Scottish Government
Riaghaltas na h-Alba
gov.scot

Scottish House Condition Survey: 2015 Key Findings

A National Statistics publication for Scotland

PEOPLE, COMMUNITIES AND PLACES

Scottish House Condition Survey Team

Ganka Mueller, Silvia Palombi
DIRECTORATE FOR HOUSING AND SOCIAL JUSTICE
Communities Analysis
Scottish Government
shcs@scotland.gsi.gov.uk
http://www.gov.scot/SHCS

Acknowledgements

Scottish Government: Adam Krawczyk and the SHS team (Jackie Horne, David MacLeod, Pat Cairns and Ludmila Kopaskova)
Ipsos MORI: Chris Martin, SHCS Project Manager; Murray Petrie and the building survey team
BRE: Matthew Custard, Elaine Simpson, Chris Beer; energy modelling and physical survey
Alembic Research: Bill Sheldrick; surveyor training and energy prices survey

The Scottish Government
St Andrew's House
Edinburgh
EH1 3DG

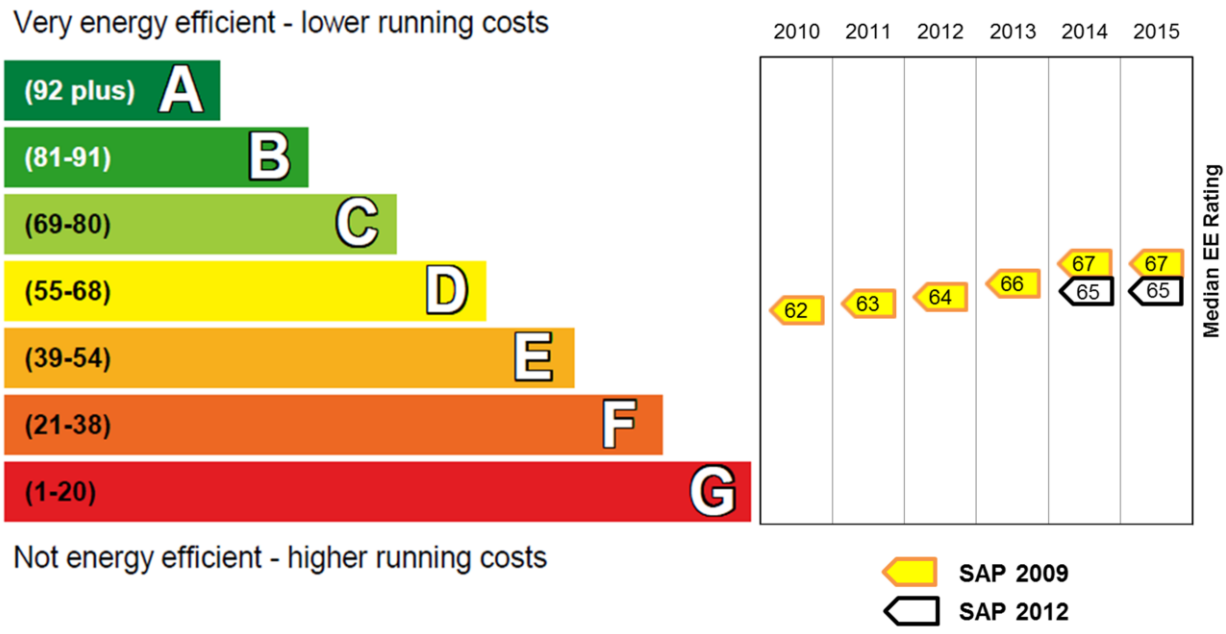
Contents

Key Findings Summary

Energy Efficiency and Carbon Emissions

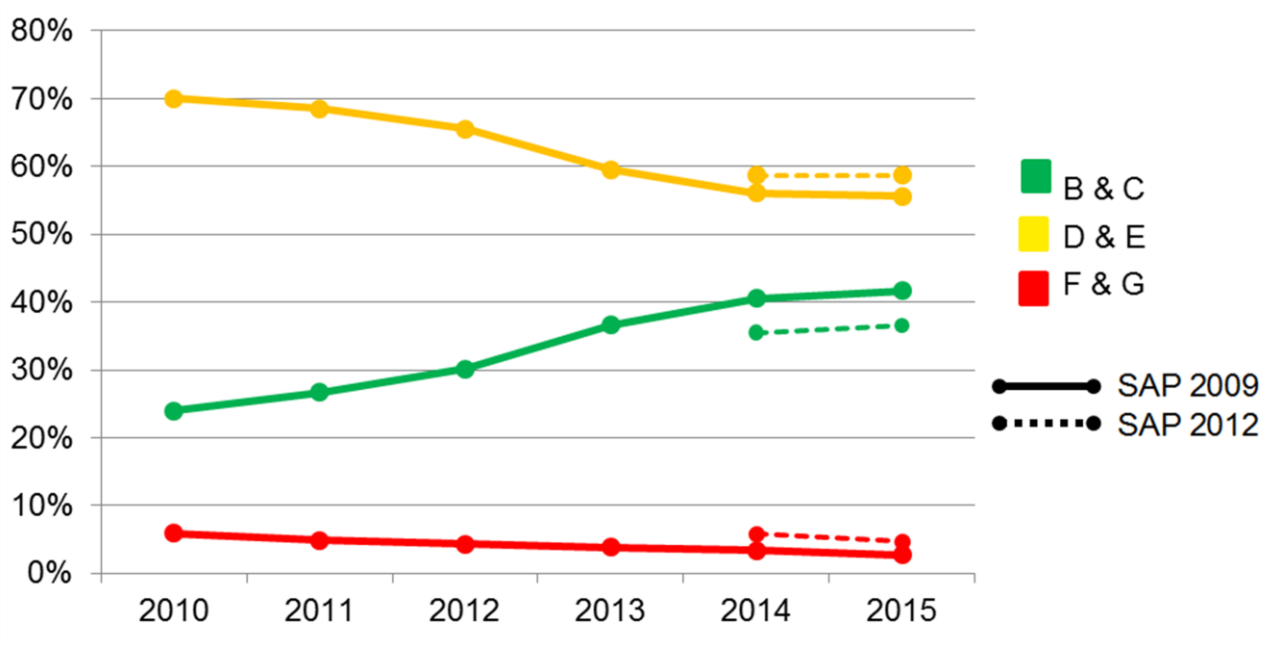
- In 2015 37% of Scottish homes were in EPC band C or better and half had an **energy efficiency rating** of 65 or higher (**SAP 2012**). This is similar to 2014.
- In the last year the average energy efficiency rating of older properties (pre-1919), increased 3.2 points to reach 54.8. The share of electrically heated properties in band C or better increased 8 points to reach 25%.

Median Energy Efficiency Rating Relative to EPC Band, SAP 2009 and SAP 2012



- Using **SAP 2009** shows strong improvement in the energy efficiency profile of housing in the last five years. There was a 74% increase in the share of the most energy efficient dwellings (rated C or better) between 2010 and 2015.

Proportion of Scottish Homes by Grouped EPC Band, SAP 2009 and SAP 2012

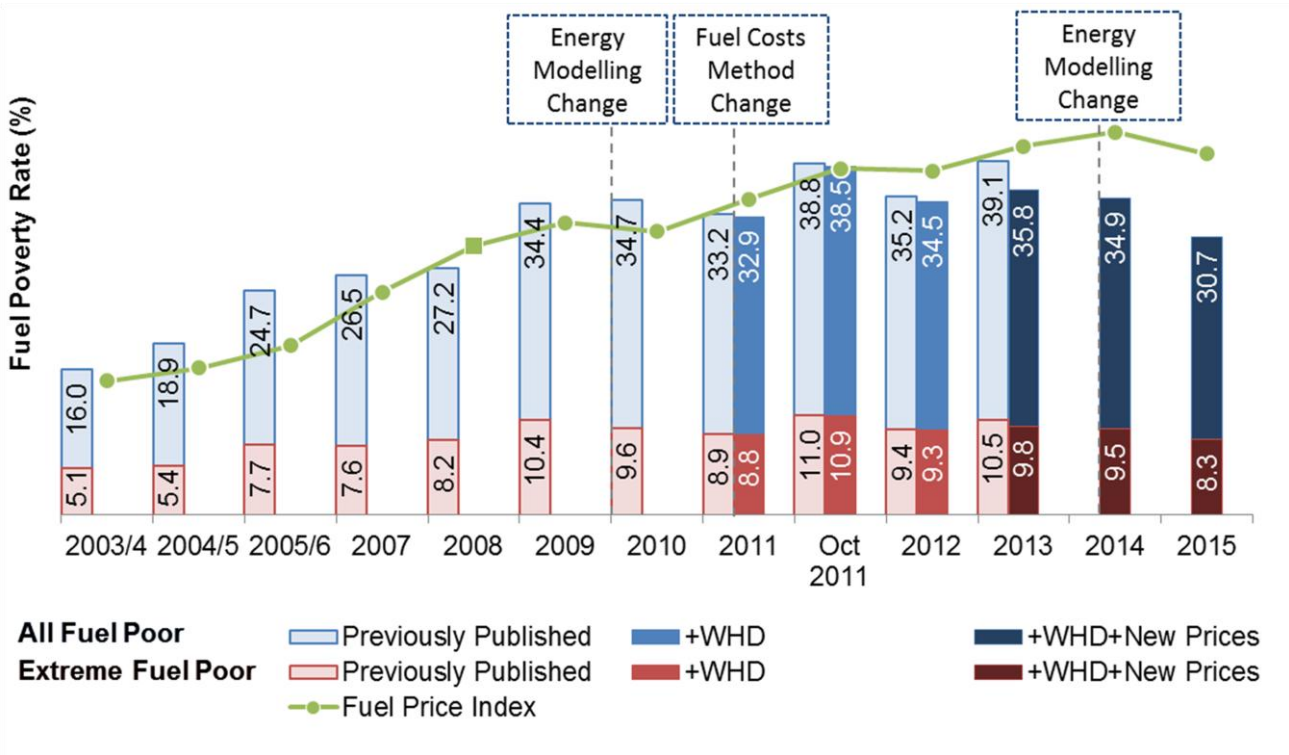


- The share of homes with **lofts** insulated to 100 mm or more was 92% in 2015 which is similar to 2014. This represents an increase of 10 percentage points on 2010 levels. Most improvement in the last year was recorded in the share of lofts with a high standard of insulation (300 mm or more). In 2015 32% of lofts were insulated to this standard, an increase of 5 percentage points from 2014.
- Levels of **wall insulation** remained similar in the last year. While wall insulation measures continued to be delivered under energy efficiency programmes such as ECO, sample size limitations may mean these were not picked up by the SHCS. 11% of solid wall dwellings and 71% of cavity wall dwellings were insulated in 2015. In the last 5 years the share of insulated cavity wall dwellings has grown by 9 percentage points.
- The proportion of dwellings with **environmental impact ratings** in band C or better in 2015 was 27%. The average rating was 58 which lies in band D.
- Based on modelled energy use the average Scottish home is estimated to produce 7.3 tonnes of **CO2** per year. Carbon emissions for older properties (pre-1919) have decreased in the last year from 102 kg per square meter of floor area to 93 kg/m^2 in 2015, a reduction of nearly 10%.

Fuel Poverty and Heating Satisfaction

- In 2015 **fuel poverty** declined by about 4 percentage points, equivalent to around 97,000 fewer households living in fuel poverty compared to 2014. 30.7% (or around 748,000) households were fuel poor and 8.3% (or 203,000 households) were living in extreme fuel poverty in 2015.

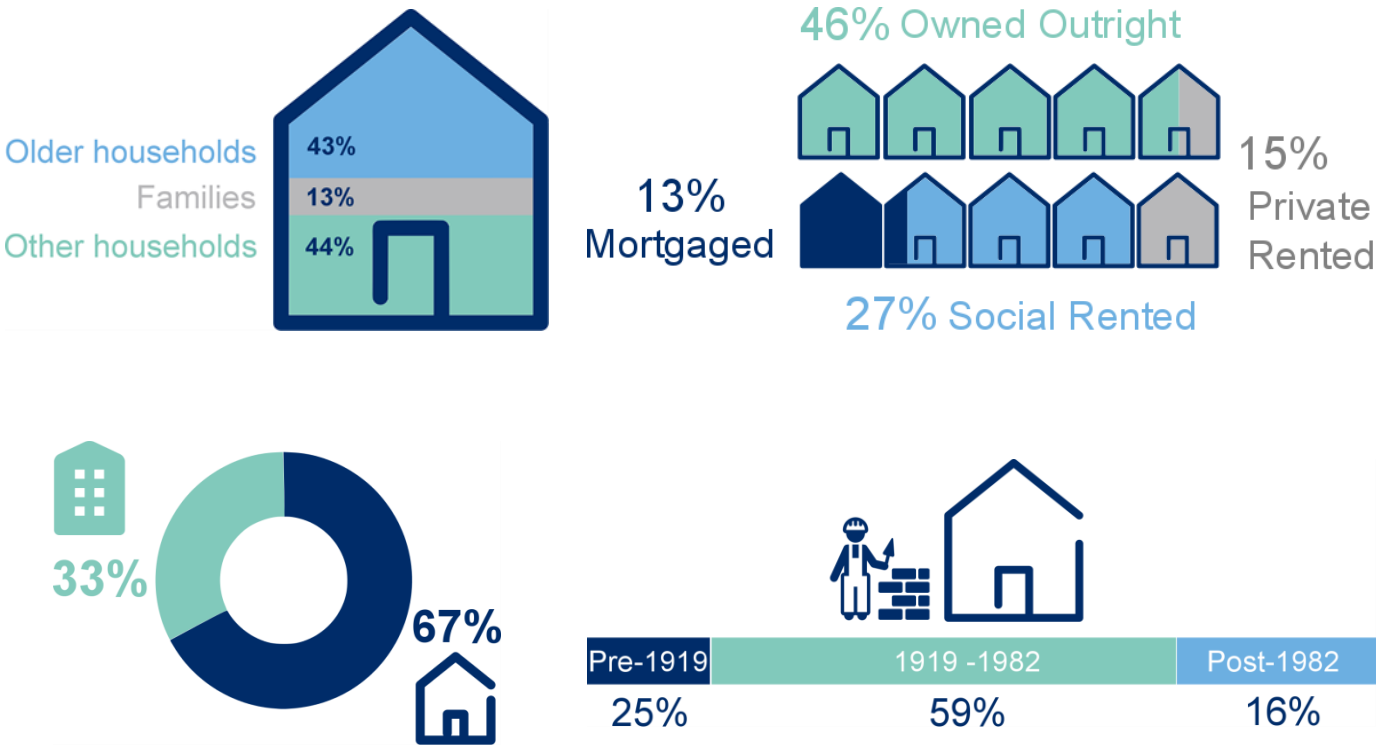
Proportion of Households in Fuel Poverty and Extreme Fuel Poverty, 2003/4 – 2015



- Just over half (2.3 percentage points) of the reduction in fuel poverty rates between 2014 and 2015 can be attributed to the drop in the price of domestic fuels over this period. Around a third (1.3 points) can be attributed to improvements in the energy efficiency performance of the housing stock and the rest (0.6 points) can be explained by higher household incomes.
- Households using **oil** as the primary heating fuel have seen most improvement in fuel poverty levels in the last year, in large part due to the falling price of oil. Just over a quarter of them are now assessed as fuel poor (26%, down from 49% in 2014), which is comparable to the level of fuel poverty among those using mains gas (27%).

- Similarly, **rural** households have gained disproportionately in the last year with fuel poverty levels falling 15 points to 35%. Rural fuel poverty is now close to the level of fuel poverty in urban areas (30% in 2015) and the difference between the two is no longer statistically significant.

Composition of Fuel Poor Households, 2015



- Around 13% of fuel poor households are families with children, the rest being equally split between older households and other households without children. Almost 6 out of 10 are owner occupiers and two-thirds live in houses (67%).
- Around half (52%) of fuel poor households have incomes above the poverty threshold, defined as £291 per week before housing costs for a couple without children.
- Fuel poor households are more likely to report difficulties staying warm in winter. 27% of them say that their heating keeps them warm in winter "only sometimes" (20%) or "never" (8%) compared to 21% of all other households. 9% of fuel poor households report that they cannot afford to heat their home. This pattern is similar to 2014.

- The extent to which home energy use is monitored by householders remains unchanged since last year with 57% stating they monitor their energy use “very” or “fairly closely”. 8% report owning an energy monitoring device. Fuel poor households are no more likely to monitor their energy use or own a monitoring device. There has been no change on these measures in the last year.

Housing Quality

- The level of disrepair remained unchanged in the last year. In 2015, 73% of all dwellings had some degree of disrepair, however minor. Disrepair to critical elements stood at 52%, 33% of dwellings had some instances of urgent disrepair, and in 8% of the housing stock some extensive disrepair was present.
- Levels of damp and condensation remained similar to 2014 levels. Around 9 out of 10 properties were free from any damp or condensation, an improvement of around 3 percentage points since 2013.
- Compliance with the tolerable standard in 2015 remained similar to 2014: 2% (or 42,000) of all dwellings fell below the tolerable standard. This represents an improvement of nearly 2 percentage points since 2012.
- Across the stock as a whole, Scottish Housing Quality Standard (SHQS) compliance remained similar to 2014 levels. In 2015, just under 44% (43.8%) of Scottish homes failed to meet the SHQS, compared to 47.5% in the previous year.
- The SHQS failure rate in the social sector was 38%, not allowing for abeyances and exemptions. This has fallen from 60% in the last 5 years. 26% of properties did not meet the Energy Efficient criterion.
- SHCS surveyors may not always be able to identify the presence of cavity wall insulation. The overall SHQS failure rate in the social sector would be 25% if it is assumed that all social dwellings have insulated cavity walls where this is technically feasible.
- The majority of dwellings falling below the SHQS failed on a single criterion; this accounts for more than 8 out of 10 failures in the social sector.
- For 7 out of 10 social homes which failed the SHQS this was due to falling short on a single one of the 55 elements making up the standard.
- Overcrowding levels in Scotland remain unchanged: 3% of all households (70,000) were living in overcrowded accommodation in 2015.

1. Introduction

1. Statistics reported in this publication are based on a national survey of the housing stock, the only one of its kind in Scotland, which is part of the Scottish Household Survey (SHS). Until 2012 it was carried out as a stand-alone survey under the name Scottish House Condition Survey (SHCS). Following the review of the large-scale Scottish population surveys, the SHCS was incorporated within the SHS and became one of its modules. We continue to report the results from this module of the SHS under the name Scottish House Condition Survey.

2. The SHCS consists of an interview with householders and a physical inspection of the dwelling they occupy to provide a picture of Scotland's occupied housing stock. It covers all types of households and dwellings across the country - whether owned or rented, flats or houses. The physical data about the dwelling is recorded by surveyors trained to collect detailed information on housing characteristics. This is combined with information about the household collected through a face to face interview with the householder. The interview covers a range of topics such as household characteristics, tenure, neighbourhood satisfaction, dwelling satisfaction, health status, income, etc. The result is a powerful data set for examining the condition and characteristics of the dwellings alongside the views and experience of the people living in those dwellings.

3. This is the twelfth 'Key Findings' report since the SHCS changed to a continuous format in 2003 and the fourth since it was integrated within the SHS. Details on the methodology and design of the survey are provided in the SHS Technical Report due to be published shortly on the Scottish Government website[1]. The incorporation of the SHCS within the SHS introduced some discontinuities in the methodology of the survey and may be contributing to some observed change over time.

[1] http://www.gov.scot/Topics/Statistics/16002/PublicationMethodology

4. The new survey design resulted in a small reduction of the sample where a physical inspection of the dwellings was undertaken. In some cases this limits the level of detail we can provide compared to previous years. In 2015 there were 2,754 surveyed properties compared to 3,219 in 2011. Statistics published in this report are based on fieldwork undertaken during 2015. A small proportion (10%) of the household interviews took place in the first quarter of 2016.

5. In 2009, the SHCS was designated as a National Statistics product by the UK Statistics Authority (UKSA). This demonstrates that the SHCS statistics are accurate, trustworthy and compliant with the high standards required of National Statistics.

6. The analysis of the energy performance of the housing stock reported in this publication is based on the Building Research Establishment Domestic Energy Model (BREDEM) 2012[2] first adopted for the 2013 SHCS Key Findings Report published in December 2014[3]. The methodological change that this involved affected comparability with previously published statistics on energy efficiency, fuel poverty and carbon emissions from housing. Details of this impact and revised estimates for the preceding 3 years were published in the 2013 SHCS Key Findings report and the accompanying Methodology Notes[3,4].

7. An update to the BREDEM 2012 methodology, version 1.1, was published in January 2015[5]. This updated version was used for our 2014 Key Findings report. This introduced further discontinuities in the estimates of energy efficiency, emissions and fuel poverty, details of which are provided in the 2014 main report and the accompanying Methodology Notes[6]. There have been no further changes to the energy modeling methodology and the current 2015 Key Findings report is based on the same version of BREDEM.

---

[2] BRE 2013; BREDEM 2012 – A technical description of the BRE Domestic Energy Model http://www.bre.co.uk/filelibrary/bredem/BREDEM-2012-specification.pdf

[3] 2013 SHCS Key Findings http://www.gov.scot/Publications/2014/12/6903

[4] SHCS - Methodology Notes 2013 available at http://www.gov.scot/Topics/Statistics/SHCS/Downloads/MethodologyNotes2013

[5] http://www.bre.co.uk/filelibrary/bredem/BREDEM-2012-specification.pdf

[6] Methodology Notes 2014 www.gov.scot/Topics/Statistics/SHCS/Downloads/Methodology2014

8. The 2014 Key Findings report also introduced some improvements to the method for determining the cost of the energy required to maintain an appropriate standard of heating and other energy use which underpins the fuel poverty estimates. This involved allowing for Warm Home Discount and sourcing fuel prices which better reflect the experience of Scottish households. Details on the nature of the changes and their impact are provided in the 2014 Methodology Notes publication[7]. The current report continues to use this improved method for setting the cost of the domestic energy requirement.

9. There are no significant methodological changes in this year's report in comparison to the previous publication. We always seek to improve and keep up to date our methods and processes and there may be small changes to elements of data processing which do not impact significantly on the results. In such cases details are provided in the respective technical sections.

10. The remainder of this report covers the following topics:

- Key Attributes of the Scottish Housing Stock: this chapter describes key characteristics of the housing stock such as the dwellings' type and age of construction, their location in relation to the gas grid, and the characteristics of the households that occupy them.
- Energy Efficiency: this chapter presents an analysis of the energy efficiency of the housing stock including presence and level of insulation.
- Fuel Poverty: this chapter presents an analysis of the number and characteristics of households in fuel poverty and extreme fuel poverty. It also examines the key drivers of fuel poverty and how they have changed over time.
- Perceptions and Experiences examines householders' reports of their experience and satisfaction with heating and the extent to which they monitor their use of energy.

---

[7] Methodology Notes 2014
www.gov.scot/Topics/Statistics/SHCS/Downloads/Methodology2014

- Housing Conditions: this part of the report provides information on the number of dwellings in compliance with the tolerable standard and the Scottish Housing Quality Standard (SHQS). It also covers the presence of dampness, condensation and disrepair as well as some indicators of overcrowding and under-occupation.
- Technical Notes, the final chapter in the report, provides information about the content of the survey and the definition of some of the key concepts used. Discussion on the statistical reliability of the estimates is also included.

2. Key Attributes of The Scottish Housing Stock

11. The Scottish House Condition Survey provides a snapshot of the Scottish housing stock in each survey year. This chapter sets out information on the basic attributes of occupied Scottish dwellings as captured in 2015. Subsequent chapters build on this and provide more details on energy efficiency, fuel poverty, housing quality and disrepair.

12. The following topics are included:

- the construction age and general types of Scottish domestic buildings;
- the dwellings' location in relation to the gas network and the type of fuel used to heat them;
- the relationship between the dwellings' attributes and household tenure; and
- the makeup of the households who live in them.

2.1 Dwelling Age and Type

13. The age of construction and the built form of a dwelling has consequences for energy performance, the improvement potential, affordability and living conditions.

More information on the main dwelling types used in the SHCS is provided in section 7.5.1

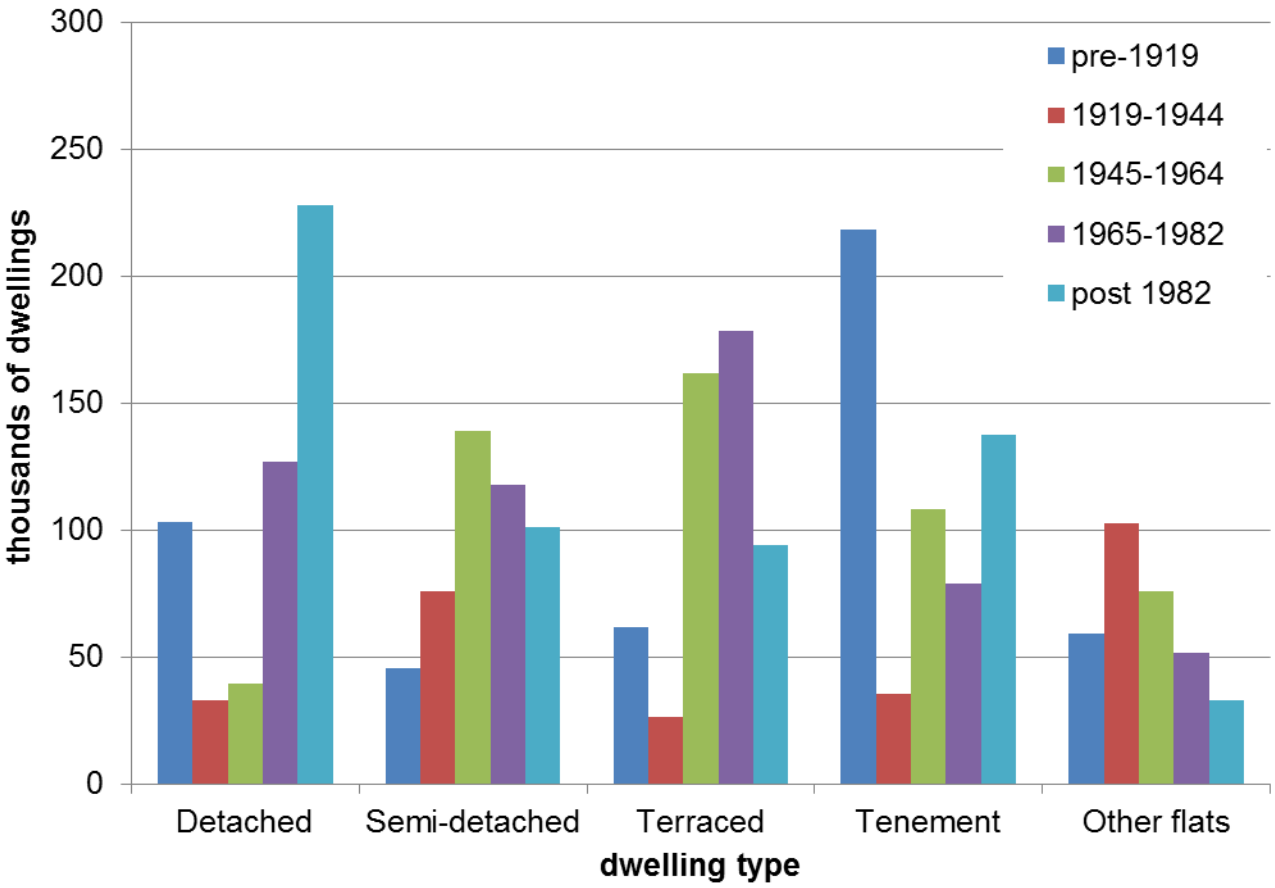
14. For example, dwellings built since 1982 comply with standards for minimum levels of energy efficiency and airtightness. At the same time, types of dwellings can differ in terms of the size of exposed areas: fewer exposed areas of wall, or shielding by dwellings above and below, lead to lower levels of heat loss than in buildings with fewer sheltered sides.

15. The Scottish housing stock is diverse and varies across the country and between rural and urban areas. However, some common types can be recognised in Figure 1:

- Old (pre-1919) detached houses (around 103,000) and tenement flats (218,000)
- More modern post-1982 detached houses (228,000) and tenements (138,000)
- Post-war terraced houses (340,000 built between 1945 and 1982)
- Semi-detached houses, common across all age bands and accounting for around 20% of the stock alone.

16. These six broad categories account for 62% of the overall housing stock. However, there is also a good deal of variability within these groups; even among pre-1919 tenement flats of the type common in Edinburgh and Glasgow, there is a wide range of sizes, shapes and areas of exposure (for example in top floor flats the roof is exposed) which affects their energy efficiency and the living conditions they provide.

Figure 1: Number of Occupied Scottish Dwellings by Age Band and Type, 2015



17. The proportion of the stock in each dwelling age band and type is provided in Table 1. Numbers of dwellings of each age group and type are shown in Table 2

Table 1: Proportion of Occupied Dwellings by Age Band and Type, 2015 (Percentage of Whole Stock)

	Type of Dwelling					
Age of dwelling	**Detached**	**Semi-detached**	**Terraced**	**Tenement**	**Other flats**	**Total**
pre-1919	4%	2%	3%	9%	2%	**20%**
1919-1944	1%	3%	1%	1%	4%	**11%**
1945-1964	2%	6%	7%	4%	3%	**22%**
1965-1982	5%	5%	7%	3%	2%	**23%**
post-1982	9%	4%	4%	6%	1%	**24%**
Total	**22%**	**20%**	**21%**	**24%**	**13%**	**100%**
Sample size						*2,754*

Table 2: Number of Occupied Dwellings by Age Band and Type, 2015 (Thousands)

Age of dwelling	**Detached**	**Semi-detached**	**Terraced**	**Tenement**	**Other flats**	**Total**
pre-1919	103	46	62	218	59	**488**
1919-1944	33	76	27	36	103	**274**
1945-1964	40	139	162	108	76	**524**
1965-1982	127	118	178	79	52	**554**
post-1982	228	101	94	138	33	**594**
Total	**531**	**480**	**522**	**579**	**322**	**2,434**
Sample size						*2,754*

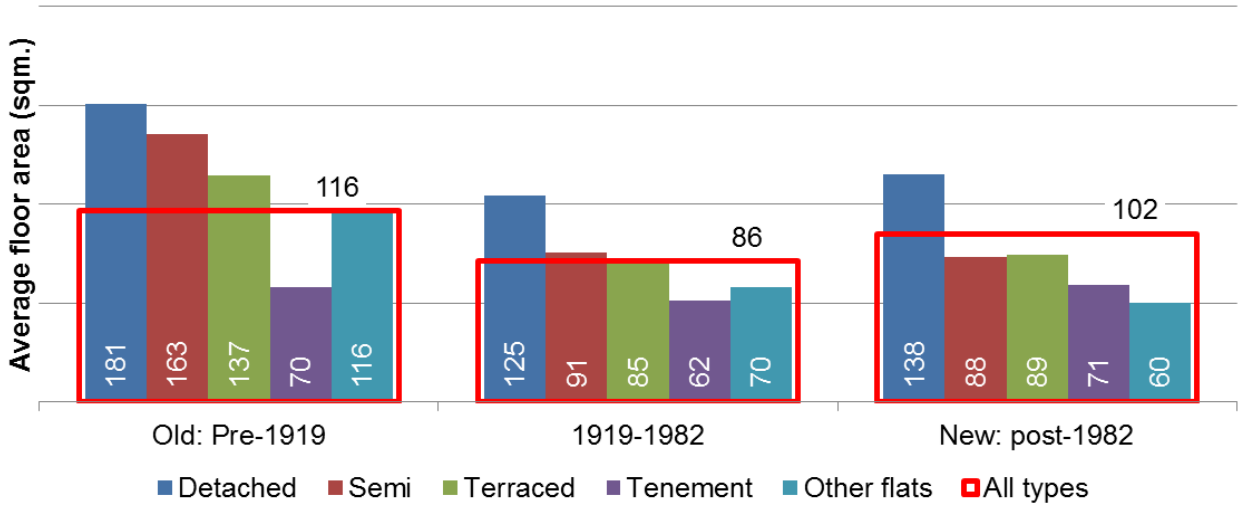
18. The category ‘other flats’ includes houses that have been converted to flats (44,000), high rise blocks (55,000) and so-called “4-in-a-block” flats (223,000).

- “4-in-a-block” flats were commonly built as social housing between 1919 and 1965 (72% of all flats of this type fall in that age category).
- 86% of tower blocks were built in the 1945 to 1982 period, again often as social housing.
- Converted flats are almost exclusively pre-1919 structures (92%), where a house has been divided into multiple residences.

2.1.1 Dwelling Size (Floor Area)

19. The size of the internal floor area has implications for the heating requirements of a dwelling. Larger dwellings require greater heat inputs and therefore cost more to heat. This has a direct impact on fuel poverty (see Chapter 4).

Figure 2: Average Floor Area (m^2) by Dwelling Type and Age, 2015



20. Pre-1919 dwellings tend to be larger than the other two age categories and this applies across all dwelling types except tenement flats which on average are comparable in size to more recently built ones (Figure 2). Detached houses built after 1919 are on average around three-quarters of the size of those built pre-1919, while semi-detached and terraced houses are on average between just over half and two-thirds of their pre-1919 counterparts.

21. The overall average for post-1982 dwellings is somewhat higher compared to those built between 1919 and 1982. This is largely driven by differences in detached houses, which are both larger in size and more common in the post-1982 stock (see Table 2).

22. Rural dwellings are 39% larger than urban dwellings on average based on internal floor area, as shown in Table 3. The difference is smallest for dwellings built between 1919 and 1982 at 17%. Among older dwellings, rural properties are around 54% larger, while among the post-1982 stock the difference is close to the average at 36%.

Table 3: Average Internal Floor Area (m^2) by Urban/Rural Location, 2015

	Location			Rural %
Dwelling Age	Urban	Rural	All	**larger**
Pre-1919	103	158	116	54%
1919-1982	84	98	86	17%
Post-1982	95	129	102	36%
All Age Bands	90	125	96	39%

2.2 Gas Grid Coverage and Rural/Urban Location

23. Approximately 16% of dwellings in Scotland are estimated to be outside the coverage of the gas grid[8]. As shown in Table 4, the majority (93%) of urban dwellings are within the coverage of the gas grid, whereas over half (63%) of those in rural areas are not.

