

AGENDA MANAGEMENT SHEET

Name of Committee Environment Overview and Scrutiny Committee

Date of Committee 27th April 2006

Report Title Climate Change Strategy for Warwickshire

Summary The report sets out the policy context for a Climate Change Strategy for Warwickshire, provides an overview of the Strategy and attaches as **Appendix A** a Draft Strategy for Members' consideration.

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Would the recommended decision be contrary to the Budget and Policy Framework? Yes/No

Background Papers None

CONSULTATION ALREADY UNDERTAKEN:- *Details to be specified*

- Other Committees
- Local Member(s)
(With brief comments, if appropriate)
- Other Elected Members Councillor K Browne)
Councillor Mrs E Goode) for information
Councillor Mrs J Lea)
- Cabinet Member Councillor M Heatley – for information
(Reports to The Cabinet, to be cleared with appropriate Cabinet Member)
- Chief Executive
- Legal I Marriott – comments incorporated
- Finance
- Other Chief Officers

- District Councils
- Health Authority
- Police
- Other Bodies/Individuals

FINAL DECISION **YES/NO** (*If 'No' complete Suggested Next Steps*)

SUGGESTED NEXT STEPS :

Details to be specified

- Further consideration by this Committee
- To Council
- To Cabinet 25th May 2006
- To an O & S Committee
- To an Area Committee
- Further Consultation

**Environment Overview and Scrutiny Committee -
27th April 2006**

Climate Change Strategy for Warwickshire

**Report of the Strategic Director of
Environment and Economy**

Recommendation

That the Committee considers the Draft Climate Change Strategy for Warwickshire and recommends its adoption by Cabinet.

1. Introduction

1.1 Members considered a draft Climate Change Strategy for Warwickshire at their meeting on 6th December 2005 and requested that:-

- “(i) Officers prepare a revised more user friendly draft strategies in consultation with the Chair and Group Spokespersons.
- (ii) The draft strategies be circulated to other Members of the Committee for comment.
- (iii) The Committee consider approving the revised draft strategies as the basis for public consultation and policy development at a future meeting.”

2. The Rationale for a Strategy

2.1 This revised strategy (see **Appendix A**) has been produced taking account of the concerns raised by Members.

2.2 The national policy contexts for this climate change strategy are:-

- (i) The Government’s revised climate change strategy published on 28th March.
- (ii) The Kyoto Treaty commitments which include a 12.5% reduction in greenhouse gas emissions by 2010 and a 60% reduction by 2050 (from a 1990 base).
- (iii) The current Department of Trade and Industry (DTi) led Energy Review which the Cabinet responded to on 6th April.

- (iv) The Government's Sustainable Development Strategy for the UK "Securing the Future" published last year.
- (v) The power to improve social, economic and environmental well-being of our area under the Local Government Act 2000.

2.3 Locally the Council:-

- (i) Has signed up to the "Nottingham Declaration" which commits us to producing the Climate Change Strategy.
- (ii) Is working with the Carbon Trust and the Energy Savings Trust, through our Carbon Management Action Plan, to reduce our own CO₂ emissions.
- (iii) Is developing with public sector partners a Local Area Agreement with Government, with a strong environmental dimension and
- (iv) Has a target to adopt the environmental management standard ISO 14001 across the authority by March 2008, the first part of which – the accreditation of the Environment and Economy Directorate, was achieved on time and within budget in March.

3. The Consultation Process

3.1 This strategy groups together a wide range of policy initiatives across the Council, and is primarily intended to guide our own actions in this area. However, to be effective it needs to be a climate change strategy for Warwickshire, not just Warwickshire County Council. Accordingly, the strategy which was re-written in the Spring as a single strategy (rather than separate "adaptation" and "mitigation" strategies) has been consulted upon over the past couple of months including:-

- (i) Consideration by the Warwickshire Sustainability Commission.
- (ii) Review by the Environmental Sustainability Board.
- (iii) Being taken out to consultation with stakeholders including District and Borough Councils, the voluntary sector and the private sector.
- (iv) Placed on our e-website during March and April for the public to comment.
- (v) Appraised by Forum for the Future and the Climate Outreach Information Network.

4. What the Strategy Does

4.1 The revised strategy is deliberately short, set out in plain English and focussed on Warwickshire.

4.2 The aim is:-

“To reduce greenhouse gas emissions in Warwickshire to at least the level set by Government policy, with a target reduction of 15%-18% by 2010 and a 60% reduction by 2050 (against 1990 levels). We will achieve this whilst maintaining and improving the quality of life of Warwickshire residents through the implementation of a policy of sustainable development.”

4.3 The objectives are:-

- (i) To reduce greenhouse gas emissions through improving energy efficiency, minimising waste and increasing the exploitation of renewable sources of energy.
- (ii) To reduce greenhouse gas emissions resulting from transport (particularly road transport), both through effective consideration and promotion of public transport, car sharing, home working and other interventions, as well as encouraging walking and cycling.
- (iii) to reduce greenhouse gas emissions through better waste management, including waste minimisation and increased recycling, more efficient use of resources and more environmentally aware procurement.
- (iv) For organisations to educate their employees and, as a result, the wider communities of Warwickshire on their responsibilities and actions required to limit the effects of climate change in our county.

4.4 It does not try to address issues that are properly the responsibility of central Government, or international organisations, such as airports policy or the nuclear energy debate, important as these are. Nor does it take account of new government policy as set out in the revised strategy published on 28th March. The scientific and international context of global warming is set out briefly in Annex 4 of the Strategy.

4.5 The draft is a strategy only. It will be supported by two action plans, one for “mitigation” i.e. a low carbon action plan and one for “adaptation” i.e. those things that we need to do to adapt to the inevitable short term changes that climate change will bring, e.g. increased risk of flooding. There will be a verbal report of some of the key actions proposed in the first year, presented to the meeting.

4.6 Once the strategy is adopted by the Council, it will be launched with stakeholders in the summer. Plans are under way for the launch and these will be reported verbally to the meeting. Proposals for updating, reporting and review of the strategy are set out in section 7. This strategy should properly be seen as a framework document. It is likely to need substantial revision and updating in the context of fast moving changes in Government policy and to better accommodate the views of partners locally.

5. Conclusions

- 5.1 The draft Strategy provides a clear rationale and framework for measures to tackle climate change in Warwickshire and through the action plans it charts a way forward over the coming years.

JOHN DEEGAN
Strategic Director of Environment and Economy
Shire Hall
Warwick

18th April 2006

DRAFT

Warwickshire Climate Change Strategy

12 April 2006

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Foreword

Climate Change is not simply an environmental problem it also has major economic , social and health impacts. Adapting to meet these challenges is something in which individuals, communities and organisations need to play a role. This is increasingly recognised and climate change will be a key area for development globally and within the European Union and other industrial nations.

