Joint Technical Evidence Paper WCS-MCS-10

Climate Change

Living Draft

October 2009

Contents

Section 1: Introduction

1. Climate change is already happening within Gloucestershire. The South West Climate Change Impacts Partnership have indicated that the South West (which Gloucestershire is part of) is likely to experience the following climate change impacts:[1]

   - The region is becoming warmer and by the 2050s average temperatures may be as much as 3.5°C warmer in summer;
   - High summer temperatures are becoming more frequent, and very cold winters are becoming increasingly rare;
   - Winters are becoming wetter (5 - 20% increase in precipitation is expected by the 2050s), whilst summers are becoming drier (10 - 40% decrease by the 2050s);
   - Relative sea level continues to rise, and could be as much as 80cm higher by the 2080s;
   - Changes to insurance costs and coverage are expected, in particular in vulnerable geographic areas or economic sectors;
   - Loss of habitats and indigenous species could occur as well as longer growing seasons and increased potential for novel agricultural crops.

2. This joint technical evidence paper will identify how relevant policies on climate change are being incorporated within the Gloucestershire Minerals and Waste Core Strategies.

[1] Further information on the South West Climate Change Impacts Partnership can be found at http://www.oursouthwest.com/climate/

Section 2: International Action on Climate Change

3. Some of the key international organisations, events and policies which have a direct (or indirect) effect on the formation of planning policies are listed below. Further information and relevant links related to these areas can be obtained from the Climate change: International action page of the DEFRA website (http://www.defra.gov.uk/environment/climatechange/internat/index.htm)

Kyoto Protocol

4. The Kyoto Protocol is the first ever international treaty to set legally binding emissions reduction targets on developed countries that have ratified it. Developed (Annex 1) countries agreed to targets that will reduce their overall emissions of a basket of six greenhouse gases by 5.2 per cent below 1990 levels over the period 2008-2012.

United Nations Framework Convention on Climate Change (UNFCC)

5. The Convention entered into force on 21 March 1994. It sets an overall framework for intergovernmental efforts to tackle the challenge posed by climate change. It recognises that the climate system is a shared resource whose stability can be affected by industrial and other emissions of carbon dioxide and other greenhouse gases. The Convention enjoys near universal membership, with 192 countries having ratified. Under the Convention, governments:

   - gather and share information on greenhouse gas emissions, national policies and best practices
   - launch national strategies for addressing greenhouse gas emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries
   - cooperate in preparing for adaptation to the impacts of climate change

European Climate Change Programme (ECCP)

6. The European Commission established the ECCP in 2000 to help identify the most environmentally effective and most cost-effective policies and measures that can be taken at European level to cut greenhouse gas emissions. The immediate goal is to help ensure that the EU meets its target for reducing emissions under the Kyoto Protocol. This requires the 15 countries that were EU members before 2004 to cut their combined emissions of greenhouse gases to 8% below the 1990 level by 2012.

EU Emissions Trading Scheme

7. In January 2005 the European Union Greenhouse Gas Emission Trading System (EU ETS) commenced operation as the largest multi-country, multi-sector Greenhouse Gas Emission Trading System world-wide. The scheme is based on Directive 2003/87/EC, which entered into force on 25 October 2003. Allowances traded in the EU ETS will not be printed but held in accounts in electronic registries set up by Member States. All of these registries will be overseen by a Central Administrator at EU level who, through the Community independent transaction log, will check each transaction for any irregularities. In this way, the registries system keep track of the ownership of allowances in the same way as a banking system keeps track of the ownership of money.

G8 Summit

8. The G8 (Group of Eight) is a forum, created in 1975, for governments of eight nations of the northern hemisphere: Canada, France, Germany, Italy, Japan, Russia, the United Kingdom, and the United States. Each calendar year, the responsibility of hosting the G8 rotates through the member states. At the 2008 G8 Summit in Toyako, Japan, the leaders of the G8 issued a statement demonstrating their commitment and strong leadership on climate change, setting out the need, together with the UNFCCC, to consider and adopt a global Long-Term Goal of a reduction in emissions of at least 50% by 2050. The G8 leaders also sent a clear message on their intention to take action and implement ambitious economy-wide mid-term goals and to agree a global international climate change framework when the 15th Conference of Parties to the United Nations Framework Convention on Climate Change meets in Copenhagen in 2009.

