



**South  
Derbyshire**  
District Council  
Planning Services



INVESTOR IN PEOPLE

South Derbyshire Local Development Framework

**LDF**

core  
strategy

South Derbyshire Local  
Development Framework  
(LDF)

# Core Strategy Topic Paper

HOUSING  
ECONOMY  
RETAIL & LEISURE  
TRANSPORT  
INFRASTRUCTURE

## Climate Change & Renewable Energy

WATER & FLOODING  
BUILT ENVIRONMENT  
SPATIAL VISION & STRATEGY



January 2010

South Derbyshire Changing for the better

## Derby Housing Market Area Core Strategies

### Climate Change and Renewable Energy Topic Paper

#### 1.0 Purpose and Scope of Topic Paper

1.1 This topic paper is number six of a set of nine. The topic papers are:

1. Housing
2. Economy
3. Retail and Leisure
4. Transport
5. Infrastructure
6. Climate Change and Renewable Energy
7. Water and Flooding
8. Built Environment
9. Spatial Vision and Strategy

1.2 The topic papers have been prepared to support the development of options for consultation as part of the preparation of the Core Strategy. The topic papers bring together relevant policies, evidence base and previous consultations that need to inform the Core Strategy. More information about the Core Strategy evidence base can be found online at:

[www.south-derbys.gov.uk](http://www.south-derbys.gov.uk)

1.3 The topic papers have been prepared in collaboration with Amber Valley and Derby City who are also developing Core Strategies. The topic papers therefore include information and analysis common to the Derby Housing Market Area as well as content that is specific to South Derbyshire.

1.4 Also supporting the preparation of the Core Strategy is the Sustainability Appraisal. An initial Sustainability Appraisal Scoping Report was published in July 2008 and is available online at [www.south-derbys.gov.uk](http://www.south-derbys.gov.uk). The key sustainability implications of the Core Strategy will be considered more fully as the Core Strategy progresses.

1.5 Finally, a series of Area Profiles have been produced. The profiles are ward based but in some cases profiles are made up from a number of aggregated ward areas which share similar characteristics. The Area Profiles can be viewed online at: [www.south-derbys.gov.uk](http://www.south-derbys.gov.uk).

#### 2.0 WHAT IS CLIMATE CHANGE?

2.1 The Earth's climate is not static and is always changing. In the past it has altered as a result of natural causes. The term climate change is now generally used when referring to changes in our climate which have been identified since the early part of the twentieth century. Global temperatures have increased by 0.74°C over the last hundred years. Around 0.4°C of this warming has occurred since the 1970s. The changes we've seen over recent years and those which are predicted over the next 100 years are now largely attributed to human activity rather than due to natural changes in the atmosphere. The main human influence on global climate is through emissions of greenhouse gases, particularly Carbon Dioxide (CO<sub>2</sub>).

- 2.2 The impacts of climate change are anticipated to include:
- Warmer average daily temperatures
  - Hotter summers
  - Wetter, milder winters
  - More extreme weather events
  - Rises in sea levels
- 2.3 These anticipated impacts have very wide ranging implications, particularly for our natural environment (the water we drink, the food we grow and for our wildlife); our built environment (ensuring our buildings and infrastructure are more sustainable/energy efficient and can withstand the impacts of more extreme weather such as flooding) and our quality of life (the health impacts of increasing temperatures, the amount we travel).
- 2.4 Whilst planning cannot reverse the effects of climate change, the decision we make about the future of our cities, communities and countryside can in part help to reduce the impacts that we have on our climate and address some of the problems that climate change may pose.
- 2.5 Planning can have a direct impact on action to tackle the causes of climate change and to mitigate and adapt to deal with its effects. A reduction in CO<sub>2</sub> emissions can be influenced by delivering more sustainable patterns of development, reducing the need to travel, especially by car; and increasing the energy efficiency of existing and new buildings leading to a reduction in energy consumption from buildings and transport.
- 2.6 Planning can also help adapt and shape places to deal with the impacts of climate change by protecting flood plains and open space to counter urban heat island effects and ensuring a secure supply of food and energy through renewable technologies.

### **Energy Resilience and Security**

- 2.7 In addition to the impacts of climate change, there are also ongoing issues around energy resilience and security of our energy supply. Since the Second World War, the UK has fluctuated between being a net exporter and importer of energy, this however masks trends for different fuels and there has been an ongoing, and in more recent years, increasing reliance on imported energy, particularly oil.
- 2.8 This trend is set against decreasing national and international supply of fossil fuels combined with an increasing global demand for energy, especially from developing economies. The increasing reliance on imported energy leaves the UK vulnerable to changes in global supply. The recent DECC review carried out by Malcolm Wicks MP, Energy Security: A national challenge in a changing world makes clear that global energy reserves are concentrated in some of the most unstable parts of the world, making energy supply an issue of national security.
- 2.9 Compounding the problem is the fact that North Sea oil and gas reserves are running out and much of the energy generating infrastructure, both electricity and nuclear, is coming to the end of its useable life and will require de-commissioning in the next 10 years.

2.10 The matter of energy resilience and security is recognised as an issue that needs to be addressed at a national level. The DECC review proposes a framework in relation to both international and domestic policy of first, acting to reduce total energy demand; secondly, promoting the adoption of technologies that reduce reliance on oil and gas and simultaneously reduce carbon emissions; and, finally, acting to mitigate the international energy security risks inherent in the use of fossil fuels. In response to this challenge one of the first in the series of National Planning Statements that have been issued by Government covers Energy Infrastructure. The Core Strategy will need to take account of the implications of these statements.

### **3.0 DERBY HOUSING MARKET AREA CONTEXT**

3.1 The Derby Housing Market Area covers the administrative areas of Amber Valley Borough Council, Derby City Council and South Derbyshire District Council which collectively cover an area of around 68,000ha, with a population of just under 450,000.

3.2 Aligned Core Strategies are being prepared by Amber Valley, Derby City and South Derbyshire District Councils. The need for this approach is largely being driven by the fact that Derby's long-term housing growth requirement cannot be accommodated solely within the City's boundary and some development will need to be located in adjoining districts.

