Carbon Management Plan 2010 – 2014

Date: 18 March 2011

Version number: Final

Owner: Ariane Crampton

Approval route: Energy Change Opportunity Board

Approval status: Approved

The Nottingham Declaration

We acknowledge that

- *Evidence shows that climate change is occurring.*
- *Climate change will continue to have far reaching effects on the UK's people and places, economy, society and environment.*

We welcome the

- *Social, economic and environmental benefits which come from combating climate change.*
- *Emissions targets agreed by central government and the programme for delivering change, as set out in the UK Climate Change Programme.*
- *Opportunity for local government to lead the response at a local level, encouraging and helping local residents, local businesses and other organisation - to reduce their energy costs, to reduce congestion, to adapt to the impacts of climate change, to improve the local environment and to deal with fuel poverty in our communities.*
- *Endorsement of this declaration by central government.*

We commit our Council from this date ***5 May 2009*** *to*

- *Work with central government to contribute, at a local level, to the delivery of the UK Climate Change Programme, the Kyoto Protocol and the target for carbon dioxide reduction by 2010.*
- *Participate in local and regional networks for support.*
- *Within the next two years develop plans with our partners and local communities to progressively address the causes and the impacts of climate change, according to our local priorities, securing maximum benefit for our communities.*
- *Publicly declare, within appropriate plans and strategies, the commitment to achieve a significant reduction of greenhouse gas emissions from our own authority's operations, especially energy sourcing and use, travel and transport, waste production and disposal and the purchasing of goods and services.*
- *Assess the risk associated with climate change and the implications for our services and our communities of climate change impacts and adapt accordingly.*
- *Encourage all sectors in our local community to take the opportunity to adapt to the impacts of climate change, to reduce their own greenhouse gas emissions and to make public their commitment to action.*
- *Monitor the progress of our plans against the actions needed and publish the result.*

Wiltshire Council *acknowledges the increasing impact that climate change will have on our community during the 21st century and commits to tackling the causes and effects of a changing climate on our county.*

Contents

Table of Contents

List of Appendices

Glossary

AMR Automated Meter Readers (AMR or smart meters) which enable the accurate collection of data.
A meter will be defined as an AMR meter under CRC if it meets the following four criteria:

- The meter together with an ancillary device is capable of capturing consumption data on at least an hourly basis;
- The meter is the main fiscal meter and not a sub-metering device;
- The meter has been read remotely;
- The consumption data is made available to the customer.

BS16001 British Standard 16001 is a national accreditation for energy management systems using a 'plan, do, check, act' format to set and monitor performance targets

CMP Carbon Management Plan

CAOD Campus and Operational Development Programme (previously the Workplace Transformation Programme (WTP)). The CAOD is a major undertaking seeking to streamline the council's building stock. The first phase of the project is expected to reduce the council's 98 administrative properties down to four large hub offices with hot-desking facilities by 2014. Of the 4 hubs, two existing offices will be fully refurbished (Trowbridge: County Hall and Devizes: Browfort) to make them fit for purpose; one will require moderate modernisation and one is a new build. Further phases of the programme to review, rationalise and invest in the operational property estate have been approved.

CRC The Carbon Reduction Commitment Energy Efficiency Scheme is a mandatory scheme to improve energy efficiency and therefore cut CO_2 emissions in large public and private sector organisations. These organisations are responsible for around 10% of the UK's CO2 emissions. The scheme features a range of reputational, behavioural and financial drivers which aim to encourage organisations to develop energy management strategies that promote a better understanding of energy usage.

Defra Government's Department for the Environment, Farming and Rural Affairs

ECO Strategy / Board / Team The Energy, Change and Opportunity (ECO) Strategy is a framework strategy which sets out the council's ambitions for reducing its carbon emissions as an organisation, for leading the county's low carbon transition and preparing for unavoidable climate change. As a framework strategy it is underpinned by and linked to other council strategies to ensure objectives are embedded across the entire organisation.

The ECO Board, chaired by the Cabinet Member for the Environment and with a membership of directors from services across the council, oversees implementation of the ECO Strategy, supported by the ECO Team.

ICT Information and Communications Technology

ISO14001 The international standard ISO 14001 is used by organizations for designing and implementing an effective environmental management system.

NI 185 Until 2010, Government required local councils to report on their emissions data through national performance indicator NI 185. At the time of writing, reporting against this performance indicator had been suspended as the national indicator set was under review and due to be replaced in April 2011 by a single data set for local authorities which is expected to include a requirement to report on carbon emissions.

Salix Independent social enterprise which provides interest free loans to UK public sector bodies to finance carbon reduction projects.

tCO_2 Tonnes of Carbon Dioxide

UKCP09 UK Climate Projections 2009, http://ukclimateprojections.defra.gov.uk/ See also http://ukclimateprojections.defra.gov.uk/

Foreword from Wiltshire Council's Cabinet member for the Environment

Wiltshire Council had a carbon footprint of 61,500 tonnes in 2009/10. To put this in context, this is the same as the annual static carbon emissions from around 12,000 Wiltshire homes. This carbon management plan sets an aspirational target for the council to reduce its footprint by 50% by 2020, with an interim pledge of saving 11,823 tonnes by 2013/2014.

This challenging target will require us to change how all parts of the council do their business. It places the council firmly at the forefront of the fight against climate change and will enable us to lead others to follow our example to a low carbon future.

The impact of our work will be amplified if it is matched by the commitment of businesses, other public sector organisations and local residents to reducing their carbon footprints. The Wiltshire Assembly has identified climate change as one of the top three issues that need to be tackled. Other partners are already fully engaged – for example, Wiltshire Fire and Rescue Service have adopted their own carbon management plan.

This plan shows that we are committed to getting our own house in order. We are also working with the Energy Saving Trust to develop a carbon reduction strategy for the whole of Wiltshire, and will be developing a plan to deal with unavoidable climate change alongside these.

Cllr Toby Sturgis
Cabinet member for the Environment

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 in line 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.

Wiltshire Council was selected in 2009, amidst strong competition, to take part in this ambitious programme. Wiltshire 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_2 by 11,823 tonnes by 2013/14 which would represent a potential financial savings, through avoided energy costs, to the council of around £2.8 million over this period.

There are those that can and those that do. Local authorities can contribute significantly to reducing CO_2 emissions. The Carbon Trust is very proud to support Wiltshire Council in their ongoing implementation of carbon management.

Richard Rugg
Head of Public Sector, Carbon Trust

Executive Summary

Why we need a carbon management plan:

Wiltshire Council is committed to moving towards a low-carbon future and the Carbon Management Plan 2010-2014 presents the council's vision and details the means for achieving it. Wiltshire Council has already committed to tackling carbon emissions by signing the Nottingham Declaration in May 2009 and in November 2009 signed up to the 10:10 campaign.

Good carbon management is important as it reduces the council's environmental impact as well as reduces operating costs, allowing the council to provide better value for money in its services to taxpayers**.** Support for developing this plan was provided free of charge from the Carbon Trust.

In 2009/10, the council's total carbon footprint was 61,500 tonnes of CO_2, arising from energy use for property, transport and street lighting. This figure includes emissions from contracted out services (eg recycling collections) as well as from in-house operations. These emissions were associated with an annual expenditure on energy and transport of £13.86 million.

In April 2010, the council became a participant in the new, mandatory, Carbon Reduction Commitment Energy Efficiency Scheme (CRC), which is projected to cost the council £600,000 in 2011/12, and is expected to rise rapidly thereafter. Through implementing a carbon management plan, there will be opportunities to reduce both the council's carbon footprint as well as avoid some of these considerable costs.

What this plan seeks to achieve:

The council's vision is to embed carbon management into the delivery of all services and to set an example to the business sector and communities of Wiltshire. The council will work to influence and support others to reduce their carbon emissions, thereby taking the lead and driving forward efforts to reduce the effects of climate change. The consequences of excessive climate change are very severe and the appropriate response is to ensure the targets for carbon reduction are correspondingly challenging. Such targets should emphasise strong, early action and the council has set an aspirational target to halve its emissions by 2020, and in the meantime to reduce its emissions by **20% from the 2008/09 baseline by 2013/14, a total of 11,823 tonnes CO_2.**

How we will deliver this plan:

An important first step for delivering this carbon management plan is to ensure that our carbon data is accurate and comprehensive. The first goal is therefore to ensure that systems are put in place to collect, analyse and benchmark performance of every aspect of energy consumption to minimise the risk of waste. With performance data and management frameworks in place the Energy, Change and Opportunity (ECO) Board will drive change from the top. On the ground, a network of Green Champions will engage with staff directly, disseminating information across the organisation and providing feedback and valuable intelligence for new projects. This structure will be critical to enable a programme of behaviour change to begin immediately. A comprehensive portfolio of energy efficiency projects will be required for the short- and mid-terms, and ultimately a move to energy generation in the long-term.

Carbon-saving opportunities of all types will be considered in terms of contribution to the overall objective and the council's commitment to value-for-money. The council has allocated an invest-to-save budget of £0.5m revenue for the next 4 years and £0.5m capital for the next 2 financial years for energy efficiency projects. These projects will achieve important financial savings by avoiding energy and carbon trading costs. Where possible the council will seek external investment to lever additional resources in its response to climate change. External funds of more than £600,000 have already been secured to reduce carbon emissions in a diverse range of projects. Future projects will see the council estate becoming increasingly energy efficient and new facilities will be built to be both sustainable and suitable for a changing climate. Procurement policy will be reviewed to ensure that sustainability is a core value and future decision making on all major projects will be informed by the impact on the environment.

Monitoring progress:

The intention is for the plan to be regularly updated and to be produced as a web-based, living document. Progress towards our target will be reported on an annual basis.

Some change in the natural climate is now believed to be inevitable, but strong and consistent action to reduce carbon emissions is a vital step to minimising any further change and reduce the future financial and human cost of actions taken today. This plan provides a clear direction for reducing carbon emissions and for embedding a culture of awareness and responsibility throughout Wiltshire Council.

March 2011

1. Introduction

Wiltshire has a population of approximately 460,000 (or 200,000 households), making it one of the largest populations of all English authorities, behind conurbations such as Birmingham. The population is distributed throughout a large and predominately rural area extending approximately 54 miles north to south and 34 miles east to west. The size of the county has a significant impact on the way in which services are delivered in Wiltshire and this directly affects carbon emissions.

Since being formed in April 2009, Wiltshire Council began working with the Carbon Trust, following the Carbon Trust Local Authority Carbon Management Programme to establish a Carbon Management Plan for Wiltshire. In its seventh year, the Programme has worked with local authorities and other organisations to reduce carbon emissions. (Of the former local authorities in Wiltshire, Wiltshire County Council had previously taken part in the Programme but none of the four former district councils had.)

