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Scottish House Condition Survey: 2022 Key Findings

An Accredited Official Statistics Publication for Scotland

PEOPLE, COMMUNITIES AND PLACES

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Introduction

The statistics in this report 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 2011 it was carried out as a stand-alone survey, under the name the Scottish House Condition Survey (SHCS). Following the review of the large-scale Scottish population surveys, the SHCS was incorporated within the SHS in 2012 and became one of its modules. We continue to report the results from this module of the SHS under the name the SHCS.

The SHCS consists of an interview with householders and a physical inspection of the dwelling they occupy, which provides 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 the (usually) face-to-face social interview, covering a range of topics such as household characteristics, tenure, neighbourhood satisfaction, dwelling satisfaction, health status and income. The result is a unique and powerful data set for examining the condition and characteristics of Scotland's housing stock alongside the views and experience of the people living in those dwellings.

This is the eighteenth 'Key Findings' report since the SHCS changed to a continuous format in 2003 and the tenth since it was integrated within the SHS in 2012. (Note that the 2020 SHCS could not be completed due to Covid-19 restrictions.) As well as the first report since 2019 to be published as Accredited Official Statistics.

Details on the methodology and design of the survey are provided in the Scottish Household Survey Methodology and Fieldwork Outcomes reports. The incorporation of the SHCS within the SHS in 2012 introduced some discontinuities in the methodology of the survey and may contribute to some observed change over time.

In 2022 there were 2,983 surveyed properties. Statistics published in this report are based on fieldwork undertaken mostly during 2022. Household interviews took place between March 2022 and March 2023 with 19% of the interviews taking place in the first quarter of 2023. Physical surveys took place between April 2022 and March 2023 with 30% of the surveys taking place in the first quarter of 2023.

In 2009, the SHCS was designated as a National Statistics product by the UK Statistics Authority (UKSA) and in October 2020, following a compliance check by the Office for Statistics Regulation (OSR), it was confirmed that these statistics should continue to be designated as National Statistics. This demonstrates that the SHCS statistics are accurate, trustworthy, and compliant with the high standards required of National Statistics.

Due to Covid-19 restrictions the 2020 SHS and the 2021 SHS were undertaken using a push to telephone/video approach. It was not possible to resume the 2020 SHCS but the 2021 SHCS was undertaken using an external+ approach. For further details see the section on external+ data quality in the 2021 report.

However, due to the change in approach for the 2021 SHCS, its results are not directly comparable with the National Statistics from previous waves of the survey.

As such, in 2021 we agreed with the OSR (see the letters between the OSR's Director General for Regulation and the Scottish Government's Chief Statistician) that the key findings should be published as Experimental Statistics representing a snapshot of the key attributes, energy efficiency and condition of the housing stock and fuel poverty levels in 2021. As such the results for 2021 should not be compared with those for previous or future years.

As the 2022 survey returned to its typical methodology of in-home surveying in March the statistics from the SHCS were independently reviewed by the Office for Statistics Regulation in February 2024. Through this review it was determined that they comply with the standards of trustworthiness, quality and value in the Code of Practice for Statistics and should return to being labelled 'Accredited Official Statistics'

Past methodological changes are described in each year's key findings report and associated methodology notes and, where relevant, in individual sections of this report. We always seek to improve and keep our methods and processes up to date and there may therefore be small changes to elements of data processing which do not impact significantly on the results. Details are provided in the respective technical sections.

The main change for 2022 is to the information presented relating to disrepair in section 5. The Tolerable Standard was amended by the Housing (Scotland) Act 1987 (Tolerable Standard) (Extension of Criteria) Order 2019 and now includes a new element covering smoke, heat, and carbon monoxide alarms. For the first time, in SHCS 2022 assessors considered the presence, type and condition of smoke, heat, and carbon monoxide alarms in a house when deciding if the house meets

the Tolerable Standard. Additionally, for the first time the SHCS includes the presence of mould in a property.

Differences across characteristics are only highlighted in the commentary of this report if they are statistically significant. Values will be described as 'similar' if they are not significantly different. On occasion we also explicitly note that a difference is not statistically significant, particularly if it might appear large to the reader. This can occur if the statistic is based on a small sample size. Please see the Methodological and Technical notes for further details on confidence intervals, design effects and statistical significance.

Scottish House Condition Survey results for 2022 have been assessed to be comparable in the most part to 2019 and earlier years. However, the 2022 results for percentages of households in each tenure should be treated with caution, as there is evidence to suggest that social rented, and private rented households may be under-represented in the 2022 achieved sample while owner occupiers are overrepresented. See section 1.1.4 for details of SHCS weighting and section 1.1.5 for a comparison to Previous SHCS Waves in the Methodological and Technical notes. In general, these differences are unlikely to have a significant impact on the reported results. For those results where an impact is more likely, this is highlighted in the relevant chapter and as notes to the relevant data tables.

The remainder of this report covers the following topics:

Key Attributes of the Scottish Housing Stock: this chapter describes key dwelling characteristics such as dwelling type, age of construction, main heating fuel 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 characteristics of households in fuel poverty and extreme fuel poverty. It also examines the drivers of fuel poverty and how they have changed over time.

Energy Perceptions: this chapter examines the householder’s self-reported experience and satisfaction with their heating system and the extent to which they monitor their use of energy. This is analysed by the fuel poverty status of the household.

Housing Conditions: this part of the report provides information on the number of dwellings with urgent disrepair to critical elements and the external critical elements

with disrepair. It also covers overcrowding and under-occupation, as defined by the bedroom standard. As well as statutory housing standards including the Tolerable Standard, the Scottish Housing Quality Standard (SHQS)

Bedroom Standard: this chapter examines the measures of whether households are living in overcrowded or under-occupied conditions. It also examines the householder's views on the number of rooms in their accommodation.

Methodological and Technical notes: the final part of the report is available in a separate document and 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.

While the key findings report it usually accompanied by the later release of Local Authority level analysis, the lack of SHCS data for 2020 and the enforced changes for 2021 cause issues with the production of this, as they require three consecutive years of survey data to be combined to provide a three-year average.

For the 2022 SHCS we cannot take the usual approach for two reasons. Firstly, there is no SHCS data for 2020 so we cannot produce a three-year average for 2020 to 2022. Secondly, the data from the 2021 external+ SHCS is not directly comparable with that for earlier years due to the methodological differences and it would not be appropriate to combine it with the data for 2019 (or earlier) to produce a multi-year average. Therefore, we will not be using the 2021 external+ SHCS to produce local authority estimates.

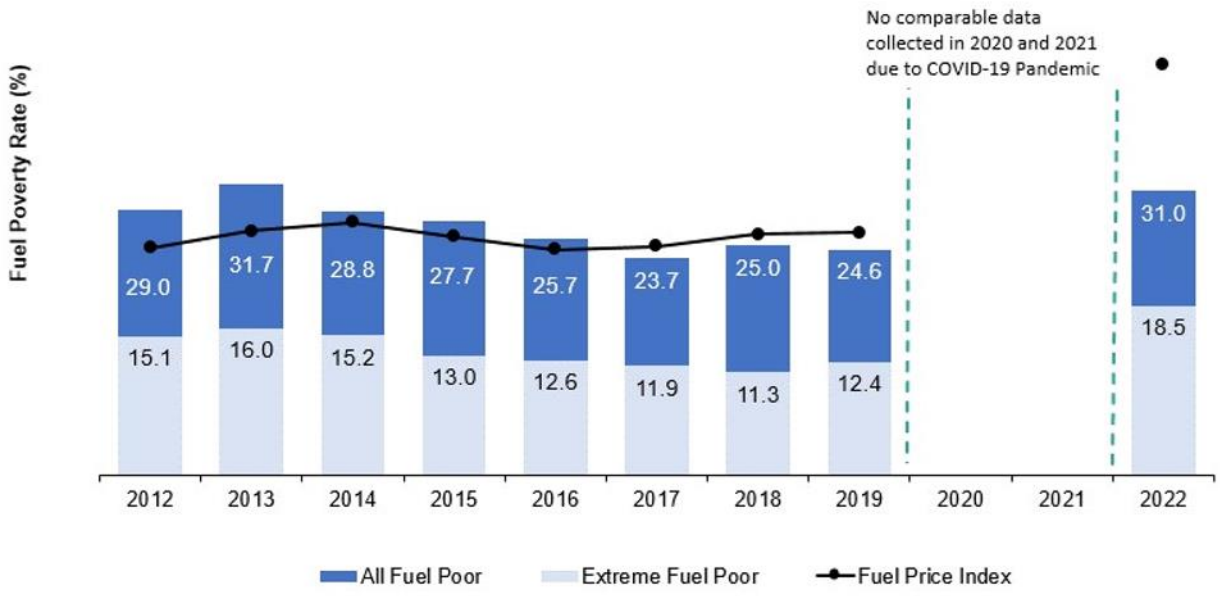
Due to this we won't be able to return to the usual approach for producing local authority estimates from the SHCS until the 2024 wave of the SHCS has completed. We will then be able to produce local authority estimates from the SHCS based on a three-year average for 2022 to 2024. We expect these estimates to be published in early 2026.

Executive summary

Fuel Poverty

- In 2022 an estimated 31% (around 791,000 households) of all households were in **fuel poverty**. This is higher than the 2019 fuel poverty rate of 24.6% (around 613,000 households).
- 18.5% (or 472,000 households of the 791,000 households in fuel poverty) were living in **extreme fuel poverty** in 2022 which is higher than the 12.4% (311,000 households) in 2019.
- The **actual median fuel poverty gap** for fuel poor households in 2022 was £1,240. This is 65% higher than the median fuel poverty gap from 2019 of £750.
- The **median fuel poverty gap (adjusted for 2015 prices)** for fuel poor households in 2022 (£1,020) is 46% higher than in 2019 (£700).

Proportion of Households in Fuel Poverty and Extreme Fuel Poverty, 2012-2022



Notes: [note 7] [note 8]

- Overall rates of fuel poverty differed between the social (48%) and private sector (26%). Similarly households in the social sector were more likely to be in extreme fuel poverty (26%) compared to households in the private sector (16%).

- However, looking at tenure in a more disaggregated way shows that rates of fuel poverty in housing association (47%), local authority (48%) and private rented sectors (44%) are similar. In comparison owner occupiers have lower rates with 14% of those with a mortgage and 28% of those who own outright assessed to be fuel poor. This is a similar trend to 2019.

- 46% of households using electricity as their primary heating fuel were fuel poor, higher than for households using gas (29%), and oil (28%). But similar to households using other fuel types (41%) as their primary heating fuel.

- A higher proportion of households with a pre-payment meter (PPM; electricity, gas or both) were in fuel poverty compared to those without a PPM; 47% compared to 28% respectively.

- Fuel poverty and extreme fuel poverty have a strong association with income, with rates increasing as annual household income decreases. For example, 89% of households with an annual income less than £15,000 were in fuel poverty compared to 43% of households earning between £15,000 and £24,999 annually.

- For both fuel poor and extreme fuel poor households, the lowest rates of fuel poverty are associated with higher energy efficiency standards. 27% of households living in dwellings rated EPC band C or better were fuel poor, compared to 41% living in dwellings in bands F or G.

- Scottish House Condition Survey results for 2022 have been assessed to be comparable in the most part to 2019 and earlier years. However, as noted in section 1.1.5 of the Methodological and Technical notes there is evidence to suggest that social and private rented households, who have higher rates of fuel poverty, may be under-represented in the 2022 achieved sample and owner-occupied households, who have lower rates of fuel poverty, may be over-represented. Due to this, national level estimates of fuel poverty may be slightly under-estimated, however we expect any effects to be minor, especially in the context of other key drivers of fuel poverty such as fuel prices.

Heating Satisfaction

- 16% of all households find that their **heating keeps them warm enough** in winter only **sometimes** and 5% find it **never** keeps them warm.

- **Fuel poor** households and **extreme fuel poor** households are more likely to have difficulties staying warm in winter and to report affordability problems; 26% of fuel poor and 29% of extreme fuel poor report that their heating keeps them

warm in winter “only sometimes” or “never”, compared to 20% of non-fuel poor households. 16% of both fuel poor households and extreme fuel poor households say they **cannot afford to heat my home**, compared to 9% of non-fuel poor households

- The extent to which home energy use is monitored by householders is higher than in 2019 with 71% stating they **monitor their energy use** “very” or “fairly closely” compared to 57% in 2019. 46% of all households report owning an **energy monitoring device** – an 11 percentage point increase on 2019.

- A similar proportion of **fuel poor** (71%), **extreme fuel poor** (71%) and non-fuel poor households (71%) monitored their energy use “very” or “fairly closely” in 2022. However, both fuel poor households (42%) and extreme fuel poor (38%) households were less likely to have a monitoring device than and non-fuel poor (47%)

Energy Efficiency and Carbon Emissions

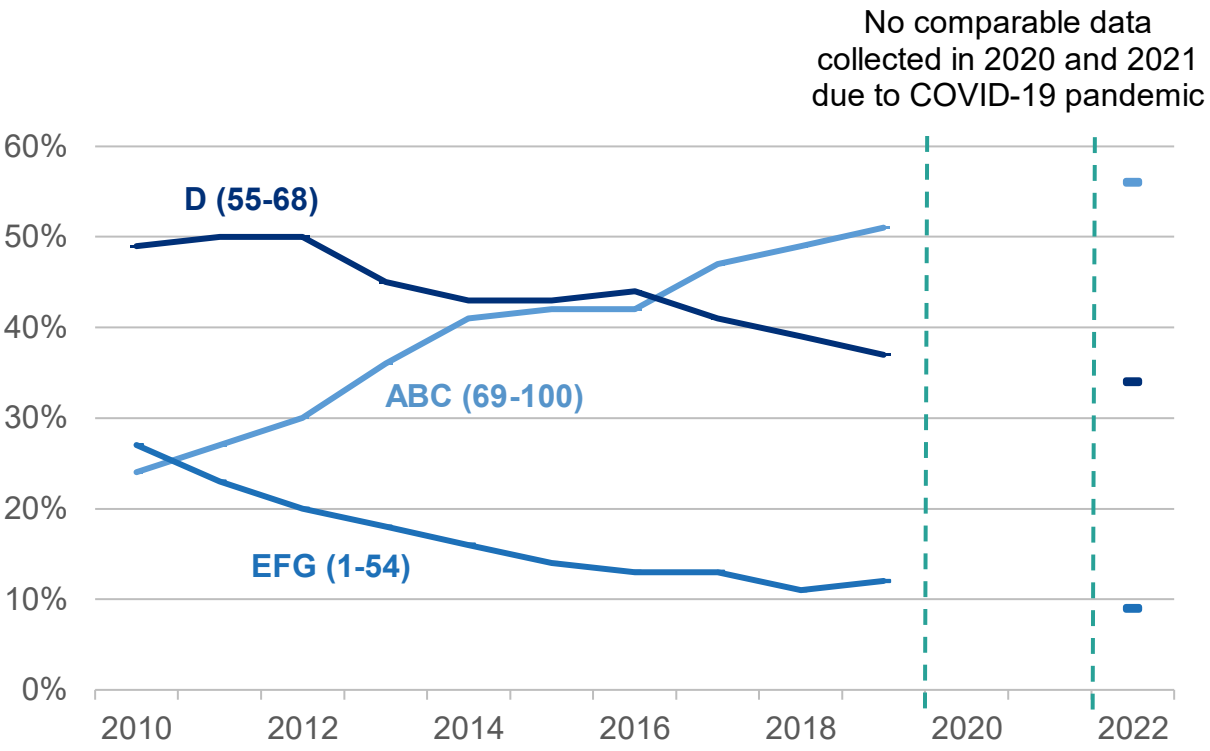
- In 2022, 52% of Scottish homes were rated as **EPC band C** or better, compared to 45% in 2019 an increase of 8 percentage points.

- Under SAP 2009, which allows comparisons over a longer period, over half of dwellings (56%) were rated C or better, up 32 percentage points since 2010. In the same period, the proportion of properties in the lowest EPC bands (E, F or G) has reduced from 27% in 2010 to 9% in 2022.

- Under SAP 2009, the median EE rating in 2022 was 70, which is equivalent to Band C. This is an increase from 62 in 2010 which is equivalent to band D.

- Scottish House Condition Survey results for 2022 have been assessed to be comparable in the most part to 2019 and earlier years. However, there is some evidence to suggest that social and private rented households, may be under-represented in the 2022 achieved sample and owner-occupied households, may be over-represented as laid out in section 1.1.5 of the Methodological and Technical notes. Due to this national level estimates of EPC ratings, loft, and solid wall insulation may be slightly under-estimated, as socially rented households tend to have higher rates of solid wall insulation and higher EPC ratings than owner-occupied households and private renters. However, we expect any effects to be minor as solid wall insulation makes up only around a quarter of all dwellings. Furthermore private rented dwellings (which are underestimated more significantly than socially rented properties) tend to have similar EPC scores to owner occupiers (50% C or above and 48% C or above respectively).

- **Distribution of the Scottish housing stock by grouped EPC band (SAP 2009), 2010 to 2022**



Notes: [note 19]

- The majority of loft spaces are insulated. In 2022, loft insulation with a thickness of 100 mm or more had been installed in 95% of dwellings. This has been broadly stable since 2015 but represents an increase of 23 percentage points on 2007 levels.
- In 2022, 32% of lofts were insulated to a high standard of insulation (300 mm or more). This proportion has remained about this level since 2015, following year on year increases from the 2010 figure of 5%.
- The proportion of insulated cavity walls recorded by the SHCS was 69% in 2022.
- The proportion of solid wall dwellings with insulation was 16% in 2022, an increase of 5 percentage points on the 2012 figure.
- Levels of insulation (both loft and wall) are higher in the social sector than in the private sector. 53% of homes in the private sector have wall insulation compared to 67% in the social sector. In the private sector, 63% of lofts are insulated to 200 mm or more compared to 76% in the social sector.

- In 2022, 75% of gas and oil **boilers** met the minimum efficiencies specified by current Building Standards, a substantial increase from 30% in 2012.
- Based on modelled energy use required to meet the SAP standard heating regime , the average Scottish home was estimated to produce 6.5 tonnes of carbon dioxide (CO2) per year in 2022, which is approximately double the average carbon emissions per household as reported by Department for Energy Security and Net Zero (3.3 tonnes per year) in 2020, based on actual energy use. This suggests that households are not heating their homes to the SAP standard heating regime.
- Average modelled carbon emissions for all properties were 69 kg per square meter of floor area in 2022.

Housing Conditions

- Disrepair to critical elements, which are central to weather-tightness, structural stability and preventing deterioration of the property, stood at 49% in 2022. Less than half of these (18% of all dwellings) required urgent disrepair to critical elements and just 3% had extensive disrepair (covering at least a fifth of the element area) to one or more critical elements.
- Overall, this is an improvement of 3 percentage points on 2019, when 52% of dwellings had disrepair to critical elements. The 2022 rate has returned to a level similar to 2016 (48%).
- 17% of dwellings had disrepair only to non-critical elements, with 3% of dwellings requiring some urgent repair and 1% with extensive disrepair to non-critical elements, similar to 2019.
- Levels of mould, damp and condensation were similar to those seen in 2019: 90% of properties were free from any damp or condensation and 91% were free from mould.
- In 2022, two new below tolerable standard criteria were introduced (assessing the presence, type, and condition smoke, heat, and carbon monoxide alarms) leading to a sharp increase to the proportion of below tolerable standard dwellings from 2% in 2019 to 29% in 2022. However, if these two criteria were not included the proportion of dwellings below tolerable standard would be 2% similar to 2019.
- The Scottish Housing Quality Standard (SHQS) failure rate in the social sector was 41% in 2022, not allowing for abeyances and exemptions, his has fallen from 60% in 2010. Failures of the Energy Efficient criterion were the biggest

drivers of failures overall for the social sector. In 2022, 29% of social sector properties did not meet the Energy Efficient criterion.

- SHCS surveyors may not always be able to identify the presence of cavity wall insulation. The Energy Efficient criterion failure rate in the social sector would be 10% if it is assumed that all social dwellings have insulated cavity walls where this is technically feasible. This, in turn, would lower the overall SHQS failure rate in the social sector to 28%.

- The majority of dwellings falling below the SHQS failed on a single criterion; this accounted for more than 7 out of 10 failures in the social sector.

- For 77% of social homes failing the SHQS this was due to falling short on just one of the 55 elements which make up the standard. In 2022, these were cavity wall insulation (50%), pipe insulation (8%), full and efficient central heating (7%), fire alarms (6%), carbon monoxide alarms (6%) and secure door entry system (3%).

- In 2022 around 70,000 households lived in overcrowded accommodation (3%) under the bedroom standard.

- Around 949,000 (37%) households had one bedroom in excess of the minimum requirement under the bedroom standard. A further 888,000 (35%) households had two or more bedrooms in excess.

- Social sector tenants are more likely to live in accommodation which meets but does not exceed the minimum requirements of the bedroom standard (51% compared to 17% in the private sector). Social sector tenants are also slightly more likely (5%) to live in accommodation which is overcrowded according to the bedroom standard than those households living in the private sector (2%)

- By comparison households in the private sector are more likely to live in accommodation which exceeds the bedroom standard (81% vs 44% for social tenants).

- Scottish House Condition Survey results for 2022 have been assessed to be comparable in the most part to 2019 and earlier years. However, as noted in section 1.1.5 of the Methodological and Technical notes there is evidence to suggest that social and private rented households, may be under-represented in the 2022 achieved sample and owner-occupied households may be over-represented. Due to this, national level estimates of some elements of disrepair may be slightly under-estimated as disrepair to critical elements is more prevalent in the private rented sector, which is underrepresented in the sample. Conversely, when including the two new criteria failure rates for the tolerable standard are higher in the owner occupied sector, and as a result national level

figures for this may be slightly overestimated. However, the main drivers of disrepair tend to be property age and type not tenure, and as set out in section 1.1.4 of the Methodological and Technical notes these characteristics are included in the SHCS calibration weighting process. Additionally, given the diversity of disrepair data and the broad similarities to 2019 figures in key categories such as the tolerable standard and the overall SHQS failure rate (before revisions) we expect any differences to be minor.

1 Key Attributes of the Scottish Housing Stock

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 2022. Subsequent chapters build on this and provide more details on energy efficiency, fuel poverty, housing quality and disrepair.

The following topics are included:

- the construction age and built form 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, their urban/rural location and household tenure and
- the composition of the households who occupy them.

1.1 Dwelling Age and Type

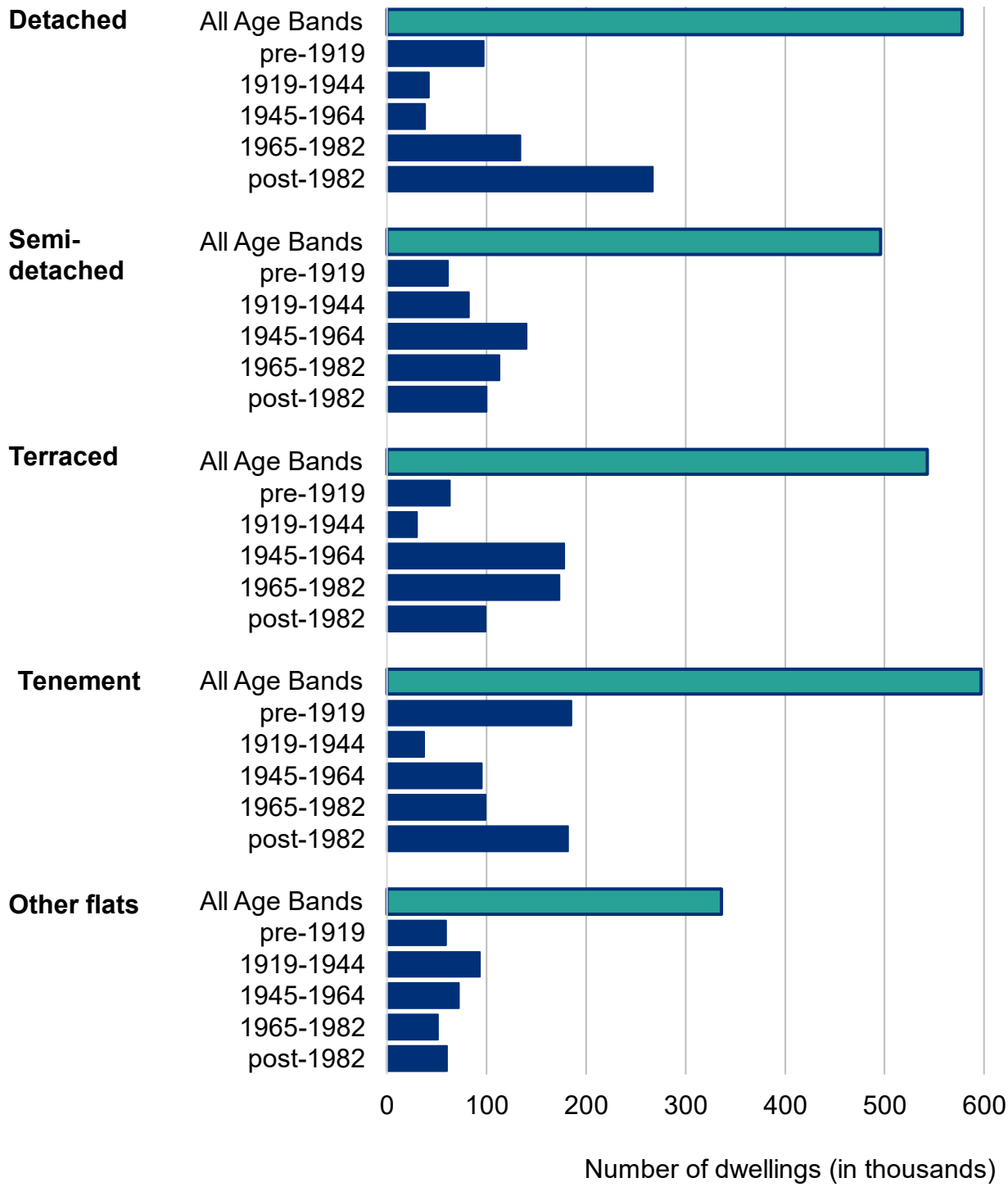
The age of construction and the built form of a dwelling has consequences for energy performance, running costs and living conditions. For example, older dwellings built with solid stone walls are typically less effective at preventing heat transmittance between the inside and the outside of a building than properties that have been built using modern construction materials and that, since 1982, have been subject to increasingly rigorous minimum standards of energy efficiency and airtightness.

More information on the main dwelling types used in the SHCS is provided in section 2.1 of the Methodological and technical notes.

At the same time, types of dwellings can differ in terms of the size of the external surface area; dwellings with a smaller area of exposed wall, for example those that are shielded by adjacent properties, typically have lower levels of heat loss than in buildings with fewer sheltered sides.

The housing stock in Scotland is diverse.

Figure 1.1: Number of occupied Scottish dwellings by age band and type, 2022



As shown in Figure 1.1, the 2.55 million Scottish occupied housing stock is diverse and varies across the country. However, some common types can be recognised:

- Old (pre-1919) detached houses (4%; around 97,000) and tenement flats (7%; 185,000)
- More modern post-1982 detached houses (10%; 267,000) and tenements (7%; 182,000)
- Post-war terraced houses (14%; 351,000 built between 1945 and 1982)
- Semi-detached houses, common across all age bands and accounting for around 19% of the stock alone.

These six broad categories account for 61% of the overall housing stock (approximately 1.578 million occupied dwellings) however there is also variability within these groups. For example, among pre-1919 tenement flats, of the type common in Edinburgh and Glasgow, there is a wide range of sizes, layouts, and areas of exposure (for example in top floor flats the roof is exposed) which affects their energy efficiency and the living conditions experienced by the household.

Data Source: Table KA1a and KA1b in 'SHCS 2022- Chapter 01 Key Attributes of the Scottish Housing Stock – tables and figures'

The category 'other flats' includes houses that have been converted to flats (31,000), towers / slabs (70,000) and so-called "4-in-a-block" flats (234,000).

- "4-in-a-block" flats were commonly built as social housing between 1919 and 1965 (66% of "4-in-a-block" flats fall in that age category).
- 66% of towers / slabs were built in the 1945 to 1982 period, again often as social housing.
- Converted flats are almost exclusively pre-1919 structures (89%), where a house has been divided into multiple residences.

More information is available on Table KA2a and KA2b in 'SHCS 2022- Chapter 01 Key Attributes of the Scottish Housing Stock – tables and figures'

Rural and urban dwellings tend to be different.

Figure 1.2: Dwelling types in rural and urban areas, 2022

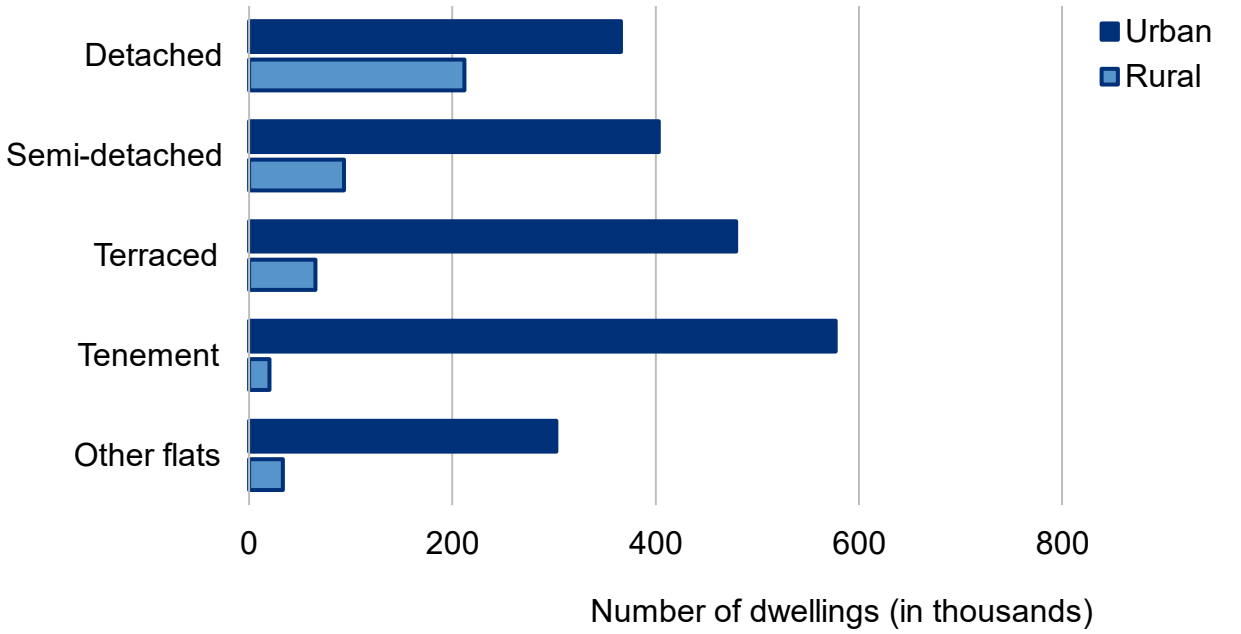


Figure 1.2 shows the number of dwellings in rural (422,000 households) and urban areas (2.127 million households) by property type. Half (50%; 212,000 households) of all rural dwellings are detached, and 22% (93,000) are semi-detached. Only 13% of rural dwellings are flats; 53,000 in total. The most common dwelling type in urban areas is the tenement flat (577,000), accounting for around 27% of urban housing. Around 59% of urban stock are detached, semi-detached and terraced houses, in total accounting for 1.2 million of the 2.1 million urban dwellings.

Data Source: Table KA3a in 'SHCS 2022- Chapter 01 Key Attributes of the Scottish Housing Stock – tables and figures'

Notes: [note 1]

1.2 Dwelling Size (Floor Area)

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 3).

Across Scotland older dwellings tend to be larger than modern dwellings.

Figure 1.3: Average floor area (m^2) by dwelling type and age, 2022

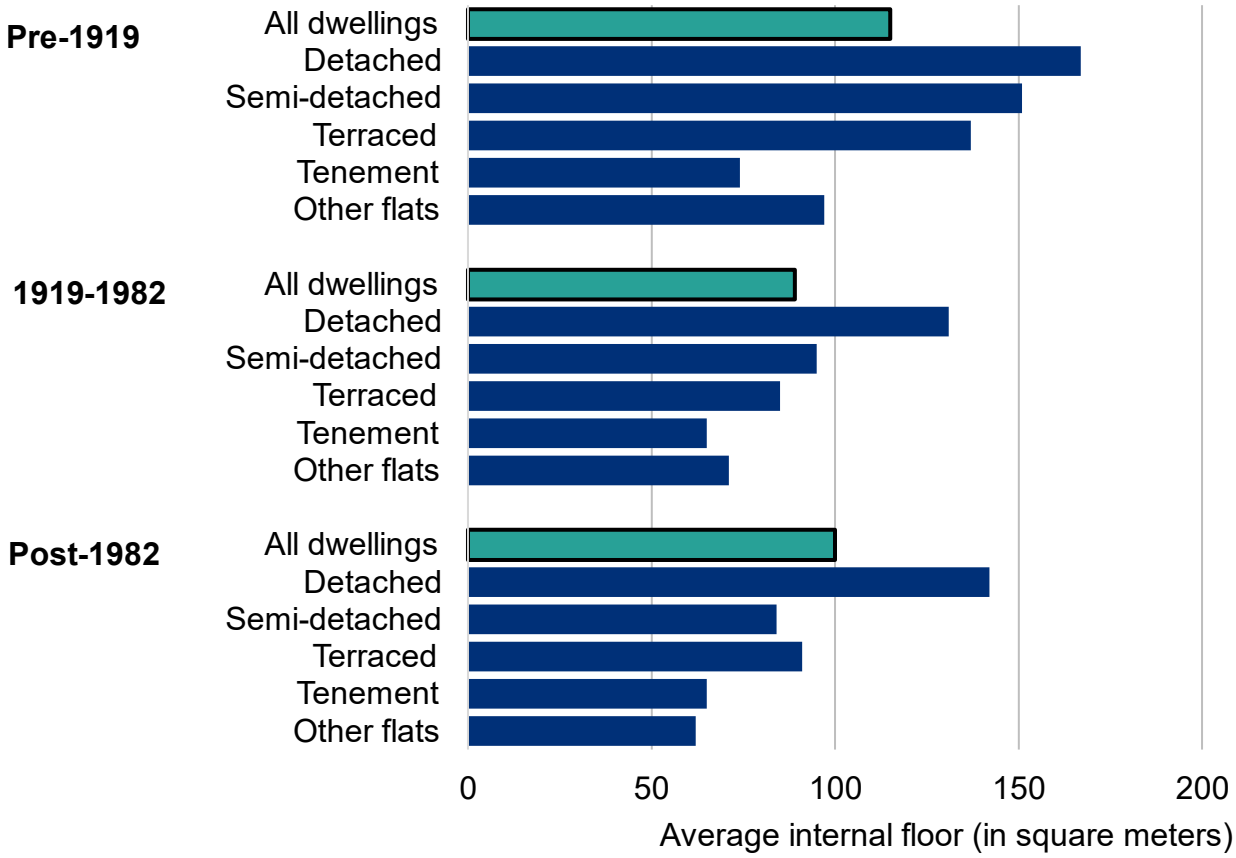


Figure 1.3 shows that pre-1919 dwellings tend to be larger than the other two age categories across dwelling types with the exception of tenements which on average are more comparable in size to more recently built ones. Semi-detached houses built after 1919 are on average around two-thirds of the size of those built pre-1919. Terraced houses built after 1919 are around two thirds the size those built pre-1919. The overall average for post-1982 dwellings is 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.

Data Source: Table KA4 in 'SHCS 2022- Chapter 01 Key Attributes of the Scottish Housing Stock – tables and figures'

Rural dwellings tended to be bigger than urban dwellings.

Figure 1.4: Average internal floor area (m^2) by urban/rural location, 2022

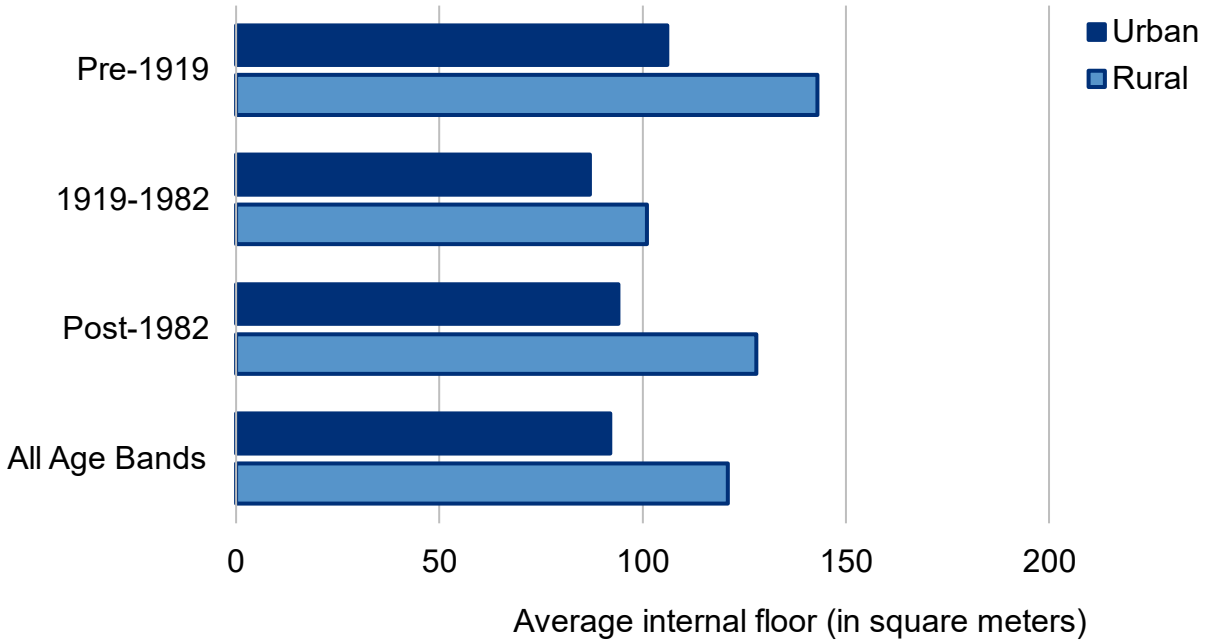


Figure 1.4 shows that rural dwellings are, on average, 32% larger than urban dwellings based on internal floor area. The difference is smallest for dwellings built between 1919 and 1982 at 16%. Among pre-1919 and post-1982 dwellings, rural properties are around 35% larger.

Data Source: Table KA5 in 'SHCS 2022- Chapter 01 Key Attributes of the Scottish Housing Stock – tables and figures'

Notes: [note 1]

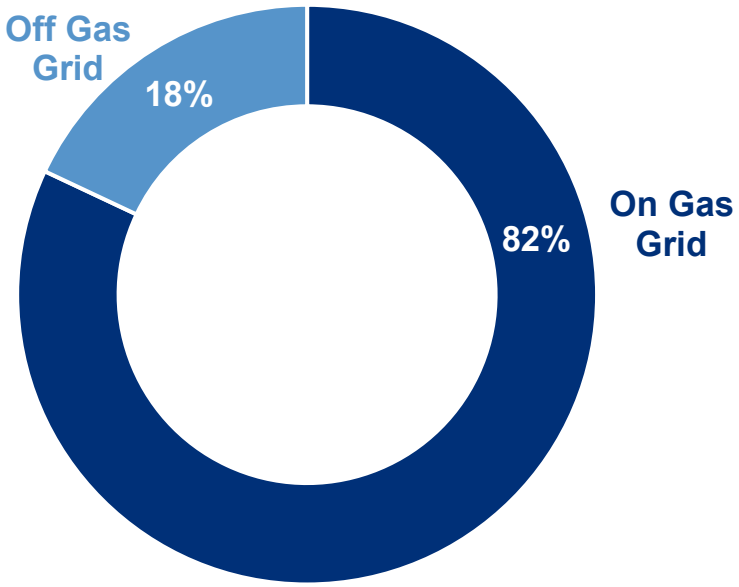
1.3 Gas Grid Coverage

Gas grid coverage is determined on the basis of the distance of the dwelling from a low / medium / intermediate pressure gas distribution pipe. Based on the usual maximum distance for standard domestic connection (63 meters), dwellings are classified as being "on" or "off" the grid. This does not reflect whether the dwelling is actually connected to the grid. For 2021 onwards an improvement was introduced whereby in addition to this definition a dwelling is also classified as "on" the grid if a mains gas connection has been recorded in the physical survey, irrespective of the distance to the gas distribution pipe. Further details on the method for estimating distance to the gas grid are available in section 2.4 of the Methodology Notes.

Connection to the gas grid allows households to use gas for heating and hot water. As gas is currently the cheapest of the major commercial fuels, gas grid access can be a significant determinant in the required cost of heating a home to a satisfactory temperature.

Around 18% of dwellings in Scotland are estimated to be outside the coverage of the gas grid.

Figure 1.5: Gas grid coverage, 2022



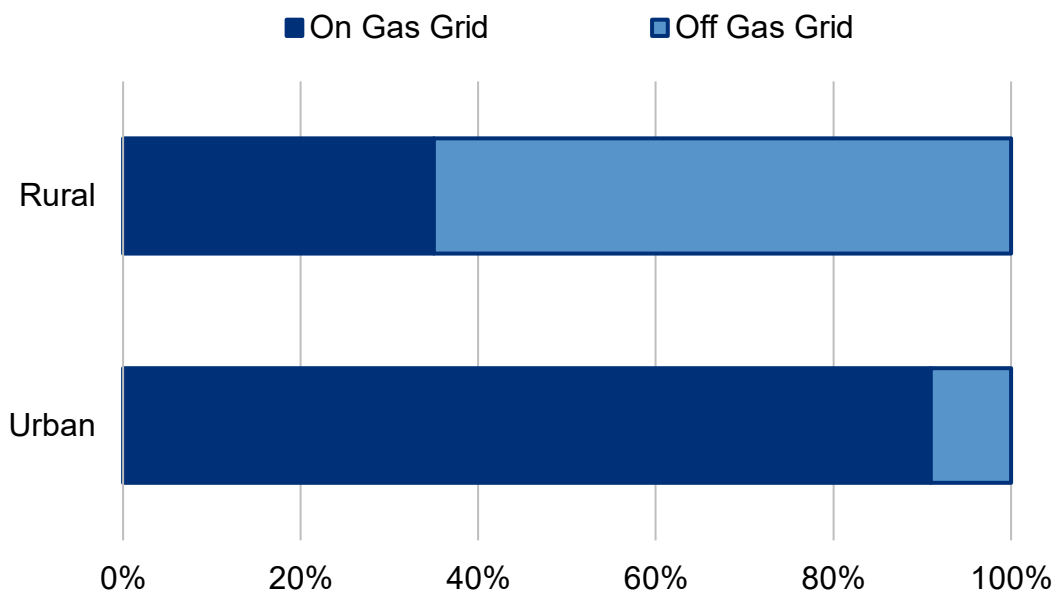
As shown in Figure 1.5, approximately 18% of dwellings in Scotland are estimated to be outside the coverage of the gas grid and 82% to be within gas grid coverage.

Data Source: Table KA6a in 'SHCS 2022- Chapter 01 Key Attributes of the Scottish Housing Stock – tables and figures'

Notes: [note 2]

The majority of urban dwellings are within the coverage of the gas grid, whereas almost two-thirds of those in rural areas are not..

Figure 1.6: Gas grid coverage by urban rural location, 2022



As shown in Figure 1.6, the 91% of urban dwellings are within the coverage of the gas grid, whereas 65% of those in rural areas are not.

Data Source: Table KA6a in 'SHCS 2022- Chapter 01 Key Attributes of the Scottish Housing Stock – tables and figures'

Notes: [note 1] [note 2]

1.4 Heating Fuel

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

Mains gas is the most common heating fuel in Scotland.

Figure 1.7: Primary heating fuel, 2022

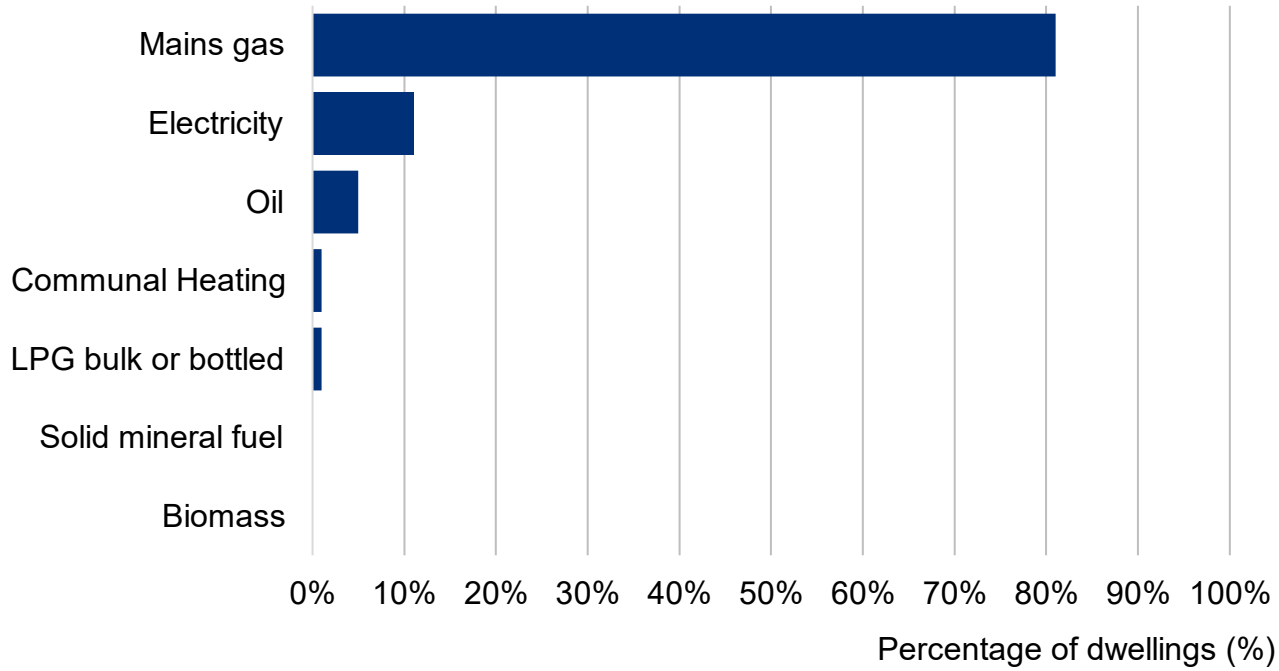


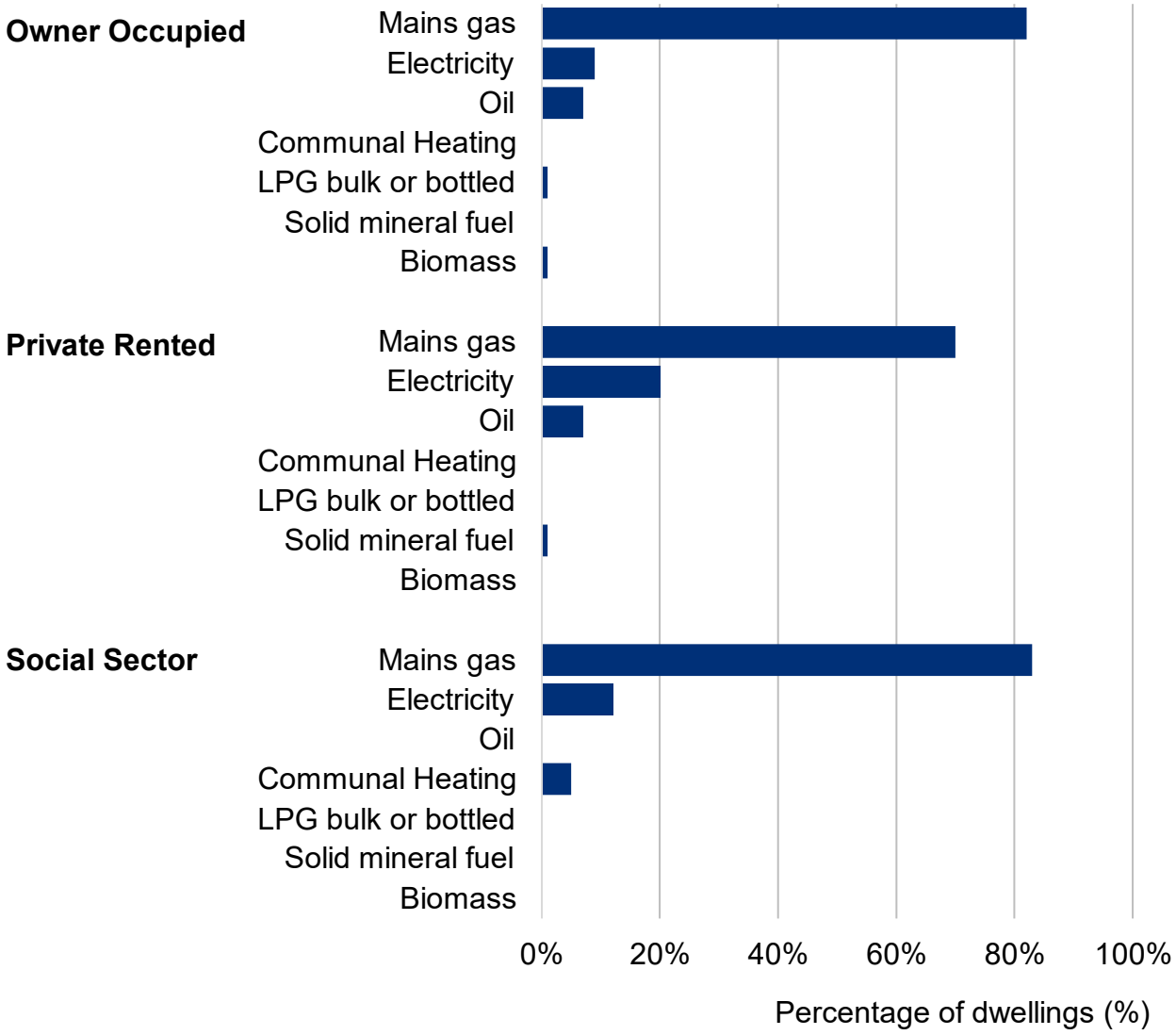
Figure 1.7 shows that overwhelmingly the most common heating fuel is mains gas: 81% of Scottish households (around 2.0 million) use mains gas for heating, 11% (277,000 households) use electricity and 5% (130,000 households) use oil. Around 85,000 households (3% of all households) were estimated to heat their homes with communal heating, LPG bulk or bottled, solid mineral fuel or biomass.

