

1. Public Sector

1. 1 Sector description

There are a wide range of public sector organisations in Gloucestershire, including local authorities, education establishments, health and social care organisations and the emergency services.

All of the Gloucestershire Councils recognise the importance of their leadership role in reducing community carbon emissions, including by managing and reducing their own CO₂ emissions, and working with other public sector organisations to do the same.

The Public Sector Task Group was established in 2008, and includes:

- Cheltenham Borough Council;
- Cotswold District Council;
- Forest of Dean District Council;
- Gloucester City Council;
- Gloucestershire County Council;
- Gloucestershire Hospitals NHS Foundation Trust;
- NHS Gloucestershire (formerly Gloucestershire Primary Care Trust);
- Stroud District Council;
- Tewkesbury Borough Council; and
- University of Gloucestershire.

The role of this group is to:

- Identify opportunities for joint working to support public sector organisations in managing and reducing emissions, contributing to reducing emissions from the Industrial and Commercial sector under National Indicator 186; and
- Co-ordinate reporting of local authority carbon dioxide (CO₂), particulate (PM₁₀) and nitrous oxides (NO_x) emissions to Government, as required by National Indicators 185 and 194.

1. 2 Emissions in this sector

It is not possible to disaggregate public sector emissions from the Government's Industrial & Commercial Sector data published under NI186. This sector accounted for 40% of emissions in 2005. In keeping with the overall Local Area Agreement (LAA) target, emissions from the sector need to be reduced by 9.1% by the end of 2010/11, against the 2005 baseline. This is in line with the Government target of reducing UK CO₂ emissions by 80% by 2050 (against 1990 levels).

Each member organisation has made varying progress to date in managing and reducing CO₂ emissions.

Cheltenham and Stroud Councils have been through the Energy Saving Trust's Key Account Management scheme, to manage council and community emissions. Gloucestershire County Council, Gloucestershire Hospitals NHS Foundation Trust, NHS Gloucestershire, and Cotswold, Forest of Dean, and Stroud District Councils have all developed Carbon Management Plans with the Carbon Trust. Gloucestershire County Council is working with the Carbon Trust to develop a new Carbon Management Plan which will run from April 2011-March 2020. The University of Gloucestershire has also worked with the Carbon Trust to manage emissions. Gloucester City has adopted an energy management strategy in 2003

and a climate change strategy in 2007 and along with Tewkesbury Council have been taking part in the Energy Saving Trust's 1-2-1 support programme in 2009/10 to produce an action plan to further address climate change, which runs from April 2009-2011.

Table 1: CO₂ baselines

Organisation	Baseline Year	Baseline CO ₂ emissions (tonnes)
Cheltenham Borough Council	2005/06	4,250 (buildings and fleet)
Cotswold District Council	2007	4,220 (buildings, fleet, business mileage, outsourced waste services mileage)
Forest of Dean District Council	2007/08	1,315 (buildings, fleet, business mileage)
Gloucestershire Constabulary	2009/10	7,265 (buildings)
Gloucester City Council	2002/03	1,247 (all sources)
Gloucestershire County Council	2006/07	62,700 (buildings, schools, street lighting, signals, signs & bollards, fleet, business travel)
Gloucestershire Hospitals NHS Foundation Trust	2008/09	27,292 (Scope 1, 2 and 3 emissions) ¹
NHS Gloucestershire	2007/08	4,300 (primary energy from buildings within estate)
Stroud District Council	2007/08	2,266 (buildings, fleet, business mileage)
Tewkesbury Borough Council	2006	1,885 (main offices, leisure centre, water, transport, staff commuting and business mileage)
University of Gloucestershire	2005/06 (Aug-Jul)	4,895 (buildings: Scope 1 ² 2,012; Scope 2 2,730)
TOTAL		185,397 tCO₂

¹ **Scope 1** Green House Gas (GHG) emissions are those directly occurring "from sources that are owned or controlled by the institution, including: on-campus stationary combustion of fossil fuels; mobile combustion of fossil fuels by institution owned/controlled vehicles; and "fugitive" emissions. Fugitive emissions result from intentional or unintentional releases of GHGs, including the leakage of HFCs from refrigeration and air conditioning equipment as well as the release of CH₄ from institution-owned farm animals." (ACUPCC Implementation Guide [11](#) p. 11). **Scope 2** emissions are "indirect emissions generated in the production of electricity consumed by the institution." (ACUPCC Implementation Guide [11](#) p. 11). **Scope 3** emissions are all the other indirect emissions that are "a consequence of the activities of the institution, but occur from sources not owned or controlled by the institution" such as commuting, air travel for university activities, waste disposal; embodied emissions from extraction, production, and transportation of purchased goods; outsourced activities; contractor owned-vehicles; and line loss from electricity transmission and distribution" (ACUPCC Implementation Guide [11](#) p. 11-12).

