

Bolton's Carbon Management Plan 2008-2013

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cleaner and greener



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**Bolton
Council**

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Foreword

I am very pleased, on behalf of Bolton Council, to present this Carbon Management Plan 2008-2013.

Through this document the council will demonstrate its unequivocal commitment to undertake a wide range of practical steps to assist in tackling the challenges that climate change presents.

The council has already demonstrated its commitment to this agenda by signing the Nottingham Declaration and by setting out targets within our Environment Strategy. However, by working with the Carbon Trust on this programme we have, for the first time, been able to measure the "carbon footprint" across our extensive range of activities. This yardstick will be the means by which our progress will be measured.

A challenging target to reduce our CO2 emission by a third has been set and whilst the focus of this document relates to improvement and change in respect of the council's operations and functions, the council recognises its role and responsibility to lead by example. We have a strong track record of success through our Local Strategic Partnership and we will work hard to assist our partners, stakeholders and customers to join us in moving towards a more sustainable way of life.

I am confident that our elected members, staff, partners, stakeholders and citizens are ready, willing and able to rise to this challenge. This plan, whilst only a start, is nevertheless a significant step on our carbon reduction journey, and therefore I commend the plan to you.

Sean Harriss
Chief Executive
March 2009



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.

Bolton Council was selected in 2008, amidst strong competition, to take part in this ambitious programme. Bolton Council partnered with the Carbon Trust on this programme in order to realise vast carbon and cost savings. This Carbon Management Plan commits the council to a target of reducing CO2 by 33.33% by 2013 and underpins potential financial savings to the council of around £5 million.

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

Richard Rugg
Head of Public Sector, Carbon Trust

Management summary

Local authorities are coming under increasing government pressure to reduce their CO2 emissions in order to meet national environmental targets. To avoid the potentially devastating affects of climate change, the government has established that the UK needs to reduce its emissions by 80% by 2050 against a 1990 baseline. Achieving these reductions will present a huge challenge for Bolton Council. It does however represent real and lasting opportunities in terms of energy efficiency improvements/investments and cost reductions.

The Energy Performance of Buildings Directive (EPDB)2002/91/EC has been introduced to promote the improvement of the energy performance of buildings. Implementation of the Directive is seen as an important contribution to reducing carbon dioxide emissions as part of the UK Climate Change Programme. From the 1st October 2008 public sector occupiers of buildings of 1000 m2 or more were required to display a Display Energy Certificate (DEC) in a prominent place visible to the public, which shows the energy performance of the building based on actual energy consumption. Bolton Council has a total of 153 buildings that require a DEC. The table below shows the number rated in each category for those DECs completed to date.

Sustainable development -

“The goal of sustainable development is to enable all people throughout the world to satisfy their basic needs and enjoy a better quality of life, without compromising the quality of life of future generations”

(Securing the Future – the UK Sustainable Development Strategy).

Rating	A	B	C	D	E	F	G
No. received	0	1	2	39	22	13	4

Carbon Reduction Commitment (CRC) –

is a mandatory ‘Cap & Trade’ emissions trading scheme for organisations whose total electricity consumption is greater than 6,000 MWh or approximately £500k. From 2010 poorly performing Local Authorities will be financially penalised depending on their position in a CRC league table. The ‘Polluter Pays’ principle is, in relation to carbon dioxide emissions, the principle that persons responsible for generating carbon dioxide emissions should make a financial contribution to the cost of measures implemented to reduce such emissions, whether by taxation or otherwise, commensurate with the scale of the carbon dioxide emissions for which they are responsible.

The Department for Environment Food and Rural Affairs (Defra) who are responsible for monitoring performance of Local Authorities have created two National Indicators specific to CO2 reduction:

NI 185 – percentage CO2 reduction from Local Authority operations. Measurement against this indicator requires each authority to calculate its CO2 emissions from analysis of the energy and fuel use in their relevant buildings and transport, including where these services have been outsourced. The first reporting year will be the financial year 2008/09. The reporting period (i.e. by financial year) is now consistent with the reporting requirements under the Carbon Reduction Commitment (CRC) in order to reduce the reporting requirement on local authorities.

NI 186 – per capita CO2 emissions in the Local Authority Area: the percentage reduction in CO2 per capita will be reported annually. This will be produced by Central Government based on CO2 emissions in the Local Area from business and public sector activities, domestic housing and road transport.

Local authorities need to take action both to reduce emissions that they themselves cause as well as those produced by their communities.

This Carbon Management Plan sets out the key initiatives identified by Bolton Council to reduce its direct carbon emissions. It has been developed under the Carbon Trust’s Local Authority Carbon Management Programme and has been built around a number of the council’s existing strategies and key corporate policies.

The council’s direct emissions are essentially those that the council emits from its use of electricity, gas and oil in all of the council’s buildings, diesel used for the council’s vehicle fleet, business travel including car mileage, train and air journeys and waste the council generates that goes to landfill.

The council has a number of existing strategies and key corporate policies that will have a positive impact on the success of this Carbon Management Plan.

The Bolton Vision

Our Vision 2007-2017 has a clear vision and ambitious high level targets designed to make a positive and lasting difference to Bolton. It has been influenced by national and regional plans such as the Regional Economic Strategy and the UK Sustainable Development Strategy. It also provides the framework for the work of partner agencies within Bolton, setting out the outcomes we want to achieve and the differences we want to make by 2017.

The Corporate Asset Management Plan

Our Asset Management Strategy sets out the vision, core values and objectives of the council in managing its land and property assets to have a significant impact both on the quality of services delivered to the public and the local environment. The Strategy has six core values, **Engagement, Sustainability, Efficiency, Cohesion, Access and Regeneration.**

Two of the key objectives of the strategy are:

- To ensure our land and property assets are used in a sustainable way and that we always take a sustainable approach to the development of new buildings.
- To reduce the levels of carbon dioxide emitted from the operation of our buildings and associated council operations.

The Capital Investment Plan

The Capital Investment Plan 2009-2012 is one of the council’s overarching documents, whose primary purpose is to ensure that capital investment is targeted at our priorities. It is important in the context that it demonstrates how our capital investment programme will contribute to the achievement of our strategic priorities as set out in the Sustainable Community Strategy and the Bolton Plan.

Environment Strategy 2006-2011

Bolton Council is rated as a four star council by the Audit Commission and as such is committed to transforming its environmental performance. The

2006-2011 Environment Strategy clearly demonstrates this promise and functions as the corporate framework to co-ordinate these commitments both internally and in partnership.

Carbon reduction is also identified as a priority in many other council strategies and plans including Sustainable Community Strategy, Procurement Strategy, Green ITC Strategy, Accommodation Strategy, the Local Transport Plan and the Staff Travel Plan. We have worked over the last year to ensure that there is alignment and consistency throughout our policies and the Carbon Management Plan and will continue to embed this further.

Funding the Action Plan

The Council’s Capital Investment Programme – a fund of £100K per project year for use on sustainability related capital works to improve and enhance council assets.

Central Energy Efficiency Fund – funding of approx. £154K allocated to fund energy efficiency projects with a payback period of five years or less with saving to be re-invested.

Corporate Energy Efficiency Fund – a revolving fund built up from brokerage.

Council Service Revenue Budgets – service budgets to fund small departmental based projects.

Government Grants (LCBP2 etc) – All projects to be matched funded using government grants where applicable.

