HILLINGDON'S CLIMATE CHANGE STRATEGY 2009 - 2012	ITEM 3

Cabinet Member	Councillor Sandra Jenkins
Cabinet Portfolio	Environment
Officer Contact	Kristen Webster, Planning and Community Services, and, Kevin Byrne, Deputy Chief Executive's Office
Papers with report	Hillingdon's Climate Change Strategy 2009 -2012

HEADLINE INFORMATION

Purpose of report	To endorse the Borough's Climate Change Strategy 2009 - 2012 for adoption, as proposed by the Council's Strategic Climate Change Group.
Contribution to our plans and strategies	The Strategy is the overarching framework of priorities and actions for Hillingdon in relation to the climate change agenda. The Strategy links in to the following Council plans and strategies: Sustainable Community Strategy, Local Area Agreement 2008 – 2011, National Indicator 185, emerging Local Development Framework, Local Implementation Plan, Air Quality Management Plan, draft Highway Management Network Plan, Waste Management Strategy, HIP workstreams on Waste and Energy, Housing Strategy, Open Space Strategy.
Financial Cost	There is no direct financial cost to the Council as a result of the Climate Change Strategy as it sets out high level priorities rather than detailed interventions. Any actions proposed by the Strategy will be financially assessed and integrated into the Medium Term Financial Forecast process.
Relevant Policy Overview Committee	Residents' and Environmental Services
Ward(s) affected	All

RECOMMENDATION

That Cabinet endorses for adoption the Council's Climate Change Strategy 2009-2012 as contained in the Appendix to the report.

INFORMATION

Reasons for recommendation

As a signatory of the Nottingham Declaration, the Council is committed to addressing the issue of climate change at the local level. Signatories of the Declaration commit themselves to producing a Strategy or Action Plan, which sets out how the issue will be tackled by the local authority. A commitment to produce a Climate Change Strategy was also contained within the Council's Local Area Agreement (LAA) 2007-10.

New national indicator 185 requires the Council to report on the carbon emissions arising from its own operations and to set a target in 2009 for emissions reductions. Hillingdon has accepted the indicator as a "below the line" target in our LAA 2008-2011, that is one which we regard as important and will report on but which does not formally form part of the LAA.

A draft strategy was developed during 2008 across all Council directorates. Public and external stakeholder consultation was undertaken between 15 December 2008 and 20 February 2009. Incorporating the comments received where appropriate, officers have made minor amendments to the consultation draft and are now seeking Cabinet's endorsement of the Strategy to enable adoption by the Council.

Alternative options considered

Not to endorse the Climate Change Strategy: this would not be in keeping with the Council's commitment as a signatory to the Nottingham Declaration, nor would it acknowledge the extensive work being undertaken across Council services to deliver initiatives and projects which have contributed to the development of a Climate Change Strategy for the Borough, LAA targets and the enhancement of Hillingdon's environment.

Comments of Policy Overview Committee(s).

The following committees are potentially relevant to the proposals; none have requested to comment at this stage:

- Residents' and Environmental Services Policy Overview Committee
- Social Services, Health and Housing Policy Overview Committee
- Corporate Services and Partnerships Policy Overview Committee
- Education and Children's Services Policy Overview Committee

Supporting Information

1. **Context:**

1.1 The Council Plan Fast Forward 2010 identifies a clean and attractive Borough as a priority theme. Within the Council Plan a number of ongoing initiatives contribute to climate change, including the Hillingdon improvement programme workstream to lead on new innovations such as waste and energy and alternative sources of power. Developing an overarching climate change strategy for Hillingdon is a key priority for

the Sustainable Community Strategy 2008-2018 and is relevant to a wide range of Council strategies and policy documents.

1.2 In January 2008, a corporate Climate Change Steering Group was formed, comprising Heads of Service representing all directorates. This Group has been responsible for developing the scope of the Strategy and agreeing the framework and content of the document.

2. Key elements:

2.1 Key objectives of the Strategy:

- Provide community leadership
- Raise awareness
- Adapt to impacts
- Work towards Borough-wide emission reductions

2.2 Hillingdon's proposed Strategy focuses on three themes of the Council as a community leader, estate manager and service provider. These themes are looked at in the context of raising awareness, adapting to impacts and reducing emissions. With regard to reducing emissions, the Strategy has identified interrelated themes within which specific actions have been identified. The themes and their corresponding objectives are as follows:

Theme	**Objective**
Transport	To reduce the emissions in the borough associated with transport (particularly road transport) through the borough's travel planning function and its own activities and to encourage residents and members of the business community to use more sustainable modes of travel.
Waste	To reduce the greenhouse gas emissions in the borough associated with waste, through a reduction in the amount of organic waste that is landfilled and increasing recycling rates in the borough to a minimum of 40% by 2010, working towards a target of 50% by 2015.
Businesses	To actively engage with the borough's businesses and encourage them to take action to reduce their carbon footprints and adopt environmentally sustainable business practices.
Existing housing	Reduce the emissions in the borough through improving energy efficiency.
New developments	Ensure that new developments in the borough mitigate against climate change through utilising sustainable design and construction methods and incorporating renewable energy.
Procurement	To ensure climate change issues are embedded into the council's procurement strategy and processes.

2.3 A key action of the Strategy is participation in the Carbon Trust Local Authority Carbon Management Programme (LACM), which the Council was selected to participate in for 2008/09. The programme runs until the end of March 2009 and culminates in an action plan of carbon reduction measures for the Council to take forward. Participation in the LACM programme is one of the key actions of Hillingdon's draft Climate Change Strategy.

2.4 Through the LACM programme the Carbon Trust provides councils with technical and change management support and guidance to help them realise carbon emissions savings. The primary focus of the work is to reduce emissions under the control of the local authority such as buildings, vehicle fleets, street lighting and landfill sites. The Carbon Management Plan for the LACM is a companion document to the more high-level Climate Change Strategy and is also on the agenda for April 16th 2009 Cabinet meeting under separate cover.

Consultation Carried out:

Responses to a full public consultation were received from the following organisations:

- Civil Aviation Authority
- GreenSpeed
- Defence Estates
- Thames Water
- The Coal Authority
- British Airways Authority
- Foundation for Endangered Species
- Natural England
- Eastcote Residents Association
- Vine Lane Residents' Association

Three representations were received from individual residents.

In general the responses received were supportive of the Strategy but with some suggestions for additions. Where considered appropriate these amendments have been incorporated.

Financial Implications

None directly. Future actions agreed will be financially assessed and integrated into the Medium Term Financial Forecast process.

EFFECT ON RESIDENTS, SERVICE USERS & COMMUNITIES

What will be the effect of the recommendation?

The Climate Change Strategy offers a vision for responding to climate change issues in Hillingdon and, as implemented, will have a positive impact on all residents, communities and the environment.

CORPORATE IMPLICATIONS

Corporate Finance

A corporate finance officer has reviewed this report and the financial implications within it, and is satisfied that there are no new direct resource implications arising from the recommendations. Specific costs and savings to the Council resulting from actions to mitigate and adapt to climate change are considered in the Carbon Management Plan presented elsewhere on this Cabinet agenda.

Legal

The Climate Change Strategy, which is being recommended to Cabinet, is underpinned by legislation and Government policy. The Borough Solicitor can confirm that the Strategy is compliant in both of these respects.

It is not intended to provide exhaustive details of the relevant legislation within these comments but it is nevertheless important to highlight examples of it which appear within the Strategy Document itself.

Firstly, the Home Energy Conservation Act 1985 places obligations on local authorities to improve the energy efficiency of all housing in their area. The improvements in energy efficiency achieved through this Act contribute towards meeting the UK's climate change commitments. Local authorities are required to prepare, publish and submit an energy conservation report to the Secretary of State on an annual basis which contains a number of prescribed requirements.

Secondly, the Climate Change Bill has recently become law and it commits the UK to a legally binding target of 80% CO2 reductions by 2050. Furthermore, there is a legal requirement for Hillingdon to meet the European Landfill Directive, which requires significant reductions in the level of biodegradable waste that can be sent to landfill between now and 2020. The Council will be subject to severe financial penalties in the event that it fails to achieve them.

Relevant Service Groups

N/A.

Corporate Property

The Head of Corporate Property supports the recommendations contained in this report.

BACKGROUND PAPERS

None.

Contents

1 Foreword

1.1 Hillingdon prides itself on being one of London's greenest boroughs. I want to ensure that it stays that way. Therefore a key objective of our Sustainable Community Strategy is to 'protect and enhance the environment' in Hillingdon. With the help of our residents, Hillingdon is already delivering on this, and successes to date include the continued improvement in recycling rates, the achievement of 10 Green Flag awards for our parks and national recognition received for the sustainable design of Ruislip High School.

1.2 A new challenge for the borough is how we can build on these environmental achievements and continue to deliver excellent services to our residents as well as tackling the issues presented by climate change. This is likely to be the most important issue for the UK this century and presents challenges that the borough needs to take action on.

1.3 In 2007, the Chief Executive and the Leader of the Council signed the Nottingham Declaration on Climate Change. This demonstrated the commitment Hillingdon has to tackling the issue. Since then, we have been looking at the way the council operates and have been exploring new technologies and processes to ensure that we are working to reduce our carbon emissions.

1.4 This Strategy sets out what the council has been doing and will continue to do to protect the environment in Hillingdon from the impacts of climate change, and what action we will take to mitigate against future changes. Dealing with climate change presents a challenge, which brings opportunities. This Strategy identifies some of these opportunities.

Councillor Sandra Jenkins
Cabinet Member for Environment
April 2009

2 Executive Summary

2.1 The London Borough of Hillingdon signed the Nottingham Declaration in 2007. Signing the Declaration commits local authorities to actively tackling climate change within their borough. Recent government reports (including the Stern Review (2006)) have shown it will be much more economic to take steps now to prevent further climate change rather than attempt to deal with the consequences later.

2.2 There is general agreement amongst scientists that there is still time to avoid the most catastrophic impacts of climate change, but to do this we must achieve immediate and significant cuts in carbon emissions.

2.3 The Council Plan 'Fast Forward 2010' identifies a clean and attractive borough as a priority theme. Within this a number of ongoing initiatives contribute to the mitigation of climate change and point to the council's aim to lead on new innovations such as the conversion of waste to energy and the utilisation of alternative sources of power. Developing an overarching Climate Change Strategy for Hillingdon is a key priority for the Sustainable Community Strategy 2008-2018.

Hillingdon's plan of action

2.4 An effective response to the challenge of climate change needs to encompass action on both mitigation of and adaptation to climate change.

- **Mitigation** Involves seeking to limit and slow down future climate change by reducing the emission of greenhouse gases such as carbon dioxide and methane into the atmosphere.

- **Adaptation** Involves taking steps to ensure that we are able to adapt to the changes in the climate already occurring and that are projected to continue to occur over the next 100 years, due to the emissions already in the atmosphere.

2.5 Hillingdon's Climate Change Strategy seeks to address both mitigation and adaptation by focusing on the council's roles and functions as:

- An estate manager;
- A service provider; and
- A community leader.

Objectives of the Strategy

2.6 The following objectives are considered by the council to be key in developing an effective response to the challenges of climate change. For each of the objectives the council has developed targets, against which its success will be measured:

Objective 1

Provide community leadership

- To reduce the emissions resulting from the council's own operations and take measures to deal with the current and future effects of climate change, therefore leading by example in encouraging residents and businesses in the borough to take action.

Targets

- Reduce the council's carbon footprint by 40% by 2015; and
- Achieve a minimum of a 10% reduction in total energy use by 2012 for council buildings.

Objective 2

Raise awareness

- To develop greater awareness of climate change issues and engagement in solutions to tackling them amongst council staff, elected Members, those that live in, work in or visit the borough and businesses operating in the borough.

Targets

- Establish a network of 'green champions' by Summer 2009;
- Develop climate change pages on the council website by 2010; and
- Work with a minimum of 5 of the borough's schools per annum to achieve carbon reductions and raise awareness amongst Hillingdon's students.

Objective 3

Adapt to impacts

- To ensure that Hillingdon will be resilient to the current and future effects of climate change.

Target

- Complete a Local Climate Impacts Profile by 2010.

Objective 4

Work towards borough-wide emission reductions

- To reduce and minimise the emissions in the borough associated with transport (particularly road transport) through the council's travel planning function and its own activities and to encourage residents and members of the business community to use more sustainable modes of travel.

  Target

  Achieve a modal shift of 15% away from car use for trips to school by 2012 through the council's School Travel Plan programme.

- To reduce the greenhouse gas emissions in the borough associated with waste.

  Target

  Reduce the amount of organic waste that is landfilled and increase recycling rates in the borough to a minimum of 40% by 2010, working towards a target of 50% by 2015.

- To actively engage with the borough's businesses and encourage them to take action to reduce their carbon footprints and adopt environmentally sustainable business practices.

  Target

  Compile information for distribution to the borough's businesses regarding climate change issues to include sources of information, technical advice and funding by Summer 2011.

