Department for Energy Security & Net Zero

Annual Fuel Poverty Statistics in England, 2024 (2023 data)

15 February 2024 **National Statistics**

Headline Statistics

- In 2023, there were an estimated **13.0 per cent of households (3.17 million) in fuel poverty in England** under the Low Income Low Energy Efficiency (LILEE) metric, effectively unchanged from 13.1 per cent in 2022 (3.18 million)[1].

- The **aggregate fuel poverty gap** for England in 2023 was estimated at £1.32 billion under the LILEE metric, up by 20 per cent since 2022 (£1.11 billion) in real terms. The **average fuel poverty gap** for England in 2023 (the reduction in fuel costs needed for a household to not be in fuel poverty) was estimated at £417, up by 20 per cent since 2022 (£348).

- Due to improvements in energy efficiency, there has been a slight increase in the share of households meeting the **2030 fuel poverty target** in 2023 with 54.0 per cent of all low income households living in a property with a Fuel Poverty Energy Efficiency Rating (FPEER)[2] of band C or better, up from 53.1 per cent in 2022.

- It is projected that in 2024, fuel poverty will decrease to 12.7 per cent (3.12 million) with the average fuel poverty gap falling by 8 per cent in real terms to £385 (in 2023 prices). In 2024, an estimated 55.5 per cent of all low income households are projected to live in a property with a fuel poverty energy efficiency rating (FPEER) of band C or better.

- These statistics also include an affordability measure of the number of households who are required to spend more than 10 per cent of their income (after housing costs) on domestic energy. In 2023, 36.4 per cent of households (8.91 million) exceeded this threshold up from 27.4 per cent in 2022 (6.66 million).

[1] Estimates for 2022 have been revised using final English Housing Survey data – See Annex E for details.
[2] To estimate fuel poverty and measure progress against the fuel poverty target, the Department for Energy Security and Net Zero (DESNZ) is legally bound to use a fuel poverty specific energy efficiency rating. DESNZ uses the Fuel Poverty Energy Efficiency Rating system which is a modified version of the Standard Assessment Procedure (SAP) used to generate Energy Performance Certificates.

A household's fuel poverty status using the Low Income Low Energy Efficiency (LILEE) measure depends on the interaction of these key drivers:

- **Energy efficiency** – Improvement in energy efficiency between 2022 and 2023 has brought more low income households up to a minimum of FPEER band C which removes them from fuel poverty. The progress with energy efficiency combined with an increase in the number of households receiving Warm Home Discount is estimated to have reduced fuel poverty by around 112,000 households over this period if no other factors had changed.

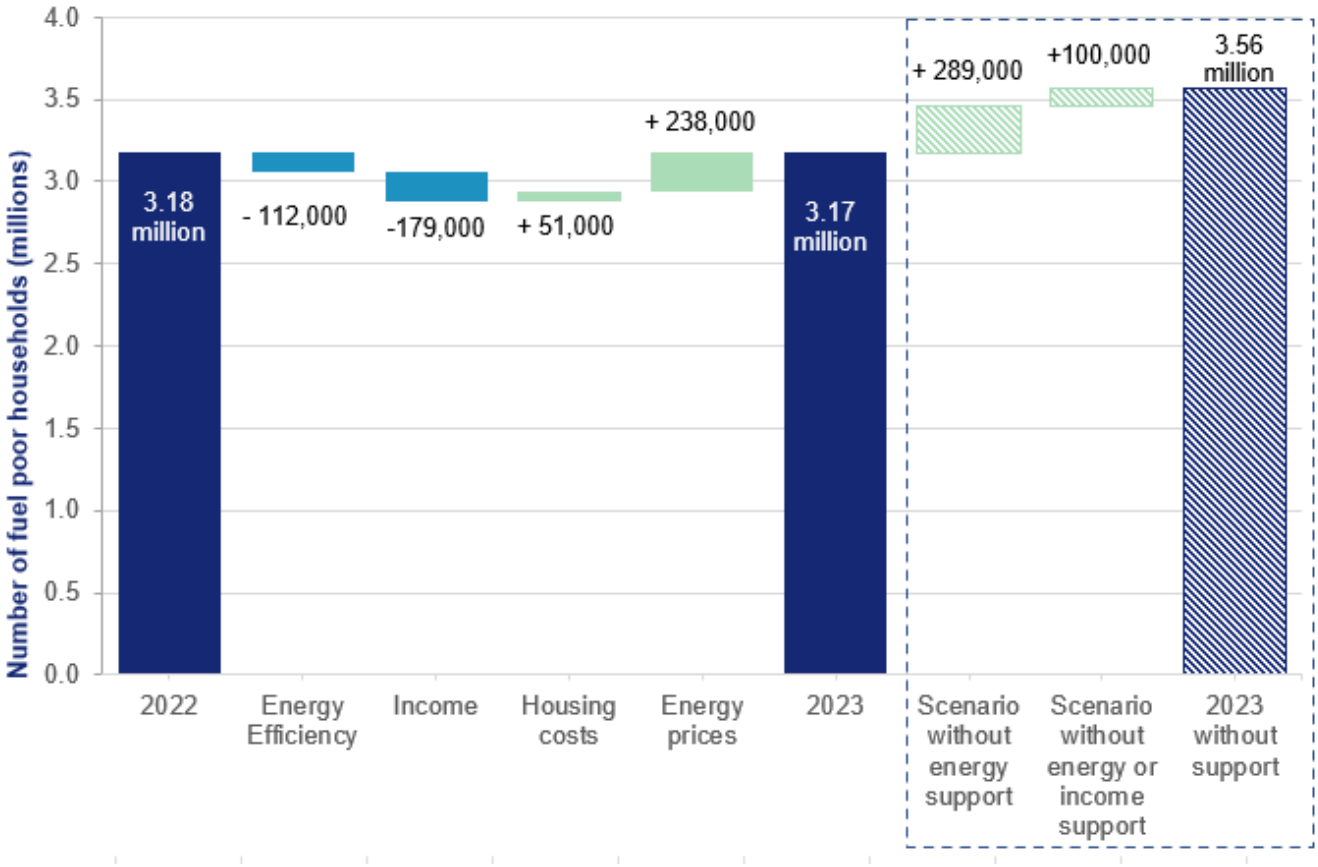
- **Incomes** – Overall, income changes are estimated to have reduced fuel poverty by around 179,000 households between 2022 and 2023 if no other factors had changed. Over a quarter of this can be attributed to the targeted cost of living income payments in 2022/23 and 2023/24. The rest is largely due to above average rise in incomes (in cash terms) offsetting some of the rise in energy costs.

- **Housing costs** - Some households have seen significant rises in their housing costs which has brought an estimated 51,000 households into fuel poverty.

- **Energy prices** – Between 2022 and 2023 gas & electricity prices rose by 19 per cent in real terms. The Energy Price Guarantee capped gas & electricity prices for a standard dual fuel consumer to £2,500 between October 2022 and June 2023. While prices fell later in 2023, they remained higher than at the start of 2022. The Energy Bill Support Scheme gave all households a rebate of £400 in winter 2022/23. After considering energy rebates, energy efficiency and household changes the overall required energy costs increased by 27 per cent between 2022 and 2023 in real terms. The change in energy prices after government support is estimated to have increased fuel poverty by around 238,000 households over this period if no other factors had changed.

Figure 0.1 illustrates the decomposition of changes described above. The dark blue bars show the estimated number of fuel poor households in 2022 and 2023. The mid-blue bars and turquoise bars represent the drivers that have worked to remove households from fuel poverty and the source of the increase in fuel poverty respectively. Overall, the effects of these drivers have cancelled each other out leading to negligible change in the overall number of fuel poor households.

Figure 0.1: Decomposition of changes in number of fuel poor households from 2022 to 2023



The bars in the dashed box represent a scenario of how fuel poverty in 2023 could have increased to 3.56 million households (14.5 per cent) without the financial support given by government. It is estimated that without the energy bill support given between April 2022 and June 2023, an additional 289,000 households would have been in fuel poverty in 2023[3] with a further 100,000 households lifted out of fuel poverty due to cost of living income support given in 2022/23 and 2023/24[4].

The impact of higher energy prices is seen more in the 10 per cent affordability metric where 13.9 million households would have exceeded this energy costs to after housing costs income ratio in 2023 without government support compared with 8.9 million households.

[3] This sensitivity analysis removes the Energy Price Guarantee (Oct 2022-June 2023) and uses the Ofgem energy price caps for the period. It removes Energy Bill Support Scheme and Council Tax rebate.
[4] This sensitivity analysis removes additional cost of living payments for those on means tested benefits (£650 in 2022/23 and £900 in 2023/24) and the pensioner cost of living payment (£300).

Contents

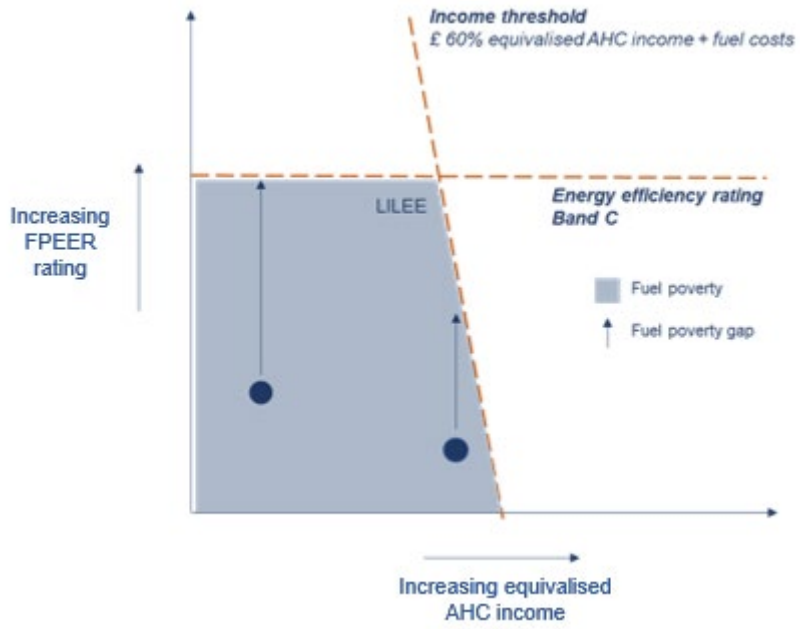
Chapter 1: Introduction

This annual publication provides a comprehensive view of the latest statistical trends and analysis of fuel poverty in England in 2023.

Fuel poverty in England is measured using the Low Income Low Energy Efficiency (LILEE) indicator, which considers a household to be fuel poor if:

- it is living in a property with an energy efficiency rating of band D, E, F or G as determined by the most up-to-date Fuel Poverty Energy Efficiency Rating (FPEER) Methodology - this is depicted by the horizontal threshold in Figure 1; and
- its disposable income (income after housing costs (AHC) and energy costs) would be below the poverty line[5] as depicted by the vertical sloping threshold in Figure 1.

Figure 1: The LILEE metric including the fuel poverty gap



The 2014 fuel poverty target for England set an objective to ensure that as many fuel poor households as reasonably practicable achieve a minimum FPEER rating of band C[6,7] by 2030, with interim targets of band E by 2020, and band D by 2025.

The primary purpose of the Annual Fuel Poverty Statistics is to monitor progress against the statutory target and track the proportion of households in fuel poverty and their fuel poverty gap[8].

[5] The poverty line (income poverty) is defined as an equivalised disposable income of less than 60% of the national median in Section 2 of the ONS publication Persistent poverty in the UK and EU: 2017.
[6] Energy efficiency rating is measured using Fuel Poverty Energy Efficiency Rating (FPEER), see Section 2.3.3 and glossary for more detail.
[7] Household energy efficiency ratings are banded from G (lowest) to A (highest).
[8] Fuel poverty gap is the reduction in fuel bill that a fuel poor household needs to not be classed as fuel poor.

In addition to the headline results, the key drivers of fuel poverty are presented in Chapter 2, with detailed analysis of the prevalence and severity of fuel poverty by various household and dwelling characteristics in Chapter 3. Detailed data tables are published alongside this report (see Annex H for details of published tables).

The fuel poverty statistics, and underlying data, form a key element of the evidence base supporting the Department for Energy Security and Net Zero (DESNZ) to:

- Implement the Fuel Poverty Strategy
- Inform Clean Growth Strategy ambitions
- Develop, monitor and evaluate key policies including the Energy Company Obligation (ECO), Warm Home Discount, Green Homes Grant, Home Upgrade Grant, Social Housing Decarbonisation Fund, Great British Insulation Scheme and Private Rented Sector Minimum Energy Efficiency Standards

The Government is interested in the amount of energy households need to consume to have a warm, well-lit home, with hot water for everyday use, and the running of appliances. Fuel poverty is therefore measured based on required energy bills rather than actual spending. This ensures that those households who have low energy bills simply because they actively limit their use of energy at home, by not heating their home for example, are not overlooked.

1.1 Fuel Poverty Strategy

The Government published the latest Fuel Poverty Strategy, Sustainable warmth: protecting vulnerable households in England, in February 2021. The Strategy confirmed a new fuel poverty metric, Low Income Low Energy Efficiency (LILEE).

1.2 Data

These statistics are based on data collected in the English Housing Survey (EHS), which is a continuous national survey commissioned by the Department for Levelling up, Housing & Communities (DLUHC). It collects information about people's housing circumstances and the condition and energy efficiency of housing in England.

The latest complete combined year dataset for the EHS is for 2022 based on fieldwork carried out between April 2021 and March 2023 (with a mid-point of 1st April 2022). The sample comprised 10,890 occupied dwellings where a physical inspection and a household interview was carried out. Further information including EHS releases and a detailed survey guide for users can be found at the EHS publication page. Confidence intervals for key estimates are shown in Annex A.

The headline figures used in this report are projections for 2023. These are designed to represent the period between April 2022 and March 2024 inclusive. This is a one year ahead projection from the final 2022 estimates designed to present a timely estimate of fuel poverty last year. The 2023 projection is less uncertain than the 2024 projection since it is based more on observed changes to energy efficiency installations, income changes and announced energy prices. The methodology for these projections is described in section 7 of the

Methodology Handbook with the data based on actual EHS data from April 2022 to March 2023 and modelled data from previous EHS single year data projected forward.

This publication includes a range of tables for 2023 and timeseries data 2010-2023 which are described in Annex H. All tables for 2022 have been revised to reflect the final EHS 2022 data. The 2022 fuel poverty dataset will be made available later this year via the UK Data Service. This dataset contains the underlying data used to calculate fuel poverty and the corresponding breakdown variables used within the fuel poverty report. Documentation covering variable names and descriptions are also provided alongside the datasets.

The majority of fuel poverty variables are included in the dataset deposited at the UK Data Service under the standard End User Licence. To comply with data protection, supplementary fuel poverty variables are released under a more restricted Special Licence on the UK Data Service. To maintain the confidentiality of respondents, disclosure control is applied to both the End User Licence and Special Licence fuel poverty datasets on the UK Data Service.

Please note users will need to register with the UK Data Service website to access the data.

1.3 Sub-regional data

This report provides estimates for fuel poverty at regional level in England but does not include estimates for sub-regional data. These cannot be measured directly from survey data due to small sample sizes. Separate modelling is used to produce the estimates at local authority, lower layer super output area and parliamentary constituency levels with the 2022 figures due to be published on 25th April.

1.4 Methodology

A methodology handbook has been published alongside this publication. This sets out the method for calculating the headline fuel poverty statistics using the LILEE indicator and the detailed methodology for calculating the income, energy efficiency and fuel prices for each household.

A Fuel Poverty Energy Efficiency Rating (FPEER) Methodology has also been published. This sets out the method for calculating a fuel poverty specific measure of household energy efficiency.

There is further information on methodological changes in Annex B.

Chapter 2: Key Drivers of Fuel Poverty in England, 2023[9]

2.1 Overview: Fuel poverty in England

In 2023, an estimated 13.0 per cent of households in England (3.17 million households) were classed as fuel poor, effectively unchanged since 2022 (3.18 million households).

The depth of fuel poverty is measured by the fuel poverty gap. The fuel poverty gap is the reduction in fuel costs needed for a household to not be in fuel poverty. This is either the change in required fuel costs associated with increasing the energy efficiency of a fuel poor household to a Fuel Poverty Energy Efficiency Rating (FPEER) of at least 69 (band C threshold) or reducing the costs sufficiently to meet the income threshold. The average fuel poor household would require a reduction of £417 to their fuel costs to be moved out of fuel poverty, this is the average (mean) fuel poverty gap (referred to hereafter as simply the gap). The average gap in 2023 was 20 per cent higher than 2022 in real terms and the highest level recorded since these figures started in 2010[10]. We recommend using the gap, in conjunction with the proportion, as an indication of the depth of fuel poverty.

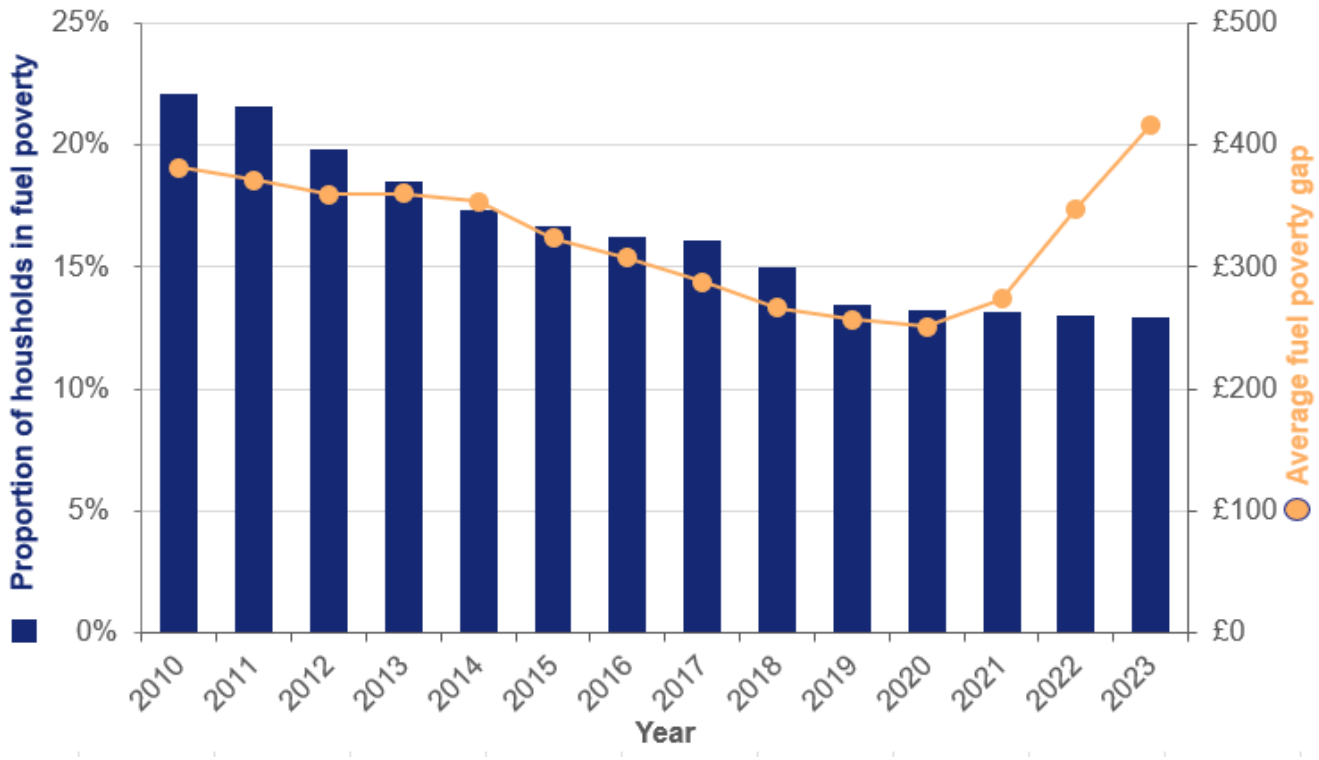
The aggregate fuel poverty gap, which is the total of all fuel poverty gaps for households in England also increased by 20 per cent since 2022. Table 2.1 below summarises these figures.

Table 2.1: In 2023, the number of households in fuel poverty was effectively unchanged compared with 2022 but the aggregate gap increased by 20 per cent compared with 2022.

Headline measure	2010	2020	2022	2023
Number of households in fuel poverty (millions)	4.78	3.16	3.18	3.17
Proportion of households in fuel poverty (%)	22.1	13.2	13.1	13.0
Aggregate gap (£ millions)	1,823	793	1,105	1,323
Average gap (£)	381	251	348	417

[9] Note that caution should be used when interpreting year on year changes as the sample is not independent; fuel poverty is based on a two-year combined sample (see Annex B).
[10] The average gap and aggregate gap figures are adjusted to 2023 prices produced using the Gross Domestic Product (GDP) deflators consistent with the Office for Budget Responsibility estimates November 2023.

Figure 2.1: Following a steady decrease over time, the proportion of fuel poor households has remained very consistent since 2019. The average fuel poverty gap has increased by 66 per cent to £417 in real terms since 2020[11,12].



The share of households in fuel poverty reduced consistently between 2010 and 2019 with improved energy efficiency being the key driver. While further progress in energy efficiency has been seen in recent years this continues to be offset by economic factors. In the pandemic, low income households in particular were affected followed by the impact of rising energy prices. These have led to fuel poverty rates remaining consistent since 2019.

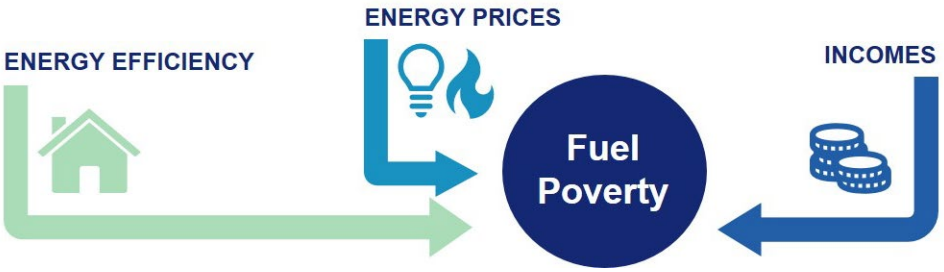
The average fuel poverty gap, which measures the depth of fuel poverty, has increased by 66 per cent between 2020 and 2023 in real terms due to rising energy prices. This follows a strong declining trend which reflects the impact of energy efficiency measures in reducing the gap between the required energy costs of a household and the required fuel costs for that household at band C.

Confidence intervals for the share of fuel poor households and average fuel poverty gap are shown in Figure A.1 and A.2 respectively up to 2022. The confidence intervals reflect the sample variation between years and hence small changes such as the changes in the rate of fuel poverty since 2019 are not statistically significant. Since the 2023 data point is a projection this is subject to both sample variability and modelling uncertainty.

[11] In Annex A error bars have been added to this line to denote the confidence interval around the figures up to 2022.
[12] Left axis: blue bars show the proportion of households in fuel poverty. Right axis: orange dots show the average fuel poverty gap.

2.2 Key drivers

The fuel poverty status of a households depends on the interaction between three key drivers[13]:



The key drivers will be assessed in turn to explore their effect on headline fuel poverty figures in 2023. **Increased** energy efficiency, **higher** incomes and **lower** energy prices would each have a positive impact on a fuel poor household.

The LILEE fuel poverty indicator sets an absolute energy efficiency threshold making it easier to identify the impact of changes in energy efficiency. The relative nature of the income threshold means it is harder to see the impact of changes in income and the contribution of prices since this requires an assessment of how household incomes and fuel costs change relative to the median income.

Chapter 3 explores dwelling and household characteristics that help identify where the most severe fuel poverty gaps are, and which households are in fuel poverty.

2.2.1 The Low Income Low Energy Efficiency quadrant

Fuel poverty in England is measured using the LILEE indicator, as defined in Chapter 1. Based on a combination of household income, energy requirements and energy prices, the indicator allows households to be grouped into one of the four quadrants illustrated in Figure 2.2.

Energy Efficiency: The horizontal line provides the absolute threshold between low energy efficiency rated households (band D to G) and high energy efficiency rated households (band A to C).

Fuel costs: The Government is interested in the amount of energy households need to consume to have a warm, well-lit home, with hot water for everyday use, and the running of appliances. Fuel poverty is therefore measured based on **required** fuel costs of the energy efficiency of the home rather than **actual** spending. This ensures that households who have low energy bills simply because they actively limit their use of energy at home, for example, by not heating their home are not overlooked. An equivalisation factor is applied to reflect the different levels of energy required depending on the number of people living in the property.

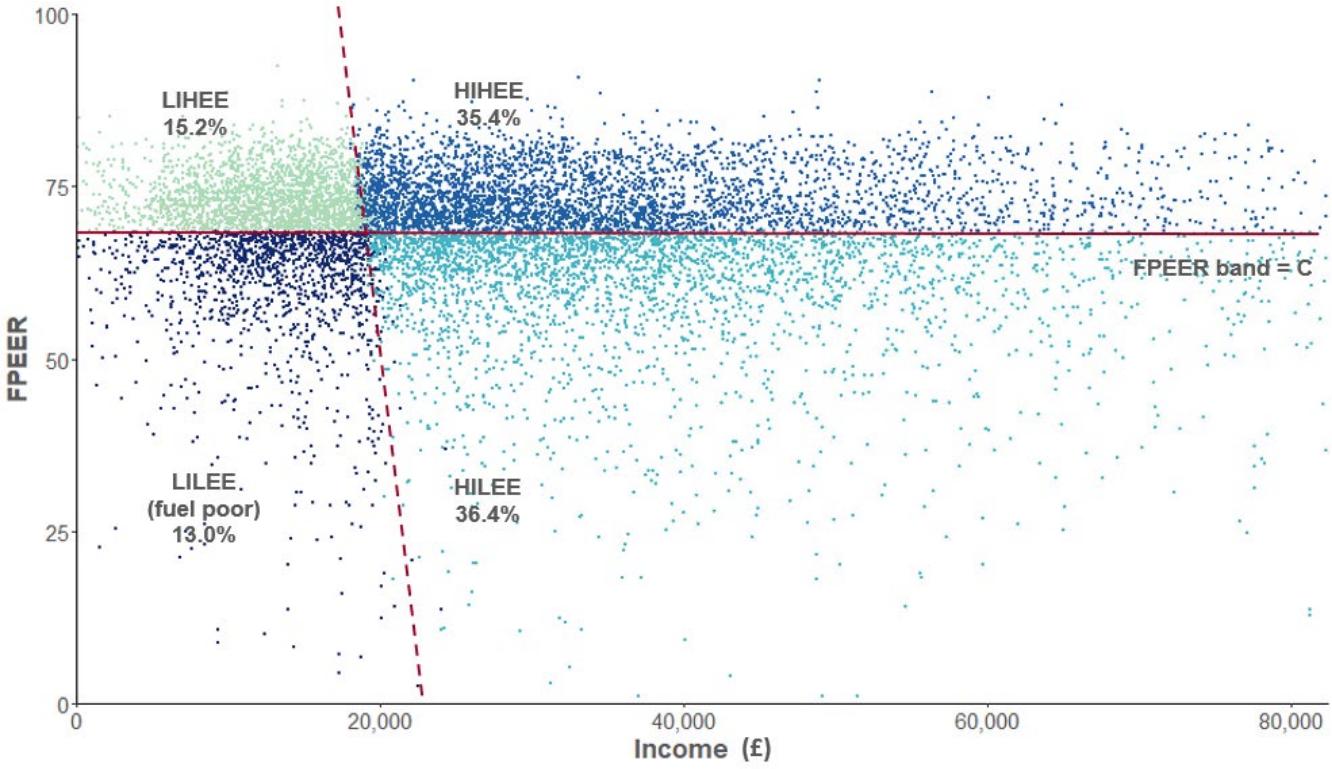
[13] See Annex B: Measuring fuel poverty in England, for further explanation of how changes to key drivers affect fuel poverty figures.

Income, on the horizontal axis, is defined as equivalised income after housing costs, tax, and National Insurance. Equivalisation reflects that households have different spending requirements depending on the number and age of people living in the property.

Under the LILEE indicator there is no exact point on the income axis, for a given FPEER rating, where the household would be classed as low income since this threshold is measured using income minus fuel costs. The sloping dashed line marks a line of best fit between households classed as low income and high income and shows the impact of higher fuel costs in low energy efficiency households. The variation in fuel costs for a given FPEER is due to factors including property size, household size and occupancy pattern. The poverty threshold line is more sloped in recent years with greater variability in fuel costs between high and low energy efficiency households due to higher prices. The scatter plot shows how a band F/G household with an income over £24,000 can be considered a low-income household with high energy costs but that some band B households with incomes under £18,500 are considered to be high income.

Further information on how income and fuel costs are calculated can be found in Sections 3 and 5 of the Methodology Handbook.

Figure 2.2: 13.0 per cent of all households classified as fuel poor (LILEE) in 2023[14].



In 2023, 28.1 per cent of households were classed as having a low income (with 71.9 per cent having a high income). Overall, 49.4 per cent of households were classed as low energy

[14] In line with Canberra Group Handbook guidance, negative AHC incomes have been set to zero following equivalisation. Households with AHC incomes over £80,000 have not been included. For more information, see Section 3 of the methodology handbook.

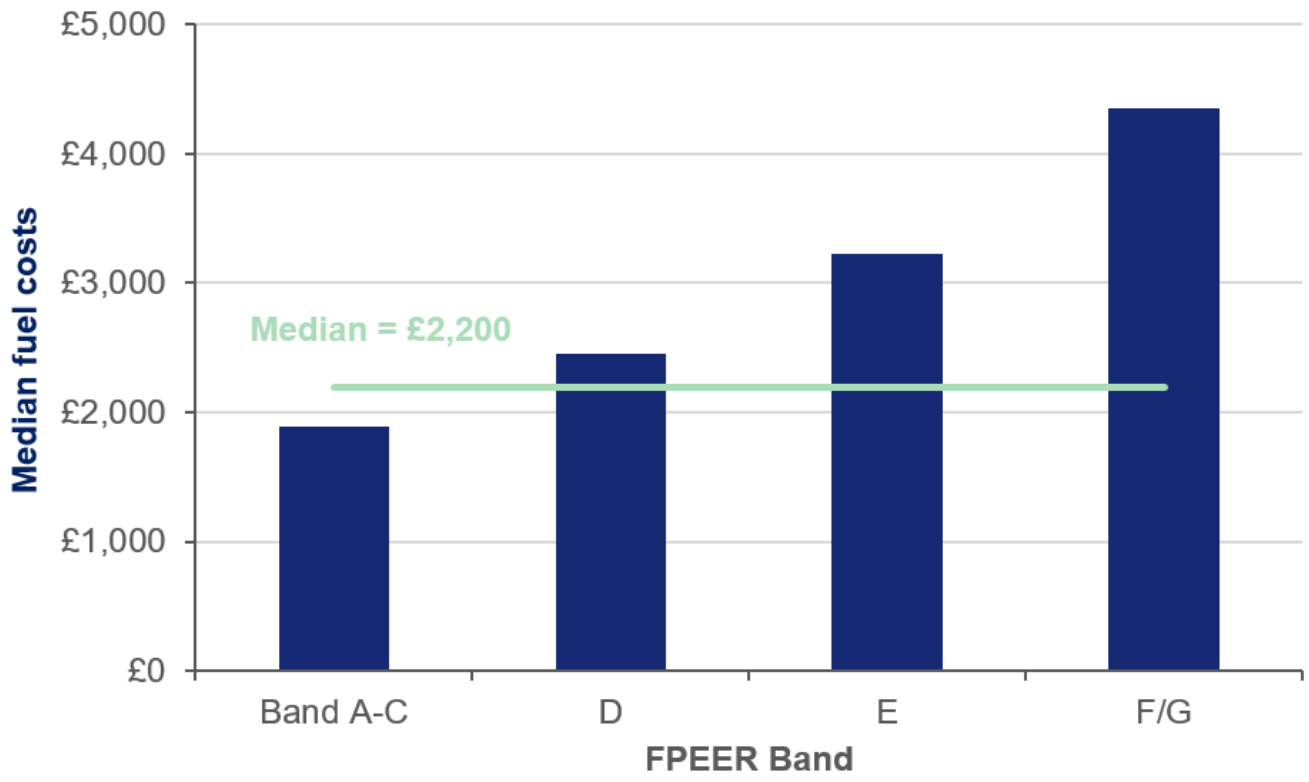
efficiency. Of those households with low incomes, 46.0 per cent were classed as low energy efficiency and hence fuel poor based on having an energy efficiency rating of band D or below.

