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## Living in Wales 2008: Heating and Energy Measures

The Living in Wales survey is a household survey for Wales commissioned by the Welsh Assembly Government. The survey comprised household surveys for each year from 2004 to 2008 with additional property surveys in 2004 and 2008. The Living in Wales property survey involved qualified surveyors visiting some 2,700 addresses that had participated in the Living in Wales household survey.

This report provides analysis of the 2008 Living in Wales household and property data on elements relating to a household's heating and energy measures.

The household survey asked respondents about the heating method and regime and the types of insulation installed. The property survey looks at the age and type of dwelling lived in by respondents, evidence of cavity wall insulation and loft insulation. Surveyors were also asked to record the heating system installed and the heating controls available to the respondent.

New questions added in the 2008 household survey focused on the heating regime and how households pay for their energy. New sections in the 2008 property survey looked to collect evidence on households that had installed renewable energy equipment to their house. These ranged from solar panels (photovoltaic or solar water heating) to wind turbines.

This information is used by the Welsh Assembly Government to help develop programmes to improve energy efficiency, tackle fuel poverty, and reduce climate change. It helps the Welsh Assembly Government to monitor progress in achieving the statutory target to eradicate fuel poverty by 2018 and also to monitor progress and activity that will help to reduce greenhouse gas emissions in Wales in line with the targets in the Climate Change Strategy for Wales. This information is also of interest to a wide range of organisations in Wales that help to tackle fuel poverty, reduce energy bills and deal with climate change. These organisations include National Energy Action, the Energy Saving Trust, Consumer Focus, WWF Cymru and Friends of the Earth.

### Key points show:

- The use of central heating as the main form of heating has continued to increase, accounting for 91 per cent of all heating methods in 2008.
- Households renting privately, those living in older dwellings, in flats or maisonettes and in rural areas are all less likely to use central heating as the main heating method.
- There has been an increase in the use of cavity wall insulation, double glazing and energy saving light bulbs since the last property survey in 2004.
- Three-quarters of households had some or all insulation measures present in their homes. Private renters were more likely than any other tenure to have no insulation measures in their homes.

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**Next Update:** Not a regular output



## Heating method

The main form of heating is defined as the predominant system present at the household. If a household has, for example, two gas fires and two storage heaters, the primary system is the one that is present in the main living area. Since 1986 the use of central heating as the main form of heating has greatly increased.

**Table 1: Main way of heating the home (a)**

Survey Year	Method of heating				
	Central heating	Gas fire	Open fire	Electric fire	Other
1986	67	13	13	4	3
1998	87	6	4	2	1
2004	93	2	2	1	1
2008	94	2	2	1	1

Source: Welsh House Condition Surveys in 1986 and 1998, Living in Wales 2004 and 2008

(a) The figures shown for central heating include night storage heaters.

Table 1 shows the main forms of heating from property surveys between 1986 and 2008. Whilst in 1986, 67 per cent of households used central heating (including electric night storage heaters), significant use was also being made of individual gas and open fires (both at 13 per cent). By 2008, 94 per cent of households used central heating or electric night storage heaters as the main form of heating. The proportion of households using individual gas and open fires has fallen steadily over the past 22 years to two per cent each.

**Table 2: Main way of heating the home by tenure**

Tenure	2004		2008	
	Central heating	Night storage heaters	Central heating	Night storage heaters
Owner-occupied	91	3	92	3
Local authority	90	4	90	4
Housing association	85	11	90	8
Private rented	78	8	82	6
All tenures	89	4	91	4

Weighted total: 1,209,100 (2004) and 1,265,100 (2008)

Source: Living in Wales 2004 and 2008

A higher proportion of households who own their homes or rent from a local authority or housing association use central heating, compared to those who rent privately. For private renters, night storage heaters are the second most common form of room heating. For those renting privately, more use was made of fixed gas and electric heaters, open fires and portable heaters than in other tenures, similar to the trends observed in 2004.

### Age of dwelling

Central heating is present in 92 per cent of properties built after 1919 with four per cent using night storage heaters. For those properties built before 1919, 89 per cent use central heating as the main form of heating with five per cent using open fires.