- To reduce the emissions in the borough associated with existing housing through improving energy efficiency.

  Target

  Achieve a 30% improvement in the energy efficiency of the borough's housing by 2010.

- To ensure that new developments in the borough mitigate against and adapt to climate change through utilising sustainable design and construction methods and incorporating renewable energy.

  Target

  Ensure that 100% of all major planning applications submit an energy statement outlining how energy efficiency has been considered in the design and renewable energy incorporated.

- To ensure climate change issues are embedded into the council's procurement strategy and processes.

  Target

  Adopt a Sustainable Procurement Policy by 2010.

2.7 In order to achieve the above objectives an integrated approach is needed. The council will work to develop such an approach and ensure both mitigation and adaptation to climate change are considered in an integrated manner in all relevant council policies and plans. Effort will also be made to ensure that the choices made to reduce climate change emissions are of benefit to other key challenges for the borough, such as improving local air quality.

3 Introduction

3.1 The London Borough of Hillingdon signed the Nottingham Declaration in 2007, which consolidated the council's commitment to action on the issue of climate change at the local level.

3.2 The council has been involved in various initiatives that contribute to action on the climate change agenda. The development of this Strategy provides an opportunity to bring together this existing work and set out Hillingdon's aims and priorities for future action, allowing the council to demonstrate its commitment to community leadership on tackling climate change.

3.3 An effective response to the challenge of climate change needs to encompass action on both mitigation of and adaptation to climate change. Hillingdon's Climate Change Strategy seeks to address both mitigation and adaptation by focusing on the council's roles and functions as an estate manager, service provider and community leader.

4 The Climate Change Challenge

What is climate change?

4.1 The world's climate is changing due to increased levels of gases such as carbon dioxide in the atmosphere. These 'greenhouse' gases occur naturally in the atmosphere, trapping heat that comes from the sun like the glass in a greenhouse. The 'greenhouse effect' is a natural occurrence and without it the Earth would be over 30 degrees cooler and uninhabitable.

4.2 However, due to human activities such as the burning of fossil fuels (oil, gas and coal) and deforestation, concentrations of greenhouse gases in the atmosphere are rising and making the natural greenhouse effect more pronounced, trapping more of the sun's heat and resulting in a rise in the earth's temperature.

4.3 Various gases contribute to amplifying the natural greenhouse effect. However the main contributor to the global warming that we are now seeing is carbon dioxide. Scientific research has demonstrated that carbon dioxide levels are higher than at any time in the past 650,000 years, and this has resulted in gradual warming of the world's climate. The ten warmest years on record have all occurred since 1990.

Why does climate change matter?

4.4 Uncontrolled climate change will lead to higher global temperatures, rising sea levels and more extreme, unpredictable weather conditions across the world. These events and their knock-on effects, such as drought and its impact on food production, or the flooding of coastal areas where many people live, will put hundreds of millions of lives at risk. This is already occurring in the developing world.

4.5 Temperatures in the UK have increased by 0.7°C since 1659. Of this, a rise of around 0.5°C has occurred in the 20th century. This may not sound like much, and for inhabitants of countries with cooler climates, temperature increases may sound desirable. However, even the slight change in temperature to date has been accompanied by more extreme weather events, which scientists consider are occurring as a consequence of the rise in temperature. Further temperature rises are projected to bring an increase in the frequency and severity of extreme weather events, which would have potentially catastrophic impacts. The higher the temperature rises, the greater the impacts.

4.6 Estimates as to how much global temperatures are likely to rise vary. In 2007, the Fourth Assessment Report from the Intergovernmental Panel on Climate Change (IPCC) reported that the likely range of global average warming by the end of this century is between 1.1°C and 6.4°C, relative to 1980-1999.

4.7 The European heatwave of summer 2003 serves to illustrate the serious impacts arising from even a moderate rise in temperatures. During the heatwave there were approximately 35,000 excess deaths across Europe, around 900 of these in London and over 2000 in the UK. The heatwave of 2003 was one of the ten deadliest natural disasters in Europe during the last 100 years and the worst in the last 50 years.

Temperatures over this time in the UK were between 2 and 3 degrees above average, and current projections consider that these temperatures will be average summer temperatures by the middle of the century.

4.8 Climate change can also have a drastic impact on biodiversity. Changes in the climate disrupt fragile ecosystems as some species thrive in the different conditions and out-compete others which cannot adapt. This change in the habitat has knock on effects as food sources dwindle and can lead to extinctions. There are already many species worldwide that are considered to have become extinct due to climate change.

4.9 Without significant action to reduce greenhouse gas emissions, floods from rising sea levels could displace up to 100 million people, disappearing glaciers could cause water shortages for one in six of the world's population, up to 40 per cent of the world's wildlife species could become extinct, and droughts could create tens or even hundreds of millions of 'climate refugees'.

4.10 Closer to home, there are likely to be problems in Hillingdon related to flooding, either from rivers, the Grand Union Canal, sewers or surface water and overheating, causing evacuation of vulnerable people such as the elderly and school closures during summer heatwaves. Water shortages London-wide are also a likely reality as summers continue to get hotter and drier.

4.11 In 2005 the UK government commissioned Lord Nicholas Stern, the then Head of the Government Economic Service to provide a report to the Prime Minister and Chancellor assessing the economic challenges of climate change and how they can be met, both in the UK and globally. The key message of the Stern Review was that it will be much more cost effective to act on the issue of climate change now than to deal with its consequences later.

5 Policy Framework

International commitments

5.1 The UK has ratified the Kyoto Protocol, an agreement made under the United Nations Framework Convention on Climate Change (UNFCCC). This commits the UK to a legally binding greenhouse gas emissions reduction of 12.5% below the 1990 base year levels over the 2008 to 2012 commitment period. The gases included are carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride. The UK is on track to surpass its target. The predictions for 2010 are emissions of greenhouse gases 23.6% below base year levels.

National policies and targets

5.2 However, whilst the UK is performing well against the Kyoto targets which were developed in 1997, the government is well aware that more drastic carbon emission reductions are needed in order to avert catastrophic climate change. In 1997 the government set a more stringent domestic target of reducing CO_2 emissions by 20% below 1990 levels by 2010.

5.3 In addition the 2003 Energy White Paper adopted a longer term goal of 60% CO_2 reductions by 2050 and the 2008 Climate Change Bill now commits the UK to a legally binding target of 80% CO_2 reductions by 2050. These domestic targets are challenging and the government recognises more needs to be done in order for them to be achieved.

5.4 In 2006 the government released a series of planning policy documents to deal with climate change through the development planning process, including the supplement to Planning Policy Statement 1 – Planning and Climate Change; the Code for Sustainable Homes (CSH); and Building a Greener Future, which sets out the government's ambition for all new homes to have zero carbon emissions from 2016.

Regional policies

5.5 The Mayor's London Plan (2008) provides the regional policy framework for development in the borough and contains an emphasis on ensuring that new developments in London both mitigate and adapt to climate change. The London Plan outlines a suite of policies to deliver this, including policies on energy efficiency, renewable energy, flood risk and sustainable urban drainage systems.

5.6 The Mayor also has the following strategies that consider environmental issues in London that are interlinked with issues related to climate change:

- **Air Quality Strategy (2002)** – Outlines a set of policies and proposals aimed at improving London's air quality to meet the objectives set out by the government's National Air Quality Strategy.

- **Biodiversity Strategy (2002)** - Seeks to ensure that there is no overall loss of wildlife habitats in London, and that more open spaces are created and made accessible to all Londoners.

- **Climate Change Action Plan (2007)** - The Mayor is committed to preparing London for the climate change that is now inevitable (adaptation) and limiting further climate change by reducing London's carbon dioxide emissions (mitigation). The Climate Change Action Plan recommends key actions to help London and Londoners tackle climate change.

- **Energy Strategy (2004)** - Aims to reduce London's contribution to global climate change, tackle the problem of fuel poverty and promote London's economic development through renewable and energy efficient technologies.

- **Municipal Waste Strategy (2003)** - Identifies policies and proposals for recycling and reducing waste, aimed at dealing with London's growing output of municipal waste.

- **Draft Business Waste Management Strategy (2008)** - Over 4 million tonnes of municipal waste is produced in London each year, and yet it accounts for just a quarter of all the waste produced in London. Therefore, the Mayor has produced a draft strategy for the remaining three quarters (13.8 million tonnes) of London's waste produced by London's businesses.

- **Draft London Climate Change Adaptation Strategy (2008)** - Identifies the key risks posed by climate change to London and Londoners and prioritises the actions necessary to manage those risks.

- **Draft Water Strategy (2007)** - Examines how we could use our present water resources more effectively.

Council policies

Sustainable Community Strategy 2008-2018

5.7 The overarching strategy for the council is the Sustainable Community Strategy. The Strategy sets out the council's ambitions for the borough, looking ahead to 2018 and identifies the challenges facing Hillingdon now and predicts what they might be in the future. It focuses on the actions we need to take collectively to tackle these challenges, in order to improve the lives of everyone in Hillingdon.

5.8 Within the Sustainable Community Strategy, 'protecting and enhancing the environment' is identified as a priority theme and within this tackling climate change through mitigation and adaptation are identified as focus areas.

Other relevant council strategies and policy documents, by service area:

(i) Adult Social Care Health and Housing

- Housing Strategy 2007-2010
- Learning Disability and Mental Health Modernisation Strategies
- Draft Sheltered Housing and Extra Care Strategy
- Home Energy Conservation Act (HECA) Strategy

- Affordable Warmth Strategy
- Plan for Older People 2008-2011
- Supporting People Strategy 2005-2010

(ii) Planning and Community Services

- Unitary Development Plan Saved Policies 2007-
- Emerging Local Development Framework
- Local Implementation Plan 2006-2011
- Safer Hillingdon Partnership Plan 2008-2011
- Arts Strategy 2005-2010
- Strategy for Sports and Physical Activity 2007-2012

(iii) Education and Children's Services

- Children and Families Trust Plan 2008-2011

(iv) Finance and Resources

- Asset Management Plan 2008-2010

(v) Environment and Consumer Protection

- West London Waste Authority Joint Municipal Waste Strategy 2005-2020
- Air Quality Action Plan 2004-2010
- Green Spaces Strategy 2002-
- Joint Allotments Strategy 2003-2008

(vi) Deputy Chief Executive

- Sustainable Community Strategy 2008-2018
- Council Plan 'Fast Forward to 2010' 2007-2010
- Hillingdon's Strategy for a Sustainable Economy 2005-2015
- Local Area Agreement 2008-2011

6 Climate Change in Hillingdon

Hillingdon's current emissions

6.1 In 2008 the Department for Environment, Food and Rural Affairs (DEFRA) released data collated for each of the UK local authorities on their emissions of carbon dioxide in 2006. The emissions estimates are calculated on an 'end user' basis. This means that emissions from the production and processing of fuels (including electricity) are reallocated to users of these fuels to reflect the total emissions relating to that fuel use.

6.2 The end user basis for reporting emissions was chosen by DEFRA because it fully accounts for the emissions from energy use at the local level and does not penalise local areas for emissions from the production of energy which is then 'exported' and consumed in other areas. Included in the figures are end user CO_2 emissions in Hillingdon from:

- Business and Public Sector;
- Domestic housing; and
- Road transport.

6.3 Calculated on a per-capita basis, Hillingdon has the fourth highest carbon emissions of the thirty-three London boroughs, behind the City of London, Westminster and Tower Hamlets. The quantity of emissions attributable to each borough varies greatly across the UK and London, which is mainly due to variations in the level of commercial and industrial uses located within the local authority area. It should be noted that emissions from aviation fuel and motorway travel are excluded from the figures.

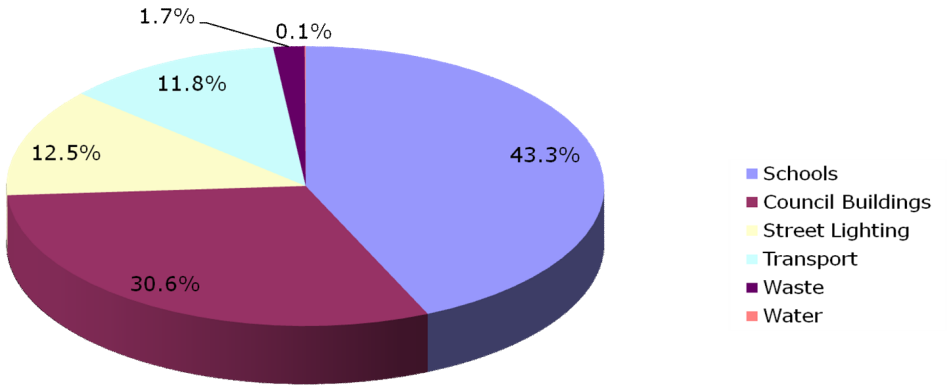
6.4 During 2008 the council has examined its own operations and collated data to calculate its 'carbon footprint'. This includes the emissions associated with the following:

- Energy used by council-owned buildings including offices, schools, libraries and leisure centres;
- Water used by council-owned buildings;
- Waste arising from council operations that is sent to landfill;
- Fleet vehicles such as refuse trucks and road sweepers; and
- Commuting by council staff and their business mileage by private car.