Intergovernmental Panel on Climate Change (IPCC)

9. The IPCC was set up in 1988 by the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP) to assess the scientific and technical aspects of climate change.

Section 3: National Action on Climate Change

The Department of Energy and Climate Change (DECC)

10. The Department of Energy and Climate Change (DECC)[2] was created in October 2008, bringing together energy policy with climate change mitigation policy.

11. The three overall objectives of DECC are:

- Ensuring our energy is secure, affordable and efficient;
- Bringing about the transition to a low-carbon Britain;
- Achieving an international agreement on climate change at Copenhagen in December 2009.

Office of Climate Change

12. The Office of Climate Change (OCC)[3] was set up in September 2006 and works across Government to support analytical work on climate change and the development of climate change policy and strategy. Many government departments are involved in tackling climate change, or in helping the UK and other countries adapt to its possible future impacts. The OCC is a shared resource for all departments.

13. The OCC's role is to:

- Run policy focused projects on difficult cross-cutting issues
- Programme manage (at a high level) the UK's climate change commitments
- Consolidate analysis and co-ordinate between departments
- Act as an advocate for climate change issues within government

14. Since the creation of the Department for Energy and Climate Change (DECC) in October 2008 the role of the OCC has evolved. The OCC has become part of DECC, and will lead the development of the department's overall strategy. However, because of the complexity of the climate change and energy challenge it will continue to retain a distinctive role and cross-cutting way of working, with other departments having a role in the Office's funding and governance.

[2] Further information can be obtained from the DECC website http://www.decc.gov.uk/default.aspx
[3] Further information can be obtained from the OCC website http://www.occ.gov.uk/

UK Climate Projections and the Government Plan of Action

15. At the time of writing (Summer 2009) a concerted programme of action in response to climate change is being pursued across the Government, led by DECC and Defra.

16. Starting with the publication by Defra of the latest UK Climate Projections, Ministers will set out the building blocks of a 'five point plan' designed both to reduce emissions at home and abroad and to protect and prepare for the changes that are already inevitable.

17. The five main areas are:

- Protecting the public from immediate risk
- Preparing for the future
- Limiting the severity of future climate change through a new international climate agreement
- Building a low carbon UK
- Supporting individuals, communities and businesses to play their part

Climate Change Act 2008

18. The UK has passed legislation which introduces the world's first long-term legally binding framework to tackle the dangers of climate change. The Climate Change Bill was introduced into Parliament on 14 November 2007 and became law on 26th November 2008[4].

19. The Climate Change Act 2008 enhances the UK's ability to adapt to the impact of climate change including that the Government has the power to require public authorities and statutory undertakers (companies like water and energy utilities) to report on how they have assessed the risks of climate change to their work, and what they are doing to address these risks.

20. This 'reporting power' was being consulted on at the time of writing - http://www.defra.gov.uk/environment/climatechange/adapt/legislation/reporting.htm

21. The report should contain:

- a summary of the statutory and other functions of the reporting authority – to ensure that they are taking into account the risks presented to all their functions;
- an assessment of the current and predicted risks to that organisation, or its functions, presented by climate change; and
- a programme of measures to address the risks highlighted above, including any policies or practices that are already being implemented

[4] Copies of the Climate Change Act 2008 can be obtained via the OPSI website at http://www.opsi.gov.uk/acts/acts2008/ukpga_20080027_en_1 .

National Planning Policy

22. The Government is committed to putting in place regional and local planning policies on adaptation to climate change, and to strengthen policies that will mitigate and reduce greenhouse gas emissions. Planners already have suitable instruments such as conditions, agreements, obligations and informatives, all of which can be used to respond to climate change on the local, regional and national level.

23. Planning Policy Statement 1 (PPS1), published in January 2005, sets out the Government's overarching planning policies on the delivery of sustainable development through the planning system. In December 2007, the Government published *Planning Policy Statement: Planning and Climate Change - Supplement to Planning Policy Statement 1.* This Planning Policy Statement (PPS) sets out how planning, in providing for the new homes, jobs and infrastructure needed by communities, should help shape places with lower carbon emissions and resilient to the climate change now accepted as inevitable.

