



Gloucestershire Energy Strategy

2007 -2017

Executive Summary

April 2007

Gloucestershire First

Gloucestershire First is an enabling partnership organisation, with the overall aim of driving forward the Gloucestershire economy under which a number of partners in the field of economic development share and coordinate their strategies and contribute to an overall economic plan for the County. The main focus of the partnership's work is strategic in nature although a significant element of activities is in delivery.

The Gloucestershire First Partnership includes the following organisations
South West Regional Development Agency, Government Office for the South West, South West Regional Assembly, Gloucestershire County Council, Cheltenham Borough Council, Cotswold District Council, Forest of Dean District Council, Gloucester City Council, Stroud District Council, Tewkesbury Borough Council, Gloucestershire Chamber of Commerce & Industry, CBI, Federation of Small Businesses, Learning & Skills Council Gloucestershire, Business Link Gloucestershire.

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THE ENERGY STRATEGY FOR GLOUCESTERSHIRE

Executive Summary

Overview

This is a brief summary of the strategy and action plan to create a sustainable energy future for Gloucestershire, which aims to provide a comprehensive and systematic approach to meeting Gloucestershire's energy needs. It shows how the integration of actions to minimise energy demand, to use energy efficiently and to use sustainable energy sources, can deliver more sustainable communities and minimise the impacts of climate change. For brevity, unless otherwise stated, this strategy relates to Gloucestershire, and advocates sustainable solutions.

The project to develop the strategy was commissioned by Gloucestershire County Council in association with Gloucestershire First and its partners, and with support of the District Councils. The initial research and drafting of the strategy was undertaken by ESD Consultants in consultation with Gloucestershire First's partners and other stakeholders. The strategy in its present form was produced by members of the Gloucestershire Energy Strategy Steering Group with valued input from the Cornwall Sustainable Energy Partnership (CSEP) in Cornwall.

The structure of this strategy and delivery plan is based on that of the CSEP, which is regarded as an exemplar and in 2003 was chosen by the European Commission's Directorate General of Transport and Energy as the best practice model for sub regional partnerships. Special thanks is given to Tim German, CSEP Manager, for sharing best practice and energy information with us.

The implementation of the actions in this strategy will:

- Put Gloucestershire on the path to dramatically increase its current sustainable electricity generating capacity to reach a target of 40 MW by 2010 - retaining a greater part of the estimated £700m annual energy bill, of which over 98% currently leaves the local economy
- Guide and encourage the County in using best practice to cut carbon emissions from energy use in all sectors, and make a real contribution to the global effort to reduce the risks from climate change.
- Enable every resident to have access to the basic energy services they need to have a good quality of life at an affordable price, reducing the high number of households that cannot afford to keep warm at a reasonable cost.

The Gloucestershire Sustainable Energy Partnership (GSEP) will be the main catalyst and deliverer of this strategy and action plan. This format is based on the successful partnership in Cornwall designed to harness the skills, expertise and resources of all relevant sectors to deliver sustainable energy solutions. Local authorities and other public sector organisations, businesses and the public all have a role in implementing this strategy and in enjoying the benefits it delivers. The implementation of actions will be monitored at least annually and the strategy revised every three years.

Background

The UK is a signatory to the Kyoto Protocol which sets quantified emission limitations and reduction obligations with respect to a basket of six gases. Of these, carbon dioxide (CO₂), which derives from the burning of fossil fuels such as coal, oil and gas, is the most important. Methane (CH₄) and nitrous oxide (N₂O) emissions are also substantial contributors to the problem.

The UK Government has set a target of a 20% reduction from 1990 levels of CO₂ emissions by 2010, and has an aspirational target of a 60% reduction by 2050. To assist in reaching this, the UK aims to generate 10% of its electricity supplies from renewable energy sources by 2010, and the Government's Energy White Paper aspires to this reaching 20% by 2020.

The South West Regional Development Agency (SWRDA), via Regen SW, has published the Regional Renewable Energy Strategy, setting targets of 11-15% by 2010, and this has been included in the Regional Planning Guidance.

