Annual Fuel Poverty Statistics in England, 2020 (2018 data)

30 April 2020   **National Statistics**

Headline Statistics

- In 2018, the **average fuel poverty gap** (the reduction in fuel bill that the average fuel poor household needs in order to not be classed as fuel poor) in England was estimated at £334, a slight increase from £328 in 2017.

- The **aggregate fuel poverty gap** for England continued to decrease in 2018 (by 3.4 per cent in real terms) to £802 million.

- The **proportion of households in England** in fuel poverty was estimated to have decreased by 0.7 percentage points from 2017 to 10.3 per cent in 2018 (approximately 2.40 million households).

- In 2018, further progress was made towards the interim 2020 **fuel poverty target**, with 92.6 per cent of all fuel poor households living in a property with a fuel poverty energy efficiency rating of Band *E* or better.

Fuel poverty target	2010 progress	2017 progress	2018 progress
Band E or above by 2020	81.1	92.2	92.6
Band D of above by 2025	32.7	65.9	69.4
Band C or above by 2030	1.5	10.0	12.4

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

- **Energy efficiency** – improvement in energy efficiency between 2017 and 2018.

- **Energy prices** – prepayment price cap has contributed to the reduction of energy prices for mainly low income households.

- **Incomes** – incomes increased at a faster rate for low income households, partly due to the introduction of the National Living Wage in April 2016.

Contents

Chapter 1: Introduction

The aim of this annual publication is to provide a comprehensive view of the latest statistical trends and analysis of fuel poverty in England in 2018.

Fuel poverty in England is measured using the Low Income High Cost (LIHC) indicator[1], which considers a household to be fuel poor if:

- they have required fuel costs[2] that are above average (the national median level); and

- were they to spend that amount, they would be left with a residual income[3] below the poverty line[4].

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*[5,6] 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[7].

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 (between 2003 and 2018) in Chapter 3. Chapter 4 explores fuel poverty headline figures in future years. Detailed data tables are published alongside this report (see Annex E for details of published tables).

The fuel poverty statistics, and underlying data, form a key element of the evidence base supporting BEIS to:

- Implement the Fuel Poverty Strategy[8]

- Inform Clean Growth Strategy ambitions[9]

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[1] Further information on how the LIHC indicator works can be found in Annex B.

[2] Fuel costs required to have a warm, well-lit home, with hot water and the running of appliances. An equivalisation factor is applied to reflect that households require different levels of energy depending on who lives in the property. Further information on how fuel costs are calculated can be found in Section 5 of the Methodology Handbook:
https://www.gov.uk/government/publications/fuel-poverty-statistics-methodology-handbook

[3] Residual income is defined as equivalised income after housing costs, tax and National Insurance. Equivalisation reflects that households have different spending requirements depending on who lives in the property. Further information on how income is modelled can be found in Section 3 of the Methodology Handbook (above).

[4] The poverty line (relative income poverty) is defined as an equivalised disposable income of less than 60% of the national median, more information on the methodology can be found in the following infographic:
https://www.gov.uk/government/publications/how-low-income-is-measured

[5] Energy efficiency rating is measured using Fuel Poverty Energy Efficiency Rating (FPEER), see Section 2.3.3 and glossary for more detail.

[6] Household energy efficiency ratings are banded from *G* (lowest) to *A* (highest).

[7] Fuel poverty gap is the reduction in fuel bill that a fuel poor household needs in order to not be classed as fuel poor.

[8] https://www.gov.uk/government/publications/cutting-the-cost-of-keeping-warm

[9] https://www.gov.uk/government/publications/clean-growth-strategy

- Develop, monitor and evaluate key policies including the Energy Company Obligation (ECO)[10], Warm Homes Discount[11] and Private Rented Sector Minimum Energy Efficiency Standards[12]

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. Therefore fuel poverty is 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, for example, by not heating their home are not overlooked.

A methodology handbook has been published alongside this publication. This sets out the method for calculating the headline statistics using the LIHC indicator and the detailed methodology for calculating the income, energy efficiency and fuel prices for each household. It is available at:
https://www.gov.uk/government/publications/fuel-poverty-statistics-methodology-handbook

Fuel Poverty Strategy Consultation

The Government consulted on the upcoming Fuel Poverty Strategy for England in summer 2019[13]. In light of the ongoing coronavirus (COVID-19) pandemic, the Government has taken the decision to temporarily delay publication of the Government response to the consultation. We now plan to publish the Government response to consultation, the updated Fuel Poverty Strategy for England and related documents later this year.

The consultation included a proposed new fuel poverty metric, Low Income Low Energy Efficiency (LILEE). We intend to publish the fuel poverty statistics relating to LILEE later this year to better coincide with the release of the updated Fuel Poverty Strategy; this statistical release will be pre-announced in due course.

Data

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

This report is based on fieldwork carried out between April 2017 and March 2019 (a mid-point of 1st April 2018). The sample comprises 12,203 occupied dwellings where a physical inspection and a household interview was carried out; this is hereby referred to as the 2018 data. Further information, including EHS releases and a detailed survey guide for users, can be found at the following link:

https://www.gov.uk/government/collections/english-housing-survey

The 2018 fuel poverty dataset will be made available later this year via the UK Data Service, where previous year's data are also available. These releases contain the underlying data

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[10] https://www.ofgem.gov.uk/environmental-programmes/eco
[11] https://www.gov.uk/the-warm-home-discount-scheme
[12] https://www.gov.uk/government/publications/the-private-rented-property-minimum-standard-landlord-guidance-documents
[13] https://www.gov.uk/government/consultations/fuel-poverty-strategy-for-england

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: https://ukdataservice.ac.uk/

Chapter 2: Key Drivers of Fuel Poverty in England, 2018[14]

2.1 Overview: fuel poverty in England

In 2018, 10.3 per cent of households in England (2.40 million households) were classed as fuel poor, a reduction of 0.7 percentage points (130,000 households) from 2017. The average fuel poor household required a reduction of £334 to their fuel costs to move them out of fuel poverty – the average fuel poverty gap (referred to hereafter as simply the *gap*). The average gap in 2018 is 1.9 per cent higher than 2017 but 8.2 per cent lower than 2010[15]. We recommend using the gap, in conjunction with the proportion, as an indication of fuel poverty at the national level. The changes in the proportion of households in fuel poverty and the average gap are not statistically significant – see Annex A.

The aggregate fuel poverty gap, which is the total of all fuel poverty gaps for households in England decreased by 3.4 per cent since 2017 and Table 2.1 below summarises these figures.

Table 2.1: In 2018 the proportion of households in fuel poverty and the aggregate gap have decreased compared to 2010 and 2017

Headline measure	2010	2017	2018
Average gap[16] (£)	364	328	334
Aggregate gap[16] (£ millions)	896	830	802
Proportion of households in fuel poverty (%)	11.4	10.9	10.3
Number of households in fuel poverty (millions)	2.46	2.53	2.40

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[14] 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).
[15] This is reduction in real terms, adjusted to account for inflation.
[16] The average gap figures are adjusted to 2018 prices.

Figure 2.1: The average gap decreased each year between 2014 and 2017 with a slight increase in 2018, whilst the proportion of households in fuel poverty has decreased to a low of 10.3 per cent in 2018 [16,17,18]
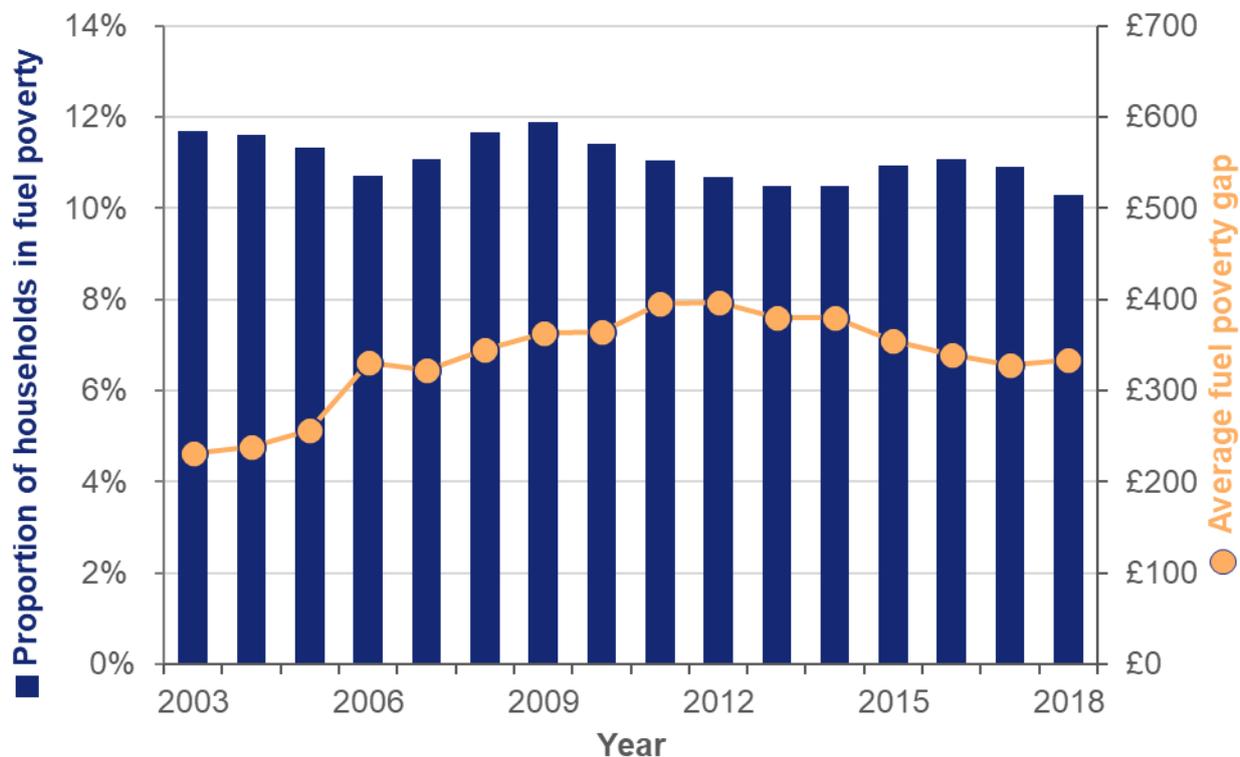
Due to the relative nature of the LIHC measure, the proportion of households in fuel poverty has remained broadly stable over time, fluctuating between 10 and 12 per cent since 2003.

There were two main reasons for a reduction in fuel poor households in 2018. **Fuel bills for low income households increased more slowly than average**, and as a result fewer households are classed as having higher than average fuel costs. In addition, **incomes increased at a higher rate than average for the low income group** which resulted in a narrowing of the income distribution and a smaller group of households classed as low income.

There is evidence that the proportion of households in fuel poverty and the gap can be negatively correlated, as seen above in Figure 2.1[19]. That is, when the proportion of fuel poor households decreases, the gap increases. This is due to the relative nature of the measure which means that households cluster close to the fuel poverty thresholds[20].

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[17] In Annex A error bars have been added to this line to denote the confidence interval around the figures.
[18] Left axis: blue bars show the proportion of households in fuel poverty. Right axis: orange dots show the average fuel poverty gap.
[19] See Page 12 of the 2018 annual report for more detail: https://www.gov.uk/government/statistics/annual-fuel-poverty-statistics-report-2018
[20] In 2018, 29.3 per cent of all fuel poor households had a gap of less than £100.

2.2 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[21,22] by 2030, with interim targets of Band E by 2020, and Band D by 2025 (see Figure 2.2).

**Figure 2.2: England's statutory fuel poverty target**
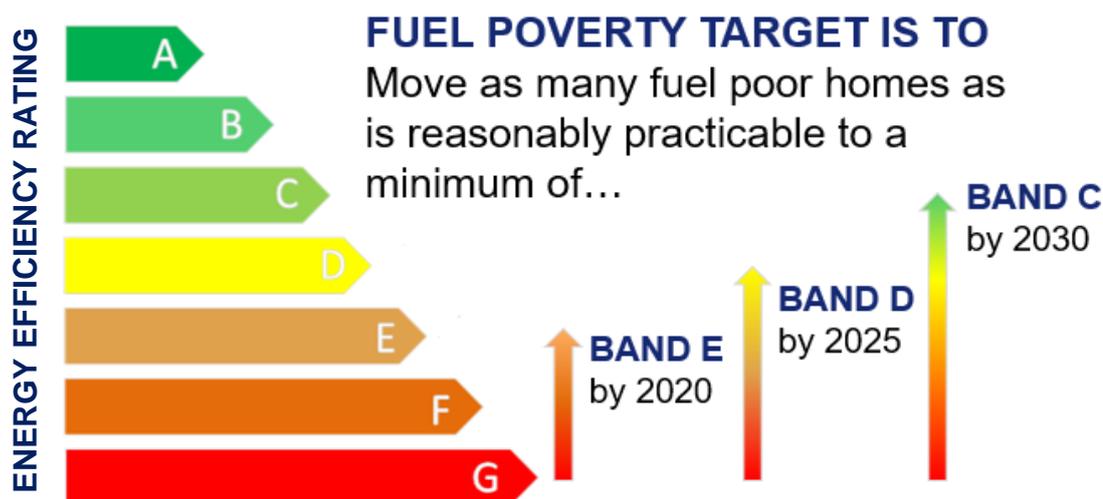
The proportion and number of fuel poor households in each band are reported annually to track progress against the target. Figure 2.3, Table 2.2 and Table 2.3 show that, in 2018, further progress was made towards the fuel poverty target and interim milestones.

Table 2.2: In 2018, further progress was made towards the fuel poverty target and interim milestones

Fuel poverty target	2010 progress	2017 progress	2018 progress
Band E or above by 2020 (%)	81.1	92.2	92.6
Band D of above by 2025 (%)	32.7	65.9	69.4
Band C or above by 2030 (%)	1.5	10.0	12.4

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[21] Energy efficiency rating is measured using Fuel Poverty Energy Efficiency Rating (FPEER), see Section 2.3.3 and glossary for more detail.
[22] Household energy efficiency ratings are banded from G (lowest) to A (highest).

Figure 2.3: Percentage of fuel poor households in Band A to E was 92.6% in 2018[23],[24],[25]
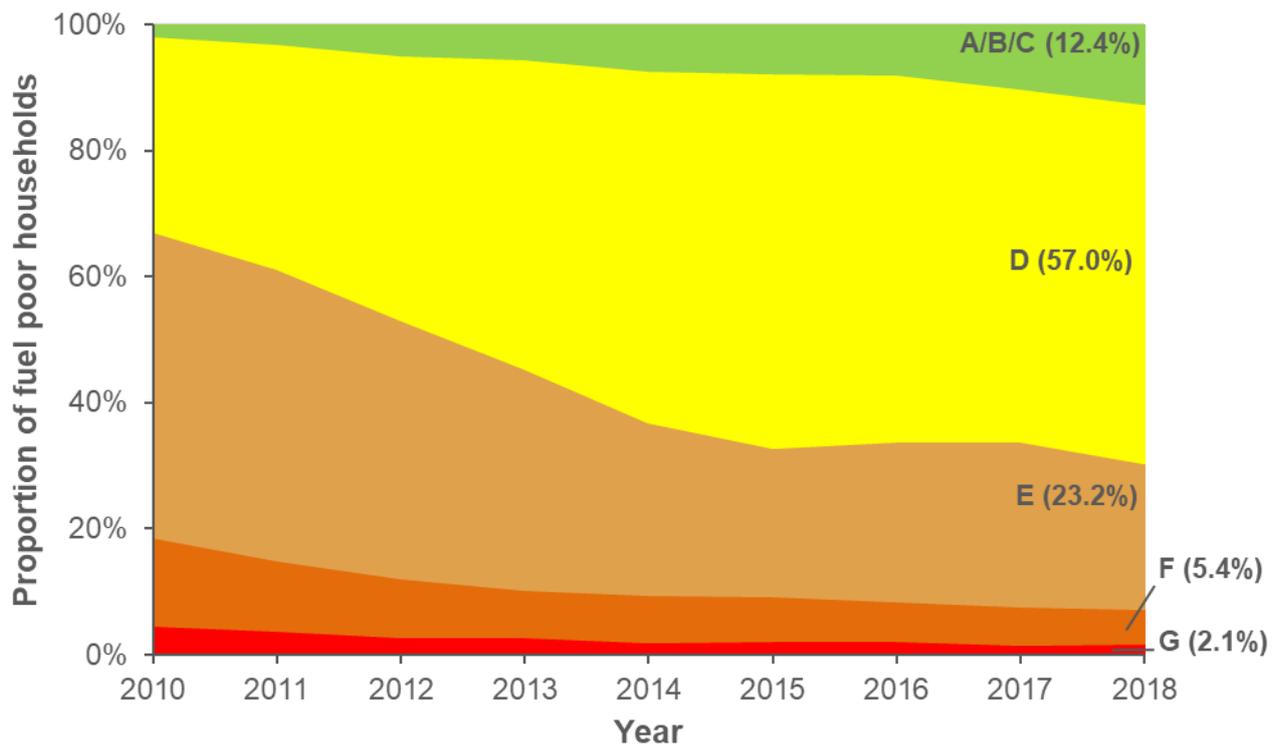
Table 2.3: Proportion and number of fuel poor households in each band, 2010, 2017 and 2018

Fuel poor households in each FPEER band	2010		2017		2018	
	(%)	No. households (000's)	(%)	No. households (000's)	(%)	No. households (000's)
Band A/B/C	1.5	38	10.0	253	12.4	298
Band D	31.2	768	55.9	1,416	57.0	1,369
Band E	48.4	1,191	26.3	665	23.2	556
Band F	14.1	346	5.9	150	5.4	128
Band G	4.8	119	1.9	49	2.1	49

2020 interim target progress – 92.6 per cent of fuel poor households were living in properties with an energy efficiency rating in Band A to E. In other words, in 2018 7.4 per cent of households are in Band F or G, this has reduced from 18.9 per cent in 2010. For context, only 3.6 per cent of *all* households are Band F or G.

