

Carbon Management End of Year Analysis 2011/2012

Cherwell District Council

YEAR END EMISSION ANALYSIS 2011/12
CHERWELL DISTRICT COUNCIL

This report outlines the Carbon Dioxide emissions resulting from council operations for April 2011 to March 2012. All emissions are provided in tonnes of Carbon Dioxide (CO₂) and utilise the carbon conversion factors defined by DECC in the DEFRA reporting tool published in September 2009. Please also note that these emissions are true values and not corrected for weather differences.

SUMMARY DATA

Table 1: Year end emissions data compared with 2009/10 and 2010/11 with percentage variances.

Tonnes of CO₂	2011/12	2010/11	2009/10	2011/12 % variance from 2009/10	2011/12 % variance from 2010/11
Buildings	757	879	1042	-27.4%	-14.0%
Fleet Emissions	1149	1164	1207	-4.8%	-1.3%
Business Mileage	128	137	132	-3.0%	-6.6%
Leisure Centres	2949	3131	3053	-3.4%	-5.8%
Total	4982.8	5311.6	5434.1	-8.3%	-6.2%

1. The table highlights a combined reduction of 6.2% compared to carbon emissions of 2010/11. When compared to the baseline year (2009/10), there is an 8.3% reduction.
2. Buildings have seen an overall reduction of 27.8% in carbon emissions compared to the baseline with a 14% decrease from 2010/11 emissions.
3. Fleet emissions have maintained a reducing trend with a 1.3% reduction from 2010/11 and an overall 4.8% reduction from baseline year
4. Business mileage has decreased by 3.0% from the baseline year and show a decrease of 6.6% from 2010/11 data.
5. Leisure Centre emissions have decreased by 3.4% from baseline year 2009/10 and have decreased by 5.8% from 2010/11.

GRAPH 1.1 PROGRESS AGAINST CARBON REDUCTION TARGETS

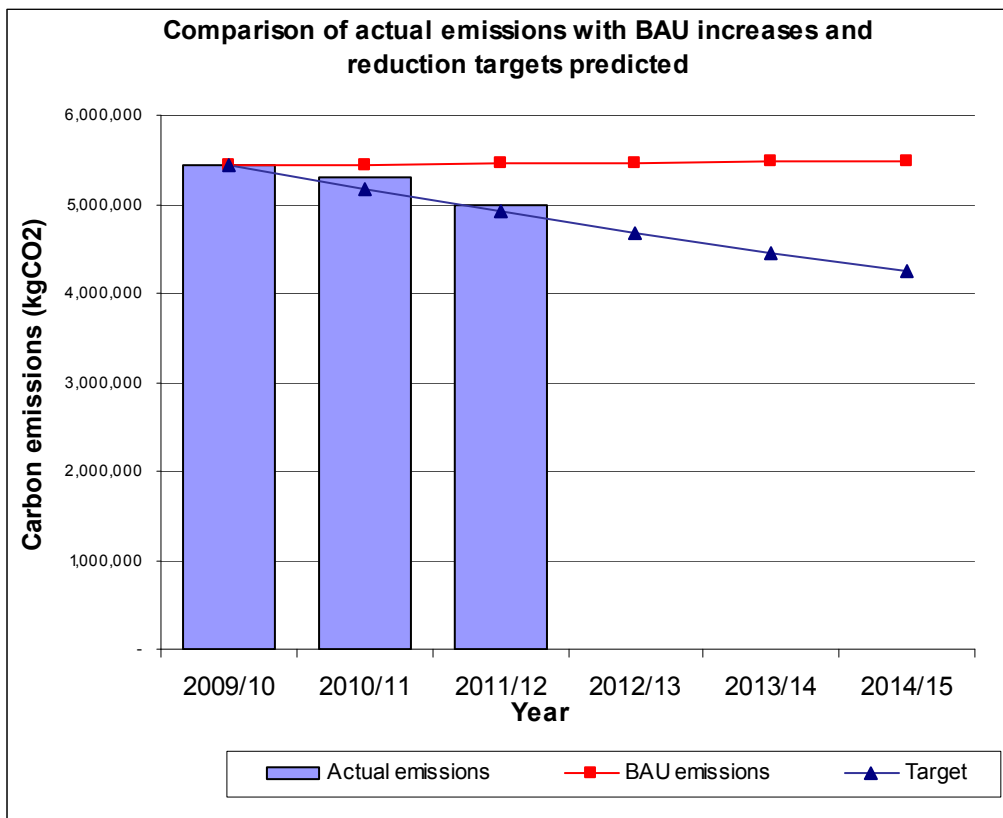


Table 1.1 Annual Carbon reduction figures (not adjusted)

	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15
Annual Target %		4	6	4	4	4
Annual value at stake (t CO ₂)	-	263	251	239	227	216
Actual per cent reduction (%)		2.3%	6.2%			
Actual annual carbon reductions (t CO ₂)	-	123	328.8	n/a	n/a	n/a