The Programme is well structured and managed, following a five step process:

- step 1: mobilise the organisation
- step 2: set baseline and forecast
- step 3: identify and quantify projects
- step 4: define your Carbon Management Plan (CMP)
- step 5: implementation

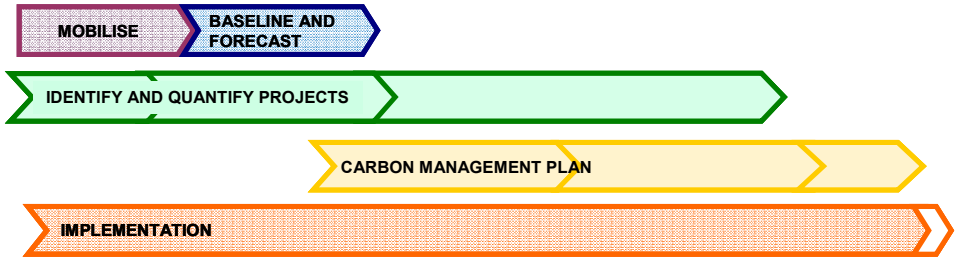


Figure 1: The Carbon Trust Five Step Process

This process has resulted in the production of this plan which sets out the current extent of the council's carbon emissions, the financial cost of those emissions, and the rationale for reducing them.

This **carbon management plan** covers the 4 year period between 2010/11 and 2013/14. It starts to provide details of individual projects that will reduce the council's emissions over the plan period and beyond. Review of the Plan will be on-going so that new projects can be added when identified. The council's ECO Board, with its senior corporate membership, will oversee this work ensuring that it remains high on the corporate agenda.

2. Wiltshire's Carbon Management Strategy

2.1 Context and Drivers for Carbon Management

Good carbon management is important for two key reasons:

- **it reduces the impact of carbon emissions on the environment**
  The environmental impact of carbon emissions and other greenhouse gases is a serious change to the world's climate. Whilst climate is subject to natural fluctuations, the recent acceleration of temperature rise is due to human activities, mainly the burning of fossil fuels that generate carbon dioxide, a key greenhouse gas. In the South West of England, climate projections show that under the 'least emissions scenario' mean summer temperature will rise by 0.7 to 2.7 degrees by the 2020s[1]. Winters are likely to be wetter and summers drier; extreme weather events will be more common. Worldwide, food and water shortages could cause mass population migration. Locally, symptoms will include damage to infrastructure and increased strain on services such as health provision.

- **it reduces operating costs**
  Reducing operating costs allows the council to provide better value for money in its services to taxpayers. The current economic climate means the council faces considerable financial pressures, such as the introduction of a mandatory carbon trading scheme, reduced budgets and rising energy prices.

The following sets the environmental policy and economic context for the council's Carbon Management Plan.

Mandatory National Drivers:

The UK is taking a lead on tackling the effects of climate change: the Department of Energy and Climate Change has been created; the **Climate Change Act 2008** set a challenging target of an 80% reduction in green house gas emissions by 2050. A further national target requires a 34% reduction of carbon emissions from a 1990 emissions baseline by 2020. The **Stern Report** of 2006 presented a persuasive case for the economics of tackling climate change, highlighting that action taken now will be more cost effective than action taken later. The **Energy Performance of Buildings Directive** has introduced Display Energy Certificates meaning that the energy use in council buildings is now open to scrutiny in the public domain.

Carbon Reduction Commitment:

The Carbon Reduction Commitment (CRC) is a mandatory scheme which came into force in April 2010 and provides both a financial and reputational incentive for carbon reduction. The CRC makes large energy users such as the council responsible for buying 'allowances' to cover their carbon emissions. The scheme is intended to be a 'cap and trade' scheme, although initially allowances will be bought retrospectively based on actual emissions. At the time of writing, the scheme is still being finalised. Key features are:

- Carbon emissions from all council buildings (including schools) and from street lights will be included in the scheme. Emissions from transport will be excluded.

[1] From UK Climate Projections 2009 (UKCP09) for the South West region.

- First compliance year: April 2010- March 2011. Annual Report and Footprint Report due July 2011 for the period 2010-2011. Phase 1 will runs to 2013/14.
- Carbon allowances to cover emissions will need to be purchased at a cost of £12 per tonne during phase 1. This amounts to a cost of approximately £600,000 per year for Wiltshire Council. The cost of allowances are expected to rise rapidly over time – see table 1 below.
- A league table will be published in October every year starting in 2011 showing the relative performance of all organisations taking part in the scheme nationally. Councils will be competing against large companies such as national supermarket chains. Good performance will be achieved through demonstrating a year on year reduction in emissions.

Table 1 summarises projected CRC costs that have been built into the council's medium term financial planning:

	2011/12	**2012/13**	**2013/14**	**2014/15**
Estimated CRC tCO_2	51,000	50,000	48,000	48,000
Budget forecast for CRC allowances	£600,000	£600,000	£700,000	£800,000

Table 1: Projected budget for CRC, 2011/12 – 2014/15

This carbon management plan identifies a long term strategy for carbon reduction within the council. A sustained approach will be critical to the council's success under the CRC. The delivery of this carbon management plan will be directly linked to the council's performance within the CRC league tables and any future financial costs that might be incurred.

Other national drivers:

From its inception on 1 April 2009, Wiltshire Council committed to tackling carbon emissions by signing the **Nottingham Declaration**. The text of the declaration is reproduced at the start of this document. The signing of the declaration is a public commitment to acknowledging and tackling climate change and any related campaign or scheme to reduce carbon emissions or enable adaptive measures to be implemented will be consistent with this policy alignment. The council re-confirmed its commitment to the Nottingham Declaration and signed up to the 10:10 campaign following a debate at full Council in November 2009.

The **10:10 campaign** is a grassroots initiative that has national support and includes individuals, Government departments, local authorities and businesses. The target will see the council achieve a minimum 3% reduction on key 2009/10 emissions (658 tonnes CO_2), excluding school and contracted service emissions. The delivery date for this annual footprint reduction is the end of 2010/11.

The **cost of energy** is expected to rise[2] over the coming years as primary energy reserves dwindle and are replaced by technologies with a higher minimum cost than is currently attainable. This level of cost increases is likely to be higher than inflation which means the council will face higher operating costs from energy consumption unless it can be more energy efficient or find non-fossil fuel alternatives.

[2] Ofgem's 2009 review of UK energy supplies developed four scenarios which would result in increases in domestic energy bills of between 14% and 25% by 2020 (from 2009 levels) and the possibility that wholesale price spikes could lead to an increase in domestic energy bills of up to 60% in the interim.

The Government published its **Comprehensive Spending Review** on 20 October 2010, which fixed spending budgets for each Government department up to 2014-15. The result of the spending review is an immediate and challenging cut to local government budgets. The effect for Wiltshire Council is that we will need to realise efficiencies in all areas as quickly as possible.

Local external drivers:

Climate change has emerged as an area of focus for Wiltshire Council and is high on the **Wiltshire Assembly's** list of priorities (the Assembly is the forum for Wiltshire organisations to come together to decide what needs to happen in order for Wiltshire to build a bright future for itself).

Local internal drivers:

A fundamental driver behind the creation of the new unitary council was the need to **deliver efficiencies**. Combined with budget cuts from the 2010 Government Comprehensive Spending Review, this means the council has a strong financial requirement to become more energy efficient.

The new unitary authority has a property portfolio of over 800 sites which represent the combined inherited assets from the five former authorities. This is a diverse property portfolio that includes school campuses, libraries, leisure centres, depots, care homes and administrative buildings. Added to this inventory are various in-house fleets of vehicles and contracted-out services which cover such services as waste collection, meals on wheels, street cleaning and road maintenance. Wiltshire Council is in the process of transforming itself and is forming some key programmes of work to deliver efficiencies in the medium and long term. Many of these programmes represent **strategic opportunities for carbon efficiencies** to be embedded across the council's estate, service operations and fleet.

2.2 Wiltshire Council's Strategy and Vision

Wiltshire's Energy, Change and Opportunity Strategy 2011-2020

Wiltshire Council has developed a strategic response to climate change and national requirements that is set out in the Energy, Change and Opportunity (ECO) Strategy 2011-2020. The strategy incorporates two types of response:

- Mitigation: those responses that seek to reduce the impact of our behaviour on the natural systems of our planet; that is, reducing greenhouse gas emissions.
- Adaptation: those responses that seek to prepare us better for the challenges likely to arise from climate change.

The ECO Strategy is a framework strategy which sets out the council's ambitions for reducing its carbon emissions as an organisation, for leading the county's low carbon transition and preparing for unavoidable climate change. As a framework strategy it is underpinned by, and linked to, other council strategies to ensure our objectives are embedded across the entire organisation. It will be supplemented by detailed action plans to set out more specifically how we are going to deliver our climate change ambitions, including:

- **Carbon Management Plan** for the council's emissions (this document)
- Climate Change Adaptation Plan for Wiltshire

- Low Carbon Transition Plan for Wiltshire
- Renewable Energy Action Plan for Wiltshire

Together, the strategy and the action plans will enable the council to deliver against the key themes of waste, transport, water, purchasing and procurement, biodiversity and natural environment, energy, planning and communicating environmental issues.

Wiltshire Council's Low Carbon Vision:

Wiltshire Council will embed carbon management into the delivery of all services to reduce our carbon emissions and set an example to the business sector and communities of Wiltshire. We will use the experience gained to influence and support others to reduce their carbon emissions, thereby mitigating the effects of climate change.

2.3 Objectives and Target

In the Corporate Plan 2010-2014, the council set out the following **target:**

Wiltshire Council will reduce its annual CO_2 emissions by 20% of its 2008/09 baseline by end 2013/2014, equating to a reduction of 11,823 tCO_2.

In the longer term, it is the council's aspiration to halve its emissions by 2020.

The council has also pledged to meet the 10:10 challenge, which requires as a minimum a 3% reduction on key 2009/10 emissions (equivalent to 658 tonnes CO_2), excluding school and contracted service emissions.

The **objectives** of this carbon management plan are to ensure the council:

1. Makes energy cost savings
2. Performs well under the Carbon Reduction Commitment Energy Efficiency Scheme (CRC)
3. Reduces the council's carbon footprint

2.4 Our Approach

A Whole Council Approach:

The analysis of our carbon footprint (detailed in Section 3) has established that all aspects of the council's work generate carbon emissions. Tackling emissions successfully will therefore require cooperation from across the council, driven by the strong support of leadership of Members and senior management. The ECO Board (discussed in Section 7) will drive change from the top, and the creation of a network of Green Champions will establish a channel for disseminating information across the organisation as well as generating ownership within service areas.

Both the long term and near term targets represent a significant challenge for the authority. The identification and delivery of carbon reduction projects will not only require financial investment, but will also require a fundamental shift in the way that the council manages its energy use. The sheer scale of the organisation, both in terms of the number of assets and geographic spread, means that project identification cannot be the sole responsibility of a single employee or team. The council will need a comprehensively planned and monitored energy management system and to carefully consider the way in which energy budgets are managed.

In order to ensure that the implementation of carbon management is distributed across services, the council has decided to implement an energy management system - BS16001. This will provide a structured approach to energy and hence carbon management.

Energy Policy:

Wiltshire Council is committed to responsible energy management with continual improvement as part of our wider environmental and property management strategy. The council has adopted an Energy Policy, which sets out the authority's aims and objectives that will be used to assess our progress – the full policy is reproduced at Appendix 1.

