

HAMPSHIRE COUNTY COUNCIL**Report**

Committee/ Panel:	Buildings, Land and Procurement Panel
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Title:	Carbon Reduction Progress Report
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Joint report from:	Director of Culture, Communities and Business Services

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1. Executive Summary

1.1. The purpose of this report is to update Members of the Panel on the progress to date with the delivery and further development of the Carbon Management Plan, the Carbon Reduction Commitment and other related energy reduction programmes. This report seeks to:

- set the context in terms of the County Council's Carbon Strategy
- outline the progress made to date with the Carbon Management Plan
- outline the work with schools to help reduce their carbon footprint
- inform on the outcome of the Carbon Reduction Commitment and Greenhouse Gas Emissions submissions to Government.

1.2. Progress in Year 2 of the 5 Year First Phase Plan is again ahead of target. A total of over 15,500 tonnes of carbon has now been saved. This represents nearly 12% of the total carbon consumption and is 60% of the way towards the 20% first phase target.

2. Contextual information

2.1. In July 2010 the County Council approved a Carbon Strategy that set out a number of short, medium and long-term targets for carbon reduction over the next five, 15 and 40 years.

2.2. Programmes of work and energy reduction projects to achieve the short-term target of a 20% reduction (from 2008 levels) by 2015 are being implemented and these form the Carbon Management Plan.

2.3. Achieving the medium-term reduction of 35% – 40% by 2025 and the longer-term aim of carbon neutrality by 2050 will be the subject of second and third stage plans.

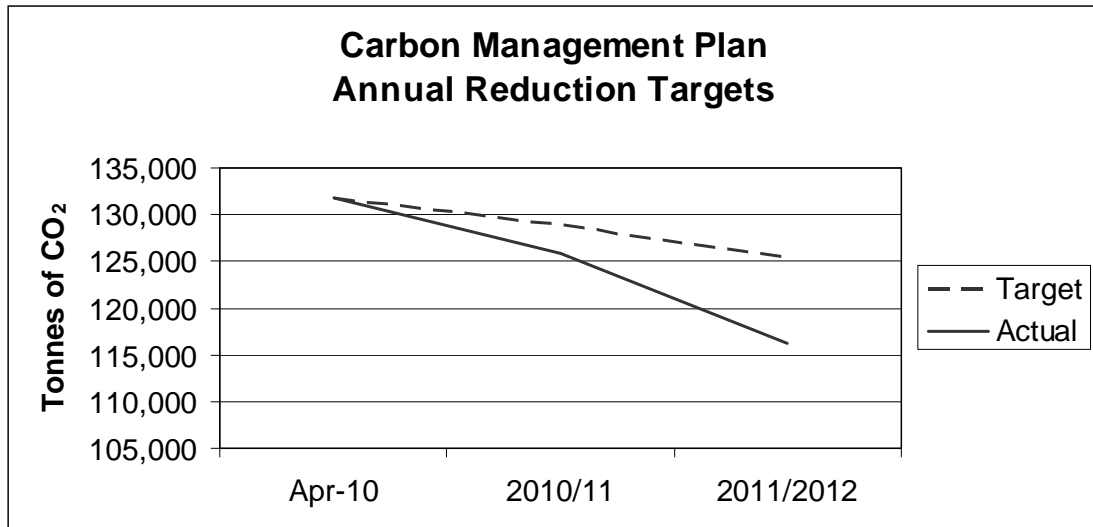
2.4. This report summarises the position at the end of Year 2 of the 5 Year First Stage plan.

- 2.5. Given the links between carbon, energy and fossil fuels, the Carbon Management Plan will link to, and support, the Strategic Aims of the Energy Strategy agreed by Cabinet on 29 October 2012.

