



Council  
25<sup>th</sup> February 2010

10.00 AM

Item No

**11**

Public

## SHROPSHIRE COUNCIL CARBON MANAGEMENT PLAN

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### 1. Summary

1.1 Shropshire Council is currently working with the Carbon Trust on the Local Authority Carbon Management Programme Phase 7. The Council has set a target to reduce carbon emissions from Council operations by 35% by 31 March 2014 from a baseline set at 2008/09 levels.

The Council has established a Carbon Management Team that has identified potential projects which will generate future carbon and financial savings.

1.2 The Carbon Management Team is following a fixed and tested programme developed by the Carbon Trust with the purpose of producing a coherent and deliverable plan for achieving the target reduction in carbon emissions.

### Recommendations for Council

- A. Members are asked to note that the financial implications of the proposed Carbon Management Plan are included in the Capital Programme 2010/11 to 2014/15 on this Agenda.
- B. Members are asked to approve the proposed Carbon Management Plan which is attached as Appendix 1.
- C. Members are asked to approve the additional application for a Salix Energy Efficiency Loan of approximately £24,100 in order to undertake works in Area HQ buildings which will provide long term savings.

# Report

## 2. Background

- 2.1 The UK's direct emissions of carbon dioxide are known to be in the region of 560 million tonnes per annum, 8% (45million tonnes) of which are from the public sector. The governments target is to reduce the UK emissions by 34% by 2020 and 80% by 2050.
- 2.2 Shropshire Council had a strong track record of tackling climate change; the Council was one of the first signatories of the Nottingham Declaration and developed Corporate and Community Climate Change Strategies. In 2006 the Council was awarded Beacon Status for Sustainable Energy.
- 2.3 The creation of the new Unitary authority in 2009 gives the Council an opportunity to renew and invigorate the initial efforts and drive forward the building expectations of an active and well developed network of low carbon communities throughout the County. As an authority we are very keen to move carbon reduction up the political agenda and make a real difference to residents and the local community.

## 3. Drivers for Carbon Management within Shropshire Council

### 3.1 Policy Obligations and Drivers

- 3.1.1 **The Carbon Reduction Commitment:** Present government plans are to introduce a mandatory "cap & trade" carbon emissions trading scheme for which the Council will have to purchase 'carbon allowances' or credits which will cost £12 per tonne of Carbon Dioxide emitted in the first three years, with price being market determined thereafter. Each year the number of credits available for purchase will reduce forcing all organisations involved to either pay a higher rate (could be £50 per tonne of Carbon Dioxide) or to implement emissions reductions and just buy allowances to cover the difference. The current estimate of the financial burden to the Authority under this obligation is approximately £540,000+ per annum. At present the Council has no budget set aside to cover the costs of this programme, believing it better to take early action to reduce carbon emissions. There is also a league table associated with this programme which is open to public scrutiny as well as fines for the worst performing 10% of participants and financial rewards for the best performing. The financial implications of this are shown in figure 1 below.

