with the Project Lead to engage schools and this is set to continue -

We have been operating our own Green School award programme for around a decade. Building on this, the National Framework for Sustainable Schools has just been launched to the Heads of Bournemouth Schools. This scheme is to encourage schools to become Sustainable Schools by 2020. The Carbon Management Programme was introduced to the Schools at the same time so the link between energy reduction across the whole council and the sustainable schools initiative could be made. Engaging with the schools is seen as key to meeting the CMP target and so activities as shown below have been developed -

- A co-ordinator for sustainable schools has just been appointed who has 1.5 days a week to support schools with the national framework. Carbon reduction initiatives are promoted as part of this role and a half termly newsletter is provided and a termly network meeting to share ideas and good practice including what schools are doing to reduce energy. The Co-ordinator also attends the Carbon Reduction Team meetings and the Climate Change Team.
- A schools energy reduction pledge was introduced in January 2010 which asked schools to sign up to a commitment to reduce their energy use by 10% by July 2011 from baseline 08/09. As part of this pledge, schools will be asked to commit to undertake 4 low cost measures which amount to good housekeeping actions; 2 medium cost measures and an optional high cost measure for which funding can be sought.
- Prizes for the best performing school will be given.
- Energy surveys by the Carbon Trust have been arranged for schools with energy bills of over £50k. This will help to identify further carbon saving projects.
- Energy reduction workshop, was ran for Headteachers and site managers in February 2010.

The Co-ordinator for Sustainable Schools is also responsible for ensuring that sustainability is embedded into the schools involved in the 'Building Schools for the Future'. A Local Authority sustainability brief has been developed around the framework for sustainable schools. This brief was developed in consultation with the Carbon Reduction Team and Climate Change Team. It includes measures that must be considered in the design, construction and use of the new or refurbished buildings to reduce energy use and carbon emissions as a whole.

## 6.4 Engagement of our Suppliers - working with suppliers to reduce our carbon footprint

The Council procures a large number of services and equipment. There is the potential that carbon emissions could grow as a result of procurement and undoing the good work through the projects and measures identified in section 4.

The Strategic Procurement Manager attends the Carbon Reduction Team meetings and is tasked with ensuring that the Council's procurement does not conflict with the requirements of the Plan.

Below sets out how the Council will reduce the impact on CO<sub>2</sub> emissions in terms of procurement -

### Supplier selection

Within the limits of EU and UK procurement law we will ensure that all elements of sustainability, including energy use and waste are taken into account during the selection of our suppliers.

Where possible we will work with local businesses and offices to reduce travel and transport and to promote the local economy.

### Supplier contracts

Where appropriate and within the limits of EU and UK law the Council will ensure that any contracts contains carbon reduction targets

The Council will ensure that contracts contain clauses requiring the suppliers to demonstrate the downward management of their carbon footprint

### Supplier Management

Once in contract with suppliers we will use our supplier management meetings to:

- a) Where appropriate, discuss and agree how the supplier can help reduce the Council's direct carbon footprint
- b) Discuss and agree how the Council and the supplier can work together to reduce the carbon footprint of the relationship
- c) Discuss how the supplier is working to reduce their own carbon footprint and that of their supply chain

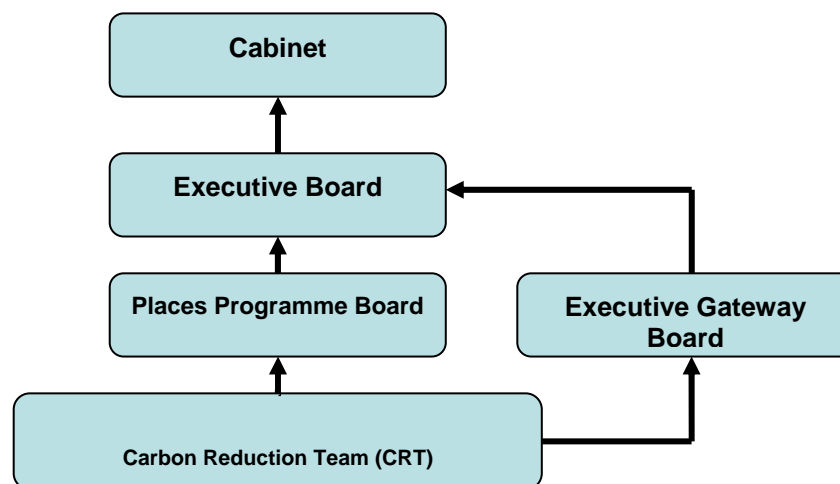
## 7 Programme Management of the CM Programme