24. To assist practitioners in implementing the PPS, CLG joined forces with the Homes and Communities Academy and the Planning Advisory Service to provide web-based practice guidance. This is available from the Home and Communities Academy website http://www.hcaacademy.co.uk/planning-and-climate-change . The content of the web-based guidance is drawn from the living draft that was developed on behalf of Communities and Local Government by Environmental Resources Management and Faber Maunsell, and made available in March 2008. The document has been developed into a web-based resource so that it can be refreshed with emerging practice and examples. The practice guide is designed to be read and used alongside the Climate Change PPS. It does not set or interpret policy but focuses on the 'how to', offering advice, ideas, examples of practice and signposts to further sources of information. It will be useful for regional planning bodies, planning authorities, developers, and community groups. The guidance sits within the policy framework provided by the PPS and does not make or change policy. It is designed to secure good practice.

25. Planning Policy Statement 25 (PPS25) sets out Government policy on development and flood risk. It's aims are to ensure that flood risk is taken into account at all stages in the planning process to avoid inappropriate development in areas at risk of flooding, and to direct development away from areas of highest risk. Where new development is, exceptionally, necessary in such areas, policy aims to make it safe, without increasing flood risk elsewhere, and, where possible, reducing flood risk overall. As well as making frequent references to climate change throughout the document, this PPS devotes an entire Annex to discussing the impacts of climate change in the context of the water environment.

26. Climate change is also a recurring theme throughout the companion document to PPS25 *Planning Policy Statement 25: Development and Flood Risk - Practice Guide*. This states that "*The impacts of climate change need to be taken account of in a realistic way and discussions between developers, the LPA and Environment Agency should result in an agreement of what allowances are acceptable."*

27. There is also a whole suite of planning policy statements and minerals policy statements whose contents have some relevance to climate change such as *PPS22 - Renewable Energy* and *PPS9 Biodiversity and Geological Conservation.*

"Making the right choices for our future: An economic framework for designing policies to reduce carbon emissions"

28. Defra and DECC published the above document in March 2009 a joint document setting out economic principles for use in selecting and designing policies to reduce the emissions of carbon dioxide and other greenhouse gases. It is designed to be especially useful to policy makers and those with and interest in the UK government's economic approach to tackling climate change.

The Nottingham Declaration

29. The County Council and the six District Councils within Gloucestershire have all signed up to the Nottingham Declaration on Climate Change[5]. The declaration was launched in October 2000 at a conference in Nottingham with 200 leaders, chief executives and senior managers of UK local government. It recognises the central role of local authorities in leading society's response to the challenge of climate change. By signing the Declaration, the Councils pledge to systematically address the causes of climate change and to prepare their community for its impacts.

The Local Government Association

30. The Local Government Association has produced a document entitled "Cutting through the green tape – the powers councils have to tackle climate change[6]" which highlights some existing powers, tools and examples which councils can use to tackle climate change and includes a section on planning powers.

The Waste Strategy for England 2007[7]

31. Annex E: Summary guidance on energy from waste (EfW) technologies. This contains an Energy from waste (EfW) technology matrix which details the estimated carbon savings in CO_2 equivalent by using an EfW technology as opposed to landfilling. The best technology appears to be MBT-RDF which when including the benefit of recycling and using a standard mix of municipal waste, could reduce CO_2 emissions by up to 570kg per tonne.

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[5] Further information on the Nottingham Declaration on Climate Change can be found at http://www.energysavingtrust.org.uk/nottingham

[6] This document can be downloaded from http://www.lga.gov.uk/lga/publications/publication-display.do?id=874295

[7] This document can be downloaded from the Defra website http://www.defra.gov.uk/ENVIRONMENT/waste/strategy/

Section 4: Regional Action on Climate Change

32. The Draft Revised Regional Spatial Strategy for the South West (incorporating the Secretary State's Proposed Changes) was published in July 2008.