BS16001 Energy Management System:

The council is aiming to achieve British Standard 16001 accreditation for a new Energy Management System by April 2011. BS16001 has been developed using the same structure and principles as the ISO14001 environmental management system and will facilitate continuous improvement in the management of the council's energy. In using the 'plan, do, check, act' format, it requires organisations to:

- Put in place mechanisms for the collation of accurate and timely energy data.
- Analyse historic information to identify trends and significant energy aspects.
- Develop an action programme for reducing energy consumption (and carbon emissions) through the establishment of objectives and targets.
- Understand who in the organisation contributes to energy consumption, and ensure there is adequate training and support to generate reductions in consumption.
- Instigate a cycle of audits to ensure compliance with the energy policy and action programme.
- Nominate a senior management representative who will oversee the installation and running of the system.

A number of different benefits will arise through the installation of an energy management system, namely:

Issue	Benefit
Energy and financial efficiencies	Reducing energy consumption will result in lower utility bills and reduced exposure to future price increases.
Accurate data	The development of an accurate baseline and automated energy management database will produce accurate and timely data.
Greater departmental awareness of energy issues	The establishment of departmental energy budgets will generate a wider awareness of energy issues. The system should encourage all departments to take the lead.

The Energy Hierarchy:

Action to reduce carbon emissions will generally fall within three categories which should all be tackled for maximum benefit. Figure 2 below shows the energy hierarchy which seeks to rank action in order of return on investment.

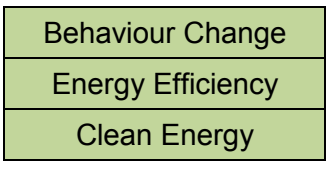


Figure 2. The energy hierarchy

The energy hierarchy will form the basis of the approach to carbon reduction within the council. In the first instance, projects relating to energy saving through behaviour change will be taken forward. Behavioural change offers a low cost way of reducing energy consumption and therefore carbon emissions. These savings can be significant with in some cases up to 10% energy saving being delivered through raised awareness and action (see Figure 3). The impact of behaviour change projects will depend on how much control and influence building/transport users have over the energy consumed. Some key roles will have more influence than others (eg facilities managers). This plan identifies projects such as the Green Champions network and BS16001 that will deliver positive behavioural change, amongst staff and contractors through targeted campaigns aimed at raising awareness.

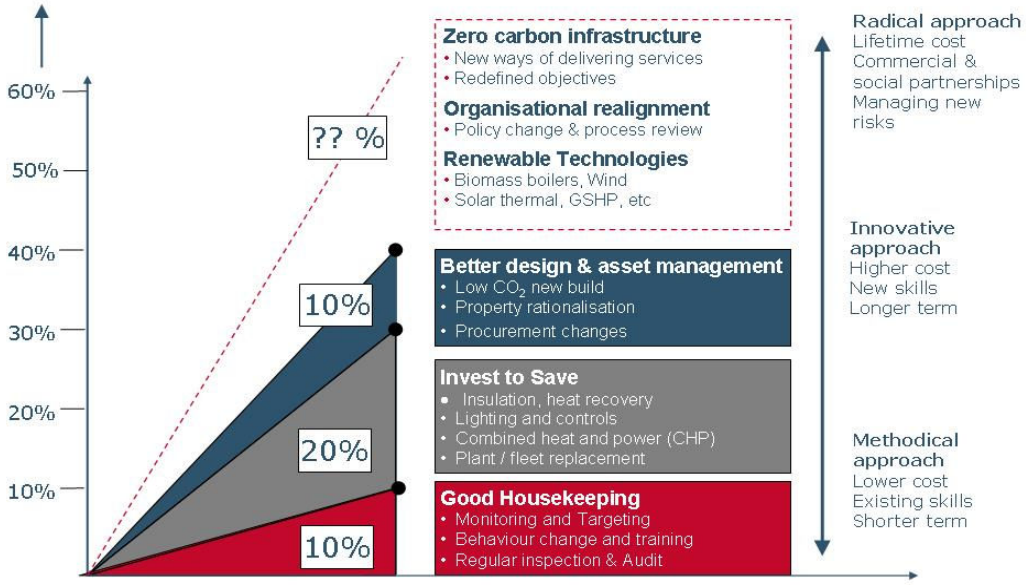


Figure 3: Proportion of carbon likely to be saved through different measures

A significant proportion of carbon to be saved will come through improvements to energy efficiency. Within the council there are numerous opportunities to make more efficient use of the energy we use to heat and light our buildings. Improvements to insulation, efficient lighting and the switch to more efficient appliances (such as laptop computers) can all reduce the amount of energy the council consumes.

The installation of renewable or low-carbon technology is a good way of reducing carbon emissions once demand has been reduced through energy efficiency projects and changing behaviours. It is capital intensive and needs strategic planning. Opportunities for renewable energy exist, and it is likely that these will be rolled out in the medium to long term.

3. Emissions, Baseline and Projections

3.1 Scope

In understanding and tackling emissions, it is necessary to work with three differing datasets: the **council's total carbon emissions** (all emissions from council and contracted out services, including buildings, streetlighting and transport), the subset that covers **CRC emissions** (which includes buildings and excludes transport and some contractors' emissions) and the **10:10 emissions** (covering buildings emissions and mileage emissions but excluding schools). Figure 4 below shows the 2009/10 footprints (total footprint, CRC and 10:10) and the difference between these three datasets.

The council's CRC, 10:10 and total footprint cannot be compared directly.

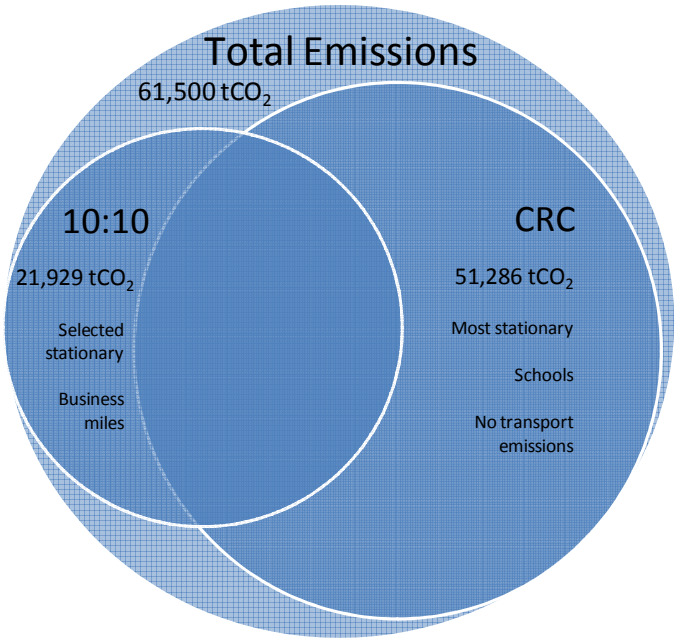


Figure 4: Comparison of Total emissions, CRC and 10:10 footprints

Wiltshire Council's Total Carbon Footprint:

The council's total carbon footprint is determined by calculating emissions arising from energy use for property, transport and street lighting. Included in the footprint are:

- Council owned buildings energy use (including administrative buildings, schools , leisure centres, depots, care homes, etc)
- Building energy use for outsourced council functions (including PFI arrangements, and other contracted services such as leisure centres)
- Street lighting energy consumption
- Council owned fleet fuel use

- Fleet fuel use for outsourced council functions (eg waste management, school transport, highways maintenance)
- Council business travel
- Business travel for outsourced council functions

Excluded from the council's footprint are:

- Subsidised bus transport (ie public transport, as these are included in the county's footprint)
- Emissions from non-energy sources, such as landfill gas, etc
- Council employee commuting
- Energy use in council owned housing
- Waste produced by council buildings and operations
- Water used in council buildings and operations

The energy data for internal council operations is collected in three streams:

- **Property** data for council property is collected by Strategic Property Services
- **Transport** data for transport is collected from Fleet Services for large vehicle plant, for example refuse vehicles, and the Shared Services Team for business travel
- **Street-light** information is collected by the street-lighting service.

Emissions data is requested from **contractors** on a regular basis.

A large proportion of the transport emissions in the baseline from fleet services is derived from estimated rather than actual mileage. Some of the fleet emissions from social services (client transport mileage) and schools (pupil transport) were omitted in 2008/09 while data relating to business mileage could not be broken down by fuel and engine type as this data was not collected. However, this data has been included in the 2009/10 baseline (see also Section 3.2 on data quality).

In previous years, the Government required local councils to report on their emissions data through **National Indicator 185**. Reporting against this performance indicator has been suspended as the national indicator set is under review and due to be replaced in April 2011 by a single data set for local authorities which will include a requirement to report on carbon emissions. The NI85 data allowed a temperature correction for each year to enable a more accurate comparison of performance between local authorities in different parts of the UK and between years when weather may be milder or colder. It is expected that the new data set will allow for the same weather correction. The total emissions footprint outlined above equates to the former NI185 data, without temperature correction.

CRC Energy Efficiency Footprint:

The council is obliged to participate in the CRC scheme and the data required for participation is extracted from the total carbon footprint data set. The following are not included in the CRC Energy Efficiency Scheme:

- Transport
- Tenant emissions
- Emissions from contracted-out services where the contractors are mandatory participants in the CRC scheme

10:10 Footprint:

The emissions covered by the 10:10 campaign include those from:

- Electricity consumption
- On-site fuel use (eg gas, etc)
- Road transport
- Air travel

Emissions from schools and contracted services are excluded from the 10:10 footprint for councils as they are encouraged to sign up to the campaign separately.

The 10:10 target will see the council achieve a minimum 3 % reduction on key 2009/10 emissions (658 tonnes CO_2). The delivery date for this relative annual footprint reduction is the end of 2010/11. A number of energy savings projects implemented in 2010/11 will result in a reduced carbon footprint. Once all the savings projects are implemented by the end of the financial year, our performance will be as identified in the table below, and we therefore expect to have exceeded our 10:10 target.

10:10 Footprint	21,928	tCO_2
TARGET: 3% reduction in emissions	**658**	**tCO_2**
Annual savings expected from all projects to be installed by March 31st 2011	742	tCO_2

Table 2: Projected performance against 10:10 carbon footprint reduction target

3.2 Data Quality

In our workings on footprints and emissions projections we use the latest and best available data. We recognise that there is scope to improve the quality of our data and a number of measures are underway. This means that reported data may change from time to time. In particular, we currently report on a proportion of estimated rather than actual consumption. As data gathering is improved, our footprint will therefore become more accurate.

The baseline for this Carbon Management Plan is the financial year 2009/10 which is the first year of Wiltshire Council operating in place of the five original authorities. The baseline is the carbon emissions total obtained from meter readings, bill analysis, fleet fuel use data, staff transport claims and contractors' emissions.

An early baseline process collected the council's carbon emissions from all five Wiltshire authorities for 2008/09 and this information was used to set a target in the council's Corporate Plan 2010-2014. Since the merging of the five local authorities into a single unitary authority a considerable amount of work has been necessary to consolidate and improve data collection and monitoring. This has been due to the fact that the council inherited five different systems; and secondly, that most of the energy consumption data was estimated, not actual. Accuracy in reporting data is a key requirement of the CRC and inaccurate reporting carries financial penalties.