3.3 The Regional Spatial Strategy (RSS), which is also known as the Regional Plan sets out a requirement for 36,600 dwellings over the period 2006-2026 within the Derby HMA. Most new homes (21,400 or 58.4%) within the HMA are likely to be built within, or as urban extensions to Derby City. The remainder of new homes are likely to be mainly located within the Sub Regional Centres of Swadlincote in South Derbyshire, or around all, or some, of the main towns of Alfreton, Belper, Heanor, and Ripley in Amber Valley.

3.4 In addition to the issues around the management of physical development across administrative boundaries, there will be an obvious need to co-ordinate the planning and delivery of supporting infrastructure and services, both to meet the needs of existing residential areas and new communities.

3.5 The proposed scale of development within the Derby HMA will have significant implications for mitigating and adapting to climate change, in terms of:

- Reducing and mitigating the impacts of accommodating the proposed levels of growth on the natural and physical environment and on carbon emissions through sustainable development;
- Ensuring existing and new communities are resilient to the impacts of climate change;
- Harnessing the opportunities that growth, and the associated demand for energy, brings to increase the efficient use of resources, sustainable construction techniques and the use of renewable energy.

3.6 In terms of current issues, there are stark differences in the current levels of energy consumption across the HMA with Derby residents consuming lower amounts of electricity, gas, coal and oil than the regional average and

significantly less than residents in Amber Valley and South Derbyshire, whose consumption exceeds the regional average (EMRA 2006). This is reflected in the carbon footprints of the individual authorities with existing CO<sub>2</sub> per capita emissions across the HMA standing at 6.4 tonnes in Derby, 8.9 tonnes in Amber Valley and 12.2 tonnes in South Derbyshire (Defra CO<sub>2</sub> Emissions Estimates 2005-2006).

- 3.7 At present outside of existing energy from gas installations at Bretby, South Derbyshire, there is very little installed renewable energy capacity across the HMA. The National Forest and the Derwent Valley Mills World Heritage Site offer particular opportunities and challenges for integrating renewable energy technologies.
- 3.8 The presence of the Rivers Derwent, Erewash, Mease and Trent within the HMA area also has implications for adapting to and mitigating the impacts of climate change. More details on the impacts climate change on water and flooding issues can be found in the Water and Flooding Topic Paper.
- 3.9 The purpose of this topic paper is to highlight the work that has already been undertaken to inform 'thinking' of how the Core Strategy should address the overarching challenges posed by addressing and mitigating the effects of climate change. It will seek to flag up any gaps in data which will affect our ability to understand the key issues, (including further studies or assessments which may need to be undertaken in the future), and provide a brief summary of international, national, regional and local policy.
- 3.10 This paper will also indicate the Strategic Objectives for Climate Change and Renewable Energy across the Derby HMA set out the different options available to deliver the partner authorities objectives to adapt to the impacts of climate change and to increase the amount of installed renewable energy capacity over the Plan period.

#### **4.0 EXISTING INTERNATIONAL, NATIONAL, REGIONAL, SUB-REGIONAL AND LOCAL POLICIES**

##### **International Policies**

- 4.1 Since the early 1990's policy on Climate Change is being driven at an International level. The most recent international agreement on climate change is the *Kyoto Protocol*, which was signed in 1997, but did not come into force until 2005. The agreement contained the first legally binding carbon emissions reduction targets and has been ratified by 166 countries including the UK. The Kyoto Agreement is currently being updated following the Copenhagen summit in December 2009. This will commit the UK to an updated carbon dioxide reduction path, as well as technology development and transfer and financial investment, which will need to be reflected in planning policy.

## **National Policies**

- 4.2 Progress taken at European and International level have been translated into UK national policy, initially through the **UK Climate Change Programme** (2006), which set an ambitious programme to reduce the UK's green house gas emissions. Through this programme the Government confirmed that it believes that "*climate change is the greatest long term challenge facing the world today and that addressing the cause and effect of climate change is a key national, regional and local priority*".
- 4.3 The recent **Climate Change Act 2008**, has move the national agenda forward and sets a national statutory target of 80 per cent reductions in carbon emissions (against 1990 baseline) by 2050 and the new Climate Change Committee is ensuring progress to the target is met by setting 5 year carbon budgets. The first budget suggests a reduction of 34 per cent by 2020.
- 4.4 In July 2009, the UK Government published its **Low Carbon Transition Plan**, which outlines how the UK will cut emissions by 34% on 1990 levels by 2020. The plan sets objectives for households, industry and power generation. It aims for the creation of an additional 1.2 million 'green' jobs by 2020, a large increase in pay-as-you-save home energy schemes, and support for households to produce their own clean energy (e.g. solar panels etc). In terms of power generation, 40% should be from renewable sources, nuclear and clean coal by 2020, whilst gas imports will need to be halved. Finally, with road transport increasing its share of green house gas emissions in many parts of the UK, the plan sets an objective for the average car to emit 40% less carbon by 2020.
- ### **The Code for Sustainable Homes**
- 4.5 The 'Code' was introduced in April 2006 and has 6 performance levels (1-6) assessed against issues such as energy efficiency and water consumption. It is currently a voluntary standard for developers. Government-funded housing, through the Homes and Communities Agency (HCA) is currently expected to achieve Code level 3.
- ### **In Building a Greener Future: Towards Zero Carbon (2007)**
- 4.6 The government has announced that all new homes in England and Wales must be zero carbon by 2016 (equivalent to Code level 6), with interim reductions in CO<sub>2</sub> emissions of 25% below current Building Regulations (code level 3) by 2010 and 44% (code level 4) by 2013. There are similar ambitions to cut carbon emissions from new non-domestic buildings by 2019. The government has also identified that the planning system has a key role to play in supporting the delivery of this timetable for reducing carbon emissions from domestic and non-domestic buildings by providing evidence for and helping to secure the delivery of low or zero carbon development, in areas that will be subject to significant levels of development in the coming years.
- 4.7 The need to address climate change is also recognised through the **UK Sustainable Development Strategy: Securing the Future (March 2005)** sets out five principles for sustainable development with a focus on environmental limits. It also identifies four priority areas: sustainable consumption and production, climate change, natural resource protection and sustainable communities.

