



Climate Change Strategy

2010 - 2013



Charnwood

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I Forward

Charnwood Borough Council's Climate Change Strategy was one of the first to be produced in the East Midlands. It reflects our commitment to address at local level the causes of global climate change. It sets out our responsibility to lead at local level the preparation of our communities for the impacts of changing weather patterns which threaten our built and natural environment.

We have also demonstrated our commitment to achieving a significant reduction in carbon emissions from our own operations by investing in and addressing our energy sourcing and use, waste production and disposal, travel and transport, and purchasing of goods and services. Since the strategy was introduced, we have reduced the energy consumption of our public buildings by 13% and our waste to landfill by 41%. In this refreshed strategy we will continue to reduce our environmental impact, setting out new targets for CO₂ emission reduction, renewable energy generation, travel planning and parking, and natural resource use.

We have demonstrated our commitment to working with communities, businesses and schools to reduce carbon emissions, by working towards a more integration public transport system, better air quality within urban areas, and an improved domestic waste recycling service. In this refreshed strategy we continue to do so, setting out new ambitions for fuel poverty, support of local and community led initiatives and encouraging more sustainable modes of transportation to key areas.

We cannot deliver the strategy alone and we all have play a part in ensuring we limit the impact of climate change, whether citizens, employers, community groups, or political representatives by integrating these proposals in our daily lives.

This refreshed strategy reflects more strongly the Council's commitment to adapting its service delivery to the public to the impacts of climate change. It also highlights the crucial role that the Council's partners will play to achieve the objectives of this strategy.

There are many social, economic and environmental benefits to be gained from addressing climate change and this strategy's aim is to secure the maximum benefit for the Borough of Charnwood.



Leader of the Council
Councillor Mike Preston
2010

2 Executive Summary

There is overwhelming evidence that the release of greenhouse gases as a result of human activity is changing our climate. The accumulation of these gases in the atmosphere causes the trapping of enough of the sun's energy to overheat the planet and cause global climate change.

Current evidence not only shows that climate change is already occurring but is beginning to reveal what the UK climate and weather will look like at the end of the century as a result of decisions we make now. Hotter and drier summers, milder and wetter winters will lead to increased flooding, heatwaves, and water scarcity in the UK

As a result there is no longer any time to hesitate - significant reductions of greenhouse gas emissions in general, and carbon dioxide in particular must be achieved. Greenhouse gas emissions from domestic energy consumption, transport, industry and commerce waste production and disposal have to be addressed in order to meet the UK national target of an 80% reduction in carbon emissions by 2050.

This Strategy sets out how the Council will respond to the challenges of climate change; the commitments that it has made in keeping with a signatory of the Nottingham Declaration and how it will encourage others in the Borough to take similar steps (a full copy of the Nottingham Declaration can be found in Appendix 1).

Performance and progress of the strategy action plan will continue to be reported annually to the Council's Performance Scrutiny Committee. This information will also be published on the Council's website.

The Strategy will be reviewed every three years, to update it in response to changes to government regulations, targets and initiatives, and to ensure progress towards our corporate plan aim: to reduce the Borough's impact on climate change.

Evidence shows that the effects of climate change are now inevitable. The need to plan, prepare and adapt to effects of climate change are covered in the Adaptation chapter of this Strategy. Particular emphasis is placed on the growing need to improve the level of preparedness for climate change by identifying priority climate change risks to the Borough and working with partners to minimise those risks.

The principles driving this Strategy have been consulted on with Charnwood Together, the Local Strategic Partnership, whose members include higher education institutions, the Primary Health Care Trust, Police and Fire Service Authorities, Leicestershire County Council, local businesses, and voluntary groups.

The Council recognises the challenges that climate change brings and will work with Leicestershire Local Authorities to meet joint targets on reduction of carbon dioxide emissions from own operations and adaptation to climate change.

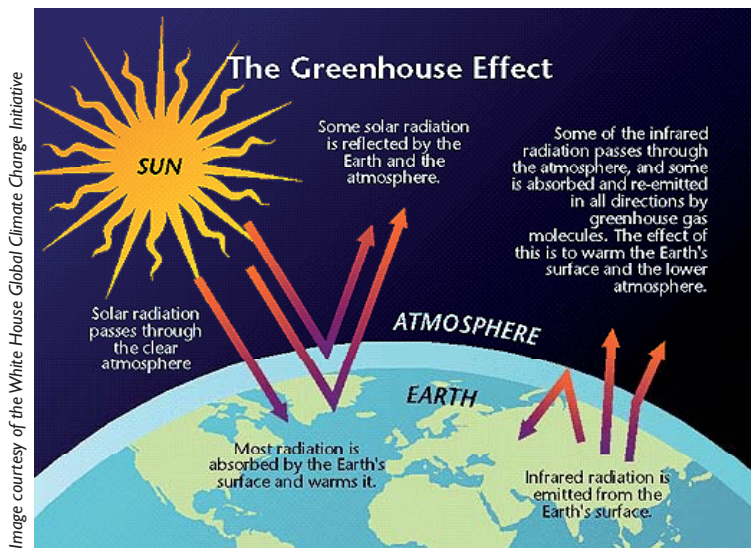
The aspirations of this strategy reflect the importance of its key partners including Charnwood Neighbourhood Housing, Capita, and Serco who are responsible for major outsourced services and wider community partners including Charnwood Together and Leicestershire Together.

The delivery of the strategy action plan will ensure the Council continues to reduce the impact on the Borough from climate change. This cannot be achieved by the Council alone and we will work relevant partners and communities to achieve our aims.

3 What is Climate Change?

There is a balance between light and heat energy emitted from the sun to earth which and then reflected back into space that determines the surface temperature of the earth. Certain atmospheric gases including carbon dioxide, water vapour, and methane, absorb the long wave radiation being reflected from earth surface and re emit heat energy to the planets surface. This is known as the greenhouse effect, without which the earth's average temperature would be a chilly -18°C , rather than the present 15°C and life as we know it would not exist.