A substantial amount of work has been undertaken to ensure that all energy-using properties and all energy bills have been captured in the energy database, to ensure that no consumption data is missing. Work is ongoing to ensure that this data accurately represents all energy use in council

buildings. The recent installation of new energy monitoring and targeting software has facilitated this programme of work and once fully operational this software will allow detailed monitoring of energy information.

As very few council buildings had automated meter readers, a programme to install Automated Meter Readers (AMR or smart meters) has been instigated for both schools and non-schools buildings, to enable the accurate collection of data for the majority of our consumption / emissions. The smart meter roll-out is contracted for completion by the end of the financial year 2010/11.

Improving Data from Non-School Buildings:

The council's Energy Services Team has begun improving data collection for energy consumption from non-schools buildings. A programme of installing smart meters into 70 of the high energy using non-school properties is underway. This will provide accurate and regular energy use information for 66% of non-school properties (i.e. within the direct control of the council). Data collected from these meters will be automatically transferred into an energy database, as well as being sent directly to the supplier. This will mean no more estimated data on any property that has a smart meter.

In order to improve energy data collection on the remainder of the estate, a system has been introduced to allow individual site meter readings to be entered onto a dedicated web page. Readings entered into the web page are transferred into the central energy database held by the Energy Services Team. This information will allow a fuller coverage and more accurate data for all sites, including schools. It should also reduce the occurrence of estimated data. It relies on the co-operation of site-based staff to take the readings and enter them.

In the buildings where oil is used for heating it is proposed to fit an automatic oil level meter (a 'watchman') on each tank. This will automatically monitor the oil level in a tank and send a level reading to a logger that can be fitted within the building. This system will allow building staff to enter the monthly oil level reading onto the web page without having to go to the tank. It will also allow for more consistency between readings. Sites with oil will be asked to enter oil delivery information onto the web page as well as the monthly level. This system will be fitted onto all non-school oil tanks during 2011.

Overall these new systems will greatly improve the authority's ability to monitor energy use and therefore target areas for greater savings.

Improving Data from School Buildings:

There are over 230 schools across Wiltshire. Carbon emissions from schools amount to 45% of the council's emissions and the council is corporately liable for these emissions under the CRC.

The service director for schools wrote to all schools in February 2010, and again in July 2010 setting out what the CRC means for them; reinforcing the need for the council and schools to work together; and offering to fund the installation of AMR units across the school estate.

A contract to install over 400 smart meters was set up in October 2010 and is contracted for implementation by end March 2011. Once the programme of smart meter installation is complete, the accurate and detailed consumption information that they provide will be fed into the Energy Database. From this database it will be possible for the council and each individual school to monitor and analyse their energy use. In particular, the database will assist in identifying unusual

patterns of energy use; high energy use; and potential areas for improving energy efficiency. Schools may also use the data relevant to them for curricula activity.

Improving Data from Transport:

In order to better capture emissions from **council fleet**, work is underway to harmonise fuel records across all depots with the introduction of a new fuel management system. It is anticipated that this system will be rolled out in late 2010/11. A short-term measure which extrapolates emissions based on expenditure on fuel, broken down by vehicle type and use, has been introduced to provide indicative data. This method of estimating emissions has also been applied to social care client and pupil transport.

A key, low cost method of reducing emissions from our **fleet** is by improving driver technique through information obtained from in-vehicle telematic systems. During 2011 the Eco Team will work with Fleet Services to determine a specification for a fleet-wide roll out of this system and develop a business case for its implementation.

In order to improve the collection of **business mileage** data, the council's finance and procurement system (SAP) will be updated to record it more accurately. This will need to include fuel type, engine size and journey mileage so that accurate information can be collected and broken down by service area, which in turn will assist in the identification of potential projects.

Improving Data from Contractors:

To understand all emissions generated as a result of the council's activities, emissions data is requested from contractors on a regular basis. For example, Ringway monitor fleet activity at Devizes Depot through a GPS telemetry system, and the council already has access to data for the 12 facilities managed by DC Leisure.

3.3 Wiltshire Council's Emissions Baseline

For the baseline year 2009/10 the total carbon emissions from Wiltshire Council operations were 61,500 tonnes of CO_2 associated with an annual expenditure on energy and transport of £13.86 million.

Of these total emissions, for 2009/10, the emissions relating to CRC and 10:10 were:

Total emissions:	61,500 tCO_2
CRC footprint:	51,286 tCO_2
10:10 footprint:	21,928 tCO_2

Table 3 below shows the headline split between stationary emissions and transport in 2009/10 in terms of total carbon emissions and spend. It can be seen that although transport accounts for 23% of the Council's carbon emissions, it accounts for 40% of the council's spend.

Unit	Transport	Stationary sources	Total
Energy Cost (£)	£5.54m (40%)	£8.32m (60%)	£13.86m
Carbon Emissions (tCO_2)	12,040 (19.6%)	49,460 (80.4%)	61,500

Table 3: 2009/10 carbon emissions and energy spend

While the council is responsible for generating 61,500 tCO_2 in total, 28% of these emissions result from contracted-out services – see table 4 below. The total proportion of our emissions that we have direct control over, therefore, accounts for 72% of our total footprint, equating to 44,542 tCO_2. We will try to influence the emissions produced by contractors, but may not be in a position to affect them until contracts come round for renewal.

Source	Emissions (tCO_2)	% of Total Emissions	Internal / contracted
Internal Facilities	37,049	60%	72%
Internal Transport	7,493	12%	
Contracted Facilities	12,411	20%	28%
Contracted Transport	4,547	7%	
Total:	61,500	100%	100%

Table 4: Split of carbon emissions by source and internal or external responsibility

Figure 5 below shows the proportionate split between internal and contracted emissions while figure 6 shows their service source.

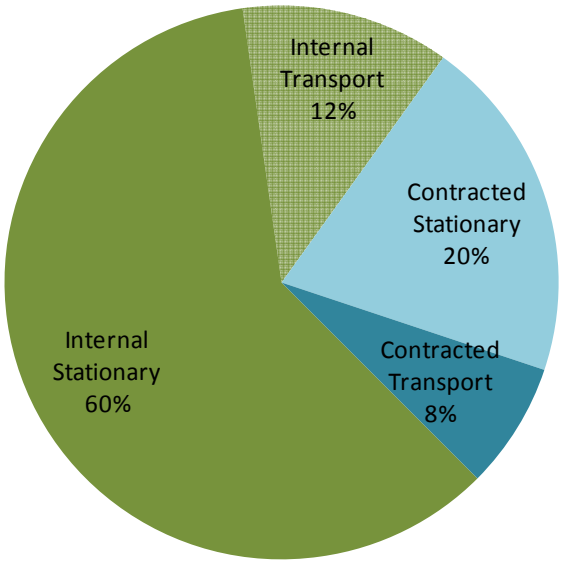
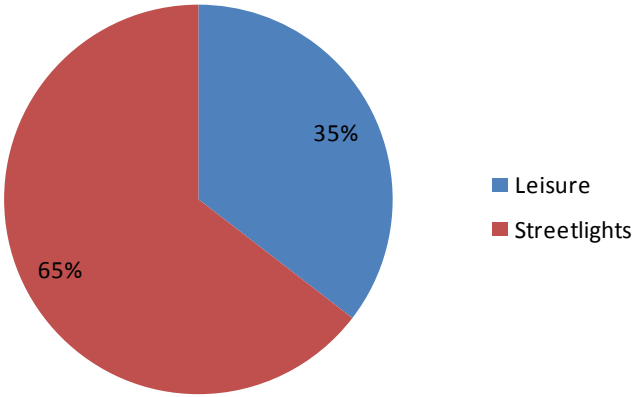
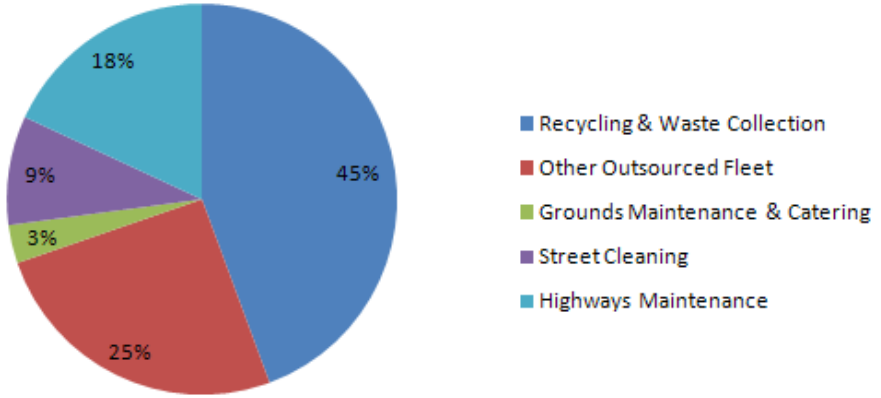


Figure 5: Proportion of internal and contracted carbon emissions, 2009/10

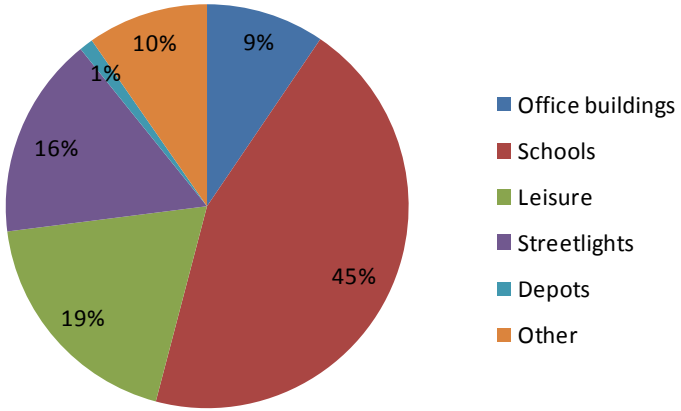
Contracted Stationary Emissions



Contracted Transport Emissions



Internal Stationary Emissions



Internal Transport Emissions

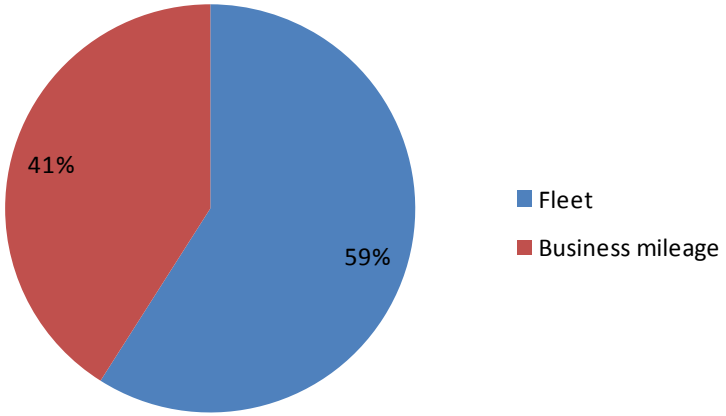


Figure 6: Service-related source of carbon emissions, 2009/10

3.4 Emission Factors and Assumptions

As well as accuracy of the data (discussed in 3.2 above), there are a number of variables and assumptions that influence the calculated carbon emissions and cost to the council. The key variables relate to:

- Energy costs
- Mileage rates
- Weather (temperature correction)
- Emission factors
- Growth: absolute and relative reductions

Energy costs are prone to fluctuation and significant price changes are frequent. The council's gas and electricity energy supply contracts are fixed for one year which offers an opportunity to reduce costs through negotiation with suppliers. Oil and LPG prices will fluctuate all year round. As a consequence, energy costs may rise over the plan period and this will be monitored in reporting and forecasting work. The calculations currently assume an annual cost increment of base rate plus 2% per annum, although in reality this may be much higher in any given year. For example in April 2008 gas prices rose by 35% and in October 2008 electricity prices rose by 70%.