Overall, around 323,000 households (13% of all households) were estimated to have low and/or zero greenhouse gas emissions heating systems in 2022, primarily heating their homes with electricity, communal heating, or biomass. This is similar to the estimate of 313,000 households (13% of all households) from the 2019 SHCS.

Data Source: Table KA7a in 'SHCS 2022- Chapter 01 Key Attributes of the Scottish Housing Stock – tables and figures'

Rented homes were more likely to use electricity as their primary heating fuel than those in the owner occupied sector.

Figure 1.8: Primary heating fuel by tenure, 2022



Mains gas and electricity are the primary fuel types present in 95% of social housing with a further 5% (29,000 households) using some form of communal heating. Conversely, oil is rarely used to heat social housing, but is the primary heating fuel in 7% of owner-occupied dwellings and 7% of private rented dwellings. Mains gas use is less prevalent in private rented households at 70% compared to 82% in owner occupied dwellings and 83% in social housing. Owner occupier households were less likely to use electricity as their primary fuel type at 9% compared to 20% of private rented dwellings and 12% of social sector dwellings.

Data Source: Table KA7a in 'SHCS 2022- Chapter 01 Key Attributes of the Scottish Housing Stock – tables and figures'

Primary heating fuel across Scotland varies by age and type of dwelling.

Figure 1.9: Primary heating fuel by age and type of dwelling, 2022

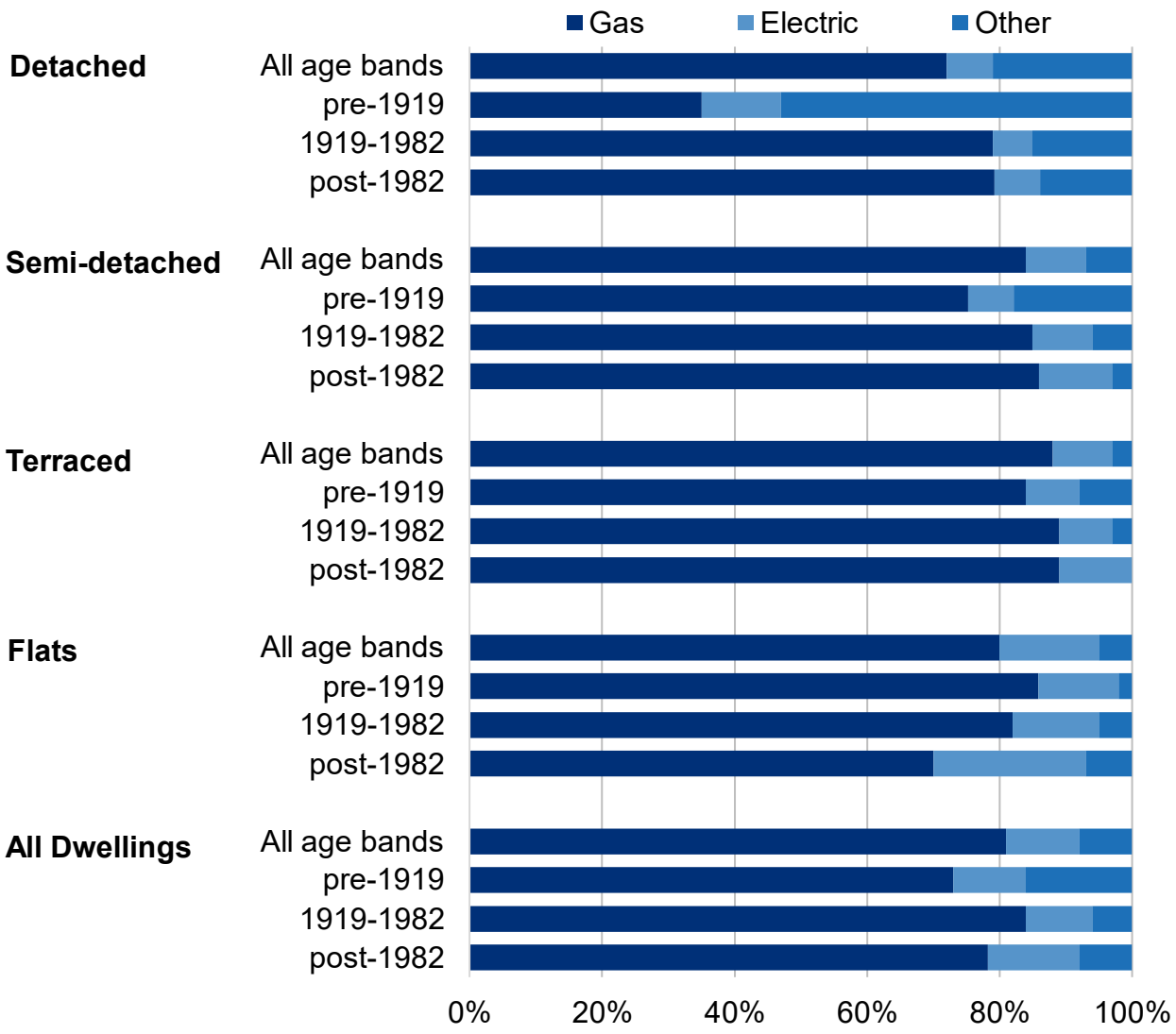


Figure 1.9 shows that 84% of dwellings built between 1919 and 1982 use gas as their primary heating fuel. In comparison, 79% of dwellings built after 1982 and 73% of dwellings built pre-1919 use gas.

Older pre-1919 dwellings more commonly (16%) use other fuel types (such as oil) aside from gas or electricity than newer dwellings.

Primary heating fuel also varies by type of dwelling. Households living in detached dwellings are least likely to use mains gas for heating, 72%, compared to 88% of those households living in terraced houses, 84% in semi-detached houses, and 81% of households for Scotland as a whole. This is driven in part by the greater prevalence of alternative heating fuels amongst pre-1919 detached houses. 53% use an alternative fuel source (other than gas and electricity) for space heating and hot water. By comparison only 18% of pre 1919 semi-detached houses and 8% of pre 1919 terraced households are reliant on other fuels.

As shown in Figure 1.2 this is largely due to the higher proportion of detached dwellings in rural areas and Figure 1.6 demonstrates that dwellings in rural areas are less likely to be within the coverage of the gas grid.

"Other" fuels (than gas or electricity) are most commonly used in detached houses. Flats have the highest levels of electricity (15%) as main heating fuel.

Data Source: Table KA8a in 'SHCS 2022- Chapter 01 Key Attributes of the Scottish Housing Stock – tables and figures'

89% of dwellings in urban locations used mains gas as their primary heating fuel compared to 41% of those in rural locations.

Figure 1.10: Primary heating fuel by urban/rural location, 2022

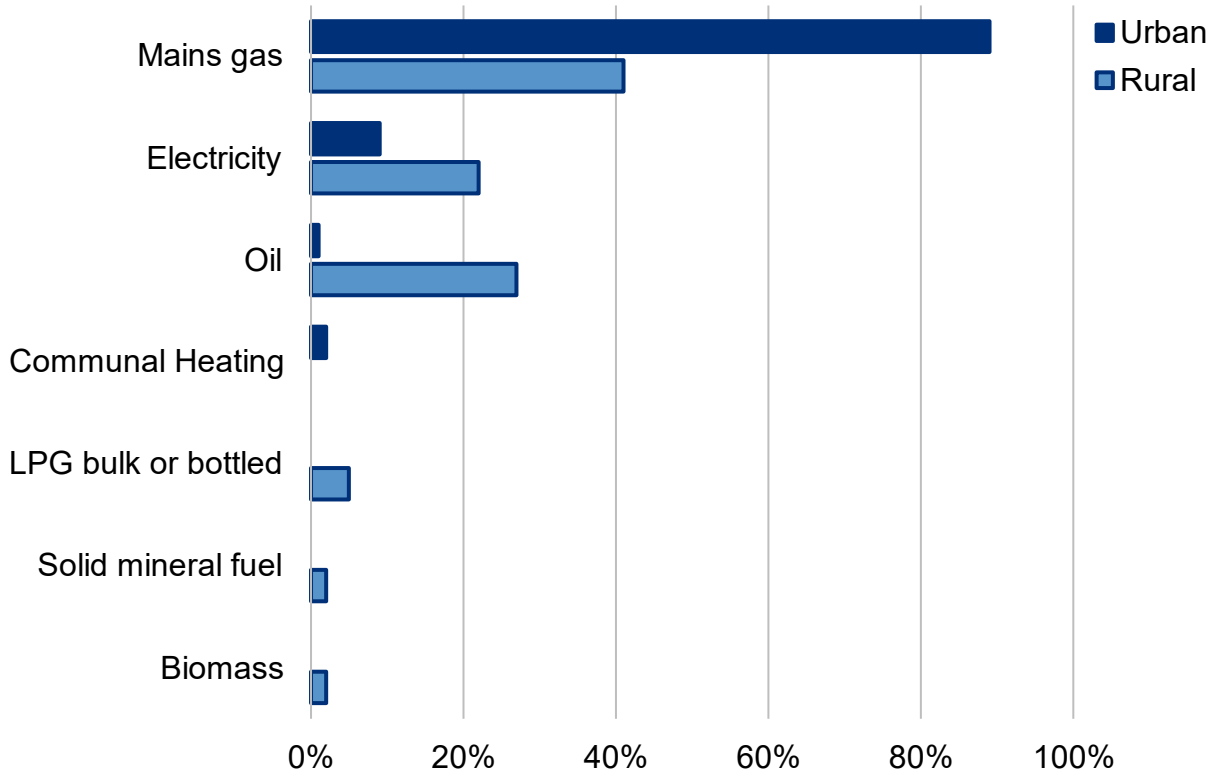


Figure 1.10 shows that 89% of dwellings in urban locations use mains gas as their primary heating fuel compared to 41% of those in rural locations. By contrast, there are higher rates of electricity and oil as primary heating fuel in rural locations, 22% and 27%, respectively, compared to urban locations where electricity is used in 9% and oil in 1% of dwellings.

Data Source: Table KA9a in 'SHCS 2022- Chapter 01 Key Attributes of the Scottish Housing Stock – tables and figures'

Notes:[note 1]

Boilers are the most common method of heating homes.

Figure 1.11: Primary heating type, 2022

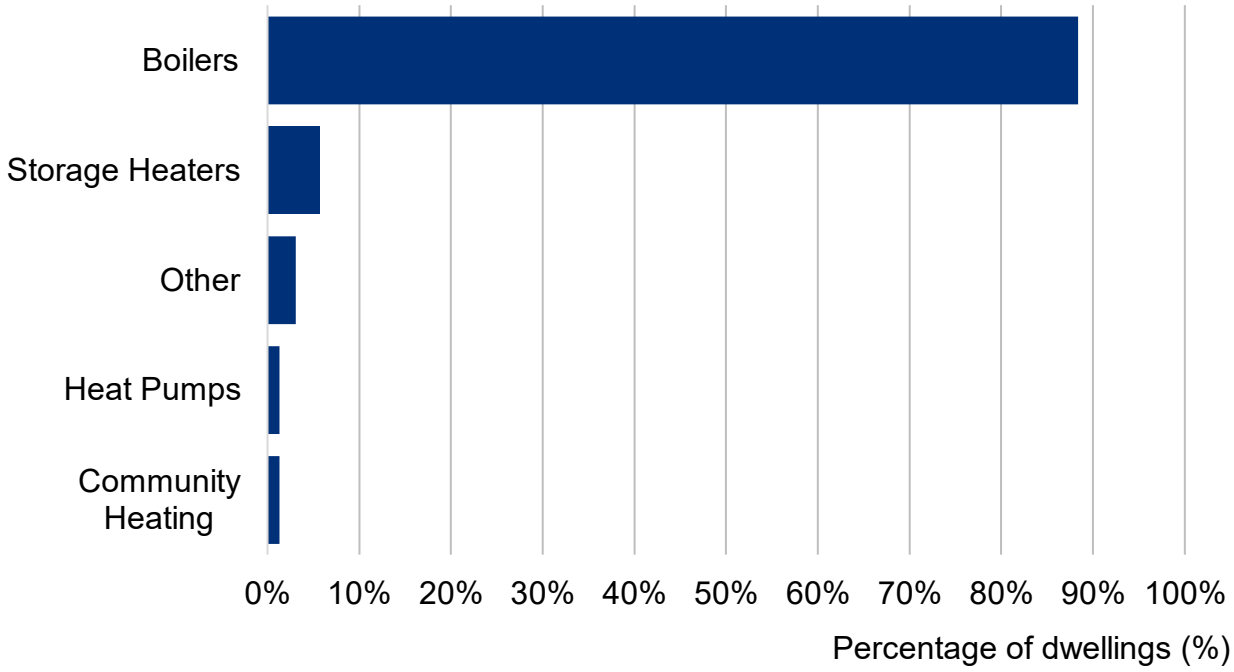


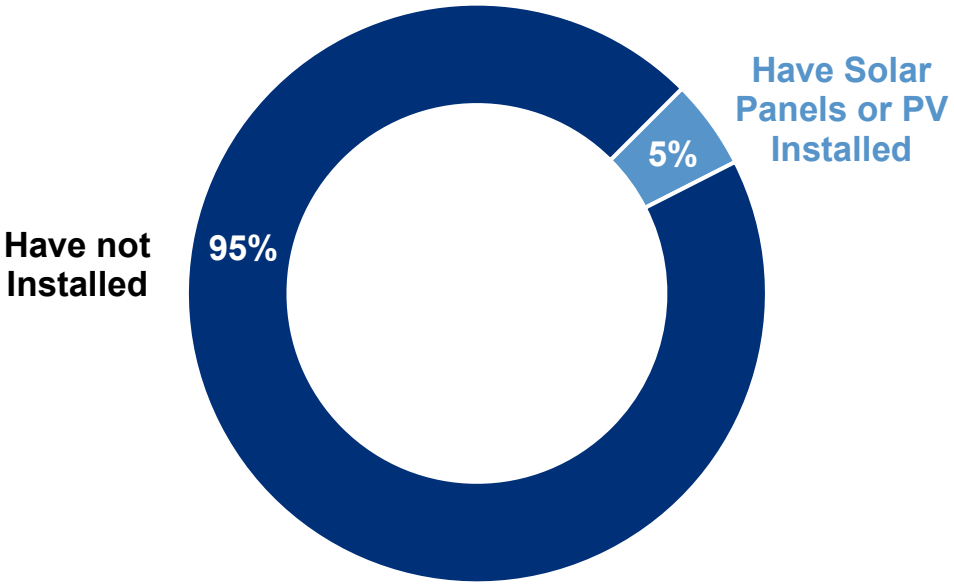
Figure 1.11 shows that 88.4% of all dwellings in Scotland use a boiler (including gas, oil, LPG) to heat their home. This is followed by storage heaters which make up 5.7% of the stock, and other forms of heating such as warm air systems, and room heaters which are used by 3.1% of dwellings. Heat pumps are used by a small number of dwellings (1.3%).

Historic data covering the period from 2015 to 2022 are available in the data source below.

Data Source: Table KA10a in 'SHCS 2022- Chapter 01 Key Attributes of the Scottish Housing Stock – tables and figures'

Around 5% of dwellings in Scotland have solar panels or solar PV installed.

Figure 1.12: Dwellings with solar panels or solar PV, 2022



As shown in Figure 1.12 an estimated 5% of all dwellings in Scotland had either solar panels, solar PV, or both installed. This is higher than in 2019 (3%).

Historic data covering the period from 2015 to 2022 are available in the below data source.

Data Source: Table KA11a in 'SHCS 2022- Chapter 01 Key Attributes of the Scottish Housing Stock – tables and figures'

1.5 Household Type

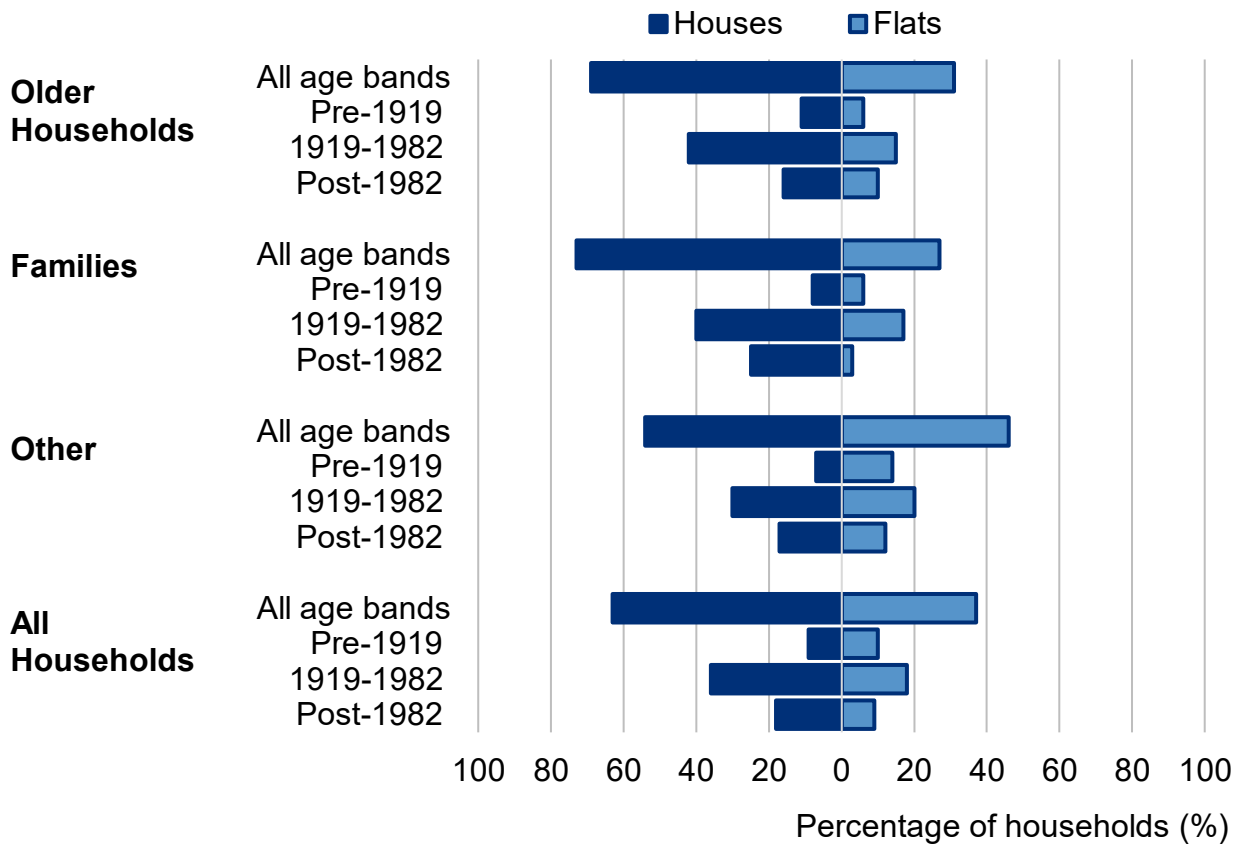
In this report we describe households in terms of three main types which are derived from the more detailed classification used in the Scottish Household Survey:

- **Families.** These are households which contain at least one child aged under 16. The resident adult(s) 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 2.2 of the Methodological and Technical notes

Families and older households are more likely to live in houses

Figure 1.13: Households by dwelling type and age band, 2022



There is a broad association between household types and the type of dwellings they occupy, as shown in Figure 1.13. While families and older households are more likely to live in houses (69% and 73% respectively), other households are more evenly split between houses and flats (54% and 46% respectively).

Families have the highest proportional occupancy of post-1982 houses: 25% of households with children live in post-1982 houses, compared with 16% of older households and 17% of other types of households. The highest occupancy of pre-1919 flats is observed among other types of households, 14%, compared to 6% for families and 6% for older households.

Data Source: Table KA12a in 'SHCS 2022- Chapter 01 Key Attributes of the Scottish Housing Stock – tables and figures'

1.6 Tenure

Statistics on tenure in the SHCS are based on the achieved sample of dwellings in the physical survey and are not calibrated against figures produced as part of the Scottish Government Housing Statistics for Scotland publication or the Scottish Household Survey publication (which is based on a larger sample and different weighting methodology).

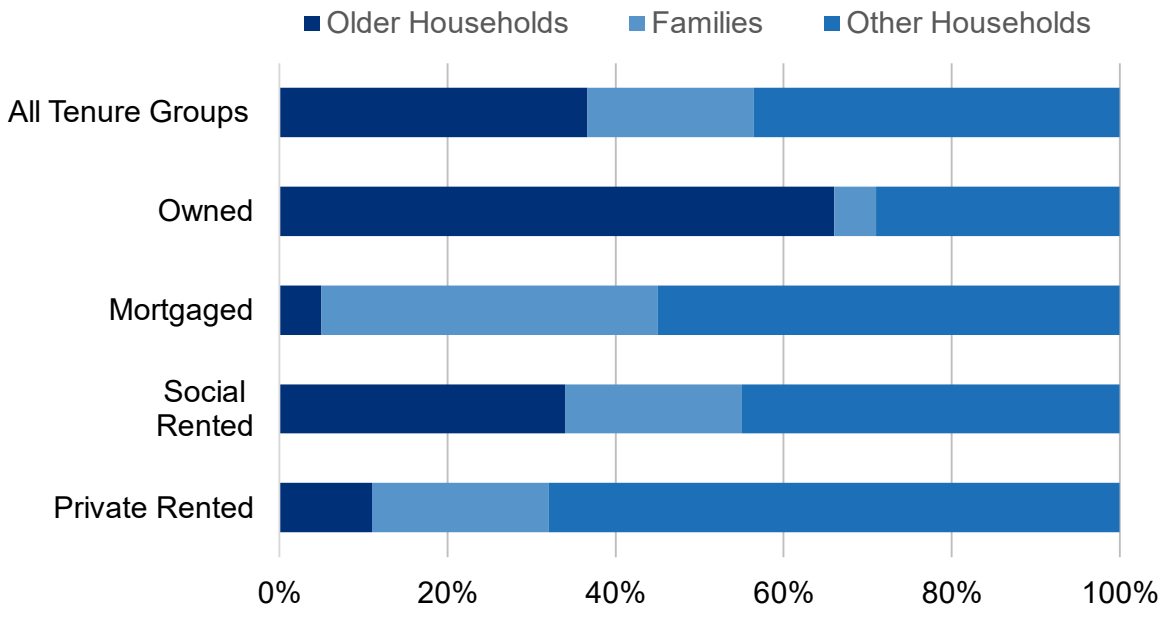
For estimates of the total number of dwellings by tenure, readers are referred to the Scottish Government Housing Statistics for Scotland publication which uses information from social landlords' returns which comprehensively cover the social housing sector and therefore provides more accurate estimates of the total stock by tenure.

In this section we explore data from the SHCS sample which provides more detailed information on the composition of each tenure type.

Scottish House Condition Survey results for 2022 have been assessed to be comparable in the most part to 2019 and earlier years. However, as noted in section 1.1.5 of the Methodological and Technical notes there is evidence to suggest that social and private rented households, may be under-represented in the 2022 achieved sample and owner-occupied households may be over-represented. Therefore, the 2022 results for percentages of households in each tenure should be treated with caution.

Household types vary across tenure.

Figure 1.14: Proportion of households in each tenure group by household type, 2022



As shown in Figure 1.14, owner occupiers with mortgages are predominantly families (40%) and other households (55%). The majority of those who own their properties outright are older households (66%) and a small amount are families (5%). The majority of those who live in the private rented sector (PRS) belong to other households (68%) and only 11% are older households. Around 21% of renters in both the private and social sector are households with children, which reflects their share in the national population.

Data Source: Table KA13a in 'SHCS 2022- Chapter 01 Key Attributes of the Scottish Housing Stock – tables and figures'

Owner-occupied dwellings are more likely to be houses.

Figure 1.15: Proportion of dwellings in each tenure group by age band and type of dwelling, 2022

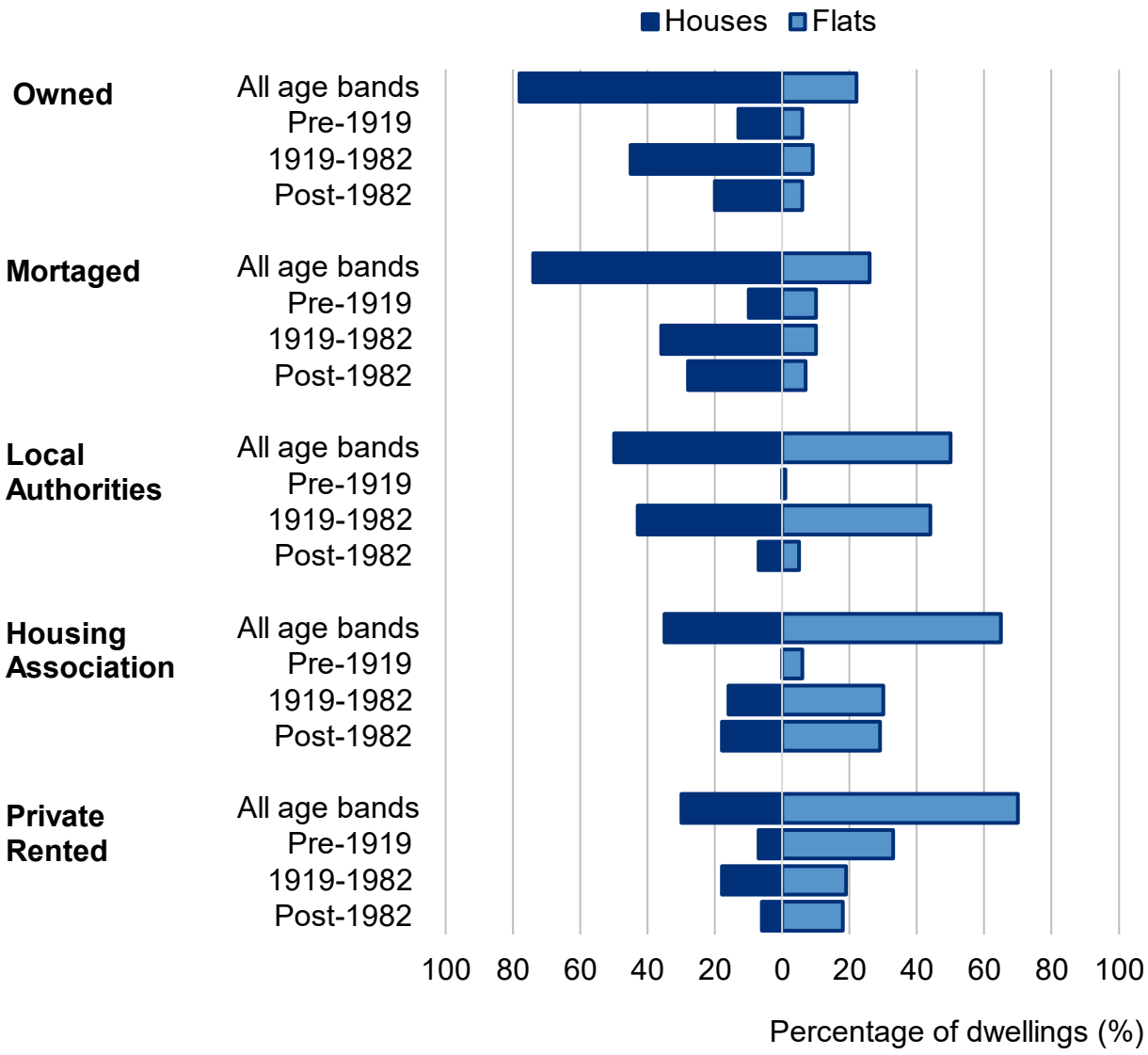


Figure 1.15 shows that properties rented from Housing Associations (HA) or the Private Rented sector are more likely to be flats. Flats account for 65% of Housing Association (HA) stock and 70% of dwellings rented from private sector landlords. Conversely, owner-occupied dwellings are more likely live in houses: 78% of dwellings owned outright and 74% of those with a mortgage, compared to 50% of dwellings owned by Local Authorities, 35% of Housing Association stock and 30% of private rented properties.

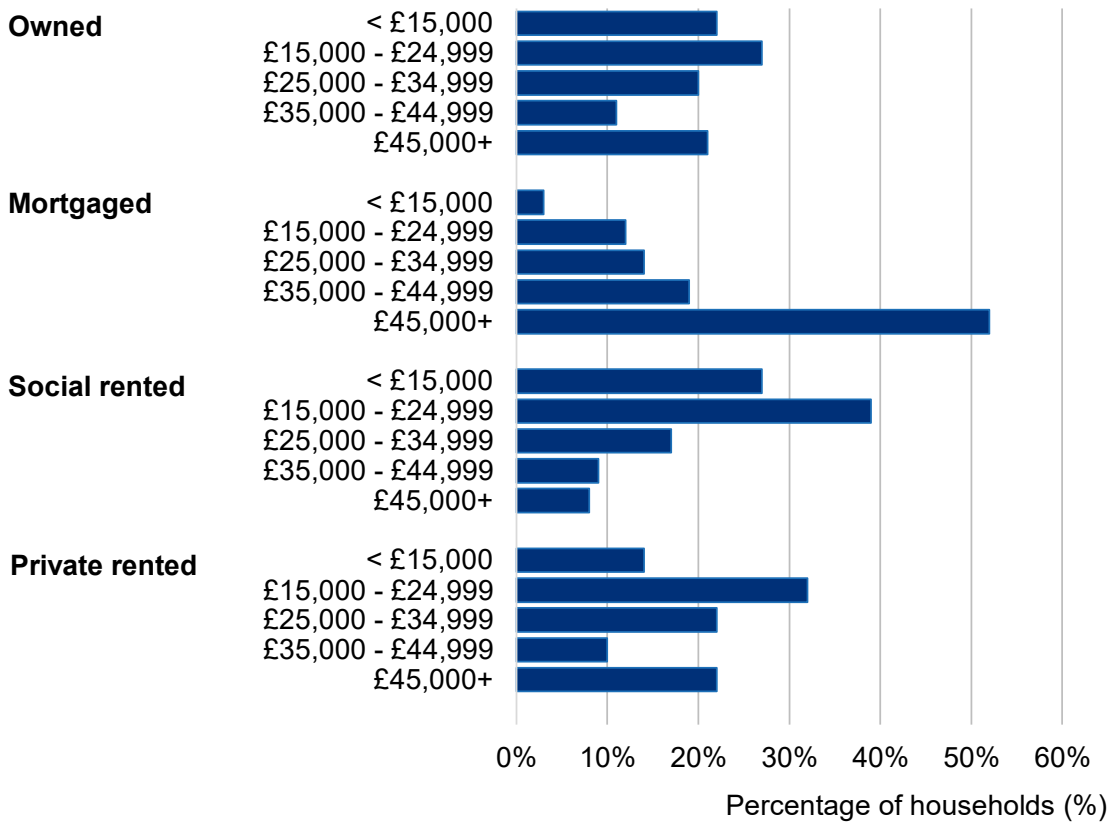
Almost all properties (87%) owned by Local Authorities were built between 1919 and 1982, while less than half (46%) of the Housing Associations stock was built in this period. By contrast, 39% of private rented sector dwellings were built before 1919, higher than both local authority (1%) and housing association (7%) properties.

Data Source: Table KA14a in 'SHCS 2022- Chapter 01 Key Attributes of the Scottish Housing Stock – tables and figures'

1.7 Household Income Band

Income and tenure are closely correlated.

Figure 1.16 Households by tenure group and annual household income band, 2022



For social sector residents the distribution of households is skewed towards lower income groups, as shown in Figure 1.16, while for households with mortgages the distribution is skewed towards the highest income group. The distribution of households by income in the PRS is broadly similar to that for outright owner occupiers.

Data Source: Table KA15a in 'SHCS 2022- Chapter 01 Key Attributes of the Scottish Housing Stock – tables and figures'

2 Energy Efficiency

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.

Based on information about the characteristics of the dwelling collected in the SHCS physical survey and using standard assumptions about the make-up and the behaviour of the occupying household, the energy consumption associated with the dwelling is modelled. This allows us 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 Methodological and Technical notes.

In this chapter we report on:

- levels of insulation in Scottish dwellings (section 2.1);
- boiler efficiencies (section 2.2);
- Energy Efficiency Ratings (EER), also known as SAP ratings (section 2.3);
- modelled carbon dioxide (CO_2) emissions from dwellings (section 2.4); and
- Environmental Impact Ratings (EIR) (section 2.5).

A breakdown of findings is also provided by tenure of the household and other relevant dwelling characteristics.

Scottish House Condition Survey results for 2022 have been assessed to be comparable in the most part to 2019 and earlier years. However, there is some evidence to suggest that social and private rented households, may be under-represented in the 2022 achieved sample and owner-occupied households, may be over-represented as laid out in section 1.1.5 of the Methodological and Technical notes. Due to this national level estimates of EPC ratings, loft, and solid wall insulation may be slightly under-estimated, as socially rented households tend to have higher rates of solid wall insulation and higher EPC ratings than owner-occupied households and private renters. However, we expect any effects to be minor as solid wall insulation makes up only around a quarter of all dwellings. Furthermore private rented dwellings (which are underestimated more significantly than socially rented properties) tend to have similar EPC scores to owner occupiers (50% C or above and 48% C or above respectively).

2.1 Insulation Measures

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. As a result, insulation can significantly reduce energy consumption and therefore lower heating bills, making it cheaper to enjoy satisfactory levels of thermal comfort. (See Chapter 3 on Fuel Poverty.)

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

Key Points

- The majority of loft spaces are insulated. In 2022, loft insulation with a thickness of 100 mm or more had been installed in 95% of dwellings. This has been broadly stable since 2017 but represents an increase of 23 percentage points on 2007 levels.
- In 2022, 32% of lofts were insulated to a high standard of insulation (300 mm or more). This proportion has remained about this level since 2015, following year on year increases from the 2010 figure of 5%.
- The proportion of insulated cavity walls recorded by the SHCS was 69% in 2022.
- The proportion of solid wall dwellings with insulation was 16% in 2022, an increase of 5 percentage points on the 2012 figure.
- Levels of insulation (both loft and wall) are higher in the social sector than in the private sector. 53% of homes in the private sector have wall insulation compared to 67% in the social sector. In the private sector, 63% of lofts are insulated to 200 mm or more compared to 76% in the social sector.

2.1.1 Loft Insulation

The majority of loft spaces in Scotland are insulated.

Figure 2.1: Loft insulation (where applicable), 2003/2004 to 2022

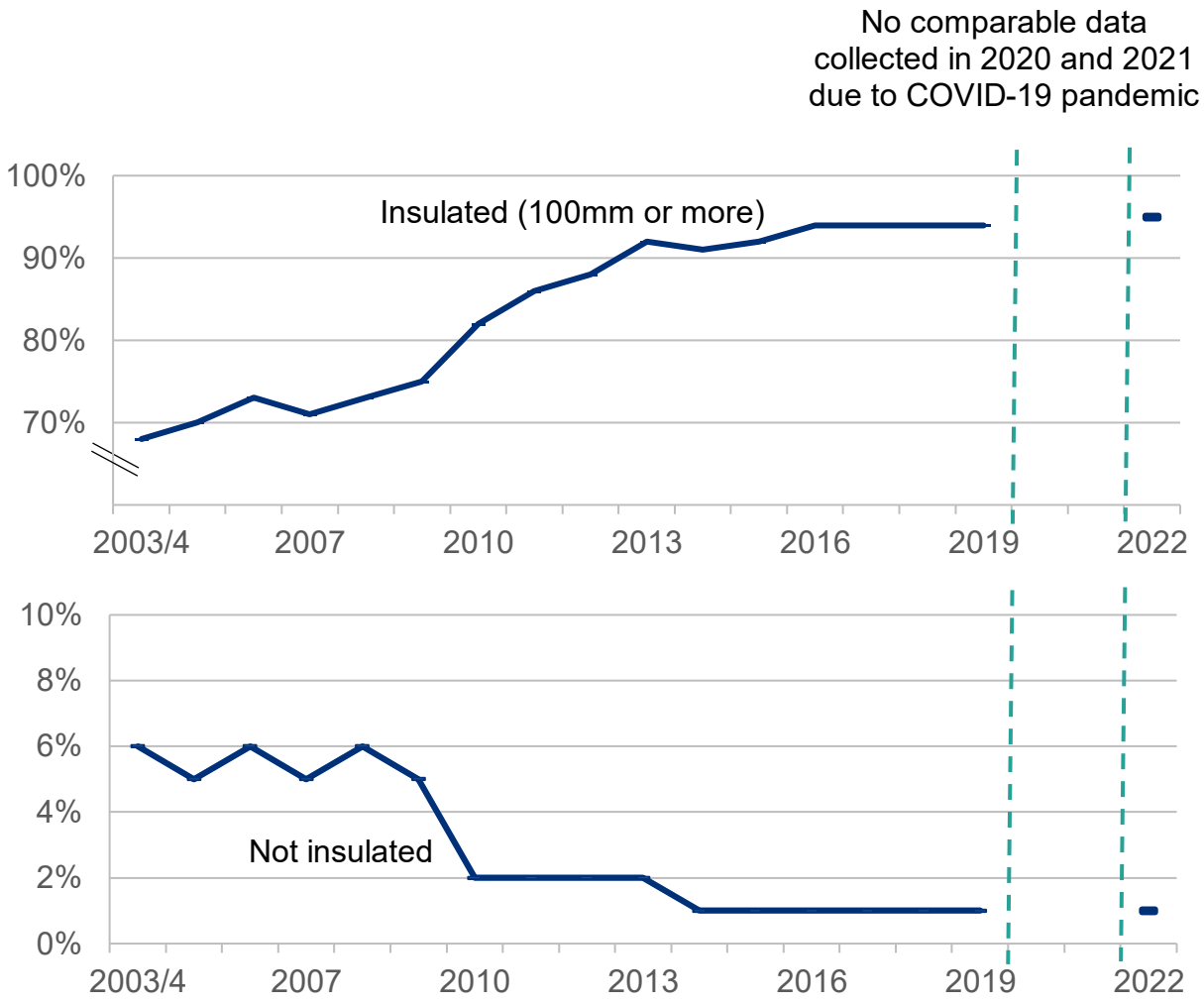


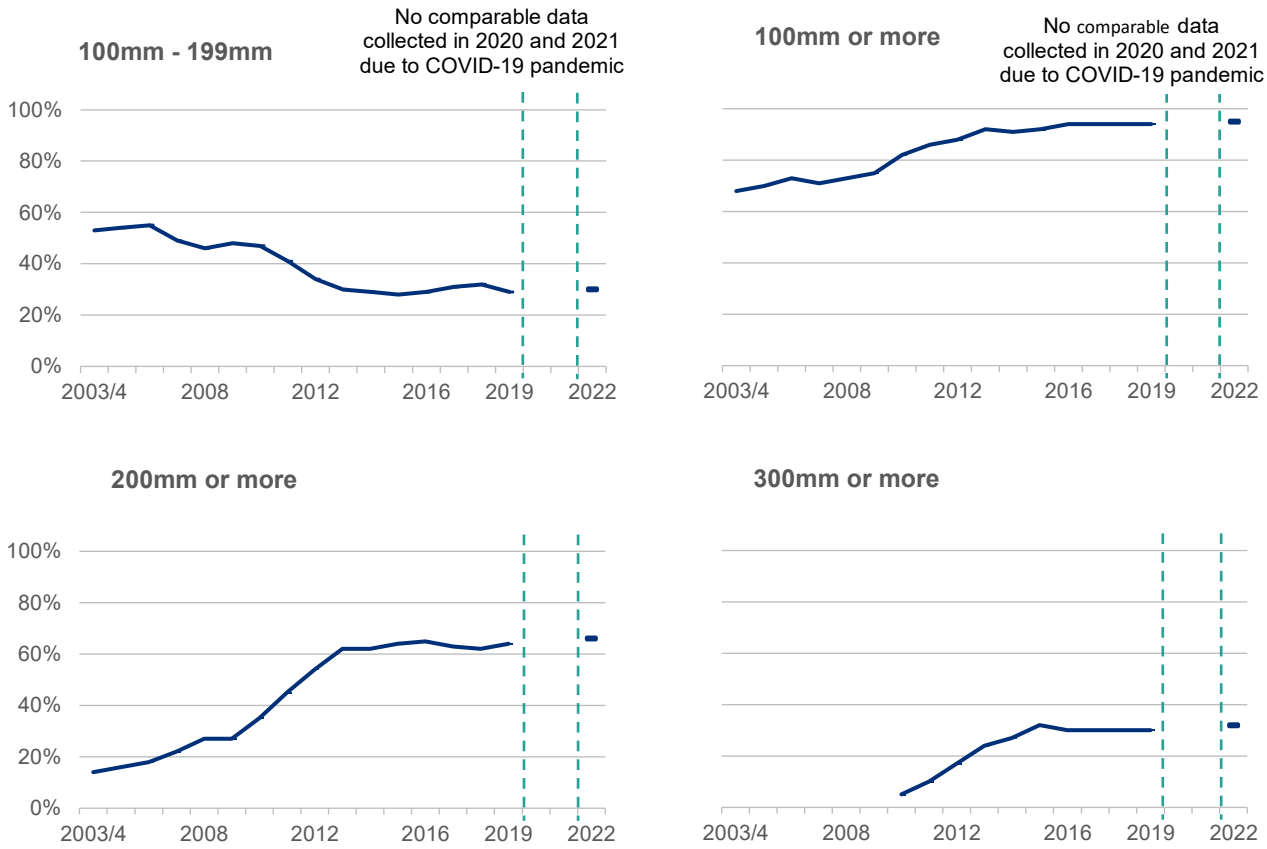
Figure 2.1 shows that since 2007, there has been an overall improvement in the uptake of loft insulation. The proportion of all housing with 100 mm or more of loft insulation has increased by 23 percentage points on 2007 levels with 95% of applicable dwellings insulated in 2022. Most of this improvement occurred before 2014. The share of dwellings with no loft insulation has fallen from 6% in 2003/4 to 1% in 2022. Most of this decline occurred before 2011. Since then, improvement has slowed down, suggesting that there may be barriers preventing the installation of insulation in the relatively few remaining uninsulated lofts.

Data Source: Table EE1 in ‘SHCS 2022- Chapter 02 Energy Efficiency- tables and figures’

Notes: [note 3]

In 2022, 32% of lofts were insulated to a high standard of insulation (300 mm or more).

Figure 2.2: Depth of loft insulation (where applicable), 2003/2004 to 2022



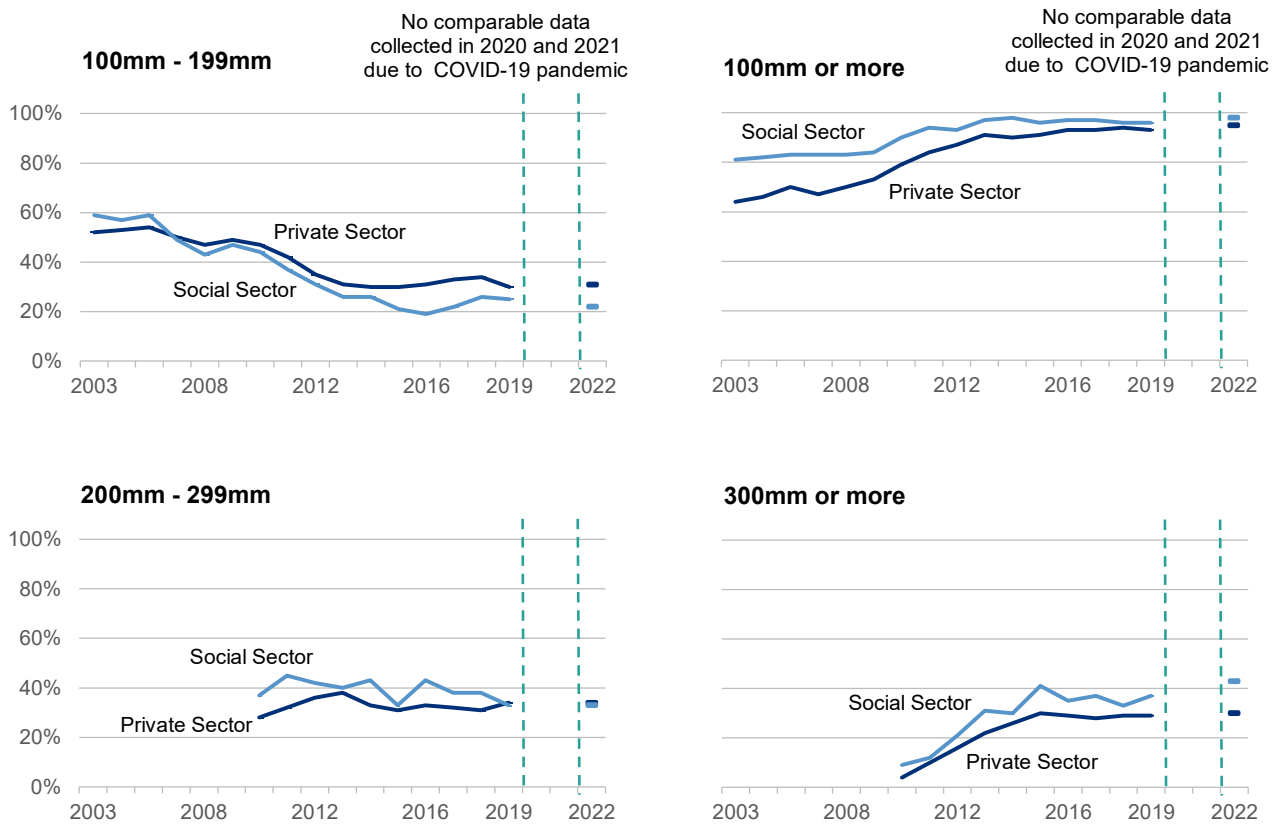
Since 2010 the thickness of loft insulation has increased significantly. In 2022, 66% of dwellings with lofts had insulation with a depth of 200 mm or more. Much of this increase has occurred between 2009 and 2013, when the percentage increased from 27% to 62%. This can largely be attributed to the installation of top-up insulation. The increase in the estimated number of dwellings with loft insulation between 100-199 mm and with 200 mm or more between 2019 and 2022, are both within the margin of error of the survey.

Data Source: Table EE1 in ‘SHCS 2022- Chapter 02 Energy Efficiency- tables and figures’

Notes: [note 3] [note 19]

Levels of loft insulation are higher in the social sector than in the private sector.

