

West Midlands Regional Assembly

Sustainability Appraisal of Draft
Regional Spatial Strategy (RSS)
Phase 3 Revision for the West
Midlands – Final Scoping Report

TOPIC PAPER 2: CLIMATE CHANGE AND ENERGY

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1 SUSTAINABILITY APPRAISAL OF DRAFT REGIONAL SPATIAL STRATEGY (RSS) PHASE 3 REVISION FOR THE WEST MIDLANDS – TOPIC PAPER 2: CLIMATE CHANGE AND ENERGY

1.1 INTRODUCTION

1.1.1 Sustainability Appraisal of Phase 3 of the West Midlands RSS

The West Midlands Regional Assembly (WMRA) is currently carrying out a revision of its Regional Spatial Strategy (RSS). The purpose of the RSS is to guide the preparation of local authority development plans, local waste plans and local transport plans, so that together they can provide a coherent framework for regional development up to 2021.

The revision is being carried out in three phases; this is the third and final phase of the revision. Phase Three of the revision considers various environmental issues, minerals provision, accommodation for Gypsies and Travellers and Travelling Showpeople, culture, sport and tourism, and critical rural services. The phase was begun in November 2007 with the launch of the Draft Project Plan, and is likely to conclude in the summer of 2009 when the Preferred Option and Policies will be submitted to the Secretary of State.

Sustainability Appraisal (SA) aims **to promote sustainable development through the integration of social, economic and environmental consideration into plans, programmes and strategies**. Sustainability Appraisal is mandatory for Regional Spatial Strategies under Section 39(2) of the *Planning and Compulsory Purchasing Act 2004*. Therefore, an SA is being carried out as part of the Phase Three Revision of the West Midlands RSS.

An SA is carried out in stages. Producing a *Scoping Report* is the first stage in the SA process.

1.1.2 The Scoping Report

This *Topic Paper* is part of the *Scoping Report* for the Sustainability Appraisal of Phase Three of the RSS Revision. The purpose of the *Scoping Report* is to set out the scope of the Sustainability Appraisal of the Phase Three of the RSS Revision. In particular, the report sets out the Sustainability Appraisal Framework, which includes questions which will be used to ‘interrogate’ proposals developed as part of the revision process.

The *Scoping Report* is designed to provide a focus for consultation with relevant environmental authorities and other sustainable development stakeholders within the West Midlands, in order to gain feedback on the various elements which will frame the subsequent appraisal process.

The *Scoping Report* comprises five elements:

- An *Introductory Paper*, which provides introductory material on Sustainable Development, sustainability appraisal, and Phase Three of the RSS

Revision, and summarises the main findings and conclusions of scoping work, including setting out the ‘Sustainability Appraisal Framework’; and

- Four *Topic Papers*, which provide detailed information on 33 Sustainable Development objectives, particularly focusing on how those objectives relate to Phase Three of the RSS Revision and the West Midlands more generally.

The four *Topic Papers* are as follows:

- Topic Paper 1 – Sustainable Consumption and Production
- Topic Paper 2 – Climate Change and Energy
- Topic Paper 3 – Natural Resource Protection and Environmental Enhancement
- Topic Paper 4 – Sustainable Communities

This approach is designed to help stakeholders in locating topics and information of most interest to them.

Figure 1.1 *Structure of the Scoping Report*



1.1.3 *Structure of Topic Papers*

Each topic paper is divided up into sections on each of the RSDF Objectives. For example, Topic Paper 1 on Sustainable Consumption and Production has eleven sections covering each of the objectives relating to that RSDF theme.

Each section presents the following information:

1. **RSDF Objective**, with an explanation of how it is believed the Objective can be impacted on, affected or delivered by Phase 3.
2. **Baseline**. An analysis of current (and reasonably foreseeable future) conditions on the issues relating to the Objective in the West Midlands. This is designed to satisfy a key requirement of the SEA Directive – the ‘Environmental Report’ required under the Directive must include “*the relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme*” (Annex I (b)) and “*the environmental characteristics of areas likely to be significantly affected*” (Annex I (c)).

3. **Policy Context.** A review of the policies, plans and programmes relevant to Phase 3 and that RSDF Objective. Also designed to satisfy a key requirement of the SEA Directive – the ‘Environmental Report’ required under the Directive must include *“an outline of the contents, main objectives of the plan or programme and relationship with other relevant plans and programmes”* (Annex I (a)) and *“the environmental protection objectives, established at international, Community or Member State level, which are relevant to the plan or programme...”* (Annex I (e)).
4. **Key Sustainability Issues and Problems.** An analysis of the sustainability issues and problems facing the West Midlands as regards that RSDF Objective, on the basis of baseline information and the review of policy. Also designed to satisfy a key requirement of the SEA Directive – the ‘Environmental Report’ required under the Directive must include *“any existing environmental problems which are relevant to the plan or programme including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to Directives 79/409/EEC and 92/43/EEC”* (the Birds and Habitats Directives under which Special Protection Areas and Special Areas of Conservation, respectively, are established) (Annex I (d)).
5. **Sustainability Appraisal Framework.** The questions that will be used to ‘interrogate’ options and proposals under Phase 3, to ascertain whether and how specific sustainability issues are being addressed; and to understand the environmental, social and economic implications of options and proposals. These questions reflect an understanding of the RSS vision, challenges and objectives, and the objectives and tasks developed for the Phase Three Revision; objectives and targets identified through the review of plans and strategies; the baseline conditions within the Region; and key sustainability issues in the Region.

This structure is designed to ensure that the legal requirements of SA and SEA are clearly visible to stakeholders.

1.1.4 ***RSDF Objectives covered by this Topic Paper***

This *Topic Paper*, on Climate Change and Energy, covers the following RSDF objectives:

- 2.1 Reduce overall energy use through increased energy efficiency
- 2.2 Increase the proportion of energy generated from renewable and low carbon sources, including by micro-generation, CHP, district heating, and in transportation
- 2.3 Minimise the Region’s contribution to the causes of climate change by reducing emissions of greenhouse gases from transport, domestic, commercial and industrial sources
- 2.4 Implement a managed response to the unavoidable impacts of climate change, ensuring that the design and planning process takes into account predicted changes in the Region’s climate
- 2.5 Land use and development that takes into account predicted changes in the Region’s climate including flood risk

The following sections present information on each RSDF objective in turn.

