

**CARBON MANAGEMENT PLAN UPDATE
(Report by Head of Environmental Management)**

1. INTRODUCTION

- 1.1 At a time of economic uncertainty, the need to reduce energy consumption has never been so pressing. Increasing energy and fuel prices are causing great concern for local authorities, as is longer term energy security. In aiming to use public funds efficiently, whilst making cost savings; low carbon operations are becoming increasingly important.
- 1.2 In September 2010 an initial update was given on progress in delivering the Council's Carbon Management Plan (CMP) approved in June 2009. The report highlighted the need to introduce a more joined up approach to carbon management across the Council's sites and outlined the work undertaken by the Council's Environment Team to deliver a Carbon Dioxide Equivalent (CO₂e) saving of 13% in the first year of implementation (09/10).
- 1.3 With a target to deliver a 30% CO₂e reduction over a five year period (08/09-12/13), this report gives details of work undertaken in year two of the CMP, of progress made towards reaching this target and makes recommendations for further implementation of the CMP to maximise financial savings from reduced energy use.

2. BACKGROUND

- 2.1 Work to develop clearly defined energy strategies for each of the Councils 10 main sites is ongoing. These tailored plans prioritise actions to introduce energy efficiency and renewable measures during the current financial year and the remainder of the CMP period. Measures identified have been evaluated and costed and together they will save energy and generate revenue for the Council. The measures are listed site by site (Annexe B attached) and are being funded through the Councils existing SALIX Energy Efficiency Fund and from the Council's limited Environment Strategy capital budget.
- 2.2 Analysis of current progress towards reaching a 30% reduction in CO₂e emissions has been carried out in line with guidance provided by DECC and DEFRA on reporting greenhouse gas emissions, and a 15% reduction has been made since the baseline year used for the CMP (08/09). This is a saving of 1,026 tonnes of CO₂e and is a significant achievement. For more details please see the Green House Gas report 2010/11 issued to DECC (Annexe A attached).
- 2.3 The Council's Environmental Resource Efficiency Group (EREG) has now been meeting regularly for over a year and communication across

the Council is giving a much clearer picture of where energy is being used. Mapping of CO₂e emissions and energy use per site has been extremely helpful in prioritising energy and CO₂e saving projects and focusing on where the greatest immediate savings can be made.

2.4 Work undertaken to date has largely focussed on One Leisure sites with a wide range of projects implemented including:

- Variable speed drives – for reducing the speed of pool pumps
- Passive infrared lighting – Sensing movement and light
- Voltage optimisation – to reduce incoming voltages by up to 10%
- Insulation – both cavity fill and roof fabric
- Valve and pipe insulation – Reducing heat loss in plant rooms
- Pool covers – Retaining heat overnight

2.5 Members of EREG continue to report their department's resource consumption via the Council's scorecard reporting system to ensure the Council is on track with targets committed to in Growing Awareness; Our Plan for the Environment .

2.6 In addition to the projects already implemented there is considerable scope to reduce energy use further during the remaining three years of the CMP (Annexe B attached) and for the Council to generate energy a significant income from the renewable energy feed-in-tariff (FIT). The most immediate plans in this respect include the installation of a 50Kwp solar photovoltaic PV array at Eastfield House which has already been the subject of a report to Cabinet and will be installed during the current financial year.

2.7 A three year programme to install further PV systems at the Council's main sites is detailed in Annexe C. This project is also the subject of an MTP bid. Income from the project is based on the current level of the (FIT) which at the moment is guaranteed for projects installed by 31st March 2012 but is likely to be reduced from this date.

2.8 To maximise income from the installation of PV systems the Council will seek to install the largest systems and those with the shortest payback period (Paxton Pits Visitor Centre and Hinchingsbrooke Country Park Visitor Centre) during the current financial year and reassess viability going forward based on any amendment to the (FIT).