Figure 2.3: Depth of loft insulation (where applicable) by tenure, 2003/2004 to 2022



As shown in Figure 2.3 in 2022, 30% of private sector dwellings had a high standard (300 mm or more) of loft insulation, lower than 43% of dwellings in the social sector. 95% of private housing lofts were insulated to 100 mm or more and 63% to 200 mm or more. In the social sector, 98% of dwellings had lofts insulated to 100 mm or more, and 76% had 200 mm or more of loft insulation.

One of the reasons for the difference in uptake of loft insulation over time between the private and social sector is that the Scottish Housing Quality Standard (SHQS), which was introduced in 2004 and applies only to social sector housing, requires at least 100 mm of loft insulation (see section 5.2.3 for more information).

The difference in the proportion of lofts with 100 mm or more of 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 3 percentage points in 2022 (98% in the social sector and 95% in the private sector). This likely

reflects the benefits of loft insulation also recognised by the private sector households.

Data Source: Table EE2a in 'SHCS 2022- Chapter 02 Energy Efficiency- tables and figures'

Notes: [note 3]

2.1.2 Wall Insulation

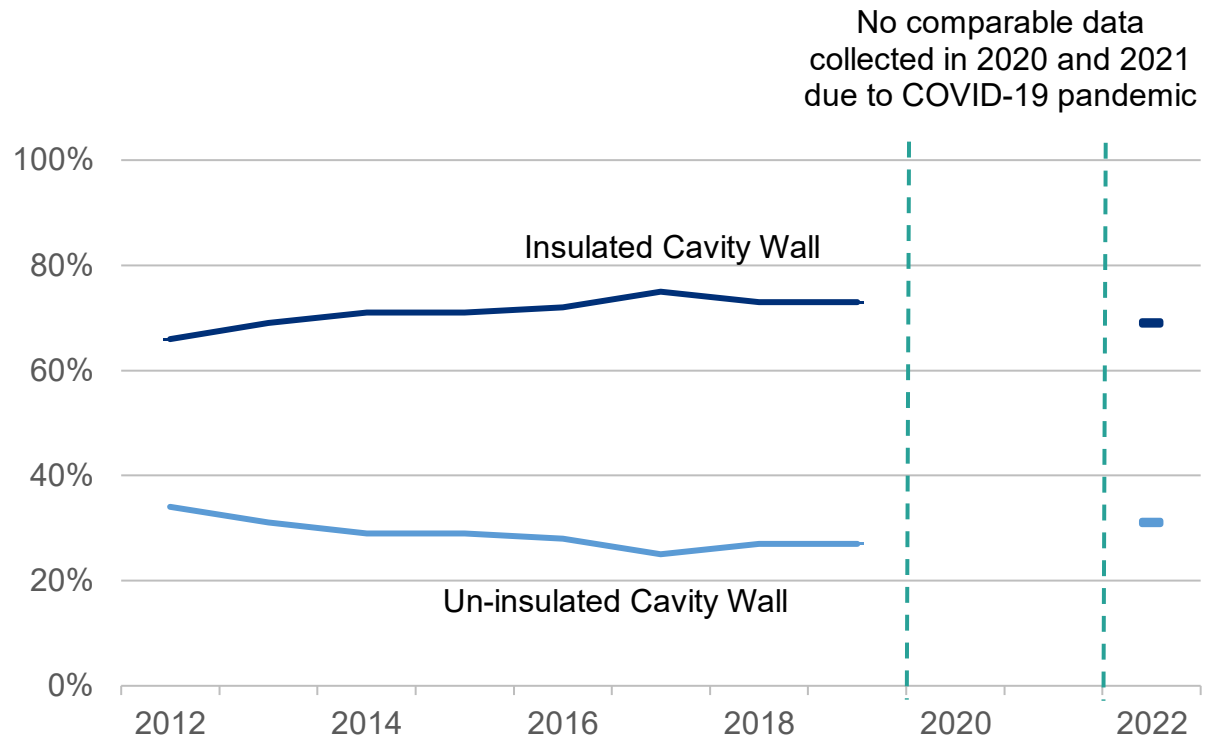
The presence of cavity wall insulation (CWI) added since built is becoming increasingly difficult for SHCS surveyors to identify as over time the injection holes age, fade or are covered up by later work. Contractors are also getting better at concealing their work. This may mean that the SHCS underestimates the number of homes which have had CWI installed (see also section 6.2.2.4 of the 2019 SHCS key findings report). Despite efforts to maintain the high quality of the SHCS physical survey fieldwork, some misclassifications may remain.

In Scotland around 76% of dwellings have external cavity walls and the remaining 24% have solid or other construction types of external wall. These "other" types include steel or timber-frame dwellings and dwellings made from prefabricated concrete. As the improvement of solid and other wall types generally requires more expensive interventions than CWI, this diverse group is addressed together in this chapter.

Higher insulation levels in new buildings have been required by building standards since 1983 when the Building Standards (Scotland) Amendment Regulations 1982 came into force. These dwellings are therefore treated as insulated when built.

In 2022, 69% of cavity wall dwellings in Scotland were insulated.

Figure 2.4: Cavity wall insulation, 2012 to 2022



In 2022, 69% of cavity wall dwellings in Scotland were insulated. The longer term trend, showing a decrease in the share of uninsulated cavity walls of 3 percentage points since 2012.

Data Source: Table EE3a in 'SHCS 2022- Chapter 02 Energy Efficiency- tables and figures'

Notes: [note 4]

In 2022, 16% of dwellings with solid and other wall types in Scotland were insulated.

Figure 2.5: Wall insulation of solid and other wall types, 2012 to 2022

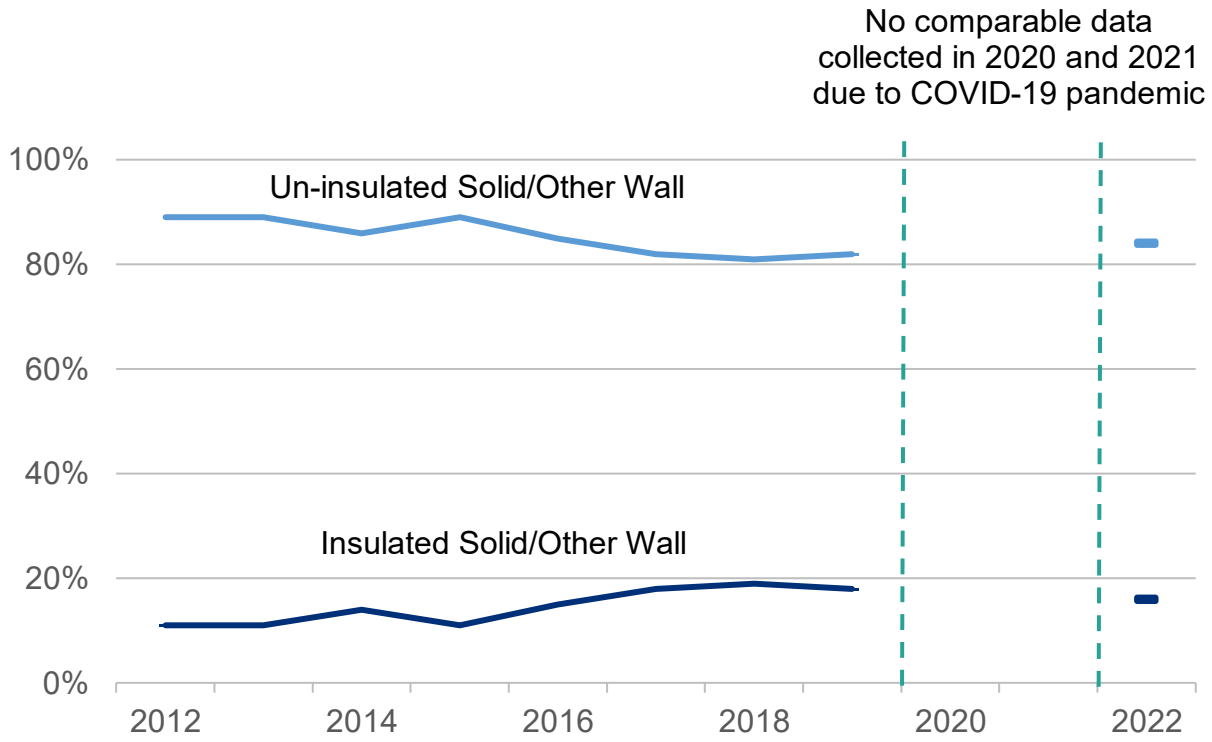


Figure 2.5 shows the levels of insulation in dwellings with solid or other construction type walls recorded by the survey from 2012 to 2022. The results show that 16% of dwellings in this category had insulated walls in 2022; the difference with the level recorded in 2019 (18%) is not statistically significant but is an increase of 5 percentage points from 2012. Only 769 dwellings with solid walls were surveyed in 2022 as part of the SHCS.

Data Source: Table EE3a in 'SHCS 2022- Chapter 02 Energy Efficiency- tables and figures'

Notes: [note 4] [note 19]

The information in Table 2.1 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 are available in section 2.6 of the Methodological and Technical notes).

HTTCs have certain attributes which make CWI more expensive, complex or inadvisable. Standard cavity walls have no such barriers.

Levels of wall insulation were higher in the social sector than in the private sector.

Table 2.1: Wall Insulation by wall type and tenure, 2022

Wall Type	Insulation Status	Wall/ Insulation Categories	Private Sector	Social Sector	All Tenures
Cavity	Un-insulated	HTTC wall	8%	11%	9%
Cavity	Un-insulated	Standard wall	23%	19%	22%
Cavity	Un-insulated	All	32%	30%	31%
Cavity	Insulated	CWI insulation	28%	33%	30%
Cavity	Insulated	Int/External insulation	4%	12%	6%
Cavity	Insulated	As built insulation	36%	25%	33%
Cavity	Insulated	All	68%	70%	69%
Cavity	All	All	100%	100%	100%
Solid/Other	Un-insulated	Pre-1919 wall	72%	29%	67%
Solid/Other	Un-insulated	Post-1919 wall	15%	31%	17%
Solid/Other	Un-insulated	All	87%	60%	84%
Solid/Other	Insulated	Retrofit insulation	10%	36%	13%
Solid/Other	Insulated	As built insulation	3%	4%	3%
Solid/Other	All Status	All	13%	40%	16%
Solid/Other	All	All	100%	100%	100%
All	Un-insulated	All	47%	33%	44%
All	Insulated	All	53%	67%	56%
All	All	All	100%	100%	100%
Cavity	All	Sample size (number)	1,641	573	2,214
Solid/Other	All	Sample size (number)	707	62	769
All	All	Sample size (number)	2,348	635	2,983

In the social sector, 70% of cavity wall dwellings and 40% of dwellings with solid and other wall types were found to be insulated in 2022. 67% of social housing overall had insulated walls.

In the private sector, 68% of cavity wall dwellings and 13% of solid and other wall dwellings, had insulation in 2022. Over half (53%) of all private sector dwellings had insulated walls.

Overall, 69% of cavity wall dwellings in Scotland have wall insulation. 30% have had retrofit cavity wall insulation, which is generally the lowest cost improvement available; the remainder of insulated cavity walls were insulated as built (33%) or insulated in another way such as with internal and external wall insulation (6%).

Levels of insulation are higher in the social sector at 67% (all wall types) compared with 53% in the private sector. This is being driven by higher levels of insulated solid walls in the social sector (40%) compared to the private sector (13%). Within wall type, this tenure divide is also apparent for the more expensive insulation measures: internal / external insulation of cavity walls (12% of cavity wall dwellings in the social sector; 4% of private dwellings) and retrofit solid wall insulation measures 36% of solid wall dwellings in the social sector; 10% in the private sector).

Notes: [note 4] [note 19]

2.2 Boilers

The heating system is a key factor in the thermal efficiency of a dwelling. Around 86% of households use a gas or oil-fuelled boiler (see Figure 1.7). 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
- In 2007, Scottish Building Standards increased the efficiency requirements for all new and replacement boilers, details are available in the Domestic Building Services Compliance Guide for Scotland.

Building regulations in Scotland effectively require the installation of a condensing boiler[1] for gas and oil-fuelled heating in new builds or when boilers are replaced in any dwelling.

The SHCS has recorded the age of the household's heating system since 2010 and contains sufficient data to derive the Seasonal Efficiency (SEDBUK) ratings of surveyed boilers in the 2012-2019 and 2022 data collections. For these years we can track the improved efficiency of gas and oil boilers associated with the rising standards of the regulatory framework.

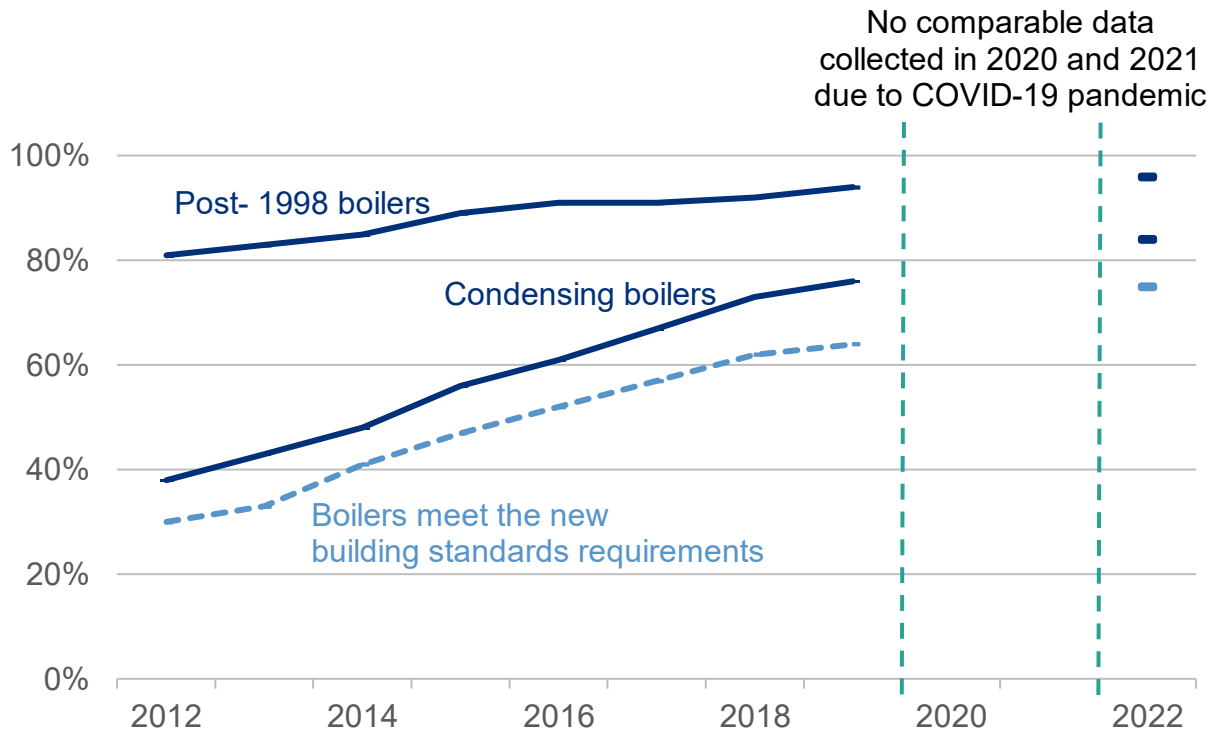
[1] This design has higher running efficiencies; a portion of the heat that would be lost through vented water vapour is recovered through condensation in a heat exchanger.

The methodology by which boiler efficiency ratings are calculated changed in 2016 and the time series was updated at that point to reflect this and to account for the minimum efficiency required of new oil combination condensing boilers. All subsequent data is published on the basis of the new methodology and further details can be found in section 1.4 of the Methodological and Technical notes.

The minimum requirements applied in the assessment of whether a boiler is compliant with standards are: a minimum efficiency of 88% for condensing standard gas, oil and LPG boilers; for condensing combination boilers, 86% for oil, and 88% for gas and LPG; for ranges, back boiler and combined primary storage units (CPSUs), 75% when gas, and 80% when oil[2].

Three-quarters of gas and oil boilers met the minimum efficiencies specified by the current Building Standards, in 2022.

Figure 2.6: Gas and oil boiler types, 2012 to 2022



In 2022 the survey found that 96% of the domestic gas and oil boilers in Scotland have been installed since 1998, when the European Boiler Efficiency Directive minimum standards came into effect. The proportion of new boilers, those installed

[2] 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 result in a boiler with poorer efficiency than that of a newly installed condensing boiler of the same fuel type.

since 1998, has increased by 15 percentage points since 2012. In 2022, 84% of gas and oil boilers were condensing boilers. This represents an increase of 46 percentage points since 2012. Three-quarters (75%) of gas and oil boilers met the minimum efficiencies specified by the current Building Standards. This has increased substantially from 30% in 2012.

Data Source: Table EE5a in 'SHCS 2022- Chapter 02 Energy Efficiency- tables and figures'

2.3 Energy Performance Certificates

Key Points

- In 2022, 52% of Scottish homes were rated as EPC band C or better under SAP 2012 (RdSAP v9.93), compared to 45% in 2019. The proportion of properties in the lowest EPC bands (E, F or G) under SAP 2012 (RdSAP v9.93), was 12% in 2022, down from 15% in 2019.
- Under SAP 2009, which allows comparisons over a longer period, over half of dwellings (56%) were rated C or better, up 32 percentage points since 2010. In the same period, the proportion of properties in the lowest EPC bands (E, F or G) has reduced from 27% in 2010 to 9% in 2022.
- Under SAP 2009, the median EE rating in 2022 was 70, which is equivalent to Band C. This is an increase from 62 in 2010 which is equivalent to band D.

Energy Performance Certificates (EPC) 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 standardised usage. EPCs are required when a property is either sold or rented to a new tenant.

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 dwelling, taking into account the energy needed for space and water heating, ventilation and lighting and, where relevant, energy generated by renewables.

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 higher fuel bills, while 100 represents very high energy efficiency and lower fuel bills. Ratings can exceed 100 where the dwelling generates more energy than it uses.

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

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

Energy Efficiency Ratings reported in this publication are calculated under two versions of SAP, the SAP 2009 methodology and the SAP 2012 methodology. Using SAP 2009 enables us to examine the trend in the energy efficiency of the housing stock since 2010.

SAP is periodically reviewed by the UK government to ensure it remains fit for purpose and to address its continued 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 the assessment of existing buildings.

SHCS energy modelling for SAP 2012 in this report is based on RdSAP (v9.93). The RdSAP (v9.93) was released on 19 November 2017 and contains revisions to the underlying assumptions used within the SAP calculations. The most notable update to the methodology in v9.93 was a change to the default U-values of cavity, solid and stone walls, built prior to 1976. Compared to v9.92, U-values for solid, insulated stone and uninsulated cavity walls have improved, whereas they have declined for insulated cavity walls.These U-values are used to calculate the rate of heat loss through the walls, which contributes to the overall thermal performance of the building fabric of the dwelling. Data on the basis of RdSAP v9.93 is presented for 2018, 2019 and 2022 only.

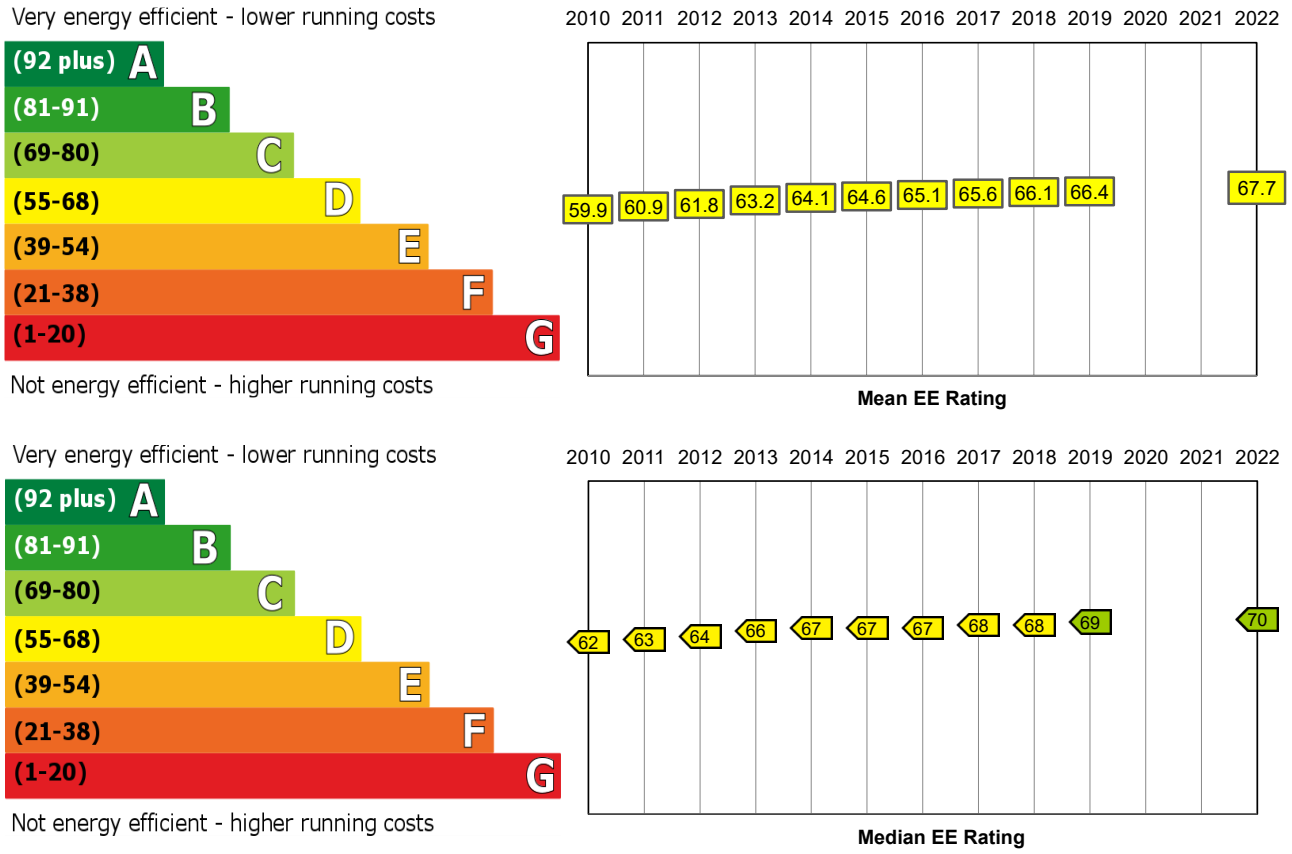
2.3.1 Energy Efficiency Rating, SAP 2009

This section examines the energy efficiency profile of the Scottish housing stock in 2022 under the SAP 2009 methodology.

Dwellings with main heating fuels other than mains gas (for example oil or coal) have systematically lower SAP ratings in SAP 2012 than in SAP 2009 and this is particularly true at the lower end of the SAP range. The main reason for this is that between SAP versions 2009 and 2012, fuel prices for these fuels increased more than for mains gas. As a result, average EERs tend to be slightly lower under SAP 2012 compared to SAP 2009.

The Scottish housing stock is gradually becoming more energy efficient.

Infographic 2.1: Mean and median EER relative to EPC bands, SAP 2009, 2010-2022



Infographic 2.1 shows the trend in mean EERs based on SAP 2009, which rose from 59.9 in 2010 to 67.7 in 2022. These ratings fall into band D. There was around a 1-point increase in the mean EER each year between 2010 and 2014. Improvement since then has been slower, and the increase between 2019 and 2022 was 1.3 points.

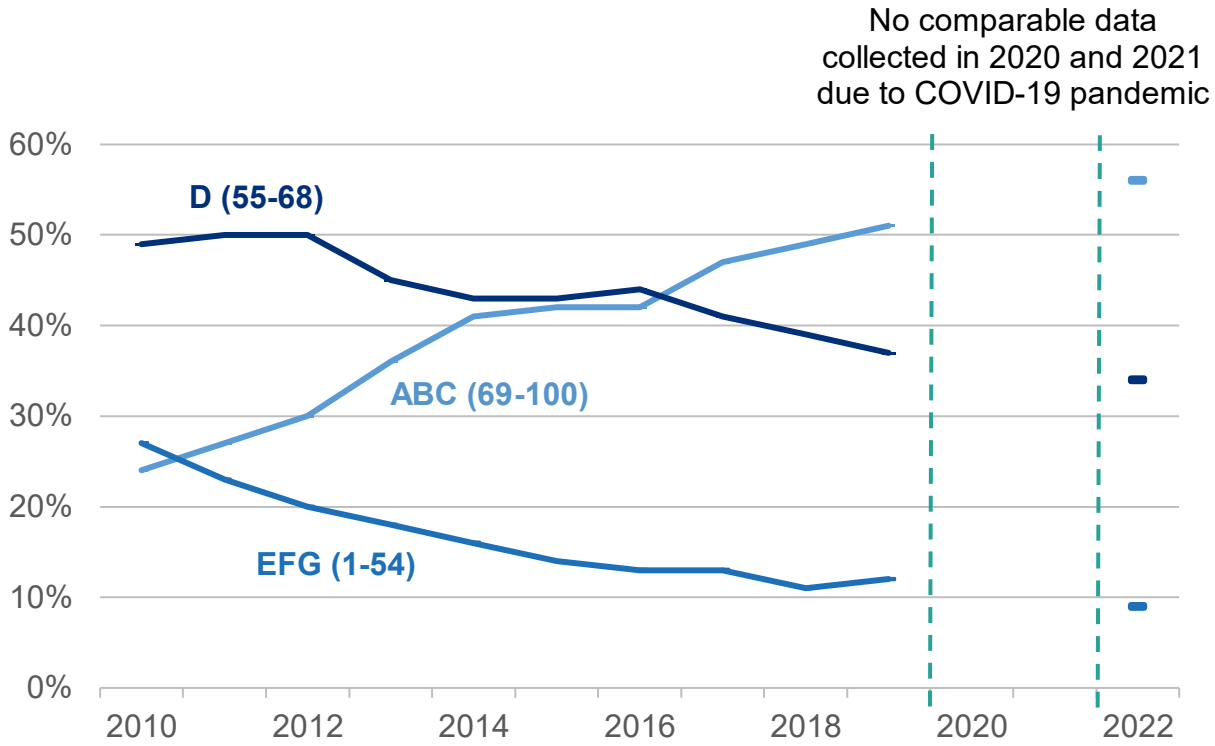
The median EE Rating has also improved since 2010. In 2022, half of all Scottish dwellings were rated 70 or better, fall into EPC band C or above, an increase of 8 SAP points from 62 in 2010.

Data Source: Table EE6 in 'SHCS 2022- Chapter 02 Energy Efficiency- tables and figures'

Notes: [note 19]

A strong trend of improvement has been observed in the energy efficiency profile of the housing stock since 2010.

Figure 2.7: Distribution of the Scottish Housing Stock by EPC Band, SAP 2009, 2010-2022



As shown in Figure 2.7, 56% of the housing stock in 2022 had an EPC rating of C or better, up 32 percentage points since 2010. Over the same period, the proportion of properties in the lowest EPC bands, E, F and G, has dropped 18 percentage points: 27% of properties were rated E, F or G in 2010 compared with 9% in 2022.

Data Source: Table EE7a in 'SHCS 2022- Chapter 02 Energy Efficiency- tables and figures'

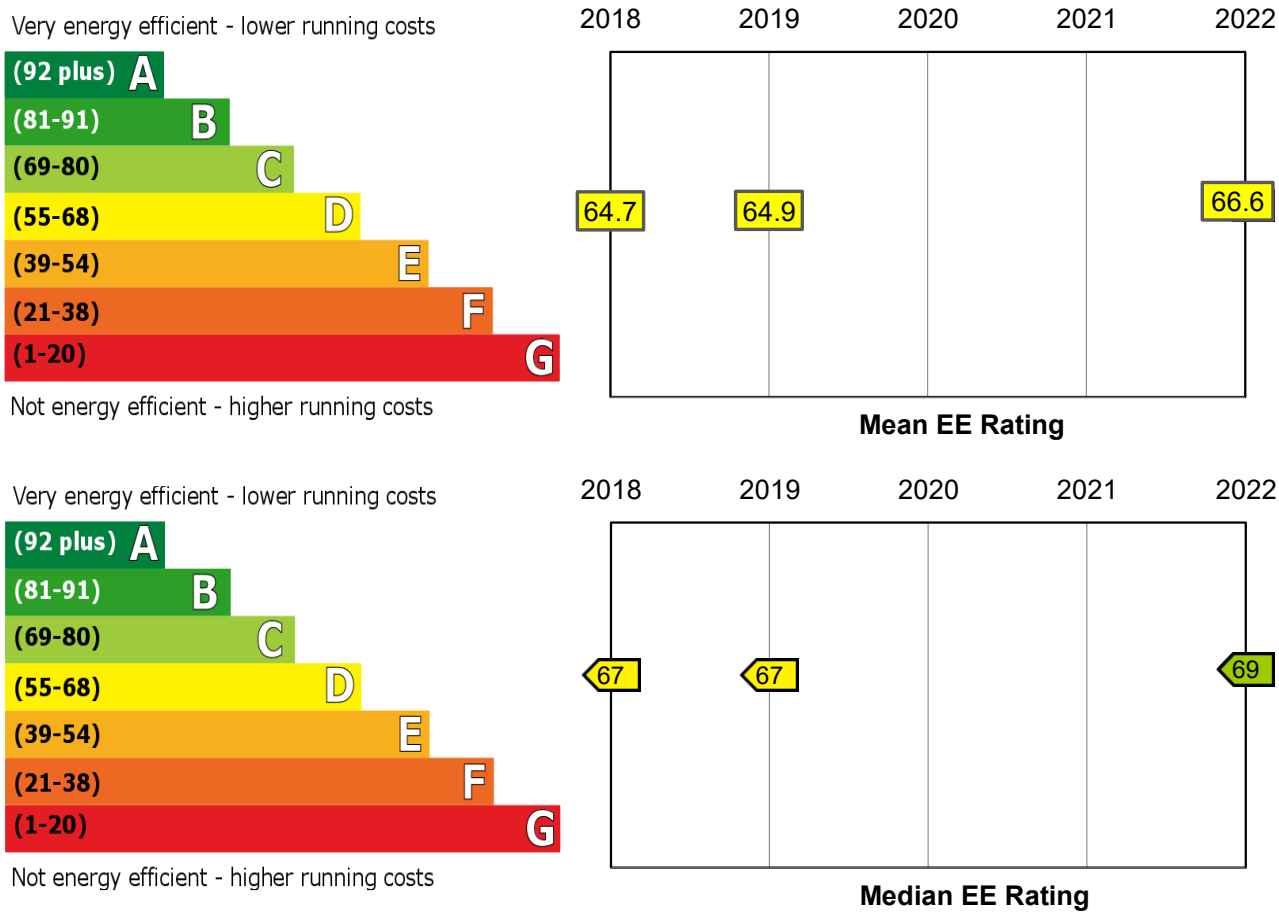
Notes: [note 5] [note 19]

2.3.2 Energy Efficiency Rating, SAP 2012

This section examines the energy efficiency profile of the Scottish housing stock under the SAP 2012 methodology (RdSAP v9.93). Time series analysis is presented for 2018, 2019 and 2022. Further breakdowns by household and dwelling characteristics for 2022 are also presented.

The Scottish housing stock is gradually becoming more energy efficient.

Infographic 2.2: Mean and median EER relative to EPC bands, SAP 2012, 2010-2022



In 2022, the mean energy efficiency rating of the Scottish housing stock under SAP 2012 (RdSAP v9.93) was 66.6 and the median was 69 points, indicating that half of the housing stock has an energy efficiency rating of 69 or better. The mean rating increased between 2019 and 2022, from 64.7 to 66.6.

Data Source: Table EE6 in ‘SHCS 2022- Chapter 02 Energy Efficiency- tables and figures’

Notes: [note 19]

Scottish housing is gradually moving up through the EPC bands.

Figure 2.8: Distribution of the Scottish Housing Stock by EPC Band, SAP 2012, 2018-2022

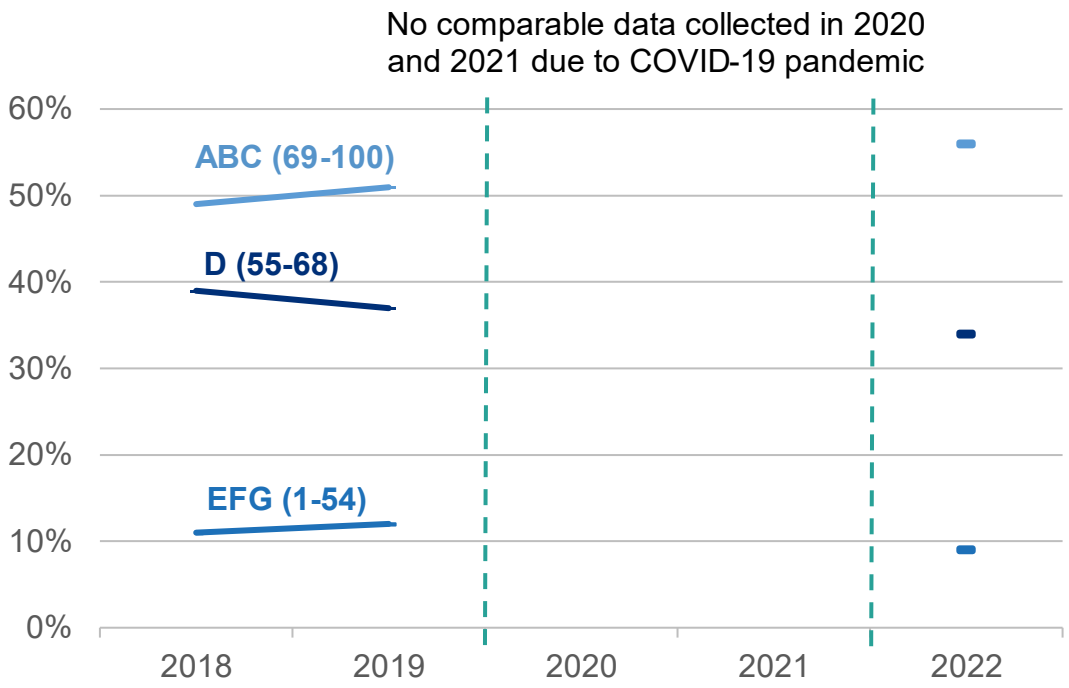


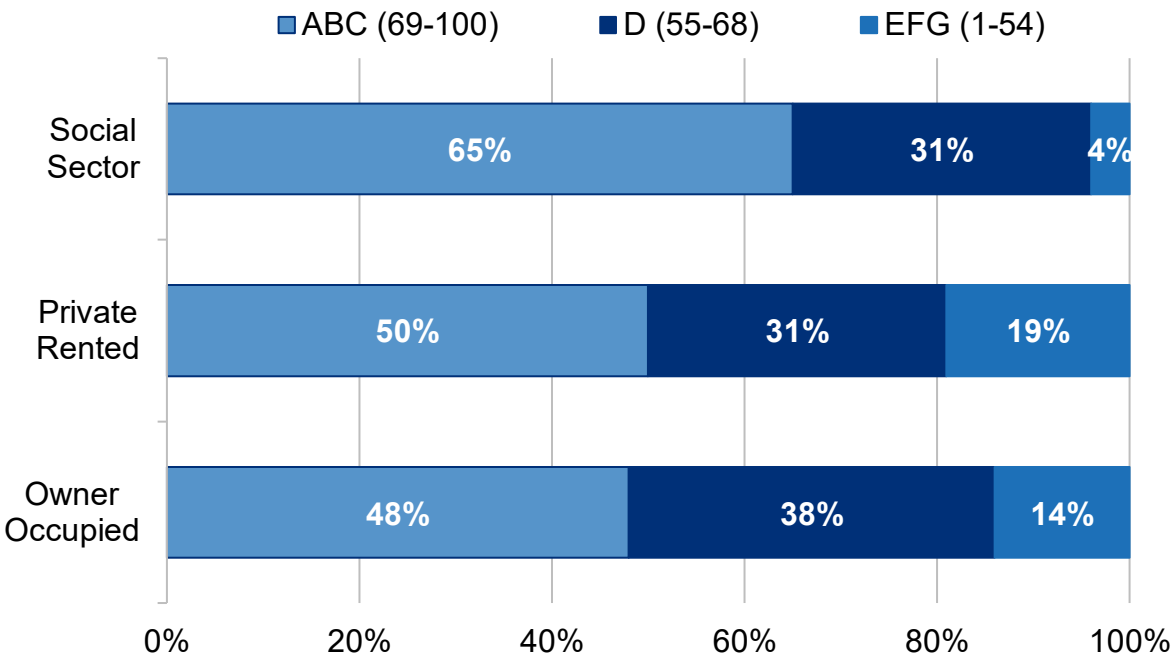
Figure 2.8 shows that 52% of all properties in 2022 were rated C or better under SAP 2012 (RdSAP v9.93), compared to 45% in 2019. 12% of properties in 2022 were in bands E, F or G, down from 15% in 2019.

Data Source: Table EE7a in 'SHCS 2022- Chapter 02 Energy Efficiency- tables and figures'

Notes: [note 5] [note 19]

Housing in the social sector tends to be more energy efficient than the owner occupied or private rented sector.

Figure 2.9: Percentage of dwellings by EPC band and tenure in 2022



As shown in Figure 2.9, 65% of social housing is in band C or better under SAP 2012 (RdSAP v9.93), compared to 50% in the private rented sector and to 48% in the owner-occupied sector. Around 4% of dwellings in the social sector are within EPC bands E, F or G, while 14% of owner occupied dwellings and 19% of the private rented sector are within these EPC bands. Housing in the social sector tends to be more energy efficient than the owner occupied or private rented sector. This could be driven by the Scottish Housing Quality Standard and the Energy Efficiency Standard for Social Housing which introduced minimum energy efficiency levels for that sector.

Data Source: Table EE8a in 'SHCS 2022- Chapter 02 Energy Efficiency- tables and figures'

Across Scotland, 4% of properties were in bands F or G in 2022.

Figure 2.10: Proportion of homes in EPC Band F or G by dwelling and household characteristics in 2022, SAP 2012

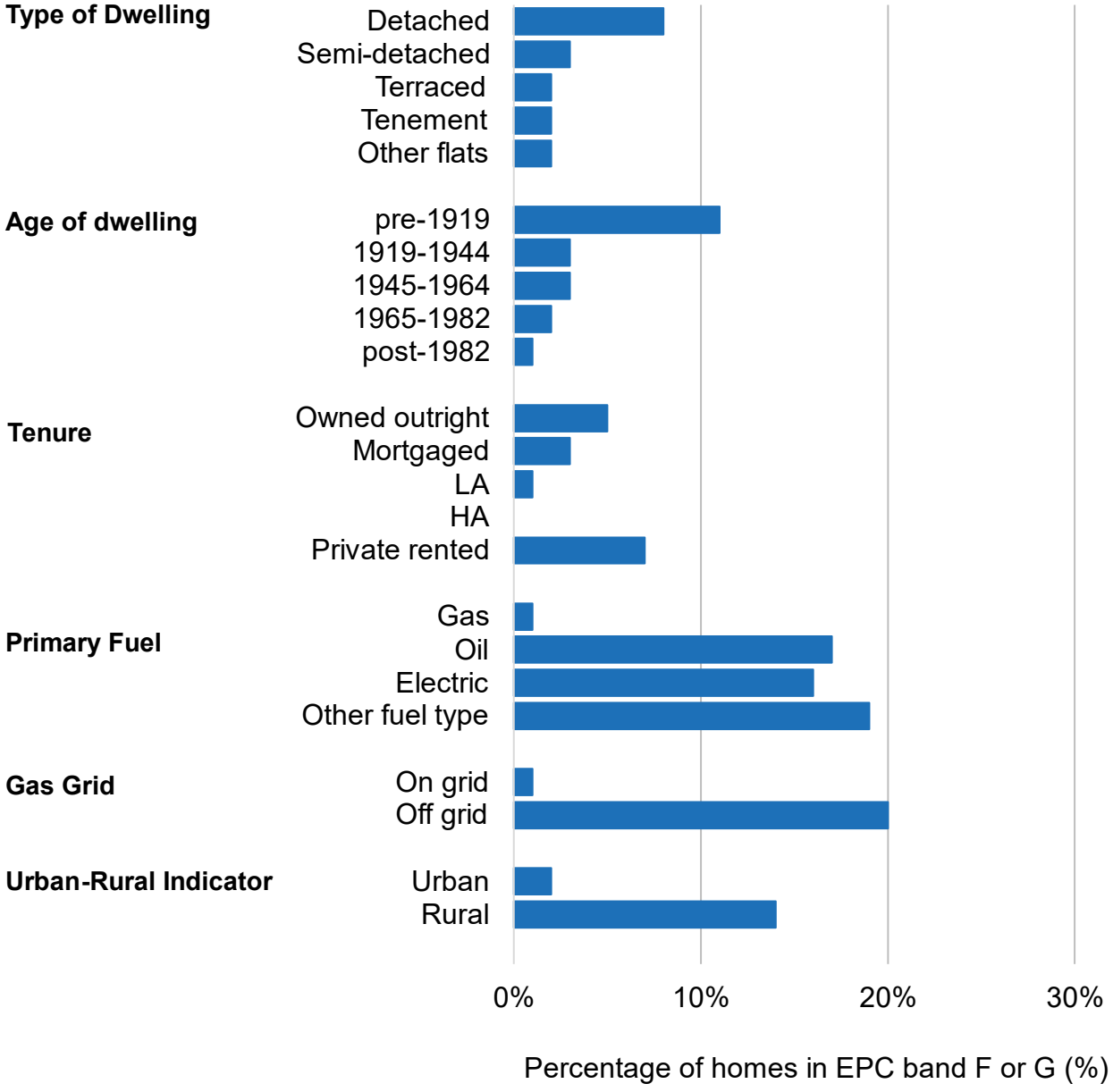


Figure 2.10 shows that dwellings in the lowest energy efficiency bands (F and G) are more likely to be pre-1919 dwellings (11%), non-gas heated properties (16% for electric, 17% for oil and 19% for other fuels), detached properties (8%), off gas grid properties (20%), and in rural areas (14%). Across Scotland as a whole, 4% of properties were in bands F or G in 2022.

Data Source: Table EE9 and EE10 in 'SHCS 2022- Chapter 02 Energy Efficiency- tables and figures'

Notes: [note 1] [note 2] [note 4]

There is a strong association between household characteristics and energy efficiency rating.

Table 2.2: Mean EER and percentage in EPC bands ABC, by household characteristics in 2022, SAP 2012

Household Characteristics	Category	SAP 2012 Ratings Mean	EPC Band ABC (%)
Tenure	Owned outright	64.3	43%
Tenure	Mortgaged	67.3	56%
Tenure	LA	68.8	58%
Tenure	HA	73.2	78%
Tenure	Private rented	64.5	49%
Tenure (grouped)	Private Sector	65.3	48%
Tenure (grouped)	Social Sector	70.5	66%
Household Composition	Older Households	64.6	45%
Household Composition	Families	68.4	60%
Household Composition	Other Households	67.5	55%
Annual Household Income	< £15,000	66.6	49%
Annual Household Income	£15,000 - £24,999	67.1	55%
Annual Household Income	£25,000 - £34,999	66.1	50%
Annual Household Income	£35,000 - £44,999	66.4	54%
Annual Household Income	£45,000+	66.4	53%
Council Tax Band	Band A	67.6	57%
Council Tax Band	Band B	66.5	54%
Council Tax Band	Band C	66.0	51%
Council Tax Band	Band D	66.0	51%
Council Tax Band	Band E	67.2	52%
Council Tax Band	Band F	66.3	49%
Council Tax Band	Band G & H	65.1	45%
All households	All households	66.6	52%

Mean SAP 2012 (RdSAP v9.93) ratings ranged from 64.3 in dwellings owned outright to 73.2 in housing association dwellings, a statistically significant difference. Social housing as a whole is more energy efficient than the private sector, with a mean EER of 70.5 compared to 65.3 for private dwellings.

Older households (64.6) have lower average EER ratings than families (68.4) and other (adults without children) households (67.5).

Mean EER ratings ranged from 66.1 to 67.1 across income bands. Average EER ratings ranged from 65.1 to 67.6 across council tax bands with dwellings in higher council tax bands being less energy efficient.

For more information and sample sizes, please see Table EE9 and EE10 in 'SHCS 2022- Chapter 02 Energy Efficiency- tables and figures'

Notes: [note 19]

There is a strong association between dwelling characteristics and energy efficiency rating.

Table 2.3: Mean EER and percentage in EPC bands ABC, by dwelling characteristics in 2022, SAP 2012

Dwelling Characteristics	Category	SAP 2012 Ratings Mean	EPC Band ABC (%)
Dwelling Type	Detached	63.2	44%
Dwelling Type	Semi-detached	64.2	40%
Dwelling Type	Terraced	66.5	48%
Dwelling Type	Tenement	70.3	68%
Dwelling Type	Other flats	69.5	67%
Dwelling Age	pre-1919	58.8	29%
Dwelling Age	1919-1944	64.4	42%
Dwelling Age	1945-1964	64.8	43%
Dwelling Age	1965-1982	66.2	48%
Dwelling Age	post-1982	74.2	83%
Primary Heating Fuel	Gas	69.1	58%
Primary Heating Fuel	Oil	51.7	9%
Primary Heating Fuel	Electric	56.1	29%
Primary Heating Fuel	Other fuel type	60.2	49%
Urban-Rural Indicator	Urban	68.2	56%
Urban-Rural Indicator	Rural	58.6	33%
Gas Grid	On grid	68.5	57%
Gas Grid	Off grid	52.1	17%
All dwellings	All dwellings	66.6	52%

Table 2.3 shows that across dwelling types, **detached properties** have the lowest energy efficiency ratings on average (mean EER 63.2) while flats have the highest ratings (70.3 for tenements and 69.5 for other flats).

The **oldest, pre-1919**, properties are the least energy efficient (mean EER of 58.8 and 29% rated C or better) while those built after 1982 have the highest energy efficiency ratings (mean EER of 74.2, with 83% in band C or better).

Primary heating fuel is a key determinant of the energy efficiency of the dwelling. Properties heated by mains gas have an average rating of 69.1 and 58% are in band C or better. Dwellings heated by other fuels (including electric and oil) have considerably lower ratings. The average energy efficiency rating for oil heated properties is 51.7 (corresponding to EPC band E) and only 9% are in band C or better. For electric heated dwellings the average energy efficiency rating was 56.1 and 29% are in band C or better.

Proximity to the **gas grid** has a similar effect on the energy efficiency rating (average SAP rating 68.5 for dwellings near the gas grid, higher than the 52.1 for off grid dwellings).

As dwelling characteristics associated with lower energy efficiency are disproportionately represented in **rural areas**, the average energy efficiency profile of rural properties is lower than that for **urban areas**. Table 2.3 shows that the mean SAP 2012 (RdSAP v9.93) rating is 68.2 for dwellings in urban areas with 56% in band C or above, higher than the 58.6 for dwellings in rural areas, where 33% of dwellings are in band C or better.

For more information and sample sizes, please see Table EE9 and EE10 in 'SHCS 2022- Chapter 02 Energy Efficiency- tables and figures'

Notes: [note 1] [note 2] [note 4] [note 19]

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. Further details can be found in the Methodology Notes to the 2013 SHCS report. However because of user interest (and because NHER scores were taken into account under the energy efficiency criterion of the SHQS) we provide an approximate NHER score by household and dwelling characteristics in Table EE11 and EE12 in 'SHCS 2022- Chapter 02 Energy Efficiency- tables and figures'.

2.4 Carbon Emissions

Key Points

- Based on modelled energy use required to meet the SAP standard heating regime[3], the average Scottish home was estimated to produce 6.5 tonnes of carbon dioxide (CO_2) per year in 2022, which is approximately double the average carbon emissions per household as reported by Department for Energy Security and Net Zero (3.3 tonnes per year) in 2020, based on actual energy use. This suggests that households are not heating their homes to the SAP standard heating regime.

- Average modelled carbon emissions for all properties was 69 kg per square meter of floor area in 2022.

Carbon Emissions are the amount of greenhouse gas emissions, expressed as their carbon dioxide gas equivalent, vented to the atmosphere. Estimates of emissions from the residential sector which take into account actual energy consumption by households are reported annually by Department for Energy Security and Net Zero in the Local and Regional Carbon Dioxide (CO_2) Emissions Estimates. 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.