This climate change strategy builds on environmental and sustainable development policies produced and tested by Warwickshire County Council. These highlight work carried out to mitigate both the causes and the consequences of climate change as a result of the council delivering its services. However, Warwickshire's Climate Change Strategy will add immeasurably to the work of the county council if it is carried out as a partnership project. This Partnership has a critical role to play in developing and refining the joint strategy and over time, delivering on the action plans. The boxes in the text highlight existing good practice by two of the partners, with a national reputation and many other examples are referred to more briefly in the strategy.

If we are to succeed in achieving reductions of greenhouse gas emissions of 15%-18% by 2010 and 60% by 2050 (against 1990 levels) Warwickshire people will need to think carefully about their activities and re-prioritise their use of resources. The County Council's partnership with Carbon Trust enabled it to think through these issues in relation to the impact of its own services and produce a Carbon Management Action Plan in 2004. This has acted as the basis for the development of this more ambitious, Climate Change Strategy. The Partnership intends that it will become the basis of future fruitful collaboration with Government and regional partners as well as acting as a catalyst for local action.

To remain relevant it is intended that this stratify will need to develop and be reviewed regularly to ensure the aims, objectives and targets continue to be challenging. The Partnership looks forward to reporting increased levels of performance, and more inspiring examples of people making a difference to climate change, in our first review. Because of the fast moving nature of the issues and changes in Government policy this Strategy should be seen as a framework document which will be reviewed and updated regularly.

We intend to build on Warwickshire County Council proactive approach in developing a response to climate change, and will work in partnership with other organisations in the County to deliver our programmes of work. In this way we are committing to thinking globally and acting locally.

Signed by Leader/CE/Partner representatives

Executive Summary

This climate change strategy sets out the framework of what Warwickshire County Council and its partners in Warwickshire intend to do to tackle climate change. Climate change is something that has global dimensions but local impacts. This Strategy identifies five key areas where actions locally can assist in both mitigating the impacts of climate change, in energy, transport and resource efficiency and addresses the steps needed to adapt to the climate change that is already happening and that which will happen whatever we do from now on. To make this work and to encourage the people, businesses and other organisations in Warwickshire to play a part, a communications and education dimension is also critical.

This Strategy deliberately takes a broad brush view and is accompanied by supporting action plans which will be reviewed and updated regularly in the light of changing circumstances. It concludes with a short section on how we will monitor and review progress.

Aims and Objectives

The overarching aim of this strategy is:

“To reduce greenhouse gas emissions in Warwickshire to at least the level set out by Government policy, 15%-18% reduction by 2010 and a 60% reduction by 2050 (against 1990 levels). We will achieve this whilst maintaining and improving the quality of life of Warwickshire residents through the implementation of a policy of sustainable development”.

By implementing this strategy the Partnership will meet its 2010 target to reduce greenhouse gas emissions by 15%-18% and have substituted low carbon technologies, where this is possible, in all sectors.

Our Objectives are:

- To reduce greenhouse gas emissions through improving energy efficiency, minimising waste and increasing the use of renewable sources of energy.
- To reduce greenhouse gas emissions resulting from transport (particularly road transport) both through effective consideration and promotion of the public transport, car sharing, home working and other interventions, as well as encouraging walking and cycling.
- To reduce greenhouse gas emissions through better waste management, including waste minimisation and increased recycling, more efficient use of resources and more environmentally aware procurement (including infrastructure).
- For organisations to educate their employees and as a result, the wider communities of Warwickshire, on their responsibilities and actions require to limit the effects of climate change in our County.

1. Introduction

- 1.1 Climate change is the most significant environmental issue facing the UK this century. Only by tackling it will local communities be able to develop a sustainable future for present and future generations. In addition it has the potential to have major social, economic and health benefits which contribute to our quality of life.
- 1.2 Climate change is here already and is most noticeable in the extremes of weather experienced not only in Warwickshire but globally. However it is still not too late to control and minimise its impact and doing nothing is not an option. The scientific consensus is that there is evidence of further warming caused by emissions of greenhouse gases over the past forty years. Even if we act now climate change will continue to happen. We therefore need to adapt our behaviour now to mitigate negative impacts in the future and in achieving this everyone can play a part.

BOX 1

Practical Action

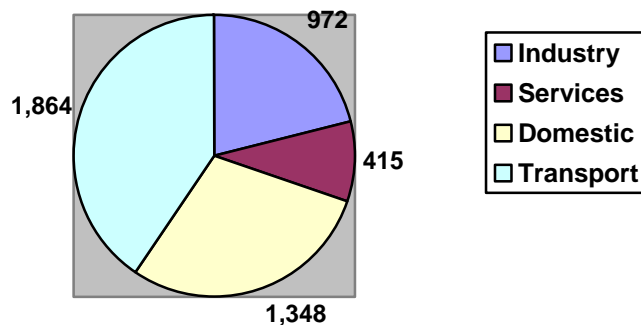
The developing world is already experiencing the devastating effects of climate change. Changing rainfall patterns cause crops to fail so that communities go hungry; increasingly severe floods and storms devastate homes and livelihoods year after year. Poor communities, already struggling with the burden of poverty, have to cope with more frequent extreme weather events. The world's poorest people have contributed least to our changing climate yet are hardest hit by the devastating effects.

Practical Action (formerly ITDG) is an international development charity based in Bourton on Dunsmore, near Rugby. We work with poor women and men in Africa, Asia and Latin America to help them choose and use technology to improve their lives today and for generations to come. For example, in Western Zimbabwe, we have worked with rural communities to develop methods for capturing scarce rain, using ridges of soil along the contours of fields. These ridges prevent rainfall from running off the hard-baked soils too quickly, so that crops have enough water to grow. Using this system, even when rainfall levels are low families can harvest enough maize.

Practical Action, with 40 years experience of delivering sustainable solutions, also works in partnership with communities to help them use clean, renewable energy such as micro-hydro and wind power – alternative technologies which bring huge benefits while not contributing to the burden of climate change.

1.3 Residents, businesses, organisations and visitors to Warwickshire produce an estimated 4.6 million tonnes of carbon dioxide every year in the county, which is equivalent to 10 tonnes per person. Around 80% of these emissions come from powering our homes, businesses and vehicles. The chart in Figure 1, showing Warwickshire’s greenhouse gas emissions, highlights the significance of electricity production/use and transport as major sources of the gases contributing to climate change. Meeting our target of reducing each persons production of carbon dioxide per year will mean significant changes in the way we live in the future.

Figure 1: Co₂ emissions in Warwickshire by sector 2004



Source : Warwickshire Energy Statistics 2005

1.4 Recognising the need for significant action in this field this strategy has set ambitious targets. Public awareness of the nature and impact of climate change is increasing. In our Citizens Panel survey in February 2006 93% of the Panel considered climate change to be very or quite important, and just one percent not important at all. Simple behavioural changes, such as buying energy efficient products (89%), improving home energy efficiency (90%) and recycling (96%) were cited as important ways of reducing its impact. This response reflects the strong public support for concerted action against climate change and has been reflected recently in growing political support across all parties at national and local levels to take action now .

