Agenda Item

Report to	**Cabinet**
Date	**28 April 2009**
Report By	**Director of Transport and Environment**
Title of Report	**Climate Change Strategy**
Purpose of Report	**To consider the draft Climate Change Strategy**

RECOMMENDATIONS: Cabinet is recommended to:

1. note the work of the Climate Change Strategy Project Board; and

2. approve the Climate Change Strategy for East Sussex.

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1. Financial Appraisal

1.1 The strategy has been produced within existing budgets. The development of an Implementation Plan and action on climate change will require additional work by all Departments, and by other organisations in East Sussex. Some of this work will be within existing budgets and some will require additional resources. For the County Council, an additional budget has been established for this: in January 2008, Cabinet agreed to set aside £150,000 as the Climate Change – General Sustainability Initiatives Fund; agreeing a further £50,000 in January 2009.

2. Supporting Information

2.1 On 11 March 2008, Cabinet agreed that the County Council would produce a Climate Change Strategy and be a formal signatory to the Nottingham Declaration on Climate Change.

2.2 Following a seminar for Members and key staff in June 2008, the Climate Change Strategy Project Board met in August and November 2008, and February 2009. The Board considered the County Council's approach and drafts of the strategy; it was chaired by Councillor Reid, and also comprised Councillor Lock, Councillor Daniel, Councillor Freeman, the Director of Transport and Environment, Director of Policy and Communications, and Assistant Director/Head of Service representation for Corporate Resources, Children's Services and Adult Social Care.

2.3 Key partners were informed of the work to develop a Climate Change Strategy and their views sought on an early draft. Throughout 2008 and early 2009, the development of the strategy was discussed with Borough and District Councils, and Environment Agency officers, during technical discussions about how we address National Indicators 185, 186 and 188 (carbon dioxide emissions from our own estate, carbon dioxide emissions from our area, and adaptation to climate change). An early draft of the strategy was shared as part of the environment discussions at the East Sussex Strategic Partnership Assembly in November 2008. In December 2008, 13 key organisations were invited to comment on a draft of the strategy (Borough and District Councils, Environment Agency, Natural England, English Heritage, East Sussex Fire and Rescue, Police Authority, Learning and Skills Council, and Director of Public Health for both Primary Care Trusts).

2.4 All organisations were corresponded with or met and all responded. Overall they:

- consider climate change as an important subject area for action
- welcome the production of a strategy;
- value the technical discussions that have already taken place;
- are keen to consider how a County Council strategy or one for the county, might work alongside their own strategy, where they had one; and
- look forward to full collaboration on the Implementation Plan, recognising that this will take time and effort by all parties.

Responses were duly noted and appropriate modifications made to the Climate Change Strategy.

2.5 A final draft of the Climate Change Strategy for East Sussex was considered by the Project Board in February 2009, and agreed with amendments (Appendix 1). The strategy recognises what the County Council has already done, identifies the further action it will take and the issues that can be addressed in partnership with other organisations. Some of these actions will help businesses and residents take advantage of the opportunity that climate change offers in the context of the current recession, both by reducing fuel bills and stimulating the demand for new, low carbon products and services. A chronology of action by the County Council on climate change is attached at Appendix 2.

2.6 The County Council signed the Nottingham Declaration on Climate Change on 20 May 2008. The adoption of a strategy for climate change forms part of the County Council's progress on the requirements of the declaration (all of the requirements and progress are set out in Appendix 3).

3. Conclusion and Reason for Recommendation

3.1 The adoption of this Climate Change Strategy for East Sussex will help the County Council to provide leadership and a framework for actions across the county on climate change, as well as provide direction for our own action. The strategy is also part of the delivery of our commitment to deliver progress on the Nottingham Declaration.

RUPERT CLUBB
Director of Transport and Environment
28 APRIL 2009

Contact Officer: Simon Hickmott Tel. No. 01273 482660
Local member: All

BACKGROUND DOCUMENTS

Action on Local Agenda 21 by East Sussex County Council 1992-1996.
Nottingham Declaration see http://www.energysavingtrust.org.uk/nottingham

Appendix 1 – Climate Change Strategy

Appendix 2 – Chronology of Key Actions by County Council on Climate Change

Past Actions

1989
Tree Council establishes the National Tree Warden scheme based on the East Sussex Parish Tree Warden model, as a response to the Great Storm of October 1987.

1990
New corporate environmental policy for County Council sets the need to address global as well as local environmental issues and notes energy saving investment since 1978.

1992
County Council co-organised European Sustainable Cities Forum, Brighton, identifying 90% carbon dioxide reductions as the long term target for industrialised countries.

1994
First representative poll of residents "1994 East Sussex Environment Survey" using national poll questions shows concern here for global as well as local issues.

1995
First UN International Children's Conference on the Environment, Eastbourne; County Council organises and provides the environmental content (subsequently around the world).

1996
First "Walk to School Week" in East Sussex, organised by the County Council. Since then 10,000 children have registered for the event.

1997
Model United Nations General Assemblies for East Sussex schools begun, supported by County Council; discuss fair shares of greenhouse gas emissions between teams of students representing various countries.

2001/2
Cuckmere Estuary Partnership formed to consider sustainable future management of this part of the coast, adapting to climate change.
East Sussex County Council agree a revised Environmental Management Policy that includes the aim to minimise the energy and water use and the environmental impact of its buildings.

2003/4
East Sussex County Council adopts a Corporate Property Energy Strategy and Action Plan.

2004/5
50,000th visitor to WoodFair, event developed and organised by County Council to encourage use of local, carbon-neutral fuel and construction material.
East Sussex County Council takes part in the Local Authority Carbon Management Pilot Programme run by the Carbon Trust.
Carbon Management Strategy and Action Plan adopted – target 14% reduction in CO_2 by 2009/10 compared to 2001/02 base year.

2005/6
4% traffic reduction in Lewes compared to 2004/5, after introduction of controlled parking scheme (reductions continue in 2006/7 and 2007/8).

2006/7
Carbon Action Management Plan achieves target of 14.6% reduction, two years early.

2007/8
Wood-fired boilers running at Crowborough Beacon Community College, largest educational biomass installation in UK, saving 600 tonnes of carbon dioxide.

2008/9
County Council determines to produce Climate Change Strategy and signs Nottingham Declaration on climate change.
Street lighting energy reduction pilot scheme developed, to save 300 tonnes of carbon dioxide.
Corporate Sustainable Buildings Policy approved setting minimum standards for new build, refurbishment and maintenance.

Next Steps By Strategy Theme

MAINSTREAM

- **County Council and partner organisations**: 24 June, take stock of progress at East Sussex Climate Change conference for organisations, organised by Environment Agency, supported by Borough and District Councils and County Council;
- **County Council and partner organisations**: by October 2009, amongst policy authors, share experience of climate change assessments, such as the County Council's pilot appraisal of the Cycling Strategy and the Minerals and Waste planning core strategy and policies.
- **County Council**: in 2009/10, develop a method to enable policy, strategy and work programme authors to know how to take climate change into account.
- **County Council**: take stock of progress at County Council at Climate Change Project Board meetings of 6 July and 28 September, including consideration of County Council's contributions to the Climate Change Implementation Plan.
- **County Council**: throughout 2009/10, prepare ourselves for Carbon Reduction Commitment from April 2010 (compulsory limit to emissions – 'cap', and carbon trading for large organisations).

ENGAGE

- **Community**: throughout 2009/10, offer small 'first step' grants (max £500) and officer support for community effort on climate change, extending successful model of waste reduction and recycling grant scheme. Details for applications available.
- **Community**: by October 2009, review public information about practical steps to address climate change, and with partners address gaps, using Energy Saving Week 19-25 October as a focus for extra information.
- **Schools**: throughout 2009/10, support schools to act on climate change with a dedicated Sustainable Schools project worker, and materials.
- **Large organisations**: April-October 2009, work with large organisations, such as PCTs, and East Sussex Fire and Rescue, to determine how we can best support county-wide effort on climate change, through the creation of a partnership board and through the development of a climate change Implementation Plan that identifies actions, by organisation and by date.

MITIGATE

- **County Council**: by July 2009, review our baseline carbon dioxide emissions from our own estate and contractors in 2008/9 (NI 185), and develop targets for improvement, apportioned by department and function.
- **County Council**: throughout 2009/10, deliver carbon dioxide emission reductions, through projects such as street lighting dimming, Green Fleet Review, School Travel Plans, changes to computer servers, installation of wood-fired heating, improved metering and school insulation programme, to reduce emissions by at least 500

tonnes (contribution to LAA NI 186 – emissions of carbon dioxide from whole County Council area).

