

Achieving a 40% reduction in emissions

Section 1 – baseline and savings to be achieved

Carbon emissions total 2005/6 (CO ₂ e)	5,115,877
Carbon emissions total 2011/12 (CO ₂ e)	4,410,824
Percentage emissions saving achieved against baseline by end 2011/12	13.8%

Section 2 – projects planned, underway or recently completed

Project	Cost		Annual saving		Payback (Years)	% saving against 2005/6 baseline
	Capital	Revenue	Financial	Carbon (kg estimated)		
Replacement of cremators, commissioning 2012	738,412			190,648		3.7
Lighting replacement at Regent Arcade car park, commissioned April 2012	41,463		22,024	200,491	1.9	3.9
Replacement of corridor lights at Town Hall	1,849		3,259	12,796	0.6	0.3
Evaporative cooling in Municipal Offices server room, 2012/13	15,000	350	9,000	45,369	1.6	0.9
Voltage optimisation 2012/13:						
- Depot	20,820			16,370	6.5	0.3
- Town Hall	20,346			16,707	6.2	0.3
- Leisure@ dryside (Municipal Offices to be considered)	21,798			20,100	5	0.4
Lighting replacement in swimming pool hall	29,400		14,584	41,060	2	0.8
Rationalise corporate printing, complete 2012/13			(elec) 3,687 (printing) 12,000	10,660		0.2

Project	Cost		Annual saving		Payback (Years)	% saving against 2005/6 baseline
	Capital	Revenue	Financial	Carbon (kg estimated)		
Implementation of Citrix project to replace PCs / laptops (part of ongoing 'working flexibly' project)	116,000	39,528 (over 4 yrs to end 12/13)		16,200 (total for 80x PCs)		0.3
ESTIMATED TOTAL REDUCTION				570,401		11.1
Other activities:						
<ul style="list-style-type: none"> • Replacement of chandelier bulbs at Town Hall/Pump Room (still subject to trials) • Enforcement of side waste • Review of waste and recycling routing and scheduling (initially Cheltenham then consider whole company area) • Vehicle replacement (up to 3.5 tonne vehicle can expect to achieve a 5% increase in fuel efficiency from upgrading to a newer model) • Virtualisation of servers 						

Section 3 – potential future options

Project	Cost		Annual saving		Payback (Years)	% saving against 2005/6 baseline
	Capital	Revenue	Financial	Carbon (kg estimated)		
Install 57x smart meters for electricity (estimate 5% carbon saving based on evidence from SMEs)	16,530	18,525 (over 5 yrs)	84,208 (over 5 yrs)	85,292		1.7
Install 25x smart meters for gas (estimate 5% carbon saving based on evidence from SMEs)	8,175	9,875 (over 5 yrs)	122,740 (over 5 yrs)	80,004		1.6
Replace gas CHP unit at Leisure@ with biomass boiler plant room ^{1,2} (Cannot be considered until current lease expires in 2015)	See notes	5,750 to 8,450		822,608	6 to 8	16.1
Move out of Municipal Offices – notional 20% saving on gas & electricity	n/a	n/a	n/a	89,040	n/a	1.7
Remain in Municipal Offices and invest in building – notional 20% reduction in emissions from gas and	n/a	n/a	n/a	89,040	n/a	1.7

Project	Cost		Annual saving		Payback (Years)	% saving against 2005/6 baseline
	Capital	Revenue	Financial	Carbon (kg estimated)		
electricity						
Install PV ³ :	See note					
- Leisure@ (27.5% carbon saving)				94,983		1.9
- Town Hall (2 roofs, 7.23% saving)				14,795		0.3
- Municipal Offices (1.41% carbon saving)				4,639		0.1
- Depot (11.94% carbon saving)				52,141		1.0
Purchase zero carbon electricity (not currently available)				1,705,846		33.3
Other initiatives currently being investigated:						
<ul style="list-style-type: none"> • Replacing air conditioning at Leisure@ with alternative cooling system (costed at £30k, actual savings still subject to confirmation) • Replacing lights on top deck of Regent Arcade car park (costed at £32k, actual savings still subject to confirmation) 						
Further initiatives that could be investigated:						
<ul style="list-style-type: none"> • Installing PV on top deck of Regent Arcade and Grosvenor Terrace car parks or on land at the cemetery • Hybrid conversion to transit vans (supplier advertises 25% saving on fuel and emissions, grant funding may be available to cover part of cost) • Purchase of gas converted vans (local infrastructure not yet in place) • Reducing size and weight of vehicles (eg putting on lighter chassis) • Review of vehicle replacement policy • Switch to electric bin lifters on refuse vehicles rather than using hydraulic system 						

¹ Leisure@ is largest consumer of energy, accounting for approximately 25% of council's total emissions.

² Biomass is recognised as zero carbon and would also generate income through the Renewable Heat Incentive. There would be an option to lease or purchase the equipment (£275k to £350k depending on plant size and arrangement). At the current rate, income from the RHI would be approximately £49k per annum for 20 years, but this may have changed by 2015. Under the purchase option the council would receive the whole amount, under the leased option the council would receive a percentage of the RHI, which would increase over time. The cost and availability of fuel over the longer term is an issue that would need to be considered for plant of this size.

³ Gloucestershire County Council has recently agreed a procurement framework for PV and awarded the contract to a preferred supplier. The terms of the agreement are to provide free installation, free electricity and a small percentage of the tariff. These terms are available to the council. However, capital investment may be required to upgrade roofs to ensure they are suitable to carry panels. The carbon savings quoted are based on a feasibility study undertaken in April 2011.