Table 4: Gas Grid Coverage Overall and by Urban/Rural Location, 2015

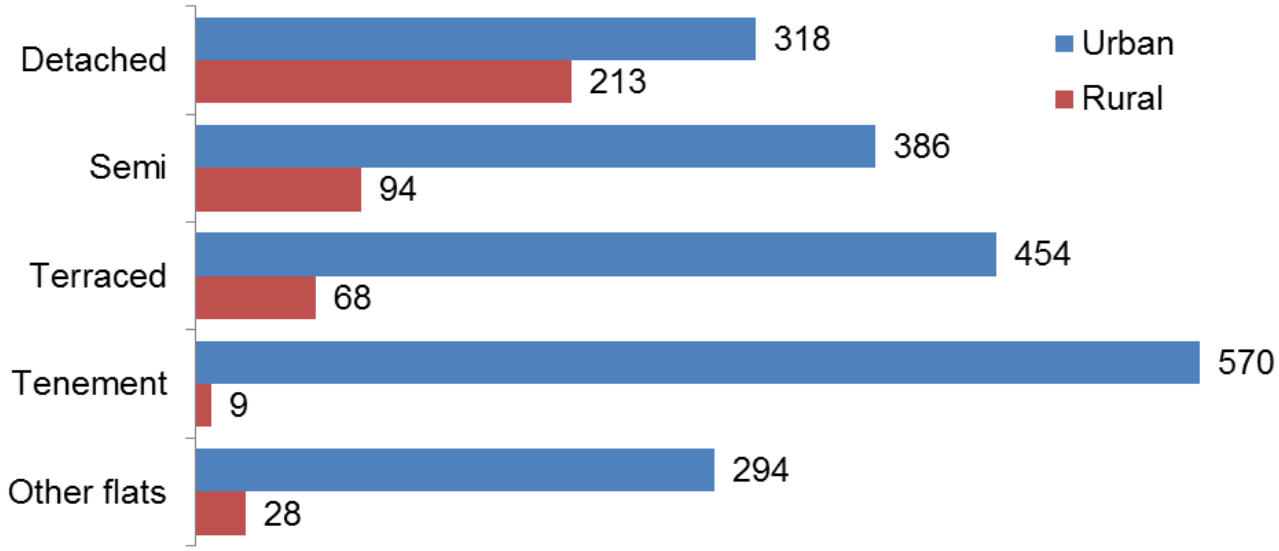
Gas Grid Coverage			Location			
			Urban		Rural	
	000s	%	000s	%	000s	%
On Gas Grid	2,038	84%	1,887	93%	150	37%
Off Gas Grid	396	16%	135	7%	261	63%
Total	2,434	100%	2,022	100%	412	100%
Sample size		*2,754*		*2,147*		*607*

24. Connection to the grid allows households to use gas for heating and hot water. Gas is currently the cheapest of the major commercial fuels, so gas grid access can have a strong effect on the cost of heating a home.

[8] Gas grid coverage is determined on the basis of the distance of the dwelling from a low/medium pressure gas distribution pipe. Based on the usual maximum distance for standard domestic connection (63 m), dwellings are classified as being “on” or “off” the grid. This does not reflect whether the dwelling is actually connected to the grid.
Further details on the method for estimating distance to the gas grid are available in section 7.5.4 of this report and in SHCS Methodology Notes 2015 available at www.gov.scot/Topics/Statistics/SHCS/Downloads/MethodologyNotes2015

25. Figure 3 shows the number of dwellings in rural and urban areas by type.

Figure 3: Dwelling Types in Rural and Urban Areas (000s), 2015



26. Just over half (213,000) of all rural dwellings are detached, and nearly a quarter (94,000) are semi-detached. Only 9% of rural dwellings are flats; 37,000 in total.

27. The most common dwelling type in urban areas is the tenement flat (570,000), accounting for around 28% of urban housing. Around 57% of urban stock are detached, semi-detached and terraced houses, in total accounting for over 1.2 million of the 2 million urban dwellings.

2.3 Heating Fuel

28. The primary heating fuel affects the cost of heating and therefore the energy efficiency of the dwelling and the risk of the occupants experiencing fuel poverty.

29. The relationship between the type of fuel used, the energy efficiency rating and fuel poverty will be explored further in later chapters. This section examines the distribution of dwellings in terms of the primary heating fuel used and a range of other characteristics.

30. Overwhelmingly the most common heating fuel is mains gas: 79% of Scottish households (around 1.9 million) use mains gas for heating, 12% use electricity and 7% use oil.

Table 5: Primary Heating Fuel, Households (000s) and %, for All Stock and by Sector, 2015

	All Stock		Private		Social	
Primary Heating Fuel	**000s**	**%**	**000s**	**%**	**000s**	**%**
Mains gas	1,914	79%	1,446	78%	468	79%
Electricity	284	12%	192	10%	92	16%
Oil	158	7%	156	8%	*	*
Communal Heating	25	1%	5	0%	21	3%
Solid mineral fuel	18	1%	16	1%	*	*
LPG bulk or bottled	15	1%	*	*	*	*
Biomass	15	1%	*	*	*	*
Other	-	-	-	-	-	-
Sample size		*2,754*		*2,095*		*659*

* denotes cases where attributes appear too rarely to provide an adequate basis for reporting. See section 7.1.5 for table conventions

31. There is a greater diversity in fuels used in the private housing sector. Gas and electricity are used in 95% of social housing and around 3% (21,000 households) use some form of communal heating.

32. 82% of dwellings built between 1919 and 1982 use gas as their primary heating fuel. In comparison, 76% of dwellings built after 1982 use gas. Of the older dwellings, fewer use gas (73%) while electricity and other fuel types are more common (9% and 17% respectively).

33. Primary heating fuel also varies by type of dwelling. As shown in Table 6, households living in detached houses are least likely to use mains gas for heating: around two thirds (66%) of them do, compared to almost four out of five (79%) households for Scotland as a whole. This is largely because only around a third (35%) of pre-1919 detached houses have gas as their primary heating fuel; 54% use some other fuel source and 11% use electricity. As shown in Figure 3 and Table 4 this is due to the higher proportion of detached dwellings in rural areas which are not within the coverage of the gas grid.

34. “Other” fuels are most commonly used in detached houses across all age groups. Flats have the highest levels of electricity as primary heating fuel, especially among post-1919 dwellings.

Figure 4: Primary Heating Fuel by Age and Type of Dwelling, 2015 (percent of dwellings in age/type category using fuel type)

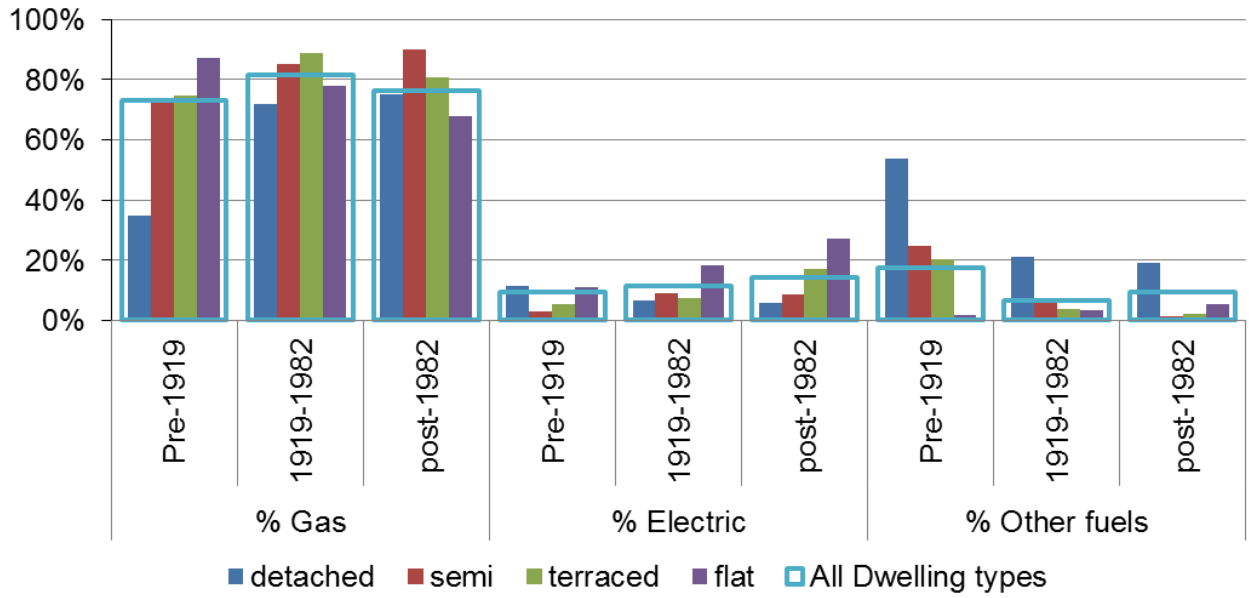


Table 6: Primary Heating Fuel by Age and Type of Dwelling, 2015

Dwelling Type	Dwelling Age	Primary Heating Fuel			*Sample size*
		Gas	Electric	Other	
All Dwelling types	**All age bands**	79%	12%	10%	*2,749*
	pre-1919	73%	9%	17%	*487*
	1919-1982	82%	11%	7%	*1,570*
	post-1982	76%	14%	9%	*692*
Detached	**All age bands**	66%	7%	27%	*692*
	pre-1919	35%	11%	54%	*129*
	1919-1982	72%	7%	21%	*274*
	post-1982	75%	6%	19%	*289*
Semi	**All age bands**	85%	8%	7%	*594*
	pre-1919	72%	3%	25%	*57*
	1919-1982	85%	9%	6%	*412*
	post-1982	90%	9%	1%	*125*
Terraced	**All age bands**	86%	9%	6%	*625*
	pre-1919	75%	5%	20%	*71*
	1919-1982	89%	7%	4%	*444*
	post-1982	81%	17%	2%	*110*
Flat	**All age bands**	79%	18%	3%	*838*
	pre-1919	87%	11%	2%	*230*
	1919-1982	78%	18%	3%	*440*
	post-1982	68%	27%	5%	*168*

2.4 Household Type

35. In this report we describe households in terms of three main types which are derived from the more detailed classification used in the Scottish Household Survey[9]:

- **Families.** These are households which contain at least one child aged under 16. The resident adults may be of any age.
- **Older households.** One- or two-member households which include at least one resident aged 65 or older.
- **Other households.** These are all other household types which are made up of adults only and have no resident children.

More details about the definitions are provided in section 7.5.2. This grouping differs from the one used in previous SHCS reports. The age threshold for older households used up until the 2014 Key Findings report was 60 for women and 65 for men, which reflected the prevalent state pension age for this period. As state pension age for women is gradually approaching that for men, for the current report we adopt 65 as the common age threshold for both men and women.

36. There is a broad association between household types and the type of dwellings they occupy, as shown in Figure 5 and Table 7. While families and older households are more likely to live in houses (74% and 69% respectively), other households are more evenly split between houses and flats (53% and 47% respectively).

37. Families have the highest occupancy of post-1982 dwellings, particularly houses: 27% of households with children live in post-1982 houses, compared with 13% of older households and 15% of other types of households. The highest occupancy of pre-1919 flats is observed among other types of households, 16%, compared to 7% for families and 8% for older households.

[9] Available at http://www.gov.scot/Publications/2016/09/7673/downloads

Figure 5: Proportion of Households in Each Dwelling Type and Age Band, 2015

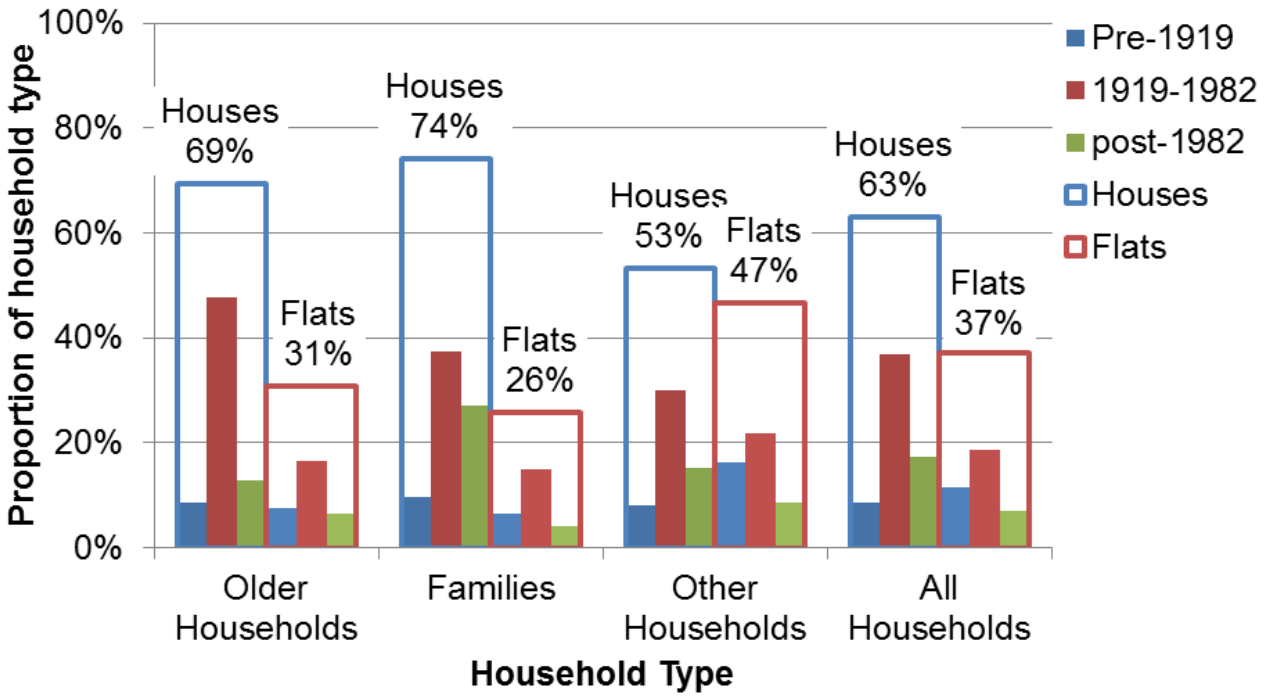


Table 7: Proportion of Households in Each Dwelling Type and Age Band, 2015

Dwelling Type and Age Band		Older Households	Families	Other Households	All Household Types
Houses	Pre-1919 House	9%	10%	8%	9%
	1919-1982 House	48%	37%	30%	37%
	Post-1982 House	13%	27%	15%	17%
	Subtotal	69%	74%	53%	63%
Flats	Pre-1919 Flat	8%	7%	16%	11%
	1919-1982 Flat	16%	15%	22%	19%
	Post-1982 Flat	7%	4%	9%	7%
	Subtotal	31%	26%	47%	37%
Total		100%	100%	100%	100%
Sample size		*841*	*679*	*1,234*	*2,754*

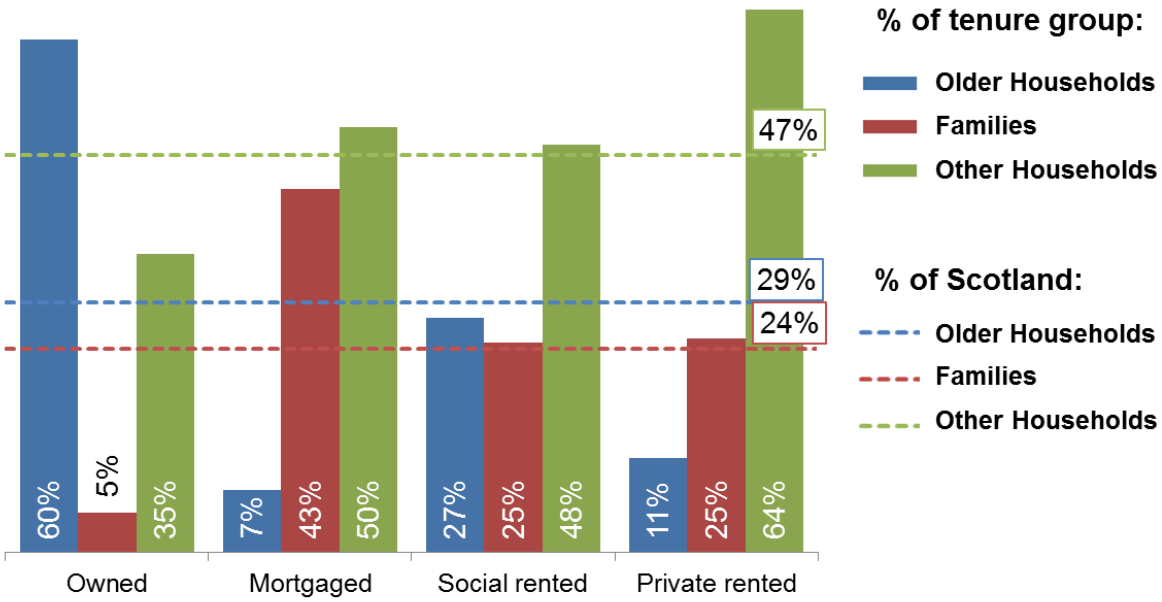
2.5 Tenure

38. Statistics on tenure in the SHCS are based on the achieved sample of dwellings in the survey and are not calibrated against figures produced as part of the Scottish Government Housing Statistics for Scotland[10] publication. For estimates of the total number of dwellings by tenure, readers are referred to the Housing Statistics for Scotland publication which uses information from social landlords' returns covering the social housing sector comprehensively and therefore provides more accurate estimates of the total stock.

39. Data from the SHCS sample provides more detailed information on the composition of each tenure type. This is the topic we explore in this section.

2.5.1 Household Type and Tenure

Figure 6: Proportion of Households in Each Tenure Group by Household Type, 2015



Note: Dashed lines represent the proportion of household type in Scotland as a whole.

40. There are some clear differences in household type across tenure, as shown in Figure 6.

[10] Housing Statistics for Scotland http://www.gov.scot/Topics/Statistics/Browse/Housing-Regeneration/HSfS/KeyInfoTables

41. Owner occupiers with mortgages are predominantly families (43%) and other households (51%), while those who own their properties outright are dominated by older households (60%) and other types of households (35%).

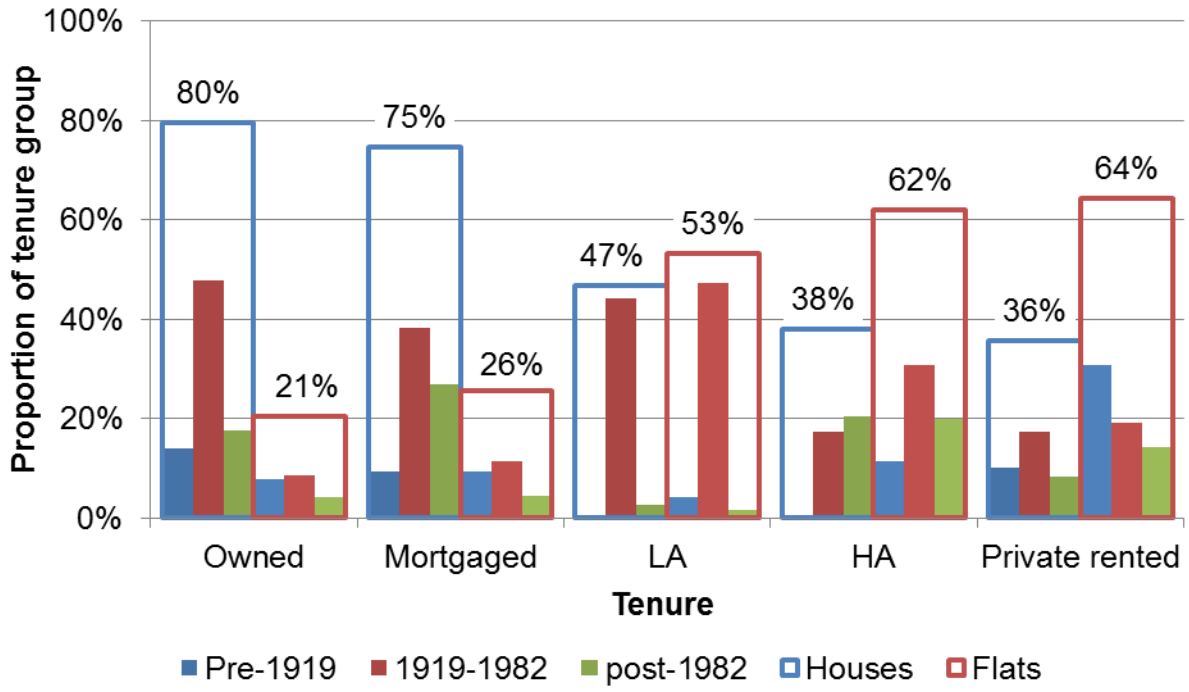
42. The majority of those who rent from private landlords (PRS) belong to other households (64%) and only 11% are older households. A quarter of renters in both the private and the social sector are households with children, which reflects their share in the national population.

2.5.2 Dwelling Type and Tenure

43. Figure 7 shows that rented properties are more likely to be flats. Flats account for 53% of all Local Authority stock, 62% of Housing Association stock and 64% of dwellings rented from private sector landlords.

44. Owner-occupied dwellings are more likely to be houses, 80% of dwellings owned outright and 75% of those with a mortgage, compared to 47% of dwellings owned by Local Authorities, 38% of Housing Association stock and 36% of private rented properties

Figure 7: Proportion of Dwellings in Each Tenure Group by Age Band and Type of Dwelling, 2015



45. Almost all properties (91%) owned by Local Authorities (LA) were built between 1919 and 1982, while about half (49%) of the Housing Associations (HA) stock was built in this period and 40% are more recent. By contrast, 41% of private rented sector dwellings were built before 1919 (Table 8).

Table 8: Proportion of Dwellings in Each Tenure Group, by Age Band and Type of Dwelling, 2015

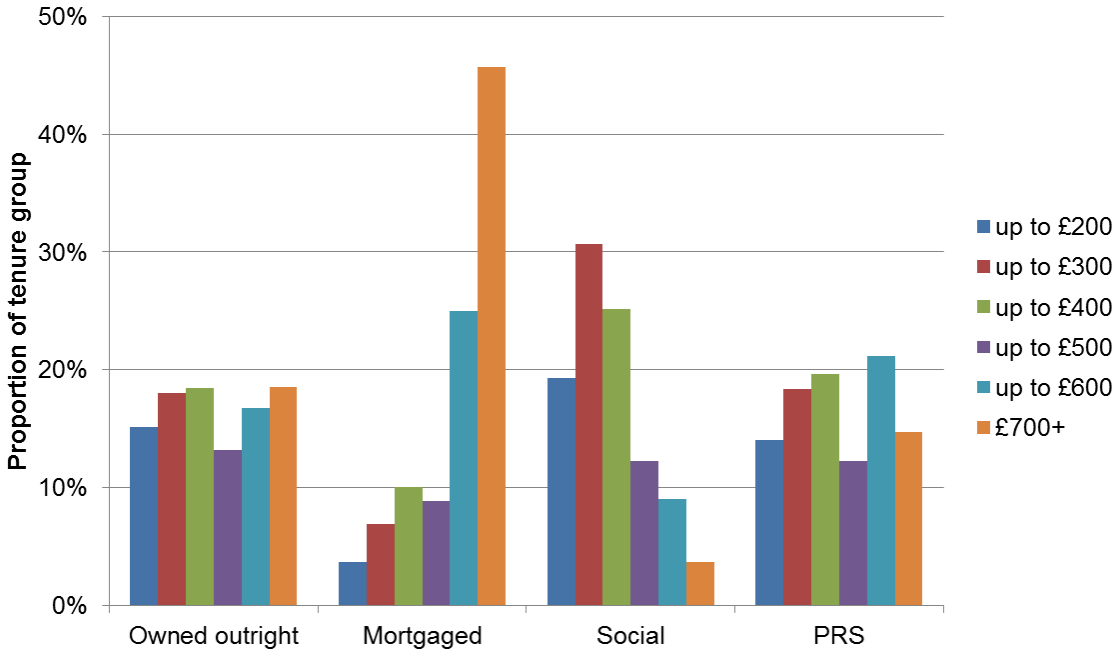
Dwelling Age and Type		Owned	Mort-gaged	LA	HA	Private rented
Houses	Pre-1919	14%	9%	-	-	10%
	1919-1982	48%	38%	44%	18%	17%
	Post-1982	18%	27%	3%	20%	8%
	Subtotal	80%	75%	47%	38%	36%
Flats	Pre-1919	8%	9%	4%	11%	31%
	1919-1982	9%	12%	47%	31%	19%
	Post-1982	4%	5%	2%	20%	14%
	Subtotal	21%	26%	53%	62%	64%
Total		100%	100%	100%	100%	100%
Sample size		*929*	*811*	*380*	*279*	*355*

2.5.3 Household Income Band

46. As we might expect, income and tenure are closely correlated. For social sector residents the distribution is skewed towards lower income groups, as shown in Figure 8, while households with mortgages have the largest share of higher income groups.

47. The distribution of households by income in the private rented sector (PRS) is broadly similar to that for outright owner occupiers. It is generally wider than the social housing sector, including significant shares of both higher and lower income band households.

Figure 8: Proportion of Households in Each Tenure Group by Weekly Household Income Band, 2015



3. Energy Efficiency

48. The energy efficiency of a dwelling depends on its physical characteristics. Factors such as the age of construction, the dwelling type, the heating and hot water systems in use and the extent to which the building fabric is insulated, all affect energy efficiency.

49. Based on information about the characteristics of the dwelling collected in the SHCS physical survey, and using some standard assumptions about the make-up and the behaviour of the occupying household, the energy consumption associated with the dwelling is modelled. This allows to make comparisons of energy use, emissions and energy efficiency ratings between dwellings that are independent of occupant behaviour. Further details on the methodology underpinning these measures of energy efficiency are provided in the Methodology Notes[11].

50. In this chapter we report on analysis of:

- levels of insulation in Scottish dwellings (section 3.1);
- Energy Efficiency Ratings (EER), also known as SAP ratings (section 3.3);
- modelled CO2 emissions from dwellings (section 3.5); and
- Environmental Impact Ratings (section 3.6).

3.1 Insulation Measures

◊ The majority of loft spaces are insulated. As of 2015, at least 100 mm of **loft insulation** is installed in an estimated 92% of lofts. This is an increase of 10 percentage points on 2010 levels

◊ 8% of lofts (an estimated 144,000 dwellings) have less than 100 mm of insulation or no insulation at all and would benefit from retrofit or top up measures. This is similar to 2014.

[11] SHCS - Methodology Notes 2015 available at www.gov.scot/Topics/Statistics/SHCS/Downloads/MethodologyNotes2015

- Lofts with a high standard of insulation (300 mm or more) continue to show a significant year on year increase. In 2015 32% of lofts were insulated to this standard, an increase of 5 percentage points from 2014.
- The proportion of **insulated cavity walls** recorded by the SHCS was 71% in 2015. This is similar to the previous year. In the longer term the share of insulated cavity walls has grown by 9 percentage points since 2010 and 6 percentage points since 2011.
- The proportion of **solid wall** dwellings with insulation was 11% in 2015. No increase since 2014 was recorded by the survey.
- There still remains a significant difference in the uptake of wall insulation measures between the private and social sectors.

51. Installing or upgrading insulation is one of the most effective ways to improve the energy efficiency of a building. The Energy Saving Trust estimates that an un-insulated dwelling loses a third of all its heat through the walls and a further quarter through the roof[12]. As a result, insulation can significantly increase thermal comfort and reduce heating bills.

52. Additional insulation is most commonly added to a property through the insulation of loft spaces and by adding insulating material to external walls.

3.1.1 Loft Insulation

53. Since 2010, an overall improvement in loft insulation has occured. The proportion of all housing with 100 mm or more of loft insulation increased 10 percentage points on 2010 levels, with 92% of applicable dwellings insulated in 2015 (see Table 10).

[12] EST: Roof and Loft Insulation http://www.energysavingtrust.org.uk/scotland/Insulation/Roof-and-loft-insulation
EST: Wall Insulation http://www.energysavingtrust.org.uk/domestic/cavity-wall and http://www.energysavingtrust.org.uk/domestic/solid-wall

54. Lofts with a high standard of insulation (300 mm or more) continue to show a significant year on year increase. While only 5% of lofts were insulated to this standard in 2010 (the first year the SHCS captured this information), by 2015 this figure had increased to 32%. This is an increase of 5 percentage points from 2014.

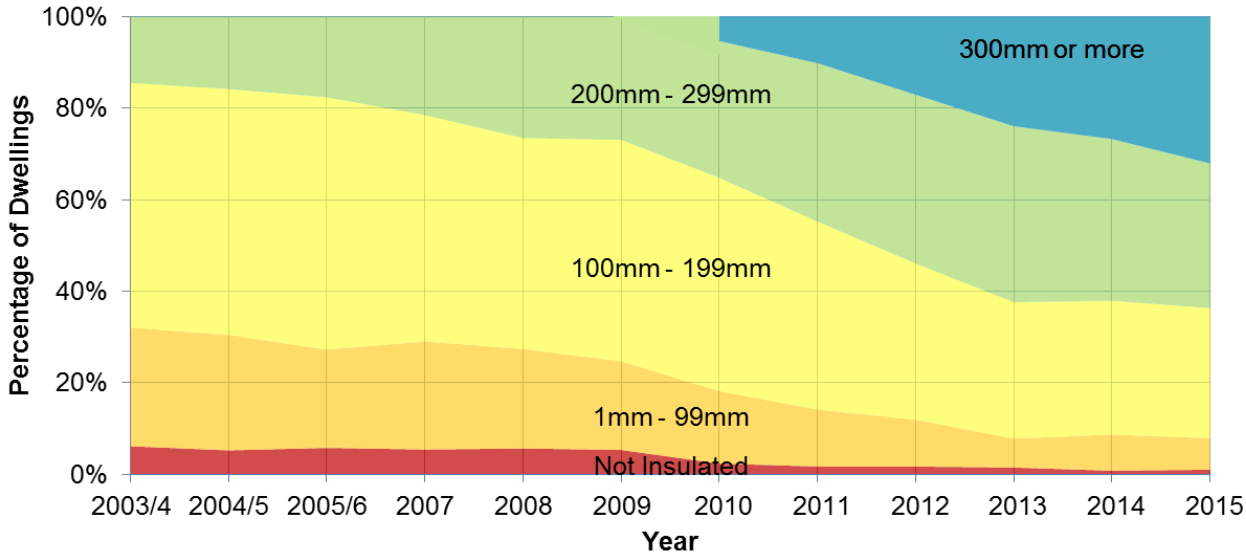
55. The proportion of dwellings without loft insulation was 1% of all dwellings with lofts in 2015.

56. Figure 9 shows the level of loft insulation in all dwellings back to 2003/4.

57. The number of dwellings with no loft insulation has fallen from 6% in 2003/4 to 1% in 2015. Most of this decline occurred before 2010. Since then improvement has slowed down, suggesting that there may be barriers preventing the installation of insulation in the relatively few remaining lofts.

58. Over the same period the thickness of loft insulation has increased significantly. In 2015, 64% of dwellings with lofts had insulation with a depth of 200 mm or more. Much of this increase has occurred since 2009 (Figure 9), when 27% of lofts fell into this group and can largely be attributed to the installation of top up insulation.

Figure 9: Depth of Loft Insulation (where applicable) 2003/04 - 2015



Note: A dwelling is classified as 'not applicable' for loft insulation if it has a flat roof or another dwelling above it (i.e. it is a mid- or ground-floor flat).

59. For 2009 the SHCS estimated that 1,318,000 lofts had less than 200 mm of insulation, as shown in Table 9. By 2015 this number had decreased by approximately 655,000 to an estimated 663,000 lofts.

60. Between April 2008 and December 2012, the UK government Carbon Emissions Reduction Target (CERT) scheme delivered 410,937 loft insulation measures in Scotland[13].

61. Between January 2013 and December 2015 a further 39,279 loft insulation measures were delivered in Scotland by its successor scheme ECO[14].

62. In total, around 450,000 loft insulation measures have been installed under these government programs since 2008.

Table 9: Depth of Loft Insulation (000s), 2009 to 2015

Loft Insulation	2015	2014	2013	2012	2011	2010	2009
none	19	15	27	31	32	42	96
1mm-99mm	125	143	113	185	225	279	349
100mm-199mm	518	528	534	617	745	822	872
Subtotal: <200mm	663	686	675	834	1,002	1,143	1,318
200mm or more	1,161	1,123	1,118	975	812	621	485
Not applicable	610	611	606	577	554	592	542
All Dwellings	2,434	2,420	2,399	2,386	2,368	2,357	2,344
Sample size	*2,754*	*2,682*	*2,723*	*2,787*	*3,219*	*3,114*	*3,346*
Cumulative recorded loft insulation measures under government schemes[15]							
CERT (000s)				411	269	157	92
ECO (000s)	39	30	10				

[13]CERT-Summary-Report-Q19-by-English-Regions-Scotland-Wales, HEED dB, Nov 2014. Access available through Energy Saving Trust.

[14] Scottish Government analysis of data provided by Ofgem of measures installed under ECO. Provisional figures.

[15] Note that the SHCS data collection continues throughout the year. Some of the measures recorded in administrative sources for a particular year may be picked up by the survey in subsequent years.

63. As shown in Table 10 thickness of loft insulation is greater in social sector dwellings. In 2015, 91% of private housing lofts were insulated to 100 mm or more and 61% to at least 200 mm. In the social sector, 96% of dwellings had lofts insulated to 100 mm or more, and 75% had at least 200 mm of loft insulation.

64. One of the reasons for this difference between private and social sector is that the Scottish Housing Quality Standard (SHQS) requires at least 100 mm of loft insulation. The SHQS was introduced in 2004, and all social rented dwellings were required to meet this standard by 2015 (see section 6.2.2 for more information).

