7 March 2012

STATISTICAL RELEASE: EXPERIMENTAL STATISTICS

Estimates of Home Insulation Levels in Great Britain: January 2012

Key points

It is estimated that at the start of January 2012:

- There are 26.7 million homes in Great Britain. Of these 23.3 million have lofts, 18.9 million have cavity walls with the remaining 7.8 million having solid walls.
- Through Government schemes since April 2008 (the start of CERT), there have been 3.8 million lofts insulated, 2.0 million cavity walls insulated and 58,000 solid walls insulated.
- Compared with October 2011, 370,000 more properties had loft insulation, 160,000 more had cavity wall insulation and 6,000 more had solid wall insulation.
- 14.1 million homes had loft insulation of at least 125mm (60 per cent of homes with lofts).
- 11.2 million homes had cavity wall insulation (59 per cent of homes with cavity walls).
- 122,000 homes had solid wall insulation (2 per cent of homes with solid walls).

List of Tables

List of Charts

Introduction

This publication presents DECC estimates for the number of homes in Great Britain with loft, cavity wall and solid wall insulation. It gives headline estimates for the number of insulated homes and a summary of how these estimates are derived from different data sources.

DECC set out in its Departmental Business Plan 2011-15[1] that these data for cavity wall and loft insulations would be used as one of the departments key impact indicators.

Sources and methodology

The English Housing Survey (EHS) and Scottish House Condition Survey (SHCS) collect information on insulation measures in homes. The estimates in this Statistical Release use the 2008 survey data, which coincides with the start of the Carbon Emissions Reduction Target (CERT), and adds known measures delivered through Government schemes including CERT[2], the Community Energy Saving Programme (CESP)[3] and Warm Front. This is supplemented with data on house building from Communities & Local Government.

These estimates are released as Experimental Statistics while the methodology is developed further. As part of ongoing efforts to ensure these estimates are robust DECC is welcoming input into the assumptions used in the production of these estimates. Some key questions for users are provided in Appendix B. A detailed methodology and assumptions are set out in the Methodology Note[4].

Headline results

Table 1 shows the number of properties in Great Britain with cavity wall, loft and solid wall insulation (see Appendix A for explanation of measures). At the start of January 2012, 11.2 million had cavity wall insulation (59 per cent of properties with a cavity wall), 14.1 million had loft insulation (60 per cent of properties with a loft) and 122,000 had solid wall insulation.

Table 1: Insulated homes in Great Britain: April 2007 to January 2012 (Thousands)

Date		Cavity wall insulation	Loft insulation >125mm	Solid wall insulation
April 2007	r	8,500	9,500	n/a
April 2008		8,700	9,860	65
April 2009	r	9,420	10,630	73
April 2010	r	10,140	12,150	94
January 2011	r	10,530	12,860	100
April 2011		10,730	13,220	102
July 2011		10,850	13,430	110
October 2011	r	11,020	13,710	116
January 2012	p	11,180	14,080	122

[1] http://www.decc.gov.uk/assets/decc/About%20us/decc-business-plan-2011-2015.pdf

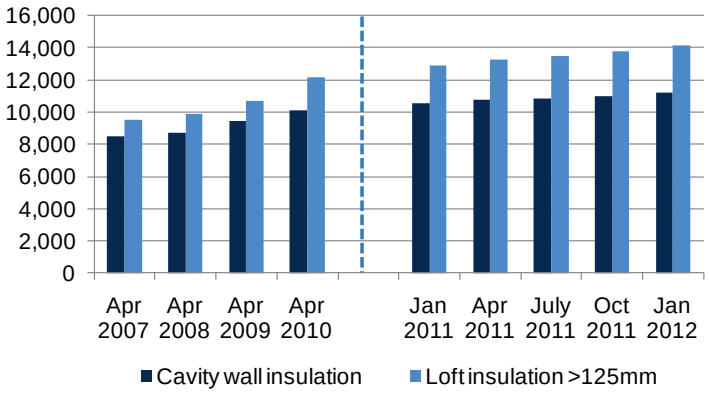
[2] http://www.ofgem.gov.uk/Sustainability/Environment/EnergyEff/CU/Pages/CU.aspx

[3] http://www.ofgem.gov.uk/Sustainability/Environment/EnergyEff/cesp/Pages/cesp.aspx

[4] http://decc.gov.uk/publications/basket.aspx?filetype=4&filepath=Statistics%2fenefficiency%2f947-methodology-note-home-insulation.pdf&minwidth=true