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[23] Annex A contains the raw data in this chart.
[24] Charts which capture changes in FPEER go back to 2010, as opposed to 2003, due to data collection. See Section 2.3.3 for more information on FPEER.
[25] Figures for energy efficiency Band G are based on small sample sizes, inferences should not be made based on this figure.

2025 interim target progress – 69.4 per cent of fuel poor households were living in properties with energy efficiency rating in Band A to D. There has been an increase of 3.5 percentage points between 2017 and 2018 which is likely in part due to sampling. For comparison, 85.3 per cent of all households have an energy efficiency rating in Band A to D.

2030 target progress –12.4 per cent of fuel poor households were living in properties with an energy efficiency rating of A, B or C, an increase of 10.9 percentage points since 2010 and 2.4 percentage points since 2017. Over a third of all households (36.3%) have an energy efficiency rating of A, B or C.

The changes in the interim target progress are not statistically significant – see Annex A.

2.3 Key drivers

The fuel poverty status of a households depends on the interaction between three key drivers[26]:

The key drivers will be assessed in turn to explore their effect on headline fuel poverty figures in 2018. *Higher* incomes, *increased* energy efficiency and *lower* energy prices would each have a positive impact on a fuel poor household.

The relative nature of the fuel poverty indicator makes it difficult to accurately isolate individual reasons for change. For any factor to affect the number of households in fuel poverty, it must change by a greater amount for those in fuel poverty, than for those not in fuel poverty. For example, a change in income will only have an impact on the number of households in fuel poverty if households with low incomes and high fuel costs (LIHC households) see relatively larger or smaller income changes compared to those who are not in fuel poverty.

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. Changes to the key drivers in future years are explored in Chapter 4.

2.3.1 The Low Income High Costs quadrant

Fuel poverty in England is measured using the LIHC indicator, which is defined in Chapter 1. Based on a combination of a household's income, energy requirements and energy prices, the indicator allows households to be grouped into one of the following four quadrants illustrated below in Figure 2.4.

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

Figure 2.4: 10.3 per cent of all households classified as fuel poor (LIHC) in 2018[27]
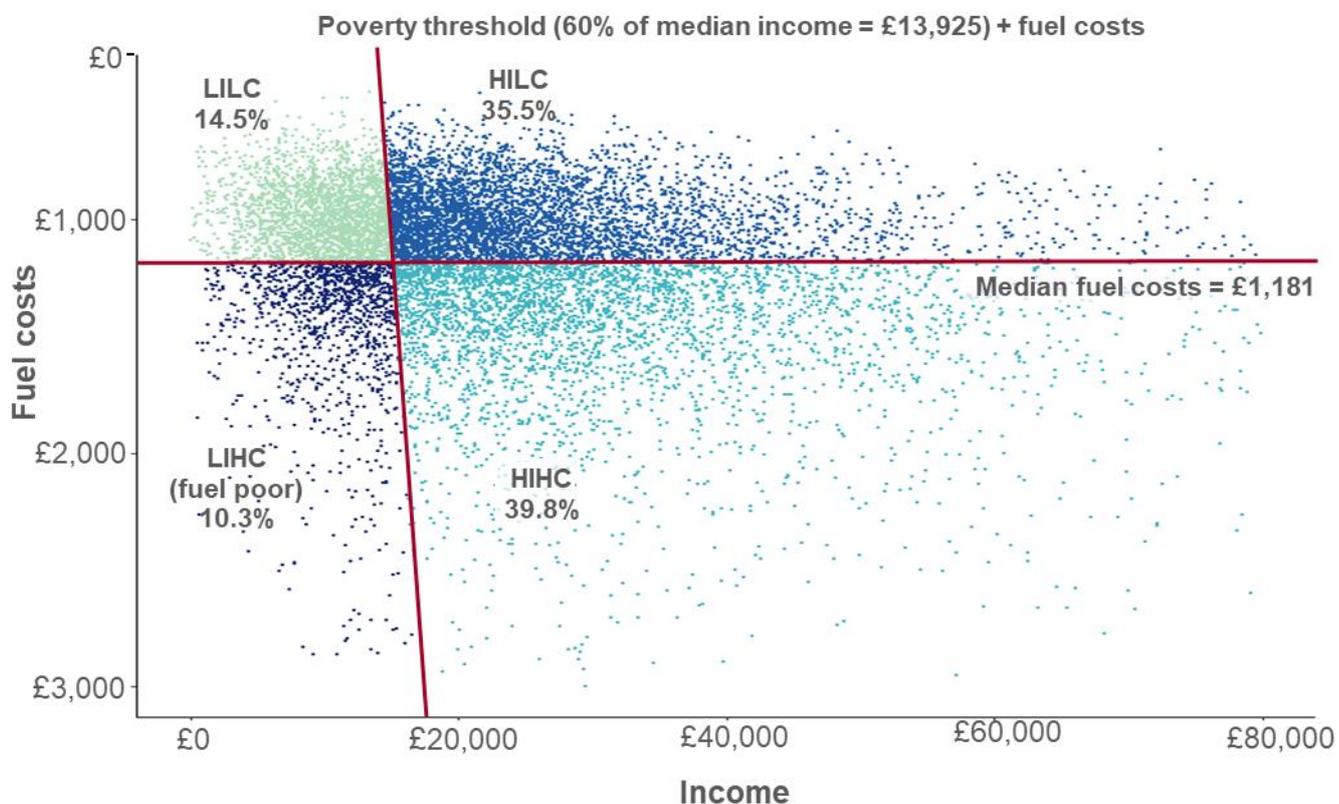
In 2018, 24.7 per cent of households were classed as having a low income (with 75.3 per cent having a high income) and 50 per cent of households were classed as having high fuel costs. Of those households with low incomes 41.5 per cent were classed as fuel poor and of those households with high fuel costs, 20.5 per cent were classed as fuel poor.

Fuel costs on the vertical axis refers to *required* 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 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. Hereafter this will be referred to as fuel costs (unless otherwise specified).

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. Hereafter this will be referred to as income (unless otherwise specified).

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[27] In line with Canberra Group Handbook guidance, negative AHC incomes have been set to zero following equivalisation: http://www.unece.org/index.php?id=28894. For more information, see Section 3 of the methodology handbook.

Further information on how fuel costs and income are calculated can be found in Sections 5 and 3 of the Methodology Handbook: https://www.gov.uk/government/publications/fuel-poverty-statistics-methodology-handbook.

2.3.3 Energy efficiency

Energy efficiency is a key driver of fuel poverty, as higher energy efficiency reduces a household's fuel costs and as a result a household is less likely to be classified as "high costs". As fuel poor households get more energy efficient, they have lower costs required to heat their homes and so their gap also decreases[28].

Figure 2.5: Fuel costs for the least efficient[29] properties (Band G) are almost three times higher than costs for the most efficient properties (Band A/B/C) in 2018
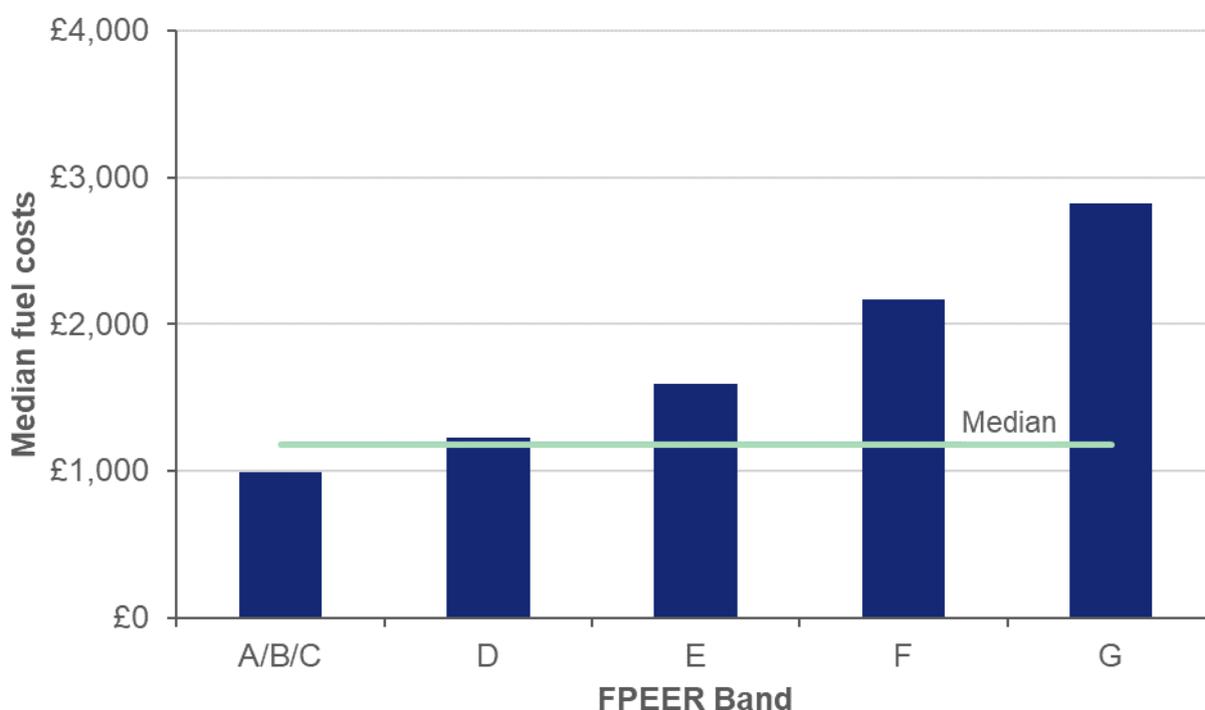
A special feature article which compared theoretical energy consumption and actual usage[30] was published in March 2019. The analysis suggests that in properties rated Band C or lower actual consumption is, on average, lower than the theoretical value. This difference increases as the energy efficiency of a property decreases.

The Standard Assessment Procedure (SAP) is used[31] to measure energy efficiency of the housing stock in England. For fuel poverty statistics, and to measure progress against the fuel poverty target (Section 2.2), BEIS is legally bound to use a fuel poverty specific energy efficiency rating.

[28] See Section 3.1.1 for more information on energy efficiency and floor area.
[29] Energy efficiency measured using FPEER.
[30] https://www.gov.uk/government/publications/energy-trends-march-2019-special-feature-article-comparison-of-theoretical-energy-consumption-with-actual-usage
[31] 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.

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[32])[33]. For example, if a household has a Band E Energy Performance Certificate (EPC) and they get £140 deducted from their energy bill due to receipt of the Warm Home Discount, this could move them into an FPEER Band D.

Figure 2.6: Median energy efficiency ratings increased between 2017 and 2018 for fuel poor households and all households
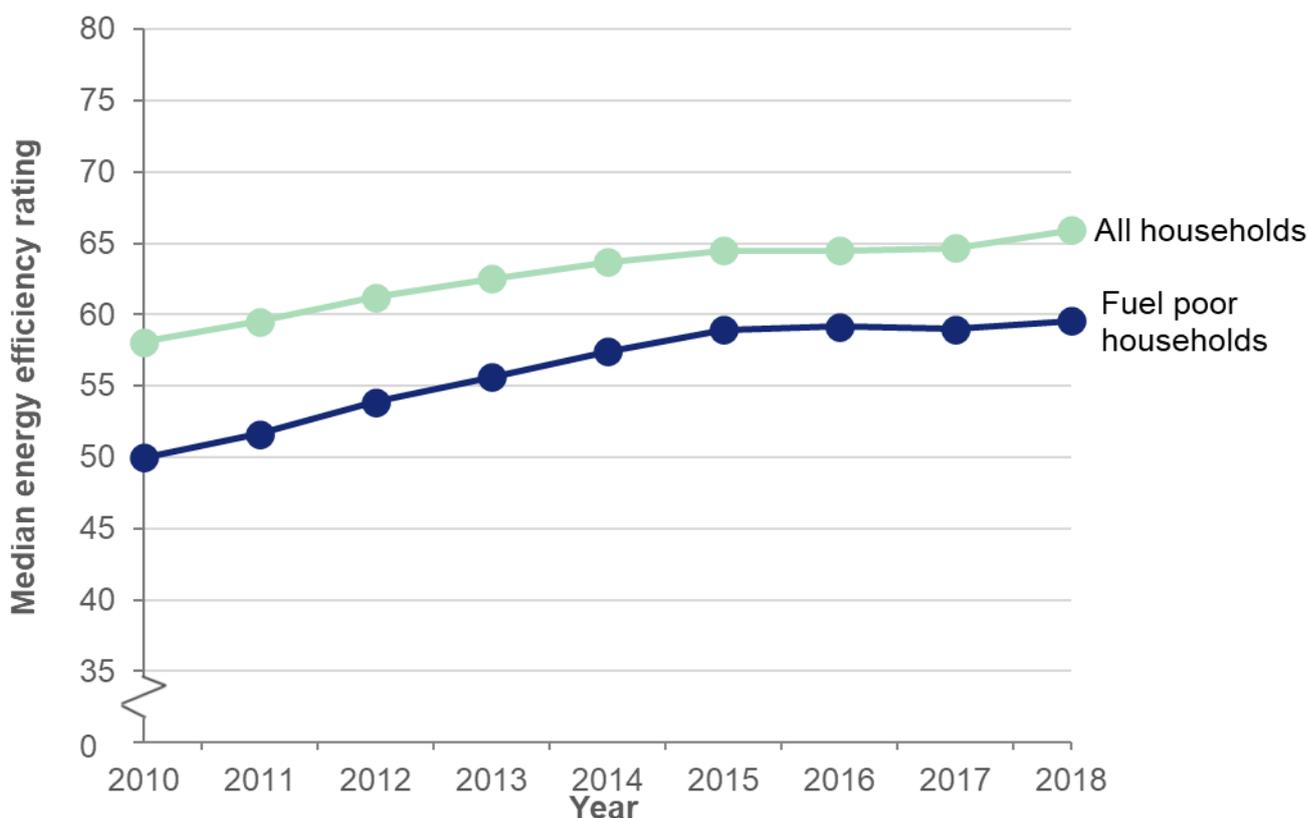
The median energy efficiency rating for fuel poor households increased marginally between 2017 and 2018[14], after it had levelled off between 2015 and 2017. In comparison, however, the energy efficiency improvement for fuel poor households was on average larger per year between 2010 and 2015.

Although energy efficiency has increased for fuel poor households, the improvement is greater for all households meaning that the changes to energy efficiency therefore will have had a smaller effect on the headline fuel poverty figures.

The levelling off for median energy efficiency ratings between 2015 and 2017[34] is partly due to the decrease in the number of measures installed compared to previous years in England through the Energy Company Obligation (ECO) and the Green Deal, as reported in the Household Energy Efficiency National Statistics[35] which can be seen in Figure 3.2.