2.2.2 Energy efficiency

Energy efficiency is a key driver of fuel poverty, as higher energy efficiency reduces a household's fuel costs for a particular size of property. The LILEE metric also sets an absolute threshold above which a household cannot be fuel poor (FPEER band C) regardless of income. Using an absolute threshold also means that once a property attains this threshold it is unlikely to fall unless energy efficiency measures.

The fuel costs in figure 2.3 of this report and 2023 Supplementary Tables are reported net of rebates provided through Warm Home Discount[15], Energy Bills Support Scheme[16] and the 2022/23 council tax rebate[17]. After considering these, the median fuel cost in 2023 was £2,200, an increase of 27 per cent in real terms since 2022.

Figure 2.3: Fuel costs for the least efficient[18] properties (band F/G) are 2.3 times higher than costs for the most efficient properties (band A-C) in 2023.



[15] Warm Home Discount provided a rebate of £150 to approximately 2.2 million households in 2022/23 in England and is expected to have provided £150 to approximately 2.8 million households in 2023/24 in England.
[16] The Energy Bills Support Scheme provided a rebate of £400 to all households in 2022/23
[17] In 2022/23 a council tax rebate of £150 was given to all band A-D homes. This has been modelled as an energy saving since this was part of a specific support package to help households with energy costs.
[18] Energy efficiency measured using FPEER.

Fuel poverty modelling is based on the estimated fuel costs of a household's theoretical energy consumption since this provides a consistent assessment using the Standard Assessment Procedure (SAP) [19] and The Building Research Establishment Domestic Energy Model (BREDEM) occupancy patterns, reflecting a standard achieved temperature for all households. Theoretical energy consumption and actual usage were compared in a special feature article, published in March 2019. The analysis suggested that in properties rated band C or lower, actual consumption is, on average, lower than the theoretical value. This difference increases as the energy efficiency of a property decreases.

For fuel poverty statistics, and to measure progress against the fuel poverty target (Section 2.3), DESNZ is legally bound to use a fuel poverty specific energy efficiency rating.

The fuel poverty energy efficiency rating (FPEER) (from hereafter referred to as energy efficiency rating), is based on SAP, but accounts for the impact of policies which discount households' energy bills (e.g. the Warm Home Discount). For example, if a household has a band D Energy Performance Certificate (EPC) and they get £150 deducted from their energy bill due to receipt of the Warm Home Discount, this could move them into an FPEER band C.

The impact of the WHD rebate on FPEER depends on the relative size of the rebate to the total energy bill. In 2023 due to high prices, the bill saving reduced in percentage terms for WHD households. In 2023 the typical energy efficiency uplift to a band D home was less than 3 FPEER points, down from over 5 points in 2021. While the overall median energy efficiency rating for households has continued to rise slightly in recent years, the reduction in the uplift due to WHD has offset the energy efficiency improvement in low income and fuel poor households since 2021.

[19] Every household in England can be assessed using SAP, and a score 1-100 awarded, with 1 indicating the least energy efficient and 100 being the highest. For the purposes of Energy Performance Certificates (EPC), SAP scores are banded to give a rating A-G, A being the highest.

Figure 2.4: Median energy efficiency ratings increased slightly overall between 2022 and 2023.

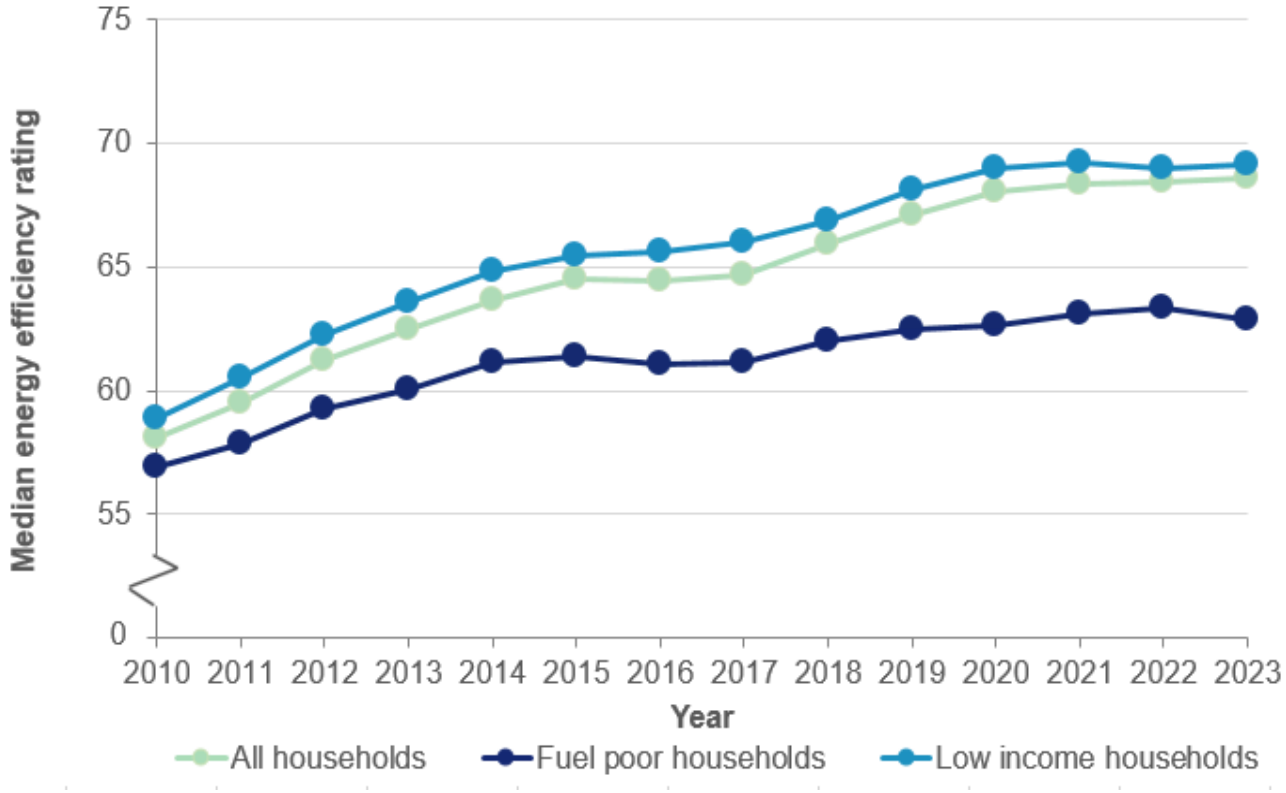


Figure 2.4 shows that between 2022 and 2023, the median FPEER was 68.6, up from 68.5 in 2022. As explained above, the improvement in the median energy efficiency rating due to energy efficiency has been partially offset by the reduction in the impact of the WHD uplift to the rating. It is also thought that the FPEER ratings in 2020 and 2021 might be slightly high due to the sample achieved in the first year of the pandemic (2020/21).

The rate of increase in median energy efficiency rating since 2010 is slowest among fuel poor households. This is because when the energy efficiency improvements made to a low income household which bring this household up to band A-C, this removes them from fuel poverty and therefore this improvement is not seen within the current fuel poor group.

2.2.3 Income

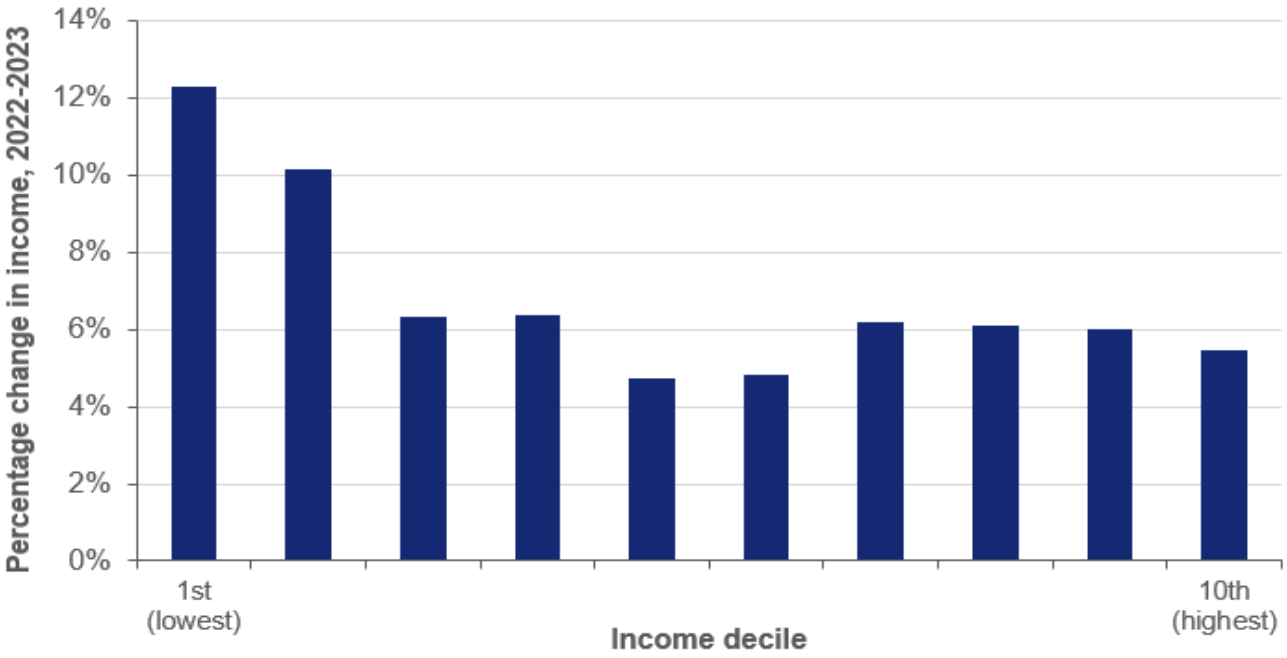
Income is one of the three key drivers of fuel poverty. Changes to occupants' earnings, benefits, other income sources and housing costs determine whether a household is classed as "low income" or "high income."

In 2023, a household was classified as low income if their equivalised income (after tax, National Insurance, and housing costs) minus their required fuel costs was less than £17,300 (60 per cent of median AHC income for all households)[20].

[20] In the 2023 Fuel Poverty projected dataset, the median (after housing costs equivalised income for all households) was £28,818. 60 per cent of the median is £17,291. See Figure 2 in the methodology handbook.

There has been an above average rise in incomes across the income distribution despite a significant increase in housing costs for some households. The increase is much higher in the lowest two income deciles boosted by cost of living payments. The impact of the pensioner cost of living payment will be seen across the income deciles because it is not means tested.

Figure 2.5: The growth in incomes (after housing cost equivalised) in lower deciles was higher than the median income growth between 2022 and 2023.



The proportion of households classed as low income between 2010 and 2019 remained between 25.6-26.2 per cent as the shape of the income distribution remained stable. Since then, the share of low income households has risen, initially due to the economic impact of the pandemic followed by higher energy prices.

In 2022, the share of low income households was 27.8 per cent. Due to the impact of the strong growth in incomes shown above this would have fallen to 26.9 per cent in 2023 but the increase in energy costs has led to a slight overall increase to 28.1 per cent.

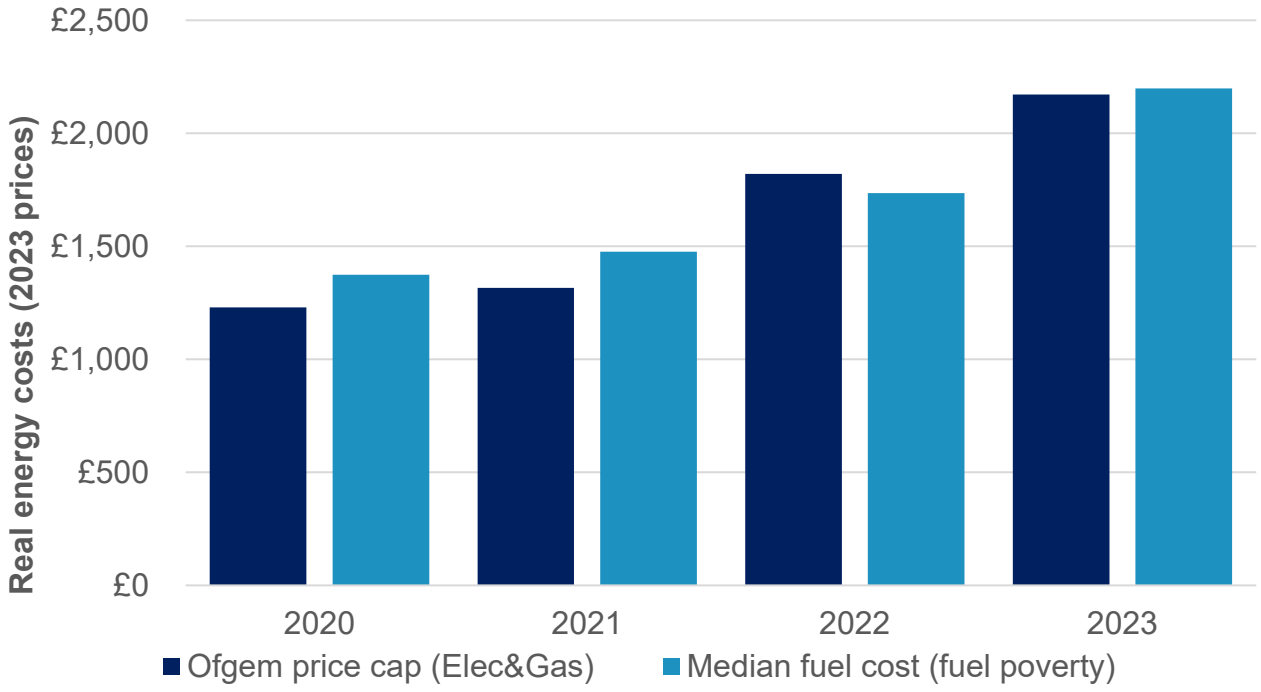
2.2.4 Energy prices

Energy prices are used to calculate how much the required energy for each household would cost for that specific year. The required equivalised energy bill for each household is subtracted from the equivalised AHC household income and hence determines if a household is classified as low income.

Domestic energy prices have risen significantly in recent years, but consumer bills have been protected to a degree through government support. Figure 2.6 compares the trend in the typical household bill as measured through the Ofgem price cap with the median fuel costs seen in this fuel poverty modelling.

Fuel poverty datasets are based on two years of data across the two financial years in this comparison. The change in prices between the fuel poverty datasets for 2022 and 2023 is based on the change between the average of 2021/22 & 2022/23 prices and the average of 2022/23 & 2023/24 prices.

Figure 2.6: The median fuel cost for households (after rebates) increased by 60 per cent between 2020 and 2023 in real terms.[21]



There are a number of differences to be aware of in this comparison. The median fuel cost used for fuel poverty is usually higher than the Ofgem price cap because 1) it includes all types of fuel, 2) fuel poverty modelling uses assumptions consistent with SAP which are known to be higher than actual energy use particularly for low income households facing high energy prices. The fuel poverty costs though are net of rebates including the Warm Home Discount and other rebates given to households in 2022/23 with all households eligible for the Energy Bill Support Scheme (£400), households in council tax band A-D (£150) and the Alternative Fuel payment for non gas or electricity heated homes (£200). These are why the increase in median fuel costs used for fuel poverty calculation rose by 60 per cent in real terms between 2020 and 2023 compared with an increase of 77 per cent in the Ofgem price cap based on fixed consumption levels.

In 2023, fuel poor households were required to spend a median cost of £2,530 on their energy bills after rebates, 38 per cent (£690) more than Low-Income High Energy Efficiency households (£1,840). Characteristics of the dwelling and household which contribute to these higher costs are explored in detail in Chapter 3.

[21] All prices include the impact of the Energy Price Guarantee which was below the Ofgem price cap (Oct 22-June23). Figures for 2023/24 are based on a consumption weighted average of quarterly price caps. Data for gas and electricity separately can be found in Annex A. For prices for non-metered fuels used in fuel poverty modelling, see section 4 of the Methodology Handbook.

As shown in figure 0.1, without the energy bill support offered by the Government in 2022/23 an additional 289,000 households would have been in fuel poverty in 2023[22]. In this scenario the median fuel cost was estimated to be £2,950 compared with the actual estimate of net fuel costs of £2,200 in 2023.

Overall, the projected increase in prices between 2022 and 2023 is 18 per cent for electricity and 20 per cent for gas leading to an overall increase of 19 per cent for the typical dual fuel household.

The rate of increase for gas and electricity combined for pre-payment households is slightly lower (18%) and for direct debit households slightly higher (20%) with standard credit up by 19%. The cheapest payment type remains direct debit (typical dual fuel bill £2,170), followed by pre-payment (£2,280) with standard credit the most expensive (£2,340). See Tables A.1 and A.2 in Annex A for details.

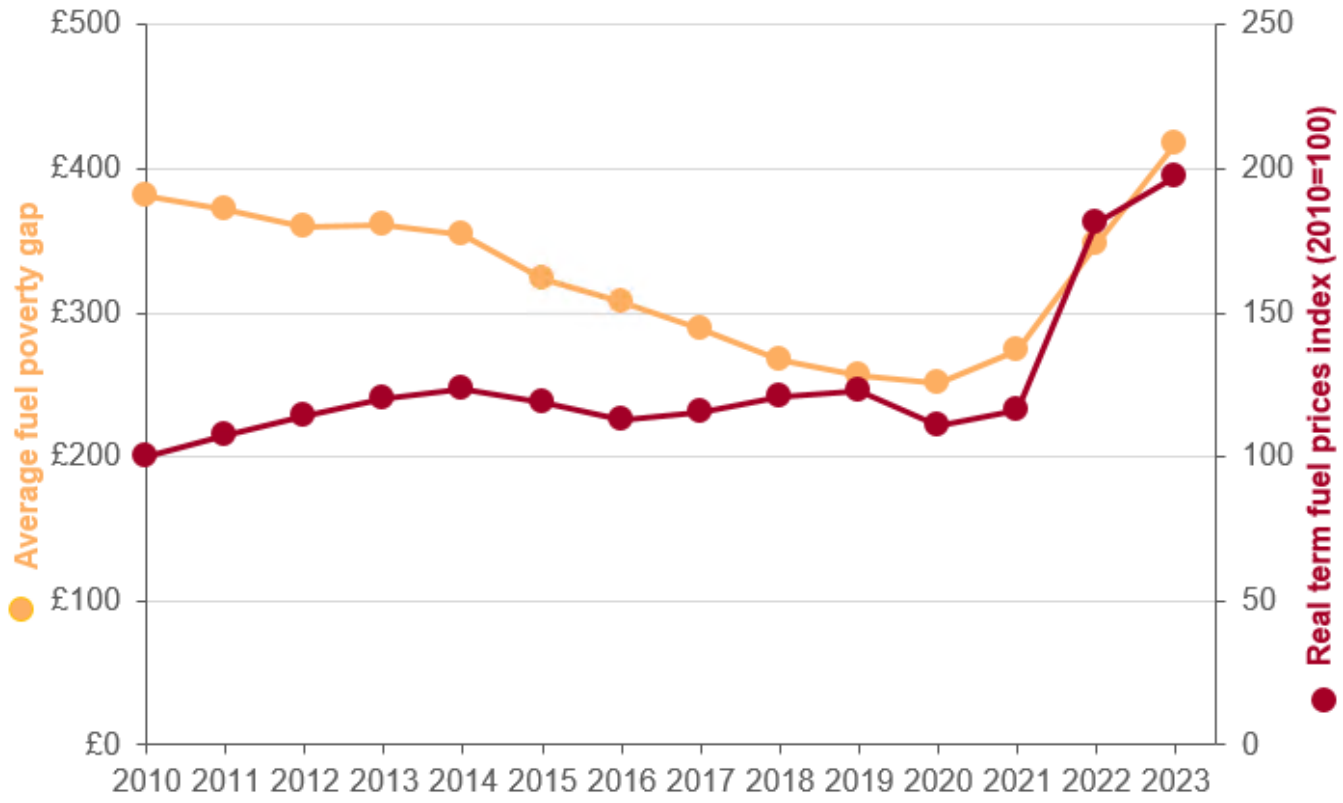
Fuel poverty statistics are modelled using required fuel expenditure that take into account the assumed heating pattern appropriate to a household's circumstances. Households are assigned one of four heating patterns depending on whether they are usually at home during the day or not and whether they under occupy their home. It is noted that in 2022/23 (the latest single year EHS data), 66 per cent of households reported that someone was usually at home during the day. While this is lower than the peak of 71 per cent in 2020/21 it shows even with all pandemic restrictions lifted this remains well above the average of 51 per cent seen over the two years before the pandemic due to higher rates of working from home.

Figure 2.7 shows that between 2010 and 2019, as energy prices were stable, the average fuel poverty gap reduced due to energy efficiency improvements. However, since 2020, as energy prices have risen, the average fuel poverty gap has increased along a similar trend.

The energy price series does include the impact of the Energy Price Guarantee, which capped the unit price of gas and electricity to households but is not adjusted for energy rebates. Likewise, the fuel poverty gap is not directly impacted by energy rebates since these apply equally to the fuel poor households and the assumed band C costs for that household.

[22] This sensitivity analysis removes the Energy Price Guarantee (Oct 2022-June 2023) and uses the Ofgem energy price caps for the period. It removes Energy Bill Support Scheme and Council Tax rebate.

Figure 2.7: The average fuel poverty gap rose by 66 per cent in real terms between 2020 and 2023 due to rising energy prices[23,24].



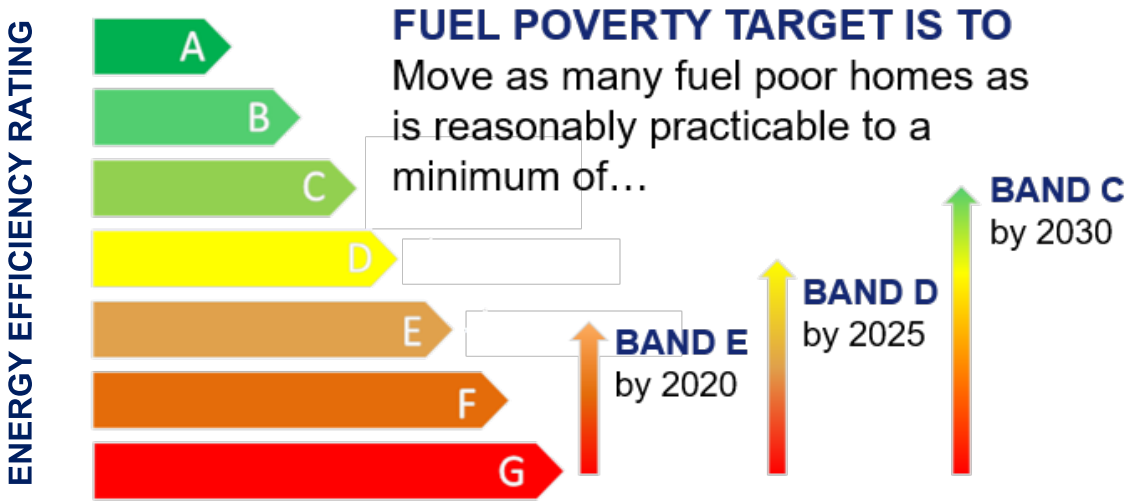
Higher energy costs affect the number for fuel poor households relative to their disposable income under the LILEE metric, for example if fuel costs rose by £500, fuel poor households would be found £500 further up the income distribution. Annex D analyses some alternative affordability metrics which are more sensitive to energy price changes.

2.3 Progress against the target

In 2014, the Government put in place a new statutory fuel poverty target for England: to ensure that as many fuel poor households as reasonably practicable achieve a minimum energy efficiency rating of band C[25,26] by 2030, with interim targets of band E by 2020, and band D by 2025 (see Figure 2.8).

[23] Produced using the Gross Domestic Product (GDP) deflators (December 2022), published in January 2023.
[24] Real term fuel prices index taken from Quarterly Energy Prices table 2.1.2. up to 2021 with 2022 estimated based on the energy price cap/guarantee.
[25] Energy efficiency rating is measured using Fuel Poverty Energy Efficiency Rating (FPEER), see Section 2.3.3 and glossary for more detail.
[26] Household energy efficiency ratings are banded from G (lowest) to A (highest).

Figure 2.8: England's statutory fuel poverty target



Under the Low Income Low Energy Efficiency (LILEE) metric, a household that achieves a fuel poverty energy efficiency rating of band C or above would not be measured as fuel poor, and therefore fuel poverty would be eradicated if all low income households achieved an energy efficiency band C rating, providing an absolute metric for the target. Progress towards the fuel poverty target is measured as the percentage of all low income households who achieve an energy efficiency band C in 2030 and the interim milestones. Figure 2.3, Table 2.2, and Table 2.3 show a slight increase in the percentage of low income households have reached the thresholds for the 2030 fuel poverty target and 2025 interim milestone in 2023.

There are two reasons why high energy prices are restricting progress towards the fuel poverty target:

- The number of low income households has increased by 13 per cent between 2019 and 2023 mainly due to higher energy costs. This brings in a higher share of households less likely to live in social housing or purpose built flats. Social housing and purpose built flats had median energy efficiency ratings of 72 and 74 respectively, well above the overall figure of 69. It also moves fuel poverty further up the income distribution with households less likely to be eligible for Warm Home Discount and energy efficiency improvements e.g. Energy Company Obligation.
- As noted in section 2.2.2, the impact of the WHD uplift to FPEER has almost halved since 2021 due to the impact of higher energy prices. It is estimated that the share of households attaining the band C threshold would have risen to around 55.0 per cent if the value of the energy efficiency uplift from Warm Home Discount had remained unchanged since 2022.

Table 2.2: In 2023, a slight increase was seen in the percentage of households reaching the fuel poverty target and remaining interim milestone.

Fuel poverty target	2010 progress	2020 progress	2022 progress	2023 progress
Band D or above by 2025 (% of low income households)	64.6	90.1	91.2	91.3
Band C or above by 2030 (% of low income households)	14.6	52.1	53.1	54.0

Figure 2.9: The percentage of low income households in band A to C was 54.0 per cent and band A to D was 91.3 per cent in 2023.

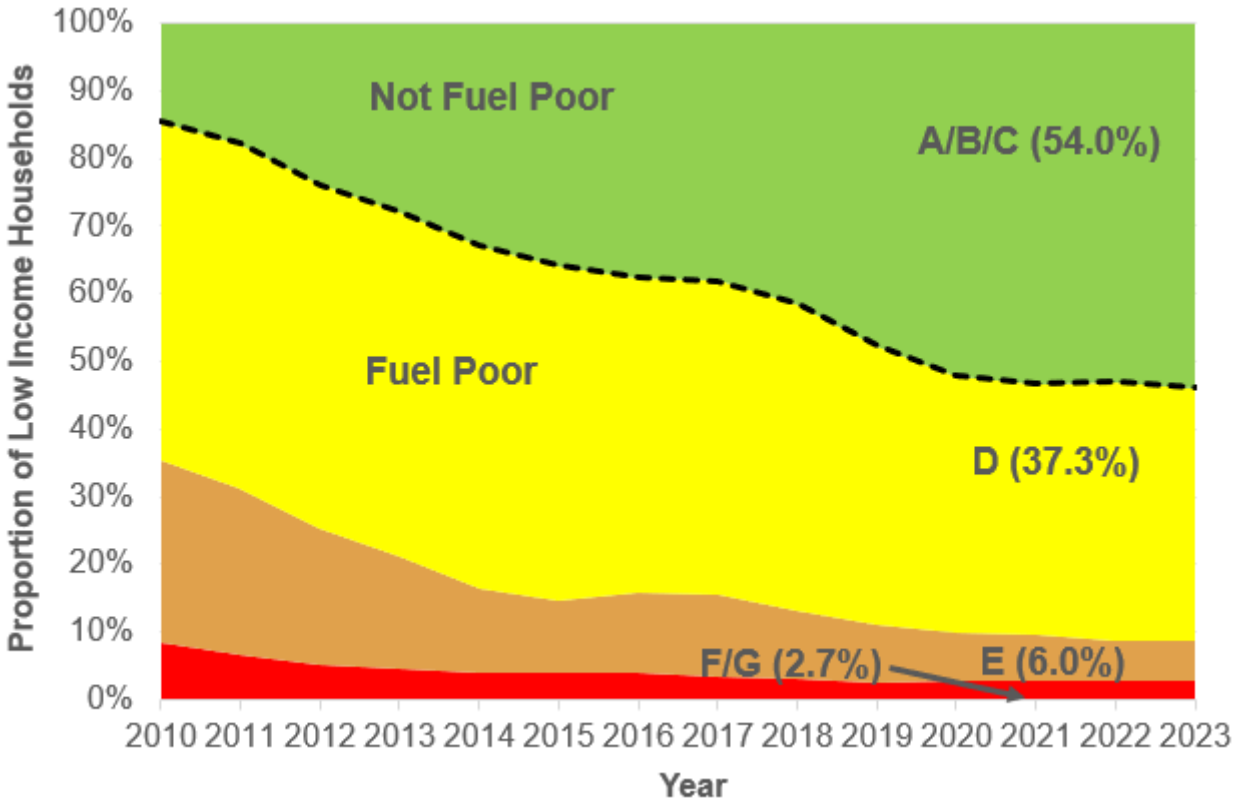


Table 2.3: Proportion and number of low income households in each fuel poverty energy efficiency band, 2010, 2022 and 2023

Low income households in each FPEER band	2010		2022		2023	
	(%)	No. households (000's)	(%)	No. households (000's)	(%)	No. households (000's)
Band A/B/C	14.6	814	53.1	3,594	54.0	3,720
Band D	50.0	2,797	38.1	2,578	37.3	2,574
Band E	27.0	1,509	6.1	410	6.0	414
Band F/G	8.5	474	2.8	187	2.7	186

2025 interim target progress – 91.3 per cent of low income households were living in properties with an energy efficiency rating in band A to D, an increase of 26.7 percentage points from 2010, and an increase of 0.1 percentage points since 2022.

2030 target progress – 54.0 per cent of low-income households were living in properties with an energy efficiency rating of A, B or C, an increase of 39.4 percentage points since 2010 and an increase of 0.9 percentage points since 2022.