- **County Council**: throughout 2009/10, determine role of transport planning in carbon dioxide reductions, including detailed plans to reduce one-off emissions as a result of the construction and continuing extra emissions from the Bexhill-Hastings Link Road.
- **County Council and partner organisations**: by July 2009, review out-turn of delivery plan for NI 186. and most effective ways to deliver LAA proxy target of 50,000 tonnes cumulative reductions by end of 2009/10 (75,000 by end of 2010/11).
- **County Council and partner organisations**: by October 2009, at publication of third year of data (2007), understand changes in NI 186 and reasons behind them.
- **Community**: throughout 2009/10, share County Council experience of delivering carbon dioxide reductions.
- **Community**: in 2009/10, determine scale of methane and nitrous oxide to emissions of greenhouse gases in East Sussex (around 7% each nationally), and options for reductions.
- **Large Organisations**: by October, assist large contractors to the County Council to understand and plan to reduce their emissions (contributes to our NI 185 figure).
- **Small organisations**: deliver support such as energy audits, training events and small grants through BETRE co-funded EU INTERREG IVa programme.

ADAPT

- **County Council and partner organisations**: throughout 2009/10, review effects of severe weather on services, and assess the risk posed in the future using the forthcoming UKCP09 climate predictions (expected summer 2009).
- **County Council and partner organisations**: by April 2010, achieve LAA target level 1 (public commitment to identify and manage climate related risk: undertaken local risk-based assessment of vulnerabilities, demonstrate understanding of those not yet addressed in existing strategies and actions).

Appendix 3 – Progress on Requirements of Nottingham Declaration

Requirements (verbatim)	Action by March 2009	Action for 2009/10
Work with central government to contribute, at a local level, to the delivery of the UK Climate Change Programme, the Kyoto Protocol and the target for carbon dioxide reduction by 2010. *(Note: this target was -20% from 1990 to 2010; changed in 2008 and established in law to be 80% reduction 1990-2050, equivalent to -3.5% per year from 2008, given -8.5% achieved nationally by 2007).*	Carbon dioxide emission reduction from the County Council's estate and operations begun through the Carbon Management Action Plan: 14% target achieved early - 14.6% (5,534 tonnes) reduction 2001/2 by 2006/7; a total of 19.7% reductions achieved by 2007/08. Baseline now changed with new standard methodology for NI 185 (emissions from delivering our functions directly and through contractors). See Appendix 2 for chronology of County Council action on climate change.	Climate Change Implementation Plan collaborative work will set the scale of ambition for reductions and establish lead agencies for delivering each source of reduction.
Participate in local and regional networks for support.	County Council established and chairs the Sustainable Business Partnership, offering support to small businesses. County Council joined Climate South East in 2008, and participates in regional networks established by GOSE to support action on NIs 186 (carbon dioxide emissions from county) and 188 (adaptation to climate change).	Assess effectiveness of networks and consider other networking opportunities, especially where they could enable bidding for external funding and agree 'best' practice.
Within the next two years develop plans with our partners and local communities to progressively address the causes and the impacts of climate change, according to local priorities, securing maximum benefit for our communities.	Climate change addressed in East Sussex Strategic Partnership Countywide Action Plan (support the establishment of a new countywide partnership climate change board). Climate Change Strategy for East Sussex prepared as a draft for adoption by County Council and offered as a framework for the county.	Develop multi-agency Climate Change Implementation Plan, including delivery of LAA targets for mitigation and adaptation.
Publicly declare, within appropriate plans and strategies, the commitment to achieve a significant reduction of greenhouse gas emissions from our own authority's operations, especially energy sourcing and use, travel and transport, waste production and disposal and the purchasing of goods and services.	Carbon Management Action Plan established in 2004/05 (see above).	Baseline of County Council NI 185, to be established, including emissions from fuel use in heating, lighting and transport at work, with ambitions for improvement to be set in 2009/10. Methane emissions from landfill sites and role of transport strategy to be considered, and plans developed, as appropriate.
Assess the risk associated with climate change and the implications for our services and our communities of climate change impacts and adapt accordingly.	LAA included adaptation (NI 188). Multi-agency work being led by Environment Agency, includes work to document extreme weather events in past and their impacts.	Assess effects of past extreme weather events in terms of our services. Consider 2009 new national climate predictions for small areas (25x25 km).
Encourage all sectors in our local community to take opportunity to adapt to the impacts of climate change, to reduce their own greenhouse gas emissions and to make public their commitment to action.		Climate Change Implementation Plan collaborative work will allocate responsibilities for community support.
Monitor the progress of our plans against the actions needed and publish the results.	NIs 185, 186 and 188 established new methodologies to assess progress; work undertaken in 2008/9 to understand methodologies and establish baselines.	Publish first annual progress statement.

April 2009

Climate Change Strategy for East Sussex

PHOTO INSERT

Robertsbridge Floods – October 2000

East Sussex County Council

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1. FOREWORD

I am sure all of us are now aware that our climate is changing. We recognise that extreme weather events have increased in recent years, as has the impact of such extremes on our daily lives. Scientists are warning that climate change, resulting from emissions of greenhouse gases from human activities, is one of the greatest challenges facing us today. Comparisons have been made to the current financial crisis, suggesting that failure to address issues now will lead to massive problems in the future, in the same way that failure to address unsustainable banking practices has had for the economy.

For some time, East Sussex County Council has recognised the threats and opportunities that climate change will bring. This strategy brings together the work that we have already done with our future plans for dealing with these threats and seizing these opportunities. It will be closely followed by an implementation plan, turning the ideas in this strategy into practical actions.

Public services and infrastructure need to change in response to a changing climate and we know that this will involve some tough decisions. While there are some things that the County Council can do by itself, there are many other organisations and individuals in East Sussex with the expertise and ability to contribute to effort by the county as a whole. I am grateful to those who have already contributed to the thinking behind this strategy. Looking forward, I believe that local action to tackle climate change will be effective if we work together as a community, alongside the action at national and international levels.

I look forward to working closely with residents and our partner organisations as we implement a county wide response to climate change.

Councillor Tony Reid
Deputy Leader, East Sussex County Council

2. INTRODUCTION

Challenge

Our climate is changing and we must act locally, nationally and internationally to reduce the causes and adapt to the effects. East Sussex County Council adopts this strategy to guide its work and offers it as a framework for everyone in the county. Tackling climate change will safeguard our community and bring opportunities for business. Taking action now is more important than ever.

Climate change means we can expect hotter drier summers, warmer wetter winters and an increased frequency of extreme weather events such as the great storm of 1987 and the October 2000 floods in Lewes, Uckfield and Robertsbridge. In the latter, more than 1,000 homes were damaged and the estimated financial loss was around £130 million[1]. Heat has also affected us here in the recent past. In August 2003, the 10 day heat wave led to an additional 2,000 deaths throughout the South of England, with death rates of those aged 75 and over increasing by 33% above normal[2].

Although climate change presents a significant challenge to us, taking action will also provide opportunities. Government, business and individuals all have a part to play and all of us can benefit. For example, addressing climate change means lower fuel bills - we can all save money by being more energy efficient. Addressing climate change also means services and businesses being better prepared for extremes of weather. Addressing climate change now is vital if we are to minimise the costs and maximise the opportunities.

Strategy for East Sussex

East Sussex County Council adopts this strategy as a framework that sets out the scope of its own necessary actions. Some other organisations also have their own such strategies; the County Council offers this strategy as a starting point to those that do not and as a framework for actions across the whole county.

We do not start with a blank sheet. For years, the County Council has been taking positive steps forward. For example, we have long standing programmes to reduce the heating costs of County Council buildings and to encourage recycling, and these have led to reduced carbon dioxide (CO_2) emissions. However, there are many areas where work is still needed and we are all learning about the scope and scale of this.

Climate change is not an issue which can be resolved in isolation; we need to work together to understand and tackle it. Many organisations and individuals in our area have been working in partnership to help address climate change, or have been carrying out actions for other reasons, that will have helped. This includes, but is certainly not limited to, work led by the Environment Agency to tackle flooding, adapting to the effects of climate change; work led by District and Borough Councils to insulate homes; and work led by the County Council to assist schools and small businesses to reduce their energy bills. Individuals in our community have also helped tackle climate change: having made difficult decisions to change their lifestyles, their means of travel, or made improvements to their homes.

Commitment and Leadership

The East Sussex Strategic Partnership brings together different parts of our local community and government: public services, local businesses, community groups, voluntary sector organisations and local people, to deliver its long term aims. The Partnership created "Pride of Place", the Sustainable Community Strategy for East Sussex, which identifies climate change as a strategic priority within its vision for 2026. The partnership aims "to protect and enhance our natural and built environment for current and future generations, and enable individuals and organisations to tackle and adapt to climate change" (see Appendix 1). In 2008, the partnership negotiated a contract for improvement with Government – the Local Area Agreement for 2008/09 to 2010/11, which included two key aspects of work on climate change: the reduction of CO_2 emissions from the county and work to adapt the county to climate changes (see Appendix 2).