1.2 RSDF 2.1: ENERGY EFFICIENCY

1.2.1 RSDF Objective

‘Reduce overall energy use through increased energy efficiency’.

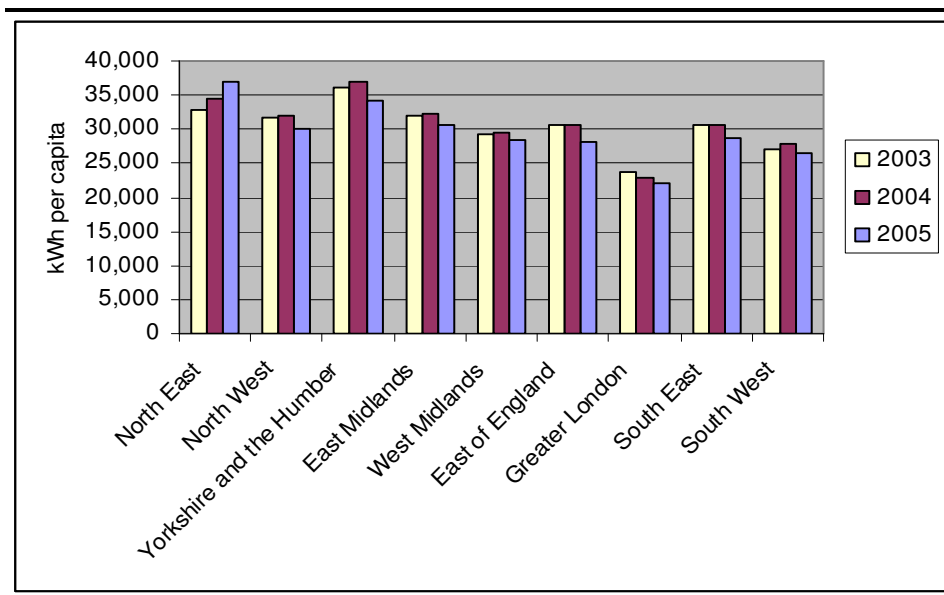
How can the Objective be impacted on, affected or delivered by Phase 3?

The policy on Energy Conservation (EN2) is likely to directly deliver this objective. Policy QE3 on Creating a High Quality Built Environment also covers energy efficiency.

1.2.2 Baseline

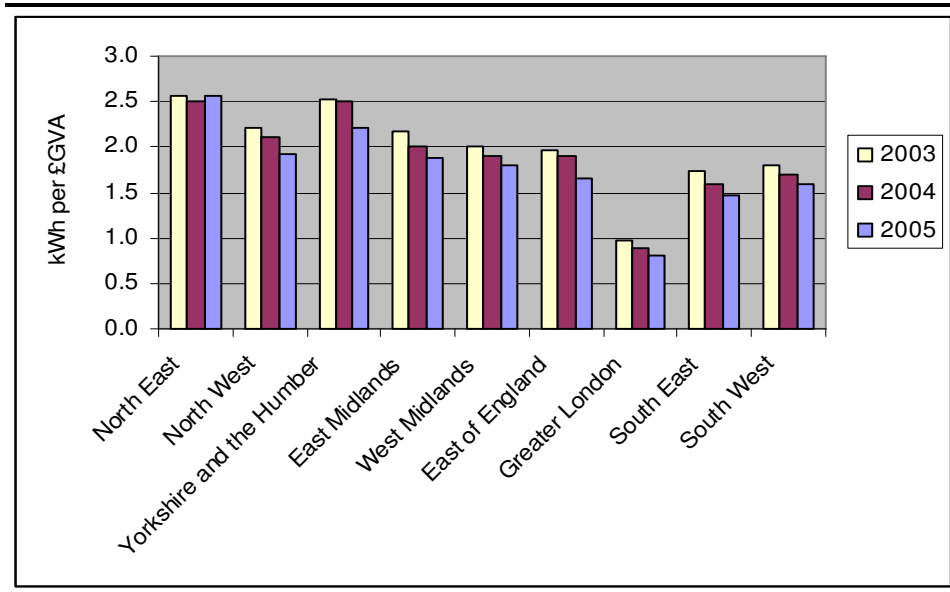
Overall energy efficiency in the West Midlands increased from 2004 to 2005 both in terms of population numbers and economic output. The following charts show total energy consumed (i.e. domestic and commercial/industrial) per head of population and for every pound of economic wealth created (or gross value added).

Figure 1.2 Total Final Energy Consumption Per Capita, by Region



Source: High Level Indicators of Energy Use and Regional and Local Authority Level, BERR, <http://www.berr.gov.uk/energy/statistics/regional/high-level/page36161.html>

Figure 1.3 Total Final Energy Consumption Per Pound of Gross Value Added, by Region



Source: High Level Indicators of Energy Use and Regional and Local Authority Level, BERR, <http://www.berr.gov.uk/energy/statistics/regional/high-level/page36161.html>

According to the *West Midlands Low Carbon Housing Market Framework*¹, the average SAP rating for a home in the West Midlands is 48.8. (A SAP rating of around 50 creates a demand for space heating of around 140KWH/m² which, typically, might account for over 50% of a household's CO² emissions.)

1.2.3 Policy Context

Strategy	Key relevant policy objectives
UK Sustainable Development Strategy	Reducing the inefficient use of resources Promoting the use of modern methods of construction Minimise climate change, including through energy efficiency
Meeting the Energy Challenge: A White Paper on Energy	Encourages more energy saving through better information, incentives and regulation removing barriers to the take up of cost-effective energy efficiency. More support should be provided for low carbon technologies through public/private sector collaboration and increased international collaboration. There is scope for increased use of heat and distributed energy and providing better planning guidance to ensure that the CHP option is considered. Opportunities for transport lie in increasing fuel efficiency.
PPS1 Planning and Climate Change Supplement	Spatial strategies should secure the highest viable resource and energy efficiency. New development should be planned to make good use of opportunities for decentralised energy. Regional planning bodies should have regard to the potential to build into new and existing development more efficient means of energy supply.
PPS3 Housing	Developments should facilitate the efficient use of resources, during construction and in use.
PPS1 Delivering Sustainable Development	Ensuring high quality development through good and inclusive design, and the efficient use of resources Development plan policies should seek to minimise the need to consume new resources Reduce energy use
An Environmental Manifesto for the West Midlands	Priorities include: promoting reduced consumption of natural resources; promotes sustainable new and refurbished homes; West Midlands to become a leader in energy efficiency
West Midlands	Improving energy efficiency, with the following targets:

¹ SHAP, March 2008, <http://www.sustainabilitywestmidlands.org.uk/shap/shap0708/Vision>

Strategy	Key relevant policy objectives
Regional Energy Strategy	<ul style="list-style-type: none"> • Industry: Reduce CO₂ emissions by 2.4 Mt (18%) by 2010 and an additional 4.3 Mt (32%) by 2020. • Commercial and public sector: Reduce emissions by 2.0 Mt (36%) by 2010 and an additional 1.5Mt (26%) by 2020. • Domestic: Reduce emissions by 2.4 Mt (19%) by 2010, and an additional 3.7 Mt (29%) by 2020. • Transport: Stabilise emissions by 2010 and reduce by 0.7 Mt (7%) by 2020. • Combined Heat and Power: A target of 1,000 MWe by 2010
West Midlands Regional Climate Change Action Plan	<p>Plan for low-carbon communities. Help regional businesses improve resource efficiency. Move the region towards greater energy efficiency and security, by supporting and encouraging decentralised and sustainable production and lower energy demand through greater energy efficiency.</p>
West Midlands Economic Strategy	Improving business competitiveness
West Midlands Health and Well-Being Strategy	Tackle climate change and its impacts, by reducing emissions of global warming gases

1.2.4 **Key Sustainability Issues and Problems**

Increasing energy efficiency is one of the keys to reducing the emission of greenhouse gases, as well as helping to decrease energy costs. With challenging national targets on emission reductions and current performance indicating that these are unlikely to be achieved, the region must ensure that it implements all practicable measures to increase the energy efficiency of all sectors, including domestic (new build and existing homes), industry and commerce, and transport.

1.2.5 **Sustainability Appraisal Framework**

Does the option/proposal:

- **Reduce overall energy use through increased energy efficiency?**

1.3 **RSDF 2.2: RENEWABLE AND LOW CARBON ENERGY**

1.3.1 **RSDF Objective**

‘Increase the proportion of energy generated from renewable and low carbon sources, including by micro-generation, CHP, district heating, and in transportation’.

How can the Objective be impacted on, affected or delivered by Phase 3?

Policies on Energy (EN1) directly relates to this issue. The policy on Energy Conservation (EN2) also covers issues on CHP, and the policy on Forestry and Woodlands (QE8) also promotes biomass.

1.3.2 **Baseline**

The West Midlands Regional Energy Strategy 2004 has a target of generating 5% of its electricity by 2010 (compared to the UK target of 10%), excluding any contribution from mass burn waste incineration or from co-firing at large power stations. This target is made up of:

- 75MW of landfill gas fuelled generators
- 1.5MW of wind turbines
- 27 biomass/biodiesel powered generators, each one 1MW in size

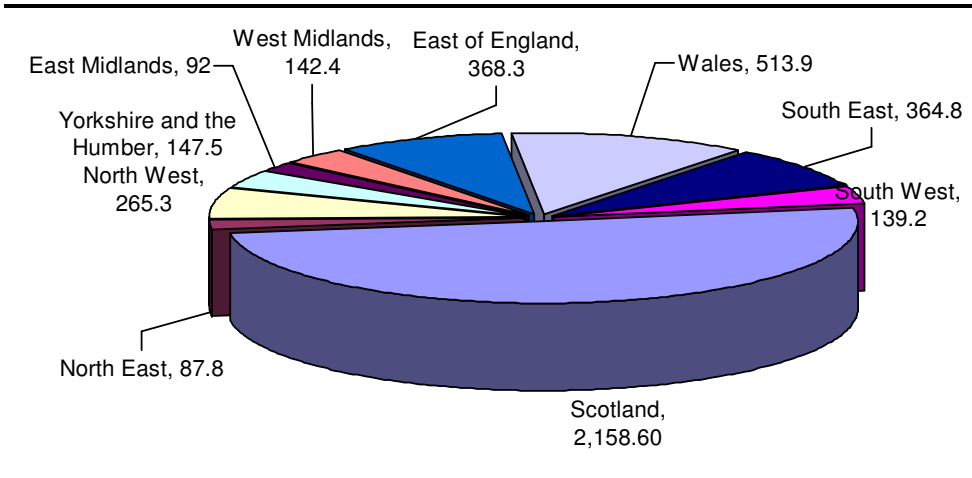
The region currently produces relatively little renewable electricity, a reflection of the limited potential opportunities for renewables in the area. Total renewable energy generating capacity in the West Midlands has fallen from 164.7MW in 2003 to 141.6MW in 2006, due to a reduction in co-firing of biofuels. A breakdown of renewables by type is set out below.

Table 1.1 Renewable Energy Generating Capacity by Type, MW

	2003	2004	2005	2006
Hydro-electric	0.6	0.6	0.6	0.6
Landfill gas	43.9	45.3	44.3	53.7
Other biofuels	120.3	127.4	97.5	87.4
Total	164.7	173.2	142.4	141.6

