

HAMPSHIRE COUNTY COUNCIL

Report

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| Committee/Panel: | Buildings, Land and Procurement Panel |
| Date: | 12 October 2015 |
| Title: | Energy and Carbon Management Activities Update |
| Reference: | 6519 |
| Report From: | 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 5 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 ongoing programmes of work to reduce carbon consumption.
 - Update on the Solar PV project on corporate buildings.
 - Progress on the Energy Performance Programme – Phases 1 and 2.
 - Support to Hampshire schools to reduce their energy consumption.
 - Behavioural change programmes for both schools and the corporate estate.
- 1.3 The Carbon Management Plan has now reached the end of its five year duration and the 20% reduction target has been exceeded.
- 1.4 Over the life of the five year plan, a reduction of carbon emissions of over 30,000 tonnes has been achieved (from 131,800 to 101,760). This represents a percentage saving of 22.8% against the target of 20%. This is an excellent achievement given the stretching target set by the plan.

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 have been addressed through the workstreams defined in the Carbon Management Plan which set down how the 20% reduction was to be achieved in the five year plan. We are now at the end of the plan and whilst the behavioural change has made a contribution to achieving the target, the greater part of the reduction has been through the delivery of technical programmes of work – significantly more than was originally anticipated.
- 2.4. A number of specific technical programmes aimed at reducing carbon emissions have been completed and more are scheduled beyond the end of the plan and will contribute to Phase 2 of the strategy.
- 2.5. 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 to government (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 were excluded from the measure of GHG emissions in 2013/14, hence the apparent substantial reductions from 2012/13 to 2013/14 (Table 1 refers).
- 3.3. The year on year comparison of GHG emissions is further complicated by the changes in conversion factors issued by the government each year. For example the conversion factor for electricity has increased by 11% from 2013/14 to 2014/15, (i.e. a unit of electricity consumed in 13/14 emitted less carbon than a unit used in 14/15). Thus a reduction of 5% in energy used translates to a 6% increase in carbon emissions. Furthermore, the conversion factors issued by the government for the GHG emissions differ

from those used to calculate CRC emissions. This complex reporting arrangement can easily cause misinterpretation. As a result, the County Council's Carbon Management Plan uses our own local metrics to ensure consistency of comparison and a true reflection of differences.

- 3.4. Data from some or all of the emissions set out in 3.1 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 in 3.1 and represents the carbon emissions associated with all of the activities and services delivered directly by the County Council.

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 its buildings and street lighting and to purchase carbon credits to match the emissions. It is a different sub-set of the GHG data.

The Carbon Management Plan (CMP)

- 3.8. The Carbon Management Plan comprised a number of key workstreams and was the tool by which the first phase 20% reduction has been successfully achieved.

- 3.9. Typically the plan comprised:

- Specifically funded energy or sustainability projects (for example the Energy Performance Programme and street lighting replacement).
- 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 maintenance programmes (re-roofing, boiler replacements, relighting schemes etc.).

Progress to Date

- 3.10. Over the five years of the plan, projects, programmes of work and behavioural changes have delivered carbon reductions of approximately 30,040 tonnes against a target reduction of 26,360 tonnes. This demonstrates that the technical initiatives achieved have impacted positively on our carbon footprint and has meant the first phase target has been exceeded.

Future programmes of work extending beyond the Carbon Management Plan are identified later in this report. The effect of behaviour change is more difficult to predict and also to measure. It continues to prove challenging to get wide scale engagement of staff although this has gathered some momentum through the '*Do your Energy bit*' initiative. Schools remain the

biggest challenge and any reductions from behaviour change are more uncertain in this sector.

Data Analysis

3.11 The table below shows the metrics for 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 2013/14 will have contributed to some of the reduction. The last two years of the plan have had comparable winters. We must be mindful that the data is not weather corrected and therefore the effects on carbon emissions has some unpredictability.

Table 1 – Government required reporting

| Metric | Base Year 2009/10 (tonnes) | Year 1 2010/11 (tonnes) | Year 2 2011/12 (tonnes) | Year 3 2012/13 (tonnes) | Year 4 2013/14 (tonnes) | Year 5 2014/15 (tonnes) |
|---------------------------------|---|--|--|--|--|--|
| GHG Emissions | 162,308 | 157,385 | 146,003 | 153,110 | - | - |
| GHG Emissions – revised metrics | - | - | - | (116,076) ¹ | 101,212 | 99,469 ³ |
| CRC scheme | N/A | 83,849 | 76,242 | 92,290 | 88,934 | 35,737 ⁴ |

Table 2 – Hampshire County Council Carbon Management Plan Progress

| Metric | Base Year 2009/10 (tonnes) | Year 1 2010/11 (tonnes) | Year 2 2011/12 (tonnes) | Year 3 2012/13 (tonnes) | Year 4 2013/14 (tonnes) | Year 5 2014/15 (tonnes) |
|--------------------------|---|--|--|--|--|--|
| Carbon Management Plan | 131,800 | 125,935 | 116,294 | 122,158 | 109,026 ² | 101,760 ² |
| % reduction on base year | - | -4.5% | -11.8% | -15.07 | -17.3% | -22.8% |

- Notes: 1 – Equivalent data set (outsourced services emissions excluded)
 2 – Emission conversion factors for 12/13 used for consistency.
 3 - Emission conversion factors from 13/14 used for consistency
 4 - School emissions excluded in Phase 2 of CRC and street lighting emissions added.