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[32] https://www.gov.uk/the-warm-home-discount-scheme
[33] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/332236/fpeer_methodology.pdf
[34] The combined year dataset used for fuel poverty statistics is explained in Chapter 1.
[35] https://www.gov.uk/government/collections/household-energy-efficiency-national-statistics

2.3.4 Income

Income is one of the three key drivers of fuel poverty and determines whether a household is classed as "low income" or "high income". Changes to occupants' earnings, benefits and housing costs all affect household income. In 2018, a household is classed as low income if their equivalised income (less tax and National Insurance), once they've paid their housing and fuel costs (definition can also be found on Page 11) is less than £13,925 (60 per cent of median income for all households)[36]

Figure 2.7: Lowest income deciles (1st to 4th) saw a greater than average increase in their income[11] between 2017 and 2018
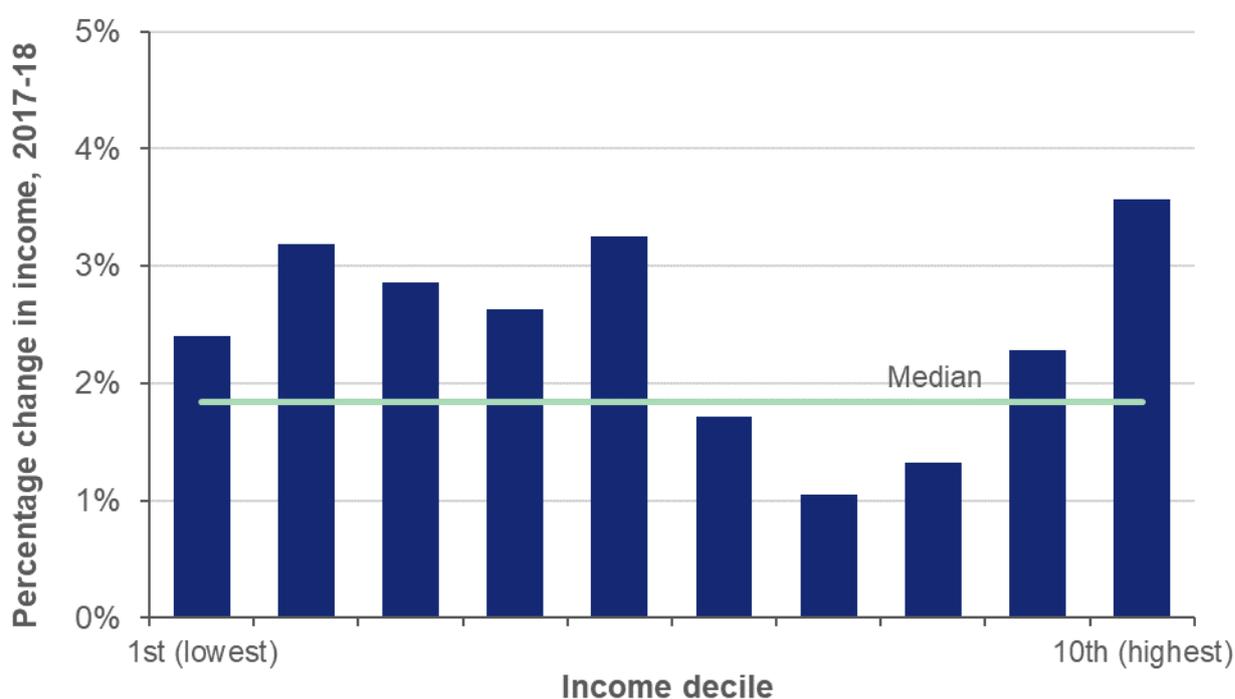
Incomes increased at a higher rate than average for the lowest income groups (1st to 4th deciles) which resulted in a narrowing of the income distribution, this is partly due to the National Living Wage, introduced in April 2016[37] which is being gradually phased in. As a result, the proportion of households classed as low income decreased from 25.3% in 2017 to 24.7% in 2018.

As discussed in Section 2.3, when there is a larger change for households in fuel poverty than for the whole population, there are changes to the fuel poverty headline figures. The larger relative increase in income for lower income households will have caused households to shift out of fuel poverty, reducing the proportion of households in fuel poverty.

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[36] 60 per cent of £23,209 (median after housing costs equivalised income for all households) = £13,925. See Figure 2 of the methodology handbook: https://www.gov.uk/government/publications/fuel-poverty-statistics-methodology-handbook
[37] https://www.gov.uk/national-minimum-wage-rates

2.3.5 Energy prices

Energy prices are used to calculate how much the required energy[38] for each household would cost for that specific year. The required energy bill for each household then determines whether a household is classed as "high costs" or "low costs", and so affects the proportion of households in fuel poverty.

In 2018, fuel poor households were required to spend a median cost of £1,378 on their energy bills, 38.0 per cent more (£379) than Low-Income Low-Cost households. Characteristics of the dwelling and household which contribute to these higher costs are explored in detail in Chapter 3.

Figure 2.8: There was broadly a close relationship between fuel prices and the gap[39] between 2003 and 2012, but this has weakened in recent years[40]
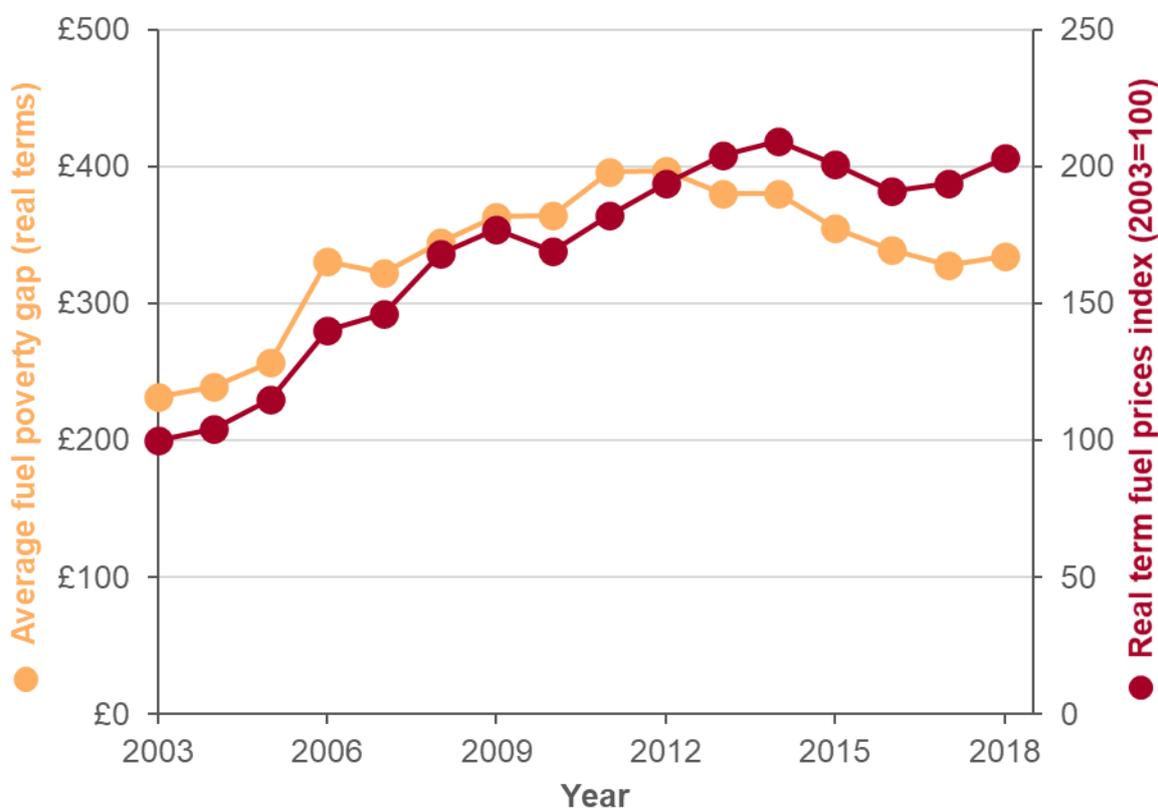
The relationship between the gap and fuel prices depends on changes to the other key drivers of fuel poverty. Between 2012 and 2014 a divergence in the trend emerged, this is likely related to the downward trend in household energy requirements, a result of improving energy efficiency, which outweighed price increases in these years.

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[38] Fuel costs defined on Page 11.
[39] Produced using the Gross Domestic Product (GDP) deflators (March 2020), published in March 2020 and available at the following link:
https://www.gov.uk/government/statistics/gdp-deflators-at-market-prices-and-money-gdp-march-2020-budget
[40] Real term fuel prices index source: 2.1.2: https://www.gov.uk/government/statistical-data-sets/monthly-domestic-energy-price-stastics

A separate price cap applies to customers on prepayment meter tariffs which is now implemented alongside the default tariff cap. The prepayment cap was introduced in April 2017 and is due to end in 2020[41].

In 2018, domestic energy prices increased by approximately 2.9 per cent in real terms[42] compared to 2017. However, this varies with the method of payment used by the householder (see Figure 2.9).

Figure 2.9: The average prepayment domestic gas and electricity bill decreased between 2017 and 2018[43]
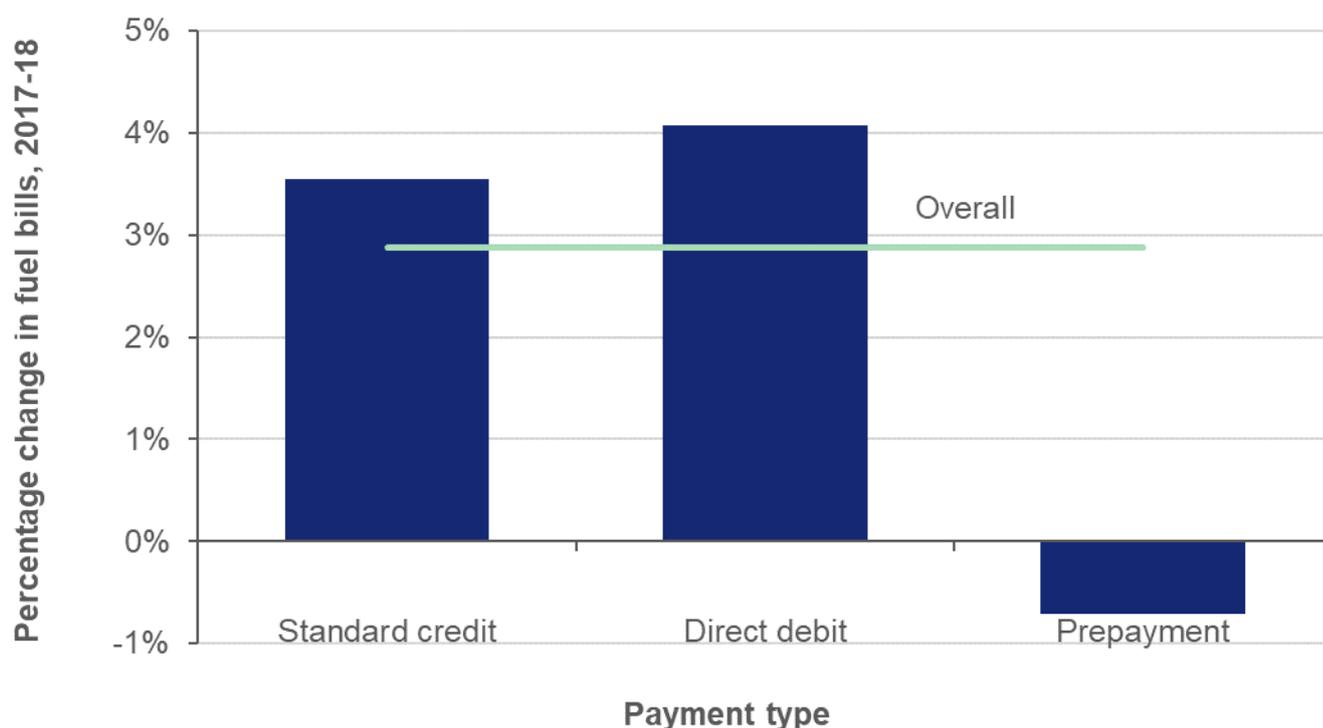
The rate at which average domestic gas and electricity prices changed between 2017 and 2018 differs depending on payment method. The average total bill for households paying for their energy by prepayment meter decreased by £7 (0.7%) between 2017 and 2018, making standard credit the most expensive form of payment, followed by direct debit, see Tables A.2 and A.3 in Annex A.

Fuel poor households are more likely to pay their energy bills by prepayment compared to all households (19.7 per cent vs 14.0 per cent respectively[44]). Households paying by prepayment meter had, on average, a reduction in their fuel bill. This will have likely pushed some prepayment households out of fuel poverty. The proportion of households paying their electricity by prepayment meter that are in fuel poverty decreased sharply from 20.5 per cent in

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[41] Prepayment cap is expected to end in 2020 as smart meter rollout is expected to be completed: https://www.ofgem.gov.uk/gas/retail-market/market-review-and-reform/implementation-cma-remedies/prepayment-meter-price-cap

[42] Domestic energy prices increased by 5.1% in cash terms between 2017 and 2018.

[43] Source: Annual domestic price statistics, Table 2.2.2 and Table 2.3.2: https://www.gov.uk/government/statistical-data-sets/annual-domestic-energy-price-statistics. Figures are based on Standard Electricity tariffs, are in real terms and cover England and Wales. Data for gas and electricity separately can be found in Annex A.

[44] These figures are for electricity method of payment, figures for gas follow a similar pattern.

2017 to 14.5 per cent in 2018. Households paying for electricity by standard credit, as opposed to other payment types, are now most likely to be in fuel poverty (18.4%).

As a result, the proportion of fuel poor households paying by prepayment meter has reduced from 27.1 per cent in 2017 to 19.7 per cent. Therefore, fuel bills for low income households increased more slowly than average and as a result fewer households are classed as being high cost.

The effect of the prepayment price cap is explored further in Chapter 3, Section 3.4.

# Chapter 3: Detailed Analysis of Fuel Poverty in England, 2003-2018[14]

Fuel poverty in England is affected by multiple characteristics, many of which are inter-related. This means that assigning causality to one factor alone is not possible. The following chapter analyses these individual characteristics, but users should be aware of the built-in interactions likely to exist between them[45].

The data behind this analysis is available in the fuel poverty detailed, trends and supplementary tables detailed in Annex E.

3.1 Property characteristics

3.1.1 Fuel Poverty Energy Efficiency Rating (FPEER)[46]

Figure 3.1: The proportion of households in fuel poverty and the size of the average gap is highest for those living in Band G properties in 2018
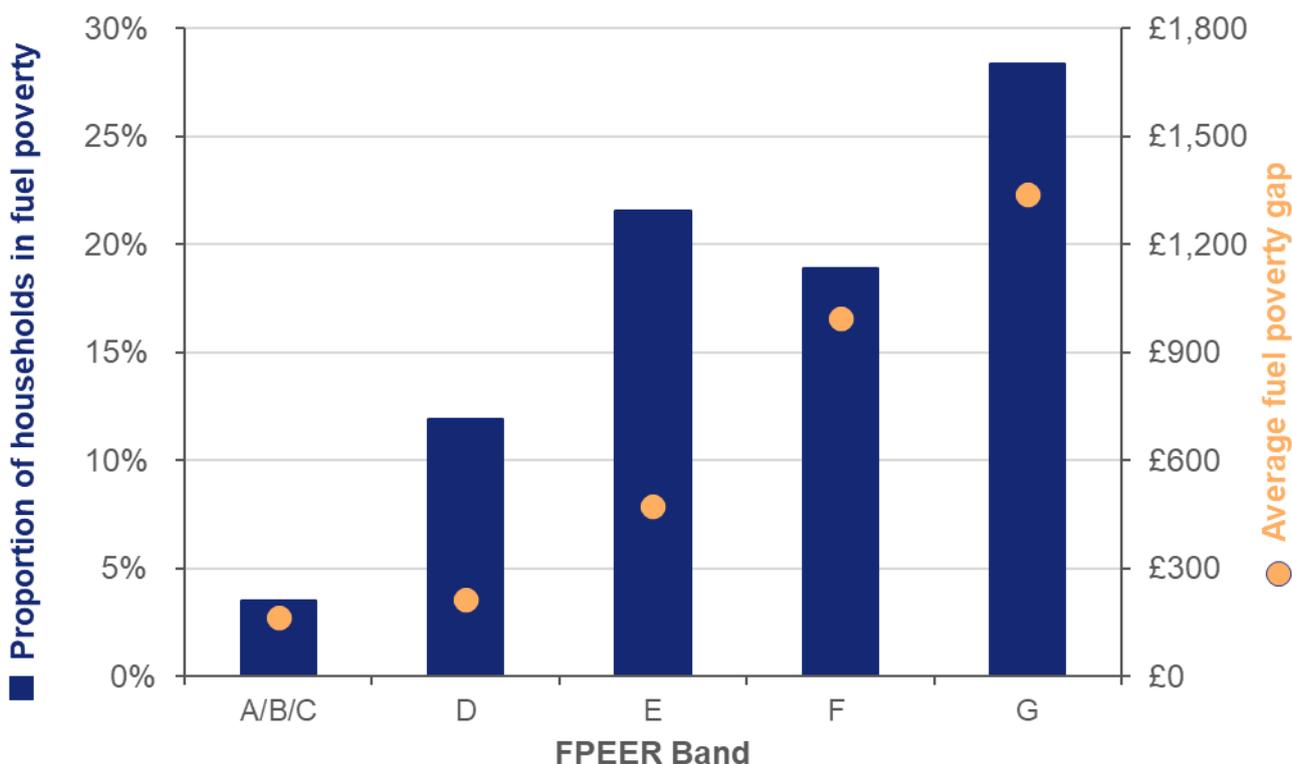
In Figure 3.1 above, the blue bars denote the proportion of households in fuel poverty for each group and the orange circles represent the average fuel poverty gap for each group. For example, the blue bars show that 11.9 per cent of households who live in energy efficiency

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[45] The Ministry for Housing, Communities and Local Government published a report on variations in housing circumstances which can be found at the following link:
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/724642/Variations_in_housing_circumstances_report.pdf
[46] The Fuel Poverty Energy Efficiency Rating is defined in Section 2.3.3.