In 2008, tackling climate change became a formal corporate priority for the County Council with the adoption of the policy steer "to make positive progress towards tackling climate change in East Sussex, both in the County Council's own activities and through work with partners, to influence the behaviour of others."

By summer 2008, the County Council had joined each Borough and District Council in our area in signing the Nottingham Declaration, which "recognises the central role of local authorities in leading society's response to the challenge of climate change. By signing, councils pledge systematically to address the causes of climate change and to prepare their community for its impacts." (see Appendix 3).

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Measuring Progress

Our local progress is currently guided by three measures: National Indicators for Local Government, which set standards for measuring emissions and for adaptation (see Appendix 2); the Nottingham Declaration, a standard for commitment (see Appendix 3); and the statutory duty for councils to have regard to the Government's Energy Measures Report[3], which offers suggestions for action across our responsibilities. Together, with our key partners, we will develop an Implementation Plan, with specific targets to measure our progress.

3. CLIMATE CHANGE AND EAST SUSSEX

Climate Changes and Vulnerabilities

Weather is the short-term condition we experience, measured by, for example, temperature, humidity and wind speed. Climate is the average weather observed over a long period of time. The climate has never been static; indeed, it has been so severe in the past that continuous human habitation has not always been possible.

The climate varies naturally, but climate change as referred to in this strategy is "attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods."[4] The Earth's climate has warmed by three-quarters of a degree centigrade over the last hundred years and more than half of this warming has occurred since the 1970s. Human activity is the primary cause of this relatively drastic change. The key factor is our emission of greenhouse gases: carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF_6) (see Glossary). Further warming is inevitable due to current levels of greenhouse gases in the atmosphere. The challenge is to reduce the rate of increase in these gases and ultimately to stabilise or reduce their levels so that the rate of warming and climate change that they produce is within the bounds of our capacity to cope.

In the UK, there will be greater warming in the south and east than in the north and west. High summer temperatures will become more frequent and very cold winters will become increasingly rare. It is likely that the very hot Augusts we experienced in 1995 and 2003 will become common by the middle of the century.

AUGUST 2003, EAST SUSSEX HEAT EFFECTS REPORTED IN LOCAL PRESS	
Travel disruption	Temperatures expected to reach 37.8°C. AA warns that tarmac can melt in the heat. County Council receives £4.6 million to help repair roads damaged by the heat wave.
Health Issues	Increases in incidences of respiratory problems and health difficulties for those suffering from angina and heart problems. The heat-related death toll amounts to over 2,000 throughout the South of England.
Temperatures	Mean August temperature recorded at Eastbourne 19.6°C, the second highest since 1867 (highest in 1995).

The frequency and amount of rainfall will also change. Winters will become wetter and summers will become drier across the UK. The largest relative changes will be in the south and east where summer rain may decline by up to 50% by the 2080s. Sea level will continue to rise and could increase between 26 and 86 centimetres above the current level in south east England by the 2080s. With most of our residents living on or near low lying land at the coast or beside rivers inland, East Sussex is vulnerable to flooding. The south east is also susceptible to water shortages.

OCTOBER 2000, LEWES, ROBERTSBRIDGE AND UCKFIELD FLOOD DAMAGE	
Lewes was the worst affected town in the country in the widespread flooding affecting England and Wales in the autumn of 2000. The floods devastated the centres of Robertsbridge, Uckfield and Lewes, and caused significant damage to surrounding rural properties and the farming community: 2,000 hectares and 1,033 properties were inundated and 682 vehicles damaged or written off. The total financial cost of the flood, including the costs of the emergency response and aftermath work, was approximately £130 million.	
FEBRUARY 2009, EAST SUSSEX SNOW DISRUPTION[5]	
Travel disruption	All train services on Southeastern railway services between London, Kent and East Sussex were cancelled, as were those on Southern. Sussex Police advised people to not attempt to drive after heavy snowfall overnight. Between noon on 1 February and noon on 3 February, County Council teams were continually salting more than 800 miles of the 2,050 miles of East Sussex roads. Over 2,000 tonnes of salt was used over the 48 hour period – at a cost of around £60,000 for the salt alone.
Medical disruption	All non-urgent operations and routine out-patient appointments in hospitals across central Sussex were cancelled.
Businesses	The Federation of Small Businesses estimated 20% of the UK's working population did not make it to work across the UK.
Schools	Of 192 schools in East Sussex, 114 closed due to snow on 2 February and 93 on 3 February.

The forthcoming UK Climate Projections, UKCP09[6], will be the fifth generation of UK climate change scenarios, describing how the climate of the UK might change during the 21st century. These more detailed and more up to date projections will be available later in 2009 and used to help us to prepare for the effects of a changing climate locally.

Local Advantages

On the other hand, East Sussex has natural advantages that will help us to tackle climate change. The county has renewable resources and the opportunities provided by a long coastline for the development of wind and wave power. Our county is often the sunniest place in the UK and we once used tidal power. Around 17% of East Sussex is woodland: it is one of the great beauties of our landscape and is important for biodiversity and recreation (see below).

WOOD – OUR NATURAL ADVANTAGE
Careful woodland management in East Sussex could give us around 100,000 tonnes of wood each year for renewable fuel and as a construction material. County Council initiatives have included: • buying the site for the Woodland Enterprise Centre, Flimwell, that features local timber architecture; • starting WoodLots, a magazine for those who want to buy or sell wood, now in its 75th edition; • starting WoodFair, attended by over 10,000 people annually, now a commercial success; and • installing wood-fired heating in schools.

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Running successfully since February 2007, the UK's largest biomass boiler in a school is at Beacon Community College, Crowborough. The system burns local woodchip, generating up to 1,000 kilowatts of power and saving 600 tonnes CO_2 per year compared to fossil fuel power.

HM Prison Lewes installed a biomass boiler in September 2007 for the new prisoner accommodation. The wood chip boiler saves about 150 tonnes of CO_2 per year compared to fossil fuels.

Options for using local resources are evolving, as is our knowledge of how best to use them. For example, in 2009, bio-char carbon storage seems a prospect worth exploring here, it may be relevant for parts of the county with woodland and poorer agricultural soils: it involves the production of charred wood and its incorporation in soils, where it appears to be stable for hundreds of years; applications of 50 tonnes per hectare have been suggested, indicating a significant scale of storage may be possible across the county. An example of our increasing knowledge as to how best to use natural resources is research published in 2009 by the Environment Agency illustrating that wood chip fuel can reduce CO_2 emissions greatly compared to gas, when cropping existing woodland and especially when used for heat rather than just for electricity, but that the manufacture of wood pellets, or the establishment of new woodland on former permanent grass pasture, would lead to much smaller reductions[7].

Following the energy use hierarchy, avoiding the use of fossil fuel and then taking energy conservation measures, are the best first and second steps. Thereafter, local renewable resources can potentially make a very significant contribution to our remaining, lesser, energy needs. However, we will need to be careful to ensure adequate protection of local amenity, landscape, biodiversity and the historic environment.

4. OUR OVERALL AIM AND PRINCIPLES

The overall aim for the Climate Change Strategy for East Sussex is:

"To promote the prosperity and well-being of our community by reducing greenhouse gas emissions and adapting to climate change, and to enable individuals and organisations to tackle and adapt to climate change."

Guiding our aim are the following principles:

1. Climate change, above and beyond that which can be explained by natural variation, is happening, and the impact of this change poses significant risks for our local community.

2. Addressing climate change requires both immediate work and long term effort.

3. Addressing climate change requires personal action, as well as action at local, national and international levels.

4. Addressing climate change will require resources but the costs of not taking action will be far greater.

5. We should all be exemplars of good practice in making positive progress towards tackling climate change.

6. Climate change considerations must inform decision-making, investment and policy development.

7. As organisations and businesses, we need to work together to address climate change.

8. As individuals, we all need to play our part in rising to the challenges of climate change.

We will achieve our overall aim by addressing four themes:

- bring climate change into the **mainstream** of all that we do;
- **engage** with new and existing partner organisations and the public;
- reduce our greenhouse gas emissions ("**mitigation**"); and
- create a community which is **adaptive** to the changing climate.

5. OUR APPROACH AND OBJECTIVES

Within each theme, we set out objectives to achieve our overall aim of addressing climate change.

5.1 MAINSTREAM

To ensure that the implications of climate change are considered and action is taken in all our work and lives.

An effective response to the causes and effects of climate change will require action within every organisation and by each household in our community. Awareness of the risks of climate change, and responding to them, need to become a part of all activity. This theme brings climate change issues to the forefront in all that we do; from policy development and our procurement procedures, to the development we encourage and even to our personal behaviours.

