

# climate change

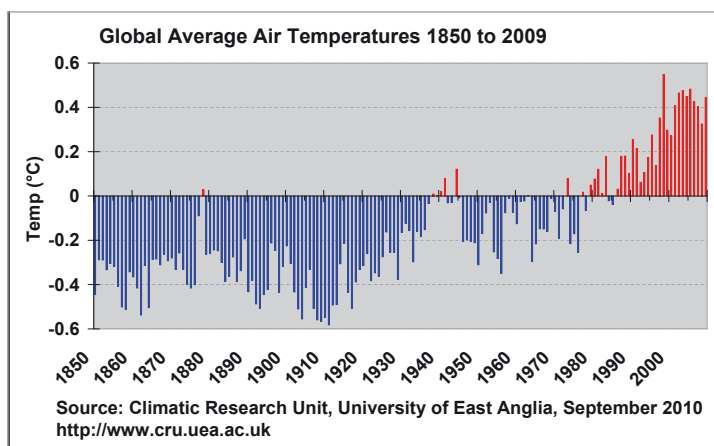


## Hertfordshire and Climate Change

Hertfordshire is being proactive in its response to the risks and opportunities presented by climate change. The county is also actively reducing its contribution to climate change.

There is evidence that the climate is changing. Global average air temperatures have risen 0.9°C since 1850, with around half of this occurring in the past 30 years.

In the UK, this warming has been accompanied by more frequent heatwaves and more intense rainfall events.<sup>1</sup>



## Climate Change Indicators

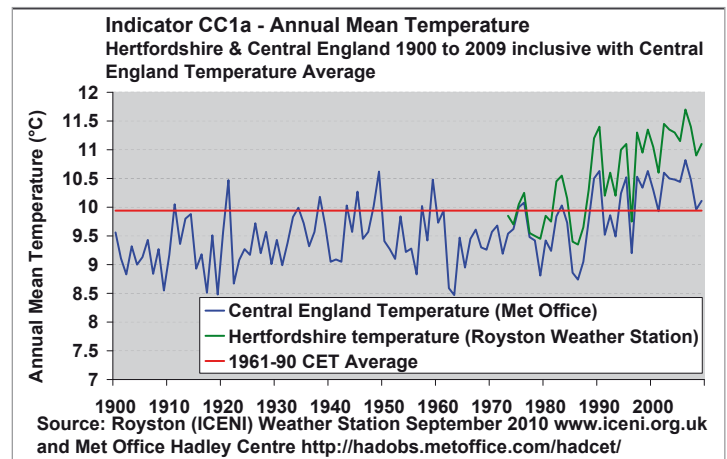
Indicators show how the climate has changed in the county and the country. Meteorological records chart changes in temperature and precipitation (rain and snow).

Hertfordshire's contribution to climate change can also be measured. Carbon dioxide (CO<sub>2</sub>) emissions from a range of activities across the county show how emissions have changed in Hertfordshire between 2007 and 2008.

### Indicator CC1a – Annual Mean Temperature

Both Hertfordshire and Central England Temperature (CET) records show a long term warming trend. However, annual mean temperatures in Hertfordshire are slightly higher than the CET. This trend may be due to the influence of warmer weather systems from the European continent or the urban heat island effect, caused by Hertfordshire's proximity to London.

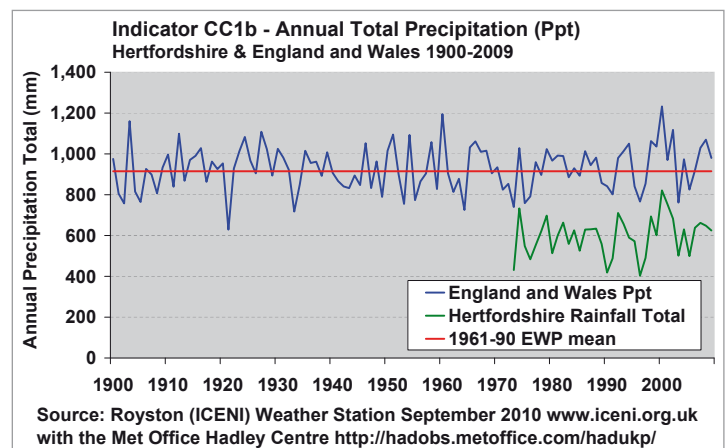
The urban heat island effect relates to increased temperatures of urban air compared to that of rural surroundings in that a dense built up environment can trap warm air and so create higher temperatures.