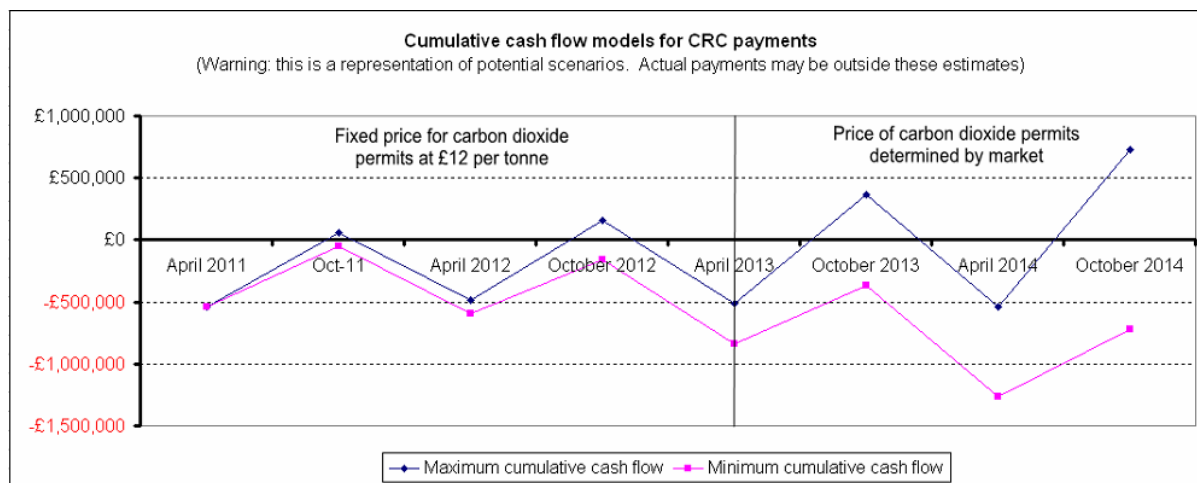


Figure 1

- 3.1.2 **NI185 –Percentage CO<sub>2</sub> reduction from LA operations:** The public sector is in a key position to lead on efforts to reduce CO<sub>2</sub> emissions by setting a behavioural and strategic example to the private sector and the communities they serve. Measurement against this indicator requires each local authority to calculate its CO<sub>2</sub> emissions from analysis of the energy and fuel use in their relevant buildings and transport, including where these services have been outsourced. Shropshire submitted its NI185 baseline to Defra in August 2009. NI185 is also a Local Area Agreement priority - LAA20.
- 3.1.3 **NI186 – per capita CO<sub>2</sub> emissions in the LA area:** Local authorities are uniquely placed to provide vision and leadership to local communities by raising awareness and to influence behaviour change. The percentage reduction in CO<sub>2</sub> per capita in each LA will be reported annually. This will be produced by Central Government based on CO<sub>2</sub> emissions in the Local Area from business and Public Sector, domestic housing, and road transport.
- 3.1.4 **Display Energy Certificates:** As of 1 October 2008 there is a legal requirement for all public sector buildings with a total useful floor area of over 1,000m<sup>2</sup>, to show a Display Energy Certificate (DEC) in a prominent place, clearly visible to the public. The DEC gives a clear indication of energy consumption within the building and can be improved through improved management practices as well as improvements to building fabric. At the start of the Carbon Management Programme the Council has a total of 127 buildings effected by this legislation with an average score of 96.4 (a D rating), with the Shirehall being F rated. The Council's full position is shown in Figure 2 below.

Rating	Number of DECs
A	0
B	9
C	24
D	46
E	28
F	12
G	8

Figure 2

3.1.5 In addition, under the Comprehensive Area Agreement, we have to report to the Audit Commission on how we as an Authority are reducing our use of natural resources and impact on the environment.

### 3.2 Shropshire Council's own drivers

3.2.1 The Shropshire Core Strategy (currently under development), will set out strategic policies to guide development and change in Shropshire over the next 20 years. Sustainability and Climate Change are cross-cutting themes throughout, but Strategic Objective 8 is key: 'Promote a low carbon Shropshire, delivering development which mitigates, and adapts to, the effects of climate change, including flood risk, by promoting more responsible transport and travel choices, more efficient use of energy and resources, the generation of energy from renewable sources, and effective waste management.'

3.2.2 Measures to increase energy efficiency will reduce energy costs, which is particularly important for the future given the predicted increases in energy prices. Energy and fuel costs have seen a dramatic rise in recent years, with energy prices increasing by well over 50% since 2004. This trend is not expected to change and we must accept that the price we pay for our energy will continue to increase in the coming years. For this reason cost is one of the Council's own key drivers; cost savings will mean greater efficiency in the use of the Council's public funding.

## 4. The Carbon Trust Local Authority Carbon Management (LACM) Programme

4.1.1 Shropshire Council was selected in 2009, amidst strong competition, to take part in this ambitious programme. Shropshire Council partnered with the Carbon Trust on this programme in order to realise vast carbon and cost savings. This Carbon Management Plan commits the council to a target of reducing CO<sub>2</sub> emissions by 35% by 31 March 2014 and presents the opportunity for very significant financial savings over the 5 year duration of the programme.

4.1.2 The LACM follows a 5 step process, which we have followed closely, often working slightly ahead of schedule, to ensure we have gained maximum potential from the programme. The Carbon Trust provides technical and change management support, enabling Local Authorities to realise carbon emissions savings, thereby saving money, meeting regulations, raising profile, and leading by example. These 5 steps are identified below.

4.2.1 **Step 1: Mobilise the organisation** – The Council identified a Carbon Management Team, with Project Leader, Co-Leader, Deputy Leader, and Project Sponsor and

Councillor Sponsor. The scope and drivers for our work were discussed and agreed, and a timetable drawn up to follow the programme from project initiation in May 2009 through to closure in April 2010. Key to the process was the Council's internal launch event and communication of the project to all stakeholders.