4.8 National Planning Policy in relation to Sustainable Development, Climate Change and Renewable Energy is expressed through PPS1, PPS1 Supplement, PPS3, PPS22 and the companion guide to PPS22.

**Planning Policy Statement 1: Sustainable Development**

4.9 PPS1 sets out the Government's overarching planning policies on the delivery of sustainable development through the planning system. PPS1 contains a set of key principles that, in relation to sustainable development, climate change and renewable energy, include the requirements for development plans to:

- Ensure that sustainable development is pursued in an integrated manner; and
- Addressing the causes and potential impacts of climate change through policies which reduce energy use, reduce emissions and promote the development of renewable energy resources;

**Planning Policy Statement: Planning and Climate Change - Supplement to Planning Policy Statement 1**

4.10 The Climate Change PPS was prepared by the Government in response to the growing need to integrate climate change concerns into all aspects of planning. Although published prior to the finalisation of the Climate Change Act, the document confirms the Act's headline target for a reduction of CO<sub>2</sub> emissions of between 26 - 32% below 1990 levels by 2020 and at least 60% by 2050.

4.11 The PPS1 supplement puts climate change at the centre of planning policy and emphasises the need to tackle climate change across a wide range of areas, including:

- Ensuring climate change is a key factor when selecting land for new development;
- Exploiting existing and potential opportunities for decentralised and renewable or low carbon energy;
- Ensuring high levels of energy efficiency in new development;
- Ensuring new development is planned to minimise future vulnerability to the impacts of climate change;
- Delivering patterns of development which secure the fullest use of sustainable transport;
- Encouraging competitiveness and technological innovation in mitigating and adapting to climate change.

4.12 Clear criteria for selecting land for development are set out within the PPS1 Supplement to ensure that developments are both sustainably located and supported by appropriate physical, green and social infrastructure. Further details on how these requirements are being taken on board on the development of the 3 aligned Core Strategies can also be found in the Spatial Strategy, Vision and Objectives and in the Infrastructure Topic Paper.

4.13 The PPS1 supplement on Climate Change makes it clear that local authorities should develop policies in the Core Strategy that encourage decentralised and renewable and low carbon energy along with the supporting infrastructure needed to maintain such facilities. In doing so local planning authorities are required, based on evidence, to set a viable target for the percentage of decentralised and renewable and low carbon energy to be included in new developments.

4.14 Paragraphs 30-33 of the PPS1 supplement on Climate Change recognise that there will be situations where it could be appropriate for local planning authorities to anticipate levels of building sustainability, for identified development areas or site-specific opportunities, in advance of those set out nationally. The PPS makes clear that local planning authorities must be able to demonstrate the local circumstances that warrant and allow this and that any local requirement must be set out in a development plan document to ensure it is properly tested. It also makes clear that local requirements should be specified in terms of achievement of nationally described sustainable buildings standards, such as the Code for Sustainable Homes.

**Planning Policy Statement 3:**

4.15 Housing has 'Designing for Quality' as one of its key objectives. It also advocates energy efficiency in new housing developments, stating: "Local planning authorities should adopt policies which promote the energy efficiency of new housing where possible." (Para 56)

**Planning Policy Statement 4: Planning for Sustainable Economic Growth.**

4.16 This replaces Planning Policy Guidance 4: Industrial, Commercial Development and Small Firms (PPG4); Planning Policy Statement 6: Planning for Town Centres (PPS6) published on 21 March 2005; and the economic development sections of Planning Policy Statement 7: Sustainable Development in Rural Areas (PPS7) published on 3 August 2004. It sets out the Government's objectives for economic development, which include delivering more sustainable patterns of development, reducing the need to travel, especially by car and respond to climate change.

**Planning Policy Statement 22: Renewable Energy**

4.17 Published in 2004, sets out the Government's planning policies for renewable energy and encourages the development of renewable energy schemes throughout England. However, the policy advice pre-dates more recent advances in both targets and technology and does not cover Combined Heat and Power (CHP) developments.

4.18 However, PPS22 looks to positive planning which facilitates renewable energy developments. The PPS contains a number of key principles that should be adhered to by local authorities in their approach to planning for renewable energy:

- Policies should not constrain or rule out the use of renewable energy technologies;
- Policies should provide guidance for both standalone renewable energy schemes and integration of renewable energy schemes into new development;
- Policies should encourage at least 10% of energy to be provided by on-site renewable sources;
- To ensure policies for on-site renewable energy generation are viable, given the type of development proposed, its location and design, and do not place an undue burden on developers;
- Develop key criteria based policies against which applications for renewable energy developments can be assessed.

- 4.19 The Government, through the recently published **Renewable Energy Strategy (2009)**, has pledged to update PPS1 and PPS22 and consult on a new combined climate change PPS, to ensure that a clear and challenging framework for delivering energy infrastructure and cutting carbon emissions consistent with national ambitions is set.
- 4.20 It is recognised that one of the impacts of climate change may be an increased risk of flooding. The Core Strategy will need to take account of the key messages in **Planning Policy Statement 25: Development and Flood Risk**, which sets out the elements of the risk based approach to planning for development in areas of flood risk. More details on the impacts climate change on water and flooding issues can be found in the Water and Flooding Topic Paper.

#### **Forthcoming National guidance**

- 4.21 The Government has recently consulted on the *Definition of Zero Carbon Homes and Non-Domestic Buildings*. The consultation proposed meeting part of the zero carbon requirements through both on site and off site measures. The document suggests that between 44% and 100% of the carbon emissions reduction must be met onsite, and that for the remaining emissions a range of onsite and offsite solutions are possible. The consultation also proposes a maximum cost per tonne of carbon for offsite measures, which will be published in 2009 and updated in 2012, to give developers some certainty over the costs they face.