This section sets out the processes in place that ensure that the Plan is considered at all levels and aspect of the Councils operations. It also outlines the key staff that will ensure that the Plan succeeds.

### 7.1 The Programme Board - strategic ownership and oversight

The Programme Board will meet bi-monthly and comprises -

- o Chair: Roger Ball, Service Director, Technical Services
- o Councillor Robert Lawton, Cabinet Member for Environment & Transport
- o Tony Williams, Executive Director, Environment and Economic Services
- o Stephen Parker, Chief Accountant
- o Roger Brown Service Director, Leisure
- o Mike Holmes, Service Director, Planning & Transport
- o Neil Goddard, Service Director, Children's Strategic Services



#### Programme Board Terms of Reference

- To provide leadership on carbon management across the Council and ensure that it is considered at all levels.
- Review progress of carbon management and status of the Councils carbon footprint
- Ensure that carbon management projects and measures are identified and
- Ensure that projects can be implemented

*\* The Places Programme Board has been tasked with delivering the 'Better Planning' and 'Improving our Environment' priorities*

## 7.2 The Carbon Reduction Team - delivering the projects

- Monthly meetings chaired by the Project Lead.
- Project Lead will review progress with the team and highlight issues to the Programme Board
- Project Lead to meet regularly with the Project Sponsor to discuss progress.

The Carbon Reduction Team is made up of the following officers -

| Role                          | Name and position   | Name and position  |
|-------------------------------|---|--|
| Project Leader                | Kevin Smith<br>Senior Energy Engineer   |  |
| Deputy Project Leader         | Lee Green<br>Environmental Strategy & Sustainability Manager                        |  |
| Carbon Reduction Team Members | Anna Bourne<br>Strategic Procurement Manager  | Keith Simmons<br>Incident & Service Desk Manager - ICT             |
|                               | Barry Mortimer<br>Facilities & Accommodation Manager - Adult and Community Services | Kevin Grant<br>Youth Service                                       |
|                               | Bob Olding<br>Technical Manager - Leisure Centres                                   | Marcin Grabowski<br>Planning & Development Officer - Schools       |
|                               | Carly Earnshaw<br>Media & Communications Officer                                    | Martin Belbin<br>Head of Building & Engineering - BIC/Pavilion     |
|                               | Catherine Buchanan<br>Team Leader Admissions - Children's Strategic Services        | Martin Wilkins<br>Policy Officer (Property)                        |
|                               | Chris Hardy<br>Project Manager - Street Lighting                                    | Patricia Zimmerman<br>Children's Learning and Engagement           |
|                               | David Harrop<br>Passenger Transport Manager   | Paula Mills<br>Group Accountant                                    |
|                               | Graham Fox<br>Building Services Manager   | Roy Osborough<br>Strategic Waste Manager                           |
|                               | Jane Potter<br>Business Support Manager - Children's Strategic Services             | Simon Percival<br>Principal Surveyor - Housing & Landlord Services |
|                               | Gerardine Bodey<br>Area Librarian   | Steve Goold<br>Crematorium Technician                              |

### 7.3 Succession planning for key roles

It is essential that the plan stays on course in the event of any organisational or staff changes. The deputy project leader has been and will stay fully involved in the development and delivery of the Carbon Management Plan. All other members of the Carbon Management Team will continue to be involved and engaged through its work. Any issues regarding the future strength and stability of key roles will be escalated to the Programme Board.