Mainstream energy companies such as Powergen, Shell, and BP all see renewables as a major business development area. Their activities in this new market will create opportunities for SMEs to supply consultancy, services and goods etc.

"The Regional Economic Strategy suggests that the renewable energy sector could create 12,000 new jobs and generate an extra £260 million for the region's economy over a ten year period."

Source: Regional Renewable Energy Strategy for the South West of England 2003 - 2010

UK energy consumption increased by 10% between 1990 and 2001, with transport accounting for over one-third of the overall energy used. The UK is now a net importer of energy and therefore vulnerable to fluctuations in supply and/or price. Measures to increase energy efficiency and conservation and to reduce fuel poverty are vital elements in the mix of actions the County must take.

Gloucestershire needs to ensure that it shares in the economic benefits of the projected growth and development of the environmental technology sector. The increasing production of renewable energy can provide a new impetus for rural diversification and regeneration, and enable the County to reduce its greenhouse gas emissions and be more self-reliant in energy generation.

Environmental Issues

Gloucestershire is situated in an area of highly attractive landscape with much of the land designated as an Area of Outstanding Natural Beauty, with two areas classed as greenbelt. There is a valued cultural and historical heritage, and a good level of biodiversity. The River Severn, the longest river in Britain, has the second largest tidal range in the world and opportunities for energy generation should be explored. A high degree of sensitivity to the aesthetic and environmental impact on the rural landscape of suggested energy developments is required, e.g. when dealing with the proposed positioning of any large wind turbines.

The Strategy must fit within the framework of policies and initiatives existing at the international, national, regional and County levels. There is no intention to reproduce existing work, where appropriate information will be extracted from or reference made to relevant current documents including the subject areas:

Climate Change and Renewable Energy	Environment
Economic Development	Agriculture, Forestry, and Rural Development
Transport	Planning and Community Regeneration
Water and Waste Management	Housing and Sustainable Construction

Embedding sustainable energy into development

Gloucestershire has only around 9 MW of renewable electricity installed capacity at present, making it the county with the lowest sustainable energy generation in the region. A further 30 - 40 MW of new capacity is needed to meet the County's 2010 target. Going forward it is essential that pragmatic and cost effective sustainable solutions are identified and implemented in as many energy related areas as possible.

The proposed hierarchy of priorities for sustainable energy reflects the statement in the Government's Energy White Paper that states: *"The cheapest, cleanest and safest way of addressing our energy policy objectives is to use less energy"*.

However, the urgent need to reduce carbon emissions will require the use of all the means available. In practical terms, initiatives to minimise energy demand, improve energy efficiency and develop renewable energy technologies will need to go on in parallel and in many instances will be the elements of an integrated approach. We must work closely with partners at both local and regional levels, and REGEN SW will play an important role.

The Vision

Gloucestershire will have an affordable, secure and sustainable energy supply, which integrates energy conservation, efficiency, and generation while maximising business opportunities.

Sustainable energy will be a vital part of sustainable development in Gloucestershire. This will be driven by; the need to cut carbon emissions to reduce the impacts of climate change, the need to diversify agriculture, the opportunities to further develop local sustainable energy related businesses, and through the desire to protect our landscape and environment. Specifically, following this strategy and action plan, the period to 2017 is likely to see:

- A better informed County population aware of the need to use less energy, be more energy efficient, recycle and, whenever possible, use or even generate energy from sustainable sources
- Improving energy efficiency in all Gloucestershire homes with a focus on low-income homes, helping to reduce fuel poverty. All new housing being designed to be energy efficient and provide 'affordable warmth'
- Businesses becoming more energy efficient as a result of the provision of comprehensive advice and support on environmental management
- Public buildings and activities becoming as energy efficient as practicable and using sustainable energy whenever possible