6.5 This exercise has helped the council to better understand where the bulk of the emissions are coming from and therefore where best to concentrate its efforts in terms of reducing emissions. Additionally by looking at energy, water, fuel and waste disposal prices and their estimated costs over the next five years it is possible to gain an understanding of the potential financial savings that can be made by reducing emissions.

6.6 The council's carbon footprint in 2007/08 amounted to 39,360 tonnes. The following pie chart illustrates the breakdown of the emissions by the categories of council buildings, schools, streetlighting, transport and waste and water. The borough's schools are the most significant contributor. The council additionally has a large number of

buildings in its ownership/management and the emissions associated with building energy use (electricity and gas) make up the next greatest proportion. The baseline is the starting point for looking to reduce the council's carbon emissions and provides the data against which our emissions going forward will be assessed year on year.



Hillingdon's carbon emissions in 2007/08

Nottingham Declaration

6.7 The Leader of the Council and the Chief Executive formally signed the Nottingham Declaration on World Environment Day in June 2007, indicating the council's commitment to tackling climate change. By signing the Declaration, councils promise to actively contribute to local delivery of the UK Climate Change Programme and reduce emissions countrywide. Hillingdon joins around 130 other local authorities in recognising that climate change will have a major impact locally this century and will have far-reaching effects on the UK economy, society and environment.

6.8 Signatories of the Declaration pledge to do the following:

- 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 partners and local communities to progressively address the causes and impacts of climate change, according to local priorities, securing maximum benefit for communities;
- Publicly declare, within appropriate plans and strategies, the commitment to achieve a significant reduction of greenhouse gas emissions from the 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 council services and communities of climate change impacts, and adapt accordingly;
- Encourage all sectors in the 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; and
- Monitor the progress of plans against the actions needed and publish the results.

Hillingdon Council Leader, Cllr. Ray Puddifoot and Chief Executive, Hugh Dunnachie, signing the Nottingham Declaration June 2007.

Local Authority Carbon Management Programme

6.9 The council was selected to participate in the Carbon Trust Local Authority Carbon Management (LACM) Programme for 2008/09. The Programme culminates in an action plan of carbon reduction measures for the council to take forward over at least 3 years. Participation in the LACM Programme is one of the key actions of Hillingdon's Climate Change Strategy.

6.10 The Carbon Trust is an independent company set up by government in response to the threat of climate change, to accelerate the move to a low carbon economy by working with organisations to reduce carbon emissions and develop commercial low carbon technologies.

6.11 Launched in 2003, the LACM Programme is designed to deliver improved energy management of vehicle fleets and academic, accommodation and leisure buildings. The Programme facilitates the sharing of best practice between participants, enabling them to learn from each other's experience, thereby optimising results. The Carbon Trust is now working with 215 of the UK's 468 local authorities – around 45 per cent - to assess the risks and opportunities posed by climate change and develop a robust strategy to drastically reduce their carbon footprints over a five to ten year period.

6.12 Through the LACM Programme, the Carbon Trust provides councils with technical and change management support and guidance to help them realise carbon emissions savings. The primary focus of the work is to reduce emissions under the control of the local authority such as buildings, vehicle fleets, street lighting and landfill sites.

6.13 This Programme guides authorities through a systematic analysis of their carbon footprint, the value at stake (the carbon and financial savings to be made through a reduced emissions scenario projected over a 5 year period as opposed to a business as usual scenario) and the opportunities available to help them manage carbon emissions in a strategic manner. The Programme provides an exemplary way for Hillingdon to lead by example in tackling climate change through working to reduce its carbon emissions.

Achievements and progress to date

6.14 The council has been involved in various initiatives, which contribute to the climate change agenda. The objectives and corresponding actions detailed within Hillingdon's Climate Change Strategy seek to build on our earlier successes, further develop existing initiatives, and identify new projects. The examples below illustrate some of the council's achievements and progress to date.

Environmental campaigning and education

- Spearheaded a major campaign to oppose the third runway at Heathrow Airport, to help protect our villages and the quality of life of our residents.
- Responded to consultations on a raft of new national policies and legislation including the UK Climate Change Bill.
- Promoted energy conservation, energy efficiency and climate change issues to households across the borough through presentations, road shows and displays. A number of projects have also been carried out in local schools.

Air quality

- The council has an adopted Air Quality Action Plan, which identifies measures for Hillingdon-specific action and for partnership action. Reducing emissions of climate change pollutants, as well as local air quality pollutants, is an integral part of the Air Quality Action Plan.

Waste and recycling

- With the help of our residents, more than a third of Hillingdon's waste is recycled or composted, making Hillingdon one of London's top recycling boroughs.
- Launched the council's first 'swap shop' at New Years Green Lane waste site in Harefield, to help people to recycle equipment that can be re-used.

Energy efficiency

- Installed the first solar powered cats eyes in London in Harvil Road, Rickmansworth Road and Breakspear Road North.
- The council has energy efficiency targets to meet as set out in the Home Energy Conservation Act (HECA) Strategy for the borough. The Act requires Local Authorities to achieve a 30% improvement in domestic energy efficiency by 2010. Up to the 31st of March 2007 Hillingdon had improved the energy efficiency of its housing stock by 22.65% since 1996 and is on track to meet the 30% target.
- With the home insulation programme (funded by EDF Energy), the council last year installed insulation measures to over 2,000 households in the borough through the Heat Streets scheme.
- The council's Sunrise scheme promotes renewable energy to householders, Housing Associations and developers. The scheme provides a complete service including surveys, installation and assistance with grant applications for all technologies such as wind turbines, solar water heating and photovoltaic panels.

Sustainable Transport

- All council vehicles meet new low emission targets and we are one of the first councils in London to carry out an emissions inventory, identifying when we need to replace those vehicles.
- In the last two years, we have reduced the amount of carbon emissions from school journeys by 6% by implementing school travel plans making Hillingdon the fourth best borough in London.

- The council is a member of the BAA Clean Vehicles Programme (CVP). This Programme helps to reduce vehicle emissions. The CVP helps companies identify and implement cost-effective measures for improving the environmental performance of their business and fleet transport operations. The CVP also rewards achievements through an assessment and certification process.
- A freight audit of the major industrial and business areas in the borough has been undertaken.
- The Local Implementation Plan promotes the use of walking, cycling and public transport and encourages travel plans for businesses in the borough.
- The council's own Travel Plan, which is aimed at all council employees and elected Members, will improve sustainable transport choices and aims to reduce single occupancy car trips.

Sustainable design and construction

- Received a silver Green Apple award, a national award for excellence in environmental and sustainable design standards for Ruislip High School.

Open space

- Ten of Hillingdon's parks now have a Green Flag, a national award for excellent parks and green spaces across the borough, which has sustainability considerations as key criteria.
- Beginning to use locally sourced wood for park furniture and fencing in some parks.
- Several parks have on-site composting facilities.

Climate change adaptation

- The council has undertaken a Strategic Flood Risk Assessment for the borough which considers current and future risks of flood to Hillingdon.
- Gardens are designed to minimise water use through species selection and companion planting.
- Beginning to use water butts for rainwater harvesting at the borough's allotments and cemeteries.

7 Hillingdon's Plan of Action

7.1 This Strategy focuses on actions that will minimise and reduce carbon dioxide emissions in Hillingdon, as this is the greenhouse gas making the most significant contribution to climate change. In addition the Strategy also considers how the borough can deal with the effects of future climate change as well as actions that will decrease contributors such as methane arising from landfilled waste.

7.2 Hillingdon's strategy for tackling climate change considers both mitigation of and adaptation to climate change.

- **Mitigation** Involves seeking to limit and slow down future climate change by reducing the emissions of greenhouse gases into the atmosphere.

- **Adaptation** Involves taking steps to ensure that we are able to adapt to the changes to the climate already occurring.

The council's role

7.3 The council's role in addressing climate change has three main functions:

- **Estate Management** through the management of operational buildings such as day centres, leisure centres, offices and housing and the borough's open spaces;
- **Service Provision** through the provision of waste collection and planning functions; and
- **Community Leadership** in carrying out the above functions and engaging with residents, businesses and partners.

Objectives of the Strategy

7.4 The following sections outline the council's objectives in developing an effective response to the challenges of climate change. In order to achieve these objectives an integrated approach is needed. The council will work to develop such an approach and ensure both mitigation and adaptation to climate change are considered in an integrated manner in all relevant council policies and plans. Effort will also be made to ensure that the choices made to reduce climate change emissions are of benefit to other key challenges for the borough, such as improving local air quality.

Community leadership

Objective

To reduce the emissions resulting from the council's own operations and take measures to deal with the current and future effects of climate change, therefore leading by example in encouraging residents and businesses in the borough to take action.

Context:

7.5 The work of a local authority is wide-ranging and visible, therefore giving the opportunity for local authorities to lead by example and demonstrate good practice.

7.6 In demonstrating community leadership, the council seeks to improve its own practices and in particular to reduce and minimise its carbon footprint. A key part of this is the council's participation in the Carbon Trust Local Authority Carbon Management Programme.

7.7 Additionally the council maintains its opposition to airport expansion and has led a major campaign to oppose proposals to expand Heathrow airport by adding a third runway. The council will continue to oppose these plans.

Hillingdon's focus on carbon emission reduction:

7.8 Various workstreams in the council have dealt with climate change issues and emission reduction. There is a need however to bring this work together in a cohesive manner and look at ways to reduce the emissions associated with the operations of the council as a whole.

7.9 The council recognises the areas of waste and energy as being key to reducing the emissions associated with its own estate and operations. Under the council's Hillingdon Improvement Plan, a waste and energy workstream has developed the use of renewable energy and is actively considering options for creating energy from waste such as on the RAF Uxbridge development.

Actions

Ongoing

- Participate in the Carbon Trust Local Authority Carbon Management Programme.
- Progress the Hillingdon Improvement Programme projects on waste and energy.
- Progress identified projects to improve energy efficiency within council buildings and utilise renewable energy:
  - Installation of synchronisation equipment, gas fired generator and investigation of renewable energy options at the civic centre;
  - Investigate the feasibility of opportunities for hydrogeneration of energy; and
  - Investigate the feasibility of the installation of voltage optimisation equipment.

Short term

- Adopt a Sustainable Energy Policy for the council by 2010.

Raising awareness

Objective

To develop greater awareness of climate change issues and engagement in solutions to tackling them amongst council staff, elected Members, those that live in, work in or visit the borough, and businesses operating in the borough.

Context:

7.10 Climate change is likely to be the greatest challenge faced by the UK this century. The issue has received a great deal of publicity over the last few years and there is increasing awareness amongst the wider population.

7.11 The key findings of recent market research on the attitudes of people in the UK demonstrated:

- Over **95%** of people **agree** that the **climate is changing**;
- **85%** consider it is due to **human activity**;
- More than **80%** feel it is **more important** now than they felt it was last year; and
- **85%** said they are **willing to help** tackle the issue.

7.12 However a willingness to recognise the problem and to help does not always translate into action and there can be barriers to people's involvement. There is therefore a need not only to continue to raise awareness of the issues but to facilitate and remove barriers to action through active engagement.

Hillingdon's focus on raising awareness:

7.13 Following several months of activities across the council related to sustainability and climate change, in June 2007 the Leader of the Council and the Chief Executive signed the Nottingham Declaration. To demonstrate Hillingdon's commitment to this UK pledge of acknowledgement and action, associated events were held on the themes of:

- Energy efficiency;
- Sustainable transport;
- 'Greener living'; and
- Climate change.

7.14 On signing the Nottingham Declaration the Leader of the Council confirmed his commitment by stating "small changes can make a big difference. By signing the Nottingham Declaration it shows that we take the future of our planet seriously and are committed to protecting the environment. As one of the greenest boroughs in London, we should be setting an example to others."

Actions

Ongoing

- Continue to provide an effective energy advice service that reaches the most vulnerable and socially excluded members of the community, through both direct contact and by informing those who regularly come into contact with the target groups, for example health and social care workers.
- Provide 'energy bingo' sessions during National Warm Homes Week at day centres across the borough as an effective way of engaging with vulnerable groups to disseminate practical energy advice.
- Continue to promote the council's Energy Advice DVD at relevant events.
- Continue to provide and promote the borough's allotments and the benefits of allotment-holding to our residents.

Short term

- Develop a comprehensive set of webpages for the council website with information on climate change and sustainability, including information about council initiatives and links to relevant external organisations and initiatives including grants and funding sources by 2010.
- Set up a network of 'green champions' within the council by Summer 2009 and in the community by 2011 to increase education and engagement on climate change issues.
- Implement the 'At Home with Energy' programme in the borough's schools, which uses smart meters and energy efficiency education to encourage energy conservation at home.
- Develop an energy efficiency awareness raising campaign that includes a mechanism to provide grants information and advice to the general public.
- Develop an awareness raising campaign to encourage waste minimisation, greater use of composting and higher recycling rates amongst borough residents and businesses.