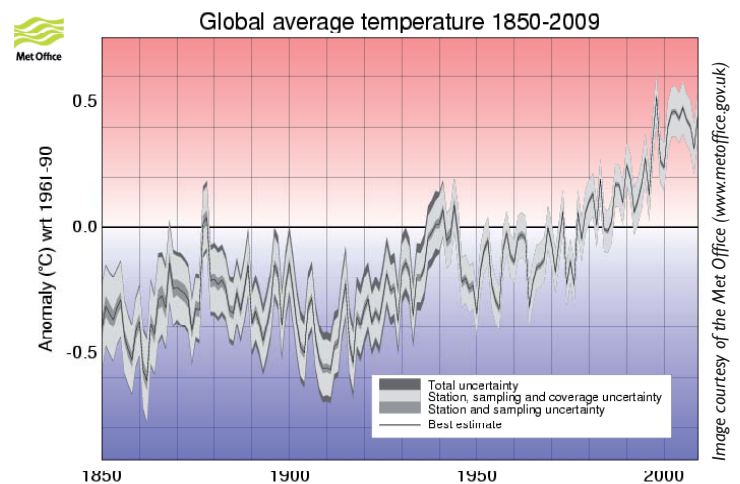
Figure 1 The Greenhouse Gas Effect



Since the industrial revolution of the 1900's atmospheric greenhouse gas concentrations across the globe have risen significantly and rapidly as the figure below shows. The cause has been attributed to the burning of carbon based fossil fuels for industry, transport and domestic use. It is upon this resource that today's globalised economy is built. The consequence has been the global warming of the earth's atmosphere. The graph below is taken from the UK's Centre for Climate Change Research and shows the increase in global average temperature following the industrial revolution of the 1900s. The world cannot yet return to pre industrial atmospheric

levels of 280ppm of CO₂, the main greenhouse gas. However scientists agreed that stabilisation at 350ppm CO₂ may avert potentially catastrophic social and environmental consequences including rising sea levels, inundation of coastal cities, and large scale ecosystem transformations.

Figure 2 Global average temperatures from 1850 to 2009



4 Climate Change and other Global Concerns

Our global climate is already changing. The maximum area covered by seasonally frozen ground has shrunk by 7% in the northern hemisphere since 1900 — in spring by up to 15 per cent. 20% of Arctic Summer Sea Ice has disappeared in the last 30 years. One third of the earth land surface is now desert. The global average temperature has been rapidly increasing since records began and January 2010 was the hottest January since records began in 1850.

The natural resources of the world are not infinite, and neither can the planet continue to absorb the impact of uninhibited economic development and population growth. Climate Change is now the most serious environmental problem the global community faces, not least because it exacerbates other global environmental problems in existence. The relationship between climate change and deforestation, desertification, biodiversity loss and water scarcity are summarised below.

Deforestation

Trees absorb carbon dioxide and are vital carbon sinks. Approximately 283 Gigatonnes of carbon is stored in the biomass of the world's forests alone and there is 50% more carbon stored in forest biomass, deadwood, litter and soil than carbon in the atmosphere.

Global deforestation driven by expanding agricultural and industrial needs, population growth, poverty, landlessness and consumer demand have led to a loss of 7.3 million hectares per year (an area the size of Sierra Leone or Panama) from 2000 to 2005.

The clearing of forests for agricultural land, timber logging and some bio-fuels has contributed up to 35% of all human caused greenhouse gas emissions. The greenhouse gas emissions arising from deforestation is greater than the contribution of the world's transportation systems. Planting trees and preserving natural environment is an effective way to reduce emissions.

Desertification

Desertification is the extreme deterioration of land due to loss of vegetation and soil moisture in the dry arid areas of the world. This has been primarily caused by poor agricultural practices by over abstraction of water, over grazing and deforestation. Such changes in land use cause loss of soil structure, moisture content and major erosion.

Recurring droughts over decades suggest weather patterns are becoming dryer and harsher. The Intergovernmental Panel on Climate Change has warned that rising global temperatures would cause an expansion of the world's deserts, with effects including the reduction in West African agricultural production by up to 50% by the year 2020.

Water Scarcity

While the world's population tripled in the 20th century, the use of renewable water resources has increased six-fold. An expected 40 to 50% increase in the world's population by 2060 - coupled with industrialization and urbanization - will result in an increasing demand for water and have serious consequences on the environment.

Already 1.1 billion people (more than one out of six people) lack access to safe drinking water, and 2.6 billion people (more than two out of six) lack adequate sanitation.

Water availability in the different regions of the world is changing as the climate changes. Not only will this significantly impact global food production and industry, but also aquatic ecosystems and their dependent species.

Biodiversity Loss

Some of the world's rarest ecosystems will be most vulnerable to the effects of climate change because of the degree of change expected and because of stresses already being exerted upon them. Coral reefs and

other marine ecosystems already polluted by sediment and nutrient run-off may not survive increasing oceanic temperatures, changes to circulation and acidification due to excess dissolved atmospheric carbon dioxide. Agricultural land, cleared by fire, will make adjacent forests more susceptible to burning in drier, warmer conditions. Naturally occurring fires, floods and insect plagues are expected to become more frequent as a result of climate change. Global warming above 3-4°C could eliminate 85% of wetlands. Some low lying islands and coastal regions could be wiped out by a sea level rise of just 1 metre.

This demonstrates how devastating the effect of climate change will be on our natural environments. This will affect not only the poorest and most vulnerable developing nations, but will stunt the growth of emerging economies and undo rich and developed nations to whom the rise in atmospheric greenhouse gases are mainly attributed.