- Increasing use of small scale, low and zero carbon technologies integrated into building developments. These will include ground source and air source heat pumps, solar water heating, photovoltaics, micro CHP, and micro wind turbines. These technologies being used to tackle fuel poverty in 'hard to heat' homes
- The planning system, Community Strategy, and other relevant strategies and plans placing far greater emphasis on sustainable energy use and supply in all new developments and as key elements of delivering sustainable communities. County plans and strategies will assess and address the likely impacts of climate change so as to be as efficient as possible in coping with them
- A major mixed-use development in Gloucestershire, such as that at Littlecombe near Dursley, becoming a demonstration model of a sustainable community. This might include low-energy design of buildings, district heating delivered by biomass and/or conventional fired combined heat and power, the use of solar thermal and photovoltaics as appropriate, and the provision of alternative fuels for transport
- The growing of energy crops and development of supply chains playing an important role in the diversification of agriculture. Small scale biomass energy plants being used to supply energy to public buildings, new housing and business premises. Agricultural, horticultural and other workers understanding how best to adapt to climate change
- Waste management, recycling, and energy from waste being fully addressed in a comprehensive Waste Management Strategy for Gloucestershire
- Further and higher educational establishments becoming centres of sustainable energy research and training. School age children being taught about the key issues surrounding climate change and energy. The education sector working with businesses in the county to provide a workforce with the range of scientific, management, technical and craft skills required by the sustainable energy industry

Guiding Principles

This energy strategy adheres to the principles of sustainable development and based upon this vision the guiding principles are to *deliver local benefits by:*

- Developing the ability of Gloucestershire to meet its own energy needs and to retain a greater part of energy expenditure in the County
- Creating new opportunities for the employment of local people, widening the skills base and career development opportunities
- Creating new opportunities for local businesses and particularly small construction companies and clusters of companies including Gloucestershire manufacturers of sustainable energy products
- Helping local farmers diversify into viable sustainable energy activities, including renting sites for wind turbines, growing energy crops and creating a market for the crops
- Strengthening social capital in Gloucestershire communities by promoting community led projects
- Securing development that respects the quality, character, diversity and local distinctiveness of the natural and built environment
- Assessing the most sustainable approaches to minimising and managing waste and, where appropriate, recovering energy from residual waste using advanced technologies such as pyrolysis, gasification and anaerobic digestion.
- Recycling profits from energy developments and supplies into the Gloucestershire economy by means of local energy service companies (ESCo's).
- Reducing the risk of fuel poverty by improving thermal efficiency of homes and particularly addressing the need to reduce heating costs for those without access to gas and in hard to heat homes
- Reducing the constraints on the capacity, and security of, electricity supply for Gloucestershire's businesses imposed by the County's location in the electricity grid
- Ensuring that, wherever possible, sustainable energy developments add to the interest and the image of tourism in the county and that care is taken not to impact negatively on this sector.

Aims and Objectives

This strategy aims to address the energy needs of Gloucestershire from 2007 to 2017 through low carbon solutions, and to encourage businesses of all sizes to realise the business and investment opportunities that will arise from a sustainable energy economy. The strategy proposes the formation of a Gloucestershire Sustainable Energy Partnership (GSEP) to combine the expertise and knowledge of organisations within the public, private, health, community and voluntary sectors.

It will aim to actively integrate sustainable energy into countywide strategies by:

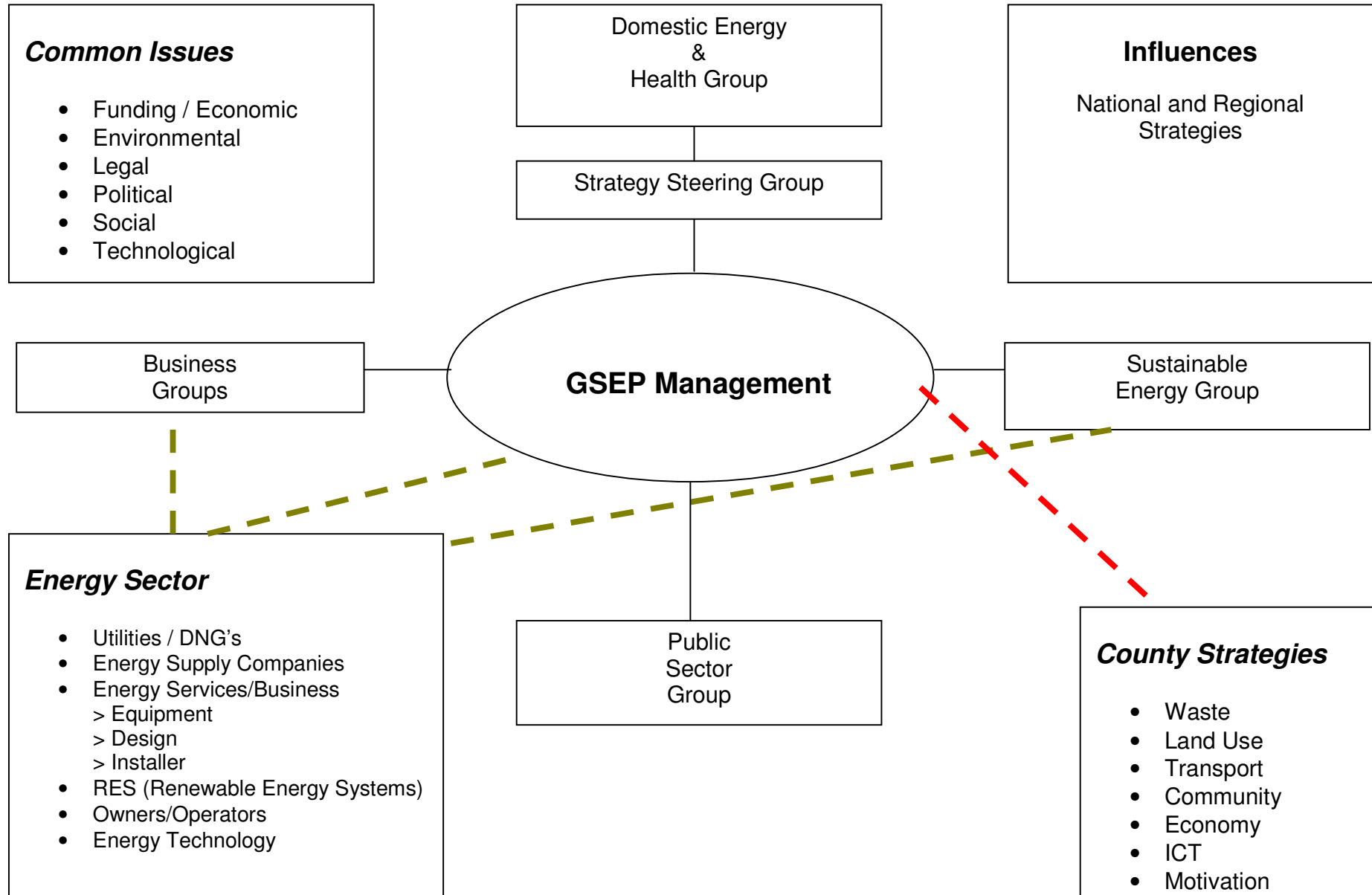
- Encouraging the inclusion of sustainable initiatives into existing partnerships and programmes
- Promoting the development of new sustainable energy programmes
- Prioritising activities that explicitly address climate change and fuel poverty issues.

The GSEP should set out to achieve the following objectives by 2017:

- Ensure that sustainable energy is incorporated into all development plans, policies and strategies for existing and new initiatives in Gloucestershire. *This needs to be undertaken at regional, county and district levels. It is crucial that GSEP makes a major input into the implementation of the Regional Renewable Energy Strategy for the South West of England 2003-2010 and development of a Regional Energy Strategy*
- Stimulate energy savings resulting in a significant reduction in energy use per £ of GDP in Gloucestershire. *This should be seen within the context of the need for Gloucestershire to reduce carbon emissions in the domestic, public and business to make a proportionate contribution to the UK target for achieving 20% reduction by 2010*
- Reduce fuel poverty and its associated health problems in both urban and rural areas in Gloucestershire. This will be heavily reliant on co-operative effort between all the partners in GSEP and focusing funding from a wide range of sources. It should be set in the broader context of creating sustainable communities and the need for education and training to address capacity issues
- Stimulate the development of at least 5 new renewable energy projects that are broadly acceptable to businesses, residents and planners in Gloucestershire. *This should be seen in the context of the need to develop at least 30 MW of new renewable electricity capacity to achieve Gloucestershire's contribution to the 2010 regional renewable target.*

The action plans are related to the structure of GSEP and its four task groups, as set out in the following diagrams.