1.5 Warwickshire County Council has agreed to facilitate this Strategy and Action Plan as part of its commitment to the Local Government Declaration on Climate Change - the ‘Nottingham Declaration’ which commits it to reviewing the delivery of its services and implementing measures to reduce wasteful practices.

1.6 This strategy commits its members to adopting an Environmental Sustainability policy which commits organisations to a more sustainable way of operating. (An example of the county council’s policy is set out in **Annex 1**). An Environmental Management Action Plan (EMAP) sets out what organisations

need to do to implement this policy and encourages a commitment to obtain ISO14001 accreditation. The Warwickshire Strategic Partnership plan sets out priority areas of activity for partners in the county to address climate change. Its key aims and objectives are summarised in **Annex 2**.

- 1.7 The Partnership will work closely with the Government and other public sector bodies locally, businesses, community and voluntary groups. It will also work through the Warwickshire Strategic Partnership to implement this strategy using delivery mechanisms such as Local Public Service Agreements and Local Area Agreements and well-being powers under the Local Government Act 2000 to maximise its effectiveness.
- 1.8 The local authority partners will also use their regulatory powers, and those conferred through legislation, purchasing power and other financial resources and influence through their community leadership roles, to assist in its delivery.
- 1.9 The introduction of climate change as part of the local government performance framework from 2008 will also be a significant “driver” for local government partners.

BOX 2

Garden Organic

Garden Organic is the national charity for organic growing, based at Ryton Warwickshire. Sustainability is a fundamental precept of the organic approach, along with a respect for the environment and working in harmony with nature.

Garden Organic uses its demonstration sites and staff expertise to show visitors and organisations how they can be part of the solution. The sustainable waste team are acknowledged experts in composting and run the Master Composter programme with several local authorities, including Warwickshire, to encourage people to make compost not landfill. At the gardens people can see composting in action, they can also see the use of mulches to conserve water and the Heritage Seed Library, and its work to preserve more than 800 old varieties of vegetable seed.

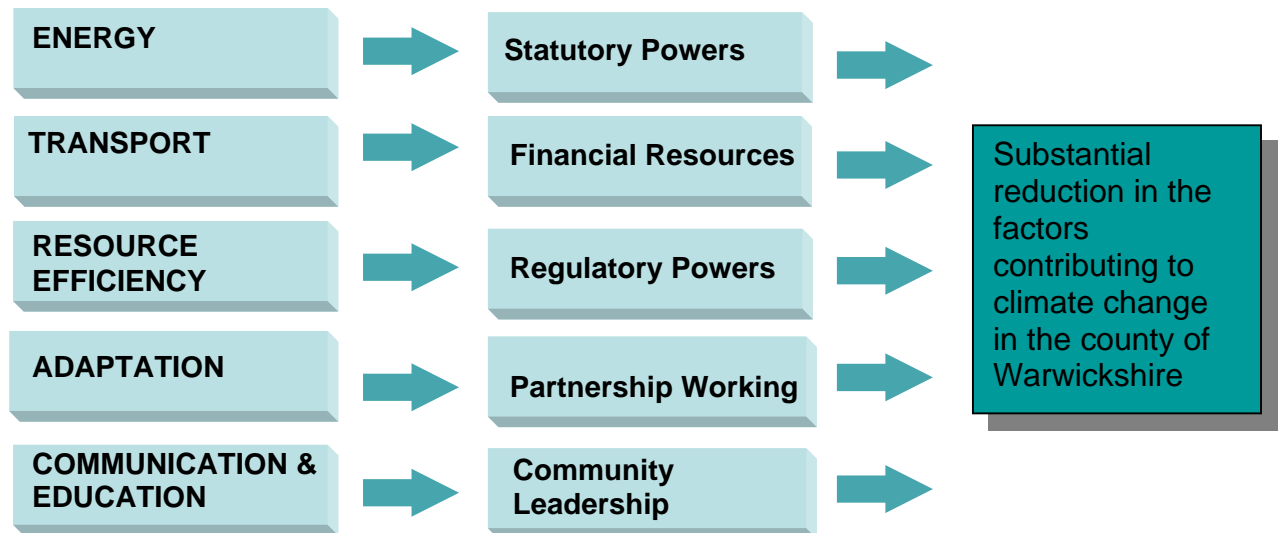
The headquarters buildings and the Vegetable Kingdom were designed to minimise their impact on climate change. Underground tanks store rainwater run off, to be used on the gardens. The buildings have living roofs of sedum, this acts to help regulate the temperature inside, as well as providing an additional nature environment for wildlife. There is also a reed bed for processing waste water.

Garden Organic has a sustainability Working Group which examines aspects of its work to see how it can further reduce, reuse and recycle to minimise its environmental footprint.

The Key Elements of the Climate Change Strategy

1.10 The diagram below (Figure 2) shows the five areas we have identified in which work is required to deliver on the Climate Change challenge. Each of these blocks is essential if we are to make a difference. It also sets out the mechanisms through which we can work to achieve our goals. Taken together they are all necessary elements if we are to achieve our objectives.

Figure 2. The key elements of our climate change strategy



Roles and Accountabilities for the Climate Change Agenda

1.11 The Partnership accepts that all individuals and groups must be involved to succeed in reducing the impact of climate change in Warwickshire. The following three groups are key to delivering change. Partners will work to ensure that these groups understand what causes climate change and actively participate in environmentally acceptable solutions.

Policy makers and Opinion formers

- Showing leadership both personal and institutional on the challenge of climate change.
- Integrating climate change into their policies and strategies.
- Identifying and committing resources to enable climate change and strategies to be implemented in their areas of responsibility.
- Communicating to the public and stakeholders what they are doing and why.
- Influencing others, at regional, national and international levels in the public, private business and voluntary sectors to ensure their policies and actions support and enhance the strategy.

Technical Specialists and Industry

- Resourcing innovation to support climate change policies .
- Ensuring that their current activities and future plans take account of climate change.
- Seeking out and maximising business opportunities arising from climate change .
- Identify data to monitor relevant changes and share it appropriately

Communities

- Acting at a neighbourhood level to support climate change policies
- Encouraging individuals to “do their bit” .
- Leading from below – identifying areas for improvement and joining up issues and actions at the local level.

The strategy is based around the five themes set out in Figure 2 above. These are now explored in the next five sections.

Early Actions

- Identify statutory, financial, regulatory and policy instruments and opportunities that will assist in implementing the Strategy.
- Acquire relevant baseline data to ensure robust performance management of the strategies objectives (using proxies where necessary).
- Identify sources of external funding that can be used to assist in the delivery of the Strategy and submit bids as individual organisations or in partnership.