5 The UK Profile

It was British Physicist John Tyndall who, in 1859, proposed that certain atmospheric gases could affect infra-red radiation and cause climatic changes. Svante Arrhenius then published his first calculation of global warming from human emissions of CO₂ in 1896 and the scientific exploration of climate change had begun. In 1979, the world climate research programme was formed to coordinate international interest. Some discoveries then included

- CFCs, methane and ozone shown be contributing to greenhouse effect,
- Greenland ice core showed drastic difference in temperature profiles within last century
- Deep Sea and Antarctic Ice cores show how fluctuation in atmospheric CO₂ affect temperature leading to strong biological and geochemical feedbacks

In 1988 the UK Prime Minister was the first major world leader to call for global action. The Montreal Protocol has already put an international ban on gases destroying the ozone layer, which would also contribute to a global warming. In 1992 the UN Framework Convention on Climate Change was published with the ultimate objective of “stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system ...within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner”.

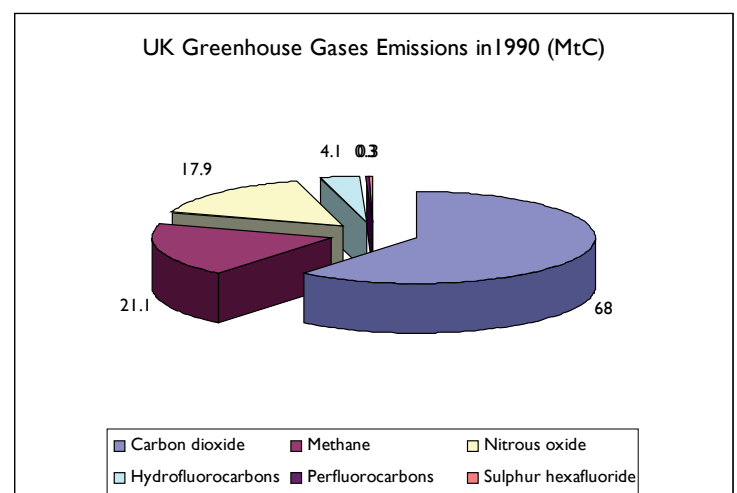
The 1997 Kyoto Protocol, adopted in 2005, was centred on countries agreeing limits to greenhouse gas emissions. In the 2009 Copenhagen Accord, developed nations agreed to strengthen their existing carbon reduction targets and the developing world to implement mitigation actions to slow the growth of their carbon emissions despite economic development and poverty reduction.

The UK Government was the first government to pass a legally binding framework to reduce national greenhouse gas emissions through the Climate Change Act 2008. The UK Low Carbon Transition Plan issued in July 2009, sets out the actions needed to meet the ambitious target of 80% reduction of greenhouse gas emissions by 2050 from 1990 levels. The UK has been a world leader in implementing legislation in this area with some examples given below:

- Code for Sustainable Homes (2008): mandatory zero carbon homes by 2016
- Planning Policy Statement 1 (2008): Planning for Sustainable Development
- Carbon Reduction Commitment (2010): cap and trade emissions schemes for private and public sector

In 1990, the UK's emissions of the six greenhouse gases covered by the Kyoto Protocol were equivalent to 212 million tonnes of carbon (MtC). Figure 3 shows why carbon dioxide has receives the most attention - its emission levels far outweigh the other greenhouse gases.

Figure 3 UK Greenhouse Gas Emissions in 1990 (MtC)



The table below summarises the greenhouse gases that have been produced from every sector within the UK since 1990. Whilst the UK has reduced its greenhouse gases output there is still along way to go to meet the UK government's targets of an 80% reduction on the 1990 baseline by 2050.

Table 1 UK Greenhouse Gas Emissions 1990 - 2009 (provisional),

Greenhouse gas emissions weighted by global warming potential (million tonnes carbon dioxide equivalent)

	Source	1990	2000	2009*	2050**
Net CO2 emissions (emissions minus removals)	Energy supply	243.1	202.7	186.2	48.62
	from power stations	204.5	158.7	150.5	40.9
	other Energy supply	38.6	43.9	35.6	7.72
	Business	108.5	103.6	72.4	21.7
	Transport	122.6	126.8	121.8	24.52
	Public	13.5	11.7	10.2	2.7
	Residential	79.8	86.9	76.7	15.96
	Agriculture	5.2	4.8	4.2	1.04
	Industrial process	16.2	14.7	11.1	3.24
	Waste Management	1.2	0.5	0.4	0.24
	Land Use, Land Use Changes, Forestry	2.9	-0.4	-2	0
	Total CO ²	592.8	551.2	480.9	118.56
	Other greenhouse gases	Total	183.3	122.7	93
Kyoto greenhouse gas basket		773.8	674.1	574.6	154.76

* Provisional data

**Estimated emissions in line with UK 2050 target

The Effects of Climate Change

In the UK, the ten hottest years on record have all occurred since 1995. 2006 was one of the warmest years in Britain since records began, and in January 2003 in Aberdeenshire temperatures rose to 18.3°C equalling the warmest January on record. The 10th August 2003 was the hottest day ever recorded in Britain. Sea levels around the UK have risen by 10cm since 1900.

The UK Climate Impact Programme was established in 1997 to coordinate scientific research on the impacts of climate change in Britain. Using historical data and trends the following climate projections for the UK have been proposed:

- Summers will become hotter and drier
- Winters becoming milder and wetter.
- More extreme weather events including heatwaves and intense rainfall,
- Increased risk of flooding in some areas,
- Sea levels will continue to rise, increasing the risk of coastal flooding erosion.
- Frequency and intensity of storms and high wind events likely to increase

Climate Change impacts have already been shown to affect water supply, transport, health, power supply, biodiversity and agriculture, tourism, and emergency services. In October 2007 flooding cost the UK an estimated £3 billion, whilst in Europe the 2003 heatwave accounted for over 13000 related deaths. The intense heat island effect in urban areas is likely to increase pressure on surrounding rural and suburban areas as people migrate. Social impacts including increasing crime rates, overseas immigration from developing countries experiencing climate disasters, and invading pests and diseases from warmer climates may be experienced. The effects of climate change, therefore, go beyond traditional environmental concerns.