Management, reporting and evaluation

The Project Leader will meet on a monthly basis with the Project Board to review progress towards the 33% target. In addition to this, the Carbon Management Team will meet on a monthly basis to report on progress relating to their individual areas of responsibility.

Progress will be reported to the Corporate Sustainability Group on a quarterly basis and to the Executive Members on an annual basis. Progress will be reported to council staff through the staff magazine (BOB), the council's Intranet and through the local press.

In addition, an annual review of the baseline will be carried out in April of each year in order to track and monitor progress in achieving the target. The results of the Annual review will form part of the reporting framework outlined above.

Through the LACM programme a number of opportunities for reducing emissions have been identified. Six of these have been prioritised and developed in some detail.

These are:

- Implementing Energy Efficiency Measures identified by energy audits carried out as part of the Display Energy Certificates programme
- Improving Energy Awareness Programmes in council buildings including schools
- Further implementation of Sustainable Construction practices
- Integrate Carbon Reduction into Staff Travel Plans Implementation
- Further integrate Carbon Management into Corporate Procurement
- Street Lighting Remote Monitoring Pilot Scheme.

The plan also contains a number of other actions that are being considered, which may be included as priorities in future years as the plan progresses.

Our carbon Footprint

Carbon Emissions

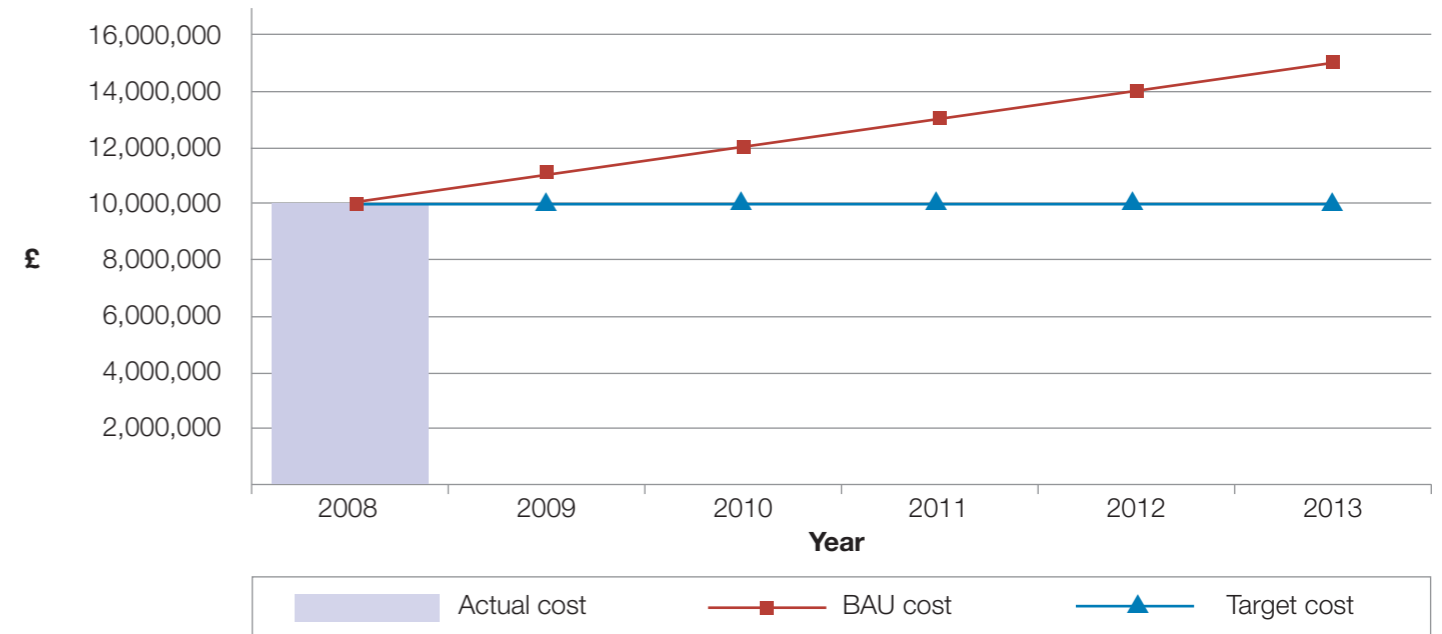
The total amount of emissions omitted by the council in 2007/08 was

48,295



Value at stake is the difference between the business as usual scenario and the reduced emissions scenario (see graph below).

Comparison of emissions with BAU increases and reduction targets - financial



The projected costs for the business as usual scenario have been calculated using the NI185 carbon assessment tool. It shows the expected rise in costs up to 2013 from the base year with overall cost starting at £9,923,025.

The full scenario assumes we do nothing to reduce the existing trends in energy use within the council and takes account of industry expected price rises. This leads to a projected increase in energy costs to **£15,379,346** by the target year of 2013.

Key figures for investment required, cost savings and carbon savings

Project	Capital Cost	Annual Saving		Pay back
		Fin	CO2 tonnes	
Powerperfactor voltage optimisation Ashburner Street Market	£54,112	£22,610	110	2.4 yrs
Powerperfactor voltage optimisation Bolton Town Hall	£118,000	£68,965	337	1.7 yrs
Training and staff awareness programme	£20,000	£469,700	2,925	0.2 yrs
Upgrade of switching gear for street lighting (photocells)	£270,000	£366,667	1,790	0.7 yrs
Management of trend	£15,000	£98,046	907	0.15 yrs

1. Introduction

This Carbon Management Plan (CMP) is the main output from the Carbon Trust's Local Authority Carbon Management Programme. The CMP details the sources of Bolton Council's carbon emissions and establishes a baseline against which the effects of actions can be measured. It sets out the council's approach towards energy and carbon management and identifies key actions we are taking to reduce our carbon emissions. Our carbon reduction programme covers a five year timeframe (2008 – 2013) and will include regular monitoring and annual reviews to assess and report on our progress.

Background to the Carbon Management Programme

The council introduced its current Environmental Strategy in November 2006, which covers a five year timeframe (2006 – 2011).

The Strategy is organised around the Government's priorities for action:

- Sustainable consumption and production
- Climate change and energy
- Natural resources and environmental enhancement
- Sustainable communities.

We have agreed nine priorities as part of our Environmental Strategy:

- Embedding the use of sustainability appraisals
- Making our procurement more sustainable
- Achieving energy, emissions and other resource savings in council buildings
- Tackling emissions in the council's vehicle fleet
- Reducing the environmental impact of staff travel
- Focusing on education for sustainable development with schools and young people
- Embedding sustainability considerations into our Building Schools for the Future, Transforming Estates, Great Estates, and Bolton Innovation Zone Programmes
- Implementing an internal waste recycling scheme
- Support all projects through an awareness raising/training programme.



In 2007 the Audit Commission's carried out a Corporate Assessment of the council, which highlighted a requirement to strengthen our approach to environmental sustainability and carbon management issues. The Carbon Trust's Local Authority Carbon Management Programme was recognised to compliment our Environmental Strategy and provided synergies with our improvement priorities. In April 2008 the council was successful in its application to take part in the sixth round of the programme.