2. Energy

Objective

To reduce greenhouse gas emissions resulting from our use of energy through improving energy efficiency, minimising waste and increasing the exploitation of renewable sources of energy.

Context

- 2.1 Energy is central to our everyday lives. We take it for granted that electricity is available to light our homes and offices, and to power our fridges, televisions and computers. Likewise we use petrol and diesel in our cars and gas for cooking and heating. Energy simply enables us to carry out normal activities.
- 2.2 The energy we use has many environmental impacts. Exploration, extraction, refinement, transportation, storage, conversion and distribution, as well as how efficiently the energy is used, and how any waste is disposed of, significantly influence these environmental impacts. When fossil fuels are used to generate energy, greenhouse gases are released. These are a major contributor to climate change.
- 2.3 In 2002, the UK's primary energy (before transformation into e.g. electricity or petrol) came from the sources below:

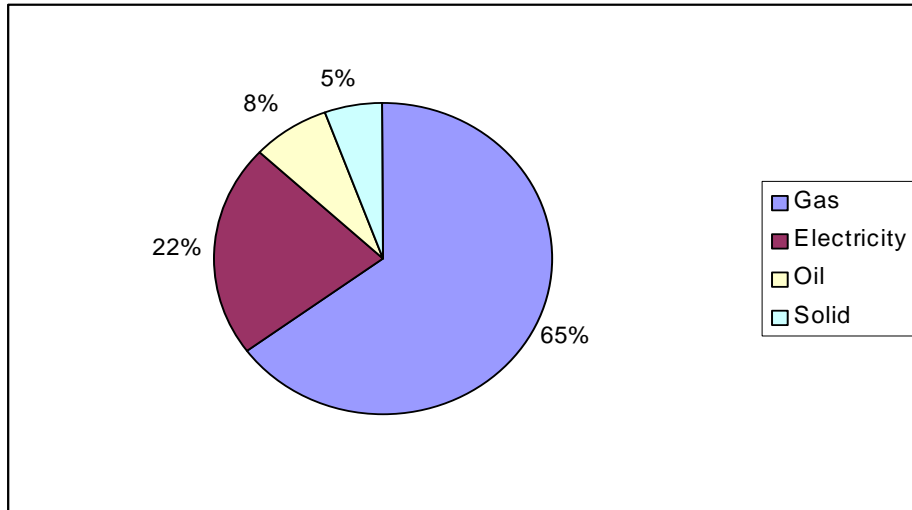


Figure 3 – UK Primary Energy Sources 2002 (source: Energy White Paper 2003)

Energy Efficiency

- 2.4 We all use far more energy than we need to because we use it inefficiently. Poorly insulated buildings and poor control of heating, ventilation, air conditioning and lighting all waste energy. Many of our appliances are less energy efficient than they could be. Increasing energy efficiency will dramatically reduce our energy consumption. The subsequent reductions in greenhouse gas emissions will help minimise the effects of climate change.
- 2.5 Warwickshire County Council is directly responsible for the energy used in schools, nurseries, care homes, day centres, libraries, museums, Council offices, and street lights across the county. Historically, this energy has been far the largest source of our greenhouse gas emissions. In 2002/2003 the Council used 140,210 Megawatt hours (MWh) of energy (from all fuels) to operate its services. This produced over 52,000 tonnes of carbon dioxide.
- 2.6 The Council adopted an energy strategy for its properties in 2001, and this strategy is a key element in demonstrating leadership by reducing emissions from its own estate.
- 2.7 Key private sector companies in Warwickshire have also accepted the challenge of climate change, for example the BMW plant at Hams Hall has reduced its energy consumption by 27% since it opened in 1998, through the adoption of ISO14001.

Fuel Poverty

- 2.8 Recent rises in energy prices are estimated to have tipped a further 1 million people nationally into 'fuel poverty' - defined as when 10% or more of a household's disposable income is spent on energy.
- 2.9 The Home Energy Conservation Act (HECA, 1996) aims to reduce energy consumption in residential accommodation by 30% within 10 years. Warwickshire Borough and District Councils, which are responsible for housing have created partnerships with manufacturers, retailers and installers to achieve this through subsidised schemes.

Renewable Energy

- 2.10 Renewable energy comes from the flows of energy that occur naturally and continuously in the environment. In the UK these include wind (both on and offshore), the sun (using solar panels), water (including conventional hydro-electricity and developing tidal stream and wave technologies) and biomass fuels (energy crops). These are not exhaustible resources like coal, oil and gas, and as they are not fossil fuels they do not contribute to climate change.
- 2.11 Less than 3% of the electricity used in the UK in 2004/05, came from renewable sources. The Government is committed to increasing this and has set a target of 10% of UK electricity to be generated renewably by 2010, aiming for 20% by 2020.

- 2.12 The *Regional Energy Strategy for the West Midlands* includes a target for 5% of the region's electricity to come from renewable sources by 2010. The County Council is contributing to this, and helping to stimulate demand by buying energy from renewable sources. Currently 94% of the County Council's electricity is being procured from renewable sources. This has cut the Council's CO₂ emissions by 46,000 tonnes per annum since 2002/03.
- 2.13 We support the generation of energy from these sources and can influence the adoption of local renewable energy production through partnerships and education campaigns.
- 2.14 The County Council is itself a small generator of renewable energy, through the capture of methane gas from closed landfill sites e.g. at Ryton Country Park and wind turbines at Pooley Fields Country Park.
- 2.15 Energy efficiency is considered in all County Council building projects and we have recently developed a flagship BREEAM excellent low energy building the Eliot Park Innovative Centre, Nuneaton part powered by photovoltaics.

The Planning System

- 2.16 The planning system has an important role to play in promoting renewable energy and energy efficiency. *The West Midlands Regional Spatial Strategy* (policy EN1) says that local authorities in their development plans should 'encourage proposals for the use of renewable energy resources...'
- 2.17 *The Warwickshire Structure Plan* provides the framework for land use and new developments in Warwickshire up to 2011. Adopted in 2001 Policy ER2 requires that the environmental impact of all proposed development ... must be thoroughly assessed including enabling 'local plans to address the land use implications of issues such as climate change, energy efficiency, atmospheric emissions, noise and the sustainable use of water.' (para 8.2.3)
- 2.18 Rugby Borough Council have a policy (GP4) requiring all new developments over 1,000 sq m to meet 10% of their energy from onsite renewable production.

Early Actions

- Through the planning system promote on-site renewable energy generation of at least 10% in all new developments.
- Through the planning system actively assist in the delivery of regional (Energy Strategy for the West Midlands) and national renewable energy generation targets.
- Support the development of a thriving renewable energy sector by purchasing electricity produced from renewable resources wherever possible.