6 Charnwood Focus

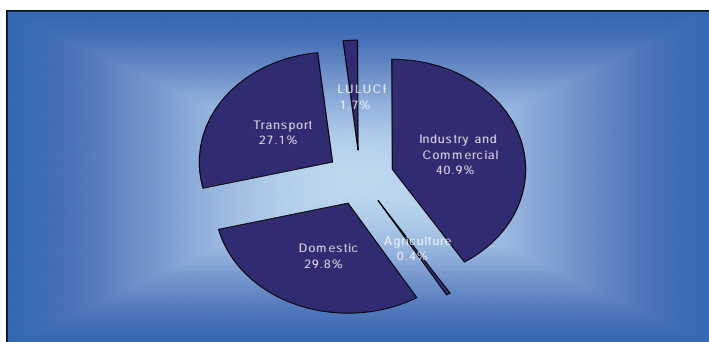
Charnwood is the 2nd largest geographical borough in the UK and the largest within the county of Leicestershire. During the year 2007, the carbon emissions of Leicestershire County were 7.34 CO₂ per capita. The contribution of each district is shown below.

Table 2 Leicestershire Carbon Emissions

District	CO ₂ Emissions per capita
Leicester	6.6
Blaby	5.93
Charnwood	7.13
Harborough	7.23
Hinckley and Bosworth	6.6
Melton	8.51
North West Leicestershire	11.67
Oadby and Wigston	5.05
Leicestershire Total	7.34

A range of human activity contributes to carbon dioxide emissions. The activities that contribute most to Charnwood's emissions are combustion arise from industry and commerce (40.9%), domestic activity (29.8%) and road transport (27.1%) as shown below.

Figure 4 Source of Charnwood CO₂ emissions 2007



Source: NII 86 Local Authority Data Set, DEFRA, November 2009

The carbon dioxide emissions from activities in Charnwood as reported to the National Atmospheric Emissions Inventory (NAEI) from the year 2005-7 are shown in the table below.

Table 3 Change to Local CO₂ emissions per sector from 2005-2007

LA Name	Year	Industry and Commercial	Domestic	Road Transport	Total	Population ('000s, mid-year estimate)	Per Capita Emissions (t)
Charnwood	2005	550	374	264	1,187	159.8	7.4
	2006	566	375	262	1,203	162.4	7.4
	2007	543	366	266	1,175	164.8	7.1

Source: DECC revised dataset released November 2009

Charnwood has reduced its emissions per capita from 7.4 to 7.1 tonnes and overall from 1,187 000 tonnes to 1,175 000 tonnes despite an increase in population. Whilst we are reducing our carbon emissions, there is still a role for every resident, business, school and community group to play to achieve further reductions.

For example in the area of energy consumption, significant amounts of carbon dioxide are being released outside the Borough to generate the electricity used by Charnwood residents and businesses, and to manufacture goods purchased within the Borough. Whilst the generation of electricity takes place outside of the Borough, the ability to reduce this demand must take place within the Borough. Similarly consumer choice to buy local will not only support our local economy but reduce the carbon footprint arising from freight transport and travel.

As a result of past carbon emissions the 2009 UK Climate Projections predict the following climatic changes in the East Midlands:

- Winter Average Temperatures – increase of 2.5°C by 2050
- Summer Average Temperatures - increase of 2.8°C by 2050
- Summer Maximum Temperature - increase of 3.8°C by 2050

- Winter Average Rainfall - increase of 16% by 2050
- Summer Average Rainfall - decrease of 17% by 2050

The East Midlands region is particularly prone to the impacts of increased flooding caused by more intense winter rainfall. It is also susceptible to reduced water availability and water quality of freshwater resources as a result of an extended dry summer seasons.

A Local Climate Impact Profile study (LCIP) of Charnwood was conducted as part of a county wide study with UK Climate Impact Programme (UKCIP) in 2008. The main impacts for Charnwood based on past vulnerability were identified as:

- Flash Flooding
- Storms and High Winds
- Heatwaves and warmer temperatures

It is important that priority risks to the Borough are identified and understood in order to build capacity within our infrastructure to manage the impacts and increase resilience wherever possible. Flooding in particular poses a significant threat to the Borough's economy, society, natural and built environment.

7 The Council's Commitment

The Council has been very committed to responding to the impacts of Climate Change and was one of the first Local Authorities within the East Midlands to produce a Climate Change Strategy, sign the Nottingham Declaration for Climate Change and take part in the Local Authority Carbon Management Programme.

The Council has made some significant achievements with the implementation of the first Climate Change Strategy 2005 – 2010. These have included:

- Secured over £370K in 'Salix Funds' for energy efficiency improvements of Council buildings, including loft insulation, solar and motion activated lighting, and heating systems.
- The Council have successfully achieved and maintained the ISO14001 Environmental Management System.
- 13% overall reduction in the Council's energy consumption since 2005.
- 36% electricity reduction the Southfield Road Offices and procured 100% from Combined Heat and Power. Established Carbon Footprint of the Council in 2008/9.
- Awareness campaigns including Big Switch Off Campaign resulting in equivalent of £2 million energy savings across Leicestershire and 10% across public buildings.
- Engagement with schools through Eco Schools programme with over 20 schools actively participating in Big Switch Off
- Green Doctor Scheme introduced with Groundwork and over 150 vulnerable households in Charnwood and North West Leicestershire receiving a free energy audit and energy saving devices.
- Low energy lighting at Beehive car park predicted to save up to £20,000 in electricity per year
- Carbon offset scheme introduced in partnership with local businesses.
- Energy (SAP) ratings within the Council housing stock improved from 64 to 73%
- 41% Reduction of Council's own waste going to landfill.
- Achieved 42% domestic recycling within the Borough.
- CO2 emissions per capita within the whole of the Borough has reduced by 7.4 to 7.1 tonnes per capita from 2005 to 2007

The Council has also recognised the importance of partnership working within the region on climate change, particularly working with Leicestershire Together, Environmental Action for Better Leicestershire (ENABLE), Cleaner Greener, Leicestershire Waste Partnership, Climate Mitigation and Adaptation group (CLIMA), and Charnwood Together.