### Indicator CC1b – Annual Total Precipitation

There is no obvious trend in annual average precipitation levels across Hertfordshire or at the national level. Seasonal variations in precipitation may be hidden when looking at annual totals. For example, in the UK winters have become wetter, while summers have become drier. However, precipitation in Hertfordshire is lower than the national average.

Hertfordshire is located in the East of England, the driest region in England<sup>2</sup>. It is likely that climate change will increase water stress in the region.



## Hertfordshire's Contribution to Climate Change

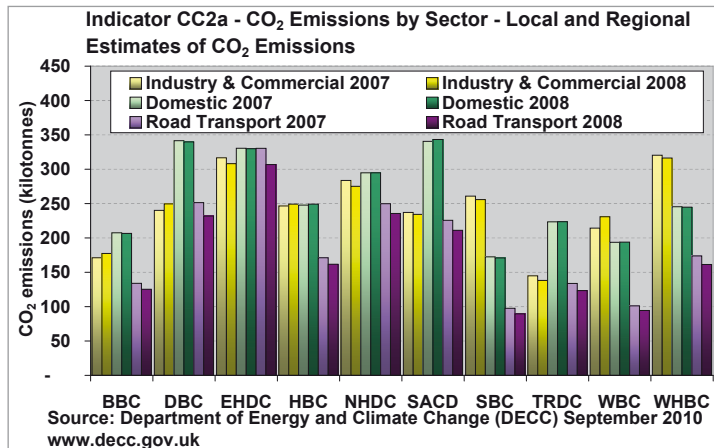
Estimates of local and regional CO<sub>2</sub> emissions from the Department of Energy and Climate Change (DECC) are used to measure CO<sub>2</sub> emissions in Hertfordshire, at the county and district level.

*Note: The data published here is not directly comparable to previous editions of the report due to ongoing development of statistical methodologies. The 2007 data presented here replaces the 2007 data reported last year and is directly comparable to the 2008 data presented alongside.*



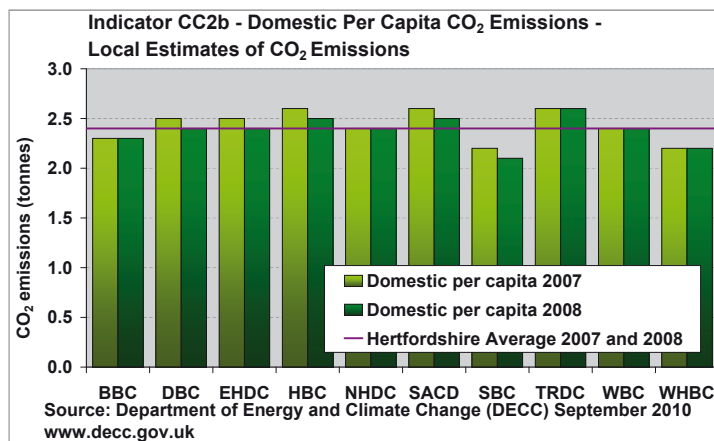
## Indicator CC2a – CO<sub>2</sub> Emissions by Sector

In 2008, Hertfordshire's overall CO<sub>2</sub> emissions were 6,773,000 tonnes, a decrease of 1.9% from 2007. The domestic sector contributed the highest proportion of CO<sub>2</sub> emissions in Hertfordshire at 38.3%. All districts, except Watford, experienced a decline in emissions from all sectors, between 2007 and 2008.



## Indicator CC2b – Domestic Per Capita CO<sub>2</sub> Emissions

Household contribution to carbon emissions in Hertfordshire is varied. In 2008 Stevenage had the lowest domestic emissions per person, at 2.1 tonnes, while Three Rivers had the highest, at 2.6 tonnes.



In 2008, the average domestic per capita CO<sub>2</sub> emissions in the East of England was 2.3 tonnes. Seven of the districts had emissions greater than this. Emissions in all districts either remained the same or decreased between 2007 and 2008.

## Indicator CC3 – Consumption-based CO<sub>2</sub> Emissions – Per Capita Carbon Footprint

There is no updated information available for this indicator, therefore no data is presented this year. However, if you would like to calculate your own carbon footprint, follow the link below:

<http://carboncalculator.direct.gov.uk/index.html>

## Future Climate Change and its Impact on Hertfordshire's Quality of Life

Climate affects our economy, health and environment. The impacts that climate change will have on quality of life in Hertfordshire will depend on how well the Government, the public, private and third sector, communities and individuals plan for and prepare for those changes.

In March 2010, the Hertfordshire UK Climate Projections (UKCP09) headlines report was produced. The report used information from the UKCP09 report, published by the Government, to identify possible changes in Hertfordshire's climate in the 21st century.