Source: West Midlands Annual Monitoring Report, 2007

Figure 1.4 Renewables Electricity Capacity by Region in MW, 2005

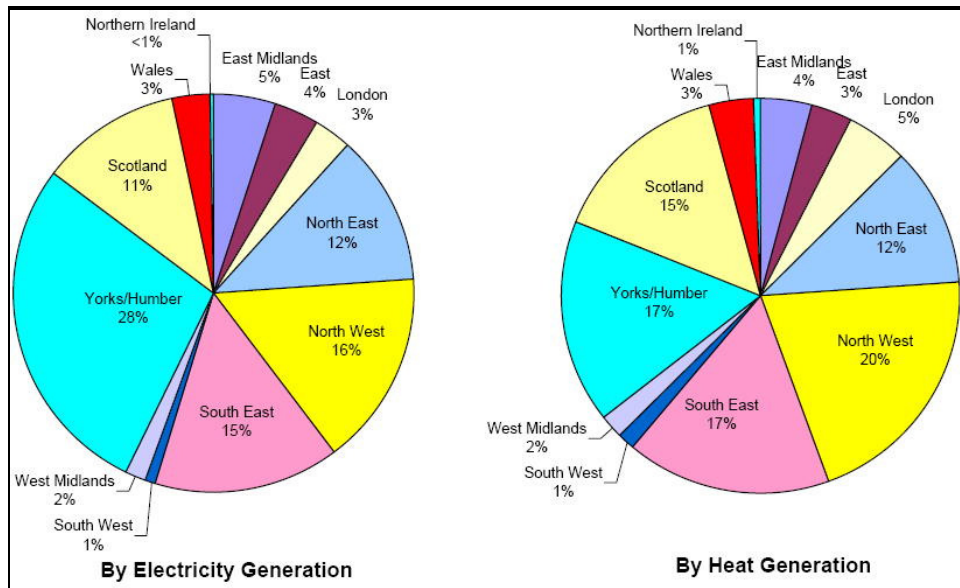


Source: High Level Indicators of Energy Use at Regional and Local Authority Level 2005, BERR, <http://www.berr.gov.uk/energy/statistics/regional/high-level/page36161.html>

In 2005, the region consumed 152,000 GWh of energy, of which 27,000 GWh was electricity consumption², therefore it generates about 0.5% of its total energy requirements and 3% of its electricity requirements from renewables.

The West Midlands currently generates about 1500 GWh of heat and electricity from Combined Heat and Power plant. This represents a very low proportion of the total generated in the UK.

Figure 1.5 CHP Generation by Region, 2006



Source: Combined Heat and Power in Scotland, Wales, Northern Ireland and the Regions of England in 2006, BERR, September 2007, <http://www.berr.gov.uk/files/file43836.pdf>

The West Midlands currently has capacity for 200 GWh of road biofuels, against a 2010 target of 460 GWh per year³ by 2010 (approximately 44 million

² Total Final Energy Consumption at Regional and Local Authority Level, BERR, <http://www.berr.gov.uk/energy/statistics/regional/total-final/page36187.html>

litres - 2% of current diesel sales). The presence of just two large processors means it is regionally strong in terms of production with half the current UK production capacity. The majority of sales, however, go out of the region.

1.3.3

Policy Context

Strategy	Key relevant policy objectives
UK Sustainable Development Strategy	Minimise climate change, including through the use of renewables.
Energy White Paper: Our Energy Future – Creating a Low Carbon Economy	Greater involvement from English regions and from local communities, complemented by a planning system that is more helpful to investment in infrastructure and new electricity generation, particularly renewables and CHP. Regional bodies are encouraged to examine strategically the resources and opportunities for renewable projects within their areas and what they can do to develop them in their region. Target for 10% of electricity to be supplied from renewables by 2010, with an aspiration to double this by 2020.
Meeting the Energy Challenge: A White Paper on Energy	More support should be provided for low carbon technologies through public/private sector collaboration and increased international collaboration. There is scope for increased use of heat and distributed energy, including by making planning permission for microgeneration easier and providing better planning guidance to ensure that the CHP option is considered. The target is for renewables to contribute 10% of electricity supplies 2010, with an aspiration for this level to double by 2020. Opportunities for transport lie in increasing fuel efficiency and promoting alternative fuels. Notes targets from European strategy on energy security and climate change: <ul style="list-style-type: none"> • To generate 20% of the EU's energy from renewables by 2020, covering heat and transport as well as electricity. • A minimum of 10% for the share of biofuels in EU petrol and diesel consumption, to be achieved by all Member States.
Our Energy Challenge: Power from the People	Local authorities have a key role to play in relation to microgeneration, particularly with respect to planning permission for new developments and for the installation of some microgeneration technologies on existing buildings. Recognises the need to increase the contribution from bioenergy and at the same time ensure that biomass production from energy crops or forestry is sustainable
Transport White Paper: The Future of Transport – A Network for 2030	Deliver carbon savings and reduce the impact of other emissions which pollute the environment
Towards a Sustainable Transport System	Seeks to cut emissions of greenhouse gases, including by encouraging innovation in low carbon technologies
The Rural Development Programme for England 2007-2013	Developing a greater awareness of market opportunities, and a greater ability to exploit these opportunities, particularly in relation to renewable energy
PPS1 Delivering Sustainable Development	Promote the development of renewable energy resources
PPS1 Planning and Climate Change Supplement	New development should be planned to make good use of opportunities for decentralised and renewable or low carbon energy. Regional planning bodies should have regard to the potential to build into new and existing development more efficient means of energy supply and increasing contributions from renewable and low-carbon energy sources, maximising the opportunities. Also should set regional targets for renewable energy generation.

³ *An Audit of Existing and Proposed 'Bioenergy' Installations and Infrastructure in the West Midlands Region*, Marches Energy Agency, June 2005

Strategy	Key relevant policy objectives
PPS3 Housing	Developments should seek to reduce the impact on climate change.
PPS22 Renewable Energy	RSSs should contain policies designed to promote and encourage, rather than restrict, the development of renewable energy resources, and include targets for renewable energy capacity for 2010 and 2020.
West Midlands Regional Energy Strategy	Increasing the use of renewable energy resources and maximising uptake of business opportunities, with the following targets: <ul style="list-style-type: none"> • Renewable generation equivalent to 5% of electricity consumption by 2010 and 10% by 2020. • Heat from renewable sources providing 250 GWh (0.3% of consumption) by 2010 and 650 GWh (1% of consumption) by 2020. • Production of 460 GWh of liquid biofuels per year by 2010.
West Midlands Regional Forestry Framework and Delivery Plan	To improve awareness, understanding and support for wood energy
West Midlands Regional Climate Change Action Plan	Plan for low-carbon communities. Identify strategic sites for decentralised energy production/district heating and include a policy applying to e.g. major investment sites in RSS review. Promote sustainable and renewable energy as a strong economic driver.
West Midlands Economic Strategy	Capitalising on sustainability and low-carbon opportunities Supporting a secure, low-carbon energy infrastructure for the region
West Midlands Health and Well-Being Strategy	Tackle climate change and its impacts, by reducing emissions of global warming gases

1.3.4 **Key Sustainability Issues and Problems**

Although the region has limited potential in some types of renewables (eg wind, wave and tidal), it still has some way to go to meet its targets for 2010 which recognise these constraints. Other renewable or low carbon generators such as biomass, CHP, district heating and some forms of microgeneration are not particularly constrained in the West Midlands compared to other regions, and there is scope for increasing the proportion of energy generated from these sources. The region performs poorly on CHP generation, which is increasingly promoted in policy including recent Energy White Papers. With the increased levels of housing development proposed in the region, and continuing economic development, there are opportunities to ensure these types of generation are promoted as an integral part of new development.