Band D properties are fuel poor and they have an average gap (shown by the orange circles) of £216.

As households become more energy efficient, they have lower required energy costs. Therefore, households living in properties with lower energy efficiency bands are more likely to have both a higher proportion of households in fuel poverty and larger average gaps. In 2018, the only exception to this is Band E, which has a higher proportion of households in fuel poverty than Band F, at 21.5 and 18.9 per cent respectively. This could be due the movement between Bands, as seen in Figure 2.3 or due to sampling error[47,48].

There has been an overall increase in fuel poor households living in Band A-D properties and an overall decrease in fuel poor households living in Band E-G properties between 2010 and 2018 (see Figure 2.3). The rate of change levelled off between 2015 and 2017 and has seen another marked increase between 2017 and 2018. In 2018, the majority of fuel poor households live in Band D properties (57.0%).

There has also been an increase in *all households* living in Band A-D properties, with a steeper increase in Band C properties, and a reduction of households living in in Band E-G properties between 2010 and 2018 (see Figure A.4 in Annex A).

Figure 3.2: The cumulative number of energy efficiency measures installed has increased between 2013 and 2018, with some measures levelling off in more recent years[49]


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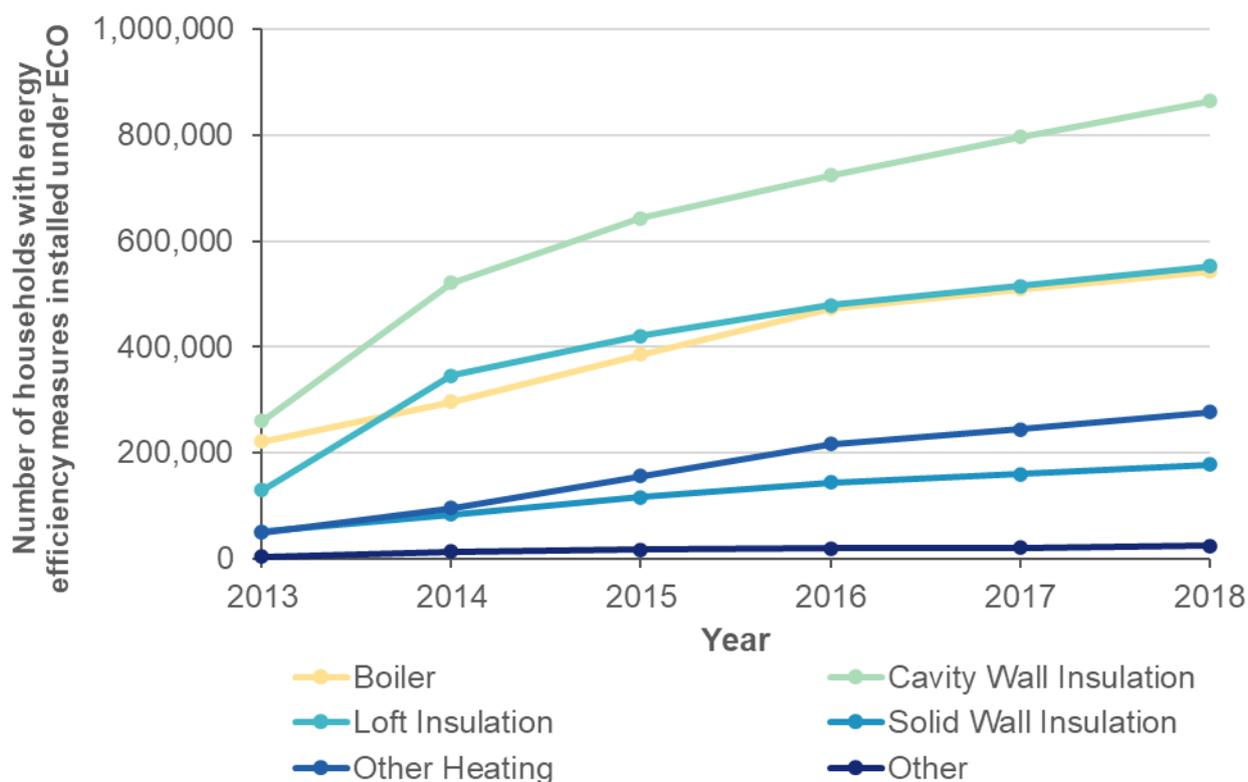
[47] Sampling error is variation in a statistical analysis arising from the unrepresentativeness of the sample.
[48] Note that caution should be used when interpreting year on year changes as the sample is not independent; fuel poverty is based on a two year combined sample.
[49] The 'Other' category includes windows and doors, micro-generation and other insulation

The change in bands can partly be explained by the installation of energy efficiency measures reported in the Household Energy Efficiency National Statistics[50], see Figure 3.2. These statistics show there has been an increase in the cumulative number of energy efficiency measures installed through the Energy Company Obligation between 2013 and 2018, with some measures levelling off in recent years.

**Figure 3.3: As energy efficiency decreases (from A to G) fuel costs tend to increase**
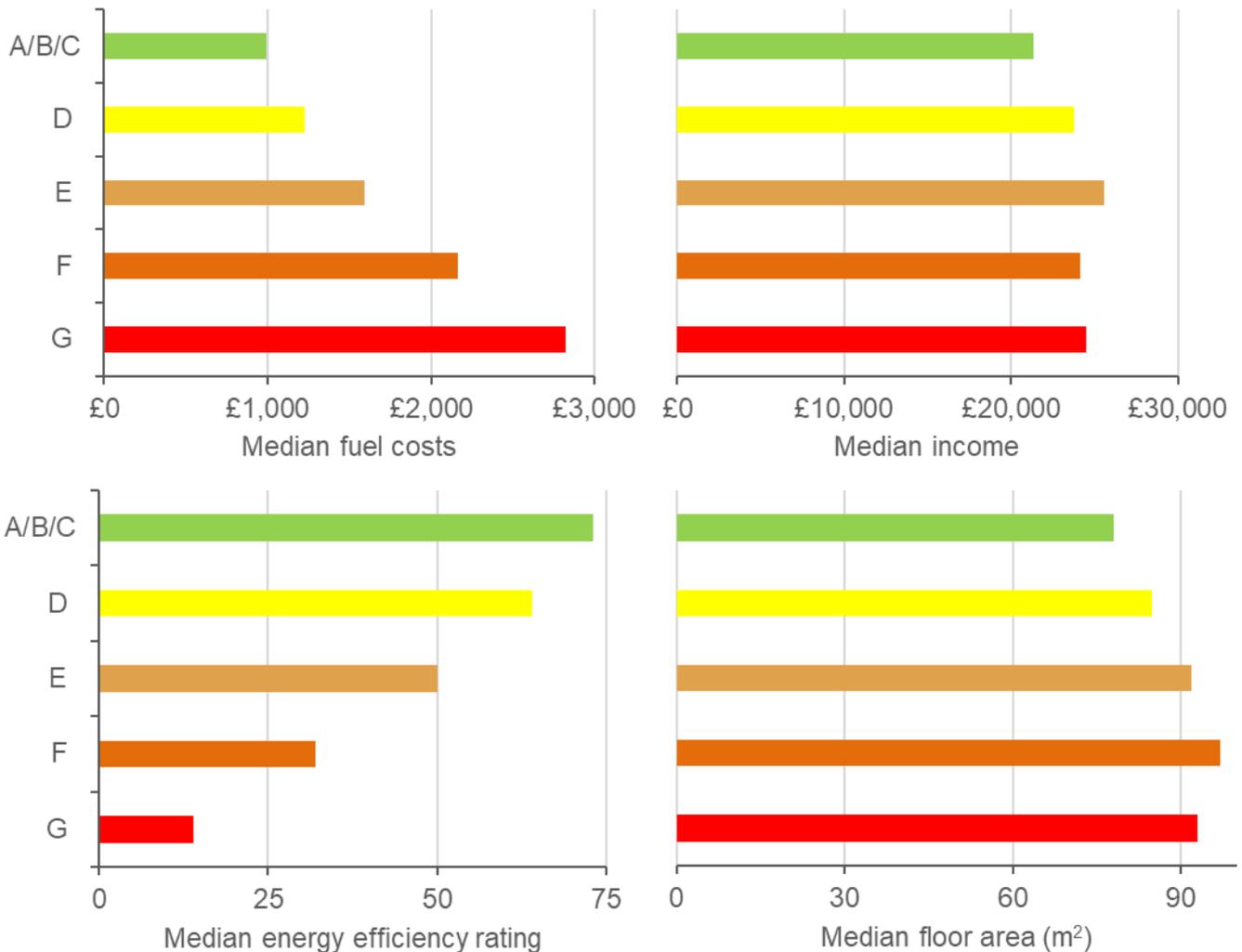
There is a correlation between the energy efficiency rating of a property and the median floor area, with small properties tending to be more energy efficient and have lower fuel costs. The 2019 Annual Fuel Poverty Publication[51] discussed the disparity in income between Band A-C social housing and Band A-C private housing, therefore, it is not simply the case that increasing incomes and floor area are associated with lower energy efficiencies. Further detail on tenure type is discussed in Section 3.2.1.

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[50] https://www.gov.uk/government/collections/household-energy-efficiency-national-statistics
[51] https://www.gov.uk/government/statistics/annual-fuel-poverty-statistics-report-2019

3.1.2 Wall type

Figure 3.4: In 2018 the average gap and proportion of households in fuel poverty is higher for those living in properties with uninsulated walls[52,53]
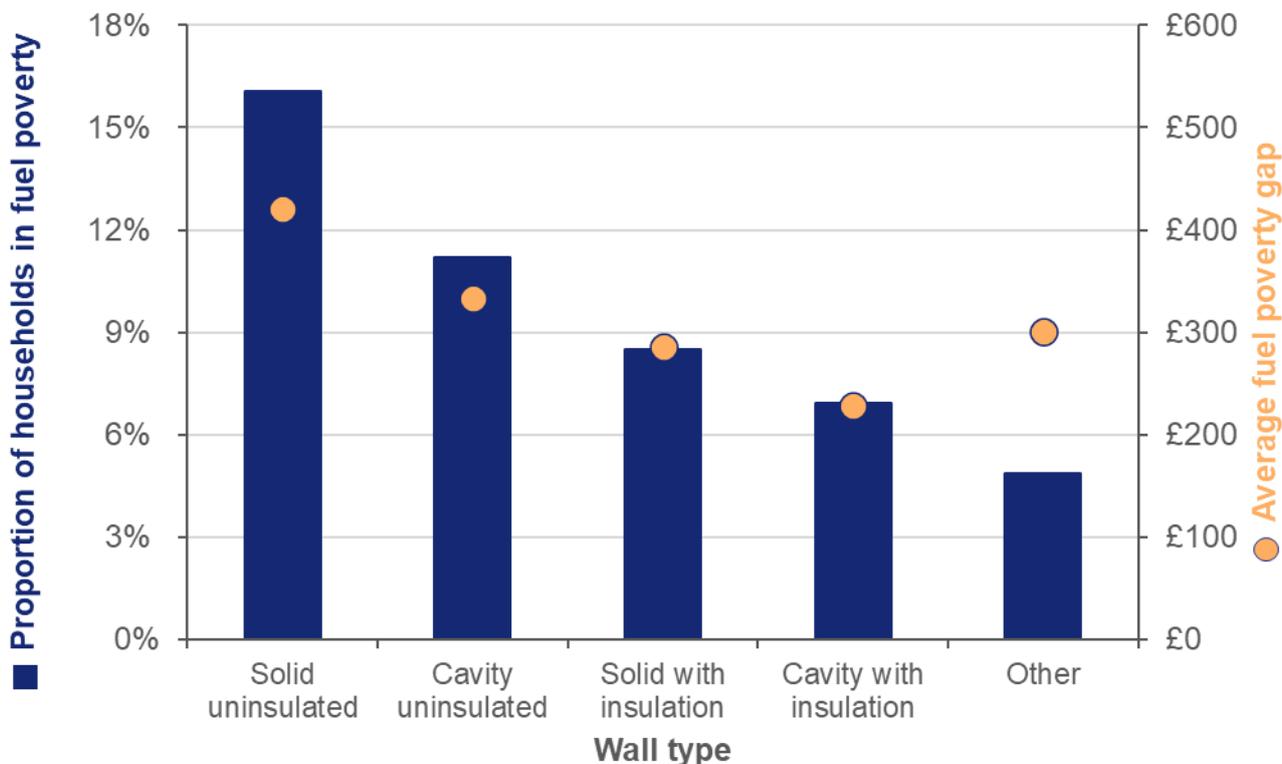
Properties with solid uninsulated walls had the highest proportion of households in fuel poverty (16.1%) with an average gap of £420, whereas those with insulated solid walls are almost half as likely to be fuel poor (8.5%) with an average gap of £286. Properties with cavity walls follow a similar pattern – households living in properties with uninsulated cavity walls are more likely to be fuel poor and have a larger average gap than those households living in properties with insulated cavity walls.

The larger average gaps and higher likelihood of fuel poverty in properties without wall insulation are likely, in part, due to the higher fuel costs associated with a lower level of energy efficiency - insulated walls have a higher median energy efficiency rating than uninsulated. According to figures from the National Energy Efficiency Data-Framework (NEED), properties studied had median percentage cost savings of 7.3 per cent following the installation of cavity wall insulation, and 13.2 per cent from installing solid wall insulation[54].

The proportion of properties with cavity wall insulation increased from 25.3 per cent to 46.9 per cent between 2003 and 2018, whilst the proportion of properties with *uninsulated* cavity walls has decreased from 43.6 per cent to 22.2 per cent over the same period.

[52] The 'Other' category includes dwellings built with stone, pre-fab, timber and other methods.
[53] 'Other' figures based on low sample count (between 10 and less than 30), inferences should not be made based on this figure.
[54] Source: National Energy Efficiency Data-Framework (NEED) report: Summary of analysis 2019
https://www.gov.uk/government/statistics/national-energy-efficiency-data-framework-need-report-summary-of-analysis-2019

3.1.3 Dwelling type

Figure 3.5: Households living in converted flats[55] are more than twice as likely to be in fuel poverty than those living in purpose-built flats
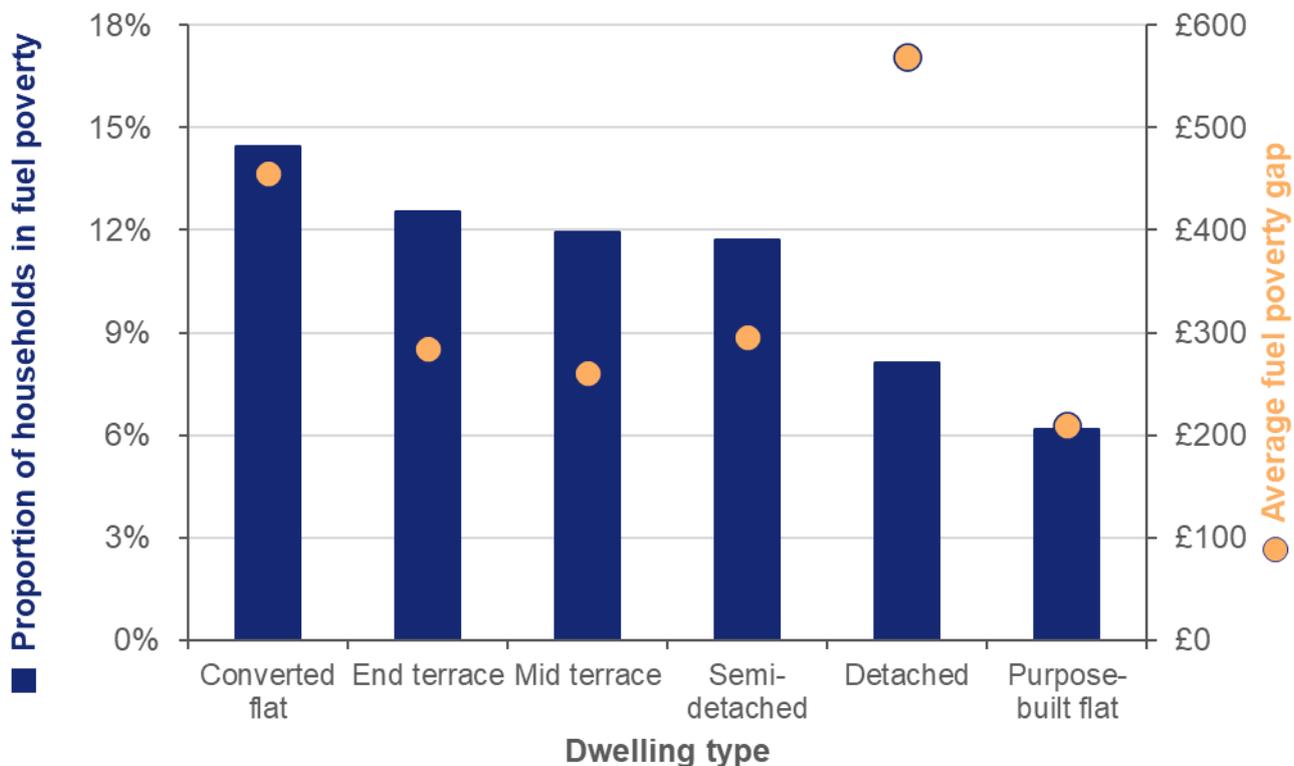

Households living in detached properties have the largest average gap at £569, partly due to the number of exposed walls which contribute to a lower energy efficiency rating and higher fuel costs (see Figure 3.6). Detached properties also tend to be larger, with a median floor area of 121m^2, compared to semi-detached with a floor area of 87m^2 – the next largest.