3. FINANCIAL/ RESOURCE IMPLICATIONS

3.1 Overall energy use at the Council's 10 main sites has decreased by 7% since the baseline year and the energy bill at these sites has decreased by £49K since 2009/10 as shown in the table below which is based on billing data. Against a backdrop of rising fuel prices and the addition of energy intensive buildings and services to the Council's estate, these results are an outstanding success.

Year	Energy spend	% change
2008/09	£662,828	
2010/11	£613,810	↓ 7%

- 3.2 Although the CMP and the work of the Environment Team has been successful in reducing energy, CO₂e and fuel costs, more can be done at most sites over the remaining three years of the plan and beyond. Over 70% of the Council's total energy spend is from five main sites including three leisure centres, Pathfinder House and the Operations Centre at Eastfield House.
- 3.3 Projects to reduce energy use at these five buildings must continue as a priority over the next three years and will result in further energy and cost savings. Physical measures at leisure centres and Eastfield House are already being put in place and considerable amount is being done to reduce energy use within Pathfinder House through behavioural change, including Saturday closure and active management using the sophisticated building management system (BMS).

4. CONCLUSIONS

- 4.1 Significant progress has been made in reducing emissions during the first two years of the Carbon Management Plan. The Council is now half way towards achieving its target of reducing CO₂e emissions by 30% over a five year period. A clear delivery pathway has been identified for the remaining three years of the plan with projected savings evidenced by the payback of highly successful, easily replicated projects that have been implemented to date.
- 4.2 The review of energy use at the Council's main buildings indicates that there is still significant scope to undertake lower cost, fabric based efficiency measures with shorter payback periods and to combine these with projects with a slightly longer payback that will maximise the use of renewable energy and generate a significant income for the Council.
- 4.3 Close working between One Leisure and Environmental Management has enabled energy efficiency and consequent cost savings to be central to the delivery of high quality leisure services. Going forward it will remain very important to make the most of refurbishment opportunities at buildings such as One Leisure St Ives, to 'design in' energy saving measures such as natural lighting and natural ventilation. Failure to do so will result in high running costs at what can be very energy intensive facilities.

5. RECOMMENDATIONS

- 5.1 Cabinet is recommended to:
- (a) note the good progress towards the implementation of the Councils Carbon Management Plan and the positive impact this has had on energy use and energy bills at the Councils main sites.
 - (b) to support ongoing cross-functional energy reviews to maximise cost savings and the continued use of the Salix ring-fenced funding and Environment Strategy Capital funding to implement further energy saving projects.
 - (c) to support the installation of Solar PV panels at the Councils main sites which will generate a significant ongoing revenue stream for the Council.

BACKGROUND INFORMATION

HDC Carbon Management Plan

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Green House Gas (GHG) Emissions for Huntingdonshire District Council's (HDC) Estate – Financial Year 2010/2011

GHG emissions data for period 1 April 2010 to 31 March 2011			
	Global Tonnes of Carbon Dioxide equivalent (CO ₂ e)*		
	10/11	09/10	Base Year 08/09
Scope 1 – Direct emissions	2,761	2,760	3,205
Scope 2 – Energy indirect	3,070	3,088	3,577
Scope 3 – Other indirect	93	168	167
Total gross emissions	5,923	6,016	6,949
Carbon offsets	0	0	0
Green tariff	0	0	0
Total annual net emissions	5,924	6,016	6,949
Intensity measurement 'Tonnes of CO ₂ e per member of full time staff'	8.3	7.4	9.0

*CO₂e includes Carbon Dioxide, Nitrous Oxide and Methane emissions

Company Information

HDC is a District Council covering a geographical area of approximately 350 square miles and home to a population of over 160,000.

Reporting Period

1 April 2010 – 31 March 2011

Change in emissions

Scope 1 - This section of the table above records all of HDC's gas, petrol and diesel consumption, used to heat Council-owned buildings and to run the fleet of waste collection and street cleansing vehicles and the fleet of pool cars.

There has been a steady decrease in CO₂e from the consumption of gas, petrol and diesel. This can be attributed to a number of measures including energy efficiency solutions at the leisure centres, such as boiler replacements and insulation and the rescheduling of refuse and recycling rounds to reduce miles travelled by the fleet.