Our membership of Phase 6 of the Carbon Management Programme supports the Local Strategic Partnership's Sustainable Community Strategy priority themes:

- Healthy
- Achieving
- Prosperous
- Safe
- Cleaner and Greener
- Strong and confident

Making the borough cleaner and greener is a top priority for local people. Sustained efforts have brought real successes, such as more recycling, cleaner streets, two flagship Green Flag parks and higher resident satisfaction with our services. Challenges remain though, particularly meeting national recycling targets and ensuring that environmental sustainability is at the top of the agenda locally.

It is against this context that our key targets for the future include:

- Raising the percentage of household waste reused, recycled or composted.
- Reducing CO2 emissions from the council's activities.

We have worked with our partners to identify a number of critical targets within our Community Strategy Three Year Plan. These priorities for improvement reflect the most important and most challenging outcomes for Bolton – one of these priorities is 'Improving cleanliness and reducing waste'.

Carbon Management Programme

Through the Local Authority Carbon Management Programme (LACM), the Carbon Trust provides councils with technical and change management support and guidance to help them realise carbon emissions savings. The primary focus of the work is to reduce emissions under the control of the local authority such as buildings, vehicle fleets, street lighting and landfill sites.

Participating councils benefit from consultant support in the form of workshops and limited dedicated support tailored around the five step process. This process guides authorities through a systematic analysis of their carbon footprint, the value at stake and the opportunities available to help them manage carbon emissions in a strategic manner.



Our achievements to date

Prior to our involvement in the Carbon Trust Carbon Management Programme, Bolton Council had already been working for many years on energy reduction initiatives and renewable energy projects. Bolton Council was the subject of a Good Practice case study, which was part of the DETR's Best Practice Programme. 'Energy-efficient refurbishment of schools – the achievements of Bolton Council' is a publication that outlined the council's positive approach to property and energy management.

The council was also successful in bidding for both New Deals for Schools money and School Energy an Energy Savings Trust programme funded by the Government and British Gas. More recently the council has secured funding from the Clear Skies Programme and The Low Carbon Building Programme Phase 2.

Some key achievements to date include:

- Photovoltaics systems at The Valley School, Queensbridge School, Ucan Centre and Cherry Tree School
- A ground source heat pump at Leverhulme Community Sports Club
- An internal recycling scheme has been introduced for a number of our civic centre operational buildings
- A number of 'Green Procurement' events were held in 2008/09 with key suppliers
- We have developed a Sustainability Appraisal Toolkit in conjunction with the Forum for the Future. Business Support Managers across the council have been trained as appraisal facilitators. We are now aiming to roll its use out among the Borough's Local Strategic Partners
- Staff Travel Survey completed
- Application of a Sustainable Design and Construction Policy in major developments
- Six schools now have 'Green Flag' awards
- Waterless urinals installed within a number of the council's civic centre offices
- Grey water harvesting at two schools.

The council also has a policy of procuring 100% green electricity from renewable sources for all of its building stock and street lighting. There are several advantages of buying green energy: the financial savings by not having to pay the Climate Change Levy, a reduction in CO2 emissions to meet agreed environmental targets, the generation of positive publicity within the community and a demonstration of community leadership.

Thinking about environmental sustainability is part of "the way we do things round here".



2. Carbon Management Strategy

2.1 Context and drivers for carbon management

Climate Change

Greenhouse gases, 86% of which in the UK is carbon dioxide, are largely caused by human activities, in particular the burning of fossil fuels for energy generation. Based on current trends, global emissions could reach double pre-industrial levels by 2035, causing a global average temperature rise of over 2 degrees Celsius. Longer term there would be a 50% chance that the temperature rise would exceed 5 Degrees Celsius. This would be the equivalent to the change in average temperature from the last ice age to today.

National Drivers

The Government commissioned Stern Review estimated that the overall costs and risks of climate change would be equivalent to the loss of at least 5% of gross domestic product (GDP) each year, now and forever. If a wider range of risks and impacts is taken into account the estimate could rise to 20% of GDP or more. In contrast the cost of actions to reduce greenhouse gas emissions to avoid the worst impacts of climate change could be limited to around 1% of global GDP each year. The Stern Review concluded that the costs of combating climate change are not only manageable but will lead to economic growth, whilst the costs of doing nothing could lead to a human and economic catastrophe.

Carbon Reduction Commitment (CRC) – this is a mandatory 'Cap & Trade' emissions trading scheme for

organisations whose total electricity consumption is greater than 6,000 MWh or approximately £500k. If an organisation falls within the CRC scheme all electricity and fuels are covered. From 2010 poorly performing local authorities will be financially penalised depending on their position in a CRC league table. The 'Polluter Pays' principle is, in relation to carbon dioxide emissions, the principle that persons responsible for generating carbon dioxide emissions should make a financial contribution to the cost of measures implemented to reduce such emissions, whether by taxation or otherwise, commensurate with the scale of the carbon dioxide emissions for which they are responsible.

Regional Drivers

In January 2008 the Association of Greater Manchester Authorities (AGMA) agreed in principle to support the establishment of a climate change agency across the city region. AGMA recognised the need for an agency within the context of emerging policy and fiscal instruments that will have a significant impact upon the sub-regional economy. The responsibility for establishing the agency lies with the Environment Commission and its development team. The Agency's remit is to develop capacity in the form of behavioural change work, including support for businesses, planning policy and procurement as well as the development of critical infrastructure including combined heat and power and renewable energy installations. A number of initiatives are being developed to better understand energy demand, future use and supply across the sub-region.

Local Drivers

For the Local Strategic Partnership these include the 'Priority Themes' within its Sustainable Community Strategy 2007 – 2017.

For the council the local drivers include:

- Priorities agreed within the current Bolton Plan
- Planned outcomes and the associated performance targets agreed within our current Environmental Strategy (2006 – 2011)
- Property rationalisation programmes (e.g. Office Accommodation Strategy and the Access Points Programme)
- The need to proactively reduce energy consumption in response to exceptional energy price increases in recent years. Energy prices have increased well over 50% since 2004. This trend is not expected to change in the foreseeable future and we must accept that the price we pay for our energy is likely to increase in the coming years
- To be the community leader on the issue of 'Environmental Sustainability'. We are in a key position to lead on efforts to reduce CO2 emissions by setting a behavioural and strategic example to the private sector and the communities we serve.

2.2 Our low carbon vision

The council's vision for carbon reduction and energy management is set out below:

“The council will, in its Carbon Management Plan, seek to inform, educate and listen to its Members, employees and local people regarding all aspects of carbon emission reductions and energy use management. It will strive to continually improve its emissions performance, and will measure itself against other similar Local Authorities and organisations. It will lead the community by example, working with partners to build strong communities and ensure that Bolton is a place where people want to live.”

2.3 Strategic themes

The council recognises that sustainability is a responsibility that it must lead on behalf of its community and society at large. It must embed from an early age, and reinforce throughout all life decisions, the need for the individual and organisation to take ownership of the environment and sustainability. To be that beacon to the Bolton Community the council must take ownership of its own actions and “put its own house in order” before it can become the community lead in sustainability. Focus was placed on five key areas of activity where real step change could be targeted and achieved; **Energy, Recycling, Travel and Transport, Design, and Procurement.**

Bolton's strategic objectives in support of these themes are:

- To further integrate carbon management into council Corporate Procurement
- To increase the use of renewable energy within the borough
- To review all design activities in terms of energy and carbon reduction targets
- To deliver long term savings from managing carbon emissions
- To inspire staff and Member participation in the implementation of the carbon management actions and initiatives
- To review and refine working practices and activities to reduce the wider Community Carbon reduction
- To review Service activities and delivery for continuous improvement with Carbon Reduction an underlying objective
- To work with other organisations within the borough to raise awareness of carbon management and to share experience.