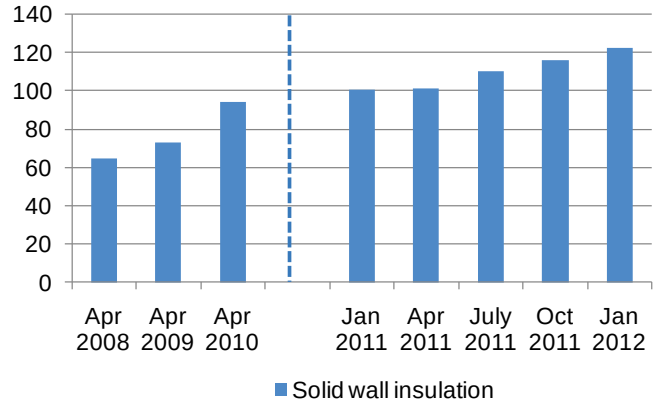
Taking into account Government schemes and new properties built during the last quarter, there were 370,000 more homes with at least 125mm of loft insulation and 160,000 more homes with cavity wall insulation compared with the previous quarter.

Chart 1a: Homes in Great Britain with cavity wall insulation and loft insulation: April 2007 to January 2012 (Thousands)



- The number of properties with cavity wall insulation increased by 6 per cent between the start of January 2011 and January 2012.
- The number of properties with loft insulation of 125mm or more increased by 9 per cent between the start of January 2011 and January 2012.

Chart 1b: Homes in Great Britain with solid wall insulation[5]: April 2008 to January 2012 (Thousands)



- The number of properties with solid wall insulation increased by 22 per cent between January 2011 and January 2012. An increase of approximately 22,000 properties.

Sources of increases in insulation levels

Increases in the number of properties with insulation result from new properties being built[6] and from retro-fit insulation, predominantly through Government schemes. Table 2 and Chart 2 show what has driven the increase in the number of insulated cavities and lofts since the 2008 survey baseline. Delivery of measures through CERT has made the largest contribution since April 2008, for both lofts and cavities.

[5] Solid wall insulation has been defined throughout this report as internal or external wall insulation installed through Government programmes. In addition, in April 2008 about 900,000 properties are known to have had other forms of non-cavity wall insulation that fall outside this definition.

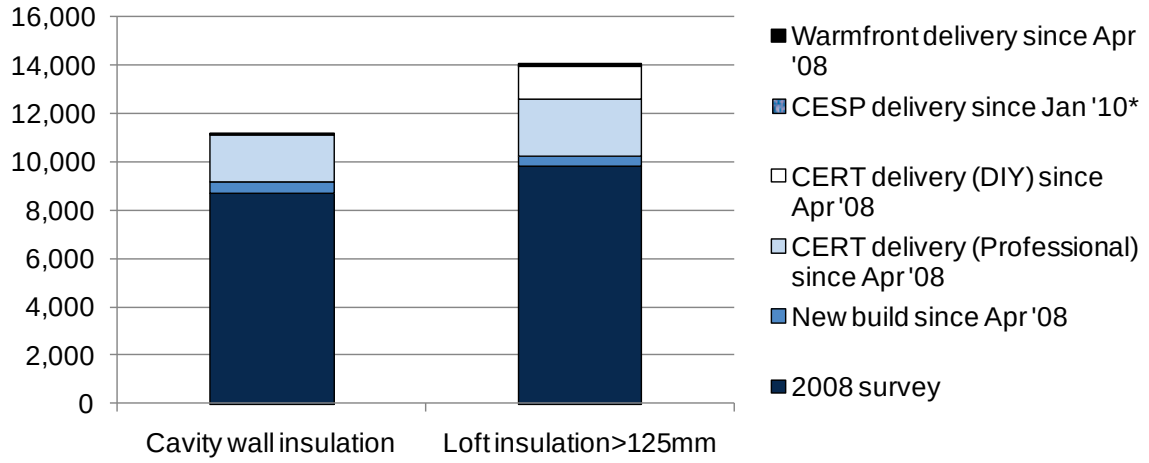
[6] Information is not available on the wall construction of new homes. Typically Building Regulations would be met by insulated cavity walls but other construction types could be used. In this publication it is assumed that all new builds since April 2008 have cavity wall insulation.