### Type of dwelling

For households living in houses or bungalows, 90 per cent used central heating as the main form of room heating, compared with 79 per cent for flats and 76 per cent for maisonettes. In 12 per cent of flats and 13 per cent of maisonettes, households used night storage heaters as the main form of room heating.

### Location of dwelling

In 2008, 93 per cent of households located in urban areas had a central heating system. This compared with 82 per cent of households located in rural areas. Seven per cent of households located in rural areas stated the main method used to heat their rooms in winter was by an 'open fire or stove', compared with an average for all households of two per cent.

### Age of Household Reference Person

For households where the household reference person (HRP) was aged 16 to 64, 91 per cent used central heating as the main form of heating. For those HRPs aged 65 and over, 88 per cent used central heating as the main form of heating. This is an increase of 3 percentage points from 2004. The second most common form of heating was night storage heaters. This was present in four per cent of all households. However, for those HRPs aged 25 to 64, open fires or stoves were the second most common form of heating (3 per cent).

**Table 3: Main way of heating the home by age of HRP**

	<i>per cent</i>			
	2004		2008	
	Central heating	Night storage heaters	Central heating	Night storage heaters
16-64	91	3	91	3
Aged 65 and over	85	7	88	5

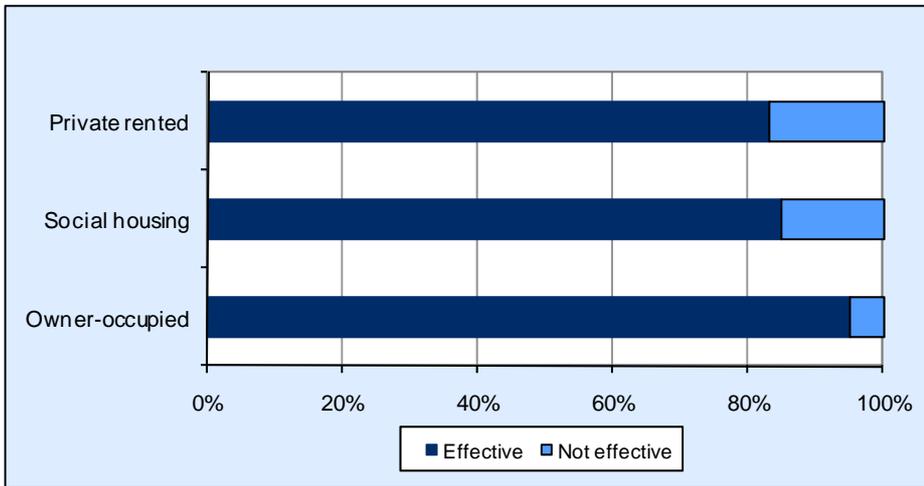
Weighted total: 1,209,100 (2004) and 1,267,600 (2008)

Source: Living in Wales 2004 and 2008

## Effectiveness of Heating

In 2008, 92 per cent of respondents stated that they thought the heating in their household was either very effective or fairly effective. This percentage varies by tenure - 95 per cent of respondents in owner occupied households stated that they thought the heating in their household was effective. This compared with 85 per cent of respondents in social housing and 83 per cent of respondents in private rented housing.

**Chart 1: Respondents' opinion on the effectiveness of their heating in winter by tenure**



'Effective' covers those who said 'very effective' and 'fairly effective' and 'not effective' covers those who said 'not very effective' and 'not at all effective'. Respondents who didn't know whether their heating in winter was effective have been excluded from this chart.

## Heating Regime

The Living in Wales survey asked respondents to indicate the times of the day that their home was occupied during the winter. This was to establish the heating regime of the household i.e. when heating needs are greatest for all households. Respondents could select more than one answer.

42 per cent of respondents stated that someone was in all day/all the time, followed by 37 per cent who stated that someone was in on weekday evenings and 34 per cent who stated that someone was in on weekend evenings.