Confidence intervals for the fuel poverty target and milestones are shown in Figure A.3 up to 2022. The increase shown above of 0.9 percentage points against the target between 2022 and 2023 does not represent a statistically significant difference.

Chapter 3: Detailed Analysis of Fuel Poverty in England, 2023

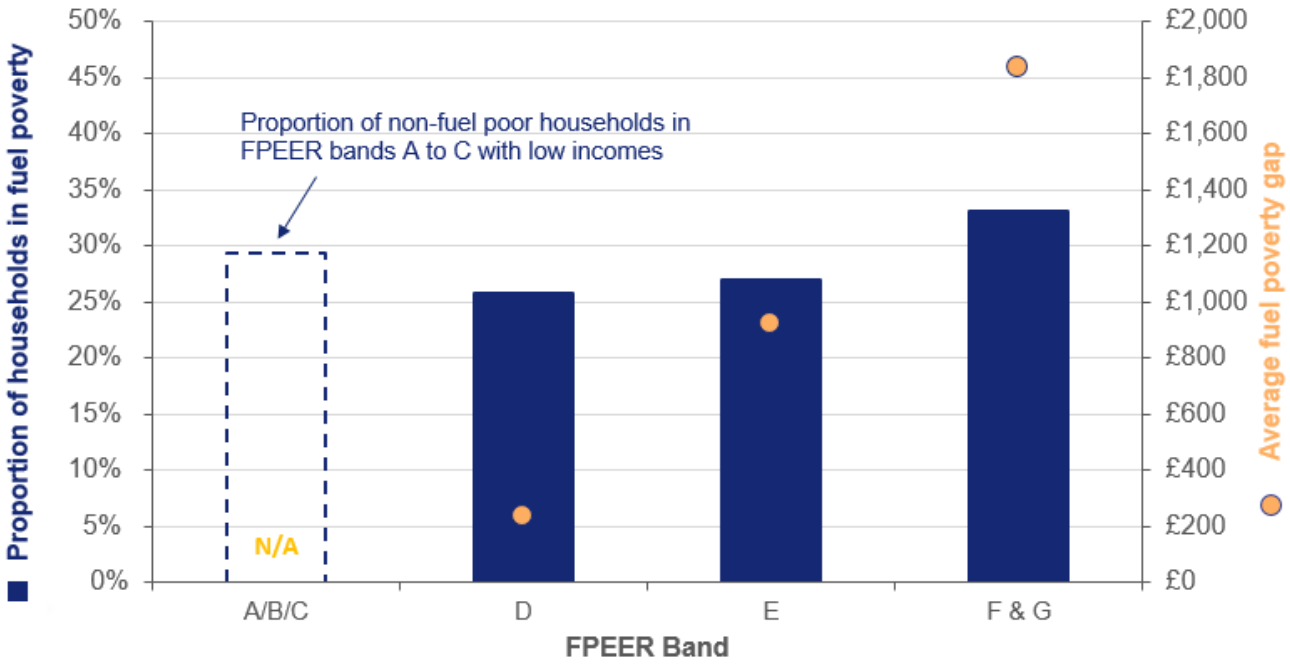
Fuel poverty in England is affected by multiple characteristics, including energy efficiency, income, and fuel costs. This means that assigning causality to one factor alone is not possible. The following chapter analyses these individual characteristics, but users should be aware that built-in interactions likely exist between them.

The data behind this analysis is available in the fuel poverty detailed, trends and supplementary tables (of median incomes, fuel costs, energy efficiency ratings and floor areas) detailed in Annex H.

3.1 Property characteristics

3.1.1 Fuel Poverty Energy Efficiency Rating (FPEER)[27]

Figure 3.1: Proportion of "low income" households at different FPEER ratings in 2023. Households with FPEER D-G were also "fuel poor."



In Figure 3.1 above, other than for band A-C, the blue bars denote the proportion of households in fuel poverty for each group and the orange circles represent the average fuel poverty gap for each group. For example, the blue bars show that in 2023, 25.7 per cent of households who lived in energy efficiency band D properties were fuel poor and the orange circle shows that these households had an average gap of £233.

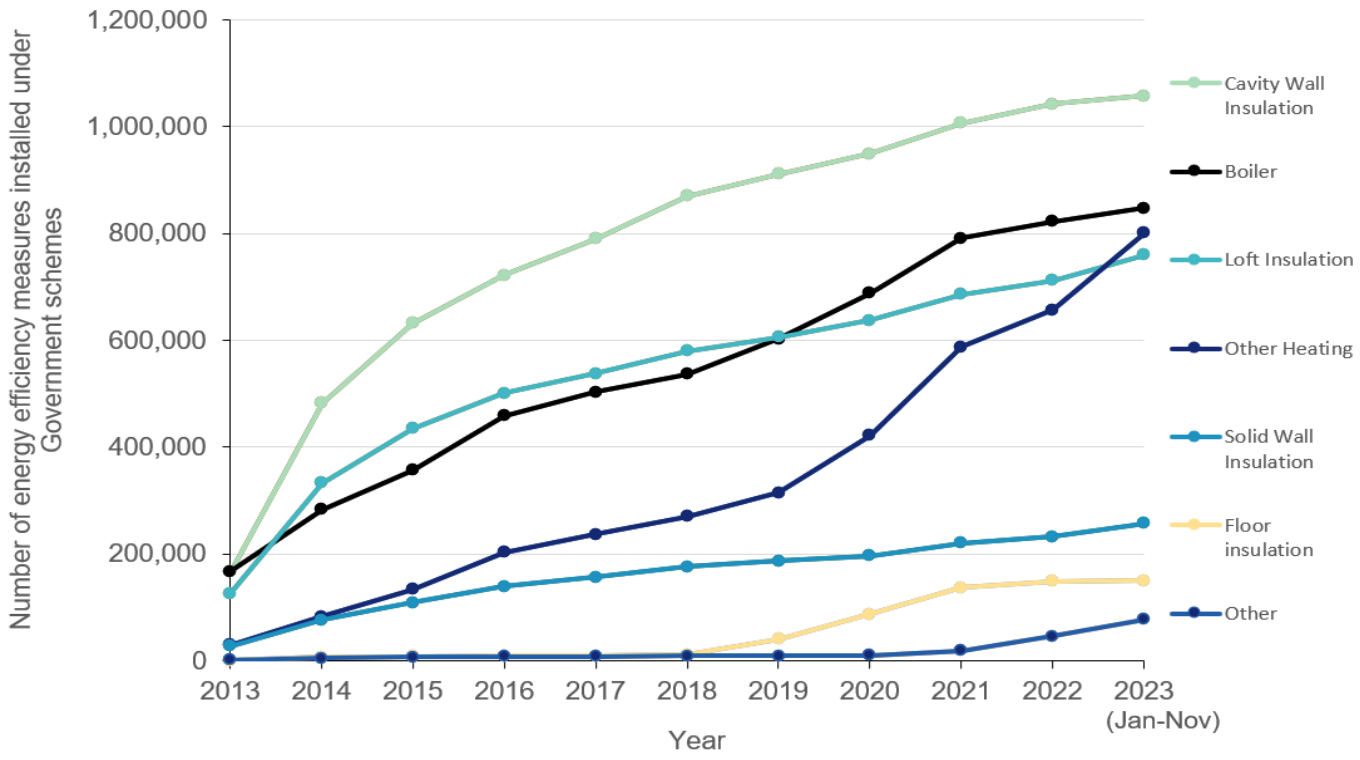
[27] The Fuel Poverty Energy Efficiency Rating is defined in Section 2.2.2.

In 2023, 81.1 per cent of all fuel poor homes were FPEER band D, 13.1 per cent were band E, and 5.9 per cent were band F/G. Households living in band F/G had the highest median energy costs (£4,350), leading band F/G properties to have the highest average fuel poverty gap in 2023.

By definition, households rated A-C were not fuel poor and therefore they did not have a fuel poverty gap. In 2023, the median income of households within energy efficiency bands A-C (£27,200) was 14.7 per cent lower than the median income of households in band E, which had the highest median income of £31,900. This demonstrates that lower income households were more likely to be living in higher energy efficiency rated homes. Despite the lower median income, none of these band A-C households were fuel poor because of their high energy efficiency rating.

The increase in energy efficiency ratings over the past decade is explained through a combination of the higher performance standards of new homes and by the retrofitting of energy efficiency measures[28] (see Figure 3.2). Data for 2023 are complete until the end of November. This information is sourced from the individual scheme statistical reports. Overall, 4.0 million measures have been installed through these Government schemes since 2013.

Figure 3.2: The cumulative number of energy efficiency measures installed through Government schemes between 2013 and 2023[29].

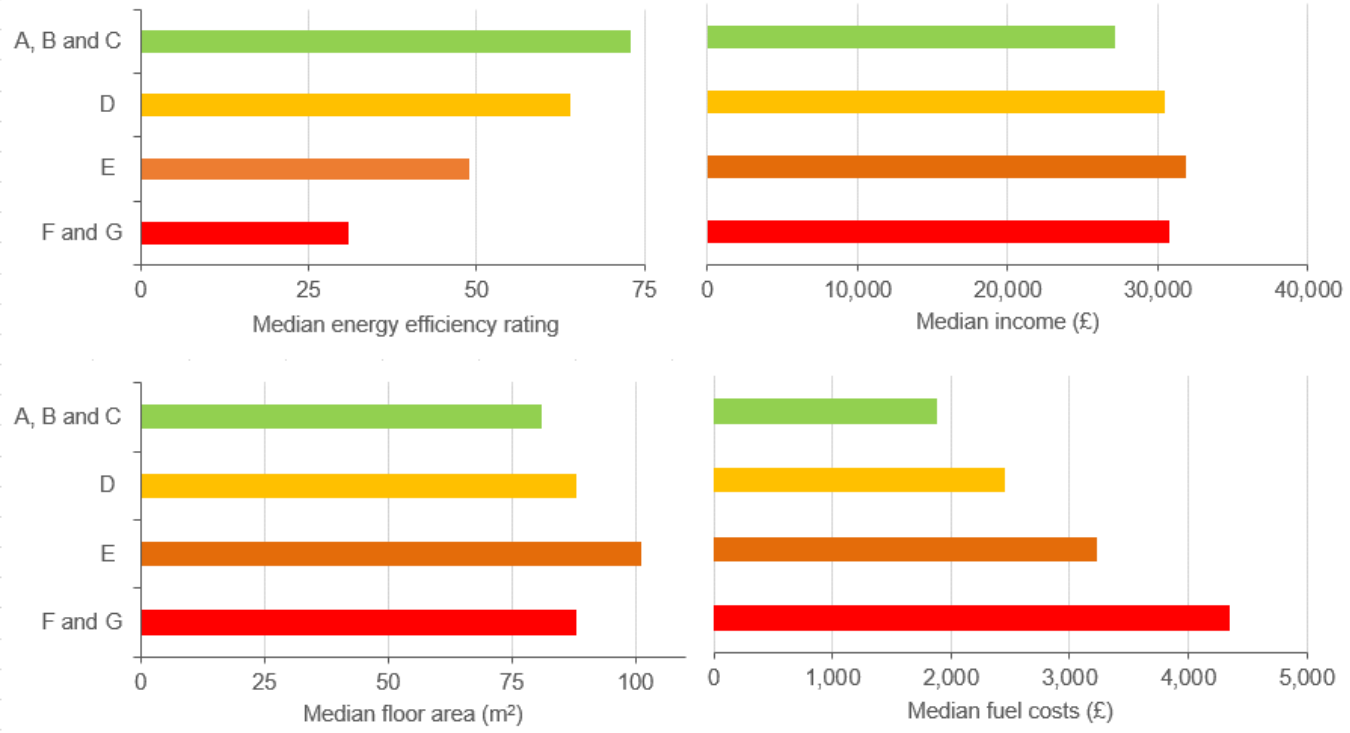


[28] The 'Other' category includes windows and doors, micro-generation and under floor insulation and glazing measures.

[29] Figure 3.2 is sourced from Government schemes including Energy Company Obligation, Green Homes Grant Vouchers, Local Area Delivery Schemes, Home Upgrade Grant, Social Housing Decarbonisation Fund, and the Great British Insulation Scheme. Data for 2023 is to the end of November 2023. Figures up to the end of 2023 will be published on 28th March 2024 in the Household Energy Efficiency Statistics Annual Report.

While the delivery of some measures has levelled off in recent years, the introduction of ECO3 at the end of 2018 increased the delivery of boilers alongside supplementary insulation measures, typically under floor insulation and often heating controls. ECO4 measures (including ECO3 Interim) installed up to the end of November 2023, around two-thirds (65 per cent) were heating measures, 31 per cent were insulation measures and 5 per cent solar photovoltaics.

Figure 3.3: As energy efficiency ratings decreased from A to F/G, fuel costs tended to increase.

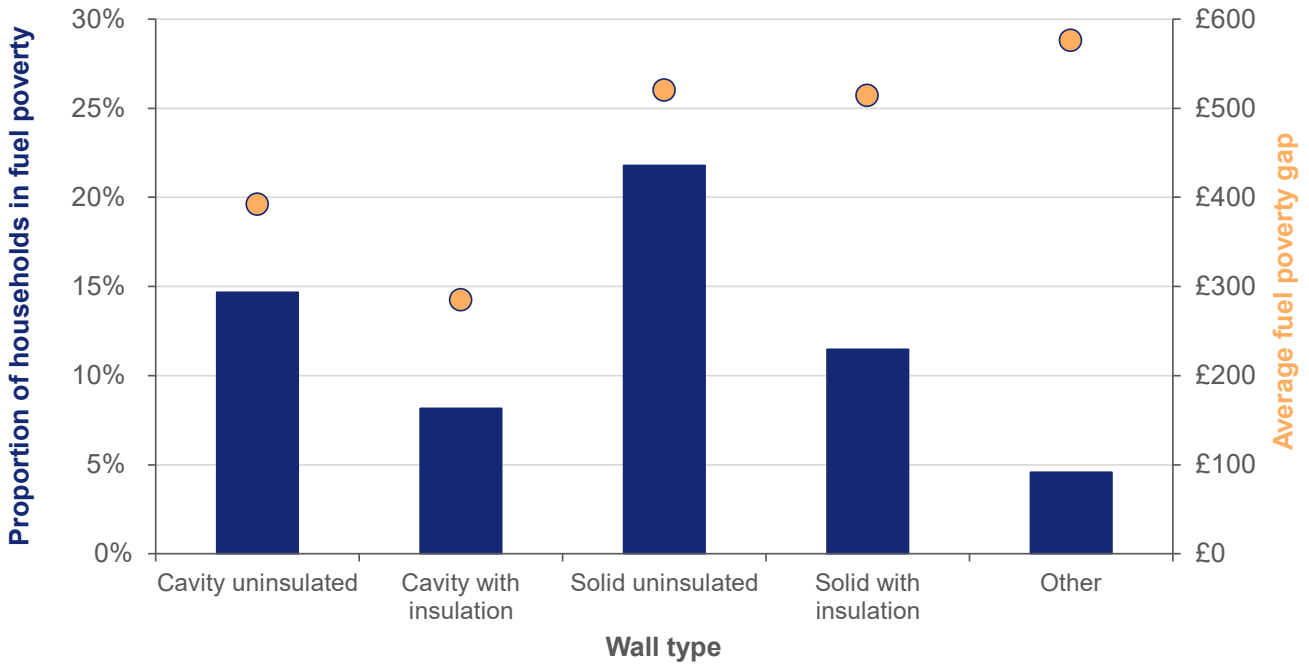


There was very strong negative correlation between median fuel costs and FPEER rating. Households in the lower FPEER bands with the lowest energy efficiency ratings tended to be larger and more expensive to heat (see Figure 3.3).

Households in the highest energy efficiency bands had the lowest median income. This is partially due to higher FPEER ratings in social housing and flats. The Warm Home Discount also targeted low-income households and provided an uplift to their energy efficiency rating. Further detail on tenure type is discussed in Section 3.2.1.

3.1.2 Wall type

Figure 3.4: In 2023, the proportion of households in fuel poverty was highest for those living in properties with uninsulated walls.



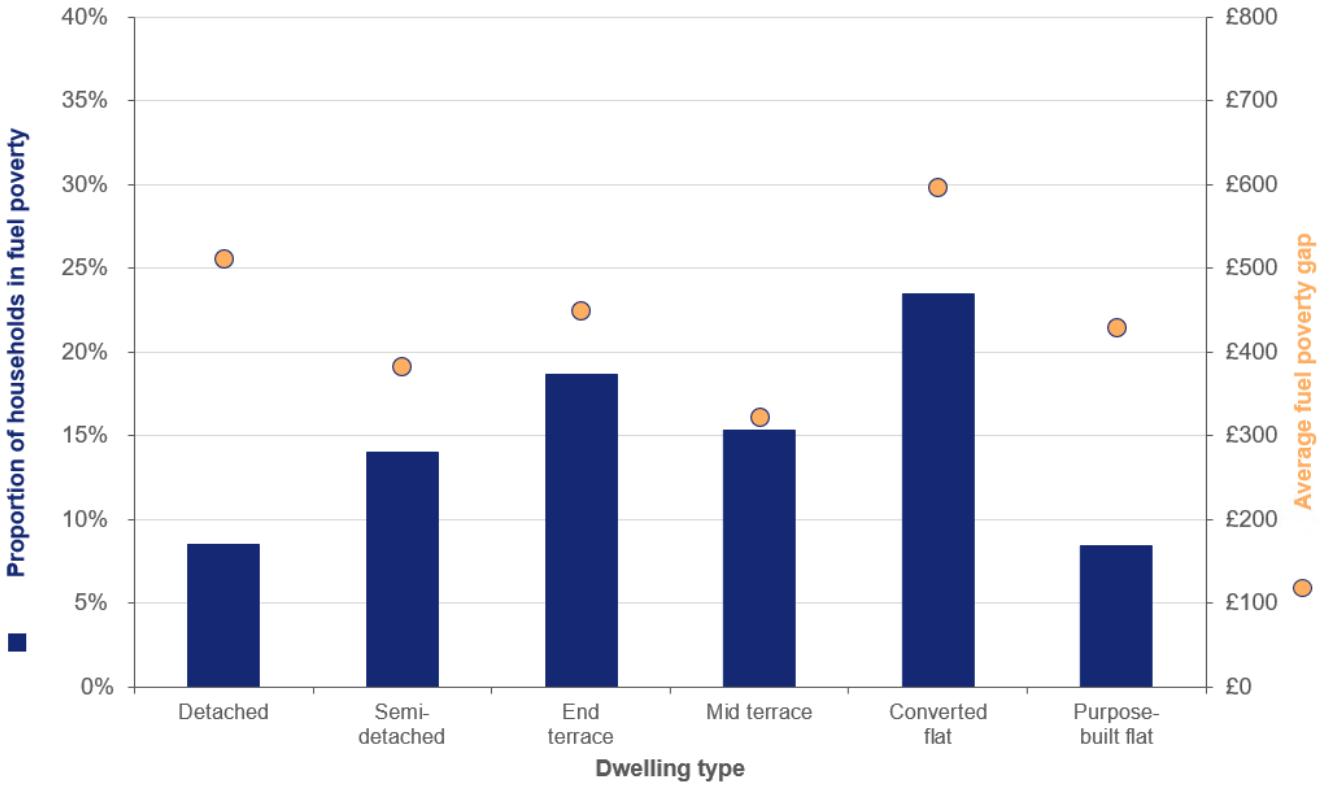
Properties with uninsulated solid walls had the highest rate of fuel poverty (21.8 per cent of households) with an average gap of £520, whereas those with insulated solid walls were less than half as likely to be fuel poor (11.5 per cent) with an average gap of £512. Properties with cavity walls followed a similar pattern – households living in properties with uninsulated cavity walls were more likely to be fuel poor (14.7 per cent) and have a larger average gap (£392) than those households living in properties with insulated cavity walls (8.2 per cent and £285).

The larger average gaps and higher likelihood of fuel poverty in properties without wall insulation was likely due to these properties having lower energy efficiency ratings and higher fuel costs - insulated walls had a higher median energy efficiency rating than uninsulated walls. According to figures from the National Energy Efficiency Data-Framework (NEED), properties had median percentage gas consumption savings of 10 per cent following the installation of cavity wall insulation, and 14 per cent from installing solid wall insulation[30].

[30] Source: National Energy Efficiency Data-Framework (NEED) report: Summary of analysis 2023.

3.1.3 Dwelling type

Figure 3.5: The average fuel poverty gap and the proportion of households in fuel poverty was highest for converted flats in 2023.

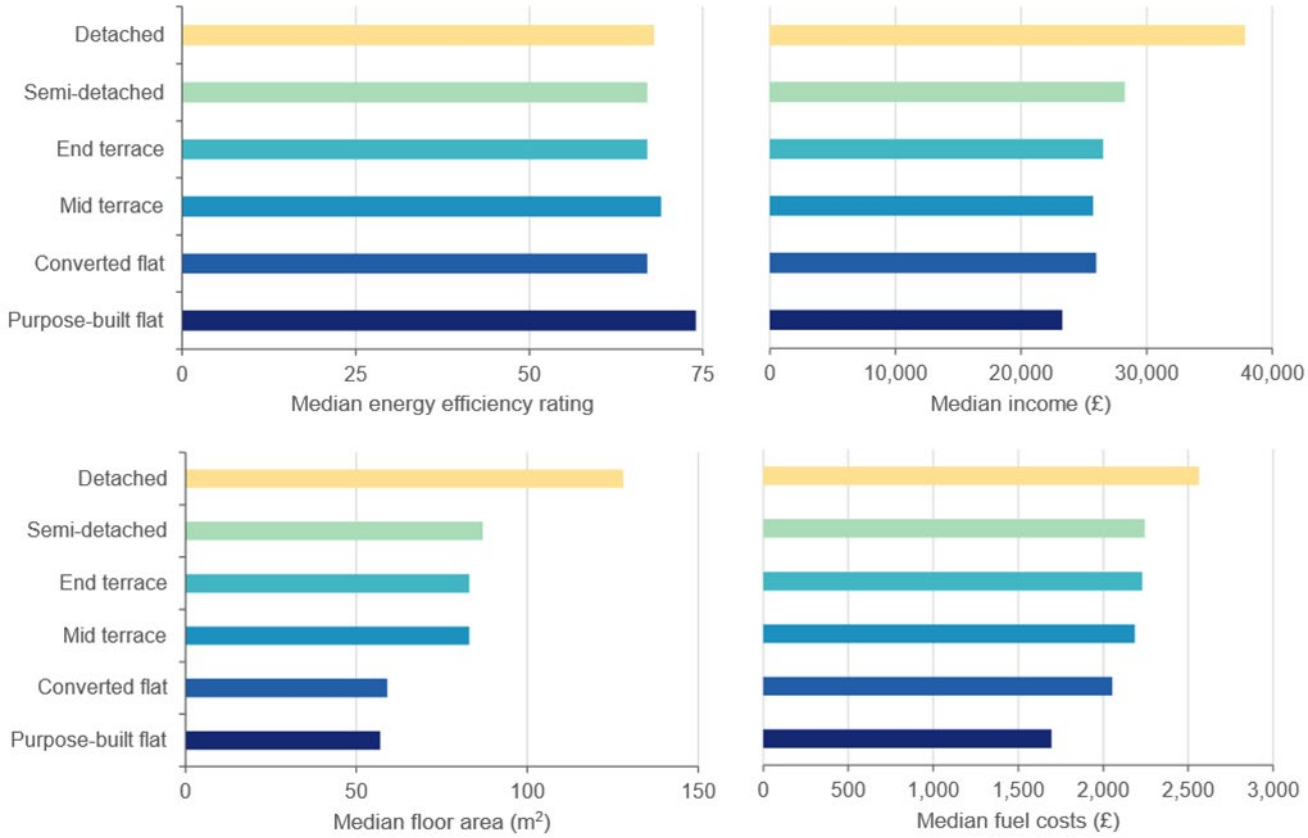


Households living in converted flats (3.7 per cent of all households) had the highest likelihood of fuel poverty (23.5 per cent) and the largest average gap at £597. In contrast, households living in purpose-built flats had the lowest likelihood of fuel poverty (8.4 per cent) and a fuel poverty gap of £430. This could be explained by the difference in median energy efficiency ratings, with purpose-built flats having a median energy efficiency rating of 74, compared to 67 for converted flats. This is due to the nature of the build and age of the property: more modern properties are built to a higher energy efficiency standard. These different property standards resulted in a median fuel cost of £1,700 for purpose-built flats, compared to £2,050 for converted flats.

After purpose-built flats, detached properties had the second-lowest likelihood of fuel poverty (8.5 per cent). Meanwhile, these households had the second-largest average gap at £511. This large gap was due to the number of exposed walls, which contributed to a lower energy efficiency rating, and larger floor area (median of 128m^2), which was much larger than the next largest floor area in semi-detached households (median of 87m^2).

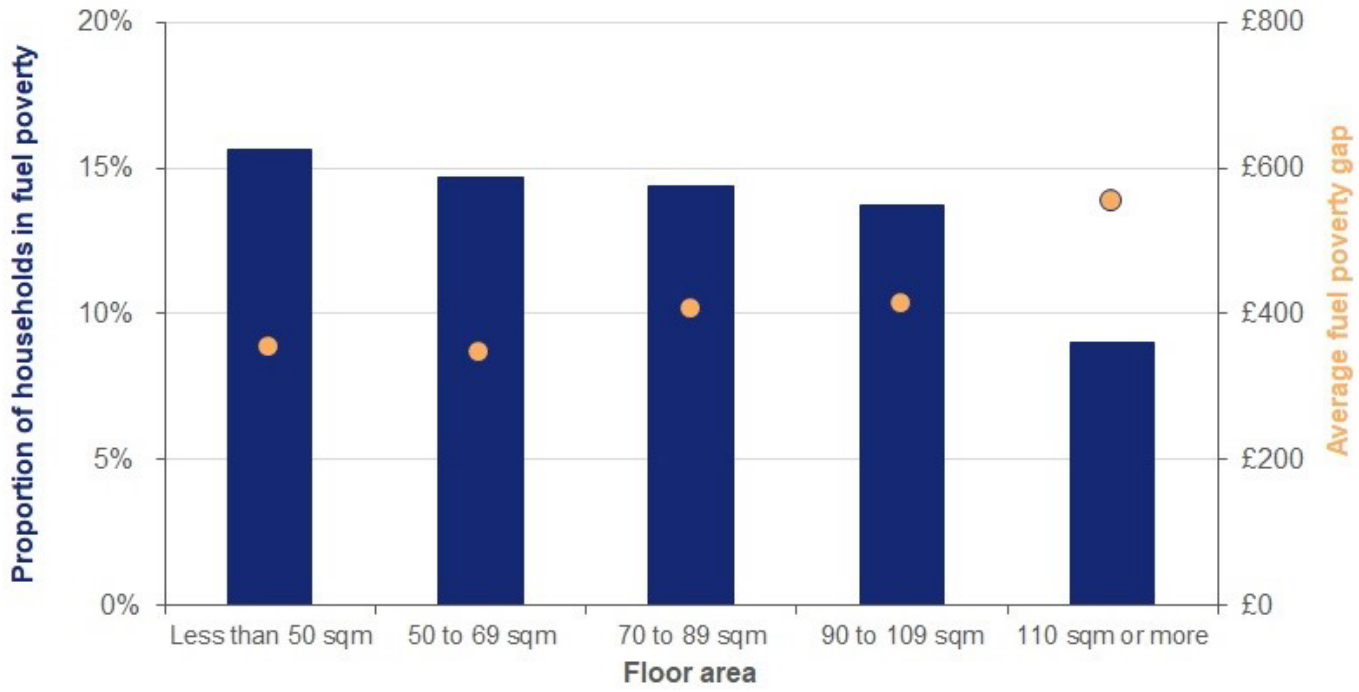
Figure 3.6 shows that households living in detached homes had much higher median incomes than other households, which explains the lower levels of fuel poverty for these households. However, because these households had the largest floor areas and the highest fuel costs, there was a large fuel poverty gap.

Figure 3.6: Purpose-built flats had the highest median energy efficiency but the lowest median income.



3.1.4 Floor area

Figure 3.7: Smaller properties were more likely to be occupied by the fuel poor but properties over 110m^2 had the largest average gap (£554).

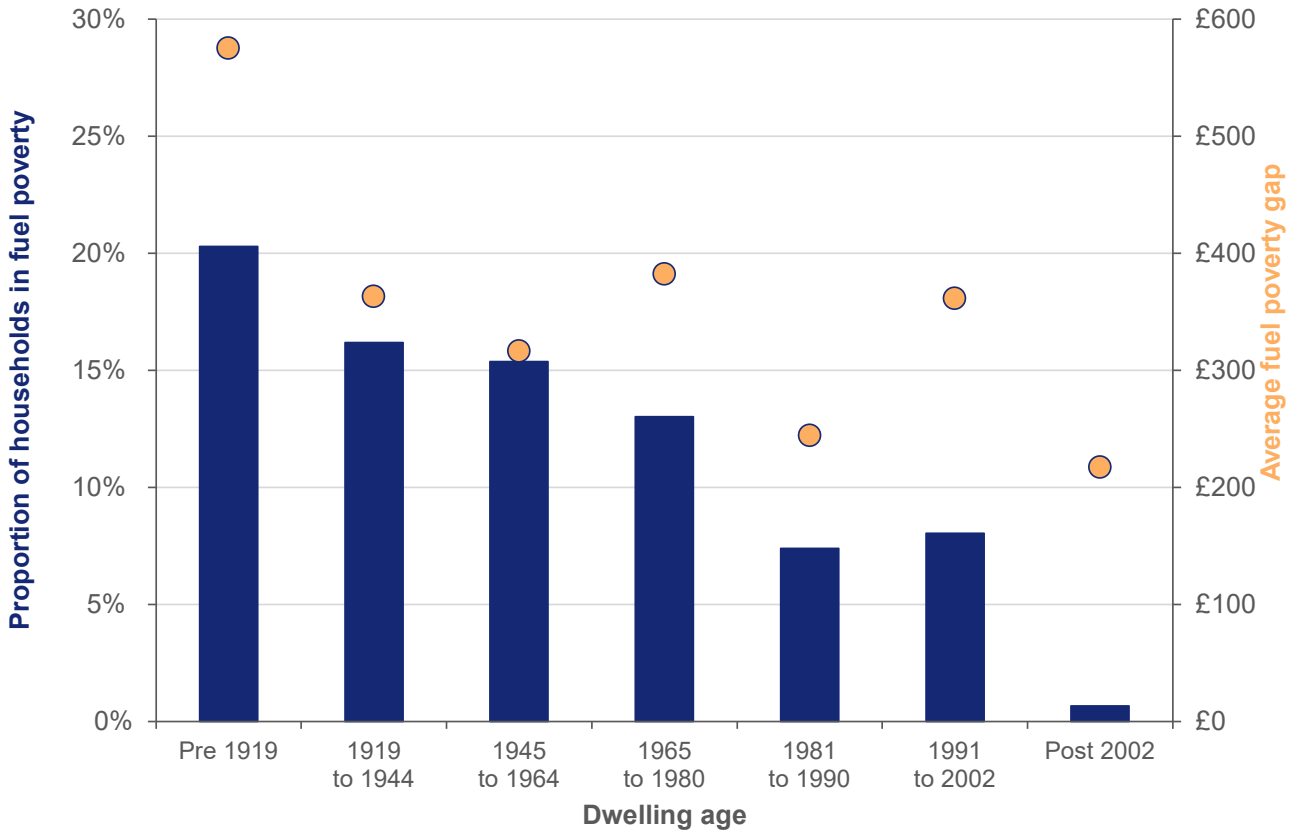


There was a higher proportion of fuel poor households in smaller homes; this was due to a lower median income of £21,700 (<50m^2) and £24,200 (50-69m^2), compared to an overall median of £28,800.

