Cherwell District Council

Executive

30 November 2015

Carbon Management Plan

Report of Head of Environmental Services

This report is public

Purpose of report

To review the performance of the previous Carbon Management Plan which covered the period April 2009 – March 2015 and to consider the proposed Carbon Management Plan for the period April 2015 – March 2020.

1.0 Recommendations

The Executive is recommended:

1.1 To note the avoided energy costs and the reduction in carbon emissions in the period April 2009 – March 2015

1.2 To support the proposed Carbon Management Plan for the period April 2015 – March 2020

2.0 Introduction

2.1 In 2011, a target of 22% was set using a baseline of 2009/10, for a reduction in carbon emissions. This target would reduce the Council's impact on the natural environment as well as providing financial savings through the reduction in the use of energy.

2.2 This reduction in energy was expected to have realised savings of up to £1 million and to reduce the carbon footprint by 1,195 tonnes or 22%.

2.3 A large number of projects have taken place during the period 2011 -15 to; increase the energy efficiency of buildings, install photovoltaics on many Council buildings, install woodchip boilers and improve the fuel consumption of the Council's vehicle fleet.

2.4 Many of these projects have been very successful with solar PV installations generating £89k/year. Buildings, especially Bodicote House, have seen a near 25% reduction in carbon emissions from the projects delivered.

2.5 Unfortunately, despite many successful projects the overall reduction in carbon emissions was less than expected being an 11.1% reduction. One factor was the national electricity grid factor which is determined by the mix of carbon producing and non-carbon electricity used across the country. The factor rose compared to 2009/10 due to a number of events including several nuclear reactors being taken out of service for unplanned maintenance in 2014/15. Without this change in electricity factor, the overall reduction in emissions would have been a 15.2% reduction. Financially, the savings, income and cost avoidance to the Council and its contractors totalled £1,100,000 over the 5 years.

2.6 Other elements which contributed to the overall carbon emissions not being achieved included delays in the delivery of the woodchip boiler at Bicester Leisure Centre.

2.7 The largest source of emissions are the Council's Leisure Centres which account for 57% of overall emissions. With the centres new or recently refurbished the opportunities for easy wins on energy efficiency are small. A reduction over 8% was achieved but this is well below the 22% reduction target. The Council's vehicle fleet accounts for 22% of overall emissions with the majority attributable to the refuse collection vehicles. For these, a reduction of over 4% was achieved. The main elements of this reduction were re-planning rounds and a number of small improvements in engine efficiencies. However, there were few changes in large vehicle technology as anticipated in 2011, which could deliver large reductions in carbon emissions.

2.8 More details of the performance between 2009-2015 is set out in Appendix 1 .The proposed Carbon Management Plan for 2015-2020 is set out in Appendix 2.

3.0 Report Details

3.1 One of the four strategic priorities for the Council is Safe, Clean and Green. Minimising the impact on the environment is an important priority.

3.2 Reducing the overall energy consumption of the Council is beneficial because it helps reduce the financial pressures on the Council as well as reducing the carbon emissions which helps protect the environment.

Carbon Management Plan 2009-2015

3.3 A carbon management plan has been in operation for a number of years to help reduce energy spending by up to £1m and to reduce emissions by 22%.

3.4 A large number of actions took place over the period 2009 – 2015 to reduce energy consumption and hence emissions. In many areas these have been successful. Reductions in energy in our buildings have been achieved through insulation, lighting changes as well as the use of solar PV.

3.5 Unfortunately, the 22% reduction has not been met due to a number of factors. The electricity factor is one major factor (which is the factor the electricity industry uses to see how much carbon is produced by each kilowatt hour generated). Despite the growth in renewable electricity, the electricity factor for 2014/15 was higher than 2009/10 due to several nuclear power plants having being taken out of commission

during 2014/15 for maintenance. If the electricity factor had not risen in 2014/15, then an overall reduction of 15.6% would have been achieved. Despite this, the savings through additional income and cost avoidance to the Council and its contractors totalled £1,100,000 over the 5 years.

3.6 There are four main sources of carbon emissions – The Leisure Centres (more than 55%), the Vehicle Fleet (22%), Council Buildings (20%) and Business Mileage (2%). In two areas, Council Buildings and Business Mileage, significant reductions in emissions have been achieved through a variety of projects. However, in the remaining two areas, reductions have been a lot smaller

3.7 The Leisure Centres have all been rebuilt in recent years to good standards of energy efficiency. Consequently, the opportunity to improve energy efficiency at the Leisure Centres has been relatively small.

3.8 The Council's fleet is varied but the largest users of fuel are the refuse collection vehicles (RCVs). The RCVs are renewed on a 7-8 year cycle. Although the newer vehicles produce much less Nitrous oxides (NOx) and particulates (soot), the amount of carbon dioxide has only fallen by small amounts. Although alternative fuels exist for smaller vehicles, for RCVs the diesel engine is the most suitable engine. Work has taken place to reduce mileage through collection round reviews and considering the disposal point for all materials. Small savings have been achieved even though the District's population and service is growing.

Carbon Management Plan 2015-2020

3.9 The new Carbon Management Plan looks to set a target of 10% reduction over the 5 years of the plan. As the Councils performance forms part of the national targets against a 1990 baseline, the Council should also use the earliest possible data, which should be based on 2008/09 data. In addition, the national targets and the recommended Department of Energy and Climate Change (DECC) guidance include all greenhouse gases, not just carbon dioxide. The difference between carbon dioxide reports and Greenhouse Gas reports are highlighted in the table below. By converting the carbon dioxide targets to Greenhouse Gas targets the Council can take a better account of its impact on the environment, with all of the changes implemented the councils performance of reduction is approximately 21%.