2.4 Targets and objectives

Bolton Council will reduce the CO2 emissions from its activities by 33% from the 2007 baseline, by December 2013.

Bolton Council is well placed to play a significant part in achieving the national goal of developing a low-carbon economy.

Key areas that we will influence include:

Council Corporate Portfolio i.e. Public Buildings

- Reduce CO2 emissions from buildings by 33% by 2013
- Promote and encourage the use of renewable energy resources.
- Continue the council's commitment to procuring 100% of the council's annual electricity requirement from guaranteed renewable sources.

Street lighting

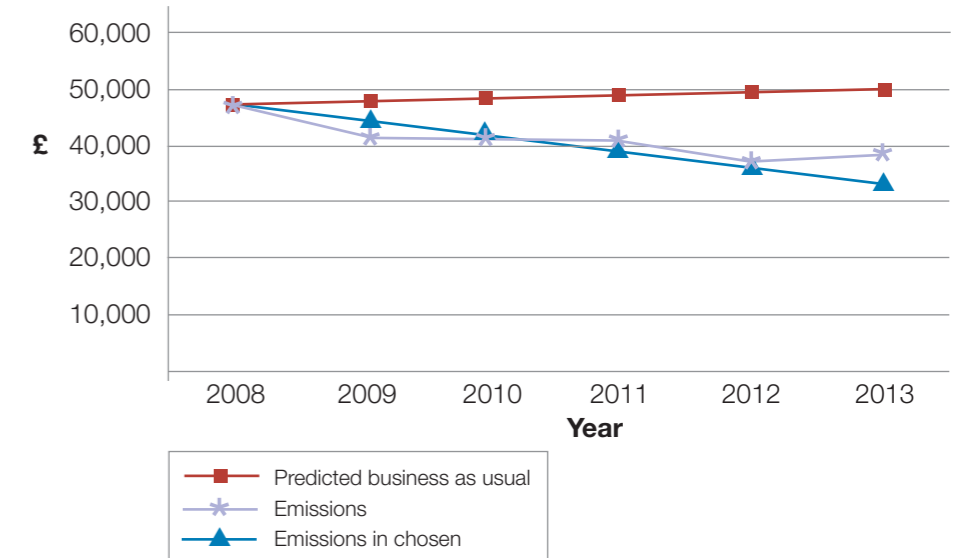
- Reduce CO2 emissions from street lighting by 33% by 2013
- Improve the energy efficiency performance of the councils street lighting
- Promote and encourage the use of renewable energy resources to power street lighting, signage etc.

Vehicle Fleet and Transport

- Reduce emissions from journeys made
- Reduce the total number of miles travelled
- Use more efficient vehicles
- Reduce air travel
- Use and encourage the use of more sustainable modes of transport.

Year	Predicted Business as Usual Emissions	Target Emissions	Total CO2 saving for this year	Emissions in chosen plan
2008	48,295	48,295	44	48,251
2009	48,633	44,577	6,880	41,753
2010	48,973	41,146	7,762	41,211
2011	49,316	37,979	7,963	41,353
2012	49,661	35,056	12,606	37,055
2013	50,009	32,357	12,239	37,770

Carbon progress against target



The graph shows the business as usual (BAU) emissions and the planned reduction path - the "Value At Stake" from the baseline tool. The starred line shows how the planned opportunities identified in the project plan will effect baseline carbon emissions in the long term.

3. Emissions baseline and projections

3.1 Scope

For the purpose of this Carbon Management Plan Bolton Council has used the NI185 carbon assessment tool and data for the financial year 2007/2008 to form a baseline of CO2 emissions. The information we have used to set the baseline includes energy data for our operational buildings, schools and street lighting, mileage from the council's own commercial fleet and staff business travel by car, rail and air where possible.

Staff commuting has been excluded as this is not recorded. Information from some outsourced services has also been excluded but the council will make every effort to put into place a regular reporting mechanism for this data and it will be included as the data becomes available.

At present the council does not record waste collected from each operational building individually but only records domestic waste and this has been included in the baseline information.

3.2 Baseline

- The baseline emissions have been arrived at using data from 2007/2008 financial year. The council recognises that for the purpose of reporting NI185 and for the Carbon Reduction Commitment this baseline information will need to be reviewed and reported on a financial year basis.
- The energy data used in forming the baseline has been extracted from the Council's Energy Management data base (Systemlink). In many cases bills have been based on estimated readings. Some school data is from direct reads provided by the site manager and some from automatic meter readings (AMR) which the council has started to roll out across its portfolio. Whilst this provides adequate baseline information for this report and for forecasting and target setting we acknowledge that the roll out of AMR meters needs to be accelerated. In particular the gross internal areas for some operational properties was not available at the time of the project and therefore could not be included in the baseline data. Improvements in the individual buildings data will enable better reporting in future.
- The council's own commercial fleet information is recorded using the mileage from each vehicle and the litres of fuel used.
- Staff mileage is recorded within the Councils Payments and Payroll section and business miles from rail and air travel have been calculated from information provided by the Council's Procurement section.

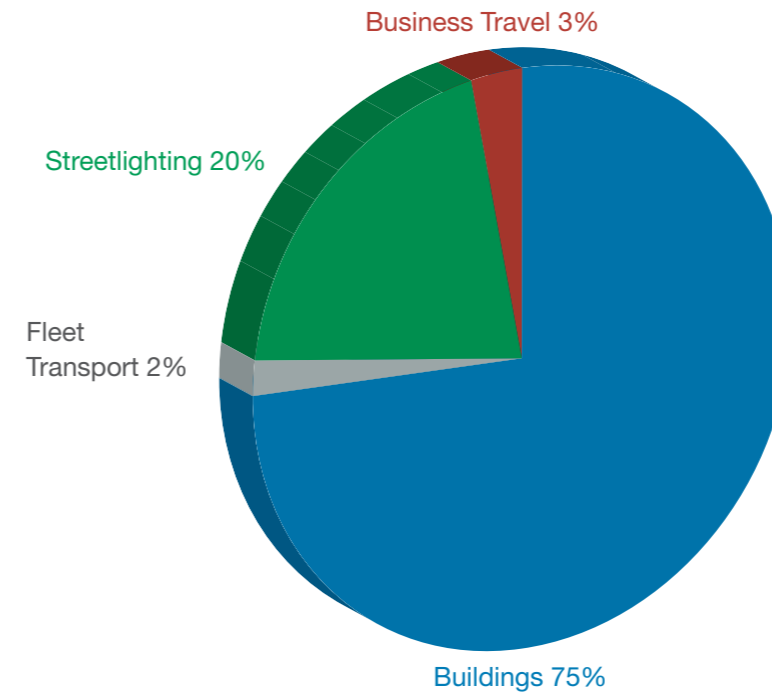


Table 3.1 – Summary table of emissions for baseline year 2007/08

	Total CO2 Emission (tonnes)	Buildings and street lights	Transport	Waste and Water
Baseline CO2 emissions (tonnes)	48,295	46,374	1,762	159
Baseline Cost (£)	£9,878,470	£6,624,420	£2,943,799	£310,251



Figure 3.2 Summary of emissions for baseline year 2007/08



3.3 Projections and Value at Stake

The projected costs for the business as usual scenario have been calculated using the NI185 carbon assessment tool. It shows the expected rise in costs up to 2013 from the base year with overall cost starting at **£9,923,025**

The BAU scenario assumes we do nothing to reduce the existing trends in energy use within the council and takes account of industry expected price rises. This leads to a projected increase in energy costs to **£15,379,346** per annum by the target year of 2013.