- Commit to ensuring that all new public buildings achieve BREEAM 'excellent' rating by 2010.
- Implement measures to tackle fuel poverty and halve the number of households in fuel poverty by 2010.

3. Transport

Objective

To reduce greenhouse gas emissions resulting from transport (particularly road transport), both through our transport planning function and our own activities.

Context

- 3.1 Transport is central to our lives. Demand has increased for decades and the transport sector, including air travel, now produces 25% of all the UK's greenhouse gas emissions. Road transport contributes about 85% of this, and cars account for around 50% of the total transport emissions. Transport is not only a major source of greenhouse gas emissions it is also where emissions are growing the fastest. Nationally and locally the transport sector is the most difficult area to address in terms of climate change. This is because mobility is so central to our present lifestyles and energy efficient means of transport are still underdeveloped.
- 3.2 Although aircraft emissions are excluded from national targets under the Kyoto Treaty, the recent confirmation of the status of Coventry Airport by the ODPM with permission to handle 1 million passengers per annum has significant surface access and air quality implications for Warwickshire.
- 3.3 The County Council is the largest employer in Warwickshire. We have approximately 16,000 employees (including teachers), most of whom commute to work. Combined with the mileage carried out on essential Council business, providing quality services to the community, this produces approximately 24,000 tonnes of carbon dioxide each year.

Local Transport Plan

- 3.4 *The Warwickshire Local Transport Plan* commits the County Council to 'provide alternatives to using cars, giving the highest priority to improving public transport, the integration of transport, and improving facilities for walking and cycling'. By doing so it will reduce the need to travel, encourage more efficient travel, and the use of low carbon modes of transport.
- 3.5 The County Council has had a number of successes including the opening of Warwick Parkway station and in partnership with Sustrans, the creation of 87 kms of National CycleNetwork, in addition to the 425 km on and off road in the county. A new station, Coleshill Parkway in north Warwickshire is currently under construction and is due to open in 2007.

Travel Plans

- 3.6 The County Council's *Green Travel Plan* complements its environmental and transport strategies by supporting more environmentally friendly means of travel to work and thereby alleviating traffic congestion, travel costs, and climate change.
- 3.7 The Partnership will seek to reduce single occupant car trips and increase car-sharing, encourage the use of less environmentally-damaging vehicles, increase the number of commuting trips made by public transport, cycling or walking, and also increase the amount of working from home, or at alternative sites closer to home. The County Council is piloting a 5% reduction in business mileage in one directorate in 2006/07.
- 3.8 Web-based tools exist which enable employees to find other people locally who would like to car-share. Car-sharing helps protect the environment, reduces congestion and also saves money. The County Council is currently operating such a system which will be extended to other employers in Warwickshire in 2006.
- 3.9 Pool cars for staff can also be used which can reduce car use for short journeys. Shire Hall site also operates a pool bicycle scheme. These schemes also mean that staff do not need to bring a car to work, increasing the travel options for their commute.
- 3.10 The County Council is just one of the organisations across Warwickshire striving to reduce people's dependence on cars. As part of its planning powers the County Council asks other major employers to develop their own Travel Plans to highlight, improve and encourage viable sustainable travel alternatives for their employees when new premises are developed. National Grid's in Warwick is one example of a successful plan.

Early Actions

- Give more prominence to climate change and carbon emission reduction policies in revisions of the Local Transport Plan, in line with the new local government performance framework.
- Work with the Energy Savings Trust and the Carbon Trust to implement reductions in emissions and improve fuel efficiency in public sector fleets and reduce staff business mileage.
- Encourage all major Warwickshire employers to put in place mechanisms to reduce fair carbon emissions through the adoption of travel plans.
- Work with Coventry Airport Management to minimise the impact of its expansion on local air quality and emissions from surface access.

4. Resource Efficiency

Objective

To reduce greenhouse gas emissions through better waste management including waste minimisation and increased recycling, more efficient use of resources and more environmentally aware procurement including infrastructure.

Context

- 4.1 A product's life-cycle begins when the base materials are extracted and stretches through manufacture, construction, transportation and maintenance and use through to the product's ultimate disposal. Greenhouse gases can be produced at every stage. Resource efficiency is about getting the most out of finite resources and minimising waste, and the climate change benefits are clear.

Environmental Management

- 4.2 The County Council is currently implementing the Environmental Management Standard ISO 14001 in all of its directorates. The first pilot directorate, Environment & Economy, was registered in March 2006. Three more directorates are expected to be registered in 2007 and the whole Council by 2008.
- 4.3 The Environmental Management System for schools, Eco Schools, is also being rolled out across Warwickshire schools. Currently 83 (32%) are signed up, close to the target of 85 registrations by March 2007.
- 4.4 Warwickshire County Council's business support team works with local companies to improve their environmental performance. In 2005 over 150 businesses were assisted on issues such as environmental legislation, waste minimisation, energy efficiency and the recycling of waste materials.

Waste and Resource Use

- 4.5 Effective waste management has a key role in reducing greenhouse gas production. In the UK, around 75% of household waste is sent to landfill sites. Once there all organic waste decomposes, releasing the powerful greenhouse gas methane into the atmosphere. Methane is twenty times more potent a greenhouse gas than CO₂ and contributes 12% to greenhouse gas emissions nationally.
- 4.6 *The Warwickshire Municipal Waste Strategy* was adopted in 2005. Its priority aim is to reduce the amount of waste created. However, national trends are not encouraging. Waste minimisation is nevertheless a key element of resource efficiency.

- 4.7 It also aims to increase recycling and composting to at least 40-45% of the waste stream by 2009/10. In recent years there have been real improvements. Although more household waste is collected each year, the proportion which is taken to landfill is decreasing. In Warwickshire, the amount of household waste which has been recycled and composted has risen from 16% in 1999/2000 to over 30% in 2005/06. Not all waste can be recycled or composted and as the amount of residual waste sent to landfill decreases, more is likely to be sent to Energy from Waste plants, in accordance with the Government's National Waste Strategy. 89% of respondents to our Citizens Panel agreed that it was a good idea to use waste that cannot be recycled to produce electricity and heat energy.
- 4.8 The County Council recently adopted its own waste minimisation strategy and action plan and targets will be agreed with all Directorates during 2006.

Procurement

- 4.9 Warwickshire County Council is a member of the Eastern Shires Purchasing Organisation (ESPO), whose Environment Group is working to develop common environmental specifications on products. These standards will make it easier for council staff to follow our recently adopted Green Procurement Policy, which requires managers to purchase environmentally preferable options wherever possible. The impact of public sector purchasing policies has the potential to make significant differences to the products brought to market.
- 4.10 Many of the plans being developed by County Council highways maintenance staff actively seek to reduce CO₂ emissions. These include using locally sourced gravel rather than imported aggregate, re-using road planings and other materials as sub layers when they resurface minor roads.