The report includes projections for future temperature and precipitation under low, medium and high emissions scenarios in the 2020s, 2050s and 2080s.

The headlines report suggests that the following changes may occur in Hertfordshire in the 2020s across all emissions scenarios:

- Annual average temperatures may increase by 1-2°C
- Summer rainfall could decrease by 7%
- Precipitation on the wettest day in winter may increase by 6%.

It is expected that these changes will become more pronounced in the 2050s and 2080s.

### Impacts of severe winter weather in Hertfordshire Snow in Winter 2008/09

February 2009 saw the worst winter weather in 20 years. A series of snowfalls over 12 days and nights occurred, with some intervening temperatures well below freezing. The cold snap ended with a period of heavy rain and rapid thaw which led to flooding and further disruption.

Damage to the highway was caused by the extent and cumulative impact of the weather on the road network. The 2009 cold snap did more than a year's worth of damage over a two week period. Impacts on highways included:

*continued on next page*

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- More than 15,000 potholes reported and repaired in a six-week period at a cost of £1.1m
- Road salting outings were 70% above average
- A relative increase of 54% of roads in poor condition over a two week period
- Accelerated deterioration of the highway amounted to around £16m over and above normal spend.

## Snow in Winter 2009/10

Winter 2009/10 saw the coldest weather conditions in nearly 30 years and significant snowfall for Hertfordshire, particularly around 18 December 2009 and 6/7 January 2010. This had the following effects:

- At least 300 out of c.530 schools were closed on 18 December 2009 due to heavy snow fall - closures persisted on and off throughout the first two weeks of January
- Identified damage amounting - at the very least - to a cost of £20m, but conservative estimates expect this to double.



Road damage caused by severe winter weather

## Responding to Climate Change

Limiting Hertfordshire's contribution to future climate change by reducing CO<sub>2</sub> emissions is important. The Hertfordshire Climate Change Partnership, which includes a number of key organisations, continues to work on reducing emissions throughout the whole county.

However, it is also essential for the county to prepare for the effects that the changing climate may have. Hertfordshire County Council (HCC) has implemented a number of measures to reduce the impact of climate change on its operations and services. These actions will also contribute to improving the wider community's ability to adapt to a changing climate.

Responding to climate change is also a priority for Government. The Climate Change Act (2008) requires local authorities to reduce their CO<sub>2</sub> emissions as well as prepare for the possible effects of climate change.

## Climate change risk assessment in Hertfordshire County Council

In March 2010, a full climate change risk assessment of key services and critical service delivery was completed for the county council. The risk assessment used the UKCP09 projections for Hertfordshire and the council's standard risk assessment methodology.

The risk assessment identified the priority threats, opportunities and risks within the council and makes recommendations for action that can be taken to address these risks. The work was shared with the district and borough councils and the NHS.

As a result of this, HCC now has:

- a corporate Climate Change Risk Register
- an emerging awareness of climate risk across the whole organisation
- service areas beginning to incorporate climate risks into their own risk registers and starting to identify control measures
- service areas beginning to incorporate climate change risk into their policy making
- corporate commitment to tackling the impacts of climate change.

The full risk assessment can be found here:

[www.hertsdirect.org/envroads/environment/greenissues/climatechange/whatwearedoingaboutcclicchs](http://www.hertsdirect.org/envroads/environment/greenissues/climatechange/whatwearedoingaboutcclicchs)

## Building Futures: Helping Hertfordshire adapt to climate change

Practical advice on adapting Hertfordshire's built environment to climate change is now available via the Building Futures website.

A new Climate Change Adaptation module is available that offers practical guidance on how Hertfordshire's built environment can be adapted to present and future climate change risks. It provides advice on how risks can be identified and assessed, including a checklist to be used at the design stage of new development and refurbishment projects; a comprehensive range of solutions that can be applied to manage those risks; and a number of case studies showcasing how the solutions can be employed.

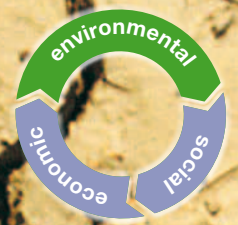
To access the module and other advice on sustainable construction and design, visit the website at:

[www.hertslink.org/buildingfutures](http://www.hertslink.org/buildingfutures)

## Hertfordshire's Performance on Climate Change

National indicators (NI) have been used over the last two years to measure the progress made on reducing carbon emissions and preparing for climate change. There are three indicators that relate to climate change, NI 185, NI 186 and NI 188.

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## NI 185 - Percentage CO<sub>2</sub> reduction from local authority operations

NI 185 requires HCC and the ten district councils to report on CO<sub>2</sub> emissions reduction from local authority operations. This includes emissions from the property and transport used to deliver council services, including those that are outsourced.