#### **Regional and Sub-Regional Policies**

##### **East Midlands Regional Plan (March 2009)**

- 4.22 The adopted East Midlands Regional Spatial Strategy 2009 (RSS) includes a number of policies concerning Climate Change and Renewable Energy. The Core Objectives of the RSS (Policy 1) seeks to secure the delivery of sustainable development through all spatial plans and in particular seeks to reduce the causes and impacts of climate change and minimize the adverse environmental impacts of new development (objectives *i, j and k*).
- 4.23 Taking forward the requirements of Building a Greener Future, in the interim period before local policies are in place, the RSS, through Policy 2 Promoting Better Design requires all new major developments to provide at least 10% of their energy requirement from renewable or decentralised sources, unless it can be demonstrated that it is not feasible or viable.
- 4.24 Policy 3: Distribution of New Development, seek to adopt a development strategy across the Region that reduces the need to travel, secures efficient use of existing infrastructure and resources, conserves the countryside and makes the best use of previously developed land.
- 4.25 A number of other regional policies have implications for how we can address the causes and impacts of Climate Change. These include Policy 28 Regional Priorities for Green Infrastructure, Policy 29 Priorities for Enhancing the Region's Biodiversity and Policy 30 Regional Priorities for Increasing Woodland Cover, the implications of these policies are discussed further in the Infrastructure Topic Paper. In addition, the implications of Policy 32: A Regional Approach to Water resources and Water Quality, Policy 35 A

regional Approach to Managing Flood Risk and Policy 43: Regional Transport Objectives are discussed in the Water and Flooding and Transportation Topic Papers.

- 4.26 Of direct relevance to addressing the causes of climate change are the Energy policies of the RSS. Policy 39: Regional Priorities for Energy Reduction and Efficiency require local authorities, and others, to promote reductions in energy usage and to reduce future energy need through the sustainable location of development along with site layout and building design that encourage energy efficiency. In addition, Policy 40: Regional Priorities for Low Carbon energy Generation sets targets for energy generation from decentralised and renewable resources and requires the identification/ safeguarding of sites with large scale potential for energy generation and the development of policies and proposal to deliver the renewable energy targets. The policy also sets out criteria for locating new renewable and decentralised energy generation facilities, including wind energy.
- 4.27 In terms of local potential for contributing to the delivery of targets for energy generation from decentralised and renewable resources, the RSS sets out the Region's view on what technologies may be suitable in the 3 Cities Sub-Area of which the Derby HMA is part. The RSS states:  
*"The scale of development in the Three Cities Sub-area offers opportunities for local distribution networks for electricity and heat using CHP. Micro-generation also has the biggest potential here. Large scale wind generation is limited, but there are opportunities for smaller scale at business park level, contributing to carbon neutral developments. There may be opportunities for generating energy from waste through a variety of different technologies."*

#### **East Midlands Regional Plan Partial Review**

- 4.28 The current partial review of the RSS is again looking at the renewable Energy targets. The recent RSS options consultation proposed a move away from targets for different technology types, as set out in the adopted RSS, towards targets for CO<sub>2</sub> savings. The options look at high or low scenarios for CO<sub>2</sub> savings depending on the degree of policy intervention.
- 4.29 In the Derby HMA, the RSS options asserts that achieving these targets will rely on a significant increase in heat networks, on-site renewable energy as part of new development and biomass to a lesser degree. This has implications for how new development is delivered to ensure that joined up opportunities for securing heat networks and delivering renewable energy technologies are not lost.

#### **Derbyshire's Sustainable Community Strategy 2006 – 2009**

- 4.30 This strategy highlights priority areas for improvement and sets targets to make life better for everyone who lives in, works in, or visits Derbyshire.

#### **Derbyshire's Sustainable Community Strategy 2009 – 2014 (Final Draft)**

- 4.31 This draft Sustainable Community Strategy (SCS) is centred around 5 themes; Safer Communities, Children and Young People, Health and Well being, Culture and Sustainable Communities. Key priorities included in the SCS is to create sustainable communities by improving and protecting the natural environment so that local communities are more resilient to climate

change and ensuring that Derbyshire's landscape and heritage are protected for future generations to enjoy.

## **Local Policies**

### **South Derbyshire Local Policies**

- 4.32 Renewable energy and climate change issues have emerged fairly recently as government priorities in policy making. As such the Council's Local Plan, which was adopted in 1998, does not contain any specific renewable energy or climate change policy, as it predates much of the current drive towards tackling climate change and related issues.
- 4.33 Given the lack of climate change policy within the adopted Local Plan perhaps the most significant local policy document relating to this issue is the Sustainable Community Strategy (SCS) for South Derbyshire. This strategy includes a number of relevant priorities that sit under 5 overarching themes:
- Healthy Communities
  - Safer Communities
  - Vibrant Communities
  - Sustainable Development
  - Children and Young People
- 4.34 In the context of Climate Change and Renewable Energy this strategy seeks to reduce per capita emissions of carbon dioxide. In order to achieve this the SCS includes objectives and actions (under the theme of vibrant communities) to target 'hard to reach' homes with energy efficiency measures and to improve energy efficiency in community buildings. Other relevant objectives included in the South Derbyshire SCS include objectives to improve transport solutions for those without a car.
- 4.35 In the longer term the Local Development Framework Core Strategy will be crucial in delivering longer-term goals set out in the SCS. In the short-term, there are a number of Local Area Agreement priorities that will in part rely on the Core Strategy for implementation. These include NI186 which seeks to secure a per capita reduction in CO<sub>2</sub> emissions in the Local Authority area, and NI188 Planning to Adapt to Climate Change which seeks to stimulate progress on assessing and managing climate risks and opportunities, and promote the incorporation of appropriate action into local authority and partners strategic planning.
- 4.36 Whilst the National Forest is a large-scale project to regenerate or enhance over 200 square miles of the East and West Midlands, only the southern part of South Derbyshire District is located within the National Forest. As such National Forest Policy is considered as a local policy in the context of this Topic Paper. The recently published National Forest Delivery Plan 2009-2014 contains a wide range of cross cutting climate change objectives including:
- To contribute towards sustainable energy generation (through support of wood fuel biomass) as an alternative energy source
  - To deliver large scale landscape planting and habitat creation to allow the local environment to adapt to climate change

- To advocate the Forest's contribution to reducing carbon emissions and the effects of climate change
- To educate young people about the impacts of climate change.