The Leicestershire Sustainable Community Strategy 2008 set the following priority outcomes for Climate Change:

- 4.1 "Our contribution to climate change is reduced"
- 4.2 "There is high resilience to the effects of Climate Change"

The Charnwood Sustainable Community Strategy 2008 set the following Strategic Objective for Climate Change:

- To reduce contributions to climate change and to promote prudent use of resources through patterns of development, design, transport measures, reducing the use of minerals, energy and water and minimising waste and encouraging recycling in support of achieving a carbon neutral Borough.

The Corporate Plan 2009-12 also reinforced this commitment to climate change by setting the following aim:

- Environment Matters: We will reduce the Borough's impact on climate change.

As a signatory to the Leicestershire Area Agreement, the Council will report on progress against the following National Indicators, developed by DEFRA to monitor Local Authority performance in respect of Climate Change:

- NI 185 – reducing CO2 emissions from Council operations
- NI 188 – process of adapting to climate change

The Climate Change Strategy 2010 – 2013 reflects the current aspirations of the Council as set out in the Corporate Plan 2009-12, the Leicestershire Local Area Agreement targets up to 2012, and the most recent information on UK Climate Change Projections and Impacts. As a result the updated strategy takes stock of our current position, new actions, and the importance of partnership working with key stakeholders, along with the implementation of adaptation measures to deal with inevitable climate change impacts.

8 Our Action Plan

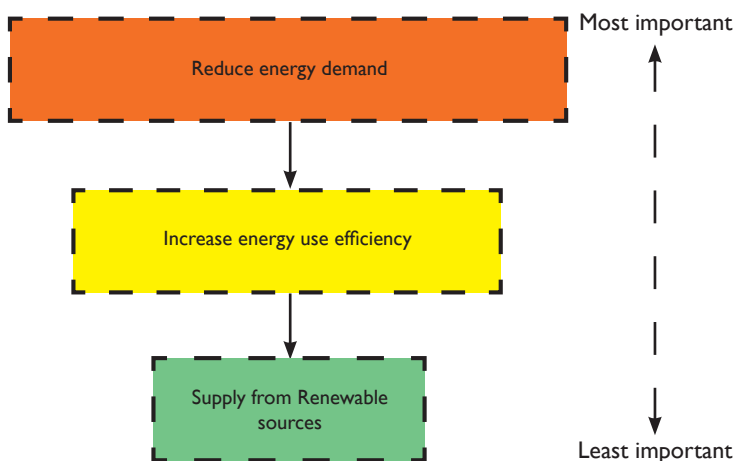
The following section of the Strategy outlines our action plan which is to be rolled out over the next 3 years in order to deliver some of the main objectives of this strategy. The actions have been categorised into the following strategic themes:

- **Energy**
- **Purchasing**
- **Transport & Air Quality**
- **Waste**
- **Development & Planning**
- **Biodiversity & Open Space**
- **Adaptations**
- **Raising awareness**

8.1 Energy

Energy use and production through the burning of fossil fuels is the major contributor to emissions of greenhouse gases. Reducing energy demand is the most important factor in reducing CO₂ contribution as the energy hierarchy below shows.

Figure 5 The Energy Hierarchy



A significant proportion of the Council's energy use is through the use of our buildings e.g. from lighting and heating. We will aim to reduce this by continuing to integrate low energy lighting and heating systems across all public buildings, by analysing our energy consumption data patterns to identify opportunities for further reduction in consumption and through cultural and behaviour change, encouraging users to help make a difference.

For many householders fuel poverty is a real issue. This situation arises when a household can't afford to pay for the energy they need to keep their homes heated to an acceptable temperature. This may be due to poor energy efficiency of the house due to age, poor quality of design, lack of insulation, or the income of the householders. Those particularly vulnerable include the elderly and low income households. We will continue to ensure that social tenants and private owners or tenants have access to grants and support schemes to improve the thermal comfort of their properties. We shall also provide advice and assistance on how to reduce energy consumption for these households.

The UK government has a target to generate 10% of its electricity from renewable sources by 2010. The future generation of energy from renewable sources will be critical in cutting emissions in the longer term.

There is potential for renewable energy generation within the Borough and wider County area. Biomass sources such as wood fuels or animal slurry are low carbon heat sources, readily available within the Borough and can benefit the local economy. There is no net increase in greenhouse gases to the atmosphere. Charnwood benefits from the national forest and wood fuel boilers are becoming more popular. The Council already produces wood fuel in the form of wood chips and charcoal which are available to the public.

We will continue to explore the potential for renewable energy generation within the Borough as a source of zero carbon energy for existing homes and new developments. We will support local communities to explore their potential for community owned renewable energy projects direct benefiting that community.



Objective	Key Climate Change Actions
E1	Reduction of Council's carbon dioxide (CO2) emissions arising from transport and energy consumption by 4% year on year from 2008/9 baseline
E2	Procure all electricity from low CO2 (combined heat and power) or zero CO2 (renewable energy) sources for public building.
E3	Carry out feasibility assessments for the integration of renewable energy and improved energy efficiency measures for all Council building projects.
E4	Carry out a feasibility study of renewable energy micro-generation at main Council buildings, implementing recommendations where possible.
E5	Develop an energy and resource efficiency toolkit for small and medium sized businesses to assist assessment and reduction of consumption.
E6	Improve thermal efficiency of Council housing stock, through the delivery of energy efficiency measures to all households, with priority given to those who are vulnerable
E7	Deliver energy efficiency improvements for Non Traditional Council properties.
E8	Reduce fuel poverty by increasing energy efficiency SAP ratings of properties of vulnerable households
E9	Continue to assist householders with warm front grants
E10	Support community led approaches to renewable energy projects
E11	Deliver the Big Switch Off Campaign in Charnwood and Leicestershire in conjunction with countywide partners
E12	Report to cabinet on study of a Charnwood Borough that complies with the UK government target of an 80% CO2 reduction by 2050

8 Our Action Plan

8.2 Purchasing

Everything we buy and use has an impact on the environment and can add to the effects of climate change. Products such as computers, stationery, vehicles and furniture have a life cycle impact that should influence decision making. The same applies to the services we buy such as construction, refurbishment and waste management.

