

**HAMPSHIRE COUNTY COUNCIL****Report**

<b>Committee/Panel:</b>	Buildings, Land and Procurement Panel
<b>Date:</b>	21 October 2014
<b>Title:</b>	Energy and Carbon Management Activities Update
<b>Reference:</b>	6137
<b>Report From:</b>	Director of Culture, Communities and Business Services

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## **1. Introduction**

- 1.1. This report updates members on progress in relation to a number of Energy and Carbon Management related activities. Issues covered in this report are those which specifically impact on the County Council's built estate. Since the introduction of the recent Energy Strategy and the Carbon Management plan 4 years ago there has been a real focus in Property Services supporting the ambition to reduce energy consumption, (and, therefore, our carbon footprint) and increase the use of renewable technologies delivering cost savings and reducing the County Council's reliance on fossil fuels.
- 1.2. This report provides an update on:
- The Carbon Management Plan including programmes of work to reduce carbon consumption.
  - Update on the Solar PV pilot project on corporate buildings.
  - Progress on the Energy Performance Programme.
  - Support to Hampshire schools to reduce their energy consumption.
  - Behavioural change programmes for both schools and the staff occupied corporate estate.
- 1.3. The Carbon Management Plan is making very good progress towards it's goal (now 80% through the duration) and this report explains this progress to date and the high level of confidence that the County will achieve it's strategy target.
- 1.4. In year four of the five year plan, a reduction of carbon emissions of nearly twenty three thousand tonnes has been achieved. This represents a

percentage saving of 17.3% which is well on the way to the target of 20% by summer 2015.

## **2. Carbon Management Plan**

- 2.1. In July 2010 Cabinet approved a Carbon Strategy which set out the targets for carbon reduction up to 2050.
- 2.2. The Strategy set out carbon reduction targets for the short, medium and long term as follows:
  - Phase 1: Short term 2010 – 2015 - 20% reduction
  - Phase 2: Medium term 2015 – 2025 - 40% reduction
  - Phase 3: Long term 2025 – 2050 - carbon neutral
- 2.3. The first phase targets are being addressed through the workstreams defined in the Carbon Management Plan which sets down how the 20% reduction may be achieved in the five year plan. This consisted of physical means to reduce carbon consumption of around 9% and the balance of 11% targeted for behavioural change. We are now at the end of year four of the five year plan and whilst the behavioural change is gaining more support across the corporate estate it is difficult to quantify with any degree of accuracy how great a contribution is being made to the overall reduction. A number of successful technical programmes have been completed and more are planned over the final year of the plan.
- 2.4. In parallel with this carbon reduction strategy there is also pressure to reduce our carbon emissions in respect of the Carbon Reduction Commitment (CRC) Energy Efficiency Scheme and the reporting of our Green House Gas emissions (GHG); the replacement for an earlier National Performance Indicator.

## **3. Carbon Emissions**

- 3.1. Hampshire County Council's carbon emissions broadly comprise those from:
  - Council owned and leased buildings from which we conduct the business of the County Council
  - LEA schools, VA schools, foundation school and academies
  - Street lighting
  - Officer travel and transport used to conduct the business of the County Council
- 3.2. Outsourced services are no longer included in the measure of GHG emissions, hence the apparent substantial reductions from last year to this. Gaining accurate information from those organisations delivering services from the County Council is becoming increasingly difficult and in recognition of this the guidelines for the reporting of GHG emissions have been relaxed by government.

- 3.3. To give a comparison of the GHG emissions from last year to this, the 12/13 figures have been amended to show the same group of emissions which have been included in the 13/14 figures.
- 3.4. Data from some or all of the above are used to determine each of the three key carbon emission data sets.

Green House Gas (GHG) Emissions

- 3.5. This is the sum of the emissions from all of the four groups listed above and represents the carbon emissions associated with all of the activities and services delivered directly by the County Council, i.e. excluding outsourced service providers.

Carbon Management Plan Emissions

- 3.6. Essentially a sub-set of the GHG emissions; this data set measures the carbon emissions from buildings, street lighting and officers' business travel.

Carbon Reduction Commitment Energy Efficiency Scheme (CRC Emissions)

- 3.7. This is the mandatory government scheme which requires the County Council to submit carbon emissions connected only with buildings and to purchase carbon credits to match the carbon emissions. It is a further sub-set of the GHG data.

The Carbon Management Plan (CMP)

- 3.8. The Carbon Management Plan comprises a number of key workstreams and is the tool by which the short term 20% reduction will be achieved.
- 3.9. Typically the plan comprises:
  - Specifically funded energy or sustainability projects (for example the Energy Performance Programme.)
  - Behavioural change programmes with staff and building users to drive down energy use – ('Do your Energy bit' initiative).
  - Building and engineering improvement works as part of capital maintenance programmes (re-roofing, boiler replacements, relighting schemes and the like)

Progress to Date

- 3.10. In the first four years of the plan, projects, programmes of work and behavioural changes have delivered carbon reductions of approximately 22,774 tonnes against an overall target reduction of 26,360 tonnes from all projects across the whole of the 5 year life of the plan. This demonstrates that the physical means achieved are impacting positively on our carbon footprint and there is some confidence that the strategy target of the first phase will be met.
- 3.11. Future programmes of work for the final year of the plan are identified later in this report, but the effect of behaviour change is more difficult to predict and also, therefore, to measure. To date it has proved challenging to get

wide scale engagement of staff although this is now gathering momentum through the 'Do your Energy bit' initiative. Schools still remain the biggest challenge and the targeted reductions from behaviour change are more uncertain in this sector.