1.3 Sector target

Gloucestershire signed up to NI 186 in the spirit of striving to lead on community emissions reduction, and as such seek for each Public Sector Task Group member to reduce its own emissions by at least 9.1% by the end of 2010/11, in line with the LAA target.

A 9.1% reduction on baseline CO₂ emissions from these public sector organisations would reduce their combined annual emissions by in the order of 16,000 tonnes by Mar 2011 (bearing in mind the varying baseline dates). The majority of organisations in the Task Group have adopted individual CO₂ emission reduction targets.

Table 2: Public Sector Organisation Targets

Organisation	CO ₂ Reduction Targets
Cheltenham Borough Council	15% reduction by 2010 on 2005/06 levels and 20% reduction in energy consumption over the same period. Also agreed 3% reduction with Cheltenham Low Carbon Partnership from January to December 2009. Cheltenham Council has also signed up to the 10:10 campaign, committing them to a 10% reduction in CO ₂ emissions by 2010/11.
Cotswold District Council	25% reduction from service provision activities against 2008/09 baseline by Dec 2015
Forest of Dean District Council	25% reduction in direct carbon emissions by 2012/13 based on a 2007/08 baseline
Gloucestershire Constabulary	10-20% reduction in direct carbon emissions by 2010/11 based on a 2009/10 baseline
Gloucester City Council	Increase amount of electricity generated in Gloucester from low carbon or renewable sources to a minimum of 11% by 2010; Reduce CO ₂ emissions from principal buildings owned by the City Council by 20% by 2010
Gloucestershire County Council	2.5% pa with milestone reduction targets against the 2006/07 baseline of 10% by 2012; 30% by 2020; and 60% by 2050 (being reviewed). Gloucestershire County Council has also signed up to the 10:10 campaign, committing them to a 10% reduction in CO ₂ emissions by 2010/11 (10:10 excludes schools and outsourced emissions).
Gloucestershire Hospitals NHS Foundation Trust	20% reduction from 2008/09 baseline by April 2015 (3.3% reduction per annum).
NHS Gloucestershire	10% reduction from 2007/08 baseline by April 2015 (3% reduction per annum).
Stroud District Council	Reduce CO ₂ emissions from its' direct operations by at least 35% by the end of the 2010/11 financial year based on a 2007/08 baseline
Tewkesbury Borough Council	10% decrease in energy use by 2010 (from 2006), looking at mileage data
University of Gloucestershire	30% reduction by the end of financial year 2013/14 from a baseline year of 2005/06

1. 4 Public Sector Organisation 2009/10 CO₂ Emissions

Table 3: CO₂ Emissions

Organisation	CO ₂ Emissions (tCO ₂)		2010/11 Target
	2008/09	2009/10	
Cheltenham Borough Council	3,991	4,028	Ongoing annual target of 3% reduction. Signed up to 10:10 campaign - aspiration to achieve 10% in 2010/11
Cotswold District Council	3,256	3,746	Ongoing annual target of 3.6% reduction
Forest of Dean District Council	1,265	1,193	Ongoing annual target of 5% reduction
Gloucestershire Constabulary	Didn't start monitoring until 2009/10	7,265	Carbon Trust estimates 10-20% reduction on 2009/10 baseline by 2012/13*
Gloucester City Council	4,975	4,541	Signed up to 10:10 campaign: aspiration to achieve 10% in 2010/11
Gloucestershire County Council	65,452	61,315	Ongoing annual target of 2.5% reduction. Signed up to 10:10 campaign - aspiration to achieve 10% in 2010/11
Gloucestershire Hospitals NHS Foundation Trust	27,292	27,857	Ongoing annual target of 3.3% reduction per annum
NHS Gloucestershire	4,850	5,100	Ongoing annual target of 3% reduction per annum
Stroud District Council	2,868	2,837	Signed up to 10:10 campaign: aspiration to achieve 10% in 2010/11
Tewkesbury Borough Council	1,778		10% reduction in energy use by 2010/11
University of Gloucestershire	4,738	4,558	Ongoing annual target of 6% reduction per annum
Total*	118,699	115,175	