- 4.2.2 **Step 2: Set baseline, forecast and targets** – The Council identified its baseline data for the period 2008/09. The amalgamation of the Councils led to an increase in the property database from 300 properties to, in excess of 500, with an additional 4,300 houses. This created potential for a massive increase in carbon emissions, whilst at the same time offering good potential for savings to be made. Having established baseline figures, we were able to produce emissions forecasts and calculate the value at stake: estimating the financial implications given the price of energy, price of carbon, cost of compliance and voluntary commitments. This information then allowed us to form our vision and strategic goals.
- 4.2.3 **Step 3: Identify and quantify options** – At this stage of the project the Carbon Management Team became involved in identifying potential projects for carbon reduction. Data is gathered, priorities drawn up, and feasibility assessed.
- 4.2.4 **Step 4: Finalise strategy and Implementation plan:**
- 4.2.5 **Step 5: Implement Plan** – Although being the final step of the Carbon Trust's programme, this is in fact the start of the cyclical process of implementing and monitoring our carbon reduction strategy.

The timeline for these 5 steps is outlined in figure 3.



# LACM7 – the timeline

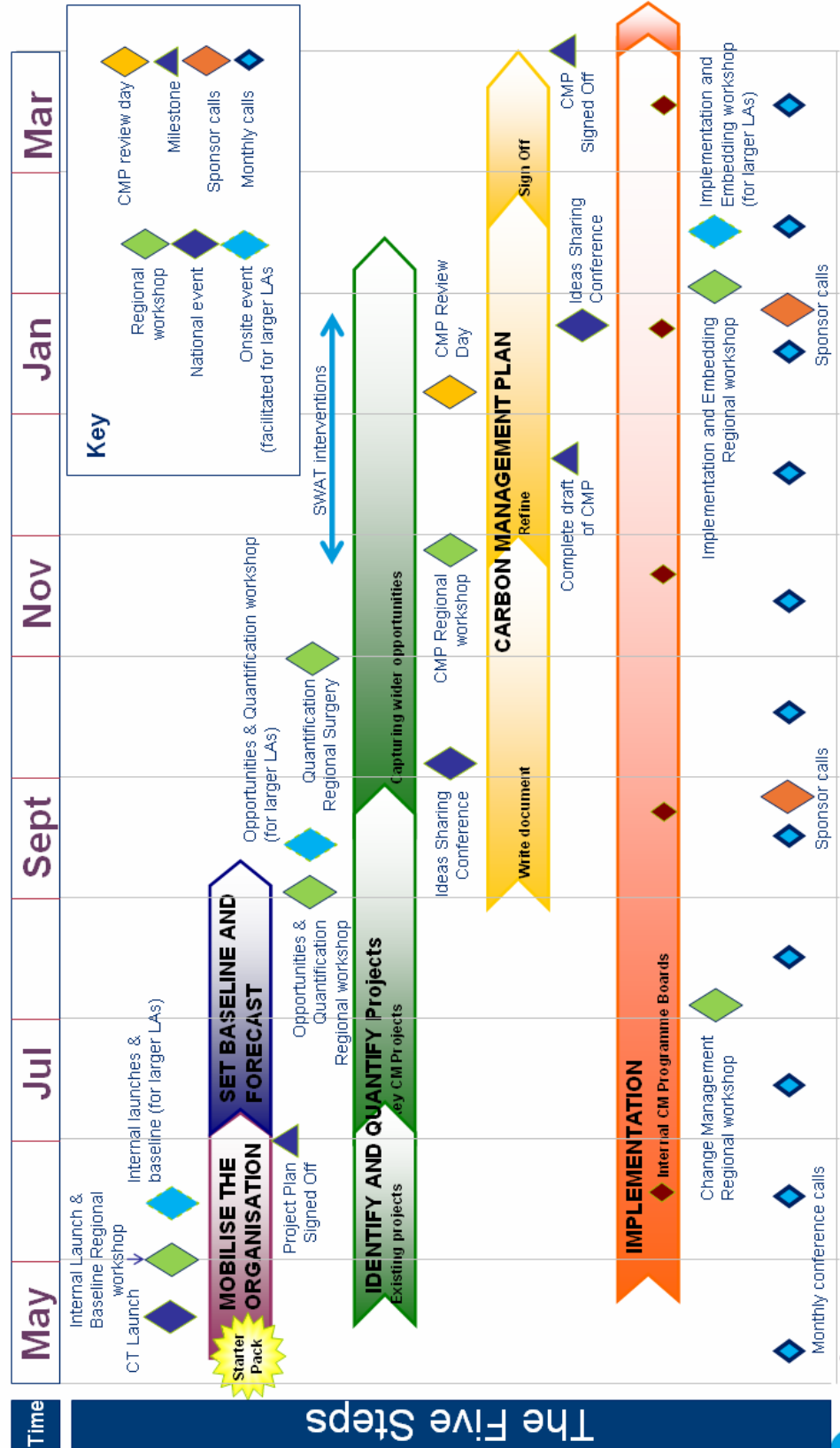


Figure 3





## **5. Strategic Themes**

The Council has identified 6 strategic themes which have shaped our carbon reduction strategy:

### **5.1 Communications:**

In order for this programme to be successful, involvement is required from all Shropshire Council staff at every stage of the project. Keeping staff interest will be crucial for the success of the programme. We will be organising regular events, issuing advice and progress updates all emphasised by the passion of a volunteer network of staff 'green office champions'.