Longer term

- Develop a training and information package to raise awareness of energy and climate change issues targeted at employees of organisations in the borough.
- Engage with council youth workers to organise an environment-themed youth event.

- Promote home water conservation through the use of water saving fittings and appliances, the use of 'hippos' in toilet cisterns and water butts.
- Promote alternatives to air conditioning to combat overheating.

Adapting to impacts

Objective

To ensure that Hillingdon will be resilient to the current and future effects of climate change.

Context:

7.15 The United Kingdom Climate Impacts Programme (UKCIP) has undertaken detailed modelling to produce projections of what the UK's climate might look like in the future, as well as detailed analysis of how our climate has changed since 1914.

7.16 In general, changes to the climate will produce hotter, drier summers and colder, wetter winters. The impacts of these changes in weather patterns that are already beginning to be observed in the UK are heatwaves, water shortages and flooding events. This has impacts on people but also on biodiversity as the changing weather patterns affect the survival of plants and animals that in many instances are not evolved to suit the new conditions.

7.17 With regard to adaptation, the important element is not the weather events themselves but the level of vulnerability of the area to these events. It is therefore necessary to assess how the likely weather patterns from climate change would impact the borough.

7.18 A Local Climate Impacts Profile (LCLIP) is a resource that local authorities can compile which enables them to understand their exposure to weather events. An LCLIP is based on the evidence of an area's vulnerability to severe weather events, and in particular how these events affected the community as well as the local authority's assets and capacity to deliver services.

7.19 Cities not only make a significant contribution to causing climate change but are also vulnerable to the consequences of it. An issue that compounds the problems of a warmer climate and is unique to cities is the Urban Heat Island (UHI) effect. The Urban Heat Island effect describes the increased temperature of urban air compared to its rural surroundings.

7.20 The following diagram shows an idealised heat island profile for a city, with temperatures rising from the rural fringe and peaking in the city centre. The profile also demonstrates how temperatures can vary across a city depending on the type of land cover; urban parks and lakes are cooler than adjacent built up areas.

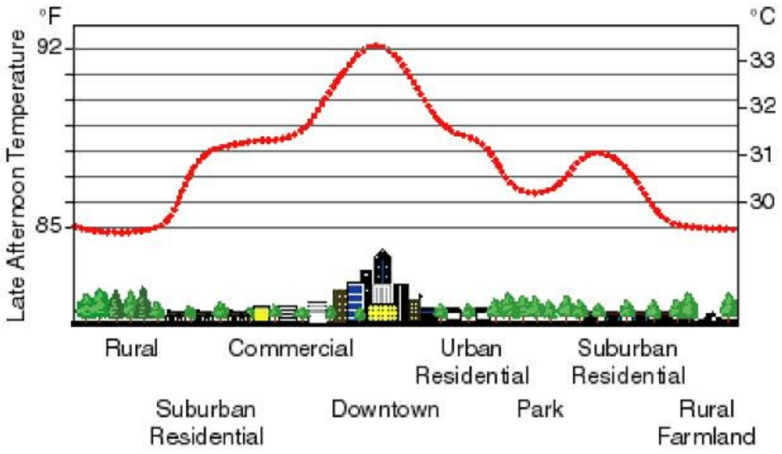


Diagram illustrating the Heat Island Effect. (Source: GLA)

7.21 The UHI effect arises as during the day, solar energy is absorbed by the urban fabric and stored. This energy is then released into the atmosphere at night. Urbanisation and development alter the balance between the energy from the sun used for raising the air temperature (heating process) and that used for evaporation (cooling process), because the cooling effect of open areas containing predominantly vegetation is replaced by concrete and buildings.

7.22 The strength of the Urban Heat Island is measured by the 'Urban Heat Island intensity'. This describes the maximum difference in temperature between urban and rural locations over a certain time period. The highest values of the Urban Heat Island intensity, of around 6-8°C, are frequently reached between about 11 o'clock at night and 3 o'clock in the morning.

7.23 Urban Heat Island intensities are greater in summer than winter because of the increased amount of energy received from the sun in summer, which is absorbed by the urban surface during the day and released at night. The Urban Heat Island keeps London warmer than surrounding areas in winter; observed through the earlier on-set of Spring and less frequent settling of snow in London. The UHI effect means that London is particularly vulnerable to heatwave weather events and the predicted increase in frequency and intensity of heatwaves as a result of climate change require that consideration is given to mitigating the Urban Heat Island effect.

7.24 To manage London's Urban Heat Island most effectively, the alteration of existing land cover of large areas of central London would be necessary which is not a practical solution. There are however opportunities to alter microclimates and therefore manage the UHI effect at the street and neighbourhood scale. Over time the cumulative effects on the UHI effect of local scale climate modification could be significant. Effective strategies that can be implemented within existing urban areas and have impacts at the local level include cool roofs, green roofs, planting trees and vegetation and cool pavements.

Hillingdon's focus on adaptation:

7.25 The council's civil protection service deals with emergency planning and business continuity for emergencies and disasters. Historically, neither flooding, heatwaves nor droughts have frequently or significantly affected the borough. However as these events are likely to increase in frequency and severity, there is a need for greater understanding of the threats they would pose to Hillingdon.

7.26 A community risk register has been compiled for North West London, which includes the London Borough of Hillingdon and considers the risk of different types of emergencies and disasters occurring. There has not however been a more detailed analysis undertaken of the impacts of extreme weather events on the London Borough of Hillingdon as would be undertaken through a Local Climate Impacts Profile.

7.27 In response to the Urban Heat Island effect there is a need to continue to protect the open spaces and vegetation that the borough already has in recognition of the increasingly important role that these will have in adapting to climate change.

Actions

Ongoing

- Continue to implement relevant London Plan policies relating to adaptation of climate change.
- Continue to protect and enhance the borough's green spaces and open land and work to create new green spaces in recognition of their role in adaptation to climate change as well as their amenity and recreation value and benefits to biodiversity.
- Continue to retain and seek to increase the borough's level of vegetation, through tree planting and maintenance.
- Encourage new developments to take into account adaptation to climate change in their design, through minimising the risk of overheating, minimising impervious surfaces, incorporating sustainable urban drainage systems where appropriate and including water conservation devices.

Short term

- Compile a Local Climate Impacts Profile for the borough by 2010.
- Undertake a review of water usage across the council's estate with a view to a programme of work to minimise water consumption by 2010.

- Prepare and publish on the council's website an advisory note for developers on best practice in design that is adaptable to climate change including measures to mitigate the Urban Heat Island effect by Summer 2011.
- Promote the use of water butts to residents and increase their use across the council estate where practicable, particularly on the borough's allotments and cemeteries.

What you can do:

- Install a water butt in your garden for collecting rain water to use for watering plants or washing your car.
- If you are renovating or building a new home or commercial premises, choose water-saving devices such as low flow taps and low flush toilets or ideally make use of greywater recycling. This is re-use of shower, bath and wash basin water to flush toilets.
- Keep impervious surfaces (those that do not allow water to pass through) such as hardstanding to a minimum on your property or premises. Impervious surfaces increase surface water run off which contributes to localised flooding by overloading drains. Planning permission is required to lay traditional impermeable driveways that allow uncontrolled run-off of rainwater from front gardens onto roads, because this can contribute to flooding and pollution of watercourses.
- Plant trees on your property or premises and if doing an extension or building consider installing a green roof. A green roof is one that is partially or completely covered in vegetation and soil or another growing medium, planted on top of a waterproof membrane.
- When the weather is hot, try and avoid the use of fans and air conditioning by opening windows and closing blinds and curtains to limit the amount of heat entering from the sun.

Further Information and support:

- Information on future predicted impacts of climate change on the UK and advice on adaptation:

  The UK Climate Impacts Programme (UKCIP) http://www.ukcip.org.uk/

- Information about how the effects of climate change might impact your home and how to minimise them:

  English Heritage http://www.climatechangeandyourhome.org.uk/live/climate_impacts.aspx

- Environment Agency information:

Top water saving tips for homes, schools and businesses

http://www.environment-agency.gov.uk/homeandleisure/drought/31755.aspx

Reusing and harvesting water

http://www.environment-agency.gov.uk/homeandleisure/drought/31761.aspx

Flooding

http://www.environment-agency.gov.uk/homeandleisure/floods/default.aspx

- Information on how to design a new development to be adaptable to climate change:

  'Adapting to Climate Change: A Checklist for Development'
  http://www.london.gov.uk/lccp/publications/development.jsp

- Good practice guidance for permeable paving:

  'Guidance on the permeable surfacing of front gardens'
  http://www.communities.gov.uk

- Information about what to do in a heatwave:

  The Department of Health
  http://www.dh.gov.uk/en/AboutUs/MinistersAndDepartmentLeaders/ChiefMedicalOfficer/Features/DH_4135398

Reducing emissions

Transport

Objective

To reduce and minimise the emissions in the borough associated with transport (particularly road transport) through the council's travel planning function and its own activities and to encourage residents and members of the business community to use more sustainable modes of travel.

Context:

7.28 Transport accounted for approximately 28% of UK greenhouse gas emissions in 2005. Carbon dioxide is the main greenhouse gas, accounting for about 84% of greenhouse gas emissions in 2005, and road transport is a significant contributor (22% of the total UK CO_2 produced in 2005). Transportation also affects local air quality as vehicles emit pollutants such as NO_x and PM_{10} which are associated with poor air quality and human health impacts.

7.29 Greenhouse gas emissions from aircraft are excluded from both national targets in the Kyoto Protocol, and from the local authority CO_2 emissions data collated by DEFRA. It should be noted that the aviation sector is regulated by national policy and whilst the council remains opposed to airport capacity expansion such as that proposed at Heathrow, these decisions will ultimately be made at a national level.

7.30 In the government's transport strategy 'The Future of Transport: a network for 2030' (2004) it is made clear that while good transport is central to a prosperous economy, facilitating better access and greater mobility, there is a need to balance the increasing demand for travel against our goal of protecting the environment effectively and improving the quality of life for everyone – whether they are travelling or not.

7.31 The government is currently using fiscal measures to incentivise consumers to choose more fuel efficient (and therefore lower carbon) vehicles, e.g. fuel and vehicle excise duty. In the 2008 Budget, further taxes were announced aimed at promoting environmentally efficient business travel and the take up of cleaner cars.

7.32 One effective means to address the issue is by enabling people to adopt low carbon behaviours. As well as taxation measures to encourage the use of cleaner vehicles, the government is working to increase awareness and improve choice. Investments to improve public transport are being made, as well as awareness programmes such as 'Act on CO_2' which provides tips on how to drive 'smarter' for better fuel efficiency and encourages the purchasing of more fuel efficient vehicles. The UK planning system also seeks to direct development to sustainable locations that have good public transport access.

7.33 Improvements in public transport and new technologies that produce lower emission cars make a valuable contribution to reducing CO_2 emissions associated with transport. However reducing people's need to travel has multiple benefits; it makes a positive impact on not only CO_2 emissions from transport, but subsequently on air quality and congestion. The planning system plays a part in transport demand management but changes in traditional office culture can also assist. Many organisations are reducing their carbon footprints through increased home working and the use of available technologies for telephone and video conferencing and internet-based training and seminars which reduce employee commuting and business mileage.

Hillingdon's focus on transport:

7.34 Due to its outer London location and lack of good north-south public transport orbital routes, Hillingdon continues to have one of the highest car ownership rates in London. This location and the radial national and strategic highway routes in/adjacent to the borough (M4, M40/A40, M25, A4, and A312), result in significant road congestion and associated poor air quality. While the location of Heathrow within the borough's boundary does not count towards the borough's 'carbon footprint', it does raise issues of surface access and poor air quality as there is a considerable amount of road traffic associated with the airport. Therefore key to addressing many of the transport related climate change issues in Hillingdon is a focus on travel demand management.

7.35 In conjunction with Transport for London (TfL), Hillingdon continues to look at ways of improving the public transport network across the borough. This approach is complemented by encouraging a reduction in road traffic through increased usage of sustainable transport modes such as walking and cycling.

7.36 The council's draft Travel Plan for staff is currently being developed with a view to being adopted by 2010. The borough is also developing a travel plan programme for businesses across Hillingdon and other organisations with large numbers of employees. New major development proposals are now required to produce travel plans in advance of the development being completed, using TfL detailed guidance.

7.37 Another focus for travel demand management is the borough's School Travel Plan programme, which is currently one of the most advanced in London in terms of the number of schools preparing and implementing travel plans. Nearly 75% of schools now have a travel plan which over the last few years have been successful in contributing to a modal shift of 12% away from car use for trips to school. This has resulted in improvements in local air quality. The benefits to the school pupils in terms of health as well as to the environment in general need to be maintained and as far as possible enhanced.