* Totals exclude Tewkesbury and Gloucestershire Constabulary

Table 3 Comments

Cotswold District Council

CDC's NI185 Outturn 2009/10 - +15% (3,746tCO₂) – this is compared to the amended 2008/09 baseline which is now 3,256tCO₂. Note: reductions were made in CDC's carbon emissions from stationary sources, in-house fleet vehicles and business travel. The increase in emissions results from a significant increase in SITA's waste collection emissions due to service improvements – collection of cardboard recycling doubling no. of recycling vehicles due to high volumes of recycling and weekly collection of organic waste as food caddies were introduced. It has been calculated that accounting for the GHG emissions savings diverting waste from landfill the overall picture is positive resulting in a reduction in GHG gases.

Cheltenham Borough Council

Carbon emissions have remained static over the two year period. Within this overall figure emissions from gas consumption went down by 4%. Emissions from electricity rose by 4%. Results were mixed across the buildings, but the increase can largely be accounted for by electricity use at the council's recreation centre, which was open for only part of the year in 2008/9. Emissions from fleet rose by just over 5%, the reasons for this are not clear and further investigation is underway.

Gloucestershire Constabulary

*The Constabulary has concentrated on the accurate monitoring of the data and we are only beginning to look at targets. The Carbon Trust has advised 10 – 20% reductions are possible and we have put together an action plan, target dates are yet to be approved.

NHS Gloucestershire

The 09/10 outturn carbon footprint is 5,100 tonnes primary energy. This is an increase from 07/08 however; floor areas have increased by 10% over the same time period to reflect increased service delivery.

Stroud District Council

Over the past few years SDC has addressed most of the 'low hanging fruit' in terms of energy efficiency measures in our own operations and this has resulted in substantial carbon savings. As the years progress considerable investment will be needed to achieve continuing reductions. During 2009/10, despite an exceptionally cold winter, improved data capture and further service improvements have resulted in a reduction in both buildings and transport emissions saving 111 tCO₂.

1.5 Public Sector Action Plan

Table 4: Organisation actions, planned for 2010/11

Financial Year/ Actions	Estimated Annual Saving/ Cost Avoided	
	£	CO ₂ (tonnes)
Cheltenham Borough Council		
Replacement of 50% of security lighting at Depot	2,519	10.8
Installation of Power perfector voltage optimisation kit	15,700	91.5
Certero power management software for IT network	20,481	120
Completion of Depot rationalisation – leading to reduced fuel consumption from refuse lorries	*Not known	68
Citrix Thin Client		*Not known
Double glazing at Depot offices		*Not known
Fuel monitoring & saving trial		*Not known
Staff awareness campaign	Not measurable	Not measurable
Total Estimate	£38,700+	290 tCO₂
Cotswold District Council		
Voltage Optimisation Trinity Road	6,550	31
Lighting Controls Bourton LC	2,250	11
SMART Meters (7 main sites)	19,000	107
Solar Panels		*Not known
Waste Service Re-Zoning	*Not known	120
Waste Vehicles Speed Restrictions		*Not known
Green Travel Plan inc. LPG vans, pool cars, pool bikes	Pool cars~£2,000 LPG Vans = Cost neutral	*Not known Pool cars = 2 LPG Vans = 11
Total Estimate	£29,800+	269+ tCO₂
Forest of Dean District Council		
Leisure Centre (Lydney) Pool Hall lights change to LED	973	8
Leisure Centre (Lydney) fitness suite lights change to LED	1099	8
Leisure Centre (Lydney) pool – fit pump inverters	2218	26
Insulating Coleford Offices	1,500	10
Investigating renewable energy (PV)	500	2
Coleford Offices – communal lights change to LED	500	2
Coleford Offices – communal lights sensors fitted	500	2
Total Estimate	£7,290	58 + tCO₂
Gloucester City Council		
Wind turbine 225kWh at Alnay Island	302,075	128
Pool Covers for training pools for GL1	26,110	53
Voltage master / voltage reduction active energy from 240V to the EU 230V Standard at all main sites	94,000	180
Biomass boiler at Oxstalls tennis centre	96,000	55