1.3.5 **Sustainability Appraisal Framework**

Does the option/proposal:

- **Increase the proportion of energy generated from renewable and low carbon sources, including by micro-generation, CHP, district heating, and in transportation?**
- Ensure that 10% of electricity supplies is provided from renewable energy sources by 2010, and 20% by 2020?

1.4 **RSDF 2.3: CLIMATE CHANGE MITIGATION**

1.4.1 **RSDF Objective**

‘Minimise the Region’s contribution to the causes of climate change by reducing emissions of greenhouse gases from transport, domestic, commercial and industrial sources’.

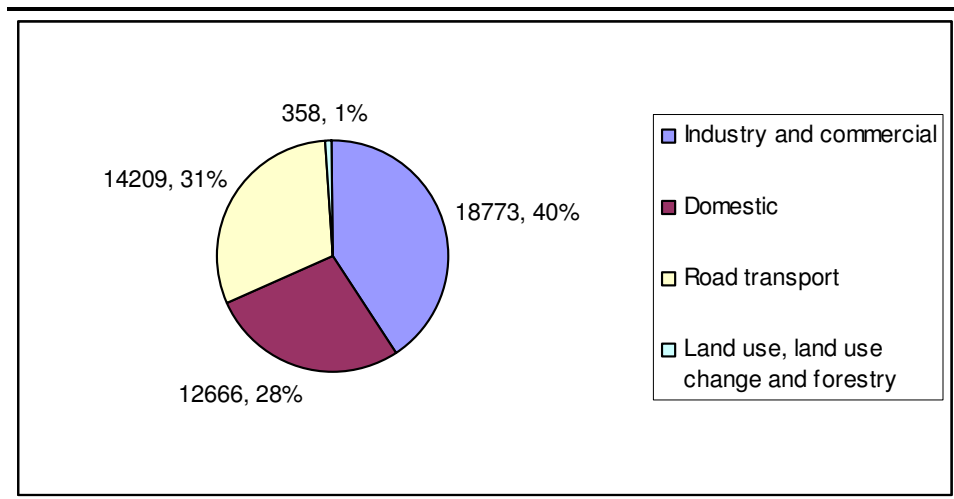
How can the Objective be impacted on, affected or delivered by Phase 3?

Policy EN1 directly relates to the issue of climate change mitigation. The policy on Energy Conservation (EN2) also covers issues on CHP, and the policy on Forestry and Woodlands (QE8) also promotes biomass.

1.4.2 **Baseline**

The West Midlands emitted 46,000 kT of CO₂ in 2005, which represented 8.7 tonnes per capita⁴.

Figure 1.6 Carbon Dioxide Emissions by End User in the West Midlands, in kilotonnes of CO₂ and percentage of total, 2005



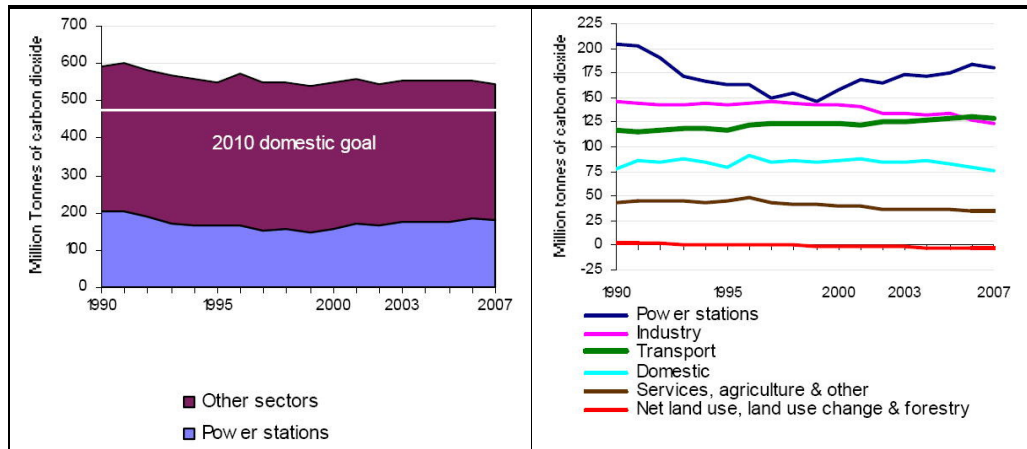
Source: e-Digest Statistics about Climate Change, Defra, <http://www.defra.gov.uk/environment/statistics/globalatmos/galocalghg.htm>

Domestic emissions of CO₂ equate to 2.4 tonnes per capita, close to the UK average and very similar to all English regions.

These statistics are not comparable with earlier years. However, the graphs of trends below show that the UK is not on course to meet its 2010 target for emissions reduction. There is no reason to suppose that the West Midlands is not typical of the UK in lifestyle terms, and therefore it is probable that greenhouse gas emissions are barely reducing in the region and certainly not fast enough to meet the equivalent of the national targets.

⁴ e-Digest Statistics about Climate Change, Defra, <http://www.defra.gov.uk/environment/statistics/globalatmos/galocalghg.htm>

Figure 1.7 Trends in UK Carbon Dioxide Emissions



Source: Energy Trends March 2008, BERR, <http://www.berr.gov.uk/files/file45397.pdf>
 Note: Excludes emissions from aviation