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 cost, preferences or changes in weather conditions. As such, they are distinct from the carbon emissions figures published by Department for Energy Security and Net Zero and compiled in GHG inventories.

Estimates in the Climate Change Plan: Third Report on Proposals and Policies (RPP3) are also not comparable to SHCS estimates. RPP3 figures for the residential sector 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.

[3] The standard heating regime is: 21°C in the living room and 18°C in other rooms for 9 hours a day during the week and 16 hours a day during the weekend. See section 3.1 for a breakdown of the 4 heating regimes used in the SHCS.

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. Information on the energy modelling is available in section 1.3 of the Methodological and Technical notes.

To derive emissions estimates, modelled energy demand is combined with carbon intensity factors as adopted for the 2012 edition of the SAP (see section 1.3 of the Methodological and Technical notes). These are carbon dioxide (CO_2) equivalent figures which include the global warming impact of methane (CH_4) and nitrous oxide (N_2O) as well as carbon dioxide (CO_2).

2.4.1 Modelled Emissions by Dwelling Type and Age of Construction

The annual modelled emissions from a property reflect the energy use for the whole dwelling heated according to the SAP standard heating regime[4].

[4] The standard heating regime is: 21°C in the living room and 18°C in other rooms for 9 hours a day during the week and 16 hours a day during the weekend.

Newer dwellings have lower modelled emissions than older ones.

Table 2.4: Modelled annual carbon emissions by dwelling age and type, 2022

Dwelling Age	Dwelling Type	Carbon Emissions (tonnes/ year)
Pre-1919	Detached	15.6
Pre-1919	Semi-detached	12.0
Pre-1919	Terraced	10.6
Pre-1919	Tenement	5.0
Pre-1919	Other flats	7.3
Pre-1919	All dwellings	9.2
1919-1982	Detached	9.5
1919-1982	Semi-detached	7.0
1919-1982	Terraced	5.9
1919-1982	Tenement	4.3
1919-1982	Other flats	4.4
1919-1982	All dwellings	6.2
Post-1982	Detached	7.4
Post-1982	Semi-detached	4.7
Post-1982	Terraced	4.6
Post-1982	Tenement	3.1
Post-1982	Other flats	3.2
Post-1982	All dwellings	5.2

Table 2.4 shows that 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 2.3). Post-1982 tenement and other flats have the lowest modelled emissions on average (3.1 and 3.2 tonnes per year, respectively).

Across all age bands, detached houses have the highest modelled emissions due to a larger share of exposed surfaces (between 15.6 tonnes per year for pre-1919 dwellings to 7.4 tonnes per year for post-1982 dwellings). As shown in section 1.3 of this report, they are also the most likely to use high carbon-intensity fuels such as oil and coal in place of mains gas.

For more information, please see Table EE14 in 'SHCS 2022- Chapter 02 Energy Efficiency- tables and figures'

Dwellings with larger floor areas have higher modelled carbon emissions.

Table 2.5: Modelled annual carbon emissions (per square meter of floor area) by dwelling age and type, 2022

Dwelling Age	Dwelling Type	Carbon Emissions (kg/sqm)
Pre-1919	Detached	109
Pre-1919	Semi-detached	84
Pre-1919	Terraced	81
Pre-1919	Tenement	72
Pre-1919	Other flats	80
Pre-1919	All dwellings	84
1919-1982	Detached	77
1919-1982	Semi-detached	75
1919-1982	Terraced	72
1919-1982	Tenement	68
1919-1982	Other flats	63
1919-1982	All dwellings	71
Post-1982	Detached	55
Post-1982	Semi-detached	59
Post-1982	Terraced	52
Post-1982	Tenement	50
Post-1982	Other flats	54
Post-1982	All dwellings	54

By dividing modelled emissions by total internal floor area, we derive carbon dioxide (CO_2) emissions per square meter (kg/m^2). Controlling for floor area in this way (see Table 2.5) shows that pre-1919 detached (109 kg/m^2) houses have the highest modelled emissions per square meter. Post-1982 dwellings have the lowest emissions, particularly tenements dwellings (50 kg/m^2), terraced (52 kg/m^2) and other flats (54 kg/m^2).

For more information, please see Table EE14 in 'SHCS 2022- Chapter 02 Energy Efficiency- tables and figures'

2.4.2 Modelled Emissions by Tenure

Although data for 2014-2022 is not directly comparable to prior years due to changes in the carbon emissions methodology, the data suggests that there is a longer term trend of declining emissions. Average modelled carbon emissions reduced from 92 kg/m2 in 2010 to 80 kg/m2 in 2013. Based on the updated carbon emissions methodology, there was then a further decrease from 80 kg/m2 in 2014 to 74 kg/m2 in 2017 and then remaining stable at 73 kg/m2 in 2018 and 2019 and reducing to 69 kg/m2 in 2022.

Private sector have higher modelled carbon emissions than social sector.

Figure 2.11: Average modelled emissions by tenure, 2010 to 2022

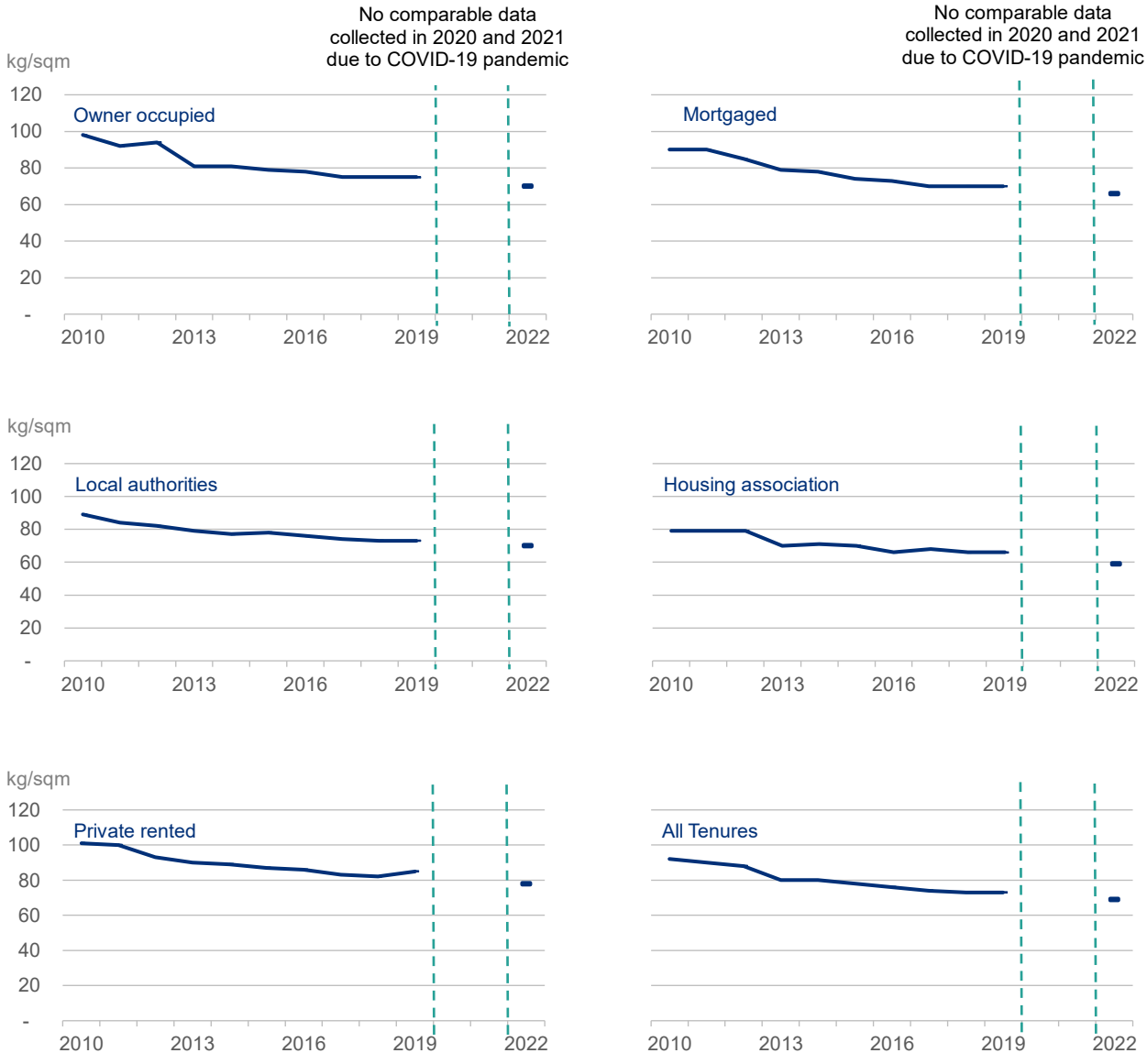


Figure 2.11 shows how emissions differ across tenure for the period 2010 to 2022. In 2022, the highest emissions were observed for private rented dwellings (78 kg/m^2) and lowest for housing association dwellings (59 kg/m^2). The values were similar to the previous year across all tenures; however, the longer time series shows a decreasing trend over the 2010-2022 period for all tenures.

Changes to the tenure definitions and the revised carbon emissions methodology mean that figures for 2014 to 2022 by tenure are not fully comparable to earlier years. Differences that were statistically significant were seen in the mortgaged sector (reducing from 78 kg/m2 in 2014 to 66 kg/m2 in 2022) and households that are owned outright (reducing from 81 kg/m2 to 70 kg/m2 between 2014 and 2022).

Data Source: Table EE15 in 'SHCS 2022- Chapter 02 Energy Efficiency- tables and figures'

Notes: [note 6]

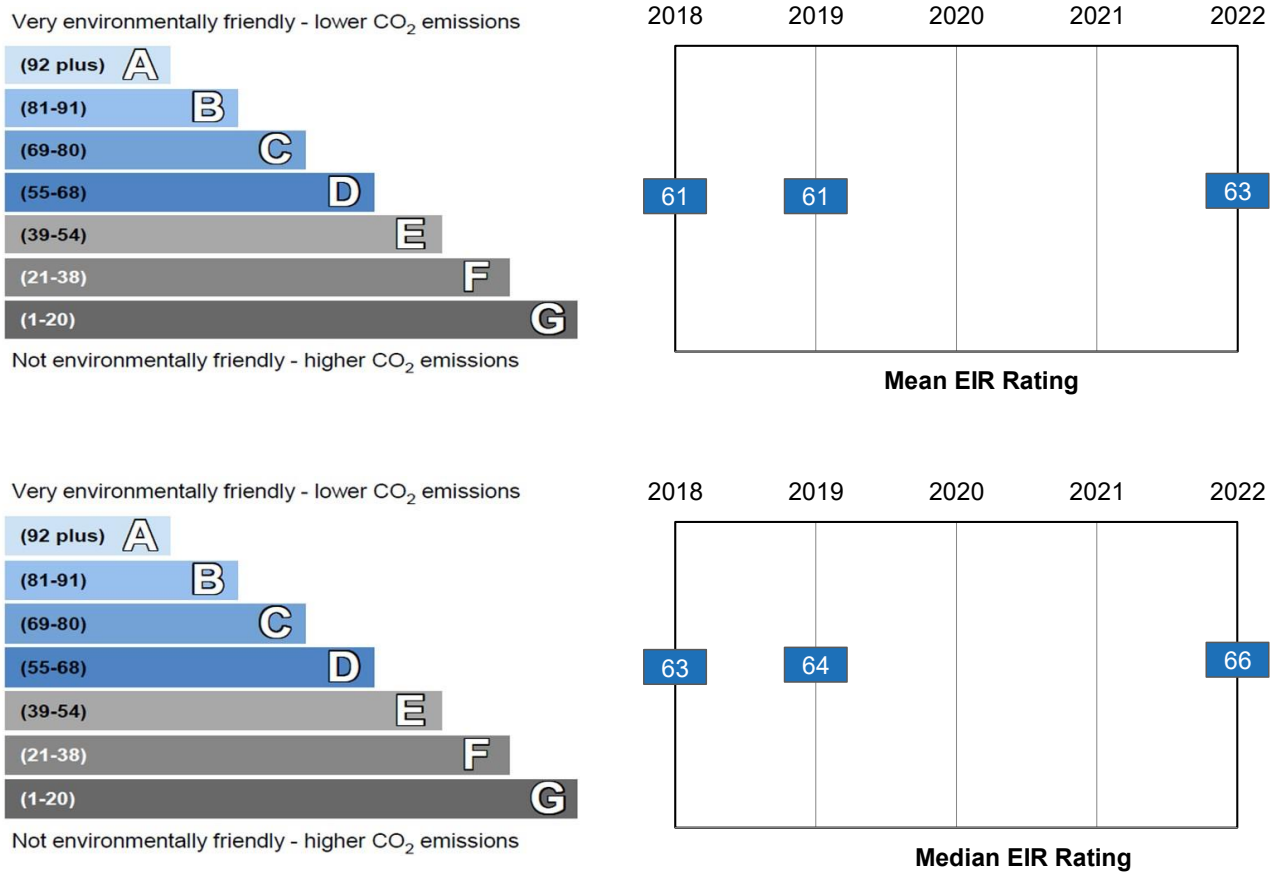
2.5 Environmental Impact Rating

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 the SAP methodology.

EIRs for 2022 have been described in this report based on SAP 2012 under RdSAP v9.93.

The Environmental Impact Rating (EIR) of Scottish dwellings has gradually increased over time.

Infographic 2.3: Median EIR relative to Band, 2018 to 2022.



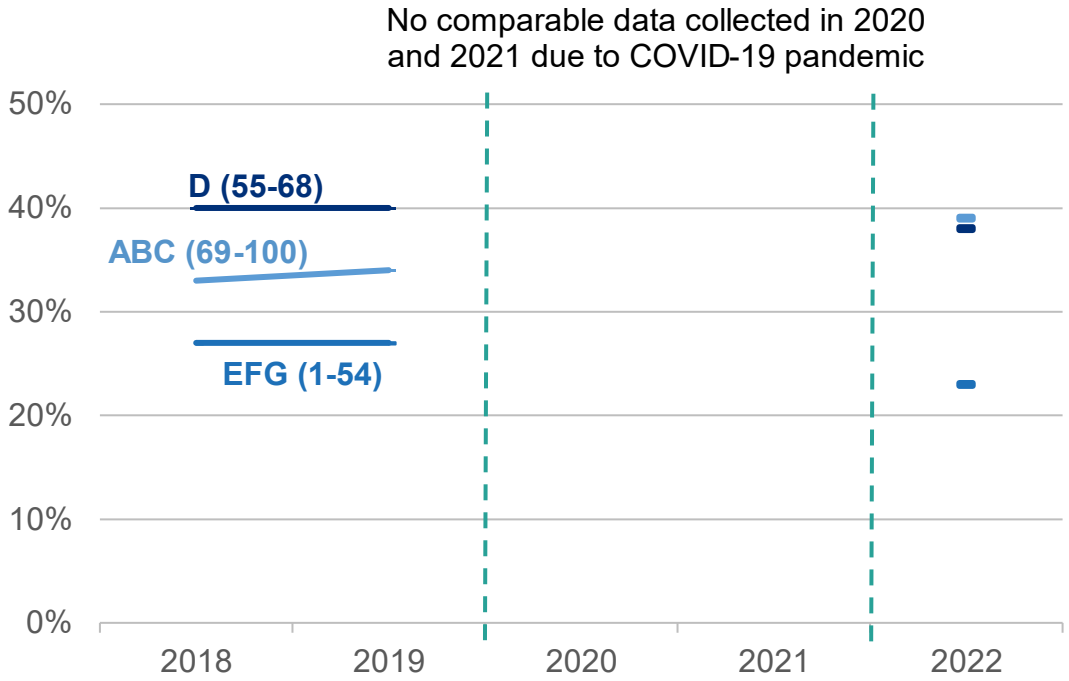
In 2022, the mean EIR rating was 63 and the median was 66, both of which fall in band D. Infographic 2.3 illustrates the increasing trend in the mean and median EIR between 2018 and 2022. This indicates that the environmental impact of Scottish housing is gradually falling over time but has remained within band D.

Data Source: Table EE16 in 'SHCS 2022- Chapter 02 Energy Efficiency- tables and figures'

Notes: [note 19]

In 2022, 39% of dwellings had an EIR of band C or above

Table 2.12: EIR Bands in the Scottish Housing Stock, 2018 - 2022 SAP 2012



As shown in Table 2.12, 39% of dwellings had EI ratings in band C or better under SAP 2012 (RdSAP v9.93) in 2022, an improvement on the 2019 figure of 34%. 23% of dwellings were rated E, F or G in terms of their environmental impact in 2022, lower than 2019 rate.

Data Source: Table EE16 in 'SHCS 2022- Chapter 02 Energy Efficiency- tables and figures'

Notes: [note 19]

Environmental Impact Ratings (EIRs) vary across different type of dwellings.

Table 2.6: Mean EIR and percentage in EIR Bands ABC, by dwelling characteristics, 2022

Dwelling Characteristics	Category	EIR (Mean)	EIR Band ABC (%)
Dwelling Type	House	59.9	28%
Dwelling Type	Flat	68.6	59%
Dwelling Age	pre-1919	53.7	22%
Dwelling Age	1919-1944	59.6	28%
Dwelling Age	1945-1964	61.0	29%
Dwelling Age	1965-1982	62.5	31%
Dwelling Age	post-1982	72.6	71%
Primary Heating Fuel	Gas	66.3	44%
Primary Heating Fuel	Oil	43.2	2%
Primary Heating Fuel	Electric	48.4	16%
Primary Heating Fuel	Other fuel type	62.8	63%
Urban-Rural Indicator	Urban	65.0	42%
Urban-Rural Indicator	Rural	53.7	26%
Gas Grid	On grid	65.4	43%
Gas Grid	Off grid	45.8	14%
All dwellings	All dwellings	63.1	40%

Dwellings built post-1982 have (higher) better EIRs than other dwellings, with 71% rated band C or better. Flats have a lower environmental impact (higher EIR) than houses, as do gas heated properties compared to those heating using oil or electricity.

Oil heating systems and houses are more common in rural areas, leading to higher environmental impacts (lower EIRs) for rural dwellings. Dwellings near the gas grid have better EIRs than dwellings off the gas grid, with 43% rated band C or better.

For more information and sample sizes, please see Table EE17 in ‘SHCS 2022-Chapter 02 Energy Efficiency- tables and figures’

Notes: [note 1] [note 2] [note 19]

3 Fuel Poverty

Key Points

- Scottish House Condition Survey results for 2022 have been assessed to be comparable in the most part to 2019 and earlier years. Therefore the figures presented in this report represent the first set of accredited official statistics which meet the full definition of fuel poverty as set out in the Fuel Poverty (Targets, Definition and Strategy)(Scotland) Act 2019 and The Fuel Poverty (Enhanced Heating) (Scotland) Regulations 2020.

- Scottish House Condition Survey results for 2022 have been assessed to be comparable in the most part to 2019 and earlier years. However, as noted in section 1.1.5 of the Methodological and Technical notes there is evidence to suggest that social and private rented households, who have higher rates of fuel poverty, may be under-represented in the 2022 achieved sample and owner-occupied households, who have lower rates of fuel poverty, may be over-represented. Due to this, national level estimates of fuel poverty may be slightly under-estimated, however we expect any effects to be minor, especially in the context of other key drivers of fuel poverty such as fuel prices.
- In 2022, 791,000 households (31% of all households) were estimated to be in fuel poverty, of which 472,000 (18.5% of all households) were in extreme fuel poverty. This is higher than the 2019 estimates of 24.6% (613,000 households) and 12.4% (311,000 households) respectively.
- The actual median fuel poverty gap for fuel poor households in 2022 was £1,240. This is 65% higher than the median fuel poverty gap from 2019 of £750.
- The median fuel poverty gap (adjusted for 2015 prices) for fuel poor households was £1,020. This 46% is higher than the adjusted gap in 2019 of £700.
- Overall rates of fuel poverty differed between the social (48%) and private sector (26%). Similarly households in the social sector were more likely to be in extreme fuel poverty (26%) compared to households in the private sector (16%).
- However, looking at tenure in a more disaggregated way shows that rates of fuel poverty in the housing association (47%), local authority (48%) and private rented sectors (44%) are similar. In comparison owner occupiers have lower rates with 14% of those with a mortgage and 28% of those who own outright assessed to be fuel poor. This is a similar trend to 2019.

- 46% of households using electricity as their primary heating fuel were fuel poor, higher than for households using gas (29%), and oil (28%). But similar to households using other fuel types (41%) as their primary heating fuel.
- A higher proportion of households with a pre-payment meter (PPM; electricity, gas or both) were in fuel poverty compared to those without a PPM; 47% compared to 28% respectively.
- Fuel poverty and extreme fuel poverty have a strong association with income, with rates increasing as annual household income decreases. For example 89% of households with an annual income less than £15,000 were in fuel poverty compared to 43% of households earning between £15,000 and £24,999 annually.
- For both fuel poor and extreme fuel poor households, the lowest rates of fuel poverty are associated with higher energy efficiency standards. 27% of households living in dwellings rated EPC band C or better were fuel poor, compared to 41% living in dwellings in bands F or G.
- Although low income is associated with fuel poverty, it is not equivalent. 67% of fuel poor households were also income poor in 2022 whilst the other 33% would not be considered income poor.

3.1 Definition and Measurement of Fuel Poverty

Under the Housing (Scotland) Act 2001 (section 88), the Scottish Government was committed to eradicating fuel poverty as far as practicably possible by November 2016. In June 2016, the Minister for Local Government and Housing informed Parliament that, based on the advice received from experts, it was unlikely that the statutory fuel poverty target would be met. This was confirmed by 2016 and 2017 fuel poverty rates, under the old definition of fuel poverty, of 26.5% and 24.9% respectively.

The Fuel Poverty (Targets, Definition and Strategy)(Scotland) Bill was introduced to the Scottish Parliament on 26 June 2018 and the Fuel Poverty (Targets, Definition and Strategy)(Scotland) Act 2019 received Royal Assent on 18th July 2019. This includes a new definition of fuel poverty based on advice from an independent panel of experts and further scrutiny and amendment by the Scottish Parliament.

This was followed by The Fuel Poverty (Enhanced Heating) (Scotland) Regulations 2020 which received royal assent in February 2020 and defined the heating regimes to be used in the measurement of fuel poverty.

As set out in section 3 of the Fuel Poverty (Targets, Definition and Strategy) (Scotland) Act, a household is in **fuel poverty** if, in order to maintain a satisfactory heating regime, total fuel costs necessary for the home are more than 10% of the household's adjusted net income (after housing costs), **and** if after deducting fuel costs, benefits received for a care need or disability and childcare costs, the household's remaining adjusted net income is insufficient to maintain an acceptable standard of living. The remaining adjusted net income must be at least 90% of the UK Minimum Income Standard (MIS) to be considered an acceptable standard of living, with an additional amount added for households in remote rural, remote small town and island (RRRSTI) areas.

Extreme fuel poverty follows the same definition except that a household would have to spend more than 20% of its adjusted net income (after housing costs) on total fuel costs to maintain a satisfactory heating regime.

It is important to note that households in extreme fuel poverty are also considered to be in fuel poverty and consequently represent a subset of the total number of fuel poor households.

Where a household is in fuel poverty, the **fuel poverty gap** is the annual amount that would be required to move the household out of fuel poverty. This is either:

- the amount required so that the fuel costs necessary for the home are no longer more than 10% of the household's adjusted net income (after housing costs), or
- the amount required which, after deducting fuel costs, benefits received for a care need or disability[5] and childcare costs, means the household's remaining adjusted net income is sufficient to maintain an acceptable standard of living.

The figure taken to determine the gap for each household is the lower of the two options.

The Fuel Poverty (Targets, Definition and Strategy) (Scotland) Act 2019 also set targets to eradicate fuel poverty. The 2040 targets are that:

- no more than 5% of households in Scotland would be in fuel poverty
- no more than 1% of households in Scotland would be in extreme fuel poverty

[5] This includes amounts received for: Disability Living Allowance (DLA), Personal Independence Payments (PIP), Attendance Allowance (AA) and Severe Disablement Allowance (SDA)

- the median fuel poverty gap of households in Scotland in fuel poverty would be no more than £250 at 2015 prices (adjusted to take account of changes in the value of money).

The Fuel Poverty (Enhanced Heating) (Scotland) Regulations 2020 and Fuel Poverty (Additional Amount in respect of Remote Rural Area, Remote Small Town and Island Area) (Scotland) Regulations 2020 came into force on the 26th February 2020. These regulations set out the types of households to which the enhanced heating regimes are appropriate and specify a person who is to determine the uplifts to the UK MIS for households living in Remote Rural Area, Remote Small Town and Island (RRRSTI) areas. The estimates in this report are the first set of official statistics[6] for fuel poverty estimates fully compatible with all of the elements of the new definition in the Fuel Poverty (Targets, Definition and Strategy) (Scotland) Act 2019 including the regulations above.

The estimates in this report include an uplift to the UK MIS for households living in RRRSTI areas, as determined by the Centre for Research in Social Policy, Loughborough University. The uplifts range from 14% to 33% depending on household type and location. A full breakdown of the uplifts is shown in Table 3.1.

Table 3.1 Uplifts to MIS value for RRRSTI areas by household type

Household Type	Uplift if on mainland (%)	Uplift if on Island (%)	Base MIS value applied (£)
Couple with children	15%	14%	£21,380 - £44,000
Single working age	27%	31%	£11,950
Couple working age	28%	33%	£20,100
Single pensioner	26%	26%	£10,240
Couple Pensioner	19%	24%	£16,150

The UK MIS values used in this report are based on the full 107 MIS household budgets for detailed family types provided by Loughborough University[7] [8]. Under this approach each household receives a MIS value based on the characteristics of the household including the age of the adults and children, and if adults in the household are in a relationship.

[6] While the 2021 SHCS also produced estimates under this definition they were published as experimental statistics.

[7] A Minimum Income Standard for the UK in 2022.

[8] MIS budgets are updated annually based on a public consultation where groups are asked to identify goods and services that people need inside and outside the home to meet an acceptable

For statistics in this publication heating regimes are set based on the Fuel Poverty (Enhanced Heating) (Scotland) Regulations 2020, which specifies the households for which enhanced heating temperatures and/or hours are appropriate.

Enhanced heating temperatures are 23°C in the living room and 20°C in other rooms.

Standard heating temperatures are 21°C in the living room and 18°C in other rooms.

Enhanced heating hours are 16 hours a day during the week and at the weekend.

Standard heating hours are 9 hours a day during the week and 16 hours a day during the weekend.

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

Enhanced heating temperatures and enhanced heating hours (enhanced heating regime 1) are appropriate for households where the dwelling is frequently occupied during the morning or afternoon or both on weekdays by any member of the household when it is cold and any member of the household meets one or more of the following criteria: is aged 75 or over; has a long-term sickness or disability; or is in receipt of benefits received for a care need or disability.

Enhanced heating temperatures and standard heating hours (enhanced heating regime 2) are appropriate for households where the dwelling is not frequently occupied during the morning or afternoon or both on weekdays by any member of the household when it is cold and any member of the household meets one or more of the following criteria: is aged 75 or over; has a long-term sickness or disability; or is in receipt of benefits received for a care need or disability.

Standard heating temperatures and enhanced heating hours (enhanced heating regime 3) are appropriate for households where the dwelling is frequently occupied during the morning or afternoon or both on weekdays by any member of the household when it is cold and any member of a household has a child aged 5 years old or under and the household is not a household for which enhanced heating regimes 1 or 2 are appropriate.

living standard. New research is conducted yearly alternating between households without children and households with children. For a complete description of the MIS methodology see section 1 and 2 of the full report A Minimum Income Standard for the UK in 2022.

For all other households, standard heating temperatures and standard heating hours (the standard heating regime) apply.

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. All types of energy expenditure are estimated on the basis of a standard set of behavioural 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.

The majority of modelled energy use if for space heating.

Figure 3.1: Mean Modelled Household Energy Consumption by End Use

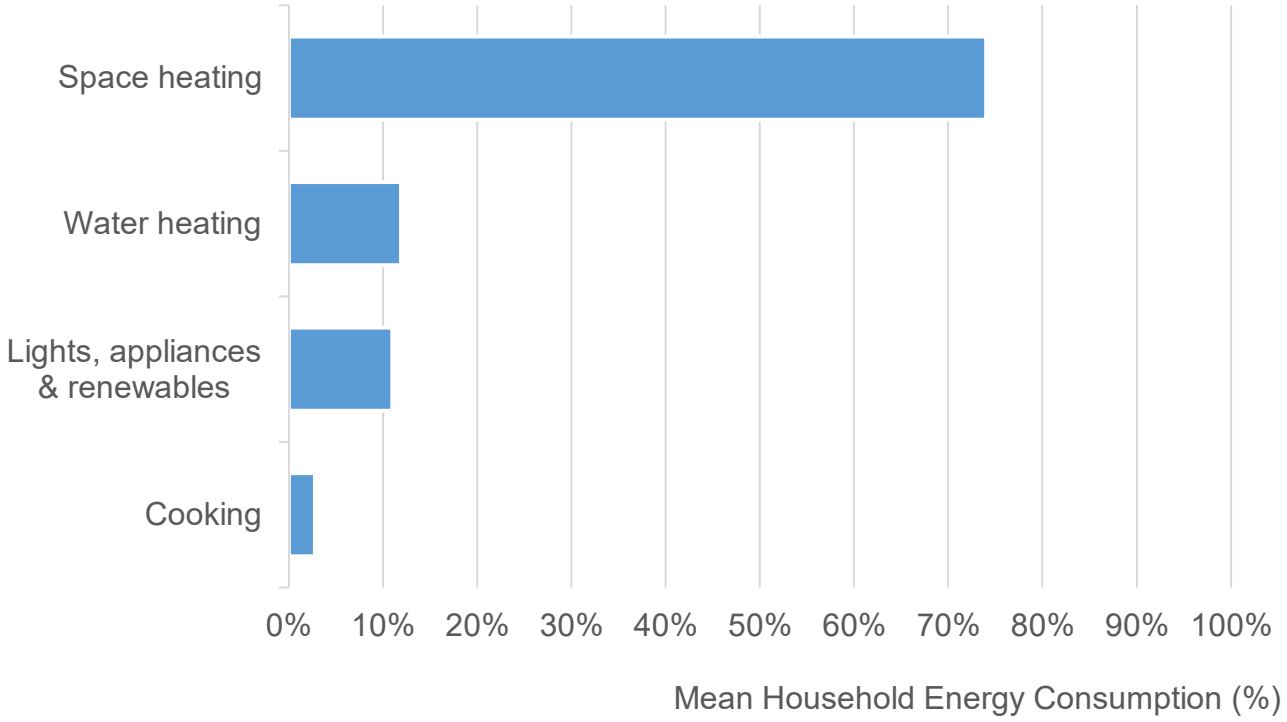


Figure 3.1 shows that, on average, around 74% of the modelled household energy demand was from space heating, 12% from water heating, 11% from lighting and appliance usage, and 3% was accounted for by cooking.

Data Source: Table FP1 in 'SHCS 2022- Chapter 03 Fuel Poverty- tables and figures'

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 2014 Methodology Notes.

The current report continues to use this improved method for setting the cost of the domestic energy requirement. A further small improvement introduced in the 2016 survey about **pre-payment meters** for energy supply is also continued, which has allowed us to improve the accuracy of fuel price information for pre-payment meter users, who are more common among lower income groups which are at higher risk of fuel poverty. In the 2022 SHCS, 14% of households had a pre-payment meter (mains gas, electricity, or both).

In 2019, two further small improvements were introduced. Firstly, more detailed information on combi boilers have been included to improve the accuracy of calculations surrounding hot water losses.

Secondly, a household's lights and appliances are now assigned as using an off-peak tariff if an off-peak meter is present, even if there is no form of electric heating in the dwelling. Previously, where a household did not have a form of electric heating, the lights and appliances were assumed to use standard electricity. This change does not affect the energy consumption of a dwelling, only the fuel prices applied to the energy associated with lighting and appliance use. Figure 3.1 shows that, on average, around 11% of the modelled household energy demand was from lighting and appliance usage.

The cost of the energy requirement includes an allowance for the bill rebate provided under the Warm Home Discount (WHD) scheme[9]. It no longer includes the £12 contribution of the Government Electricity Rebate (GER) as the scheme only ran for two years (2014 and 2015).

[9] Eligible households receive a £150 discount on their electricity bills. Households qualify if they receive the guarantee credit element of pension credit (core group) or they are on a low income and meet their energy supplier's criteria (broader group).

From 2021 onwards, the BRE Domestic Energy Model (BREDEM) used to model fuel poverty energy consumption and annual running costs used postcode district-level external weather data, whereas previously this was based on regional data. This means that colder more exposed households may require more energy to keep their homes warm, while households in more sheltered or warmer locations may need less. For further details see the Methodological and Technical Notes.

Additionally, from 2021 methodological changes were implemented to allow fuel poverty estimates to fully met the definition of fuel poverty as laid out in the Fuel Poverty (Targets, Definition and Strategy) (Scotland) Act 2019, The Fuel Poverty (Enhanced Heating) (Scotland) Regulations 2020, and The Fuel Poverty (Additional Amount in respect of Remote Rural Area, Remote Small Town and Island Area) (Scotland) Regulations 2020. This included: Placing households on one of 4 heating regimes as laid out in The Fuel Poverty (Enhanced Heating) (Scotland) Regulations 2020, using the full 107 Minimum Income Standard (MIS) Household budgets produced by Loughborough University, including childcare costs, using the income of all household members, and including imputed housing costs[10].

For 2022, the calculation of fuel poverty also includes an adjustment to household income and energy bills to account for the cost of living payments in 2022. This includes the £650 Cost of Living Payment for households on means tested benefits, the £150 Disability Cost of Living Payment for households in receipt of select disability benefits, the £300 Pensioner Cost of Living Payment for households in receipt of Winter Fuel Payment, and the £199 paid to households as part of the Energy Bill Support Scheme[11] (EBSS). (See Section 1.5.2, 1.5.3, and 1.6 of the Technical and Methodological notes for full details)

3.2 Comparison to 2019 fuel poverty levels.

Due to issues with the representativeness of the achieved sample and mode effects, results for the 2021 SHCS are not comparable to previous or current waves of the survey[12]. Therefore in order to draw comparisons to previous years this analysis makes comparisons with 2019 fuel poverty estimates in the 2019 key

[10] For a full description of methodological improvements for fuel poverty see Section 1.5.1 of the Technical and Methodology notes.

[11] Eligibility criteria for the £650 COL payment, £150 Disability COL payment and £300, pensioner COL payment is available at Cost of Living Payment 2022 while details of the EBSS are available at Help with your energy bills.

[12] See Section 6 of the 2021 Key Findings report for full details.

findings report[13]. (See section 1.51 of the methodological and technical note for full details of the changes in fuel poverty methodology from 2021)

3.3 Fuel Poverty and Extreme Fuel Poverty

An estimated 31.0% of all households were in fuel poverty, around 791,000 households (see Table 3.2). Higher than the 24.6% seen in 2019.

Around 472,000 of these households (18.5% of all households) were living in extreme fuel poverty (see Table 3.2). Higher than 311,000 in 2019.

31% of households were in fuel poverty in 2022

Table 3.2: Fuel Poverty and Extreme Fuel Poverty since levels and rates

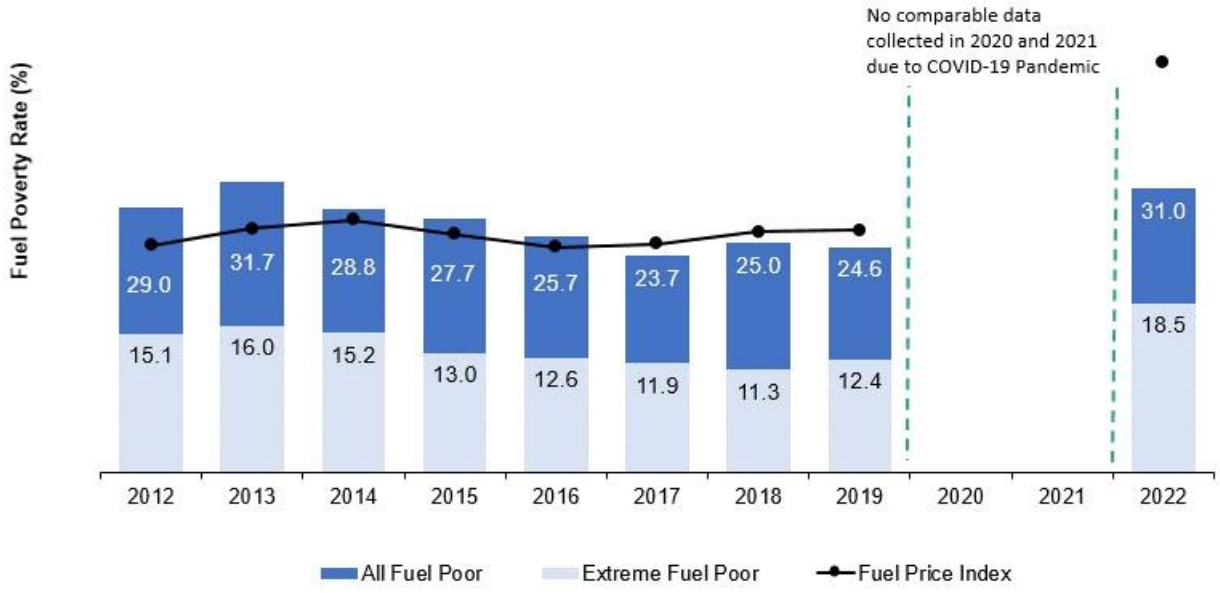
Fuel Poverty and Extreme Fuel Poverty	2019	2022
Fuel Poverty (%)	24.6%	31.0%
Fuel Poverty (thousands)	613	791
Extreme Fuel Poverty (%)	12.4%	18.5%
Extreme Fuel Poverty (thousands)	311	472
Sample size (number)	2,950	2,931

Notes: [note 7]

[13] From 2021 methodological improvements were introduced to the measurement of fuel poverty in the SHCS. Analysis had shown that some methodological improvements such as adding imputed housing costs have worked to increase the fuel poverty rate, while others such as including the incomes of all members in the household have worked to decrease the fuel poverty rate. This has had a broadly neutral effect on the overall national fuel poverty rate. As such while the 2022 rate was calculated using an updated methodology comparisons can be drawn with previous rates, although caution is urged when drawing any conclusions in relation to the overall national fuel poverty rate, due to slight tenure bias in the achieved 2022 sample.

Fuel poverty has risen since 2019

Figure 3.2: Estimates of Fuel Poverty and Extreme Fuel poverty since 2012



Data Source: Table FP4 in 'SHCS 2022- Chapter 03 Fuel Poverty- tables and figures'

Notes: [note 7] [note 8]

3.4 Fuel Poverty Gap

Where a household is in fuel poverty, the fuel poverty gap is the annual amount that would be required to move the household out of fuel poverty. The fuel poverty gap is presented as the median gap before adjustment and the median gap adjusted to 2015 prices. The median gap before adjustment presents the actual amount that fuel poor households require to move out of fuel poverty. The adjusted median gap figures have been presented in order to assess progress against the 2040 fuel poverty gap target. The adjustment has been made in alignment with the increases or decreases in the annual average consumer prices index (CPI) over the period from 2015 to the year which the figure relates to.

In 2022 the median fuel poverty gap for fuel poor households was £1,240 (Table 3.3). This is 65% higher than the median fuel poverty gap from 2019 of £750

The median fuel poverty gap (adjusted for 2015 prices) for fuel poor households was £1,020. This is 46% higher than the adjusted median fuel poverty gap from 2019 of £700

The median fuel poverty gap in 2022 was £1,240

Table 3.3: Median Fuel Poverty Gap of Fuel Poor Households, 2022

Fuel Poverty Gap Measurement	2019	2022
Actual Median Fuel Poverty Gap (£)	£750	£1,240
Median Fuel Poverty Gap (adjusted for 2015 prices) (£)	£700	£1,020
Sample size (number)	742	918

3.5 Drivers and Trends

Fuel poverty is affected by levels of household income, the price of fuel required for space and water heating, the energy efficiency of the dwelling, and the required use of fuel by households to maintain satisfactory heating regimes. Fuel poverty is distinct from poverty in that, while low income is an important driver, it is not a prerequisite. As shown in Figure 3.5, fuel poor households are found in all income bands. In 2022 around 14% of all fuel poor households had an after housing costs income above £25,000 annually, which places nearly all of these households in the top half of the income distribution.

Table FP4 in the SHCS 2022- Chapter 03 Fuel Poverty- tables and figures shows indexes constructed to compare trends in three key drivers of fuel poverty since 2012.

In the below sections we describe the changes observed in household income, fuel prices and energy efficiency (through energy consumption). As well as break down the impact that changes in each of these drives has had on the overall fuel poverty rate between 2019 and 2022.

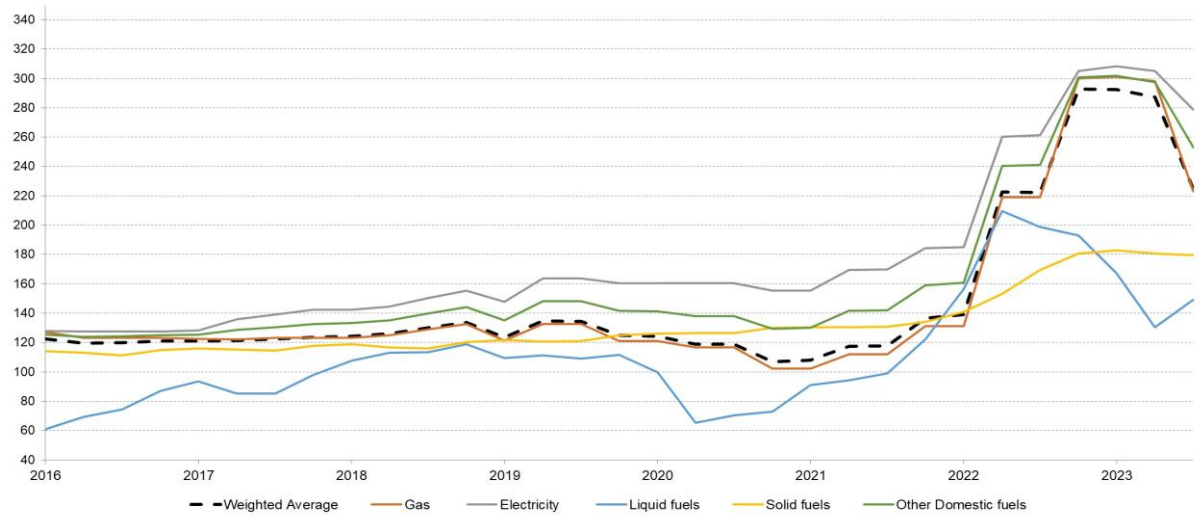
3.5.1 Fuel Costs

DESNZ publish quarterly energy prices data on the price of key fuels which enables us to construct a time series of the price of fuels for the average Scottish household over the longer term. For further information on the data sources which feed into these National Statistics and the quality assurance processes undertaken see the DESNZ domestic energy prices guidance document.

Using information from the SHCS about the fuels used for space and water heating we can weight the published national quarterly fuel price indices, DESNZ QEP 2.13 and produce an average index value for the price of the heating fuel requirement for Scotland. Since the majority of Scottish households heat their properties with gas (81%), the national average index follows the gas index closely.

The weighted index price of fuel grew by 82.7% in 2022

Figure 3.3: Index prices of fuels 2016 to September 2023



Data Source: DESNZ Domestic energy price indices

As shown in Figure 3.3 in 2017 and 2018 the average index grew by 1.2% and 5.4%, respectively, mostly driven by electricity (up 8.7% in 2018) and liquid fuels (up 25.3% in 2018). In 2019, the fuel price index grew again by 0.7%. The largest increases were in electricity (up 7.3%), solid fuels (3.6%) and other domestic fuels (3.8%). The average index for liquid fuels fell by 2.6% compared to 2018. In 2020 the average index fell by 9.4% driven by falling gas prices (-10%) and liquid fuels (-30.1%) due to the Covid-19 pandemic. In 2021 the fuel pirce index grew by 2.4% due mainly to increases in liquid fuel prices (31.8%) however it remained 7% lower than 2019 levels.

In 2022 the average index grew by 82.7% driven by an increase in all fuel types with gas 90%, and liquid fuels 86.5% showing the largest increases compared to 2021.

DESNZ has published fuel price data up to September 2023. As fuel use changes slowly, we assume that the fuel mix in Scotland in 2023 was the same as captured by the 2022 SHCS in order to extend the weighted average for Scotland into 2023. Into the third quarter of 2023 the weighted average of heating fuels remaines higher than 2022, driven primarily due to the rising price of electricity (up 17.6%) and gas (up 26.1%). This amounts to an approximate 22.3% increase in the composite price

on average 2022 levels to September 2023[14]. However, as seen in Figure 3.3 energy prices peaked between Quarter 4 of 2022 and Quarter 2 of 2023 before falling in Quarter 3 of 2023.

3.5.2 Household Income

The SHCS is not designed to capture income as comprehensively as other formal surveys of income and is collected on a self-reported basis. Income was previously collected on the highest income householder and their spouse. However, from 2018 a methodological improvement was implemented to collect total household income, including the income of other adults. Therefore while we are able to provide a time series from 2012 for income, all data prior to 2018 represents the income of the highest income householder and their spouse only. See table FP 4 in SHCS 2022-Chapter 03 Fuel Poverty- tables and figures for a full time series of median household incomes from 2012.

Income is reported in nominal terms and is not equivalised to take into account that households of different size and composition need different levels of income to sustain the same living standard. Figures in this section therefore may not align with official statistics on household income and inequality.

As discussed in section 1.1 household income figures for 2022 also include the Cost of Living Payments received by eligible households[15] during the cost of living crisis.

In 2022, 50% of households earned £28,300 or more after tax, higher than the £26,200 in 2019 (Table 3.4). This equates to an increase in median income of 8% compared to 2019.

The mean income of surveyed households was higher in 2022 (around £34,500) than 2019 (£31,800). This equates to an increase in mean income of 8%. Percentage change in income between years varied across income deciles.

[14] Scottish Government has produced scenario modelling to estimate the rates of fuel poverty under the Ofgem price cap. Our most recent estimates are for January 2024 to March 2024 under the price cap of £1,928 for the typical dual fuel household are available in the updated economic context section of The Cost of Living (Tenant Protection) (Scotland) Act 2022: report -1 October to 31 December 2023:

[15] In 2022 household income includes the cost of living payments paid to eligible households including: the £650 COL payment for households on means tested benefits, the £300 Pensioner COL payment paid to eligible pensioner households, and the £150 Disability COL paid to households with a member in receipt of disability benefits. For a full list of eligibility criteria see Cost of Living Payment 2022 - GOV.UK

Increases in income ranged between 1% in decile 1 to 10% in decile 8. There were no decreases in income for any decile group.

Median household income was £28,300 in 2022

Table 3.4 Annual total household income by decile 2019 and 2022

Income Decile Group	2019	2022	Percentage Change
1	£7,500	£7,600	1%
2	£13,000	£14,000	7%
3	£16,500	£17,500	6%
4	£19,800	£21,100	7%
5	£24,000	£25,500	6%
6	£28,700	£30,900	8%
7	£34,400	£37,500	9%
8	£41,700	£45,900	10%
9	£52,400	£57,300	9%
10	£80,300	£87,600	9%
All	£31,800	£34,500	8%
Median	£26,200	£28,300	8%
Mean	£31,800	£34,500	8%
Sample Size	2960	2932	

3.5.3 Housing Stock

As shown in Table 3.5a and Table 3.5b the mean modelled energy consumption in 2022 was 25,350 Kwh, 11% lower than the modelled consumption of 28,430 Kwh in 2019[16]. This is likley due to improvements in the energy efficiency of the Scottish housing stock. As shown in Figure 2.8 52% of Scottish homes had an EPC rating of C or better in 2022. This is an increase of around 8 percentage points since 2019.

Over the same time period, mean running costs have significantly increased by 53.9% from £1,820 in 2019 to £2,810 in 2022. This reflects the overall increase in domestic fuel prices observed between 2019 and 2022, and demonstrates the importance of fuel prices as a driver of fuel poverty rates.

[16] 2019 figures are based on the previous methodology which used two heating regimes as defined in Fuel Poverty (Targets, Definition and Strategy)(Scotland) Act 2019 while estimates from 2022 reflect households being placed on one of the four heating regimes defined in The Fuel Poverty (Enhanced Heating) (Scotland) Regulations 2020. However, analysis shows that when calculated under the previous approach the 2022 figures for mean energy use would be 26,600 kwh. The difference between this and the 2019 values was also statistically significant.