65. The difference in the proportion of lofts with at least 100 mm insulation between the private and the social sector has been reducing gradually, from 17 percentage points in 2003/04 (81% in the social and 64% in the private sector) to 6 percentage points in 2015 (96% in the social sector and 91% in the private).

Table 10: Depth of Loft Insulation (000s and %) by Tenure, 2014 and 2015[16]

Year	Loft Insulation	Private Sector		Social Sector		All Tenures	
		000s	%	000s	%	000s	%
2015	none	17	1%	2	1%	19	1%
	1mm - 99mm	113	8%	13	4%	125	7%
	100mm+	1,332	91%	347	96%	1,680	92%
	100mm - 199mm	442	30%	76	21%	518	28%
	200mm - 299mm	455	31%	121	34%	576	32%
	300mm or more	435	30%	150	41%	585	32%
	Total	1,462	100%	362	100%	1,824	100%
2014	none	15	1%	-	-	15	1%
	1mm - 99mm	135	9%	7	2%	143	8%
	100mm+	1,287	90%	364	98%	1,651	91%
	100mm - 199mm	432	30%	96	26%	528	29%
	200mm - 299mm	481	33%	158	43%	639	35%
	300mm or more	374	26%	110	30%	484	27%
	Total	1,437	100%	371	100%	1,809	100%
Sample	*2015*		*1,753*		*437*		*2,190*
	2014		*1,708*		*432*		*2,140*

[16] Dwellings without loft spaces are excluded.

66. Between 2014 and 2015 the main improvement in loft insulation was in the growing share of lofts insulated to at least 300 mm, from 27% in 2014 to 32% in the following year. This is particularly evident in the social sector where this share rose from 30% to 41%.

3.1.2 Wall Insulation

67. The presence of **cavity wall insulation (CWI)** is becoming increasingly difficult for SHCS surveyors to identify as over time the injection holes age, fade or are covered up by later work. Contractors are also getting better at disguising their work. This may mean that the SHCS under-estimates the number of homes which have had CWI installed (see also section 6.2.2). Despite efforts to maintain the high quality of the SHCS physical survey fieldwork, some misclassifications may remain.

68. In Scotland around three quarters of dwellings have external cavity walls and the remaining one quarter have solid or other construction types of external wall. These “other” types include steel or timber-frame dwellings and dwellings made from pre-fabricated concrete. Because the improvement of solid and other wall types generally requires more expensive interventions than CWI, this diverse group is addressed together in this chapter.

69. Table 11 and Table 12 show the number and proportion of insulated dwellings by type of external wall. Higher insulation levels in new buildings have been required by building standards since 1982. These dwellings are therefore presumed insulated when built.

Table 11: Cavity Wall Insulation, 2010 to 2015[17]

	2015		2014		2013		2011		2010	
	000s	%	000s	%	000s	%	000s	%	000s	%
Not insulated	525	29%	518	29%	554	31%	600	34%	671	38%
Insulated	1,286	71%	1,287	71%	1,218	69%	1,154	66%	1,076	62%
Total	1,811	100%	1,805	100%	1,772	100%	1,754	100%	1,747	100%
Sample		*2,099*		*2,017*		*2,051*		*2,414*		*2,337*
Cumulative reduction in uninsulated cavity wall dwellings since 2007, SHCS										
000s	291		298		262		216		145	
Cumulative recorded CWI installations under government schemes since 2007, thousands										
CERT[18]							178		130	
ECO[19]	74		55		19					

70. In 2015 71% of cavity wall dwellings in Scotland were insulated (Table 11). This is the same as recorded by the survey in 2014. Although we know from administrative data that 18,805 cavity wall dwellings were insulated during 2015 (through ECO), the change from 2014 has not been picked up by the survey, which is only based on a sample of all dwellings. However the longer term trend is consistent with administrative data, which shows an increase in the share of insulated cavity walls of 6 percentage points since 2011 and 9 percentage points since 2010. This increase is broadly equivalent to the number of cavity wall insulation measures installed under the Carbon Emissions Reduction Target (CERT) and its successor scheme, the Energy Company Obligation (ECO) which began in 2013.

[17] Dwellings built post 1982 are presumed insulated when built

[18] CERT-Summary-Report-Q19-by-English-Regions-Scotland-Wales, HEED dB, Nov 2014. Access available through Energy Saving Trust.

[19] Scottish Government analysis of data provided by Ofgem of measures installed under ECO. Provisional figures.

71. Between April 2008 and December 2012, the UK government Carbon Emissions Reduction Target (CERT) scheme delivered around 227,000 wall insulation measures in Scotland[20] (218,000 cavity and 9,000 solid and other walls). Between January 2013 and December 2015 a further 73,718 cavity and 28,610 solid wall insulation measures were delivered in Scotland by the successor Energy Company Obligation (ECO) scheme[21]. This equates to a total of around 329,000 wall insulation measures being installed under these two government programs by the end of 2015, including around 292,000 cavity wall insulation measures. This is almost identical to the cumulative reduction of 291,000 uninsulated cavity wall dwellings reported by the SHCS since 2007 (Table 11).

72. Table 12 shows the levels of insulation in dwellings with **solid or other** construction type walls recorded by the survey in 2015. The results show that 11% of dwellings in this category had insulated walls. The difference with the level recorded in the previous year (14%) is within the margin of error. Only 655 dwellings with solid walls were surveyed in 2015 as part of the SHCS. This relatively small sample does not allow enough precision to capture the increase in solid wall insulation measures which we know from administrative data is taking place. Since the beginning of January 2013 at least 28,610 solid wall insulation measures were delivered in Scotland[22], however the proportion of insulated solid wall dwellings recorded by the SHCS has stayed more or less constant between 9% and 17% (allowing for sampling error).

73. Further information on insulation levels by wall type for the private and social housing stock is provided in Table 13.

[20] CERT-Summary-Report-Q19-by-English-Regions-Scotland-Wales, HEED dB, Nov 2014. Access available through Energy Saving Trust.

[21] Scottish Government analysis of data provided by Ofgem of measures installed under ECO. Provisional figures.

[22] This is the number of SWI measures delivered under ECO

Table 12: Wall Insulation of Solid and Other Wall Types, 2011 to 2015[23]

	2015		2014		2013		2012		2011	
	000s	%	000s	%	000s	%	000s	%	000s	%
Not insulated	552	89%	528	86%	559	89%	557	89%	546	89%
Insulated	71	11%	85	14%	71	11%	66	11%	68	11%
Total	623	100%	613	100%	630	100%	623	100%	614	100%
Sample		*655*		*663*		*674*		*711*		*805*
Cumulative recorded EWI installations under government schemes since 2007, thousands										
CERT[24]							9		5	
ECO[25]	29		18		4					

74. Around three quarters (73%) of cavity wall dwellings and a quarter (25%) of dwellings with other wall types in the social sector are estimated to have insulation in 2015. Two-thirds (66%) of social housing overall had insulated walls.

75. Over two thirds (70%) of private sector cavity wall dwellings, and 9% of solid wall dwellings, had insulation in 2015. Just over half (52%) of all private sector dwellings had insulated walls.

76. The information in Table 12 is broken down by type of cavity wall into **hard to treat cavities (HTTC)** and standard cavity walls using the ECO definition as far as possible with the available data (further details on the definition are available in section 7.5.6.). HTTCs have certain attributes which make CWI more expensive, complex or simply inadvisable. Standard cavity walls have no such barriers.

[23] Dwellings built post 1982 are presumed insulated when built

[24] CERT-Summary-Report-Q19-by-English-Regions-Scotland-Wales, HEED dB, Nov 2015. Access available through Energy Saving Trust

[25] Scottish Government analysis of data provided by Ofgem of measures installed under ECO. Provisional figures.

Table 13: Insulation by Wall Type and Tenure, 2015 and Insulation of all Wall Types by Tenure, 2014 and 2015[26]

Wall and Insulation Type	Private Sector			Social Sector			Total		
	000s	%wall	% all	000s	%wall	%all	000s	%wall	%all
2015									
Cavity									
Un-insulated	392	30%	21%	133	27%	23%	525	29%	22%
- HTTC	130	10%	7%	58	12%	10%	188	10%	8%
- Standard	262	20%	14%	75	15%	13%	337	19%	14%
Insulated	920	70%	50%	366	73%	62%	1,286	71%	53%
- CWI	462	35%	25%	198	40%	34%	659	36%	27%
- Int/External	40	3%	2%	68	14%	12%	108	6%	4%
- As built	418	32%	23%	100	20%	17%	519	29%	21%
Total	1,312	100%	71%	499	100%	85%	1,811	100%	74%
Sample size		*1,527*			*572*			*2,099*	
Solid/Other									
Un-insulated	484	91%	26%	67	75%	11%	552	89%	23%
- Pre-1919	413	78%	22%	40	45%	7%	453	73%	19%
- Post-1919	72	13%	4%	27	30%	5%	98	16%	4%
Insulated	48	9%	3%	23	25%	4%	71	11%	3%
- Retrofit	41	8%	2%	23	25%	4%	63	10%	3%
- As built	8	1%	0%	-	-	-	8	1%	0%
Total	533	100%	29%	90	100%	15%	623	100%	26%
Sample size		*568*			*87*			*655*	
All Wall Types									
Uninsulated	877		48%	200		34%	1077		44%
Insulated	968		52%	389		66%	1357		56%
Total	1,845		100%	589		100%	2,434		100%
Sample size			*2,095*			*659*			*2,754*
2014: All Wall Types									
Uninsulated	855		48%	191		31%	1,046		43%
Insulated	938		52%	435		69%	1373		57%
Total	1,792		100%	626		100%	2,418		100%
Sample size			*2,008*			*672*			*2,680*

[26] Dwellings built post 1982 are presumed insulated when built

77. Overall, the majority of work done to cavity walls has been CWI; 36% of cavity wall dwellings in Scotland have had retrofit cavity wall insulation, which is generally the lowest cost improvement available.

78. Levels of insulation are higher in the social sector 66% (all wall types) compared with 52% in the private sector. The difference is more marked with respect to the more expensive measures, internal/external insulation of cavity walls (14% of cavity wall dwellings in the social sector compared to 3% in the private) and solid wall insulation measures (25% compared to 8% respectively).

79. No improvement in wall insulation levels is recorded in the survey for either the private or the social housing sector since 2014.

3.2 Boilers

80. The heating system is a key factor in the thermal efficiency of a dwelling.

81. Around 85% of households use a gas or oil-fuelled boiler. Trends in boiler efficiency are closely related to developments in energy efficiency and building standards regulations:

    - From 1998, minimum boiler efficiency standards were set by European Council Directive 92/42/EEC[27]
    - Since 2007, Scottish Building Standards increased the efficiency requirements for all new and replacement boilers[28]

82. Building regulations in Scotland effectively require the installation of a condensing boiler[29] for gas and oil-fuelled heating in new builds or when boilers are replaced.

---

[27] EU "Boiler Efficiency Directive" http://www.icqc.co.uk/userfiles/File/Directive_92_42.pdf

[28] Domestic Building Services Compliance Guide for Scotland http://www.gov.scot/Resource/0046/00460094.pdf

[29] This design has higher running efficiencies; a portion of the heat that would be lost through vented water vapour is recovered through condensation in a heat exchanger.

83. The SHCS records the age of the heating system since 2010 and contains sufficient data to derive the Seasonal Efficiency (SEDBUK) ratings of surveyed boilers in the 2012-2015 data collections. For these years we can track the energy efficiency improvement of gas and oil boilers associated with the rising standards of the regulatory framework.

84. The minimum requirements for the installation of new boilers in new buildings are: a minimum efficiency of 88% for standard gas, oil and LPG boilers and 86% for condensing combination boilers; 75% for gas ranges and 63% for gas room heaters; 80% for oil-fuelled ranges and 60% for oil room heaters[30].

Table 14: Gas and Oil Boiler Improvements, 2007-2015

	2015	**2014**	**2013**	**2012**	**2011**	**2010**	**2009**	**2008**	**2007**
Households using gas or oil boilers for heating									
%	85%	84%	84%	82%	83%	83%	83%	82%	82%
000s	2,075	2,041	2,022	1,960	1,963	1,945	1,935	1,906	1,896
… of which									
% "new" boilers (post-1998)	89%	85%	83%	81%	73%	70%			
% condensing boilers	56%	48%	43%	38%	33%	22%	17%	12%	7%
% standards compliant	48%	41%	38%	32%					
Sample (gas/oil boilers)	*2,259*	*2,195*	*2,219*	*2,222*	*2,601*	*2,488*	*2,684*	*2,414*	*2,410*

85. In 2015 the survey found that 89% of the domestic gas and oil boilers in Scotland were installed since 1998, when the European Boiler Efficiency Directive minimum standards came into effect. The proportion installed in accordance with this directive has increased by 19 percentage points since 2010.

86. In 2015, over half (56%) of gas and oil boilers were condensing boilers. This represents a rapid increase of 49 percentage points over eight years.

[30] For existing dwellings, there are occasions where it may not be practical to install a condensing boiler. The 'Condensing Boiler Installation Assessment Procedure Guide' offers further guidance in this area. Where a non-condensing boiler is installed this may results in a boiler with poorer efficiency than that of a newly installed condensing boiler of the same fuel type.

87. In 2015, 48% of gas and oil boilers meet the minimum efficiencies specified by current Building Standards, an increase of 7 percentage points from 2014. As older boilers reach the end of their life and are replaced, we expect to see a continuation of this trend of improving efficiency.

3.3 Energy Performance Certificates

- Just over two-fifths (42%) of the housing stock in 2015 had an EPC rating of C or better (under SAP 2009), up 18 points since 2010.
- 37% of all properties were rated C or better under SAP 2012 and half of all Scottish dwellings were rated 65 or better.

88. **Energy Performance Certificates (EPC)**[31] were introduced in January 2009 under the requirements of the EU Energy Performance Building Directive (EPBD). They provide energy efficiency and environmental impact ratings for buildings based on standardized usage. EPCs are required when a property is either sold or rented to a new tenant.

89. EPCs are generated through the use of a standard calculation methodology, known as Standard Assessment Procedure (SAP). SAP is the UK Government approved way of assessing the energy performance of a building, taking into account the energy needed for space and water heating, ventilation and lighting and, where relevant, energy generated by renewables.

90. The Energy Efficiency Rating (EER) is expressed on a scale of 1-100 where a dwelling with a rating of 1 will have very poor energy efficiency and high fuel bills, while 100 represents very high energy efficiency and low fuel bills. Ratings can exceed 100 where the dwelling generates more energy than it uses.

91. Ratings are adjusted for floor area so that they are essentially independent of dwelling size for a given built form.

92. For Energy Performance Certificates EERs are presented over 7 bands, labeled A to G. Band A represents low energy cost and high energy efficiency, while band G denotes high energy cost (and low energy efficiency).

---

[31] An example of the current EPC format can be seen at http://www.gov.scot/Resource/0041/00414384.pdf

93. Energy Efficiency Ratings reported in this publication are calculated under two versions of SAP, the SAP 2009 methodology[32] and the most recent SAP 2012 methodology[33]. Using SAP 2009 enables us to examine the trend in the energy efficiency of the housing stock since 2010. SAP 2012 was first used in reporting data from the SHCS in the 2014 Key Findings report and therefore only two years of data are available.

3.3.1 Energy Efficiency Rating, SAP 2009

94. Table 15 shows the trend in mean EE Ratings, which rose from 59.9 in 2010 to 64.6 in 2014. These EE Ratings fall into band D. There has been around a 1 point increase in the average EE Rating each year since 2010, except in the last year.

Table 15: Average EER for 2010 – 2015, SAP 2009

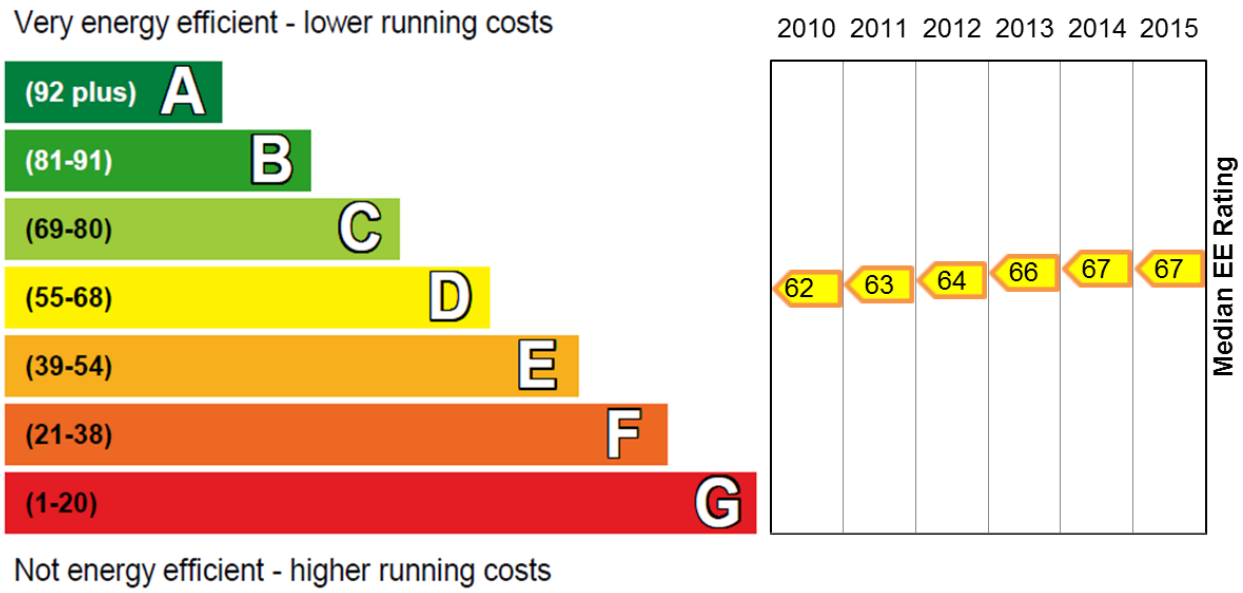
		2015	2014	2013	2012	2011	2010
EER	Mean	64.6	64.1	63.2	61.8	60.9	59.9
	Median	67	67	66	64	63	62
Sample		*2,754*	*2,682*	*2,725*	*2,787*	*3,219*	*3,115*

95. The median EE Rating has also improved over this period. In 2015 half of all Scottish dwellings were rated 67 or better, similar to the previous year.

[32] BRE: The Government's Standard Assessment Procedure for Energy Rating of Dwellings, http://www.bre.co.uk/filelibrary/SAP/2009/SAP-2009_9-90.pdf

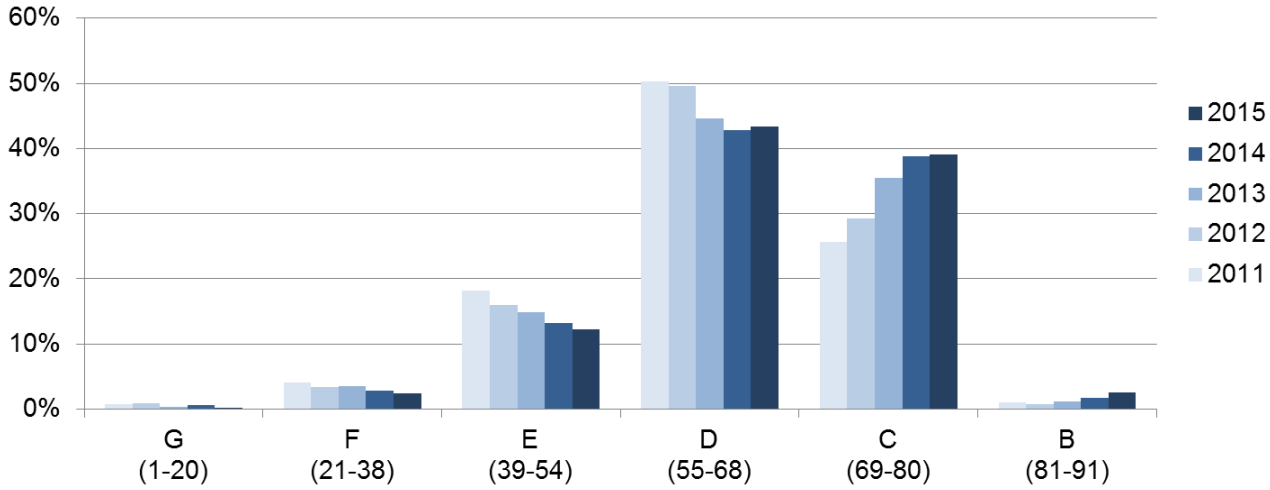
[33] http://www.bre.co.uk/filelibrary/SAP/2012/SAP-2012_9-92.pdf

Figure 10: Median EER relative to EPC bands, SAP 2009, 2010-2015



96. The average figures reflect that Scottish housing is gradually moving up through the EPC bands (where A is the most energy efficient), as shown in Figure 11 and Table 16.

Figure 11: Distribution of the Scottish Housing Stock by EPC Band, SAP 2009, 2011-2015



Values for this figure are provided in Table 16.

97. Just over two-fifths (42%) of the housing stock in 2015 had an EPC rating of C or better, up 18 points since 2010 (Table 16). Over the period 2010-2015, the proportion of properties in the lowest EPC bands, E, F and G, has nearly halved: 27% of properties were rated E, F or G in 2010 compared with 15% in 2015.

Table 16: Distribution of the Scottish Housing Stock by EPC Band, SAP 2009, 2010-2015

EPC band	2015		2014		2013		2012		2011		2010	
	000s	%	000s	%	000s	%	000s	%	000s	%	000s	%
A (92-100)	-	-	-	-	-	-	-	-	-	-	-	-
B (81-91)	62	3%	42	2%	29	1%	20	1%	25	1%	18	1%
C (69-80)	953	39%	939	39%	851	36%	699	29%	606	26%	547	23%
D (55-68)	1,055	43%	1,037	43%	1,072	45%	1,184	50%	1,191	50%	1,157	49%
E (39-54)	298	12%	321	13%	359	15%	381	16%	431	18%	495	21%
F (21-38)	59	2%	68	3%	84	4%	82	3%	96	4%	127	5%
G (1-20)	7	0%	14	0%	8	0%	21	1%	19	1%	13	1%
Total	2,434	100%	2,420	100%	2,402	100%	2,386	100%	2,368	100%	2,357	100%
Sample		*2,754*		*2,682*		*2,725*		*2,787*		*3,219*		*3,115*

No A-rated properties were sampled between 2010 and 2015.

3.3.2 Energy Efficiency Rating, SAP 2012

98. This section examines the energy efficiency profile of the Scottish housing stock in 2015 under the most recent SAP 2012 methodology[34].

99. SAP is periodically reviewed by the UK government to ensure it remains fit for purpose and to address application across an increasing range of carbon and energy reduction policy areas. SAP is used for assessment of new buildings whilst a 'reduced data' version of the methodology, RdSAP, is applied to assessment of existing buildings. On 7 December 2014, a new edition of RdSAP (version 9.92)[35] was implemented across the UK. In addition to introducing some technical updates and broadening of scope (for example, enabling assessment of 'park homes' as a dwelling type), the new edition includes updated UK carbon factors and fuel costs based upon recent research undertaken by BEIS.

100. Tables 17 and 18 show the energy efficiency profile of the Scottish housing stock in 2015 under SAP 2012, and in comparison to 2014. Figure 12 shows this alongside the longer term change as measured by SAP 2009.

[34] www.bre.co.uk/sap2012

[35] http://www.nesltd.co.uk/news/rdsap-992-update

Table 17: Average EER for 2015 and 2014, SAP 2012

		2015	2014
EER	Mean	62.8	62.2
	Median	65	65
	Sample	*2,754*	*2,682*

101. In 2015, the mean energy efficiency rating of the Scottish housing stock under SAP 2012 is 62.8 and the median is 65 points, indicating that half of the housing stock has an energy efficiency rating of 65 or better. The apparent small improvement in the mean rating since 2014 in Table 17 is within the margin of error.

102. Over a third (37%) of all properties were rated C or better and about a fifth (20%) were in bands E, F or G.

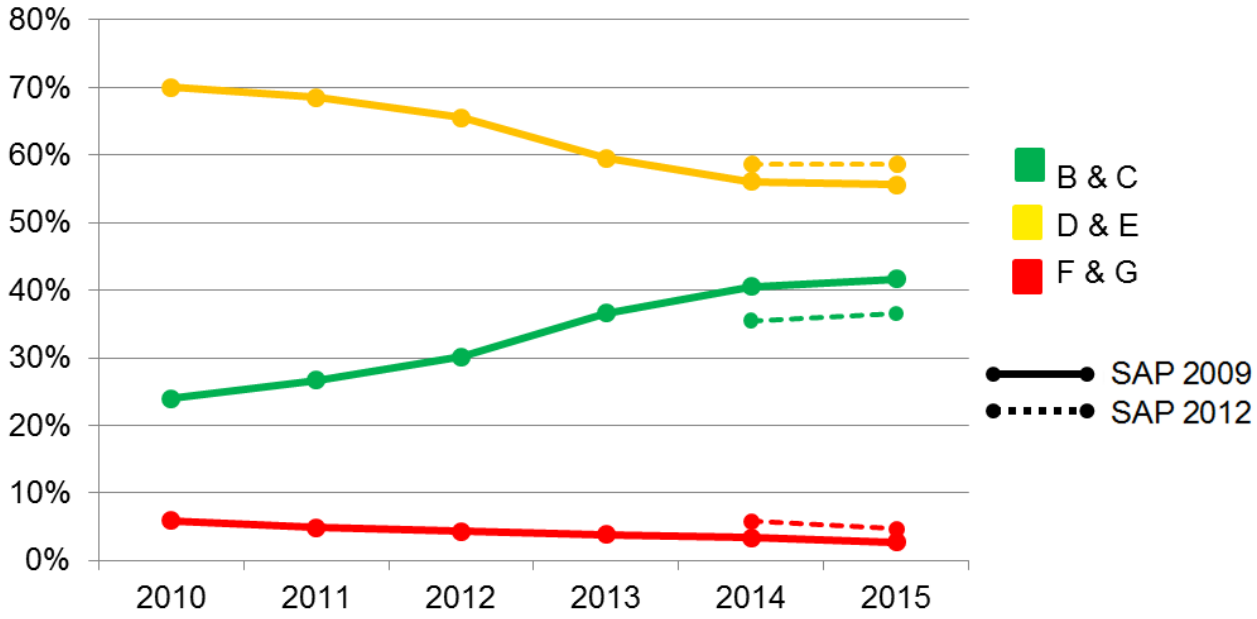
Table 18: Distribution of the Scottish Housing Stock by EPC Band in 2014 and 2015, SAP 2012

EPC Band	2015		2014	
	000s	%	000s	%
A (92-100)	-	-	-	-
B (81-91)	53	2%	29	1%
C (69-80)	837	34%	830	34%
D (55-68)	1,061	44%	1,052	43%
E (39-54)	368	15%	369	15%
F (21-38)	94	4%	115	5%
G (1-20)	20	1%	25	1%
Total	2,434	100%	2,420	100%
Sample		*2,754*		*2,682*

No A-rated properties were sampled in 2014 or 2015.

103. Figure 12 shows a strong trend of improvement in the energy efficiency profile of the housing stock since 2010. The proportion of dwellings rated C or better increased from 24% to 42% of the stock (as measured under SAP 2009), equivalent to a 74% improvement in the share of the most energy efficient dwellings. The observed improvement in the last year, as measured by both SAP 2009 and SAP 2012 is within the margin of error for this survey.

Figure 12: Grouped EPC Bands under SAP 2009 and SAP 2012, 2010-2015



104. Table 19 shows the energy efficiency profile by broad tenure groups in 2015 using SAP 2012. Figure 13 provides more details on the distribution of the least energy efficiency properties by selected dwelling and household characteristics.

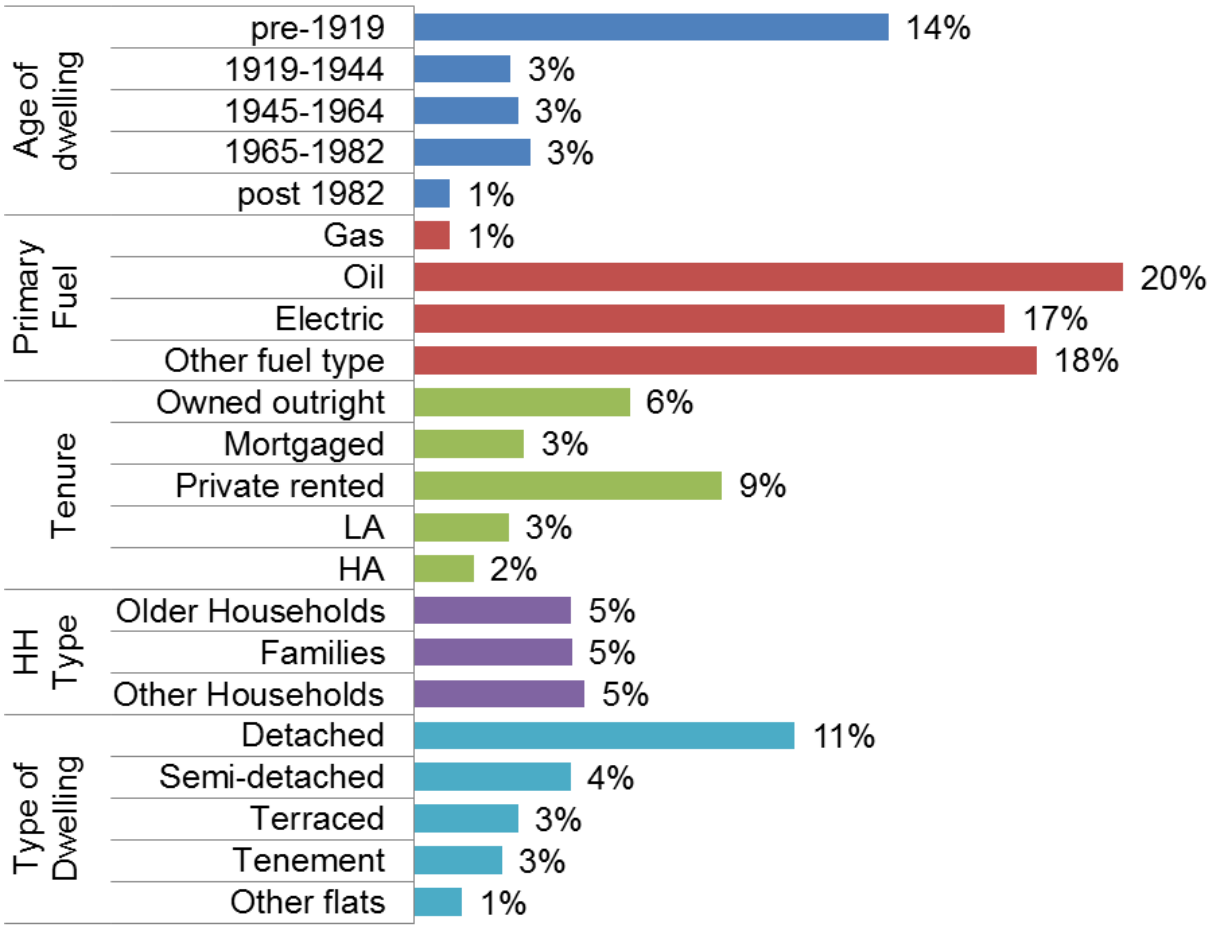
Table 19: EPC Band by Broad Tenure in 2015, SAP 2012

	Owner occupied		Private rented		Social sector		All Tenures	
EPC Band	000s	%	000s	%	000s	%	000s	%
A (92-100)	-	-	-	-	-	-	-	-
B (81-91)	23	2%	12	3%	18	3%	53	2%
C (69-80)	460	31%	103	30%	274	46%	837	34%
D (55-68)	690	46%	131	38%	239	41%	1,061	44%
E (39-54)	258	17%	65	19%	45	8%	368	15%
F (21-38)	54	4%	26	8%	13	2%	94	4%
G (1-20)	17	1%	4	1%	-	-	20	1%
Total	1,502	100%	342	100%	589	100%	2,434	100%
Sample		*1,740*		*355*		*659*		*2,754*

105. Nearly half (49%) of social housing is in band C or better under SAP 2012, compared to around a third of dwellings in the private sector. Ten percent of dwellings in the social sector are in bands E, F or G, while 22% of owner occupied dwellings and 28% of the private rented sector are within these EPC bands.

106. The share of dwellings in the lowest energy efficiency bands (F and G) is particularly high for pre-1919 dwellings (14%), non-gas heated properties (between 17% and 20%), detached properties (11%) and in the private rented stock (9%) (Figure 13). The average for Scotland as a whole is 5%.

Figure 13: Proportion of Homes in Band F or G by Dwelling Age, Primary Heating Fuel, Tenure and Household and Dwelling Type in 2015, SAP 2012



Base figures provided in Table 20 and Table 21

107. More detailed breakdowns in terms of average scores and EPC bands are shown in Table 20 (by household characteristics) and Table 21 (by dwelling attributes).

108. The average energy efficiency rating for Housing Association dwellings is higher than other tenure groups, at 69.2. **Social housing** as a whole is more energy efficient than private sector dwellings, with a mean of 66.7 compared to 61.6 for private dwellings.

Table 20: Mean EER and Broad EPC Band, by Household Characteristics in 2015, SAP 2012

	EE Rating	Band			Sample
	Mean	BC	DE	FG	
Tenure					
Owned outright	60.1	26%	67%	6%	*929*
Mortgaged	63.6	38%	59%	3%	*811*
LA/Other public	64.8	38%	59%	3%	*380*
HA/co-op	69.2	65%	34%	2%	*279*
PRS	60.7	34%	57%	9%	*355*
Private	61.6	32%	62%	5%	*2,095*
Social	66.7	49%	48%	2%	*659*
Household Composition					
Older Households	61.9	32%	64%	5%	*841*
Families	64.2	41%	54%	5%	*679*
Other households	62.8	37%	58%	5%	*1,234*
Weekly Household Income					
< £200	63.1	37%	59%	4%	*328*
£200-300	64.4	41%	54%	4%	*475*
£300-400	63.7	40%	56%	3%	*463*
£400-500	62.0	29%	67%	4%	*322*
£500-700	61.4	33%	60%	7%	*480*
£700+	62.6	38%	57%	5%	*640*
Council Tax Band					
Band A	64.4	40%	56%	3%	*546*
Band B	62.3	35%	59%	5%	*644*
Band C	63.0	36%	60%	5%	*466*
Band D	63.0	38%	58%	4%	*375*
Band E	61.7	34%	59%	7%	*377*
Band F	63.2	36%	60%	4%	*200*
Band G & H	62.0	38%	58%	4%	*137*
Scotland	62.8	37%	59%	5%	*2,754*

Note: The age threshold for older households in 2015 has changed to 65 for both men and women. This affects comparability with 2014 across household types, except for families .