66 per cent of non-working age households and 61 per cent of workless households stated someone was in all day/all the time compared with 16 per cent of working households. 58 per cent of households housed in social housing stated someone was in all day/all the time compared with 40 per cent in owner occupier households and 34 per cent in private rented accommodation.

## **Energy Saving Measures**

The Living in Wales survey asked respondents whether the following insulation measures had been implemented in their properties:

- roof/loft insulated;
- cavity walls insulated;
- windows double glazed (including secondary glazing);
- doors/windows draught stripped; and
- hot water tank insulated.

### **Roof Insulation**

In 2008, 91 per cent of respondents who could have roof insulation knew if their roof was insulated. Considering only those who could have insulation and knew whether their roof was insulated, 84 per cent of properties had the entire roof space insulated and a further 7 per cent had some roof insulation. This is broadly similar to the results observed in 2004, where the figures were 86 per cent and 5 per cent respectively.

Considering only those who could have insulation and knew whether their roof was insulated, 88 per cent of respondents living in local authority housing and 86 per cent of those living in housing association households had their entire roof space insulated, compared with 74 per cent of respondents who rented privately.

As part of the property survey, surveyors inspected the roof space to establish the thickness of the loft insulation installed. In 27 per cent of households, the insulation was over 200mm thick, with a further 28 per cent of households having between 125mm and 200mm of insulation. Surveyors found that 40 per cent of households had 100mm of insulation or less.

### **Cavity Wall Insulation**

The household survey asked each household if they were aware of having cavity wall insulation. One in six respondents (17 per cent) did not know whether their house had cavity wall insulation. Of those respondents who knew if they had cavity wall insulation, 14 per cent reported that their household was not of cavity wall construction.

Of those respondents who had cavity walls and knew if they were insulated, just over half (52 per cent) stated that they had all possible walls insulated and a further 4 per cent, stated that they had some of the possible walls insulated.

The property survey reported that a third of all properties had cavity wall insulation present. In properties where the construction was masonry box-wall cavity, 52 per cent had signs of cavity wall insulation.

**Table 4: Presence of full cavity wall insulation, by tenure (a)**

Tenure	<i>per cent</i>	
	2004	2008
Housing association	73	61
Local authority	56	72
Owner-occupied	40	51
Private rented	31	37
All tenures	42	52

Source: Living in Wales 2004 and 2008

Weighted total: 785,700 (2004) and 906,100 (2008)

(a) Figures only include households with cavity walls

Respondents in social housing are most likely to have full cavity wall insulation (where applicable). In 2008, 72 per cent of households in local authority housing stated that they had full cavity wall insulation compared with only 37 per cent of those who rent privately. The decrease in the percentage of housing association properties with full cavity wall insulation could be a consequence of acquiring new housing stock from local authorities through large scale voluntary transfers.

Half (51 per cent) of all owner occupied homes that could have cavity wall insulation have it throughout, which is 11 percentage points up from the figure of 40 per cent report in 2004. The smallest increase was in the private rented sector, where a 6 percentage point increase was observed (31 per cent in 2004 to 37 per cent in 2008).

## Double Glazing

Households who rented privately were most likely not to have any windows double-glazed (21 per cent). In 2008, 84 per cent of owner-occupied households had complete double-glazing, with another 10 per cent having some double glazing. For local authority rented households, the figures are 80 and 5 per cent respectively. For full double glazing, this is a 14 percentage point increase compared to 2004. For housing association households, 78 per cent had full double-glazing and 4 per cent partial double glazing. This is an increase from 2004, where the figures were 71 per cent and 7 per cent respectively.

The presence of double glazing varies with the age of the property. Around 90 per cent of post-1964 properties had full double-glazing, whereas only 68 per cent of pre-1919 properties did. In addition, the older a property is, the more likely it is to be partially double-glazed.