In 2009/10 staff claimed almost 6.9m miles. At an average **mileage rate** of £0.40, it is estimated that the cost to the authority in 2009/10 was £2.7m. Whilst £0.40 is the HMRC rate paid to staff on Wiltshire Council contracts, a variety of different rates are currently in place as a legacy from the historic county and district council structure. A new staff travel policy is being developed that will harmonise terms and conditions. By making changes to allowances, it aims to encourage staff to travel more sustainably, whilst reducing the annual budget payable.

As mentioned in Section 3.2 above, **weather / temperature correction** is useful to enable the comparison of performance between years as the mean temperature has a very significant effect on the amount of heating or cooling required and therefore on fuel consumption and resulting emissions. For example, the 2009/10 winter was the coldest for 30 years and direct comparison of energy consumption for previous or subsequent years with this baseline year could be misleading.

The amount of carbon dioxide emitted by any particular fuel is dependent upon its carbon content – the higher the level of carbon, the higher the level of CO_2 emitted. Different fuels will have a higher impact than others. Defra-published **Emission Factors** convert existing data sources (e.g. utility bills, car mileage, refrigeration and fuel consumption) into CO_2 equivalent emissions by applying relevant conversion factors (e.g. calorific values, emission factors, oxidation factors). For further details see Appendix 2.

Most organisations will expect an inflationary effect of consuming more energy and resources each year compared with the previous year. The industry standard is to expect an annual **growth of emissions** of 0.7 %. This is **not** accounted for in this plan's targets; the targets in this plan will therefore be a **relative reduction** and not an **absolute reduction** in emissions. Absolute carbon reductions must take this growth into account and must therefore be larger cuts than relative cuts if overall emissions are on the increase. The figure below illustrates the widening gap caused by consistent emissions growth between an absolute cut and a relative cut of five percent against the baseline year.

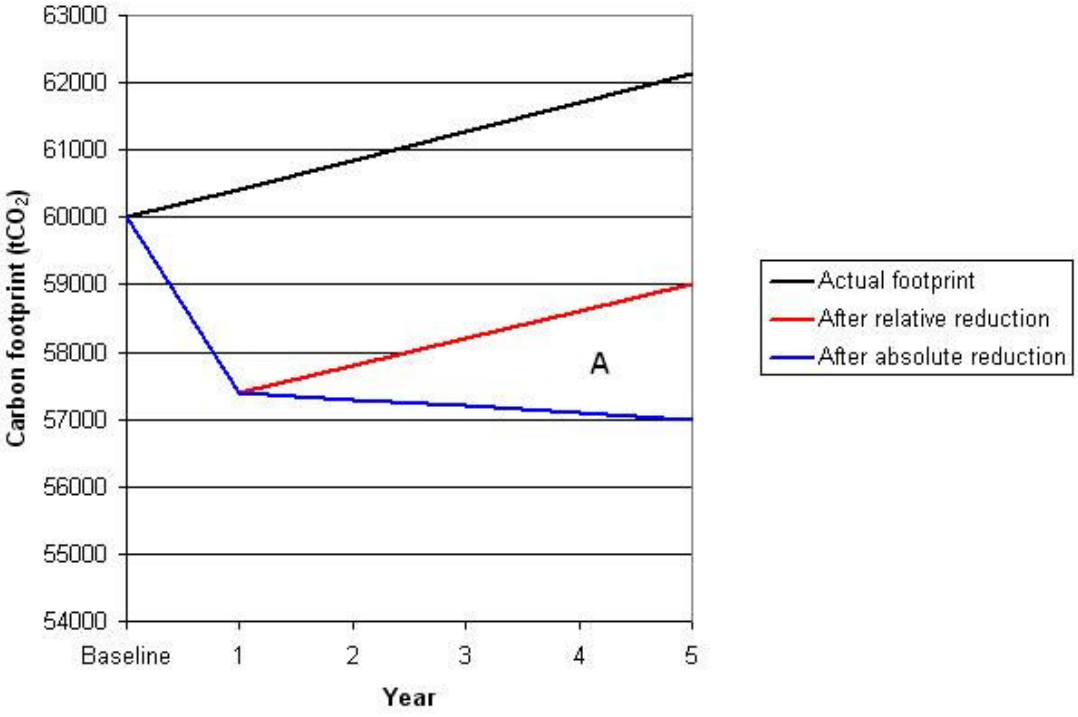


Figure 7. Gap (A) between absolute and relative reduction of five percent in year one by the end of a five year plan period.

4. Delivery

The analysis of council operations has shown that all aspects of the council's work generate carbon emissions. Tackling emissions successfully will therefore require cooperation from across the council which will be supported by strong leadership from Members and senior management. This chapter presents the key services associated with the reduction of carbon emissions, the major programmes of work that must be engaged with, describes the issues surrounding the management of the school estate and sets out specific projects to reduce carbon emissions.

The creation of the new unitary authority in April 2009 means that the council is in a unique position in terms of carbon reduction. Wiltshire Council operates in a fundamentally different way to the previous five authorities. The first year of the new unitary was a 'transitional' year, with services being brought together in a way that minimised disruption to service delivery. The council is now moving into a phase of transformation to realise efficiencies and improve service quality. This transformation programme offers the opportunity to deliver carbon reduction and will form the basis for a significant proportion of our carbon savings during the life of this plan and beyond.

Section 4.1 below identifies a number of key strategic programmes of work that are underway which could impact on the council's carbon emissions. Some of the proposed programmes could increase carbon emissions, while the majority are expected to reduce our footprint. These strategic work programmes will need to assess and quantify the carbon emissions impact.

4.1 Delivery Opportunities

Office and workplace transformation:

One of the major changes that the council is making relates to the rationalisation of its building assets. The Campus and Operational Development Programme (CAOD) is a major undertaking seeking to streamline the council's building stock. The first phase of the project is expected to reduce the council's 98 administrative properties eventually down to four large hub offices with hot-desking facilities by 2014. Of the 4 hubs, two existing offices will be fully refurbished (Trowbridge: County Hall and Devizes: Browfort) to make them fit for purpose; one will require moderate modernisation and one is a new build. The carbon management plan will be updated to reflect new developments as this dynamic area of work progresses.

Service Operational Campuses:

The second phase of the Campus and Operational Development Programme will review operational accommodation to provide 'service campuses' that co-locate service centres with administrative centres, in each community area (approximately 20 in total). Several of these will be delivered in the same timeframe as phase one. As with the first phase, a significant property disposal programme will be implemented to help realise additional benefits and savings. The outcome of this work programme may significantly affect the CMP and the document will need to be updated with the outcome of the review when that process is complete.

Leisure Review:

In tandem with the campus review, the authority has conducted a review of leisure provision and the proposals have gone through consultation process. Final decisions will be made through the campus review process.

The council currently owns 22 leisure facilities across Wiltshire:

- 8 managed by the council
- 12 managed by DC Leisure on behalf of the council
- 2 leased to community sports associations. (Calne and Cricklade)

The council is also in the final stages of negotiating a contract extension with DC Leisure for a further two year period (01/04/11 - 31/03/2013). As part of this extension the council (via Strategic Property Services) is looking to assume responsibility for the procurement of all the utilities. This means that the emissions from these buildings will fall under the council's in-house footprint (where before they were contracted out) and we will be responsible for them under CRC. On the other hand, the council will have direct control over influencing consumption and implementing energy efficiency measures.

Libraries Review:

The Library Service is currently engaged in a review process to ensure that provision is effectively matched to customer need. By March 2012 the service will have analysed its current provision, sought customer and stakeholder views and designed/implemented its future delivery model. It is likely that these processes will identify opportunities for carbon reduction through analyses of building, transport and service delivery operations.

The review also falls under the Campus and Operational Development Programme, with Libraries having an involvement in several workstreams, many of which will bring a carbon reduction benefit – County Hall refurbishment (new Trowbridge Library and alternative location for the functions sited in the Chapmans building), touchdown centres (the first of which will be within the new energy-efficient library at Pewsey), personal care facilities for people with severe disabilities, service co-location, service campuses and the re-designed approach to customer focus.

Low Carbon Standards for New Council Buildings:

A working group has been set up with a view to developing a low carbon building policy that, once adopted, could be applied to any building development or refurbishment being carried out by the council or on its behalf. The group consists of representatives of the ECO team, Strategic Property Services team and School Buildings team. The Policy will build on the work on sustainable schools that has already been started within Strategic Property Services and will tie in with the Climate Change Adaptation Plan.

Depot Review:

The authority has conducted a review of depot sites and plans to rationalise them for greater operational and cost efficiency. The review has forecasted that carbon emissions from depots will be reduced by 20% (5000 tonnes) over the life of the project.

Harmonisation of Staff Terms and Conditions:

This programme of work is driven by the need to ensure all staff from the five former councils move to the same employment terms and conditions. It presents an opportunity to develop a new staff travel policy and a duty for all staff to act responsibly for their energy and fuel consumption at work.

ICT:

Supporting all of these projects will be information technology (IT) systems that will allow staff to access information and programs when and where they need them. In order to achieve this flexible approach, the five networks of the former authorities need to be amalgamated. Although this will take time, it will lead to a carbon saving in its own right as the number of data centres (which need to be powered and cooled) will be reduced from five down to two.

Data Centre Consolidation will essentially reduce the number of computer rooms that the Council has. As well as moving physical equipment and putting it into two big data centres, it also involves the virtualisation of servers. Virtualisation is the hosting of individual servers as virtual machines within a much larger system meaning that the amount of power needed is reduced, realising carbon savings from decommissioning physical machines.

Having a joined up network will enable ICT to implement other programmes for example the switching off of ICT equipment when it is idle i.e. screens and workstations overnight. Since these will not be drawing any power when turned off, there is a declarable carbon saving to be made. The ICT Team have started looking at suitable solutions for this.

Through CAOD, more flexible working patterns can be developed. This will include but will not be limited to; secure remote working, video conferencing capabilities, tele-conferencing capabilities, etc. All of these are designed to reduce the amount of miles travelled by staff to attend meetings at other sites, saving on fuel and carbon emissions.

As a service, ICT has partnered with a company called Redemtech to dispose of obsolete equipment either through recycling or sale. Redemtech provide a quarterly report of carbon and trace metal savings achieved.

Schools:

There are over 230 schools in Wiltshire, some operating from more than one site. Although schools are increasingly autonomous from the local authority, the council is responsible for their carbon emissions under CRC. A Climate Change Project Officer: Schools post was created in October 2010 to develop resources and communications to schools to ensure that they understand their responsibilities under the CRC and to work with them to reduce their emissions, identifying and obtaining external funding where possible. The officer will also network with officers in other authorities to establish best practice.