It is also essential that all information used to produce this plan particularly that used for baseline and projects is accessible, in the event of any staff changes.

Information relating to the Carbon Management Programme is stored electronically in the Building Services 'Energy & Sustainability' drive under LACMP.

### 7.4 Ongoing stakeholder management

This will take place primarily through the Carbon Reduction Team ensuring that all services remain connected with and are kept up to date on developments and progress with the delivery of the Carbon Management Plan. Further Go Green @ Work communications and campaigns will be undertaken to support this.

### 7.5 Progress monitoring and review

Continuous monitoring of progress will be carried out predominantly by the energy officer in conjunction with the Carbon Reduction Team. This information will be reviewed regularly by the Programme Board. Additionally the development and delivery of the Council's actions towards National Indicator 185 (see section 2.1) are the subject of quarterly progress reports to the 2026 Sustainable Environment Strategic Delivery Partnership.

Overall progress will be reported annually to the Programme Board and Cabinet

The main parts of the monitoring and progress review will cover -

- Overall Carbon reduction and progress
- Overall financial savings and progress
- Continuous review of projects and measures, and how they are meeting the predicted savings

## Appendix A: Carbon Management Matrix - Embedding

|                          | CORPORATE STRATEGY   | PROGRAMME MANAGEMENT  | RESPONSIBILITY   | DATA MANAGEMENT   | COMMUNICATION & TRAINING  | FINANCE & INVESTMENT  | POLICY ALIGNMENT *  | ENGAGEMENT OF SCHOOLS   |
|--------------------------|--|---|--|---|---|---|---|---|
| <b>5</b><br><b>BEST</b>  | <ul style="list-style-type: none"> <li>Top level target allocated across organisation</li> <li>CO<sub>2</sub> reduction targets in Directorate Business Plans</li> <li>Action plans in place to embed strategy. Progress routinely reviewed</li> </ul> | <ul style="list-style-type: none"> <li>Cabinet / SMT review progress against targets on quarterly basis</li> <li>Regular diagnostic reports provided to Directorates</li> <li>Progress against target published externally</li> </ul>     | <ul style="list-style-type: none"> <li>CM integrated in responsibilities of senior managers</li> <li>CM part of all contracts / T's&amp;C's</li> <li>Central CO<sub>2</sub> reduction advice available</li> <li>Green Champions leading local action groups</li> </ul> | <ul style="list-style-type: none"> <li>Regular collation of CO<sub>2</sub> emissions for all sources</li> <li>Data externally verified</li> <li>Monitoring &amp; Targeting in place for:                             <ul style="list-style-type: none"> <li>buildings</li> <li>street lighting</li> <li>transport/travel</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>All staff given formalised CO<sub>2</sub>:                             <ul style="list-style-type: none"> <li>induction and training</li> <li>communications</li> </ul> </li> <li>Joint CM communications with key partners</li> <li>Staff awareness tested through surveys</li> </ul> | <ul style="list-style-type: none"> <li>Finance committed for 2+ yrs of Programme</li> <li>External funding being routinely obtained</li> <li>Ring-fenced fund for carbon reduction initiatives</li> </ul>   | <ul style="list-style-type: none"> <li>CO<sub>2</sub> friendly operating procedure in place</li> <li>Central team provide advice and review, when requested</li> <li>Barriers to CO<sub>2</sub> reduction routinely considered and removed</li> </ul> | <ul style="list-style-type: none"> <li>A 'whole school approach' including curriculum</li> <li>Mature programme of engagement in place</li> <li>CO<sub>2</sub> saving in schools having a wider community impact</li> </ul>                     |
| <b>4</b>                 | <ul style="list-style-type: none"> <li>CO<sub>2</sub> reduction commitment in Corporate Strategy</li> <li>Top level targets set for CO<sub>2</sub> reduction</li> <li>Climate Change Strategy reviewed annually</li> </ul>                             | <ul style="list-style-type: none"> <li>Sponsor reviews progress and removes blockages through regular Programme Boards</li> <li>Progress against targets routinely reported to Senior Mgt Team</li> </ul>                                 | <ul style="list-style-type: none"> <li>CM integrated in to responsibilities of department heads</li> <li>Cabinet / SMT regularly updated</li> <li>Staff engaged through Green Champion network</li> </ul>  | <ul style="list-style-type: none"> <li>Annual collation of CO<sub>2</sub> emissions for:                             <ul style="list-style-type: none"> <li>buildings</li> <li>street lighting</li> <li>transport/travel</li> </ul> </li> <li>Data internally reviewed</li> </ul>   | <ul style="list-style-type: none"> <li>All staff given CO<sub>2</sub> reduction:                             <ul style="list-style-type: none"> <li>induction</li> <li>communications</li> <li>CM matters communicated to external community</li> </ul> </li> </ul>   | <ul style="list-style-type: none"> <li>Coordinated financing for CO<sub>2</sub> reduction projects via Programme Board</li> <li>Funding principles and processes agreed</li> <li>Finances committed 1yr ahead</li> <li>Some external financing</li> </ul> | <ul style="list-style-type: none"> <li>Comprehensive review of policies complete</li> <li>Lower level policies reviewed locally</li> <li>Unpopular changes being considered</li> </ul>  | <ul style="list-style-type: none"> <li>A clear emphasis on energy / CO<sub>2</sub> reduction in schools</li> <li>Council activities fully coordinated</li> <li>Broad set of education stakeholders engaged</li> <li>Funding in place</li> </ul> |
| <b>3</b>                 | <ul style="list-style-type: none"> <li>CO<sub>2</sub> reduction vision clearly stated and published</li> <li>Climate Change Strategy endorsed by Cabinet and publicised with staff</li> </ul>  | <ul style="list-style-type: none"> <li>Core team regularly review CM progress                             <ul style="list-style-type: none"> <li>actions</li> <li>profile &amp; targets</li> <li>new opportunities</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>An individual provides full time focus for CO<sub>2</sub> reduction</li> <li>Key individuals have accountability for carbon reduction</li> <li>Senior Sponsor actively engaged</li> </ul>                                       | <ul style="list-style-type: none"> <li>Collation of CO<sub>2</sub> emissions for limited scope i.e. buildings only</li> </ul>   | <ul style="list-style-type: none"> <li>Environmental / energy group(s) given ad hoc:                             <ul style="list-style-type: none"> <li>training</li> <li>communications</li> </ul> </li> </ul>   | <ul style="list-style-type: none"> <li>A view of the cost of CO<sub>2</sub> reduction is developing, but finance remains ad-hoc</li> <li>Some centralised resource allocated</li> <li>Finance representation on CM Team</li> </ul>                        | <ul style="list-style-type: none"> <li>All high level and some mid level policies reviewed, irregularly</li> <li>Substantial changes made, showing CO<sub>2</sub> savings</li> </ul>  | <ul style="list-style-type: none"> <li>A person has responsibility for Schools CO<sub>2</sub> reduction</li> <li>Schools CO<sub>2</sub> reduction projects coordinated</li> <li>Ad-hoc funding</li> </ul>                                       |
| <b>2</b>                 | <ul style="list-style-type: none"> <li>Draft Climate Change Policy</li> <li>Climate Change references in other strategies</li> </ul>   | <ul style="list-style-type: none"> <li>Ad hoc reviews of CM actions progress</li> </ul>   | <ul style="list-style-type: none"> <li>CO<sub>2</sub> reduction a part-time responsibility of a few department champions</li> </ul>  | <ul style="list-style-type: none"> <li>No CO<sub>2</sub> emissions data compiled</li> <li>Energy data compiled on a regular basis</li> </ul>  | <ul style="list-style-type: none"> <li>Regular awareness campaigns</li> <li>Staff given CM information on an ad-hoc basis</li> </ul>  | <ul style="list-style-type: none"> <li>Ad hoc financing for CO<sub>2</sub> reduction projects</li> </ul>  | <ul style="list-style-type: none"> <li>Partial review of key, high level policies</li> <li>Some financial quick wins made</li> </ul>  | <ul style="list-style-type: none"> <li>Ad-hoc schools projects to specifically reduce energy / CO<sub>2</sub></li> </ul>  |
| <b>1</b><br><b>Worst</b> | <ul style="list-style-type: none"> <li>No policy</li> <li>No Climate Change reference</li> </ul>   | <ul style="list-style-type: none"> <li>No CM monitoring</li> </ul>  | <ul style="list-style-type: none"> <li>No recognised CO<sub>2</sub> reduction responsibility</li> </ul>  | <ul style="list-style-type: none"> <li>No CO<sub>2</sub> emissions data compiled</li> <li>Estimated billing</li> </ul>  | <ul style="list-style-type: none"> <li>No communication or training</li> </ul>  | <ul style="list-style-type: none"> <li>No specific funding for CO<sub>2</sub> reduction projects</li> </ul>   | <ul style="list-style-type: none"> <li>No alignment of policies for CO<sub>2</sub> reduction</li> </ul>   | <ul style="list-style-type: none"> <li>No CO<sub>2</sub> / energy reduction policy for schools</li> </ul>   |