Public bodies throughout East Sussex have declared their commitment to action (see section 2 - Introduction). The challenge is to ensure that this commitment is maintained and widened to include all sectors within our community. In 2007, there was a high level of optimism and understanding about climate change issues in England, but only a small level of environmental action on the key aspect of travel, the only area of increasing CO_2 emissions (see below).

PUBLIC COMMITMENT NEEDS TO GROW[8]	
Optimism	When asked about their attitudes toward the environment, two-thirds "strongly agreed" or "tended to agree" that "humans are capable of finding ways to overcome the world's environmental problems".
Understanding	Three-quarters of people believe that if most people in the UK recycled more, cut down their car use or flew less, it would have a major or medium impact on the UK's contribution to climate change.
Action	Only one-quarter had already begun to fly less or travel by car less (see also 6.2 below).

Our objectives within this theme are:

MA 1. Establish widespread local commitment to action on climate change.

MA 2. Take account of climate change implications in all policy development

MA 3. Monitor and report progress, highlighting success as well as areas for further action, and review the strategy.

5.2 ENGAGE

To inform, advise, and enable everyone in our community to play their part in reducing emissions and adapting to climate change.

This theme recognises the need to work together, engaging local residents and organisations, and helping us all to take action. National bodies, such as the Government's Department of Energy and Climate Change, the Energy Saving Trust and the Carbon Trust, as well as local organisations and companies, offer information and other support. Academics and environmental organisations have a particularly important role as they provide trusted sources of advice.

WHY TAKE ACTION?	
Individuals	Switching off, insulation, and choosing lower energy equipment saves money and avoids CO_2 emissions, as do many consumer choices such as cutting down on water use. The Carbon Trust estimates that the largest proportion, one-sixth, of all CO_2 emissions as a result of consumption in the UK are from leisure and recreation choices, including travel[9]. Adapting your home and your lifestyle will protect your property and save money in the long run.
Businesses[10]	• Profitability: addressing climate change makes good businesses sense by cutting costs - being energy efficient could add the same amount to your profits as a 5% increase in sales. • Competitive advantage: improving your environmental credentials can improve your market appeal and increase staff retention. • Managing business risk: ensuring your business is adaptive to the risks of climate change will ensure you are more resilient to change and may help to reduce your insurance premiums. • Legal Compliance: failure to comply with environmental regulations, such as the need for Display Energy Certificates, can expose your business to the risk of prosecution.
Communities	The Transition Towns movement, active in Forest Row, Lewes and Hastings, and other local community work show that joint effort inspires individuals and businesses.

The County Council will listen to the views of residents, schools, businesses and other organisations about what support is needed in our community, identify the gaps, and work with our partners to address them. Our local communication and support is best directed at working with national campaigns, to add local colour and to ensure that national offers of assistance are delivered and extended in our area.

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Projects led by the County Council encourage recycling, composting and waste awareness help to reduce greenhouse gas emissions from waste collection and disposal. Understanding what goes into our bins and its impact is an important part of engaging with local schools and communities. This award-winning work, supported by EU grant aid, has included Sedlescombe Primary School.

This theme supports one of the Key Tasks for the East Sussex Integrated Community Strategy: encouraging individuals and organisations to minimise their water consumption, CO_2 emissions and overall environmental impact.

National organisations with branches in East Sussex and local organisations are already active in addressing climate change. For example, the East Sussex Fire and Rescue Service has joined the partnerships established by the Local Area Agreement to deliver reductions in CO_2 emissions and to adapt to climate change, and the National Health Service has set itself a CO_2 reduction pathway (see below).

PARTNER ACTION - NHS[11]
In January 2009, the NHS Carbon Reduction Strategy for England set an ambition for the NHS to help drive change towards a low carbon society. The strategy shows the scale of CO_2 reduction required for the NHS to progress towards the Climate Change Act 2008 requirements of an 80% cut from 1990 to 2050. The NHS has a carbon footprint of 18 million tonnes CO_2 per year, based on a wide definition that includes fuel used in the production of drugs and other materials that it uses The total is composed of energy (22%), travel (18%) and procurement (60%). "The NHS has increased its carbon footprint by 40% since 1990. This means that meeting the Climate Change Act2 targets of 26% reduction by 2020 and 80% reduction by 2050 will be a huge challenge. This strategy establishes that the NHS should have a target of reducing its 2007 carbon footprint by 10% by 2015."

Our objectives within this theme are:

EN 1. Ensure that residents and organisations are well informed about climate change, including how they can play their part in mitigation and adaptation.

EN 2. Ensure that programmes of support for action on mitigation and adaptation are available and suitable for individuals and organisations in East Sussex.

5.3 MITIGATE

To reduce greenhouse gas emissions from East Sussex and our share of those released elsewhere as a result of our actions here.

This theme addresses our need to understand and reduce the levels of emissions from our area, and the emissions for which we are responsible that are emitted elsewhere, such as those from factories abroad which make the goods that we import.

The Climate Change Act 2008 sets legally binding targets for reducing greenhouse gas emissions in the UK by at least 80% from 1990 to 2050. Given the slow start nationally, a 9% reduction by 2007 excluding emissions trading, this now requires an average reduction of around 3.5% per year. The Government estimates that CO_2 emissions from East Sussex generated by business, domestic users and road transport were around 3.1 million tonnes in 2006. This is equivalent to around 6.2 tonnes for each resident of East Sussex every year. These figures exclude emissions from the UK's largest factories, motorway or air travel, or emissions abroad from the production of materials or goods that we buy. The Stockholm Environment Institute based at the University of York, estimates that as a result of our consumption of goods and services (produced here or elsewhere), we are responsible in our

area for around double the Government's estimate - 13 tonnes of CO_2 per person[12]. Sustainable levels of emissions are estimated by various authors, not least by former East Sussex resident Dr. Mayer Hillman of the Policy Studies Institute, at around 2 tonnes per person on the basis of all consumption (similar to the basis for the 13 tonnes estimate above), or around 1 tonne on the narrower basis of fuel use (similar to the basis for the 6.2 tonne estimate above)[13].

SCALE OF PERSONAL ACTION[14]	
Loft insulation	If your home currently has no loft insulation and you install the recommended 270mm depth, you could save around £200 a year on your heating bills and around 1 tonne of CO_2 per year.
Double glazing	Installing double glazing could cut your heating bills by around £140 a year, as well as 0.7 tonnes of CO_2.
Travel Choice	An average car creates about 204 grams of CO_2 per km; taking an average bus emits about 107 grams per passenger per km and average train 60 grams of CO_2 per passenger per km (DEFRA[15]). On this basis, if you changed from driving alone to taking the train between Eastbourne and Hastings every day for work (say 30 km for 220 days), you could avoid about 1 tonne of CO_2 emissions per year. If you changed from driving alone to taking the bus between Brighton and Lewes every day for work (say 20 km for 220 days), you could avoid about half a tonne of CO_2 per year; cycling would double this saving.

In 2008, our Local Area Agreement (LAA) set a mitigation target similar to that in the Climate Change Act: a 10% reduction in CO_2 emissions over the three year period 2008/09 – 2010/11. Four-fifths of this reduction is to come from the effects of national policies and programmes; one-fifth is to come from local efforts. The LAA also set a proxy target of an absolute reduction of 75,000 tonnes over the three year period, to give certainty to the scale of local effort required, whatever the effects of international and national factors outside of our control.

This theme also addresses improving our understanding and control of other greenhouse gases, such as methane and nitrous oxide that each account for around 6% of national emissions but an unknown proportion of local emissions.

Our objectives within this theme are:

MI 1. Understand current and forecast levels of greenhouse gas emissions from East Sussex.

MI 2. Set the scale of appropriate local mitigation, at least in line with national Government targets.

MI 3. Develop appropriate tools to enable the assessment of the greenhouse gas emission consequences of policies, programmes and projects, and determine the options available for the reduction of greenhouse gases.

MI 4. Take action to reduce greenhouse gas emissions from East Sussex.

5.4 ADAPT

To respond to the risks and opportunities presented by a changing climate in East Sussex.

Adaptation describes the actions we take to reduce the negative impacts and enhance the benefits of severe weather events and climate changes. East Sussex has about 80 kilometres of coastline as well as rivers, estuaries and other low-lying land; we are at risk from flooding and rising sea levels. National Indicator 189 (flood and coastal erosion risk management) measures local authorities' actions to implement flood and coastal erosion risk management. Working with the Environment Agency, local authorities will help our community adapt to reduce the risk of flooding and erosion. Learning from previous flood events helps us to reduce the risks.

An important aspect of the adaptation theme is to understand our local climate – how it has changed and how it is expected to change in the future. Councils and the Environment Agency have collected evidence of the effects of past severe weather to construct a Local Climate Impact Profile (LCLIP). When combined with climate predictions, this will help us to prepare for the changes ahead, reducing the negative impacts through effective risk management. Changes in climate not only present very serious threats to our environmental, social and economic well-being, they also bring opportunities which we should identify and exploit, such as for business development and tourism.