A climate change section will be published on Wisenet – the Wiltshire Council schools' online resource – and will provide a reference point for all schools to access guidance on sustainability issues. There may be scope for a designated forum for schools to be created, to provide networking opportunities for schools who want to become more sustainable.

A working group has been established to update key members of staff within the ECO Team, Department of Children and Education and Energy Services Team on progress within the project.

Street Lighting – Part Night Lighting:

Money and energy will be saved by Wiltshire Council in converting around 400 main street lights across the county to part night lighting.

The new scheme will mean street lights are to be switched off for part of the night on some main roads where there are generally no properties or junctions. They would be switched off between midnight and 6am when traffic flows are low and there is less need for the lighting. Reducing the time the 400 lights are on will save more than £9,400 per year at the current price of electricity. This could mean savings of more that £300,000 over the next 25 years.

The lights are on the following roads:

- A3102 Greenacres Way, Calne
- A350 West Cepen Way, A4 Pewsham Way, A4 Avenue La Fleche, Chippenham
- A4 Corsham to Box
- A361 Caen Hill, A361 London Road, Devizes A350 Western Way (between Semington Roundabout and Countrywide Roundabout) Melksham
- A4 Pewsham
- A338 Churchill Way South and New Bridge Road, Salisbury
- A361 Hilperton Drive, Trowbridge

Temporary signs will be in place to advise motorists the lights will be turned off for part of the night, the scheme is due to start by the summer 2011.

Street Lighting Community-Based Projects:

The council is also working with local communities to convert village lights to only operate for part of the night. A pilot project has already been successfully introduced in trial sites at Urchfont and Tidworth. The council has set aside £5,000 for each of the 18 Area Boards to introduce schemes in their areas in 2010/11, garnering interest from Town and Parish Councils and other interested parties to take part in the scheme. £5,000 would enable over 100 units to be converted to part night lighting so that they would go off at about midnight and come back on at approximately 5.30am.

Interested communities must nominate an individual to act as Project Leader to take the lead in identifying groups of street lights to be altered, undertake consultations and liaise with the community. Council staff and specialists will advise on technical aspects, including the viability of the proposals, and will arrange the implementation of the schemes.

In urban areas there may be concerns about crime and personal safety, as well as road safety implications, and it may be more appropriate to dim the street lighting during part of the night. In rural areas and villages turning off street lighting for part of the night may have local support, especially where night sky pollution is a concern, and there is a desire to preserve the rural environment as well as concerns about climate change.

Waste Management:

The council intends to make changes to waste and recycling collections in line with government policies and a corporate objective of reducing waste sent to landfill to 25% of the total collected by

2014. The changes to collections is forecast to increase the council's average recycling rate to about 50%, compared to 40% currently.

There is no clear guidance about the extent to which this general presumption in favour of recycling might be undermined when additional vehicle miles will be travelled and additional fuel will be needed to collect the recyclates. For this reason, the proposed changes were assessed for the likely vehicle mileage impact and mitigating factors at the collection stage. The assessment concluded that the changes will result in an increase in collection vehicle mileage of about 20%, which will result in the authority's carbon footprint increasing. Based on the figures contained within the assessment, it is estimated that an additional 634 tonnes of CO_2 will be emitted which equates to the 2009/10 emissions from Durrington and Warminster leisure centres combined.

The provision of a garden waste collection service should divert an increased quantity of waste which is 100% biodegradable from landfill. Similarly, the decision to provide a cardboard collection service should divert a considerable quantity of card, which is also 100% biodegradable, from landfill. With less biodegradable municipal waste entering landfill, a lower methane production from landfilled waste could mitigate any increase in carbon emissions from additional miles travelled to collect these materials.

The changes to collections should see a decrease in the overall county carbon emissions as residents would make fewer journeys to household recycling centres and local recycling sites, instead taking advantage of the enhanced kerbside recycling services. Whilst this scenario cannot be proven at this stage, if realised approximately 681 tonnes of CO_2 could be saved on the county's carbon footprint, cancelling out the increase due to kerbside collections. There would also be a slight reduction in heavy goods vehicle miles for servicing these sites.

Whilst these estimates cannot be confirmed, they indicate that the net mileage impact of collections on Wiltshire's carbon footprint is likely to be relatively slight, and likely to be broadly neutral in its effect on the collective Wiltshire Council and county carbon footprint.

Plans for a proposed mechanical biological treatment (MBT) plant in Westbury have been approved and it is expected to be in operation in 2014. The £15 million plant will turn more than 45,000 tonnes of local rubbish in to a fuel to be used at a variety of outlets. The approved plans also include a household recycling centre (HRC) which means that local residents will no longer need to travel to Warminster and Trowbridge.

Fleet:

Options for reducing emissions from fleet operations include investing in vehicle carbon emission telemetry, which would give us more detailed data to ensure they are operating as efficiently as possible.

Vehicle carbon emissions telemetry should also be specified for future fleet contracts.

Implementation of BS16001 :

As part of the BS16001 Energy Management System, site inspections and audits will be carried out, initially targeted at eight sites, but eventually for all sites. The Energy Services and ECO Teams will work with building users to develop robust energy management practices. This will allow for greater understanding of energy use in the council's buildings, enable the embedding of

carbon reduction work into the day-to-day running of council properties, and identify opportunities for potential carbon saving projects.

Sustainable Procurement:

The council needs to consider how it influences carbon emissions from services that are contracted out to third parties. This is particularly challenging where contracts are already let. Engagement with procurement at the earliest stage is essential to ensure tender specifications keep CO_2 levels as low as possible. For existing contracts, provision needs to be put in place for the council to work with contractors to cut carbon, reclaiming money from the operator where the council's invest to save fund has been used on energy efficiency projects.

Another issue that needs to be considered during the tendering process is the Carbon Reduction Commitment (CRC). Liability for the payment of these allowances could fall with the Council if the contractor does not participate in the CRC scheme in their own right. However, if they are large enough then liability for these allowances would be passed from the council to the contractor. This variance has the potential to skew tender price submissions and needs to be factored in accordingly during the tender evaluation process.

During 2011 the Senior Procurement Practitioners Group will look at how energy efficiency and the CRC can be embedded within contracts. There is the potential that this could be done in several different ways, including:

- Revising the procurement toolkit
- Providing training to key members of staff who undertake procurement
- Assisting with the development of ranking matrices for tender responses that take energy and carbon issues into consideration.
- Developing contract clauses that enable the council to work closely with third parties on energy efficiency projects, reclaiming money where we have invested money in projects.
- Undertaking a carbon audit of services before tender specifications are written to determine ways services can be made greener.

The Energy Project Team task group, made up of officers from the ECO Team, Energy Services Team, Procurement and contract managers is investigating the possibility of moving all sites onto an Office of Government Commerce (OGC) energy contract in order to achieve savings to the council, as well as to move where possible to low carbon or green energy contracts.

Policy Alignment:

To ensure all policies and services align with the council's low-carbon vision, key decisions deliberated by Cabinet must now include an assessment of the carbon emissions and climate change adaptation impacts.

Renewable Energy and the Feed In Tariff (FIT):

The potential for the council to consider renewable energy for its buildings is currently being considered separately to this plan and is expected to be published in early May 2011. The final recommendations will be fed through into reviews of this plan.

Appendix 4 identifies existing renewable energy schemes installed across council services.

4.2 Carbon Management Projects

Carbon reduction projects have been identified to deliver emissions and cost savings both in the short, medium and long term. These may be either behavioural or technology based.

Behavioural projects relate to how people interact with technology - either reducing the need to use energy or encouraging a preference for a lower-carbon alternative. This would range from creating a culture of switching off devices when not required, to choosing not to travel to a meeting and use a remote conferencing option instead. Behavioural projects are characterised by minimal capital cost. They involve staffing (revenue) costs to implement and maintain the programme, difficulties in generating momentum and then later quantifying its impact and, critically, a very high and immediate potential impact on carbon emissions. Ancillary benefits include greater staff engagement and improvements in domestic practice when staff take energy saving ideas into the home environment.

One of the key areas for carbon reduction over the short term will be through behavioural change and staff engagement though raising awareness of energy efficiency. This is assumed to deliver an approximate 5% saving on energy. It should be noted that the carbon savings identified through these projects are a theoretical maximum across all energy types and locations. The ability for staff to actively save energy will be dependent upon the building they work in.

Technology-based projects include lighting sensors, high-efficiency lamps, timer switches, energy-efficient heating, cooling and ventilation equipment. In some cases equipment will deliver a cost saving irrespective of the end user, for example voltage optimisation equipment. Other equipment may be expected to generate a saving but may be compromised by the end user, for example auto-closers fitted to doors that are then propped open. The expected savings from a project can also be compromised by the subsequent introduction of other equipment, for example when high-frequency lighting replaces the original lighting after a voltage optimiser unit has been fitted.

Short Term (First year of Plan, 2010/11):

Appendix 3 sets out the programme of energy efficiency measures to be delivered in the short term, together with expected costs and carbon savings. In addition, a programme of awareness raising and behaviour change has been launched across the council with the aim of meeting part of the 20% reduction target and the impact of this campaign will be quantified and monitored.

In total, the energy efficiency projects implemented in 2010/11 will save an annual total of 742 tCO_2.

Medium term (2011/12 to end of plan period, 2013/2014):

In the medium term, in addition to invest-to-save schemes implemented through the council's invest to save energy efficiency budget (see table 7), a number of strategic work programmes have been identified, in particular through the Campus and Operational Development Programme (CAOD) and are quantified in Table 6 below:

Project	Description	Footprint Reduction	Avoided Energy Cost	Avoided CRC	Total annual avoided

		tCO_2	(£ m)	Cost (£ m)	costs (£m)
CAOD: Office Review – Phase 1 (V4)	Streamlining the council's building stock by 2014. Phase 1 objective: reduce the council's 97 administrative properties down to 4 large hub offices with hot-desking facilities.	3,273	£0.998	£0.161	£1.159

Table 6: Medium Term Strategic Work Programme

Long term (Beyond Plan Period, post 2014):

In the longer term, a number of further strategic programmes have been identified that present the opportunity to make carbon emissions and related cost savings. These are listed below. Work will be ongoing to quantify the savings.