Table 1.2 Cumulative Progress

	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15
Cumulative Target %	-	4	10	14	18	22
Cumulative carbon reductions targets (t)	-	263	514	753	980	1196

CO ₂)						
Actual cumulative carbon reduction against target (%)	-	2.3%	8.3%	-	-	-
Actual cumulative carbon reductions (t CO ₂)	-	123	451.8	n/a	n/a	n/a

1. By end of Year 2, Cherwell has a cumulative reduction of 451.8 tonnes of CO₂. There is a 62.2 tCO₂ shortfall. This is likely due to slippage in project completion from Year 1 and Year 2 (e.g. Depot refurbishment technologies, variable speed drives) and the subsequent delay in realising the savings before the next financial year (Year 3). Example of this is the completion of Solar PV at Thorpe Lane Depot on March 1st 2012.
2. Cherwell District Council has a cumulative reduction total of 8.3%.
3. The change in per cent reduction from a 3.9% reduction in year one to 2.3% (2010/11 reduction from baseline year 2009/10) is due to updated consumption figures for 2010/11 (*Annex 1, Point 4 and 5*).

Annex 1: Error correction log

Table 2.1: Issues that have been corrected across the dataset as a whole						
Key	No.	Issue	Reason	What amendments have been made	Areas of concern:	Date
	1	Formula error in the column that calculates Leisure Centre Gas data for Kidlington	Meter change in March from ft ³ x100 units to m ³ . Formula was not updated in Tool.	Formula correction	- Gas - Kidlington - Leisure Centres - 2011/12 data	29/09/2011
	2	Revision of assets.	It is essential to continually review assets.	Omission of Drayton Pavilion	- Drayton Pavilion - Elec/gas - 2011/12 data	29/09/2011
	3	Highfield Gas calculation Data	The formula was referring to the wrong column.	The formula in gas calculation has been corrected	- gas - Highfield - Buildings - 2011/12 data	12/10/2011
	4	2010/11 incorrect data set initially used	Data set was taken from a 2010/11 Q1 report. However, the end report 2010/11 revealed a revised data set.	Final 2010/11 data set has been used	2010/11 data set.	12/10/2011
	5	Incorrect 2010 Ban Museum elec data	Manual readings were out by x10 due to meter display	Have to revisit data with aid of SSE half hourly data and USEA	Elec - Ban Museum - 2010	14-Oct-11
	5a	Incorrect 2010 Ban Museum elec data	Manual readings were out by x10 due to meter display	After confirming this with USEA, this has been noted and it is confirmed that 2011 data is accurate.	Elec - Ban Museum - 2010	22-Mar-12
	6	Formula error for Bodicote House gas and annex builds	Discrepancies over Bod Hse Gas due to multiple sites, some sites not included	1) Bodicote House will now also include gas from Bodicote House restaurant and Training Block 2) Old Bodicote House gas to	gas - BH - buildings - 2011/12	22-Mar-12

			remain individual. This is on the NI185 tool		
7	Inaccurate data conversion for Continental Landscapes transport emissions	Formulas in Ni185 tool, Input 2- Transport, Column G, row 611-615 did not copy accurately from 2010. Data which was meant to be converted via a km factor was converted using litre factor.	Formula copied over correctly	vehicle emissions - CLL - 2011/12	22-Mar-12
8	Ban TIC data not added	formula did not copy over to Ban Museum	Formula copied over correctly	Elec - Ban Museum - 2011/12 data	22-Mar-12
9	Degree days updated for 2011/12. Now 1819				13-Apr-12
10	For CDC Fleet Aux Codes a) C p Bus and K17 are not CDC assets				13-Apr-12
11	Referring to 5a. This data was not updated in the tool. This has been now updated and saved.				21-May-12
12	An additional file has been created with Nov 2011 Conversion factors from DECC for information purposes.				21-May-12

Annex 2: Project Implementation progress

Summary

- In Year 1 approximately 5% of the 22% target was implemented according to the scheduled projects in the CMP.
- In Year 2
 - 35% of the 22% target was implemented (Green).
 - 17.04% of target was partially implemented (Amber)
 - 10.83% of target was not implemented (red)

Table 3.1: Year 1 Scheduled Projects according to CMP

Project Ref	Project Description	UoNR Stream	Cost		Annual Savings (yr 1)		Pay back (yrs)	Net Present Cost (£)	% of Target	Implemented before April 2011
			Capital	Operational	Financial (Gross)	tCO2				
PR 1	Solar PV at Thorpe Lane Depot	Property	£47,400 (Allocated)	-£5,127	£1,247	6.8	7.4	-£55,697	0.57%	
PR 4	PIRs (Phase 1) at Bodicote House (HQ)	Property	£7,400 (Allocated)	£0	£577	3.1	5	-£12,936	0.26%	