### **5.2 Financial Momentum:**

With the help of the Carbon Trust we have created a dedicated 'spend-to-save' ring fenced fund that will capture and reinvest energy savings back into further and more challenging projects. This will give us the required momentum to meet our carbon dioxide emissions reduction targets.

### **5.3 Sustainable Buildings:**

In order to achieve significant energy & carbon reduction, it is vital that new buildings must be designed to be as energy efficient as possible. At the outset of the project, we identified, with the help of the Carbon Trust a number of immediate savings which could be made, through improving the efficiency of some of our key buildings. We have established an ongoing rolling programme of improvements and efficiencies to all our buildings, new and old, which will be a central theme in our carbon management.

### **5.4 Information Technology:**

We have had the keen involvement from the outset of the project, of IT Services. It is recognised that ICT have a key role in reducing the Council's carbon emissions, both in terms of the direct implications of new ICT systems and solutions and their operation, and also in terms of ICTs contribution to the wider agenda.

### **5.5 Leadership from the Top:**

The Council's involvement in and commitment to the Carbon Trust's Local Authority Carbon Management programme has been supported from the start by the Director of Resources, who has continued to be involved in the process throughout the programme. This high level support has been met throughout the Council, backed up by the enthusiasm of the interim Chief Executive Sheila Healey, and continues with the present Chief Executive Kim Ryley.

### **5.6 Working Together:**

The Council's vision is 'To improve significantly the quality of life for Shropshire people by working together.' This is critical to the success of carbon reduction. The Council acknowledges that energy may be used wastefully and that there is scope for energy saving. In order to minimise wasted energy and control energy demand, we must work with colleagues at all levels across the Council, to ensure we are all taking active steps to reduce demand. A number of the carbon reduction projects are cross-cutting, involving staff from more than one service in a co-ordinated approach.



## 6. Shropshire Councils Baseline Emissions

### 6.1.1 Scope

At the start of the project, the Council needed to establish its current level of carbon emissions, in order to allow us to move forward and identify savings. For Shropshire this was complicated by the move to a unitary authority, expanding our property portfolio greatly. It also meant that data collection varied across different departments. However, along with the Carbon Trust we are confident that the levels identified for our baseline year of 2008/09, are an accurate picture of our emissions.

6.1.2 In addition to our baseline figure for LACM7, the Council has also committed to publishing N185 targets for emissions, to Defra, which include areas such as NO<sub>x</sub> and PM<sub>10</sub> emissions as well as CO<sub>2</sub>. The main difference between N185 and LACM7 is that LACM7 requires the inclusion of housing as well as buildings, street lighting and transport.

6.1.3 The Council has included emissions from all actions carried out or for which we are responsible including official car travel figures. It is our intention to include staff travel to and from work once a complete survey is carried out in 2010.

## 6.2 Baseline

The baseline figures for the Council under LACM7 refer to the financial year 2008/9. The source of data used is the Council's Energy Conservation Unit (ECU). The ECU has also produced the data for N185, CRC and ultimately the Carbon Standard, and will continue on an ongoing basis in the recording of energy usage.

6.2.1 Each of the different schemes for recording emissions / energy usage mentioned above have different assessment protocols. For this Carbon Management Plan we are using the LACM7 data sheets, provided by the Carbon Trust. Figures 5 and 6 below illustrate Shropshire Council's position as at March 2009.

6.2.2 The breakdown of emissions shows the extremely large contribution (50%) of the authority's building stock to total emissions and highlights the potential savings which can be made in this area through programmes of energy efficiency and property rationalisation.