1.4.3 Policy Context

Strategy	Key relevant policy objectives
UK Sustainable Development Strategy	Minimise climate change, including through energy efficiency and the use of renewables.
Energy White Paper: Our Energy Future – Creating a Low Carbon Economy	Renewable energy will play an important part in reducing carbon dioxide emissions. Regional bodies are encouraged to examine strategically the resources and opportunities for renewable projects within their areas and what they can do to develop them in their region. Targets to reduce 1990 CO ₂ emissions by 20% by 2010 and 60% by 2050.
Climate Change the UK Programme 2006	Based on the principle of the need for the UK to adapt to the impacts of climate change. Targets: <ul style="list-style-type: none"> To reduce CO₂ emissions by 20% below 1990 levels by 2010. To reduce CO₂ emissions by some 60% by about 2050
Meeting the Energy Challenge: A White Paper on Energy	Encourages more energy saving through better information, incentives and regulation removing barriers to the take up of cost-effective energy efficiency. Opportunities for transport lie in increasing fuel efficiency and promoting alternative fuels. Notes targets from European strategy on energy security and climate change: <ul style="list-style-type: none"> To generate 20% of the EU’s energy from renewables by 2020, covering heat and transport as well as electricity. A minimum of 10% for the share of biofuels in EU petrol and diesel consumption, to be achieved by all Member States.
Our Energy Challenge: Power from the People	Local authorities have a key role to play in relation to microgeneration, particularly with respect to planning permission for new developments and for the installation of some microgeneration technologies on existing buildings.
Transport White Paper: The Future of Transport – A Network for 2030	Deliver carbon savings
Transport Ten Year Plan	Promotes a transport system that makes less impact on the environment
Towards a Sustainable Transport System	Seeks to cut emissions of greenhouse gases, including by encouraging innovation in low carbon technologies, promoting greener alternatives, provision of good public transport and better urban design.
The Future of Air Transport	Calls for an approach which seeks to reduce and minimise the impacts of airports on the natural environment, while balancing this with other considerations.

Strategy	Key relevant policy objectives
PPS1 Planning and Climate Change Supplement	Spatial strategies should: <ul style="list-style-type: none"> • secure the highest viable resource and energy efficiency • promote developments which are planned to make good use of opportunities for decentralised and renewable or low carbon energy • deliver patterns of urban growth and sustainable rural developments that help secure the fullest possible use of sustainable transport and which reduce the need to travel. • secure new development and shape places that minimise vulnerability, and provide resilience, to climate change; • conserve and enhance biodiversity, recognising that the distribution of habitats and species will be affected by climate change; • reflect the development needs and interests of communities and enable them to contribute effectively to tackling climate change; and • respond to the concerns of business and encourage competitiveness and technological innovation in mitigating and adapting to climate change. • encourage land uses and land management practices that help secure carbon sinks; • consider and take account of the availability of water resources; • bring forward adaptation options for existing development in likely vulnerable areas. New development should: <ul style="list-style-type: none"> • provide public and private open space so that it offers accessible choice of shade and shelter, recognising the opportunities for flood storage, wildlife and people; • give priority to the use of sustainable drainage systems and waste water recycling.
PPS3 Housing	Developments should facilitate the efficient use of resources, during construction and in use and seek to reduce the impact of and on climate change.
West Midlands Economic Strategy	Improving business competitiveness Capitalising on sustainability and low-carbon opportunities
West Midlands Health and Well-Being Strategy	Tackle climate change and its impacts, by reducing emissions of global warming gases and promoting adaptation to climate change

1.4.4 **Key Sustainability Issues and Problems**

The UK will struggle to meet its 2010 target for CO₂ emissions reduction, and emissions in the West Midlands are typical of the UK, certainly in per capita terms, although variations in the industrial mix between regions affects the national distribution of total CO₂ emissions.

Industrial emissions must continue to decrease by increases in resource efficiency, and emissions from power generation need to be reduced through fuel substitution. Emissions from the transport sector are growing steadily, while domestic emissions are likely only now to have fallen back to 1990 levels, and it is here that planning has the greatest contribution to make, as expected by both national and regional policy. Spatial planning needs to create a step change in the delivery of development which minimises the need to travel, and which promotes local energy generation. Increasing the energy efficiency of existing development also needs to be a priority in order to have any significant impact on emissions from the domestic sector as a whole.

1.4.5 Sustainability Appraisal Framework

Does the option/proposal:

- **Minimise the Region's contribution to the causes of climate change by reducing emissions of greenhouse gases from transport, domestic, commercial and industrial sources?**

1.5 ***RSDF 2.4: CLIMATE CHANGE ADAPTATION***

1.5.1 ***RSDF Objective***

‘Implement a managed response to the unavoidable impacts of climate change, ensuring that the design and planning process takes into account predicted changes in the Region’s climate’.

How can the Objective be impacted on, affected or delivered by Phase 3?

The policies on Water and flood risk (QE9), Urban Greenspace (QE4), Biodiversity (QE7) and Forestry and Woodlands (QE8) strongly relate to climate change adaptation.

1.5.2 ***Baseline***

Adaptation to climate change could cover a number of issues. Responding to and managing flood risk is covered in detail under the next RSDF objective, while other actions could include the adoption of some sustainable construction methods, the provision of green infrastructure within new and existing development and the maintenance and enhancement of wildlife networks. However, no data was found in order to make an assessment of the baseline for adaptation activities within the region other than issues of flood risk and the regional response.

1.5.3 ***Policy Context***

Strategy	Key relevant policy objectives
PPS1 Planning and Climate Change Supplement	<p>Spatial strategies should:</p> <ul style="list-style-type: none"> • secure new development and shape places that minimise vulnerability, and provide resilience, to climate change; • conserve and enhance biodiversity, recognising that the distribution of habitats and species will be affected by climate change; • reflect the development needs and interests of communities and enable them to contribute effectively to tackling climate change; and • respond to the concerns of business and encourage competitiveness and technological innovation in mitigating and adapting to climate change. • encourage land uses and land management practices that help secure carbon sinks; • consider and take account of the availability of water resources; • bring forward adaptation options for existing development in likely vulnerable areas. <p>New development should:</p> <ul style="list-style-type: none"> • provide public and private open space so that it offers accessible choice of shade and shelter, recognising the opportunities for flood storage, wildlife and people; • give priority to the use of sustainable drainage systems and waste water recycling.
PPS3 Housing	Developments should seek to reduce the impact of climate change.
West Midlands Health and Well-Being Strategy	Tackle climate change and its impacts, by promoting adaptation to climate change

1.5.4 Key Sustainability Issues and Problems

Although there is no data to illustrate the uptake of measures to adapt to climate change, it is recognised in both national and regional policy that adaptation measures will be increasingly important to ameliorate the inevitable future impacts arising from climate change, such as increased temperatures, increased storm events and flooding, and greater unpredictability in the weather, with the consequent social, economic and environmental impacts for people and society. There will also be impacts on wildlife species and habitats which are less able to adapt than human beings, and it is important that land use builds in mechanisms to support this where possible.