### Data Analysis

3.12. The table below shows the metrics for the first four years of the Carbon Management Plan compared to the base year. It should be noted that:

Although there was an increase in year 3 as a result of the prolonged cold winter of the 2012/13 season the milder winter of 13/14 will have contributed to some of the reduction. We must be mindful that the data is not weather corrected and therefore the effects of weather are unpredictable

Carbon emissions across the Council had been increasing year on year for at least a decade before 2009/10 and that increase has been stopped. We are still on a downward trend from the base year with year 4<sup>1</sup> following the downward trend.

Table 1 – Government required reporting

<b>Metric</b>	<b>Base Year 2009/10 (tonnes)</b>	<b>Year 1 2010/11 (tonnes)</b>	<b>Year 2 2011/12 (tonnes)</b>	<b>Year 3 2012/13 (tonnes)</b>	<b>Year 4 2013/14 (tonnes)</b>
GHG Emissions	162,308	157,385	146,003	153,110	-
GHG Emissions – revised metrics	-	-	-	(116,076) <sup>1</sup>	101,212
CRC scheme	N/A	83,849	76,242	92,290	88,934

Table 2 – Hampshire County Council Carbon Management Plan Progress

<b>Metric</b>	<b>Base Year 2009/10 (tonnes)</b>	<b>Year 1 2010/11 (tonnes)</b>	<b>Year 2 2011/12 (tonnes)</b>	<b>Year 3 2012/13 (tonnes)</b>	<b>Year 4 2013/14 (tonnes)</b>
Carbon Management Plan	131,800	125,935	116,294	122,158	109,026 <sup>2</sup>
% reduction on base year	-	-4.5%	-11.8%	-15.0%	-17.3%

Notes; 1 – Equivalent data set (outsourced services emissions excluded)

2 – Emission conversion factors for 12/13 used for consistency.

- 3.13. In year four of the five year plan, a reduction of carbon emissions of nearly twenty three thousand tonnes has been achieved. This represents a percentage saving of 17.3% which is well on the way to the target of 20% by summer 2015.
- 3.14. The table below illustrates how targeted reductions delivered by technical programmes in the next two years will impact on the overall target. It also makes an assumption about the potential for Behavioural Change reduction, however as referred to above, this can only be a target and there is no guarantee of success.

<b>Future Carbon Management Plan (CMP) Reductions</b>	<b>Year 5 2014/15 (tonnes)</b>
Works Programmes Emission Reductions	5,858
Behaviour Change Reductions (2% target)	2,270
Target Emissions for year	100,898
<b><i>Potential Reduction overall</i></b>	<b>23.5%</b>
20% Reduction Target in the CMP of 2010	<b>105,440</b>

#### **4. Future Activities for the Carbon Management Plan**

- 4.1. Year 5 (2014 - 15) of the Plan will see the delivery of phase 1 of the Energy Performance Programme across the 24 highest energy consumption buildings on the corporate estate. Favourable tenders have now been received for the initial packages of work and works will commence on site shortly.
- 4.2. Programmes in place for the final year of the plan 2014/15 will give an expected reduction of 450 – 500 tonnes for the capital programmes, 5,250 tonnes from street lighting and 150 tonnes for the final phase of the Workstyle programme.
- 4.3. The following table illustrates, for various technologies, the capital cost per tonne of carbon saved.

<b>Technology</b>	<b>Capital cost per Tonne of CO2 saved (£)</b>
Advanced Boiler Controls	750
Combined Heat & Power	801
Ground Source Heat Pumps	2,500
Draft Proofing	2,646
Roof Insulation	4,714
Solar PV	5,876

The Carbon Management Plan has focused on the technologies which represent best value for money. Future programmes, including improvements to building fabric, are influenced by the factors in the table above. Solar PV is only cost effective because of the availability of financial incentives from Government.