In some cases, we aren't aware of these impacts. They may happen in the early design and manufacture stage of a product (e.g. through mining the raw materials needed to make our computers, or cutting down the trees to make our paper), or after final use (e.g. when it is sitting in a landfill or being burned in an incinerator).

It is possible to purchase goods and services in a more sustainable way by specifying environmentally friendly products, looking at the whole life costing of a product or service, by adopting green and sustainable procurement policies.

Having integrated a carbon footprint and sustainability assessment into our standard contracts and

procurement procedures we will ensure that our purchases are energy efficient and that our suppliers and contractor contribute to our carbon footprint reduction.

Food miles, the distance food travels from where it has been grown to where it is consumed, is also become an important issue. The food system accounts for up to 40% of all UK road freight and a typical Sunday meal could have travelled 49000 miles, equivalent to 2 trips around the world. Supporting local food production and consumption through farmers' markets and farm shops can drastically reduce food miles and benefit the local economy at the same time.

We shall continue to support and promote local food and produce through the farmers markets in the Borough, and procure local produce and food where possible.



Objective	Key Climate Change Actions
P1	Implement sustainability assessment into Pre Qualification Questionnaires and Invitation to Tender for Council contracts over value of £5000
P2	Purchase Council office furniture from sustainable forestry sources and implement a program of repair to damaged furniture where possible and feasible.
P3	Ensure all new Council computers, photocopiers and printers have high energy efficiency ratings and reduce energy consumption associated with use.
P4	All new and replacement electrical equipment meets high energy efficiency ratings and operates on energy saving devices where possible.
P5	Reduce the amount of paper of paper purchased by the Council by encouraging more efficient use of paper.
P6	Specify carbon reduction and sustainability measures in all contract specifications where applicable
P7	Increase the amount of locally and regionally produced foods available for purchase at public buildings where possible

8.3 Transport and Air Quality

Transport is the third largest source of greenhouse gas emissions in the UK (Climate Change UK Programme). But more importantly it is the fastest growing source. Left unchecked, car traffic could grow by about 20% over the next two decades and van and lorry traffic is forecast to grow by about 22%. Action to tackle the impacts of this growth on congestion and to reduce the impact of transport on the environment is being taken forward as one of the government's main priorities.

Local Transport and Travel planning is an important contribution to the wider programme to curb traffic congestion and pollution. The answer lies in the reduced use of the car. The challenge presented by peak oil, the depletion of global oil resources, and the fluctuations in global oil prices that usually accompany economic recessions teach us that we cannot continue to build our transportation systems around reliance on the notion of ever flowing oil! The cost will be more congestion, cost to business, and further damage to the environment and our health.

Work and school journeys in particular, offer significant potential for change, as it is during peak commuting times that traffic problems are at their worst. Recent studies show that Charnwood is a net commuter Borough with more people leaving the Borough each day for work and school than remaining within it.

Total emissions of CO₂ can be reduced not only through reducing journeys but also by improving vehicle efficiency and the types of fuels used. Electric vehicles and alternative fuels are being actively supported through national schemes and incentives.

We will continue to explore the opportunities for use of alternative bio-fuels that do not compete with land for food crops within our fleet. We will continue to promote and support sustainable modes of travel through our staff travel plan. We will continue to strive

for sustainable transport and travel through influencing the Local Transport Plan and Local Development Framework.

Objective	Key Climate Change Actions
T1	Refresh and implement the Staff Travel Plan for the Council
T2	Implement a staff parking charge scheme based on banding of vehicle CO ₂ emissions
T3	Implement new Council fleet contract to ensure reduction in CO ₂ and other air pollutant emissions compared to 2008/9 baseline
T4	Work with Serco to ensure 32% reduction in carbon footprint associated with household waste collection service
T5	Enhancement of the Railway station and public transport interchange through the implementation of Eastern Gateway Regeneration Project
T6	Ensure completion of Hallam Fields Park and Ride Scheme to reduce car journeys in the south of the Borough
T7	Encourage schools and businesses to develop travel plans by working in partnership with Charnwood Together.
T8	Improve air quality across the Borough through working in partnership with Leicestershire County Council in delivering the Local Transport Plan.
T9	Expand safe access for pedestrians and cyclists within the Borough through pedestrianised zones, cycleways and planning developments like the Inner Relief Road
T10	To consider the use of car park tariffs to encourage the use of more sustainable modes of transport
T11	Take part in annual events to promote sustainable modes of travel around the Borough
T12	Support community initiatives to provide localised alternatives to car travel
T13	Introduce video conferencing facilities to main Council offices to reduce business travel within the county

8 Our Action Plan

8.4 Waste

The waste we produce has a big impact on climate change. The products we throw away may have taken a significant amount of energy to produce and more often than not, what we throw away can be re-used or recycled.

When biodegradable waste breaks down in landfill sites it gives off a gas which is mainly a mixture of up to 65% methane and 35% carbon dioxide. As these are both potent greenhouse gases it is important to examine the impact of waste disposal to landfill.

First we need to choose products with less packaging, for example fruit and vegetable from the farmers markets, to reduce the amount of potential waste generated. Once we have used a product that cannot be reused, where possible we need to dispose of it in an environmentally responsible way.

The Council has recently partnered with Serco to ensure its domestic recycling service enables households to recycle more. As the new service develops we expect to see an increase in household recycling rates up to 50% by 2012.

The Council will aim to reduce our own waste to landfill by 50% on 2006 baseline. We will also signpost other businesses to recycling and waste services.

However, for those individuals and businesses who wilfully pollute the environment and dispose of waste inappropriately, the Council will take necessary legal action.