109. The association between the dwelling characteristics and energy efficiency rating, as shown in Table 21, is strong. Across **dwelling types**, detached properties have the lowest energy efficiency profile on average (mean EER 58.2) while flats have the highest rating (and average of 66.3 for tenements and other flats combined).

110. The **oldest, pre-1919**, properties are least energy efficient (with a mean EER of 54.8 and only 17% rated C or better) while those built after 1982 have the highest energy efficiency ratings (with a mean of 70.5 and 67% in band C or better). The remaining age categories are comparable in terms of their energy efficiency profile.

Table 21: SAP 2012: Mean EER, Differences from 2014 and Broad EPC Band, by Dwelling Characteristics, 2015

	EE Rating		Band			Sample
	Mean	Differences from 2014	BC	DE	FG	
Dwelling Type						
Detached	58.2		26%	63%	11%	*692*
Semi	61.1		26%	69%	4%	*594*
Terraced	63.3		35%	62%	3%	*626*
Tenement	66.4		51%	47%	3%	*506*
Other flats	66.0		46%	52%	1%	*336*
Age of dwelling						
pre-1919	54.8	+3.2	17%	69%	14%	*489*
1919-1944	61.1		24%	73%	3%	*321*
1945-1964	63.0		34%	63%	3%	*608*
1965-1982	62.4		30%	67%	3%	*644*
post-1982	70.5		67%	31%	1%	*692*
Primary Heating Fuel						
Gas	65.4		41%	58%	1%	*2,033*
Oil	49.5		8%	72%	20%	*236*
Electric	55.0		25%	58%	17%	*401*
Other	56.0		34%	48%	18%	*79*
Location						
urban	64.6		40%	57%	2%	*2,147*
rural	54.1		19%	65%	17%	*607*
Gas Grid						
On	64.4		38%	60%	2%	*2,138*
Off	55.1		29%	52%	19%	*616*
Scotland	62.8		37%	59%	5%	*2,754*

111. **Primary heating fuel** is a key determinant of the energy efficiency of the dwelling. Properties heated by mains gas have an average rating of 65.4 and 41% are in band C or better. Dwellings heated by other fuels have a considerably lower rating. The average energy efficiency rating for oil heated properties is 49.5 (making the average dwelling in this group D rated) and only 8% are in band C or better. Proximity to the gas grid has a similar effect on the energy efficiency rating. As dwelling characteristics associated with lower energy efficiency are disproportionately represented in rural areas, the average energy efficiency profile of rural properties tends to be lower than that for urban.

112. The only improvements since 2014 which pass the statistical significance test are a 3.2 points gain in the mean SAP score for pre-1919 dwellings and an increase in the share of B and C rated electrically heated properties, from 17% in 2014 to 25% in the following year.

3.4 National Home Energy Ratings (NHER)

113. The National Home Energy Ratings (NHER) system was the main methodology used in the SHCS to report on the energy efficiency of the housing stock prior to 2013. With the publication of the 2013 SHCS Key Findings Report the energy modelling methodology was updated and it is no longer possible to reproduce exactly the original NHER method, as the full documentation of this method is not publicly available. However because of user interest and because NHER scores are taken into account under the energy efficiency criterion of the SHQS, we provide an approximate NHER score. Further details on how this emulated NHER score compares to previously published NHER figures can be found in the Methodology Notes to the 2013 SHCS report[36].

[36] SHCS - Methodology Notes 2013 available at http://www.gov.scot/Topics/Statistics/SHCS/Downloads/MethodologyNotes2013

114. Table 22 presents banded NHER scores and mean values for selected categories of dwellings and household types for 2015.

Table 22: NHER Scores and Banded Ratings by Selected Dwelling and Household Characteristics, 2015

		NHER band			*Sample*
	Mean	Good	Moderate	Poor	
Scotland	7.4	72%	26%	2%	*2,754*
Dwelling Type					
Detached	6.7	61%	36%	3%	*692*
Semi-detached	7.0	67%	32%	2%	*594*
Terraced	7.3	76%	24%	1%	*626*
Tenement	8.0	80%	19%	2%	*506*
Other flats	7.8	82%	18%	0%	*336*
Age of dwelling					
pre-1919	6.3	50%	45%	5%	*489*
1919-1944	7.0	67%	31%	1%	*321*
1945-1964	7.3	73%	26%	1%	*608*
1965-1982	7.2	73%	26%	1%	*644*
post-1982	8.5	92%	8%	0%	*692*
Primary Heating Fuel					
Gas	7.7	80%	19%	0%	*2,033*
Oil	5.9	38%	58%	3%	*236*
Electric	5.9	41%	49%	10%	*401*
Other fuel type	7.1	58%	40%	2%	*79*
Tenure					
Owner occupied	6.9	66%	32%	2%	*929*
Mortgaged	7.4	75%	24%	1%	*811*
LA	7.6	78%	20%	2%	*380*
HA	8.4	87%	12%	1%	*279*
Private rented	7.1	65%	33%	3%	*355*
Private Sector	7.2	69%	29%	2%	*2,095*
Social Sector	7.9	82%	16%	1%	*659*
Household Composition					
Older Households	7.3	72%	27%	1%	*841*
Families	7.5	75%	23%	2%	*679*
Other Households	7.4	71%	27%	2%	*1,234*

Note: The age threshold for older households in 2015 has changed to 65 for both men and women. This affects comparability with 2014 across household types, except for families .

3.5 Carbon Emissions

115. **Carbon Emissions** are the amount of carbon dioxide gas vented to the atmosphere. Estimates of emissions from the residential sector which take into account actual energy consumption by households are reported by BEIS at Local Authority and Scotland level annually[37]. This methodology is consistent with the Greenhouse Gas Inventory (GHGI) which is the source for monitoring progress against the Scottish Government's climate change commitments.

116. In contrast, emissions reported from the SHCS are modelled on the assumption of a standard pattern of domestic energy consumption and do not reflect differences in consumption behaviour due to preferences or changes in weather conditions. As such, they are distinct from the carbon emissions figures published by BEIS and compiled in GHG inventories. Table 23 shows modelled emissions from the SHCS and provides a comparison with the estimates published by BEIS for the period 2010-2014.

Table 23: Carbon Emissions and Modelled Emissions in Scottish Housing, 2010-2015

		2010	2011	2012	2013	2014*	2015*
Carbon Emissions[1]: BEIS Domestic sector	Total (Mtonnes)	13.7	12.0	12.8	12.3	10.4	
	per HH (tonnes) [2]	5.8	5.1	5.4	5.1	4.3	
	% change per HH	+6.0%	-13.0%	+6.1%	-4.3%	-16.6%	
Modelled Emissions: SHCS	Total (Mtonnes)	18.6	18.2	18.1	17.4	17.9	17.7
	per HH (tonnes)	7.9	7.7	7.6	7.3	7.4	7.3
	% change per HH	-	-2.6%	-1.4%	-3.6%	+1.1%	-1.8%

[1] Local and Regional CO2 Emissions Estimates, BEIS
https://www.gov.uk/government/statistics/uk-local-authority-and-regional-carbon-dioxide-emissions-national-statistics-2005-2014
[2] Number of households (HHs) sourced from Housing Statistics for Scotland:
http://www.gov.scot/Topics/Statistics/Browse/Housing-Regeneration/HSfS/KeyInfoTables
* Modelled emissions figures for 2014 and 2015 are not fully comparable to previous years

[37] Local and Regional CO2 Emissions Estimates, DECC:
https://www.gov.uk/government/statistics/local-authority-emissions-estimates

117. In 2012, cooler temperatures led to an increase in domestic energy use and an increase in CO2 emissions from the domestic sector overall. This was reflected in the estimates of emissions levels from the domestic sector reported by BEIS. At the same time, modelled SHCS emissions per household fell by 1.4%, reflecting the improved energy efficiency of the sector in this period and the greater potential to reduce CO2 emissions. The SHCS estimates are not designed to capture the increased demand for heating due to colder weather in this particular year.

118. Estimates in the Second Report on Proposals and Policies (RPP2)[38] are also not comparable to SHCS estimates. RPP2 figures relate to non-traded emissions only (i.e. exclude electricity which is covered by the EU Emissions Trading System) while SHCS estimates cover all fuel types.

119. This report is only concerned with the level and variations in modelled emissions from the Scottish housing stock. These estimates are produced through the use of BREDEM 2012 - based models, in line with other statistics on energy efficiency and fuel poverty reported here.

120. To derive emissions estimates, modelled energy demand is combined with carbon intensity factors as adopted for the 2012 edition of the SAP (see section 7.3). These are CO_2 equivalent figures which include the global warming impact of CH_4 and N_2O as well as CO_2.

121. The change in the underlying BREDEM 2012 model for the reporting of 2014 data has meant that carbon emissions for 2014 and 2015, on the one hand, and the period 2010-2013, on the other, are not estimated on a consistent basis. Further details on this methodological change are given in the Methodology Notes to the 2014 Key Findings report[39].

---

[38] RPP2 available at: http://www.gov.scot/Topics/Environment/climatechange/scotlands-action/lowcarbon/meetingthetargets

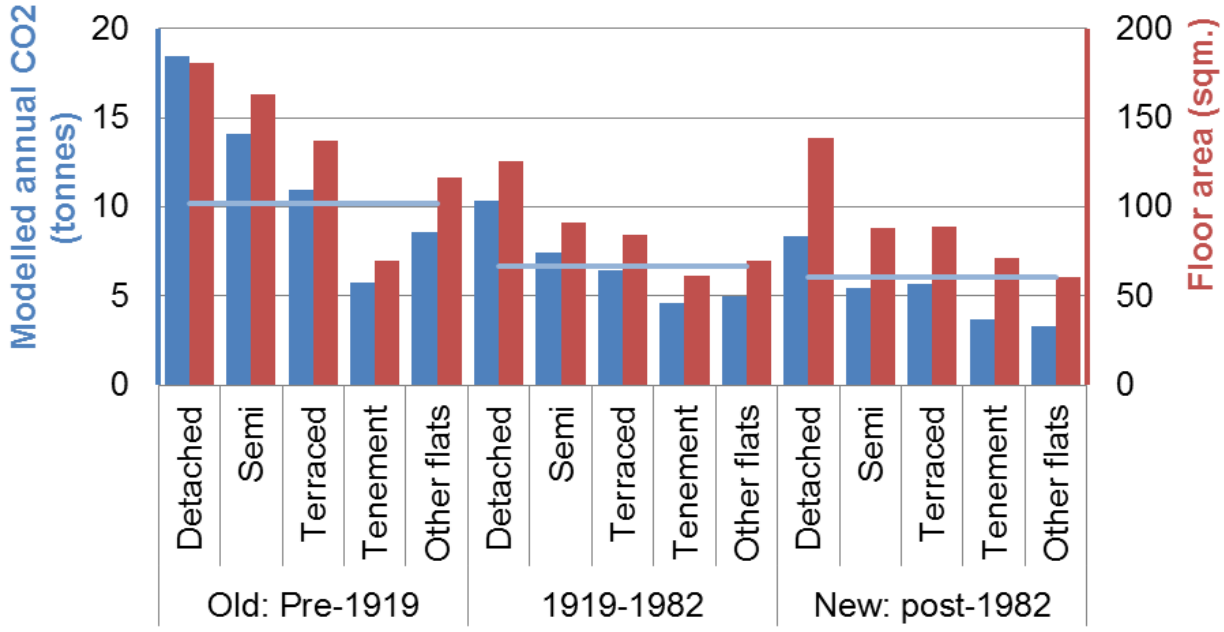
[39] SHCS Methodology Notes 2014 available at www.gov.scot/Topics/Statistics/SHCS/Downloads/Methodology2014

3.5.1 Modelled Emissions by Dwelling Type and Age of Construction

122. The annual modelled emissions from a property reflect the energy use for the whole dwelling heated according to the standard heating regime. As shown in Figure 14, dwellings with larger floor area generally have higher carbon emissions.

123. Newer dwellings have lower modelled emissions than older ones on average as a result of their better thermal performance and higher energy efficiency (as shown in section 3.3). Post-1982 flats have the lowest modelled emissions on average; less than 4 tonnes per year (Table 24).

Figure 14: Average Floor Area and Average Modelled Annual Emissions by Age and Type of Dwelling, 2015



Note: Floor area for these subgroups are provided in section 2.1.1. Modelled carbon emissions figures are provided in Table 24.
The pale blue line indicates the average modelled emissions from the dwelling age group

Table 24: Average Modelled Annual Carbon Emissions (tonnes per year) by Dwelling Age and Type, 2015

	Dwelling Age			
Dwelling Type	Pre-1919	1919-1982	Post-1982	All
Detached	18.4	10.3	8.4	11.1
Semi-detached	14.1	7.4	5.4	7.6
Terraced	10.9	6.4	5.7	6.8
Tenement	5.7	4.6	3.7	4.8
Other flats	8.6	5.0	3.3	5.5
All dwelling types	10.2	6.7	6.1	7.3

124. Across all age bands, detached houses have the highest modelled emissions due to a larger share of exposed surfaces. As shown in section 2.3, they are also the most likely to use high carbon-intensity fuels such as oil and coal in place of mains gas.

125. By dividing modelled emissions by total internal floor area we derive emissions per square meter (kg/m^2). Controlling for floor area in this way shows that pre-1919 detached houses have the highest modelled emissions per sq m (115 kg/m^2), as shown in Table 25. Post-1982 flats have the lowest emissions, at 56 kg/m^2 for tenements and 60 kg/m2 for other flats.

Table 25: Average Modelled Emissions per Square Meter of Floor Area (kg/m^2) by Age and Type of Dwelling, 2015

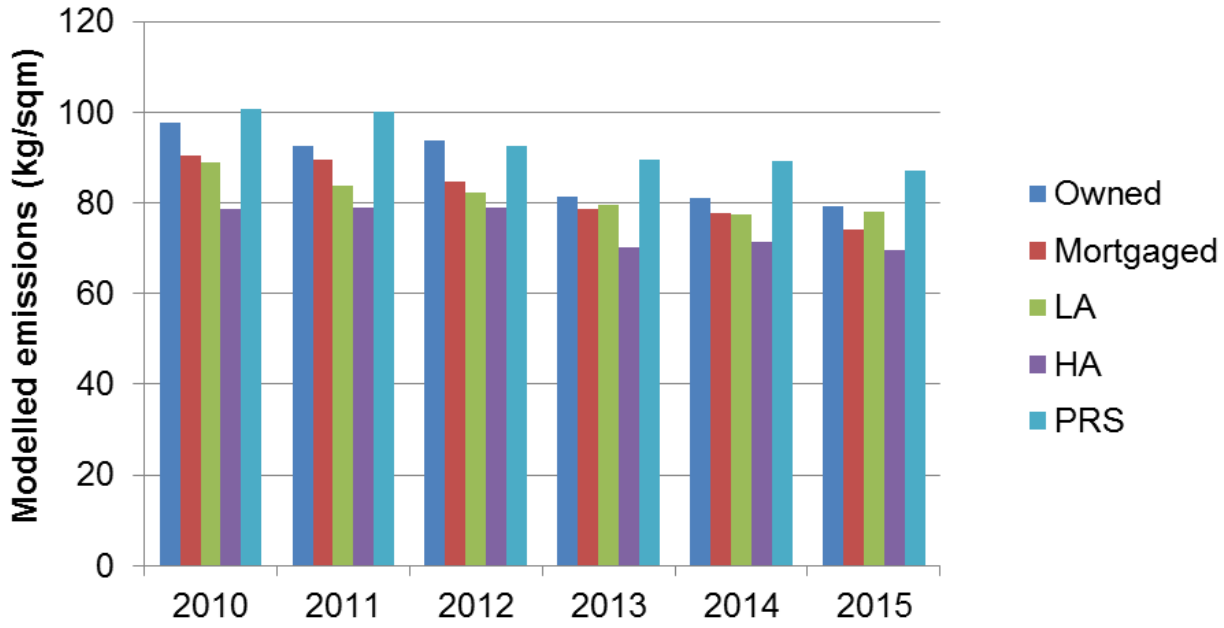
Dwelling Age		**Pre-1919**	**1919-1982**	**Post-1982**	**All Ages**
Type	Detached	115	84	62	81
	Semi	92	84	64	80
	Terraced	87	78	67	77
	Tenement	88	76	56	76
	Other flats	78	73	60	73
All types		93	79	62	78

126. Controlling for floor area also demonstrates that a significant improvement in the level of emissions for older properties has occurred between 2014 and 2015. From 102 kg/m^2 in 2014 the average emissions for this group has dropped to 93 kg/m^2 in 2015, a reduction of nearly 10%.

3.5.2 Modelled Emissions by Tenure

127. Figure 15 and Table 26 show how emissions differ across tenure for the period 2010 - 2015. The pattern of differences across tenure types has remained similar to previous years: with highest rates of emissions observed for the PRS (87 kg/m^2) and lowest for the HA sector (70 kg/m^2) and the remaining types of tenure with similar values in between. Although there is a suggestion that emissions are declining across all types, these reductions are not statistically significant.

Figure 15: Modelled Emission per square meter (kg/m2) by Tenure, 2010-2015*



Note: * Figures for 2014 and 2015 are not fully comparable to previous years

Table 26: Average Modelled Emissions per Square Meter by Tenure, 2010-2015

	2015*	2014*	2013	2012	2011	2010
Owned outright	79	81	81	94	92	98
Mortgaged	74	78	79	85	90	90
LA/Other public	78	77	79	82	84	89
HA/co-op	70	71	70	79	79	79
PRS	87	89	90	93	100	101
All Tenures	78	80	80	88	90	92

Note: * Figures for 2014 and 2015 are not fully comparable to previous years

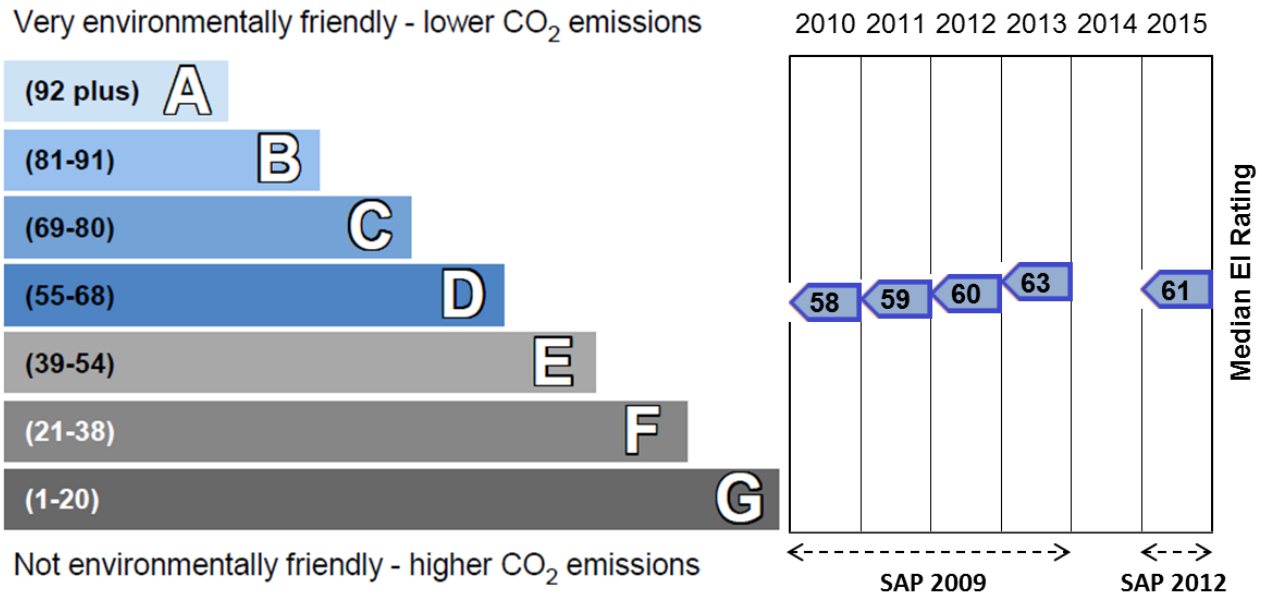
3.6 Environmental Impact Rating

128. The Environmental Impact Rating (EIR) represents the environmental impact of a dwelling in terms of carbon emissions associated with fuels used for heating, hot water, lighting and ventilation. Ratings are adjusted for floor area so they are independent of dwelling size for a given built form. Emissions for this measure are calculated using SAP methodology.

129. EI ratings were previously published in the 2013 SHCS Key Findings report for the period 2010-2013[40]. These were produced on the basis of SAP 2009 and are therefore not fully comparable to the EI rating for 2015 published in the current report which is based on SAP 2012.

130. Figure 16 illustrates the trend in the median EIR between 2010 and 2015. This indicates that the environmental impact of Scottish housing is falling over time.

Figure 16: Median EIR relative to Band, 2010-2013 (SAP 2009) and 2015 (SAP 2012)



[40] Scottish House Conditions Survey Key Findings 2013: http://www.gov.scot/Publications/2014/12/6903

131. As shown in Table 27 the proportion of dwellings with EI ratings in band C or better in 2015 was 27%. The average rating was 58 which falls in band D.

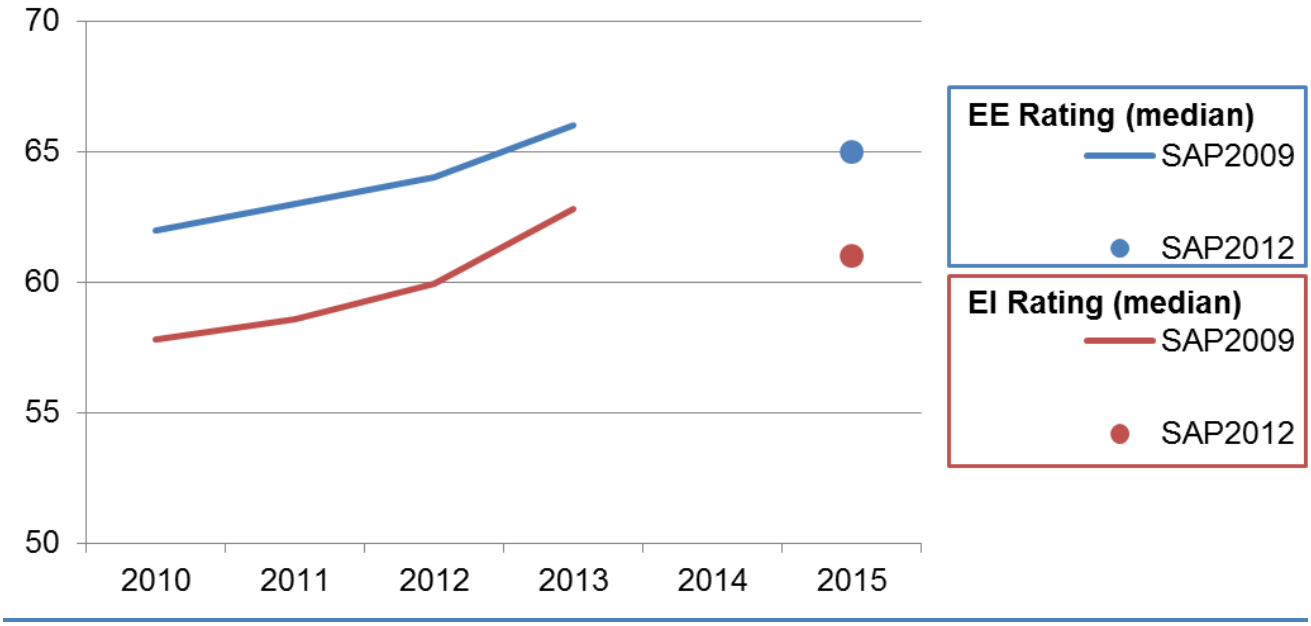
132. In 2015, 11% of dwellings were rated F or G in terms of their environmental impact.

Table 27: EIR Bands in the Scottish Housing Stock, 2010-2013 and 2015

EPC Band	2015		2013		2012		2011		2010	
	000s	%	000s	%	000s	%	000s	%	000s	%
A - B (81+)	102	4%	79	3%	71	3%	52	2%	55	2%
C (69-80)	554	23%	683	29%	524	22%	468	20%	424	18%
D (55-68)	926	38%	895	37%	888	37%	873	37%	857	37%
E (39-54)	576	24%	509	21%	587	25%	623	27%	615	26%
F (21-38)	221	9%	197	8%	248	10%	270	12%	297	13%
G (1-20)	55	2%	38	2%	64	3%	64	3%	81	4%
Total	2,434	100%	2,402	100%	2,383	100%	2,349	100%	2,330	100%
Mean		58.0		59.7		57.0		55.9		54.9
Median		61		63		60		59		58
Sample		*2,754*		*2,725*		*2,783*		*3,191*		*3,073*

133. Figure 17 illustrates that the energy efficiency and the environmental impact rating for the median Scottish dwelling have changed in parallel since 2010.

Figure 17: Trend in Median EE and EI Ratings, 2010-2013 and 2015



134. Table 28 shows how EI ratings vary across different type of dwellings. As expected dwellings built more recently have better environmental impact ratings with 53% rated C or better and only 3% in the bottom two bands (F and G). Flats have lower environmental impact than houses, as do gas heated properties compared to those using oil or electricity.

135. Oil heating systems and houses are more common in rural areas, leading to lower overall environmental impact ratings for rural dwellings.

Table 28: Mean EIR and Broad EIR Band, by Dwelling Characteristics, 2015

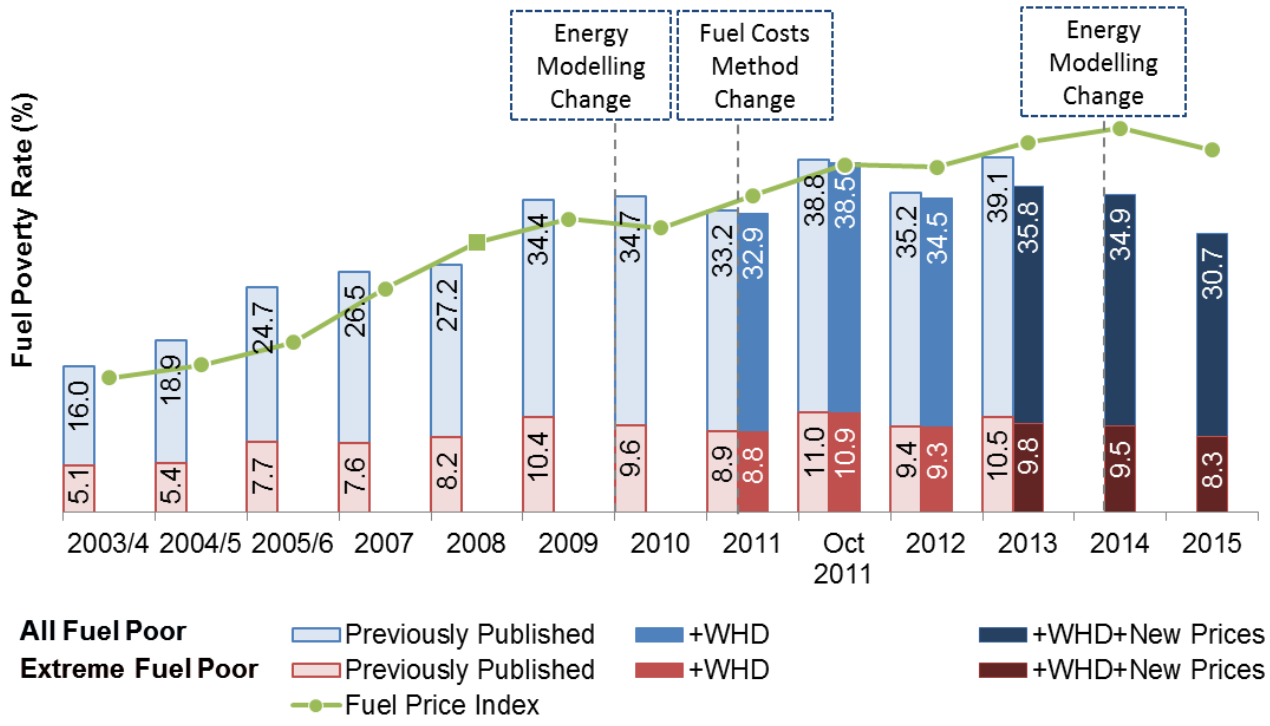
	Environmental Impact Rating	EI Band			*Sample*
	Mean	ABC	DE	FG	
Dwelling Type					
Detached	52.2	16%	63%	21%	*692*
Semi-detached	55.7	17%	71%	13%	*594*
Terraced	58.5	22%	68%	9%	*626*
Tenement	63.7	46%	48%	6%	*506*
Other flats	62.2	34%	60%	6%	*336*
Age of Dwelling					
pre-1919	48.7	13%	61%	25%	*489*
1919-1944	56.5	18%	72%	10%	*321*
1945-1964	58.5	25%	65%	10%	*608*
1965-1982	57.6	18%	73%	9%	*644*
post-1982	67.5	53%	44%	3%	*692*
Primary Heating Fuel					
Gas	61.9	31%	65%	4%	*2,033*
Oil	41.0	3%	55%	43%	*236*
Electric	43.8	9%	50%	41%	*401*
Other fuel type	58.1	57%	12%	31%	*79*
Urban-Rural Indicator					
Urban	60.5	29%	64%	7%	*2,147*
Rural	47.6	16%	53%	31%	*607*
Gas Grid					
On	60.0	27%	66%	7%	*2,138*
Off	49.4	27%	39%	35%	*616*
Scotland	58.3	27%	62%	11%	*2,754*

4. Fuel Poverty

- In 2015 fuel poverty declined by about 4 percentage points compared to 2014: 30.7% or around 748,000 households were fuel poor and 8.3% (or 203,000 households) were living in extreme fuel poverty (Table 29). This is a reduction of 97,000 households compared to 2014 when 34.9% or 845,000 households were fuel poor.

- Just over half (2.3 percentage points) of the reduction in fuel poverty rates between 2014 and 2015 can be attributed to the drop in the price of domestic fuels over this period. Around a third (1.3 points) can be attributed to improvements in the energy efficiency performance of the housing stock and the rest (0.6 points) can be explained by higher household incomes.

Figure 18: Fuel Poverty and Extreme Fuel Poverty since 2003/4



Note: Energy requirement underpinning fuel poverty estimate modelled on the following basis: 2003/4 – 2009: BREDEM – 12; 2010 – 2013: BREDEM 2012 v.1.0 and 2014 and 2015: BREDEM 2012 v.1.1.

- Around half (52%) of fuel poor households have incomes above the poverty threshold, defined as £291 per week before housing costs for a couple without children (section 4.5).

4.1 Definition and Measurement of Fuel Poverty

136. As set out in the Scottish Fuel Poverty Statement, a household is in **fuel poverty** if, in order to maintain a satisfactory heating regime, it would be required to spend more than 10% of its income on all household fuel use[41].

137. Under the 2001 Housing (Scotland) Act (section 88), the Scottish Government was committed to eradicating fuel poverty as far as practically possible by November 2016[42].

138. **Extreme fuel poverty** indicates that a household would have to spend more than 20% of its income to maintain a satisfactory heating regime.

139. A **satisfactory heating regime** is defined as follows:

- For "vulnerable" households[43], 23°C in the living room (zone 1) and 18°C in other rooms (zone 2), for 16 hours in every 24.
- For other households, this is 21°C in the living room (zone 1) and 18°C in other rooms (zone 2) for 9 hours a day during the week and 16 hours a day during the weekend.

140. Although space heating is the largest component of the energy spend which underpins the fuel poverty estimate, there are other types of energy use that are also taken into account, such as water heating, lighting and appliance use, and cooking. These types of energy expenditure are estimated on the basis of a standard set of behavioral assumptions and do not reflect the actual energy use of the household, which may vary considerably depending on personal preference and priorities relative to other types of household expenditure.

---

[41] Scottish Fuel Poverty Statement 2002, http://www.gov.scot/Resource/Doc/46951/0031675.pdf

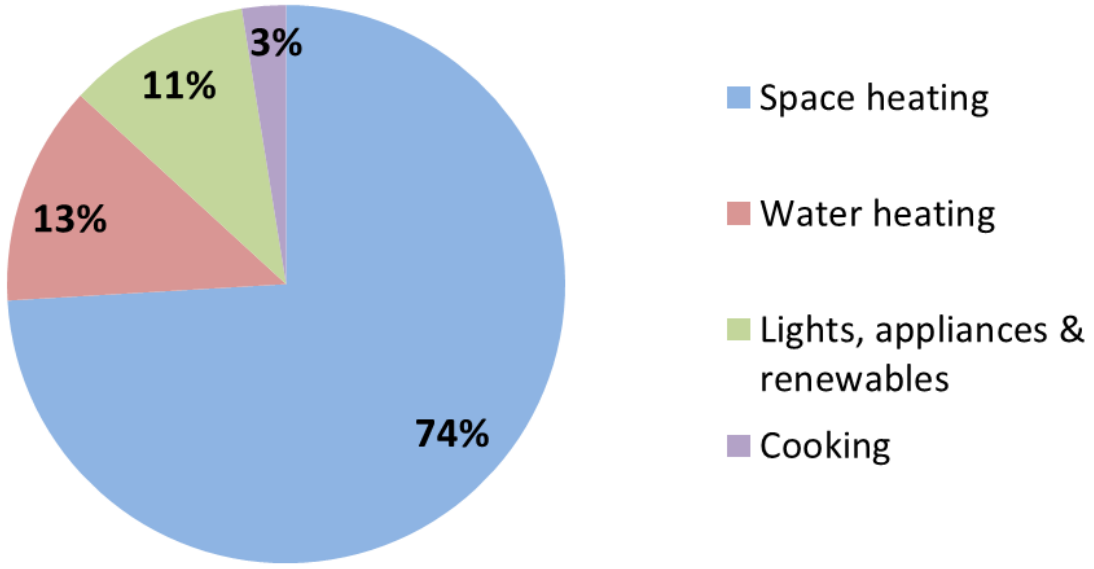
[42] Scottish Government's Fuel Poverty Policy, http://www.gov.scot/Topics/Built-Environment/Housing/warmhomes/fuelpoverty

[43] Vulnerable households are those where at least one resident is aged 60 or over, or suffers long term sickness or disability.

