



Little change in energy use during 2006

As politicians and the media focussed more on climate change and we experienced another year of rising gas and electricity bills, energy became a major concern for Hertfordshire's businesses and households in 2008.

Energy lies at the core of sustainability issues. In addition to the impact that mining and pollution has on the planet in pursuing fossil fuels, carbon dioxide is released as they are burnt to produce energy that contributes to climate change. Consumption is also a financial and moral concern. As these fuels become scarcer prices rise, so does fuel poverty.

Fuel Poverty

"Where a household cannot afford to keep warm, damage to the health of those living in cold homes can affect their quality of life. The old, children, and those who are disabled or have a long-term illness are especially vulnerable."

Department for Environment and Rural Affairs

Whilst help is offered by organisations in the county, reducing energy consumption and the production of renewable energy is key to lowering emissions. Progress of the latter remains slow, however, in comparison to the rest of the region. In the interim it is important to monitor use. This year we use rounded figures with the same methodology as 2007.

Energy Act 2008

Having received Royal Assent in November 2008, the Energy Act sets out the key objectives for the UK energy sector. These include:

- the reduction of carbon dioxide emissions
- maintaining the security of energy supplies
- ensuring affordable energy through competitive markets.

To meet these objectives, the Act sets out a wide range of measures including increasing the amount of energy produced from renewable energy sources, the installation of smart meters (initially for medium-sized businesses, but potentially for small businesses and households in the future) and the introduction of tariffs to encourage the growth of small-scale, low carbon electricity generation.

The Act also paves the way for Carbon Capture and Storage - a technology currently in development that prevents the release of carbon dioxide emissions from power stations that run on fossil fuels.

Energy Consumption in the Residential Sector

Residential gas figures show reduced consumption in all districts, compared to 2005, creating an overall decline in the county of over 3%. Six districts saw a small fall in domestic electricity consumption whilst the remainder consumed slightly more than in 2005, so there remains little change in the amount used.

Table 1: 2006 Gas consumption and carbon dioxide produced as a result in each district in the residential sector

District	Gas Consumption GWh	CO ₂ Tonnes Produced
Broxbourne	590	106,654
Dacorum	1,033	186,747
East Hertfordshire	866	156,649
Hertsmere	763	137,895
North Hertfordshire	814	147,211
St Albans	1,081	195,433
Stevenage	524	94,762
Three Rivers	695	125,660
Watford	602	108,928
Welwyn Hatfield	753	136,237
County	7,721	1,396,176

Source: Consumption data: BERR April 2008
CO₂ values: DEFRA September 2008. 1 GWh = 100,000 kWh

Table 2: 2006 Electricity consumption and carbon dioxide produced as a result in each district in the residential sector

District	Electricity Consumption GWh	CO ₂ Tonnes Produced
Broxbourne	186	101,608
Dacorum	283	154,317
East Hertfordshire	309	168,707
Hertsmere	204	111,220
North Hertfordshire	253	138,048
St Albans	273	149,159
Stevenage	144	78,738
Three Rivers	180	98,393
Watford	161	88,016
Welwyn Hatfield	203	110,926
County	2,197	1,199,131

Source: Consumption data: BERR April 2008
CO₂ values: DEFRA September 2008. 1 GWh = 100,000 kWh

Energy Consumption in the Commercial Sector

Commercial sector gas consumption fell by 12%, with Dacorum seeing a large drop in consumption (over 50%) which is probably due to the closure of a paper mill in Hemel Hempstead. As with residential consumption, commercial use of electricity remained largely unchanged from 2005 figures.

Table 3: 2006 Gas consumption and carbon dioxide produced as a result in each district in the commercial sector

District	Gas Consumption GWh	CO ₂ Tonnes Produced
Broxbourne	179	32,342
Dacorum	288	52,162
East Hertfordshire	348	62,995
Hertsmere	328	59,286
North Hertfordshire	398	71,995
St Albans	354	64,098
Stevenage	374	67,702
Three Rivers	203	36,715
Watford	189	34,208
Welwyn Hatfield	398	72,015
County	3,061	553,518

Source: Consumption data: BERR April 2008
CO₂ values: DEFRA September 2008. 1 GWh = 100,000 kWh

Table 4: 2006 Electricity consumption and carbon dioxide produced as a result in each district in the commercial sector

District	Electricity Consumption GWh	CO ₂ Tonnes Produced
Broxbourne	210	114,801
Dacorum	321	175,092
East Hertfordshire	353	192,959
Hertsmere	318	173,610
North Hertfordshire	307	167,478
St Albans	294	160,272
Stevenage	339	185,100
Three Rivers	193	105,578
Watford	315	171,745
Welwyn Hatfield	400	218,122
County	3,050	1,664,757

Source: Consumption data: BERR April 2008
CO₂ values: DEFRA September 2008. 1 GWh = 100,000 kWh

Smart Metering

The monitoring of energy consumption usually relies on an employee of a utilities company visiting a site, reading a meter and the usage then calculated on that reading. Where it is not possible to take a reading, as is often the case, consumption will be estimated but this fails to provide accurate information to enable a measurable reduction in energy consumption.

A new metering code of practice is being introduced to enforce energy monitoring on certain meter sizes. This will provide remote access of energy consumption data in multiple time periods, typically every half hour. This offers the customer the ability to analyse a consumption profile of their site remotely from a computer. This information can then be used to identify unnecessary energy consumption and take corrective action to reduce carbon dioxide emissions.

Hertfordshire County Council has installed 'smart meters' at several of its larger offices, fire stations, libraries, schools and adult care premises to monitor the consumption of gas, electricity and water to cut costs and meet the government's stringent carbon reduction targets. Carbon and water reduction is now accurately measured and considerable. In many cases the investment has achieved a paybacks in under six months because of the energy savings. Some schools also use energy data in curriculum subjects.

Maple Grove School, Hertfordshire

Smart meters were installed at Maple Grove School in September 2008. Initial analysis of the energy data suggested the heating system was operating during the night through faulty controls. Using the energy data produced it was calculated that over £230 a month of gas was being wasted before the fault was rectified.