33. Sections 1.6.9 to 1.6.13 of this document specifically address Climate Change with Policy SD2 Climate Change stating that:

- The region's contribution to climate change will be reduced by:
  - *Reducing greenhouse gas emissions at least in line with the current national targets, of 30% by 2026 (compared to 1990 levels), as part of a longer term reduction of 60% by 2050.*

- The region will adapt to the anticipated changes in climate by
  - *Managing the impact of future climate change on the environment, economy and society*
  - *Identifying the most vulnerable communities and ecosystems given current understanding of future climate change and provide measures to mitigate against these effects*
  - *Avoiding the need for development in flood risk areas and incorporating measures in design and construction to reduce the effects of flooding*
  - *Recognising and putting into place policies and measures to develop and exploit those opportunities that climate change will bring*
  - *Requiring 'future proofing' of development activity for its susceptibility to climate change*
  - *Improving the resilience and reliability of existing infrastructure to cope with changes in climate and in the light of future demand.*

The South West Climate Change Impacts Partnership

34. The South West Climate Change Impacts Partnership's[8] key role is to raise awareness of the impacts of climate change, inform and advise on the challenges and opportunities of climate change in SW England, and develop practical adaptation responses. It influences the strategies and plans of key partners and work with stakeholders across key sectors to enhance the region's resilience to the impacts of climate change.

[8] See footnote 1

Section 5: Local Action on Climate Change

Gloucestershire Local Area Agreement

35. The Gloucestershire Local Area Agreement[9] contains a National Indicator which specifically mentions climate change (NI 188 – Planning to adapt to climate change) as well others which are directly linked to climate change such as NI 186 – Per capita reduction in CO2 emissions in the LA area).

Gloucestershire Sustainable Community Strategy

36. The SCS[10] is a short strategy that outlines the key issues that partners and organisations in Gloucestershire agree they need to address. The SCS sets partners' ambitions for the next 10 years. Aim 1 states that "We make concerted local efforts to address climate change and deal with the consequences"

Gloucestershire County Council, Responding to Climate Change

37. In July 2008 Gloucestershire County Council adopted a comprehensive climate change strategy, *'Responding to Climate Change' (Corporate Climate Change Strategy) - July 2008*[11] and signed *The Nottingham Declaration*[12]

38. The strategy sets out targets on reducing carbon emissions and establishes a framework for action on adapting our services, managing our estate, and providing leadership to others. It also established the Climate Change Forum[13], bringing together elected Members and senior managers to review the Council's progress on climate change issues on a quarterly basis.

39. Gloucestershire County Council adopted a *Carbon Management Strategy and Implementation Plan*[14] in June 2007. which commits the Council to reducing CO_2 emissions by at least 2.5% a year, year on year from 2007/08, against the 2005/06 baseline, with milestone emissions reduction targets of:

- 10% by 2012
- 30% by 2020
- 60% by 2050 (under review)

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[9] Further information on the Gloucestershire LAA can be found at http://www.gloucestershire.gov.uk/index.cfm?articleid=12808

[10] Further information on the Gloucestershire Sustainable Community Strategy can be found at http://www.gloucestershire.gov.uk/index.cfm?articleid=15274

[11] Available to download from http://www.gloucestershire.gov.uk/index.cfm?articleid=1133

[12] See Footnote 5

[13] More information available from http://www.gloucestershire.gov.uk/index.cfm?articleid=92839

[14] Available to download from http://www.gloucestershire.gov.uk/index.cfm?articleid=1133

Gloucestershire Strategic Flood Risk Assessment (SFRA)

40. In December 2007 Gloucestershire County Council, Cheltenham Borough Council, Cotswold District Council, Forest of Dean District Council, Gloucester City Council, Stroud District Council and Tewkesbury Borough Council commissioned Halcrow to produce a Level 1 Strategic Flood Risk Assessment (SFRA) in accordance with Planning Policy Statement 25 (PPS 25). The outputs from the SFRA will give the County Council the necessary information to inform the Minerals and Waste Development Framework (MWDF) to ensure due regard is paid to flood risk in the creation of policies and plans. A Level One SFRA has been produced for each of the seven local authorities involved.