141. Figure 19 shows that in 2015, on average, around 74% of the modelled household energy demand was from space heating, 13% from water heating, 11% from lighting and appliance usage, and 3% was accounted for by cooking.

142. The **energy costs** of maintaining a satisfactory heating regime and other uses of energy are modelled using data from the physical inspection of dwellings and the household interview conducted as part of the SHCS, as well as information on consumer fuel prices. The methodology for modelling the cost of energy use was updated for the 2014 Key Findings report and details were provided in the accompanying Methodology Notes[44]. The current report is based on the same method. The cost of the energy requirement includes an allowance for the bill rebate provided under the Warm Home Discount (WHD) scheme and the £12 contribution of the Government Electricity Rebate (GER) delivered in Autumn 2015 to all electricity customers[45].

Figure 19: Average Household Energy Consumption by End Use, 2015



Note: Figures do not add to 100% due to rounding

[44] SHCS - Methodology Notes 2014 available at www.gov.scot/Topics/Statistics/SHCS/Downloads/Methodology2014

[45] https://www.gov.uk/guidance/government-electricity-rebate

4.2 Fuel Poverty and Extreme Fuel Poverty

143. Between 2014 and 2015 the rate of fuel poverty declined by around 4 percentage points. In 2015 there were around 748,000 fuel poor households representing 30.7% percent of all households. The number of fuel poor households fell by about 97,000 compared to 2014 when 34.9%, or around 845,000 households, were living in fuel poverty (Table 29).

144. This is the lowest rate recorded by the survey since 2008.

145. Around 203,000 households, or 8.3% were living in extreme fuel poverty in 2015, compared to 229,000 households (or 9.5%) in the previous year.

Table 29: Estimates of Fuel Poverty and Extreme Fuel Poverty since 2011

	Fuel Poverty		Extreme Fuel Poverty	
	000s	%	000s	%
2011	779	32.9%	209	8.8%
Oct 2011	911	38.5%	257	10.9%
2012	824	34.5%	222	9.3%
2013	860	35.8%	236	9.8%
2014	845	34.9%	229	9.5%
2015	748	30.7%	203	8.3%

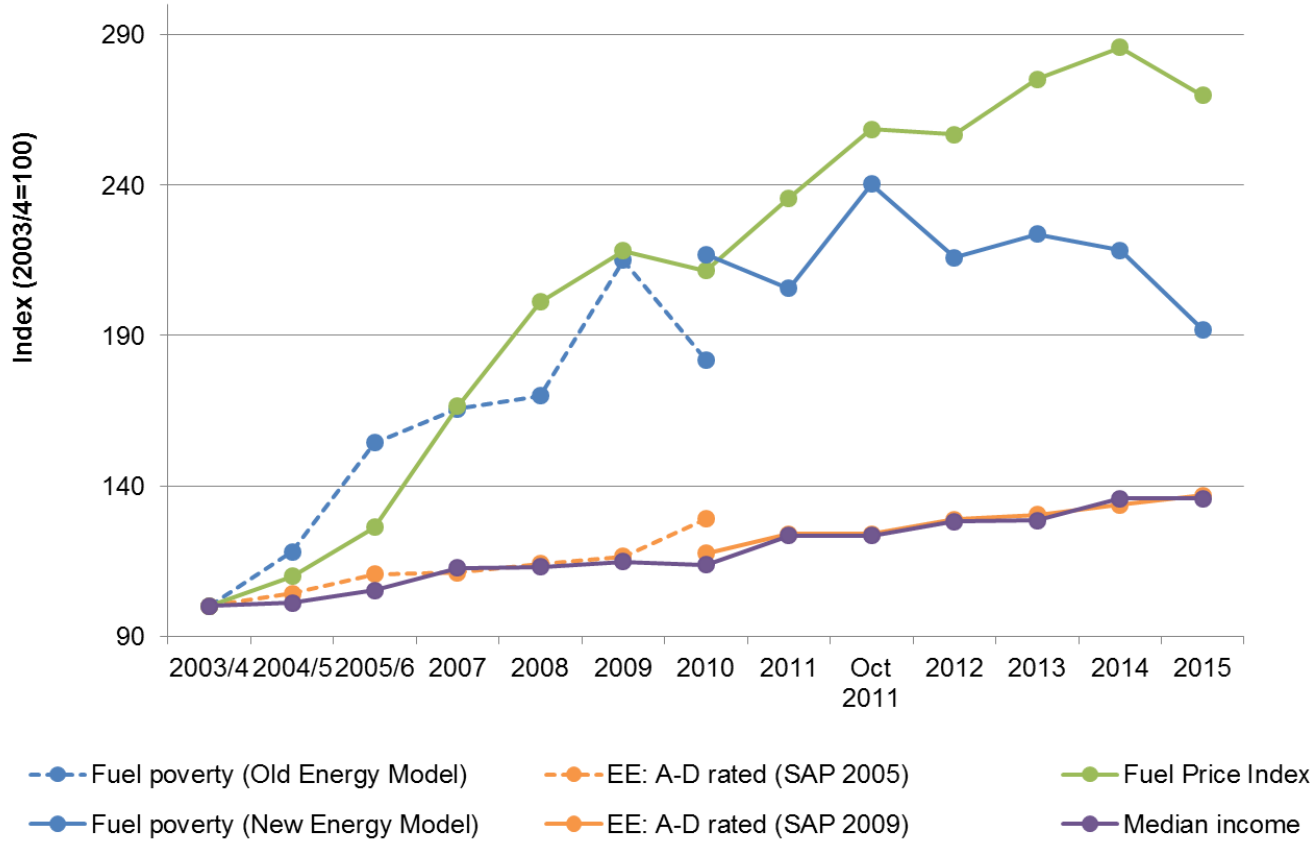
Note: There are some discontinuities in the underlying methods as follows: figures for 2011 and 2012 allow for WHD adjustment only; 2013 include WHD and price source adjustment; 2014 and 2015 include WHD and price source adjustment and an updated BREDEM model

4.3 Drivers and Trends

146. Fuel poverty is affected by levels of household income, the price of fuel and the energy efficiency of housing. It is distinct from poverty in that, while low income is an important driver, it is not a prerequisite. As shown in Table 35, fuel poor households are found in all income bands. Around 15% of all fuel poor households had weekly income above £400 before housing cost, which places nearly all of these households in the top half of the income distribution (Table 35). Fuel poverty also depends on the condition of the home and the cost of energy for space and water heating, cooking, lighting and running appliances.

147. In Table 30 and Figure 20 we have constructed indexes to compare trends in the three key drivers of fuel poverty since 2003. Measures of energy efficiency and household incomes are derived from SHCS data. The fuel price index is constructed from BEIS quarterly prices as described in section 4.3.1. Prices and incomes are presented in nominal, cash terms.

Figure 20: Trends in Fuel Price, Energy Efficiency and Median Income, 2003/4 – 2015



Note: All values indexed to 100 in 2003/4. Data for this chart are provided in Table 33. Fuel Price index constructed as described in section 4.4.1.
Fuel poverty energy requirement modelled on the following basis: 2003/4 – 2009: BREDEM – 12; 2010 – 2013: BREDEM 2012 v.1.0; 2014 and 2015: BREDEM 2012 v.1.1.
Fuel poverty costs as follows: 2011 and 2012 include WHD adjustment only; 2013, 2014 and 2015 include WHD and price source adjustments.

148. Since 2003 the proportion of dwellings rated A-D has increased by 37% and median household income has grown by 36%. Fuel prices have risen much faster, so that by 2015 they were more than two and half times (170%) their level in 2003.

149. Until 2012 the increase in fuel poverty has broadly mirrored the growth in the fuel price index[46]. Between 2013 and 2014 the rate of fuel poverty did not increase in line with the rise in the average fuel price index, and there are a number of factors that may have contributed[47]. In the last year, the decline in the price of fuel was reflected in a reduction in the fuel poverty rate.

Table 30: Fuel Price, Energy Efficiency and Income Indices

Key Drivers of Fuel Poverty: Indices 2003/4=100								
Survey year	**Fuel poverty**		**Fuel Price Index**		**EE: A-D rated**		**Median income**	
	%	Ix	Ix	Rebased	%	Ix	£	Ix
2003/4	16.0	100	47	100	62%	100	16,000	100
2004/5	18.9	118	52	110	65%	104	16,000	101
2005/6	24.7	154	60	126	69%	111	17,000	105
2007	26.5	166	79	167	69%	111	18,000	113
2008	27.2	170	95	201	71%	114	18,000	113
2009	34.4	215	103	218	72%	116	18,000	115
2010	34.7	217	100	211	73%	118	18,000	114
2011	32.9	206	111	236	77%	124	20,000	123
Oct 2011	38.5	240	122	259	77%	124	20,000	123
2012	34.5	216	121	257	80%	129	20,000	128
2013	35.8	224	130	275	81%	130	20,000	128
2014	34.9	218	135	286	83%	134	22,000	136
2015	30.7	192	128	270	85%	137	22,000	136

Source: BEIS Quarterly Prices; SHCS.
Note: Fuel poverty rates shown on BREDEM-12 basis (old energy model) up to 2009 and on BREDEM 2012 basis (new energy model) from 2010.
EE ratings shown on SAP 2005 basis up to 2009 and on SAP 2009 basis from 2010.

4.3.1 Fuel Costs

150. Data published by the Department for Business, Energy and Industrial Strategy (BEIS) on the price of key fuels enables us to construct time series for the price of fuels for the average Scottish household over the longer term.

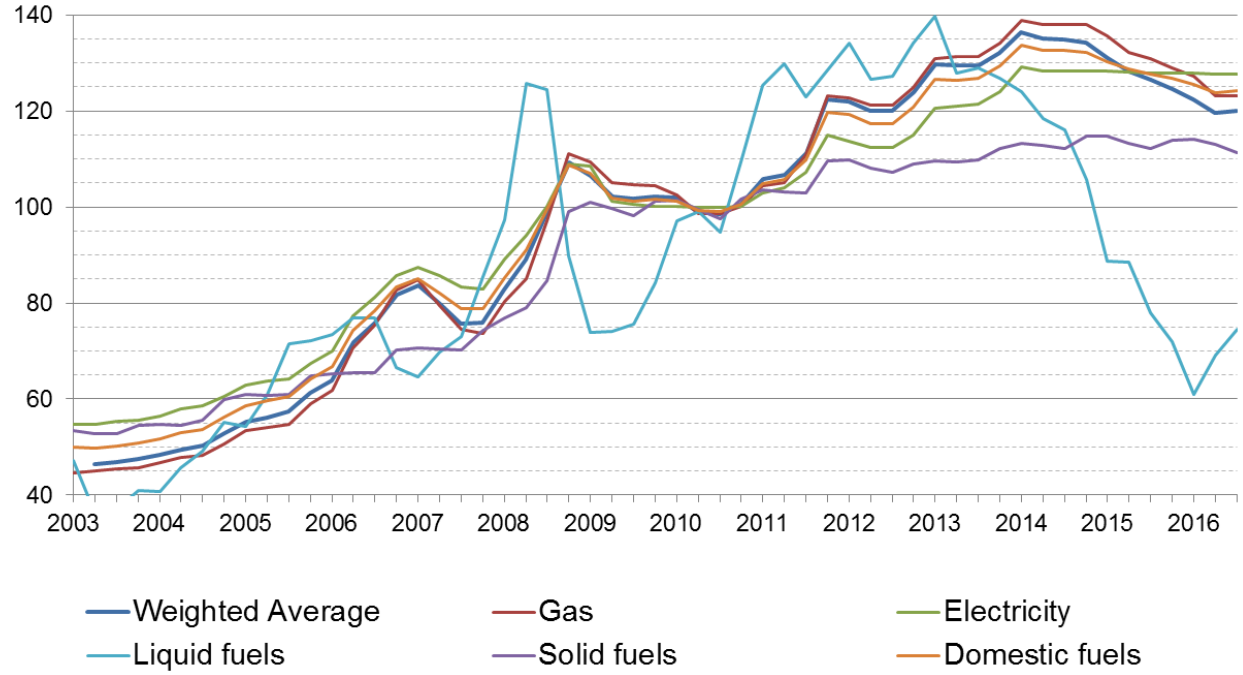
[46] Allowing for the impact of the new fuel price methodology which contributes to the slower rate of growth in the estimated level of fuel poverty between 2012 and 2013 shown in Figure 19

[47] There are several discontinuities in the methodology for estimating fuel poverty reflected in Figure 19 which may affect this comparison: the underlying energy model changed in 2010 and 2014, the method of sourcing price information changed from 2013.

151. Using information from SHCS about the fuels used for space and water heating we can weigh the national quarterly fuel price indices published by BEIS[48] and produce an average index value for the price of the heating fuel requirement for Scotland. The results are shown in Figure 21.

152. Since the majority of Scottish households heat their properties with gas (79%), the national average index follows the gas index closely. Between 2003 and 2014 the price of the fuel mix required by the average Scottish household almost trebled. Between 2014 and 2015 the average index fell by 5.6%, primarily due to the drop in the price of oil and gas.

Figure 21: BEIS Fuel Price Indices and a Weighted Average for Scotland: 2003 – 2016



153. BEIS has published fuel price data up to September 2016. As in reality fuel use changes slowly, we assume that the fuel mix in Scotland in 2015 remains the same in order to provide a complete series into 2016. In the third quarter of 2016 the composite price of heating fuels continued to fall. This amounts to approximately 5.4% decrease on average 2015 levels to September 2016 (Table 31).

[48] BEIS Quarterly Energy Prices, Table 2.1.3, https://www.gov.uk/government/statistical-data-sets/monthly-domestic-energy-price-stastics

Table 31: BEIS Current Fuel Price Indices and a Weighted Average for Scotland: 2003/04 – September 2016

Year	Current fuel price indices					
	Gas	Electricity	Liquid fuels	Solid fuels	Other fuels	Weighted Average
2003/04	45.7	55.5	38.7	53.7	50.6	47.3
2004/05	50.1	60.0	51.0	57.7	55.4	52.0
2005/06	57.4	66.3	69.5	63.0	62.7	59.7
2007	78.1	84.9	73.2	71.4	81.2	78.8
2008	93.4	98.1	109.3	84.9	96.2	95.1
2009	105.9	102.6	77.0	100.0	102.9	103.2
2010	100.0	100.0	100.0	100.0	100.0	100.0
2011	110.9	107.3	126.6	104.8	110.0	111.5
Oct 2011	123.2	114.9	128.5	109.7	119.6	122.3
2012	122.5	113.4	130.5	108.6	118.7	121.5
2013	131.9	121.7	130.8	110.2	127.2	130.2
2014	138.2	128.5	116.0	113.2	132.8	135.2
2015	131.9	128.0	81.8	113.5	128.4	127.6
to Sep 2016	124.5	127.7	68.2	112.8	124.5	120.7

BEIS Quarterly Energy Prices, Table 2.1.3. Indices supplied with 2010 = 100
https://www.gov.uk/government/statistical-data-sets/monthly-domestic-energy-price-stastics
Weighted average based on SHCS heating fuel use proportions, 2003/4 to 2015. 2016 proportions assumed unchanged from 2015.

4.3.2 Household Income

The SHCS is not designed to capture income comprehensively. Whole household income is not recorded, only that of the highest income householder and their partner. Income is reported in nominal terms and is not equivalised to take into account that households of different size and composition have different needs. Figures in this section therefore may not align with official statistics on household income and inequality.

154. In 2015, 50% of households earned £21,600 or more after tax, which was unchanged from 2014. This median income has increased by 19% in cash terms since 2010 (representing around £3,500).

155. Between 2014 and 2015 there was a 2% nominal increase in the average income of the surveyed households (Table 32). This was not uniform across the distribution. There was a small decrease for the bottom income decile, and increase in the 2nd and 3rd bottom income deciles, while around the middle of the distribution average income remained broadly unchanged. The largest increase was observed in the second highest income decile.

Table 32: Mean Annual Income in Each Decile Group, SHCS 2014-2015

Income Decile	Year 2014	2015	Percentage change
1	£6,700	£6,500	-3%
2	£11,000	£11,200	2%
3	£13,700	£14,000	2%
4	£16,600	£16,800	1%
5	£19,800	£19,900	0%
6	£23,700	£23,700	0%
7	£28,500	£28,800	1%
8	£34,100	£34,900	2%
9	£42,200	£43,800	4%
10	£67,500	£68,400	1%
All	£26,400	£26,800	2%
Median	£21,600	£21,600	0%

4.3.3 Housing Stock

156. As we have seen from the analysis in Chapter 3, on some measures the energy efficiency of the housing stock increased between 2014 and 2015. There were improvements in the depth of loft insulation, the energy efficiency profile of domestic gas and oil boilers and the SAP ratings for pre-1919 dwellings and properties with electric heating. As shown in Table 33, the average modelled energy required to meet the fuel poverty heating regime for 2015 was 27,398 kWh, compared to 27,609 kWh for 2014, a reduction of just under 1%.

157. At the same time running costs have dropped more dramatically, by 6.4%, which reflects the additional contribution of the lower price of domestic fuels in 2015 compared to the previous year.

Table 33: Modelled Annual Energy Consumption and Running Costs, 2014 and 2015

	Energy requirement		Running Costs	
Year	Mean(kWh)	Annual change	Mean (kWh)	Annual change
2010	29,752	-	1,531	-
2011	28,881	-2.9%	1,594	4.1%
2012	28,077	-2.8%	1,704	6.9%
2013	27,425	-2.3%	1,764	-
2014	27,609	-	1,826	-
2015	27,398	-0.8%	1,709	-6.4%

Fuel poverty energy requirement modelled on the following basis: 2003/4 – 2009: BREDEM – 12; 2010 – 2013: BREDEM 2012 v.1.0; 2014 and 2015: BREDEM 2012 v.1.1. Fuel poverty costs as follows: 2011 and 2012 include WHD adjustment only; 2013, 2014 and 2015 include WHD and price source adjustments.

4.3.4 Impact on Fuel Poverty

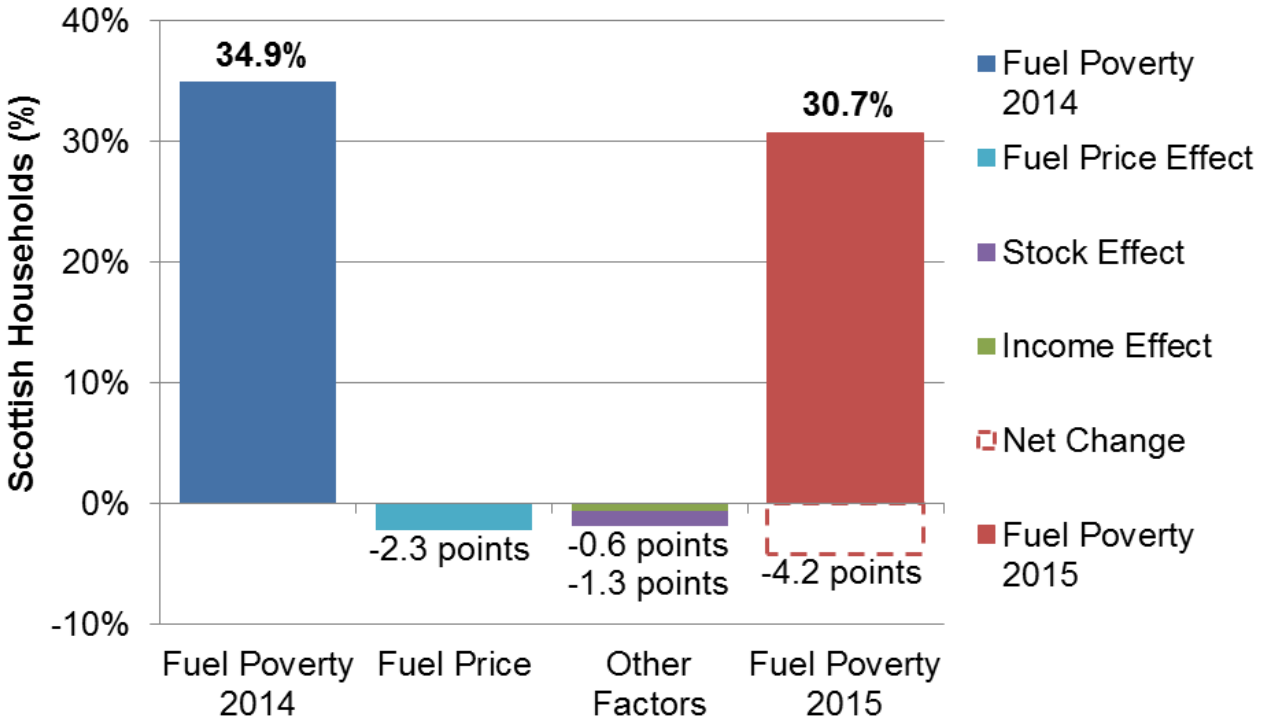
158. To understand how the changes in the price of domestic fuels and the incomes of the households included in the SHCS sample interact with the performance of the housing stock, we carried out a micro-simulation which sought to isolate the impact of each set of factors on the level of fuel poverty recorded in 2015. The results are illustrated in Figure 22 and Table 34.

159. Between 2014 and 2015 fuel poverty fell by 4.2 percentage points The results from the micro-simulation analysis indicate that just over half (2.3 percentage points) of this reduction could be attributed to the lower price of domestic fuels in 2015 compared to the previous year. The remainder was due to higher household incomes and improved energy efficiency performance of the housing stock, 0.6 and 1.3 percentage points respectively. Just under a third of the overall reduction in fuel poverty can therefore be attributed to the energy efficiency performance of the housing stock[49].

160. The analysis which underpins these findings involves modelling of hypothetical rates of fuel poverty under different scenarios. Using SHCS data from 2014 and 2015 one set of factors was altered at a time, holding the other two constant. This included the following steps as shown in Table 34.

[49] This captures also other sources of sampling variability between the 2014 and 2015 survey which may affect the energy demand in the sample of dwellings included in the SHCS.

Figure 22. Contributions to Change in Fuel Poverty Rate Between 2014 and 2015



- First, 2015 fuel prices were applied to the 2014 survey sample to determine the effect of price change alone under 2014 levels of energy demand and household income.
- Next, the income of households in this sample was increased by the mean gain observed for their decile group between 2014 and 2015. This demonstrated the additional effect of income on fuel poverty change between 2014 and 2015.
- The remaining difference between the fuel poverty rate modelled at the previous step and the observed rate for 2015 was attributed to the change in energy performance of the housing stock between 2014 and 2015.[50]

[50] The sequence of steps in this method affects the size of the estimated impact. Where factors operate in the same direction any potential joined effect will be attributed to those assessed first. Because fuel price demonstrated the most dramatic change between 2014 and 2015, it is appropriate to assess its impact first.

Table 34. Steps in Attributing Change in the Fuel Poverty Rate Between 2014 and 2015

	Fuel Poverty Rate	Step Difference
Fuel Poverty 2014	**34.9%**	
- Step 1: Fuel price change	32.6%	-2.3 points
- Step 2: Income change	32.0%	-0.6 points
- Step 3: Attributed to energy efficiency change		-1.3 points
Fuel Poverty 2015	**30.7%**	

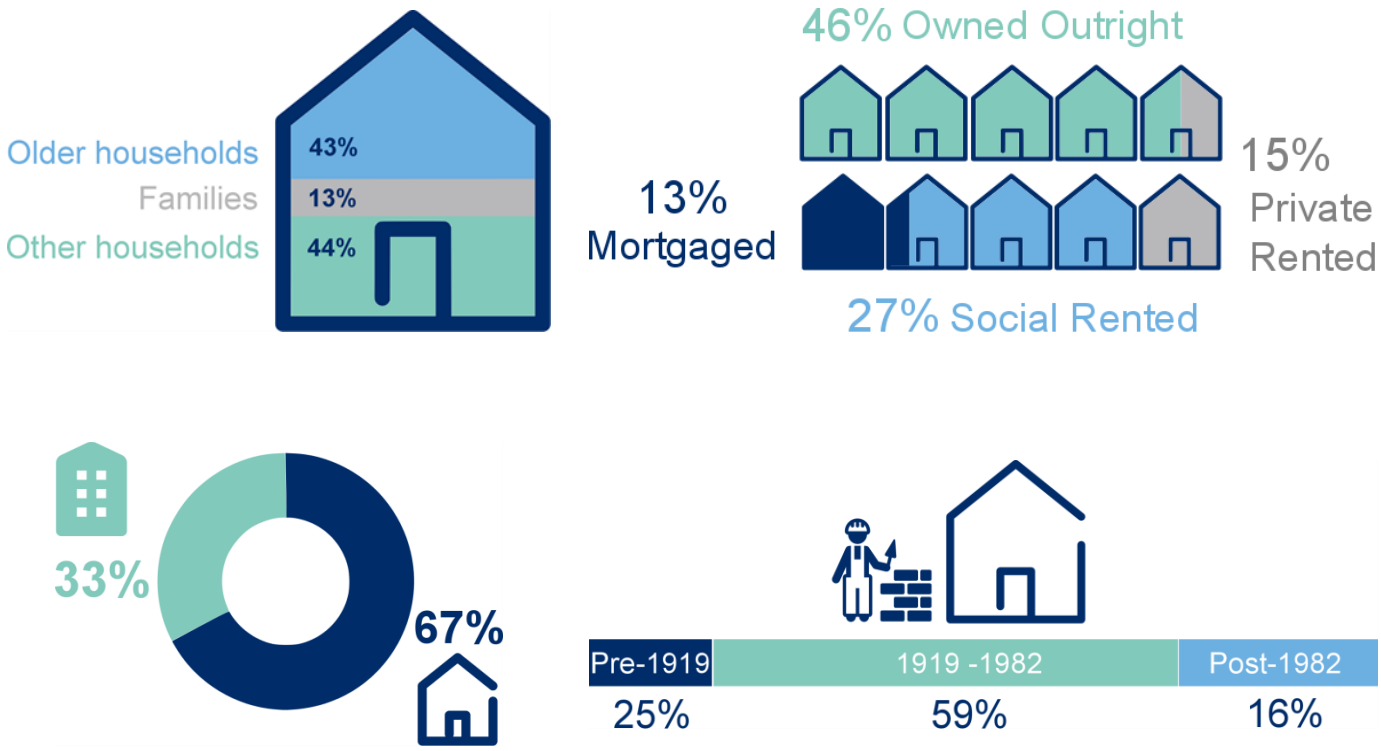
4.4 Characteristics of Fuel Poor Households

161. Figure 23 illustrates some of the key attributes of the fuel poor population in 2015. Around 13% of households living in fuel poverty are families with children. The remaining 87% are almost equally split between older one- or two-person households, on the one hand (43%), and all other types of households with adult residents (44%), on the other.

162. The large majority of fuel poor households are owner occupiers (59%), 27% are social housing residents and the remaining 15% rent in the private sector. Two-thirds of fuel poor households live in houses (67%), broadly equally split between detached, semi-detached and terraced properties. The remaining one-third live in flats (33%).

163. One quarter (25%) of the dwellings of fuel poor households were built before 1919, and 16% were built since 1982. The remaining 59% were constructed in the intervening years.

Figure 23 : Composition of Fuel Poor Households by Selected Household and Dwelling Characteristics, 2015



4.4.1 Household Characteristics

164. Table 35 shows fuel poverty rates by a number of household characteristics for 2015 and in comparison to the previous year. Some of the highest and lowest rates of fuel poverty can be seen among **private sector** residents: 45% of outright owners and 13% of those with a mortgage are assessed to be fuel poor.

165. **Older households** make up a substantial part of those who own their property outright; they have generally lower income than working age households and their energy needs are assessed under an enhanced heating regime in accordance with the fuel poverty definition. The properties in which they live are often larger, requiring more energy to heat, and are more likely to be detached which leads to greater heat loss. Correspondingly, at 45% older households have higher fuel poverty rates.

Table 35: Fuel Poverty Rates by Household Characteristics, 2015 and 2014

	2015			2014		
	000s	%	*Sample*	000s	%	*Sample*
Tenure						
Owned	341	45%	*900*	354	47%	*889*
Mortgaged	97	13%	*800*	125	17%	*780*
LA/ public	129	38%	*377*	151	42%	*382*
HA/co-op	70	28%	*275*	96	36%	*279*
PRS	111	33%	*345*	120	37%	*304*
Private	549	30%	*2,045*	599	33%	*1,973*
Social	199	33%	*652*	246	39%	*661*
Household type						
Older households	321	45%	*823*	404	50%	*915*
Families	97	16%	*676*	127	21%	*667*
Other households	330	29%	*1,198*	315	31%	*1,052*
Weekly Household Income						
< £200	273	92%	*318*	282	90%	*352*
£200-300	244	56%	*475*	268	61%	*465*
£300-400	117	27%	*463*	154	38%	*439*
£400-500	50	18%	*322*	67	24%	*300*
£500-700	48	11%	*480*	49	11%	*501*
£700+	16	3%	*639*	25	5%	*577*
Council Tax Band						
Band A	169	36%	*537*	213	42%	*555*
Band B	173	31%	*633*	207	37%	*619*
Band C	136	33%	*460*	125	34%	*418*
Band D	90	27%	*361*	91	29%	*338*
Band E	107	31%	*371*	105	32%	*350*
Band F	40	23%	*195*	57	27%	*216*
Band G – H	30	23%	*133*	41	36%	*126*
All Scotland	748	31%	*2,697*	860	35%	*2,634*

Note: The age threshold for older households in 2015 has changed to 65 for both men and women. This affects comparability with 2014 across household types, except for families .

166. On average the private and the **social housing** sector have similar rates of fuel poverty: 30 and 33% respectively. There is more noticeable decline in fuel poverty in the social sector, reducing the social-private gap we saw in the SHCS sample for 2014.

167. As in previous years, fuel poverty has a strong association with **income** and households in the lower income bands have the highest rates of fuel poverty : 92% for the bottom income decile and 56% for the 2nd bottom decile. Households with income between £300 and £400 a week have seen above average reductions in fuel poverty in the last year, while changes at both the top and the bottom of the household income distribution have been negligible.

4.4.2 Dwelling Characteristics

168. Table 36 shows how the level of fuel poverty varies across dwelling characteristics.

169. The lowest rates of fuel poverty are associated with higher energy efficiency standards. Around one fifth (20%) of households living in **post-1982** dwellings are fuel poor, similarly to those living in properties **rated C or better**. Both of these categories have seen no change since 2014 in terms of fuel poverty levels. Gains in reducing fuel poverty have taken place among those living in pre-1982 dwellings or dwellings rated band D or below.

170. Households using oil as **primary heating fuel** have seen the largest improvement in fuel poverty levels since 2014, presumably in large part due to the falling price of oil. Just over a quarter of them are now assessed as fuel poor (26%) which is comparable to the level of fuel poverty among those using mains gas (27%). Similarly, the **gas network** differential has also declined, with 30% of households within the coverage of the gas network being fuel poor, compared to 36% among other households.

171. **Rural** households have gained disproportionately in the last year with fuel poverty levels falling to 35% from 50% in 2014, at least partly thanks to the lower price of domestic liquid fuels (down by about 30% in the last year). Rural fuel poverty is now close to the level of fuel poverty in urban areas (30% in 2015) and the difference between the two is no longer statistically significant.

172. Levels of fuel poverty among households using electricity as main heating fuel have remained among the highest, at 54%. Although the results suggest that this group may have also experienced some gains since 2014, the sample size is too small to provide enough confidence.

Table 36: Fuel Poverty by Dwelling Characteristics, 2015 and 2014

	2015			2014		
	000s	%	*Sample*	000s	%	*Sample*
Dwelling Type						
Detached	188	35%	*678*	198	37%	*672*
Semi	155	32%	*586*	175	37%	*547*
Terraced	160	30%	*616*	192	37%	*610*
Tenement	153	27%	*490*	169	30%	*475*
Other flats	91	29%	*327*	111	34%	*330*
Age of dwelling						
pre-1919	190	39%	*476*	206	43%	*488*
1919-1944	86	32%	*314*	110	39%	*286*
1945-1964	170	32%	*595*	200	38%	*617*
1965-1982	184	33%	*632*	205	38%	*605*
post-1982	118	20%	*680*	125	21%	*638*
Primary Heating Fuel						
Gas	527	27%	*1,987*	573	30%	*1,957*
Oil	41	26%	*233*	66	49%	*210*
Electric	154	54%	*394*	182	60%	*388*
Other	21	36%	*78*	24	39%	*79*
EPC Band (SAP 2012)						
B - C	163	18%	*923*	158	18%	*833*
D	320	30%	*1,161*	359	34%	*1,171*
E	184	50%	*452*	222	59%	*458*
F - G	80	70%	*161*	106	75%	*172*
Location						
urban	603	30%	*2,098*	637	32%	*2,064*
rural	145	35%	*599*	208	50%	*570*
SIMD: Most deprived 15%						
Yes	115	31%	*364*	149	38%	*377*
No	633	31%	*2,333*	696	34%	*2,257*
Gas Grid						
On	607	30%	*2,090*	685	34%	*2,077*
Off	141	36%	*607*	161	43%	*557*
All Scotland	748	31%	*2,697*	845	35%	*2,634*

173. The fuel poverty rate in the 15% most **deprived** areas in 2015 stands at 31%, which is the same as the average for Scotland as a whole.