While the share of fuel poor households was lowest in homes with floor areas of 110m^2 or more at 9.0 per cent, these households had the highest fuel poverty gap of £554. This was due to the higher median fuel costs of £2,830 in these larger homes, compared to £2,200 overall. In general, larger floor areas correlated with higher incomes but lower energy efficiency, resulting in higher fuel costs (see Supplementary Table 8).

3.1.5 Property age

Figure 3.8: Households living in properties built before 1919 had the highest share of fuel poverty and highest average gap at £575.

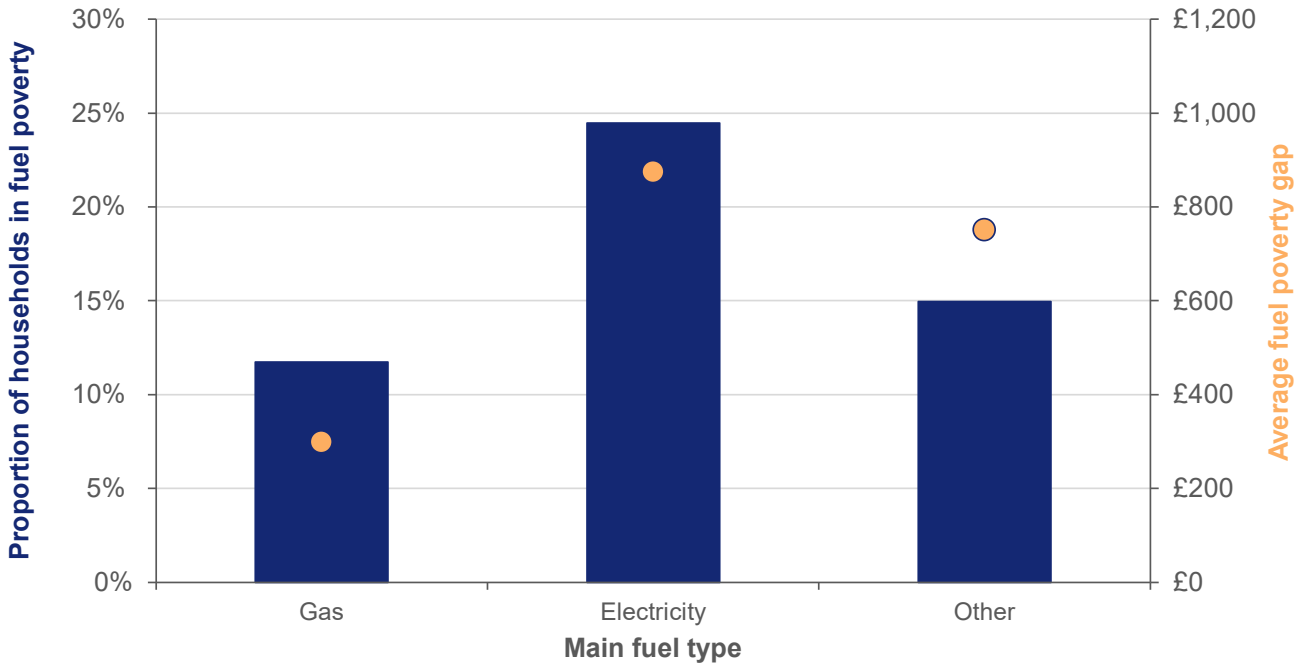


Households living in properties built before 1919 had the highest average gap at £575 and the largest proportion of fuel poverty (20.3 per cent). This was due to having the lowest median energy efficiency rating of 63 and the highest median floor area of 94 m^2, leading to a higher-than-average fuel cost for older homes compared with newer ones (see Supplementary Table 7).

Building regulations have driven up energy efficiency standards, with homes built after 2002 having a median energy efficiency rating of 78 (high band C) compared with 63 (mid band D) for homes built pre-1919, and an overall median of 69 (band C/D border).
This improvement in energy efficiency over time was reflected in the overall decrease in the fuel poverty gap as the age of the property decreased.

3.1.6 Main fuel type

Figure 3.9: Households that used electricity[31] as their main fuel for heating had the highest likelihood of being in fuel poverty and the largest fuel poverty gap.



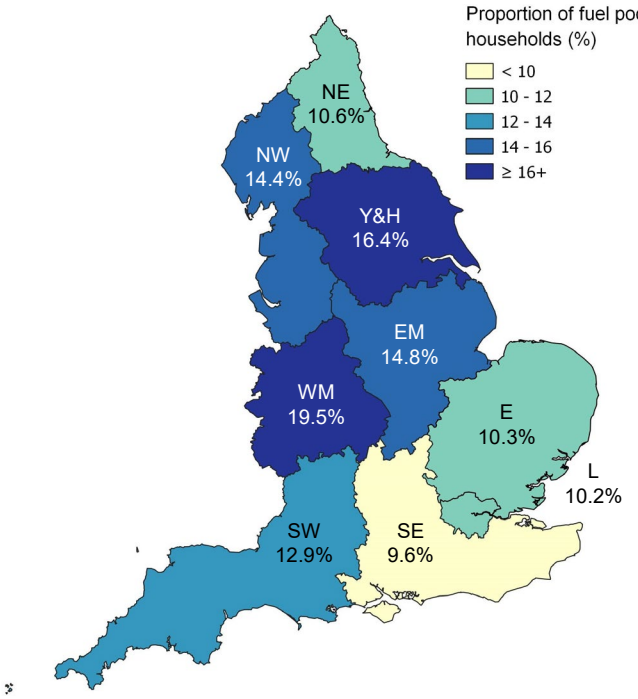
Households that used electricity as a main fuel for heating had the highest likelihood of fuel poverty at 24.5 per cent, compared to gas at 11.7 per cent. These households also had the largest average fuel poverty gap of £857, compared to gas at £299. This was partly due to energy efficiency. Households using gas as their main fuel had a median energy efficiency rating of 69, while those using electricity and other fuels had 62 and 60, respectively (see Supplementary table 10). This led to a higher median fuel cost of £2,750 for electricity, compared to an overall median fuel cost of £2,200. Additionally, households using electricity also had a lower median income (£26,400) compared to all households (£28,800), which contributed to the high rate of fuel poverty for these households.

[31] A small number of electrically powered heat pumps are included in electric heating.

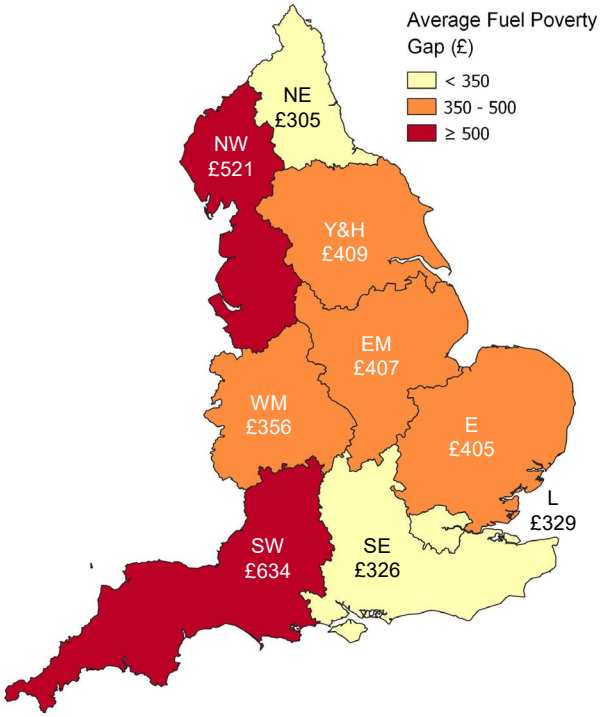
3.1.7 Region

Figure 3.10: In 2023, the West Midlands had the highest proportion of fuel poor households and the South West had the highest average fuel poverty gap.

The proportion of poor households across England by region



The average fuel poverty gap across England by region



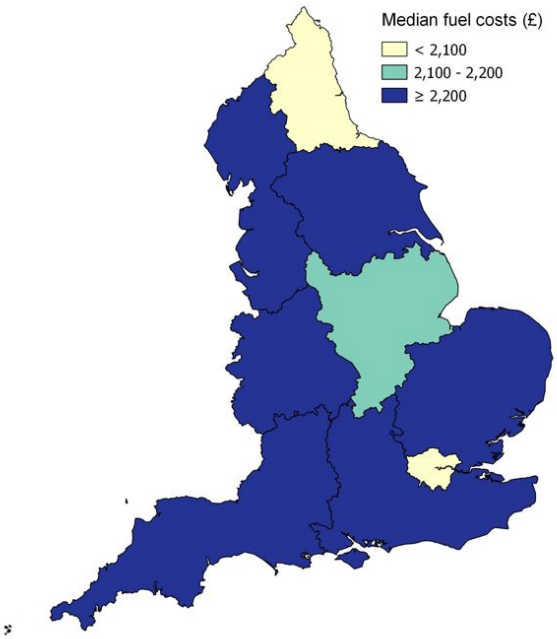
There was a high level of variation in fuel poverty rates between regions. The West Midlands had the highest rate of fuel poverty at 19.5 per cent, compared to 9.6 per cent in the South East. Given there were similar median energy efficiency ratings between regions and similar median fuel costs, the lower median incomes seen in northern regions and West Midlands were the drivers of the higher shares of fuel poverty.

The South West had the highest average fuel poverty gap of £634, compared to £305 in the North East, which was the lowest. This was due to having a slightly larger median floor area in the South West (87m^2) compared to the median for all households (85m^2), a slightly lower median energy efficiency rating (68) than the median for all households (69), and a lower median income than other regions with large houses and low energy efficiency (e.g. the South East).

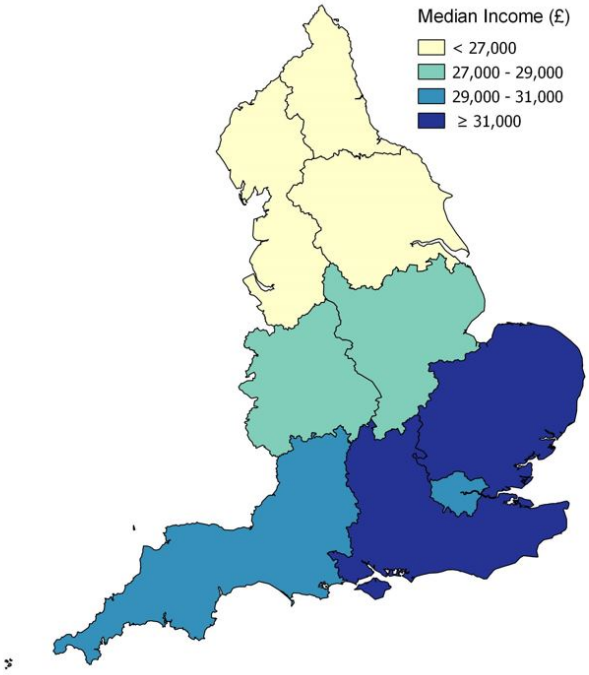
The North East's below-average fuel poverty gap (£305) could be explained by this region having the lowest median fuel costs of £2,010, compared to an overall median of £2,200.

Figure 3.11: Northern regions tended to have lower than average (median) incomes, whilst southern regions outside London tended to have larger than average median floor areas.

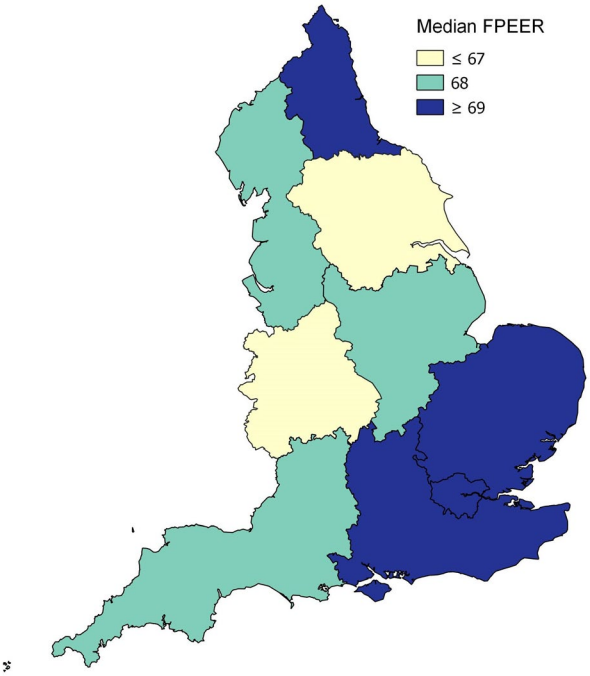
Household median fuel costs across England by region



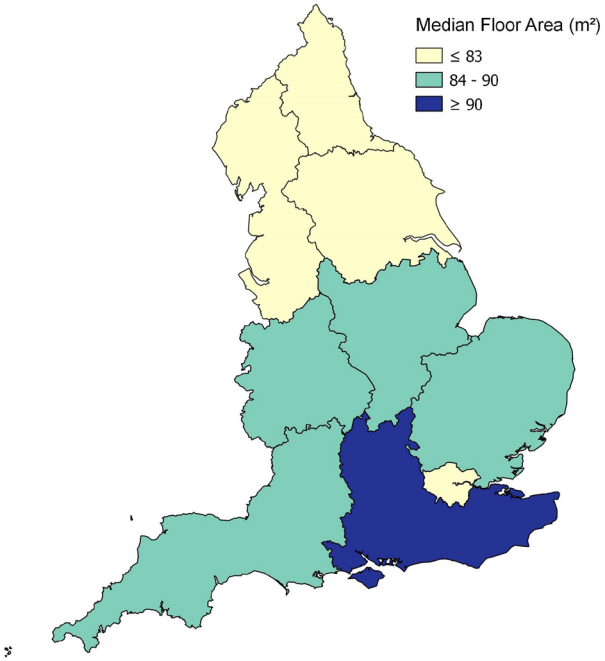
Household median income across England by region



Household median energy efficiency rating across England by region

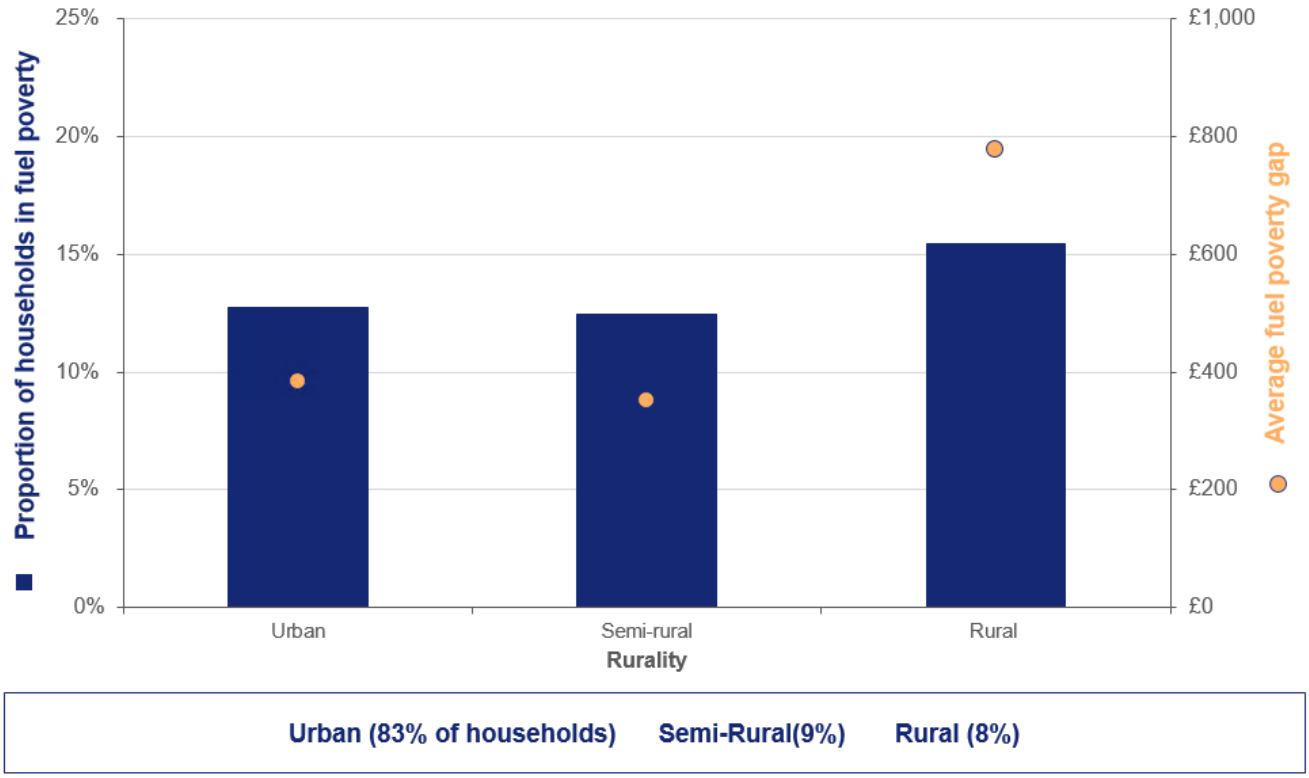


Household median floor area across England by region



3.1.8 Rurality and gas grid connection

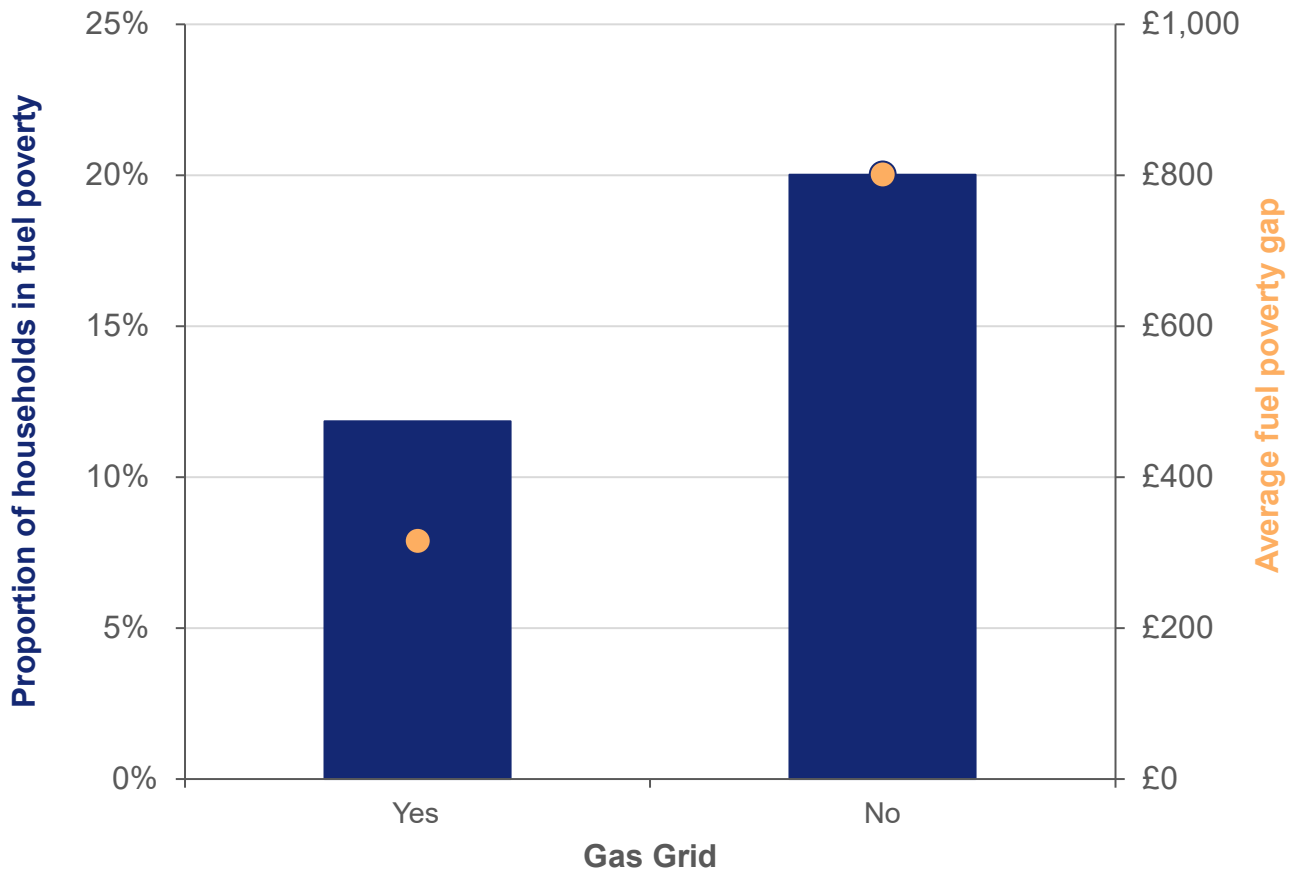
Figure 3.12: In 2023, households living in rural areas had a higher rate of fuel poverty and a larger fuel poverty gap.



Households living in rural areas had the highest fuel poverty rate of 15.5 per cent and the largest fuel poverty gap at £778 in 2023. Households in semi-rural areas had lowest fuel poverty rate of 12.5 per cent, while urban areas had a similar fuel poverty rate of 12.8 per cent.

Households living in rural areas were much less energy efficient than other households on average, with a median fuel poverty energy efficiency rating of 60, compared to an overall median of 69. Households living in rural areas were also much larger, with a median floor area of 119 m^2, compared to an overall median of 85 m^2 (see Supplementary Table 4). This combination of low energy efficiency and large floor area led to a very high median fuel cost of £2,790 in rural areas, driving the large gap and high fuel poverty rate.

Figure 3.13: Households off the gas grid were more likely to be fuel poor than households on the grid and had an average fuel poverty gap over two times higher.



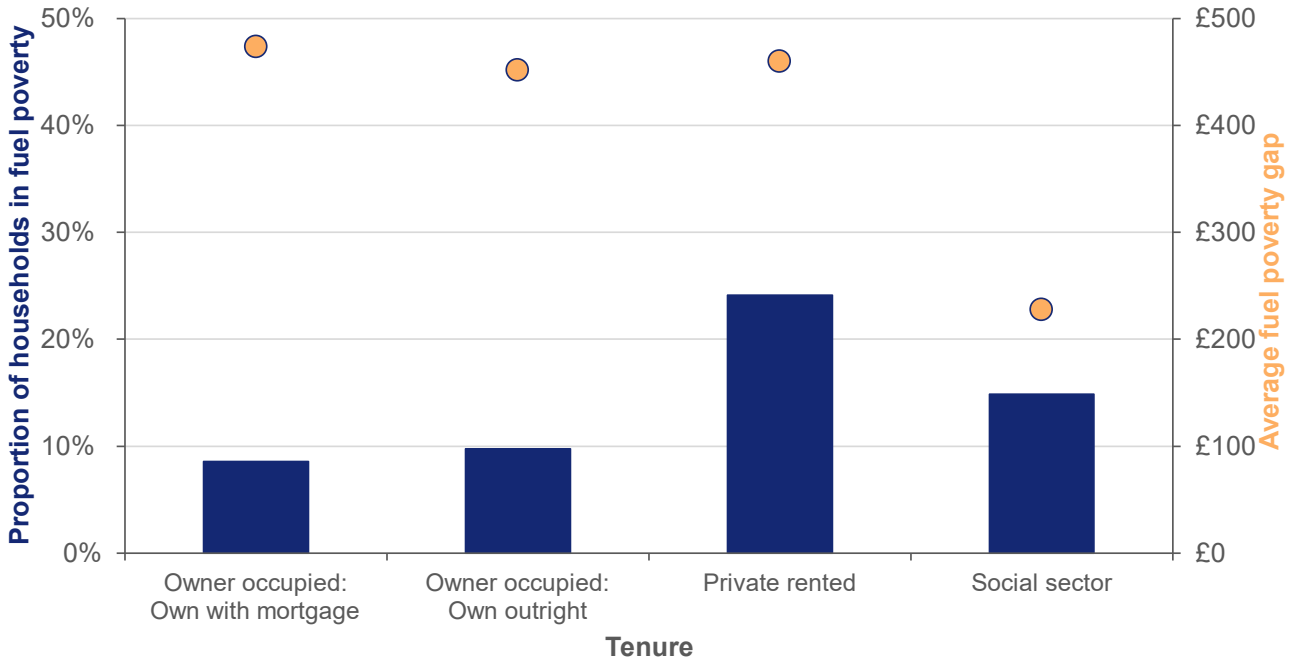
Of households living in properties off the gas grid, 20.0 per cent were fuel poor compared to 11.8 per cent of households on the gas grid. These compare with 22.9 per cent and 22.0 per cent respectively in 2010, showing the reduction in fuel poverty over time has largely come from households connected to the gas grid – 53.5 per cent of homes on the gas grid were band A-C, compared with 32.3 per cent for homes off the gas grid. The average fuel poverty gap for households off the gas grid was £801, which is over twice as large as the gap for households on the gas grid (£315).

3.2 Household characteristics

3.2.1 Tenure

The differences across tenures in both the fuel poverty rate and average gap reflect both the nature of the housing stock and household characteristics typical to a household's tenure.

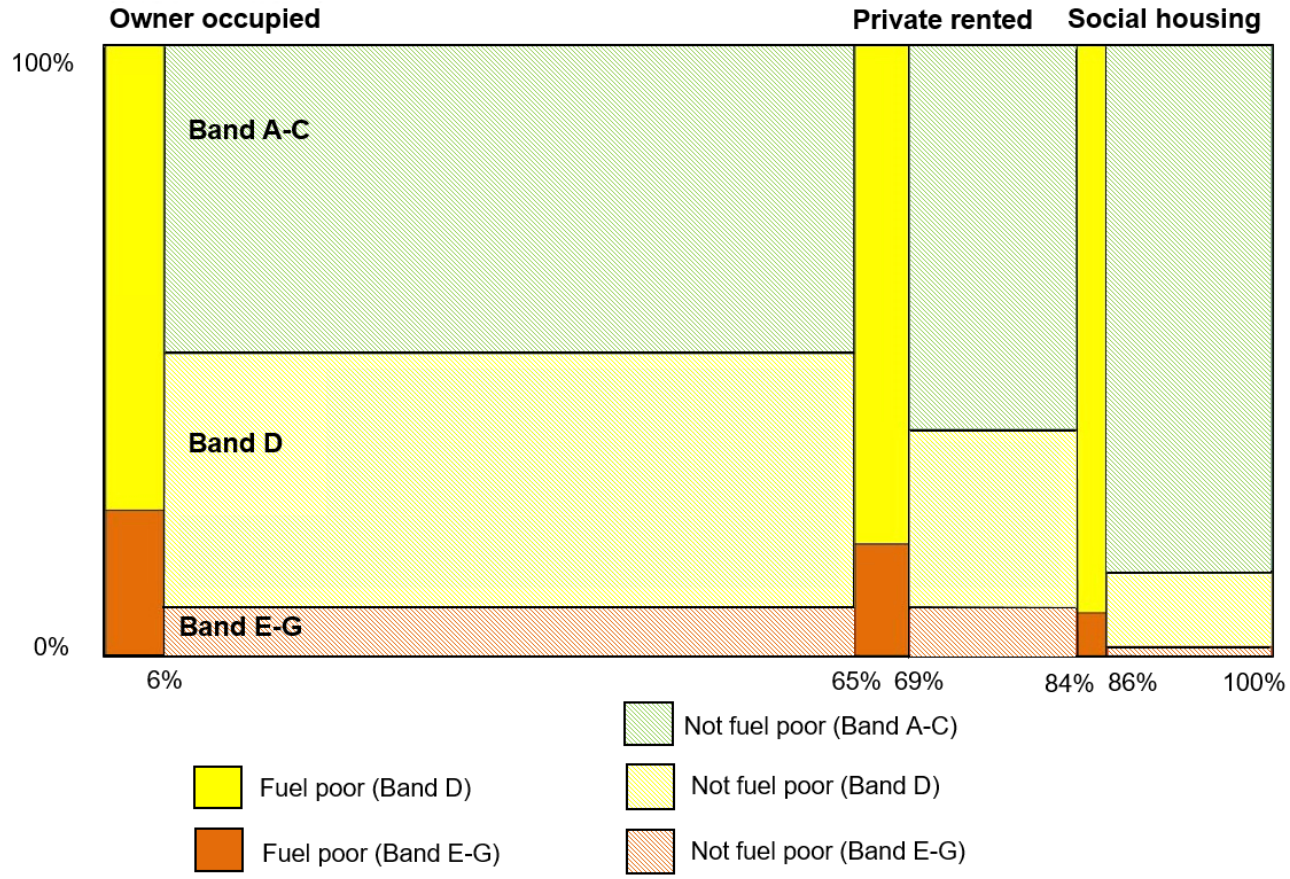
Figure 3.14: The proportion of households in fuel poverty was highest for private renters at 24 per cent whilst owner occupiers with mortgages had the highest average gap at £474.



The highest rate of fuel poverty was in the private rented sector, with 24.1 per cent of these households being fuel poor. Owner occupiers had the lowest level of fuel poverty. Owner occupiers with a mortgage were slightly less likely to be fuel poor (8.6 per cent) than those who owned their home outright (9.8 per cent). This was partially due to the higher proportion of band A-C properties among owner-occupied homes with a mortgage (53.1 per cent), compared to owner-occupied homes owned outright, where only 39.0 per cent of homes were in bands A-C.

Owner-occupied households (both with a mortgage and owned outright) had lower levels of fuel poverty because of their much higher median income (£34,600) compared to the median incomes of private renters (£22,700) and those living in social housing (£17,700). Even though the median income was higher for private renters than for social housing, private renters had a higher rate of fuel poverty because of their lower median energy efficiency rating and higher median floor area (see Supplementary Table 12).

Figure 3.15: There was a higher proportion of band A-C properties that were socially rented compared to owner occupied and privately rented properties.