41. The aim of the SFRA process is to map all forms of flood risk and use this as an evidence base to locate new development primarily in low flood risk areas (Zone 1). Areas of 'low' (zone 1), 'medium' (zone 2) and 'high' (zone 3) flood risk are mapped using data collected from many sources, including the Environment Agency (Midlands and Thames regions), Gloucestershire Highways, Severn Trent, British Waterways as well as the six District Councils.

42. Whilst the Level 1 SFRA is primarily a desk based study, it has incorporated new data from the 2007 floods. It will allow the County Council to assess the proposed mineral and waste site allocations within the flood risk vulnerability and flood zone compatibility as outlined in PPS 25 and how the 'Sequential and Exception Test' should be applied. The 'Sequential Test' is a sieving process, allocating as many sites as possible that avoid zones 2 and 3.

43. The Level 1 SFRA involves:

- Establishing relationships and understanding the planning context;
- Gathering data and analysing it for suitability;
- Producing strategic flood risk maps, GIS deliverables and a technical report; and
- Providing suitable guidance.

44. Where it is found that some sites can only be placed in 'medium' or 'high' risk areas, a Level 2 SFRA is required which carries out the 'Exception Test' as set out in PPS 25. The 'Exception Test' is only appropriate for use when there are large areas in flood zones 2 and 3, where the sequential test alone cannot deliver acceptable sites and where some continuing development is necessary for wider sustainable development reasons.

45. Level 2 SFRA potential outputs include:

- An appraisal of the condition of flood defence infrastructure and likely future policy;
- An appraisal of the probability and consequence of breach or overtopping of flood defence infrastructure;
- Maps showing distribution of flood risk across zones; and
- Guidance on the preparation of flood risk assessments for sites with varying flood risk across the flood zone.

46. Each local authority in Gloucestershire will be commissioning a Level 2 SFRA in order to bring forward site-specific allocations of land.

Drainage map

47. The Environment Asset Team has managed to secure £320,000 to prepare a drainage map of the county.

48. The money, from the Department for Transport, will be used to survey drains in flooding hotspots – their location, condition and any repairs needed.

Section 6: Minerals & Waste Development Framework

Sustainability Appraisal

49. Sustainability Appraisal (SA) is a statutory requirement under the Planning and Compulsory Purchase Act 2004 for emerging plans within the Minerals & Waste Development Framework (MWDF). The SA process aims to ensure that the social, environmental and economic implications of plans are fully considered, and that the most sustainable policies are developed. The process incorporates the requirement of the SEA Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment. This came into force in July of 2004 and applies to a range of English plans and programmes.

50. The original SA Framework with SA Objectives[15] was developed to assess the sustainability of options within a 'high level' non site specific strategic DPD. This framework included an objective specific to climate change "**15.** To reduce contributions to and to adapt to Climate Change.". The SA objectives were revised in 2008 to take account of the fact that strategic waste sites would now be included in the Waste Core Strategy. The wording of the objective has remained the same, but now includes two sub-questions:

- "To what extent does the site or facility offer the capacity for net electricity generation, community heating /combined heat and power or the production of waste derived biofuels/biogas.?"
- "How flexible or adaptable is the site or facility in terms of a) adapting to climate change and b) using new technology as it develops?"

51. These questions will be applied to the various potential sites identified in the WCS site options consultation paper in October 2009.

SFRA

52. As mentioned in Section 5, a Level 1 SFRA was produced for the Minerals and Waste Development Framework. This is available to download from http://www.gloucestershire.gov.uk/sfra

53. A Level 2 assessment of strategic waste sites has been commissioned to inform the assessment of strategic site waste options. Details of the SFRA will be published alongside other technical assessments within Appendix C of Technical Evidence Paper WCS-N scheduled for publication in October 2009. A link to the evidence papers will be made available from the Minerals and Waste Policy webpage http://www.gloucestershire.gov.uk/mineralsandwaste .

[15] For further information related to the Gloucestershire SA framework and objectives, please visit www.gloucestershire.gov.uk/sa

Minerals Core Strategy

54. Minerals have been an integral part of human society for thousands of years. Some of the most significant climate change impacts of mineral extraction are associated with the transportation of the minerals. The Minerals Core Strategy Preferred Options paper published in January 2008 presented some key options which will help to reduce, or mitigate against, some of these impacts.