4.5 Fuel Poverty and Income Poverty

174. Although fuel poverty is correlated with low income, it is not equivalent to income poverty. This sections updates previous analysis of how these two conditions relate in the household population.

175. According to the official poverty definition, individuals are considered to be in relative (income) poverty if their equivalised net household income is below 60 per cent of the median income in the same year. Official poverty estimates are calculated using the Department for Work and Pensions' (DWP) Family Resources Survey (FRS). The latest estimates for Scotland were published on 28 June 2016 and relate to 2014/15.[51]

176. It is possible to use the SHCS to determine how fuel poverty and income poverty relate, although there are some caveats to this approach. One of the main caveats is that the SHCS does not collect the full range of household income data used to derive the official measure of poverty. For example, income information is only collected for the head of the household and their spouse/partner. As a result, the SHCS would underestimate the income of households with more than two earners, and therefore over-estimate levels of income poverty. To correct to some extent for this we make a corresponding adjustment to the equivalisation method used for producing official poverty statistics. It is therefore important to note that the results presented here do not reproduce exactly the official measure of fuel poverty and are only approximate.

177. A further caveat is that the latest published income poverty estimates relate to 2014/15. In order to derive a poverty threshold figure for 2015 we use the relationship between the SHCS and the FRS estimates of the median equivalised household income for the previous year, 2014. We adjust the 2015 SHCS median by the ratio between the two estimates observed in 2014 to obtain a 2015 poverty threshold. We estimate this as £291 per week before housing costs (BHC) for a couple without children.

[51] Poverty and Income Inequality in Scotland: 2014/15

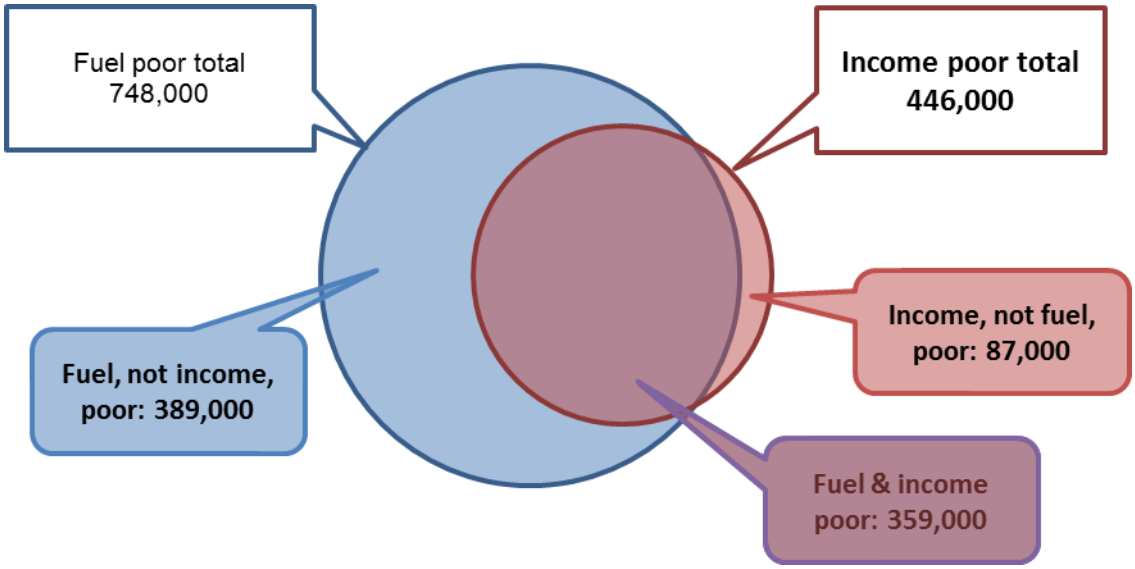
178. As Table 37 shows around half of all fuel poor households would be considered poor in terms of their income (48% or 359,000) while the other half have incomes above the relative poverty threshold (52% or 389,000 households).

Table 37: Estimated Number and Proportion of Households by Fuel Poverty and Income Poverty Status, SHCS 2015

		Income Poor	Not Income Poor	All
Fuel Poor	000s	359	389	748
	%	48%	52%	100%
Not Fuel Poor	000s	87	1,599	1,686
	%	5%	95%	100%
All	000s	446	1,988	2,434

179. Figure 24 sets out this information graphically. While those living in income poverty have a very high risk of experiencing fuel poverty (8 out of 10 do), the opposite is not necessarily true. Around half of all fuel poor households are not income poor.

Figure 24: Fuel Poor and Income Poor Households, SHCS 2015



180. Table 38 provides further information about the characteristics of the households who fall into the different sub-groups.

181. Households who are both poor and fuel poor tend to live in more energy efficient dwellings. They are more likely to use gas for heating and live in urban locations, compared to other fuel poor households. These characteristics point to low income as a key reason for their experience of fuel poverty. These households are more likely to include families with children compared to other fuel poor households.

182. On the other hand, those who are not poor but experience fuel poverty have high likelihood of living in low energy efficiency properties, more than other fuel poor households and well in excess of the average for Scotland. Among these households the share of electricity use for heating is higher and the use of mains gas is lower. Such households are more likely to live in rural locations and include a higher share of older households compared to other fuel poor households and the rest of Scotland.

Table 38: Household and Dwelling Characteristics by Poverty and Fuel Poverty, 2015

		Fuel, not Income Poor	Fuel & Income Poor	All Fuel Poor	Income, not Fuel Poor	All Scotland
EPC Band (SAP 2012)						
B-C	000s	49	115	163	55	897
	col %	12%	32%	22%	63%	37%
D	000s	151	169	320	29	1,057
	col %	39%	47%	43%	34%	43%
E-G	000s	189	75	264	3	480
	col %	49%	21%	35%	3%	20%
Household Type						
Older	000s	177	145	321	14	713
	col %	45%	40%	43%	16%	29%
Families	000s	40	57	97	44	594
	col %	10%	16%	13%	50%	24%
Other	000s	172	157	330	29	1,126
	col %	44%	44%	44%	34%	46%
Urban-Rural						
Urban	000s	281	322	603	78	2,020
	col %	72%	90%	81%	89%	83%
Rural	000s	107	37	145	10	414
	col %	28%	10%	19%	11%	17%
Primary Heating Fuel						
Gas	000s	241	286	527	77	1,926
	col %	62%	80%	70%	88%	79%
Oil	000s	29	12	41	3	160
	col %	7%	3%	6%	3%	7%
Electric	000s	106	48	154	6	284
	col %	27%	13%	21%	6%	12%
Other fuels	000s	11	10	21	2	59
	col %	3%	3%	3%	2%	2%
Gas Grid						
On grid	000s	286	320	607	82	2,038
	col %	74%	89%	81%	94%	84%
Off grid	000s	102	39	141	5	396
	col %	26%	11%	19%	6%	16%
Sample size		*486*	*395*	*881*	*86*	*2,697*

5 Energy Use: Perceptions and Experiences

- Nearly a quarter of households find that their heating keeps them warm in winter only sometimes (18%) or never (5%). This is similar to 2014.
- Similar to previous years, 6% of households report that their homes were difficult to heat because they cannot afford to heat them.
- Fuel poor households are more likely to report difficulties staying warm in winter. 27% of them say that their heating keeps them warm in winter "only sometimes" (20%) or "never" (8%). 9% of fuel poor households report that they cannot afford to heat their home. This pattern is similar to 2014.
- The extent to which home energy use is monitored by householders remains unchanged since last year with 57% stating they monitor their energy use "very" or "fairly closely".
- 8% of households report owning an energy monitoring device – a 6 percentage point increase since 2008 .

5.1 Heating Satisfaction

183. Respondents' views on their ability to keep warm in the winter and why this may be difficult is a useful context for understanding statistics on fuel poverty and energy efficiency in the home.

184. In 2015 three quarters of householders reported that they were able to stay warm at home during the winter (Figure 23). 18% said that their heating keeps them warm "only sometimes", while 5% report that their heating systems never keep them warm in winter. This is very similar to 2014.

185. Of those reporting that their heating system keeps them warm in winter "Only Sometimes" or "Never", 22% report this to be "a serious problem", 50% "a bit of a problem", while 27% said it was "not very much" or "not a problem". As shown in Figure 23 this means that 5% of the surveyed households found their heating does not keep them warm in winter and that this was "a serious problem", and 11% that it was "a bit of a problem". This distribution is very similar to the results from the 2014 survey.

Figure 23: Staying Warm in Winter

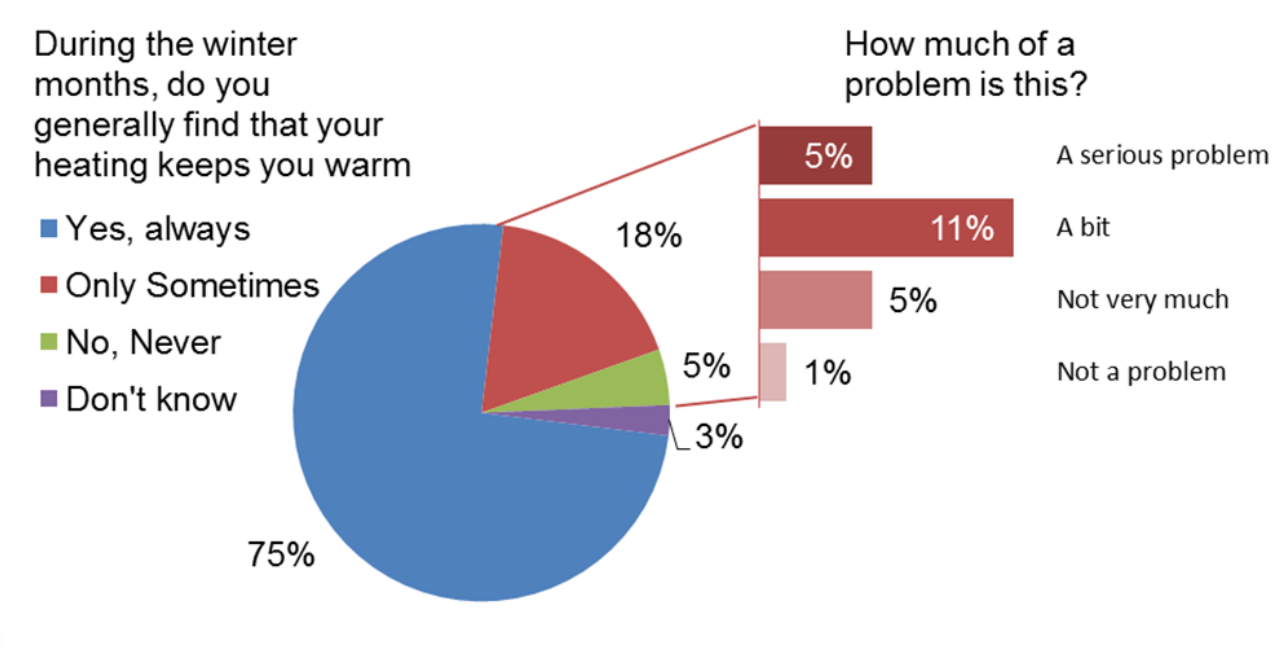
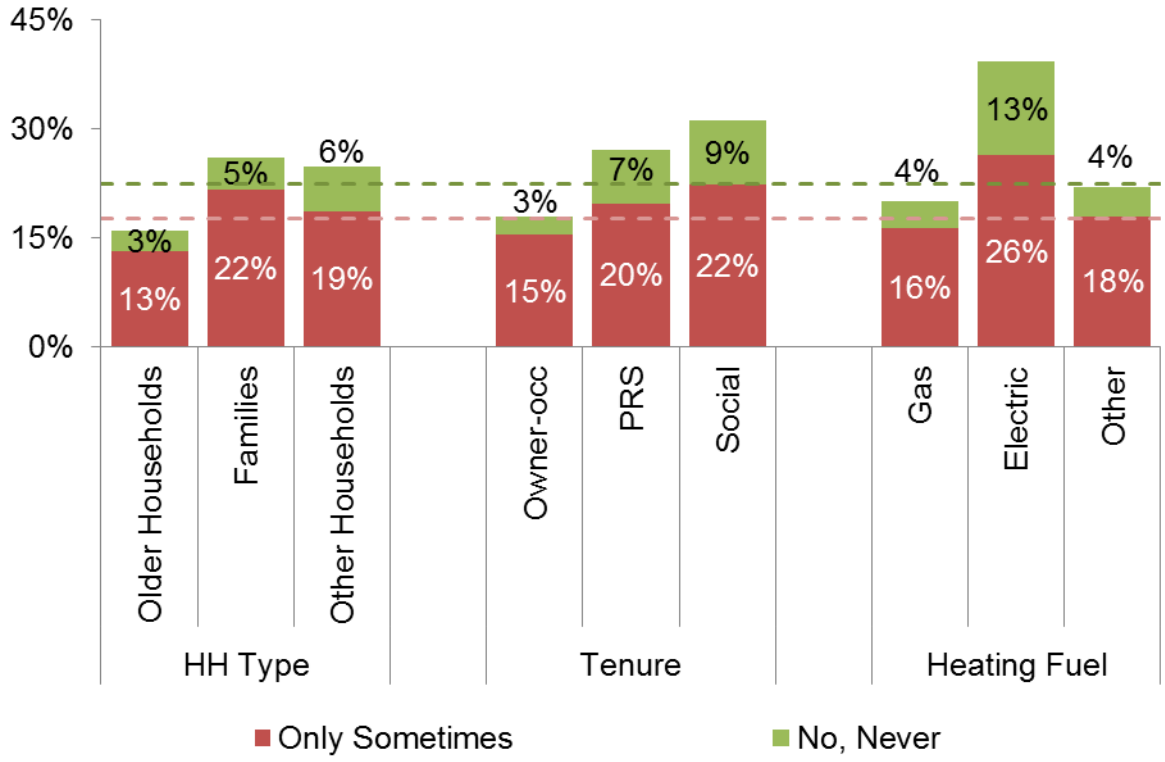


Figure 24: "Does Your Heating Keep You Warm Enough in the Winter?" by Household Type, Tenure and Primary Heating Fuel; SHCS 2015



Note: Dashed lines represent the Scotland levels shown in Figure 23

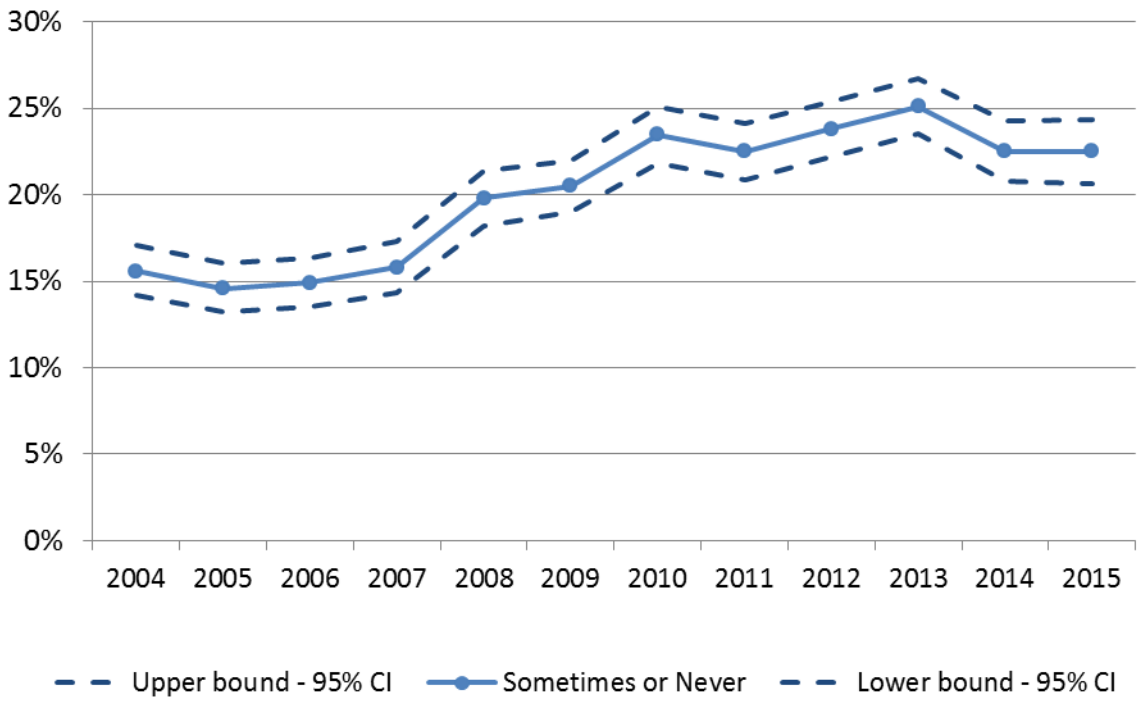
186. Figure 24 shows how respondents' views on how well their heating systems keep them warm in winter vary depending on household (HH) type, tenure and the primary heating fuel they use.

187. Pensioner households are less likely than other household types to report that their heating system doesn't always keep them warm in the winter; 16%, compared with 27% of families and 25% of other households.

188. Householders with electric heating have high propensity to report that their heating systems does not keep them warm in the winter (39%).

189. Social and private renters also have increased likelihood to report that their heating does not always keep them warm compared to owner occupiers. For social sector tenants this is in contrast to the relatively better energy efficiency of the dwellings they occupy compared to the housing stock overall (as shown in Table 19).

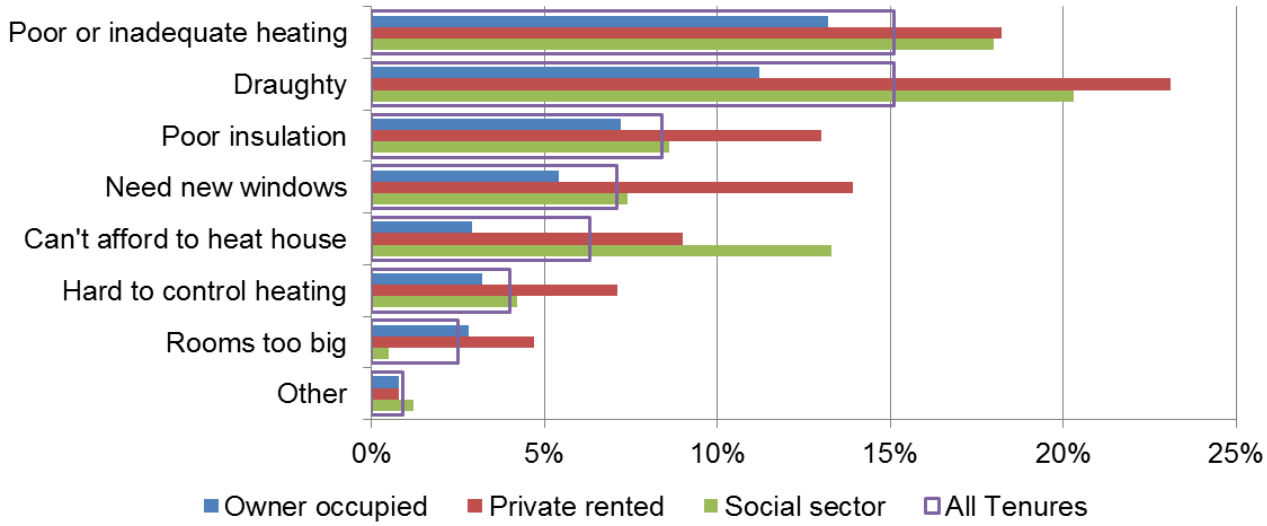
Figure 25: "Does Your Heating Keep You Warm Enough in the Winter?", Proportion 'Sometimes' or 'Never Warm', 2004-2015



190. Figure 25 shows how the proportion of householders reporting that their heating does not always keep them warm has changed over time, allowing for the margin of error. The results indicate that while after 2007 there was some increase in this proportion, it has leveled out in the last five years

191. The reasons why people find their homes difficult to heat are shown in Figure 26 and Table 39. The most common reasons relate to poor energy performance of the dwellings: poor heating systems and draughts (15% each) followed by insulation and windows (8% and 7%). About 6% of all surveyed householders consider it unaffordable to achieve the indoor temperatures they want. This is higher among renters (13% in the social sector and 9% in PRS) compared to owner occupiers (3%). On the whole private and social sector tenants are more likely than owner occupiers to report difficulties. 63% of all interviewed households did not report any problems heating their homes.

Figure 26: Reasons Heating Home is Difficult by Tenure, 2015 (% of households)



Note: responses have been grouped by theme, as described in section 7.5.5. More than one answer allowed so that the sum of responses can exceed 100%.

Table 39: Reasons Heating Home is Difficult by Tenure, 2015 (% of households)

	Owner occupied	Private rented	Social sector	All Tenures
None reported	**69%**	**54%**	**54%**	**63%**
Poor or inadequate heating	13%	18%	18%	15%
Draughty	11%	23%	20%	15%
Poor insulation	7%	13%	9%	8%
Need new windows	5%	14%	7%	7%
Can't afford to heat house	3%	9%	13%	6%
Hard to control heating	3%	7%	4%	4%
Rooms too big	3%	5%	1%	3%
Other	1%	1%	1%	1%
Sample size	*1,578*	*320*	*594*	*2,492*

Note: Respondents are permitted to select more than one response. For this reason the sum down a column can exceed 100%

192. Table 40 shows how fuel poor and non-fuel poor households compare in their views on winter heating and heating affordability. Fuel poor households are more likely to report that their heating does not keep them warm in winter, 8% of them say they can never achieve enough warmth, and for 20% this happens some of the time. These figures compare to 3% and 17% of households who are not fuel poor. For 20% of fuel poor households this is "a serious" or "a bit of a problem", compared to 15% of non-fuel poor households.

Table 40: Staying Warm and Fuel Poverty, 2015 (% of households)

	Not Fuel Poor	Fuel Poor
During the winter months, do you generally find that your heating keeps you warm enough at home, or not?		
Yes, always	77%	70%
Only some of the time	17%	20%
No, never	3%	8%
Don't know	3%	2%
How much of a problem is this, if at all, to you?		
A serious problem	4%	8%
A bit of a problem	11%	12%
Affordability		
Cannot afford to heat house	5%	9%
Sample size	*1,642*	*799*

193. Fuel poor households are also more likely to report affordability problems. When asked about the reasons why they find it difficult to keep their home warm, 9% of fuel poor households say “cannot afford to heat my home”. The proportion of non-fuel poor households who give this answer is 5%.

5.2 Monitoring Energy Use

194. Since 2008 the SHCS has asked respondents to what extent they monitor their energy use and whether or not they have energy monitoring devices.

195. The proportion of households who do not monitor their energy use has fallen from 31% in 2008 to around one-fifth in 2012 and has remained at that level since (20-22%). In 2015 22% of respondents were not monitoring their energy use (Table 41).

196. At the same time the proportion of those who report monitoring their energy use “fairly” or “very closely”, as shown in Table 41 has increased over time from 44% in 2008 to 57% in 2015.

Table 41: Extent to which Energy Use is Monitored, 2008-2015 (% of households))

Extent Energy Use is Monitored…	Year							
	2015	**2014**	**2013**	**2012**	**2011**	**2010**	**2009**	**2008**
Very closely	16%	16%	17%	16%	14%	12%	13%	11%
Fairly closely	41%	37%	38%	38%	33%	33%	34%	33%
Subtotal: Very or fairly closely	57%	54%	56%	54%	47%	45%	47%	44%
Not very closely	22%	24%	24%	24%	22%	23%	25%	24%
Not at all	22%	22%	20%	22%	30%	32%	28%	31%
Don't know	0%	1%	0%	0%	0%	0%	0%	1%
Total	100%	100%	100%	100%	100%	100%	100%	100%
Sample size	*2,492*	*2,682*	*3,442*	*3,428*	*3,949*	*3,853*	*4,153*	*3,762*

197. In 2015 8% of households had energy monitoring devices, as shown in Table 42. This has stayed at a similar level for the last five years.

Table 42: Households with Energy Use Monitoring Devices, 2008-2015

	% of households	*Sample Size*
2015	8%	*2,492*
2014	7%	*2,682*
2013	8%	*3,442*
2012	8%	*3,428*
2011	7%	*3,949*
2010	4%	*3,853*
2009	2%	*4,153*
2008	2%	*3,762*

198. Table 43 shows that fuel poor households are similar to others in the way they monitor their energy use: 57% report monitoring “very” or “fairly closely” compared to 56% of households who are not fuel poor. They are also equally likely to have monitoring devices at home: 6% of fuel poor households compared to 8% of all other households.

Table 43: Monitoring Energy Use and Fuel Poverty, 2015 (% of households)

	Not Fuel Poor	Fuel Poor
To what extent do you monitor your use of energy in your property?		
Very closely	15%	17%
Fairly closely	41%	40%
Not very closely	22%	22%
Not at all	22%	21%
Don't know	*	*
Do you have an energy-use monitoring device in your home?		
Yes	8%	6%
Sample Size	*1,642*	*799*

6. Housing Conditions

6.1 Disrepair

- The level of disrepair remained unchanged in the last year. In 2015, 73% of all dwellings had some degree of disrepair, however minor it may be. Disrepair to critical elements stood at 52%, 33% of dwellings had some instances of urgent disrepair, and in 8% of the housing stock some extensive disrepair was present.
- Levels of damp and condensation remained similar to 2014 levels. Around 9 out of 10 properties were free from any damp or condensation, an improvement of around 3 percentage points since 2013.

199. The SHCS measures disrepair for a wide range of building elements. This is reported in four broad categories:

- **Any (or Basic) disrepair.** This is the minimum threshold of disrepair measured in the SHCS and relates to any damage where a building element requires some repair beyond routine maintenance. It is the most comprehensive category covering all types of disrepair, however minor, and encompasses all other types of disrepair (see Figure 27).
- **Extensive disrepair.** To be described as extensive, the damage must cover at least a fifth (20%) or more of the building element area. This category is different from the severity of damage as described by the next two categories, urgent and critical, and can be applied to any of the other 3 categories of disrepair.
- **Urgent disrepair.** This relates to cases requiring immediate repair to prevent further damage or health and safety risk to occupants. Urgency of disrepair is only assessed for external and common elements.
- **Critical element disrepair.** This refers to disrepair to building elements central to weather-tightness, structural stability and preventing deterioration of the property. These elements are listed in section 7.5.7.3. There is some overlap in the building elements assessed under this category and those assessed for urgent disrepair. Not all disrepair to critical elements is necessarily considered urgent by the surveyor.

200. More detailed description of the categories of disrepair is given in section 7.5.7. Rates for each category for the period 2013-2015 are shown in Table 44.

201. In 2015, the level of disrepair in terms of all main categories remained as in the previous year. 73% of all dwellings had some degree of disrepair, however minor it may be. Disrepair to critical elements stood at 52%, 33% of dwellings had some urgent disrepair, and in 8% of the housing stock some extensive disrepair was present.

Table 44: Rates of Disrepair by Category, 2013-2015

Year	Any (Basic) Disrepair No Disrepair	Some Disrepair	Disrepair to Critical Elements	Urgent Disrepair	Extensive Disrepair
2015	27%	73%	52%	33%	8%
2014	27%	73%	53%	32%	7%
2013	22%	78%	57%	36%	7%

202. It is fairly common for dwellings to display elements of disrepair in more than one category, as illustrated in Figure 27. For example, we imagine a house with several elements in disrepair of varying severity.

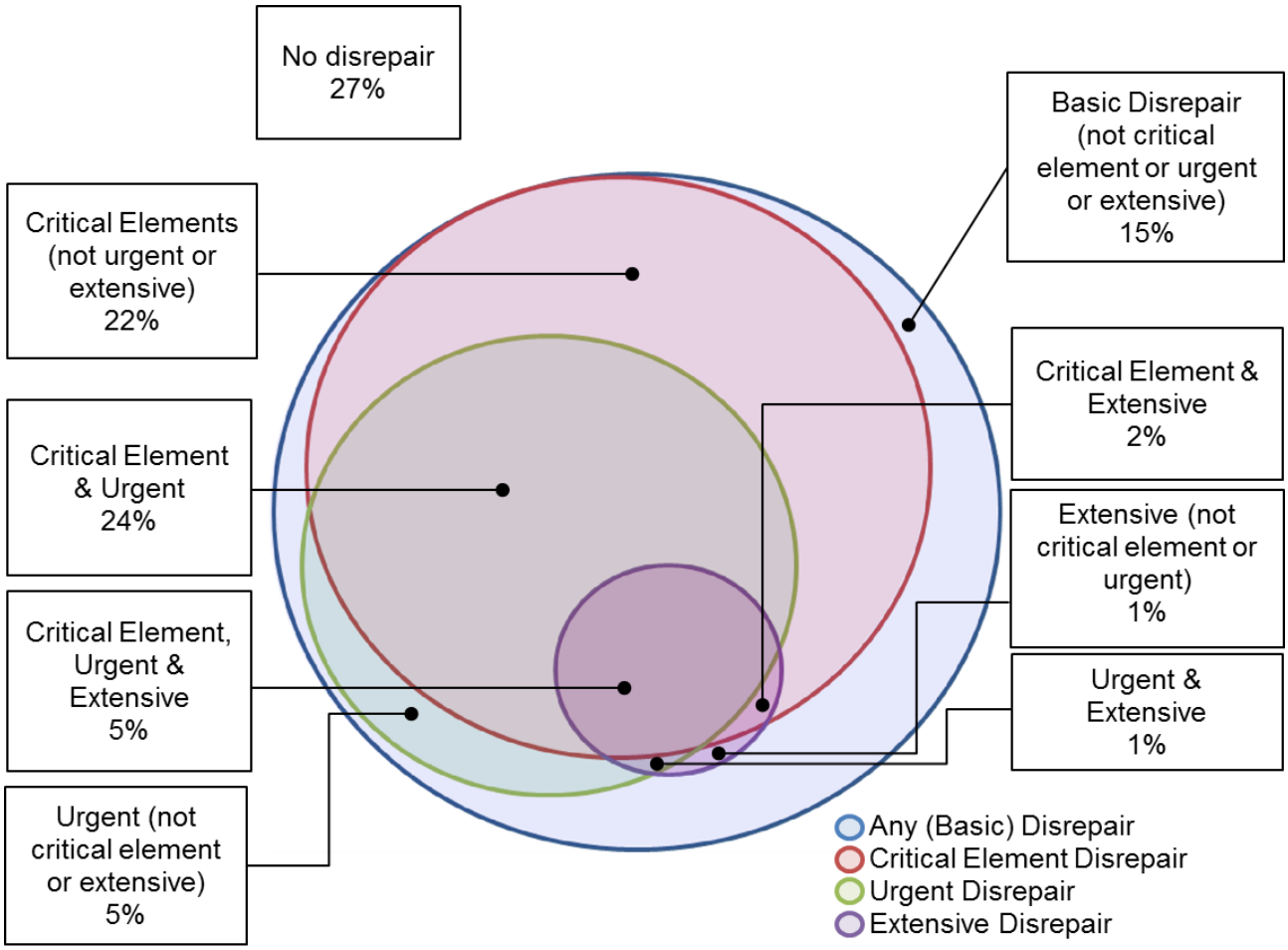
- There is a leaking tap in the bathroom.
- A large section of the render on an external wall has broken off.
- A small area of guttering is damaged, causing rain water to pour down an external wall surface.

203. Following the guidance in the SHCS surveyor handbook, the leaking tap is recorded in the survey as a minor repair. This alone is sufficient to place the house in the category **any (or basic) disrepair**.

204. The broken render on the external wall covers more than 20% of the wall area. The surveyor does not consider the repair urgent. However, the external wall finish is a critical element. This is therefore recorded as both an **extensive** disrepair and a disrepair to a **critical element**.

205. The surveyor has marked the guttering defect as requiring urgent repair, considering that the water pouring down the wall is likely to lead to further damage and compromise the weather-proofing of the building in the short term. Guttering is also one of the critical elements. As a result of this defect the dwelling has both **urgent** and **critical element** disrepair.

Figure 227: Disrepair Categories - Proportions of Scotland's Housing Stock 2015



6.1.1 Disrepair to Critical Elements

206. This section examines in more detail disrepair to critical elements and its prevalence across tenure, dwelling age band and location.

207. As shown in Table 44, in 2015 the proportion of dwellings which had some disrepair to a critical element (or elements) was 52%. In some of these dwellings, accounting for 28% of the stock overall, there was also some urgent disrepair (Table 45). This proportion has remained unchanged since 2014.

208. Table 45 also shows the share of dwellings within this group, where in addition to urgent disrepair, some disrepair was assessed as extensive. This accounted for 5% of the housing stock, a proportion which has also remained unchanged since 2014.

6.1.1.1 Dwelling age and location

209. The prevalence of disrepair to critical elements is associated with age of construction, with dwellings built after 1964 less likely to fall within this category. This is also evident where instances of critical disrepair co-exist with urgent or extensive disrepair, a pattern which has remained unchanged in the last year.

210. Urban and rural dwellings show similar rates in all categories of disrepair shown in Table 45. Similarly, all differences between 2014 and 2015 in Table 45 are within the margin of error.

Table 45: Disrepair to Critical Elements, Urgent and Extensive Disrepair by Dwelling Age and Location, 2014 and 2015

	Age of dwelling					Location		Scotland
	Pre-1919	1919-1944	1945-1964	1965-1982	Post-1982	Urban	Rural	
Dwellings with any Critical disrepair								
2015	68%	67%	60%	49%	26%	52%	51%	**52%**
2014	72%	65%	65%	52%	24%	53%	52%	**53%**
… *of which* dwellings with Critical & Urgent disrepair								
2015	39%	40%	35%	25%	10%	28%	27%	**28%**
2014	39%	37%	34%	26%	10%	27%	30%	**28%**
… *of which* dwellings with Critical, Urgent & Extensive disrepair								
2015	8%	7%	6%	3%	1%	5%	4%	**5%**
2014	5%	5%	4%	3%	1%	4%	4%	**4%**

6.1.1.2 Tenure

211. Levels of critical disrepair are similar for the private and the social housing sector considered as a whole. Just over half of all dwellings (51% in the private and 53% in the social sector) have some disrepair to critical elements. Under a third of all dwellings have both critical and urgent disrepair (28% in the private sector and 30% in the social) and a very small proportion (5% in the private and 4% in social sector) have also instances of extensive disrepair in addition to critical and urgent.