Households living in converted flats had the highest likelihood of fuel poverty (14.5%), in contrast, those living in purpose-built flats have the lowest likelihood of fuel poverty (6.2%). This is likely due to the difference in median energy efficiency and fuel costs, as seen in Figure 3.6. Purpose-built flats have a median energy efficiency rating of 72, compared to 62 for converted flats, due to the nature of the build, age and standard of the property (more modern properties are built to a higher energy efficiency standard).

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[55] 'Converted flats' also includes a small number of non-residential properties plus flats

Figure 3.6: Purpose-built flats have a median energy efficiency rating 10 points higher than for converted flats
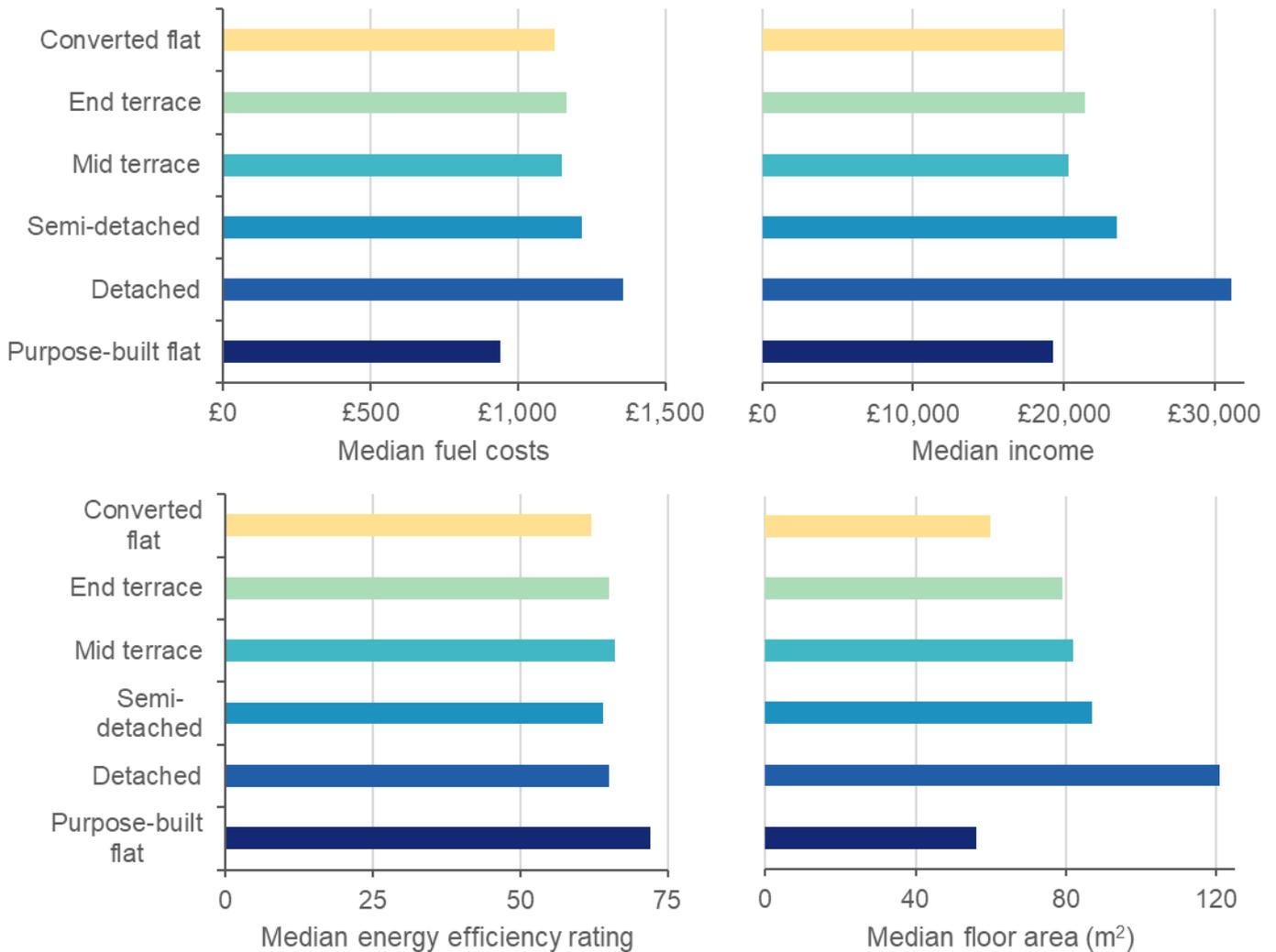
3.1.4 Floor area

Figure 3.7: Larger properties are more likely to be occupied by the fuel poor and properties over 110m^2 have the largest average gap (£511)
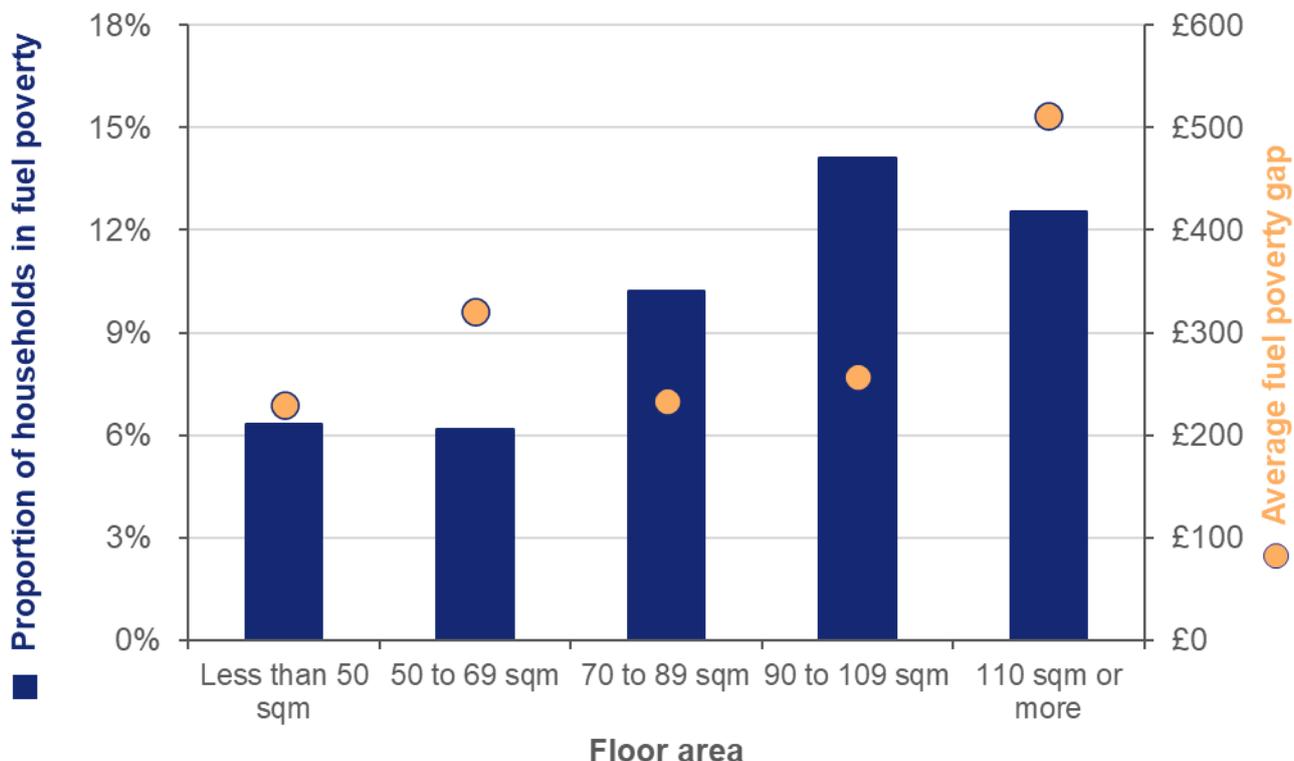
The depth and likelihood of a household being in fuel poverty tends to increase as floor size increases. The likelihood of a household being fuel poor rises from 6.3 per cent for those in the smallest dwellings (less than 50 m^2) to 14.1 per cent for those in dwellings that are 90 to 109 m^2. In general, larger floor areas correlate with higher incomes, lower energy efficiency and resulting higher fuel costs (see Supplementary Table 8). Households living in properties 110 m^2 or more have the highest median fuel costs but the impact is partly offset by this group also having the highest income.

3.1.5 Property age

Figure 3.8: Households living in properties built before 1919 have the highest average gap at £457, more than double the average gap properties built after 2002
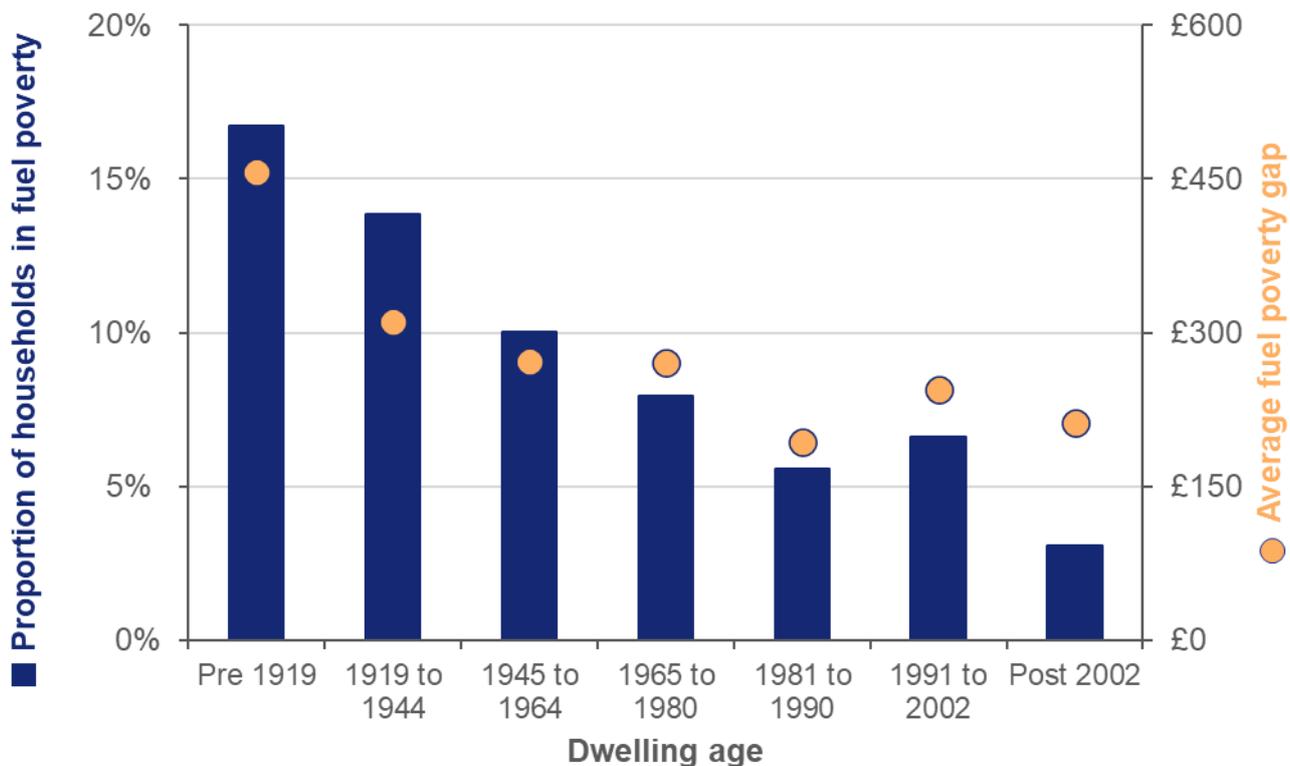
Households living in properties built before 1919 have the highest average gap at £457 and the largest proportion in fuel poverty (16.7%), this is likely due to their lower than average energy efficiency rating and higher than average floor area leading to a higher than average fuel cost (see Supplementary Table 7). This trend broadly correlates to the decreasing gap in more recently built properties as energy efficiency broadly improves with more recent property age.

3.1.6 Main fuel type

Figure 3.9: In 2018 households using electricity as their main fuel for heating have double the likelihood of being in fuel poverty than those using gas
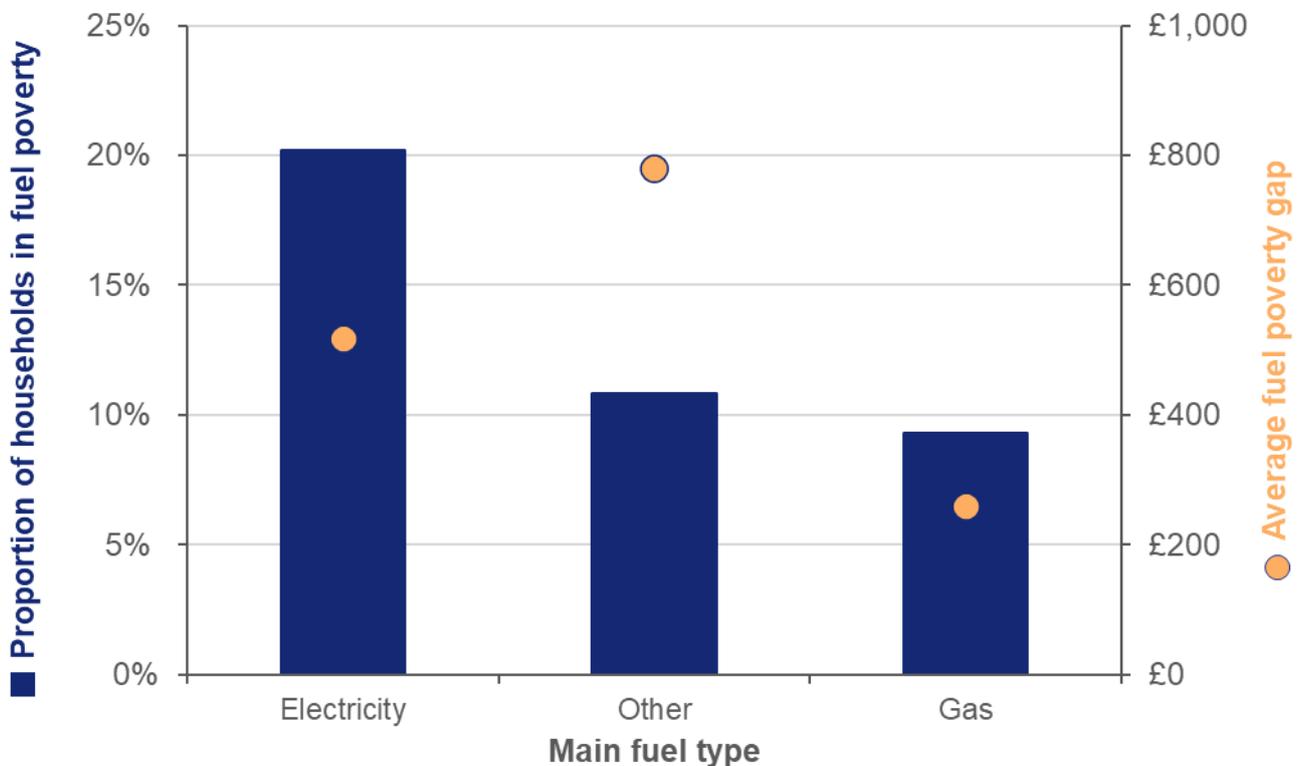

Households using electricity as a main fuel for heating have the highest likelihood of fuel poverty at 20.2 per cent, compared to gas at 9.3 per cent. The 'other' category which consists predominantly of oil or coal[56], has the highest average gap, at £781. Those using electricity as a main fuel for heating make up 7.8 per cent of households in England in comparison to 85.9 per cent using mains gas, however they account for 15.4 per cent of all fuel poor households.