Table 2: Insulated homes in Great Britain by source: January 2012 (Thousands)

	Cavity wall insulation	Loft insulation >125mm	Solid wall insulation[7,8]
2008 survey (April)	8,700	9,860	65
New build since April 2008	520	390	0
CERT delivery (Professional) since April 2008	1,930	2,350	45
CERT delivery (DIY) since April 2008**	0	1,390	0
CESP delivery since January 2010*	-	-	12
Warm Front delivery since April 2008	20	80	0
TOTAL	**11,180**	**14,080**	**122**
Homes in Great Britain†	18,930	23,330	7,780
Percentage of homes insulated ‡	59%	60%	1.6%

* CESP commenced in September 2009 with the first measures installed in January 2010 (CESP data is reported 6 monthly activity up to the end of June is reported in September and end of December in March).
**Loft insulation is the only measure that can be delivered through DIY methods under CERT.
†The number of homes in Great Britain with cavity walls, lofts and solid walls respectively.
‡The solid wall insulation (SWI) percentage is calculated based on number of homes with SWI delivered through Government schemes divided by number of homes with non-cavity walls, although SWI can be applied to homes with cavity walls.
- nil, cavity wall or loft insulation count less than 10,000

Chart 2: Number of homes in Great Britain with cavity wall insulation and loft insulation by source: January 2012



There are a number of factors that affect the amount of insulation delivered throughout any year, including some seasonal variation and promotional offers run by insulation providers. Table 3 shows a breakdown of CERT delivery by quarter.

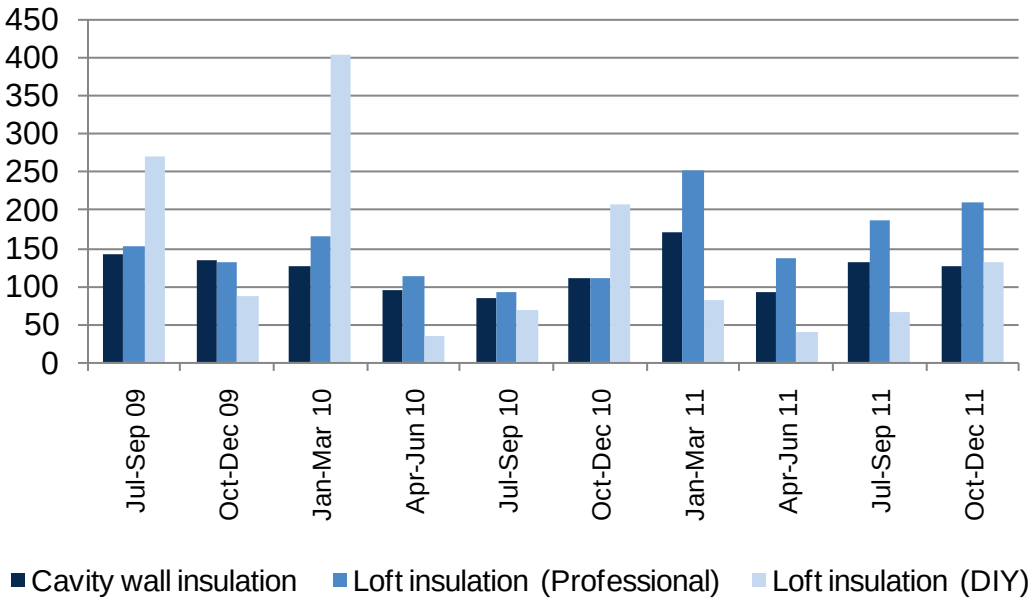
[7] 2008 estimates for solid wall insulation are taken from EEC1 and EEC2 reported activity rather than a survey.
[8] Solid wall insulation is present in 1.6% of homes with solid walls based on the definition used in this report . If all forms of non-cavity wall insulation (installed outside Government schemes) were included, 12.6% of solid wall homes have some form of wall insulation.

Table 3: Number of new CERT insulations: October 2010 to December 2011 (Thousands) [9,10]

Insulations	Oct-Dec 10	Jan-Mar 11	Apr-Jun 11	Jul-Sep 11	Oct-Dec 11
Cavity wall insulation	112	170	92	133	127
Loft insulation (Professional)	112	251	137	187	209
Loft insulation (DIY)	209	83	40	67	131
Solid wall insulation	2	1	2	3	3

Source: Ofgem

Chart 3: Number of installations of new CERT cavity wall insulation and loft insulation by quarter (Thousands)



A full review of measures installed through CERT is published quarterly by Ofgem[9]. Key points are summarised below:

- 127,000 cavity wall insulations were reported in the last quarter, 13 per cent more than the equivalent quarter the previous year.
- The number of DIY loft insulations reported in the last quarter (131,000) almost doubled compared with the previous quarter (67,000) but is 37 per cent lower than the number installed in the equivalent quarter the previous year. Over the same one year period the number of professional loft insulations increased by 87 percent.
- The number of solid wall insulations reported in the last quarter was again around 3,000, approximately 1,500 higher than the number installed in the equivalent quarter the previous year.