There has been a small increase in the use of gas in the last few years which is attributable to the installation of Combined Heat and Power (CHP) at Huntingdon Leisure Centre, but further fuel savings from our fleet have meant that overall, CO₂e emissions from scope 1 sources have decreased and by 444 tonnes since the baseline year (2008/2009).

Scope 2 - This section of the table above records all of HDC's electricity purchased to power Council-owned buildings. There has been a small decrease in emissions from these sources in the last year. This again can be attributed to the energy efficiency works that have taken place at the leisure centres, the installation of CHP and the installation of voltage optimisation technology at several Council-owned buildings. Overall, scope 2 CO₂e emissions have decreased by 507 tonnes since the baseline year.

Scope 3 - This section of the table records CO₂e emissions from HDC's business travel. The introduction of a number of 'travel for work' initiatives and the availability of both pool cars and pool bikes have resulted in a significant decrease in emissions from business travel. HDC have chosen not to report emissions from commuter travel as the data is incomplete and believed to be a very small proportion of the total emissions. Overall, scope 3 emissions have reduced by 74 tonnes since the baseline year.

Approach

We have followed the Governments guidance (September 2009) on how to measure and report GHG emissions.

Organisational boundary

We have used the financial control approach

Operational scopes

The Council has measured scope 1, 2 and 3 emissions where a monitoring system is in place to do so.

Overall, scopes 1, 2 and 3 together result in a decrease of 93 tonnes of CO₂e emissions in the last year (1.53%) and a reduction of 1026 tonnes of CO₂e emissions (14.75%) since the baseline year.

The work undertaken to achieve these savings has been supported by a ring-fenced fund from Central Government (Salix funding) and has resulted in financial savings to the Council in energy and fuel costs.

	GHG emissions 10/11 in tonnes CO ₂ e	Exclusions and % this represents
Scope 1		
Gas consumption	1,330	
Owned transport	1,431	
Process emissions	0	
Fugitive emissions	0	
Total scope 1	2,761	
Scope 2		
Purchased electricity	3,070	
Total scope 2	3,070	
Significant scope 3		
Business travel	93	By private staff vehicle only
Total significant scope 3	93	

Base year

Our baseline year is 2008/2009 which we set using a fixed base approach. We have recalculated our baseline year emissions to take into account the change to GHG factor from CO₂ factor.

Targets

Our emissions reduction target is to reduce our global GHG emissions, scopes 1, 2 and 3 by 30% from the baseline year 2008/2009 by the end of 2013/2014. The Environment Team and the Environmental Resource Efficiency Group is responsible for the achievement of the target.

Intensity measure

The Council has chosen 'Tonnes of CO₂e per member of full time staff' as the Council does not have a product output. Our intensity measure has increased this year due to a decrease in staff, despite emissions reductions.

External assurance statement

None currently in place

Carbon offsets

The Council has not brought into any carbon offsetting schemes.

For more information please contact the Environment Team on 01480 388388 or email heet@huntingdonshire.gov.uk

ANNEXE B

**Savings from energy efficiency measures 2011/12 – 2012/13
Payback calculated using independent SALIX project identification tool**