Households using electricity as their main fuel are more likely to be in fuel poverty. This is likely due to the higher fuel expenditure associated with properties with a lower energy efficiency rating and the relatively higher cost of electricity than gas. Households using gas as their main fuel have a median energy efficiency rating equal to the national average (66), whereas households using electricity and other fuels have a lower than average energy efficiency rating (60 and 53 respectively). The median fuel cost for a household using other fuels is highest at £1,581, this is due to a combination of a lower median energy efficiency, larger median floor area and the higher cost of other fuels.

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[56] Other includes heating oil, anthracite nuts, household coal, smokeless fuel, wood, propane, bulk LPG, community heating from boilers/ CHP/ waste heat

3.1.7 Region

Figure 3.10: In 2018, households living in the North West had the highest proportion of fuel poor households the West Midlands had the highest average gap
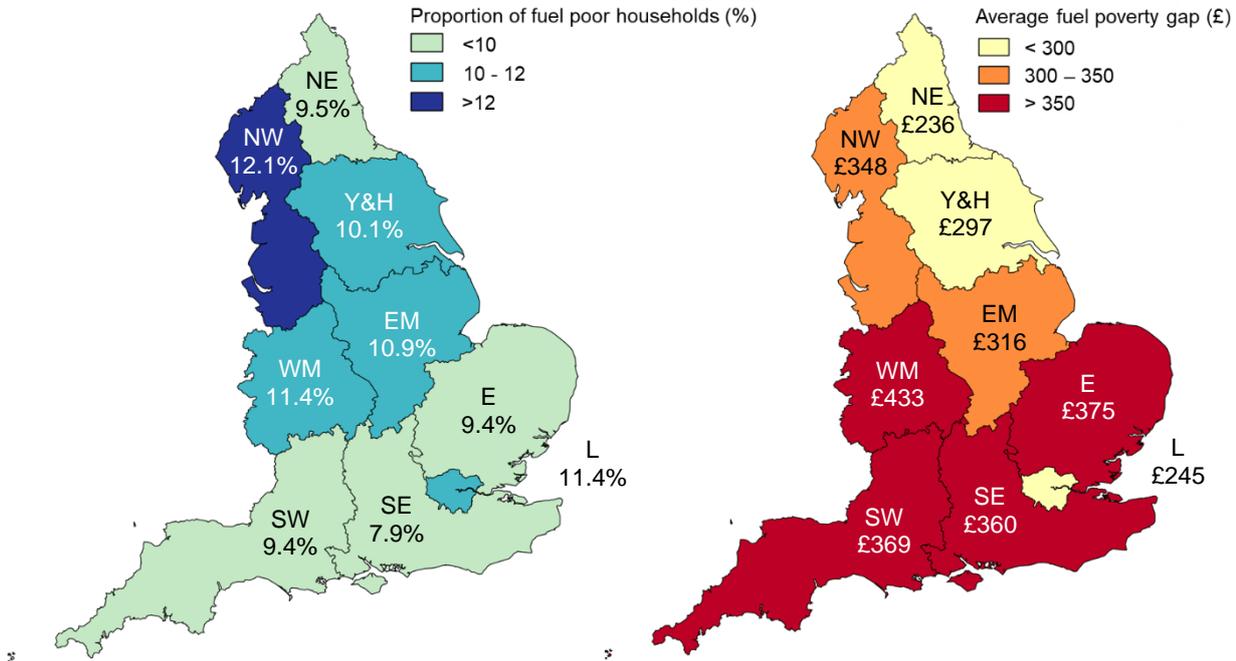
Source: Fuel poverty Statistics for England, 2018
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The North West has the highest prevalence of fuel poverty at 12.1 per cent, compared to 7.9 per cent in the South East. The West Midlands has the highest average gap (£433) and the North East had the smallest average gap (£236).

Figure 3.11: Northern regions tend to have lower than average (median) incomes, whilst southern regions tend to have the largest median floor areas
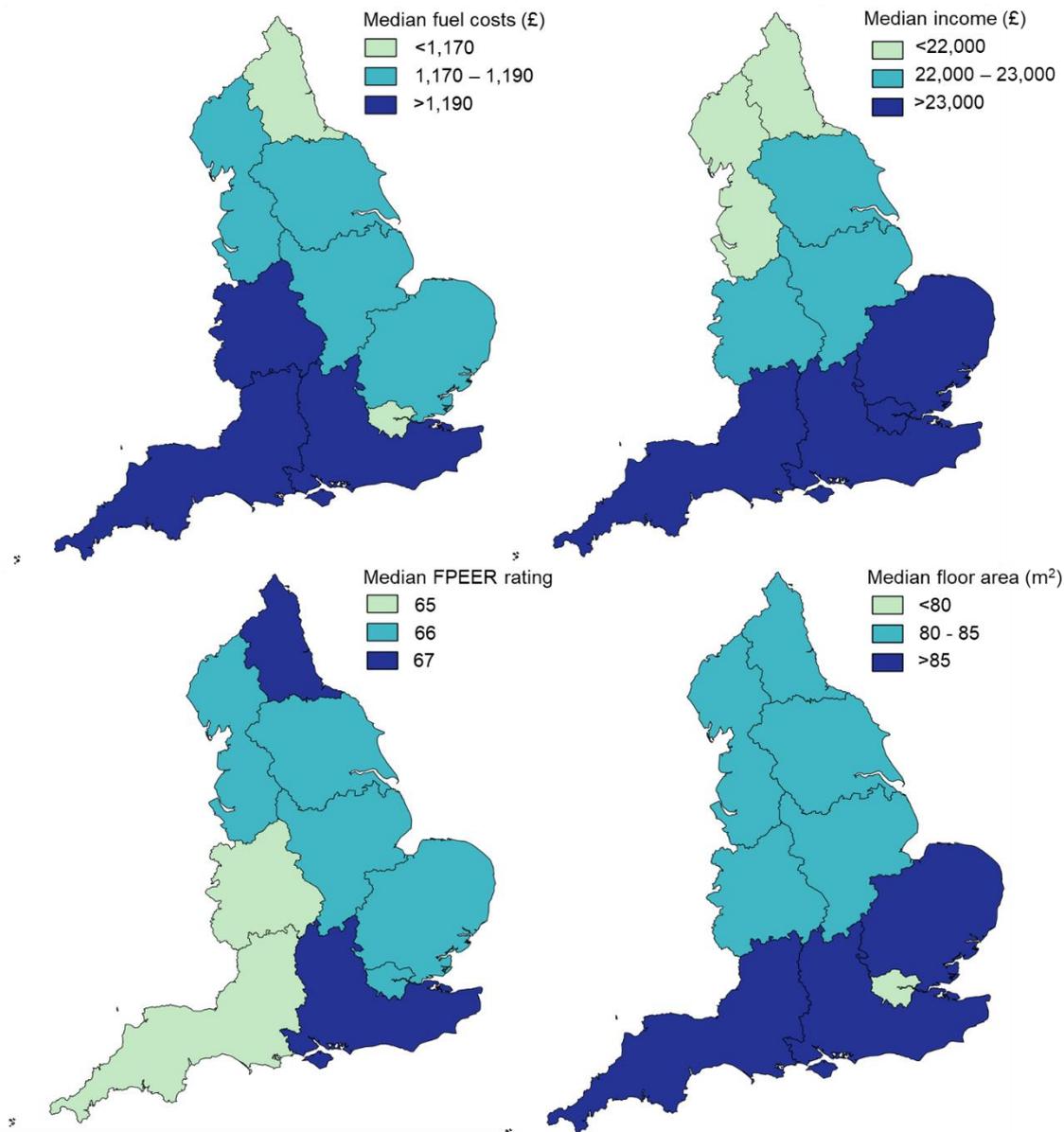
Source: Fuel poverty Statistics for England, 2018
Crown copyright 2020. You may re-use this information (not including logos) free of charge in any format or medium, under the terms of the Open Government License. Visit ww.nationalarchives.gov.uk/doc/opengovernment-license/version/r/ or write to the Information Policy Team, The National Archives, Kew, London, TW9 4DU, or email: psi@nationalarchives.gsi.gov.uk.

Median incomes, the size of properties and fuel costs tend to differ depending on the region, however, the median energy efficiency ratings of properties are roughly similar. In general, households living in northern regions tend to have a higher likelihood of being in fuel poverty which is likely due to lower than average incomes. Whereas households in southern regions tend to have higher average gaps which is likely due to their larger than average properties resulting in higher than average fuel costs.

The West Midlands has both a higher than average likelihood of fuel poverty (11.4%) and the largest average gap (£433). This is likely due to higher than average fuel costs, combined with lower than average incomes.

3.1.8 Rurality and gas grid connection

Figure 3.12: In 2018, households living in rural areas are most likely to be in fuel poverty and have the largest fuel poverty gap
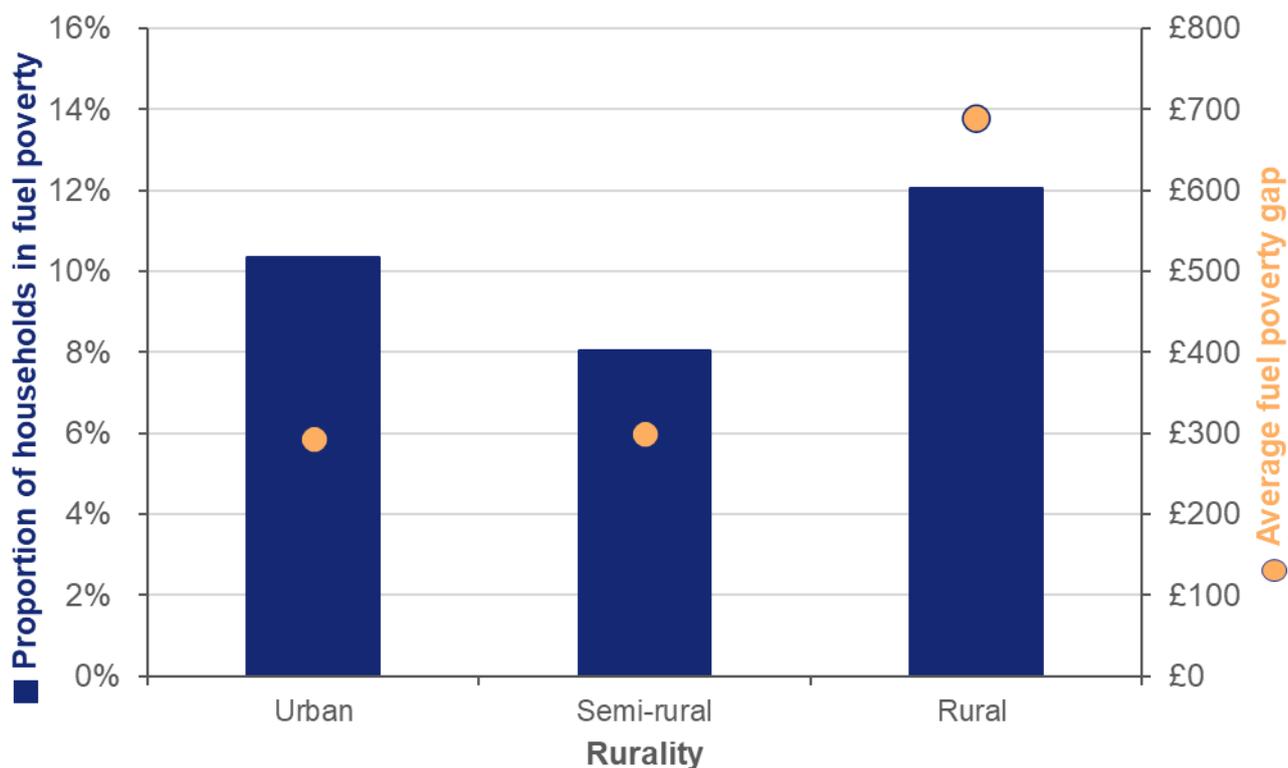

Households living in rural areas are most likely to be in fuel poverty (12.0% of rural households are in fuel poverty) and have the largest fuel poverty gap at £690. However, 82.3 per cent of the total number of fuel poor households are in urban areas (81.6% of *all* households are in urban areas).

Households living in rural areas have, on average, less energy efficient and larger properties but higher than average median incomes (see Supplementary Table 4), this is likely to somewhat offset the impact of their higher fuel costs. Households living in urban areas have the lowest median income which is likely why their incidence of fuel poverty is higher than those living in semi-rural areas.

Rural properties have a higher incidence of being off the gas grid – 56.2 per cent are off gas grid, compared to just 8.9 per cent of urban properties. Of households living in properties not on the gas grid, 16.0 per cent are fuel poor compared to 9.4 per cent on the gas grid[57].

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[57] Table 10, Fuel Poverty detailed tables 2020: https://www.gov.uk/government/statistics/fuel-poverty-detailed-tables-2020

Figure 3.13: Fuel poor households are more likely to be off the gas grid, this is most evident in the socially rented sector
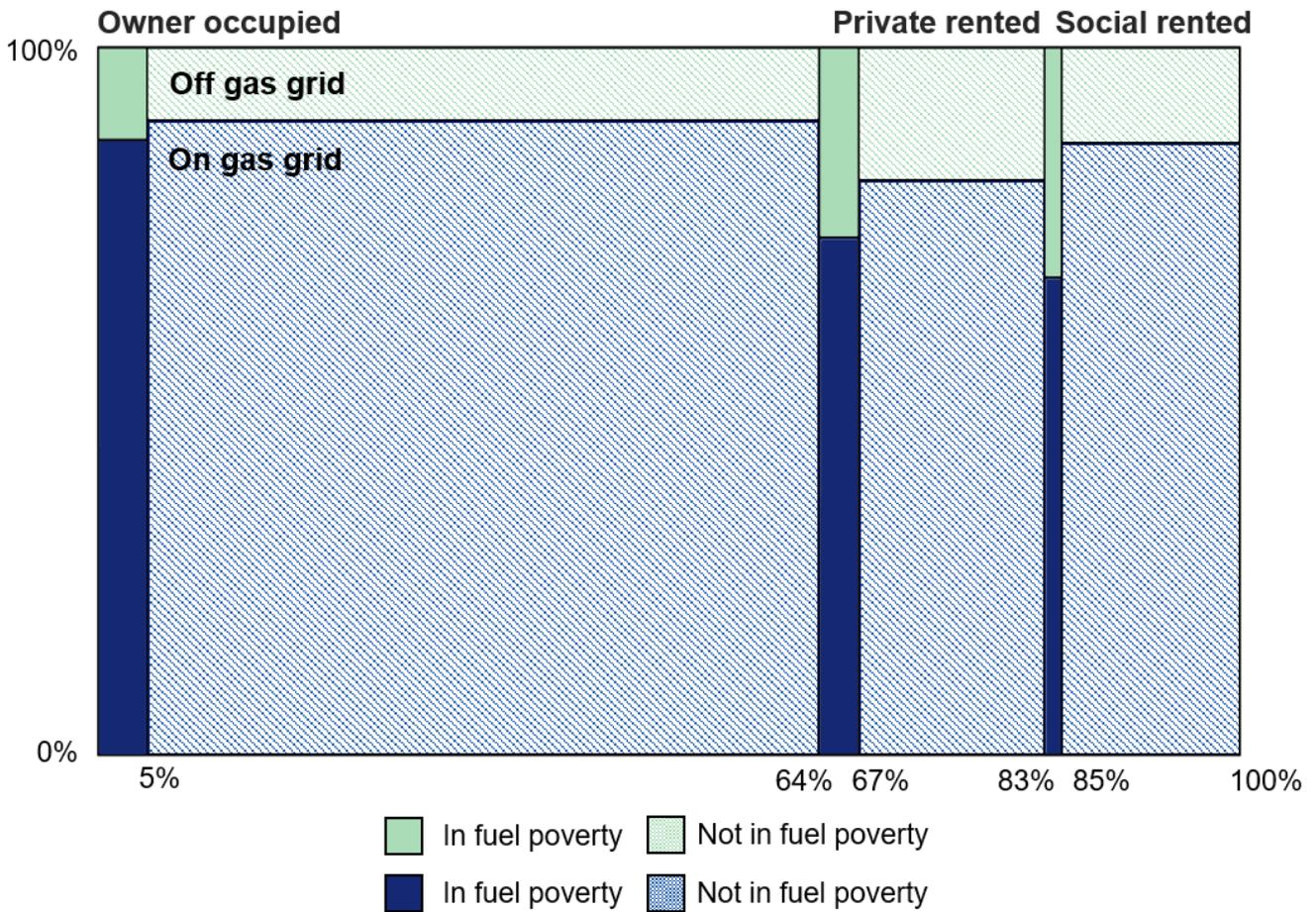
Area is equivalent to the proportion of households in that group

As discussed above, fuel poor households are more likely to be off the gas grid than non-fuel poor households. This most evident in the social rented and private rented sector where 32.5 per cent and 26.7 per cent of fuel poor households are off gas grid, respectively.

More details on tenure type can be found in Section 3.2.1.

3.2 Household characteristics

3.2.1 Tenure

The differences in fuel poverty prevalence and the average gap by tenure reflect both the nature of the housing stock and household characteristics typical to a households' tenure.