We need to build on our capacity to adapt, as well as to adapt our infrastructure and services. Building adaptive capacity means, for example, managing projects in new ways, training staff and understanding the consequences of policies. Adaptation action includes, for example, allowing flooding where it does little harm so as to allow the concentration of resources to protect places where it would do harm; it could include installing external shading above south-facing facades, or ensuring more sustainable approaches to drainage – allowing water slowly to seep into the ground rather than rush across hard surfaces to water courses. Adaptation action also includes non-physical actions, such as changing our Health and Safety advice to include working in extreme heat and improving warning systems before local flooding.

Responding to climate change will have cost implications, but some adaptation measures are not complex or expensive and many will bring long term cost savings, generate income and provide jobs. Planned adaptation is more effective and less expensive than reaction during a crisis. Adaptation is even better than insurance.

Our objectives within this theme are:

AD 1. Consider the nature of likely future climatic conditions in East Sussex.

AD 2. Understand local vulnerabilities to a changed climate, including extreme weather events, as well as the opportunities presented by change.

AD 3. Assess the likely risks to services, structures, business processes and the lives of residents and workers, and prioritise responses to risks.

AD 4. Make adaptations to climate change, revising policies and procedures, and making changes to facilities and infrastructure.

6. HOW WE WILL ACHIEVE OUR OBJECTIVES

An Implementation Plan, developed with partners, will set out how we intend to deliver this strategy. Details of actions and specific targets will be an essential part of our Implementation Plan. To be successful, some issues require immediate, specific action within a narrow subject area, while others are long term and involve work with several partners; our targets will reflect these timescales. This section illustrates some of the types of actions that are likely to be required to meet each objective.

6.1 MAINSTREAM

MA 1. Establish widespread local commitment to action on climate change.

The County Council will support the development of a partnership approach to climate change, as set out in the East Sussex Strategic Partnership action plan. The County Council will support local commitment through its work in schools, by a pilot scheme of small, starter grants for community groups, and by support for small businesses.

School Travel Plans developed by the County Council in partnership with schools and parents led to the avoidance of around 900,000 km of car travel in 2007/8, saving about 200 tonnes of CO_2 emissions. Such work has also helped to fund bike shelters, as seen here in Newick, encouraging local commitment.

PHOTO INSERT

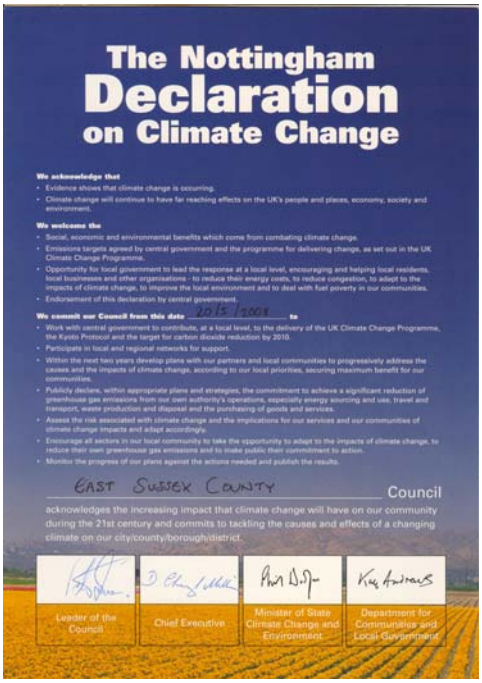
MA 2. Take account of climate change implications in policy, programme and project development.

The Local Government Association's Climate Change Commission calls on councils to undertake a climate change impact assessment of all major policy, planning and investment decisions. We are already undertaking this for the Bexhill-Hastings Link Road project, have commissioned consultants to assist us to understand the climate change consequences of future approaches to land use planning for minerals and waste, and have recently reviewed our flexible working policy, improving alternatives to travelling to work. The County Council will extend this assessment process by developing tools to ensure that we are lowering emissions and ensuring the resilience of infrastructure and services to climate changes, and will share this with other organisations.

MA 3. Monitor and report progress, highlighting success and areas for further action, and review the strategy.

The County Council will assess and publicly report our progress on all of our objectives in this strategy, and in particular:

- mainstreaming and engagement, judged against the Nottingham Declaration and the Energy Measures Report;
- mitigation, judged against National Indicator 185 (CO_2 reduction from the local authority's operations) and National Indicator 186 (per capita reduction in CO_2 emissions in the whole of East Sussex); and
- adaptation, judged against National Indicator 188 (planning to adapt to climate change), and National Indicator 189 (flood and coastal erosion risk management).


The Nottingham Declaration on Climate Change

We acknowledge that
- Evidence shows that climate change is occurring.
- Climate change will continue to have far reaching effects on the UK's people and places, economy, society and environment.

We welcome the
- Social, economic and environmental benefits which come from combating climate change.
- Emissions targets agreed by central government and the programme for delivering change, as set out in the UK Climate Change Programme.
- Opportunity for local government to lead the response at a local level, encouraging and helping local residents, local businesses and other organisations - to reduce their energy costs, to reduce congestion, to adapt to the impacts of climate change, to improve the local environment and to deal with fuel poverty in our communities.
- Endorsement of this declaration by central government.

We commit our Council from this date 2015 / 2008 to
- Work with central government to contribute, at a local level, to the delivery of the UK Climate Change Programme, the Kyoto Protocol and the target for carbon dioxide reduction by 2010.
- Participate in local and regional networks for support.
- Within the next two years develop plans with our partners and local communities to progressively address the causes and the impacts of climate change, according to our local priorities, securing maximum benefit for our communities.
- Publicly declare, within appropriate plans and strategies, the commitment to achieve a significant reduction of greenhouse gas emissions from our own authority's operations, especially energy sourcing and use, travel and transport, waste production and disposal and the purchasing of goods and services.
- Assess the risk associated with climate change and the implications for our services and our communities of climate change impacts and adapt accordingly.
- Encourage all sectors in our local community to take the opportunity to adapt to the impacts of climate change, to reduce their own greenhouse gas emissions and to make public their commitment to action.
- Monitor the progress of our plans against the actions needed and publish the results.

EAST SUSSEX COUNTY Council acknowledges the increasing impact that climate change will have on our community during the 21st century and commits to tackling the causes and effects of a changing climate on our city/county/borough/district.

Leader of the Council | Chief Executive | Minister of State Climate Change and Environment | Department for Communities and Local Government

The County Council's progress will also be judged by the Audit Commission's Comprehensive Area Assessment process that includes a "key line of enquiry" that aims to ensure that we use our resources wisely and efficiently[16].

An annual meeting will be organised for all sectors, with an annual report which reviews progress, highlights successes and sets out areas for further action. Our Climate Change Strategy for East Sussex will be reviewed at least every 5 years, sooner if major changes suggest that it is necessary.

6.2 ENGAGE

EN 1. Ensure that residents and organisations are well informed about climate change, including how they can play their part in mitigation and adaptation.

The County Council will consider the user's view of available information to ensure that appropriate and trusted information programmes exist for residents, businesses, and organisations.

The County Council will build on its existing, award-winning, community engagement activities on waste awareness (Rethink Rubbish) and sustainable travel (Travel Choice) to develop an approach to engagement, including a communications plan. We know that changing attitudes and behaviours is a lengthy process, needs to be sensitive to different audiences and to respond to different motivations. Our approach will be developed with partner organisations and using national resources to enable climate change to be understood from the local perspective and to provide suggestions for local action.

The County Council has a particular, lead role in the development of a programme for children and young people; they are especially important in this long term problem. We will develop a Sustainable Schools Network to offers advice and guidance for schools in East Sussex.

Campaigns led by the County Council helped to divert over 1,500 tonnes of waste from landfill in 2007/8, avoiding the equivalent of 2,000 tonnes of CO_2 emissions. Pupils at Willingdon Primary school in Eastbourne encouraged their community to reduce their waste and recycle more, helping reduce emissions from landfill sites.