7.38 Within the planning system, other measures are also being implemented to encourage the reduction of emissions, with higher density residential growth and high traffic-generating activities (such as retail) being directed to areas with good public transport accessibility. The provision of on-site car parking in new developments is restricted, the submission of travel plans is required and car clubs promoted.

7.39 A fleet emissions inventory has also been undertaken for the council's vehicle fleet, and the council is continuing to upgrade its fleet to lower emission vehicles as replacements are needed. This is particularly relevant following the introduction of a London-wide Low Emission Zone.

Actions

Ongoing

- Bid annually for and implement sustainable transport initiatives across the borough through the Local Implementation Plan.
- Continue to develop and implement a programme of travel plans for existing businesses and large organisations (such as hospitals and further education establishments), either individually or area-based in partnership with Transport for London.
- Annually update the Sustainable Modes of Travel Strategy for schools.
- Continue to monitor the effect of School Travel Plans in reducing the volume of CO_2 emissions against existing baselines.
- Continue to oppose airport capacity expansion due to the potential adverse impacts on the highway network and air quality.

Short term

- Adopt and implement the council's Travel Plan by 2010.
- Pilot cycle rental schemes at public transport interchanges to encourage greater 'cycle to work' use.
- Reduce the number of council business trips made in private vehicles, by greater use of pool cars by 2011.
- Establish a programme of 'walking buses' for schools following on from the pilot in 2009 and develop a School Cycling Strategy and designated network.

Longer term

- Increase the availability of car clubs, especially in new residential developments.
- Continue to work with our sub-regional transport partnerships (WestTrans and SWELTRAC) to seek funding for borough-wide travel surveys to gain a more in-depth understanding of travel patterns with a view to improving or extending sustainable transport networks on high demand routes.

- Improve, create and enhance green spaces and create high quality linkages between them in order to provide a network of green spaces or 'green infrastructure'.
- Develop a network of 'all weather' paths to allow green spaces to be used in wet conditions and thereby encouraging walking and/or cycling.

What you can do:

- Walk, cycle or take public transport whenever possible.
- Try to avoid short haul flying if you can take a train to your destination.
- If you need to drive your car to work, try car sharing.
- If you are buying a car, choose a car no larger than you need and look for the most efficient and lowest emission vehicle in that size range. This should save you money on fuel and road tax as well as reducing your emissions.
- Use less fuel to save money and reduce your car's emissions by driving smarter:
  - Make sure your tyres are pumped up to the correct pressure for your car;
  - Don't have unnecessary clutter in your car boot (the excess weight makes your car use more fuel); and
  - Try to drive smoothly and within the speed limit - revving your car, stopping and starting and driving over 50mph all use excess fuel.

Information and support:

- To find the best route to your destination using public transport, walking or cycling:

  Transport for London journey planner www.tfl.gov.uk or the travel information line 0207 2221234.

- Information on cycling and walking in the UK and maps and information on the UK National Cycle Network:

  Sustrans, sustainable transport charity. www.sustrans.org.uk

- Advice on buying a fuel efficient or low emission car and driving tips to reduce your carbon emissions and save on fuel costs:

  Department for Transport, Act on CO_2 www.dft.gov.uk/ActOnCO2/

- To find others to car share with:

Liftshare www.liftshare.org/

ShareAcar www.shareacar.com/

Chiltern Carshare - Share your journey to the rail station with others making a similar journey and save on parking costs as well as fuel. www.chilterncarshare.co.uk

Public transport in Hayes Town Centre

Waste

Objective

To reduce the greenhouse gas emissions in the borough associated with waste.

Context:

7.40 Carbon dioxide is one of the key contributors to climate change. However methane, a gas emitted by decomposition of landfill waste, is also a greenhouse gas and a main contributor to global warming, being 21 times more potent than carbon dioxide.

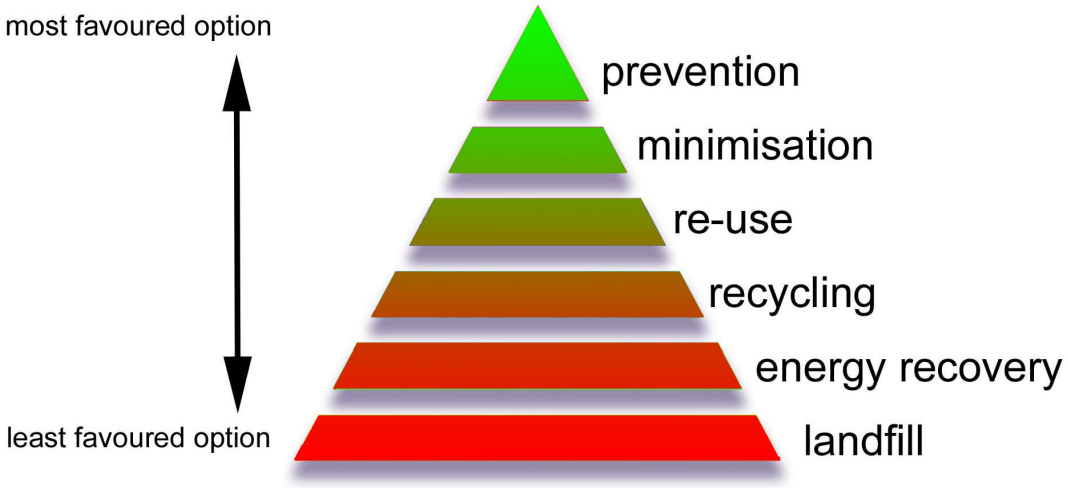
7.41 It is problematic for local authorities to control the total amount of waste that is generated in their area; residents can be encouraged to reduce waste and compost and recycle, and the provision of good facilities facilitates this, but significant reductions in waste can only come about through behaviour change.

7.42 One of the key issues with waste - and of relevance to climate change - is the consumption of resources. Greater consumption affects climate change in two ways; firstly, increased resource consumption involves carbon emissions through primarily the manufacture and distribution of goods. Secondly, when the waste breaks down, carbon dioxide or methane gases are given off, making a further contribution to climate change.

7.43 For significant reductions in waste and associated emissions there needs to be a decrease in consumption of resources, greater re-use of products (not just recycling), and in particular a shift away from disposable products and those that are of poor quality with a limited lifespan. Additionally a significant source of waste in London comes from construction and the re-use of buildings can play a crucial part in reducing this.

7.44 There needs to be a shift away from the previous reliance there has been on landfill in the UK for the disposal of biodegradable waste. Better management of waste can significantly reduce emissions of greenhouse gases; for example, the composting of bio-degradable waste gives off carbon dioxide, as the process occurs in the presence of air. The methane that this waste would have given off if landfilled is far more damaging due to its greater strength.

7.45 In terms of the best environmental outcome, there is a hierarchy of how waste should be dealt with, as shown in the following diagram. The least favourable option (at the bottom of the pyramid) is landfill disposal, with prevention being the most favourable.



The Waste Hierarchy

7.46 **Waste prevention and minimisation** are at the top of the hierarchy. Preventing unnecessary waste, such as excessive packaging, not only saves the waste of the packaging, but also prevents the carbon emissions that would have been associated with the energy or fuel used to extract the raw materials, and in manufacturing and transport.

7.47 **Re-use** of products and materials is almost as effective as waste prevention. This prevents the return of the carbon within the product to the environment for as long as possible. Re-use additionally reduces demand for raw materials and the environmental impacts from manufacturing and transport.

7.48 **Recycling** reduces the need for raw materials, and prevents materials being disposed of and contributing to greenhouse gas emissions. However the process of recycling one product into another requires energy and therefore involves greater carbon emissions than prevention, minimisation and reuse. However recycling uses less energy than creating a product from raw materials.

7.49 **Energy recovery** takes waste and converts the energy stored within it to useful energy, reducing fossil fuel use and associated emissions of carbon dioxide and pollutants.

7.50 **Landfill** is the least favourable environmental option with regard to greenhouse gas emissions. By putting waste into landfill, we are limiting the potential for reuse, recycling or recovery of valuable resources, increasing the demand for new resources and generating more greenhouse gas emissions.

7.51 Better management of waste can significantly reduce the emissions of greenhouse gases. Through application of the principles of the waste hierarchy, waste materials can be turned into resources, reducing the need for increasing the extraction of raw materials and fossil fuels. Technologies exist that enable materials and energy to be recovered from waste that would otherwise be landfilled, thus potentially releasing methane.

7.52 It is crucial that action is taken to reduce future climate change, and a key mechanism is to reduce the amount of waste produced and the amount of energy we use. There is an important link between waste management, greenhouse gas emissions and future climate change, which needs recognition.

Recycling collection in Hillingdon

Hillingdon's focus on waste:

7.53 Hillingdon has consistently been one of the top 10 boroughs in London for recycling over the last 5 years. Hillingdon was the first London borough to achieve statutory recycling targets in 2003/04. Its highly regarded recycling programme now diverts over 41,000 tonnes of material each year from landfill.

7.54 Hillingdon's draft waste strategy in 2001 commenced the council's recycling enhancement programme from a low base. Up to this point the recycling rate was approximately 9% and built around a 'bring bank' system. Investment in a pilot kerbside recycling system was the basis for the council's current kerbside recycling system which is borough wide and during 07/08 collected 19,660 tonnes contributing 15.9% to the borough's overall recycling rate. This was complemented in 2004 by Hillingdon being the leading authority introducing garden waste recycling free of charge to 86,000 households. This currently produces just over 8000 tonnes with a recycling rate of 6.7%. These two schemes remain the main focus of the council's recycling programme supported by a range of smaller activities e.g., Waste Electrical and Electronic Equipment (WEEE) collection sorting at civic amenity sites. In addition the council has continued to work with the private sector to develop and expand services e.g. inclusion of glass with the co-mingled dry recycling collection, and development of Europe's largest in-vessel composting site.

7.55 Recycling remains a key focus area in the borough's efforts to make Hillingdon an 'attractive and sustainable place' as outlined in the Sustainable Community Strategy. The council wants to build on its past success, and meet the challenging recycling targets agreed as part of the Joint Municipal Waste Management Strategy. The council's recycling rate for 07/08 was 33.8% and the aim is to reach the government's target of 40% by 2010. Looking ahead, the council has an aspiration to reach 50% recycling by 2015. These targets are set against a background of high tonnages of household waste. This is currently on a downward trend but the kilogram per household (kg/hd) of household waste stood at 481.72 kgs/hd in 2007/08.

7.56 Whilst recycling is important in minimising the waste going to landfill, there is also a need to improve composting rates of biodegradable waste and to minimise the amount of waste created in the first place. Due to the success of recycling in Hillingdon, the largest proportion of waste left in the general waste stream that goes to landfill is organic matter such as kitchen waste. It is therefore crucial to encourage residents to reduce their waste in this area.

7.57 There is a legal requirement for the borough to meet the European Landfill Directive, which requires significant reductions in the level of biodegradable waste that can be sent to landfill between now and 2020. The council will be subject to severe financial penalties if it fails to achieve this. Therefore there is an additional economic incentive to waste minimisation and increased composting on top of environmental concerns and a reduction in emissions of greenhouse gases.

7.58 These targets, in addition to the borough's aim to minimise its environmental impacts and tackle climate change, mean that the main focus of Hillingdon's waste services will need to be waste minimisation, recycling and composting.

7.59 New initiatives are being built around the council's ethos of providing customer friendly waste services which are easy to use, accessible and put service quality and customer need at the forefront. These include: estate based recycling incorporating high rise flats, re-engineering of the borough's civic amenity sites, door to door electrical and textile collection; provision of home composting, recycling of brittle plastics (i.e. toys, garden furniture) and negotiations with the private sector to further develop jointly managed civic amenity sites.

7.60 The council recognises that residents still value the traditional weekly refuse service and has made a public declaration to maintain this position. Hillingdon's ethos of 'customer first' has also been extended to the service and private sectors by provision of free recycling to schools, charities and libraries and a competitively priced trade recycling service.

7.61 There is potential for exploration of new and innovative technologies that will help waste targets be met through further reductions in the volumes of landfill waste. The council is keen to promote and support such technologies. It is recognised that this will require an integrated approach utilising a range of technologies applicable to individual sites or developments. An example is the use of waste to create energy; such schemes can provide power while also significantly reducing the amount of waste

going to landfill. On a smaller scale there are also opportunities for the utilisation of waste products such as chip fat to power vehicles, or waste wood products for biomass boilers.

Actions

Ongoing

- Develop the council's Hillingdon Improvement Programme (HIP) waste and energy initiatives including:
  - Increasing provision of recycling facilities to an additional 100 housing estates in the borough;
  - Promoting and increasing awareness of home composting through compost bin promotion to residents;
  - Carrying out an educational pilot with residents to increase participation in recycling;
  - Developing an outreach project targeting hard-to-reach groups to increase their recycling;
  - Working to improve recycling capacity at each of the borough's civic amenity sites; and
  - Investigating the feasibility of energy generation from waste.
- Lead on the development of the West London Waste Plan, which will look at how West London can accommodate the waste it produces in a sustainable manner. The Plan will give priority to waste reduction, recycling and composting.