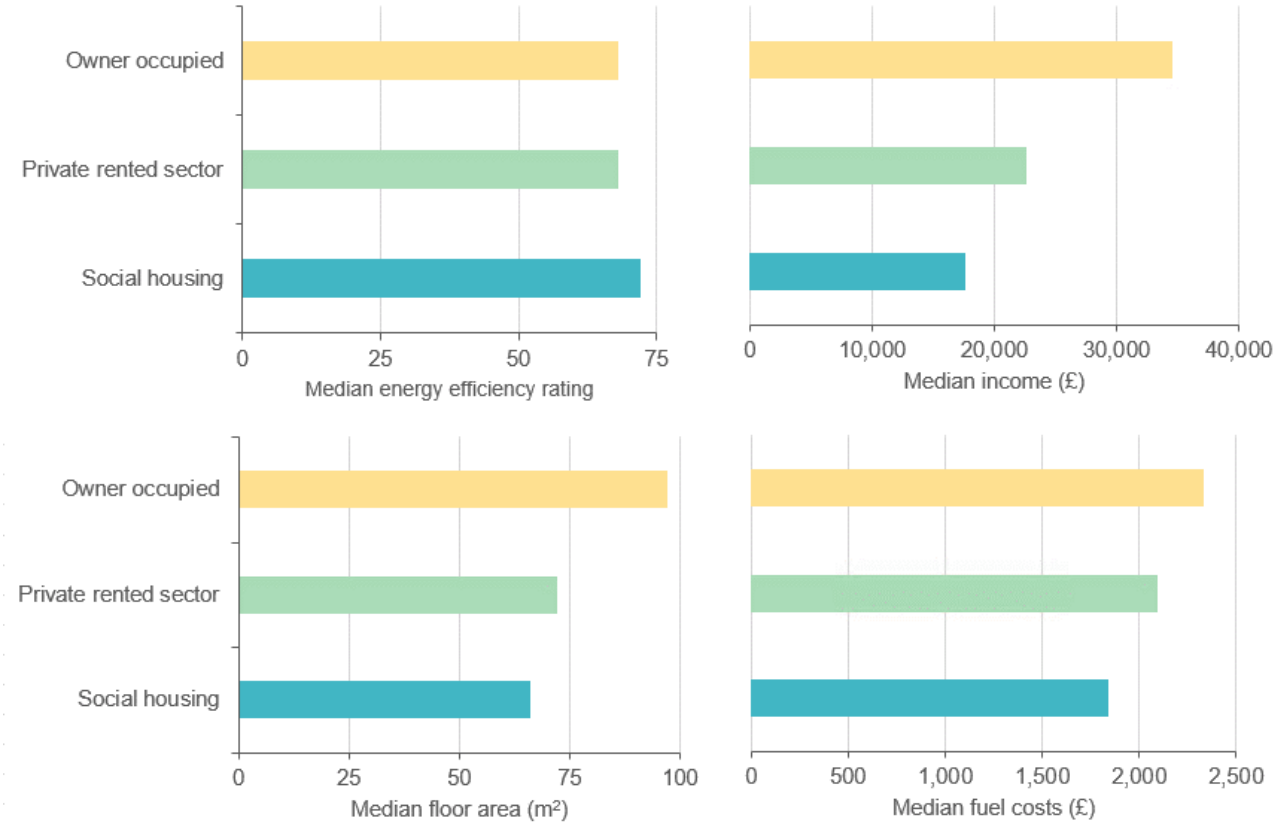
Area is equivalent to the proportion of households in that group.

By definition, any household with an energy efficiency rating of A-C is not fuel poor regardless of income. The highest share of band A-C homes was in the social housing sector, where 73.4 per cent of homes were band A-C in 2023. Of households with band D-G rating in this tenure, 56.0 per cent were fuel poor. The median income of households living in social housing was 22.1 per cent lower than for private rented households, but the higher levels of energy efficiency in social housing have driven down the rate of fuel poverty from 40.3 per cent in 2010 to 14.9 per cent in 2023.

In the private rented sector, the share of band A-C homes increased from 29.3 per cent in 2017 to 47.7 per cent in 2023. This sector still had the highest fuel poverty rate because of the lower income households who live in this sector when compared with the owner-occupied sector.

Overall, 45.9 per cent of fuel poor households were owner occupied, 35.1 per cent were privately rented, and 18.9 per cent lived in social housing. In comparison, 64.6 per cent of all households were owner occupied, 18.9 per cent were privately rented, and 16.5 per cent were in social housing.

Figure 3.16: Social housing properties had lower levels of fuel poverty despite having the lowest median incomes because they tended to be more energy efficient.

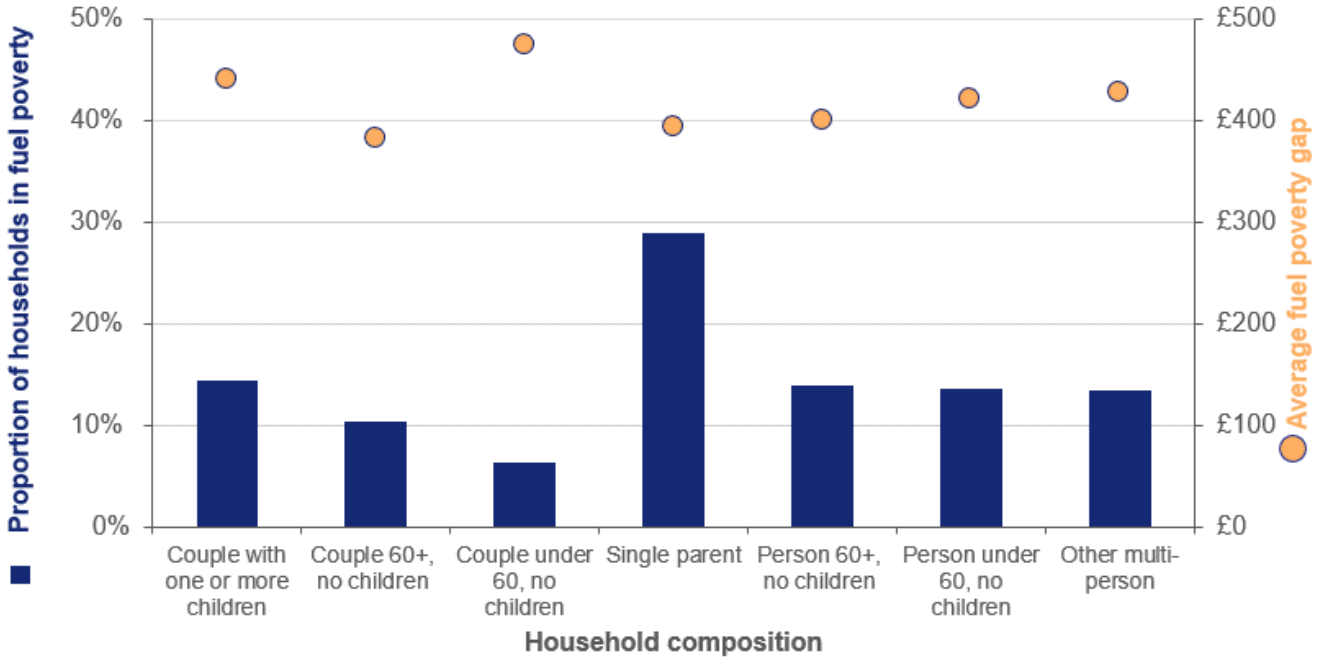


Social housing properties tended to be more energy efficient, with 73.4 per cent of social rented homes rated C or above, which means they could not fuel poor. Of social rented homes below band C, 56.0 per cent were fuel poor due to the lower incomes in this tenure.

Owner occupied and privately rented properties had lower median energy efficient ratings, which resulted in higher energy costs and a higher average fuel poverty gap. The median income of owner occupiers was significantly larger than that of private renters and social renters, leading to a lower rate of fuel poverty within this tenure.

3.2.2 Household composition

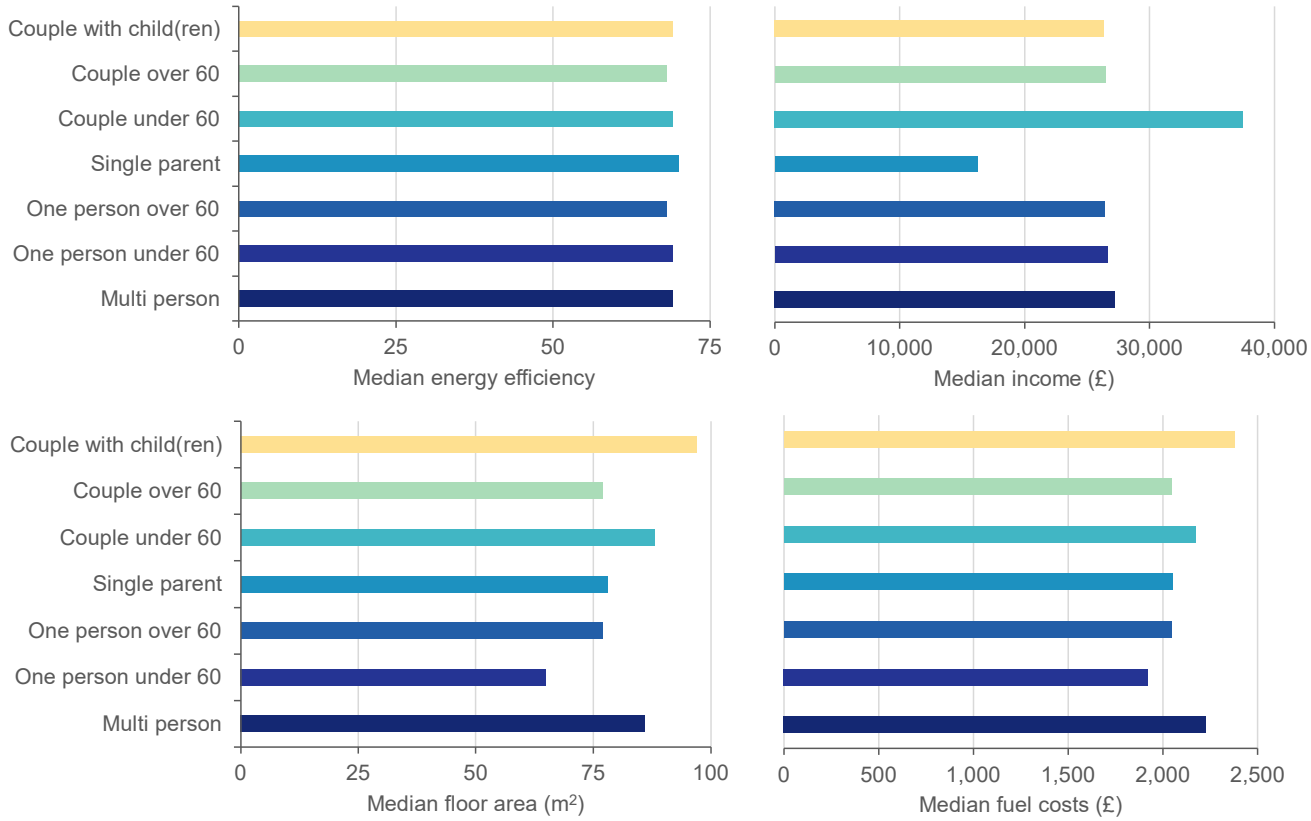
Figure 3.17: Single parents had the highest proportion of households in fuel poverty and couples under 60 without children had the highest average gap.



Single parent households have consistently had the highest proportion of households in fuel poverty (see Trends Table 11). In 2023, 28.8 per cent of single parent households were in fuel poverty, likely due to their considerably lower median income (see figure 3.18). However, their average fuel poverty gap was below average (£393), largely due to their higher energy efficiency ratings and low median floor area (see Supplementary Table 13).

Couples under 60 with no dependent children had the lowest prevalence of fuel poverty (6.3 per cent) but the highest average gap (£474). This low rate of fuel poverty was likely due to the high median equivalised income (£37,500) of this group.

Figure 3.18: Single parent households had considerably lower median incomes than average.

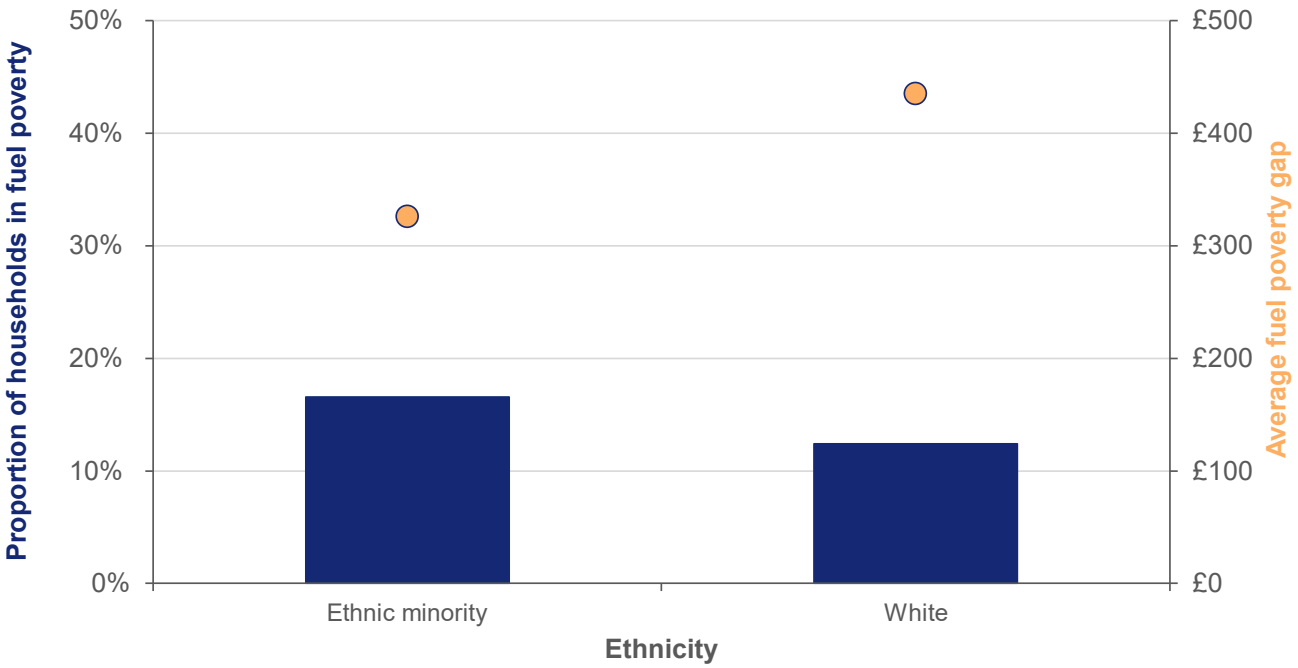


In 2023, 36.9 per cent of all fuel poor households had one or more dependent children (1.2 million households). This was 4.8 per cent of all households and 18.0 per cent of all households with children.

3.2.3 Ethnicity

Households are classified based on the ethnicity of the household reference person (HRP)[32]. Some households contain members from more than one ethnic group, which is not reflected in this analysis.

Figure 3.19: Households with an ethnic minority HRP were more likely to be in fuel poverty but have a lower average gap than households with a white HRP.



Households with an ethnic minority HRP had a higher proportion of households in fuel poverty at 16.6 per cent compared with 12.4 per cent for households with a white HRP. Households with a white HRP had a higher average fuel poverty gap of £435 compared with £326 for households with an ethnic minority HRP.

In 2023, the median income for ethnic minority households was lower than the income for white households, which partly explains their higher likelihood of fuel poverty[33]. However, ethnic minority households were more likely to be living in smaller homes (median of 80m^2) than white households (median of 86m^2); they were also more likely to live in energy efficiency properties than white households. This led to lower median fuel costs for ethnic minority households, which may explain the lower average fuel poverty gap.

This data is also published as part of the Ethnicity Facts and Figures collection published by the Cabinet Office.

[32] The person in whose name the dwelling is owned or rented or who is otherwise responsible for the accommodation. In the case of joint owners and tenants, the person with the highest income is taken as the HRP. Where incomes are equal, the older person is taken as the HRP.

[33] See Table 16 in the supplementary tables.

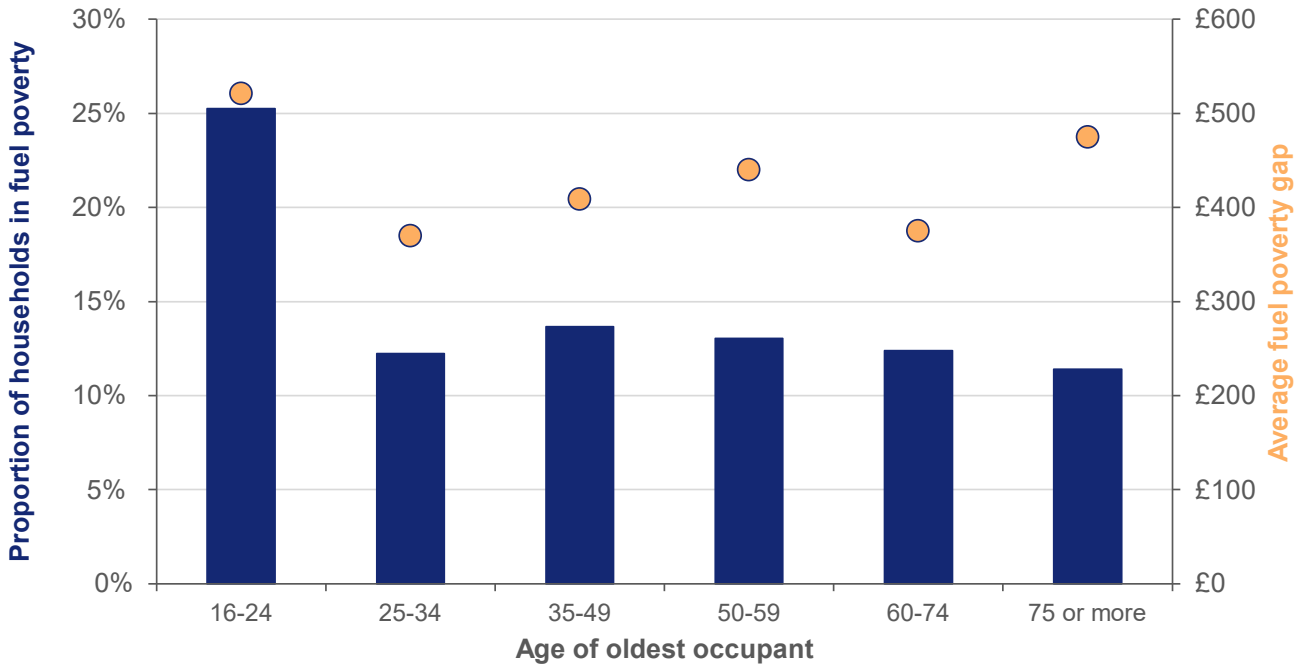
3.2.4 Age

Age can be analysed in two different ways:

- Age of the oldest member of the household.
- Age of the youngest member of the household.

This allows us to distinguish between households with young children and households that comprise solely of those aged 75 and over.

Figure 3.20: Households where the age of the oldest member was between 16 and 24 had the highest likelihood of being in fuel poverty (25 per cent), with an average gap of £521.



In 2023, 25.3 per cent of households where the oldest member was aged 16 to 24 years were fuel poor. This was likely to be a result of much lower median incomes for younger households. The youngest households (age 16-24) had a median income of £16,000 compared to £28,800 for all households (see Supplementary Table 15).

Figure 3.21: Households containing children and young people had the highest likelihood of being in fuel poverty.

Households with children or people aged 24 or under had the highest rates of fuel poverty. This was due to these households having a lower than average equivalised median income. Equivalised income reflects the number of people in the household who depend on the total household income. The lowest equivalised median income was £22,400 for households with a child aged 0-4 and £22,700 for households with a child aged 5-10, compared with an overall median income of £28,800.

3.3 Household income

3.3.1 Employment status

Data are based on the household reference person (HRP). Many households contain members with a mixture of employment statuses, which is not reflected in this analysis.

Figure 3.22: Households with an unemployed HRP or one in full-time education had the largest proportion of households in fuel poverty, while households with a HRP in full-time work had the lowest[34].

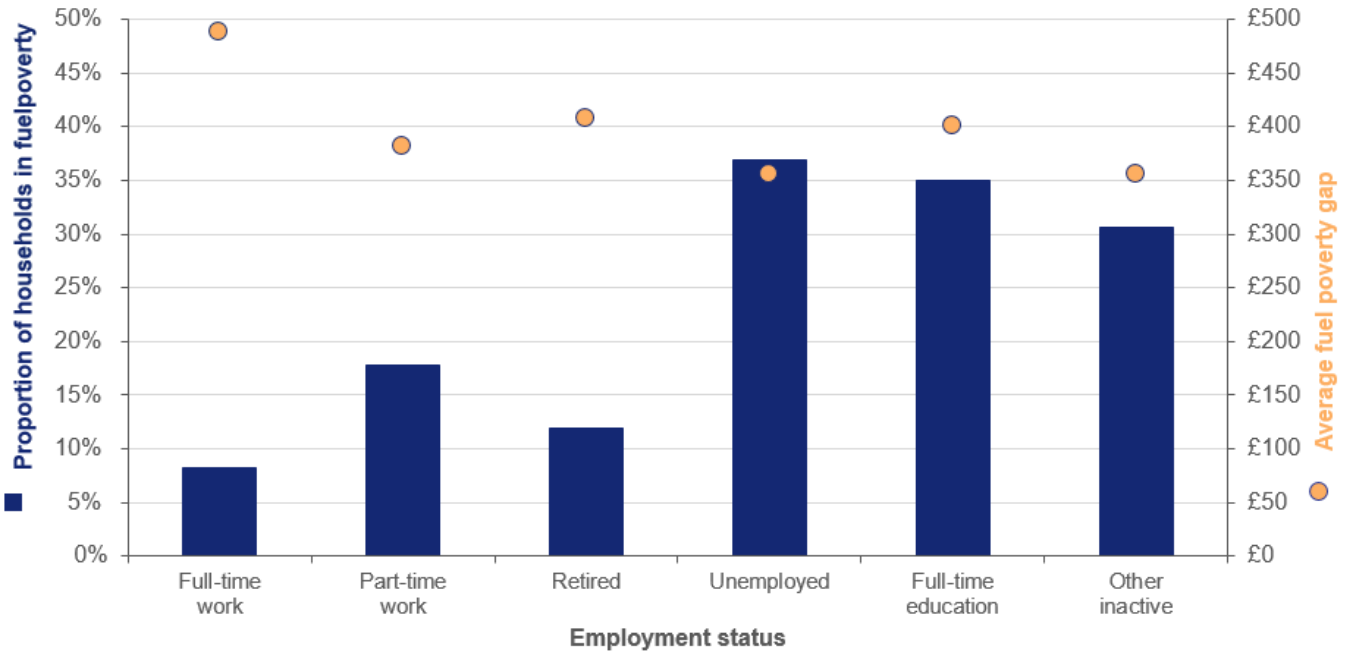
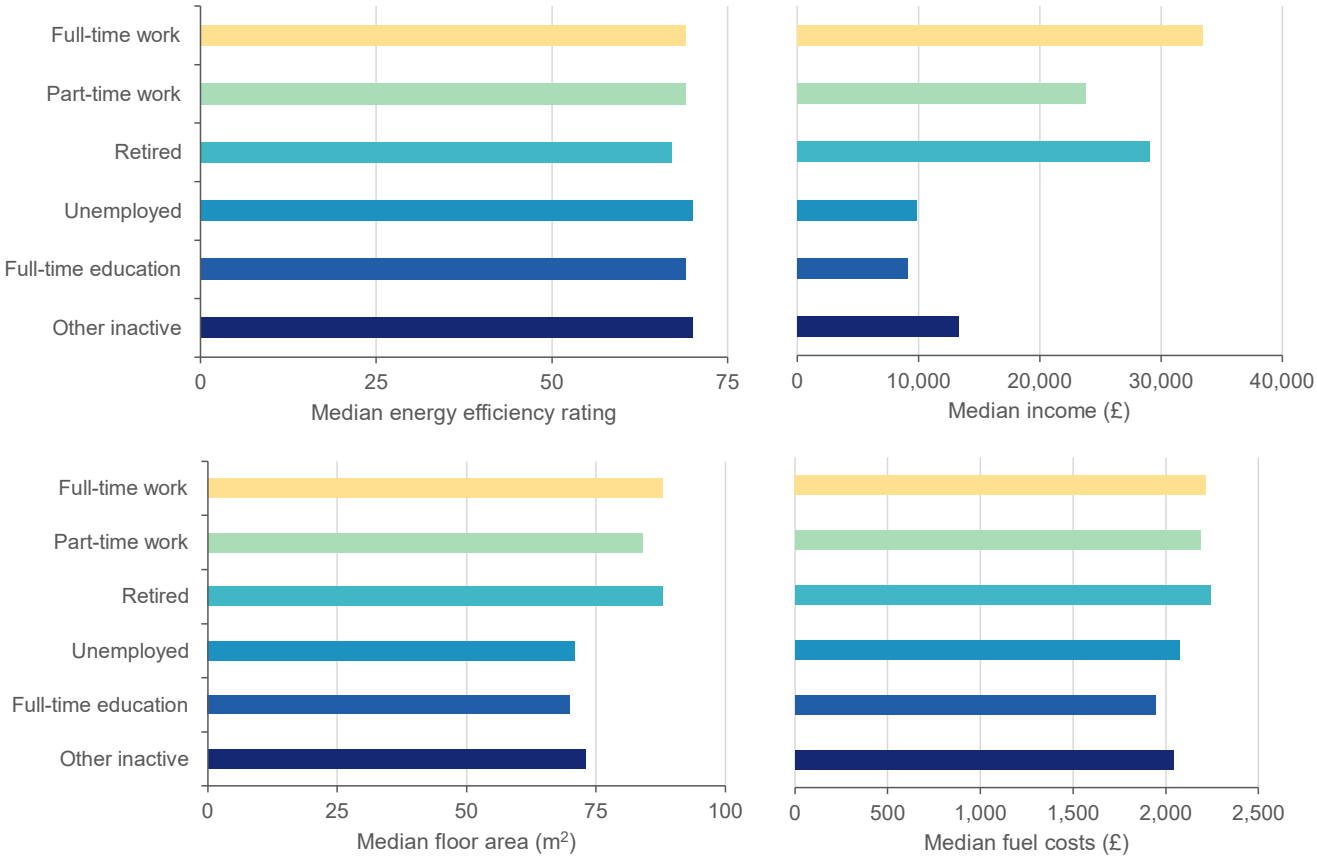


Figure 3.22 shows that those in full-time work and retired had the lowest rates of fuel poverty (8.3 per cent and 12.0 per cent, respectively), whereas households where the HRP is unemployed (36.9 per cent) or a full-time student (35.1 per cent) had the highest likelihoods of being in fuel poverty.

[34] Figures for households where the HRP is in full time education are based on small sample sizes, so inferences should not be made based on this figure.

Figure 3.23: Households where the HRP was in full-time education had the lowest median income and the lowest median fuel costs.



The median income for households tends to be negatively correlated with the proportion of households in fuel poverty. For example, households where the HRP was in full time work had the lowest proportion in fuel poverty (8.3 per cent) and the highest median income of £33,400.

3.3.2 Benefits

Overall, an estimated 63.3 per cent of households in fuel poverty were receiving at least one of following benefits (Income Support, Universal credit, Jobseeker's allowance, Employment and support allowance, Pension credit, Housing benefits, Local housing allowance, Council tax benefit, Child tax credit & Working tax credit). It does not include households receiving other state benefits e.g. State pension or Child benefit which are not specifically for low income households. (Detailed table 34a)

Income from disability benefits (Attendance Allowance, Disability Living Allowing and Personal Independence Payments) are not included in the fuel poverty income calculation. This reflects that these benefits were specifically given to manage living with a disability. The analysis below does not count households as receiving benefits unless they received another benefit in addition to a disability benefit. The share of fuel poor households receiving benefits rises to 71.0 per cent if disability benefits are included (Detailed table 34b).

Figure 3.24: In 2023, 27 per cent of households in receipt of benefits (excluding disability benefits) were fuel poor compared with 7 per cent not in receipt of benefits.

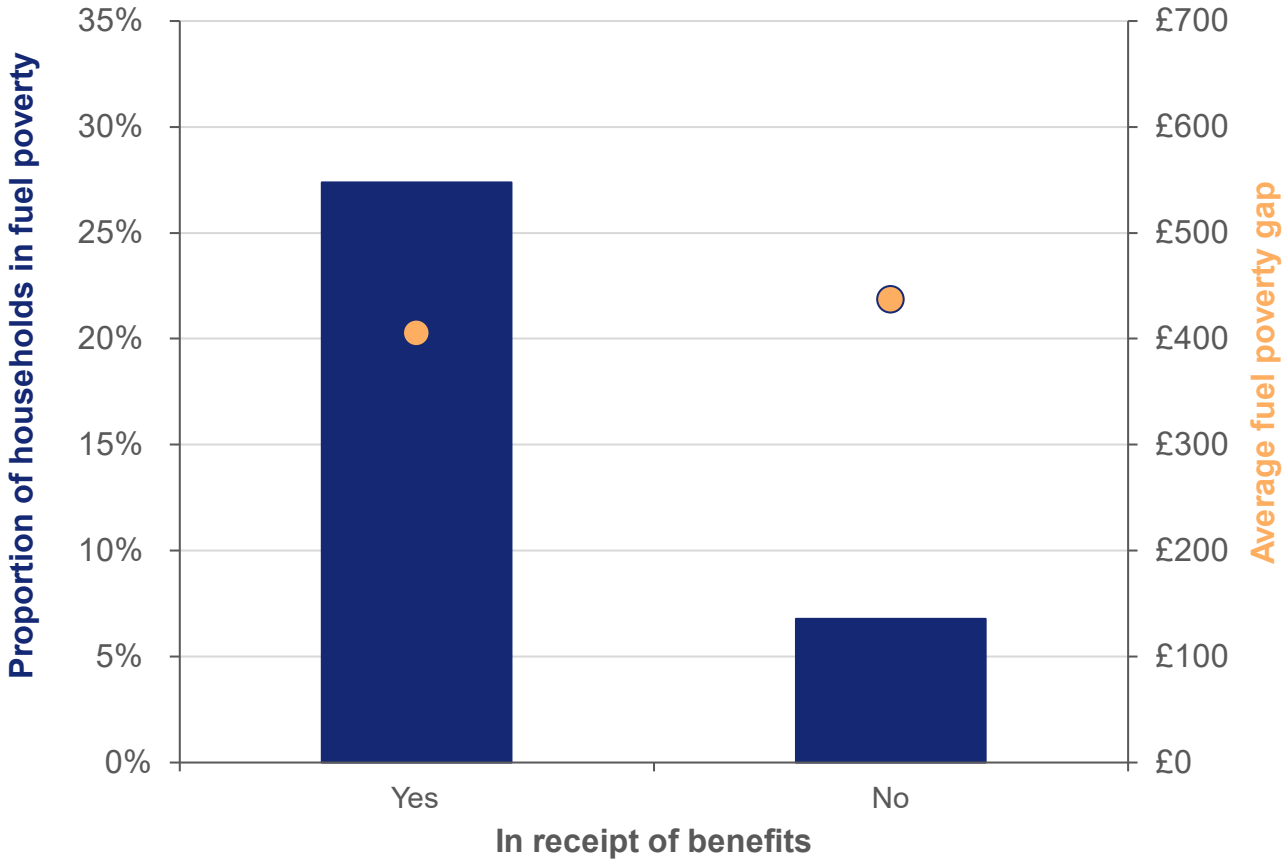
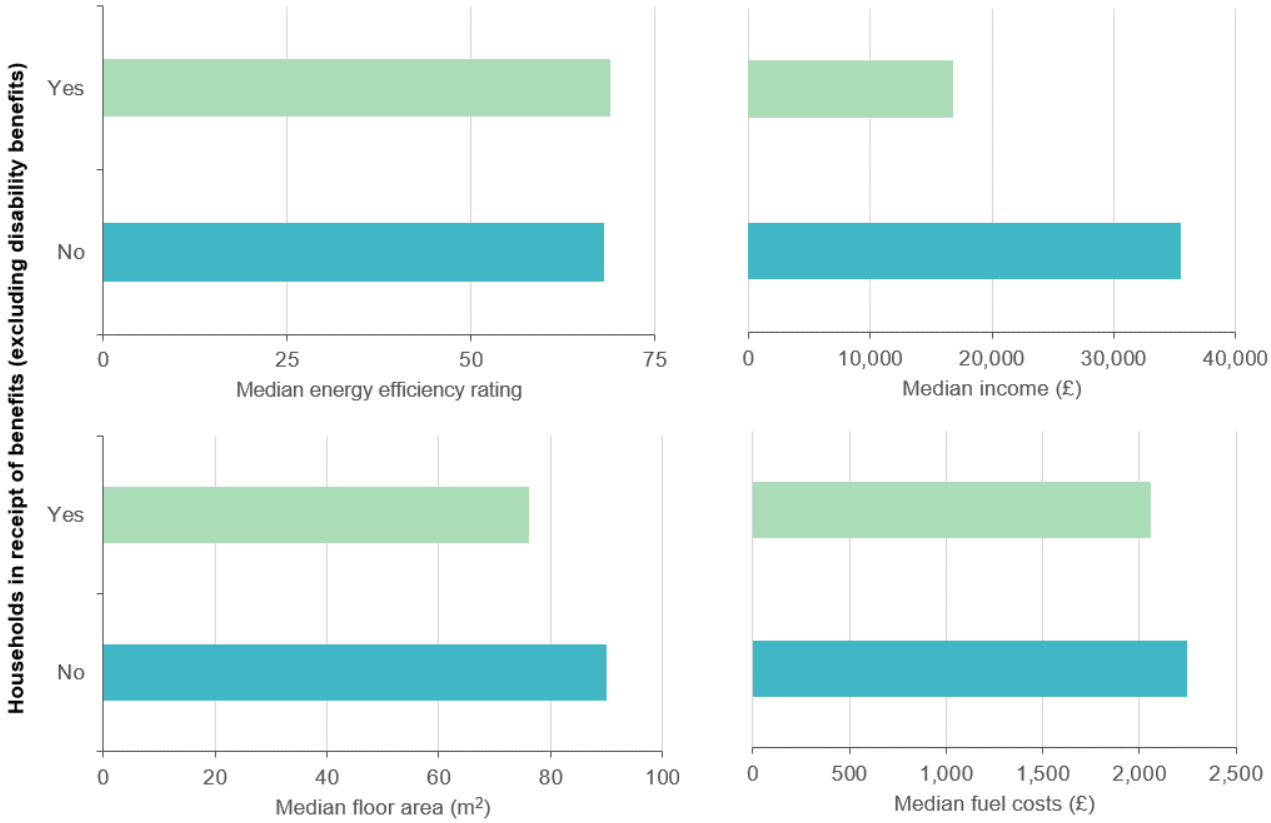


Figure 3.25: Households in receipt of benefits (excluding disability benefits) had much lower incomes than other households but also higher energy efficiency ratings and smaller floor areas, leading to lower median fuel costs than other households.