The Valley Community School photovoltaic installation



4. Carbon Management Projects

The projects listed below were gathered from a range of sources; existing work programmes; building maintenance surveys; Opportunities Workshops; staff conference workshops; and ideas from staff. Projects were selected using a combination of Priority, feasibility (are projects actually realistic) and quantification.

4.1 Existing projects to be completed 2008/9

Ref	Project	Lead	Capital Cost	Fin	Annual Saving		Year
					CO2 tonnes	Pay back	
2	Powerperfactor voltage optimisation Ashburner Street Market	Anne Mason	£54,112	£22,610	110	2.4 yrs	2009
17	Powerperfactor voltage optimisation Bolton Town Hall	Anne Mason	£118,000	£68,965	337	1.7 yrs	2009
12	Training and staff awareness programme	CPS	£20,000	£469,700	2,925	0.6 yrs	2009
21	Gaskell St. CP School Re-roofing & glazing	Warren Ramsden	Work undertaken as part of wider scheme	£1,200	11	-	2009
22	Beaumont CP School re-roofing	Warren Ramsden	Work undertaken as part of wider scheme	£757	7	-	2008
23	Heathfield CP School re-roofing	Warren Ramsden	Work undertaken as part of wider scheme	£731	7	-	2008
24	Prestolee CP School re-roofing	Warren Ramsden	Work undertaken as part of wider scheme	£570	5	-	2008
25	The Oaks CP School re-roofing & glazing	Warren Ramsden	Work undertaken as part of wider scheme	£1,744	14	-	2008
26	Upgrade of switching gear for street lighting (photocells)	Dave Doherty	£15,000	£20,370	99	0.7 yrs	2009

4.2 Planned/funded projects

Ref	Project	Lead	Capital Cost	Fin	Annual Saving		Year
					CO2 tonnes	Pay back	
1	Wind Turbine at The Gates Primary School	Anne Mason	£40,000	£3,630	18	11yrs	2009
13	PIR lighting controls	Anne Mason	£30,000	£11,000	54	2.7yrs	2009
16	Management of trend	CPS	£15,000	£98,046	907	0.15yrs	2009
18	Powerperfactor at Rivington & Blackrod High School	Anne Mason	£20,443	£8,107	40	2.5yrs	2009
19	Powerperfactor at Ladybridge High School	Anne Mason	£20,433	£9,505	46	2.2yrs	2009

4.3 Near term projects

Ref	Project	Lead	Capital Cost	Fin	Annual Saving		Year
					CO2 tonnes	Pay back	
3	Boiler & Heating replacements	Czes Jarmolowicz	£600,000	£25,702	238	23yrs	2009
4	Refenestration	CPS	£120,000	£2,017	19	-	2009
5	Upgrade electrical installations	Czes Jarmolowicz	£400,000	£4,647	23	-	2009
6	Upgrade of switching gear for street lighting 18,000 lamps	Dave Doherty	£270,000	£366,667	1790	0.7yrs	2009
8	Fleet vehicle review	Ralph Heyes	£0	£1,640	4	-	2010
9	Cavity wall insulation	CPS	£150,000	£1,200	11	-	2009
10	Double glazing programme	CPS	£150,000	£1,200	11	-	2009
11	Draught proofing	CPS	£10,000	£600	6	-	2009
14	Fit Electronic Control Gear to 2000 existing Lanterns	Dave Doherty	£500,000	£46,200	226	10yrs	2009
15	Fleet vehicle review	Ralph Heyes	not yet determined	£4,921	11	-	2011
27	Upgrade of switching gear for street lighting 1,000 lamps	Dave Doherty	£15,000	£20,370	99	0.7 yrs	2010
28	Upgrade of switching gear for street lighting 1,000 lamps	Dave Doherty	£15,000	£20,370	99	0.7 yrs	2011

4.4 Medium to long term projects

Ref	Project	Lead	Capital Cost	Fin	Annual Saving		Year
					CO2 tonnes	Pay back	
29	Fleet vehicle review	Ralph Heyes	£0	£875	2	-	2012
30	Energy Efficiency Initiative as part of PCP of £8m	CPS/CS	£0	£38,435	355	-	2011
31	BSF £200m -£250m	CPS/CS	£0	£782,896	5386	-	2012
32	Fit Electronic Control Gear to 1000 Lanterns over 3yrs	Dave Doherty	£250,000	£61,600	301	4yrs	2012
33	Upgrade of switching gear for street lighting 1,000 lamps	Dave Doherty	£15,000	£20,370	99	0.7 yrs	2012
20	District Heating scheme (Biomass)	Paul Smith	£1.2m	£110k	1017	-	2012

5. Carbon Management Plan financing

5.1 Assumptions

The financial benefits accruing to the council from implementing the Carbon Management Plan are significant. Energy costs are predicted to rise dramatically over the next few years. This has been effectively demonstrated by the recent cost increases experienced by the council for gas and electricity of 76% and 80% respectively. This rise, coupled with industry predictions of forthcoming shortfalls in both gas and electricity supplies provides a dire outlook for current energy budgets. Increases in fossil fuel costs will also have a major effect on transport costs.

The investments identified in the Carbon Management Plan for the period 2008 – 2013 will be recouped on average in around 4 years from savings in reduced energy consumption. In effectively managing its carbon emissions, the Council will contribute to the improvement of the environment and mitigate some of the anticipated increases in energy costs.

The majority of the measures identified for year one have a payback of less than five years. This will enable savings to be quickly re-invested into more schemes for accelerated reduction of carbon emissions. It also enables the Council to consider the use of

prudential borrowing to fund many of the initiatives. Approximately £4.1m is required to finance all of the schemes of which £1.4m is already committed. The remainder will be sought from a mixture of existing funding, government grants and prudential borrowing. An existing budget of £400,000 is available for small projects that have a robust financial case. Projects identified for either the Leisure

Trust or schools, will be repaid via the savings accrued.

Schemes with longer payback periods (8 years+), such as wind generators, district heating schemes and biomass, will be financed through Government grants and via the prudential borrowing route, and as fuel prices increase payback periods on these projects will become shorter.

5.2 Benefits / savings – quantified and un-quantified

	2008	2009	2010	2011	2012
Annual cost saving	£5,002	£1,157,166	£135,010	£63,726	£865,741
Annual CO2 saving (tonnes)	44	6,832	1038	465	5,788
% of target achieved	0.27%	42.9%	6.5%	2.9%	36.3%

Unquantified benefits

We aim to derive the following benefits from the programme:

- A reduction in carbon emissions associated with running council businesses and services
- To be an effective example to the community, leading the way in terms of running our services and buildings in a more sustainable manner and making a positive contribution to a reduction in climate change
- To contribute to maintaining the council's four star status (Corporate Assessment) and to demonstrate clearly the most efficient use of resources
- Deliver a number of immediate 'quick wins' in order to kick start the Programme and to demonstrate to key stakeholders the benefits of this programme
- To increase the awareness of Carbon Management amongst staff, Elected Members, partners and the community.