CAOD: Office Review – Phase 2	Phase 2: Extend service operational accommodation to form service campuses in each community. Dispose excess properties.
CAOD: Leisure Review	The review of Leisure services and campuses will offer the opportunity to reduce carbon emissions and increase energy efficiency.
CAOD: Libraries Review	The co-location of services in service campuses will offer the opportunity to reduce carbon emissions and increase energy efficiency.
CAOD: Depot Review	Review in the potential to reduce / streamline council depots
Low carbon standard for new council buildings	Development of low carbon building policy to apply to new building developments or refurbishments of existing buildings
BS16001 Energy Management System	Develop robust energy management practices in the council's buildings, enable the embedding of carbon reduction work into the day-to-day running of council properties, identify opportunities for potential carbon saving projects and implement behavioural change projects.
Renewable / low carbon energy generation	Development of a policy to maximise investment in or procurement of renewable / low carbon energy generation. Existing schemes are outlined in Appendix 4
Harmonisation of staff terms and conditions	Opportunity to develop a new staff travel policy and duty for all staff to be responsible for efficient energy and fuel consumption at work.
ICT	Development of ICT systems to provide: • Hot desking and support for flexible working (remote working, video conferencing; teleconferencing); • Consolidation of the 5 existing networks – Reduction of data centres from 5 to 2;

	• Virtualisation of servers; • Power down software for idle equipment; • Recycling of obsolete equipment
Street Lighting Projects	Improved energy efficiency for street lighting (eg implementation of dimmers, energy efficient technology or switch-offs)
Procurement	Incorporating carbon efficiency into corporate procurement
Policy Alignment	Review of key decisions in Cabinet papers for their carbon emissions and climate change adaptation impacts

5. Investment, Savings and Benefits

As an indicative cost of energy efficiency, saving a tonne of CO_2 through energy efficiency measures will initially require a one-off investment of the order of, on average, £900[3], while emitting a tonne of CO_2 currently costs £310 per year in energy bills. It will take typically 4-5 years to recoup the invest-to-save cost. Savings should therefore be understood as **avoided costs.**

5.1 Savings

The council spent £14m on energy and transport in 2009/10, with an associated carbon footprint of 61,500 tonnes of CO2. The council has set a target to reduce its carbon footprint by 20% by 2013/14 (11,823 tCO2). In reality energy efficiency projects do not necessarily deliver an absolute reduction in costs as there are many inflationary factors (see Section 3.4 on assumptions) and thus are most likely to effect relative reductions through avoiding costs.

The Carbon Reduction Commitment means that for every tonne of carbon emitted from our buildings and streetlights we project that we will pay £12 in 2011/12 and 2012/12; £16 in 2013/14 and increasing amounts thereafter. (See table 1 above.) Reducing our carbon emissions will reduce the CRC costs as well as avoid energy costs.

To illustrate the level of savings that are possible, during 2010/11, £0.5m was allocated in the capital programme and £0.7m was secured as a 0% government loan. This has been invested in a range of energy efficiency projects such as LED bollards, an air source heat pump at the Shurnhold office, building management systems at leisure centres and a combined heat and power (CHP) plant at the Salisbury 5 Rivers Leisure Centre. The CHP plant was financed through the 0% loan. It cost £176,000, will payback within 5 years and will save 6% of emissions from leisure centres currently operated by the council in Wiltshire.

In the event, not all the 2010/11 projects from the £1.2m budget will have been fully implemented by end March 2011. Those that have been implemented are projected to realise a saving of £116,000 per year of avoided costs, or a total of £580,000 over 5 years (see table 7 below).

5.2 Investment

To achieve the target carbon reduction, both capital and revenue will be necessary to invest-to-save. Additionally, external funding will be levered in wherever possible. As already indicated, £0.7m was raised as a 0% loan from government in 2009/10. Payback on the loan is achieved through the energy cost savings.

The effect of continued council investment of £0.5m revenue for the next 4 years and £0.5m capital for the next 2 financial years, as proposed in the council's Business Plan 2011-2015 will be to save the council £2.62 in avoided energy bills and is likely to save a further £260,000 in avoided CRC payments as illustrated in Table 7:

[3] The figure £900 per tonne is an indicative figure, based on energy efficiency surveys carried out by the Carbon Trust on a number of different council buildings. If we succeed in implementing projects at a more cost-effective rate, our investment fund could potentially generate greater carbon and financial savings.

	Investment (£ m)	Emissions Footprint Reduction (tCO_2)	Avoided Energy Cost (£ m)	Indicative avoided CRC Cost (£ m)	Total Avoided Spend (£m)
2010/11 (Council)	0.5	Full annual saving realised in next financial year			
2010/11 (External)	0.7				
2011/12	1	742	0.107	0.009	0.116
2012/13	1	2,467	0.404	0.030	0.433
2013/14	0.5	3,578	0.604	0.057	0.661
2014/15	0.5	4,134	0.704	0.074	0.778
2015/16	-	4,411	0.804	0.088	0.892
Total	**£4.20**	**4,411**	**£2.62**	**£0.26**	**£2.88**

Table 7: impacts of energy efficiency investment [4]

Projections for energy savings are based on an average payback period of 5 years. Some may take longer, others may pay back in 1-4 years, and so are a good opportunity for invest to save.

5.3 Non-financial benefits

In addition to the benefits quantified above, implementation of the Carbon Management Plan will ensure Wiltshire Council:

- Meets its commitments under the CRC scheme.
- Meets regulatory compliance.
- Improves its reputation with staff, stakeholders and the public through leading by example.
- Understands and is able to adapt its services in response to the unavoidable consequences of climate change.
- Delivers environmental benefits for Wiltshire.

[4] Assumptions: mean investment required to save a tonne of CO_2 is £900; payback rate is 4-5 years on average; 90% of carbon reduction funding is used for buildings or streetlights and therefore reduces CRC liability; energy cost inflation is 5% (base rate + 2%).

6. Programme Management

6.1 The Programme Board – strategic ownership and oversight

Strategic ownership and oversight of the carbon reduction work programme is undertaken by the ECO Board. Chaired by the Cabinet Member and portfolio holder for the Environment, it includes directors from across the council. The full membership is presented in Table 8.

Table 8. Membership of the Energy Change Opportunity Board

Cllr Toby Sturgis	Cabinet member with responsibility for Environment (Chair)
Mark Boden	Corporate Director, Neighbourhood & Planning
Alistair Cunningham	Director Economy and Enterprise (Project Sponsor)
Parvis Khansari	Director of Strategic Services
Laurie Bell	Director of Policy, Research and Communications
Michael Hudson	Interim Chief Finance Officer
Mark Stone	Transformation Programme Director
Jacqui White	Service Director Shared Services & Customer Care
Tracy Carter	Director of Waste Management Services
Mark Smith	Director of Neighbourhood Services
Stephanie Denovan	Director of Schools and Learning
Niki Lewis	Director of Community Communities, Libraries, Heritage & Arts
Ariane Crampton	Head of Climate Change Team

The Board's Terms of Reference are as follows:

WILTSHIRE COUNCIL ECO BOARD

Terms of Reference

The Board will:

- Champion and provide leadership on climate change work
- Set and review strategic direction and targets
- Own the scope of the climate change programme and prioritise carbon reduction projects
- Monitor progress towards objectives and targets
- Remove obstacles to successful completion of climate change projects
- Review and champion plans for financial provision of climate change projects
- Ensure there is a framework to co-ordinate climate change projects

The Board will meet on quarterly basis or more often if deemed necessary. Minutes and action points from the meeting will be recorded and distributed to members.

The ECO Board recognised early on that the Campus And Operational Development Programme (the former Workplace Transformation Programme) would be able to deliver a significant amount of carbon savings by 2014. Therefore a joint paper was prepared by the Head of ECO Team and the CAOD Director setting out the relationship between the two Boards. The Project Sponsor (the Service Director for Economy and Enterprise) for the carbon management programme sits on the CAOD Board and the Director of the CAOD Programme reports to the ECO Board as a standing item.

CAOD has committed to reducing carbon emissions by 40% for all buildings in scope.

Alongside the CMT, the ECO Team is engaged in working with task groups on sustainable procurement. The Energy Project Team and the Senior Procurement Practitioners Group (discussed in Section 4: Sustainable Procurement) report to the council's Procurement Board.

In addition to the involvement of the Corporate Director for the Department of Neighbourhood & Planning on the ECO Board, the Corporate Director for the Department of Resources is the Senior Responsible Officer for the CRC scheme.

6.2 The Carbon Management Team

The Carbon Management Team was set up in July 2009 and has successfully engaged with all relevant parts of the council. The membership is presented in Table 9 and its agreed terms of reference are as follows.

The Carbon Management Team will:

- support the project leader
- ensure carbon management is integrated across the council
- provide baseline data
- identify projects, write project definitions and quantification
- implement projects

The team will meet on a quarterly basis or more often if deemed necessary. Minutes and action points from the meeting will be recorded and distributed to members.

Table 9. Membership of the Carbon Management Team.

Issue/Role	Team Member
Project Lead	Ariane Crampton, Head of ECO Team
Energy Management (and Deputy PL)	Viviene Sawyerr, Senior Energy Officer
Internal Communications	Donna Mountford, Communications Officer
Strategic Property Services	Neil Ward, Head of Property Services
Leisure Facilities	Robin Townsend, Head of Leisure
Fleet Management	Andrew Saxton, Fleet Manager
Street Lighting	Peter Binley, Head of Highways Asset Management
Waste Management	Andy Conn, Head of Waste Management Martin Litherland, Head of Waste Collection
Schools	Nick Glass, Head of Secondary School Improvement
Sustainable Procurement	Tony Brett, Head of Procurement
IT Services	Steven Grieshaber, ICT Service Design and Infrastructure Manager
Campus and Operational Development	Sarah Ward, Project Manager

6.3 Succession Planning for Key Roles

It is important that the momentum of the carbon reduction programme continues to drive forward. The first year of the plan period (2010/11) focussed on setting up the internal structures and resourcing to ensure continued support. Key steps have been:

- Including a carbon reduction target in the council's Business Plan 2010 – 2014.
- Ensuring that energy efficiency is recognised as a corporate priority in the Business Plan.
- Setting up the ECO Board with leadership from the portfolio holder for the environment, and membership at director level across a wide range of the council's services.
- Ensuring both revenue and capital budget resources are allocated to support implementation of the programme.
- Ensuring all services and policies align with the council's low-carbon vision; key decisions deliberated by Cabinet must now include an assessment of the carbon emissions and climate change adaptation impacts.

These measures ensure that there is support both top down and across the organisation to secure carbon reduction activities as a priority. An absence of key personnel at any level will result in issues being escalated (either to higher levels of management or to the ECO Board) to ensure progress is maintained.

6.4 Priority activities

The approach for reducing carbon emissions in Wiltshire Council will be:

- To balance total emission reductions with overall cost effectiveness
- To prioritise programmes of work that will promote behavioural change in the organisation
- To prioritise programmes of work that deliver financial savings as well as carbon reduction

The initial areas of focus will be:

- Data quality and coverage
- Energy management and performance monitoring
- Sustainable procurement
- Sustainability in decision making for large projects
- Establishment of a Green Champions network to deliver behaviour change
- The establishment of a framework for energy efficiency projects
- Identification and implementation of projects

6.5 Review and monitoring

Table 10. Programme reporting structure and review cycle.

Type	Who involved	When	Purpose
ECO Board	Board members	February	To agree business plan and annual work programme to begin the following April **Report on to Corporate Leadership Team & Cabinet**
ECO Board - Mid Year review meeting	Board members	October	To review progress of work programme against targets and budget To consider opportunities to develop the business plan To consider funding opportunities
ECO Board – Quarterly meetings	Board members	Every 3 months	To monitor progress of the work programme To address barriers to progress To consider funding opportunities
Quarterly reporting	ECO Team, Carbon Management Team, Energy Services Team, Corporate Finance	Written report Q1 Jul Q2 Oct Q3 Jan Q4 Apr	To provide written progress report to the Board To monitor against corporate plan targets To update the ECO Board on the funding position **Report on to Corporate Leadership Team as necessary**
Progress Monitoring and Development planning	ECO Team, Energy Services Team	Monthly	Monitoring of progress of projects including identification of barriers Assessment of work programme to ensure sufficient projects are identified and worked up to implementation **Report on to Sponsor as**

Type	Who involved	When	Purpose
			necessary
Scrutiny – Environment Select Committee	ECO Team	Annually	To review progress of work programme against targets and budget To consider opportunities to develop the business plan To consider funding opportunities

The ECO Team will monitor the Carbon Management Programme in the first instance using a RAG (Red, Amber, Green) alert system to identify areas of concern to the Carbon Management Team and the ECO Board.