### **Summary of National, Regional and Local Policy Requirements**

#### **Overarching requirements include:**

- Ensuring climate change is a key factor when selecting land for new development;
- Exploiting existing and potential opportunities for decentralised and renewable or low carbon energy;
- Ensuring high levels of energy efficiency in new development;
- Ensuring new development is planned to minimise future vulnerability to the impacts of climate change;
- Encouraging competitiveness and technological innovation in mitigating and adapting to climate change.

#### **Detailed requirements include:**

- Have an evidence-based understanding of the local feasibility and potential for renewable and low-carbon technologies
- Identify suitable areas for renewable and low-carbon energy sources, and supporting infrastructure
- Set out a target percentage of the energy to be used in new development, with a minimum of 10% to come from decentralised and renewable or low-carbon energy sources where it is viable.
- Where there are particular and demonstrable opportunities for greater use of decentralised and renewable or low-carbon energy than a specific target percentage, bring forward development area or site-specific targets to secure this potential
- Inclusion of policies which do constrain or rule out the use of renewable energy technologies in planning documents
- Develop key criteria based policies against which applications for renewable energy developments can be assessed.
- Ensure policies for on-site renewable energy generation are viable, given the type of development proposed, its location and design, and do not place an undue burden on developers;
- Provide policy guidance for both standalone renewable energy schemes and integration of renewable energy schemes into new development;
- Contribute towards sustainable energy generation (through support of wood fuel biomass) as an alternative energy source
- Deliver large scale landscape planting and habitat creation to allow the local environment to adapt to climate change

## 5.0 EVIDENCE BASE / STUDIES

### National

#### UK Climate Projections (UKCP09)

- 5.1 The UK Climate Projections give climate information for the UK up to the end of this century. Projections of future changes to our climate are provided, based on simulations from climate models. DECC states that the purpose of providing information on the possible future climate is to help those needing to plan how they will adapt to help society and the natural environment to cope with a changing climate.
- 5.2 The projections show three different scenarios representing high, medium and low greenhouse gas scenarios. These are intended to help to demonstrate the importance of reducing our greenhouse gas emissions (mitigation).
- 5.3 The key findings from UKCP09 suggest how our climate might change:
- All areas of the UK get warmer, and the warming is greater in summer than in winter.
  - There is little change in the amount of precipitation (rain, hail, snow etc) that falls annually, but it is likely that more of it will fall in the winter, with drier summers, for much of the UK.
  - Sea levels rise, and are greater in the south of the UK than the north.

### Regional Studies

#### East Midlands Regional Energy Strategy – GOEM, EMRA, EMDA (2004)

- 5.4 The 'East Midlands Energy Challenge' is the region's energy strategy and was developed in partnership between Government Office for the East Midlands, the East Midlands Regional Assembly, the East Midlands Development Agency and other regional stakeholders. The strategy is currently being reviewed. The existing Energy Strategy is built around the Energy Hierarchy:
- Reduce use of energy
  - Use energy more efficiently
  - Move to energy from renewable sources
  - Use remaining fossil fuels cleanly
- 5.5 The key themes of the Strategy are:
- Energy for communities: leading on those priorities that more directly involve individuals, households and communities, including the general environment.
  - Energy for enterprise: lead on priorities that affect the region's economy, including business productivity and skills, and the opportunities that a low carbon economy presents.
  - Communicating the energy challenge: coordinating a communications strategy for the region, including the provision of capacity building and raising awareness that will inform the other two themes

### **East Midlands Carbon Footprint: Determining Baseline Energy Consumption Data - Best Foot Forward (2006)**

- 5.6 This report sought to determine baseline energy usage in the East Midlands broken down to district level and split between business (industrial and commercial) and domestic. It also identified associated carbon dioxide emissions and suggested a methodology for monitoring energy usage in future years. This report indicated that (at 2006) South Derbyshire had one of the highest per capita CO<sub>2</sub> emissions in the region.

### **Delivering Sustainable Communities in the East Midlands: Embedding Sustainable Design in Local Development Frameworks – EMRA**

- 5.7 This draft guidance was produced to support planning policy development throughout the East Midlands. It contains examples of good practice from across the region and signposts to helpful tools and guidance. Its aim is to ensure the delivery of sustainable design and construction in the East Midlands. The document covers the principles of sustainable design, including the layout of development, the design and use of buildings and the construction process.

### **Reviewing Renewable Energy and Energy Efficiency Targets for the East Midlands (2009)**

- 5.8 As part of the partial review of the Regional Plan, a review of regional renewable energy targets was conducted by Faber Maunsell for EMRA. This study updates existing data mentioned above by looking not only at the resource potential, but also at what the region is likely to require through future changes to national policy, and what can be achieved through growth.
- 5.9 The study arrived at future scenarios, which are suggested as potential regional targets. The targets set out the proportion of the regional energy requirements that could be achieved from renewable sources. These are set in 5 year periods and offer lower and higher target scenarios, depending on the deliverability of certain technologies. The higher targets require on-shore wind energy to be delivered at twice the previously assessed potential and almost three times the region's currently available biomass resource is required to deliver this scenario.
- 5.10 Even with this in mind the report predicts that the East Midlands will not be able to achieve the 15% renewable energy contribution by 2020 (which includes transportation) as required by EU legislation without exceeding the suggested targets or importing renewable energy from outside the region. The report therefore concludes that it is vital for the region to strive to achieve and exceed the challenging targets laid out in the report.