PHOTO INSERT

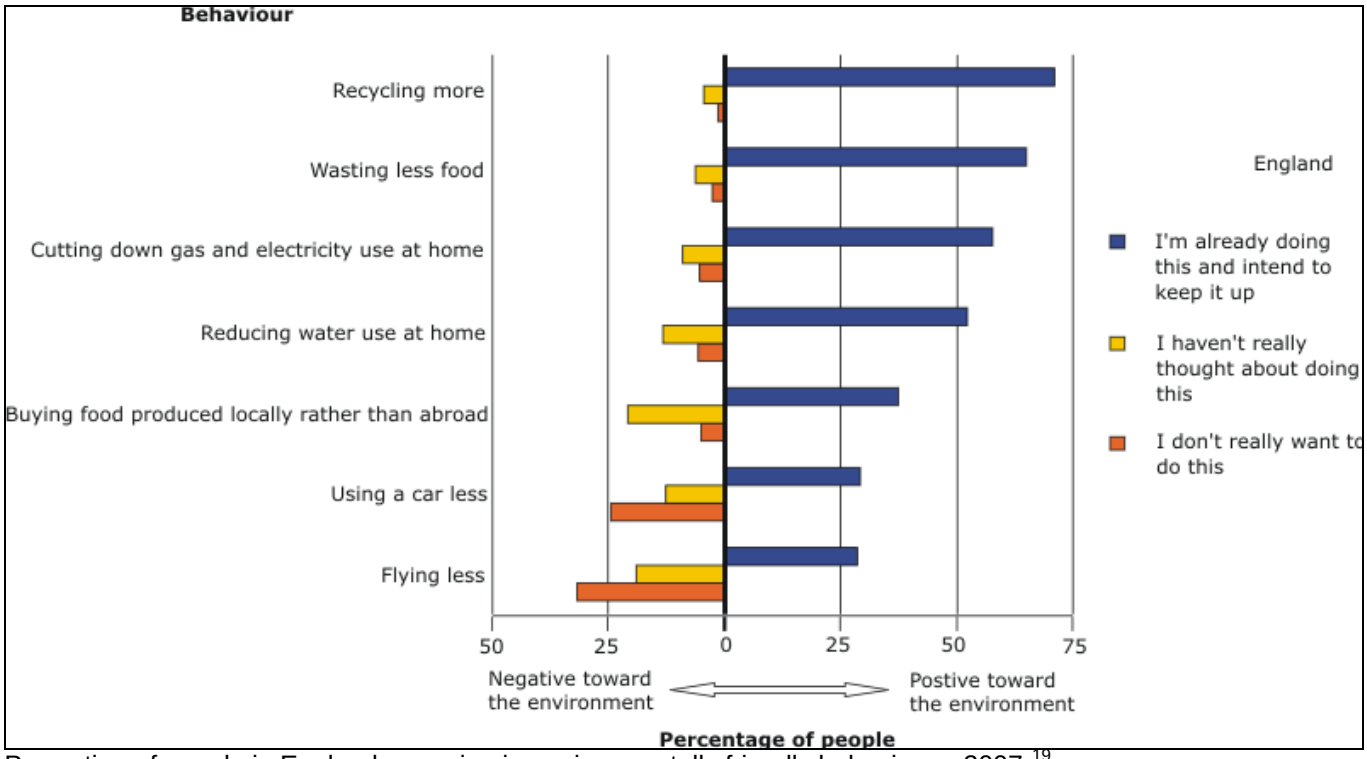
EN 2. Ensure that programmes of support for action on mitigation and adaptation are available and suitable for individuals and organisations in East Sussex.

The County Council will consider national offers of support for their local relevance and, with partners, will devise a coordinated programme of support to fill the gaps, paying particular attention to those that motivate action. The County Council will support schools, voluntary organisations and networks - helping enable them in turn to support students and residents, residents' groups (with small, starter grants), and small businesses (with our Business Excellence Through Resource Efficiency, BETRE programme, see below). If necessary, we will lobby the Government and others for action on that which helps us in East Sussex.

BUSINESS VIEWS AND ACTION	
Views[17]	Over 800 businesses were interviewed for the East Sussex Business Survey in 2007 and all reported increasing or high energy costs as their biggest constraint. 25% of firms rated the issue as 8-10 out of 10 in terms of its severity as a problem; yet only around one-fifth had heard of business support programmes on environmental matters.
Action	Established in 2001, the Betre Programme works with small and medium sized businesses in East Sussex to identify resource and energy efficiency savings. Businesses receive free energy audits, access to grants to help pay for energy efficiency measures, and follow up support to help implement improvements. Since 2003, the Betre Programme has worked with over 2,000 businesses to identify over £1 million in savings. The Programme also helped divert 3,000 tonnes of waste from landfill, save 35,000m^3 of water and reduce CO_2 emissions by 3,000 tonnes.

The national survey of environmental behaviours shows that people are commonly recycling and using less fuel at home, but there is more work to be done to engage further action in

tackling climate change. According to the Energy Saving Trust, over 80% of people believe that climate change is having an impact on the UK right now and yet 40% of us are doing nothing to reduce our energy use.[18]



Proportion of people in England engaging in environmentally friendly behaviours, 2007.[19]

6.3 MITIGATE

MI 1. Understand current and forecast levels of greenhouse gas emissions from East Sussex.

Councils in East Sussex and the Environment Agency have been assessing the CO_2 emission estimates produced by Government in 2008 for the years 2005 and 2006 as the out-turn of National Indicator 186 (per capita reduction in CO_2 emissions in the Local Authority's area). They show no overall change between the years, but a reduction from 6.2 to 6.1 tonnes per capita if normalised to the 2005 rate of emissions of CO_2 per unit of electricity used (electricity use went down locally, but the amount of CO_2 produced per unit of electricity went up nationally). We will develop a better understanding of these and other local greenhouse gas emissions such as methane and nitrous oxide. Nationally, methane and nitrous oxide are each responsible for around 6% of greenhouse gases, with much coming from landfill sites and agriculture.

The first results for National Indicator 185 (CO_2 reduction from the Local Authority's operations) will be available in the summer of 2009.

MI 2. Set the scale of appropriate local mitigation action, at least in line with national Government targets.

We set ourselves a local target within our Local Area Agreement 2008/09 – 2010/11 in line with the national targets set by Government (see Appendix 2). After its consideration of the baseline results for its own emissions (NI 185), the County Council will set a target rate for annual improvement.

The County Council is also preparing itself for the Carbon Reduction Commitment, a new legally binding climate change and energy saving scheme, which sets a limit to total emissions allowed for large energy users. Once this scheme has been finalised by Government, we will set local targets and action to meet this commitment.

In 2005, the East Sussex BETRE programme won a national Green Apple Award for its Environmental Best Practice Education and Training work with local businesses and community organisations.[20]

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As a pilot, the Transport and Environment Department has set itself a target of reducing staff travel at work by car by 10% from 2008/9 to 2009/10.

MI 3. Determine the options available for the reduction of greenhouse gases.

We want to see the establishment of good quality advice on emissions reduction options. Some of this is emerging from the Energy Saving Trust, Carbon Trust and academic programmes, such as RESOLVE at the University of Surrey.

The County Council has developed assessments of options for emissions reductions from heating and lighting its property, so that it can bid for funding from the Government's Salix programme. We will develop reduction options for the delivery of other County Council services such as waste disposal. We will train staff to use the best methods to reduce emissions and will assist our contractors to reduce their CO_2 emissions. We will set up networks with key partners to share tools and develop consistent methods.

Once we have a better understanding of our share of methane and nitrous oxide emissions, and if it appears an effective use of resources, we will develop options for their reduction.

MI 4. Take action to reduce greenhouse gas emissions from East Sussex.

The County Council's Carbon Management Action Plan (CMAP) established that the County Council is responsible for around 30,000 tonnes through fuel use alone - about 1% of the East Sussex total. The CMAP scope included CO_2 emissions from schools and other County Council buildings; street lighting; fleet transport; business travel; and staff commuting. By April 2008, the County Council had reduced its carbon emissions by 19.1% compared to the baseline year, 2001/02. The CMAP scope has been superseded by National Indicator 185 (CO_2 reduction

from local authority operations), but the positive steps taken for the CMAP will form the basis of continued work to address our own emissions.

MITIGATION ACTIONS BY THE COUNTY COUNCIL	
Travel	The County Council leads the promotion of travel choice in our area, encouraging people to travel by bus, train, on foot, by bicycle, and by car sharing, rather than by sole use of vehicles. We support schools in developing travel plans to encourage children to walk, cycle and take the bus to school. Through parking controls and other measures, we have kept traffic growth in most areas of the county below predicted levels, reducing traffic in Lewes.
Street Lighting	100% of the electricity used for County Council street lights is from a renewable electricity tariff (see Glossary). In 2009/10, we will introduce a pilot project to reduce the amount of electricity used, to avoid 300 tonnes of CO_2 per year. If successful, the trial programme will be expanded.
Sustainable Procurement	The County Council is leading a regional project funded by the Improvement and Efficiency South East (the regional Improvement and Excellence Partnership which supports local authorities in the region to meet the standards set by the National Procurement Strategy).
Schools and Buildings	Our programme of measures to improve the County Council's schools and other buildings includes: heating system improvements; plant room and roof insulation; occupancy lighting controls; photovoltaic cells; ground source heat pumps; biomass boilers; wind turbines; solar thermal; and green electricity tariffs.