GSEP Structure



Suggested sample make up of groups NB – This is a NON exhaustive list of members

Public Sector Group	<ul style="list-style-type: none">• GCC• SWRDA• PHT• LC / DC (LA)• Education• Emergency Service
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Business Group	<ul style="list-style-type: none">• FSB• CEEMG• CoC• Developers• Transport• Advanced Engineering• Finance• GEBF• Rural Economy• CBI
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Sustainable Energy Group	<ul style="list-style-type: none">• SWEA• Vision 21• RAC• Forestry Commission• BWEA• Micro Hydro• NGO's
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Domestic Energy & Health Group	<ul style="list-style-type: none">• SWEA• PHT• Building Developers• NGO's
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Actions summary – timeframes and milestones

This table sets the actions to implement the strategy with suggested timeframes and milestones. This covers the period to 2010. The key partners are suggestions of organisations primarily outside the Gloucestershire Sustainable Energy Partnership. All actions are priorities however some have been designated high priority.

Actions summary – timeframes and milestones

ACTIONS	Suggested key partners	Timeframe	Milestones / Targets	Priority
Actions for whole partnership				
1a. Create GSEP	GCC, utilities European Commission Glos 1 st	2007	GSEP created by April 2007	High
1b. Develop a communication strategy		2008	To have process in place	
2. Establish Energy Service Companies	Private sector company, local authorities, utilities, EST, Carbon Trust	2007-2008	2007 Scope possible roles formulate funding bid 2008 obtain funding for feasibility/business plan 2008 establish ESCOs	High
3a. Input into regional energy strategies and other regional strategies	REGEN SW SWRDA GOSW Glos 1 st Regional Assembly Sustainability SW	2007-2017		
3b. Regional partnering		2007	Establish efficient relationship with CSEP and others	
3c. Encourage large company collaboration	Business Link Glos Glos 1 st EST	2007-2008	Collaboration in place with two large companies	
4. Integrate sustainable energy in County level strategies and plans	GCC Glos 1 st	2007-2017	Adoption of Local Auth. plans & documents, Local Area Agreements, revisions of County community strategy	High
5. Work with LSPs and integrate sustainable energy in district level community strategies, local development frameworks, and parish plans	LSPs, parish councils	2007-2009	At least 75% of plans to include sustainable energy by July 2008	
6. Create a common gateway for advice and support	EST REGEN SW GCC Glos 1 st	2007-2008	By October 2007 review current advice, support, and supplier details By June 2008 set up GES website	
Action for Domestic Energy and Health Task Group				
7. Investigate GIS map based database on A) levels of fuel poverty and B) energy efficiency of the housing stock	GCC, Utilities, Glos 1 st	2007	Map the whole Gloucestershire A) By March 2007 B) By October 2007	High
8. Fuel Poverty and Energy Efficiency Action Plan	GCC, district authorities, utilities, SWEA, voluntary sector, charities	2007-2008	Publish new plan by mid 2008	High