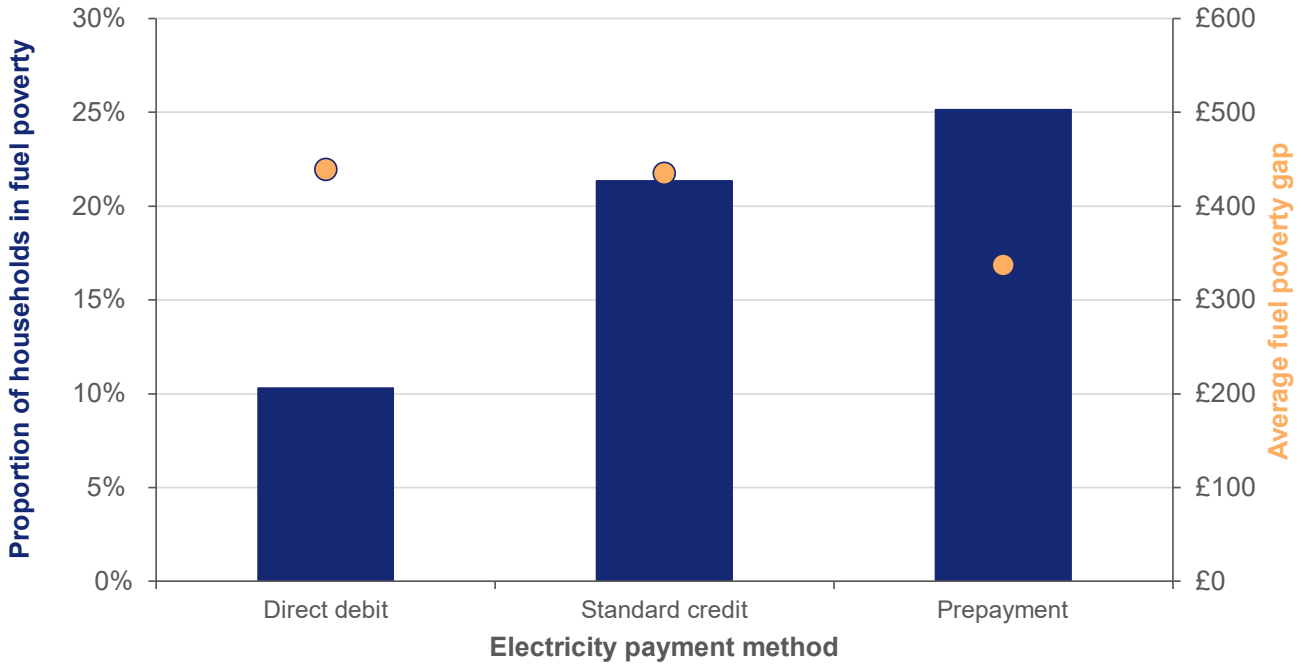


3.4 Fuel payment type

Households that pay by prepayment meter have historically had the highest likelihood of fuel poverty of the payment types. It should be noted that under the LILEE metric, this is driven by the lower incomes associated with households with these tariffs rather than the tariff itself.

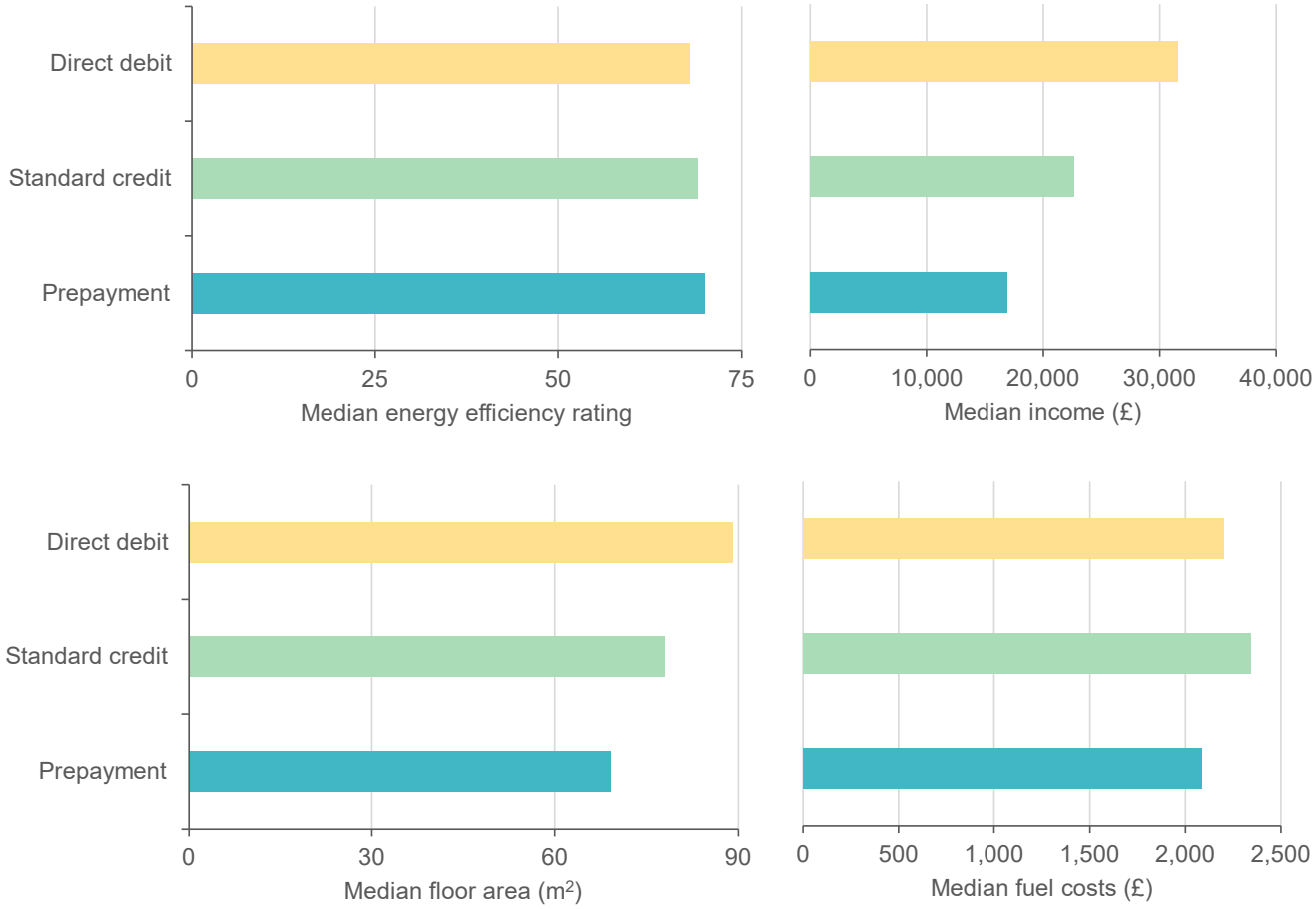
3.4.1 Electricity payment method

Figure 3.26: Households that paid for their electricity by prepayment had the highest rate of fuel poverty but the lowest fuel poverty gap.



The share of households in fuel poverty that used a pre-payment electricity meter was 25.2 per cent, compared with 21.3 per cent for standard credit and 10.3 per cent for direct debit. Households with pre-payment electricity meters had the lowest median income of £16,893 driving high levels of fuel poverty. However, households with pre-payment electricity meters also had the lowest fuel poverty gap of £337, which is explained by these households having the lowest median floor area of 69m^2 and the highest median energy efficiency rating of 70, leading to the lowest fuel costs of £2,080.

Figure 3.27: Households that paid for electricity by pre-payment meter tended to live in smaller properties, had lower than average median fuel costs, and a much lower median income.



The proportion of households in fuel poverty and the average gap followed a similar pattern for a household's gas method of payment as it did for electricity method of payment.

As presented in this chapter, the prevalence of fuel poverty in England varies by several key dwelling and household characteristics. More detailed information can be found online in the accompanying detailed, trends, and supplementary tables for fuel poverty in England.

Chapter 4: Projected Fuel Poverty Figures

4.1 Projected headline figures, 2022-2024

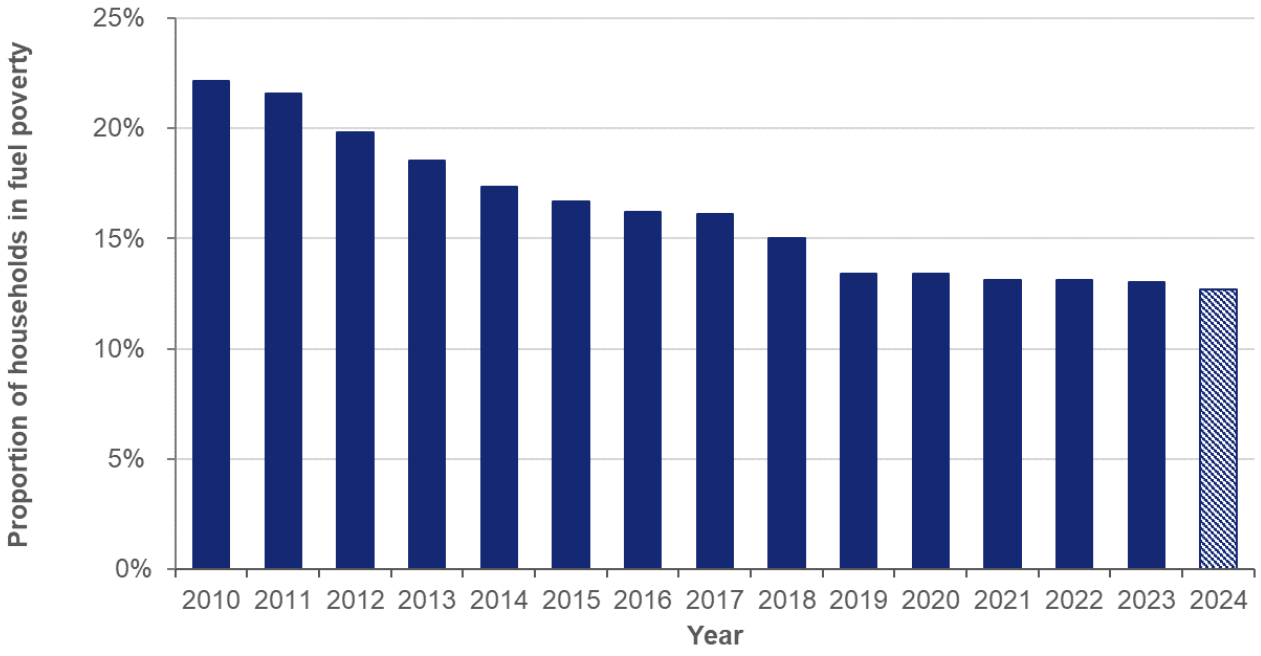
Table 4.1: Projected headline figures, 2022-2024[35]

Headline figures	2022 Outturn	2023 Projection	2024 Projection
Number of households in fuel poverty (millions)	3.18	3.17	3.12
Proportion of households in fuel poverty (%)	13.1	13.0	12.7
Aggregate fuel poverty gap (£ millions)	1,105	1,323	1,203
Average fuel poverty gap (£)	348	417	385

Note that these figures are based on our fuel poverty projections model. These should be interpreted as indicative projections, not precise point estimates.

As mentioned in section 1.2, the 2023 figures are projections but since the analysis of these trends has already been explored in section 2, the analysis in this section focuses on the trend to 2024. The 2024 projection is based on assumptions of economic factors and government policy from January 2024.

Figure 4.1: The proportion of households in fuel poverty is projected to decrease slightly to 12.7 per cent in 2024.

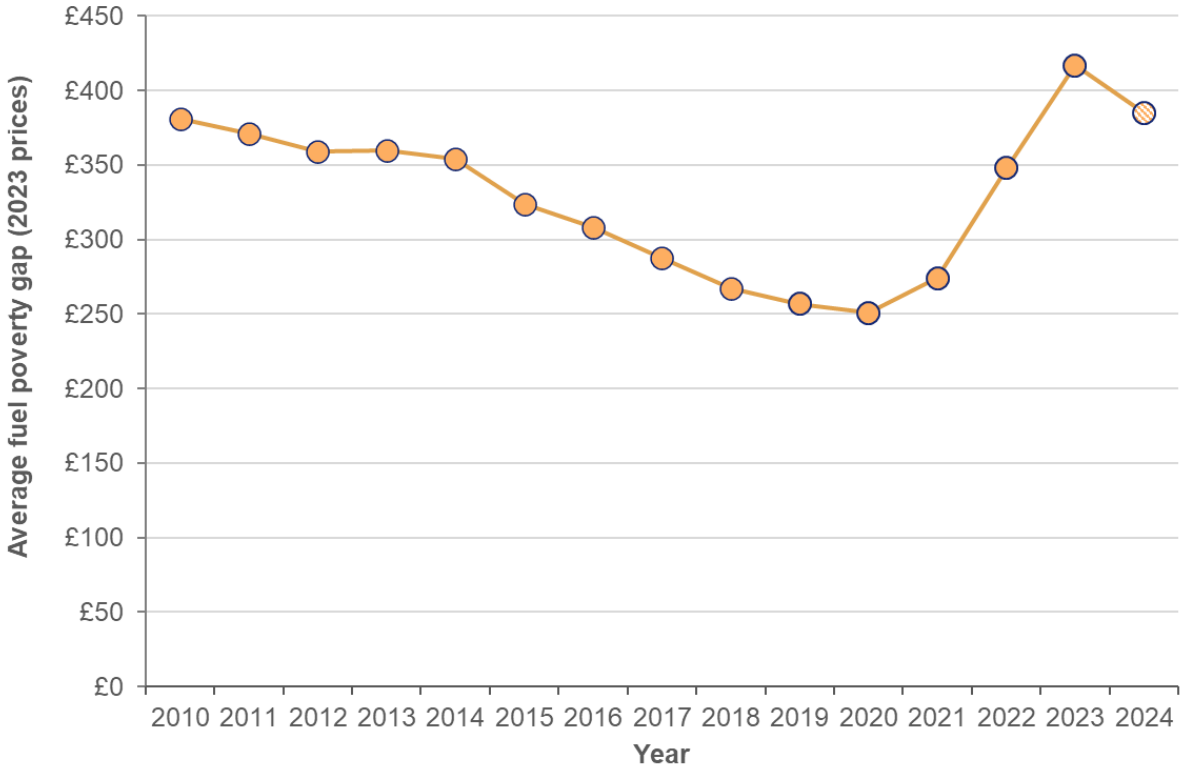


[35] The fuel poverty gap figures are adjusted to 2023 prices.

Figure 4.1 shows the proportion of households in fuel poverty fell steadily over time. from 22.1 per cent in 2010 to 13.4 per cent in 2019 and has then remained consistent since 2019, with the projected proportion estimated to be 12.7 per cent in 2024. This is a slight decrease compared to 2023 when an estimated 13.0 per cent of households were fuel poor.

The average fuel poverty gap for England in 2024 (the reduction in fuel costs needed for a household to not be in fuel poverty) is projected to be £385, down by 8 per cent in real terms since 2023 (£417), though still an increase of 53 per cent since 2020 when the gap began to first increase. The fuel poverty gap is directly affected by changes in fuel prices since it measures the reduction in fuel costs needed for a household to not be in fuel poverty.

Figure 4.2: The average fuel poverty gap in 2024 is projected to decrease to £385 after increasing since 2020 due to increasing energy costs (real 2023 prices).



The aggregate fuel poverty gap for England is projected to be £1,203 million in 2024, a decrease of 8 per cent in real terms since 2023 (£1,323 million). This reduction reflects a projected decrease in energy costs during 2024 and a lower proportion of fuel poor households.

Affordability estimates have also been made for the 2024 projections using the 10 per cent metric. These are shown in Annex D.

The estimates presented above are based on projecting forward from two years of survey data and so the year on year trend does not present the full impact of changes affecting single years.

4.2 Changes to key drivers, 2023-2024

The key drivers will be assessed in turn, to explore their effect on the projections. The latest EHS survey data covers 2022. This analysis of drivers reflects assumption of changes between 2023 estimates and 2024 projections. **Higher** incomes, **increased** energy efficiency and **lower** energy prices would each reduce the rate of fuel poverty. More information on key drivers can be found in Section 2.3.

While the fuel poverty indicator has an absolute threshold for energy efficiency, the relative nature of the income threshold makes it difficult to accurately isolate individual reasons for change.

A household's fuel poverty status depends on the interaction of these key drivers:

- **Energy efficiency** – Improvement in energy efficiency has brought more low income households up to FPEER band C which removes them from fuel poverty. The progress with energy efficiency is estimated to have reduced fuel poverty by around 65 thousand households since 2023 if no other factors had changed.

- **Incomes –** The main change affecting incomes in 2024 was the removal of the additional temporary cost of living support given to households receiving benefits and pensioner households. As these were targeted to support households in the lower income deciles this effect is estimated to have increased the number of fuel poor households by 48 thousand.

- **Housing costs** - The LILEE metric uses an after housing costs measure of income which is impacted by increases in housing costs. Increases were seen for all tenures. Overall mortgage costs increased by 8 per cent but it is noted that 36 per cent of households with a mortgage are expected to still be on their rate from 2022 in 2024.

- **Energy prices** – 2024 energy prices are comprised of 2023/24 and 2024/25 combined financial year estimated prices. Between 2023 and 2024, overall, it is projected that gas & electricity prices will reduce by 21 per cent and 11 per cent, respectively, in real terms. It is noted that 2024 is the first full year without energy bill support in addition to the Warm Home Discount and therefore these reductions are partially offset. Overall, the change in energy costs is projected to decrease fuel poverty by around 45 thousand households over this period if no other factors had changed.

To help users understand the impact of each of these drivers a decomposition of the main changes for the 2023 to 2024 projections is shown. Figure 4.3 show a decomposition of these changes.

Figure 4.3: Decomposition of changes in the number of fuel poor households from 2023 to 2024.

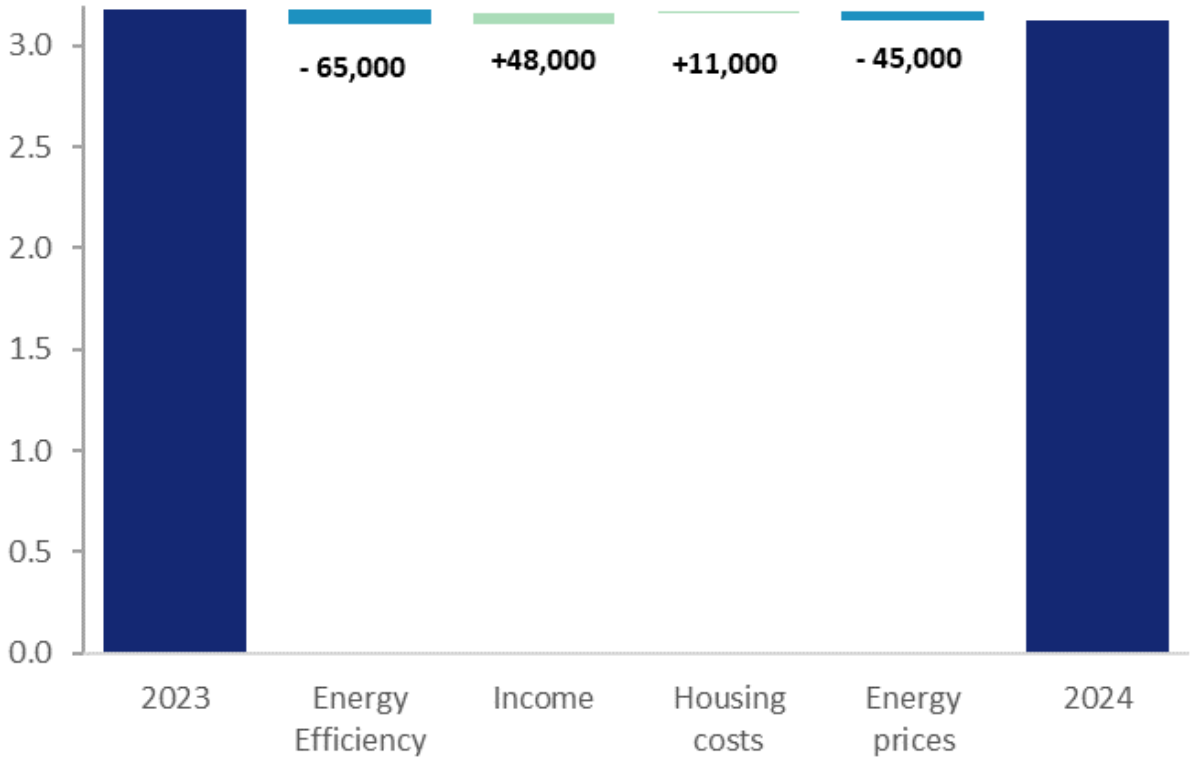


Figure 4.3 illustrates the decomposition of changes described above. The dark blue bars show the estimated number of fuel poor households in 2023 and 2024. The mid-blue bars and turquoise bars represent the drivers that have worked to remove households from fuel poverty and the source of the increase in fuel poverty, respectively.

4.2.1 Energy efficiency

Prior to recent economic impacts, fuel poverty has shown a strong declining trend driven by energy efficiency, as more low income households achieve an energy efficiency rating of C or above.

Currently, the main policies under which energy efficiency measures are installed include:

Policy	Incentive	Type of measure covered
Energy Company Obligation (ECO) [36]	Households eligible for ECO can get a grant to cover, or contribute to the costs of, home energy efficiency improvement.	Replacement boiler, heating improvements, insulation, double glazing, additional innovative measures. The current phase of ECO (ECO4) takes a fabric first multiple measure whole-house retrofit approach with the aim to encourage the installation of insulation, renewables and district heating connections as well as upgrading inefficient heating systems.
Social Housing Decarbonisation Fund (SHDF)	The Social Housing Decarbonisation Fund (SHDF) scheme aims to upgrade a significant amount of the social housing stock to Energy Performance Certificate (EPC) rating of C. The Government launched Wave 1 of the SHDF in August 2021 and delivery began in March 2022. Successful projects within Wave 2.1 of the SHDF were announced in March 2023, with delivery beginning in April 2023.	Energy efficiency and heating measures compatible with the Standard Assessment Procedure (SAP) that will help improve the energy performance of homes, excluding heating systems which are solely fuelled by fossil fuels. Examples include wall, loft and underfloor insulation and low carbon heating technologies.
Local Authority Delivery (LAD) and Home Upgrade Grant (HUG) schemes (Phase 1, Phase 2)	LAD and HUG award funding to Local Authorities to help them upgrade energy inefficient homes of low-income households in England. LAD Phase 1 allocated £200m in grants to 136 Local Authorities. LAD Phase 2 allocated a further £300m in grants to five Local Net Zero Hubs. Sustainable Warmth (consisting of LAD 3 and HUG 1) has allocated a combined £439m funding to Local Authorities. LAD 1 installations	These schemes focus on upgrading the worst insulated owner occupier and rented homes with energy efficiency installations and low carbon heating. LAD 1 and 2 supported both on and off gas grid homes. LAD 3 supports low-income households heated by mains gas and HUG supports low-income households off the gas grid.

[36] From October 2018, the ECO scheme was wholly targeted to low income vulnerable households. In previous phases of the ECO scheme, any household was entitled to subsidies towards energy efficiency improvements, regardless of their income. ECO statistics.

	ran from October 2020 to December 2022, LAD 2 from August 2021 to December 2022, and Sustainable Warmth from January 2022 to September 2023. HUG Phase 2 has been launched and is planned to allocate up to £630m of funding from September 2023 until March 2025.	
2.5 Microgeneration Certification Scheme (MCS)	The Microgeneration Certification Scheme (MCS) certifies, quality assures and provides consumer protection for microgeneration installations and installers.	The MCS consists of small scale renewable electricity technologies such as solar PV, biomass, wind, heat pumps and heat products.
Great British Insulation Scheme (GBIS)	The Great British Insulation Scheme is a new government energy efficiency scheme (formerly known as ECO+) that is administered by Ofgem. It is designed to deliver improvements to the least energy-efficient homes in Great Britain. As well as supporting low-income and vulnerable households (through the scheme's low-income group), this scheme will also help those living in homes within a wider, general group. The general group is for those households with properties that have an Energy Performance Certificate (EPC) rating of D to G, and which are within Council Tax bands A to D in England and A to E in Scotland and Wales.	Both the general and low-income groups are eligible for the following insulation measures: • cavity wall (including party wall) • loft • solid wall • pitched roof • flat roof • under-floor • solid floor • park home • room-in-roof In some cases, secondary measures, such as room thermostats or boiler programmers, will be available for households in the low-income group.
Warm Home Discount (WHD)	Annual rebate for electricity bills for low income and vulnerable households. For the purposes of fuel poverty modelling this provides an uplift to the FPEER rating.	£150 rebate off electricity bills in 2023/24 and 2024/25.

The overall trend in the increase of condensing boilers (including condensing-combination boilers) in England is projected to continue. Around 1 million additional condensing boilers (excluding new builds) are added to the stock of homes, between 2023 and 2024. The model has been developed to account for the high number of condensing boilers that already exist in the English Housing Survey and as such are removed as these are already captured through the policies listed above, or as a result of the new dwellings modelled.

4.2.2 Income & housing costs

There has been an above average rise in incomes across the income distribution as well as a significant increase in housing costs for some households.

The components that comprise a household's full income[37] (after income tax and National Insurance contributions) are categorised as follows:

- Earnings
- Savings
- Benefits
- Other
- Winter fuel payments

Strong income growth is projected across the income distribution with the median income increasing by 4.3 per cent since 2023 in real terms. As described in the Methodology Handbook, different sources are used for projecting earnings and other income sources some of which can be projected separately across the deciles. In addition, the share of each income source within deciles and the amount of housing costs affects the overall change in income within a decile.

Since the growth in income in the 3rd and 4th deciles (which is where the marginal low income households are generally found) is less than the growth in the median income, the impact of income makes a slight increase to the level of fuel poverty.

A key focus of 2024 is the continued rise in housing costs which vary by tenure. Comparing 2023 and 2024, social rents are estimated to have increased by 8 per cent and private rents are estimated to rise by 5 per cent. Around half of owner occupiers are outright owners so have no housing costs, presenting a mixed picture for those with outstanding mortgages.

The English Housing Survey collects data on mortgages including the type of mortgage deal, the value of debit outstanding and length of term remaining. This analysis reflects expected mortgages rates that households would switch onto depending on when their deal is likely to end. Our calculation is then based on how much of the year the household will pay interest at their new rate. Overall, it is expected that mortgage costs will be around 8 per cent higher in 2024 than 2023 but with significant variation depending on if and when a household's fixed rate deal comes to an end.

Overall, this has very little impact on the number of fuel poor households since all tenure housing costs except outright owners are moving at similar rates.

[37] See Chapter 3 of the Methodology Handbook for further details.

4.2.3 Energy prices

Table 4.4: Annual domestic gas bills are projected to decrease by 21 per cent between 2023 and 2024 (real 2023 prices).

Gas method of payment	2023 (2022/23+2023/24) (£)	2024 (2023/24+2024/25) (£)	Percentage change 2023 - 2024 (%)
Prepayment	1,226	920	-25
Standard Credit	1,232	942	-24
Direct debit	1,070	868	-19
All payment types	**1,121**	**888**	**-21**

Table 4.5: Annual domestic electricity bills are projected to decrease by around 11 per cent between 2023 and 2024 (real 2023 prices).

Electricity method of payment	2023 (2022/23+2023/24) (£)	2024 (2023/24+2024/25) (£)	Percentage change 2023 - 2024 (%)
Prepayment	1,057	941	-11
Standard Credit	1,112	987	-11
Direct debit	1,034	917	-11
All payment types	**1,051**	**933**	**-11**

Price assumptions for 2024/25 have been estimated based on forward market prices from January 2024. These are combined with prices consistent with the price caps announced to March 2024 to make the combined 2024 estimate of prices. Based on these estimates, gas bills are projected to decrease by 21 per cent for all payment types between 2023 and 2024. Over the same period, electricity bills are also projected to decrease across all methods of payment, with an 11 per cent decrease estimated for 2024.

When the reduction in prices is combined with the removal of temporary energy bill support, the median net energy bill fell by 5 per cent in real terms.

4.3 Projected progress against the target

The Government's statutory fuel poverty target for England is to ensure that as many fuel poor households as reasonably practicable achieve a minimum energy efficiency rating of band C[38,39] by 2030, with interim targets of band E by 2020, and band D by 2025. See section 2.3. for more details on England's statutory fuel poverty target and the final progress against the 2020 milestone.