Mean modelled annual running costs were £2,810 in 2022

Table 3.5a: Mean annual running cost and year on year change

Year	Mean annual running cost	Annual change	Sample size
2012	£1,730		2,787
2013	£1,860	8%	2,725
2014	£1,900	2%	2,682
2015	£1,740	-8%	2,754
2016	£1,610	-8%	2,850
2017	£1,660	3%	3,002
2018	£1,710	3%	2,964
2019	£1,820	7%	2,997
2022	£2,810	54%	2,983

Mean modelled annual energy consumption was 25,350 kwh in 2022

Table 3.5b: Mean modelled annual KWh consumption and year on year change

Year	Mean KWh	Annual change	Sample size
2012	29,620		2,787
2013	28,960	-2%	2,725
2014	29,200	1%	2,682
2015	29,070	0%	2,754
2016	28,290	-3%	2,850
2017	28,260	0%	3,002
2018	27,790	-2%	2,964
2019	28,430	2%	2,997
2022	25,350	-11%	2,983

Note: Annual consumption from 2012 to 2019 is calculated based on households being placed on one of the two heating regimes as defined in Fuel Poverty (Targets, Definition and Strategy)(Scotland) Act 2019 while estimates from 2022 reflect households being placed on one of the four heating regimes defined in The Fuel Poverty (Enhanced Heating) (Scotland) Regulations 2020.

3.5.4 Impact on fuel poverty

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 2022. The results are illustrated in Figure 3.4

The analysis which underpins these findings uses SHCS data from 2022 and 2019 to model hypothetical rates of fuel poverty under different scenarios, adding one change at a time. This included the following steps as shown in Table 3.6

- First, 2022 fuel prices were applied to the 2019 survey sample to determine the effect of price change alone under 2019 levels of energy demand and household income.

- Next, the income of households in this sample was updated by the mean change observed for their decile group between 2019 and 2022. This demonstrated the additional effect of income changes on fuel poverty between 2019 and 2022.

Increases in fuel prices had the largest impact on the change in fuel poverty rate between 2019 and 2022

Table 3.6 Steps in attributing change in fuel poverty rate between 2019 and 2022.

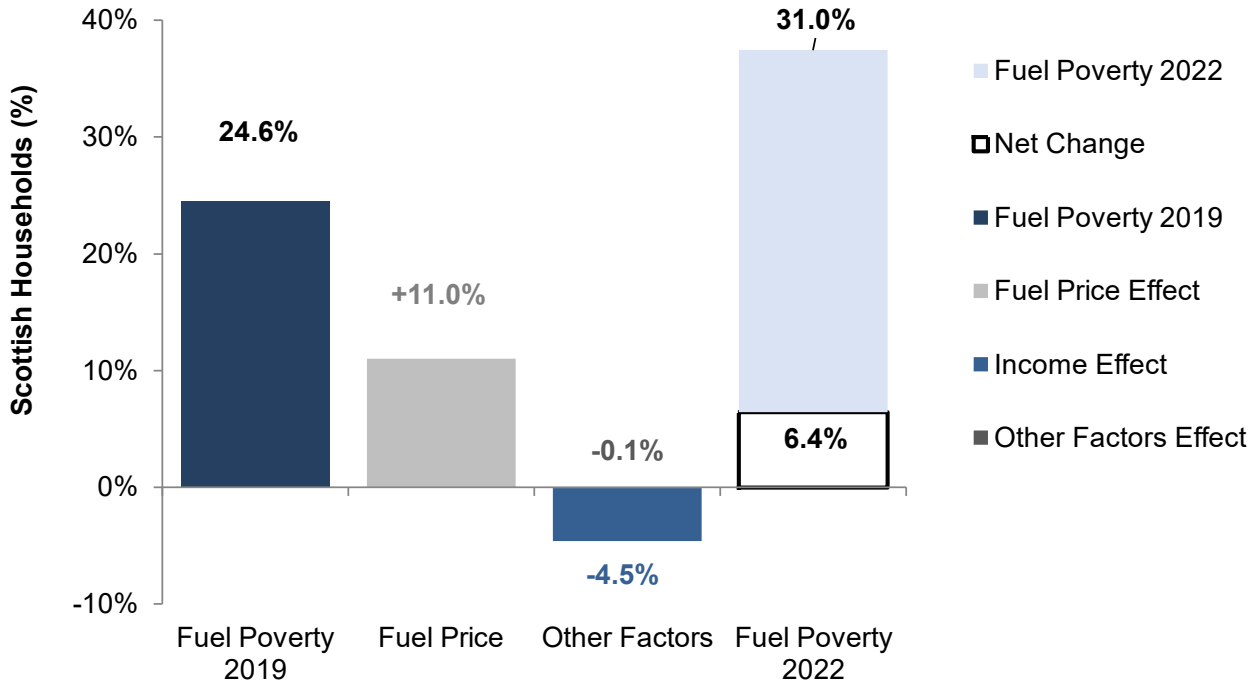
Steps	Fuel Poverty Rate	Step Difference
Fuel Poverty 2019	24.6%	
- Step 1: Fuel price change	35.6%	11 points
- Step 2: Income change	31.1%	-4.5 points
- Step 3: Attributed to other factors	31%	-0.1 points
Fuel Poverty 2022	31%	

Notes: [note 7]

- We then compare the fuel poverty rate modelled at the previous step with the estimate for 2022. The difference is estimated to be the effect of other factors including the energy performance of the housing stock, changes to household MIS budgets, changes to housing costs, and other sampled housing stock changes between 2019 and 2022.

Increases in fuel prices had the largest impact on the change in fuel poverty rate between 2019 and 2022

Figure 3.4 Contributions to Change in Fuel Poverty Rate Between 2019 and 2022.



Data Source: Table FP3 and Table FP5 in ‘SHCS 2022- Chapter 03 Fuel Poverty-tables and figures’

Notes: [note 7]

The results from the micro-simulation analysis indicate that changes in fuel prices and income would affect the fuel poverty rate differently. Applying fuel price changes increased the fuel poverty rate by 11 percentage points whilst applying income changes decreased the fuel poverty rate by 4.5 percentage points.

The residual change is attributed to other factors such as differences in energy efficiency performance, changes to MIS household budgets, changes to housing costs, changes in the housing stock as described in section 3.5.3 and other underlying changes to the sampled stock distribution. These factors combined to decrease the rate by 0.1 percentage points.

3.6 Characteristics of Fuel Poor Households

Fuel poverty is affected by four key drivers: levels of household income, the price of fuel used to meet space and water heating requirements, the energy efficiency of housing, and the use of fuel in households[17]. The following sections present the fuel poverty rate broken down by three of these drivers (income, fuel used, energy efficiency) as well as other key household and dwelling characteristics. Tables fp15 and fp16 in SHCS 2022- Chapter 03 Fuel Poverty- tables and figures show the composition of all fuel poor households broken down key dwelling and household attributes.

3.6.1 Household Characteristics

Figure 3.5 shows fuel poverty rates by a number of household characteristics.

Overall rates of fuel poverty differed between the social (48%) and private sector (26%). The highest rates of fuel poverty by tenure continue to be found in the rental sector where 48% of households renting from a local authority and 47% of households renting from a housing association are fuel poor. Similarly, 44% of private rented sector households are fuel poor. In comparison, only 14% of those with a mortgage and 28% of those who own outright are assessed to be fuel poor.

Fuel poverty has a strong association with income, and households in the lower income bands have the highest rates of fuel poverty: 89% for the bottom income band (less than £15,000 annually) and 43% for the 2nd bottom band (£15,000 - £24,999 annually) both of which represent an increase from 2019. For comparison, the fuel poverty rate for households earning between £35,000 and £44,999 annually was found to be 5%, which is similar tothe 2019 rate.

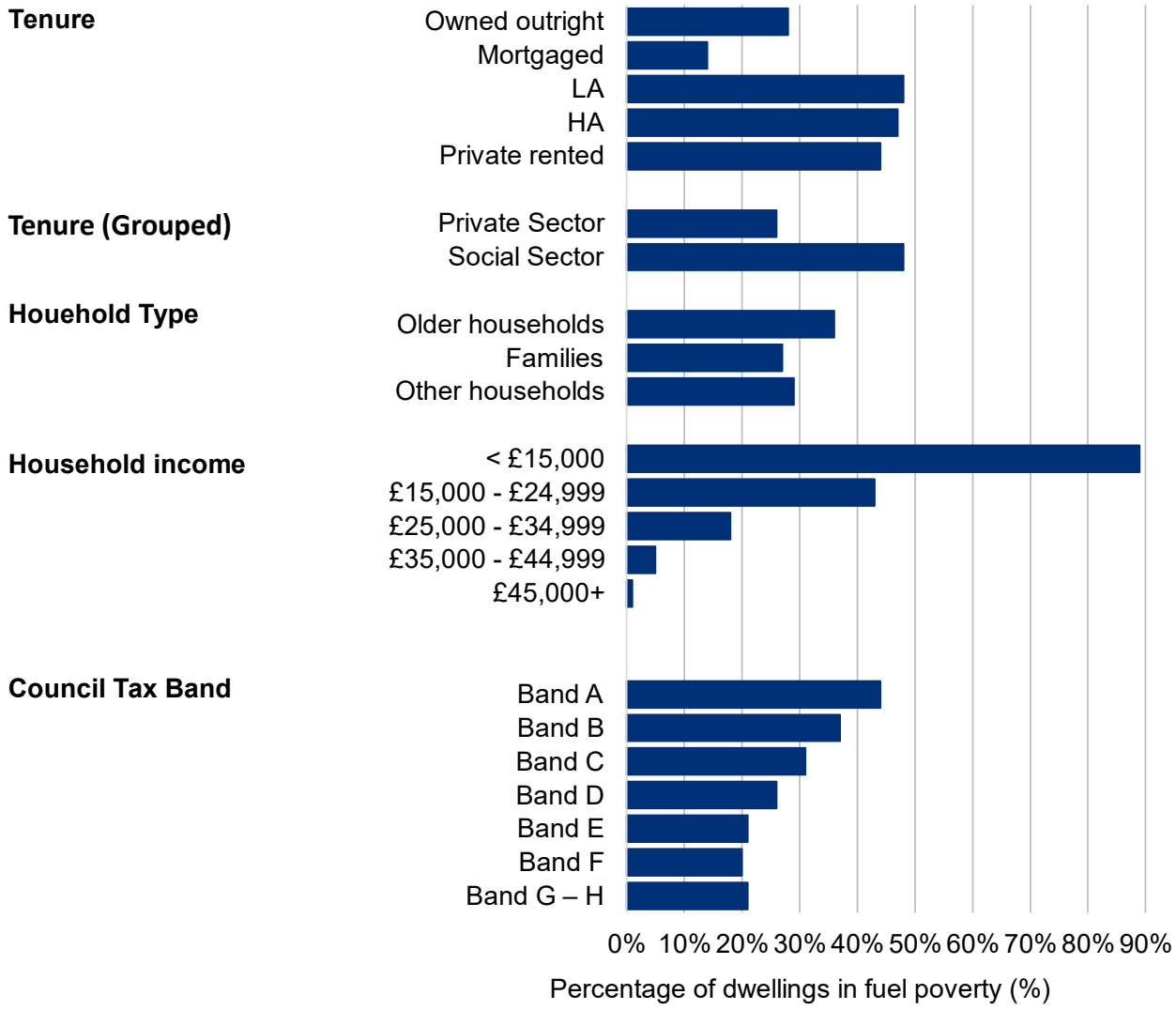
Fuel poverty rates generally decrease as council tax bands increase from band A (44%) to band F (20%) and bands G to H (21%).

Families have a lower rate of fuel poverty (27%) than older households (36%), however the rate between families and other households (29%) and older and other households in similar.

[17] The use of fuel in a household impacts on a household's lived experience of fuel poverty, but does not affect the measurement of fuel poverty which considers the energy required to meet a the households statutory heating regime as set out in section 3.1, not the actual amount of energy used.

Households earning under £15,000 had the highest rates of fuel poverty (89%)

Figure 3.5: Fuel Poverty Rates by Household Characteristics, 2022



Data Source: Table FP8 in ‘SHCS 2022- Chapter 03 Fuel Poverty- tables and figures’

Notes: [note 7]

3.6.2 Dwelling Characteristics

Figure 3.6 shows how the level of fuel poverty varies across dwelling characteristics.

The lowest rates of fuel poverty are associated with higher energy efficiency standards. 27% of households living in dwellings rated EPC band C or better **were fuel poor** compared to 41% of households living in dwellings rated EPC band F or G.

Detached houses had the lowest rates of fuel poverty, at 24% despite having lower energy efficiency ratings than the national average (Figure 2.10), likely reflecting higher household incomes.

The fuel poverty rate for **rural** (35%) households was higher than the fuel poverty rate for **urban** (30%) households. Additionally, the rate of fuel poverty for remote rural households (47%) is higher than for all other areas.

The rate of fuel poverty among households using **electricity** as primary heating fuel was 46%, higher than for households using gas (29%), and oil (28%) as their primary heating fuel but similar to households using other heating fuels (41%). This reflects the higher per unit cost of electricity relative to gas and oil.

A higher proportion of households in the 15% most deprived areas were in fuel poverty compared to other areas of Scotland; 42% compared to 29% respectively. An increase compared to 2019 in both categories.

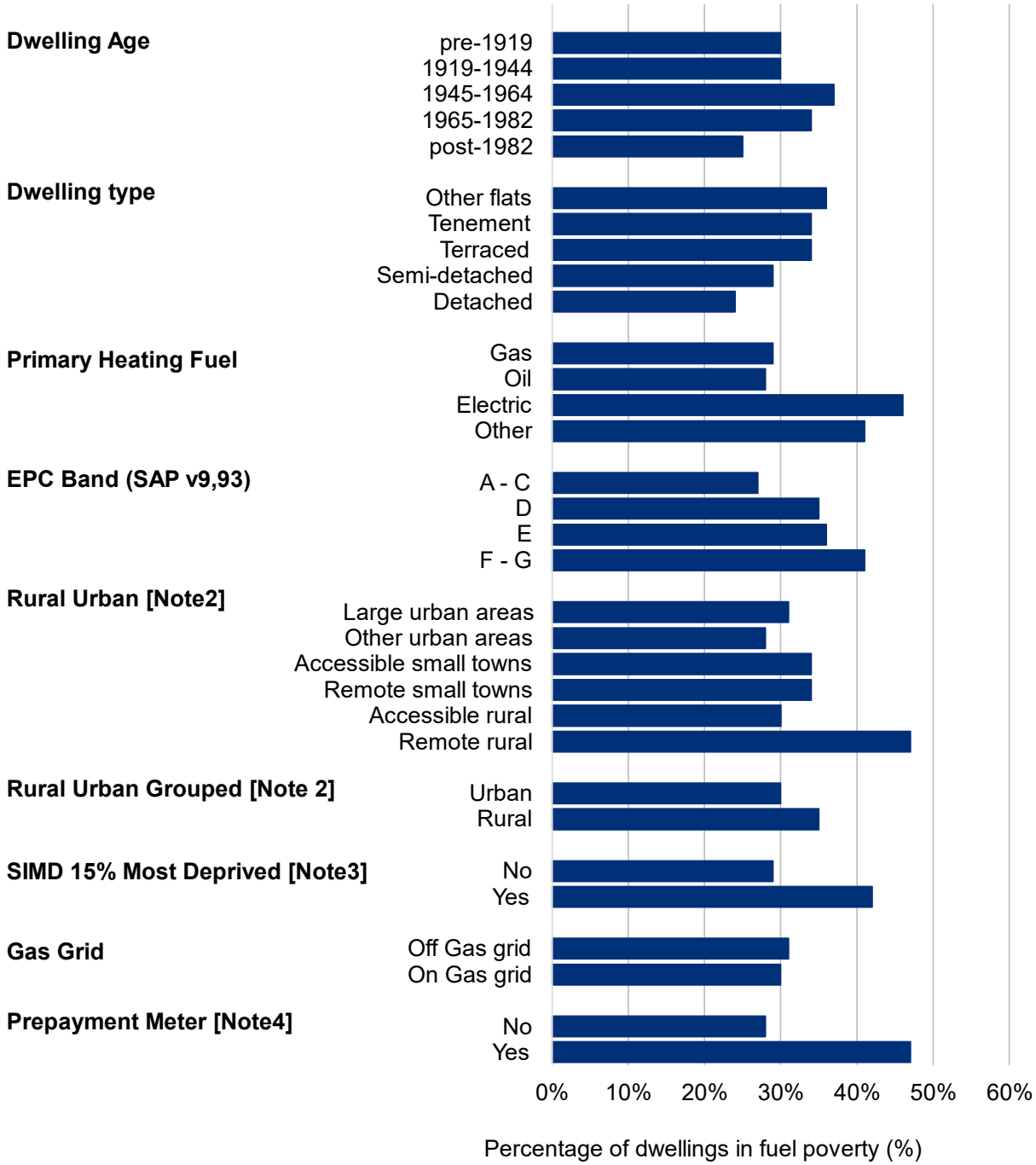
A higher proportion of households with a pre-payment meter (PPM; electricity, gas or both) were in fuel poverty compared to those without a PPM; 47% compared to 28% respectively.

Households living in dwellings built after 1982 had lower rates of fuel poverty than those in dwellings built between 1945 to 1964, and 1965 to 1982. However, the difference between post 1982 dwellings, and pre-1919, and 1919-1944 dwellings was not significant.

Households living in dwellings on the gas grid had a similar fuel poverty rate (31%) than households living in dwellings off the gas grid (30%)

Dwellings in remote rural areas had higher rates of fuel poverty (47%) than other locations.

Figure 3.6: Fuel Poverty Rates by Dwelling Characteristics, 2022



Data Source: Table FP9 in ‘SHCS 2022- Chapter 03 Fuel Poverty- tables and figures’

Notes: [note 1] [note 2] [note 7] [note 9] [note 10]

3.7 Characteristics of Extreme Fuel Poor Households

3.7.1 Household Characteristics

Figure 3.7 shows extreme fuel poverty rates by a number of household characteristics.

Overall rates of extreme fuel poverty were higher in the **social sector** (26%) than in the **private sector** (16%).

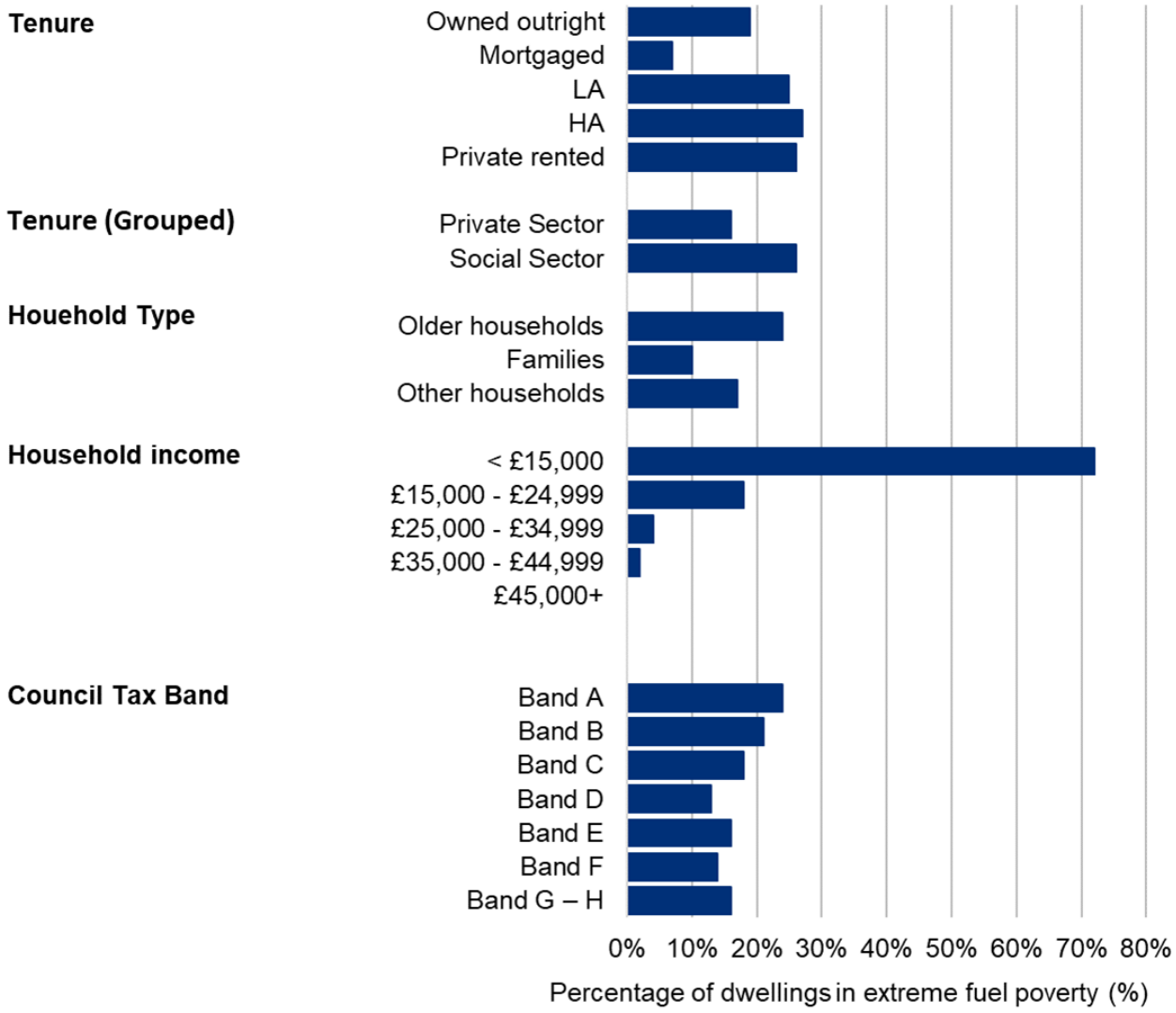
As with fuel poverty overall, extreme fuel poverty has a strong **association** with **income**. Households in the lowest income band (<£15,000 annually) have the highest rate of extreme fuel poverty (72%) dropping to 2% for households in the £35,000 - £44,999 annual income band.

Similar to income, the highest rates of extreme fuel poverty are seen in the lowest council tax band with band A having an extreme fuel poverty rate of 24%. By comparison households in council tax band F have a rate of 14%.

Families have a lower rate of extreme fuel poverty (10%) than both older households (24%) and other households (17%)

Households in the social sector have higher rates of extreme fuel poverty (26%) than those in the private sector (16%)

Figure 3.7: Extreme Fuel Poverty Rates by Household Characteristics 2022



Data Source: Table FP10 in ‘SHCS 2022- Chapter 03 Fuel Poverty- tables and figures’

Notes: [note 4] [note 7]

3.7.2 Dwelling Characteristics

Figure 3.8 shows how the level of extreme fuel poverty varies across dwelling characteristics.

Levels of extreme fuel poverty among households using **electricity** as their primary heating fuel were higher, at 34%, than for households using oil (21%) or gas (16%) as their primary heating fuel but were similar but were similar to households using other fuels (30%).

The lowest rates of extreme fuel poverty are associated with higher energy efficiency standards. Only 12% of households living in dwellings rated EPC C or better were in extreme fuel poverty, compared to 23% for dwellings in band D and 32% for dwellings in band E.

Levels of extreme fuel poverty were higher in **rural areas** (25%) compared to **urban areas** (17%) in 2022. Similar to fuel poverty, rates of extreme fuel poverty were highest for remote rural households (35%) than any other area.

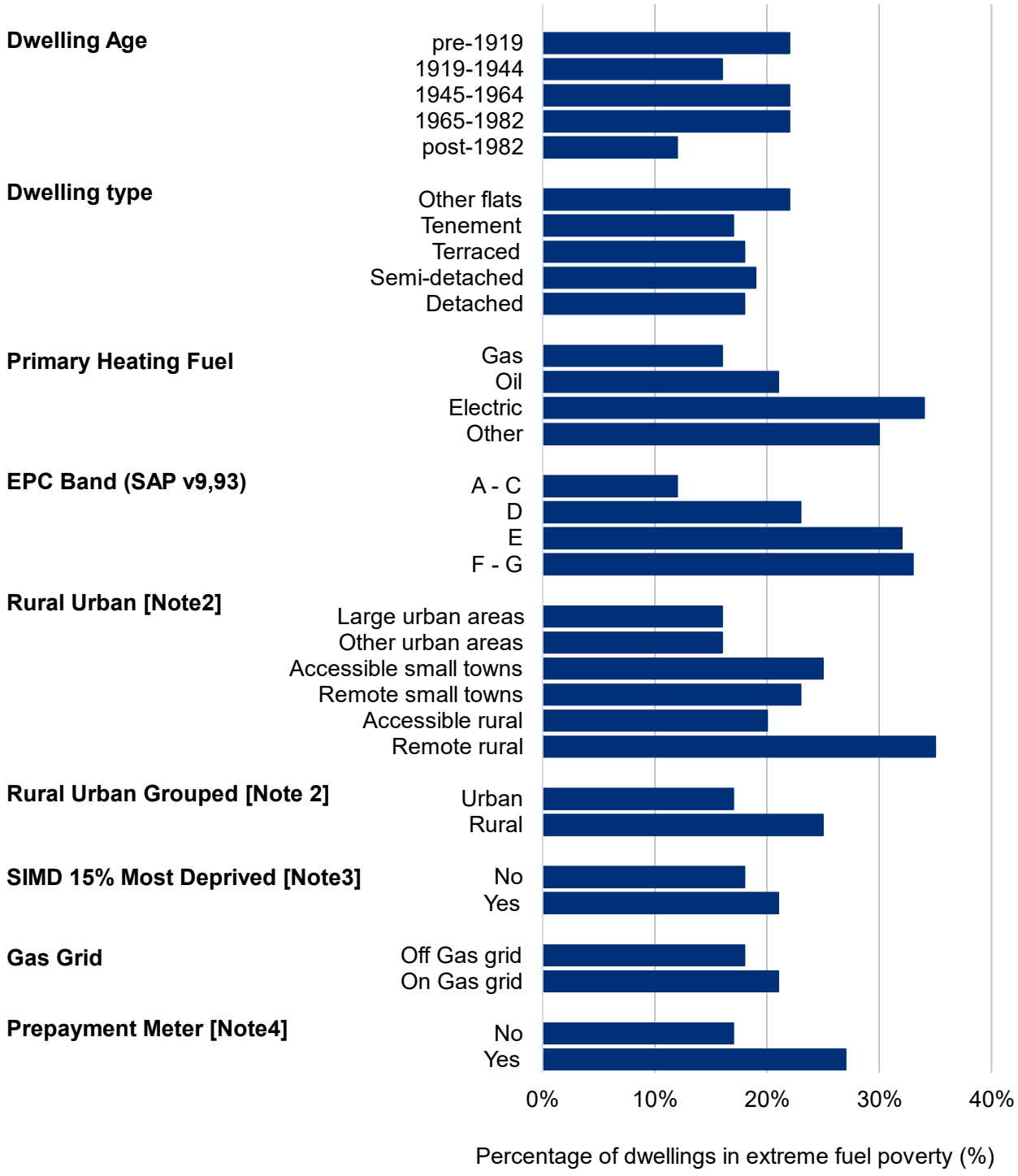
Similar to fuel poverty, households living in dwellings built post 1982 had lower rates of extreme fuel poverty than those living in dwellings constructed between 1945-1964 and 1965-82. Again the difference between post 1982 and 1919-1944 was not statistically significant.

A higher proportion of households with a pre-payment meter (PPM; electricity, gas or both) were in extreme fuel poverty compared to those without a PPM; 27% compared to 17% respectively.

Differences between other characteristics shown in Figure 3.8 such as gas grid, dwelling type, and SIMD are not statistically significant.

Dwellings in rural areas have higher rates of extreme fuel poverty (25%) than urban dwellings (17%).

Figure 3.8: Extreme Fuel Poverty by Dwelling Characteristics 2022



Data Source: Table FP11 in 'SHCS 2022- Chapter 03 Fuel Poverty- tables and figures'

Notes: [note 1] [note 2] [note 7] [note 9] [note 10]

3.8 Fuel Poverty and Income Poverty

Although fuel poverty is correlated with low income, it is not equivalent to income poverty. This section provides an analysis of how fuel and income poverty relate in the household population.

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 23 March 2023 and relate to 2019/22.

It is possible to use the SHCS to determine how fuel poverty and income poverty relate. The main caveat to note is that the SHCS is not designed to capture income as comprehensively as other formal surveys of income, e.g. the FRS. Household income is collected in the SHS on a self-reported basis. Therefore, figures in this section may not align with National Statistics on household income and inequality.

A further caveat is that the latest published income poverty estimates relate to 2020/21. Typically, in order to derive a poverty threshold, figure the SHCS uses the relationship between the SHCS and the FRS estimates of the median equivalised household income for the previous year. However, due to issues with the representativeness of the achieved sample, the 2021 SHCS is not comparable to this year's data. Therefore, for this year we adjusted the 2022 SHCS median by the ratio between the 2019 SHCS median and the published 2019/2020 FRS observed in 2019 to obtain a 2022 poverty threshold. For 2022 we estimate this as around £312 per week after housing costs (AHC) for a couple without children.

As Table 3.7a shows, around two thirds of fuel poor households would be considered poor in terms of their income (67% or 530,000) while around one third have incomes above the relative poverty threshold (33% or 261,000 households).

Table 3.7b shows the fuel poverty rate by income poverty status. In 2022 95% of income poor households were fuel poor.

The majority of fuel poor households (67%) are also in income poverty

Table 3.7a: Estimated Number and Proportion of Households by Fuel Poverty and Income Poverty Status, SHCS 2022

Income Poverty Status	Fuel Poor (%)	Fuel Poor (thousands)	Not Fuel Poor (%)	Not Fuel Poor (thousands)
Income Poor	67%	530	2%	26
Not Income Poor	33%	261	98%	1,733
All	100%	791	100%	1,759
Sample size (number)	918	[z]	2013	[z]

Notes: [note 7]

95% of income poor households are also fuel poor

Table 3.7b: Fuel Poverty Rate (%) by Income Poverty Status, SHCS 2022

Income Poverty Status	Fuel Poverty Rate (%)	Sample size (number)
Income Poor	95%	588
Not Income Poor	13%	2,343
All	31%	2,931

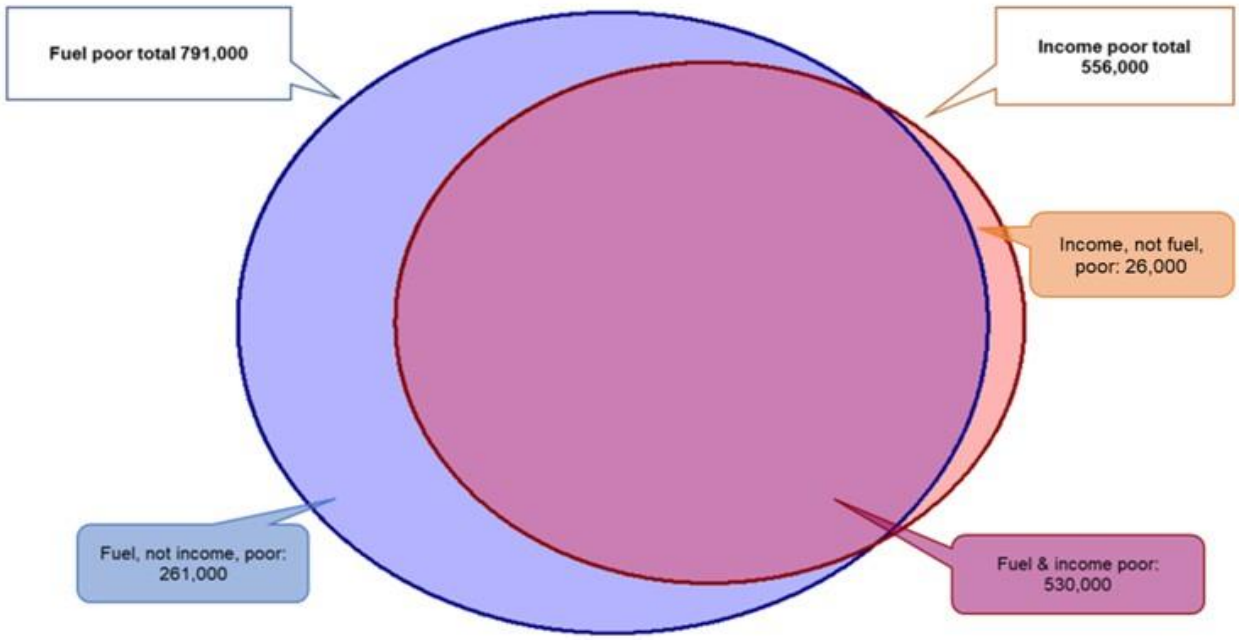
Notes: [note 7]

Figure 3.9 is a Venn diagram which sets out this information graphically. As shown in the diagram the majority of fuel poor households (530,000) are also in income poverty. Conversely, 261,000 households are estimated to be fuel poor only (and not income poor), and 26,000 households are estimated to be income poor but not fuel poor.

This chart demonstrates that while low income is associated with fuel poverty, it is not equivalent. Around 33% of fuel poor households (261,000 households) would not be considered income poor. Similarly, 5% of income poor households (26,000 households) would not be considered fuel poor.

The majority of income poor households are in fuel poverty

Figure 3.9: Fuel Poor and Income Poor Households, SHCS 2022



Data Source: Table FP12 in 'SHCS 2022- Chapter 03 Fuel Poverty- tables and figures'

Notes: [note 7]

Table 3.8 provides further information about the characteristics of the households who fall into the different sub-groups.

Households that are both income poor and fuel poor tend to live in more energy efficient dwellings than other fuel poor households, potentially because of high energy efficiency standards in the social rented sector. They are more likely to use gas for heating, live on the gas grid 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.

Conversely, households who are not income poor, but experience fuel poverty have a higher likelihood of living in low energy efficiency properties, using electricity for heating, and living in rural areas compared to fuel poor and income poor households and Scotland overall.

Table 3.8: Household and Dwelling Characteristics by percentage of all households in Poverty and Fuel Poverty, 2022

Dwelling Characteristics	Category	Fuel Poor & Not Income Poor (%)	Fuel Poor & Income Poor (%)	All Fuel Poor (%)	Not Fuel Poor & Income Poor (%)	All Scotland (%)
EPC Band	A - C	37%	51%	46%	[c]	53%
EPC Band	D	41%	39%	39%	[c]	35%
EPC Band	E-G	22%	11%	14%	[c]	12%
Household Type	Older households	42%	42%	42%	[c]	37%
Household Type	Families	15%	19%	17%	[c]	20%
Household Type	Other households	43%	39%	41%	[c]	44%
Location	Urban	76%	83%	81%	[c]	83%
Location	Rural	24%	17%	19%	[c]	17%
Heating Fuel	Gas	68%	81%	76%	[c]	82%
Heating Fuel	Oil	6%	4%	5%	[c]	5%
Heating Fuel	Electric	23%	13%	16%	[c]	11%
Heating Fuel	Other	4%	2%	3%	[c]	5%
Gas Grid	Off Gas Grid	22%	10%	14%	[c]	12%
Gas Grid	On Gas Grid	78%	90%	86%	[c]	88%
All dwellings	Sample size (number)	354	564	918	[c]	2,931

Notes: [note 1] [note 2] [note 7] [note 11]

4 Energy Perceptions

Key Points

- 16% of households found that their heating keeps them warm in winter only sometimes and 5% find it never keeps them warm.
- 11% of households reported that their homes were difficult to heat because they cannot afford to heat them, an increase of 7 percentage points from 2019.
- Fuel poor households and extreme fuel poor households are more likely to have difficulties staying warm in winter and to report affordability problems; 26% of fuel poor and 29% of extreme fuel poor say that their heating keeps them warm in winter “only sometimes” or “never”, compared to 20% of non-fuel poor households.
- 16% of fuel poor and 16% of extreme fuel poor households report that they cannot afford to heat their home, higher than the 9% of non-fuel poor households.
- 71% of householders stated they monitor their energy use “very” or “fairly closely”. 46% of all households report owning an energy monitoring device. Both of which are an increase from 2019, (57% and 35% respectively).
- Conversely, both fuel poor (42%) and extreme fuel poor (38%) households were less likely to own a monitoring device compared to non-fuel poor (47%) households.

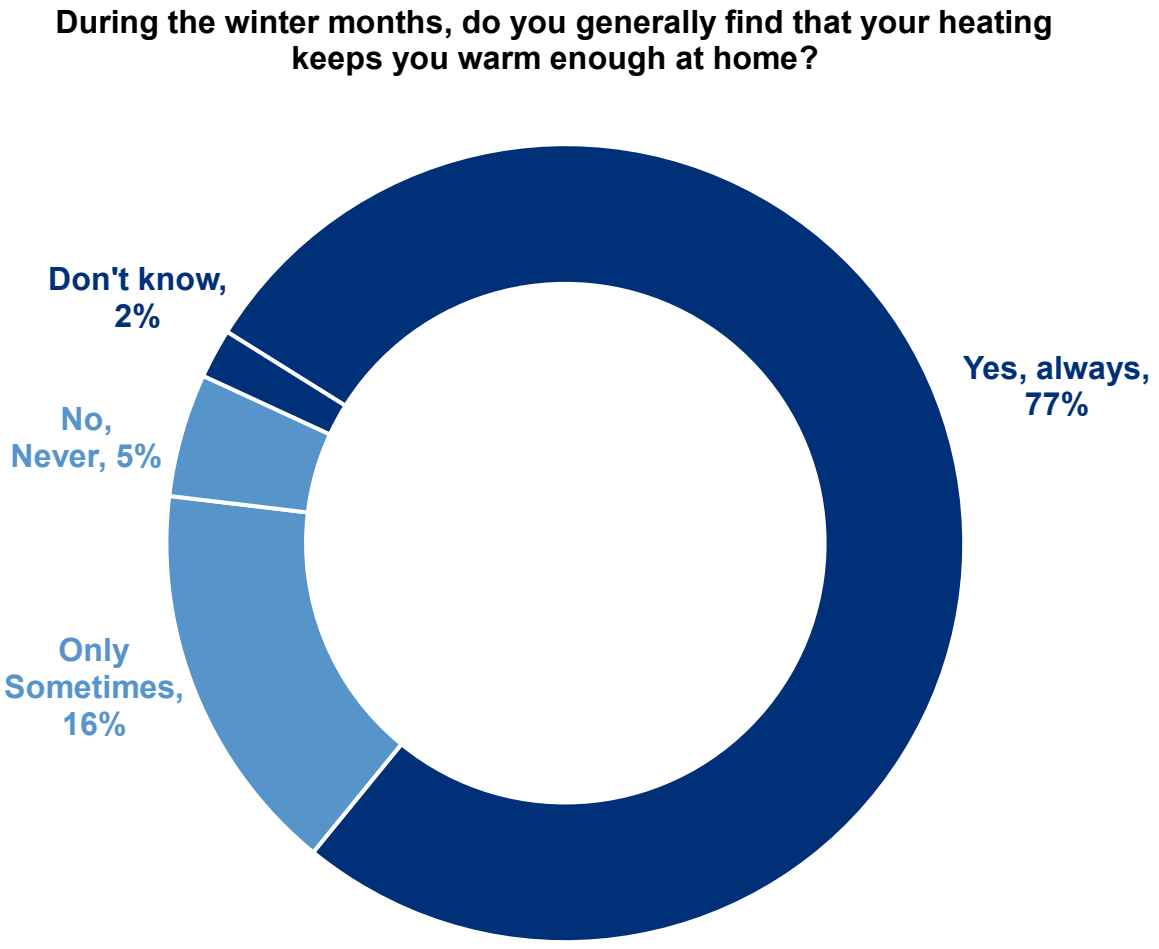
4.1 Heating Satisfaction

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.

In 2022, 77% of householders reported that they were always able to stay warm at home during the winter (Figure 4.1),a decrease of 5 percentage points compared to 2019 (81%). 16% said that their heating keeps them warm only sometimes, and 5% report that their heating never keep them warm in winter.

77% of households reported that their heating always keeps them warm in winter

Figure 4.1: Staying Warm in Winter, 2022



Data Source: Table EP1 in Energy Perceptions Tables

Notes: [note 22]

As shown in Table 4.1, of those reporting that their heating keeps them warm in winter “only sometimes” or “never”, 26% report this to be “a serious problem”, 50% “a bit of a problem”, while 23% said it was “not very much” or “not a problem”.

50% of households whose heating does not always keep them warm say this is “a bit of a problem”

Table 4.1: Households whose heating does not keep them warm in winter

How much of a problem is it?	Percentage of dwellings (%)
A serious problem	26%
A bit	50%
Not very much	19%
Not a problem	4%
Total	100%
Sample size (number)	694

Notes: [note 22]

Figure 4.2 shows how respondents’ views on how well their heating keep them warm in winter varies depending on household type, tenure and the primary heating fuel they use.

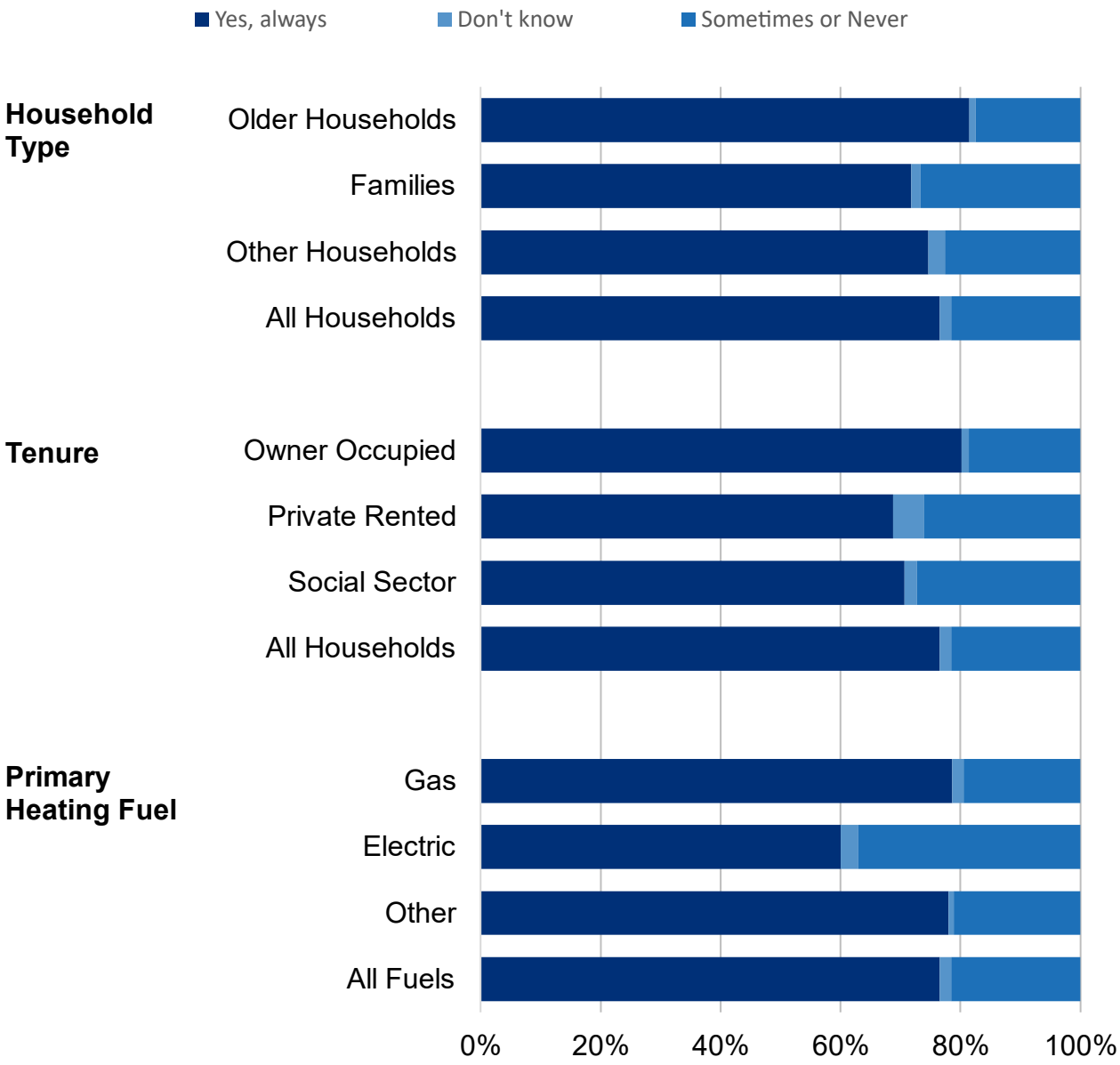
Families and Other households were more likely than older households to report that their heating doesn’t always keep them warm in the winter; 27% for families, and 23% for other households compared to 18% for older households.

Social and private renters were more likely to report that their heating does not always keep them warm compared to owner occupiers; 27% and 26%, for social and private renters respectively, compared to 19% for owner occupiers. For social sector tenants this contrasts with the relatively better energy efficiency of the dwellings they occupy compared to the housing stock overall (as shown in Figure 2.9).

Households with electric heating were also more likely to report that their heating does not always keep them warm in the winter (37%) when compared to households heated with gas (19%).

Tenants in Socially rented properties are more likely to say their heating keeps them warm "only sometimes" compared to owner occupiers.

Figure 4.2: "Does Your Heating Keep You Warm Enough in the Winter?" by Household Type, Tenure and Primary Heating Fuel; SHCS 2022

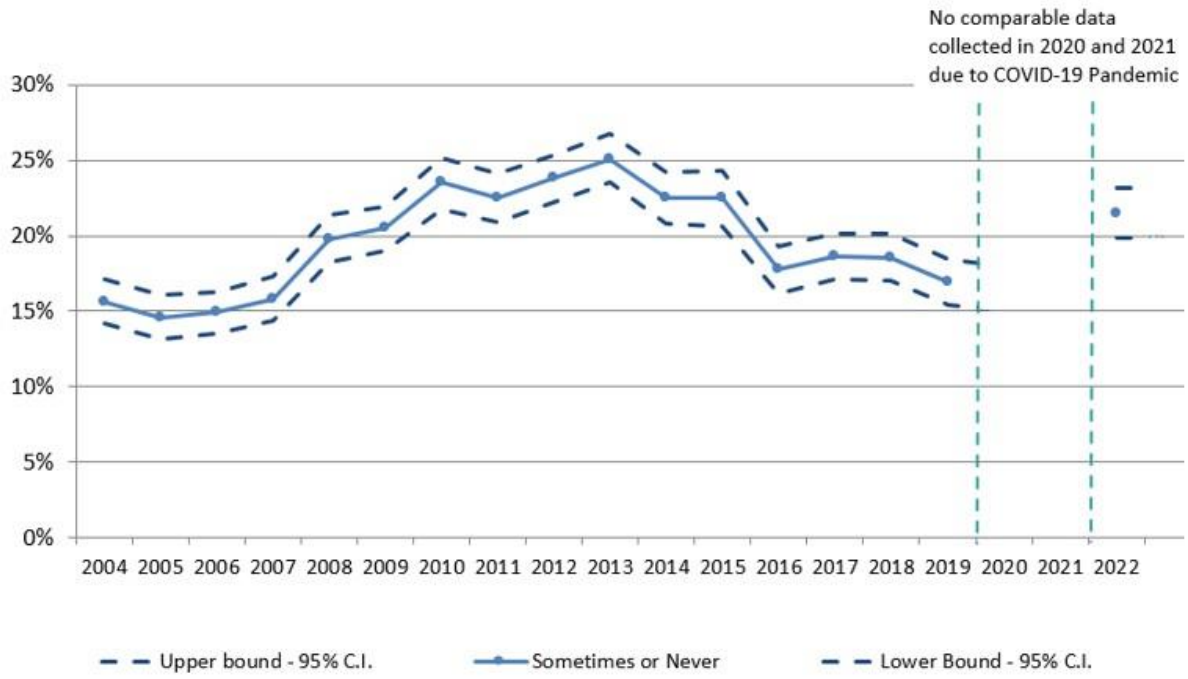


Data Source: Table EP3 in 'SHCS 2022- Chapter 04 Energy Perceptions- tables and figures'

Notes: [note 22]

The proportion of households reporting that their heating does not always keep them warm has significantly increased between 2019 and 2022.