Objective	Key Climate Change Actions
W1	Increase domestic recycling to 50% by 2012
W2	Delivery of the Zero Waste Strategy and including the waste minimisation & recycling education and promotion campaign
W3	Reduce amount of Council's generated waste to landfill by 50% on 2006/7 baseline of 144 tonnes per annum
W4	Continue to develop targeted promotions for key types of waste
W5	Promote waste reduction and use of by-products by businesses to reduce trade waste to landfill



8.5 Development and Planning

As buildings generally have an expected lifetime of between 20 and 100 years, it is important to prepare our built environment for the impacts of short and long term climate change. It is also important that we begin to build with a changing climate in mind in order to harness all potential benefits and protect against adverse effects.

Buildings, developments and their locations are particularly prone to adversely weather. Any new development should consider 'climate proofing' at the outset against intense and more frequent flooding, hotter temperatures and wind speeds.

The key design issues to consider when climate proofing any building for long term sustainability include:

- Location
- Site layout
- Buildings (type and use)
- Ventilation and cooling
- Development infrastructure
- Services (water, energy systems)

Wise design and planning can also reduce the carbon dioxide emissions of development through all of the above, with the overall aim to achieve 'Carbon Neutral' development.

UK planning guidance Planning Policy Statement 1 sets out overarching principles to achieve sustainable development through planning. This recognises that "development plans should contribute" to the mitigation of global causes and impacts of climate change by reducing energy use, need to travel by private car, and promote renewable energy sources. It also recognises the "limits of the environment to accept further development without irreversible damage". We will ensure that our planning and development framework fully recognise these principles.

Extracts from Planning Policy Statement 1 Delivering Sustainable Development; paragraph 19 and 13.

The Code for Sustainable Homes categorises the sustainability standards of new development with a zero carbon development (code 6) the UK government

target for 2016. Code 4 will be mandatory for the public sector by 2011.

Climate change will impact upon the historic environment including historic parks, historic houses, and archaeological remains. We will continue to work with our partners to ensure that our historical heritage is not lost due to the effects of climate change.



Objective Key Climate Change Actions

DP1	To lead by example by building social housing to code level 4 and 5 within the Borough ahead of the national agenda wherever possible.
DP2	Develop guidance for developers and planners in Charnwood to ensure best approach to climate change mitigation and adaptation in the Borough
DP3	Conduct feasibility study into Renewable Energy Generation and Combined Heat and Power (CHP) solutions for existing communities through new development in the Borough
DP4	Support community led renewable energy generation schemes
DP5	Integrate climate change mitigation and adaptation measures into the Local Development Framework or equivalent planning framework
DP6	Continue to implement "long life" design criteria for all new and improved Public Buildings

8 Our Action Plan

8.6 Biodiversity and Open Space

There is already clear evidence that biodiversity is being affected by climate change, with changes in population, range, migration pattern, seasonal and reproductive behaviour of certain plant and animal species. These effects are likely to become more apparent and extensive as the climate continues to change, and may result in increasing local species' extinction and habitat loss.

Uncertainties remain about the speed and severity of change at the local level. It is doubtful that global warming will result in the same amount of warming everywhere, and some places may even become cooler or wetter. The challenge will be to develop strategies that manage the uncertainties created by climate change. A precautionary approach is required to reduce the current risks, by adopting strategies to minimise or counter the effects of global warming, such as planting trees to act as 'carbon sinks' in appropriate locations. Plans should be designed to allow flexibility in future management options.

There is a need to focus on managing whole landscape types instead of isolated sites. Maximising green infrastructure and links between natural habitats across the Borough, will facilitate the movement of species, and represents the best prospect for adapting natural environments to climate change.

How climate change will influence plant diseases and subsequent impact on agricultural systems is unknown. Climate change could have positive, negative or no impact on individual plant diseases. More research is needed to understand susceptibility to climate change. This will also require making better use and pooling of current knowledge and information in conjunction with partners.

Objective	Key Climate Change Actions
BOS1	Support the implementation of the Leicestershire Biodiversity Action Plan, incorporating measures to deal with the impacts of climate change
BOS2	Implement and promote adaptation measures for green spaces that address water scarcity and flood water management
BOS3	Develop strategies to promote integrated habitats and green infrastructure within the Borough.
BOS4	Embed UK Climate Impact Profile Data into key strategies to address the susceptibility of the natural environment to climate change.
BOS5	Share information with government agencies, nature conservation organisations, research institutions and communities on potential and observed climate change impacts on biodiversity.
BOS6	Encourage and promote tree planting within the Borough



8.7 Adaptation

Although we are working hard to reduce the human activity that contributes to climate change we also acknowledge that some amount of climate change is inevitable and we need to adapt to the risks that climate change presents. This centres on protecting ourselves from the effects of hotter drier summers and wetter winters with more frequent storm and flood events.

We will ensure that our services have been assessed to ensure that we can maintain business continuity by building resilience within our services to the public. This is best achieved by working in partnership with the range of agencies that are active throughout the Borough. These partners include the Charnwood Together, Leicestershire County Council, Environment Agency, and the emergency services.



We will implement an adaptation action plan of priority actions for council services and the Borough in partnership with key stakeholders.

Objective	Key Climate Change Actions
A1	Promote Community Flood Warden Scheme in conjunction with the Environment Agency and Leicestershire Resilience Forum
A2	Continue to integrate climate change considerations into Civil Contingency Planning
A3	Prepare a Surface Water Management Plan for Loughborough in conjunction with Leicestershire County Council and the Environment Agency
A4	Integrate rainwater harvesting and water saving measures into major Council refurbishments and developments
A5	Promote water saving measures and rainwater harvesting for domestic commercial and community use
A6	Seek funding for activities within the Climate Change Strategy
A7	Coordinate climate change relevant Local Resilience Forum Emergency Exercises wherever possible
A8	Fully risks assess the vulnerability of the Council's service delivery to current and future weather and climate.
A9	Develop an adaptation action plan and implement priority actions

8 Our Action Plan

8.8 Awareness Raising

The climate change projections for the next 30-40 years will be as a result of the greenhouse gas we have already released into the atmosphere. The climate change we will experience later this century will be determined by the emissions we allow now.