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The County Council's work to reduce fuel use in its own property has reduced CO_2 emissions by more than 19,000 tonnes between 2001 and 2008.

At Hazel Court School in Eastbourne 115 valve wrap covers were fitted to uninsulated valves in the boiler room, saving £3,000 and 30 tonnes of CO_2 per year.

The County Council will lead by example, by reducing emissions and will encourage others to do the same by demonstrating achievements.

6.4 ADAPT

AD 1. Consider the nature of likely future climatic conditions in East Sussex.

We will consider climate predictions, specifically the forthcoming UK Climate Projections (UKCP09), and be guided by the UK Climate Impact Programme on estimates of future conditions for our local area.

AD 2. Understand local vulnerabilities to a changing climate, including extreme weather events, as well as the opportunities presented by change.

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County Council services are affected by weather events such as the October 2000 flood along the C19 road in Bodiam. Improving our understanding of where we are vulnerable will help us adapt services appropriately.

Following Government guidance, Councils in East Sussex will complete the LCLIP, to determine how major weather events have affected our community.

AD 3. Assess the likely risks to services, structures, business processes and the lives of residents and workers, and prioritise responses to risks.

Working in partnership with others, we will use forthcoming predictions to assess vulnerabilities and opportunities that are likely to be created by a changing climate. The County Council and partners will monitor the impacts of future weather events, and in particular, assess the likely impacts on delivering council services.

Working in partnership with others, we will assess our capacity to adapt. Alongside the Environment Agency and other organisations, the County Council will use Government guidance, such as that resulting from the Pitt Review[21] to assess our local flood risks. We will also work with our partners, including other government and community organisations, to identify areas for improvement and other key work areas, and assess milestones for adaptation.

AD 4. Make adaptations to climate change, revising policies and procedures, and implementing changes to facilities and infrastructure

We will make adaptations to policies, procedures, facilities and infrastructure. We will continually adapt our emergency response systems in partnership with such agencies as the NHS and East Sussex Fire and Rescue Service. We will monitor the effectiveness of adaptation measures as they become exposed to the increasing extremes of the changing weather.

ACTION AGAINST FLOODING	
Roads and urban areas	The County Council assessed the flood risk for the Bexhill-Hastings Link Road and have incorporated adaptive measures. Urban flooding issues will be addressed through an integrated urban drainage strategy, to ensure that our town areas are adaptive and protected against erosion and flooding.
Communities, government and partners	Two Shoreline Management Plans and four Catchment Flood Management Plans guide our action to manage flooding and coastal erosion. We are also be guided by the South East River Basin Management Plan for Hampshire, Isle of Wight, East Sussex, West Sussex and part of Kent. We will work with other members of the Cuckmere Estuary Partnership and the local community to develop a long term strategy for the management of the lower Cuckmere Estuary that is sustainable and adaptable, and will explain this work to the public.

7. GLOSSARY OF TERMS

Biomass = a renewable energy source referring to living and recently dead biological material that can be used as fuel It can be plant matter grown to generate electricity – for example, yard clippings and wood chips can be converted into biofuel. Biomass may also include biodegradable wastes that can be burnt as fuel.

Carbon dioxide (CO_2) = a chemical compound composed of two oxygen atoms bonded to a single carbon atom. Man-made emissions of carbon dioxide are considered the biggest cause of climate change.

Climate = the average weather experienced over a long period. This includes temperature, wind and rainfall patterns.

East Sussex Strategic Partnership (ESSP) = local authorities are required to work with partners to produce a sustainable community strategy to improve the economic, social and environmental well-being of their area, while safeguarding the prospects of future generations. In East Sussex, the six local authorities and six Local Strategic Partnerships in East Sussex have worked together to produce one, integrated strategy - Pride of Place.

Greenhouse effect = short wave energy from the sun passes through the atmosphere (without warming it) and then warms the Earth's surface, the Earth then radiates longer wavelength heat energy to warm the atmosphere. Radiated energy is absorbed by gases in the atmosphere: water vapour, carbon dioxide, methane and nitrous oxide. Since the industrial revolution, human activities have resulted in a large increase in the emission of greenhouse gases, especially carbon dioxide, and their concentration in the atmosphere. An increase in these gases in the atmosphere enhances the atmosphere's ability to trap heat, which leads to an increase in the average surface temperature of the Earth.

Greenhouse gases = gaseous constituents of the atmosphere, both natural and man-made, that absorb and emit radiation. The primary greenhouse gases are water vapour, carbon dioxide, methane and nitrous oxide.

Local Area Agreement (LAA) = a three year agreement between central government and local agencies setting out the priorities for a local area and how these will be tackled in partnership. The East Sussex LAA helps to deliver the priorities set out in Pride of Place and runs from 1 April 2008 until 31 March 2011, replacing the first LAA (2006/08).

Local Development Framework (LDF) = policies and plans prepared as part of the new planning system in England. In East Sussex, each of the five Districts and Borough Councils will have its own LDF, guiding development and the County Council will prepare an LDF for minerals and waste planning matters.

Methane (CH_4) = a relatively potent greenhouse gas with a global warming potential 21 times greater than carbon dioxide, averaged over 100 years. In the UK in 2006, 41% of methane emissions were from waste management and 38% from agriculture.

National Indicator for local government (NI) = measures of progress on national priorities where they are delivered by local councils acting alone or in partnership (see also Appendix 2). (http://www.lga.gov.uk/lga/core/page.do?pageId=105317).

Nitrous Oxide (N_2O) = a very potent greenhouse gas with a global warming potential 310 times greater than carbon dioxide, averaged over 100 years. In the UK in 2006, 68% of nitrous oxide emissions were from waste management and 15% from transport.

Renewable or 'Green' electricity = electricity produced from sources which have fewer negative impacts on the environment than burning coal or gas. The cleanest energy sources are those which use natural energy flows. These are known as renewable energy sources, because they will never run out and include wind power, solar power and hydropower.

8. APPENDIX 1 – East Sussex Community Strategy

The East Sussex Strategic Partnership's "Pride of Place; A Sustainable Community Strategy for East Sussex" section on environment and climate change, is reproduced in full below.

"Where We Are Now

Our environment is precious and the impacts of climate change will be wide ranging and have a profound impact on our lifestyles as well as our economy. Protecting our environment and tackling and adapting to climate change are therefore two of the most important issues we face. One of the county's greatest assets is its natural environment and many come to visit its countryside, coast and cultural attractions. Two thirds of the county falls within two Areas of Outstanding Natural Beauty and the county has received national and international recognition for its countryside, bird habitats, fisheries, sites of special scientific interest and coastline. Around 1,000 local people volunteer for practical conservation tasks. A good quality local environment can help improve health, reduce crime and contribute to our economy. Some towns have benefited from regeneration schemes and Conservation Areas have been designated in some settlements to maintain their unique character. Compared with the rest of the south east, the county is generally well provided with green space near where people live and there are proposals to convert the current waste landfill site between Bexhill and Hastings into a new countryside park. East Sussex has the second highest coverage of woodland of any county at 16.7%. Woodland is an important habitat for wildlife and leisure attraction, and also provides an important economic function for its landowners. Air quality in most of the county is generally good, but there are exceptions such as along roads such as between Bexhill and Hastings, and in central Lewes. We also have a problem with more widespread pollution with ozone levels in Sussex being some of the highest recorded in the UK. Waste is also a key issue. East Sussex has reduced the amount of household waste going to its landfills by 7% between 2004/5 and 2006/7 by encouraging residents, businesses and other organisations to recycle, however, waste from all sources continues to grow and landfill space will start to run out in 2008. Our focus will continue to be about promoting more sustainable waste management practices and encouraging people and organisations to reduce, reuse and recycle their waste.

Our climate is changing. Carbon Dioxide (CO_2) emissions and other greenhouses gases are the main human influence on the global climate and the Government has set national targets for reductions in CO_2 emissions. The County has already experienced water shortages, heat waves, intense winter storms and flooding. Climate change will increase the frequency, severity and cost of such events and could have devastating social and economic impacts, especially on those whose future is dependent upon their environment, for example our coastal towns and farmers. It is therefore important we work together to tackle climate change and plan for its impacts both positive and negative. Councils and other organisations in East Sussex have already started to work together to address this issue and reduce CO_2 emissions and pilot renewable energy schemes. However, a great deal more needs to be done to deliver the reductions necessary and to plan for the impacts of climate change.

The Challenges Ahead

Achieving planned regeneration and new developments whilst protecting and enhancing our natural and built environment is a huge challenge. Reducing CO_2 emissions, mitigating and adapting to climate change will require great effort but not taking action will be costly, especially in relation to public health, prosperity and our quality of life. We can all play our part, for example by reducing our waste, energy and water consumption, and using greener transport options. We also need to care for our open spaces, ensuring they are accessible to all, and to improve our town centres.