\* Major operational policies and procedures, e.g. Capital Projects, Through Life Costing, Procurement, HR, Business Travel

## Appendix B: Glossary of Terms

| Term                    | Meaning  |
|-------------------------|--|
| AMR                     | Automatic Meter Reading - A meter that records the amount of energy (electricity or gas). The information is sent electronically and means that manual reading of the meter is not required to acquire energy consumption. |
| Baseline                | In this context this is the starting point of emissions on which targets and progress is measured.   |
| Biomass Boiler          | A heating boiler that uses organic material such as wood chippings as a fuel source. The Method is almost carbon neutral because the carbon was absorbed during the life of the plant or tree.                             |
| Business as Usual (BAU) | Means not taking action and to continue on the current course for example not reducing energy consumption.   |
| CO <sub>2</sub>         | Carbon Dioxide - carbon emissions usually stated in either Kg or Tonnes (tCO <sub>2</sub> )  |
| Emissions Factors       | These are used to calculate the amount of carbon that is produced when a particular energy or fuel is used. Usually given in Kg of CO <sub>2</sub> per unit of energy or fuel.   |
| Fossil Fuels            | Fuels sources derived from organism materials. Examples are gas, oil and petrol.   |
| kWh                     | Kilo Watt Hour - the unit measure of energy consumed in one hour   |
| LED                     | Light Emitting Diode - a very low energy method of producing light.  |
| MWh                     | Mega Watt Hour - as with kWh although represents 1,000 kWh   |
| Photo Cells             | A detector that senses the loss of sunlight - used to switch street lights on when there is an insufficient level of light.  |
| PIR                     | Passive Infrared detector - detects movement of people and is used to switch lights on. Lights switch off when no people are present - saving energy.  |
| Solar PV                | This is where the energy of the sun is used to produce electricity. The suns energy is collected via solar panels on the roof.   |
| Solar Water Heating     | A method of heating using the energy from the sun. A liquid is passed through a collector placed in the sun. The liquid can be used to provide hot water within a building   |
| T5                      | A type of fluorescent tube that is more energy efficient   |
| Thin Client             | A type of computer that is smaller than standard one and hence uses a lot less energy.   |
| Value at Stake          | Demonstrates a figure that   |
| Voltage optimisation    | Equipment that adjusts the electricity coming into a building in a way that reduces the energy consumed by the equipment within it.  |
| VSD                     | Variable Speed Drive - equipment used to control electric motors so that their speed matches the demand, saving energy.  |



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