We need to adapt our way of life so that we can prepare for the changes that are already occurring. We must also take sufficient action to limit future greenhouse gas emissions to ensure future generations inherit a planet with sufficient natural resources to meet their needs.

Climate change is a global issue and therefore the most successful way to tackle it is to get everyone involved. The Council recognises its responsibility in community leadership and is committed to working with its partners and the local community to reduce Charnwood's contribution to climate change.

One of the major contributions towards reducing the impact of climate change is education and raising awareness of the issues. Many of us don't realise the simple steps we can take to reduce our contribution to climate change. Current media campaigns have done much to raise the general awareness, however, there is a need to inform our local residents and businesses of how they can change their own actions and behaviour

to reduce their contribution to climate change and prepare for its inevitable effects.

Objective	Key Climate Change Actions
AR1	Raising awareness with the Council's customers on the causes of climate change and what individuals can do to reduce their own contribution to climate change
AR2	Work with Shelthorpe Community to develop a climate friendly community in the Borough utilising the Knowledge Transfer Partnership project with De Montfort University and the Rural Community Council
AR3	Raising awareness amongst Council staff and members of key climate change issues and targets for reducing our impact
AR4	Work with Charnwood Together and other partners to implement strategic objectives of the Charnwood Sustainable Communities Strategy
AR5	Raise awareness of renewable energy and energy efficiency across local businesses, institutions and householders, the public and voluntary sector
AR6	Continue to support farmers' markets and local food and produce
AR7	Produce a mission statement document that summarises the Council's commitment to climate change adaptation and mitigation for the public



9 Conclusions

This strategy is a statement of the Council's commitment to working towards reducing greenhouse gas emissions in Charnwood. It is hoped that the results of this strategy will be more than the sum of the actions stated within it and that it will influence the business and local community to take action in reducing their own contribution.

This document will continue to evolve, adapting as changes to International and UK government policy occur. This is to ensure that we can respond to new legislation, information and technological innovation as they are introduced.

Individually we can each make a difference but by working together we can make a big difference. We hold the planet in trust for future generations – the impact of climate change is in our hands.

10 Useful Sources of Further Information

There are many sources of information on Climate Change as it is a growing area of research. The links below are some of the key sign posting and information sites for Climate Change initiatives in the UK.

UK CIP

The UK Climate Impacts Programme (UKCIP) provides scenarios that show how our climate might change and co-ordinates research on dealing with our future climate.

www.ukcip.org.uk

The Hadley Centre

The Hadley Centre for Climate Prediction and Research, which is part of the Met Office, provides a focus in the United Kingdom for the scientific issues associated with climate change.

www.metoffice.com/research/hadleycentre/index.html

The Carbon Trust

The Carbon Trust is a Government funded independent company that helps businesses and the public sector to cut carbon emissions and exploit the potential of climate change.

www.thecarbontrust.co.uk

The Energy Saving Trust

The Energy Saving Trust provides free and impartial advice on how to save energy to the householders, community groups and businesses.

<http://www.energysavingtrust.org.uk/>

Environmental Action for a Better Leicestershire

Environmental Action for a Better Leicestershire is a countywide forum for the protection and enhancement of the environment. ENABLE have produced a Climate Change Strategy for Leicestershire.

www.leics.gov.uk/enable

Leicestershire Together

Leicestershire Together works with the NHS, Police and other emergency services, public sector, businesses and charities to meet the needs of the county.

www.leicestershiretogether.org

Charnwood Together

Charnwood Together is a group of organisations from across the Borough working together to make Charnwood a great place to live and work. It has a dedicated climate change delivery group.

www.charnwoodtogether.com

Charnwood Borough Council

Charnwood Borough Council is the local authority for the Borough of Charnwood. It is responsible for many local services including public buildings and lands, social and private housing, enforcement, waste collection and planning within Charnwood.

www.charnwood.gov.uk


Leicestershire County Council

Leicestershire County Council is the local authority for the county of Leicestershire. It is responsible for all schools, education and transport planning within Charnwood.

www.leics.gov.uk

Appendix I

Nottingham Declaration on Climate Change



The Nottingham Declaration on Climate Change

Charnwood Borough Council recognises that Climate Change is likely to be one of the key drivers of change within our community this century.

We acknowledge that

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

We welcome the

- Social, economic and environmental benefits which will come from combating climate change.
- Recognition by many sectors, especially government and business, of the need for change.
- Emissions targets agreed by central government and the programme for delivering change as set out in the *Climate Change - UK Programme*.
- Opportunity for local government to lead the response at a local level and thereby play a major role in helping to deliver the national programme.
- Opportunity for us to encourage and help local residents and local businesses - to reduce their energy costs, to reduce congestion, to improve the local environment and to deal with fuel poverty in our communities.
- Additional powers to address the social, economic and environmental well-being of our communities contained within the Local Government Act 2000, which will assist in this process.

We commit our Council to

- Work with central government to contribute, at a local level, to the delivery of the UK climate change programme.
- Prepare a plan with our local communities, by June 2005, to address the causes and effects of climate change and to secure maximum benefit for our communities.
- Publicly declare, within the plan, 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.
- Encourage all sectors in the local community to take the opportunity to reduce their own greenhouse gas emissions and to make public their commitment to action.
- Work with key providers, including health authorities, businesses and local environmental organisations, to assess the potential effects of climate change on our communities, and to identify ways in which we can adapt.
- Provide opportunities for the development of renewable energy generation within our area.
- Monitor the progress of our plan against the actions needed and publish the results.



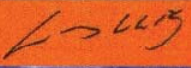
		
Councillor Max Hunt Leader of the Council	Brian Hayes Chief Executive	Lord Whitty, Parliamentary Under Secretary of State, DEFRA

Photo of Harrisson courtesy of NASA.



Charnwood