Figure 4.3 "Does your heating keep you warm enough in the winter"? Proportion only "sometimes or "never" 2004-2019, 2022



Data Source: Table EP9 in in 'SHCS 2022- Chapter 04 Energy Perceptions- tables and figures'

Notes: [note 22]

Figure 4.3 shows how the proportion of householders reporting that their heating does not always keep them warm enough has changed over time, allowing for the margin of error. As shown in figure 4.3 the proportion of households reporting that their heating does not always keep them warm has significantly increased between 2019 and 2022.

The reasons why people found their homes difficult to heat in 2022 are shown in Table 4.2. 59% of all households did not report any problems heating their homes. Private rented (53%) and social sector tenants (43%) were more likely than owner occupiers (37%) to report difficulties in 2022.

The most common reasons relate to poor energy performance of the dwellings: draughts (16%) and poor or inadequate heating systems (13%), were the most common, followed by poor insulation (12%).

11% of householders considered it unaffordable to achieve the indoor temperatures they want, an increase from 4% in 2019. This likely reflects the increase in fuel prices that occurred in 2022 (Figure 3.3). This is higher among private and social renters (18% and 16% respectively) compared to owner occupiers (8%).

59% of all households did not report any problems heating their homes

Table 4.2: Reasons Heating Home is Difficult by Tenure, 2021

Which of these things, if any, make it difficult to heat your home?	Owner Occupied	Private Rented	Social Sector	All Tenures
No Problem reported	63%	47%	57%	59%
Draughty	14%	25%	19%	16%
Poor or inadequate heating	11%	22%	15%	13%
Poor insulation	12%	15%	11%	12%
Can't afford to heat house	8%	18%	16%	11%
Need new windows	9%	15%	11%	11%
Hard to control heating	3%	3%	3%	3%
Rooms too big	3%	4%	[low]	3%
Other	1%	1%	[low]	1%
Sample Size (number)	2,041	307	634	2,982

Notes: [note 22]

Table 4.3 shows how fuel poor and non-fuel poor households compared in their views on winter heating and heating affordability in 2022, while Table 4.4 shows householders' views on how much of a problem it is if their heating does not keep them warm in winter.

Fuel poor and extreme fuel poor households[18] are more likely to report that their heating keeps them warm in winter "only sometimes" or "never", 26% and 29%, respectively, compared to 20% of non-fuel poor households (Table 4.3). For those households who replied "only sometimes" or "never" 88% of fuel poor households and 88% of extreme fuel poor households this is "a serious" or "a bit of a problem", higher than 69% for households who are not fuel poor (Table 4.4).

[18] Households in extreme fuel poverty are a subset of those in fuel poverty. Therefore, it should be noted that the estimates presented in Tables 4.3, 4.4, and 4.6 for fuel poor and extreme fuel poor households are not for two distinct mutually exclusive groups.

Fuel poor and extreme 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, 16% of both fuel poor households and extreme fuel poor households say “cannot afford to heat my home”, compared to 9% of non-fuel poor households (see table EP8 in ‘Energy Perceptions’ tables).

Fuel poor and extreme fuel poor households are more likely to report that their heating keeps them warm in winter “only sometimes” or “never”

Table 4.3: Staying Warm and Fuel Poverty - “During the winter months, do you generally find that your heating keeps you warm enough at home?”

Answer	Not Fuel Poor	Fuel Poor	Extreme Fuel Poor
Yes, always	78%	72%	69%
Only Sometimes	16%	18%	20%
No, Never	4%	8%	9%
Don't know	2%	2%	2%
Sample size (number)	2,013	918	577

Notes: [note 22]

Fuel poor and extreme fuel poor households are more likely to report that their heating not keeping them warm in winter is a problem

Table 4.4: Staying Warm and Fuel Poverty - “If your heating only keeps you warm sometimes or never how much of a problem is this?” Households who responded that heating does not keep them warm

Answer	% of Not Fuel Poor households who responded heating does not keep them warm	% of Fuel Poor who responded heating does not keep them warm	% of Extreme Fuel Poor households who responded heating does not keep them warm
A serious problem	21%	34%	36%
A bit of a problem	48%	54%	53%
Subtotal	69%	88%	88%
Sample size (number)	434	253	182

For a full breakdown of these stats see Tables EP6 and EP7 in 'SHCS 2022- Chapter 04 Energy Perceptions- tables and figures'

Notes: [note 22]

4.2 Monitoring Energy Use

The Scottish Household Survey asks respondents to what extent they monitor their energy use and whether or not they have energy monitoring devices.

As shown in Table 4.5, the proportion of households that do not monitor their energy use at all was 12%, with a further 16% stating they do not monitor very closely.

Conversely, the proportion of those who report monitoring their energy use "fairly" or "very closely" was 71%, an increase of 15 percentage points since 2019.

46% of households reported having energy monitoring devices an increase of 11 percentage points since 2019. See Table EP10 and EP14 in 'SHCS 2022- Chapter 04 Energy Perceptions- tables and figures' accompanying this report as a supporting document.

71% of households monitor their energy use "very" or "fairly" closely

Table 4.5: Extent to which Energy Use is Monitored, 2021 - "To what extent do you monitor your energy use in your property?"

Answer	Percentage of dwellings (%)
Very closely	31%
Fairly closely	40%
Not very closely	16%
Not at all	12%
Don't know	[low]
Total	100%
Sample size (number)	2,982

Notes: [note 11] [note 22]

Table 4.6 shows that fuel poor (71%), extreme fuel poor (71%) and non-fuel poor (71%) households have similar rates of monitoring their energy use “very” or “fairly closely”. However, both fuel poor households (42%) and extreme fuel poor (38%) households were less likely to have a monitoring device than non-fuel poor (47%) (see Table EP13 in ‘SHCS 2022- Chapter 04 Energy Perceptions- tables and figures’).

A similar proportion of Fuel poor and non fuel poor households monitor their energy “very” or fairly” closely

Table 4.6: Monitoring Energy Use and Fuel Poverty - “To what extent do you monitor your use of energy in your property?”

Answer	Not Fuel Poor	Fuel Poor	Extreme Fuel Poor
Very closely	31%	31%	32%
Fairly closely	40%	40%	39%
Not very closely	17%	15%	14%
Not at all	11%	14%	15%
Don't know	[c]	[c]	[c]
Total	100%	100%	100%
Sample size (number)	2,013	981	577

Notes: [note 11] [note 22]

5 Housing Conditions

Key Points

- Disrepair to critical elements, which are central to weather-tightness, structural stability and preventing deterioration of the property, stood at 49% in 2022. Less than half of these (18% of all dwellings) required urgent disrepair to critical elements and just 3% had extensive disrepair (covering at least a fifth of the element area) to critical elements.
- Overall, this is an improvement of 3 percentage points in 2019, when 52% of dwellings had disrepair to critical elements. The 2022 rate has returned to a level similar to 2016 (48%).
- 17% of dwellings had disrepair to non-critical elements only, with 3% of dwellings requiring some urgent repair to non-critical elements, and 1% having extensive disrepair to non-critical elements, similar to 2019
- Levels of mould, damp and condensation were similar to those seen in 2019: 90% of properties were free from any damp or condensation and 91% were free from mould.
- Scottish House Condition Survey results for 2022 have been assessed to be comparable in the most part to 2019 and earlier years. However, as noted in section 1.1.5 of the Methodological and Technical notes there is evidence to suggest that social and private rented households, may be under-represented in the 2022 achieved sample and owner-occupied households may be over-represented. Due to this, national level estimates of some elements of disrepair may be slightly under-estimated as disrepair to critical elements is more prevalent in the private rented sector, which is underrepresented in the sample. Conversely, when including the two new criteria failure rates for the tolerable standard are higher in the owner occupied sector, and as a result national level figures for this may be slightly overestimated. However, the main drivers of disrepair tend to be property age and type not tenure, and as set out in section 1.1.4 of the Methodological and Technical notes these characteristics are included in the SHCS calibration weighting process. Additionally, given the diversity of disrepair data and the broad similarities to 2019 figures in key categories such as the tolerable standard and the overall SHQS failure rate (before revisions) we expect any differences to be minor.

5.1 Disrepair

The Scottish House Condition Survey (SHCS) measures disrepair for a wide range of different building elements ranging from aspects of roofs and walls, to chimney stacks, internal rooms, and common parts of shared buildings like access balconies, and entry doors.

This is reported in two categories:

- **Critical elements**. This refers to disrepair to building elements central to weather-tightness, structural stability and preventing deterioration of the property, such as roof coverings or the structure of external walls. These elements are listed in section 2.7.1 of the Methodological and Technical notes.
- **Non-critical elements**. This relates to any damage to a non-critical element (such as skirtings and internal wall finishes, staircases, boundary fences or attached garages) which requires some repair beyond routine maintenance.

Elements in both of the above categories can be assessed according to the severity of disrepair, as follows:

- **Urgent disrepair**. This relates only to external and common elements (a mixture of critical and non-critical). Urgent disrepair to these elements is recorded where immediate repair is required to prevent further deterioration to the building fabric or health and safety risks to occupants. Not all disrepair to critical elements is necessarily considered urgent by the surveyor. Internal room floor structures and floor finishes as well as internal walls and the presence of dry / wet rot are the only critical elements for which urgency is not applicable.
- **Extensive disrepair**. Damage which covers at least a fifth (20%) or more of the building element area. This can apply to any element whether critical or otherwise.

Disrepair, which is not to a critical element, is not urgent or extensive, is referred to as basic. This is the minimum category of disrepair in the survey.

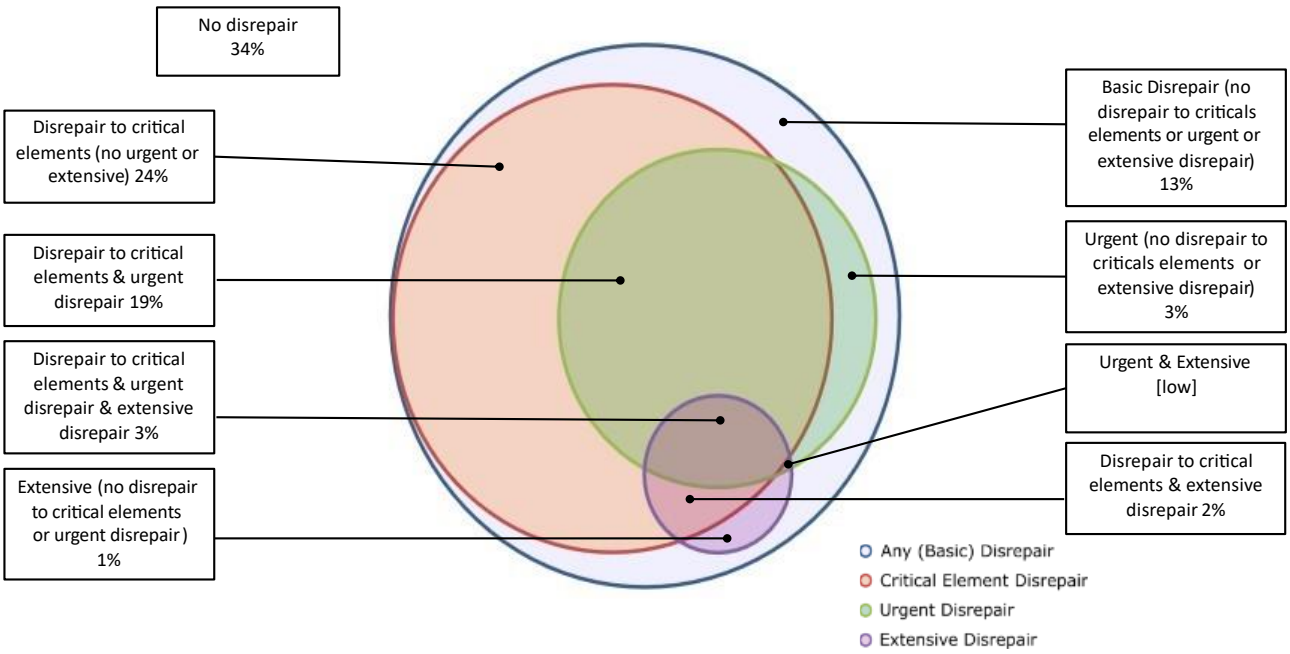
More detailed description of the categories of disrepair is given in section 2.7.

It is fairly common for dwellings to display elements of disrepair in more than one category. The SHCS surveyor manual provides guidance for our surveyors on assessing the type and severity of disrepair for each element, for example:

- A leaking tap in the bathroom (disrepair to a non-critical element).
- A large section (covering over 20% of the area) of the render on an external wall has broken off but is not considered an urgent repair by the surveyor (extensive disrepair to a critical element).
- A small area of guttering is damaged, causing rain water to pour down an external wall surface. This is marked as urgent by the surveyor as it is likely to lead to further damage and compromise the weather-proofing of the building in the short term (urgent disrepair to a critical element).

This is illustrated in Infographic 5.1

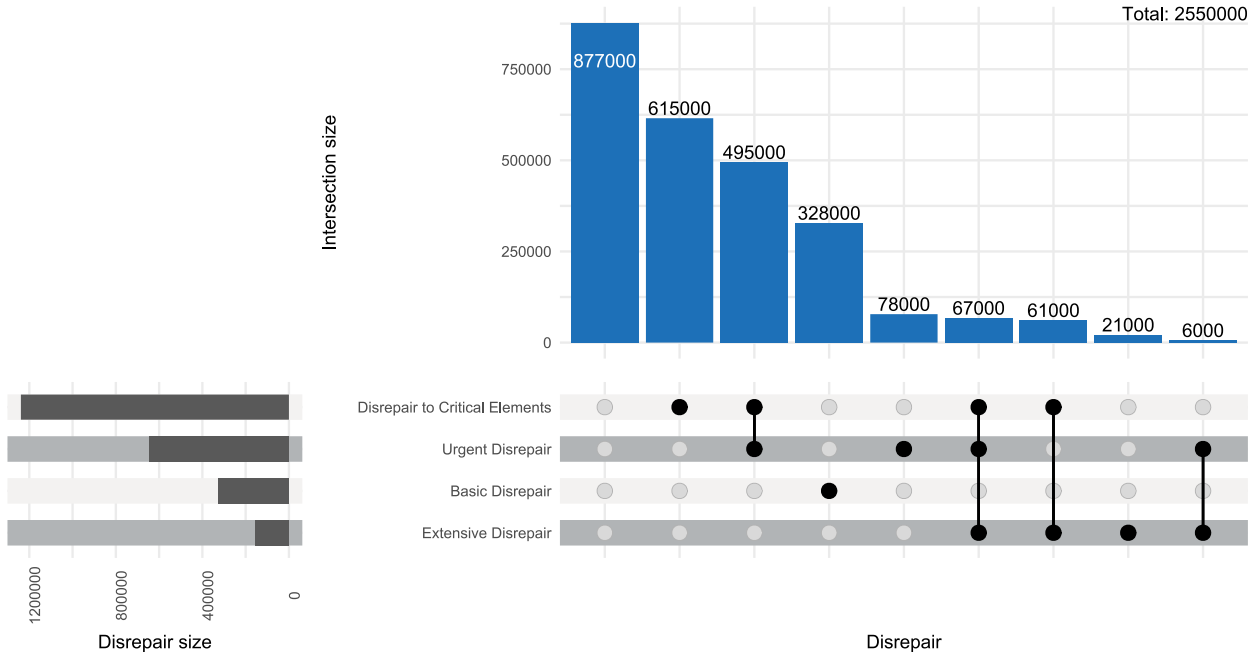
Infographic 5.1: Percentage of dwellings to display elements of disrepair in more than one category, 2022.



Infographic 5.1 shows that 49% of dwellings had some disrepair to critical elements, 24% had no instances of urgent or extensive disrepair; 19% had some urgent disrepair (which could be to critical or non-critical elements) but no extensive disrepair; 3% had some urgent and some extensive disrepair (to any element); and 2% had had some extensive disrepair (to any element) but no urgent disrepair.

Notes: [note 12] [note 13] [note 20]

Infographic 5.2: Number of dwellings to display elements of disrepair in more than one category, 2022.



Infographic 5.2 is an upset plot which shows the overlap of different types of disrepair in Scottish dwellings. The vertical axis shows the number of dwellings with different combinations of disrepair, for example 328,000 dwellings (13%) had basic disrepair only. While 495,000 (19%) had urgent disrepair, and disrepair to critical elements (although not necessarily disrepair to critical elements). It also shows that 877,000 dwellings (34%) had no disrepair. The horizontal axis shows the total number of dwellings with each type of disrepair including overlaps between groups.

Notes: [note 12] [note 13] [note 20]

5.1.1 Rates of Disrepair

Levels of disrepair to critical elements decreased from 52% in 2019 to 49% in 2022.

Figure 5.1: Percentage of dwellings with disrepair to critical elements, 2012-2022

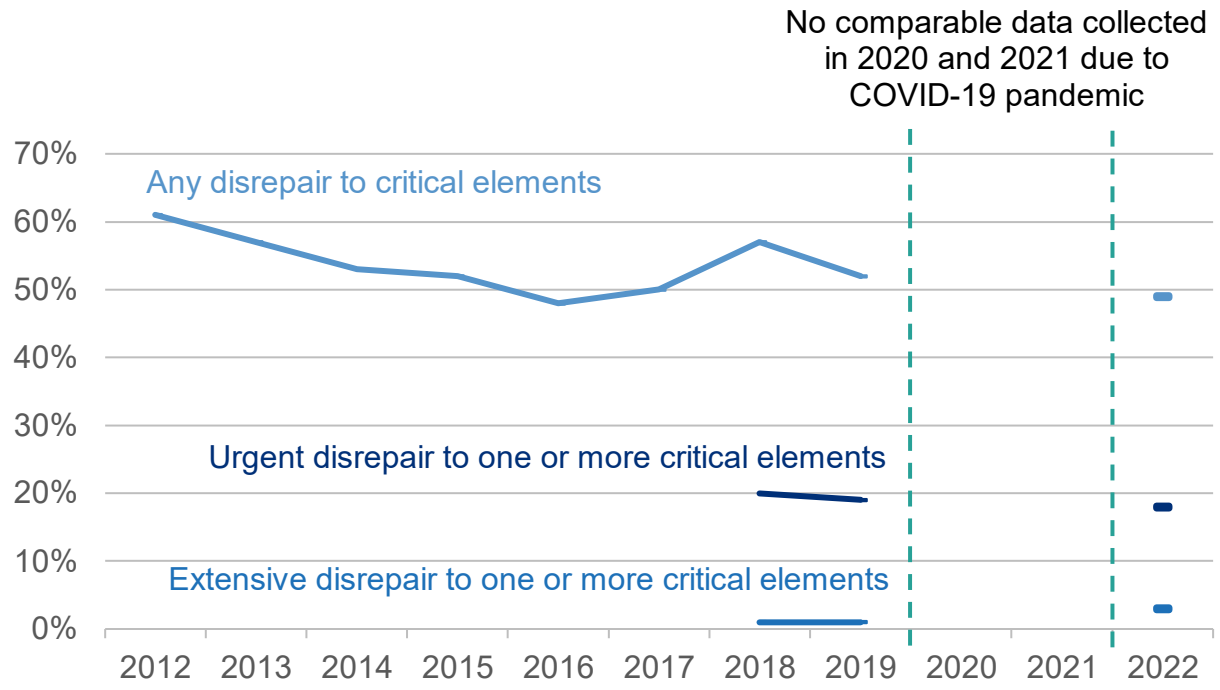


Figure 5.1 provides details of rates of disrepair over time for dwellings with disrepair to critical elements. In 2022, disrepair to critical elements stood at 49% of all dwellings. Less than half, 18% of all dwellings, had instances of urgent disrepair to these critical elements and only 3% of dwellings had extensive disrepair to one or more critical elements. These dwellings may also have other instances of disrepair (including urgent and extensive) to non-critical elements.

Overall, this is an improvement of 3 percentage points in 2019, when 52% of dwellings had disrepair to critical elements and a 12 percentage point improvement on the 61% in 2012. The 2022 rate has returned to a level similar to 2016 (48%).

Data Source: Table HC2a in 'SHCS 2022- Chapter 05 Housing Conditions - tables and figures'

Notes: [note 12] [note 13] [note 14] [note 20]

In 2022, 17% of dwellings had disrepair only to non-critical elements.

Figure 5.2: Percentage of dwellings with only disrepair to non-critical elements, 2012-2022

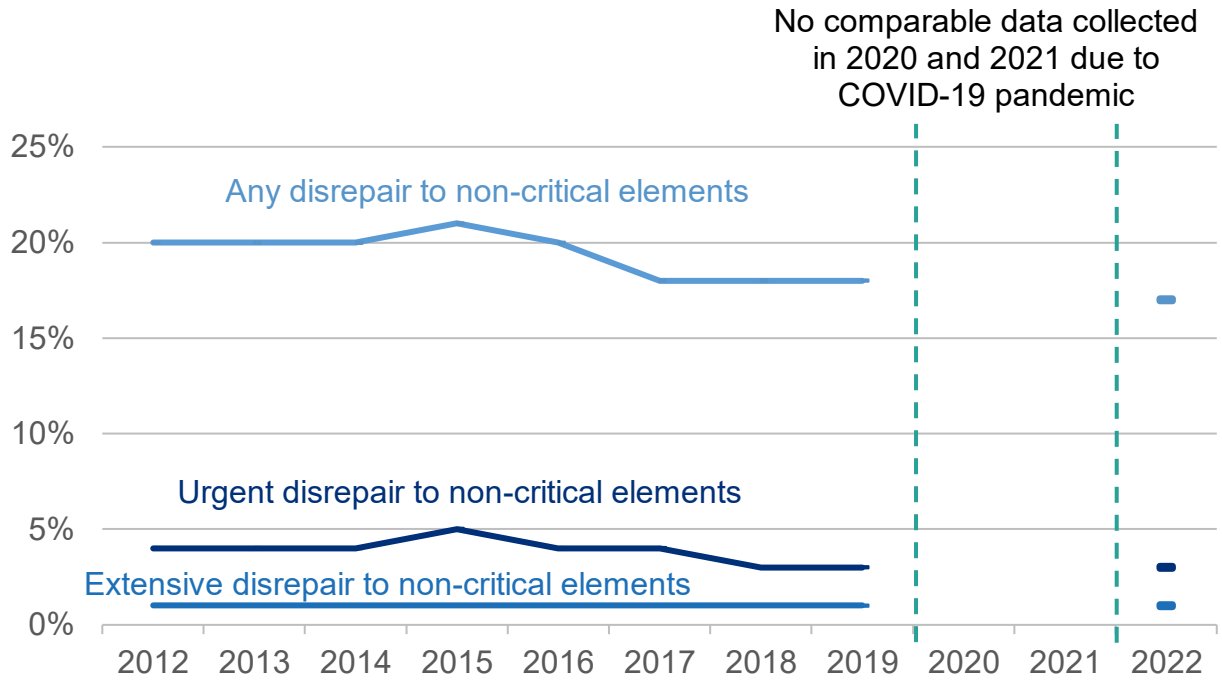


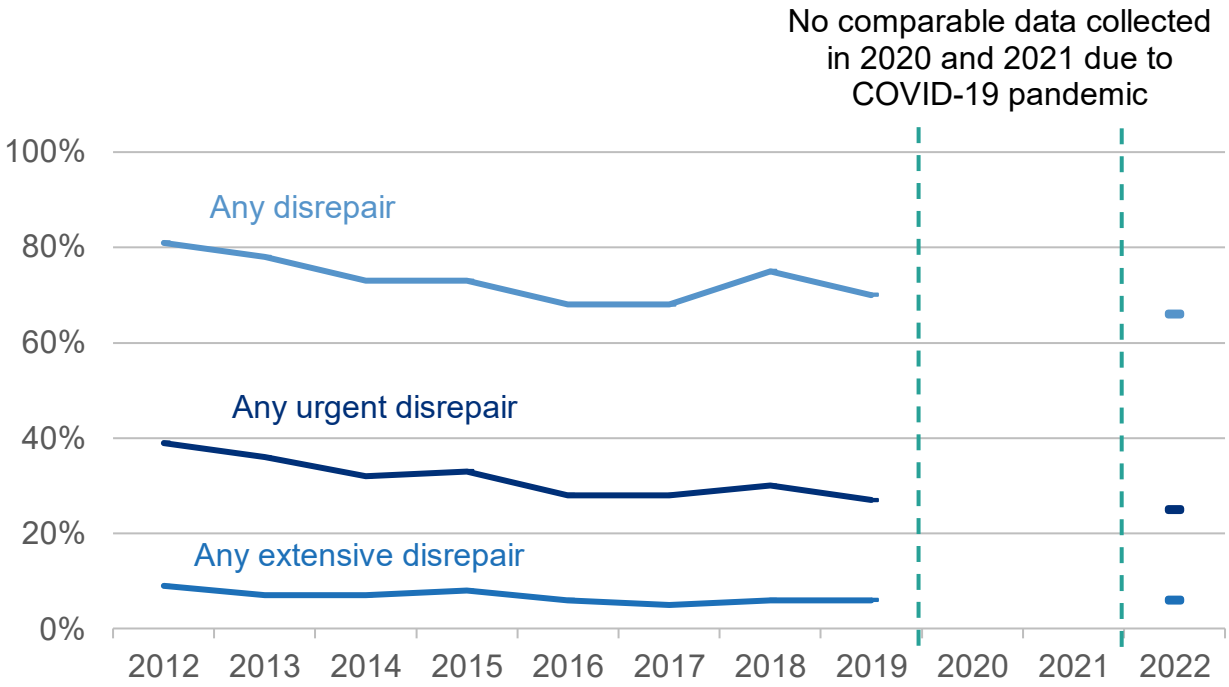
Figure 5.2 shows the rates of disrepair over time for dwellings with only disrepair to non-critical elements. In 2022, 17% of dwellings had disrepair only to non-critical elements, with 3% of dwellings requiring some urgent repair and 1% with extensive disrepair to non-critical elements, similar to 2019.

Data Source: Table HC2a in 'SHCS 2022- Chapter 05 Housing Conditions - tables and figures'

Notes: [note 12] [note 13] [note 20]

In 2022, 25% of properties had some instances of urgent disrepair, similar to 2019 (27%).

Figure 5.3: Percentage of dwellings with any disrepair 2012-2022



Urgent and extensive disrepair can apply to both critical and non-critical elements. Figure 5.3 shows the rates of this type of disrepair regardless of element type. In 2022, 25% of properties had some instances of urgent disrepair, similar to 2019 and down from 39% in 2012. In 2022, 6% of the housing stock had some extensive disrepair present, similar to 2019, but an improvement from 9% in 2012.

Data Source: Table HC3a in 'SHCS 2022- Chapter 05 Housing Conditions - tables and figures'

Notes: [note 12] [note 13] [note 20]

5.1.2 Disrepair to Critical Elements

This section examines in more detail disrepair to critical elements (affecting 49% of dwellings in 2022) and its prevalence across tenure, dwelling age band and location.

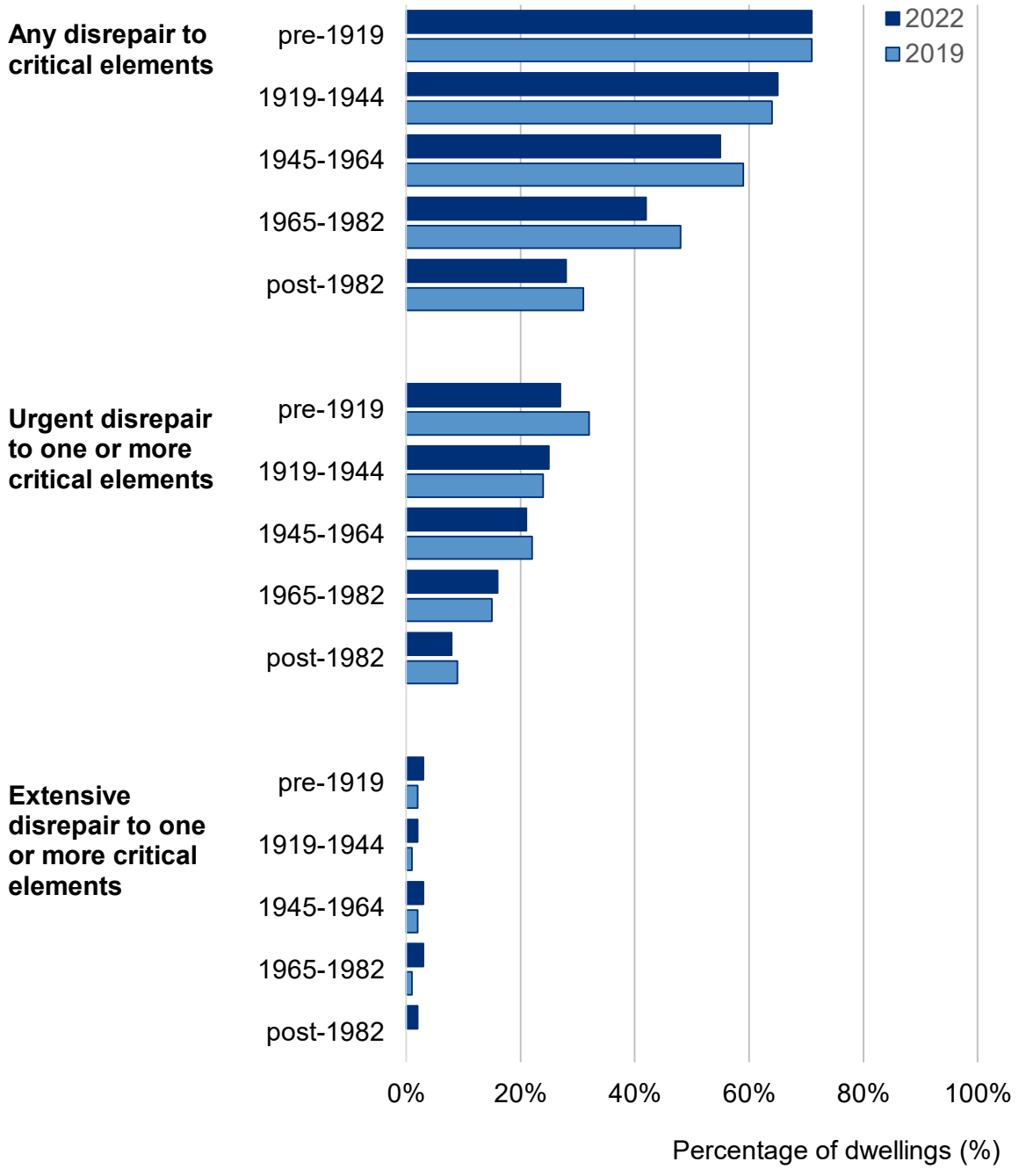
As shown above in Infographic 5.1, in some of those dwellings with disrepair to critical elements there was also some urgent disrepair to critical elements (not necessarily to the same elements), accounting for 19% of the housing stock (similar to 2019).

In 2022, 3% of the housing stock, in addition to the presence of disrepair to critical elements, and urgent disrepair, some disrepair to the property was also assessed as extensive, similar to the rate in 2019.

5.1.2.1 Dwelling age and location

The prevalence of disrepair to critical elements is associated with age of construction.

Figure 5.4: Disrepair to critical elements by dwelling age, 2019 and 2022.



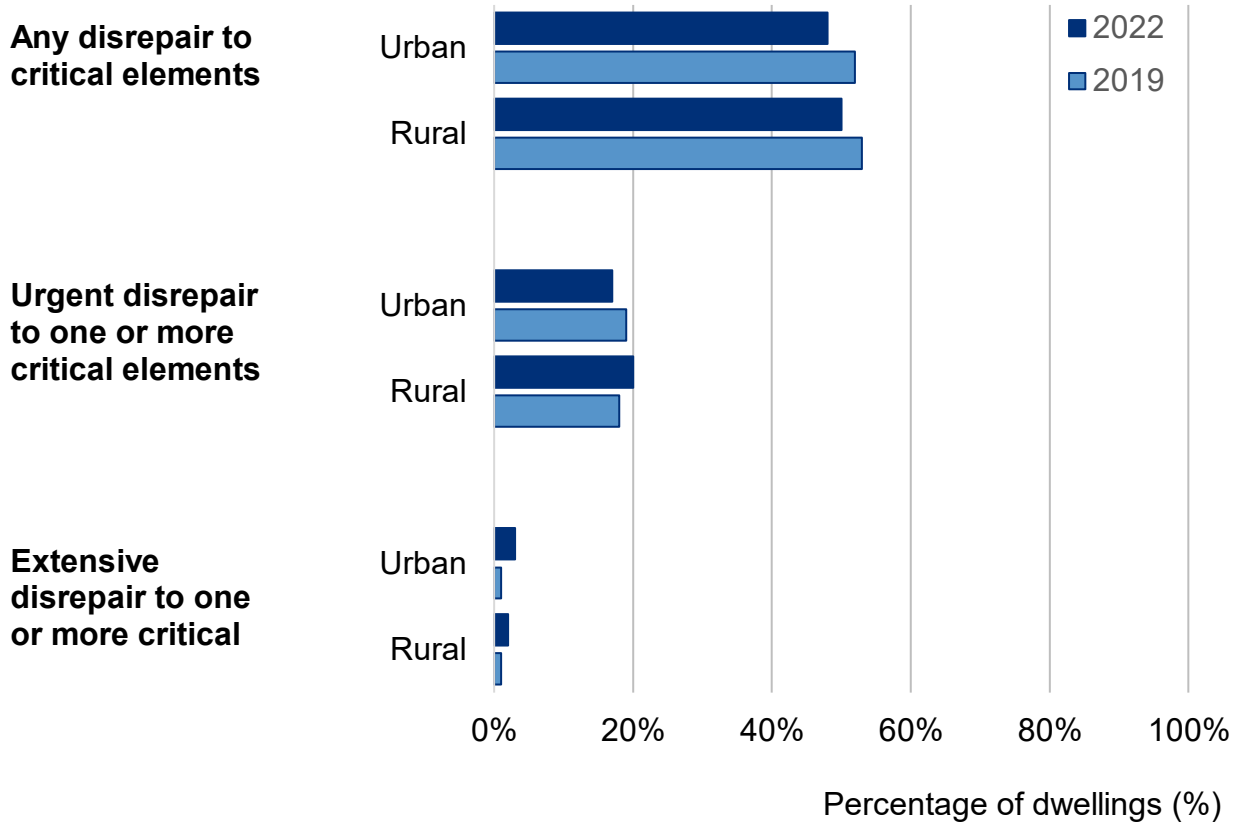
The prevalence of disrepair to critical elements is associated with age of construction, with newer dwellings significantly less likely to fall within this category. Figure 5.4 shows that dwellings built in the period pre-1919 have a rate of disrepair to critical elements of 71%, of which 27% had any urgent disrepair to critical elements. Comparatively the rates of disrepair for dwellings built in the period 1965-1982 was 42% (16% urgent disrepair to critical elements), while dwellings built after 1982 have a rate at 28% (8% urgent disrepair to critical elements). This is also evident where instances of disrepair to critical elements co-exist with urgent disrepair to critical elements, a pattern which has remained unchanged since 2019.

Data Source: Table HC4 in 'SHCS 2022- Chapter 05 Housing Conditions - tables and figures'

Notes: [note 12] [note 13] [note 14]

In 2022, rates of disrepair to critical elements were similar between urban and rural areas for all categories shown.

Figure 5.5: Disrepair to critical elements by dwelling location, 2019 and 2022.



In 2022, rates of disrepair were similar between urban and rural areas for all categories shown. This reflects an improvement for urban areas in rates of disrepair to critical elements (4 percentage point reduction) and a decrease of 2 percentage points in rates of urgent disrepair to critical elements and urgent disrepair to any element between 2019 and 2022. The rate of disrepair to critical elements for rural areas was 50%, similar to 2019.

The above figures consider the presence of critical, urgent, and extensive disrepair within a dwelling. However, these do not necessarily apply to the same elements in every case.

Data Source: Table HC4 in ‘SHCS 2022- Chapter 05 Housing Conditions - tables and figures’

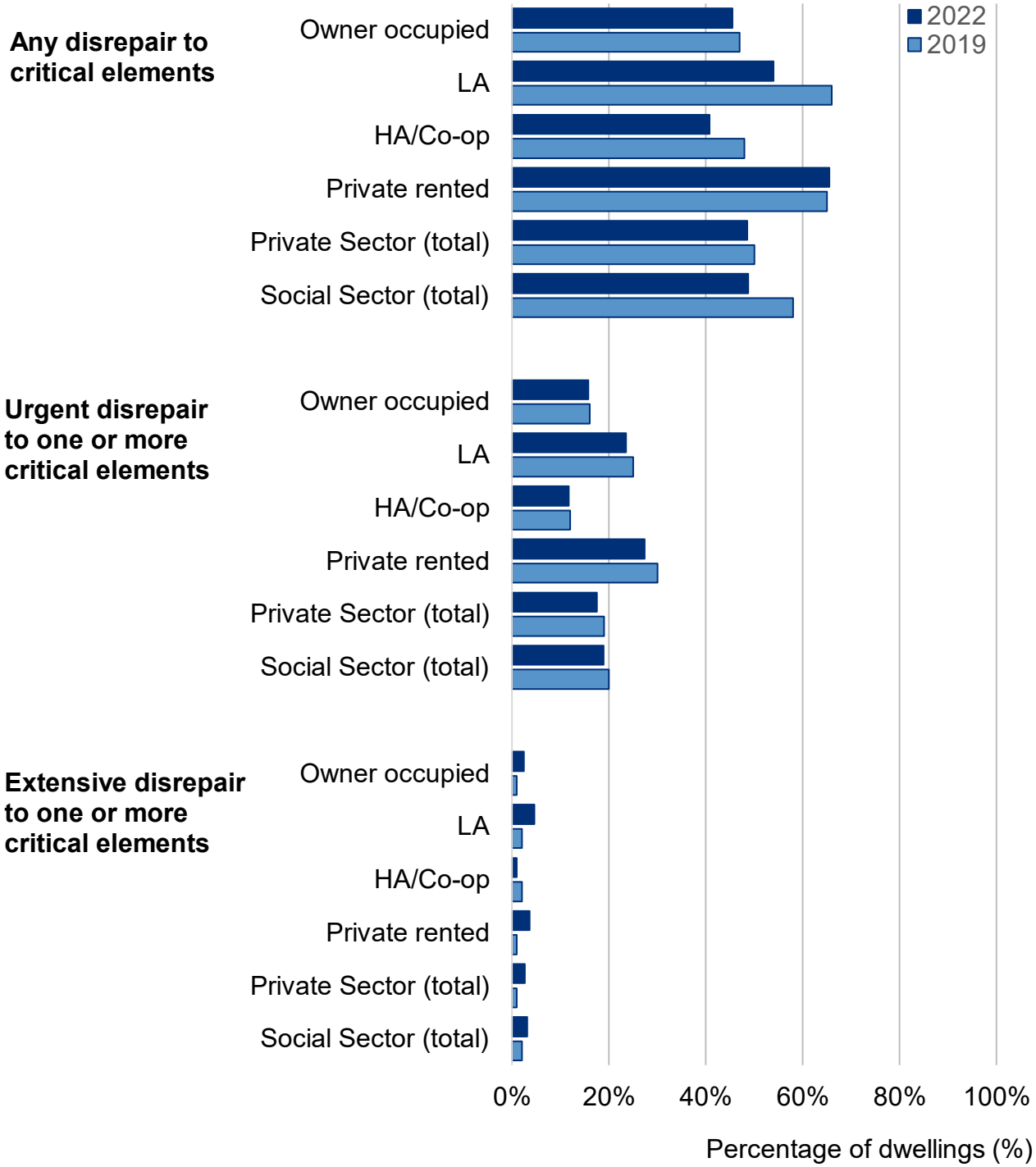
Notes: [note 1] [note 12] [note 13] [note 14]

Table HC4 in ‘SHCS 2022- Chapter 05 Housing Conditions - tables and figures’ also provides some further breakdowns for those dwellings which have urgent disrepair or extensive disrepair to one or more critical elements. Urgent disrepair to critical elements follows a similar pattern by age and location as described above. However, rates of extensive disrepair to critical elements are very small and are therefore similar across all age and location categories.

5.1.2.2 Tenure

In 2022, levels of disrepair to critical elements differ by housing tenure.

Figure 5.6: Disrepair to critical elements by tenure, 2019 and 2022.



As shown in Figure 5.6 housing association dwellings tend to have amongst the lowest levels (around 41%) of any disrepair to critical elements, similar to 2019. Conversely, Private rented sector properties have the highest levels of disrepair to

critical elements, 66% of dwellings in 2022, similar to 2019. In 2022 there was an improvement in the rate of disrepair to critical elements for local authority properties from 66% in 2019 to 54% in 2022. The rate of disrepair to critical elements for owner-occupied properties was 46% in 2022, similar to 2019.

Data Source: Table HC5 in 'SHCS 2022- Chapter 05 Housing Conditions - tables and figures'

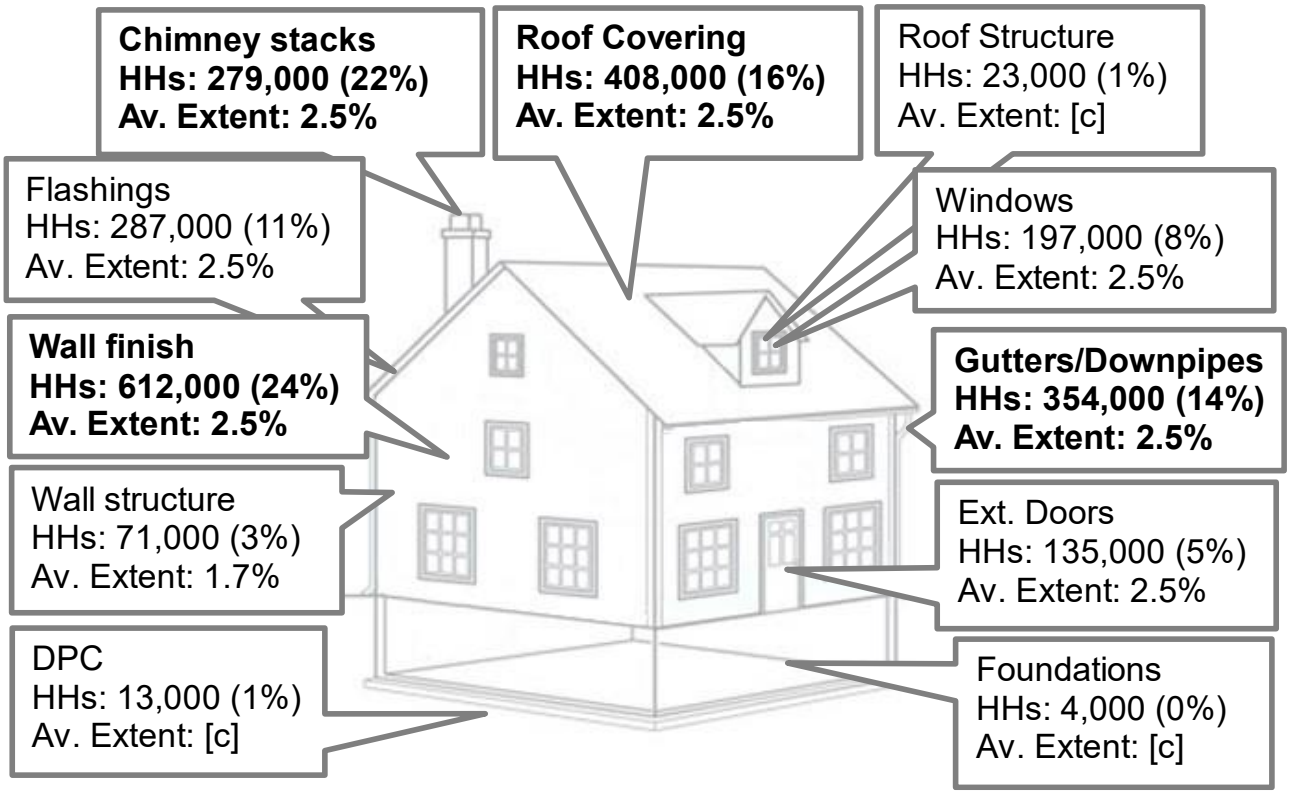
Notes: [note 12] [note 13] [note 14]

5.1.2.3 Type of Disrepair to Critical Elements

As shown in Infographic 5.3 although some disrepair to critical elements is fairly common it tends to be at a relatively low level in each property, affecting on average (median) 2.5% of the relevant area. A full list of elements in this category is provided in section 2.7.1 of the Methodological and Technical notes along with details of how the extent of disrepair is recorded in the survey for each and how an average extent is calculated.

Wall finish, gutters / downpipes, roof coverings and chimney stacks are often affected. Around 24% of dwellings had some disrepair to wall finish, 14% had some disrepair to gutters / downpipes, 16% had some disrepair to roof coverings- and 22% to chimney stacks; however, in all four cases the average (median) disrepair covered around 2.5% of the area. 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. Unchecked disrepair to chimney stacks can lead to water ingress and eventually falling masonry.

Infographic 5.3: The number of dwellings affected and average (median) extent of disrepair to external critical elements



Data Source: Table HC6 in 'SHCS 2022- Chapter 05 Housing Conditions - tables and figures'

Notes: [note 11] [note 14] [note 15]

5.1.3 Damp, Mould and Condensation

The definitions of mould, damp and condensation are provided in section 2.8 of the Methodological and Technical notes.

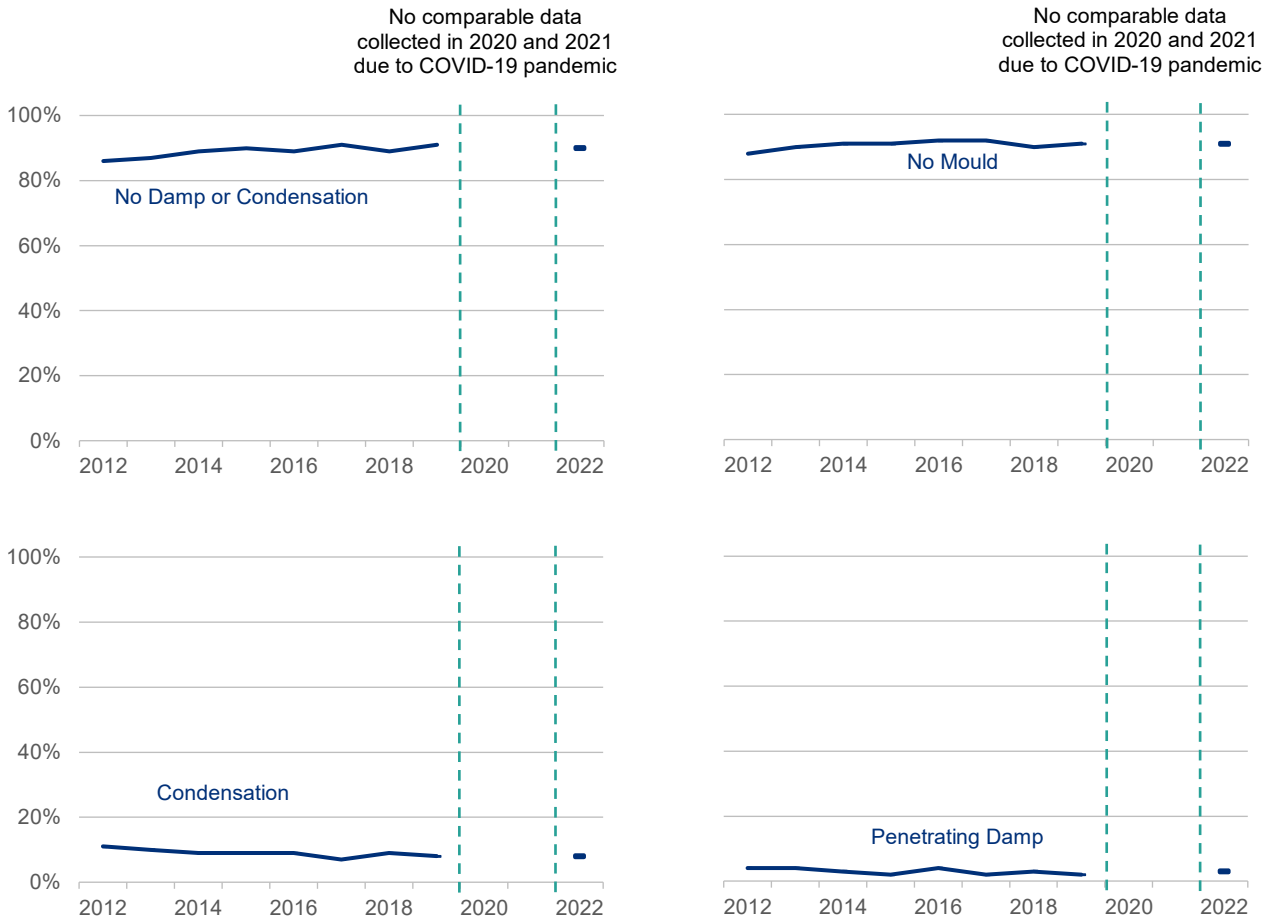
Any condensation, rising or penetrating damp and mould recorded in the SHCS can cover anything from a small damp patch or area of condensation on a single wall in one room (caused for example by ineffective ventilation whilst cooking) to prevalence throughout a dwelling, so does not indicate a serious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

Scottish House Condition Survey assessors have previously measured the presence of mould in a dwelling, often to aid with their assessment of damp. For the first time the SHCS 2022 also provides an analysis on presence of mould within dwellings as a discreet measurement, in addition to damp, and condensation.