Figure 3.14: The proportion of households in fuel poverty was highest for private renters at 17.7 per cent whilst owner occupiers have the highest average gap at £385
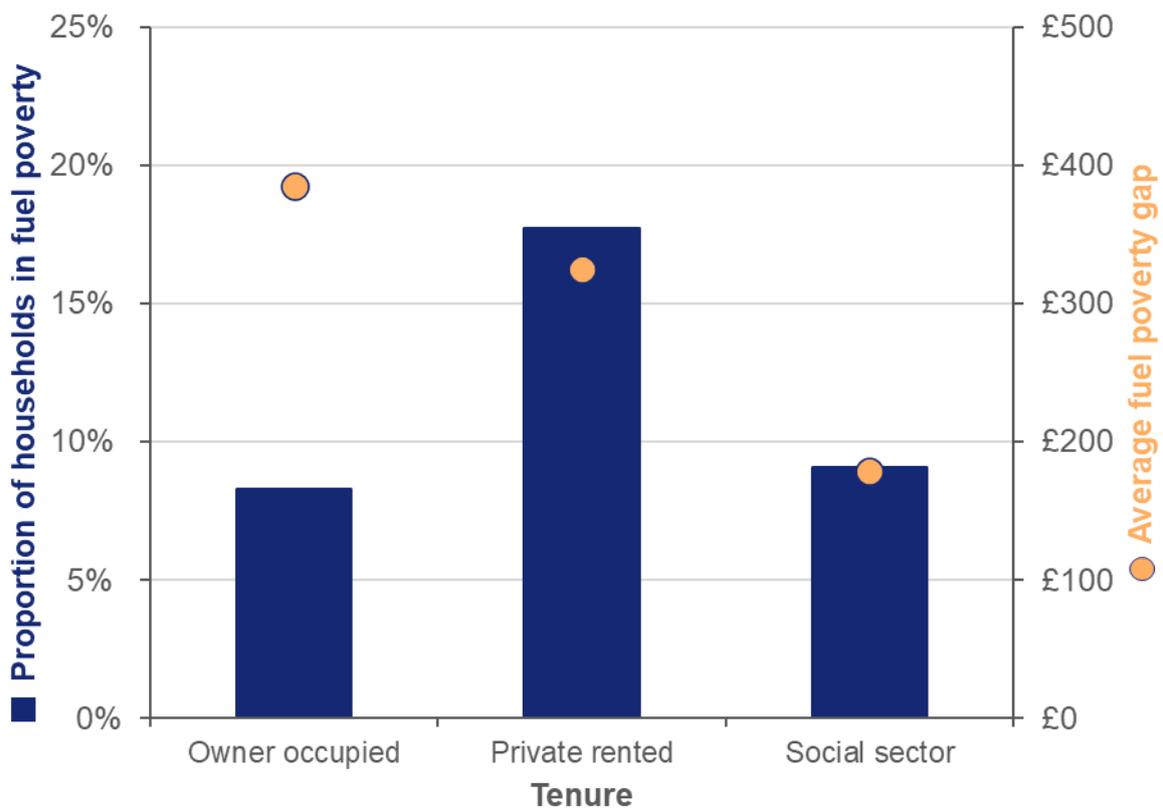
Owner occupiers that own their home outright are less likely to be fuel poor (7.6%) than those with a mortgage (9.1%). This is partly due to their minimal housing costs.

Figure 3.15: There's a higher proportion of Band A, B and C properties that are socially rented compared to owner occupied and privately rented properties
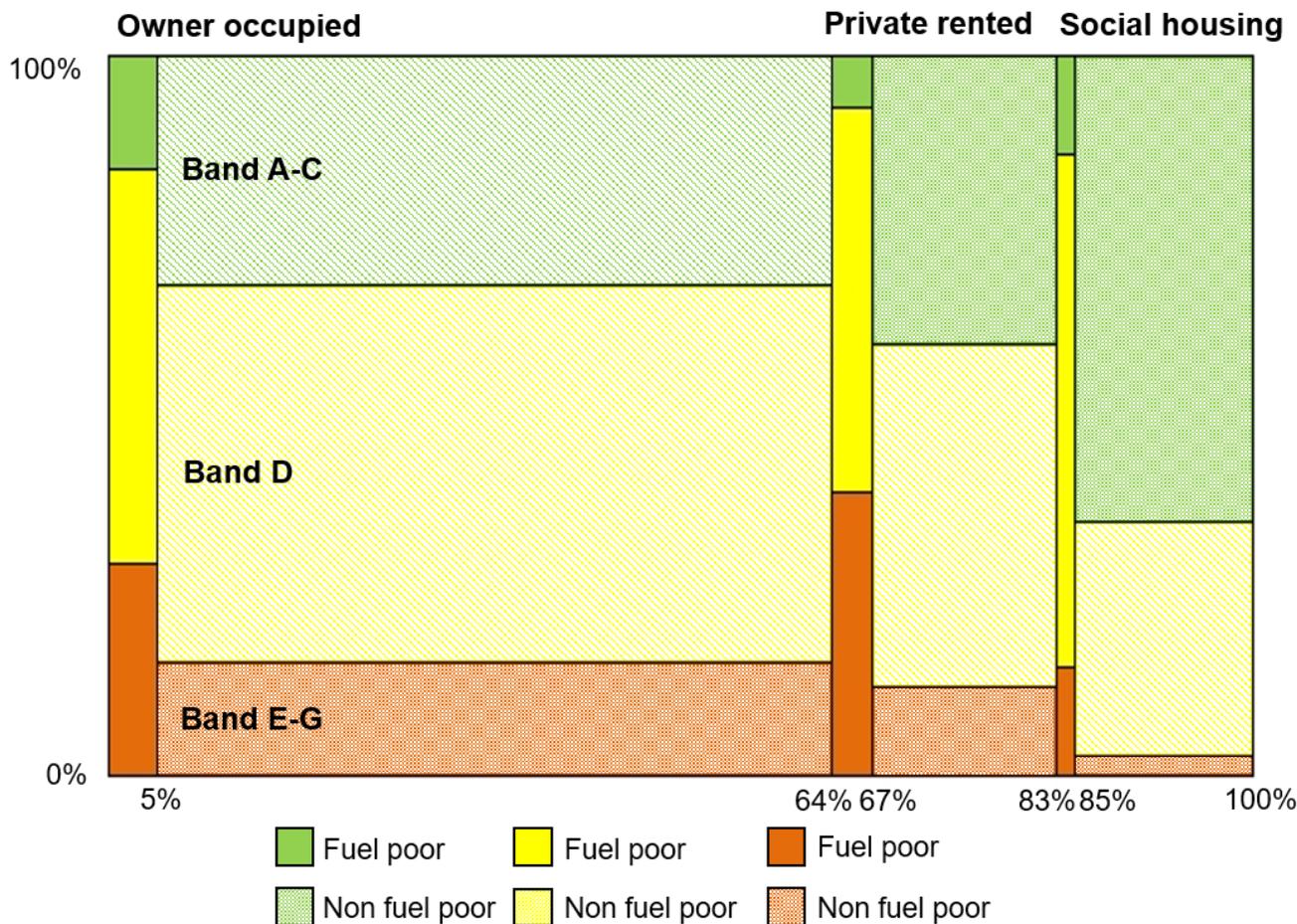
Area is equivalent to the proportion of households in that group

The majority (51.3%) of fuel poor households are owner occupied, 33.6 per cent privately rent and 15.1 per cent live in social housing. As a comparison, 63.6 per cent of all households are owner occupied, 19.4 per cent privately rent and 17.0 per cent live in social housing.

The distribution of energy efficiency bands differ markedly depending on whether households are classed as fuel poor or not. Almost all socially rented non-fuel poor properties (97.5%) are Band D or above, compared to 87.7 per cent of privately rented non-fuel poor properties and 84.3 per cent of owner occupied non-fuel poor. In comparison, only 85.0 per cent of socially rented fuel poor properties are Band D or above, 60.5 per cent of privately rented fuel poor and 70.7 per cent of owner occupied fuel poor.

Figure 3.16: Social housing properties tend to be more energy efficient resulting in lower energy costs
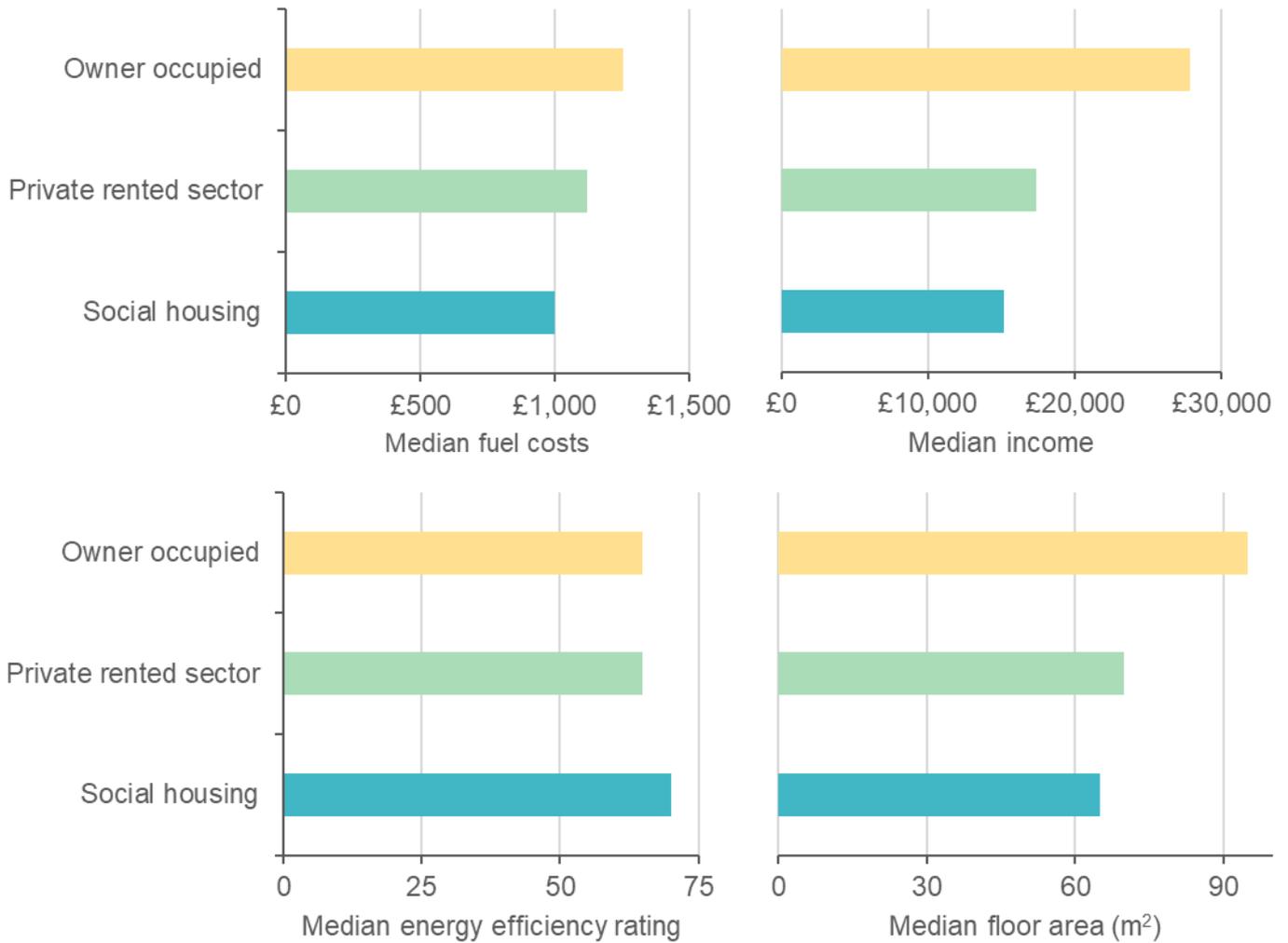
As seen in Figure 3.16 social housing properties tend to be more energy efficient resulting in lower energy costs, and therefore, limiting the prevalence and depth of fuel poverty within these property types. Households that live is social housing are more likely to pay their fuel bills by prepayment meter. Owner occupied and private rented properties tend to be less energy efficient resulting in higher energy costs and a higher average gap. The median income of owner occupiers is significantly larger than that of private renters and social renters, this is likely the reason there is a lower prevalence of fuel poverty in this group.

3.2.2 Household composition[58]

Figure 3.17: Single parents have the highest proportion of households in fuel poverty and couples over 60 have the highest average gap
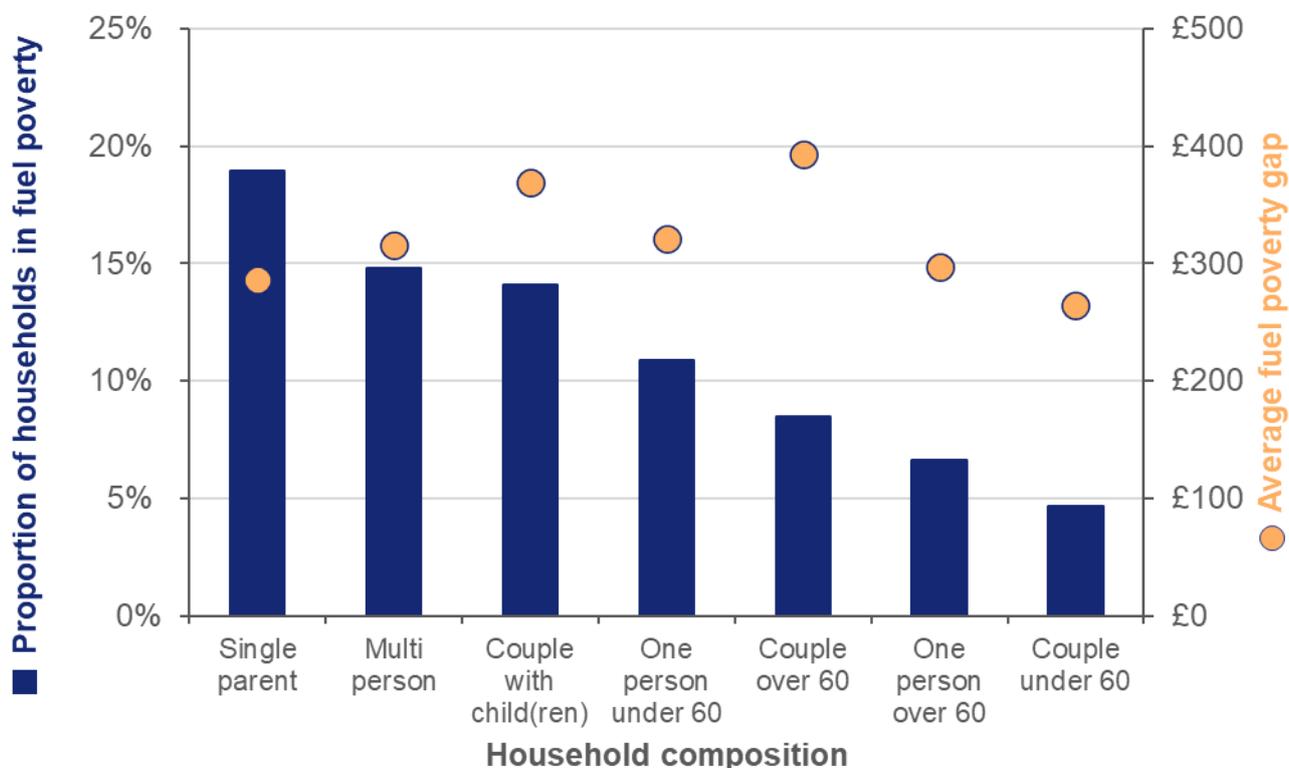
Single parent households have consistently had the highest proportion of households in fuel poverty (see Trends Table 11). In 2018, 18.9 per cent of single parent households were fuel poor and had an average gap of £286, likely due to their considerably lower median income. Couples over 60, however, had the highest average gap (£393) despite having a lower prevalence of fuel poverty (8.5%), this is likely due to their larger median floor area and higher median fuel costs. Couples under 60 were the least likely to be in fuel poverty (4.6%) with an average gap of £265 likely due to their high median income.

Of all single parent households in fuel poverty, around a quarter (23.9%) live in social housing (local authority and housing association) which has higher energy efficiency ratings thus making them more energy efficient. This partly explains why their average gap is lower than the national average.