Emissions included in Carbon Dioxide Reports	**Emissions included in Greenhouse Gas Reports**
Carbon Dioxide – CO_2	**Carbon Dioxide – CO_2** **Methane – CH_4** (25 times more potent than CO_2) **Nitrous Oxide – N_2O** (298 times more potent than CO_2)

Figure 1: Difference between Carbon Dioxide Reports and Greenhouse Gas Reports

3.10 This target can be broken down to a reduction of 2% per year between 2015 – 2020 against the baseline considering there is a reduction of 21% already

3.11 The vehicle fleet is unlikely to deliver large reductions in carbon emissions unless there is a major change in large vehicle technology. In addition, the district is due to

grow significantly which will mean more vehicles will be required. Improvements in fuel consumption on smaller vehicles from more efficient engines, possible hybrid engines and lighter vehicle bodies are likely to be achieved. But the eighteen RCVs account for more than 75% of fuel usage and in the future, the number of RCVs will increase. Although some reduction will be highlighted by the change in the reporting on Greenhouse Gases, specifically the Nitrous Oxides which previously went unreported will now be accounted for. Eight RCVs are due for replacement over the next two years with a Euro VI standard engine. Euro VI engines reduce NOx levels by 75% compared to Euro V. CO2 emissions between Euro V and Euro VI are similar. Consequently there may only be a small CO2 reduction from changing these eight RCVs but the reduction on NOx will be more significant.

3.12 A number of successes on reducing energy consumption at the Council's buildings have been achieved. Future opportunities such as renting out more space in Bodicote house, renewing boilers when they become old and inefficient and more efficient IT equipment should deliver energy reductions in the coming years.

3.13 Reductions in business mileages should continue with the smart use of technology, conference calling and the increasing uses and flexibility that electronic devices give.

3.14 Leisure Centres account for more than half of emissions. While it will be difficult to significantly reduce emissions at modern leisure centres, opportunities will arise to improve insulation, lighting efficiency etc.

3.15 The plan does not detail every action or initiative to be undertaken, the major reason for this is the every changing legislation surrounding the green sector. For example there are currently proposals to reduce the Feed-In-Tariff, government rebate for renewable electricity generation, by 87% and making our future solar PV project business cases unviable. By not listing every possible future project the Council can remain flexible in achieving the target by capitalising on the most viable and value for money measures as they become available. With this in mind the key methods already detailed are a broad overview of key projects which we expect to effect.

3.16 Financially, even if the greenhouse gas reduction target is met, the Council will still pay higher fuel bills due to the amount at which electricity and gas costs are expected to rise. There are various measures of reaching the greenhouse gas target which have different financial implications. As a result the maximum possible savings, income and cost avoidance achievable to the Council and its contractors is £1,033,000

4.0 Conclusion and Reasons for Recommendations

4.1 The Carbon Management Plan for 2009-15 has helped deliver energy savings which have been financially beneficial to the organisation. Carbon emissions have reduced even though the reductions have been less than initially hoped for. Many projects implemented have brought about significant benefits, for instance PV panels generating £89k income per year.

4.2 A new Carbon Management Plan for 2015–2020 will help outline further reductions in the future. There are a number of unknowns, especially regarding Government

policy. For instance, recent changes in Solar feed in tariff mean that the economics of installing any future PV panels do not currently look attractive. However, by taking opportunities when they arise such as replacing outdated technology with the latest in technology, reductions can be achieved

5.0 Consultation

5.1 The internal Use of Natural Resources Group has been consulted in formulating both the review and future plan. This has officer representation from facilities service, leisure services, procurement, ICT, fleet and HR.

6.0 Alternative Options and Reasons for Rejection

6.1 The following alternative options have been identified.

Option 1: Approve the recommendations as set out.

Option 2: Reject the recommendations

Option 3: Ask officers to develop alternative options

7.0 Implications

Financial and Resource Implications

7.1 Expenditure on energy is significant for the Council, energy efficiency plans can help minimise these costs.

Comments checked by Paul Sutton Head of Finance and Procurement 0300 0030106, paul.sutton@cherwellandsouthnorthants.gov.uk

Legal Implications

7.2 There are no legal implications with this report.

Comments checked by Kevin Lane Head of Law & Governance, 03000030107, Kevin.lane@cherwellandsouthnorthants.gov.uk

Risk

7.3 A Carbon Management Plan covering the main activities of the Council and setting out plans to reduce the impact on the environment has been in place for some years. Updating the plan covering the period up to 2020 minimises the risk to the Council and shows a commitment to the Safe, Clean and Green strategic priority

Comments to be checked by Louise Tustian, Acting Corporate Performance Manager, 01295 221786, louise.tustian2@cherwellandsouthnorthants.gov.uk

8.0 Decision Information

Key Decision

Financial Threshold met **No**

Community Impact Threshold Met **No**

Wards Affected

All

Lead Councillor

Councillor Debbie Pickford, Lead Member for Clean & Green

Document Information

Appendix No	Title
1	Carbon Management Plan 2009-2015
2	Carbon Management Plan 2015-2020
Background Papers	
None	
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