## **5. Review of Solar PV Business Case**

- 5.1. At the request of members earlier this year, officers reviewed the large scale solar PV programme for the corporate estate. In the intervening period, the cost of installation has dropped in excess of 50% making the review timely.
- 5.2. The review concluded that if the most favourable sized arrays were installed in around 50 buildings then the business case could be financially viable (pay back of around 10 years).
- 5.3. To test the business case with the industry, 3 sites (Ell Court North, Dame Mary Fagan House and Hawthorne Court) were selected as a pilot study. Over the summer of 2014 tenders were obtained for the supply and installation of solar PV arrays on each of these buildings. Favourable tenders were received for the scheme (around 7% lower than the modelled capital cost) and work is now underway to complete the installation over the autumn period.
- 5.4. Further work is now planned to review the earlier business case in relation to the remainder of the corporate estate with the positive return of the pilot. This will be reported to Members in due course.
- 5.5. Concurrent with the HCC corporate pilot the Director of CCBS procured a solar PV programme for the Hampshire Fire and Rescue Service which will deliver around £900,000 of solar PV arrays on fire service buildings over the next 4 months. As with the County Council's pilot scheme, favourable tenders were received from the industry within budget.

## **6. Energy Performance Programme (EPP)**

- 6.1. Progress on the EPP was reported to the last meeting of the panel. Since then the business case has been further refined in light of the detailed site evaluations undertaken. The outcome has been to consolidate the proposed measures on each building and to gain greater certainty on investment and potential returns.
- 6.2. Funding of approximately £1m has been made available from the Corporate Invest to Save Programme to fund the programme.
- 6.3. The EPP is expected to deliver around 800 tonnes of carbon reduction per year post 2015.

## **7. Support to Hampshire Schools**

- 7.1. There are currently over 20 solar PV systems installed across the schools estate generating a total of 200,000 kWh with an associated saving of

approximately £20,000 per annum in energy costs. A further thirty two installations are being planned as part of the Children's Services school place programme, the exact size and generating capacity of the new arrays are being finalised as each project design progresses to suit local conditions.

- 7.2. Work has commenced on the feasibility of offering renewable technologies to schools. Funding options are being investigated on the basis that the projects would be delivered by the County Council's property teams.
- 7.3. The Director of CCBS is developing a solar PV offer to schools and has shared the business model with the Head of Finance. Legal arrangements are being finalised to facilitate access to the scheme for LA schools, academies, diocesan schools and foundation schools. A business case is being developed for discussion with senior officers and Members and then will be reported to Members of this Panel.

## **8. Behavioural Change Programmes**

- 8.1. The behavioural change programmes have been given a renewed impetus the "Do your Energy Bit" initiative. This is starting to show reductions in the energy used in a number of corporate buildings, but the greater challenge still lies with the school estate.
- 8.2. From a position of rising energy use in the 10 years up to the commencement of the carbon management plan the upward trend was halted and briefly declined in years one and two. In the last two years we have seen a rise in energy use in schools driven by a number of factors.
- 8.3. Greater use of school buildings for community use, the provision of new accommodation to cater for increasing numbers on role, more intensive use of the school facilities, increasing use of IT and associated technology all lead to greater energy use. In the four years since the carbon management plan began, pupil numbers have risen by nearly 2,000 across the county.
- 8.4. Schools continue to receive our assistance on energy reduction initiatives, but continued pressure on utilisation and extended hours is a challenge. This was always stated as a risk when the CMP was approved by Cabinet in 2010.

## **9. Recommendations**

- 9.1. That positive progress to date with Energy and Carbon Management Programmes in the built estate is noted.

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

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

**Other Significant Links**

<b>Links to previous Member decisions:</b>		
<u>Title</u> Carbon Strategy	<u>Reference</u> 1152	<u>Date</u> 26.07.2010
<b>Direct links to specific legislation or Government Directives</b>		
<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.)

DocumentLocation

None

## **IMPACT ASSESSMENTS:**

### **1. Equality Duty**

1.1. The County Council has a duty under Section 149 of the Equality Act 2010 ('the Act') to have due regard in the exercise of its functions to the need to:

Eliminate discrimination, harassment and victimisation and any other conduct prohibited under the Act;

- Advance equality of opportunity between persons who share a relevant protected characteristic (age, disability, gender reassignment, pregnancy and maternity, race, religion or belief, gender and sexual orientation) and those who do not share it;
- Foster good relations between persons who share a relevant protected characteristic and persons who do not share it.

**Due regard in this context involves having due regard in particular to:**

- a) The need to remove or minimise disadvantages suffered by persons sharing a relevant characteristic connected to that characteristic;
- b) Take steps to meet the needs of persons sharing a relevant protected characteristic different from the needs of persons who do not share it;
- c) Encourage persons sharing a relevant protected characteristic to participate in public life or in any other activity which participation by such persons is disproportionately low.

### **1.2. Equalities Impact Assessment:**

This report intends to provide Members with an update on the Energy and Carbon Management activities and, as such, an Equalities Impact Assessment has not been considered necessary in the development of the report.

### **2. Impact on Crime and Disorder:**

2.1. The County Council has a legal obligation under Section 17 of the Crime and Disorder Act 1998 to consider the impact of all decisions it makes on the prevention of crime. The proposals in this report have no impact on the prevention of crime.

### **3. Climate Change:**

3.1. The Energy Strategy and Carbon Management Plan will have significant positive effect on the carbon emissions of the County Council. Climate change impacts are a driver in implementing reduction programmes.