6. Actions to embed Carbon Management in Bolton

6.1 Corporate Strategy – embedding CO2 saving across the organisation

We recognise even at this point in the Programme that our goal to become a 'Low Carbon' Council will potentially involve a large-scale change to existing practice and policy. Our approach to the engagement of our stakeholders aims to ensure that the ethos of 'CO2 saving' is effectively embedded across the organisation.

We will do this by:

- Gaining senior management support and buy-in; Senior representatives have been involved throughout the CM Programme. We have also run awareness and training sessions with over 200 managers within the council
- Communicate with staff right from the outset of the programme
- Identify key individuals, carbon champions and groups within the council who could help to form favourable opinions
- Build participation in planning and the implementation of change
- Establish a 'Sense of Urgency' by highlighting the costs of doing nothing
- Empower our Programme Board to take action
- Identify and deliver 'quick Wins' in terms of carbon reduction projects using a Business Case approach
- Ensure that the required changes and improvements are institutionalised within our culture.

6.2 Programme Management – bringing it all together effectively

This factor of embedding Carbon Management is covered in section seven of this plan.

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

Current protocols ensure that Executive Management and Senior Project Sponsors are engaged in the delivery of the Carbon Management Plan. Following a series of Sustainability Workshops with Managers of the council a number of staff have volunteered to become 'green champions' to embed best practice within their respective Service.

Increasing effectiveness in this area will

be achieved by making carbon management an active part of the direct responsibilities of Heads of Service, through setting targets in Service Plans. As carbon management is already part of the council's Corporate Plan under the Nottingham Declaration the Management team already have responsibility for delivery of the plan and will take the lead in ensuring it is embedded within and across all service delivery activities. Making carbon management part of the staff induction process is the start of the road to embed within all staff the key role they hold in delivering the plan and Sustainability generally within the actions of the council, its Partners and Community. Our staff will be encouraged to be carbon ambassadors for the council and Bolton. This will be reflected with existing staff by a proactive communication strategy and

education process, as well as their inclusion in the development of Service Plans. Carbon Management will also become a part of "the day to day job" to reinforce the message that all staff have a role in reducing CO2 emissions, both at work and in their personal lives.

6.4 Data Management – measuring the difference, measuring the benefit

Utility Bills are centrally managed and monitored however there are opportunities for improvement, particularly in a higher level of proactive analysis and working with our major suppliers on improvement opportunities.

Some Improvements on data collection have been achieved through



the use of SMART metering, however this needs to be extended to a wider range of properties. The council are currently looking at the feasibility of extending the current programme to improve billing, energy management and data collection, via the determination of the level of energy consumption were the installation of SMART meters is uneconomic based upon benefit analysis. Increased use of this type of meter allows readings to be captured in real time without the resultant utility bills, an obvious sustainability improvement opportunity and a way to eliminate estimated bills.

The council also plans to increase the use of Whole Life Benefit/Life Cycle Cost modelling to all Investment decisions and the energy aspects of projects will form a key factor in these considerations, ensuring that the long term benefits of Carbon Management are not overshadowed by short term capital investment decisions. Energy data management will be a key instrument in this process enhancement.

6.5 Communication and training – ensuring everyone is aware

We believe that effective and timely communications will be key to the successful delivery of our Carbon Management Programme. Accordingly, the Programme Board has commissioned specialist marketing and communications support from the council's marketing & communications Agency, in addition to our Training Centre of Excellence.

We have considered the range of stakeholders for the Carbon Management Programme to include, but will not be limited to, the following:

- The council and the Executive including: the Leader of the Council and Executive Member for Development
- Chief Officers including: the Chief Executive and Directors
- Key Heads of Service
- Senior Managers across the council
- Key partners, contractors and consultants including: the Leisure Trust/SERCO, Bolton at Home
- All staff
- Schools including: Head Teachers, teachers, governors, facilities staff, Voluntary Aided Sector representatives
- The Local Strategic Partnership
- The Council's Access Points Programme Board
- Building occupiers.



Although our plans for a rolling awareness campaign are still being formulated, we recognised that it was important to raise awareness with key stakeholders at the earliest opportunity.

Notable actions to date include:

- Relevant elected members have been involved in the formulation of our Carbon Management Project Plan (April 2008)
- Details of the programme have been shared via the council's staff newsletter (November 2008)
- Mandatory training is being provided to all of the Council's Senior Managers through the vehicle of 'Environmental Sustainability' Workshops (October – December 2008). These workshops have provided the opportunity to engage Senior Managers across the council and proactively identify valuable carbon reduction ideas/opportunities, which are informing the development of this Carbon Management Plan. Senior Managers will now be in a position to cascade this training/awareness to their teams.

Communicating our successes

Given this Programme covers a five year time frame we have recognised the importance and benefits of regular communications with our stakeholders.

The following highlights our approach to communicating our successes and the media that we will use to deliver the key messages:

- Elected Members: via formal reports and the annual Corporate Asset management Plan
- Senior Managers: via Senior Manager Briefings, via Departmental management teams
- Staff: via the council's internal communication mechanisms, including the staff newsletter 'Bob', Team Briefings and online
- Residents: via local media, the Council's Annual Performance Report and online
- Carbon Management Plan.

6.6 Finance and Investment – the money to match the commitment

This factor of embedding Carbon Management is covered in section five of this plan.

6.7 Policy Alignment – saving CO2 across your operations

Early in 2009 the CMP Implementation Project Team will be looking to incorporate and integrate capital projects into the Design Action Plan, to ensure the widest consideration of Sustainability within building projects. The council regularly undertakes other types of capital projects, such as community space initiatives, car parks, landscaping, active land management, etc., which all produce CO2 and therefore provide opportunities for reducing emissions.

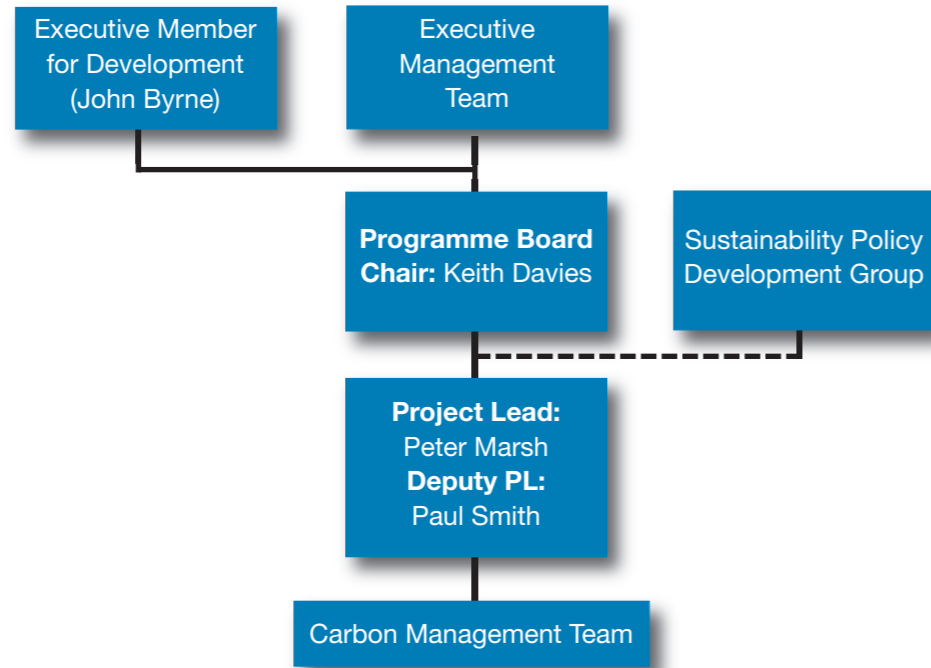
The council also recognises that when appraising projects for Value for Money, it can have a significant positive impact on Sustainability and Carbon Management, particularly the balance between initial capital investment and long term running costs. The council is looking to embed sustainability within all its life cycle costing/whole life appraisal processes, to ensure Value for Money reflects the true value of the council's low carbon/sustainability policies.