The incidence of these defects in isolation and together is given in Figure 5.7.

In 2022, around 91% of all dwellings in Scotland were free from mould.

Figure 5.7: Presence of damp, mould and condensation, 2012 to 2022.



Around 90% of all dwellings in 2022 were free from any form of condensation or damp. This rate has been stable in recent years but represents an overall improvement from 86% in 2012. Similarly, 91% of all dwellings were free from mould in 2022. This rate has been stable in recent years but represents an overall improvement from 88% in 2012.

In 2022, 3% of the housing stock (around 73,000 dwellings) suffered from some degree of penetrating damp. The presence of penetrating damp has fluctuated between 2.0% and 3.7% across the past 8 years of the survey. There were a very small number of properties with rising damp in the survey sample in 2022, suggesting that their share in the housing stock is less than 0.5%.

Condensation was observed in 8% of the surveyed stock (equivalent to around 205,000 dwellings) which is similar to recent years, although represents a reduction from 11% in 2012.

Data Source: Table HC7a in 'SHCS 2022- Chapter 05 Housing Conditions - tables and figures'

5.2 Housing Quality Standards

Key Points

- In 2022, two new below tolerable standard criteria were introduced (assessing the presence, type, and condition of smoke, heat, and carbon monoxide alarms) leading to a sharp increase to the proportion of below tolerable standard dwellings from 2% in 2019 to 29% in 2022.
- The Scottish Housing Quality Standard (SHQS) failure rate in the social sector was 41%. Failures of the Energy Efficient criterion were the biggest driver of failures overall. In 2022, 29% of social sector properties did not meet the Energy Efficient criterion.
- The failure rate in the private sector was 60% and is driven by failures of the Below Tolerable Standard criterion (35%) and the Energy Efficient criterion (32%).
- SHCS surveyors may not always be able to identify the presence of cavity wall insulation. The Energy Efficient criterion failure rate in the social sector would be 10% if it is assumed that all social dwellings have insulated cavity walls where this is technically feasible. This in turn would lower the overall SHQS failure rate in the social sector to 28%.
- The majority of dwellings falling below the SHQS failed on a single criterion; this accounted for more than 7 out of 10 failures in the social sector. For 77% of social homes failing the SHQS this was due to falling short on just one of the 55 elements which make up the standard. In 2022, these were cavity wall insulation (50%), pipe insulation (8%), full and efficient central heating (7%), fire alarms (6%), carbon monoxide alarms (6%) and secure door entry system (3%).

5.2.1 Housing Standards

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

- The Tolerable Standard. A "condemnatory" standard which means that it is not reasonable to expect people to continue to live in a house that falls below it.

The Tolerable Standard was amended by the Housing (Scotland) Act 1987 (Tolerable Standard) (Extension of Criteria) Order 2019 and now includes a new element covering smoke, heat, and carbon monoxide alarms. For the first time, in SHCS 2022 assessors considered the presence, type and condition of smoke, heat, and carbon monoxide alarms in a house when deciding if the house meets the Tolerable Standard.
For more information on the Tolerable Standard see section 2.10 of the Methodological and Technical notes.

- The Scottish Housing Quality Standard (SHQS). This was introduced in February 2004 and 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 2.11 of the Methodological and Technical notes.

5.2.2 Tolerable Standard

In 2022, 29% of all dwellings (around 742,000) fell below the tolerable standard.

Figure 5.8: Dwellings below tolerable standard (BTS), 2012 to 2022

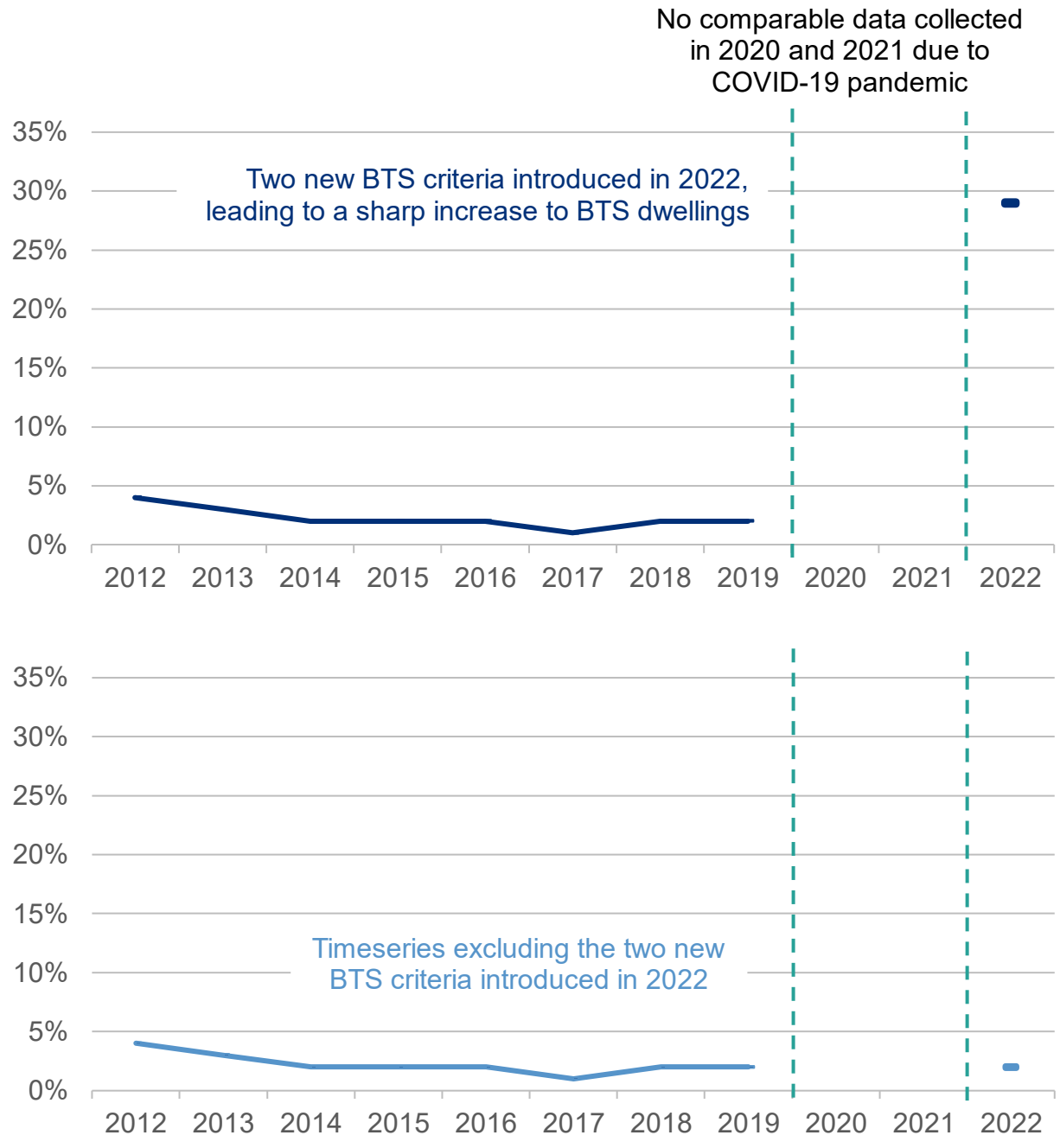


Figure 5.8 shows that 29% of all dwellings in Scotland fell below the tolerable standard in 2022 when including the two new below tolerable standard criteria that were introduced (assessing the presence, type and condition of smoke, heat, and carbon monoxide alarms). This is a sharp increase in the proportion of below tolerable standard dwellings from 2% in 2019 to 29% in 2022.

Excluding the two new criteria in the timeseries, the overall trend of below tolerable standard dwellings remained stable at around 2% since 2018. However, there is a longer term trend of improvement and 2022 levels represent a drop of around 1 percentage points since 2012.

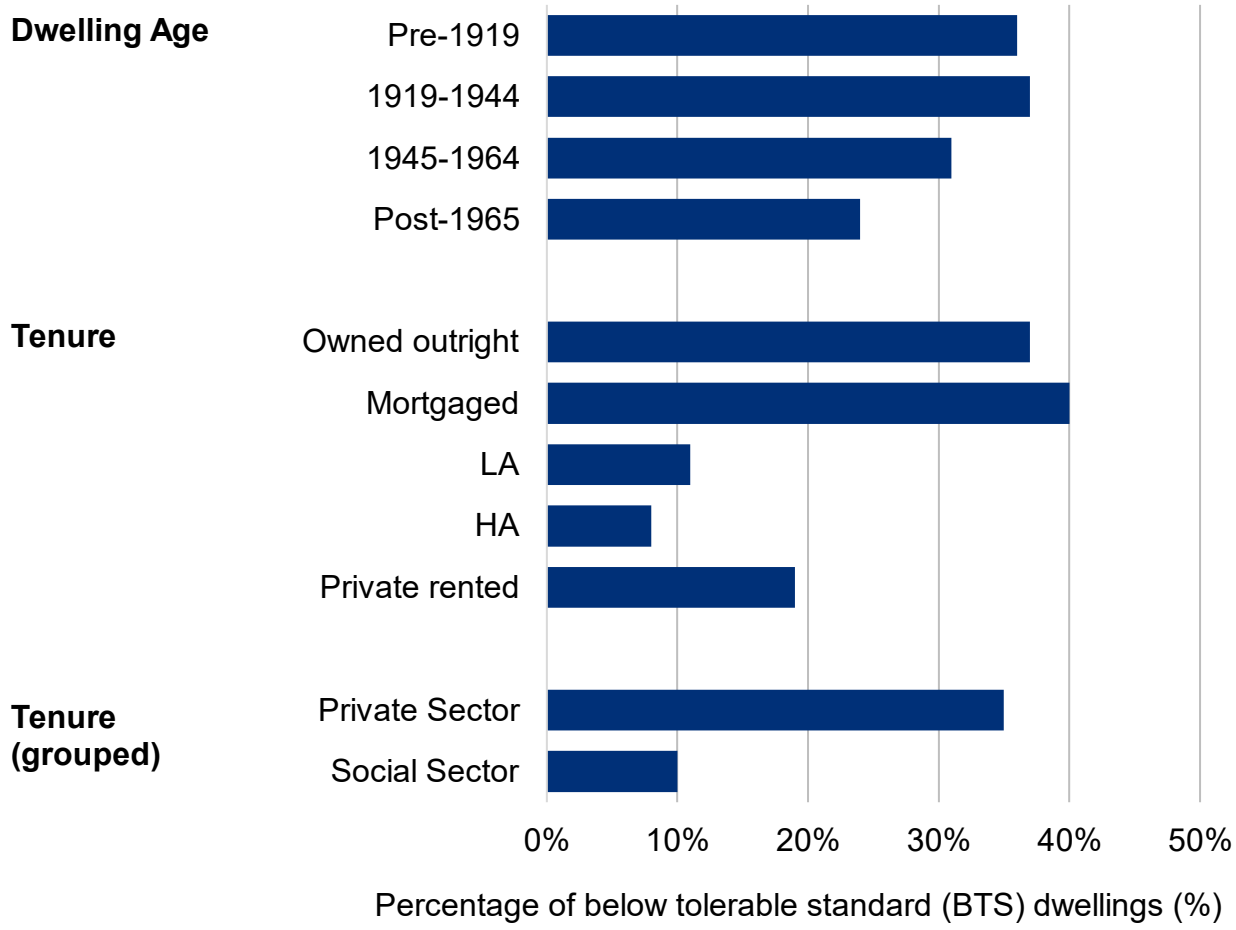
Data Source: Table HC8 in 'SHCS 2022- Chapter 05 Housing Conditions - tables and figures'

Notes: [note 17] [note 20]

The introduction of the two new below tolerable standard criteria in 2022, led to a sharp increase to the proportion of below tolerable standard dwellings across all tenures and dwelling age bands.

In 2022, 35% of private sector and 10% of social sector dwellings fell below tolerable standard.

Figure 5.9: Dwellings below tolerable standard (BTS) by tenure, 2022



As shown in Figure 5.9 the share of dwellings below tolerable standard in the private sectors was 35%, higher than the social sector at 10%. The proportion of owned outright and mortgaged dwellings failing the tolerable standard was 37% and 40% respectively. Conversely, the rate for the private rented sector in 2022 was 19%. This is likely due to smoke, heat and carbon monoxide detectors already being required for private rented properties under the Repairing Standard.

The proportion of dwellings below tolerable standard was 36% for pre-1919 dwellings and 37% for dwellings built between 1919 and 1944. Around a quarter (24%) of recently built dwellings (post 1965) were below tolerable standard in 2022.

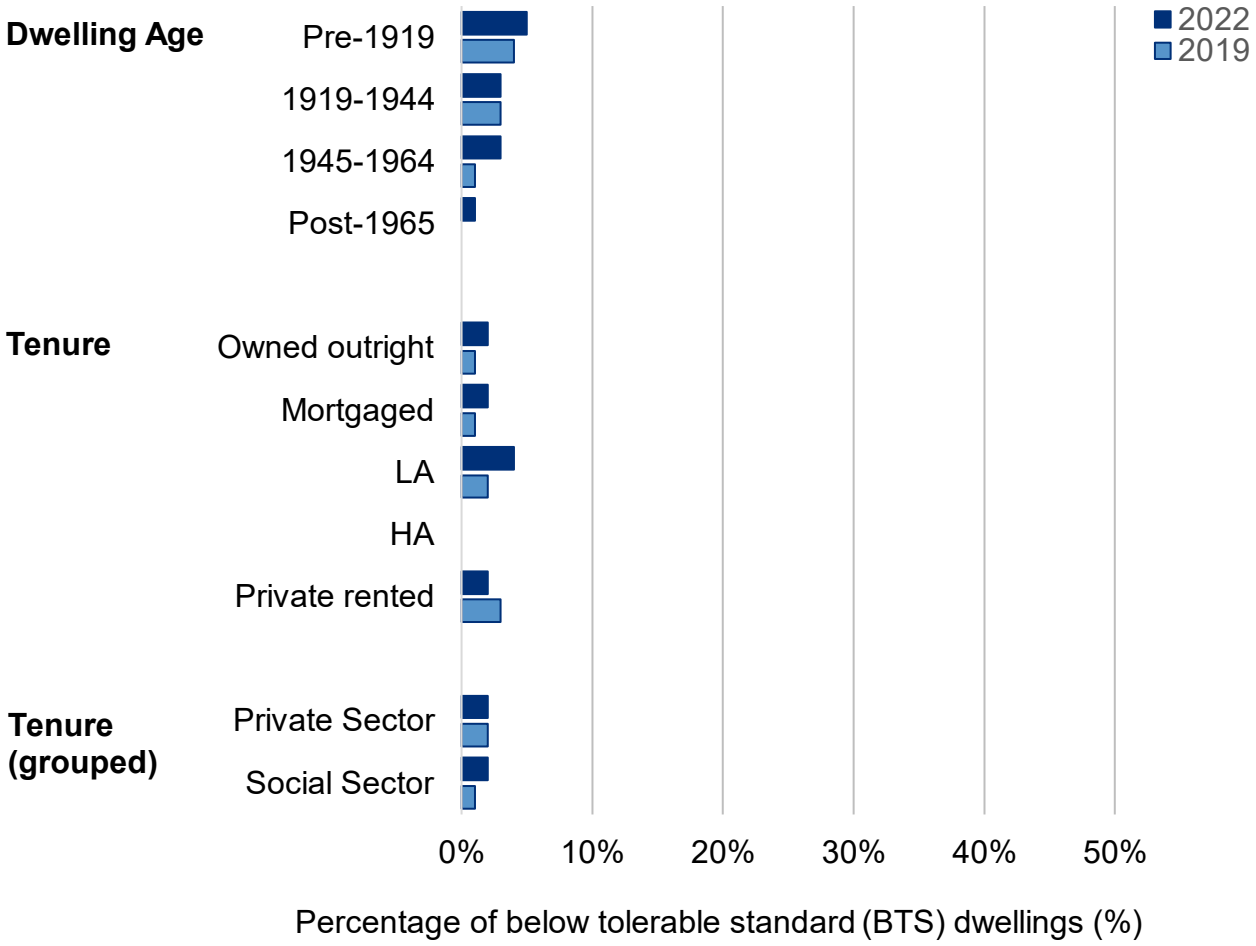
Data Source: Table HC9a in 'SHCS 2022- Chapter 05 Housing Conditions - tables and figures'

Notes: [note 17]

Figure 5.10 shows the proportion of below tolerable standard dwellings by tenure in 2022 and 2019, based only on the 12 pre-existing below tolerable standard criteria.

Considering only the 12 pre-existing criteria, in 2022 the share of dwellings below tolerable standard in both the private and social sector was 2%, both similar to 2019.

Figure 5.10: Dwellings below tolerable standard (BTS) excluding the two new below tolerable standard criteria by tenure, 2019 and 2022



As shown in Figure 5.10, in 2022 the proportion of below tolerable standard dwellings across tenure (when excluding the two new below tolerable standard criteria) is similar to 2019. The share of dwellings below tolerable standard in both the private and social rental sectors was 2%, both similar to 2019. The proportion of owned outright dwellings failing the tolerable standard was 2% in 2022, similar to 2019.

The proportion of pre-1919 dwellings below tolerable standard was 5% in 2022, similar to 2019. Very few recently built dwellings (post 1965) were below tolerable standard compared to pre-1919 dwellings, at less than 1% in 2022.

Data Source: Table HC9a in ‘SHCS 2022- Chapter 05 Housing Conditions - tables and figures’

Notes: [note 17]

Interestingly, the introduction of smoke, fire, and carbon monoxide alarms to the tolerable standard has introduced a divergence in compliance by tenure. In previous waves (and the current wave with these standards removed) compliance is similar between the private and social sector. However, when including these criteria, the social sector shows a much higher rate of compliance (90%) than the private sector (65%).

The tolerable standard now consists of 14 criteria (listed in section 2.10 of the Methodological and Technical notes), failure on one of which leads to a failure overall. This is reported on for the first time in the 2022 SHCS.

Dwellings which failed the tolerable standard in 2022 most commonly did so because they failed the two new criteria:

Figure 5.11: Below tolerable standard (BTS) dwellings by individual tolerable standard criteria failures, 2022

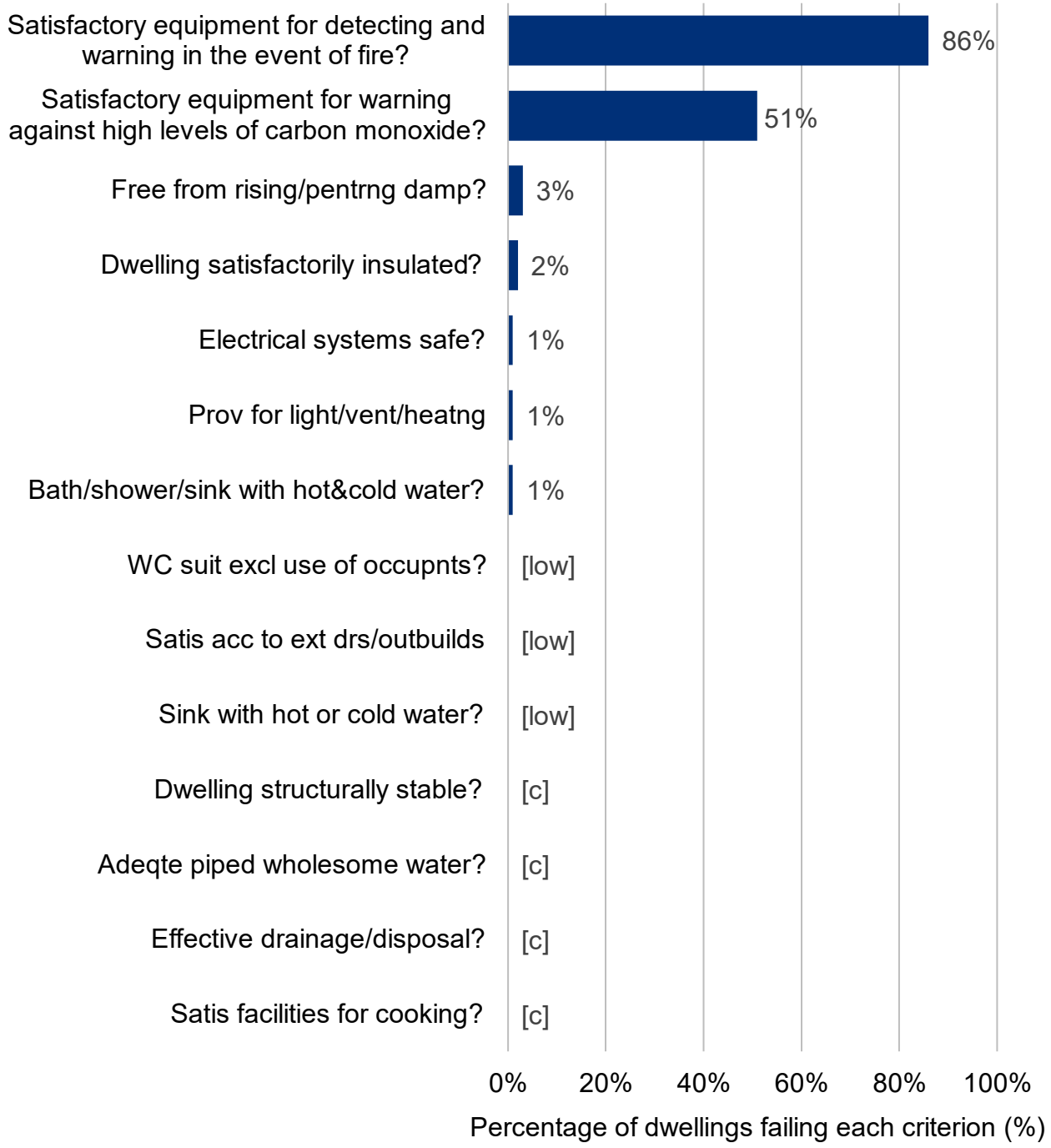


Figure 5.11 shows that of the 742,000 dwellings which failed the tolerable standard in 2022 they most commonly did so because they failed the two new criteria;

- 86% of below tolerable standard dwellings (around 638,000 dwellings) did not have satisfactory equipment for detecting and warning in the event of fire.
- 51% of below tolerable standard dwellings (around 373,000 dwellings) did not have satisfactory equipment for warning against high levels of carbon monoxide.

Other reasons causing dwellings to fail the tolerable standard in 2022 is that they were:

- not free from rising/penetrating damp (19,000 or 3% of BTS dwellings)
- not satisfactorily insulated (12,000 or 2% of BTS dwellings)

Data Source: Table HC10 in 'SHCS 2022- Chapter 05 Housing Conditions - tables and figures'

Notes: [note 11] [note 17]

5.2.3 Scottish Housing Quality Standard (SHQS)

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).

In the SHCS 54 of the 55 individual elements are assessed by surveyors trained to collect detailed information on housing characteristics. Only one element is not assessed using SHCS data: no information is collected on external noise insulation[19]. The data collected is subsequently aggregated by Scottish Government analysts into higher level measures for each of the 5 criteria and the standard overall.

[19] Compliance with this element will be considered in social landlords' annual reporting to the Scottish Housing Regulator on properties meeting the SHQS.

In 2022, 55% of dwellings failed to meet the SHQS.

Figure 5.12: Dwellings failing SHQS, 2010 to 2022

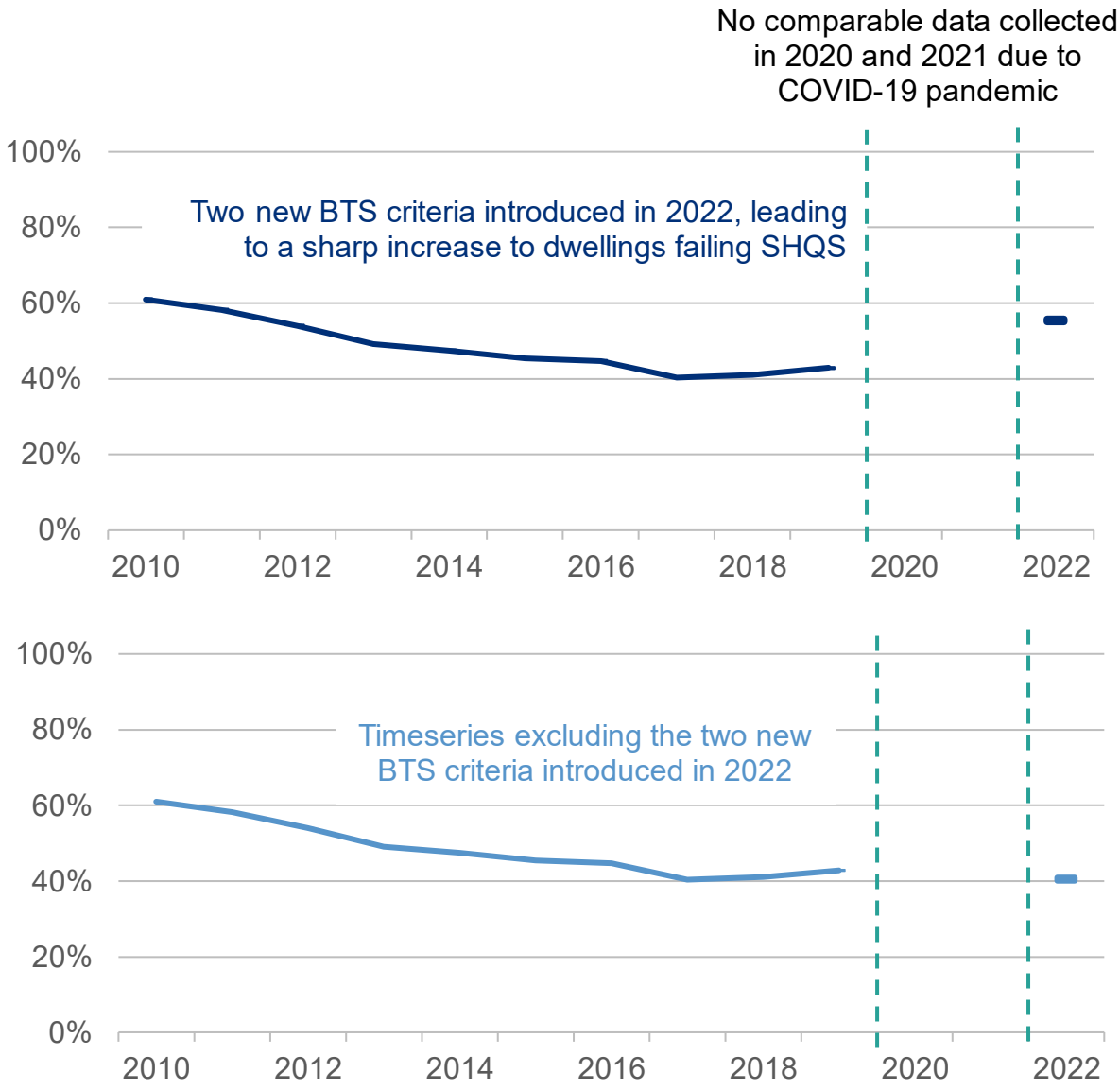


Figure 5.12 shows the overall results for the Scottish housing stock, covering the period 2010 to 2022. In 2022, two new below tolerable standard criteria were introduced leading to a sharp increase to the proportion of dwellings failing to meet the SHQS from 43% in 2019 to 55% in 2022.

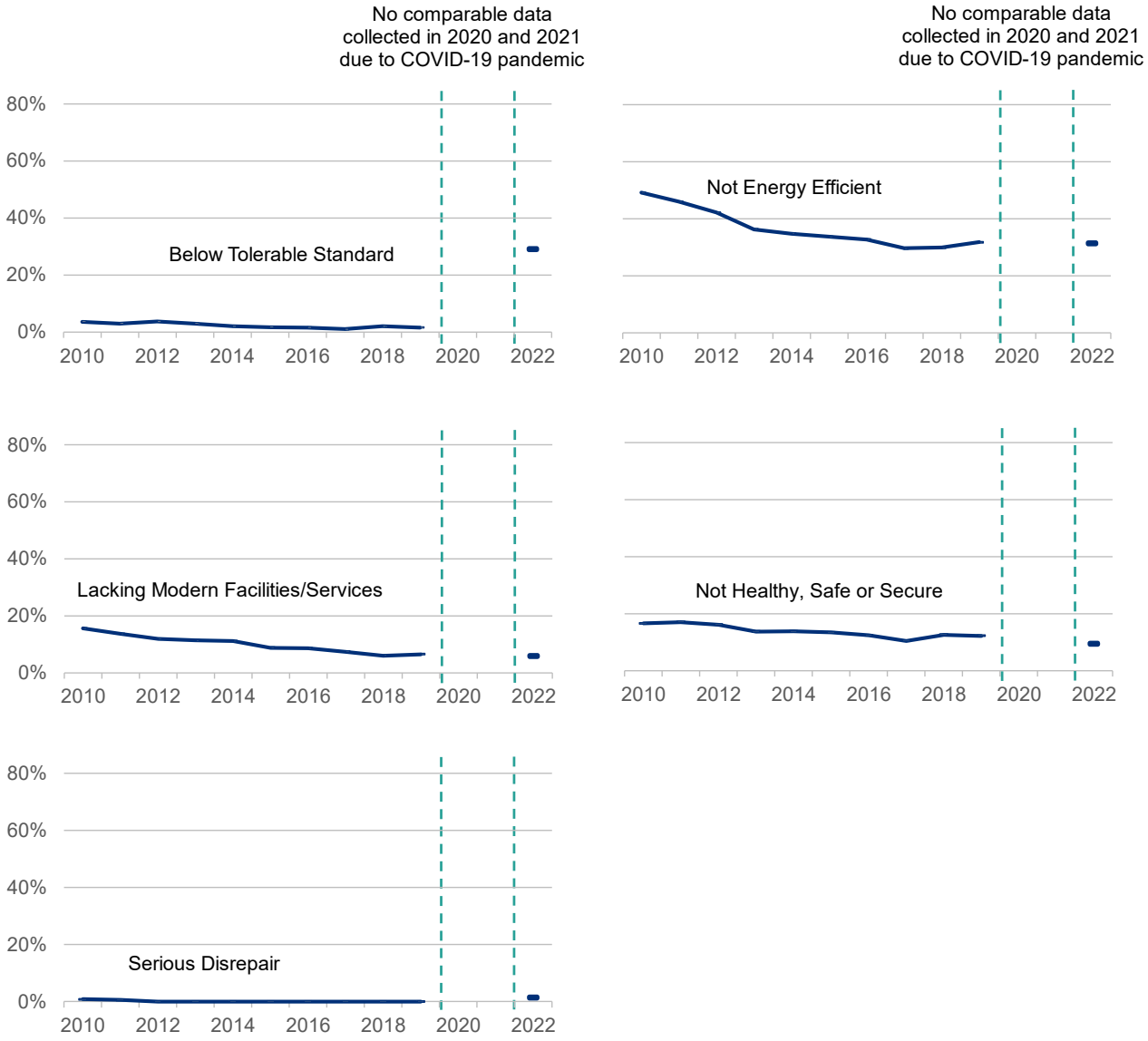
Excluding the two new criteria from the timeseries, reduces the failure rate of dwellings meeting the SHQS to 40%. Similar to the rate of 43% in 2019.

Data Source: Table HC11a in 'SHCS 2022- Chapter 05 Housing Conditions - tables and figures'

Notes: [note 17] [note 18] [note 20]

In 2022, the highest failure rate was with respect to the Energy Efficient criterion (31%) following by the BTS criterion (29%).

Figure 5.13: Dwellings failing SHQS individual criteria, 2010 to 2022



As in previous years, the highest failure rate was with respect to the Energy Efficient criterion (31%). In 2022 the proportion of dwellings which did not meet the BTS criterion increased from 2% to 29%, due to the introduction of two new BTS criteria. The failure rate for the Healthy, Safe and Secure criterion was 10%, with a failure rate of 6% for Modern Facilities. There were a small number of dwellings which did not meet the Serious Disrepair criterion (1%).

Data Source: Table HC11a in 'SHCS 2022- Chapter 05 Housing Conditions - tables and figures'

Notes: [note 17] [note 18] [note 20]

5.2.3.1 Compliance with SHQS by Tenure, Dwelling Age and Location

The overall SHQS failure rate in 2022 stood at 41% for social sector housing and 60% for the private sector.

Figure 5.14: Dwellings failing SHQS by dwelling characteristic, 2022

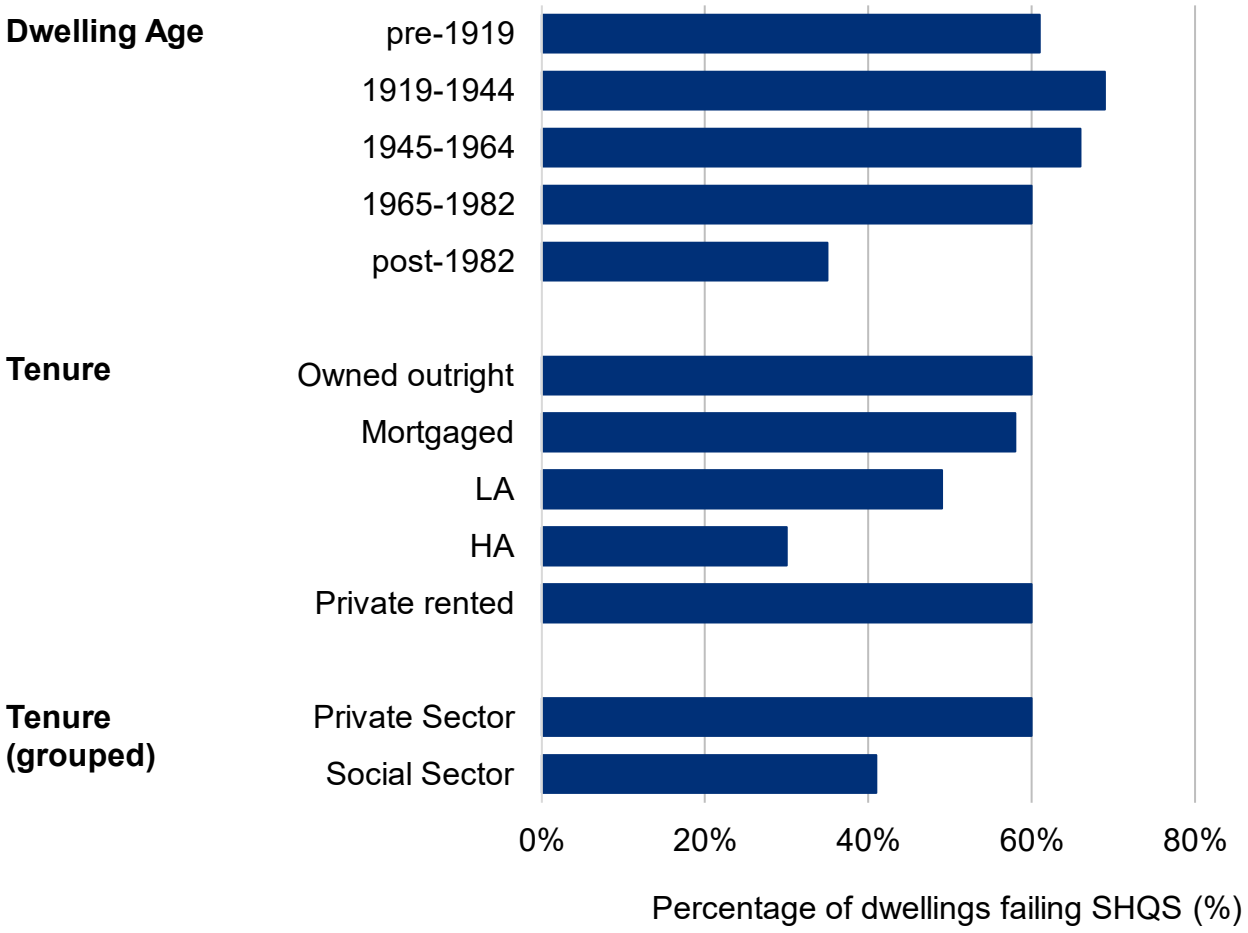


Figure 5.14 shows the proportion of properties failing the SHQS by selected characteristics. The lowest failure rates are in the newest dwellings (post-1982, 35% fail) and in Housing Associations stock (30% fail). As previously shown (see Figure 1.15), Housing Association dwellings are often newer than Local Authority stock (which had a higher failure rate of 49%) and are therefore usually 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.

The overall SHQS failure rate for social sector housing in 2022 stood at 41%, compared to the private sector at 60%. 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 28%. SHCS based measures do not make an allowance for abeyances and exemptions from the SHQS in social rented housing.

Overall, in 2022, the introduction of the two new BTS criteria led to an increase in the SHQS failure rate across all dwelling types, tenures and locations.

Data Source: Table HC12a in 'SHCS 2022- Chapter 05 Housing Conditions - tables and figures'

Notes: [note 17]

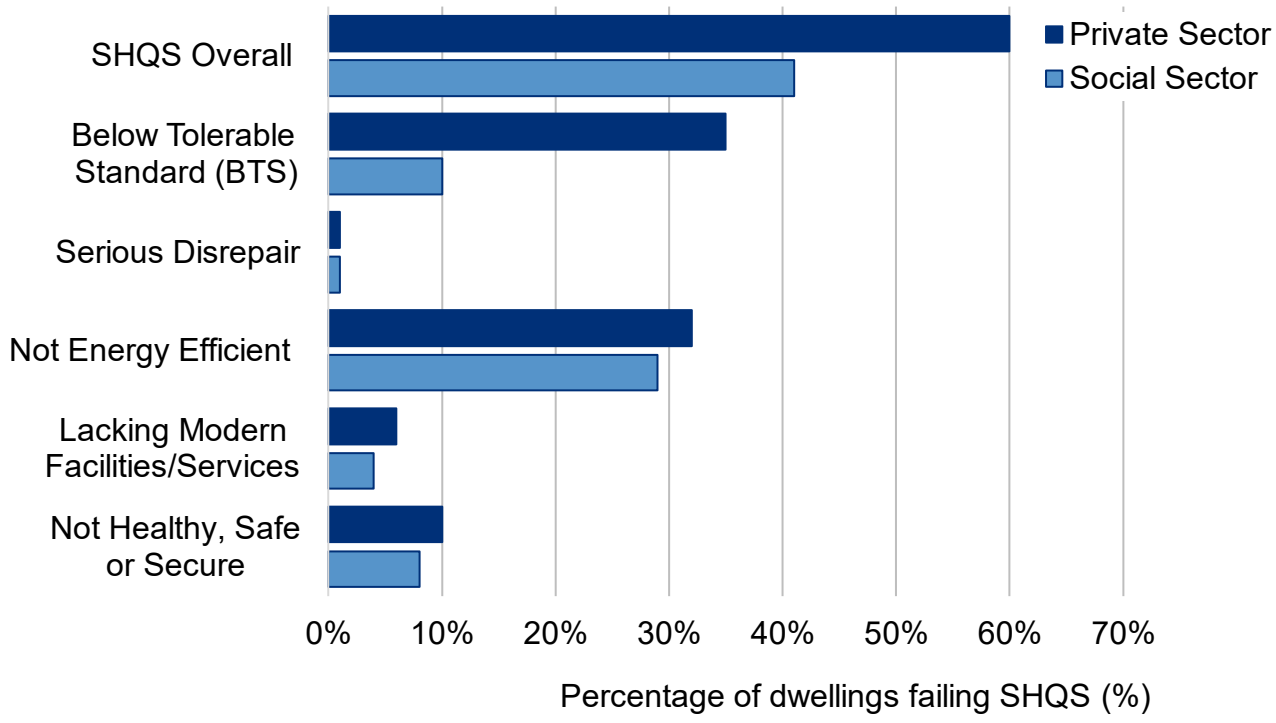
5.2.3.2 Individual SHQS Criteria

Failure rates for each criterion of the SHQS for private and social sector housing since 2010 are available on Table HC13 in 'SHCS 2022- Chapter 05 Housing Conditions - tables and figures'.

Between 2010 and 2017, there was a consistent trend of falling rates of SHQS failures, which then remained similar between 2018 and 2019. Although in some cases the survey sample is not large enough to measure accurately year-on-year changes for each criterion. In 2022, the sharp increase in Below Tolerable Standard (BTS) criterion failure is due to the introduction of two new BTS criteria, however outside of the BTS criterion, failure rates remain broadly similar to 2019.

In 2022, the highest failure rate in private sector was with respect to BTS criterion (35%) comparatively in the social sector it was the Energy Efficient criterion (29%).

Figure 5.15: SHQS criteria failure rates by tenure, 2022



The SHCS estimates that 41% of social sector housing failed to meet the SHQS in 2022. This was predominantly due to the Energy Efficient criterion, where 29% of properties failed on this measure. 10% failed the Below Tolerable Standard criterion, 8% failed the Healthy, Safe and Secure criterion and 4% failed the Modern Facilities criterion. A small proportion (1%) failed the Serious Disrepair criterion.

If the SHQS applied to private sector housing, then 60% would have failed to meet it in 2022. This would be primarily due to 35% of the properties failing to meet the Below Tolerable Standard criterion and 32% failing to meet the Energy Efficient criterion. 10% of the properties would also fail the Healthy, Safe and Secure criterion and 6% would fail the Modern Facilities criterion. A small proportion (1%) would fail the Serious Disrepair criterion.

Data Source: Table HC13 in 'SHCS 2022- Chapter 05 Housing Conditions - tables and figures'

Notes: [note 17]

5.2.3.3 Number of Criteria and Elements Failing

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[20].

[20] 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 Improving housing standards - Social housing

In 2022, the majority of SHQS failures were due to a single criterion.

Figure 5.16: Proportion of dwellings by numbers of SHQS criteria failures and sector, 2022

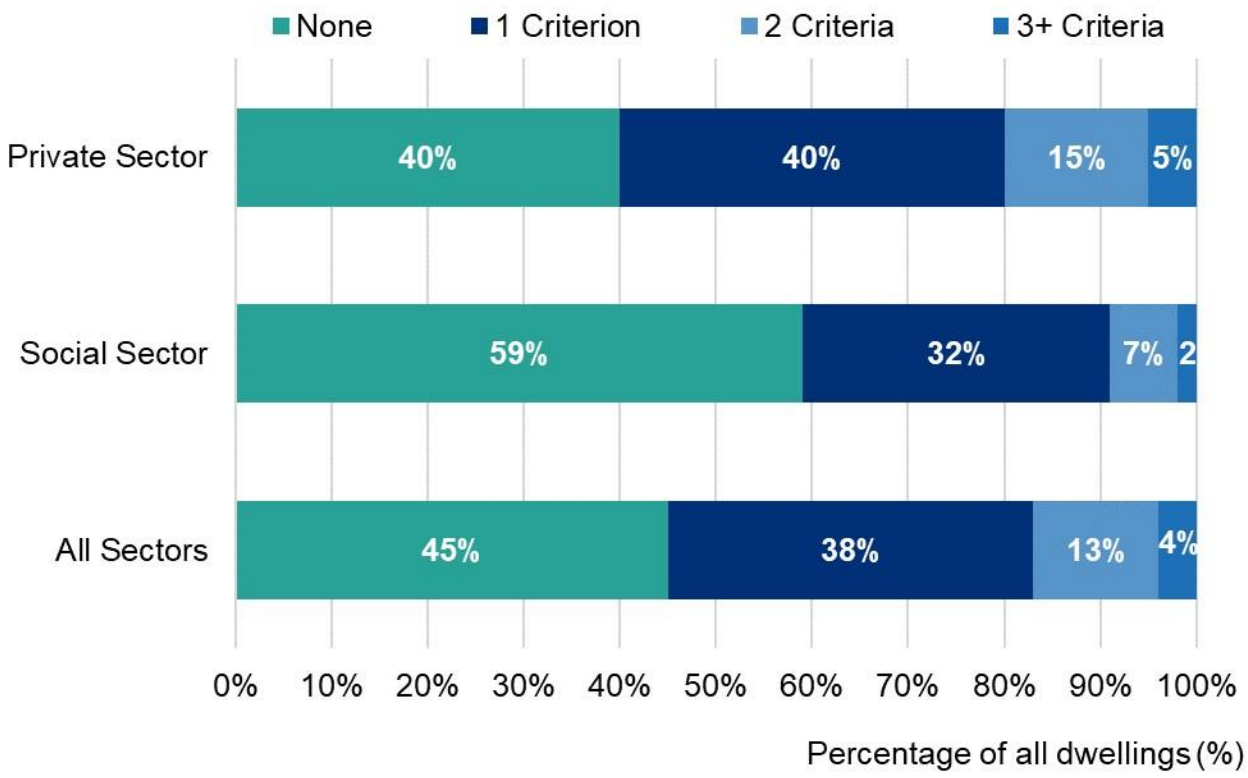


Figure 5.16 presents the distribution of dwellings by number of criteria failed and sector. The majority of failures in 2022 were due to a single criterion: 38% for the whole stock, 40% for private sector and 32% for social sector dwellings.

Data Source: Table HC14a in 'SHCS 2022- Chapter 05 Housing Conditions - tables and figures'

Notes: [note 20]

Since 2010, the majority of failures in both the private and social sector were due to failure on a single SHQS criterion.

Figure 5.17: Proportion of dwellings by numbers of SHQS criteria failures and sector, 2010 to 2022

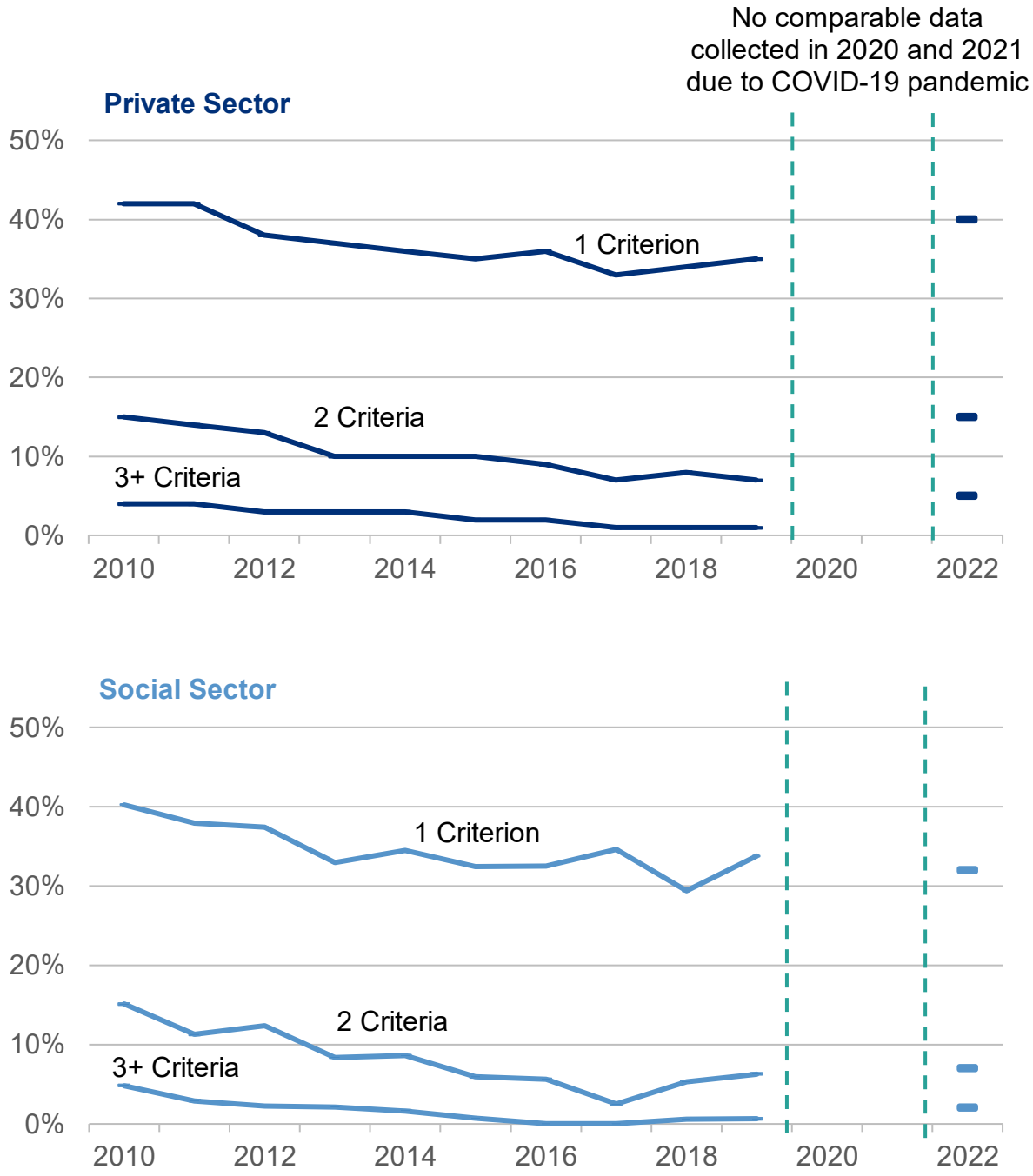


Figure 5.17 shows presents the distribution of dwellings for private and social sector by number of criteria failed. Since 2010, the majority of failures in both private and social sector were due to a single criterion.