Financial Year/ Actions	Estimated Annual Saving/ Cost Avoided	
	£	CO ₂ (tonnes)
Variable speed pumps at GL1 leisure centre	24,000	24
Lighting scheme at GL1 Leisure Centre/ Oxstalls Tennis Centre	159,000	230
Modernise heating controls, control valve installation & decommissioning at North, Herbert Kimberley and Phillpotts Warehouses	27,550	255
Fabric air-tightness draught proofing at Guildhall Arts Centre	16,907	20
Live energy consumption display at Herbert Warehouse reception	8,450	5
Zoned metering and Staff Incentive Scheme at North, Herbert Kimberley and Phillpotts Warehouses.	not measurable	not measurable
Total Estimate	£754,092	Approx 950 tCO₂
Gloucestershire Constabulary		
Commence analysis of electrical consumption data		
Undertake in depth energy audits of key premises		
Progress the Carbon Trust audit findings to plan reduction in Carbon Footprint and target quick wins		
Following the completion of accurate energy consumption data and calculation of the carbon footprint, set reduction targets inline with national trends.		
Install "smart" meters on gas supplies		
Continue to work with the Estates Strategy Team to provide input in respect of sustainability issues		
Continue to progress non-compliance identified in ISO 14001 audit		
Merge existing plans for 3 main into one action plan and promote its activities		
Gloucestershire County Council		
Street lighting Part Night Phase 2	21,174	172
Server Virtualisation	38,480	260
Cheltenham Library	900	6
Shire Hall Insulation Block 1	3,750	28
Shire Hall Insulation Block 5	5,000	37
Shire Hall Lighting Block 1	6,300	38
Shire Hall Lighting Block 5	6,300	38
Archdeacon Insulation	1,375	10
ICT Powerdown	82,200	548
LED Traffic Lights	90,000	593
Champions and Campaigns Shire Hall	30,000	200
Champions and Campaigns Other Offices	34,500	230
'Young Energy People!' 8 Secondary Schools	50,500	336
AMPS Capital Programme	Can't quantify yet	Can't to quantify yet
AMPS RIEP BEMS	Can't quantify yet	Can't quantify yet
Business Mileage, Env 5%	15,000	16
Business Mileage, BM 2.5%	3,400	4
Total Estimate	£388,879	2,516 tCO₂
Gloucestershire Hospitals NHS Foundation Trust		
GRH Energy Centre B – Replace Two Existing Burners and Install a Summer	17,878	105

Financial Year/ Actions	Estimated Annual Saving/ Cost Avoided	
	£	CO ₂ (tonnes)
Boiler		
Variable Speed Drives for Larger Pumps and Fan Motors	42,279	264
BMS Control of Discrete Air Conditioning "Splits"	11,531	72
Insulation Upgrade Steam and Heating Pipework	3,916	23
LED Street Light upgrade	4,258	27
LED Lighting Replacement GRH Lift Landings	2,317	14
Basement Corridor LED Lamp Replacements	2,934	18
Relocation and upgrade of HWS Calorifiers to PHEs from St Lukes 1 to College Road Wing	8,700	38
Additional metering and BMS upgrades	7,500	112
PN07-04 Temperature Control Settings	7,500	701
Environmental Champions – awareness raising and campaigns	15,000	310
Total Estimate	£123,813	1,684 tCO₂
NHS Gloucestershire		
Heat and Ventilation Controls Optimisation at Stroud Hospital	4,018	20
Heating Controls Improvement at the Dilke	10,960	106
Ventilation Improvements at the Dilke	4,383	21
Energy Management Practices at Lydney Hospital	1,583	8
Entrance Doors Improvement at the Dilke	2,367	11
Variable Speed Drive on Main Circulation Pump at Cirencester Hospital	1,430	6
Controls linked to BMS systems at Cirencester Hospital	2,310	12
Loft insulation could apply to all of our Community Hospitals.	10,890	56
Pipework insulation could apply to some of our Hospitals and Health Centres (e.g. Tewkesbury Hospital is one example)	667	1
Automatic lighting controls for toilets and kitchen areas for community hospitals	3,000	13
Total Estimate	£41,608	254tCO₂
Stroud District Council		
Variable Speed Drive (VSD) – SPLC	3,205	38
Replace existing PC's with Thin Client (continuing)	8,661	103
Replacement lighting in the Council Chamber	662	2
Brunel Mall Lighting reduced use	6,088	36
*New humidity controlled ventilation with VSD fans at SPLC (*subject to funding)	13,000	77
Total Estimate	£31,616	256 tCO₂