212. However, the sectors are not homogenous. Housing associations dwellings have the lowest levels of both critical and critical and urgent disrepair. They are followed by owner occupied dwellings, while LA properties and private rented properties have the highest levels of disrepair in these categories. There has been no change on any of the measures shown in Table 46 since 2014.

Table 46: Disrepair to Critical Elements, Urgent and Extensive Disrepair by Tenure Group, 2014 and 2015

	Tenure				Sector		Scotland
	Owner-occupied	LA/Other public	HA/Co-op	Private-rented	Private	Social	
Dwelling with any Critical disrepair							
2015	49%	62%	40%	61%	51%	53%	**52%**
2014	51%	66%	42%	58%	52%	56%	**53%**
… *of which* dwellings with Critical & Urgent disrepair							
2015	25%	37%	20%	37%	28%	30%	**28%**
2014	26%	35%	18%	33%	28%	28%	**28%**
… *of which* dwellings with Critical, Urgent & Extensive disrepair							
2015	5%	6%	2%	4%	5%	4%	**5%**
2014	3%	7%	3%	4%	3%	5%	**4%**

6.1.1.3 Type of Disrepair to Critical Elements

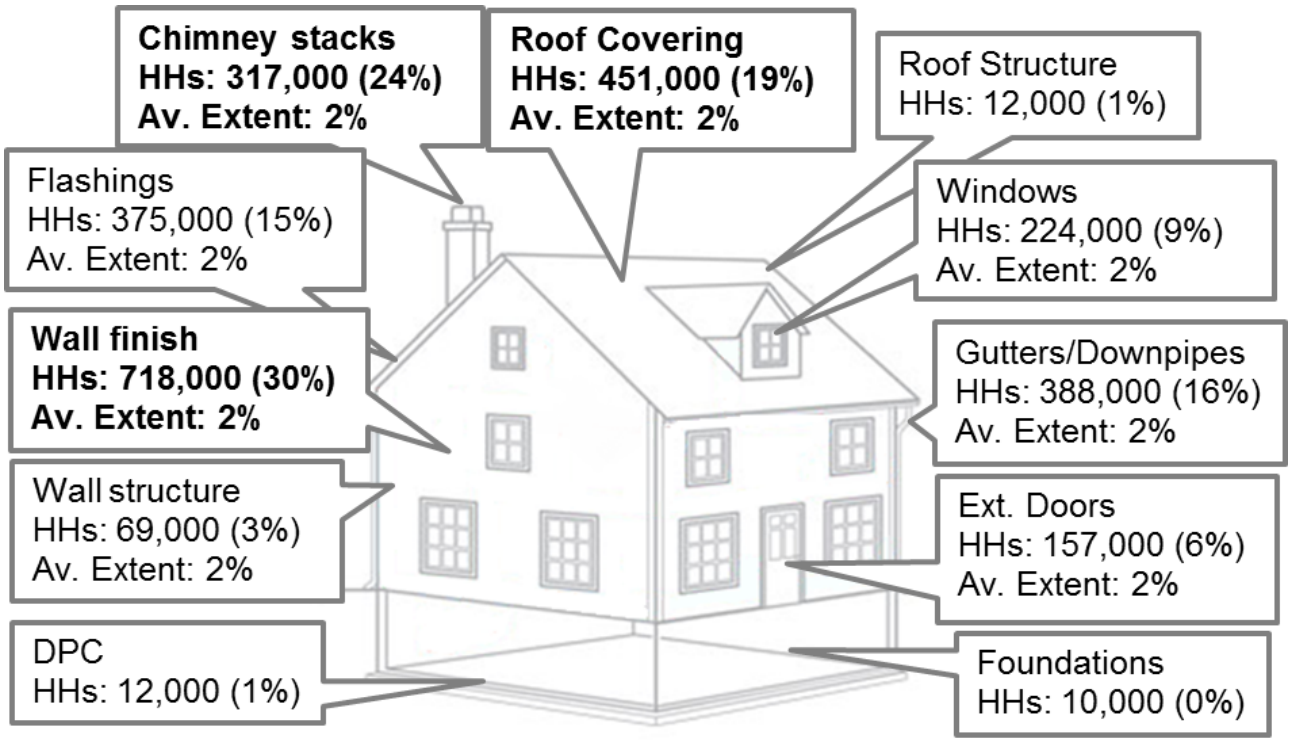
213. As shown in Figure 28, although some disrepair to critical elements is fairly common it tends to be at a relatively low level in each property, affecting on average no more than 2% of the relevant area. A full list of elements in this category is provided in section 7.5.7.3.

214. Two elements most often affected are wall finish and roof coverings. Where stone pointing, render or harling on walls is damaged, moisture can seep into the structure of the walls and cause further damage. Similarly slipped roof tiles or slates can allow water to access the roof structure or the tops of internal walls.

215. Around 30% of dwellings had some disrepair to wall finish and 19% had some disrepair to roof coverings; however, in both cases the disrepair covered no more than 2% of the area on average.

216. Around 24% of dwellings with chimneys showed some signs of disrepair. Unchecked this can lead to water ingress and eventually falling masonry.

Figure 28: The Number of Households (HHs) Affected and Average Extent of Disrepair to External Critical Elements



6.1.2 Damp and Condensation

The definitions of damp and condensation are provided in section 7.5.7.5

217. Any condensation, rising or penetrating damp recorded in the SHCS can cover anything from a small damp patch or area of condensation on a single wall in one room (caused for example by ineffective ventilation whilst cooking) to prevalence throughout a dwelling, so does not indicate a serious housing quality issue in all cases.

218. The incidence of these defects in isolation and together is given in Table 47. Around 89% of all dwellings in 2015 were free from any form of condensation or damp. This is similar to 2014 levels but represents an improvement of around 3 points since 2013, when the corresponding proportion was 86.7%.

219. In 2015 2.4% of the housing stock (around 58,000 dwellings) suffered from some degree of penetrating damp. This proportion has not changed in the last few years. There was a very small number of properties with rising damp in the survey sample, suggesting that their share in the housing stock is less than 1%.

220. Condensation was observed in 8.8% of the surveyed stock (equivalent to around 214,000 dwellings) which is similar to 2014 levels.

221. In around 1% of dwellings (20,000) both condensation and some form of damp were recorded. This level has not changed significantly since the annual survey began in 2003/4.

Table 47: Presence of Damp and/or Condensation in 2014 and 2015.

	2015		2014		2013	
Defect	000s	%	000s	%	000s	%
No Damp or Condensation	2,179	89.5%	2,144	88.6%	2,082	86.7%
Condensation	214	8.8%	226	9.3%	247	10.3%
Penetrating damp	58	2.4%	67	2.8%	90	3.7%
Rising damp	*	*	11	0.5%	16	0.7%
Condensation and damp (rising or penetrating)	20	0.8%	24	1.0%	30	1.3%
Total	2,434		2,420		2,402	
Sample size		*2,754*		*2,682*		*2,725*

6.2 Housing Quality Standards

- Levels of compliance with the tolerable standard in 2015 remained similar to 2014: 2% (or 42,000) of all dwellings fell below the Tolerable Standard. Longer term this represents an improvement of nearly 2 percentage points since 2012.
- Substantial improvements in SHQS compliance since 2014 were recorded for dwellings in rural areas (10 points reduction in failures) and older, pre-1919 properties (11 points reduction in failures).
- The SHQS failure rate in the social sector was 38%, not allowing for abeyances and exemptions. This has fallen from 60% in the last 5 years. 26% of properties did not meet the Energy Efficient criterion.
- SHCS surveyors may not always be able to identify the presence of cavity wall insulation. The overall SHQS failure rate in the social sector would be 25% if it is assumed that all social dwellings have insulated cavity walls where this is technically feasible.
- The majority of dwellings falling below the SHQS failed on a single criterion; this accounted for more than 8 out of 10 failures in the social sector.
- For 7 out of 10 social homes failing the SHQS this was due to falling short on a single one of the 55 elements which make up the standard. Most frequently these were cavity wall insulation, pipe and tank insulation, secure front and rear access to dwellings in common block, presence of at least six electrical sockets in the kitchen and others.

222. Two quality standards are set by the Scottish Government and monitored through the Scottish House Condition Survey.

223. The **Tolerable Standard** is a "condemnatory" standard. In other words, it is not reasonable to expect people to continue to live in a house that falls below it.

For more information on the Tolerable Standard see section 7.5.9

224. The **Scottish Housing Quality Standard (SHQS)** was introduced in February 2004[52]. It means social landlords must make sure their tenants' homes are in a good state of repair, energy efficient, healthy, safe and secure. A target was agreed that all social landlords must ensure that all their dwellings pass the SHQS by April 2015. Private owners and private landlords are currently under no obligation to bring their properties up to this standard. However SHCS collects the same data for all dwellings to allow comparison across the housing stock. Since 2012 this target has been incorporated in the Scottish Social Housing Charter and the performance of landlords has been monitored by the independent Scottish Housing Regulator (SHR).

For more information on the SHQS see section 7.5.10

6.2.1 Tolerable Standard

225. The overall level of compliance with the tolerable standard remained similar to 2014. As shown in Table 48, 2% of all dwellings (or 42,000 dwellings) fell below the tolerable standard in 2015. However there is a longer term trend of improvement and 2015 levels represent a drop of nearly 2 percentage points since 2012.

226. The share of dwellings below tolerable standard in the private sectors was 2%. This is similar to 2014 but around 2 points better than 2012 when 4% of all dwellings fell below tolerable standard.

227. There was no change since 2014 in the social sector where around 1% of dwellings were below tolerable standard.

228. Dwellings in the private rented sector are more likely than either owner occupied or those in the social sector to fall below tolerable standard. The rate in 2015 was just under 5% and has remained broadly at the same level for the last 5 years.

[52] For more information see letter and notes at: http://www.gov.scot/Publications/2004/02/18860/32772

229. The proportion of pre-1919 dwellings below tolerable standard has declined since 2013 by nearly 5 percentage points and stood at just under 4% in 2015. This however still exceeds the levels of BTS recoded for the most recently built dwellings (post 1965), at 1%.

230. The tolerable standard consists of 12 criteria (listed in section 7.5.9), failure on one of which leads to a failure overall.

Table 48: Dwellings Below Tolerable Standard (BTS) by Tenure and Age Band, 2015

		Below Tolerable Standard			
		%	000s	% of BTS Stock	*Sample*
Whole Stock		2%	42	100%	*2,754*
Tenure	Owner-occupied	1%	19	46%	*1,740*
	Private-rented	5%	16	38%	*355*
	Subtotal: Private	2%	35	84%	*2,095*
	Social	1%	7	16%	*659*
Age of Dwelling	Pre-1919	4%	19	45%	*489*
	1919-1944	2%	6	14%	*321*
	1945-1964	1%	8	18%	*608*
	Post-1965	1%	10	23%	*1,336*

231. Dwellings most commonly fell below the tolerable standard because they:

- were not satisfactorily insulated (15,000 or 37% of BTS dwellings);
- had unsatisfactory provision for lighting, ventilation or heating (10,000 or 23% of BTS dwellings); or
- were not free from rising/penetrating damp (7,000 or 16% of BTS dwellings).

6.2.2 Scottish Housing Quality Standard (SHQS)

232. In this section we present the results of analysis of the SHCS with regards to compliance with the Scottish Housing Quality Standard (SHQS). The SHQS provides a common standard for assessing the condition of Scottish housing. For this reason, although the requirement to comply with SHQS applies only to social sector housing, we assess all tenures for comparison.

233. The SHQS is made up of 55 different elements grouped into 5 higher-level criteria: Tolerable Standard (A), Serious Disrepair (B), Energy Efficiency (C), Modern Facilities and Services (D) and Healthy, Safe and Secure (E)[53]. In the SHCS each of the 55 individual elements is assessed by surveyors trained to collect detailed information on housing characteristics. This information is subsequently aggregated by Scottish Government analysts into higher level measures for each of the 5 criteria and the standard overall.

234. Table 49 shows the overall results for the Scottish housing stock for 2015 and the previous 5 years. In 2015, just under 44% (43.8%) of all dwellings failed to meet the SHQS. As in previous years, the highest failure rate was with respect to the Energy Efficient criterion (31.7%), followed by Healthy, Safe and Secure (13.4%) and Modern Facilities (8.8%). There were a very small number of dwellings which did not meet the BTS criterion (1.7%) or the Disrepair criterion (0.1%). Differences from 2014 on all criteria shown in Table 49 and overall are within the margin of error for this survey.

Table 49: Proportion of Dwellings Failing SHQS and Individual Criteria 2010-2015

	2015	2014	2013	2012	2011	2010
SHQS	43.8%	47.5%	49.1%	54.0%	58.2%	61.0%
BTS	1.7%	2.0%	3.0%	3.7%	3.0%	3.6%
Disrepair	0.1%	0.1%	0.2%	0.1%	0.5%	0.8%
Energy Efficient	31.7%	34.8%	36.3%	42.2%	46.0%	49.2%
Modern Facilities	8.8%	11.1%	11.4%	11.9%	13.7%	15.6%
Healthy, Safe and Secure	13.4%	13.8%	13.7%	16.1%	17.0%	16.6%

Note: Figures for 2014 and 2015 are not fully comparable to previous years. For details see Technical Notes and Definitions

6.2.2.1 Compliance by Tenure, Dwelling Age and Location

235. Table 50 shows the number and proportion of properties failing the SHQS by selected characteristics.

[53] Full guidance available at http://www.gov.scot/Topics/Built-Environment/Housing/16342/shqs

236. The lowest failure rates are in the newest dwellings (post-1982, 17% fail) and in Housing Associations stock (30% fail). As previously shown (section 2.5.2), Housing Association dwellings are often newer than Local Authority stock and are built to a higher energy efficiency standard. The newest purpose-build social housing in Scotland is also likely to be designed to comply with SHQS.

237. The overall SHQS failure rate for social sector housing in 2015 stood at 38%. If it is assumed that all social dwellings have insulated cavity walls where this is technically feasible, the overall SHQS failure rate in the social sector would be 25% (see section 6.2.2.4). SHCS based measures do not make an allowance for abeyances and exemptions.

238. In 2015 urban and rural areas had the same SHQS failure rates, 44%, with a strong 10 point improvement in rural areas since 2014. Substantial improvement was also recorded for older, pre-1919 properties, with failure rates in 2015 down 11 points to 50%.

Table 50: Number and Proportion of Dwellings Failing SHQS, 2014 and 2015

	2015			2014		
	000s	% fail	*Sample*	000s	% fail	*Sample*
All Scotland	1,066	44%	*2,754*	1,149	47%	*2,682*
Tenure						
Owned outright	352	46%	*929*	355	48%	*904*
Mortgaged	313	42%	*811*	335	47%	*786*
LA	151	45%	*380*	167	47%	*386*
HA/co-op	74	30%	*279*	113	41%	*287*
PRS	175	51%	*355*	180	54%	*319*
Private	840	46%	*2,095*	869	48%	*2,009*
Social	226	38%	*659*	280	45%	*673*
Dwelling Age						
pre-1919	242	50%	*489*	293	61%	*499*
1919-1944	165	60%	*321*	167	59%	*291*
1945-1964	265	50%	*608*	290	55%	*623*
1965-1982	292	53%	*644*	277	51%	*616*
post-1982	102	17%	*692*	122	20%	*653*
Location						
Urban	885	44%	*2,147*	927	46%	*2,108*
Rural	181	44%	*607*	222	54%	*574*

6.2.2.2 Individual SHQS Criteria

239. Table 51 shows the failure rates for each criterion of the SHQS for private and social sector housing over the last 6 years. It demonstrates that there has been a consistent trend of improvement in both the private and the social sector. However the survey sample is not large enough to measure accurately year-on-year change in each instance. All differences between 2014 and 2015 shown in Table 51 are within the survey margin of error.

240. The SHCS estimates that 38% of social sector housing failed to meet the SHQS in 2015. This was predominantly due to the Energy Efficient criterion, 26% of properties failed on this measure. Ten percent failed the Healthy, Safe and Secure criterion and the share of those not meeting the BTS or the Disrepair criterion was negligible.

Table 51: SHQS Criteria Failure Rates by Tenure, 2010-2015

		2015[1]	2014[1]	2013	2012	2011	2010
All tenures	**SHQS Overall**	44%	47%	49%	54%	58%	61%
	Below Tolerable Standard	2%	2%	3%	4%	3%	4%
	Serious Disrepair	0%	0%	0%	0%	1%	1%
	Not Energy Efficient	32%	35%	36%	42%	46%	49%
	Lacking Modern Facilities/Services	9%	11%	11%	12%	14%	16%
	Not Healthy, Safe or Secure	13%	14%	14%	16%	17%	17%
Private	**SHQS Overall**	46%	48%	51%	55%	60%	61%
	Below Tolerable Standard	2%	2%	3%	4%	4%	4%
	Serious Disrepair	0%	0%	0%	0%	1%	1%
	Not Energy Efficient	33%	37%	39%	43%	49%	51%
	Lacking Modern Facilities/Services	9%	11%	11%	11%	13%	13%
	Not Healthy, Safe or Secure	14%	14%	14%	17%	17%	17%
Social	**SHQS Overall**	38%	45%	43%	52%	52%	60%
	Below Tolerable Standard	1%	1%	3%	3%	1%	2%
	Serious Disrepair	0%	0%	0%	0%	0%	0%
	Not Energy Efficient	26%	30%	28%	39%	37%	44%
	Lacking Modern Facilities/Services	8%	12%	12%	15%	15%	22%
	Not Healthy, Safe or Secure	10%	14%	13%	13%	15%	16%

Notes: 1. Figures for 2014 and 2015 are not fully comparable to previous years.

6.2.2.3 Number of Criteria and Elements Failing

241. In the large majority of cases failure to meet the SHQS is due to a dwelling not passing one criterion or even a single element. As the standard incorporates 55 different elements, it is generally sufficient for a dwelling to fail on a single one of these in order to be considered not satisfying the higher level criterion requirement and the SHQS overall[54].

242. Table 52 and Table 53 present the distribution of dwellings for Scotland as a whole and social housing separately by number of criteria failed. The majority of failures in 2015 were due to a single criterion: 33% of dwellings in the whole stock and 32% of social sector dwellings failed the SHQS because of a single criterion. This constitutes respectively 76% (for all housing) and 83% (for social sector) of all dwellings falling below the SHQS. In 2010 the corresponding figure was 68% for both the social sector and the whole housing stock. Over time, alongside the reduction in the overall failure rate, there has also been a reduction in the reasons why a dwelling does not meet the standard.

Table 52: Number and Proportion of Dwellings by Numbers of SHQS Criteria Failures, All Housing, 2010-2015

Number of Criteria Fail	2015		2014		2013		2011		2010	
	000s	Col %	000s	Col %	000s	Col %	000s	Col %	000s	Col %
None	1,368	56%	1,271	53%	1,222	51%	990	42%	920	39%
1	813	33%	865	36%	880	37%	966	41%	980	42%
2	217	9%	227	9%	236	10%	316	13%	352	15%
3	36	1%	53	2%	60	2%	82	3%	88	4%
4	1	0%	5	0%	4	0%	11	0%	16	1%
5	-	-	0	0%	-	-	2	0%	2	0%
Total Dwellings	2,434	100%	2,420	100%	2,402	100%	2,368	100%	2,357	100%
Criteria Fails as % of All assessed	11%		12%		13%		16%		17%	
Sample size		*2,754*		*2,682*		*2,725*		*3,219*		*3,115*

[54] There is an exception to this principle with respect to 14 secondary building elements where failure on at least two is required for a building to be considered not meeting the standard overall. The full guidance is available at http://www.gov.scot/Topics/Built-Environment/Housing/16342/shqs

Table 53: Number and Proportion of Dwellings by Numbers of SHQS Criteria Failures, Social Dwellings, 2010-2015

Number of Criteria Failing	2015		2014		2013		2011		2010	
	000s	Col %	000s	Col %	000s	Col %	000s	Col %	000s	Col %
None	364	62%	347	55%	344	57%	292	48%	252	40%
1	188	32%	216	34%	201	33%	230	38%	257	41%
2	34	6%	54	9%	51	8%	68	11%	95	15%
3	4	1%	10	2%	13	2%	18	3%	25	4%
4	-	-	-	-	-	-	-	-	3	0%
5	-	-	-	-	-	-	-	-	-	-
Total Dwellings	589	100%	627	100%	608	100%	607	100%	633	100%
Criteria Fails as % of All Assessed	9%		11%		11%		14%		17%	
Sample size		*659*		*673*		*662*		*807*		*798*

Table 54. Number and Proportion of Social Sector Dwellings by Number of SHQS Element Failures, and Most Common Single-Element Failures, 2015

Number of Element Failures	000s	% of All Dwellings	% of Failing Dwellings
None	364	62%	
1 element	160	27%	71%
… *of which*			
Cavity wall insulation (C31)	*81*		
Pipe and tank insulation (C33)	*19*		
Safe common front and rear doors (E55)	*9*		
At least six kitchen sockets (D39)	*9*		
Secure external doors (E53)	*8*		
Adequate food storage space (D40)	*8*		
2 elements	44	8%	20%
3 or more elements	21	4%	9%
Subtotal: dwellings failing the SHQS	226		100%
All social sector dwellings	589	100%	
Sample size		*659*	

243. Table 54 shows the distribution of social sector dwellings by the number of elements failed. Nearly three quarters (71%) of dwellings failing the SHQS did so because of a single element, and another fifth failed because of 2 elements. The elements most likely to cause failure (as there are no other reasons to fail the SHQS in these dwellings) are cavity wall insulation, pipe and tank insulation, secure front and rear access to dwellings in common block, presence of at least six electrical sockets in the kitchen, external doors to dwellings with adequate locks, and presence of a minimum of $1m^3$ food storage in the kitchen (Table 54).

6.2.2.4 SHQS Compliance and Cavity Wall Insulation

244. The SHQS target is incorporated into the Scottish Social Housing Charter and the independent Scottish Housing Regulator (SHR) is responsible for monitoring social landlords' progress towards the target. The latest SHQS progress update was published by the SHR in September 2016[55]. It reported that 92.8% of social homes met the SHQS in 2015/16.

245. There are some differences between the SHR and the SHCS survey in the way data for assessing the SHQS is collected and reported which make the headline compliance rates not immediately comparable. Abeyances and exemptions are not taken into account by the SHCS as it is not feasible to collect this kind of information in the survey.

246. One potential source of difference relates to the ability of the survey to detect the presence of cavity wall insulation (CWI) in all cases. According to feedback from social landlords, cavity wall insulation is installed as standard where there is a suitable cavity, and in most other cases external or internal insulation is considered (although this is not required for SHQS). This is because CWI is recognised throughout the sector as a relatively low cost measure with a high impact on energy efficiency.

[55] https://www.scottishhousingregulator.gov.uk/publications/national-report-scottish-social-housing-charter-headline-findings-201516

247. However, the survey still records uninsulated cavity wall properties, and to allow for the possibility that SHCS surveyors may not always be able to identify the presence of CWI we provide an alternative estimate of SHQS compliance (Table 55). This estimate assumes that all social dwellings have insulated cavity walls where this is technically appropriate. Where it is not appropriate we assume an exemption. Therefore this alternative measure of compliance assumes that no dwelling fails the SHQS for lack of CWI. Although this is an unlikely scenario, it illustrates the maximum impact that undercounting CWI in the survey could potentially be making on the measurement of SHQS compliance in the social sector.

Table 55 Number and Proportion of Dwellings in the Social Sector Failing the Energy Efficient Criterion and SHQS Overall, With and Without the Cavity Wall Insulation (CWI) Element, 2015

	Dwellings Failing the Energy Efficient Criterion		Dwellings Failing the SHQS Overall	
	000s	%	000s	%
inc. CWI element	153	26%	226	38%
exc. CWI element	57	10%	145	25%
Difference	-96	-16 pts	-81	-14 pts

248. In 2015, around one fifth of social dwellings (19% or 111,000 dwellings) are recorded as failing the CWI element of the SHQS. Excluding this element from the compliance requirement leads to a 16 percentage point reduction in the energy efficiency element failure rate and a 14 percentage point reduction in SHQS failure. This amounts to around 81,000 fewer social sector dwellings failing the SHQS and an overall SHQS failure rate of 25%.

6.3 Overcrowding and Under-Occupancy

- Levels of overcrowding under the bedroom standard remained unchanged at 3%, indicating that in 2015 around 70,000 households lived in overcrowded accommodation.
- Around 715,000 (29%) households had two or more bedrooms in excess of the minimum requirement under the bedroom standard and a further 900,000 (37%) had one additional bedroom.

- Social sector tenants are more likely to live in accommodation which is at the level meeting the minimum requirements of the bedroom standard (59% compared to 22% in the private sector) or is over-crowded (5% compared to 2% in the private sector).

249. This section examines some key measures of whether households are living in overcrowded conditions or under-occupancy. This is determined on the basis of the bedroom standard as defined in the Housing (Overcrowding) Act 2003[56] taking into account the number of bedrooms available in the dwelling and the type of the household that occupies it.

> Minimum requirements for bedrooms under the bedroom standard should not be confused with criteria for the removal of the spare room subsidy. More information on the bedroom standard and the differences between the two is included in section 7.5.8.

250. Figure 29 and Table 56 show how headline occupancy measures have changed over time. There was no change on these headline measures between 2014 and 2015. Longer term, under-occupancy has reduced slightly since a peak in 2009 when 71% of households had at least one bedroom in excess of the bedroom standard minimum. In 2015 this figure stood at 66%. The rate of overcrowding has stayed stable since 2009 (3%), and is lower than the peak observed in 2004/5 (4%).

251. Subsequent sections examine in more detail differences across household and dwelling characteristics for 2015 and the preceding year.

[56] Housing (Overcrowding) Act 2003, section 2: http://www.publications.parliament.uk/pa/cm200203/cmbills/046/2003046.pdf

Figure 29: Proportion of Dwellings Which are Overcrowded, Meet the Minimum Standard, Exceed it by 1 Bedroom or Exceed by 2 or More Bedrooms, 2003/4-2015

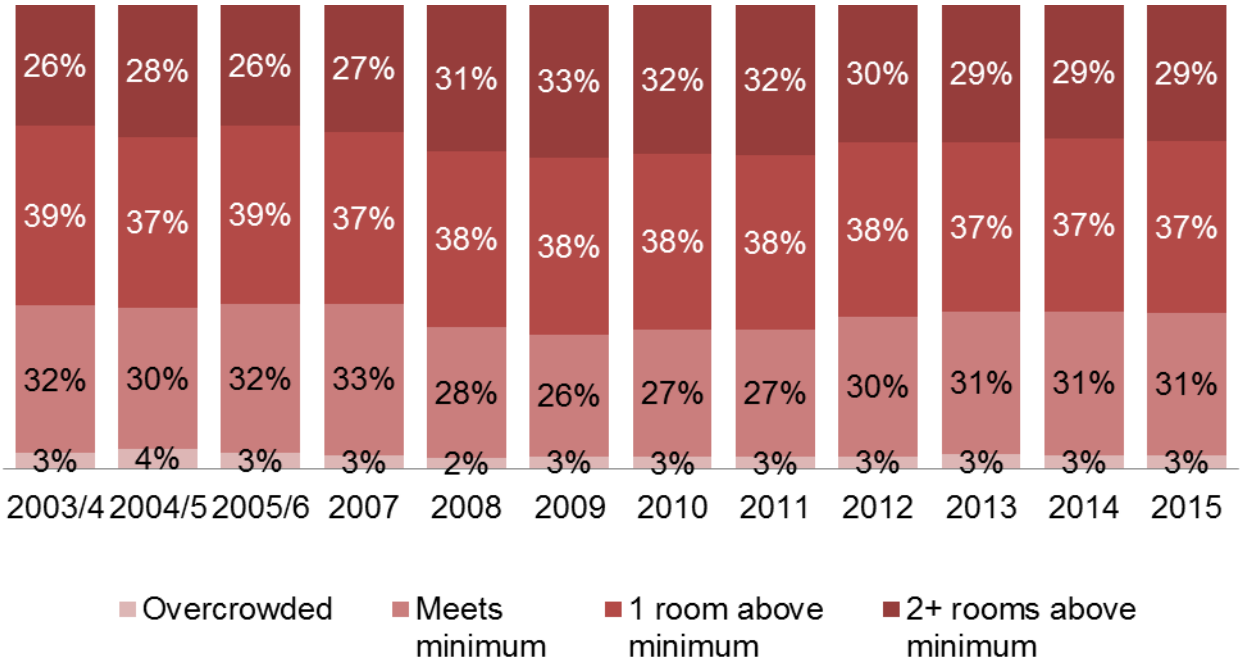


Table 56: Dwellings Which Are Below The Standard, Meet The Minimum Requirement, Or Exceed It By 1, 2 Or 3 And More Bedrooms, 000s And %, 2010, 2014, 2015

Bedroom Standard	2015		2014		2010	
	000s	%	000s	%	000s	%
Below Standard	70	3%	74	3%	61	3%
Compliance: minimum reqs	749	31%	748	31%	644	27%
Above Standard	1615	66%	1,598	66%	1,652	70%
1 bedroom above minimum	900	37%	901	37%	898	38%
2+ bedrooms above minimum	715	29%	697	29%	754	32%
- 2 bedrooms above minimum	503	21%	503	21%	543	23%
- 3+ bedrooms above minimum	211	9%	193	8%	211	9%
Total	2,434	100%	2,420	100%	2,386	100%
Sample Size		*2,754*		*2,682*		*3,115*

6.3.1 Overcrowding

252. A dwelling is considered overcrowded if there are insufficient bedrooms to meet the occupants' requirements under the bedroom standard definition (see section 7.5.8).

253. Around 3%, or 70,000 households, lived in overcrowded accommodation in 2015. This was more common among social tenants (5%) than households living in private dwellings (2%). This is a pattern which has remained unchanged in the last year (Table 57).

Table 57: Overcrowding by Tenure and Housing Type, Dwelling Age Band and Location, 2015.

	Overcrowded under Bedroom Standard					
	2015			2014		
	000s	%	*Sample*	000s	%	*Sample*
Tenure						
Owned	7	1%	*929*	5	1%	*904*
Mortgaged	18	2%	*811*	23	3%	*786*
LA	19	6%	*380*	21	6%	*386*
HA	10	4%	*279*	12	4%	*287*
PRS	16	5%	*355*	14	4%	*319*
Private	41	2%	*2,095*	41	2%	*2,009*
Social	29	5%	*659*	32	5%	*673*
Age of dwelling						
pre-1919	18	4%	*489*	18	4%	*499*
1919-1944	*	*	*321*	7	3%	*291*
1945-1964	24	5%	*608*	21	4%	*623*
1965-1982	12	2%	*644*	16	3%	*616*
post-1982	12	2%	*692*	11	2%	*653*
Dwelling Type						
Detached	*	*	*692*	4	1%	*683*
Semi-detached	12	3%	*594*	17	4%	*552*
Terraced	13	3%	*626*	19	4%	*616*
Tenement	30	5%	*506*	19	3%	*491*
Other flats	11	3%	*336*	14	4%	*340*
Weekly Household Income						
< £200	11	4%	*328*	10	3%	*357*
£200-300	9	2%	*475*	11	2%	*467*
£300-400	20	5%	*463*	17	4%	*439*
£400-500	*	*	*322*	5	2%	*301*
£500-700	13	3%	*480*	16	4%	*502*
£700+	10	2%	*640*	10	2%	*577*
Location						
urban	63	3%	*2,147*	62	3%	*2,108*
rural	7	2%	*607*	12	3%	*574*
Scotland	70	3%	2,754	74	3%	*2,682*

254. Households who own their properties outright had below average rates of over-crowding.

6.3.2 Under-Occupancy

255. In 2015 around 715,000 (29%) households had two or more bedrooms in excess of the minimum under the bedroom standard and a further 900,000 (37%) had 1 additional bedroom. The total number of households with bedrooms in excess of the minimum under the bedroom standard was 1,615,000 (or 66% of all households) (Table 56).

256. There are strong differences between residents in private housing and the social housing sector on all measures of under-occupancy and over-crowding. Social sector tenants are more likely to live in accommodation which is at the level meeting the minimum requirements of the bedroom standard (59% compared to 22% in the private sector) or is over-crowded (5% compared to 2% in the private sector). Correspondingly, households in social housing are less likely to have bedrooms in excess of the minimum requirements: 29% have one additional room, 6% have two, and just under 1% have three or more additional rooms. The respective figures for private sector households are 39% (one additional room), 25% (two additional rooms) and 11% with three additional rooms (Table 58).

257. There are also differences within the private sector. Owner occupiers are more likely to have at least 2 additional rooms than those renting in the private sector. Households owning their property outright are most likely to have 3 or more additional bedrooms (16% of them do) compared to those with mortgages (9%) and renters (6%).

258. Higher income households (£700+ per week) are more likely to live in dwellings with additional bedrooms. Of them, 29% have 2 additional bedrooms, and a further 18% have 3 or more additional bedrooms. In comparison, between 5 and 8% of households in all other lower income bands have 3 or more additional bedrooms.

259. Under-occupied dwellings are more common among the oldest (pre-1919) and the newest properties (post-82), where 15% and 12% respectively have 3 or more bedrooms in excess of the bedroom standard. Similarly, detached houses have the highest rates of under-occupancy compared to other building types; 37% with 2 additional bedrooms and another 28% with 3 or more additional bedrooms.

260. Under-occupation is more common in rural areas. 28% of rural dwellings have 2 bedrooms in excess of the minimum requirements under the bedroom standard and a further 18% have 3. The corresponding figures for urban dwellings are 19% and 7%.

261. Changes from 2014 on the measures shown in Table 58 are within the margin of error for this survey. However there is some longer term change in the social housing sector which is worth highlighting. The proportion of social dwellings with two or more additional bedrooms has nearly halved since 2011, from 13% to 7% in 2015. In the same period the proportion of those at the level of the minimum requirements under the standard has increased from 46% to 59%.