**Table 5: Double-glazing windows by age of property**

	<i>per cent</i>					
	2004			2008		
	All double-glazed	Some double-glazed	None double-glazed	All double-glazed	Some double-glazed	None double-glazed
Pre-1919	59	21	20	68	18	15
1919-1944	71	14	16	81	12	8
1945-1964	77	8	15	85	7	8
After 1964	84	6	10	90	5	5
All dates	74	12	15	81	10	9

Weighted total: 1,195,100 (2004) and 1,239,700 (2008)

Source: Living in Wales 2004 and 2008

## Draught Stripping

Full draught stripping of windows and doors in a property is a cheap method of insulation that will assist with keeping the heat within the property and therefore can help reduce the cost of heating. Over half of all households reported that they had some or all windows and doors draught stripped within their household.

## Hot Water Tank Insulation

Just over one third (34 per cent) of households did not have a hot water tank. Of those that did have a hot water tank, 6 per cent of households did not know whether it was insulated. Of those respondents that had a hot water tank and knew whether it was insulated, 80 per cent said their hot water tank was fully insulated.

## Energy Saving Bulbs

Just over three quarters of all households reported that they had all or some of their light from energy saving bulbs, up from just under half in 2004. Only 16 per cent said they had all of their light from energy saving bulbs, however this is an increase of 10 percentage points since 2004.

Respondents in owner-occupied households were least likely to have all their light from energy saving bulbs (15 per cent) compared with those respondents living in social housing (local authority and housing association both 20 per cent).

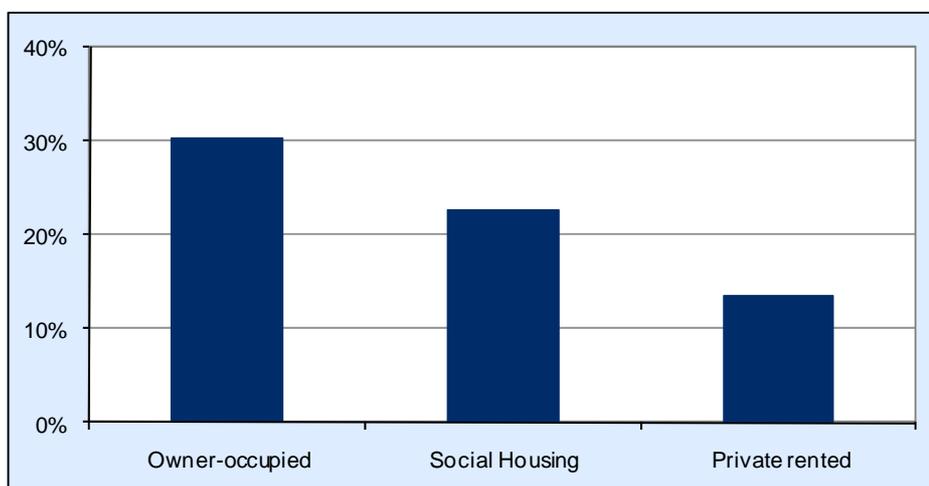
## Insulation Summary

When looking at all insulation measures, 27 per cent of households reported that they had all possible insulation measures present, whilst a further 48 per cent had some insulation measures present. In 2008, 22 per cent of respondents did not know whether some or all of the insulation measures were present.

In 2008, 26 per cent of households located in urban areas had all possible insulation measures present, compared with 32 per cent of households located in rural areas.

Only 14 per cent of households in private rented accommodation stated that they had all possible insulation measures present, compared with 23 per cent in social housing and 30 per cent in owner occupied households. Furthermore, 7 per cent of those in private rented accommodation stated they had no possible insulation measures present, compared with the all household average of 2 per cent.

### Chart 2: Households which had all possible insulation measures present, by tenure



## **Renewable energies**

For the first time in the 2008 property survey, surveyors were asked to record whether households were making use of renewable energies such as photovoltaic (PV) panels, solar water heating or micro-wind turbines, and whether these were attached to the sides or roof of the house. Figures for each individual type of renewable energy were too small to be statistically reliable to report on. However, fewer than 9,000 households (less than 1 per cent of all households) were making use of some form of renewable energy.