Short term

- Make use of on-site composting in the borough's open spaces and use the resulting compost on-site to minimise landfill waste and fuel use.

Recycling bins in Uxbridge High Street

What you can do:

- Compost your garden and food waste. For those that cannot compost their own waste the borough provides a kerbside recycling service for garden waste.
- Reduce waste packaging by:
  - Avoiding buying goods with lots of unnecessary packaging;
  - Buying 'loose food' instead of packaged food where possible;
  - Buying products with refillable containers as much as possible;
  - Buying milk from your milkman using returnable glass bottles; and
  - Using reusable containers for food instead of using cling film or foil.
- Avoid single use plastic bags when out shopping. Most supermarkets and many other stores now stock longer lasting 'bags for life' or fabric reusable bags which are a more sustainable alternative.

- Have goods repaired rather than replaced if economical to do so.
- Avoid buying disposable products such as throw-away cameras, paper handkerchiefs and napkins, razors, plastic and paper cups.
- Help to sustain and increase the markets for recycled products by buying these when possible and practical. Some commonly available examples are: recycled paper and glass products and recycled plastic rubbish bags.
- If you have a baby try re-usable/washable cloth nappies instead of disposables.
- Re-use of products is better for the environment than recycling. Use charity shops, or the eBay and freecycle websites to buy or dispose of clothes, household goods, books and DVDs etc. in a sustainable way.
- Stop unwanted mail through the following means:
    - Stop unwanted mail by contacting Mailing Preference Service (MPS) on 0845 703 4599 or at www.mpsonline.org.uk
    - Register free online to stop junk mail addressed to previous residents at your address by logging onto www.junkmailforwarding.com and selecting the 'Change of Home Register'.
    - Stop unwanted leaflets and fliers by putting a note on your letter box saying 'no leaflets or fliers'.
    - Electoral Register - tick the 'edited register' option when completing the annual form. This will keep your details out of the publicly available register.

Information and support:

- For further information, the London Borough of Hillingdon website has a comprehensive list of waste and recycling weblinks and some tips on reducing waste:

Waste weblinks

http://www.hillingdon.gov.uk/index.jsp?articleid=9160

Tips on reducing waste

http://www.hillingdon.gov.uk/index.jsp?articleid=9156

Businesses

Objective

To actively engage with the borough's businesses and encourage them to take action to reduce their carbon footprints and adopt environmentally sustainable business practices.

Context:

7.62 The commitment of business and the public sector to tackling climate change is growing in the UK. An increasing number of companies and public sector organisations are recognising and acting upon the benefits to be gained from reducing greenhouse gas emissions.

7.63 Businesses and organisations generally take action on climate change for several reasons. Improved environmental credentials boosts an organisation's image, and can better align corporate actions with the environmental concerns of owners, employees, suppliers, and customers. Action is also taken in order to reduce costs, and can provide benefits in reducing dependency on uncontrollable or uncertain costs such as fluctuating energy and fuel prices.

7.64 Two of the main mechanisms of reducing emissions (and therefore tackling climate change) that are being demonstrated in the business community and the public sector are improving energy efficiency and using renewable energy.

7.65 Generally any expenditure made to improve energy efficiency or install renewable energy will pay off in the medium to long term. However for smaller businesses the initial outlay of more expensive measures can be cost prohibitive, and for larger companies, shareholders need to be satisfied in the short term, therefore legislation seems to be the most effective means to facilitate action.

7.66 Economic instruments are being introduced to encourage the reduction of emissions from the business community and public sector.

Emissions trading

7.67 Emissions trading is a key element of the longer term solution to reducing the UK's greenhouse gas emissions. Trading on its own cannot deliver emission reductions. However it can give companies flexibility to deliver cuts in the most cost effective way and provides an incentive to seek out and develop new ways of reducing emissions.

- **Carbon Reduction Commitment**
  Announced in the government's Energy White Paper (2007), the Carbon Reduction Commitment Scheme (CRC) will apply mandatory emissions trading to cut carbon emissions from large commercial and public sector organisations. It covers around 10% of the UK economy wide emissions, and will provide incentives for organisations to save money through energy efficiency.

- **EU ETS**
  The UK is included in the EU Energy Trading Scheme (EU ETS), which is one of the policies that has been introduced across Europe to tackle greenhouse gas emissions under the Kyoto Protocol. The scheme affects heavy industrial companies such as those involved in:

  - Electricity generation;
  - Iron and steel;
  - Mineral processing industries such as cement manufacture; and
  - Pulp and paper processing industries.

7.68 The scheme operates on a 'cap and trade' basis, meaning the level of emissions these companies can generate is capped. They are given an allocation of how much they are allowed to emit. Businesses may use all or part of their allocation and have the flexibility to buy additional allowances or to sell any surplus allowances generated from reducing their emissions below their allocation.

Climate Change Levy

7.69 The Climate Change Levy is a tax on the use of energy in industry, commerce and the public sector, with offsetting cuts in employers' National Insurance contributions and additional support for energy efficiency schemes and renewable sources of energy. The aim of the Levy is to encourage users to improve energy efficiency and reduce emissions of greenhouse gases.

7.70 Climate Change Agreements allow some energy intensive business users to receive a discount from the Climate Change Levy, in return for meeting energy efficiency or carbon saving targets.

Businesses in Hillingdon:

7.71 Hillingdon has a strong business community, including large multinationals, many of which are based in the south of the borough near Heathrow and in the Stockley Business Park. Additionally there are many smaller businesses in the borough providing local employment and services.

7.72 There are some examples of good practice in relation to sustainability being demonstrated in the borough by businesses. However there is a need to engage with businesses to encourage the sharing of this good practice and to build on existing successes.

Actions

Ongoing

- Continue existing work schemes that promote upskilling the borough's workforce to decrease the proportion of workers needed from outside the borough to fill local jobs, thereby reducing commuter travel.
- Continue to work with our sub-regional transport partnerships (WestTrans and SWELTRAC) to:
  - Encourage the adoption of travel plans by existing major employers in the borough; and
  - Encourage improved fleet management practices as a result of freight audits of businesses in the borough.

Short term

- Compile information for distribution to the borough's businesses regarding climate change issues to include sources of information, technical advice and funding by Summer 2011.

Longer term

- Seek funding to work with businesses in Hillingdon to reduce their carbon footprint and improve the energy efficiency of their buildings.
- Initiate a programme of engagement with businesses to assess sustainability work being undertaken, share and encourage best practice, and to support businesses to become more sustainable.

What businesses can do:

- When doing refurbishment or maintenance, choose energy efficient options for computers, lighting and boilers.
- Develop and implement a workplace travel plan, to minimise emissions from business travel and staff commuting.
- Ensure that unnecessary lighting is turned off when the business is closed, some businesses have considerable amounts of lighting on outside of operating hours.
- Ensure that staff are made aware of how to play their part and are encouraged to do so, for example:

  - Switching off lighting and unused appliances;
  - Only printing when necessary;
  - Minimising waste; and
  - Recycling whenever possible.

- Have an energy audit of their building/s undertaken to help identify ways to improve energy efficiency and incorporate renewable energy generation.

- Source goods and services locally where possible and practical to support local businesses and minimise transport emissions.

Information and support:

- Advice and support for businesses regarding how they can reduce their carbon emissions:

  The Carbon Trust www.carbontrust.co.uk 0800 085 2005

- Advice on how businesses can make their vehicle fleet 'greener':

  The Energy Saving Trust
  http://www.energysavingtrust.org.uk/business/Business/Transport-in-business

Existing housing

Objective

To reduce the emissions in the borough associated with existing housing through improving energy efficiency.

Context:

7.73 The UK contains more than 26 million homes. In 2004 these homes together emitted a total of 41.7 million tonnes of carbon dioxide ($MtCO_2$), which represents more than 25% of the UK's total carbon emissions.

7.74 It is estimated that due to the current demand for housing, and projected future growth, in the next 12 years more than 3 million additional homes will need to be built in the UK.

7.75 The government has put in place legislation and policies to achieve its target for new homes to be zero carbon from 2016. However there is considerable need to address reducing the carbon footprint of the UK's existing housing stock. It is estimated that two thirds of the homes likely to exist in 2050 have already been built and therefore carbon emissions from existing housing will continue to be a significant contributor to the UK's emissions.

7.76 The Home Energy Conservation Act 1995 (HECA) places obligations on local authorities to improve the energy efficiency of all housing in their area. The improvements in energy efficiency achieved through HECA contribute to meeting the UK's climate change commitments. Annually, authorities must prepare, publish and submit to the Secretary of State an energy conservation report that identifies:

- Practicable and cost-effective measures to significantly improve the energy efficiency of all residential accommodation in their area;
- An assessment of the extent that carbon dioxide emissions will be reduced as a result of the measures; and
- Progress made in implementing the measures.

7.77 Various grant schemes are being made available from government and non-government organisations to homeowners for making improvements to their homes that will make them low carbon.

Hillingdon's focus on existing housing:

Private Sector

7.78 In 2008 a comprehensive housing stock condition survey was undertaken which provides a detailed analysis of the state of the non-council owned housing in the borough, including the energy efficiency and therefore the carbon emissions. The majority of dwellings in Hillingdon are houses (79.3%) compared to 20.6% of dwellings that are flats. The most common house type in Hillingdon is semi-detached (36.6%) followed by terraced (25.5%).

7.79 Most dwellings in the borough are owner occupied (84%) with 16% privately rented. Hillingdon has a similar tenure profile to England as a whole but quite different to the profile of London (Hillingdon has a greater proportion of owner-occupiers and lower proportions of private tenants). The bulk of the housing stock is post 1919, with only 4.4% constructed prior to this date. The biggest proportion was built between 1919 and 1944 (48%).

Energy efficiency

- Estimated that 53.2% of dwellings in Hillingdon have cavity walls, but of these a total of 65.1% have no cavity insulation.
- 92.3% of dwellings have at least some double-glazing, with 71.8% having all windows double-glazed.
- 84.6% of dwellings have loft insulation (11.9% have no loft). 68.6% of those with insulation have 100mm or more and only 4.5% have over 200mm.

7.80 The Standard Assessment Procedure (SAP) is the government's recommended system for home energy rating based on a scale of 1 to 100, with a high score meaning a dwelling is more energy efficient. The average SAP rating for private sector dwellings in Hillingdon is 56, compared with a national average of 49. The most recent estimate (2003) for London is an average of 51. Hillingdon's average in 2000 was 50, indicating an improvement in energy efficiency since then.

7.81 Through its continued programme of work under HECA, the council has made significant improvements in the energy efficiency of the borough's housing stock since the last stock condition survey in 2001, particularly through the insulation of lofts and cavity walls and the upgrading of boilers.

7.82 Improvements in energy efficiency are not only beneficial in reducing carbon emissions, but through reduced energy costs help to reduce fuel poverty (generally defined as when a household needs to spend more than 10% of its income on fuel to maintain satisfactory heating).

Hillingdon Homes

7.83 Hillingdon's council housing has been managed since 2003 by its Arms Length Managing Organisation Hillingdon Homes. Hillingdon Homes commissioned a stock condition survey that was undertaken in 2007.

7.84 The majority of dwellings in the Hillingdon Homes estate are flats (52%) compared to 48% of dwellings, which are houses. The most common dwelling type is low-rise flats (27%) followed by semi-detached or large terraced houses (24%). The housing stock is generally newer than that of the private sector, with the majority built post-1945.

7.85 The majority of the housing stock is well insulated and there is continued expenditure to increase the energy efficiency of the stock, primarily through window improvements and replacement of boilers. The average SAP rating of the housing stock is 74.5.

7.86 Hillingdon Homes aims to ensure good quality housing that takes into account environmental sustainability, and has developed Design and Technical Briefs on sustainability, and on energy efficiency and affordable warmth for utilisation in the carrying out of routine maintenance and in the design of new projects to improve the stock. Where funding allows Hillingdon Homes will seek to use new technologies to reduce carbon emissions.

Housing associations and Registered Social Landlords (RSLs)

7.87 A number of housing associations and RSLs operate in the borough. In general the stock owned by these is modern and relatively energy efficient. The focus for these dwellings is therefore not on making improvements, but on raising the awareness of tenants about energy conservation and efficiency. Hillingdon continues to work with housing associations in the borough to encourage improvements where necessary and raise awareness amongst tenants.