3. Carbon Management Plan

- 3.1. The Carbon Management Plan sets out an ambitious five year programme to reduce the County Council's carbon emissions by 20% between 2010 and 2015. Identification and planning of work programmes and projects are required in the early years of the first stage plan in order to deliver subsequent energy and carbon reductions in the following years. Projects which relate to asset reductions will, for example, take 2-3 years before the resultant savings are evident. The Director of Culture, Community and Business Services has been focusing efforts on a prioritised basis – formulating them in order of pay-back periods and commencing longer term initiatives like behavioural change, recognising the speed of change is slower.
- 3.2. The focus of the Carbon Management Plan is to reduce carbon emissions in two principal ways: Investment in building and engineering systems improvements and positively encouraging changes in behaviour of the people using those buildings. The first stage does not focus on the wide scale deployment of low and zero carbon technologies but seeks to reduce consumption through new technologies, good management and housekeeping practices.
- 3.3. In year 1 of the Plan (2010/11) the target reduction was calculated to be 1820 tonnes and comprised:
- The first phase of the Winchester HQ rationalisation
 - Schools and Landlords Capital programmes
 - IT initiatives, including rationalisation of the data centre operations and roll out of lower energy producing technologies.
- 3.4. The actual reductions achieved in year one of the plan exceeded the target value by some margin and a reduction of 5865 tonnes was achieved. There are also savings brought about by reduction in mileage which will contribute to the total. These have not yet been quantified due to the impact of changes under Hampshire Workstyle.
- 3.5. Year 2 of the plan (2011-12) had programmes and initiatives in place to reduce the footprint by a further 3600 tonnes. Emission figures for the period April 2011- March 2012 show a reduction in emissions of 9,641 tonnes, a 7.65% year on year reduction. Analysis of the energy use for the major sectors e.g. schools, corporate offices, libraries & museums and the adult services estate all show a decrease in the energy use. Notably, the schools, which account for around 60% of the carbon emissions show almost a 10 % year on year reduction. This is particularly significant as the majority of this reduction can only be achieved through behavioural change and focussing on good energy management.

- 3.6. Delivery of the savings is currently **ahead of the plan** but there still remains a substantial amount of work to be done to deliver the target savings by 2015. In total, therefore, specific projects or programmes of work have already delivered emissions reductions of over 15,500 tonnes in the first two years or approximately 60% of the 26,360 tonnes total target reduction.



- 3.7. The reduction in carbon emissions in the first two years of the plan equates to over £1.5 million of energy cost reductions. These are principally through significant reductions in heating fuel consumption and are at today's prices. As energy prices are predicted to rise (potentially well above annual inflation) this will deliver greater cost savings in future years.
- 3.8. Substantial progress has been made to date with the 25 year Street Lighting PFI contract and despite more fittings coming on stream as a result of adopting street lighting on new developments and increased numbers of lamps in some areas, the trend over the last three years is for a gradual reduction in carbon emissions. Rolling out the installation of more energy efficient fittings, new dimming measures and improved dynamic metering arrangements together with the planned acceleration in investment will enable the anticipated 15% reduction to be achieved by 2015.
- 3.9. Year 3 of the Plan (2012/13) will see the delivery of the schools funded advanced boiler controls programme which is planned to deliver a 2500 tonne in-year reduction and a further 700 tonne reduction in 2013/14 when the full effects of the programme will be realised. Further reductions from the Workstyles programme are also expected in Year 3.
- 3.10. It is estimated that approximately half of the savings have been achieved through the delivery of projects, with the other half as a result of behaviour change and energy consumption management.
- 3.11. The development of the Plan over years 3, 4 and 5 should see a greater proportion of the reductions achieved through project work as the programmes are developed and delivered. New initiatives, technologies and opportunities are, and will, no doubt, continue to emerge that can potentially be factored into the Plan. The intention is to remain flexible and take advantage of any financial incentives or funding opportunities that may

arise. Government direction and technology advances continue to develop in this fast-changing sphere.

- 3.12. £300,000 of Policy & Resources resource has been identified from within existing Landlord budgets to invest in opportunities as they arise through the deployment of technologies or the inclusion of energy saving initiatives on existing projects e.g. improved lighting lamps and controls.

4. Cost Reductions

- 4.1. Reducing energy consumption and therefore carbon emissions will also help minimise the effect of fuel price inflation on the County Council.
- 4.2. The energy cost reduced over the last three years as a result of the energy saving initiatives undertaken can be seen in the table below:

	2009/10	2010/11	2011/12
Energy Cost £	14,770,000	13,000,000	13,240,000
Saving (year on year) £	N/A	1,770,000	(240,000)
Note: Costs are for energy consumption associated with HCC buildings, including schools.			

- 4.3. It should be noted that, although the energy used has decreased over each of the last three years, variations in the cost of energy has led to a year on year increase in energy costs over the last two years. Overall, however, the cost reductions achieved through the reduction in energy use amounts to in excess of £1.5 million.