Site	Measure	Delivery year	Cost (£)	Saving (£pa)	Payback (yrs)	CO ₂ e saving (tpa)
One Leisure Huntingdon – Dry side	Valve/pipe insulation	11/12	£1,260	£1,260	1	8.41
	Voltage optimisation	11/12	£16,635	£3,766	4.5	22.59
	Boiler replacement	11/12	£15,000	£3,092	5	16.36
	Lighting controls (PIR's)	11/12	£8,819	£2,235	4	10.86
% saving on 10/11 energy bill - 19.9%			£41,714	£10,353	4	58.22
One Leisure Huntingdon – Wet side	Voltage optimisation	12/13	£18,053	£3,432	5	23.39
	Pool covers	11/12	£3,455	£1,820	2	9.63
% saving on 10/11 energy bill - 12.2%			£15,658	£5,595	2.8	35.36
One Leisure St Ives - Outdoor	Lighting controls (PIR's)	11/12	£3,480	£969	3.5	5.45
% saving on 10/11 energy bill – 3.75%						
One Leisure St Ives - Indoor	Valve/pipe insulation	11/12	£5,500	£5,500	1	37.23
	Cavity wall insulation	12/13	£15,000	£3,330	4.5	30.43
	Voltage optimisation	12/13	£22,000	£8,480	3	28.87
	Lighting controls (PIR's)	11/12	£9,000	£2,907	3.2	17.43
	Pool covers	11/12	£3,458	£6,661	1.3	14.09
% saving on 10/11 energy bill – 22.6%			£54,958	£26,878	2	128.05
One Leisure Ramsey	Valve/pipe insulation	11/12	£2,600	£2,600	1	18.69
	Lighting controls (PIR's)	12/13	£4,157	£866	4.8	6.30
	Variable speed drives	11/12	£1,850	£1,020	1.8	6.12
% saving on 10/11 energy bill – 11.01%			£8,607	£4,486	1.9	31.11
One Leisure Sawtry	Valve/pipe insulation	11/12	£2,650	£2,650	1	18.49
	Voltage optimisation	12/13	£12,259	£3,264	3.9	22.25
	Lighting controls (PIR's)	12/13	£578	£145	4	0.80
	Pool covers	11/12	£2,514	£1,294	2	20.16
	Variable speed drives	11/12	£1,980	£1,329	1.5	7.97
% saving on 10/11 energy bill – 15.20%			£19,981	£8,682	2.3	69.67
One Leisure St Neots	Valve/pipe insulation	11/12	£1,876	£1,876	1	13.08
	Voltage optimisation	11/12	£25,964	£5,309	5	32.86
	Pool covers	11/12	£6,005	£2,775	2.3	11.15
% saving on 10/11 energy bill – 10.72%			£33,845	£9,960	3.4	57.06
Pathfinder House	Voltage optimisation		Decision pending site survey			
	Building management system training	11/12	We are unable at this time to quantify the savings in CO ₂ e and energy associated with these measures as we are currently undertaking full monitoring of the site.			
	Saturday closing	11/12				
	Server virtualisation	11/12				
	Desk top virtualisation	11/12				
% saving on 10/11 energy bill - /						
Eastfield House	Voltage optimisation	12/13	£18,484	£3,702	5	25.01
% saving on 10/11 energy bill – 6.74%						
*TOTAL % saving on 10/11 energy bill – 40.31%			£196,727	£65,030	3	409.93

Predicted Savings from Solar PV Programme

Delivery Year	Site	Cost (£)	Saving (£pa)	Income (£pa)	Payback (yrs)	CO ₂ e saving (tpa)
11/12	One Leisure Huntingdon – Dry side	£150k	£2,604	£12,238	10	20.28
	Paxton Pits Visitor Centre	£12k	£210	£1,299	7.9	1.64
	Hinchingbrooke Country Park Visitors Centre	£12k	£210	£1,299	7.9	1.64
		£174k	£3,024	£14,836	8.6	23.56

12/13	One Leisure St Ives - Indoor	£102k	£1,911	£8,981	9.3	14.89
	One Leisure Huntingdon – Wet side	£54k	£770	£5,066	9.25	8.40
	One Leisure Sawtry	£51k	£959	£4,507	9.3	7.47
	One Leisure St Ives - Outdoor	£42k	£749	£4,235	8.4	5.85
		£249k	£4,389	£22,789	9	36.61

13/14	One Leisure Ramsey	£85k	£935	£6,152	12	10.20
	One Leisure St Neots	£102k	£1,862	£8,751	9.6	14.50
	Pathfinder House*	£35k	£547	£2,995	10	4.26
		£222k	£3,344	£17,898	10.5	28.96

* System not yet included in MTP