Financial Year/ Actions	Estimated Annual Saving/ Cost Avoided	
	£	CO ₂ (tonnes)
Tewkesbury Borough Council		
Energy Awareness Campaign (Own house in Order)	Unable to quantify	Unable to quantify
Routine Maintenance	Unable to quantify	Unable to quantify
Sustainable Energy feasibility	Unable to quantify	Unable to quantify
Total Estimate	£-	-
University of Gloucestershire		
Space rationalisation, relocation and closure of Pittville Studios	83,500	500 (savings won't register until 2011/12)
Automated Meter Reading	25,384	152
PC Cluster Power Management	3,591	21.5
Printer rationalisation	5,511	33
Total Estimate	£117,986	706.5 tCO₂
TOTAL identified estimated savings/ cost avoidance for 2010/11 actions	£1,533,784+	6,277+ tCO₂

Table 4 Comments

Cheltenham Borough Council

- Citrix Thin Client: Phased Implementation begins this financial year, but 2-3 years to complete – replacement of each PC with dumb terminal will reduce power usage by 90%, starting with remote workers.
- Double Glazing at depot offices: Part of planned maintenance programme. Unable to compare heating cost until double glazing in place.
- Fuel monitoring and saving trial: Joint trial with Tewkesbury BC. Telematics and tracking device fitted to vehicles to measure driving activities – acceleration, braking, idling times. Data used to produce Energy Efficient Driving Index score, drivers then receive training on benefits of changing driving habits. Predicted savings are anything up to 17%, although this considered unlikely in urban setting. Effectiveness is only measurable through monitoring.

Cotswold District Council

- Solar panels: Feed-In-Tariff working group has been set up to carry out an options appraisal of council's own investment vs. third party investment
- Waste service rezoning: Worked into contract costs
- Waste service speed restrictions: SITA currently putting together business case
- Green travel plan: Savings on many projects e.g. tele-conferencing and car sharing dependent on uptake

1.6 Public Sector Task Group Actions

Actions	Target	Estimated CO ₂ savings (tonnes)	Status
<p>Reducing public sector emissions Member organisations to review planned actions and identify organisation and joint opportunities to reduce public sector emissions</p> <ol style="list-style-type: none"> 1. Map existing emissions reduction activity to understand the gap between the sector target and organisational targets and action within the group; 2. Develop organisation annual action plans to reduce emissions, with quarterly monitoring of progress towards achieving agreed targets; 3. Build on the developing awareness of and commitment to tackling climate change amongst senior staff and local authority councillors, especially those who have taken strong leadership positions; 4. Raise the awareness and commitment of staff, including awareness campaigns and staff initiatives; 5. Develop appropriate collaborative actions, including information exchange and access to funding/ support programmes; 6. Report to Government on local authority emissions, as required by National Indicators 185 and 194 for 2009/10 and 2010/11. 	<p>9.1% reduction on baseline emissions by Mar 2011</p>	<p>5,000 in 2010/11</p>	
<p>Delivery partners Carbon Trust Energy Saving Trust Glos District Councils Gloucestershire County Council NHS Gloucestershire Severn Wye Energy Agency University of Gloucestershire</p>	<p>Monitoring procedures</p> <ul style="list-style-type: none"> • Quarterly monitoring of progress towards achieving agreed targets; • Annual report to Government on local authority emissions, as required by National Indicators 185 and 194. <p>Resource Implications Estimated annual savings from implementing organisational plans for 2010/11, £770,000, funded by the respective organisations</p>		