## Quality Information

### Methodology

- The 2008 Living in Wales Property Survey continues a series of Welsh House Condition Surveys, last conducted in 1998 and 2004. The survey provides information to the Welsh Assembly Government for the development and monitoring of housing policies directed at the repair, improvement and energy efficiency of the housing stock.
- The survey was commissioned by the Welsh Assembly Government, managed by the Local Government Data Unit ~ Wales and conducted by Ipsos MORI.
- The sample for the Property Survey is taken from the 2008 Living in Wales Household Survey. The Household Survey was used to assess the condition of the dwelling and determine its inclusion in the Property Survey sample. The householder must also give consent. The final sample was 2,741 dwellings stratified by condition, age of the dwelling and tenure. The sample only contains occupied first homes. Further details of the survey are available in the technical report <http://new.wales.gov.uk/about/aboutresearch/social/ocsropage/living-wales/technicalreports/?lang=en>
- The data from the 2008 Household Survey was linked to the data from the 2008 property survey to provide information on the dwelling and its occupants.

### Comparability

- There are no known reasons why the 2004 and 2008 Living in Wales Surveys should not be comparable. The surveys were designed to ensure comparability where possible. If this is not the case it is noted in the text of the report.
- The Living in Wales Survey methodology differs from other house condition survey methodologies in the UK and care should be taken when making comparisons between UK countries.

### Accuracy

- The overall response rate for the Property Survey was 71.6 per cent. Response rates varied by local authority from 60 per cent to 80 per cent. The figures are designed to be reported at a Wales level.
- The Living in Wales Survey is a sample survey and is subject to sampling variability.
- Figures reported in this publication have been rounded to the nearest 1,000 grossed responses and percentages rounded to the nearest whole number.
- Where comparisons have been made with 2004 data the figures may have different accuracy associated with them due to sampling.

### Timeliness

- The 2008 Living in Wales Household Survey was conducted between January and August 2008. The 2008 Living in Wales Property Survey was conducted between September and December 2008.
- The Living in Wales Survey was conducted in 2004 and similar methodology was used in previous House Condition Surveys in 1998 and 1986.
- The Living in Wales Survey has now been replaced by the National Survey for Wales for the household element. No further house condition surveys are planned at present.
- The Living in Wales Property Survey data is collected via paper forms and scanned to form an electronic database. The processes for checking the data are more complicated than for the Household Survey which is collected electronically. The Property Survey data is used in various post-survey modelling processes to obtain energy efficiency ratings and repair costs. These processes all contribute to a longer analysis period and therefore a delay in publication compared to the Household Survey results.

## Terms and definitions

**Household** – is defined as one person living alone, or a group of people (not necessarily related) living at the same address with common housekeeping – that is, sharing either a living room or sitting room or at least one meal a day.

**HRP** – Household Reference Person is defined as the person in whose name the home is owned or rented. If it is jointly owned or rented the HRP is the person who earns the most. If there are equal incomes the HRP is the eldest.

**Adult** – Any person who is not a dependent child.

**Dependent Child** – Persons aged between 0 and 15, and persons between 16 and 18 who are single, in full time education and economically inactive.

**Urban/Rural** – As defined by ONS morphology. <http://www.ons.gov.uk/about-statistics/geography/products/area-classifications/rural-urban-definition-and-la-classification/rural-urban-definition/index.html>. Urban combines the urban and town categories and rural combines the villages and isolated dwellings and hamlets.

## Further information

- Living in Wales Household Survey 2008 results  
<http://wales.gov.uk/topics/statistics/publications/livinginwales08/?lang=en>
- Living in Wales Household Survey 2008 technical report  
<http://wales.gov.uk/about/aboutresearch/social/ocsropage/living-wales/technicalreports/?lang=en>
- Living in Wales Property Survey 2008 technical report  
<http://new.wales.gov.uk/about/aboutresearch/social/ocsropage/living-wales/technicalreports/?lang=en>
- Further information on previous Living in Wales surveys is available from the Living in Wales web pages: <http://www.wales.gov.uk/livinginwalesurvey>
- If you require any further information about using the data collected by the Living in Wales survey, please contact the Welsh Assembly Government. The contact point for requests for statistics on the Living in Wales survey is:

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