[9] To avoid double counting the number of insulated lofts, 10% of reported installations have been removed. This assumption is explained in the Methodology Note.

[10] Source: Ofgem see footnote 1.

Appendix A - Technical appendix

1. Many homes built in Great Britain have external walls made up of an inner and outer wall with a small cavity in between. These have been typical since the 1930s, but some older properties will also have them. Cavity walls were used initially because they were cheaper (as the inner leaf could use non-decorative brick) and had a greater resistance to moisture moving from outside to inside. The presence of a cavity also improves the thermal performance of the wall, especially if the cavity is insulated. Since the mid 1980s, homes have been increasingly built with pre-insulated cavity walls, though the type of blockwork used for the inner leaf has also contributed to the improved thermal performance required by Building Regulations.

2. Some loft insulation has been installed in new homes since 1965. Current building regulations for new homes require a roof to have a thermal transmittance (U-value) at least as low as 0.13 $W/m^2.K$, which would typically be achieved with 300mm of loft insulation. There is a strong 'diminishing returns' effect with savings from increasing the depth of loft insulation, so the first inch gives about half the savings from full insulation. Therefore, a threshold of 125mm is used in these statistics since homes with less than this would expect to see significant improvements in energy efficiency from a top-up.

3. It is possible to improve the thermal performance of solid walls by adding insulation either internally or externally. There is a wide variety of technical solutions that can be used to insulate either the internal or the external face of the wall. Current building regulations require a target U-value of 0.35 $W/m^2.K$ to be reached if this modification to the wall is made. It is likely that installations of solid wall insulation before 2002 (i.e. before the first phase of the Energy Efficiency Commitment) may not achieve this level of thermal performance, so these are recorded separately in the statistics.

Appendix B – Methodology Consultation

Background

DECC has published cavity and loft insulation statistics since November 2010, with solid wall insulation added from June 2011. These data are currently published as Experimental Statistics in order to give users an opportunity to feed into their development and shape the content of future publications.

As part of ongoing efforts to ensure these statistics are robust and to feed into DECCs work to develop a product which can be produced as National Statistics in future, DECC is welcoming input into the methodology used to produce these estimates and views on what users would like from this publication.

This appendix sets out some of the key assumptions within the report and a number of wider questions about how the data should be presented. A methodology document (including assumptions) is also published on the DECC website[11].

Questions

1. What do users want to see reported in this publication? Is the information currently included helpful or is there a more useful definition that could be used?
2. How is the publication used? Is the publication used primarily as:
    a. a reference of how much of the housing stock is insulated?
    b. to monitor the combined rollout of energy efficiency policies?
    c. to understand how much of the housing stock has achieved a specific level of thermal transmittance (e.g. through cavity wall insulation, solid wall insulation or as built)?
    d. to assess how much of the housing stock still needs to be insulated?

    or are a number of the above required?
3. Solid wall insulation recorded in this publication relates to internal or external wall insulation (i.e. not cavity insulation) which can be applied to solid wall properties or cavity wall properties (although the majority of solid wall insulation is applied to solid wall properties). Is this the most useful definition? Or is it more useful to know how many cavity wall properties are insulated, whether by cavity wall insulation or solid wall insulation, and how many solid wall properties are insulated?
4. A summary of key assumptions and implications of changes are shown below with more information in the Methodology Note. Are there any other data sources or sources of evidence which could be used to improve the assumptions?

All responses to these questions or other comments on the methods used to compile these estimates should be sent to DECC's Energy Efficiency Statistics Team at: EnergyEfficiency.Stats@decc.gsi.gov.uk.

[11] http://decc.gov.uk/publications/basket.aspx?filetype=4&filepath=Statistics%2fenefficiency%2f947-methodology-note-home-insulation.pdf&minwidth=true