Under the LILEE metric, a household that achieves a fuel poverty energy efficiency rating of band C or above would not be measured as fuel poor, and therefore fuel poverty would be eradicated if all low-income households achieved an energy efficiency band C rating, or above. Progress towards the fuel poverty target is measured as the share of all low-income households who achieve an energy efficiency band C in 2030 and the interim milestones.

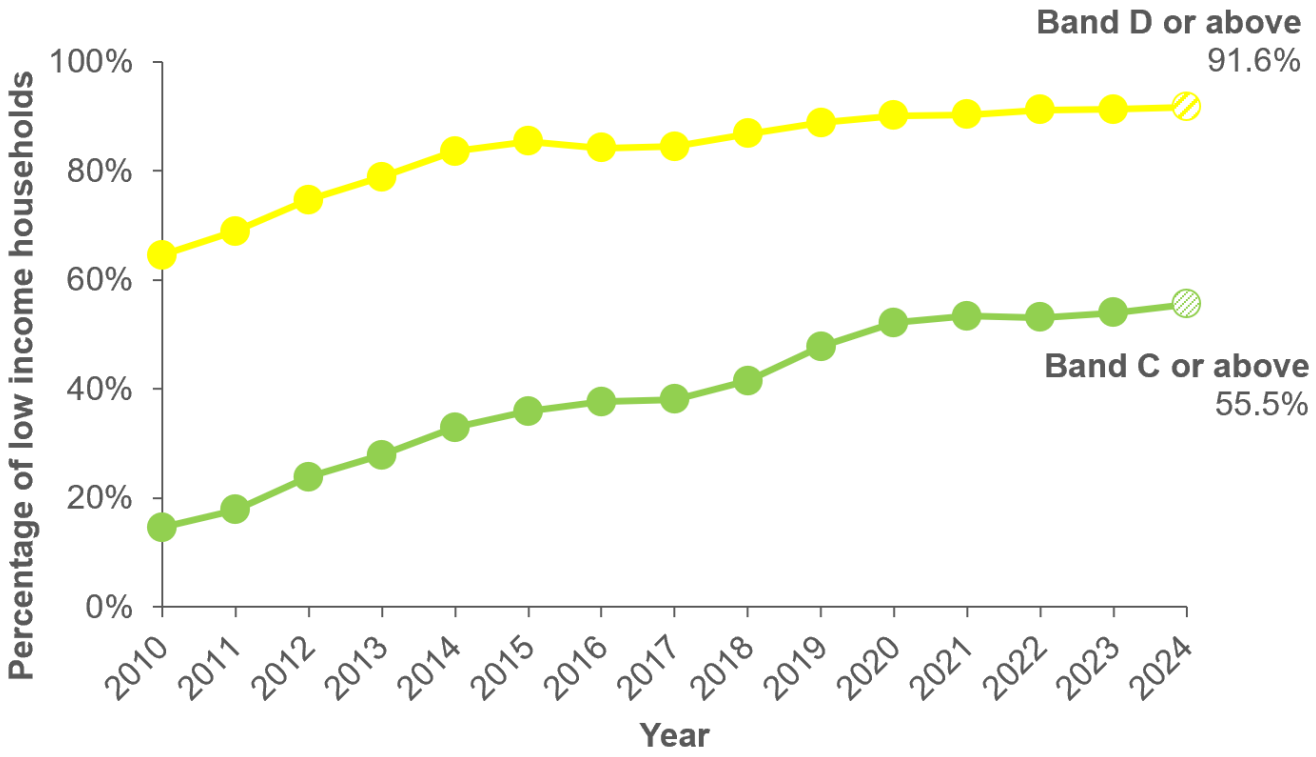
Within these projections, estimates are made for 2023 and 2024 of the share of low-income households who would meet the band C target and band D milestone at this period.

Table 4.3: Projected headline figures, 2022-2024[3]

Fuel poverty target	2022 Outturn (%)	2023 Projection (%)	2024 Projection (%)
Band D or above by 2025	91.2%	91.3%	91.6%
Band C or above by 2030	53.1%	54.0%	55.5%

[38] Energy efficiency rating is measured using Fuel Poverty Energy Efficiency Rating (FPEER).
[39] Household energy efficiency ratings are banded from G (lowest) to A (highest).

Figure 4.4: Further progress is projected to be made towards the band C fuel poverty target and band D interim milestone.



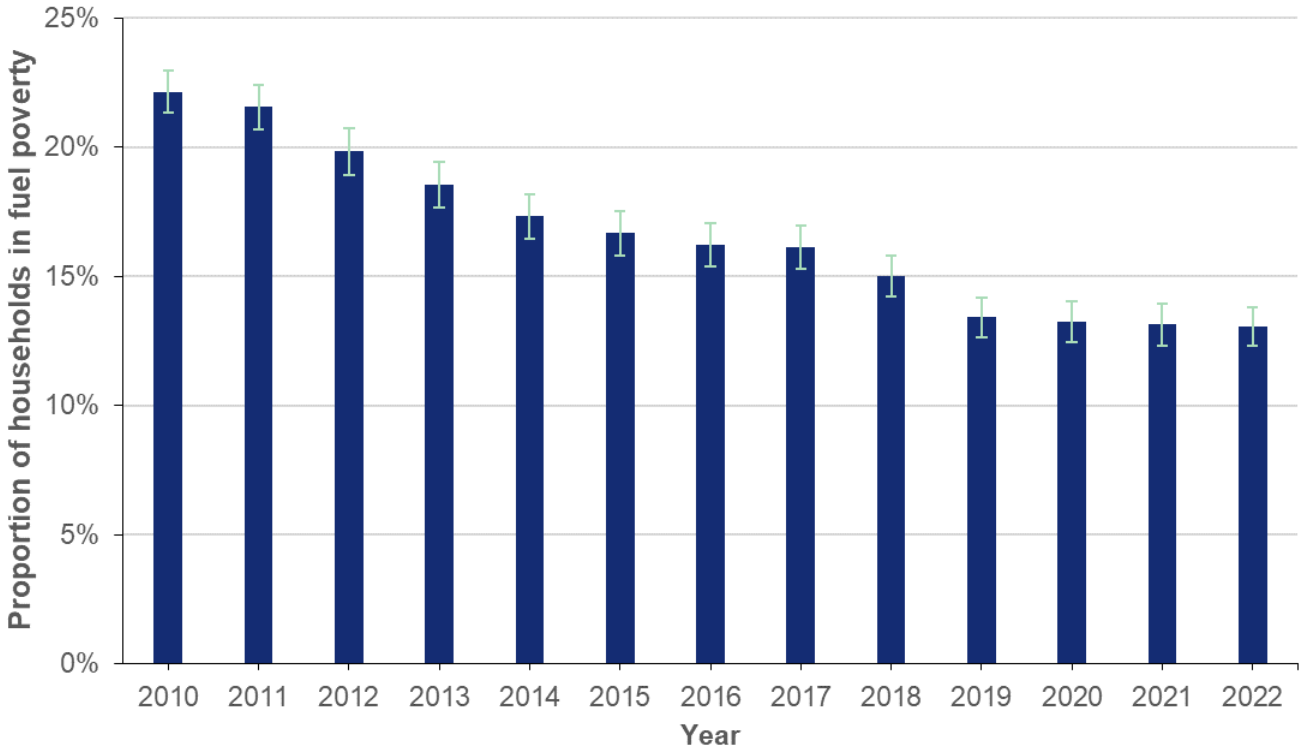
Progress towards the interim milestones and the 2030 target is projected for 2024, with 55.5 per cent of low-income households projected to be in Band A to C, 91.6 per cent of low income households projected to be in Band A to D. The projected estimates also show that 97.5 per cent of all low-income households are band E or higher.

Annex A: Additional Data and Figures

A.1 Confidence intervals for fuel poverty estimates

Figure A.1 to A.3 present confidence intervals for the headline figures measured in this report. Confidence intervals are not shown beyond 2022 since those estimates are projections and will be subject to both sampling error and additional modelling uncertainty. This modelling uncertainty has not been quantified.

Figure A.1: Proportion in fuel poverty, 2010 to 2022. 95 per cent confidence intervals are indicated by the light blue bars.



In 2022, the proportion of households in fuel poverty is an estimate based on a sample of 10,890 households from the EHS. Individual survey cases in the EHS are weighted up to give the total number of households in the UK.

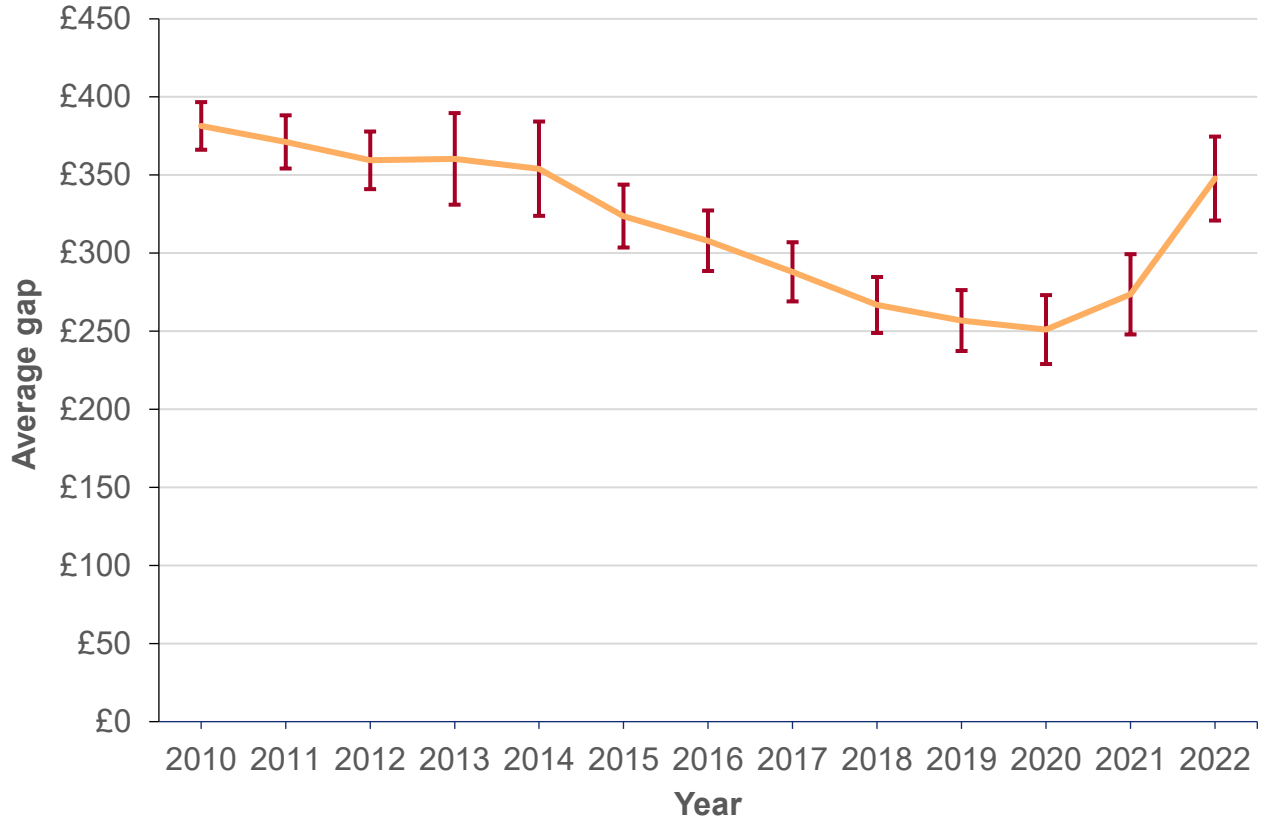
Based on the nature of the EHS sample, the 95 per cent confidence interval for the proportion of households in fuel poverty in 2022 is 13.1 per cent +/- 0.8 percentage points[40]. We can therefore be 95 per cent sure that the true proportion of households in fuel poverty in 2022 is between 12.3 and 13.8 per cent.

[40] Calculated using the following formula: $p \pm 1.96(design\ factor * standard\ error)$ where $p = 13.1\%$ and the standard error is calculated for a proportion sqrt [0.131*(1 – 0.131) / 10,890]=0.32%. The EHS $design\ factor = 1.20$ (average design factor for the EHS sample).

Response rates to the EHS improved to 31 per cent in 2021/22 and 34 per cent in 2022/23 compared with 8 per cent in 2020/21 thus reducing the width of the confidence intervals seen in 2020 and 2021. The design factor has returned to its long-run value of 1.20 in 2022 compared with 1.27 in 2020 and 2021. Survey response rates in 2020/21 were affected by the enforced move to recruiting households by letter and telephone rather than on the doorstep. Knock to nudge doorstep recruitment was introduced in 2021/22 and normal survey methods resumed in 2022/23 making the results for the combined year 2022 data more consistent with the higher data quality seen until 2019. Weights are applied to control for the changes each year in the achieved sample.

The size of the 95 per cent confidence interval around the proportion of households in fuel poverty has remained relatively stable between 2010 and 2022. While the total sample size of the EHS has decreased by 32 per cent across this time period because the rate of fuel poverty is also falling the level of uncertainty is similar to in 2010.

Figure A.2: Average fuel poverty gap, 2010 to 2022 (real 2023 prices). 95 per cent confidence intervals are indicated by the red bars.

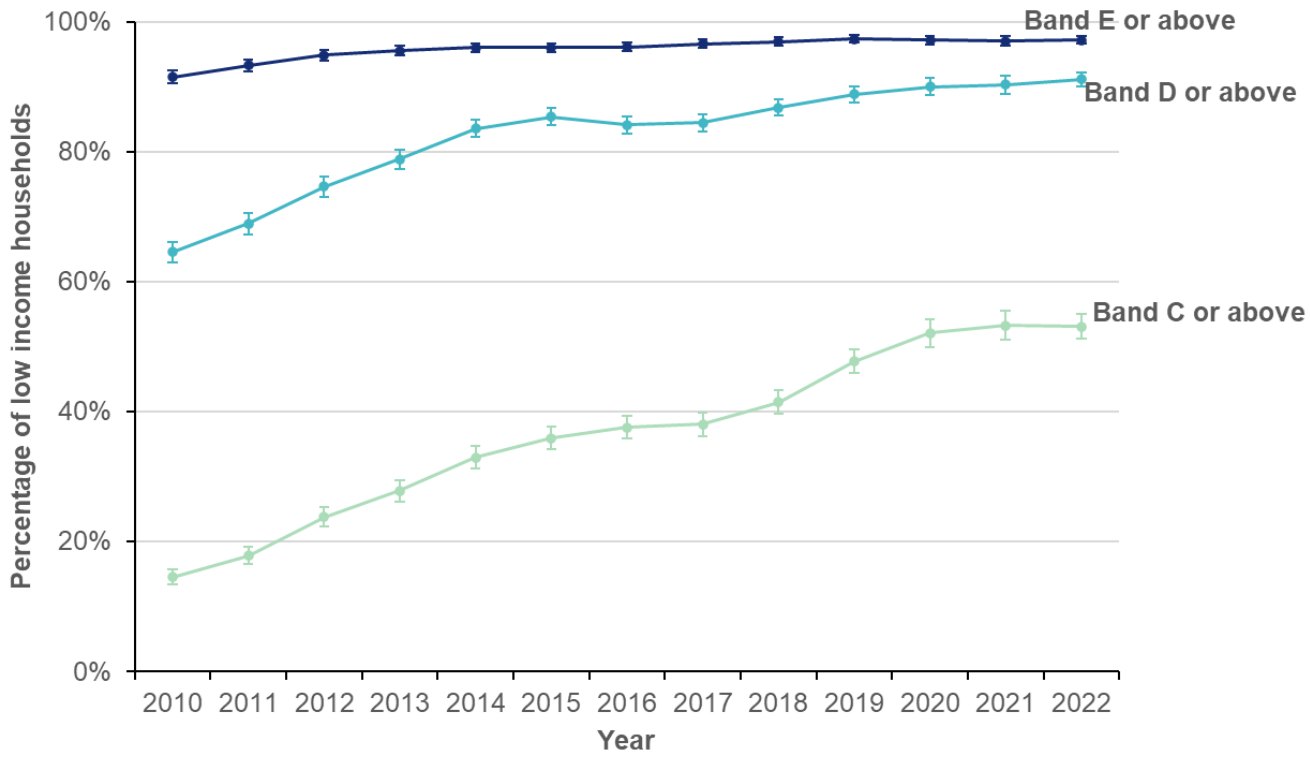


All fuel poor households have a fuel poverty gap based on their fuel expenditure and income relative to their nearest threshold to exit fuel poverty. The calculation of the average gap is the aggregate fuel poverty gap divided by the number of fuel poor households.

The 95 per cent confidence interval for the average gap in 2022 is £348 +/- £27[41] (figure A.2). We can be 95 per cent certain that the true average gap in 2022 is between £321 and £375.

[41] Calculated using the following formula: $p \pm 1.96(design\ factor * standard\ error)$ where $p = £348$ and the standard error is around £11. The EHS $design\ factor = 1.20$ (average design factor for the EHS sample).

Figure A.3: Progress against the fuel poverty target, 2010 to 2022. 95 per cent confidence intervals are indicated by the bars.



The 95 per cent confidence interval around the estimate of the proportion of households in band C or above in 2022 is 53.1 per cent +/- 1.9 percentage points. We can be 95 per cent certain that the true proportion of low income households in band C and above in 2022 is between 51.2 and 55.0 per cent.

The 95 per cent confidence interval around the estimate of the proportion of households in band D or above in 2022 is 91.2 per cent +/- 1.1 percentage points. We can be 95 per cent certain that the true proportion of low income band D and above households in 2022 is between 90.1 and 92.3 per cent.

Figure A.1 shows that the confidence intervals around the proportion of households in fuel poverty widen over time as the share of fuel poverty reduces combined with smaller and less representative samples in 2021 and 2022. The size of the confidence intervals around progress towards the target figures, however, remains similar between 2010 and 2022. This is because the proportion of households in more energy efficient properties is increasing. Therefore, the number of individual cases in each group increases and the confidence intervals do not widen.

A.2 Energy cost analysis

As discussed in Section 2.3.5, Tables A.1 and A.2 show the change in annual domestic electricity and gas bills for each payment method. These compare the prices used for the 2022 fuel poverty statistics (2021/22& 2022/23 prices) and 2023 statistics (2022/23 & 2023/24

prices) in real 2023 prices. Prices for 2023/24 are derived based on a consumption weighted average of the energy price caps for that period[42]. It is noted that these figures reflect bills before energy rebates are applied through Energy Bills Support Scheme, Warm Home Discount and Council Tax rebate. The median energy costs after rebates are shown in Detailed table 2 and Trends table 19.

Table A.1 Annual domestic gas bills increased by 20 per cent between 2022 and 2023 (real 2023 prices).

Gas method of payment	2021 (£)	2022 (£)	2023 (£)	Percentage change 2022 - 2023 (%)
Prepayment	640	1,036	1,226	+18
Standard Credit	659	1,035	1,232	+19
Direct debit	591	883	1,070	+21
All payment types	**615**	**931**	**1,121**	**+20**

Table A.2: Annual domestic electricity bills increased by 18 per cent between 2022 and 2023 (real 2023 prices).

Electricity method of payment	2021 (£)	2022 (£)	2023 (£)	Percentage change 2022 - 2023 (%)
Prepayment	688	897	1,057	+18
Standard Credit	723	942	1,112	+18
Direct debit	664	876	1,034	+18
All payment types	**701**	**890**	**1,051**	**+18**

[42] The Energy Price Guarantee (EPG) has been included in calculating these typical bills where the typical annual bill was capped at £2,500. EPG was below the Ofgem price cap between October 2022 and June 2023. Consumption weighting is used in deriving these figures reflecting higher demand in the winter months (October-March). The Winter prices are used for 70% of gas demand and 60% of electricity demand.
Ofgem's current standard consumption assumptions of 2,700 kWh of electricity per year and 11,500 kWh of gas have been used across all the years shown.

Annex B: Measuring Fuel Poverty in England

This annex provides more detailed information on the following: how the Low Income Low Energy Efficiency (LILEE) indicator of fuel poverty works, and understanding the drivers of fuel poverty, data sources, and methodological updates for the 2022 estimates. A glossary of key terms used throughout this report and supporting links can be found of the end of the Annexes.

B.1 Introduction to Low Income Low Energy Efficiency

Fuel poverty in England is measured using the LILEE[43] indicator, which considers a household to be fuel poor if:

- it is living in a property with an energy efficiency rating of band D, E, F or G as determined by the most up-to-date Fuel Poverty Energy Efficiency Rating (FPEER) Methodology - this is depicted by the horizontal threshold in Figure B.1; and
- its disposable income (after housing costs and energy needs) would be below the poverty line[44] as depicted by the sloping line threshold in Figure B.1.

Low Income Low Energy Efficiency is a dual indicator, which allows us to measure not only the extent of the problem (how many fuel poor households there are), but also the depth of the problem (how badly affected each fuel poor household is). The depth of fuel poverty is calculated by taking account of the **fuel poverty gap**. This is a measure of the additional fuel costs (in pounds) faced by fuel poor households compared with the required fuel costs at the threshold that would make them non-fuel poor. This is illustrated in Figure B.1, where the indicator consists of:

- the **number** of households that have both low incomes and low energy efficiency (shown by the shaded area in the bottom left-hand quadrant in B.1; and
- the **depth** of fuel poverty among these fuel poor households. This is measured through a **fuel poverty gap** (shown by the vertical arrows in Figure B.1), which represents the difference between the required energy costs for each household and the nearest fuel poverty threshold (in pounds).

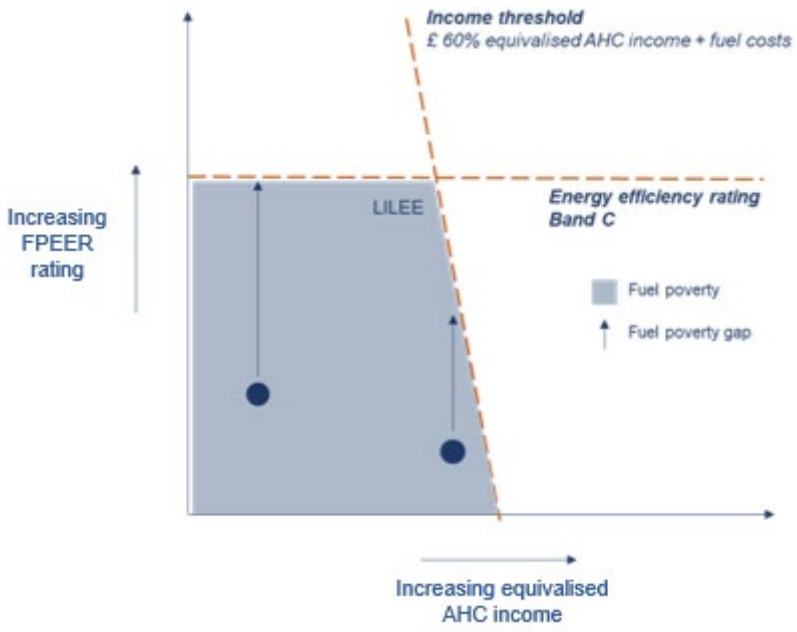
To get a sense of the depth of fuel poverty at a national level, the fuel poverty gap for each individual household is aggregated across all fuel poor households to produce an overall **aggregate fuel poverty gap**.

The fuel poverty indicator contains a relative measure, as it compares households to national income thresholds but also uses an absolute energy efficiency rating. A change in income will only have an impact on fuel poor households when they see relatively larger income changes

[43] The calculation of the LILEE metric is set out in detail in the LILEE Fuel Poverty Methodology Handbook.
[44] The poverty line (income poverty) is defined as an equivalised disposable income of less than 60% of the national median, as shown in Section 2 of the ONS release 'Persistent Poverty in the UK and EU'.

(increase or decrease) than the overall population. The absolute measure of energy efficiency means that improving the energy efficiency rating to at least band C will remove the household from fuel poverty regardless of income and fuel costs.

Figure B.1: Fuel poverty under the Low Income Low Energy Efficiency indicator



Fuel poor households (bottom left-hand quadrant of Figure B.1) include some households who may not traditionally be considered poor but are pushed into fuel poverty by their high energy requirements and low energy efficiency (this is reflected in the gradient of the income threshold).

Those in the bottom right-hand quadrant also have low energy efficiency but their relatively high incomes mean that they are not considered to be fuel poor.
Those in the top right-hand quadrant have both high incomes and high energy efficiency and are therefore not fuel poor.

While it is recognised that households in the top left-hand quadrant have low incomes, they also have high energy efficiency and so are not considered to be fuel poor.

B.2 How the Low Income Low Energy Efficiency (LILEE) indicator of fuel poverty works

Fuel poverty is estimated by calculating each household's position relative to two thresholds (illustrated in Figure B.2). The first is an absolute energy efficiency threshold whereby a household cannot be considered fuel poor if it has an FPEER rating of band C or above. The second threshold is a relative measure which considers a household's disposable income:

After Housing Cost (AHC) income[45]. The AHC income is defined by equivalising a household's income after deducting their housing costs. The low income threshold is then calculated by taking 60 per cent of the median income value having ranked all the AHC incomes in the dataset and adding on the household's equivalised required fuel costs. To be fuel poor under the LILEE indicator, a household's energy efficiency rating must be below FPEER band C and their equivalised AHC income must be below the income threshold.

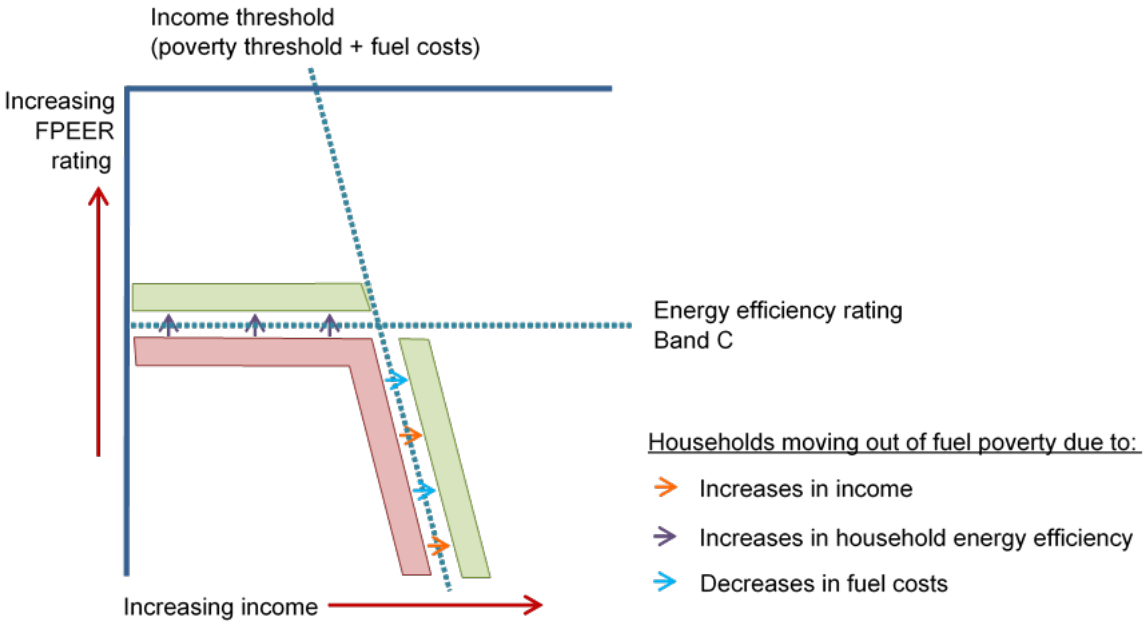
For incomes or housing costs to affect the number of households in fuel poverty they must change by a greater or lesser amount for those at the margins of fuel poverty, than for those not in fuel poverty. Fuel price changes have a limited effect on the LILEE metric unless their change is large because the change in fuel costs is measured relative to a household's income. The fuel prices through do have a significant effect on the fuel poverty gap.

While the energy efficiency rating threshold and income thresholds under the LILEE metric define the number of fuel poor households, the depth of fuel poverty is measured through the fuel poverty gap. This is the monetary difference between a household's current fuel costs and the fuel costs they need to not be considered fuel poor. The fuel poverty gap is indicated by the upward pointing arrows in the LILEE quadrant in Figure B.1, which show households can exit fuel poverty by either attaining a band C energy efficiency or through the income threshold by which their fuel costs have decreased to a value that they are no longer under the low income threshold.

Figure B.2 below illustrates how fuel poor households may move out of fuel poverty, either due to an increase in disposable income and/or an increase in household energy efficiency rating.

[45] As set out in section 3 of the Fuel Poverty Methodology Handbook for LILEE, benefit payments made specifically to the HRP and any partner to cover the additional costs of living with a disability including Disability Living Allowance (DLA), Personal Independence Payments (PIP) and Attendance Allowance (AA) are excluded from the household income used for LILEE.

Figure B.2: Movement across the income and fuel costs threshold due to either increases in income, reductions in energy consumption or a combination of both.



B.3 Drivers of fuel poverty

There are three key elements in determining whether a household is fuel poor: Household Income, Energy Efficiency Rating, and Fuel Prices.

Measuring household income

The Low Income Low Energy Efficiency indicator is based on modelled incomes calculated after housing costs and council tax have been taken into account, since money spent on housing costs cannot be spent on fuel. Mortgage payments, rent payments and council tax are deducted from the full income of each household to give an After Housing cost (AHC) measure of income.

Once housing costs are deducted, incomes are then equivalised to reflect the fact that different household types will have different spending requirements. For example, a single person on a given income will usually have more disposable income than a family of four on the same income. The equivalisation factors used for income calculations are the same as in the Department for Work and Pensions (DWP) Households Below Average Income (HBAI) statistics. These equivalisation factors were devised by the Organisation for Economic Co-operation and Development (OECD) and are widely used across Europe.

Measuring household energy requirements

The fuel poverty definition uses household energy requirements in two ways. Firstly, the energy efficiency rating sets the low energy efficiency threshold. Secondly, the required fuel

costs which includes fuel for heating the home, heating water, lighting, appliance usage and cooking. In calculating the required fuel costs, the energy costs are modelled, dependent on the following factors:

- The economic circumstances of householders (for example, if they are working from home regularly, unemployed or retired they will be at home for longer periods of the day);
- the heating system and the type of fuel(s) used; and
- the dwelling characteristics.

This allows energy requirements to be standardised to ensure households maintain an adequate standard of warmth[46] based on their household composition and energy set-up. In reality, households may under or over-heat their home, relative to the recommended levels.

Measuring fuel prices

Detailed fuel prices are allocated to each household in the data, based on reported fuel type, regional location, and method of payment. This allows us to model the unit cost of energy for each household based on their energy set-up and assign the appropriate standing charge.
To calculate fuel poverty a household's required energy costs must be modelled. This is calculated by taking the number of units of energy consumed, multiplying by the cost of a unit of energy, and adding the required standing charge for each household. Like incomes, fuel costs are then equivalised by the number of people in the household, to reflect the fact that different sizes of households will have different energy requirements. For example, a family of four will need to spend more on energy than a single person living in the same home.