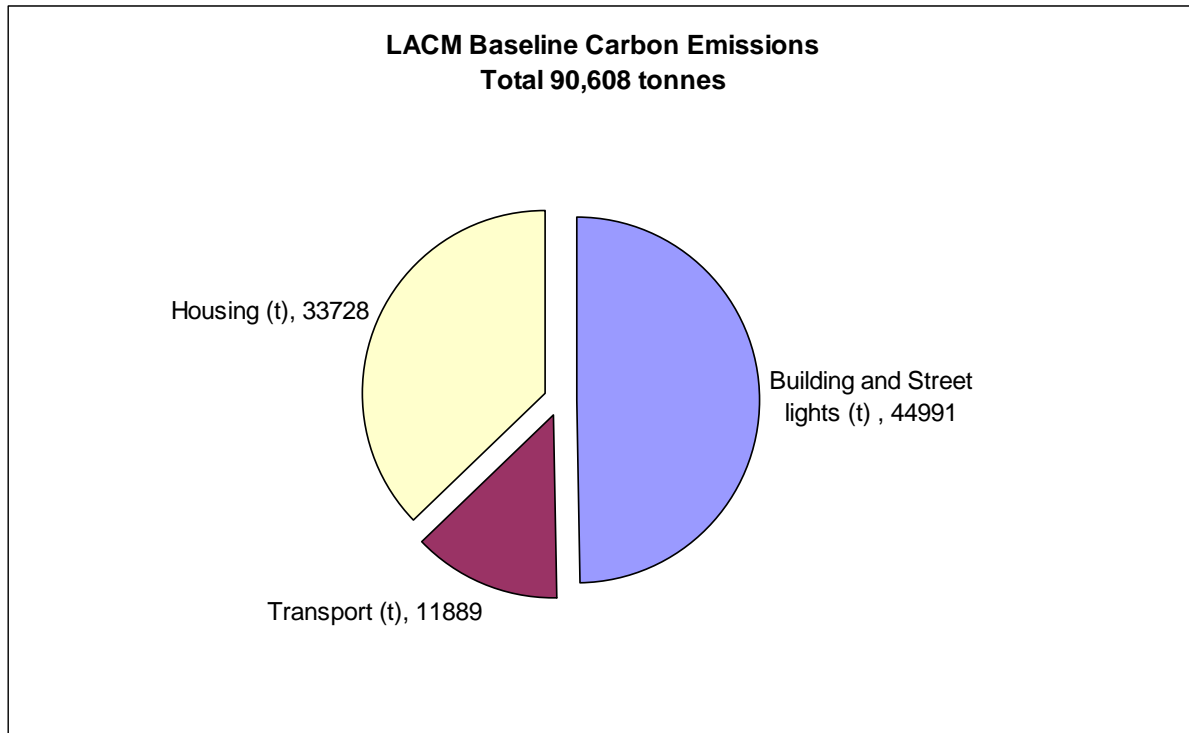
### Summary table of emissions for baseline year 2008

	<b>Total CO<sub>2</sub> Emission (tonnes)</b>	<b>Buildings and street lights</b>	<b>Transport</b>	<b>Shropshire Council Housing</b>
<b>Baseline CO<sub>2</sub> emissions (tonnes)</b>	90,608	44,991	11,889	33,608
<b>Baseline Cost (Million £)</b>	11.6	9.0	2.6	~

**Figure 5**

*Financial costs based on averages prices paid to West Mercia Supplies throughout the 2008/09 financial year. Costs of energy for housing not included as the responsibility for these energy bills lies with the private tenants. Carbon dioxide emissions for Shropshire Councils housing based on estimates completed according to the type of housing and fuel used, using conversion factors supplied by the Carbon Trust.*

**Summary Pie Chart of emissions for baseline year 2008/9**



**Figure 6**

**6.3 Projections and Value at Stake**

Using the Carbon Trust LACM7 guidance, the Council has been able to calculate the 'Value at Stake', i.e. the cost to the Council of not doing anything to reduce carbon emissions. Figures 7 and 8 below illustrate this: In 2008/09 our actual energy costs were £11.6 million. Using a number of prescribed assumptions, such as the increase in energy costs over the next 5 years the Council has been able to plot the increase in our actual energy cost under a 'Business As Usual' scenario (shown by the red line). The blue line shows what our actual energy costs are predicted to be if we meet our target reduction in emissions over the next 5 years. The difference between the two figures over 5 years, of £17.2 million, is our Value-At-Stake. This means that by committing to LACM7 and our target reduction in emissions, we will be avoiding potential energy costs to the Council of £17.2 million.