PR 2	Leisure Centre - Spiceball PV System	Sports Centre Energy Management	£216,000	-£23,719	£5,729	31.2	7.3	-£260,340	2.61%	
PR 3	Leisure Centre - Woodgreen PV System	Sports Centre Energy Management	£378,172	-£47,103	£10,878	59.2	6.5	-£560,332	4.95%	
PR 6	AMRs and aM&Ts (Ex Leisure)	Property	£14,000	-£8,000	£9,277	51.9	0.8	-£126,514	4.35%	
PR 7	HQ - Solar PV at Bodicote House	Property	£232,000	-£19,573	£4,725	25.7	9.5	-£161,035	2.15%	
PR 15	Depots - Biomass at TLD	Sports Centre Energy Management	£32,000 (Allocated)	£1,725	£1,650	10.1	N/A	£14,157	0.85%	
PR 16	LC Bicester - PV System	Sports Centre Energy Management	£150,000	-£14,853	£3,770	20.5	8.1	-£133,009	1.72%	
PR 17	Depot - Lighting at TLD	Property	£6,000 (Allocated)	£0	£1,062	5.8	5.6	-£5,486	0.48%	

PR 18	Transport: Fleet - 2.5% reduction over 5 years per year	Fleet Use Optimisation Improvements	(Allocated)	£0	£26,155	60.5	0	-£115,831	5.06%	
PR 19	Transport: Fleet - In sourcing	Fleet Use Optimisation Improvements	(Allocated)	£0	£14,595	33.8	0	-£116,394	2.82%	
PR 21	HQ - PIRs 2nd Phase	Property	£4,300	N/A	£500	2.7	N/A	N/A	0.23%	
PR 22	HQ - Server Room Air Con	Technology Enhancements	£37,000							
			(Allocated)	£0	£7,726	42	4.8	-£64,120	3.52%	
PR 24	Transport - Fleet: Rounds review	Fleet Use Optimisation Improvements	£8,000							
			(Allocated)	£2,000	£16,095	37.2	0.6	-£54,251	3.11%	
PR 26	Depot - PV at TLD (Phase 2)	Property	£94,800	-£10,254	£2,495	13.6	7.4	-£111,394	1.14%	
PR 30	Depot - Super Insulation	Property	(Allocated)	N/A	£4,767	29.2	N/A	N/A	2.45%	
Total			£1,134,272	-£119,777	£109,425	423.5	4.6	-£1,694,549	35.42%	

Project progress:

- Green:
 - In Year 2, 13.46% of the scheduled projects were completed. This is a combination of additional work packages adopted by work streams for various reasons e.g. Opportunities, priorities, slippage etc. It is important to note that Cherwell District Council was going through a merger with South Northamptonshire Council adding pressure to delivering work packages.
- Amber:
 - 11.15% of the target was partially completed. Some projects PR26 – Depot PV at TLD (Phase 2): This project was completed on 1 March 2012. Therefore, savings were not realised.
- Red:
 - Projects not completed in Year 2 include PR2, PR7 and PR16 - These were Solar PV projects that incurred delays in implementation. PR7 (Bodicote House Solar PV) to be completed in May/June 2012 whilst PR2 and PR7 are resolving structural survey issues.
 - PR6 AMRs and aM&T software (Smart Meters) – this project was suspended until Year 3 (2012/13) due to new contract with external energy management organisation (LAZER).

Table 3.3: Projects brought forward to Year 2

Project Ref	Project Description	UoNR Stream	Cost		Annual Savings (yr 1)		Pay back (yrs)	Net Present Cost (£)	% of Target	Year	RAG	Comment
			Capital	Operational	Financial (Gross)	tCO2						
PR 20	HQ – Biomass (Old Bod Hse)	Property	£90,000	£1,725	£6,600	40.5	13.6	£18,626	3.30%	Year 3		Project completed in Q4 2011

PR 23	HQ – Wyse Computer Roll out	Technology Enhancements	£67,050	£0	£6,079	33.1	11.0	-£12,513	2.70%	Year 3	Partially implemented. 70 units out of 120 (approx) available for implementation
PR 8	Leisure Centre – Woodgreen Pool temp control/circulation and review boiler controls	Sports Centre Energy Management	£8,000	£500	£6,870	39.0	1.3	-£42,629	3.19%	Year 4	Partially implemented. Replacement pump needed at site.
PR 9	Leisure Centre – Woodgreen – Energy management	Sports Centre Energy Management	£0	£0	£600	3.3	0.0	-£8,945	0.27%	Year 4	Implemented in Year 2 from Parkwood management.

PR 10	Leisure Centre – Woodgreen (PIRs and lighting)	Sports Centre Energy Management	£5,000	£200	£1,330	7.2	4.4	-£3,943	0.59%	Year 4		Implemented in March/April 2011. Project was successful in applying for funding from energy efficiency fund.
PR 11	Leisure Centre – Spiceball, Bicester, Kidlington – Energy management improvement	Sports Centre Energy Management	£1,000	£0	£37,237	213.1	0.0	- £163,910	17.40%	Year 4		Implemented in Year 2 from Parkwood management.
Total			£171,050	£2,425	£58,716	336	5.1	- £213,313	27%			

- Green: Projects brought forward and completed in Year 2. These contribute approximately 21% of the target.
- Amber: These projects began but were not fully completed in Year 2, approx 6% of the target.