Solar thermal panel for hot water heating on a house in Hillingdon

Actions

Ongoing

- Improve the energy efficiency of the council's own housing, and make use of grants and other schemes to do the same for private sector housing, prioritising households affected by fuel poverty.
    - Continue the existing work programme of window and boiler replacement to achieve an average SAP rating of 75 for the council's own housing stock by 2010 and 76 by 2011; and
    - Continue to undertake maintenance and improvements in accordance with the Hillingdon Homes Design and Technical Briefs on Sustainability and on Energy Efficiency and Affordable Warmth.
- Promote the uptake of energy efficiency measures including renewable energy technologies to all households.
    - Deliver the council's Warm Zone scheme to provide grants for home insulation and heating to various households; and
    - Work with the London Collaborative to develop new initiatives to address reducing the carbon emissions of existing housing in the borough.
- Continue to seek improvements in energy efficiency to the privately rented housing stock through liaising with landlords via the Landlords Forum including promotion of the Warm Zone scheme.
- Continue to work with Housing Associations and Registered Social Landlords in the borough to encourage the delivery of awareness raising programmes for tenants as well as improvements to the energy efficiency of the housing stock where necessary.
- Provide 'energy bingo' sessions during National Warm Homes Week at day centres across the borough as an effective way of engaging with vulnerable groups to disseminate practical energy advice.
- Continue to promote the council's Energy Advice DVD at relevant events.

Short term

- Ensure that low income consumers have access to independent advice on the competitive energy market to avoid mis-selling and allow low income customers to access cheap energy.

- Promote the uptake of energy efficiency measures including renewable energy technologies to all households.
    - Develop a programme that provides greater access to advice and installation of renewable energy technologies including solar thermal, photovoltaic panels and ground source heat pumps.
    - Develop an awareness raising campaign that includes a mechanism to provide grants information and advice to the general public on energy efficiency.
- Implement the 'At Home with Energy' programme in the borough's schools, which uses smart meters and energy education to encourage energy conservation at home.

What you can do:

- There are lots of easy things that together can have a big impact on your home energy use, for example:
    - Turn your heating down by 1°C;
    - Wash your laundry at 30°C;
    - Always turn off lights when you leave a room;
    - Use low energy lightbulbs;
    - Don't leave appliances on stand-by;
    - Make sure your boiler is serviced regularly, which will ensure it runs efficiently. If it is in need of replacement, choose a condensing boiler; and
    - If your house has a loft or walls with cavities make sure these are insulated to a minimum of 270mm.
- Generate some of your own energy through the installation of renewable energy technologies such as solar thermal or photovoltaic panels.

Information and support:

- Information on how to reduce your carbon emissions and save on energy costs in your home and information on available grants:

  Energy Savings Trust http://www.energysavingtrust.org.uk/

- Obtain an energy assessment of your home and suggestions on how the efficiency could be improved, along with the likely cost. The service also offers advice on commissioning the necessary work and can manage the process with your agreement:

  The Green Homes Concierge http://www.greenhomesconcierge.co.uk/

New developments

Objective

To ensure that new developments in the borough mitigate against and adapt to climate change through utilising sustainable design and construction methods and incorporating renewable energy.

Context:

7.88 Buildings are responsible for approximately 40% of the carbon emissions in the UK. The potential carbon emissions associated with buildings can however be significantly reduced through their design, materials and supply of energy.

7.89 In recognition of the significant contribution that housing makes to the UK's carbon emissions, the government has outlined a target under its policy document 'Building a Greener Future' (2006) that all new homes will be zero carbon from 2016.

7.90 In 2006 the government also launched the Code for Sustainable Homes. The Code measures the sustainability of a new home against nine categories of sustainable design, rating the 'whole home' as a complete package. The Code uses a 1 to 6 star rating system to communicate the overall sustainability performance of a new home and sets minimum standards for energy and water use at each level.

7.91 There are no specific aspirations or targets for non-residential buildings to date, but businesses are continuing to recognise the benefits of sustainable and low carbon design in decreased energy costs, improved workplace environments and the marketing and reputational advantages available. This is being reflected in the increasing number of low carbon developments coming forward in the UK.

7.92 Whilst there are no statutory targets to be met, the government is seeking to improve the energy efficiency of public buildings and to raise public awareness of energy use. In 2008 the requirement for Display Energy Certificates (DECs) was introduced. Buildings with a floor area of over 1,000m^2 that are occupied by a public authority or institution providing a public service and therefore visited by the public are required to have a DEC. DECs show the actual energy usage of a building, and help the public see the energy efficiency of a building through a rating system from A to G, where A has the lowest CO_2 emissions (best) and G the highest CO_2 emissions (worst). A DEC is also accompanied by an advisory report that lists cost effective measures to improve the energy rating of the building.

Hillingdon's focus on new developments:

7.93 The policies outlined in the London Plan are applied to planning applications in Hillingdon. Within chapter 4A of the London Plan a suite of policies considers mitigation of and adaptation to climate change through specific policies on, for example, energy efficiency, renewable energy, flood risk and sustainable urban drainage systems.

7.94 Another key aspect of planning with relevance to climate change is travel demand management. This involves mechanisms such as directing higher density residential growth and high traffic-generating activities (such as retail) to areas with good public transport accessibility, restricting the provision of on-site car parking in new developments, requiring submission of travel plans, and promoting car clubs.

7.95 The council is in the process of developing its Local Development Framework to replace the adopted development plan, the Unitary Development Plan Saved Policies 2007. The Local Development Framework will contain specific policies in relation to mitigation of and adaptation to climate change for Hillingdon.

Actions

Ongoing

- Continue to implement the London Plan policies relating to climate change for new developments in the borough.

Short term

- Specify a minimum Code for Sustainable Homes level for new housing as part of the emerging Local Development Framework.
- Prepare and publish on the council website an advisory note for developers on best practice in design that is adaptable to climate change by Summer 2011.
- Ensure that schools in the Building Schools for the 21st Century programme and properties within the council's Asset Management Strategy utilise good practice in sustainable design and construction.

Green roofs at Ruislip High School

Information and support:

- The Mayor's Supplementary Planning Guidance on Sustainable Design and Construction sets out how sustainability should be incorporated into new developments:

  http://www.london.gov.uk/mayor/strategies/sds/sustainable_design.jsp

- Guidance and information on the Code for Sustainable Homes:

  http://www.communities.gov.uk/planningandbuilding/buildingregulations/legislation/englandwales/codesustainable/

Procurement

Objective

To ensure climate change issues are embedded into the council's procurement strategy and processes.

Context:

7.96 Local authorities are large consumers of both products and services. There is great potential to minimise environmental and climate change impacts, and bring positive benefits to the social and economic wellbeing of the local and wider community, if these elements are assessed and incorporated within procurement processes.

7.97 The source and materials of products purchased can have sustainability impacts, for example buying timber from sustainably managed forests or buying only recycled paper products.

7.98 Correspondingly the purchasing of services can be undertaken in a more sustainable way by considering factors such as delivery options and contracts to encourage suppliers to operate more sustainable policies themselves.

7.99 The government has recognised the importance of procurement in achieving better environmental and social outcomes. In the UK National Procurement Strategy for Local Government (2003), it was stated that all councils should build sustainability into their procurement strategy, processes and contracts. Additionally, in the UK Sustainable Development Strategy (2005), the government outlines its ambition to be recognised amongst the leaders in sustainable procurement across EU member states by 2009.

Hillingdon's focus on procurement:

7.100 Some work has previously been undertaken by the council to develop a Sustainable Procurement Strategy. However this needs to be updated to include a focus on climate change issues and there is also a need to ensure that this strategy is reflected in procurement processes and outcomes organisation-wide.

7.101 The council is a signatory of the Mayor's Green Procurement Code and aims to attain a higher level of the Code as the council's sustainable procurement procedures continue to improve.

7.102 It is acknowledged that there is scope for quick wins to be exploited and these will be investigated concurrently with further work on the council's Sustainable Procurement Strategy.

Actions

Short term

- Update the council's Sustainable Procurement Strategy to include environmental and climate change policies with the aim of minimising the environmental impacts of the products and services purchased and to contribute to reducing the council's carbon emissions by 2010.
- Include criteria in the council's tender documents to ensure sustainability is an integral part of all tender processes by 2010.
- Review the procurement of products within the council's Facilities Management including Oasis Café and cleaning materials.
- Make local use of materials through coppicing and other woodland management activities at Ruislip Woods National Nature Reserve and other open spaces.
- Review the types of seats, benches and other street furniture used in the borough and where practicable seek to use furniture from local, recycled or reclaimed materials.
- Reduce the use of peat in the borough's gardens and open spaces by purchasing peat-free mulches, soil improvers and fertilisers.
- Begin a review process of identified potential quick wins by Summer 2009 including the following:
    - Waste management: Procurement of recycling and waste black bags. Investigate if there is a more sustainable, viable alternative;
    - Water: Replacement of bottled water at the civic centre with filtration devices in kitchens;
    - Stationery: Office Depot stationery supplier. Option to activate a 'green button' on the website, ensuring only recycled and 'green' products are available to purchase;
    - Furniture: Undertake analysis of existing suppliers to ensure they have Forestry Stewardship Council (FSC) certification; and
    - Clothing: Undertake analysis of current suppliers regarding environmental sustainability and social responsibility.

Longer term

- Ensure all staff are aware of the issues regarding sustainable procurement by incorporating this into training and induction programmes.

What you can do:

- When shopping, look at where products are made and what materials have been used. Where possible support local producers and sustainable materials.
- Invest in long lasting and durable products over disposable ones.
- Help to sustain and increase the markets for recycled products by buying these when possible and practical. Some commonly available examples are: recycled paper and glass products and recycled plastic rubbish bags.
- If you have a baby try re-usable/washable cloth nappies instead of disposables.
- Re-use of products is better for the environment than recycling. Use charity shops, or the eBay and freecycle websites to buy or dispose of clothes, household goods, books and DVDs etc in a sustainable way.
- Choose wood products such as furniture and tissues that bear the FSC logo – this means that the wood is from sustainable sources.
- If you buy products imported from third world countries, look for the Fair Trade logo, this means that the producers have been paid a fare wage for their work.
- When buying new electrical and white goods, look at the energy efficiency rating and where possible choose efficient appliances.
- Take your own bag when shopping and try and avoid products with excessive packaging. Buying in bulk when convenient helps to minimise waste packaging and is often cheaper too.

Information and support:

- Free support service for London based organisations committed to reducing their environmental impact through responsible purchasing:

  Mayor of London's Green Procurement Code.
  http://www.greenprocurementcode.co.uk/

8 Monitoring and Review

8.1 This Strategy will be periodically reviewed and updated when considered necessary to reflect changing government guidance, progress by the council on the identified actions and technological advances. This will ensure that the Strategy remains relevant and timely in what is a fast developing area.

8.2 Monitoring will also be undertaken to ensure that the Strategy is delivering its objectives. Targets have been developed that correspond to each of the Strategy's key objectives and performance against these targets will be measured. The council's own target of 40% carbon emission reductions from its own operations will be monitored through the Carbon Trust Local Authority Carbon Management Programme and emissions reductions will also be quantified year on year through the National Indicator NI185 (percentage CO_2 reduction from Local Authority operations) which the council has included as a 'below the line' target within it's Local Area Agreement (LAA). Also within the council's LAA is NI 192 (household waste reused, recycled and composted) and performance against this target will be measured year on year. Additionally it will be possible to track progress on achieving borough-wide emission reductions through the data collated annually by DEFRA for the purposes of NI186 (per capita CO_2 emissions in the Local Authority area).

9 Appendices

Summary of actions

Actions currently being implemented:

Actions

Community leadership

- Participate in the Carbon Trust Local Authority Carbon Management Programme.
- Progress the Hillingdon Improvement Programme projects on waste and energy.
- Progress identified projects to improve energy efficiency within council buildings and utilise renewable energy:
  - Installation of synchronisation equipment, gas fired generator and investigation of renewable energy options at the civic centre;
  - Investigate the feasibility of opportunities for hydrogeneration of energy; and
  - Investigate the feasibility of the installation of voltage optimisation equipment.

Raising awareness

- Continue to provide an effective energy advice service that reaches the most vulnerable and socially excluded members of the community, through both direct contact and by informing those who regularly come into contact with the target groups, for example health and social care workers.
- Provide 'energy bingo' sessions during National Warm Homes Week at day centres across the borough as an effective way of engaging with vulnerable groups to disseminate practical energy advice.
- Continue to promote the council's Energy Advice DVD at relevant events.
- Continue to provide and promote the borough's allotments and the benefits of allotment-holding to our residents.

Adapting to impacts

- Continue to implement relevant London Plan policies relating to adaptation of climate change.

- Continue to protect and enhance the borough's green spaces and open land and work to create new open spaces in recognition of their role in adaptation to climate change as well as their amenity and recreation value and benefits to biodiversity.
- Continue to retain and seek to increase the borough's level of vegetation, through tree planting and maintenance.
- Encourage new developments to take into account adaptation to climate change in their design, through minimising the risk of overheating, minimising impervious surfaces, incorporating sustainable urban drainage systems where appropriate and including water conservation devices.