1.5.5 Sustainability Appraisal Framework

Does the option/proposal:

- **Implement a managed response to the unavoidable impacts of climate change, ensuring that the design and planning process takes into account predicted changes in the Region's climate?**
- promote the adoption of climate change adaptation and climate proofing principles in planning and design?

1.6 *RSDF 2.5: FLOOD RISK*

1.6.1 *RSDF Objective*

‘Land use and development that takes into account predicted changes in the Region’s climate including flood risk’.

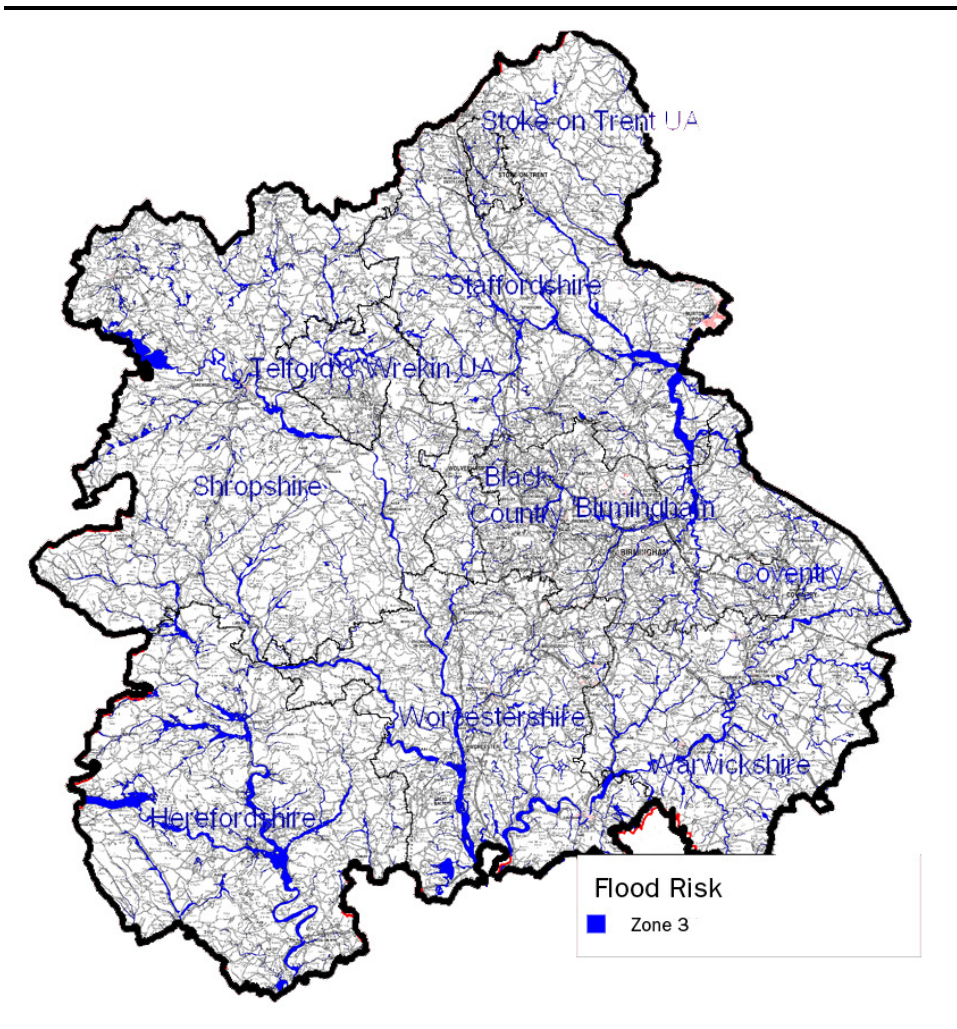
How can the Objective be impacted on, affected or delivered by Phase 3?

The policies on Water and flood risk (QE9) will be crucial in addressing this objective.

1.6.2 *Baseline*

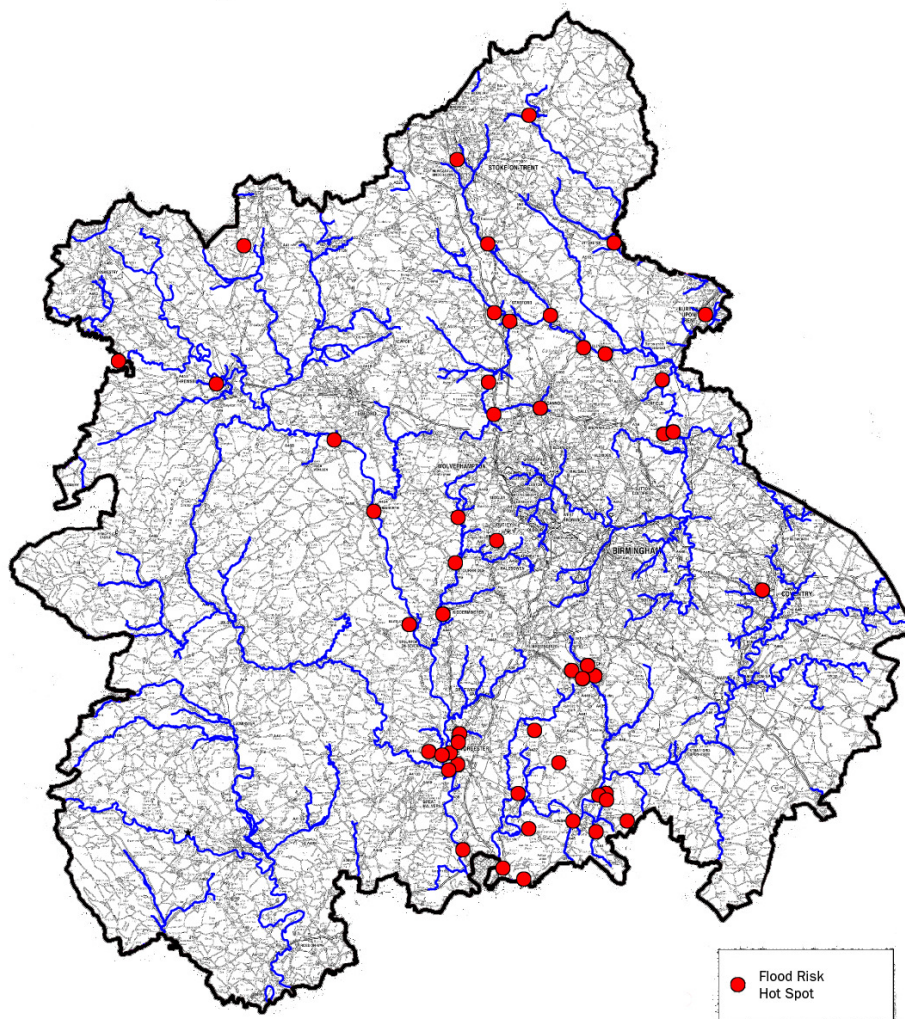
In June and July 2007 parts of the West Midlands were subject to severe flooding, both from main rivers and from local surface water drainage systems. Whilst most of the severe flood events occur in Flood Risk Zone 3, there appears to be an increasing number of incidents relating to highway flooding and localised surface water drainage flooding. These types of incidents may become more of a problem in the West Midlands Region as a result of the effects of climate change and may have increasing impact on transport, traffic and businesses.