### **Sub Regional Studies**

#### **Derby Housing Market Area Cleaner Greener Energy Study**

- 5.11 This document provides an assessment of national and regional policy in respect of energy efficiency in new buildings and set out measures, which could be pursued in new developments to meet the governments stated objective to deliver zero carbon homes by 2016 and zero carbon commercial buildings by 2019. This study also provides an analysis of existing energy usage across the Derby Housing Market Area and identifies opportunities for

small and large scale zero and low carbon heat and power generation. Based on a review of baseline capacity and potential for renewable energy generation this study outlines a number of recommendations. These include:

- To require Developers to deliver a 20% reduction in regulated Carbon emissions from on site or off site renewables increasing to 50% by 2016.
- Develop a clear criteria based planning policy for the key standalone generation technologies notably wind energy and bio-energy projects.

- 5.12 The study concludes that there is significant large scale wind energy potential in South Derbyshire. A copy of this study will be placed on the Councils website (<http://www.south-derbys.gov.uk/>) in Spring 2010.

### **Derby Housing Market Area Cleaner Greener Energy Study Sustainable Construction Guide**

- 5.13 This guidance sets out the importance of sustainable construction, the business case to support its use and identifies that developers need to think about sustainable construction from the outset of the design process. It further details ways of making developments more sustainable through individual building design measures, wider site design measures, the incorporation of low and zero carbon energy generation technologies as well as other sustainability considerations such as waste and materials.

### **South Derbyshire Local Studies**

- 5.14 To date there have been very few energy or climate change studies undertaken within South Derbyshire. The most extensive of the studies prepared to date are the Heat Loss Maps, which have been produced for the whole district. These maps seek to classify the extent to which public and private buildings suffer heat loss, and as such provide a key piece of evidence to help the Council identify broad areas that could benefit from targeted energy efficiency measures or grants. These maps also provide business owners and homeowners with information on the energy efficiency of properties and could help property owners to reduce their own energy consumption through improving insulation.

### **Summary of Evidence Base Findings:**

- South Derbyshire has some of the highest per capita CO<sub>2</sub> emissions in the Region with emissions (per person) double that of Derby City.
- It will be difficult for the Region to achieve the Government's target of 15% renewable energy contribution by 2020 without significantly exceeding the targets suggested in the partial review of the RSS or importing energy from outside the region.
- Developers should be required to achieve carbon reduction targets for new development, initially starting at the equivalent on Code level 3-4 (35% reduction in regulated emissions, 20% of which should come from renewable, low or zero carbon energy sources).
- There is significant potential for large scale wind and biomass energy generation in South Derbyshire
- In the future we will experience warmer drier summers and warmer but wetter winters

## **6.0 Outcome of Public Consultation**

### **South Derbyshire**

#### **Climate Change as a Cross Cutting Theme**

- 6.1 It was clear from the Issues and Ideas consultation that there is a need to tackle climate change as a cross cutting theme that runs through out the whole of the Core Strategy. Where it was considered that individual policies on specific topics, such as housing and employment are included in the Core Strategy appropriate adaptation and mitigation measures needed to make communities resilient to climate change should be included.
- 6.2 It was also highlighted during the Issues and Ideas consultation that the planning authority, in bringing forward its Core Strategy should consider major contributors of climate change such as transportation, and seek to lessen the impacts of growth by ensuring that new development is located in a way that provides homes in areas with good access to jobs, goods and services (and hence reducing the need to travel) and by providing alternatives to the private car. This issue is considered in detail in the Transportation Topic Paper.

#### **Renewable Energy**

- 6.3 There was general support for the inclusion of specific policies in the Core Strategy that promote the development of renewable energy infrastructure. There was also support for the development daughter policies (such as supplementary planning documents) setting out detailed policy requirements.
- 6.4 There was also significant support for the principle of new homes to be generally more sustainable than they have been historically. In particular there was support for the Core Strategy to minimise water consumption and waste generation and to support sustainable construction through the use of targets or requirements to be set out in housing or design policies.
- 6.5 In addition to these broader sustainability considerations it was also suggested that on site renewable energy generation (micro-generation) should be required for new developments. For example a number of consultees considered that a 'Merton' Style rule should be included in the plan which would require new developments to generate a minimum of 10% of their own energy requirements. However, it was further suggested by a small number of consultees that where on site energy generation were to be required within the Plan it might be appropriate to reduce density requirements in order that new buildings could be sited in a way that allows them to create their own power or hot water. It was also highlighted by two consultees that overly onerous renewable energy requirements could threaten the broader viability of new developments.

#### **Energy Efficiency**

- 6.6 There was general support for energy efficiency measures within the Core Strategy although again a number of respondents to the Issues and Ideas consultation expressed concern that onerous energy efficiency requirements or policies could impact on the delivery of new homes and factories.

6.7 Related to this point it was highlighted in one response that Local Development Frameworks should include a discrete policy on sustainable design and construction methods, and the introduction of minimum efficiency standards for extensions, change of use conversions, and refurbishments / listed building restorations. It is unclear whether such a policy, which would apply to existing developments has been successfully adopted elsewhere. However there are numerous Planning Authorities who have successfully adopted a policy in their own Core Strategy, which requires new homes and factories to exceed energy efficiency standards set out in building regulations. Despite the Government's already stated intention to deliver carbon neutral homes, it was considered that ahead of this there is a need to specify requirements for new homes to meet Code level 3 or 4 or commercial buildings to meet BREEAM standards within the Core Strategy.

#### **The Need for a Robust Evidence Base**

6.8 In seeking to include policies on climate change or energy efficiency in the Core Strategy it was clear that a number of consultees consider that sufficient baseline evidence on renewable energy capacity and technical feasibility of implementing on-site renewable energy requirements should be fully explored. One respondent was already aware of ongoing and proposed studies to outline renewable energy capacity within the Derby Housing Market Area and considered that this work would be important in helping to shape future policy.

#### **Landscape and Townscape Impacts**

6.9 Whilst there was general support for the principle of reducing climate change impacts of new development, subject to feasibility and viability considerations, there was considerable concern over potential townscape and landscape impacts of renewable energy proposals. Multiple consultees raised this same issue and in particular impacts on the historic environment and sensitive rural landscapes were flagged as key concerns. And whilst for a few consultees it seems that landscape impacts are 'a price worth paying', most stakeholders suggested that the Core Strategy should seek to include well drafted policies that include reference to conserving and enhancing landscape (and townscape character).