Our strategic priority for 2026 is to protect and enhance our natural and built environment for current and future generations, and enable individuals and organisations to tackle and adapt to climate change.

Our key tasks will be to:

- develop high quality environments in our towns and villages
- reduce traffic, increase alternative sustainable travel choices and improve air quality
- increase green spaces, leisure opportunities and visitor facilities and make best use of our natural assets
- prepare for the effects of climate change; manage the risks and make the most of the opportunities
- encourage individuals and organisations to minimise their water consumption, CO_2 emissions and overall environmental impact
- reuse, reduce and recycle more household, business and industrial waste
- ensure climate change is a strategic consideration of Local Development Frameworks and other planning polices."

8. APPENDIX 2 – National Indicators for Local Government

Local government has a key role to play in tackling climate change and Government will judge council performance in terms of our response to the issue. This is reflected in the new Comprehensive Area Assessment and the national performance framework that include indicators relating to climate change. Relevant national indicators are:

- NI185 - CO_2 reduction from local authority operations
- NI186 - Per capita CO_2 emissions in the local authority area
- NI187 - Tackling fuel poverty – percentage of people receiving income-based benefits living in homes with a low energy efficiency rating
- NI188 - Adapting to climate change
- NI189 - Flood and coastal erosion risk management
- NI198 - Children travelling to school – mode of travel usually used.

The East Sussex Local Area Agreement includes NI 186 and NI 188 as key performance indicators.

National Indicator 185 – Percentage CO_2 reduction from LA operations
This measures the progress of local authorities in reducing CO_2 emissions from delivering their functions, demonstrating leadership on tackling climate change. The standard national methodology requires each council to calculate its CO_2 emissions from fuel use in heating, lighting and transport, including where these services have been outsourced. No level of achievement is specified in Government guidance, nor has the County Council yet set a local target for reductions. However, a 3.5% annual reduction would be in line with the national reductions to achieve the 2050 target of an 80% cut.

National Indicator 186 – Per capita CO_2 emissions in the local authority area
This indicator relies on nationally produced data on end user CO_2 emissions in our local area from businesses, housing and road transport. Emissions from gas and electricity use are based on fuel bills, other fuel bills are estimates; transport emissions rely on A road traffic counts, and the length of minor roads. The indicator is the percentage change each year, on a per capita basis. Our LAA has agreed that we will reduce emissions by 10% over 3 years, with four-fifths of this due to national effort, and one-fifth due to local effort. Our local one-fifth effort to reduce CO_2 emissions by 10% is also defined as 75,000 tonnes. The delivery plan will be achieved by each District and Borough Council and the Environment Agency reducing their own emissions (as above in National Indicator 185) by at least 100 tonnes per year; the County Council reducing its own emissions by 500 tonnes per year; and the District and Borough Councils helping residents reduce emissions from their homes by 4,500 tonnes per year in each area, using the offers from utility companies.

National Indicator 187 – Tackling fuel poverty, percentage of people receiving income based benefits living in homes with a low energy efficiency rating
The purpose of this indicator is to measure progress in tackling fuel poverty through the improved energy efficiency of households inhabited by people claiming income based benefits.

National Indicator 188 – Adapting to climate change

This measures our preparedness in addressing the risks and opportunities of a changing climate. The indicator is based on the process of adaptation, measuring progress by the successful completion of a number of levels, with targets within each level. Our LAA agreed that we will achieve Indicator Level 0 by April 2009 (which has been completed); Indicator Level 1 by 2010; and Indicator Level 3 by 2011. Level 3 is that we will have completed our comprehensive risk assessments and developed an action plan detailing how the risks and opportunities will be managed and what actions the County Council and its LSP partners will be taking. For details of what we have to do to achieve each level, see DEFRA's guidance on delivering National Indicator 188 (http://www.defra.gov.uk/environment/localgovindicators/documents/ni188-guidance-2008.pdf)

National Indicator 189 – Flood and coastal erosion risk management

The aim of this indicator is to record the progress of local authorities in delivering agreed actions to implement long term flood and coastal erosion risk management plans. These plans are Shoreline Management Plans and Catchment Flood Management Plans.

8. APPENDIX 3 – Nottingham Declaration

This Nottingham Declaration is a national standard for commitment to action on climate change, it is reproduced in full below.

"We acknowledge that

- Evidence shows that climate change is occurring.
- Climate change will continue to have far reaching effects on the UK's people and places, economy, society and environment.

We welcome the

- Social, economic and environmental benefits which come from combating climate change.
- Emissions targets agreed by central government and the programme for delivering change, as set out in the UK Climate Change Programme.
- Opportunity for local government to lead the response at a local level, encouraging and helping local residents, local businesses and other organisations – to reduce their energy costs, to reduce congestion, to adapt to the impacts of climate change, to improve the local environment and to deal with fuel poverty in our communities.
- Endorsement of this declaration by central government.

We commit our Council from this date (20 May 2008, for East Sussex County Council), to

- Work with central government to contribute, at a local level, to the delivery of the UK Climate Change Programme, the Kyoto Protocol and the target for carbon dioxide CO_2 reduction by 2010.
- Participate in local and regional networks for support.
- Within the next two years develop plans with our partners and local communities to progressively address the causes and the impacts of climate change, according to local priorities, securing maximum benefit for our communities.
- Publicly declare, within appropriate plans and strategies, the commitment to achieve a significant reduction of greenhouse gas emissions from our own authority's operations, especially energy sourcing and use, travel and transport, waste production and disposal and the purchasing of goods and services.
- Assess the risk associated with climate change and the implications for our services and our communities of climate change impacts and adapt accordingly.
- Encourage all sectors in our local community to take opportunity to adapt to the impacts of climate change, to reduce their own greenhouse gas emissions and to make public their commitment to action.
- Monitor the progress of our plans against the actions needed and publish the results."

8. APPENDIX 4 – References

[1] Intergovernmental Panel on Climate Change http://www.ipcc.ch/index.htm
[2] Environment Agency – Flood Report March 2001
http://www.lewes.gov.uk/Files/env_floodreport.doc
[3] The Climate Change and Sustainable Energy Act 2006 requires each local authority, in exercising any of their functions, to have regard to the most recently published Energy Measures Report. The current report was published in September 2007. It sets out the steps that local authorities can take to improve energy efficiency; increase the levels of microgeneration and low carbon technologies; reduce greenhouse gas emissions; and reduce the number of households living in fuel poverty.
[4] Intergovernmental Panel on Climate Change http://www.ipcc.ch/index.htm
[5] Details from www.midsussextimes.co.uk and http://news.bbc.co.uk/1/hi/business/7864804.stm
[6] For more information, see UKCP09 at
http://www.ukcip.org.uk/index.php?option=com_content&task=view&id=163&Itemid=293
[7] Environment Agency, April 2009. "Biomass: Carbon Sink or Sinner".
[8] http://www.defra.gov.uk/environment/statistics/pubatt/download/pubattsum2007.pdf
[9] Carbon Trust, January 2006. "The Carbon Emissions Generated in All that We Consume".
[10] http://www.carbontrust.co.uk/energy/whysavecarbon/business.htm
[11] http://www.sdu.nhs.uk/page.php?page_id=94
[12] Stockholm Environment Institute. http://resource-accounting.org.uk/downloads/south-east/?page=downloads&area=south-east
[13] Mayer Hillman, 2004. "How We Can Save the Planet". Penguin. Table 6.
[14] Details from the Energy Saving Trust at: http://www.energysavingtrust.org.uk/
[15] http://www.defra.gov.uk/environment/business/envrp/conversion-factors.htm
[16] Details of the Audit Commission's Use of Resources Framework from: http://www.audit-commission.gov.uk/useofresources/downloads/UoR2009OverallApproach.pdf
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http://www.eastsussexinfigures.org.uk/nesstar/temp/EGMS20071015123144249/EAST+SUSSEX+BUSINESS+SURVEY+2007+FINAL+220607+v2.pdf
[18] http://www.energysavingtrust.org.uk/Your-impact-on-climate-change/The-UK-s-opinion-on-climate-change-the-Green-Barometer/Green-barometer-one
[19] http://www.defra.gov.uk/environment/statistics/pubatt/download/pubattsum2007.pdf
[20] For details on the BETRE – Business Excellence Through Resource Efficiency Programme, see: http://www.betre.org.uk/Home.aspx?ChannelID=26&PostingID=155
For details on Pestalozzi Village, see: http://www.pestalozzi.org.uk/
[21] Sir Michael Pitt conducted an independent review of the flooding emergency in June / July 2007. The Pitt Review includes conclusions and recommendations for action to reduce the risk and prepare for flooding in the future. For details, see:
http://archive.cabinetoffice.gov.uk/pittreview/thepittreview.html