Reducing emissions:

Transport

- Bid annually for and implement sustainable transport initiatives across the borough through the Local Implementation Plan.
- Continue to develop and implement a programme of travel plans for existing businesses and large organisations (such as hospitals and further education establishments), either individually or area-based in partnership with Transport for London.
- Annually update the Sustainable Modes of Travel Strategy for schools.
- Continue to monitor the effect of School Travel Plans in reducing the volume of CO_2 emissions against existing baselines.
- Continue to oppose airport capacity expansion due to the potential adverse impacts on the highway network and air quality.

Waste

- Develop the council's Hillingdon Improvement Programme (HIP) waste and energy initiatives including:
  - Increasing provision of recycling facilities to an additional 100 housing estates in the borough;
  - Promoting and increasing awareness of home composting through compost bin promotion to residents;
  - Carrying out an educational pilot with residents to increase participation in recycling;

- Developing an outreach project targeting hard-to-reach groups to increase their recycling;
- Working to improve recycling capacity at each of the borough's civic amenity sites; and
- Investigating the feasibility of energy generation from waste.

- Lead on the development of the West London Waste Plan, which will look at how West London can accommodate the waste it produces in a sustainable manner. The plan will give priority to waste reduction, recycling and composting.

Businesses

- Continue existing work schemes that promote upskilling the borough's workforce to decrease the proportion of workers needed from outside the borough to fill local jobs, thereby reducing commuter travel.
- Continue to work with our sub-regional transport partnerships (WestTrans and SWELTRAC) to:
  - Encourage the adoption of travel plans by existing major employers in the borough; and
  - Encourage improved fleet management practices as a result of freight audits of businesses in the borough.

Existing housing

- Improve the energy efficiency of the council's own housing, and make use of grants and other schemes to do the same for private sector housing, prioritising households affected by fuel poverty.
  - Continue the existing work programme of window and boiler replacement to achieve an average SAP rating of 75 for the council's own housing stock by 2010 and 76 by 2011; and
  - Continue to undertake maintenance and improvements in accordance with the Hillingdon Homes Design and Technical Briefs on Sustainability and on Energy Efficiency and Affordable Warmth.
- Promote the uptake of energy efficiency measures including renewable energy technologies to all households.

- Deliver the council's Warm Zone scheme to provide grants for home insulation and heating to various households; and
- Work with the London Collaborative to develop new initiatives to address reducing the carbon emissions of existing housing in the borough.

- Continue to seek improvements in energy efficiency to the privately rented housing stock through liaising with landlords via the Landlords Forum including promotion of the Warm Zone scheme.
- Continue to work with Housing Associations and Registered Social Landlords in the borough to encourage the delivery of awareness raising programmes for tenants as well as improvements to the energy efficiency of the housing stock where necessary.
- Provide 'energy bingo' sessions during National Warm Homes Week at day centres across the borough as an effective way of engaging with vulnerable groups to disseminate practical energy advice.
- Continue to promote the council's Energy Advice DVD at relevant events.

New developments

- Continue to implement the London Plan policies relating to climate change for new developments in the borough.

Short to medium term actions (to be undertaken within 1-3 years):

Actions

Community leadership

- Adopt a Sustainable Energy Policy for the council by 2010.

Raising awareness

- Develop a comprehensive set of webpages for the council website with information on climate change and sustainability, including information about council initiatives and links to relevant external organisations and initiatives including grants and funding sources by 2010.
- Set up a network of 'green champions' within the council by Summer 2009 and in the community by 2011 to increase education and engagement on climate change issues.
- Implement the 'At Home with Energy' programme in the borough's schools, which uses smart meters and energy efficiency education to encourage energy conservation at home.
- Develop an energy efficiency awareness raising campaign that includes a mechanism to provide grants information and advice to the general public.
- Develop an awareness raising campaign to encourage waste minimisation, greater use of composting and higher recycling rates amongst borough residents and businesses.

Adapting to impacts

- Compile a Local Climate Impacts Profile for the borough by 2010.
- Undertake a review of water usage across the council's estate with a view to a programme of work to minimise water consumption by 2010.
- Prepare and publish on the council website an advisory note for developers on best practice in design that is adaptable to climate change including measures to mitigate the Urban Heat Island effect by Summer 2011.
- Promote the use of water butts to residents and increase their use across the council estate where practicable, particularly on the borough's allotments and cemeteries.

Reducing emissions:

Transport

- Adopt and implement the council's Travel Plan by 2010.
- Pilot cycle rental schemes at public transport interchanges to encourage greater 'cycle to work' use.
- Reduce the number of council business trips made in private vehicles, by greater use of pool cars by 2011.
- Establish a programme of 'walking buses' for schools following on from the pilot in 2009 and develop a School Cycling Strategy and designated network.

Waste

- Make use of on-site composting in the borough's open spaces and use the resulting compost on-site to minimise landfill waste and fuel use.

Businesses

- Compile information for distribution to the borough's businesses regarding climate change issues to include sources of information, technical advice and funding by Summer 2011.

Existing housing

- Ensure that low income consumers have access to independent advice on the competitive energy market to avoid mis-selling and allow low income customers to access cheap energy.
- Promote the uptake of energy efficiency measures including renewable energy technologies to all households.
    - Develop a programme that provides greater access to advice and installation of renewable energy technologies including solar thermal, photovoltaic panels and ground source heat pumps.
    - Develop an awareness raising campaign that includes a mechanism to provide grants information and advice to the general public on energy efficiency.
- Implement the 'At Home with Energy' programme in the borough's schools, which uses smart meters and energy education to encourage energy conservation at home.

New developments

- Specify a minimum Code for Sustainable Homes level for new housing as part of the emerging Local Development Framework.
- Prepare and publish on the council website an advisory note for developers on best practice in design that is adaptable to climate change by Summer 2011.
- Ensure that schools in the Building Schools for the 21st Century programme and properties within the council's Asset Management Strategy utilise good practice in sustainable design and construction.

Procurement

- Update the council's Sustainable Procurement Strategy to include environmental and climate change policies with the aim of minimising the environmental impacts of the products and services purchased and to contribute to reducing the council's carbon emissions by 2010.
- Include criteria in the council's tender documents to ensure sustainability is an integral part of all tender processes by 2010.
- Review the procurement of products within the council's Facilities Management including Oasis Café and cleaning materials.
- Make local use of materials through coppicing and other woodland management activities at Ruislip Woods National Nature Reserve and other open spaces.
- Review the types of seats, benches and other street furniture used in the borough and where practicable seek to use furniture from local, recycled or reclaimed materials.
- Reduce the use of peat in the borough's gardens and open spaces by purchasing peat-free mulches, soil improvers and fertilisers.
- Begin a review process of identified potential quick wins by Summer 2009 including the following:
    - Waste management: Procurement of recycling and waste black bags. Investigate if there is a more sustainable, viable alternative.
    - Water: Replacement of bottled water at the civic centre with filtration devices in kitchens.
    - Stationery: Office Depot stationery supplier. Option to activate a 'green button' on the website, ensuring only recycled and 'green' products are available to purchase.

- Furniture: Undertake analysis of existing suppliers to ensure they have Forestry Stewardship Council (FSC) certification
- Clothing: Undertake analysis of current suppliers regarding environmental sustainability and social responsibility.

Aspirational or longer term actions:

Actions

Awareness raising

- Develop a training and information package to raise awareness of energy and climate change issues targeted at employees of organisations in the borough.
- Engage with council youth workers to organise an environment-themed youth event.
- Promote home water conservation through the use of water saving fittings and appliances, the use of 'hippos' in toilet cisterns and water butts.
- Promote alternatives to air conditioning to combat overheating.

Reducing emissions:

Transport

- Increase the availability of car clubs, especially in new residential developments.
- Continue to work with our sub-regional transport partnerships (WestTrans and SWELTRAC) to seek funding for borough-wide travel surveys to gain a more in-depth understanding of travel patterns with a view to improving or extending sustainable transport networks on high demand routes.
- Improve, create and enhance green spaces and create high quality linkages between them in order to provide a network of green spaces or ‘green infrastructure’.
- Develop a network of 'all weather' paths to allow green spaces to be used in wet conditions and thereby encouraging walking and/or cycling.

Businesses

- Seek funding to work with businesses in Hillingdon to reduce their carbon footprint and improve the energy efficiency of their buildings.
- Initiate a programme of engagement with businesses to assess sustainability work being undertaken, share and encourage best practice, and to support businesses to become more sustainable.

Procurement

- Ensure all staff are aware of the issues regarding sustainable procurement by incorporating this into training and induction programmes.

Glossary

Adaptation	Involves taking steps to ensure that we are able to adapt to the changes in the climate already occurring and that are projected to continue to occur over the next 100 years, due to the emissions already in the atmosphere.
Carbon Dioxide	One of the greenhouse gases and the gas most commonly measured as an indicator of climate change.
Carbon emissions	This is an abbreviation of carbon dioxide emissions and is commonly used in reference to mitigating climate change. Reducing carbon emissions is used generically to represent acting on climate change by reducing energy use or fuel use.
Carbon footprint	The sum of the greenhouse gas emissions produced directly or indirectly by the activities of an individual/business/organisation within a certain timeframe (often a year) which is usually expressed in equivalent tonnes of carbon dioxide.
Energy efficiency	Describes reducing energy wastage and can refer to using technologies such as improving insulation or behaviours such as ensuring that unused lights and appliances are switched off.
Fossil fuels	Fuels such as coal, oil and natural gas that are hydrocarbon deposits formed from the decayed matter of plants or animals and found in the earth's crust. When burned these fuels contribute to global warming as they produce greenhouse gases such as carbon dioxide.
Global warming	The increase in the world's temperature caused by the increase in the amount of greenhouse gases in the atmosphere.
Greenhouse effect	A natural phenomenon whereby heat from the sun is trapped by the gases that form the earth's atmosphere. The trapped heat warms the surface of the earth. Without this effect the earth would be more than 30 degrees cooler and uninhabitable.
Greenhouse gas	A gas that contributes to the greenhouse effect and therefore global warming such as methane or carbon dioxide.
Intergovernmental Panel on Climate Change	The IPCC was established to provide the decision-makers and others interested in climate change with an objective source of information about climate change. The IPCC does not conduct any research nor does it monitor climate related data or parameters. Its role is to assess on a comprehensive, objective, open and transparent basis the latest scientific,

	technical and socio-economic literature produced worldwide relevant to the understanding of the risk of human-induced climate change, its observed and projected impacts and options for adaptation and mitigation. The IPCC is a scientific intergovernmental body set up by the World Meteorological Organization (WMO) and by the United Nations Environment Programme (UNEP).
Kyoto Protocol	The Kyoto Protocol is an international agreement linked to the United Nations Framework Convention on Climate Change. The major feature of the Kyoto Protocol is that it sets binding targets for 37 industrialized countries and the European community for reducing greenhouse gas (GHG) emissions .These amount to an average of five per cent against 1990 levels over the five-year period 2008-2012. The major distinction between the Protocol and the Convention is that while the Convention encouraged industrialised countries to stabilise GHG emissions, the Protocol commits them to do so. Recognising that developed countries are principally responsible for the current high levels of GHG emissions in the atmosphere as a result of more than 150 years of industrial activity, the Protocol places a heavier burden on developed nations under the principle of 'common but differentiated responsibilities.' The Kyoto Protocol was adopted in Kyoto, Japan, on 11 December 1997 and entered into force on 16 February 2005. 183 Parties of the Convention have ratified its Protocol to date.
Low carbon	A development that is highly energy efficient and will have a low level of carbon emissions associated with its operation. A commonly accepted definition is a development that achieves a 50% reduction in energy use than an average development over a year.
Methane	A greenhouse gas around 20 times more potent than CO_2 that is produced through anaerobic decomposition (decomposition without oxygen) of waste such as that which occurs within landfill sites.
Mitigation	Involves seeking to limit and slow down future climate change by reducing the emissions of greenhouse gases into the atmosphere.

Nottingham Declaration	The Nottingham Declaration recognises the central role of local authorities in leading society's response to the challenge of climate change. By signing the Declaration councils pledge to systematically address the causes of climate change and to prepare their community for its impacts.
Renewable energy	Energy that is generated from natural sources that can be replenished such as the sun, wind or water.
Stern Review	The Stern Review was announced by the Chancellor of the Exchequer in July 2005. The Review set out to provide a report to the Prime Minister and Chancellor by Autumn 2006 assessing the nature of the economic challenges of climate change and how they can be met, both in the UK and globally. The Stern Review on the Economics of Climate Change, the most comprehensive review ever carried out on the economics of climate change, was published on October 30 2006 and was lead by Lord Stern, the then Head of the Government Economic Service and former World Bank Chief Economist. The key message of the Stern Review was that it will be more cost effective to act on the issue of climate change now than to deal with its consequences later.
Sustainable design and construction	Generic term which refers to the incorporation of design techniques and materials such as the following: reuse of land and materials; conservation of energy, water and materials; design that makes the most of natural systems in and around the building; measures to reduce the impact of noise and pollution; protection and enhancement of the natural environment and biodiversity.
Zero carbon	A development where over a year the net carbon emissions would be zero.