3.12 The table below illustrates targeted reductions that are expected to be delivered by technical programmes beyond the end of the Carbon Management Plan as part of the Energy Strategy Action Plan.

| Future Carbon Reduction Measures | 2015/16 (tonnes) |
|---|-----------------------------|
| EPP Phase 2 | 140 |
| Corporate Solar PV | 400 |
| Capital Programmes | 200 |

4. Activities beyond the Carbon Management Plan – Phase 2

- 4.1. The Carbon Management Plan focused on technologies which represented best value for money. Future programmes will specifically target measures which will provide a positive return on investment with a sensible pay back period.
- 4.2. Officers will assess the outcome of the Phase 1 Plan and review what projects and programmes are potentially viable to contribute to the next phase of the Carbon Strategy. Recommendations will be made to a future meeting of the Panel in the recognition of:-
- Changing technologies and innovation in the market.
 - Tighter fiscal controls in the public sector.
 - Reductions in financial incentives for renewable energies.
 - Significant growth in the number of school buildings as a result of pupil increases.
 - Potential changes (likely reductions) in the corporate built estate as a result of revenue savings and co-location of public sector organisations.
- 4.3 It will be important that Members make judgements based on advice from officers that recognises the context within which the County Council is expected to operate in the next 5 – 10 years. The excellent achievement of exceeding the first Phase Plan targets needs to be followed through into realistic, pragmatic and deliverable outcomes in Phase 2.

5. 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.
- 5.2. The review concluded that if the most favourable sized arrays were installed then the business case would be financially viable (pay back of around 10 years).
- 5.3. To test the business case with the market, 3 sites (Ell Court, Dame Mary Fagan House and Hawthorne Court) were selected as a pilot study. The installation was completed early in 2015 and the system is currently being

monitored using the output of the pilot study to evidence outcomes in practice. The Director of CCBS secured funding to procure approximately £1m of solar PV for the corporate estate and it is anticipated the works will be complete by the end of 2015. Around 20 further buildings will have arrays fitted.

- 5.4. The government have recently announced a substantial reduction in the subsidies paid for solar PV in the form of reduced Feed in Tariffs (FiTs) with effect from January 2016. Whilst this will affect any installations completed after this date, the proposed reduction will not have any impact on the programme of solar PV currently being undertaken.

6. Energy Performance Programme (EPP)

- 6.1. In 2014 funding of approximately £1m was made available from the Corporate Invest to Save Programme to fund the first phase of the corporate EPP programme with the work being undertaken over the winter of 2014/15.
- 6.2. Building on the success of EPP1, a further programme of works for the corporate estate has been developed (EPP2). Funding for EPP2 will be from the Corporate Invest to Save Fund (£250k) and also in the form of an interest free loan from the Government's Salix Fund (£750k). The Director of CCBS has previously had success in securing loans from this initiative to undertake a programme of boiler controls in the corporate estate.

7. Support to Hampshire Schools

- 7.1. There are currently over twenty 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 in train as part of the Children's Services basic need programme. The exact size and generating capacity of the new arrays are being finalised as each project design concludes to suit local conditions.
- 7.2. The Director of CCBS is developing an EPP offer to schools using the Salix loan fund to finance the works. Legal arrangements are being finalised to facilitate access to the scheme for Local Authority schools, academies, diocesan schools and foundation schools. A business case and delivery model is being developed for discussion with the Schools Forum in the near future.

8. Behavioural Change Programmes

- 8.1. The behavioural change programmes were given a renewed impetus through the "Do your Energy Bit" initiative. This is continuing 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 five years since the carbon management plan began, pupil numbers have risen by over 2,000 across the county. A total of 20,000 additional school places are required over the next 10 years at current estimates. This will have a significant impact on the intensity of use and area of the schools estate. Therefore a further increase in energy use is expected over this time horizon.
- 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 stated as a risk when the CMP was approved by Cabinet in 2010.
- 8.5. Alongside the EPP offer for schools a training programme will be launched for schools to enable them to get the greatest benefit from the measures installed and to assist with their energy reduction programme.

9. Recommendations

- 9.1. That the success in exceeding the 20% reduction target of the Carbon Management Plan is noted by the Panel.
- 9.2. The Director of Culture, Communities and Business Services assesses and reviews the outcomes of Phase 1 of the Carbon Management Strategy and brings forward recommendations for further energy reduction programmes, as part of the second phase of the plan to 2020, to a future meeting of the Panel.

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> 1152 | <u>Date</u> 26.07.2010 |
| 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.)

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.