Assumptions

	Assumption	Rationale	Implications
1.	In the EHS cavity wall properties built since 1990 are classified as not insulated, unless signs of insulation are observed.	This publication currently uses the definition as published by the EHS and applies a 5 per cent up lift to account for properties (of all ages) which have cavity wall insulation that has not been observed by surveyors, based on a BRE estimate see point 5.	It is likely that the majority of properties build since 1990 will have been built as cavity wall properties with the cavity insulated when built. Therefore it is likely the number of cavity wall properties with insulation is underestimated in the EHS definition. Approximately 2.5 million new properties were build between 1990 and 2008 so this is the maximum size of any revision if all new builds are incorrectly classified. In reality any misclassification is likely to be much smaller than this. This assumption has no impact on the trend since April 2008 but changes would cause an increase in the level of the series.
2.	All cavity wall properties in SHCS built since 1982 are classified as not insulated.	Data provided by the Scottish Government has previously included properties build since 1982 within a category of not filled. New data released has shown the breakdown in a different way, including all properties built since 1982 as having insulated cavities. Neither of these approaches is likely to be entirely accurate therefore advice is sought on the best approach.	These data feed into the insulation statistics via the April 2008 baseline. If all new builds were reclassified as cavity wall properties with insulation it would increase the baseline by approximately 450,000. This would cause an increase throughout the series, but have no impact on the trend since April 2008.
3.	Housing stock in Wales is assumed to have the same characteristics as the housing stock in England.	The Living in Wales survey asks households about the insulation measures they have. However, unlike the EHS and SHCS there is no physical survey by technical surveyors. Results are therefore subject to considerable uncertainty as householders may not know what measures their property has, particularly for cavities, and less detail is know about depth of insulation in lofts. It was therefore decided not to use the Living in Wales survey when producing these statistics. However the general profile of the housing stock in terms of dwelling type and tenure is similar between England and	There were 1.3 million properties in Wales in April 2008. Current estimates assume 930,000 dwellings have cavity walls and 460,000 of these are insulated. If the proportion of cavity wall properties in Wales is five percent higher or lower than in England, the 2008 baseline number of cavity wall properties would change by around 50,000.

		Wales. As a result, the insulation levels in Wales have been derived using the percentage coverage in England applied to the number of dwellings in Wales.	
5.	EHS under reports cavity wall insulation by between 5 and 10 percent.	The Building Research Establishment (BRE) estimate that the EHS 2008 and previous EHCS surveys under-estimate the number of filled cavities by between five and ten per cent. The survey estimates for the number of insulated cavity walls in England in April 2008 have been adjusted up by five per cent to take account of this.	A 5 percent uplift is currently applied to the EHS number of properties with cavity wall insulation, which effects England baselines for 2008. If the BRE assumption is not accurate this would change (5 percent is equivalent to 370,000 properties in April 2008).
6.	Average loft size is $50m^2$.	DIY loft insulation from CERT is reported as number of square meters of insulation sold, rather than dwellings insulated. In order to estimate the number of lofts insulated as a result of the volume sold an estimate is made of the average amount required to insulated a loft. EHS data gives an estimate about $50m^2$ for the average size of a loft.	A change to the this assumption would change the estimates of the number of lofts insulated throughout the time series. In January 2012 the assumption of the average loft being $50m^2$ gives 1.40 million DIY lofts insulated under CERT. To put this in context, it would increase to 1.74 million if the average loft is assumed to be $40m^2$ and reduce to 1.16 million for an assumption of $60m^2$.
7.	Ten percent of loft insulation installed under CERT is going into lofts which are already insulated to at least 125mm.	The data published by Ofgem does not identify how much insulation was present before the CERT installation. An assumption has been made that 10 per cent of insulations done under CERT are top-ups from above 125mm. These have not been included to avoid double counting of lofts insulated above the 125mm threshold.	Ten percent of loft insulations installed under CERT is equivalent to 416,000 lofts in January 2012 (assuming all other assumption remain the same).
8.	Ten percent of loft insulation sold under CERT is being used for non CERT eligible projects.	It is recognised that some CERT subsidised loft insulation is used for non CERT eligible projects including new buildings, extensions and small businesses. It is estimated that the level of this is 10 per cent.	55 million square meters of loft insulation sold would imply 1 million eligible lofts were insulated. This makes a difference of 155,000 to the estimate of lofts insulated at the beginning of January 2012.

Further information and feedback

Any enquiries or comments in relation to this statistical release should be sent to DECC's Energy Statistics Team at the following email address:
EnergyEfficiency.Stats@decc.gsi.gov.uk

Contact telephone: 0300 068 5856
Press Enquiries: 0300 068 5219
Out of hours: 020 7215 3505

The statistician responsible for this publication is Mary Gregory.

Further information on energy statistics is available at
http://www.decc.gov.uk/en/content/cms/statistics/statistics.aspx

General Enquiries: 0300 060 4000

Next release

These figures will continue to be updated on a quarterly basis. The next release, containing estimates for April 2012, is due to be published on Thursday 7th June 2012 at 9:30am.

Issued by:
Department of Energy & Climate Change
3 Whitehall Place
London SW1A 2AW
www.decc.gov.uk

DEPARTMENT OF ENERGY & CLIMATE CHANGE