ACTIONS	Suggested key partners	Timeframe	Milestones / Targets	Priority
9. Develop programme for those 'able to pay'	EEAC, EEC	2008-2017	Pilot 'able to pay' zone in 2008	
10. Develop programme to address 'hard to treat' homes	Utilities, housing associations, district authorities	2008-2017	Pilot 'hard to treat' in 2008/9	High
11. Work with Parish Councils to create sustainable communities	GCC LA	2007-2008	By 2008 establish projects in 6 parishes	
12. Work with the SEF to promote the role of sustainable energy technologies in new housing schemes	Social housing providers, local authorities, DTI, SWRDA	2007-2010	Pathfinder project in 2007-2008 in Littlecombe	
Actions for Sustainable Energy Task Group				
13. Work with local and regional partners to assist in meeting the 2010 target for renewable electricity	GOSW, SWRDA, RegenSW, SEF, Sustainable SW	2007-2010	40MW installed capacity	High
14. Work with building developers and regeneration agencies to ensure that local renewable resources and sustainable energy technologies (providing heat and/or electricity) are considered in all developments	SWRDA, SWEED. LA planning depts, Constructing Excellence	2007-2010	Two demonstration project completed and delivered as a case study by 2010 Littlecombe, Gloucester Quay	High
15. Implement model planning policies to promote integration of RE technologies in new development	GOSW, REGEN SW Local Planning Authorities Regional Assembly	2007-2009	By Dec 2007 hold workshop with planners. By 2008 draft model planning policy. By 2008 include in all LDFs	High
Actions for Bio-Energy Working Group				
16. Promote development of small-scale biomass plant and markets for biomass energy	Gloucestershire Wood Fuels, REGEN SW Other biomass suppliers	2007-2009	Demonstrate plant by 2008	High
17. Promote the role of CHP in major developments	CHPA EST Carbon Trust RegenSW	2007-2009	One major project by 2008	High
Actions for Education Working Group				
18. Promote awareness of the benefits of RE and energy conservation in the context of sustainable communities	Institute of Electrical Engineers, EPSRC, Sustainable SW SWEA	2007-2010	Provide Energy Adviser 2007	High
19. Work with education / training organisations to ensure R&D and skills capacity related to RE is developed	Learning & Skills Council, Gloscat, RAC, University of Glos	2008-2010	30 trainees	High
20. Ensure training is available for elected members and officers in public sector and private sector organisations on sustainable energy technologies	Training providers	2007-2008	Training programmes, Online training through the GES portal	High

ACTIONS	Suggested key partners	Timeframe	Milestones / Targets	Priority
Actions for Public Sector Task Group				
21. Promote the procurement of 'green energy' and general procurement policies which take account of transport, impacts and energy efficiency	Green energy suppliers, ESCOs	2007-2010	All public sector organisations to aim to procure 100% green energy by 2010 if the resources are available. Progress against target to be reported annually.	High
22. Promote and demonstrate good and progressive energy management in public sector organisations	Energy managers CEEMG GCC sustainability officers	2007-2009	Develop case studies of good energy management in Gloucestershire by 2010	High
23. Integrate sustainable energy consideration in PFI contracts and in all public sector building development	Domestic Energy & Health Task Group, Dept of Health, Dept of Education and Skills, GCC, NHT	2007-2010	Facilitate integration of sustainable energy into at least three exemplar projects by 2010	High
24. Work with the Sustainable Energy Forum, local transport planners and the Business Sector Task Group to promote the use of alternative and renewably fuelled vehicles in public sector transport fleets	EST GCC Carbon Trust Transport Policy Team Sustainable Energy Task Group	2007-2009 feasibility study by each local authority 2010-2017	All LA to have some alternative fuel vehicles. A public sector organisation to be trialling alternative fuelled vehicles by 2008. All LA to have alternative fuel vehicles. Development of network of shared refuelling facilities with private sector.	
25. Reduce car journeys through use of ICT and green travel plans	GCC, Glos Broadband Programme. Vision 21. GEBF, Car Share Scheme	2007-2008 and then ongoing	All public sector organisations to commit to reduce travel mileage by 20% by 2008.	
26. Ensure LAs lobby Govt. for/or set commercial waste plans & targets	LAs GCC	2007	Plans and targets in place by 2008	High
Actions for Business Sector Task Group				
27. Work with the Sustainable Energy Task Group and Public Sector Task Group to promote the use of renewable energy powered and fuel cell vehicles in private sector transport fleets	EST / Powershift, Sustrans. Vehicle manufacturers, Fleet managers, Fuel distributors Form private sector alternative fuel vehicle procurement & sharing consortium	2007-2008 2008-2010	6 exemplar businesses to have some alternative fuel vehicles by 2008. 10 scheme members by mid 2008.	
29. Promote the benefits of sustainable design and incorporation of sustainable energy technologies in business developments	Envision Planers	2007-2017	Adopt appropriate planning policies 2008.	
30. Promote greater engagement with the Tourism industry	LA Sustainability Officers, Local Authority Tourism Managers/officers	2008-2012	Exemplar development by 2010. Promote greater use of CHP by hospitality sector. 10 major hotels have CHP by 2009	High