5. Carbon Management in Schools

5.1. Automatic Meter Reading (AMR) - Smart Meter Installation

- 5.1.1 Throughout the year 1, the Director of CCBS worked with the utility company British Gas to install principal smart meters across the school estate to measure the electricity and gas delivered to each site. In total around 1800 meters have been installed.
- 5.1.2 As part of the of the smart meter installation contract the County Council have secured the use of the British Gas 'Energy360' web based analysis software package. By logging on to the Energy360 website and studying the energy data held for their building, school staff are able to identify patterns of use, times of high consumption and unusual energy use levels. This information is then being used to support schools to target efforts in energy reduction to the maximum effect.
- 5.1.3 Property Services staff also delivered a series of training sessions for schools on how to use the Energy360 tool and how to understand the data presented. Schools are now using this facility to identify, understand and manage their energy use. A further set of training sessions were delivered

in late 2012 as a result of the demand from schools for further more in depth training.

- 5.1.4 A second set of self-help tutorials have been produced aimed at providing a more in depth tool for analysing the energy data. This is designed to provide greater knowledge and assistance in the management of energy consumption.

5.2 Smart Sub – Meter Programme

- 5.2.1 The next phase of smart meter installation was the work to install sub-meters into the larger buildings on school campuses and shared school sites to measure the energy used by the building. The sub-metering programme was funded directly by the schools through the Schools Forum and has been completed.

5.3 Energy Saving Toolkit

- 5.3.1 A helpful toolkit for schools of practical suggestions and tips to save energy has been produced. A website has been established that is tailored for the schools community to raise awareness of energy initiatives, Smart Meters and contacts for help with advice and support.
- 5.4 The Director of CCBS continues to work proactively with schools who are showing a real willingness to engage with the reduction programmes. The focus on reducing costs is also helping raise the profile of the behaviour change support available. There is also a representative group of Headteachers and Governors who are helping to steer the projects and act as a sounding board on behalf of the schools community.

6. **Carbon Reduction Commitment**

- 6.1. The second year of the Carbon Reduction Commitment Energy Efficiency Scheme (CRC) completed at the end of March 2012, and in July 2012 the County Council lodged with the Environment Agency the 'Footprint Report' and 'Annual Report' for the 2011/12 year.
- 6.2. For the first year of the CRC, the County Council reported a total of 83,849 tonnes of CO₂ from its buildings, including schools and Academies (essentially attributed to gas and electricity used). In the second year this fell to 76,240 tonnes, a reduction of 9%

7. **Greenhouse Gas Emissions (GHG)**

- 7.1. GHG emissions take into account emissions from buildings, street lighting, business travel and transport for services delivered in house and those outsourced to other public and private sector bodies.
- 7.2. Clarifications issued by the Environment Agency on how the data is collected and translated in tonnes of CO₂ have led to an upward revision of the figures previously reported, but the year on year trend for 2009/10, 2010/11 and 2011/12 continues to show a reduction in the Council's GHG emissions.

8. Medium Term Targets – Future Workstreams

- 8.1. Whilst good progress has been made toward achieving the 20% target in the carbon management plan, 'business as usual' measures are unlikely to deliver the next stages of the plan of 40% reductions in carbon emissions to 2025. More wide ranging, specific programmes of work will need to be considered in order to achieve these targets. This could include programmes like District Energy Streams, Energy Performance Programmes (see below), etc.

Energy Strategy

- 8.2. In October 2012 Cabinet approved a long term Energy Strategy which set out the approach for the County Council to minimise the risks relating to the security of energy supply, affordability and carbon emissions and to take advantage of the opportunities to support development of a low carbon economy in Hampshire.

Energy Performance Programme

- 8.3. The Directors of Economy, Transport and Environment and Culture, Communities and Business Services are currently working to develop a business case for an Energy Performance Programme (EPP).
- 8.4. The EPP will look to invest sums of money into the estate to improve the condition of the built estate, reduce the maintenance liabilities, lower the energy consumption and thus the carbon emissions. If it was implemented, this would be a positive next step in the medium term targets post-2015.
- 8.5. A detailed analysis of the corporate estate has just been completed and the financial modelling of the data is being developed but initial outputs from the model show a viable return on investment can be achieved with a programme.
- 8.6. A more detailed report on the next steps for an EPP is elsewhere on this agenda.