6.10 A small number of consultation responses were received back indicating that renewable development, such as biomass, biofuels, anaerobic digestion, wind and solar power can be sited in the countryside and should not be restricted to urban areas only. In particular it was considered that the National Forest should be promoted as a renewable energy resource.

#### **Other Issues**

6.11 There was some support expressed for the development of a potential new gas fired power station in Willington. It was also suggested that home owners need educating about their impact on the environment as encouraging behavioural change (particularly in respect of how people use their home) is also an important issue in reducing climate change impacts. It was considered by one consultee that modern eco houses should not be allowed especially in rural areas.

### **Summary of Issues and Ideas Consultation Responses:**

- Climate change seen as an overarching issue that should influence all parts of the Core Strategy
- There was general support for the inclusion of policies in the Core Strategy that promote the development of renewable energy infrastructure.
- Decisions made about site layout and building design can all contribute to tackling climate change
- Sustainable construction targets should be set in conjunction with the development industry and industry recognised standards should be used
- There is a need to base climate change policies on a sound evidence base
- Measures to include renewable energy and sustainable construction don't adversely impact on the District's landscape or townscape character and cultural heritage
- The District offers potential to provide for a wide range of energy generation

## **7 Working Towards Options**

### **Key Issues for South Derbyshire**

7.1 On the basis of the proceeding chapters of this topic paper the following climate change and renewable energy related key issues have been identified:

### **Strategic climate change and renewable energy aims for South Derbyshire:**

7.2 The built development issues listed above have been considered and the following aims have been set out to best deal with these issues in South Derbyshire:

- The sustainability and energy efficiency of new homes and business premises should be maximised
- Improve energy resilience and security of supply
- Exploit existing and potential opportunities for decentralised and renewable or low carbon energy
- Reduce flooding and its impact on existing and future communities and reduce regulated water consumption in new housing and commercial developments.

7.3 The above issues and aims been considered alongside other issues and aims, which have been set out in the remaining topic papers. Following the consideration of the full range of issues and aims, overall objectives for both South Derbyshire and the Derby HMA have been drafted and are included in the main consultation document. These are set out below with those of less relevance to this topic greyed out:

7.4 **(Draft) South Derbyshire Strategic Objectives:**  
The South Derbyshire strategic objectives are as follows:

**SDSO 1**

To ensure future development is locally distinctive and environmentally sustainable through the achievement of design excellence, addressing the threats and causes of climate change and reducing waste and pollution

**SDSO 2**

To ensure the needs of an ageing population, and a higher than average proportion of younger people, are recognised in shaping all aspects of our communities

**SDSO 3**

To enable a robust and diverse economy, resistant to downturns and providing a strong base for sustainable growth

**SDSO 4**

To ensure the District's housing stock is decent, suitable and affordable and balanced with access to employment opportunities

**SDSO 5**

To ensure our communities can be safe, clean, vibrant, active and healthy

**SDSO 6**

To ensure sustainable, living and working rural communities

**SDSO 7**

To reduce the need to travel and to encourage travel by sustainable modes of transport, providing access to jobs, shopping, leisure, services and facilities from all parts of the District.

**SDSO 8**

To ensure the social, physical and green infrastructure needed to support strong growth levels is provided at an appropriate time and accessible to our communities

**SDSO 9**

To respect and enhance the varied character, landscape, cultural, heritage and natural environment of our fast growing District

**SDSO 10**

To make the most of the economic, social and environmental opportunities presented by the District's central location within the National Forest

**SDSO 11**

To make optimum use of previously developed and under-used land

**SDSO 12**

To enhance and develop the role of Swadlincote town centre and its wider urban area as a focus for living, working, shopping and leisure

### **SDSO 13**

To ensure growth in South Derbyshire is co-ordinated with development in adjoining areas both within and outside the Derby HMA

### **(Draft) Derby HMA Strategic Objectives:**

7.5 The Derbyshire HMA strategic objectives are as follows

#### **HMASO1**

To promote the principles of sustainable development and address the causes and mitigate and adapt to the impacts of climate change, including flood risk, particularly from rivers and surface water

#### **HMASO2**

To deliver economic success, making the Derby Housing Market Area an attractive location for major employers and inward investment, and address inequalities through the regeneration of deprived communities

#### **HMASO3**

To grow and strengthen the roles of Derby city centre and the Derby Principal Urban Area, Swadlincote sub-regional centre and, in Amber Valley, the market towns of Alfreton, Belper, Heanor and Ripley

#### **HMASO4**

To build on relationships within and outside of the HMA, particularly with the Northern, Greater Nottingham and Leicester and Leicestershire areas in the East Midlands and Burton-upon-Trent in the West Midlands

#### **HMASO5**

To give priority to making best use of previously developed land and vacant or under-used buildings in urban or other sustainable locations

#### **HMASO6**

To bring forward mixed use sustainable urban extensions to Derby Principal Urban Area and urban extensions elsewhere in the HMA

#### **HMASO7**

To provide sufficient housing to meet the needs of communities that is decent, suitable and affordable

#### **HMASO8**

To provide high quality, well designed and sustainable development, working towards zero-carbon development and Building For Life standards, minimising resource consumption and waste and maximising opportunities for renewable energy generation and recycling

#### **HMASO9**

To increase biodiversity and protect and enhance the strategic green infrastructure, open spaces, landscape and townscape character, cultural and heritage assets, and designated sites, including the Derwent Valley Mills World Heritage Site

### **HMASO10**

To promote equality and community cohesion, healthy and active lifestyles and support improvements in community safety, particularly for children and young people

### **HMASO11**

To make the best use of existing infrastructure and to fully integrate and coordinate new development with investment in and provision of new infrastructure, taking into account changes to our population including the needs of older people, children and young people

### **HMASO12**

To enhance transport links and public transport accessibility to deliver an integrated transport system and achieve viable travel choice, reducing car use, especially commuting