B.4 Data sources

The English Housing Survey (EHS)

Fuel poverty is modelled using data from the English Housing Survey (EHS). The EHS is an annual national survey of people's housing circumstances, household income and the condition and energy efficiency of housing in England. It is commissioned by the Department for Levelling up, Housing & Communities (DLUHC), covers all tenures (private and social) and involves a detailed physical inspection of properties by professional surveyors.

The two key components of the English Housing Survey for fuel poverty modelling are:

- the interview survey with the householders living in the dwelling; and
- the physical survey (survey of the physical features and condition of the dwelling).

Each year, approximately 12,000 households take part in the interview. Around half of these properties are selected for the follow-up physical survey (key to fuel poverty energy modelling), involving a physical inspection of the property by professional surveyors.

[46] An adequate standard of warmth is defined as 21ºC for the main living area and 18ºC for other occupied rooms. Further detail can be found in the Methodology Handbook.

Two years' worth of EHS data from households selected for both the interview and physical surveys are combined to ensure an adequate sample size for fuel poverty modelling. For the 2022 data, this covers the period between 1 April 2021 and 31 March 2023 and comprises 10,890 households over two consecutive data collection years (2021/22 and 2022/23). Therefore, users are advised to use caution when looking at year on year changes in fuel poverty, as the samples will not be independent. The headline results from the 2022 EHS were published on 14 December 2023. Full data relating to the 2022 EHS, will be made available by DLUHC later this year through the UK Data Service.

Fuel prices data

The English Housing Survey does not collect information on fuel prices for households. Therefore, to estimate them for each household in the EHS, fuel price information is modelled using data from other sources including: DESNZ Quarterly Energy Prices; ONS Consumer Price Index; and Sutherland Tables. Further information on modelled fuel price data is available in the Methodology Handbook.

B.5 Methodological updates

Changes to the BREDEM model

In the last year there have been no changes to underlying methodology used to model household energy requirements using the Building Research Establishment Domestic Energy Model used for the fuel poverty modelling (BREDEM 2012 version 1.1).

Changes to the English Housing Survey (EHS)

In 2022/23 the English Housing Survey returned to in-home interviews supported by full internal and external physical surveys. This enabled the full set of data to be collected and holding face to face interviews helps increase the quality and completeness of data collected through the interview survey.

For 2020/21 and 2021/22, there were changes to both the interview and physical surveys due to the COVID-19 restrictions in England. Interviews were completed by telephone rather than face-to-face, whilst internal inspections were replaced by external inspections.

Due to the sudden nature of the restrictions, no thorough testing of this new methodology was possible. Given this, it is unclear how this change of methodology affected the outcome versus how much is real change such as economic changes in employment and income, lifestyle change such the size and composition of households, or the amount of time spent at home. Surveyors collected the physical inspection data using an assessment of the exterior of the dwelling together with a short interview carried out (socially distanced) to ask the occupants for

details of items usually captured internally by the survey[47]. This included items such as the type of heating system present, and extent of low energy lighting. Whenever possible, surveyors also used information from energy performance certificates (EPCs) and web-based tools such Google Street View and Rightmove to inform decisions.

Where data was missing (e.g. loft insulation present but no insulation thickness given) due to the data collection method changes, imputed default values were used consistent with the approach used in a full survey year.

Changes to fuel prices methodology

In the 2021-22 data the modelling changed to use financial year estimates of energy prices. These were published in the DESNZ Quarterly Energy Prices publication for the first time in December 2022 and were developed for fuel poverty modelling this year since in a time of volatile retail energy prices and significant changes in the energy retail sector there can be considerable differences between calendar and financial year data.

In 2022 the combined data prices for 2021-22 and 2022-23 have been used. The 2023 projection is representative of prices for 2022-23 and 2023-24.

Temporary energy bill and cost of living support

Section 2 describes a range of energy rebates in addition to WHD paid in 2022/23 and temporary cost of living income payments paid in 2022/23 and 2023/24. These have been modelled to households based on eligibility criteria including eligible benefits, age of householder, council tax band and main heating fuel. The modelling has assumed that all households eligible for these payments have received them.

[47] EHS 2020 physical survey form highlighting data collected directly and indirectly by the surveyor.

Annex C: Fuel Poverty across the devolved nations

Fuel poverty is a devolved issue, with each nation in the UK having its own fuel poverty definition, targets and policies to tackle the issue. This is set out in brief below, alongside the latest available estimates produced by each devolved nation.

C.1 Scotland[48]

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 in Scotland based on advice from an independent panel of experts and further scrutiny and amendment by the Scottish Parliament.

As set out in section 3 of the Act, a household is in fuel poverty if[49]:

- in order to maintain a satisfactory heating regime, total fuel costs necessary for the home are more than 10 per cent of the household's adjusted (after housing costs) net income; 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 per cent 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 areas (RRRSTI).

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

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 per cent 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 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.

[48] Scottish House condition survey

[49] See section 4 of the SHCS 2019 methodology notes for further details.

In addition to a new definition of fuel poverty, 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 per cent of households in Scotland are in fuel poverty
- no more than 1 per cent of households in Scotland are in extreme fuel poverty
- the median fuel poverty gap of households in Scotland in fuel poverty is no more than £250 adjusted to take account of changes in the value of money.

Scotland publishes fuel poverty data in the annual Scottish House Condition Survey (SHCS) Key Findings report. The 2019 remains the most recent official statistics on fuel poverty in Scotland, with the 2022 figures to be published on 29th February 2024. In the interim, Scotland have released scenario modelling of fuel poverty rates under the most recent price cap although note that these figures are estimated based on scenario models from uprated 2019 data not official statistics.

In 2019, 613,000 households (24.6 per cent of all households in Scotland) were in fuel poverty, a similar level to 2018 (619,000 households or 25.0 per cent). The 2019 fuel poverty rate (24.6 per cent) was lower than that recorded between 2012 and 2015 (ranging between 27.7 per cent - 31.7 per cent).

It is estimated that 311,000 households (or 12.4 per cent) were living in extreme fuel poverty in 2019. This was similar to the previous year (279,000 households or 11.3 per cent) but a decrease from the peak of 384,000 households (or 16.0 per cent) in 2013.

The actual median fuel poverty gap for fuel poor households in 2019 was £750. This is higher than the median fuel poverty gap between 2015 and 2018. The median fuel poverty gap (adjusted for 2015 prices) for fuel poor households in 2019 (£700) is higher than in 2018 (£610) but similar to the median gap in 2012 to 2017.

C.2 Wales[50]

Wales use a 10 per cent indicator. Households that need to spend more than 20 per cent of their income (before housing costs) on fuel costs are also defined as being in severe fuel poverty. However, their methodology differs from Scotland in relation to the heating assumptions used. In March 2021 the Welsh Government published Tackling fuel poverty 2021 to 2035 which includes targets to ensure that by 2035: no households are estimated to be living in severe or persistent fuel poverty as far as reasonable practicable; no more than 5% of households are estimated to be living in fuel poverty at any one time as far as reasonably practicable; and the number of all households “at risk” of falling into fuel poverty will be more than halved based on the 2018 estimate.

Following work to rebase the 2018 estimate of fuel poverty to take into account the effects of the COVID-19 pandemic and recent significant energy price rises, the Welsh Government pub-

[50] Fuel poverty estimates for Wales

lished Fuel poverty modelled estimates for Wales: as at October 2021. In 2021, the most recent data available, 196,000 households in Wales were living in fuel poverty, equivalent to 14 per cent of all households. Of these, 38,000 households were living in severe fuel poverty, equivalent to 3 per cent of all households. 153,000 households were identified as being at risk of fuel poverty, equivalent to 11 per cent of all households. The percentage of households in fuel poverty has increased from 12 per cent in 2018 but is lower than the 26 per cent of households in 2008.

C.3 Northern Ireland[51]

Northern Ireland uses a 10 per cent indicator but has no statutory target. The approach has been to assist those private sector households most at risk of fuel poverty through schemes such as Affordable Warmth.

The last House Condition Survey was in 2016 when an estimated 160,000 households were fuel poor, 22 per cent of the total. This represented a significant improvement since 2011 when the figure was 42 per cent (294,000). The improvement was a result of a focus from the Northern Ireland Housing Executive (NIHE), Northern Ireland Authority for Utility Regulation and the Department for Communities (DfC) to tackle poor energy efficiency in the housing stock, lower than average fuel prices (particularly gas and electricity – depending on payment method) and a decrease in household energy use.

A new Northern Ireland House Condition Survey (NIHCS) is currently taking place and full figures will be published in due course. In order to provide more up to date figures, NIHE commissioned the Building Research Establishment (BRE) to model estimates of the levels of fuel poverty in Northern Ireland. Figures for 2020 and 2021 were published in October 2023 and the methodology included additional modelling work to simulate the impact of the Covid-19 pandemic. Using 2016 Survey data as a base, BRE adjusted fuel prices and household incomes, and simulated the installation of energy efficiency improvement measures, all to 2020 and 2021 levels. The number of fuel poor households was estimated to be 180,0000 in 2020 and 179,000 households in 2021, equivalent to 24 per cent of all households. The latest analysis can be found here:

Estimates of fuel poverty in Northern Ireland in 2020 and 2021 (nihe.gov.uk)

With the passing of Climate legislation in Northern Ireland and a new Energy Strategy there are commitments to decarbonising energy and residential buildings while ensuring a Just Transition. A new fuel poverty strategy is under development which will take these commitments into account.

51

C.4 Summary

Due to both definition and methodological differences in fuel poverty for each devolved nation, the figures are non-additive (i.e., should not be combined) in relation to a UK total. More details of the devolved surveys and fuel poverty measures in each of the devolved nations can be found in Section 1.3 of the Methodology Handbook.

Annex D: Affordability measures for England

D.1 Background to affordability measures

Fuel poverty in England is measured by Government using the Low Income Low Energy Efficiency (LILEE) metric. This measure was confirmed in the Sustainable warmth: protecting vulnerable households in England in February 2021. This measure includes energy efficiency, household income and modelled energy costs and hence includes the impact of energy prices. This measure closely aligns to the fuel poverty target and tracks progress effectively of the number of households reaching a minimum FPEER rating of band C and hence not fuel poor.

In the 2023 annual fuel poverty statistics, additional affordability indicators were included in response to stakeholder interest. The chosen measures were the number of households required to spend at least 10 per cent of their income on energy costs. These indicators are more responsive than LILEE to energy price changes and can help to understand potential fuel stress of households facing significant rises in their energy costs. This produced two indicators, one of energy costs relative to total post-tax income and other relative to after tax and housing costs (AHC).

The fuel poverty strategy is currently being reviewed and the review will consider any changes to the measurement of fuel poverty or additional indicators to adopt.

D.2 Impact of price on fuel poverty

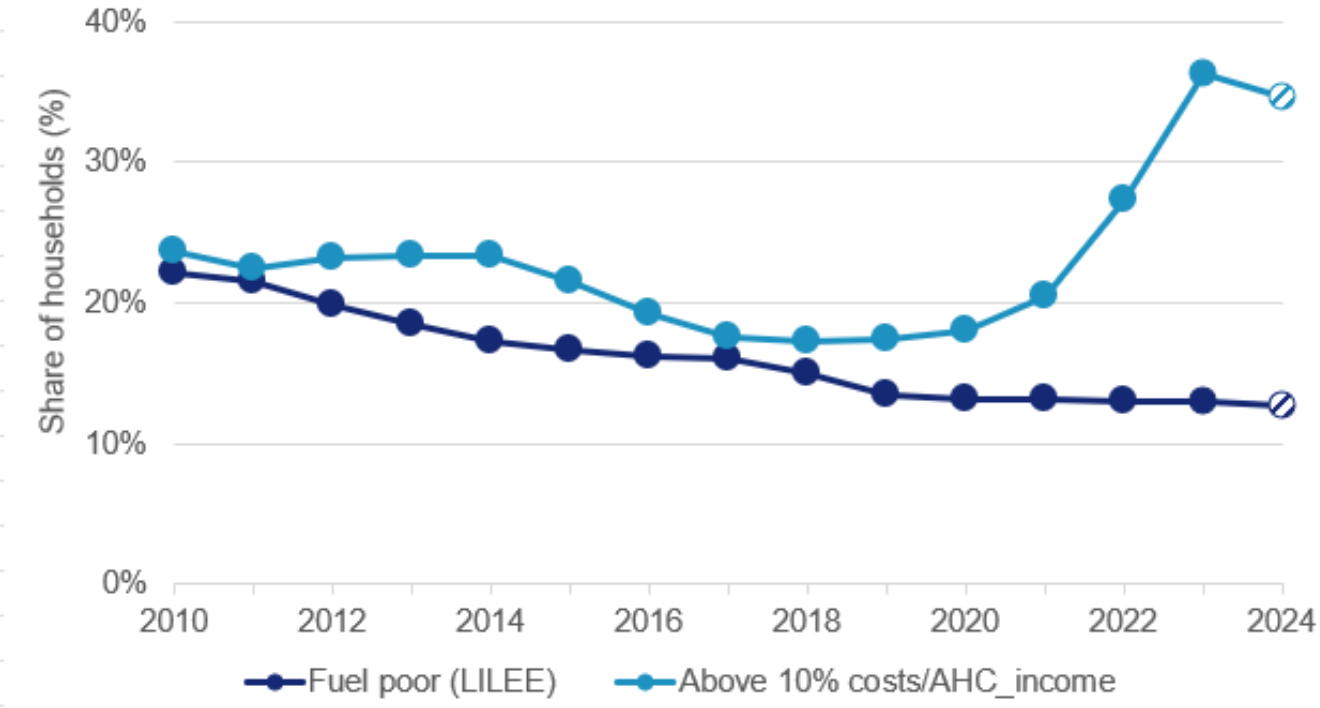
Generally, the impact of energy prices in LILEE is low since a change in bill is compared directly with income and so a £100 increase in energy costs can be offset with £100 increase in income. While the level of fuel poverty under the LILEE metric has remained fairly constant in recent years, as shown in figure 0.1, an additional 238,000 households would have been in fuel poverty in 2023 compared with 2022 due to increased energy prices and a similar increase was reported last year.

D.3 “10 per cent” affordability measures

Of the two 10 per cent affordability indicators the after housing costs (AHC) measure is more consistent with LILEE which also considers income after housing costs. DESNZ considers that the AHC measure is a better metric since households have limited ability to change their housing costs at least in the short term and has greater consistency with the official LILEE metric. Both indicators are reported in Trends Table 20.

The analysis in this annex, shows the number of households in England who have modelled required energy costs greater than 10% of their AHC household income.

Figure D.1 Comparison of the fuel poverty metric (LILEE) with 10% AHC metric



The share of fuel poor (LILEE) households decreased steadily between 2010 and 2019 driven by energy efficiency improvements. Since 2019 this has showed very little change as energy efficiency progress was offset by income changes during the pandemic followed by rising energy prices.

The 10% AHC affordability measure is much more sensitive to energy prices. Using this indicator, the number of households exceeding this threshold more than doubled from 4.3 million in 2020 to 8.9 million in 2023 but is projected to start falling in 2024 as prices are projected to fall.

Table D.1 Comparison of the number of households in fuel poverty under Low Income Low Energy Efficiency with households required to spend more than 10 per cent of their (AHC) income on energy costs (millions of households)

Year	Fuel poor (LILEE)	Above 10% costs/AHC_income
2010	4.78	5.11
2011	4.73	4.93
2012	4.35	5.08
2013	4.19	5.27
2014	3.90	5.28
2015	3.78	4.89
2016	3.73	4.43
2017	3.74	4.09
2018	3.52	4.04
2019	3.18	4.11
2020	3.16	4.30
2021	3.16	4.93
2022	3.18	6.66
2023	3.17	8.91
2024 projection	*3.12*	*8.57*

The estimates above are based on the same data as the official fuel poverty estimates with two years of data combined. The 2022 estimate was based equally on a time of relatively normal energy prices (2021/22) and one year of higher prices with an extensive package of financial support (2022/23). The 2023 estimate is based on two years of higher energy prices after the impact of the government's support package included. The 2024 projection is based on the assumption of energy prices falling to lower levels from July 2023 onwards but with the removal of all temporary energy bill support and cost of living income support. Price assumptions used are shown in chapter 4.2.3.

Annex E: Summary of revisions to 2022 estimates

E.1 Background to the 2022 projection made in 2023

In the 2023 Annual Fuel Poverty Statistics LILEE Report, the 2022 estimates were based on a one year ahead projection. The headline figures indicated that 13.4 per cent of households in England (3.26 million households) were estimated to be in fuel poverty. Following publication of the English Housing Survey 2022, final 2022 fuel poverty estimates have been published. Table E.1 shows the comparison for the headline estimates.

E.2 Comparison of provisional and final estimates

Table E.1: Comparison of headline provisional and final figures for fuel poverty indicators[52]

Headline measures	2021	2022 Provisional	2022 Final
Number of households in fuel poverty (millions)	3.16	3.26	3.18
Proportion of households in fuel poverty (%)	13.1	13.4	13.1
Aggregate gap (£ millions)	804	1,103	1,033
Average gap (£)	254	338	325
Fuel Poverty target of Band C or above by 2030 (%)	53.3	52.8	53.1
Fuel Poverty target of Band D or above by 2025 (%)	90.3	89.8	91.2
10% AHC Income measure (millions)	4.93	7.39	6.66
Proportion of households spending greater than 10% AHC Income (%)	20.5	30.3	27.4

[52] Estimates of the aggregate and average fuel poverty gap are shown in 2022 prices consistent with the 2023 Annual Fuel poverty statistics publication.

All provisional 2022 estimates of official fuel poverty metrics were within the confidence intervals shown in Annex A for the final 2022 estimates. There have therefore not been any statistically significant revisions to these metrics, but the central estimates have been revised.

As described in Chapter 2, fuel poverty is based on the three drivers of energy efficiency, after housing cost income and energy prices.

Energy efficiency – The final 2022 estimate showed a slightly higher share of households achieving an A-C FPEER rating than the provisional projection (49.8% compared with 48.4%). However, when looking just at low income households this difference is smaller (53.1% compared with 52.8%) due to the provisional estimate overestimating the number of households receiving Warm Home Discount.

Energy costs – Energy costs for electricity & gas which are covered by the Ofgem price cap[53] were known at high level when the provisional estimate was made. The overall costs also affect the balance of households by payment type and energy demand assumptions. Overall, the median household energy cost at £1,620 is unchanged.

Income – the 2022 projection assumed that incomes in lower income deciles would grow faster than the median income boosted by cost of living payments. The final 2022 figures showed that lower incomes grew even faster such that the overall share of low income households is 27.8% compared with the projection of 28.3%.

The combination of higher levels of energy efficiency and a lower share of low income households has led to the reduction on the fuel poverty estimate from 13.4% to 13.1%, reduction in the average fuel poverty gap from £338 to £325 and reduction in the share of households required to spend more than 10% of their AHC income on energy from 30.3% to 27.4%.

Putting all these changes together the 2022 projection did accurately identify the key findings presented in 2022:

- fuel poverty levels remained very consistent since 2019 with energy price support offered preventing a statistically significant increase in fuel poverty.
- a significant increase in the average fuel poverty gap due to high energy prices.
- no significant progress made against the band C fuel poverty target.

[53] It was assumed that prices consistent with the Energy Price Guarantee would apply Oct 2022 – March 2023.

Annex F: Impact of Warm Home Discount on Fuel Poverty

F.1 Introduction to Warm Home Discount

The Warm Home Discount (WHD) was introduced in 2011 with the scheme requiring obligated energy suppliers to provide energy bill rebates to eligible households. It is a key fuel poverty scheme supporting low income households with their energy bills and complements energy efficiency schemes in reducing fuel poverty.

In winter 2022/23, 2.2 million households in England received a direct energy rebate of £150 through the WHD scheme with statistics published by DESNZ of the households receiving this. Earlier years had only high level reports on the number of households receiving the rebate published by the scheme administrator Ofgem. Assumptions of delivery from winter 2023/24 are based on the revision to eligibility and are projected to deliver WHD to 2.8 million households in 2023/24. Averaging the impact of these two winters together in the 2023 statistics gives the rebate to 2.5 million households at a rate of £150.

WHD is administered through two distinct eligibility groups:

- **Core Group 1** supports pensioners on a low income who are receiving the Guarantee Credit element of Pension Credit.
- **Core Group 2** supports other low income households receiving a qualifying means-tested benefit AND assessed as living in a home with high estimated energy costs. The high-cost element is determined based on the Valuation Office Agency data held for the address of the household, specifically the property type, property age and floor area. The specific criteria used to model this are reviewed on an ongoing basis by the Department for Energy Security & Net Zero and are set in an Eligibility Statement.

F.2 How Warm Home Discount impacts fuel poverty

WHD prevents households from being fuel poor in these statistics in two different ways:

- The £150 rebate is treated as a cash value reduction in required fuel costs and therefore households who have an **AHC income – required fuel costs** within £150 of the low income threshold, can be lifted above this into one of the high-income quadrants.
- As explained in section 2.2.2, the Fuel Poverty Energy Efficiency Rating (FPEER) is an adjustment to the Energy Efficiency Rating to reflect the actual required energy costs after direct energy rebates such as WHD have been applied. In simple terms, if a household had required energy costs for regulated energy demand[54] of £1,500 the FPEER would be calculated based on costs of £1,350. It is noted in the methodology that the fuel costs and hence the rebate are deflated to 2012 energy prices consistent

[54] Only regulated energy demands are included within the Energy Efficiency Rating (EER) used in Energy Performance Certificates. These end uses include space heating/cooling, water heating and lighting but exclude appliance use.

with RdSAP2012 and therefore in times of high energy rebates the impact of the rebate is lower. In 2023 a typical uplift for a band D home less than 3 FPEER points compared with over 5 in 2021.

F.3 Warm Home Discount impact 2023

In previous years, a detailed table has been included to show the fuel poor and non-fuel poor households eligible for WHD. Households receiving WHD in winter 2022/23 have been modelled based on eligibility and constrained to the number of rebates issues. A higher number of households are expected to receive WHD in winter 2023/24 as the eligibility of Core Group 2 is expanded and these households have been modelled. In 2023, analysis shows that an estimated 248 thousand households were removed from fuel poverty by the WHD. The number of fuel poor households has therefore been reduced by 7 per cent due to WHD. It also shows that of the estimated 2.5 million households given rebates, 41 per cent of these went to households that would have been fuel poor. The tables below show the number of households receiving WHD in 2023 by fuel poverty status both before and after the rebates are included in their energy costs and FPEER ratings.

Table F.1: Fuel poverty by Warm Home Discount recipients before rebate, 2023

		Fuel poverty measured before recipients receive WHD				
Receive WHD	Total number of households (thousands)	Number of households (thousands) - Fuel poor before receiving WHD	Proportion of fuel poor households within group (%)	Proportion of total fuel poor households (%)	Aggregate fuel poverty gap (millions of £)	Average fuel poverty gap (£)
Yes	2,474	1,009	40.8	29.5	488	484
No	22,030	2,414	11.0	70.5	944	391
All households	**24,504**	**3,422**	**13.8**	**100.0**	**1,431**	**418**

Table F.2: Fuel poverty by Warm Home Discount recipients after rebate, 2023

		Fuel poverty measured after recipients receive WHD				
Receive WHD	Total number of households (thousands)	Number of households (thousands) - Fuel poor after receiving WHD	Proportion of fuel poor households within group (%)	Proportion of total fuel poor households (%)	Aggregate fuel poverty gap (millions of £)	Average fuel poverty gap (£)
Yes	2,474	760	30.7	23.9	379	499
No	22,030	2,414	11.0	76.1	944	391
All households	**24,504**	**3,174**	**13.0**	**100.0**	**1,323**	**417**

The aggregate fuel poverty gap is reduced by £109 million (8 per cent) from applying the WHD. The average fuel poverty gap actually increases due to WHD because of the reduction in the number of fuel poor households and the fuel poor households with the lowest fuel poverty gaps being the ones who cease to be fuel poor.

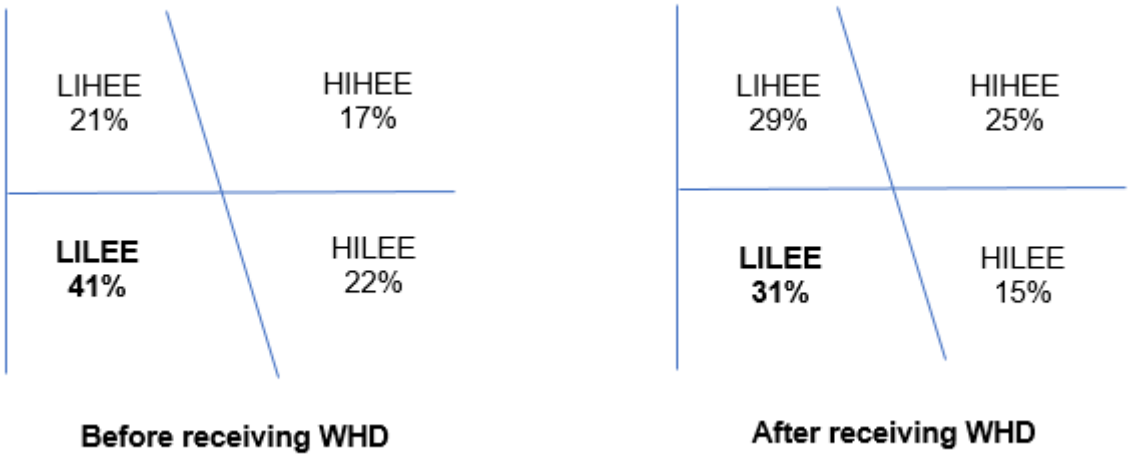
The WHD made only a slight reduction in the share of households required to spend at least 10 per cent of their AHC income on fuel costs from 9.0 million to 8.9 million. This is because it has been targeted to the lowest income households combined with high energy costs (Core Group 2). The median AHC 10 per cent affordability ratio for WHD recipients at current prices before the rebate was 14 per cent meaning that a £150 reduction in bills is unlikely to reduce the affordability ratio below 10 per cent.

F.4 Warm Home Discount recipients by fuel poverty quadrant 2023

At the time of publication of this analysis, while the actual number of WHD recipients in winter 2022/23 were known, the winter 2023/24 are assumed recipients. The figures below show this overall 2023 estimate of households receiving WHD by fuel poverty quadrant.

As above, the share of WHD recipients who would be Low Income Low Energy Efficiency (LILEE, fuel poor) was 41 per cent with a further 21 per cent Low Income High Energy Efficiency. In total, 76 per cent of WHD households were required to spend at least 10 per cent of their AHC income on energy costs compared with 36 per cent for all households.

Figure F.1: The share of WHD recipients by fuel poverty quadrant before and after receiving the rebate



Annex G: Relevant Links

G.1 Income indicators

Households below average income

Winter fuel payments

Cold weather payments

G.2 Fuel price indicators

Actual expenditure on fuel (as percentage of total income) -
Total
Weekly average

Fuel prices

Number of customers on prepayment -
Electricity
Gas

Average annual bills by payment method -
Electricity
Gas

Consumer vulnerability

Switching stats

G.3 Housing indicators

Indicator SAP rating

Number of insulated homes

Local Authority housing investment on energy efficiency improvements

G.4 Excess winter deaths

Excess winter deaths

Annex H: Accompanying tables

The following tables are available in Excel and ODS format on the department's statistics website.

Detailed tables LILEE (2023 data).

Detailed tables LILEE (2022 data).

Trends tables LILEE (2010-2023)

Supplementary tables (2023 data)

Supplementary tables (2022 data)

A fuel poverty dataset containing the underlying data for 2022 will be made available on the UK Data Service later in 2024.

Annex I: Technical information

An updated methodology handbook has been published alongside this publication. This sets out the method for calculating the headline statistics using the LILEE indicator and the detailed methodology for calculating the income, energy efficiency and fuel prices for each household.

Annex J: Acknowledgements

The fuel poverty modelling relies on the English Housing survey delivered by the Department for Levelling Up, Housing and Communities (DLUHC) and their contractors and expert modelling by the Building Research Establishment (BRE).

Annex K: Definitions

Term / Acronym	Definition
Adequate standard of warmth	Is defined as 21ºC for the main living area and 18 ºC for other occupied rooms.
Aggregate fuel poverty gap	The fuel poverty gap for each individual household is aggregated across all fuel poor households to produce a national total
AHC	After Housing Costs
Average fuel poverty gap	The average (mean) fuel poverty gap across all fuel poor households.
BREDEM	Build Research Establishment Domestic Energy Model
CW	Cavity Wall
DESNZ	Department for Energy Security & Net Zero
DWP	Department for Work and Pensions
ECO	Energy Company Obligation
EHS	English Housing Survey
Equivalisation	An adjustment factor to standardise spending and energy requirements across households of different sizes.
Equivalised AHC income	After housing costs income equivalised by household composition
Equivalised fuel costs	Household fuel costs equivalised by the number of people in the house
FPEER	Fuel Poverty Energy Efficiency Rating
Fuel Poverty (LILEE)	A household is considered to be fuel poor if: they are living in a home below band C and were they to spend the required amount on fuel costs for the home, they would be left with a residual income below the official poverty line.
Fuel poverty gap (LILEE)	The difference in pounds between the required energy costs for each fuel poor household and the nearest fuel poverty threshold
LILEE	Low Income, Low Energy Efficiency
DLUHC	Department for Levelling Up, Housing & Communities
OECD	Organisation for Economic Co-operation and Development
ONS	Office for National Statistics
Percentage points	The arithmetic difference between two percentages
Real terms	An adjusted financial number after correcting for the effect of inflation
RHI	Renewable Heat Incentive
RPI	Retail Price Index
SAP	Standard Assessment Procedure
SW	Solid Wall

Annex L: Further information

Revisions policy

The DESNZ statistical revisions policy sets out the revisions policy for these statistics, which has been developed in accordance with the UK Statistics Authority Code of Practice for Statistics.

User engagement

The DESNZ statement on statistical public engagement and data standards sets out the department's commitments on public engagement and data standards as outlined by the Code of Practice for Statistics. Users are encouraged to provide comments and feedback on how these statistics are used and how well they meet user needs. Comments on any issues relating to this statistical release are welcomed and should be sent to: fuelpoverty@energysecurity.gov.uk

National Statistics designation

These accredited official statistics (referred to as National Statistics in the Statistics and Registration Service Act 2007) comply with the standards of trustworthiness, quality and value in the Code of Practice for Statistics. The fuel poverty statistical estimates combine information about the economic circumstances of households with the characteristics of the homes they live in to understand the type of households likely to be in fuel poverty and monitor trends.

Data and processing undergo careful quality assurance, and users are kept informed about significant changes. Details of key data limitations can be found within the relevant coverage and data limitation sections of this methodology note.

Our statistical practice is regulated by the Office for Statistics Regulation (OSR). OSR sets the standards of trustworthiness, quality and value in the Code of Practice for Statistics that all producers of official statistics should adhere to. The accreditation of these statistics was last confirmed in July 2022 following a compliance check by the Office for Statistics Regulation. You are welcome to contact us directly (fuelpoverty@energysecurity.gov.uk) with any comments about how we meet these standards. Alternatively, you can contact OSR by emailing regulation@statistics.gov.uk or via the OSR website.

Pre-release access to statistics

Some ministers and officials receive access to these statistics up to 24 hours before release. Details of the arrangements for doing this and a list of the ministers and officials that receive pre-release access to these statistics can be found in the DESNZ statement of compliance with the Pre-Release Access to Official Statistics Order 2008.

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