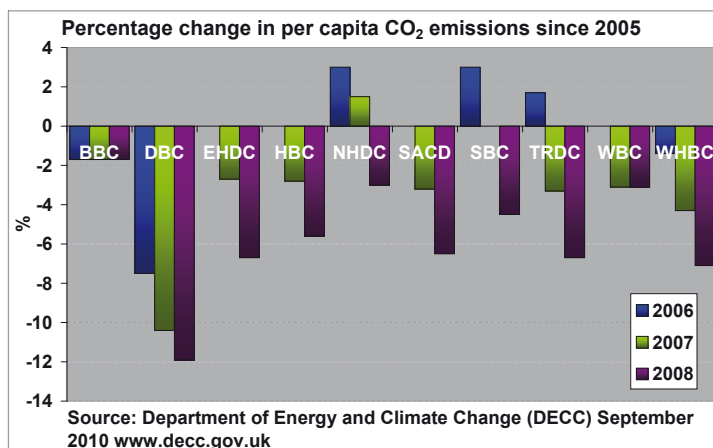
Currently, there are two years of NI 185 data, for 2008/09 and 2009/10, presented in the table below.

Note: The data published here is not directly comparable to previous editions of the report due to the availability of new and more accurate data. The 2008/09 data presented here replaces the 2008/09 data reported last year and is directly comparable to the 2009/10 data presented alongside.

Local Authority	CO <sub>2</sub> emissions (tonnes)		%age Change
	2008/09	2009/10	
Broxbourne	4,089	3,801	-7.0%
Dacorum	6,582	6,024	-8.5%
East Herts	4,519	4,963	9.8%
Hertfordshire (County)	170,491	146,757	-13.9%
Hertsmere	8,282	9,767	17.9%
North Herts	4,812	4,959	3.1%
St Albans	5,692	5,393	-5.3%
Stevenage	6,059	6,255	3.2%
Three Rivers	1,824	2,536	39.0%
Watford	3,783	3,780	-0.1%
Welwyn Hatfield	4,405	5,167	17.3%
<b>Hertfordshire LA Total</b>	<b>220,538</b>	<b>199,402</b>	<b>-9.6%</b>

There have been reductions in CO<sub>2</sub> emissions in five councils, with the largest decrease, 13.9%, achieved by HCC. The largest increase was 39.0%, in Three Rivers. Overall there has been a 9.6% reduction.

## NI 186 - Per capita CO<sub>2</sub> emissions in the local authority area



NI 186 measures CO<sub>2</sub> emissions from different sectors within a local authority's boundary. The data is collected by Government on behalf of local authorities and is published on an annual basis.

There is a Local Area Agreement target to reduce NI 186 emissions in Hertfordshire by 9.1% between 2005 and 2011. Currently, the county is on track to meet this target, as there has been a 7.5% reduction in per capita CO<sub>2</sub> emissions between 2005 and 2008.

## NI 188 - Adapting to Climate Change

This indicator measures how prepared local authorities are for climate change.

HCC and the district councils report annually on their level of preparedness. There are 5 levels of performance, graded 0 to 4. For more information on this indicator and to find out what each of the levels represent visit: [www.defra.gov.uk/environment/climate/action/local-authorities.htm](http://www.defra.gov.uk/environment/climate/action/local-authorities.htm)

Local authorities have reported on this indicator for two years, 2008/09 and 2009/10. The levels reported for Hertfordshire councils are shown in the table below.

Local Authority	Adaptation Level	
	2008/09	2009/10
Broxbourne	0	1
Dacorum	0	0
East Herts	0	0
Hertfordshire (County)	1	1
Hertsmere	1	1
North Herts	0	0
St Albans	0	1
Stevenage	0	1
Three Rivers	0	1
Watford	0	1
Welwyn Hatfield	1	1

Some district councils have improved by one level, however, even those that reported the same level have made some progress.

In November 2010, DEFRA informed local government that the requirement to report to central Government on this indicator has ceased.

<sup>1</sup> Committee on Climate Change, 'How well prepared is the UK for climate change?' report: [www.theccc.org.uk/reports/adaptation](http://www.theccc.org.uk/reports/adaptation)

<sup>2</sup> Sustainability East, 'Water Efficiency in Development' report: [www.sustainabilityeast.org.uk/index.php?option=com\\_docman&task=cat\\_view&gid=25&Itemid=25](http://www.sustainabilityeast.org.uk/index.php?option=com_docman&task=cat_view&gid=25&Itemid=25)