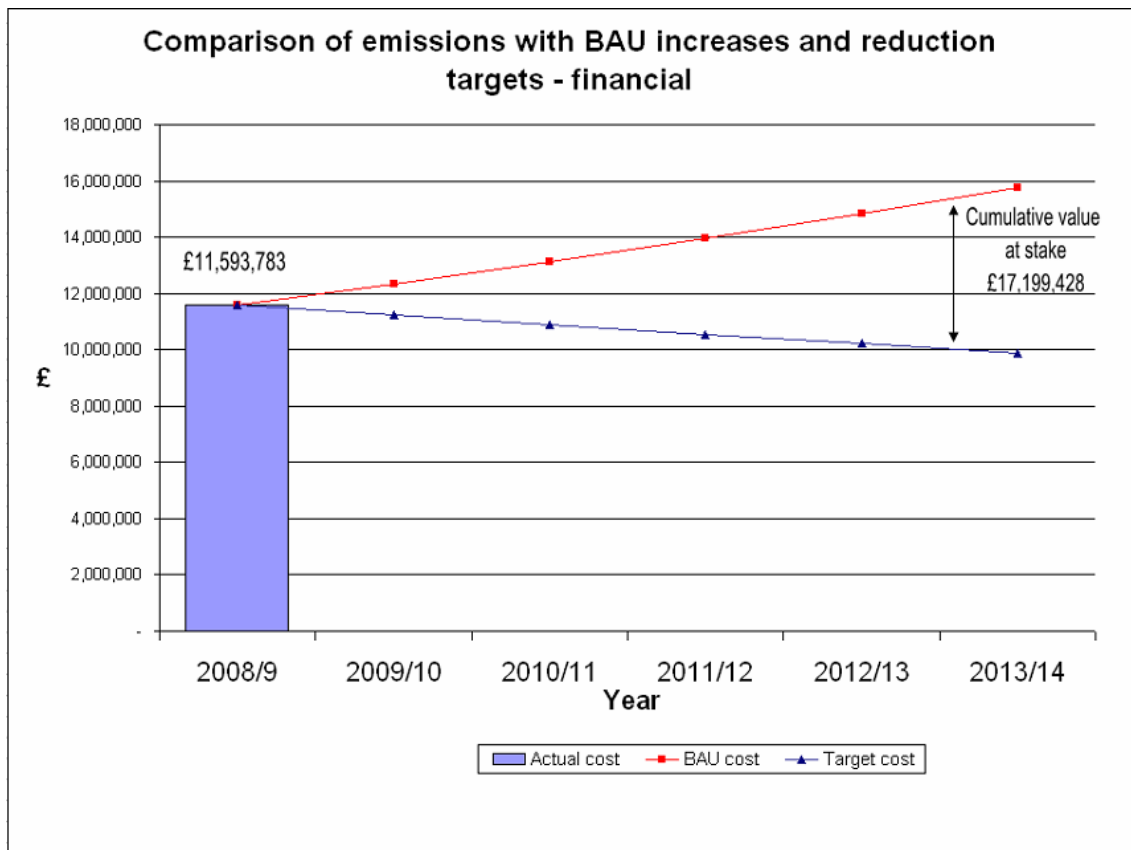


Figure 7 – Financial Value at Stake

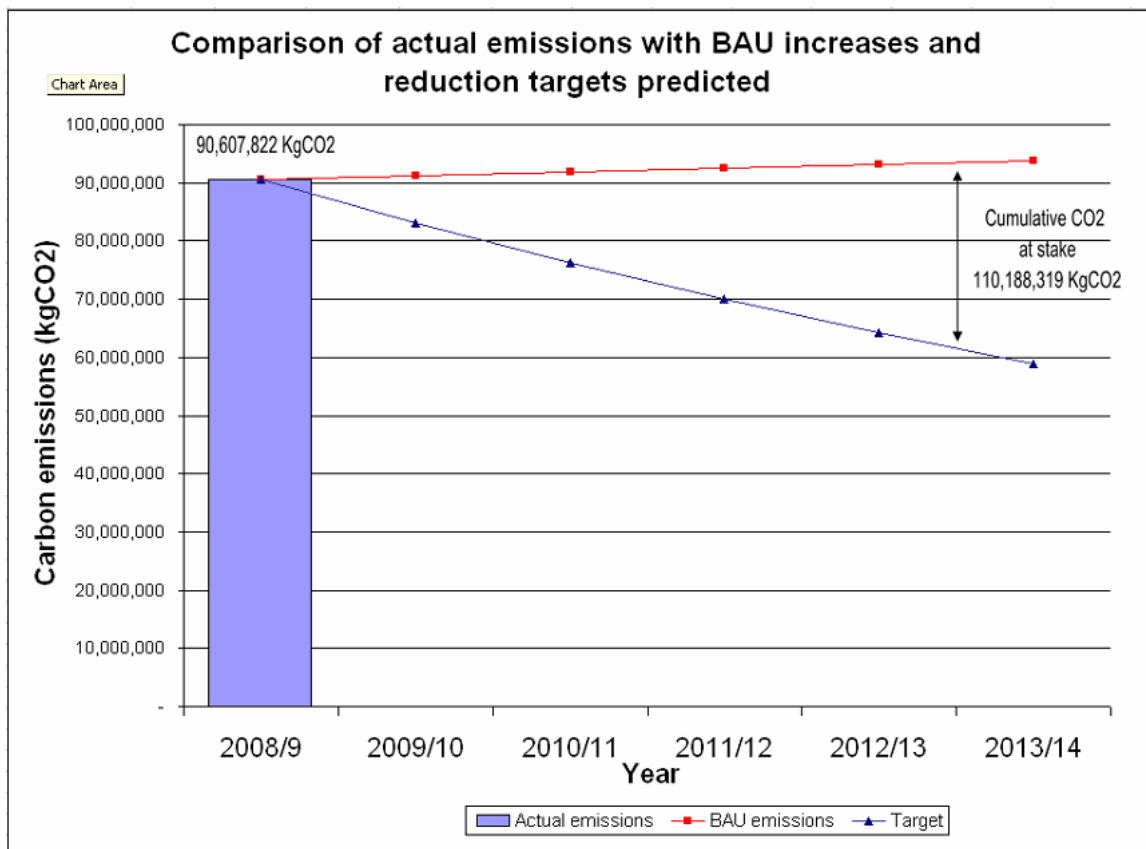


Figure 8 – Carbon Value at Stake

*The Value at stake projection is based on estimated percentage increases provided by the Carbon Trust, based on a high price scenario reported in a recent BERR study (<http://www.berr.gov.uk/files/file51365.pdf>). Current prices are based upon average prices for utilities provided by West Mercia Supplies during the 2008/09 financial year. There have been no alterations in the forecast as yet to allow for the councils major organisational changes as it adapts in its' new role as a unitary authority. Modifications will be entered as and when we can identify specific trends.*

*The Value at Stake graph assumes the following increases in fuel costs; 5.3% stationary sources and 8.4% in all others. The Emissions BAU graph includes a 0.7% increase in demand per annum, i.e. growth factor. These figures are the default values recommended by Defra and are included at this time, actual figures will be substituted as they become known.*

## **6.4 Potential Projects**

Using the suggestions from the Carbon Trust's RAP Tool (Rapid Assessment of Potential) and the suggestions from Council Directorates representatives, the Council's Carbon Management Team have identified a list of proposed projects, which will bring us some good savings in terms of carbon reduction. These projects have been allocated funding and are predicted to achieve 24% towards our 35% reduction in carbon emissions, leaving a gap of just 11%.

These projects include a boiler replacement programme, a lighting replacement programme and energy awareness promotion.

The gap will be bridged through additional projects identified by the Carbon Management Team. Further projects have been identified that over the longer term could realise a further 4% towards our target.

To achieve this work, the Council intends to use finance already earmarked for capital spending to invest in carbon reduction projects, the internal funding pool and prudential borrowing as identified earlier. Examples of early projects which the Council has initiated using this funding route are as follows:

- Solar thermal heating installation at William Brookes School, Much Wenlock