Early Actions

- Warwickshire County Council to agree corporate targets for its waste minimisation strategy.
- Warwickshire Waste Partnership members to agree a county wide waste minimisation strategy.
- Create a business network to assist in the minimisation of commercial and industrial waste.
- Identify and implement ways of improving energy efficiency in buildings and reducing fuel costs.
- Put in place the investment necessary to achieve the 40%-45% composting and recycling targets for household waste by 2010.

5. Adaptation

Objective

To introduce climate change adaptation fully in all new and reviewed policies and related activities, and minimise future risk through appropriate adaptation measures

Context

- 5.1 Climate change adaptation is changing behaviour, institutional arrangements or economic activity to adapt to both direct and indirect consequences of climate change. (UK Climate Impact Programme).
- 5.2 Climate change will happen. Whilst our actions now and in the future can limit it, past behaviour means greenhouse gases have accumulated in the atmosphere and we will have to adapt to the changes this is causing. We should expect increasing numbers of extreme weather events such as flooding, heat-waves and storminess if the increased numbers of hurricanes affecting north America and local tornadoes are a trend. Global temperature rises by the 2080's could mean Warwickshire has an average annual temperature 50C higher than the 1980's. We could experience winters up to 13% wetter and summers up to 37% drier. Sea level rises around UK coasts could lead to increased development pressures inland.
- 5.3 Nationally agencies are already taking steps to adapt the way that we manage flood risks and our assets. Overall these changes area expected to have a major negative impact on the way in which we run our lives and on the local economy but could also present many new economic opportunities. Renewable energy, energy efficiency, intelligent transport systems, new designs and methods of buildings, and processes that enable people to adapt to their changing circumstances will create business opportunities, building on Warwickshire's well established engineering skills and track record for innovation.
- 5.4 By acting now we can limit climate change even though our past behaviour means greenhouse gases have accumulated in the atmosphere and we will have to adapt to some change. A Citizen's Panel in February 2006 showed 74% of residents believe climate change is a problem everyone can do something about.
- 5.5 National and local government, together with other organisations, are now taking action to minimise the adverse impacts of climate change on society, the economy and natural environment. Climate change adaptation is crucial to minimise future risks in Warwickshire and it is proposed that key areas of activity crucial to businesses and residents are prioritised for attention.

Partnership Working

- 5.6 Working with partners such as the UK Climate Impacts Programme (UKCIP), the Environment Agency, Severn Trent Water and others, knowledge can be pooled to create a more accurate picture of the conditions that Warwickshire will be facing in the future. The more information we have the better equipped we will be able to take action.

Policy and Long Term Decision Making

- 5.7 Warwickshire's strategic partners and others will be encouraged to factor climate change into new and revised policies.

The Warwickshire Structure Plan states in Policy ERI that "local plans should..... development meets all appropriate pollution control, ground water protection, water conservation and flood control requirements". The Environment Agency is the regulatory authority that advises planning authorities on flood control requirements. The Environment Agency will also advise on the suitability of development proposals in the flood plain. Examples of flood requirements to mitigate the possible consequences of development in the flood plain include:

- Efforts to ensure that the development does not cause any net loss of flood plain storage, does not impede water flows and does not increase flood risk elsewhere;
 - Mitigation against negative interference with groundwater;
 - Use of flood –resistant construction techniques;
 - Mitigation against increased surface water run-off by means such as suitable drainage systems.
 - A detailed analysis of the flood risk as a result of the activities associated with the development.
- 5.8 Activities such as **Emergency Planning** include risk management as a part of ongoing work and already consider flooding and heat waves as part of existing activities. The likelihood of additional and more extreme weather events will be taken into account as a matter of course. With other activities such as how we develop and maintain our public infrastructure and buildings, and the impact of climate change on the activities related to them will require new solutions.
- 5.9 **The local infrastructure** is essential to residents and businesses of Warwickshire enabling them to go about their daily business. A high level of confidence in the resilience the road and rail networks, of utility supplies (electricity, gas, water), sewage systems, telecoms and IT systems on which emergency services and others depend, to extreme weather and a gradually warming climate will be increasingly important over time. Amongst providers

there is greater awareness of the issues after having suffered impacts of extreme weather.

- 5.10 **More sustainable construction** practices also support adaptation. Crucial to success will be more integrated project working and ‘whole life’ and ‘whole value’ costing of projects ensuring that running costs and benefits are considered alongside initial capital costs, particularly with regard to energy efficiency, renewable energy generation, and resilience to the impacts of climate change. These practices are being developed through out Warwickshire County Council’s supply chain and strategic partners will be offered the opportunity to engage with a process that will help them improve their performance. A £350,000 Sustainable Development Fund has been developed by the County Council which can be used to fund both mitigation and adaptation measures in Council buildings (including schools).
- 5.11 Partner organisations will be encouraged to explore the development of new funding and delivery mechanisms that might facilitate faster progress.
- 5.12 Consideration of the impact of change on **the natural environment** is also important. The consequences of our actions on the natural environment are just as long term as they are for the built environment. Greater awareness will be developed around local biodiversity and the impact of our emissions on the global environment. For example, the availability of adequate water to support natural habitats in dry summers when homes and businesses are also facing shortages could cause a real threat to survival of our natural heritage.
- 5.13 The Warwickshire Wildlife Trust with the Environment Agency and English Nature are working to promote connectivity and corridors to afford wildlife greater survival chances in the face of potential climate change.

Operational Issues

Vulnerable People

- 5.14 Following the extreme summer temperatures in 2003, the County Council will make provision to further protect vulnerable people during heat waves. On previous occasions Adult Social Care staff have responded by increasing the number of visits and ensuring adequate ventilation and fluid levels. Climate change will increase the emphasis placed on, for example, room temperatures, air circulation and hydration levels. The annual monitoring and review processes for Adult Care Services providers will be refined to ensure that excellent levels of care are maintained. Consultation will take place with the Warwickshire Care Partnership on climate-related issues that require strategic input. Primary Care Trusts are also developing registers of vulnerable people to allow more effective targeting of resources and Adult Care Services and their partners have also been implementing the Department of Health’s “*Heat wave: Plan for England*”.

Civil Protection, Insurance and Business Continuity

- 5.15 As part of the County Council's work in this area, the Corporate Risk Management Group will reassess the resources available for civil protection to deal with increases in climate-related events such as floods. Advice is already being offered to local businesses about setting up business continuity management to plan for the unexpected events like flooding.
- 5.16 With predicted changes in subsidence and storm risk to buildings insurance cover is under regular review. In recent years there has been an increase in flooding incidents in schools after heavy rain gutters and drainage systems were never designed to cope with. The cost of uninsured losses had risen significantly.