### **Options**

7.6 The purpose of the Core Strategy Issues and Alternative Options document is to set out options for how South Derbyshire could grow and change over the next 15-20 years. However, for the climate change and renewable energy topic area several of our identified aims may not be fully considered in the in the Options Consultation. The reasons for this are varied and include; current gaps in knowledge/evidence base and/or the options not being considered as strategic matters. In the case of renewable energy the District Council is awaiting the completion of a renewable energy study). Where issues are not presently dealt within in the Issues and Alternative Options Consultation it is likely they will be dealt with in a later stage of the Core Strategy preparation process; will be subsumed into a broad-brush policy (which seeks to tackle a number of related issues) or in subsequent planning documents published after the Core Strategy. Aims that are not considered fully in the Issues and Alternative Options Consultation Document include the following:

- Improve energy resilience and security of supply
- Exploit existing and potential opportunities for decentralised and renewable or low carbon energy

7.7 We have, however, identified a number of climate change and renewable energy aims which are strategically important and are based on a sufficient level of evidence to allow some consideration of potential options. These aims are discussed below and the full alternative options are set out in the main options consultation document.

### **Sustainable and energy efficient buildings**

7.8 The Government intends that all new homes should be zero carbon by 2016 with all non-domestic buildings reaching the same standard by 2019. The need to improve the energy efficiency of buildings within the District is also highlighted in a draft renewable energy study commissioned by the District Council and a number of partner authorities. The previous Issues and Ideas Consultation indicated general support for improving the sustainability and energy efficiency of new homes and business premises. Seeking not to improve the energy efficiency of new homes is not a realistic option.

**Relevant Options and Objectives:**

- 7.9 Given the information in this topic paper and the considerations immediately above a number of options to bring forward low carbon development have been identified. These all consider the extent to which we should pursue low carbon development.
- 7.10 The decisions made relating to low carbon development may assist South Derbyshire and the Derby HMA in meeting several objectives, including:
- (Draft) Derby HMA Strategic Objective (HMAS) 1 and 8
  - (Draft) South Derbyshire Strategic Objectives 1, 9 and 10

**Reducing Flood Risk**

- 7.11 This issue has been considered in this topic paper and in the Water and Flooding Topic Paper. Both National and Regional Planning Guidance set out relatively prescriptive approaches to managing flood risk in new development. This approach is based on a sequential test, which seeks to push development to areas of low flood risk, only allowing new development in areas of medium or high risk where there are no lower risk alternatives. Within this sequentially based approach, however, there may be opportunity to identify specific locations where a blanket presumption against development within a defined catchment is appropriate. Options, which seek not to avoid flood risk in new developments, are not considered realistic.

**Relevant Options and Objectives:**

- 7.12 Given the information in this topic paper and the considerations immediately above two flood risk options, which both consider the extent to which development could or should take place in areas of known risk have been included in the Issues and Alternative Options document.
- 7.13 The decisions made relating to diffuse pollution may assist South Derbyshire and the Derby HMA in meeting several objectives, including:
- (Draft) Derby HMA Strategic Objective (HMAS) 1 and 10
  - (Draft) South Derbyshire Strategic Objectives 1 and 5

If you would like this document in another language, or if you require the services of an interpreter, please contact us. This information is also available in large print, Braille or audio format upon request.

**Phone: 01283 595795**

**email:customer.services@south-derbys.gov.uk**

Jeśli chcieliby Państwo otrzymać ten dokument w innym języku lub potrzebują Państwo usług tłumacza, prosimy o kontakt. Informacje te są również dostępne na życzenie w wydaniu dużym drukiem, w alfabecie brajla lub w wersji audio.

如果你需要这份文件的中文翻译·或者需要传译员的帮助·请联系我们。这些数据也备有大字体印本、盲人点字和录音带，欢迎索取。

ほかの言語でこの文書をご希望の場合、もしくは通訳サービスをご希望の場合はご連絡ください

またこの情報は、ご要望により大きなプリント、点字版、また音声形式でも承っております。

यदि आपको ये दस्तावेज किसी दूसरी भाषा में चाहिये, या किसी दुभाषिये की सेवाओं की जरूरत है तो हमें सम्पर्क करनी कृपया करें। ये जानकारी माँग करने पर बड़े अक्षरों, ब्रैल या आडिओ के रूप में भी उपलब्ध करवाई जा सकती है।

ਜੇ ਤੁਹਾਨੂੰ ਇਹ ਦਸਤਾਵੇਜ਼ ਕਿਸੇ ਦੂਸਰੀ ਭਾਸ਼ਾ ਵਿਚ ਚਾਹੀਦਾ ਹੈ, ਜਾਂ ਕਿਸੇ ਦੁਭਾਸ਼ੀਏ ਦੀਆਂ ਸੇਵਾਵਾਂ ਦੀ ਲੋੜ ਹੈ ਤਾਂ ਸਾਡੇ ਨਾਲ ਸੰਪਰਕ ਕਰਨ ਦੀ ਕ੍ਰਿਪਾ ਕਰੋ ਜੀ ਇਹ ਜਾਣਕਾਰੀ ਮੰਗ ਕਰਨ ਤੇ ਵੱਡੇ ਅੱਖਰਾਂ, ਬ੍ਰੇਅਲ ਜਾਂ ਆਡਿਊ ਦੇ ਰੂਪ ਵਿਚ ਵੀ ਉਪਲੱਬ ਕਰਵਾਈ ਜਾ ਸਕਦੀ ਹੈ।

اگر آپ یہ ڈاکیومنٹ کسی اور زبان میں چاہتے ہوں، یا اگر آپ کو کسی ترجمان کی خدمات درکار ہوں، تو براہ کرم ہم سے رابطہ کریں۔ درخواست کرنے پر یہ معلومات بڑے پرنٹ، بریل یا آڈیو فارمیٹ میں بھی دستیاب ہیں۔



for South Derbyshire

When you have finished with this document please recycle it

Local Development Framework  
Core Strategy Topic Paper - Climate Change & Renewable Energy  
January 2010

Published by South Derbyshire District Council  
Civic Offices Civic Way Swadlincote Derbyshire DE11 0AH

[www.south-derbys.gov.uk](http://www.south-derbys.gov.uk)