The council's Internal Audit Team will provide audits for data management systems.

Wiltshire Council's Environment Select Committee has the power to scrutinise the whole work stream at any time and has already demonstrated a strong interest in the work on carbon management during 2009/10 and 2010/11.

7. Performance and Risk Management

In order for the Council to achieve its 2014 and 2020 targets it will be necessary to engage with all areas of council operations and introduce an awareness of carbon emissions. Direct reductions will be possible through funding specific projects, which will need to be continuously identified and funded. A project register will be used to record new projects and to prioritise them for funding through the ECO Board. The council is also taking action to improve its procurement strategy and move to requiring carbon reduction through its contracts with suppliers.

The carbon management programme will consist of a large number of projects spread across a wide range of the council's activities, including both technical projects (eg installing insulation in buildings) as well as corporate functions (eg corporate strategy, procurement policy, financial risk assessment, etc). It is therefore essential to have in place a rigorous management system to ensure the progress and success of the programme.

Sufficient carbon reduction projects will have to be identified and implemented in order to meet the challenging target. Although a number of projects have already been identified, the achievement of the interim and long term targets will require a step change in the way carbon reduction is dealt with in the council.

7.1 Risks

Risks associated with carbon management include:

	Risk	Owner	Mitigation
1.	Adequate financing is not made available.	Corporate	Business cases will be presented to the Portfolio holder for the Environment, ECO Board, SMT and Cabinet as appropriate. It essential to have adequate finance or the carbon reduction target will not be met.
2.	A reputational risk against failing to lead by example in reducing carbon emissions.	Corporate	ECO Board ensures adequate funding is available and monitors progress of the carbon reduction programme
3.	Missed opportunity to deliver energy efficiencies that have the potential to deliver benefits over many years (depending on the measures implemented).	Corporate	ECO Board ensures strategic opportunities are identified by board members. ECO Team identifies strategic opportunities that arise in key decisions that go to Cabinet. CAOD to include energy efficiency priorities within their work.

4.	Failure to meet our CRC obligation, which could lead to a fine against the council (as yet unquantified) and poor performance on the CRC with corresponding impact on our environmental reputation.	Corporate	The Nominated Director (Director of Resources) monitors progress against CRC requirements.
5.	Failure to respond to priorities identified locally through Wiltshire Assembly, leading to an impact on our reputation amongst both the Wiltshire public and our strategic thematic partners.	Corporate	Carbon reduction is included as a Corporate Priority in the Corporate Plan 2010-2014
6.	Failure to reduce carbon emissions from services which are not fully under the control of the council or involve a third party – eg schools, acadamies, PFI arrangements, contracted services	Corporate Schools Procurement	ECO Board includes appropriate service directors, eg Service Director Schools & Learning, Head of Procurement and ensures engagement with schools and third parties is progressed
7.	Increased future cost of energy: Energy is procured by the council as an annual contract, so costs are fixed for a one year period. As prices are generally expected to increase, the council therefore faces increased energy cost.	Corporate Strategic Property Services Procurement	Increasing energy costs increases the council's operational budget. This will increase the imperative to invest-to-save in energy efficiency projects. Procurement should endeavour to ensure that the council procures energy at the most favourable rate.
8.	Decreased future cost of energy: Alternatively, effective procurement which results in lower energy prices will	Corporate Strategic Property Services	Careful consideration of invest-to-save projects will be necessary to ensure the council invests in projects with the best financial and carbon reduction return.

	result in invest-to-save projects becoming less cost-effective.	ECO Team	
9.	Quality of energy data not good enough to comply with CRC requirements leading to additional CRC costs / penalties and poor performance in the CRC league table, consequently affecting the council's reputation. Quality of energy data not good enough to be used to identify potential efficiency projects.	Corporate Strategic Property Services ECO Team	Roll-out of AMR meters to improve data collection and increase the proportion of actual data readings compared with estimated data. Meter reading programme to ensure that remaining energy data captured. Use of monitoring and targeting software to identify data-quality issues

8. Progress

Wiltshire Council has already come a long way since becoming a unitary authority and starting to put the Carbon Management Plan together. Progress has been steadily improving, although the budget cuts resulting from the Government's Spending Review 2010 have created a financial pressure for the council and the carbon management programme. A team is in place to identify and implement carbon reduction projects, and the council is starting to implement an Energy Management System in order to embed responsibility for carbon management across the whole council.

8.1 Corporate Progress to end 2010/11

The Carbon Trust have developed a carbon management embedding matrix to assess the extent to which local authorities have embedded carbon management policies across their organisations (for full details see Appendix 5). Wiltshire Council scored as follows in January 2011 compared with July 2009 (launch of ECO Board) and March 2010:

	Corporate Strategy	Programme Management	Responsi-bility	Data Mgt	Communica-tion & training	Finance & Investment	Policy Alignment	Engagement of Schools
Jul 2009	1	2	3	3	2	2	1	2
Mar 2010	2	4	3	4	2	5	2	2
Jan 2011	3-4	4	3-4	4	3	4	2-3	3

Where 5 = best score, 1 = worst score

By the end of the plan period, the council aims to improve its performance across all of the criteria and to score the maximum 5 points wherever possible.

8.2 Carbon Reduction Progress to end 2010/11

As indicated in section 5 above, during 2010/11, £0.5m was allocated in the capital programme and £0.7m was secured as a 0% government loan. This has been invested in a range of energy efficiency projects such as LED bollards, an air source heat pump at the Shurnhold office, building management systems at leisure centres and a combined heat and power (CHP) plant at the Salisbury 5 Rivers Leisure Centre. The CHP plant was financed through the 0% loan. It cost £176,000, will payback within 5 years and will save 6% of emissions from leisure centres currently operated by the council in Wiltshire.

In the event, not all the 2010/11 projects from the £1.2m budget will have been fully implemented by end March 2011. Those projects that will have been implemented are projected to realise a saving of £116,000 per year of avoided costs, or a total of £580,000 over 5 years (see table 7 above). The total amount of carbon emissions savings for the projects will equate to 742 tCO_2. A full list of all the 2010/11 projects can be found at Appendix 3. Unspent capital budget will be rolled over to be spent in the next financial year.

Barriers to implementing projects are highlighted in Section 7.1 on risk above.

The commitment to investing £4.2m over the next four years would be an estimated saving of 4,411 tonnes of CO_2. This would take us 37% of the way to meeting our target to save 11,823 tonnes of CO_2 by the end of 2013/14. A further 3,273 tonnes CO_2 are projected to be saved by phase 1 of CAOD, taking us 65% of the way to meeting our target (see figure 9 below).

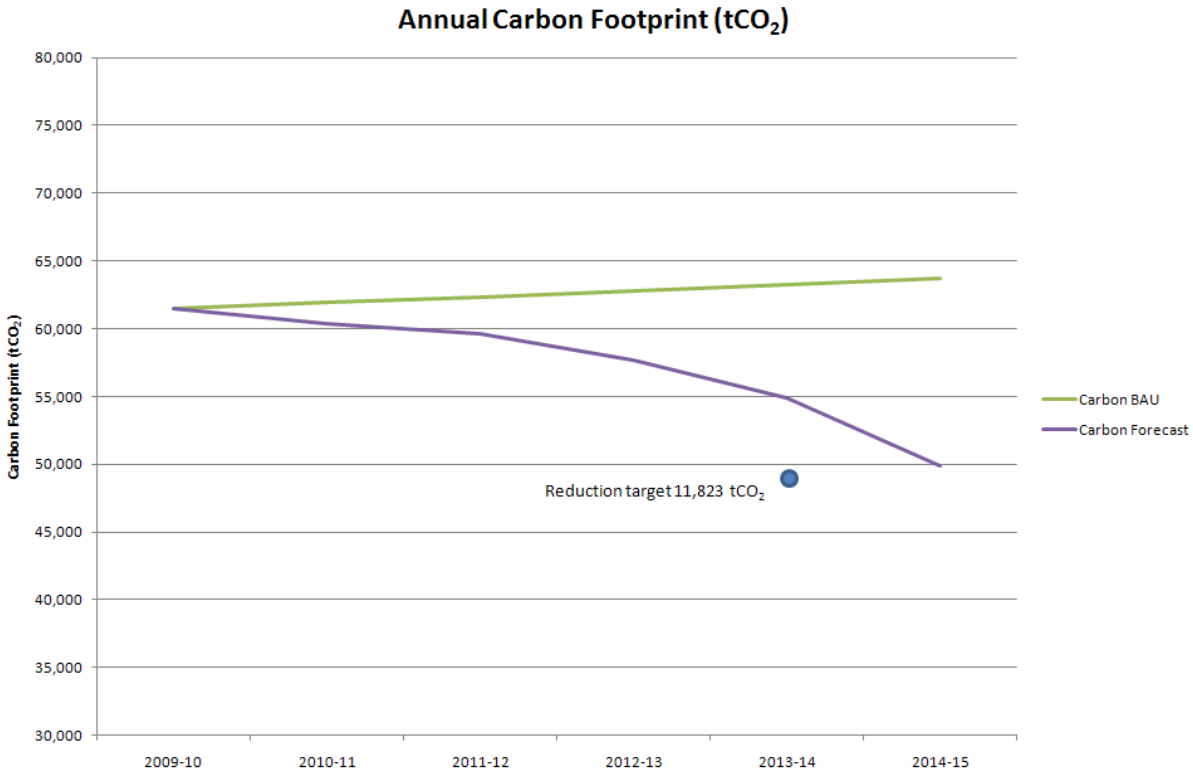


Figure 9: Predicted progress against target, as at March 2011

The graph above shows our predicted carbon footprint compared to our target, based on current levels of investment in energy efficiency projects and the first phase of CAOD programme coming into effect by 2014 as indicated in the Medium Term Strategic Work Programme (shown at section 4.2).

The sooner CO_2 reduction projects are implemented, the sooner savings can be realised and the greater these cumulative savings will be. Conversely, the longer they are left, the fewer cumulative carbon savings there will be and the deeper the CO_2 cuts that will be needed in subsequent years to meet the target. Over a number of years, the cumulative effects of carbon reduction projects will start to show themselves and bring overall emissions down.

The graph above highlights the rate of impact of carbon reduction for the council. The strategic nature of many of the projects, which require considerable implementation periods, shows a more dramatic impact is likely from 2013/14 once they are brought on line.

The programmes of work outlined for the Longer Term will be continue to be assessed and incorporated into forecasting and work programmes to ensure continued progress.

List of Appendices

Appendix 1: Wiltshire Council Energy Policy
Appendix 2: Emissions Factors
Appendix 3: Energy Efficiency Projects, 2010/11
Appendix 4: Renewable Energy Schemes in Wiltshire Council, January 2011
Appendix 5: The Carbon Trust's Carbon Management Matrix