Business Opportunities

- 5.17 As well as identifying risks, modelling global scenarios down to a regional level will allow identification of the potential benefits that the changing climate such as warmer summers and milder winters might have on sectors such as agriculture including local food production, tourism and related businesses.

Early Actions

- Promote the Sustainable Development Fund to County Council managers as a source of funding to address adaptation issues.
- Develop policies for 'whole life' costings of projects to support sustainable construction practices and incorporate them into public sector asset management plans.
- Develop more robust risk management strategies that give prominence to climate change issues.

6. Communication & Education

Objective

To communicate and educate staff and the wider communities of Warwickshire on their responsibilities and actions required to both adapt to, and limit, the effects of climate change in our county.

Context

- 6.1 Climate change is caused by all of us, and will have an impact upon every individual, business and organisation in the future. This has become increasingly accepted nationwide and internationally in the past couple of years. The Partnership will build on this and will actively develop communication and education campaigns to promote awareness throughout the Council, partner organisations, other stakeholders and the general public, in collaboration with the local media. The Citizens Panel results demonstrate a clear willingness on the part of the public to support actions to tackle climate change. 68% said that they thought that ownership by communities and individuals should be encouraged.

Communications Strategy

- 6.2 A communication strategy is being developed to ensure that up-to-date information on climate change effects and impacts are fully disseminated. We hope that this will be supported by DEFRA.
- 6.3 The Partnership will also strengthen links with other agencies to improve understanding about the potential impacts of climate change. We have taken part in a national flooding exercise (Triton) which was organised by the Environment Agency and will inform the County Flood Plan, which we are developing. Climate change will also be included in future work of the Warwickshire Strategic Emergency Forum.
- 6.4 With this strategy we are encouraging representatives of the private, public, and voluntary sectors to take local action to tackle climate change through highlighting and sharing good practice. This will include building local links with the Carbon Reduction (CRed) Initiative based at the University of East Anglia.
- 6.5 Work to tackle climate change will be promoted through various events and campaigns such as the 'Switch it off' campaign in the autumn of 2006, in partnership with Worcestershire County Council and Coventry City Council.

Education

- 6.5 Climate change is also being addressed in the classroom through the Eco Schools programme and by individual Heads and Governors. Warwickshire is the only County in England to have obtained funding from ENCAMS for the National Eco Schools Programme to assist in integrated eco – schools into

the curriculum and in working with Warwickshire Youth Parliament and Warwickshire Youth Forum to do this. 97% of Citizens Panel respondents said that it was important for children to learn about environmental issues.

Early Actions

- Develop and agree a county wide Climate Change Communications Strategy, starting with the launch of the Strategy.
- Seek funding from the DEFRA Climate Change Challenge Fund for an effective branded communications campaign.
- Partners to identify means of communicating to stakeholders through existing mechanisms.
- A partner workplace focus on communication and education is established to facilitate cross-departmental working, particularly in local authorities.
- Develop a public engagement plan on climate change.
- Raise the profile of climate change in the business community.

7. Reporting and Review

- 7.1 The Strategy will be reviewed and updated regularly. As more partners locally become engaged its remit and priorities may change. Government policy is fast moving in this area and for these reasons the strategy itself should be seen as a flexible 'framework document'.
- 7.2 The linked action plans will be updated annually with reports on progress against key targets and indicators to the Warwickshire Leaders' Group and the County Council's Cabinet.
- 7.3 The existing delivery group, the Low Carbon Economy Steering Group will play a leading role in driving forward the agenda and will act as a 'reality check' on the relevance of the strategy as we take it forward.
- 7.4 The 'early actions' at the end of each section gives a flavour of the priorities in the **two linked action plans that follow from this strategy** – adaptation and mitigation (the low carbon action plan) - and within Warwickshire County Council performance against the targets in the action plans will also be reviewed and updated regularly and reported to the relevant Overview and Scrutiny Committees.
- 7.5 Other strategies and action plans referred to will be updated and amended to take account of the changing strategic context, locally and nationally.
- 7.6 As relevant data becomes available and as Government plans to incorporate climate change as part of the local government performance framework from 2008 become clearer, the performance management framework will be modified and refined.

Warwickshire County Council's Environmental Sustainability Policy

Warwickshire County Council will move towards a more sustainable way of operation by taking a positive, solutions orientated approach. The Council accepts that natural resources are the basis of life itself and together with the environment created by humans are the sources of our social and economic opportunities, health and prosperity.

We accept the need to work pro-actively to the challenges of climate change, to reduce our use of resources, prevent pollution resulting there-from, minimise damage to natural habitats and wildlife and to protect the human environment from which we derive a sense of well-being.

Warwickshire Strategic Partnership Plan (extract)

'Our Vision is for Warwickshire to be a place where our landscape, our built and natural environment, and our diversity of habitats and species are appreciated and protected by all. Everyone will understand their responsibility to reduce the consumption of natural resources, combat climate change, and minimise waste. We will invest in modern techniques to deal with the waste we do produce in an effective and healthy way sensitive to the environment and the economy. Our communities will be active, caring, safe, and welcoming to the visitors'.

Warwickshire Climate Change Partners

The following organisations are contributing to the implementation of this strategy.

Arup
BMW Hams Hall
CTC Energy
Carbon Trust
Carillion
Encraft
Energy Savings Trust
Energy West Midlands
Forum for the Future
Garden Organic
Low Carbon Strategy Steering Group
National Grid
North Warwickshire Borough Council
Nuneaton and Bedworth Borough Council
Practical Action
Rugby Borough Council
Stratford District Council
Warwick District Council
Warwickshire County Council
Warwickshire Energy Efficient Advice Centre (EEAC)
Warwickshire Environmental Trust
Warwickshire Police

Climate Change Explained

1. The Greenhouse Effect

The Earth's atmosphere naturally contains greenhouse gases (chiefly water vapour, carbon dioxide, ozone, nitrous oxide and methane), which come from natural processes such as respiration and the decay of organic matter. The sun's radiation enters our atmosphere, passing through a layer of them and warming the Earth's surface. Much of this energy is then re-emitted and lost to space, but some is absorbed by the gases. They then re-emit heat back down to the surface, warming the earth further in a process called the 'Greenhouse Effect'. This is essential to life – without it the average temperature would be about -18°C (0°F).

Human industrial activity, and in particular burning fossil fuels, has released more and more greenhouse gases, including extremely powerful new ones such as HFCs, PFCs, and sulphur hexafluoride. Changing land use has also increased carbon dioxide levels because deforestation releases the carbon stored in living plants and trees. It also reduces the amount of carbon that can be absorbed by plants and trees through photosynthesis.