Figure 1.8 Flood Risk Zone 3



Source: West Midlands Regional Flood Risk Appraisal, 2007

Figure 1.9 Flood Risk 'Hot Spots'



Source: West Midlands Regional Flood Risk Appraisal, 2007

Under Phase Two of the RSS Revision, the Assembly commissioned a regional flood risk appraisal by Faber Maunsell. This made an assessment of the inherent flood risk in the different local authorities in the region, which combines the proportion of land covered by Flood Zone 3 with an assessment of the extent of urbanisation around the river systems as they pass through the area.

Table 1.2 Relative Inherent Flood Risk in West Midlands Authorities

Low	Medium	High
Bridgnorth	Lichfield	Birmingham
Bromsgrove	Malvern Hills	Sandwell
Cannock Chase	North Warwickshire	Tamworth
Coventry	Nuneaton	East Staffordshire
Dudley	Oswestry	
Herefordshire	Solihull	
Newcastle-under-Lyme	Stafford	
North Shropshire	Walsall	
Redditch	Wolverhampton	
Rugby	Worcester	
Shrewsbury & Atcham		

Low	Medium	High
Stoke-on-Trent Stratford upon Avon South Shropshire South Staffordshire Staffordshire Moorlands Telford & Wrekin Warwick Wychavon Wyre Forest		

Source: West Midlands Regional Flood Risk Appraisal: Final Report, Faber Maunsell for West Midlands Regional Assembly, October 2007

Note: Inherent flood risk combines an assessment of the proportion of land within Flood Zone 3 and the extent of urbanisation within the area.

Nineteen planning permissions, including four considered to be major applications (i.e. in excess of 0.5 hectares/10 dwellings), were granted in the region contrary to the advice of the Environment Agency on flood risk grounds in 2005-06, an increase on recent years⁵.

1.6.3 Policy Context

Strategy	Key relevant policy objectives
EU Water Framework Directive	Requires that all inland and coastal waters within defined river basin districts must reach at least good ecological and chemical status by 2015. For each river basin district a river basin management plan must be established which integrates general protection of the aquatic ecology, specific protection of unique and valuable habitats, protection of drinking water resources, and protection of bathing water.
PPS1 Delivering Sustainable Development	Plan policies should take climate change impacts into account in the location and design of development, avoiding new development in areas at risk of flooding and sea-level rise, and as far as possible, by accommodating natural hazards and the impacts of climate change.
PPS1 Planning and Climate Change Supplement	<p>Spatial strategies should:</p> <ul style="list-style-type: none"> secure new development and shape places that minimise vulnerability, and provide resilience, to climate change; conserve and enhance biodiversity, recognising that the distribution of habitats and species will be affected by climate change; reflect the development needs and interests of communities and enable them to contribute effectively to tackling climate change; and respond to the concerns of business and encourage competitiveness and technological innovation in mitigating and adapting to climate change. consider and take account of the availability of water resources; bring forward adaptation options for existing development in likely vulnerable areas. <p>New development should:</p> <ul style="list-style-type: none"> provide public and private open space so that it offers accessible choice of shade and shelter, recognising the opportunities for flood storage, wildlife and people; give priority to the use of sustainable drainage systems and waste water recycling.
PPS3 Housing	Developments should facilitate the efficient use of resources, during construction and in use and seek to reduce the impact of climate change.
PPS25 Development and Flood Risk	Positive planning should avoid, reduce and manage flood risk by taking full account in decisions on plans of present and future flood

⁵ Annual Monitoring Report 2007, West Midlands Regional Assembly, February 2008

Strategy	Key relevant policy objectives
	risk and the wider implications for flood risk of development located outside flood risk areas. A risk-based approach should be adopted at all levels of planning.
Future Water	Manage surface water by allowing it to be reused or to permeate naturally into the catchment. Surface Water Management Plans as a tool to promote sustainable drainage.
Making Space for Water	To manage risks by employing an integrated portfolio of approaches which reflect both national and local priorities, so as to: <ul style="list-style-type: none"> • Reduce the threat to people and their property; and • Deliver the greatest environmental, social and economic benefit, consistent with the Government's sustainable development principles
A Water Resources Strategy for the West Midlands	Water resource options that are flexible to the possible impacts of climate change are preferred.
West Midlands Regional Climate Change Action Plan	Plan for low-carbon, well-adapted sustainable communities to deliver resilience to likely climate change impacts.

1.6.4 **Key Sustainability Issues and Problems**

The increased incidence and severity of flooding in vulnerable parts of the Region has high social and economic costs. Avoiding new development in floodplains and other areas at risk of flooding will help to minimise these adverse consequences and reduce the risk of exacerbating the situation elsewhere. In addition, new development must implement sustainable urban drainage systems in order to reduce the potential for increased run-off, and the capacity of surface water drainage must be sufficient to accommodate the increasing levels of development expected in the region. Opportunities should be taken where possible to provide green infrastructure which can help to absorb rainwater and to manage land in ways that provide space for floods.

1.6.5 **Sustainability Appraisal Framework**

Does the option/proposal:

- **Promote land use and development that takes into account predicted changes in the Region's climate including flood risk?**
- promote land use and development into areas at lowest flood risk?
- encourage more strategic management of surface water?
- support measure that protect key infrastructure?
- encourage resistance and resilience measure in existing properties?