7. Programme Management of the CM Programme

In order for the CMP to succeed, it will need strong leadership at the highest level, along with ownership by all parties involved in every aspect of the Council's service delivery. Defined structure and policy on how Carbon Management will be owned and delivered. From the outset of the council's involvement in CMP senior management and leaders were involved, with Sean Harriss, Chief Executive, Councillor Byrne, Executive Member for Development and other party Leaders, participating in the launch in June 2008.

7.1 The programme board – strategic ownership and oversight



The Programme Board comprises:

- **Chair:** Keith Davies (Director of Development & Regeneration)
- Councillor Byrne (Executive Member for Development)
- **Project Leader (and Deputy Chair):** Peter Marsh (Assistant Director, Corporate Property Services)
- **Deputy Project Leader:** Paul Smith (Head of Operational Asset Management, Corporate Property Services)
- **Finance Representative:**
Beverley Newman (Policy Accountant, Corporate Resources Department)
Tim Hill (Chief Planning Officer)
Mario Devargas (Assisant Director, ICT Division, Corporate Resources Department)

It's Terms of Reference

The Programme Board will meet every two months, approximately one week after the meeting of the Carbon Management Team. The Project Leader will meet at least monthly with the Project Sponsor to discuss progress.

7.2 The Carbon Management Team – delivering the projects

Our Carbon Management Team (CMT) comprises:

- Senior Managers from relevant Council Departments
- Senior representatives from a number of our key partners (e.g. SERCO, Bolton at Home)

7.3 Succession planning for key roles

In the event of either the Project Sponsor or Project Leader leaving the Council the following measures would be put in place.

- **Project Sponsor**
If the Director of Development and Regeneration was to leave then the responsibility for the role would pass to the Director of Corporate Resources and Deputy Chief Executive until such time as a new Director as appointed.
- **Project Leader**
If the Project Leader leaves the council then the Deputy Project Leader along with the Chief Planning Officer will take responsibility for the duties of this role until a new Assistant Director of Corporate Property Services was in post. The role of Project Leader would then revert to the postholder.

The table below schedules the membership of the CMT and is chaired by Peter Marsh.

Name	Position	Role	Contact Details
Peter Marsh	Assistant Director, Corporate Property Services	Project Leader	peter.marsh@bolton.gov.uk 01204 331350
David Houghton	Head of Highways & Engineering Delivery Services	Project Manager	david.houghton@bolton.gov.uk 01204 336620
Dave Doherty	Highways Lighting Manager	Project Manager	dave.doherty@bolton.gov.uk 01204 336782
Vinod Vora	Senior ICT Account Manager	Project Manager	vinod.vora@bolton.gov.uk 01204 331695
Steve Jordan	Head of Housing Strategy	Project Manager	steve.jordan@bolton.gov.uk 01204 335777
Tim Hill	Chief Planning Officer	Project Manager	timothy.hill@bolton.gov.uk 01204 336004
Mark Hoban	Assistant Head (Waste Management)	Project Manager	mark.hoban@bolton.gov.uk 01204 336911
Ralph Heyes	Head of Fleet Management	Project Manager	ralph.heyas@bolton.gov.uk 01204 336870
Donna Ball	Assistant Director of Waste & Fleet Management	Project Manager	donna.ball@bolton.gov.uk 01204 336713
Paul Smith	Head of Operational Asset Management	Deputy Project Leader	paul.smith@bolton.gov.uk 01204 332165
Peter Cathery	Team Leader Sustainable Development Team	Advisor	peter.cathery@bolton.gov.uk 01204 336650
Anne Mason	Energy Manager	Project Manager	anne.j.mason@bolton.gov.uk 01204 331351

7.4

Ongoing stakeholder management

The LACMP is fully supported by Members and senior officers. The council's Value for Money Subset (VFM) has the Carbon Management Plan as an agenda item and its progress will be reported on periodically. CMP progress will be more widely reported through the use of local energy champions and the carbon management website.

Stakeholder Name/Group	Issues	Key messages	Means of communication	Timetable	Responsibility
Council and Executive	Need to build awareness of cause and local effects; more likely to sell on potential cost savings.	Capital Investment required but with strong business case; energy prices rising; council has "duty of care" to act; potential to publicly "lead the way".	Executive Member reports. Executive Member sponsor. Employee & Member bulletins and intranet updates		Project Leader & relevant Project Team Members
Chief Officers, including Chief Exec	Need to secure support for information and awareness to cascade	Becoming a strong corporate priority; energy prices rising; lots of small actions can make a big collective difference	VFM Subset reports EMT reports	As appropriate As appropriate	Project Leader & relevant Project Team Members
Key Heads of Service	Need to secure support for information and awareness to cascade. Need their specialist input to generate actions. Huge resource pressures to be factored in.	Becoming a corporate priority, energy prices rising; lots of small actions can make a big collective difference.	As above. Sustainability Workshops with Senior Managers	ongoing ongoing	Project Leader & relevant Project Team Members
All staff	Need for buy in across the board. Need for info to be attractive, relevant both to work and home environment and to be accessible.	Overall success depends on staff involvement. Money saving opportunities to take home for use in the house.	Regular articles in (internal electronic newsletter) 'Bob'. Staff induction Details of "quick wins" to be included in 'Energy Management and Staff Bulletins' in BOB. Intranet resource	To be developed as soon as possible	Project Leader & relevant Project Team Members



Stakeholder Name/Group	Issues	Key messages	Means of communication	Timetable	Responsibility
Schools, (head teachers, teachers, governors, facilities staff, pupils and parents)	Pressure on finances, efficiency measures should be welcomed.	Importance of "whole school approach", ie. Building fabric through to curricular content; opportunities for children and young people to take good messages home, improving household efficiency	Bolton Education Network Awareness raising poster campaign Good Housekeeping in Bolton Schools seminar for head teachers/ Caretakers	Ongoing	Project Leader & relevant Project Team Members
Local Strategic Partnership and other key partner organisation	Need to identify key partners to develop opportunities for joint working or sharing good practice; non-duplication of effort	Importance of working together to combat climate change; council leading the way but keen to work together.	LSP Forum Meetings	To be developed as soon as possible	Project Leader & relevant Project Team Members
Building Occupiers	Huge Scope to change behaviours; need to make information relevant and accessible.	Opportunities to help improve our environment and save money; small easy actions	Building User Group meetings Employee Bulletins	Ongoing Being Developed 6 months	Project Leader & relevant Project Team Members
Procurement Suppliers	Awareness of good practice in supply chain.	The Council will require suppliers to demonstrate Carbon Management Good Practice.	Selection process, contract documents and tender invitations/terms and conditions of contract	To be determined	Project Leader & relevant Project Team Members Procurement Officers.