Atmospheric greenhouse gas concentrations have risen steadily since the Industrial Revolution and continue to do so. They reached 380 ppm in 2005, a rise from 315 ppm in 1960. This has meant more heat is trapped and re-radiated in a 'human-enhanced' greenhouse effect. The Earth's surface warms ('global warming'), and significant changes to global systems are likely. However complex interactions in the atmosphere mean that not everywhere will warm up. The process is now more accurately referred to as 'climate change'. Only activities aimed at reducing greenhouse gas emissions will prevent this process from increasing as more gases accumulate. However, some models suggest not all changes will happen gradually.

2. Changes to the Gulf Stream

The UK's current climate is warmer than other areas at the same latitude because of the Gulf Stream. In the North Atlantic surface waters cool, becoming more dense and salty. As this water sinks and travels towards the equator surface water from the Gulf of Mexico moves to replace it. This process, part of a global oceanic 'conveyor belt' known as the Thermohaliner Circulation, raises temperatures in north-western Europe by around 9°C .

As the 'enhanced greenhouse effect' warms the Earth, fresh water from melting Arctic ice sheets could dilute the water in the North Atlantic and prevent it from sinking. This could potentially shut down the Gulf Stream, significantly lowering average UK temperatures. We do not yet fully understand this system. Scientists recently suggested there may be a significant chance of this happening in the next 200 years. Other major systems which have the potential to suffer abrupt and

catastrophic change include the Asian monsoon system, and the Amazonian rainforest.

3. Current Research

The Earth's temperature is now warmer than at any time in the last 2000 years. This is causing changes to weather patterns and a rising sea-level which will disrupt our way of life. 0.6°C of warming occurred in the last century and the 1990's were the hottest decade on record.

4. Impacts

There are signs that some changes are already occurring. These are likely to become more severe over time. However, it is difficult to confidently predict exactly how our future climate may change. Natural (eg meteorological) systems are inherently very complex. This is further complicated by the fact that other pollutants from human activities affect the climate; some even seem to offset the greenhouse effect e.g. global dimming. Finally, much of the full extent of climate change has not yet been determined. What actually happens will be heavily influenced by how effective our actions to tackle climate change are, including those described in this strategy. Scientists therefore work with likely future scenarios, predicting the consequences of climate change under a range of potential futures. Impacts affecting services may include:

Flooding – Melting polar ice, together with expansion of the oceans as they warm up, will raise global sea levels. This will increase coastal flooding, particularly affecting low-lying areas. Flood return periods may well decrease, meaning that events that currently occur only once every 300 years might happen every 3 years. River flooding, such as in Leamington in 1998, will also increase as rainfall becomes more heavy and seasonal, overwhelming drainage systems and damaging buildings e.g. the Lord Leycester Hospital in Warwick in 2005.

Infrastructure and Property – Flooding and soil waterlogging, particularly when combined with soil shrinkage during hotter and drier summers, could result in subsidence affecting many buildings and important infrastructure. This includes historic buildings and archaeological sites. The increased risk of violent weather (e.g. severe windstorms such as that in Birmingham in 2005) could also result in more damage. A large number of areas are already at risk and many insurance companies are increasing premiums and, in some areas, refusing to provide insurance. Transport disruption is also likely because of buckled railway lines, melted tarmac, and storm damage.

Conversely, costs related to heating buildings may reduce, although passive/natural systems may be required to deal with hotter summer temperatures. Higher average temperatures may also mean less winter gritting is required. Adaptation to the adverse impacts of climate change is also possible, but if left too late there will be a high financial cost.

Agriculture – Climate change will probably alter growing conditions, but some agricultural areas are relatively adaptable. New planting regimes may need to be

investigated, but there may also be opportunities for diversification (eg olives, sunflowers and vines in the UK). Longer growing seasons, already 30 days pa longer than in 1970, and increased productivity may allow the further development of 'biomass' crops and bio-fuels to be economically produced. However, many areas are likely to experience severe reductions in summer water availability, made worse by low summer rainfall. Increased erosion and decreased soil fertility are also possible. Effects on livestock welfare could significantly reduce production.

Plants and Animals – The biggest threats to wildlife are those factors which affect their habitats. Nature reserves may suffer prolonged floods, droughts, or temperature changes, forcing species to move. Although mobile species can migrate to more suitable areas, and there is some evidence that this is already occurring, less mobile species (eg trees) face a greater risk. They may not be able to adapt or migrate fast enough to avoid climate change pressures. There is already evidence of significant impacts on beech forest in southern England. Alterations to an area's biodiversity may have complex effects on food chains and interactions between species.

Amenities – In a warmer climate people are able to spend more time outside. Increased tourism may bring economic benefits, but this is balanced against increased pressure on existing resources, particularly water, but also the impact of more people on rights of way, environmentally-sensitive areas and historic and culturally important sites. Waste disposal techniques may have to be adjusted as a warmer climate increases the potential for pests. Flooding may also have serious implications for landfill sites, with potential to contaminate surrounding areas.

Health – There are a number of expected negative consequences for health. Skin cancers and heat exhaustion are likely to increase as people exploit the warmer weather. Pest species, and new diseases may also spread faster. Conversely, milder winters are likely to reduce winter mortality (particularly in the elderly), although such vulnerable groups are also less able to cope with the predicted increase in heat waves eg in France in 2003, where a heat wave was blamed for 15,000 additional deaths.

5. The Responses

International – The Kyoto Protocol commits countries to reduce greenhouse gas emissions. Individual targets contribute to reduce overall CO₂ emissions to 5% below the 1990 level by 2012.

Adopted in 1997, Russia's ratification in November 2004 meant sufficient countries had agreed the strategy to have it enter into force as an international agreement to reduce worldwide greenhouse gas emissions. It became legally-binding on its 128 parties on 16 February 2005. Regrettably the USA, the worlds largest producer of greenhouse gases is not a party to the treaty.

National – The UK Government has taken a lead in reducing greenhouse gas emissions and set itself a target in the Climate Change UK Programme 2006 to

reduce its current carbon emissions by 15%-18% by 2010 and 60% by the year 2050. Government measures to meet this target include tighter regulations regarding energy use, renewable energy production, and resource efficiency. Climate change adaptation is also encouraged through upcoming planning policies and revised building regulations.

Local – Warwickshire County Council signed the 'Nottingham Declaration' on Climate Change in November 2004, acknowledging that climate change is occurring and that it will have far reaching implications. Some of the actions taken by the County Council to mitigate and adapt to climate change have been outlined in this document, and include the production of this strategy.

6. Conclusion

Current research suggests the Earth is warming. Scientists feel sufficiently confident to say that climate change is happening and that it is due to human activity. It also seems that the rate of warming has been increasing in recent years, together with human greenhouse gases emissions.

The only debate that remains relates to how much the climate will change. This is greatly determined by action that we take now to minimise climate change. It is difficult to predict but if we 'wait-and-see' before we act it will be too late. It is essential that we think about climate change, and adopt a precautionary approach, particularly when it comes to making decisions that affect the future livelihood of our community.