9. Summary

- 9.1. The delivery of the Carbon Management Plan is progressing well and is on target to achieve the target of a 20% reduction in carbon emissions by 2015.
- 9.2. Progress to date has been very encouraging but as with most programmes the early 'early wins' will be difficult to replicate in later years as savings and efficiencies become more difficult and/or higher cost to deliver.
- 9.3. The County Council has lodged their Footprint and Annual Carbon Reduction Commitment Energy Efficiency Scheme (CRC) reports with the Environment Agency as required by Government.
- 9.4. The County Council's greenhouse gas emissions have reduced from 2010/11 to 2011/12:

Table of Reductions

	2009/10	2010/11	2011/12
CRC (tonnes)	N/A	83,849	76,242
GHG (tonnes)	162,308	157,358	146,003
Carbon Management Plan (tonnes)	131,800	125,935	116,294
Reduced Carbon Tax Cost £	N/A	N/A	£91,284
<p>Note:</p> <p>The differences between CRC, CHG and the Carbon Management Plan are because of variations of what consumption is in scope. These figures are also gross consumption and not 'weather corrected' so each category is on the same basis. See Appendix C for more detail attached.</p>			

10. Recommendations

- 10.1. That the Panel notes progress to date with the delivery and development of the Carbon Management Plan, the Carbon Reduction Commitment, the Greenhouse Gas Emissions and the development of programmes designed to deliver the next phases of carbon emission reductions.

CORPORATE OR LEGAL INFORMATION:**Links to the Corporate Strategy**

Hampshire safer and more secure for all:	Yes
Corporate Improvement plan link number (if appropriate):	
Maximising well-being:	Yes
Corporate Improvement plan link number (if appropriate):	
Enhancing our quality of place:	Yes
Corporate Improvement plan link number (if appropriate):	

Other Significant Links

Links to previous Member decisions:		
<u>Title</u> Carbon Strategy	<u>Reference</u>	<u>Date</u>
Direct links to specific legislation or Government Directives		
<u>Title</u>	<u>Date</u>	

Section 100 D - Local Government Act 1972 - background documents

The following documents discuss facts or matters on which this report, or an important part of it, is based and have been relied upon to a material extent in the preparation of this report. (NB: the list excludes published works and any documents which disclose exempt or confidential information as defined in the Act.)

<u>Document</u>	<u>Location</u>
None	

IMPACT ASSESSMENTS:

1. Equalities Impact Assessment:

1.1. No impact.

2. Impact on Crime and Disorder:

2.1. No impact.

3. Climate Change:

- a) How does what is being proposed impact on our carbon footprint / energy consumption?

The Carbon Management Plan will reduce the County Council's carbon footprint by an estimated 26,300 tonnes over the five year life of the Plan.

Projects and programmes of work already in place are expected to achieve over half of the County Council's first carbon reduction target of 20% by 2015 after only year one of the plan. The remainder is planned to come from behavioural change programmes.

- b) How does what is being proposed consider the need to adapt to climate change, and be resilient to its longer term impacts?

Reduced energy consumption and would provide resilience of supply should there be an interruption to the mains supply through extreme weather events or other causes.

DEFINITIONS OF THE THREE TYPES OF EMISSIONS

1. **Carbon Reduction Commitment Energy Efficiency Scheme (CRC) Emissions**

This is the mandatory Government scheme which requires the County Council to purchase carbon credits to match the carbon emissions. It is a further sub-set of the Green House Gas GHG data and comprises building carbon emissions only. It does not include street lighting or travel.

2. **Green House Gas (GHG) Emissions**

This is the sum of the emissions from Council owned and leased buildings from which we conduct the business of the County Council, LEA schools, VA schools, Foundation schools and Academies, Street Lighting, Officer travel, transport and the carbon emissions of the outsourced services and represents the carbon emissions associated with all of the activities and services delivered by the County Council. It takes into account emissions from third party organisations who are contracted to deliver services on behalf of the County Council as well as the emissions associated with the provision of the in-house delivered services.

The County Council is required to publish this data each year, no later than the end of July.

3. **Carbon Management Plan Emissions**

Essentially, a sub-set of the GHG emissions, this set measures the carbon emissions from buildings, street lighting and officers' business travel. It does not include emissions from outsourced services or transport.

These are the emissions against which the County Council has set their 20% target reduction.

4. **Weather Correction**

Whilst it is clear that variations in the weather from year to year will affect the carbon emissions as we use more or less energy for heating, the GHG and CRC emissions the County Council must report take no account of this and are not weather corrected. In order to take a consistent approach, the Carbon Management Plan emissions are also quoted as gross figures, i.e. they are not weather corrected.