7.5 Annual progress review

Progress in the delivery of the Plan will be focused on the three key activities identified below;

Risks and issues management

At the project level, the individual project managers will manage risks and issues arising and if required members of the LACM team associated with the works e.g. Carbon Management in Buildings. Projects will be reported on to the Carbon Management Team and to VFM Subset as required.

Other more general risks are associated with the established project review process covering Legal and Property Services amongst others. The key here is to maintain links between the project team members and the Carbon Management Team to strengthen all aspects of the Carbon Management Plan delivery.

Current issues that may impact upon the Carbon Management Plan include the situation with devolved capital budgets for schools, which often leads to poor investments in energy management.

Benefits management

Where possible, quantifiable benefits accruing from individual actions will be measured using the energy consumption data. In cases where this is difficult a “before and after” monitoring of energy consumption with a data logger will be undertaken. Actions have been identified within the Carbon Management Plan to improve data collection and availability. A

revised CO2 emissions value will be calculated and published each year from meter readings and, where these are lacking, billing information. This will enable progress against the targets in the CMP to be reported.

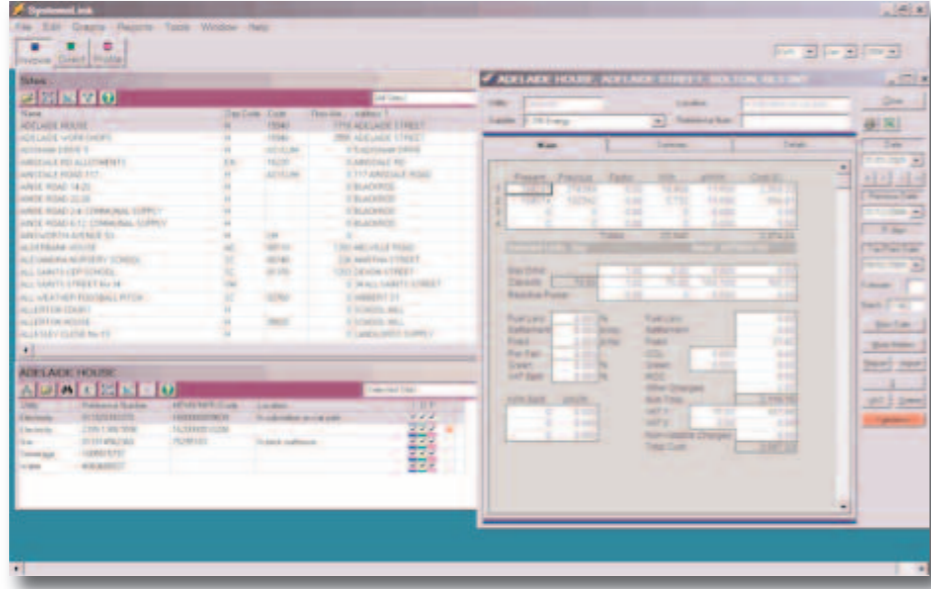
Benefits will also be reviewed periodically by the Carbon Management Team and disseminated to the various stakeholders.

Reporting and evaluation

Targets will be reviewed annually in consultation with the Project Board and the Carbon Management Team. Further actions identified throughout the period of the Carbon Management Plan will be considered for inclusion at this annual review. It seems appropriate to conduct this review at the end of the financial year. As noted above, the review will include an updated calculation of CO2 emissions and the council's progress against its CO2 reduction targets. It is the

responsibility of the Project Leader to measure and report the progress against targets, and this will be included in the council's Performance Management arrangements.

The review will record financial savings, payback on investment, and CO2 savings compared to the target. Reporting on the progress of the CMP will be made by the Project Leader to the Executive and Management Team. As a result of the review, the CMP Action Plan may require updating if, for example, the availability of funding changes or changes in priority in project delivery occurs. In this context the CMP is then viewed as a dynamic and flexible working document, which will change over time. This will not only allow the CMP to reflect the changing environmental and economic situation but also the anticipated changes from technology to deliver products and services with lower or zero Carbon Footprints.



Appendix A

Carbon Management Matrix - Embedding

	Corporate Strategy	Programme Management	Responsibility	Data Management	Communication and Training	Finance and Investment	Policy Alignment*
Best 5	Top level target allocated across organisation CO2 reduction targets in Directorate Business Plans	Executive/SMT review progress against targets on quarterly basis Quarterly diagnostic reports provided to Directories Progress against target published externally	CM integrated in responsibilities of senior managers Cm part of all job descriptions Central CO2 reduction advice available Green Champions leading local action groups	Quarterly collation of CO2 emissions for all sources Data externally verified M&T in place for buildings • street lighting • waste	All staff given formalised CO2 reduction: • induction and training • communications Joint CM communications with key partners Staff awareness tested through surveys	Finance committed for 2+ yrs of Programme External funding being routinely obtained Ring-fenced fund for carbon reduction initiatives	CO2 friendly operating procedure in place Central team provide advice and review, when requested Barriers to CO2 reduction routinely considered and removed
4	CO2 reduction committed in Corporate Strategy Top level targets set for CO2 reduction Climate Change Strategy reviewed annually	Sponsor reviews progress and removes blockages through regular Programme Boards Progress against targets routinely reported to Senior Mgt Team	CM integrated in to responsibilities of department heads EMT regularly updated Staff engaged through Green Champion network	Annual collation of CO2 emissions for: • buildings • street lighting • transport • waste Data internally reviewed	All staff given CO2 reduction: • induction • communications • CM matters communicated to	Coordinated financing for CO2 reduction projects via Programme Board Finances committed 1yr ahead Some external community external community Some external financing	Comprehensive review of policies complete Lower level policies reviewed locally Unpopular changes being considered
3	CO2 reduction vision clearly stated & published Climate Change Strategy endorsed by Cabinet and publicised with staff	Core team regularly review CM progress: • actions • profile and targets • new opportunities	An individual provides full time focus for CO2 reduction and coordination across the organisation Senior Sponsor actively engaged	Collation of CO2 emissions for limited scope i.e. buildings only	Environmental/energy group(s) given ad-hoc: • training • communications	A view of the cost of CO2 reduction is developing, but finance remains ad hoc Some centralised resource allocated Finance representation on CM Team	All high level and some mid level policies reviewed, irregularly Substantial changes made, showing CO2 savings
2	Draft Climate Change Policy Climate Change references in other strategies	Ad-hoc reviews of CM actions progress	CO2 reduction a part-time responsibility of a few department champions	No CO2 emissions data compiled Energy data compiled on a regular basis	Regular awareness campaigns Staff given CM information on an ad-hoc basis	Ad-hoc financing for CO2 reduction projects	Partial review of key, high level policies Some financial quick wins made
1 Worst	No policy No Climate Change reference	No CM monitoring	No recognised CO2 reduction responsibility	No CO2 emissions data compiled Estimated billing	No communication or training	No specific funding for CO2 reduction projects	No alignment of policies for CO2 reduction

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

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