- Ground source heat pump installation at Oswald Park Leisure Centre, Oswestry

As part of the Council's commitment to reducing Carbon emissions, the Council will look to supplement existing capital scheme resources with additional funding to enable the Council to fulfill both their Corporate Priorities and their commitment to reducing carbon emissions.

## **7. SALIX Financing**

In order to facilitate the implementation of capital projects that will generate carbon and financial savings the Council needs to identify resources to finance for these projects. Salix is an independent, publicly funded company set up to accelerate public sector investment in energy efficiency technologies through invest to save schemes.

### **7.1 Salix Energy Efficiency Loans**

- 7.1.1 Salix has £51.5M in loan funding available for schemes that will reduce carbon emissions and energy consumption. The loans are minimum £5,000, with no maximum but all projects must be completed within nine months of the agreed application. Applications must be received by December 2009 and all expenditure completed by December 2010.

- 7.1.2 The loan is interest free and no match funding is required as the loan should cover the total cost of the project. Loan repayments will be required to Salix in line with the saving profile of the project. These would commence from the start of March 2011 continuing over 4 years by 8 equal instalments with the final payment September 2014.
- 7.1.3 The Council has submitted an application and had approval for loans for projects to, for example, upgrade the Shirehall lighting and main boiling. The totalling loan applied for is £665,000, of this, it is intended to use £315,000 split £115,000 for the lighting and £200,000 for the boiling. The estimated financial saving are £26,130 per annum for the lights and £43,000 for the boiling, these would be used to meet the annual loan repayments. Once the loan has been repaid the Council would benefit from the annual savings generated from these projects.
- 7.1.4 These projects will not commence until an in depth survey has confirmed that physical difficulties can be overcome and an assessment is undertaken to ensure the energy efficiencies generated by the works will cover the loan repayments.