The Spatial Vision

55. The first paragraph of the spatial vision states that *"it [Gloucestershire] will be a leading county in managing its mineral resources and a successful contributor towards the achievements of sustainable development sustainable communities, and reducing the impacts of climate change"*.

56. The vision goes on to promote greater emphasis being placed upon maximising reuse of materials and recycling of construction and demolition wastes. It also has a paragraph discussing how smarter supply chains can be implemented which include stricter haulage routes and more efficient practices.

Strategic Objectives

57. Two of the key strategic objectives in relation to climate change impacts are *Reclamation* which specifically mentions "*contributing towards reducing climate change impacts*" and *Transport* which is aimed at reducing impacts of traffic and promoting more sustainable forms of transport.

Preferred Options

58. The burning of fossil fuels such as coal is internationally recognised as forming a significant proportion of anthropogenic carbon emissions. Gloucestershire has coal resources located within the Forest of Dean area and coal production forms an important part of Gloucestershire's Industrial Heritage.

59. The background to the coal 'preferred option' specifically references the Government's Energy White Paper of May 2007 which recognises the importance of coal in energy production for the foreseeable future, but also acknowledges there are potential adverse impacts on the environment including climate change, which needs robust mitigation.

60. The supporting text to the Reuse and Recycling Preferred Option acknowledges that reuse and recycling are central to the achievement of sustainable development and that they should help make a positive contribution to reducing climate change impacts.

61. The supporting text to the transport option discusses how road use can contribute to the wide problem of climate change through increased vehicle emissions and indicates that future mineral movements by road must look to reduce their impact on the highway and support alternative and more sustainable transport methods.

Waste Core Strategy

62. The *Preferred Options* consultation document of the *Waste Core Strategy* contains the following paragraph in relation to climate change: *"Climate change is a key global issue affecting our planet. Managing waste in a sustainable way can assist in reducing the emissions that cause climate change. The WCS can assist by delivering the waste hierarchy through practical measures to reduce the waste that we produced, making the best use of that which is produced, and making provision for facilities to sustainably treat and dispose of waste that cannot realistically be re-used or recycled. This accords with the approach set out in Gloucestershire's Community Strategy".*

63. The *Spatial Vision*, the *Strategic Objectives* and many of the preferred options are based upon achieving the above paragraph and a successfully implemented *Waste Core Strategy* will make a significant contribution to reducing Gloucestershire's greenhouse gas emissions.

Evidence Base

Minerals Restoration, Afteruse and Aftercare

64. As indicated in Section 1, loss of habitats and indigenous species is an impact of climate change that is likely to occur in the South West. Mineral restoration, where appropriate, can be used to create habitats to help achieve biodiversity targets. More details on this subject can be found in *Technical Evidence Paper MCS-F – After Minerals – Restoration, aftercare and afteruse in Gloucestershire*.

Transport

65. The *Joint Technical Evidence Paper WCS-MCS-1 – Transport* outlines transport policy considerations in relation to the minerals and waste core strategies. It makes particular references to sustainable transportation and to the Supplement to PPS 1: Planning and Climate Change.

Flooding

66. In addition to commissioning the SFRA work, a detailed evidence paper has been prepared on Flooding and Hydrological issues *Joint Technical Evidence Paper WCS-MCS-3– Flooding and Hydrological Issues*. Climate change is an important theme within this document as is the application of national policy relating to climate change and flooding within the minerals and waste core strategies.

Biodiversity

67. *Joint Technical Evidence Paper WCS-MCS-5– Flooding Biodiversity* makes references to the effects of climate change on biodiversity and outlines the appropriate policies relating to this issue.

Spatial Portrait and Vision

68. Climate change is an important theme within both the *Waste Technical Evidence Paper WCS-B– Spatial portrait and vision* and *Minerals Technical Evidence Paper MCS-E– Spatial portrait, vision and strategic objectives.*

Minerals Core Strategy & Waste Core Strategy Evidence Report

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