Table 58: Above Minimum Standard, by Tenure, Dwelling Age, Type and Location, 2015

	2015					2014				
	2 additional		1 additional		*Sample*	2 additional		1 additional		*Sample*
	000s	%	000s	%		000s	%	000s	%	
Tenure										
Owned	387	51%	294	39%	*929*	389	52%	265	36%	*904*
Mortgaged	242	33%	297	40%	*811*	217	30%	286	40%	*786*
LA	22	6%	107	32%	*380*	27	8%	131	37%	*386*
HA/co-op	17	7%	66	26%	*279*	19	7%	92	34%	*287*
PRS	47	14%	136	40%	*355*	46	14%	127	38%	*319*
Private	676	37%	727	39%	*2,095*	651	36%	679	38%	*2,009*
Social	39	7%	173	29%	*659*	46	7%	223	36%	*673*
Age of dwelling										
pre-1919	150	31%	149	31%	*489*	139	29%	136	28%	*499*
1919-1944	65	24%	129	47%	*321*	63	23%	128	46%	*291*
1945-1964	129	25%	202	39%	*608*	131	25%	206	39%	*623*
1965-1982	163	29%	199	36%	*644*	162	30%	207	38%	*616*
post-1982	208	35%	221	37%	*692*	201	34%	225	38%	*653*
Dwelling Type										
Detached	345	65%	146	27%	*692*	342	64%	134	25%	*683*
Semi	160	33%	196	41%	*594*	160	34%	190	41%	*552*
Terraced	140	27%	207	40%	*626*	130	25%	214	42%	*616*
Tenement	38	7%	203	35%	*506*	32	6%	213	37%	*491*
Other flats	32	10%	149	46%	*336*	33	10%	150	45%	*340*
Weekly Household Income										
< £200	70	24%	102	34%	*328*	59	19%	121	39%	*357*
£200-300	90	21%	159	38%	*475*	97	23%	160	37%	*467*
£300-400	98	23%	169	40%	*463*	86	22%	152	38%	*439*
£400-500	73	26%	98	36%	*322*	76	27%	120	43%	*301*
£500-700	123	29%	169	39%	*480*	144	32%	159	36%	*502*
£700+	250	46%	183	34%	*640*	227	44%	172	33%	*577*
Urban-rural indicator										
urban	526	26%	771	38%	*2,147*	510	25%	769	38%	*2,108*
rural	189	46%	129	31%	*607*	186	45%	132	32%	*574*
Scotland	715	29%	900	37%	*2,754*	697	29%	901	37%	*2,682*

7. Technical Notes and Definitions

7.1 Survey Estimation

262. From 2012 onwards the SHCS is a module of the Scottish Household Survey (SHS)[57]. One third of respondents to the SHS are invited to participate in a follow-up dwelling inspection by SHCS building surveyors.

263. The SHS 2012 incorporated a number of questions from the SHCS interview from previous years. In some cases these questions were not in the same survey streams as the physical survey which limits the scope for joint analysis.

7.1.1 Sample Sizes and Gross Dwelling Numbers

264. Table 59 we provide the sample sizes in the social interview and physical dwelling inspection follow-up for all years of the annual SHCS to 2015.

Table 59: Achieved Samples for SHCS Streams of the Scottish Household Survey and Base Number of Occupied Dwellings by Survey Year, 2003/4-2015

Survey Year	Social Interview	Physical Survey	Households (000s)
2003/4	3,870	3,090	2,269
2004/5	3,783	3,093	2,301
2005/6	3,679	3,147	2,315
2007	3,867	3,033	2,314
2008	3,763	3,015	2,331
2009	4,153	3,346	2,344
2010	3,853	3,115	2,357
2011	3,949	3,219	2,368
2012	3,813	2,787	2,386
2013	3,780	2,725	2,402
2014	3,787	2,682	2,420
2015	4,083	2,754	2,434

[57] Scottish Household Survey Website: http://www.gov.scot/Topics/Statistics/16002

265. Table 59 also shows the total number of households in Scotland for each survey year which provides the basis for grossing up the estimates of households and dwellings in this report. These figures are produced annually by the National Records of Scotland[58] as part of their inter-censal household estimates publication.

266. The SHCS is a sample survey. All survey figures are estimates of the true prevalence within the population and will contain some error associated with sampling variability. The likely size of such variability can be identified, by taking account of the size and design of the sample, as described in section 7.1.2 and 7.1.3.

267. In addition to sampling variability, there are other sources of uncertainty, such as those arising from incomplete responses or failure to secure participation in the survey from each sampled household. Where non-response is not random, i.e. some types of household are less likely to participate than others, bias is introduced into the survey data. Such errors have not been quantified in this report.

268. In general, the smaller the sample size, the greater the likelihood the estimate could be misleading, so more care must be taken when using smaller subsets of the survey sample for analysis. In this report estimates representing 5 or fewer cases, or where the base sample is below 30 have been suppressed.

269. Different types of estimates are subject to different levels of uncertainty associated with sampling and design. For example estimates of change (i.e. figures relating to comparisons across survey years) are generally subject to greater sampling error than point-in-time estimates (i.e. figures relating to one survey year only) and such errors would be understated by figures in Table 60. There is more uncertainty associated with complex measures, such as the fuel poverty rate and this is not quantified in this report or reflected by stated confidence intervals in Table 60.

[58] NRS: Estimates of Households and Dwellings in Scotland, 2015, https://www.nrscotland.gov.uk/files//statistics/household-estimates/house-est-15/15house-est.pdf

7.1.2 Confidence Intervals

270. By convention, a 95% confidence interval is used to quantify the variability of a sample estimate, under which there is a 1 in 20 chance that the true value will fall outside the given confidence interval.

271. Table 60 shows the 95% confidence limits for estimates of proportions based on sub-samples of various sizes before design effects are taken into account.

Table 60: Approximate 95% Confidence Limits for Estimates Based on SHCS Sub-Samples of Various Sizes (Excluding Design Effects)

Sub-sample size (corresponding to 100%)	Estimate (lookup to nearest multiple of 5%)											
	1% or 99%	2% or 98%	5% or 95%	10% or 90%	15% or 85%	20% or 80%	25% or 75%	30% or 70%	35% or 65%	40% or 60%	45% or 55%	50%
	percentage points (+ / -)											
100	2.0	2.7	4.3	5.9	7.0	7.8	8.5	9.0	9.3	9.6	9.8	9.8
150	1.6	2.2	3.5	4.8	5.7	6.4	6.9	7.3	7.6	7.8	8.0	8.0
200	1.4	1.9	3.0	4.2	4.9	5.5	6.0	6.4	6.6	6.8	6.9	6.9
250	1.2	1.7	2.7	3.7	4.4	5.0	5.4	5.7	5.9	6.1	6.2	6.2
300	1.1	1.6	2.5	3.4	4.0	4.5	4.9	5.2	5.4	5.5	5.6	5.7
350	1.0	1.5	2.3	3.1	3.7	4.2	4.5	4.8	5.0	5.1	5.2	5.2
400	1.0	1.4	2.1	2.9	3.5	3.9	4.2	4.5	4.7	4.8	4.9	4.9
450	0.9	1.3	2.0	2.8	3.3	3.7	4.0	4.2	4.4	4.5	4.6	4.6
500	0.9	1.2	1.9	2.6	3.1	3.5	3.8	4.0	4.2	4.3	4.4	4.4
600	0.8	1.1	1.7	2.4	2.9	3.2	3.5	3.7	3.8	3.9	4.0	4.0
700	0.7	1.0	1.6	2.2	2.6	3.0	3.2	3.4	3.5	3.6	3.7	3.7
800	0.7	1.0	1.5	2.1	2.5	2.8	3.0	3.2	3.3	3.4	3.4	3.5
900	0.7	0.9	1.4	2.0	2.3	2.6	2.8	3.0	3.1	3.2	3.3	3.3
1,000	0.6	0.9	1.4	1.9	2.2	2.5	2.7	2.8	3.0	3.0	3.1	3.1
1,100	0.6	0.8	1.3	1.8	2.1	2.4	2.6	2.7	2.8	2.9	2.9	3.0
1,200	0.6	0.8	1.2	1.7	2.0	2.3	2.5	2.6	2.7	2.8	2.8	2.8
1,300	0.5	0.8	1.2	1.6	1.9	2.2	2.4	2.5	2.6	2.7	2.7	2.7
1,400	0.5	0.7	1.1	1.6	1.9	2.1	2.3	2.4	2.5	2.6	2.6	2.6
1,500	0.5	0.7	1.1	1.5	1.8	2.0	2.2	2.3	2.4	2.5	2.5	2.5
1,600	0.5	0.7	1.1	1.5	1.7	2.0	2.1	2.2	2.3	2.4	2.4	2.5
1,700	0.5	0.7	1.0	1.4	1.7	1.9	2.1	2.2	2.3	2.3	2.4	2.4
1,800	0.5	0.6	1.0	1.4	1.6	1.8	2.0	2.1	2.2	2.3	2.3	2.3
1,900	0.4	0.6	1.0	1.3	1.6	1.8	1.9	2.1	2.1	2.2	2.2	2.2
2,000	0.4	0.6	1.0	1.3	1.6	1.8	1.9	2.0	2.1	2.1	2.2	2.2
2,200	0.4	0.6	0.9	1.3	1.5	1.7	1.8	1.9	2.0	2.0	2.1	2.1
2,400	0.4	0.6	0.9	1.2	1.4	1.6	1.7	1.8	1.9	2.0	2.0	2.0
2,600	0.4	0.5	0.8	1.2	1.4	1.5	1.7	1.8	1.8	1.9	1.9	1.9
2,800	0.4	0.5	0.8	1.1	1.3	1.5	1.6	1.7	1.8	1.8	1.8	1.9
3,000	0.4	0.5	0.8	1.1	1.3	1.4	1.5	1.6	1.7	1.8	1.8	1.8
3,200	0.3	0.5	0.8	1.0	1.2	1.4	1.5	1.6	1.7	1.7	1.7	1.7
3,400	0.3	0.5	0.7	1.0	1.2	1.3	1.5	1.5	1.6	1.6	1.7	1.7
3,600	0.3	0.5	0.7	1.0	1.2	1.3	1.4	1.5	1.6	1.6	1.6	1.6
3,800	0.3	0.4	0.7	1.0	1.1	1.3	1.4	1.5	1.5	1.6	1.6	1.6
4,000	0.3	0.4	0.7	0.9	1.1	1.2	1.3	1.4	1.5	1.5	1.5	1.5

7.1.3 Design Effects

272. The design effect is the ratio between the variance (average deviation of a set of data points from their mean value) of a variable under the sampling method used (actual) and the variance computed under the assumption of simple random sampling (standard). In short, a design effect of 2 would mean doubling the size of a simple random sample to obtain the same level of precision; a design effect of 0.5 implies the reverse. Design effect adjustments are necessary where standard errors are affected by the design and complexity of the survey.

273. Generally speaking, disproportionate stratification and sampling with non-equal probabilities tends to increase standard errors, giving a design effect greater than 1. However, this can be controlled by deliberately over-sampling in stratum where the item of interest is either very rare or variable. The impact of non-response weighting on standard errors tends to be, although with exceptions, comparatively limited. The sampling design of the SHCS meets the criteria above in that disproportionate stratification is applied across the 32 Local Authority areas with over-sampling of remote rural areas - for example in Shetland and Orkney. As a result, one would expect the design effect to be above 1 although only modestly so.

274. Table 61 shows the design effects for all the SHCS surveys since 2003/4. When using a mixture of the physical and social survey data, the physical survey design effect must be used. The design effects for the 2015 SHCS are 1.10 for the physical and 1.08 for the social surveys.

275. When producing estimates at Local Authority level, no design effect adjustment of standard errors is necessary because simple (actually equal interval) random sampling was carried out within each Local Authority.

Table 61: Design Effects for the Annual SHCS, 2003/4 to 2015[59]

Survey Year	Design Effect	
	Physical Weight	Social Weight
2003/04	1.14	1.13
2004/05	1.18	1.17
2005/06	1.14	1.14
2007	1.13	1.11
2008	1.11	1.11
2009	1.09	1.08
2010	1.11	1.1
2011	1.12	1.11
2012	1.09	1.08
2013	1.09	1.08
2014	1.09	1.08
2015	1.10	1.08

7.1.4 Example: Accounting for Sampling Variation

276. Both confidence intervals and the design effect must be accounted for when quoting confidence levels on a statistic. For example we may wish to find the confidence interval for the proportion of pre-1919 detached houses in Table 1.

277. The stated proportion is 4%. The sub-sample size for the group (the sample size of 100% of the group is also provided in the table, which in this case is the full survey sample: n=2,754. Reading from Table 60 in the row labeled 2,800 (the closest value to our n value) in the column for 5% we find the confidence interval for this estimate is 0.8 percentage points.

278. To account for the design effect, we must multiply this value by the physical design effect value from Table 61 since this statistic relates to the physical properties of the dwelling. So the true confidence interval is 0.8 x 1.10 = 0.88 ≈ 0.9 percentage points. We can therefore be 95% confident that the true proportion of pre-1919 detached houses is between 3.1% and 4.9%.

[59] An error in compiling this table in previous publications was identified. It relates to the 2012, 2013 and 2014 surveys. The error has been corrected in the current publication.

7.1.5 Table Conventions

279. The following conventions are used in tables:

0 indicates value is rounded to 0.

- indicates no sample cases in this category

* indicates base sample too small to report (below 30 cases) or estimate representing 5 or fewer sampled households

280. Because of rounding, figures in tables and charts may not always add exactly.

7.2 Missing Tenure Information

281. Because of a routing error tenure information is not available for a small number of cases in the 2012 and 2013 surveys (46 in 2012, 42 in 2013). This was rectified for the 2014 fieldwork and the full sample has been used when reporting on tenure for subsequent years. This introduces some discontinuities in comparing statistics for the social (or the private) sector between 2014 and 2015, on the one hand, and previous years, on the other. For further details please refer to the respective earlier Key Findings reports.

7.3 Energy Models

282. Two different models are used to produce the energy efficiency outputs in this report. They are based on the same core methodology but have some different assumptions and calculations which affect the output values.

Table 62: Summary of Domestic Energy Models used on SHCS Data

Model	SAP	BREDEM 2012
Version	SAP 2009[60] SAP 2012[61] for 2014 and 2015 data	Version 1.0 for data up to 2013 Version 1.1 for 2014 and 2015 data
Outputs	Energy Efficiency Rating Environmental Impact Rating	• Fuel poverty energy use • Carbon emissions • Fuel poverty running costs
Fuel Prices	SAP standard	Based on a range of sources[62]
Occupancy	Number of occupants derived based on total floor area of the dwelling	Actual number of occupants in the dwelling
Heating regime	21°C in the main living area and 18°C elsewhere; 9 hours per weekday and 16 hours at the weekend	As SAP, except for vulnerable households for fuel poverty related statistics, where: 23°C in the main living area and 18°C elsewhere; 16 hours per day
Climate	East Pennines	Based on geographical location
Energy end-use included	• space heating • water heating • fixed lighting; • gains from renewable energy technologies.	As SAP but also energy used for: • cooking • running appliances

[60] BRE, "The Government's Standard Assessment Procedure for Energy Rating of Dwellings": http://www.bre.co.uk/filelibrary/SAP/2009/SAP-2009_9-90.pdf

[61] BRE, "The Government's Standard Assessment Procedure for Energy Rating of Dwellings, 2012 Edition", Table 12: http://www.bre.co.uk/filelibrary/SAP/2012/SAP-2012_9-92.pdf

[62] For more details see SHCS Methodology Notes 2014 www.gov.scot/Topics/Statistics/SHCS/Downloads/Methodology2014

283. Carbon emissions are calculated on the basis of the standard heating regime, applying carbon intensity values to each type of fuel used. Emissions factors for the BREDEM 2012 model come from SAP 2012 and are provided in Table 63.

Table 63: Carbon Intensity of Common Heating Fuels, SAP 2012

Fuel	kg CO2 per kWh
Mains gas	0.216
LPG	0.241
Oil	0.298
Coal	0.394
Anthracite	0.394
Smokeless fuel	0.433
Wood	
- logs	0.019
- pellets	0.039
- chips	0.016
Electricity	0.519

7.4 Extent of Disrepair Correction

284. The methodology for deriving two measures of disrepair were revised in the 2013 Key Findings report: extensive disrepair (see section 6.5 of SHCS 2013 Key Findings report) and "serious disrepair" under the Scottish Housing Quality Standard. These revisions affected statistics up to 2013. Further details are available in the Methodology Notes to the 2013 Key Findings report[63]. This report contains no further revisions.

7.5 Definitions of Categories in the Key Findings Report

7.5.1 Dwelling Types

285. The SHCS uses the following definitions of dwelling types:

- **Detached house**: a house that is free standing with no party walls;
- **Semi-detached house**: a house that is only attached to one other dwelling, commercial premise etc. The two properties taken together should be detached from any other properties

[63] SHCS - Methodology Notes 2013 available at http://www.gov.scot/Topics/Statistics/SHCS/Downloads/MethodologyNotes2013

- **Terraced house**: a house forming part of a row of three or more dwellings, commercial premises etc.
- **Tenement flat**: a dwelling within a common block of two or more floors (commonly up to five storeys but may be higher in certain circumstances) where some or all of the flats have a shared or common vertical access. The selected dwelling need not share the access, but may be situated within the block with shared/common access (own door flat)
- **4-in-a-block**: each flat in a block has its own independent access. Flats on the upper level have an internal or external stair
- **Tower/slab**: flats in a high rise (ten or more storeys) or flats where the common circulation is predominantly horizontal (maisonette, balcony or gallery access)
- **Flat from a conversion**: flats resulting from the conversion of a house only. A flat converted from a non-residential building (e.g. a warehouse) is classified according to the above flat types.

7.5.2 Household Types

286. This report uses the following classification of household types:

- **Families**: Households which contain at least one child aged under 16. Resident adults may be of any age.
- **Older households**: Small households made up of one or two residents, at least one of which is aged 65 or older.
- **Other households**. These are all other households with adult residents (of any age) and no children.

287. This classification is derived from the more detailed grouping used in the Scottish Household Survey[64] as set out in Table 64 below:

[64] http://www.gov.scot/Resource/0050/00506173.pdf

Table 64: Household Types Classification Used in the SHCS and the SHS Reports

SHCS	SHS
Families	A **single parent** household – contains one adult of any age and one or more children. A **small family** household – contains two adults of any age and one or two children. A **large family** household – contains two adults of any age and three or more children, or three or more adults of any age and one or more children.
Older households	A **single pensioner** – household contains one adult of pensionable age and no children An **older smaller** household – contains one adult of working age and one of pensionable age and no children, or two adults of pensionable age and no children.
Other households	A **single adult** household – contains one adult of working age and no children. A **small adult** household – contains two adults of working age and no children. A **large adult** household – contains three or more adults and no children.

288. The pensionable age threshold used for the 2015 SHCS Key Findings report is 65 years for both men and women. Previous publications used 65 for men and 60 for women. Therefore the categories 'Older households' and 'Other households' are not fully comparable between 2015 and previous years.

7.5.3 Urban Rural Classifications

289. The urban/rural classification in this report is the Scottish Government 2 fold Urban Rural Classification[65]. Dwellings in settlements with over 3,000 people are considered urban by this definition.

7.5.4 Gas Grid Coverage Derivation

290. Determining whether a dwelling is within the coverage of the gas grid is based on its proximity to gas distribution pipes. The current methodology for deriving gas grid coverage was first used for the 2013 Key Findings Report.

[65] More details can be found at:
http://www.gov.scot/Topics/Statistics/About/Methodology/UrbanRuralClassification

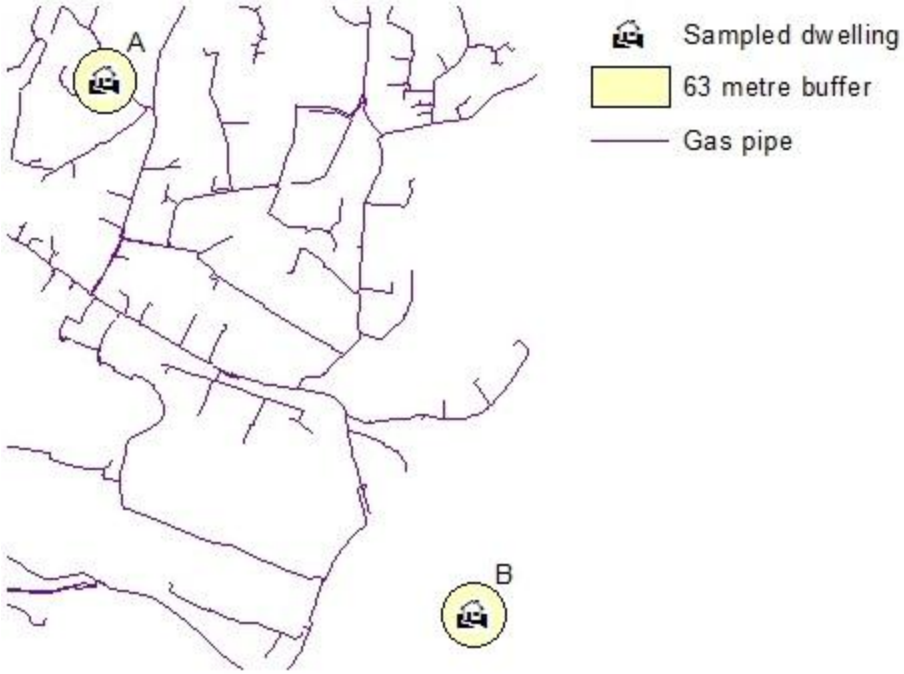
291. Prior to the 2013 SHCS report, the location of surveyed households was identified by postcode area and distance to the network was determined with an accuracy of about 0.5 km.

292. However with the addition of improved gas networks data supplied by Scotia Gas Networks (SGN) it is now possible to map the locations of surveyed dwellings relative to the gas distribution network more accurately. As a result, we can now determine if a dwelling is within 63m of a low/medium pressure pipe, the usual maximum distance for a standard domestic connection. If so, the dwelling is considered in this report to be “on the gas grid”.

293. Figure 30 shows how this is derived using GIS mapping. From the dwelling location information held on surveyed properties, a 63m buffer is drawn. Where this buffer intersects a gas distribution pipe, the dwelling is said to be on the gas network. In the example below, dwelling A is on the network, while dwelling B is not.

294. The gas grid information provided by SGN and used for this mapping includes both the national gas network and the Scottish Independent Undertakings (SIUs). SIU networks are where gas is provided in areas remote from the national gas grid.

Figure 30: Gas Grid Derivation with GIS



7.5.5 Reasons Why Home Heating is Difficult

295. The full text of this question is: “Which of these things, if any, make it difficult to heat your home”[66]. Response categories have been grouped for reporting, as described in Table 65. Respondents were able to choose any combination of reasons why heating their home was difficult.

Table 65: Potential Responses to Question ht14

Group	Response Number	Response
Poor or inadequate heating	ht14_01	No Central Heating
	ht14_02	Not enough heaters/radiators
	ht14_03	Position of heaters/radiators
	ht14_04	Poor/need new heating system
	ht14_05	Radiators not large enough
	ht14_06	Heating not working
	ht14_07	Dislike storage heaters
	ht14_08	Inadequate heating
	ht14_10	Heating in part of house
	ht14_17	Can’t afford to replace system
Hard to control heating	ht14_09	Difficult to control
	ht14_11	Hard to control heat
Need new windows	ht14_12	Need new windows
Poor insulation	ht14_13	Poor insulation
Draughty	ht14_14	Draughty
Rooms too big	ht14_15	Rooms too big
Can’t afford to heat house	ht14_16	Can’t afford to heat house
Other	ht14_18	Other
No answer	ht14_19	No answer

7.5.6 Hard to Treat Cavity Walls

296. In this report we use the ECO definition of HTTCs[67] to provide a breakdown of the remaining insulation potential of cavity wall dwellings in the Scottish housing stock (see table 13).

297. A cavity wall is considered hard to treat if:

---

[66] http://www.gov.scot/Topics/Statistics/16002/PublicationQuestionnaire , question ht14

[67] Change Works: Guide to insulating Hard to Treat Cavities (HTTC) http://www.changeworks.org.uk/sites/default/files/Guide_to_Insulating_Hard_to_Treat_Cavities_2014.pdf

- **The building has three or more storeys.** Dwelling spaces in lofts are not counted as storeys.
- **The building is severely exposed to wind-driven rain.** The SHCS is not able to collect this information, which will lead to an underestimation of hard to treat cavity walls.
- **Walls at risk of water penetration** i.e. walls requiring urgent repair to the wall finish and walls with penetrating damp[68].
- **Non-traditional building types** e.g. timber frame, metal-frame, prefabricated concrete.
- **Partially filled, narrow or uneven cavities** as well as cavities with failed CWI. The SHCS is not able to capture this information. As a result hard to treat cavity walls may be underestimated.
- Note that the presence of a conservatory alone does not cause a dwelling to be considered hard to treat under ECO.

7.5.7 Disrepair

298. This report uses our categories of disrepair to describe the state of disrepair of a dwelling.

299. A range of elements - both internal and external - are assessed for the extent of disrepair, the urgency of disrepair (for external and common elements only), and in some cases the residual life of the element.

300. Extent of disrepair is usually measured on a 5- or 10-point scale relating to the area of the element which is in disrepair.

7.5.7.1 Any (Basic) Disrepair

301. Any (Basic) disrepair is recorded where any element of the dwelling is found to have any level of disrepair, no matter how small.

7.5.7.2 Extensive Disrepair

302. Extensive disrepair is recorded where:

- Any building element has an overall disrepair score exceeding 20% by area

[68] DECC: Review of number of cavity walls in Great Britain https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/48433/5620-review-of-the-number-of-cavity-walls-in-great-brit.pdf ,

- Any building element assessed has a score of 'medium' or 'renew' on the 5-point repair scale (equivalent to an area of around 25% or more of the element) or
- Dry/wet rot is recorded in two or more rooms

303. Extensive disrepair is calculated in order to identify those dwellings where any disrepair present is of a relatively greater severity.

7.5.7.3 Disrepair to Critical Elements

304. Disrepair to critical elements is recorded where there is any disrepair, no matter how small, to the critical elements of the dwelling.

305. The critical elements are those whose condition is central to a dwelling being wind and weather proof, structurally stable and safeguarded against further rapid deterioration. They are as follows:

- Roof covering;
- Roof structure;
- Chimney stacks;
- Flashings;
- Roof gutters and downpipes;
- External walls - finish;
- External walls - structure;
- Access decks and balustrades (common areas - flats only);
- Foundations;
- Damp-proof course;
- External doors and windows (dwelling only);
- Doors, screens, windows and roof lights (common areas - flats only);
- Internal walls/partitions[69];
- Floor structure;
- Floor finish;
- Dry rot/wet rot.

[69] This element has been incorrectly described in all previous SHCS reports as ‘party walls’

7.5.7.4 Urgent Disrepair

306. Urgent disrepair is recorded where the SHCS surveyor deems that a dwelling has any disrepair which, if not rectified, would cause the fabric of the building to deteriorate further and/or place the health and safety of the occupier at risk.

307. Urgency of disrepair is only assessed for external and common elements.

7.5.7.5 Damp and Condensation

- **Penetrating damp** is usually the result of a defect in the building fabric, such as damage to the walls or roof, water ingress due to damaged seals on doors or windows or damp as a result of leaking plumbing.
- **Rising damp** is the result of defective or missing damp proof coursing, leading to water leaching into the building fabric.
- **Condensation** is the build-up of moisture inside a dwelling, which may be the result of insufficient or ineffective ventilation.

7.5.8 Bedroom Standard

308. The Bedroom Standard is defined in the Housing (Overcrowding) Act 2003 based on the number of bedrooms in a dwelling and the people in a household who can share a bedroom[70].

309. Each of the following groups or individuals requires a separate bedroom:

- Any couple;
- a person aged 21 years or more;
- two people of the same sex aged between 10 and 20;
- two children (whether of the same sex or not) under 10 years;
- two people of the same sex where one person is aged between 10 years and 20 years and the other is aged less than 10 years;
- any further person who cannot be paired appropriately.

[70] Housing (Overcrowding) Act 2003, section 2: http://www.publications.parliament.uk/pa/cm200203/cmbills/046/2003046.pdf Retrieved: 19/11/15

310. This definition is distinct from the rules introduced by the UK Government in April 2013 for the size of accommodation that Housing Benefit will cover for working age tenants renting in the social sector, known as the 'spare room subsidy'[71]. Applying the rules of the spare room subsidy requires information not collected in the SHCS. Statistics in this report relate to the Bedroom Standard only.

7.5.9 Tolerable Standard

311. The Tolerable Standard is a minimum standard for habitability introduced in the 1969 Housing (Scotland) Act, and updated by the 1987, 2001 and 2006 Acts[72].

312. Additional criteria for electrical installations and thermal insulation were added by the 2006 Act[73]. These requirements came into force in April 2009 and were first reported by the SHCS in 2010. The change in definition caused the fail rate for the standard to increase from 0.7% in 2009 to 3.9% in 2010 in the full time series tables[74].

313. A dwelling meets the tolerable standard if it:

- is structurally stable;
- is substantially free from rising or penetrating damp;
- has satisfactory provision for lighting, ventilation and heating;
- has an adequate piped supply of wholesome water available within the house;
- has a sink provided with a satisfactory supply of both hot and cold water within the house;
- has a water closet or waterless closet available for the exclusive use of the occupants of the house and suitably located within the house;
- has a fixed bath or shower and a wash-hand basin, each provided with a satisfactory supply of both hot and cold water and suitably located within the house;

---

[71] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/229364/factsheet-hbsssc1.pdf Retrieved: 19/11/15

[72] A full definition and description of Local Authority duties as regards the Tolerable Standard can be found at: http://www.gov.scot/Publications/2009/03/25154751/3 Retrieved: 19/11/15

[73] These amendments are published at: http://www.legislation.gov.uk/asp/2006/1/section/11 Retrieved: 19/11/15

[74] Full time series are provided at http://www.gov.scot/Resource/0044/00445920.xlsx Retrieved: 19/11/15

- has an effective system for the drainage and disposal of foul and surface water;
- has satisfactory facilities for the cooking of food within the house;
- has satisfactory access to all external doors and outbuildings;
- has electrical installations that are adequate and safe to use. The "electrical installation" is the electrical wiring and associated components and fittings, but excludes equipment and appliances;
- has satisfactory thermal insulation.

7.5.10 Scottish Housing Quality Standard

314. The Scottish Housing Quality Standard (SHQS) was announced by the Minister for Communities in February 2004[75]. A target was agreed that all social landlords must ensure that all their dwellings pass the SHQS by 2015. Private owners and private landlords are currently under no obligation to bring their properties up to a standard which meets the SHQS. However SHCS collects the same data for all dwellings to allow comparison across the housing stock.

315. The SHQS is an aggregation of the results from 55 different elements grouped into 5 higher-level criteria, which in turn provide a single pass/fail classification for all dwellings. The 5 higher-level criteria specify that the dwelling must be:

- above the statutory tolerable standard;
- free from serious disrepair;
- energy efficient;
- with modern facilities and services;
- healthy, safe and secure.

316. A full list of assessed elements is available on the Scottish Government website[76]. Only one element of the SHQS is not assessed using SHCS data: no information is collected on external noise insulation[77].

---

[75] For more information see letter and notes at: http://www.gov.scot/Publications/2004/02/18860/32772

[76] http://www.gov.scot /Topics/Built-Environment/Housing/16342/shqs

[77] A summary list of elements by higher level criteria is available here: http://www.gov.scot/Resource/Doc/1125/0114870.pdf Retrieved: 19/11/15

317. Figures on SHQS failure rates for 2014 and 2015 are not entirely comparable to previous years published in this report. Because of missing tenure information a small number of dwellings (see section 7.2 for more detail), are excluded from tenure breakdowns in figures relating to years prior to 2014.

318. In addition, small changes to data processing relating to failure thresholds for the energy efficiency criterion[78], as well as other minor data processing corrections were introduced in 2014. Although the effect of these corrections on the overall failure rates in the social sector was neutral, some discontinuities with previous years cannot be ruled out, especially when considering more detailed breakdowns.

[78] This relates to the SAP and NHER thresholds for element 35 and the thickness of hot water tank insulation for element 33.

A National Statistics publication for Scotland

The United Kingdom Statistics Authority has designated these statistics as National Statistics, in accordance with the Statistics and Registration Service Act 2007 and signifying compliance with the Code of Practice for Official Statistics.
Designation can be interpreted to mean that the statistics: meet identified user needs; are produced, managed and disseminated to high standards; and are explained well.

Correspondence and enquiries

For enquiries about this publication please contact:
Scottish House Condition Survey Team,
Scottish Government,
Telephone: 0131 244 0729,
e-mail: ScottishHouseConditionSurvey@gov.scot

For general enquiries about Scottish Government statistics please contact:
Office of the Chief Statistician, Telephone: 0131 244 0442,
e-mail: statistics.enquiries@scotland.gsi.gov.uk

How to access background or source data

The data collected for this statistical publication:
x are available in more detail through Scottish Neighbourhood Statistics
☐ are available via an alternative route
x may be made available on request, subject to consideration of legal and ethical factors. Further information available at http://www.gov.scot/Topics/Statistics/SHCS/DataAccess.
☐ cannot be made available by Scottish Government for further analysis as Scottish Government is not the data controller.

Complaints and suggestions

If you are not satisfied with our service or have any comments or suggestions, please write to the Chief Statistician, 3WR, St Andrews House, Edinburgh, EH1 3DG, Telephone: (0131) 244 0302, e-mail statistics.enquiries@scotland.gsi.gov.uk.
If you would like to be consulted about statistical collections or receive notification of publications, please register your interest at www.gov.scot/scotstat
Details of forthcoming publications can be found at www.gov.scot/statistics

ISBN 978-1-78652-656-4 (web only)

APS Group Scotland, 21 Tennant Street, Edinburgh EH6
5NA PPDAS83659 (12/16)