## **8. Progress to date**

- 8.1.1 The Councils Carbon Management Programme Board and the Councils Carbon Management Programme Team have been working with the Carbon Trust representatives since June 2009 to establish baseline data, identify carbon saving opportunities by creating awareness, promoting a culture of change and identifying “invest to save” opportunities. These have been created by advice on best practice from the Carbon Trust representatives, vision and inspiration from within the Councils Carbon Management Team and interaction and ideas sharing with teams in other Local Authorities. The timeline and indicated steps for this initiative are as indicated in the Carbon Trust’s matrix included above as Figure 3.
- 8.1.2 The Council is currently drawing together a capital strategy for the next 5 years, this could include a number of projects, subject to Full Council approval, which will generate future energy efficiencies and carbon and financial savings. In Children and Young People’s Services potential schemes include lighting improvements, boiler replacements, valve and flange insulation jackets and door and window seal insulations. These schemes will principally be financed from annual Devolved Formula Capital allocations and schools Asset Management Plans budgets, supplemented by specific grants where available e.g. from the Low Carbon Buildings Programme. There is also potential for £150,000 to be made available through Devolved Formula Capital allocations for school sponsored energy projects and a new fund of £1,250,000 to be set up from school balances. This fund could be used by schools for energy efficiency projects, schools will then make repayments into the fund from the energy savings generated; which will be recycled for further energy efficiency projects. The potential schools proposals are therefore entirely self financing.
- 8.2 The housing programme will include approximately £2 million per annum for heating improvements and £100,000 for wall insulations, funded from the annual housing major repairs allowance.

- 8.3 For highways existing budgets will be used to improve signage and bollard lighting as part of the ongoing replacement programme. Options are also being looked at for part night lighting and a rolling 5 year programme for the replacement of street light lanterns with LEDs.
- 8.4 Further applications of approximately £24,100 are being made to the to the Salix SEELS loan scheme for the for lighting upgrade schemes at the regional head quarter buildings across the County. On an ongoing basis we propose to use funding from existing capital budgets and additional Prudential borrowing where no alternative provision is available. This funding will be used for boiler and lighting improvements across the Council's estate of non-school buildings, together with specific schemes at leisure facilities, including liquid pool covers. Savings will be repaid into the fund to enable this to be a rolling fund for new schemes.
- 8.5.1 A list of proposed, potential, quantified projects is included as Appendix A of the proposed Carbon Management Plan attached to this report as Appendix 1.
- 8.5.2 The Councils Carbon Management Team have compiled a Carbon Management Plan, this plan was submitted to the Carbon Trust on 16<sup>th</sup> December 2009 for comment and scrutiny. Feedback from this was delivered to the Councils Carbon Management Team in January 2010 and incorporated into the Councils finalised "Carbon Management Plan". The finalised Carbon Management Plan will be submitted through due procedure to full Council for formal adoption as the Shropshire Council Plan for Carbon Emission Reduction and to the Carbon Trust for their final "sign off".



**List of Background Papers (This MUST be completed for all reports, but does not include items containing exempt or confidential information)**

www.carbontrust.co.uk

www.carbonreductioncommitment.info/

Local Authority Carbon Management Project Plan (copy in Members Library)

**Human Rights Act Appraisal**

The recommendations contained in this report are compatible with the provisions of the Human Rights act 1998

**Environmental Appraisal**

Climate Change is recognised as one of the most important national and international issues. This proposal is intended to ensure that Shropshire Council makes major progress on reducing energy consumption and therefore CO<sub>2</sub> emissions.

**Risk Management Appraisal**

Local Authorities are coming under increasing pressure as leaders of the community to demonstrate action on reducing CO<sub>2</sub> emissions, the key greenhouse gas implicated in climate change. As a local authority we work with the wider community to encourage a low carbon lifestyle, and must be seen to be doing the same. Additionally, financial benefits can be considerable by taking this route of action.

**Community / Consultations Appraisal**

None in the preparation of this report

**Cabinet Member**

Keith Barrow - Council Leader and Portfolio Holder for Shropshire Council and Member Champion for Carbon Trust work

**Local Member**

All

**Appendices**

Appendix 1 – Proposed Carbon Management Plan

**Appendix 1 – Proposed Carbon Management Plan**