In 2022, 40% of private sector dwellings, and 32% of social sector dwellings failed one SHQS criterion. In 2010, the corresponding figures for the percentage of dwellings failing on just one criterion was 42% for private sector and 40% the social sector. Therefore, over time, there has been a reduction in the reasons why social dwellings do not meet the standard although this has been more stable in recent years.

Data Source: Table HC14a in 'SHCS 2022- Chapter 05 Housing Conditions - tables and figures'

Notes: [note 17] [note 18]

In 2022, 51% of dwellings failing the SHQS did so because of a single element.

Figure 5.18: Proportion of dwellings failing the SHQS by numbers of SHQS element failures and sector, 2022

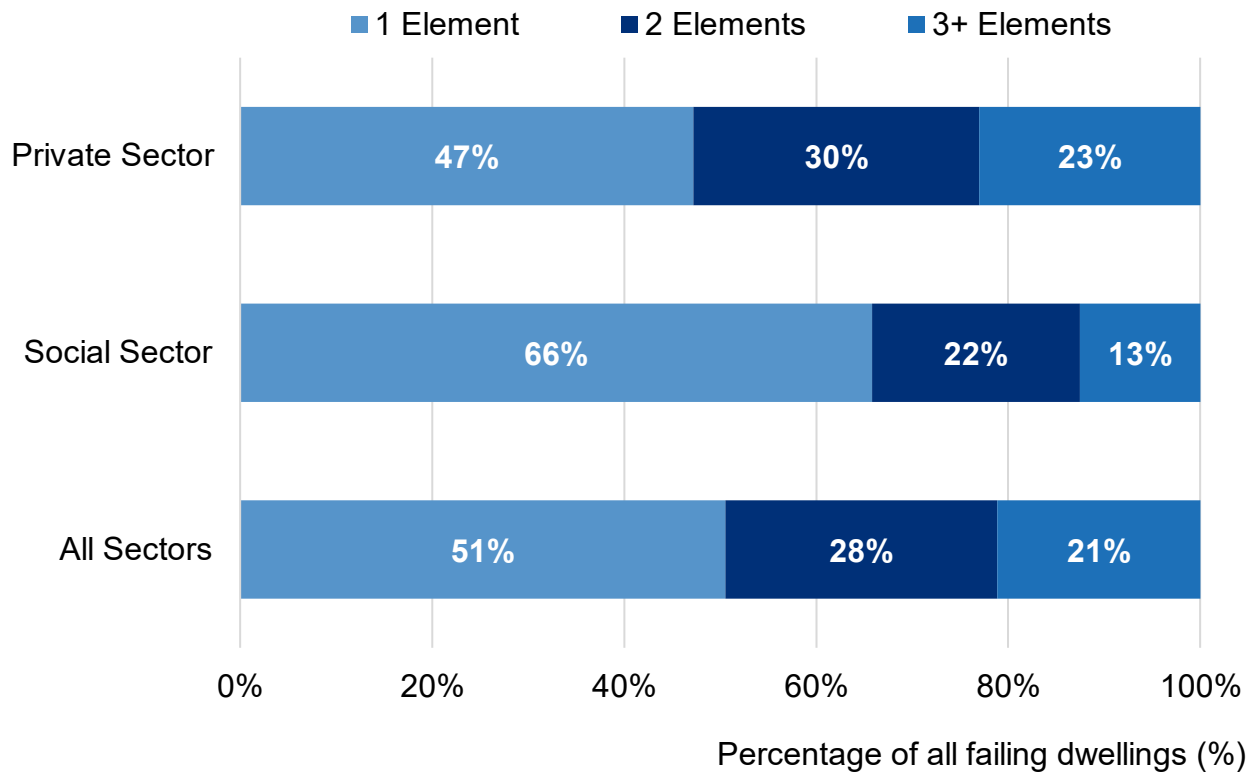


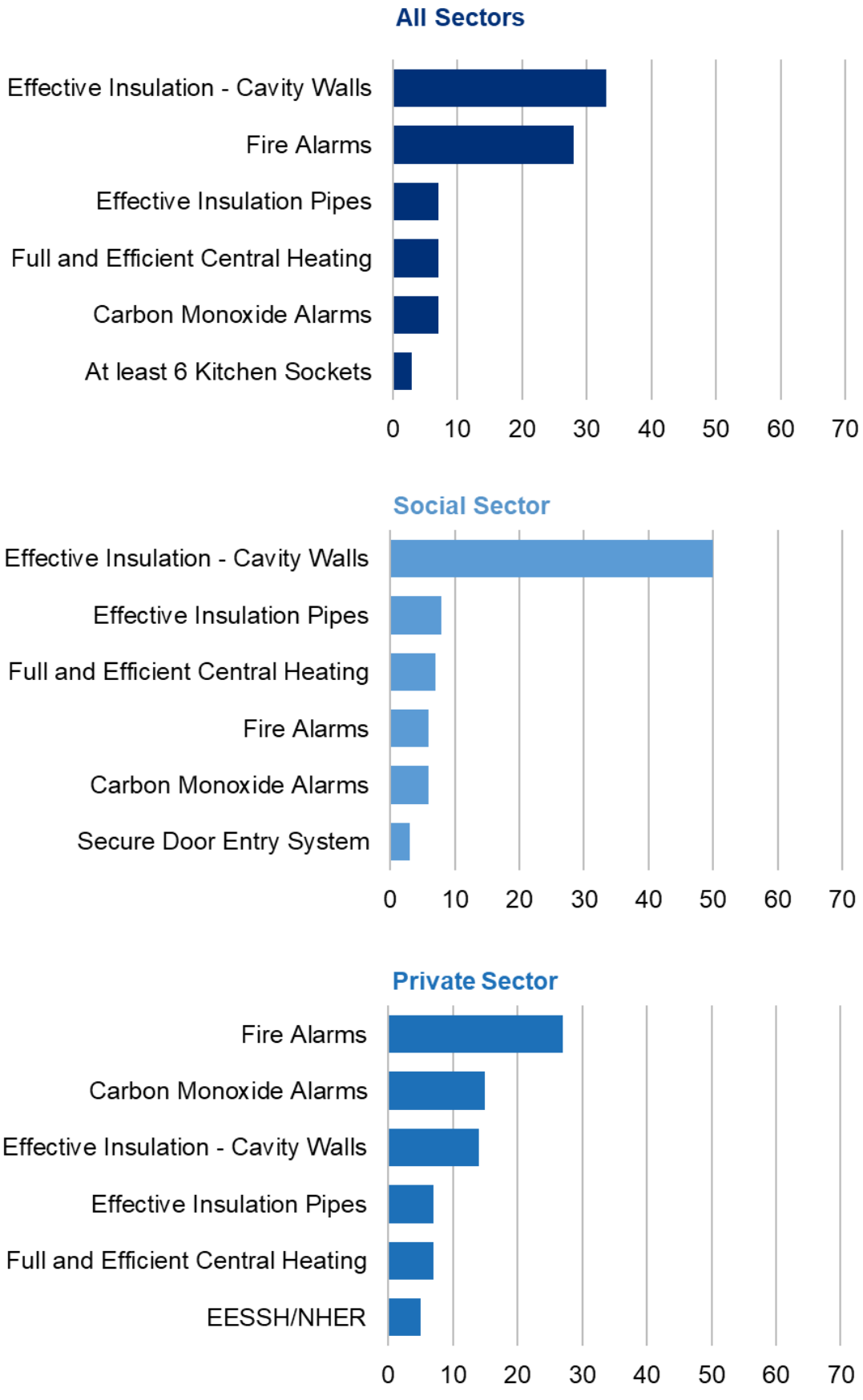
Figure 5.18 presents the distribution of dwellings failing the SHQS by number of elements failed and sector. The majority of failures in 2022 were due to a single element failure: 51% for the whole stock, 47% for private sector and 66% for social sector dwellings.

Data Source: Table HC15 in ‘SHCS 2022- Chapter 05 Housing Conditions - tables and figures’

Notes: [note 17] [note 18]

In 2022, the element most likely to cause a single SHQS failure in social sector dwellings was cavity wall insulation, and in private sector dwellings was fire alarms.

Figure 5.19: Single- element SHQS failures by sector, 2022



In 2022, the single elements most likely to cause failure (as there are no other reasons to fail the SHQS in these dwellings) across all tenures are cavity wall insulation (33%) and fire alarms (28%). Other elements causing a single SHQS failure are; pipe insulation (7%), full and efficient central heating (7%), carbon monoxide alarms (7%) and at least six kitchen sockets (3%).

In social sector, the elements most likely to cause a single SHQS failure are cavity wall insulation (50% of all single element failures in the social sector) followed by pipe insulation (8%), full and efficient central heating (7%), fire alarms (6%), carbon monoxide alarms (6%) and secure door entry system (3%).

In private sector, the elements most likely to cause a single SHQS failure are fire and carbon monoxide alarms (27% and 15% respectively). Other elements causing a single element SHQS failure are cavity wall insulation (14%) and full and efficient central heating (7%).

More information is available on Table HC16a in 'SHCS 2022- Chapter 05 Housing Conditions - tables and figures'

Notes: [note 17] [note 18]

5.2.3.4 SHQS Compliance and Cavity Wall Insulation

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 published by the SHR reported that 79% of social homes met the SHQS in 2022/23, compared to 59% reported in the 2022 SHCS.

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.

One potential source of difference relates to the ability of the SHCS 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.

However, the SHCS 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 (Section 2.11 of the Methodological and Technical notes). 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.

Excluding this element from the compliance requirement leads to a 19 percentage point reduction in the energy efficiency element failure rate and a 13 percentage point reduction in overall SHQS failure. This amounts to around 84,000 fewer social sector dwellings failing the SHQS and an overall SHQS compliance rate of 72%.

More information is available on Table HC17 in in 'SHCS 2022- Chapter 05 Housing Conditions - tables and figures'.

6 Bedroom Standard

6.1 Overcrowding and Under-Occupancy

Key Points

- In 2022 around 70,000 households lived in overcrowded accommodation (3%), under the bedroom standard.
- Around 37% of all households (949,000) had one bedroom in excess of the minimum requirement under the bedroom standard. A further 888,000 (35% of all households) had two or more bedrooms in excess.
- Social sector tenants are more likely to live in accommodation which meets but does not exceed the minimum requirements of the bedroom standard (51% compared to 17% in the private sector). Social sector tenants are also slightly more likely (5%) to live in accommodation which is overcrowded according to the bedroom standard than those households living in the private sector (2%).
- By comparison households in the private sector are more likely to live in accommodation which exceeds the bedroom standard (81% vs 44% for social tenants).
- 15% of households living in homes meeting (but not exceeding) the bedroom standard felt their home had too few rooms, while 46% of households living in overcrowded homes felt that their home had just about the right number of rooms.
- Scottish House Condition Survey results for 2022 have been assessed to be comparable in the most part to 2019 and earlier years. However, as noted in section 1.1.5 of the Methodological and Technical notes there is evidence to suggest that social and private rented households, who are less likely to exceed the bedroom standard, may be under-represented in the 2022 achieved sample and owner-occupied households, who are more likely to exceed the bedroom standard, may be slightly over-represented. Due to this, national level estimates of households exceeding or failing to meet the bedroom standard may be slightly underestimated.

This section examines some key measures of whether households are living in overcrowded or under-occupied conditions. This is determined on the basis of the bedroom standard as defined in the Housing (Overcrowding) Bill 2003 taking into account the number of bedrooms available in the dwelling and the type of 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 2.9 of the Methodological and Technical notes.

The majority of dwellings in Scotland have at least one bedroom above the minimum standard.

Figure 6.1: Proportion of dwellings which are overcrowded, meet the minimum standard, or exceed it, 2012-2022

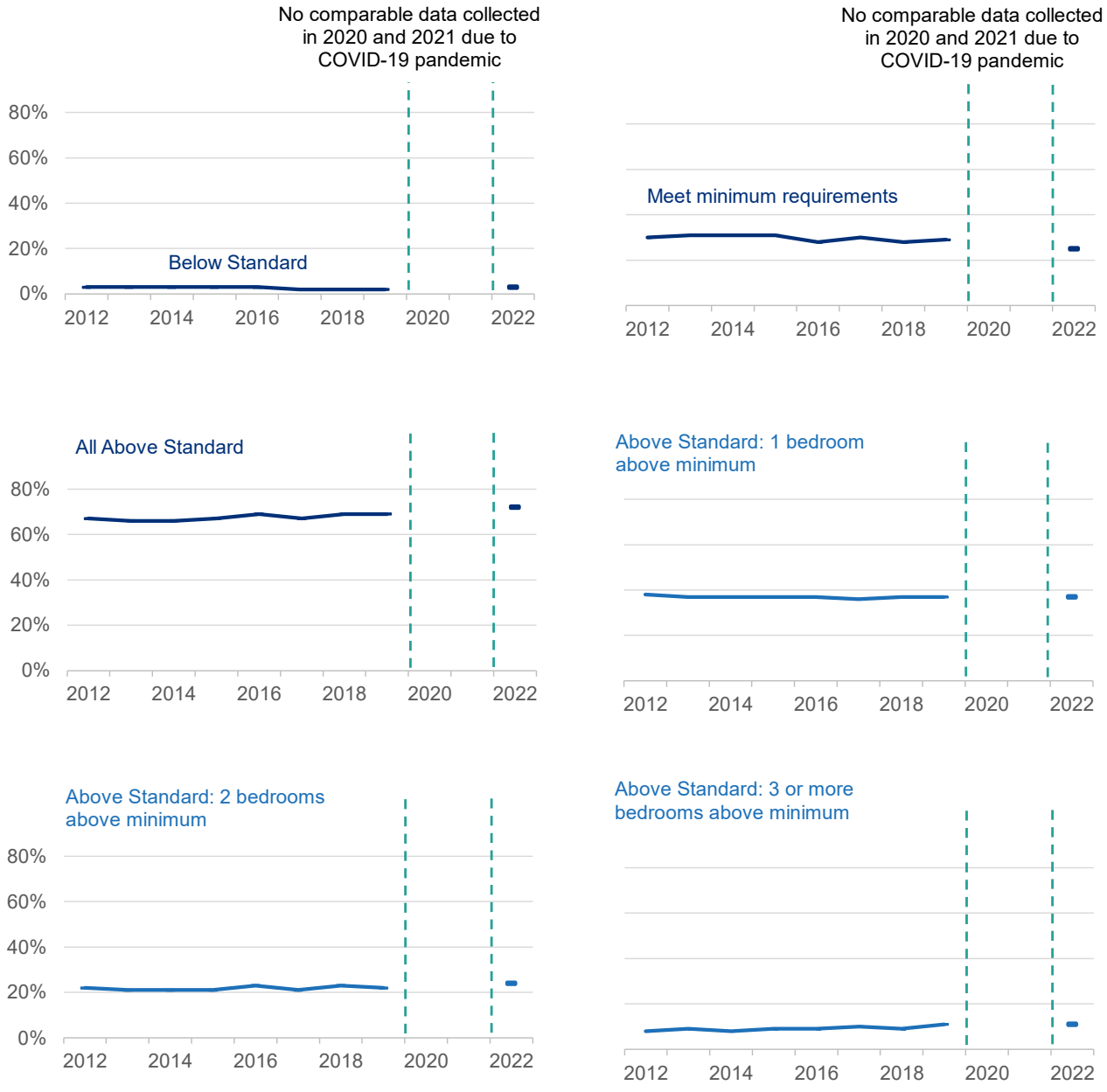


Figure 6.1 shows how headline occupancy measures have changed over time. In 2022, the national rate of households with at least one bedroom above the minimum standard was 72%, an increase of 3 percentage points since 2019. The proportion of households who live in accommodation that meets (but not exceeds) the minimum bedroom standard decreased from 29% in 2019 to 25% in 2022. The rate of overcrowding (i.e. below the standard) has remained around 2-3% since 2012 and is currently at 3% in 2022. The proportion of dwellings with 3 or more bedrooms above the minimum increased from 8% in 2012 to 11% in 2019 and remained stable at 11% in 2022.

Data Source: Table BS1a in 'SHCS 2022- Chapter 06 Bedroom Standard- tables and figures'

Notes: [note 21]

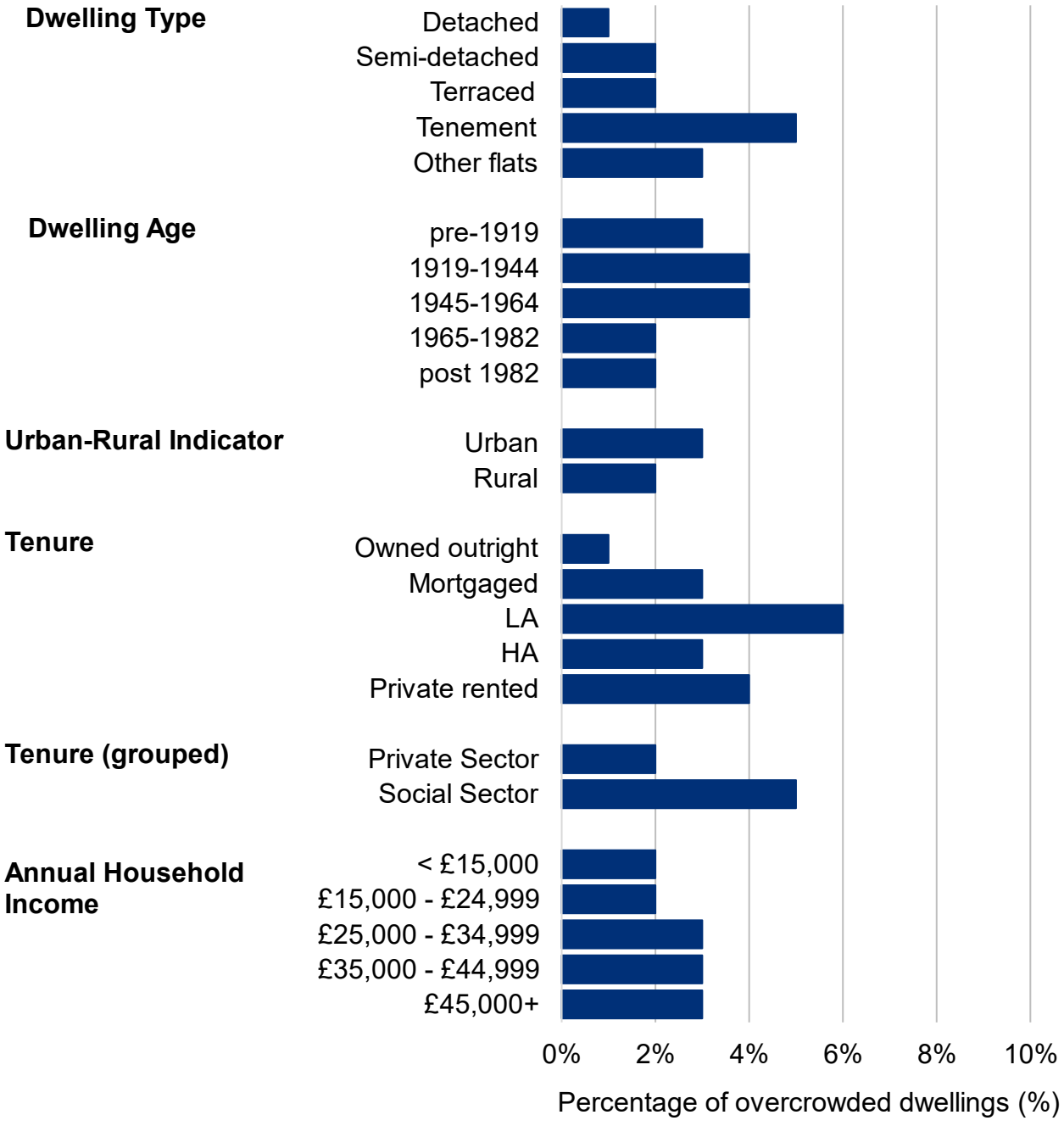
Subsequent sections examine in more detail the differences across household and dwelling characteristic.

6.1.1 Overcrowding

A dwelling is considered overcrowded if there are insufficient bedrooms to meet the occupants' requirements under the bedroom standard definition (see section 2.9 of the Methodological and Technical notes).

Around 3% of households in Scotland live in overcrowded accommodations.

Figure 6.2: Overcrowded dwellings by dwelling and household characteristics, 2022



In 2022, around 3% of all households (70,000) were found to live in overcrowded accommodation (see Figure 6.2). Social sector dwellings (5%) were more likely to be overcrowded than private sector dwellings (2%). Households who own their properties outright (1%) had overcrowding rates below the national average.

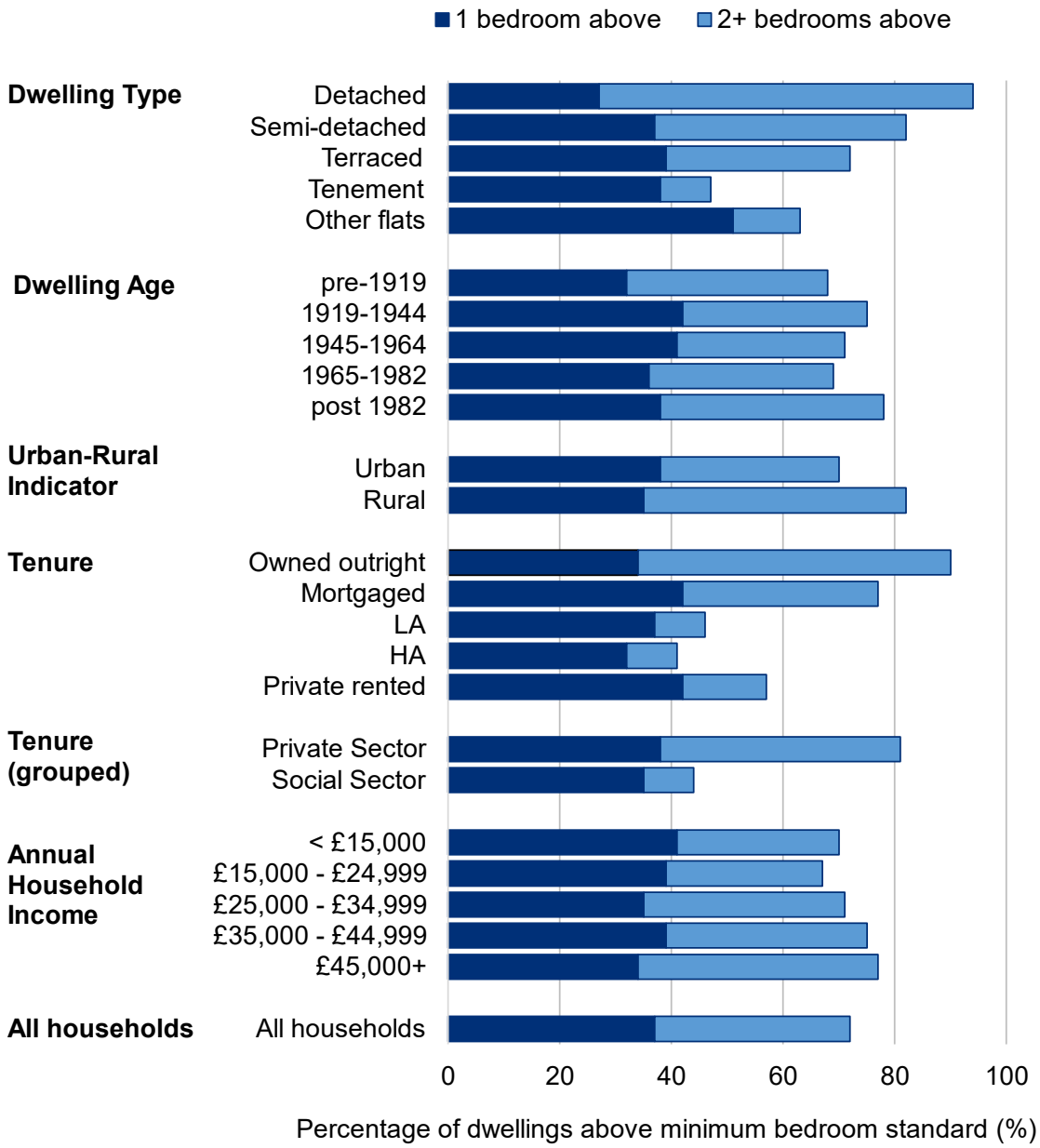
Data Source: Table BS2 in [‘SHCS 2022- Chapter 06 Bedroom Standard- tables and figures’]

Notes: [note 1]

6.1.2 Under-Occupancy

37% of households had one additional bedroom above the minimum bedroom standard and around 35% had two or more bedrooms in excess of the minimum standard.

Figure 6.3: Dwellings above minimum bedroom standard, by dwelling and household characteristics, 2022



As shown in Figure 6.3, around 37% of all household had one additional bedroom above the minimum under the bedroom standard and 35% of all households had two or more bedrooms in excess of the minimum standard.

Households in the social and private rented sectors are less likely to have two or more bedrooms in excess of the minimum requirements. Only 9% of social tenants and 15% of private tenants have two or more additional rooms, compared to 56% of those who own outright and 35% of those with a mortgage. The proportion of households with one bedroom in excess of minimum requirements is similar between the private and social sectors (38% and 35% respectively).

Higher income households (£45,000 or more per year) are more likely to live in dwellings with two or more additional bedrooms (43%) than the national average (35%).

Under-occupied dwellings are less common amongst those built pre-1919, where 68% have one or more bedrooms in excess of the standard, compared to dwellings built post-1982 where the rate is 77%. Similarly, detached houses have the highest rates of under-occupancy compared to other building types: 67% with two or more additional bedrooms. By comparison, tenements (9%) and other flats (12%) have the lowest rates of two or more additional bedrooms but are more likely to meet but not exceed the minimum standard (47% and 34% respectively) than detached houses (see Table BS4 in 'SHCS 2022- Chapter 06 Bedroom Standard- tables and figures').

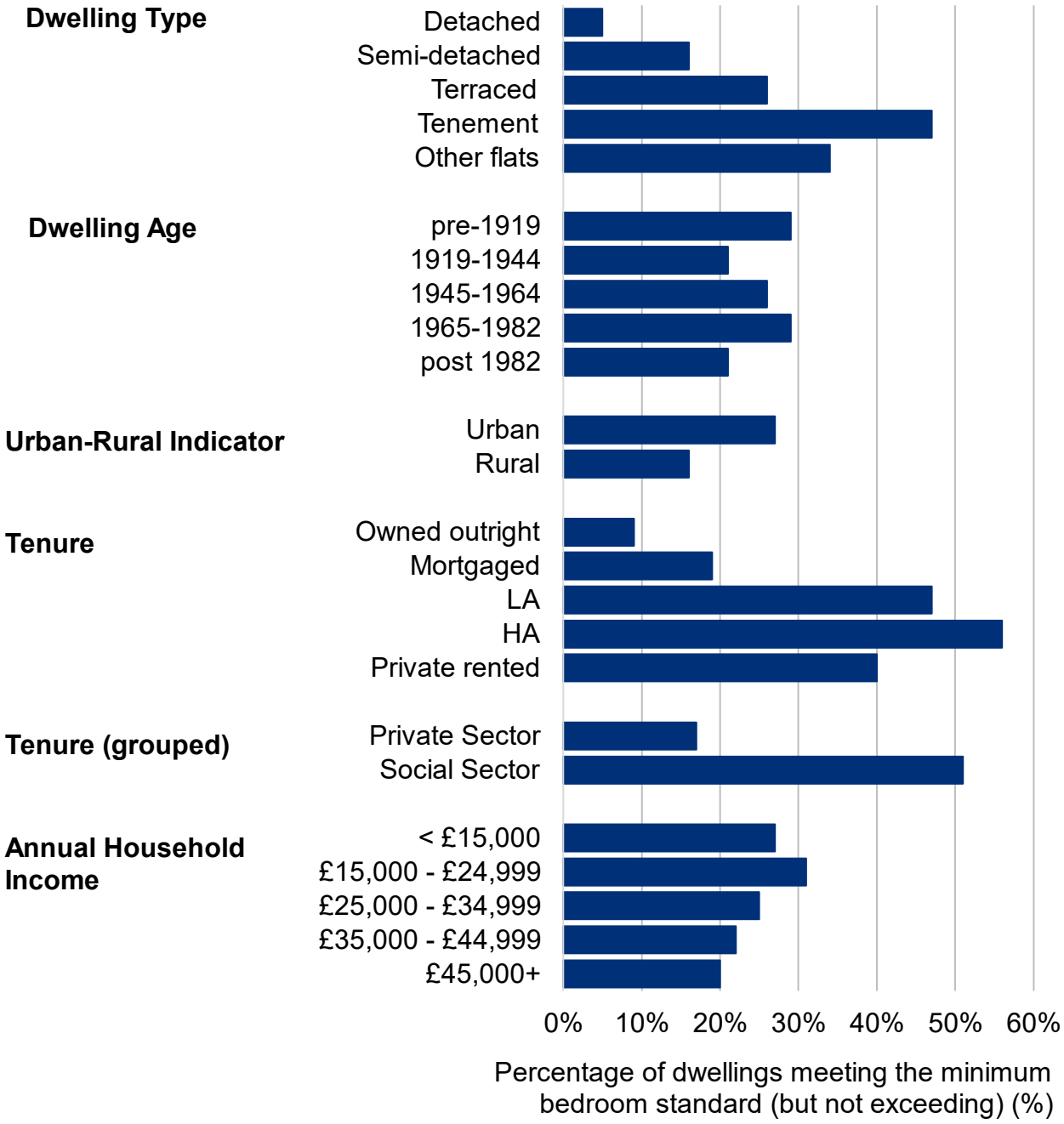
Under-occupation is more common in rural areas. 47% of rural dwellings have two or more bedrooms in excess of the minimum requirements under the bedroom standard, compared to 32% for urban properties.

Data Source: Table BS3 in 'SHCS 2022- Chapter 06 Bedroom Standard- tables and figures'

Notes: [note 1] [note 21]

In 2022, a quarter of households in Scotland live in accommodations that meet (but not exceed) the minimum bedroom standard.

Figure 6.4: Dwellings meeting the minimum bedroom standard (but not exceeding), by dwelling and household characteristics, 2022



Social and private rented sector tenants are more likely to live in accommodation which meets (but doesn't exceed) the minimum requirements of the bedroom standard (Figure 6.4); 51% of the social sector and 40% in the PRS, meet but do not exceed the bedroom standard compared to 9% for those who own outright and 19% for those with a mortgage.

In 2022, 47% of tenements and 34% of other flats met (but did not exceed) the minimum standard. Urban dwellings are more likely to meet, but not exceed, the minimum standard (27%) than rural dwellings (16%).

Lower income household are more likely to meet and not exceed the standard compared to higher income households; 27% of households with annual household income lower that £15,000 meet but do not exceed the bedroom standard compared to 20% for those with an income higher than £45,000.

Data Source: Table BS4 in 'SHCS 2022- Chapter 06 Bedroom Standard- tables and figures'

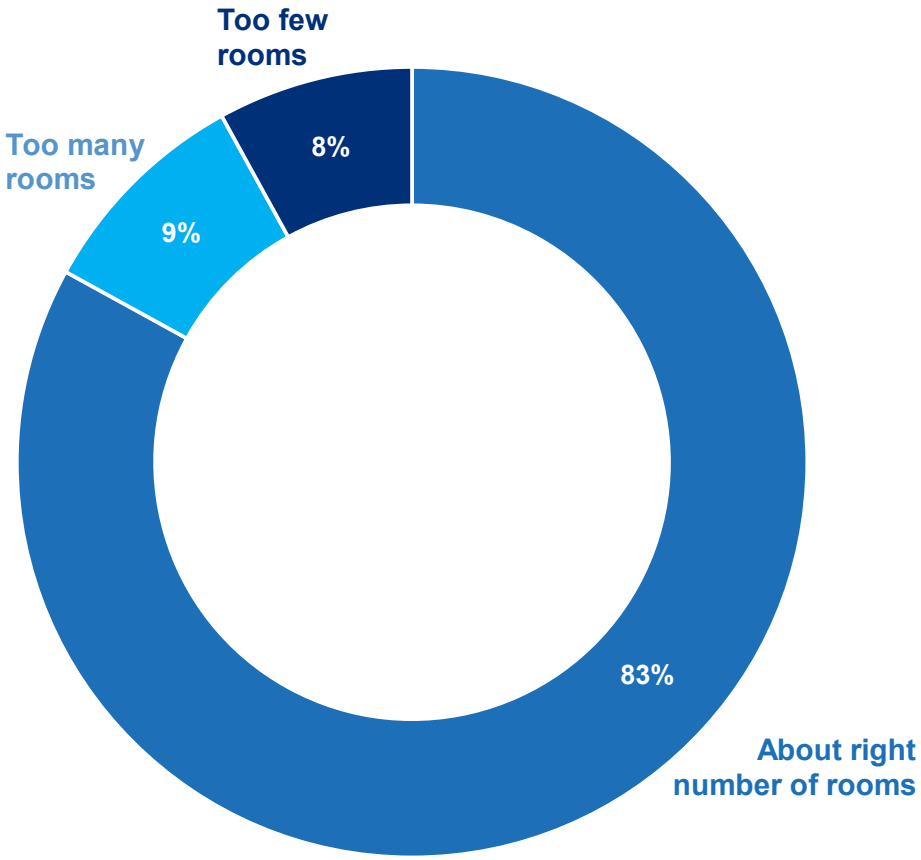
Notes: [note 1]

6.2 Overcrowding and Under-Occupancy Perceptions

The Scottish Household Survey asks householders about their views on the number of rooms in their house/flat. Since 2021 we have provided an analysis of the responses to this question and in relation to the household's compliance with the bedroom standard. It should be noted that the question does not ask specifically about the number of bedrooms in the house/flat.

The majority (83%) of householders reported that their accommodation had about the right number of rooms.

Figure 6.5: Householders' perceptions about the number of rooms in their accommodation, 2022



83% of householders reported that their accommodation had about the right number of rooms, while 8% believed that they have too few rooms and 9% that they have too many rooms (see Figure 6.5).

Data Source: Table BS5 in 'SHCS 2022- Chapter 06 Bedroom Standard- tables and figures'

Householders' views on the number of rooms in their accommodation vary across various household and dwelling characteristics.

Figure 6.6: Householders' perceptions about the number of rooms in their accommodation, by dwelling and household characteristics, 2022

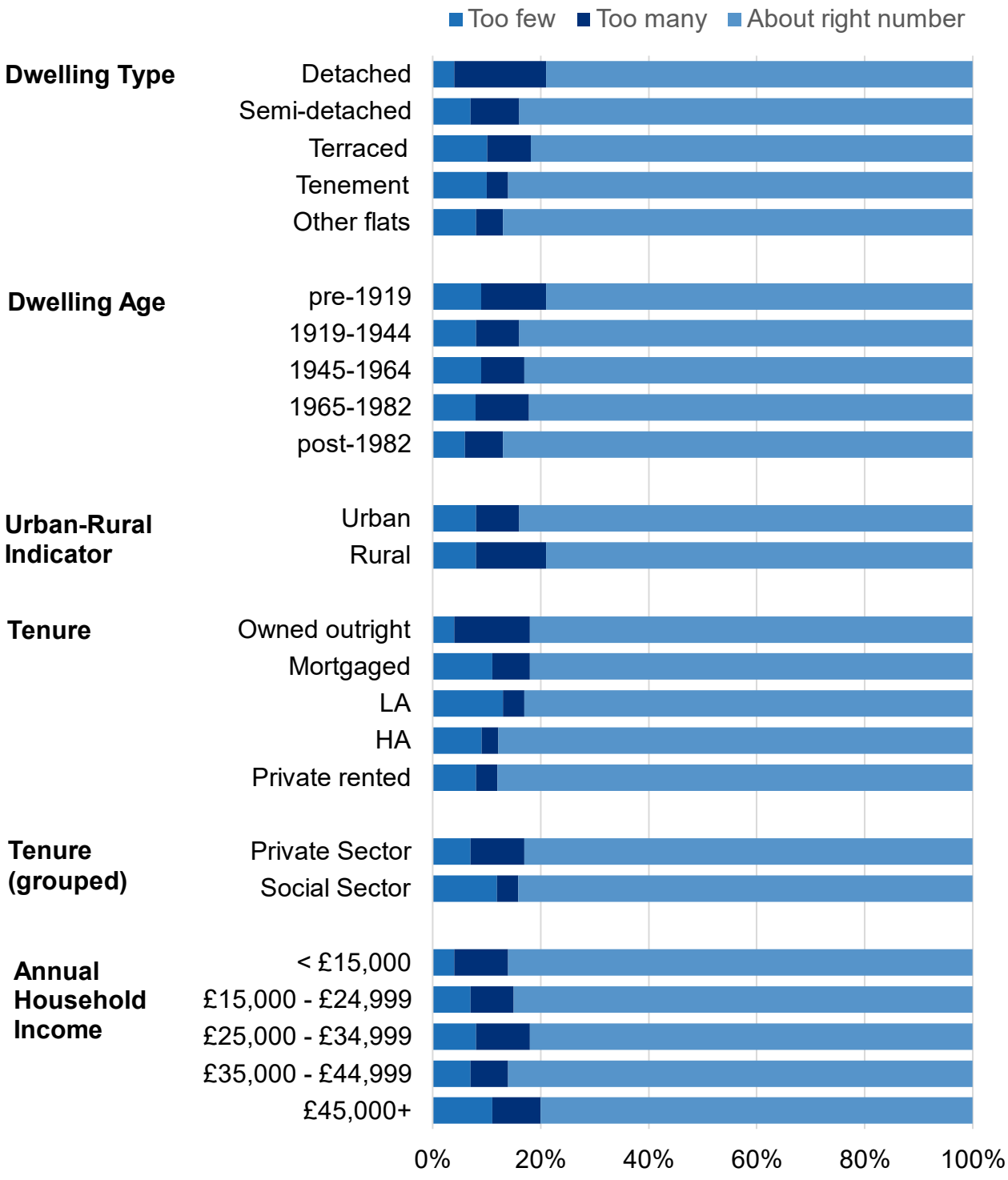


Figure 6.6 shows that in private sector dwellings 10% of householders feel that their accommodation has too many rooms and 7% that their accommodation has too few rooms. By comparison in the social sector 12% of the respondents feel that their accommodation has too few rooms while only 4% feel that they have too many rooms.

17% of householders who live in detached houses believe that their house has too many rooms, higher than all other dwelling types. By comparison 9% of semi-detached, 8% of terraced houses, 4% of tenements and 5% for other flats believe they have too many rooms. In rural locations 8% of the respondents feel that their accommodation has too few rooms and 13% feel that they have too many rooms, while for urban locations the proportions are 8% and 8% respectively. 11% of households with an annual income of £45,000 or more believe that their accommodation has too few rooms, higher than households with an income less than £15,000 where only 4% of feel the same way.

Data Source: Table BS6 in SHCS 2022- Chapter 06 Bedroom Standard- tables and figures'

Notes: [note 1]

84% of householders who live in under-occupied dwellings feel that they have about the right number of rooms.

Figure 6.7: Householders' perceptions about the number of rooms in their accommodation, by bedroom standard, 2022

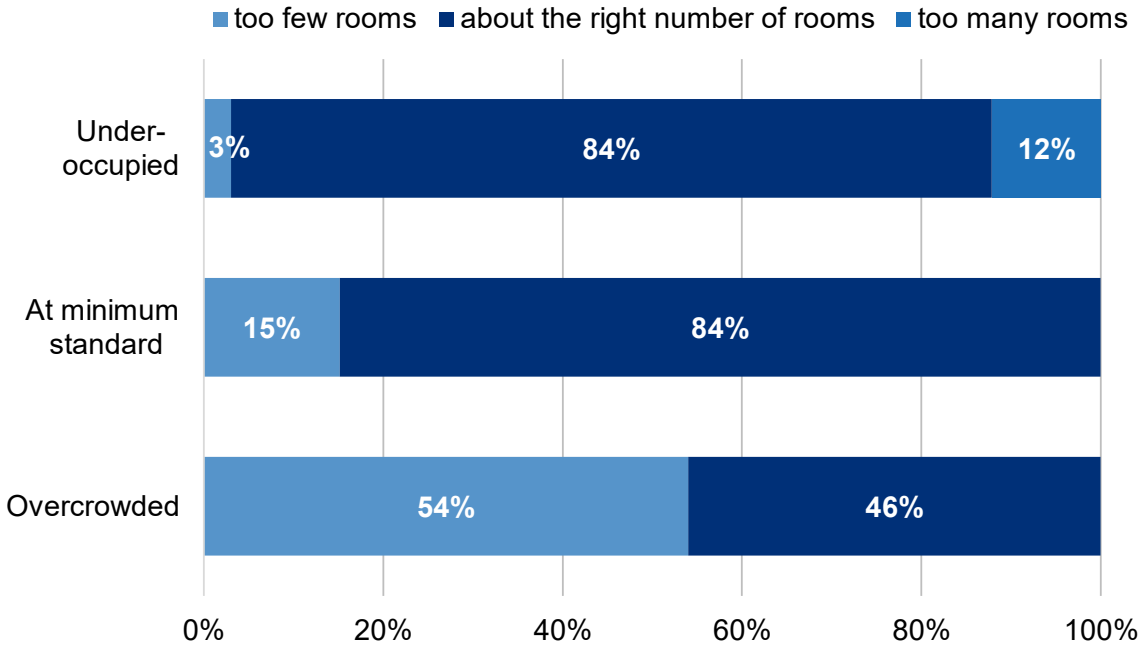


Figure 6.7 shows that 84% of respondents who live in a dwelling with 1 or more rooms above the bedroom standard feel that they have the right number of rooms, 12% feel that they have too many and 3% feel that they have too few rooms. 84% of householders who live in accommodation meeting (but not exceeding) the bedroom standard feel that they have the right number of rooms, similar to dwellings exceeding the bedroom standard. Conversely 15% feel that they have too few rooms, higher than dwellings with 1 or more rooms above the bedroom standard.

Data Source: Table BS7 in SHCS 2022- Chapter 06 Bedroom Standard- tables and figures'

7 Notes

[note 1]: For 2022 onwards, the 2020 urban rural classification is used for reporting. The 2013/14 urban rural classification (2011 data zone edition) is used for reporting 2016 to 2019 data. Prior to 2016, 2001 data zones are used. For information is available in section 2.3 of the Methodological and Technical notes.

[note 2]: Gas grid coverage is determined on the basis of the distance of the dwelling from a low / medium / intermediate 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. For 2021 an improvement has been introduced whereby a dwelling is classified as “on” the grid if a mains gas connection has been recorded in the physical survey. Further details on the method for estimating distance to the gas grid are available in section 2.4 of the Methodological and Technical notes.

[note 3]: Dwellings without loft spaces are excluded.

[note 4]: Dwellings built post-1983 are presumed insulated when built.

[note 5]: No A-rated properties were sampled between 2010 and 2019

[note 6]]: Data prior to 2014 does not include households living rent free. Figures for 2014-2022 are therefore not fully comparable to previous years. Rent free households accounting for:

- 2% of the stock in 2013 (around 42,000 households)
- 2% of the stock in 2012 (around 40,000 households)
- 1% of the stock in 2011 (around 30,000 households)
- 1% of the stock in 2010 (around 33,000 households).

[note 7]: Due to issues with tenure, as laid out in section 1.1.5 of the Methodological and Technical notes, national level estimates of fuel poverty may be slightly under-estimated, However, as laid out in the fuel poverty key points we expect any effects to be minor.

[note 8]: There are some discontinuities in the underlying methodologies used to calculate fuel poverty therefore: the 2012-2017 estimates were updated in 2019 and are not comparable to those in the 2012-2017 Key Findings reports, see section 3.1 for more details.

[note 9]: Based on the Scottish Index of Multiple Deprivation (SIMD) 2020.

[note 10] There were 2 cases in 2022 with unobtainable pre-payment meter values which have been excluded from the table but included in the Scotland statistics.

[note 11]: Some tables in this report have cells with no data. When this is the case, the cells are marked up with shorthand:

- [low] indicates a value is less than 0.5% or 500 households
- [w] indicates there are no sample cases
- [c] indicates that the base sample is too small to report (below 30 cases) or the estimate represents 2 or fewer sampled households
- [z] indicates that a value is unavailable as it is not applicable

These conventions are consistent with the guidance on using symbols and shorthand when publishing data tables on public sector websites.

[note 12]: For a very small number of cases, it was not possible to obtain the disrepair status of every element of the property. Where that element feeds into one of the disrepair categories the result is recorded as unobtainable.

[note 13]: Urgent disrepair concerns only external and common elements which are a mixture of critical and non-critical. Urgent disrepair to critical elements and extensive disrepair to critical elements have been calculated for the first time in 2019 and back updated for 2018 to allow a comparison. Back updating to previous years is complex and work will be taken forward to ensure that a longer trend can be presented in the next report.

[note 14]: Dwellings which have disrepair to critical elements may also have instances of disrepair to basic elements. Similarly, dwellings which have urgent or extensive disrepair to critical elements may also have urgent or extensive disrepair to basic elements which is not captured in this table. Table HC3a and HC3b in the SHCS 2022- Chapter 05 Housing Conditions - tables and figures' provides rates of urgent and extensive disrepair regardless of element type.

[note 15]: The percentage of disrepair is calculated considering only dwellings where the element is present.

[note 16]: Median extent of disrepair by area of the element.

[note 17]: The Tolerable Standard was amended by the Housing (Scotland) Act 1987 (Tolerable Standard) (Extension of Criteria) Order 2019 and now includes a new element covering smoke, heat, and carbon monoxide alarms. For the first time, in SHCS 2022 assessors considered the presence, type and condition of smoke and heat alarms in a house when deciding if the house meets the Tolerable Standard.

[note 18]: Figures on SHQS failure rates for 2014 onwards are not entirely comparable to previous years published in key findings reports from the SHCS. Because of missing tenure information, a small number of dwellings (see the subsection on missing tenure information for more detail) are excluded from tenure breakdowns in figures relating to years prior to 2014. In addition, small changes to data processing relating to failure thresholds for the energy efficiency criterion, 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 breakdown.

[note 19]: Due to issues with tenure, as laid out in section 1.1.5 of the Methodological and Technical notes, national level estimates of EPC ratings, loft and solid wall insulation should be treated with caution. However, as set out in the key points of the housing conditions chapter we expect any differences to be minor.

[note 20]: Due to issues with tenure, as laid out in section 1.1.5 of the Methodological and Technical notes, national level estimates of elements of disrepair, including the tolerable standard with the two new criteria, should be treated with caution. However, as set out in the key points of the housing conditions chapter we expect any differences to be minor.

[note 21]: Due to issues with tenure, as laid out in section 1.1.5 of the Methodological and Technical notes, national level estimates households of exceeding or failing to meet the bedroom standard may be slightly underestimated.

[note 22] There was one dwelling in the 2023 SHCS sample which did not provide values to the energy perceptions questions. They are excluded from these tables.

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