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[58] 'Couple with child(ren)' – Couple with dependent child(ren); 'Couple over 60' – Couple, no dependent child(ren) aged 60 or over; 'Couple under 60' – Couple, no dependent child(ren) under 60; 'Single parent' – Lone parent with dependent child(ren); 'One person over 60' – one person aged 60 or over; 'One person under 60' – one person; under 60; 'Multi-person' – Other multi-person households

Figure 3.18: Single parent households have considerably lower median income than average
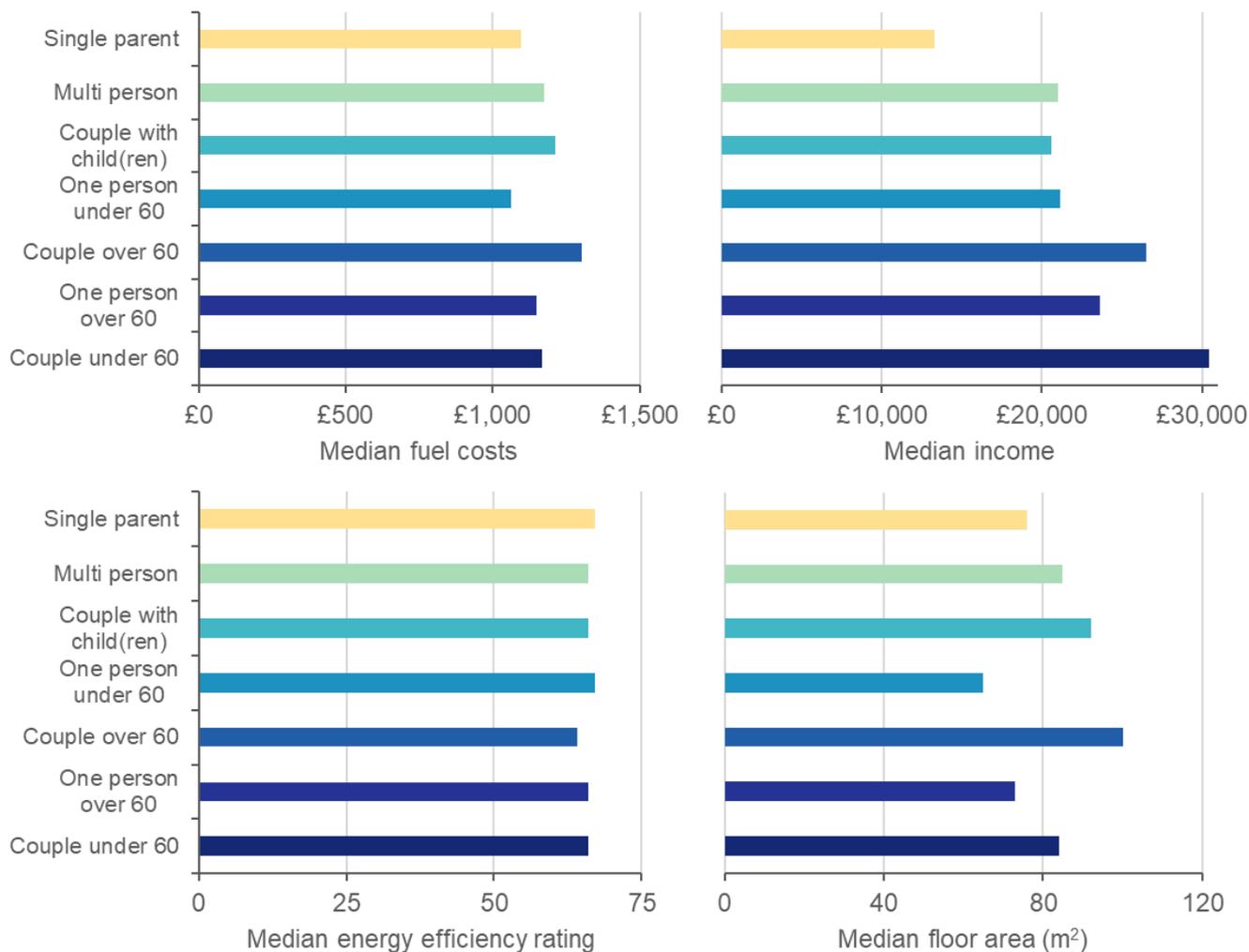
In 2018, 43.5 per cent of all fuel poor households had one or more dependent children (1.045 million households). This is 4.5 per cent of all households and 15.3 per cent of all households with children[59].

Households that pay by prepayment meter have historically had the highest likelihood of fuel poverty of the payment types, as discussed in Section 2.3.5 and Section 3.4. Single parent households have a higher likelihood of paying for their electricity by prepayment meter (38.9%) and will have therefore benefitted from the prepayment cap, however this group continue to have the lowest median income.

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[59] Table 20, detailed tables: https://www.gov.uk/government/statistics/fuel-poverty-detailed-tables-2019

3.2.3 Ethnicity[60]

Data are based on the household reference person (HRP)[61]. Some households will contain members from more than one ethnic group, which is not reflected in this analysis.

Figure 3.19: Households with an ethnic minority HRP have a higher likelihood of being in fuel poverty but a slightly lower average gap than households with a white HRP
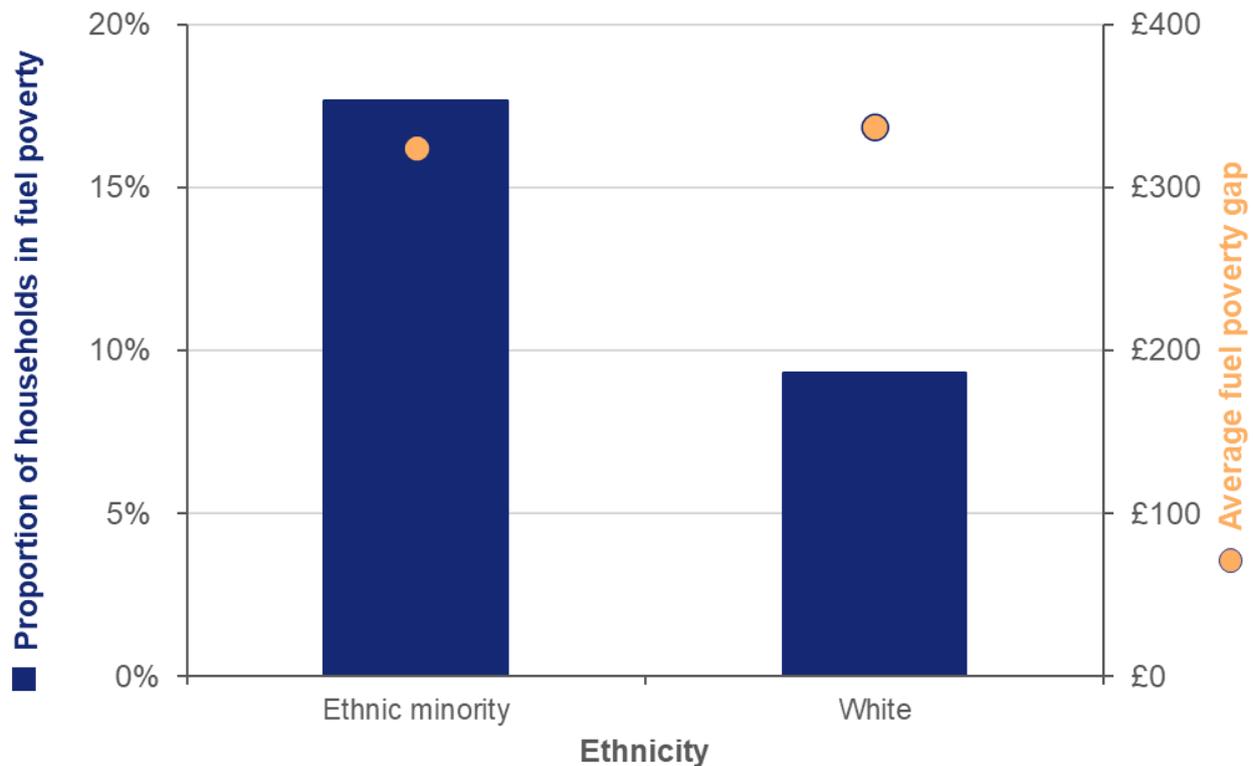
In 2018, the median income for ethnic minority households was, on average, lower than the income for white households which partly explains their higher likelihood of fuel poverty[62]. However, ethnic minority households tend to have a higher proportion living in social housing (25% compared to 16% for white households) and tend to live in more energy efficiency properties with an energy efficiency rating of 68 compared to 66 for white households which may explain their lower average gap.

This data is also published as part of the Ethnicity Facts and Figures collection published by the Cabinet Office: https://www.ethnicity-facts-figures.service.gov.uk/

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[60] In the 2011 census, 86 per cent of England and Wales said they were White and 14 per cent were from an ethnic minority. Further information on this can be found here https://www.ethnicity-facts-figures.service.gov.uk/uk-population-by-ethnicity.

[61] 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 is taken as the HRP. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/705821/2016-17_EHS_Headline_Report.pdf

[62] See Table 16 in the supplementary tables: https://www.gov.uk/government/statistics/fuel-poverty-supplementary-tables-2020

3.2.4 Age

Age can be analysed in two different ways:

- Age of the *oldest* member of the household which identifies younger households.
- Age of the *youngest* member of the household which identifies older households.

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 is between 16 and 24 have the highest likelihood of being in fuel poverty (13.9%), with an average gap of £269
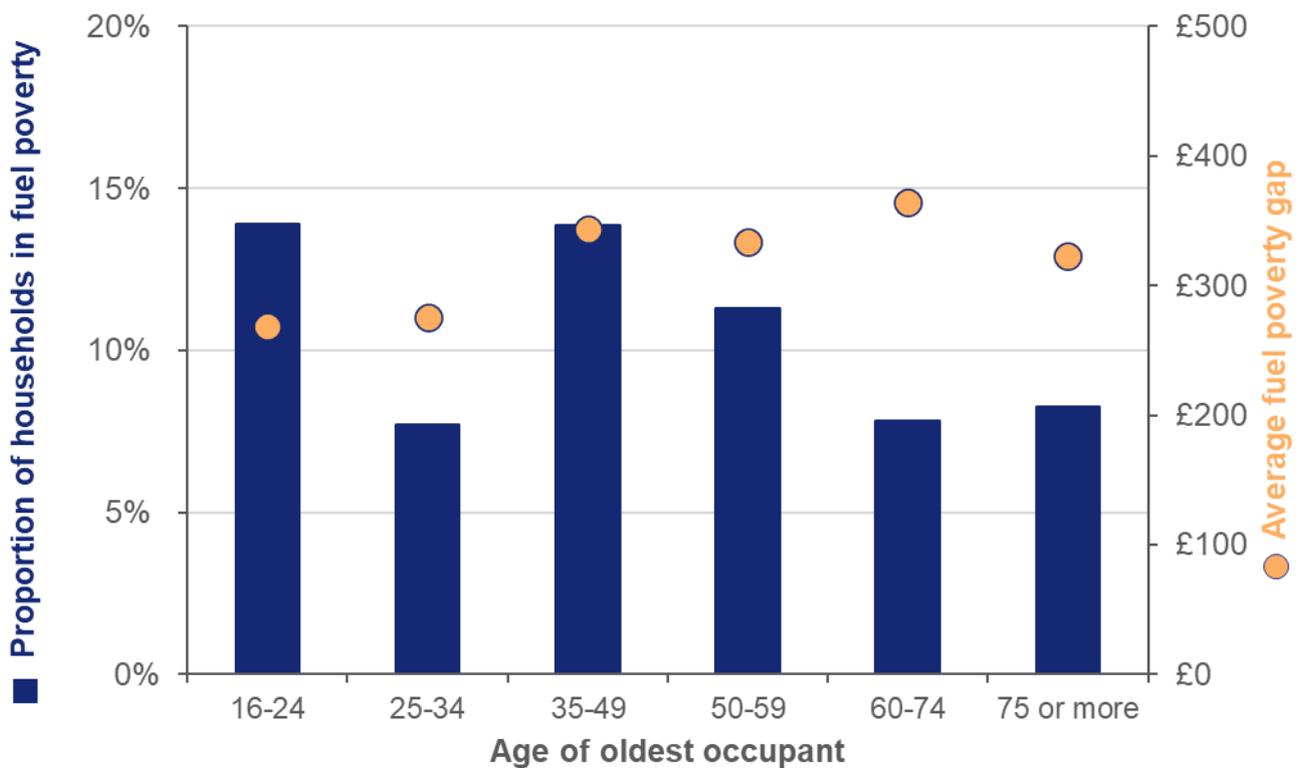
In 2018, 13.9 per cent of households where the oldest member is aged 16 to 24 years were fuel poor, which is likely to be a result of lower incomes for younger households. The youngest households had a median income of around £13,217 compared to £23,212 for *all* households[63].

---

[63] See Table 15 in the supplementary tables: https://www.gov.uk/government/statistics/fuel-poverty-supplementary-tables-2020

Figure 3.21: Households where the age of the youngest member is 15 and younger have the highest likelihood of being in fuel poverty
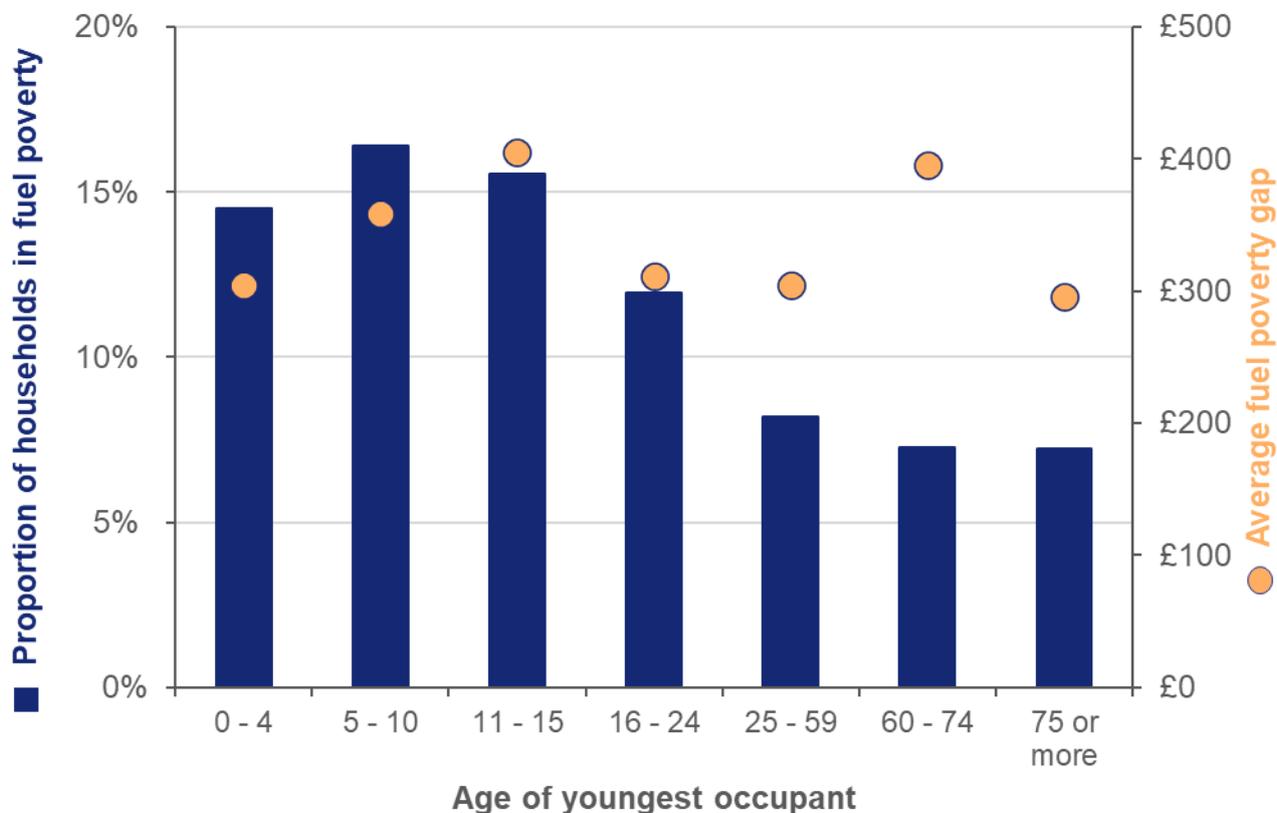
Households with children (where the youngest member is 15 years or under) have the highest prevalence of fuel poverty which is likely to be as a result of having lower than average income and higher fuel costs.

Households where the occupants were 60 or over have seen a decrease in their likelihood of fuel poverty between 2003 and 2018[64]. The Warm Home Discount[65] (introduced in 2011) and the Winter Fuel Payment[66] (which was introduced in 1997) are likely to have had an effect.

3.3 Household income

3.3.1 Employment status

Data are based on the household reference person (HRP)[67]. Some households will contain members with a mixture of employment statuses, which is not reflected in this analysis.

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[64] See Table 12 in the trends tables: https://www.gov.uk/government/statistics/fuel-poverty-trends-2020
[65] https://www.gov.uk/the-warm-home-discount-scheme
[66] https://www.gov.uk/winter-fuel-payment
[67] Please note the definition of HRP (footnote 59) would suggest there could be a bias in the figures towards those with higher incomes.

Figure 3.22: Households with an unemployed HRP have the largest proportion of households in fuel poverty at 30.2 per cent while households with a HRP in full time work have the lowest (7.4%)[68]
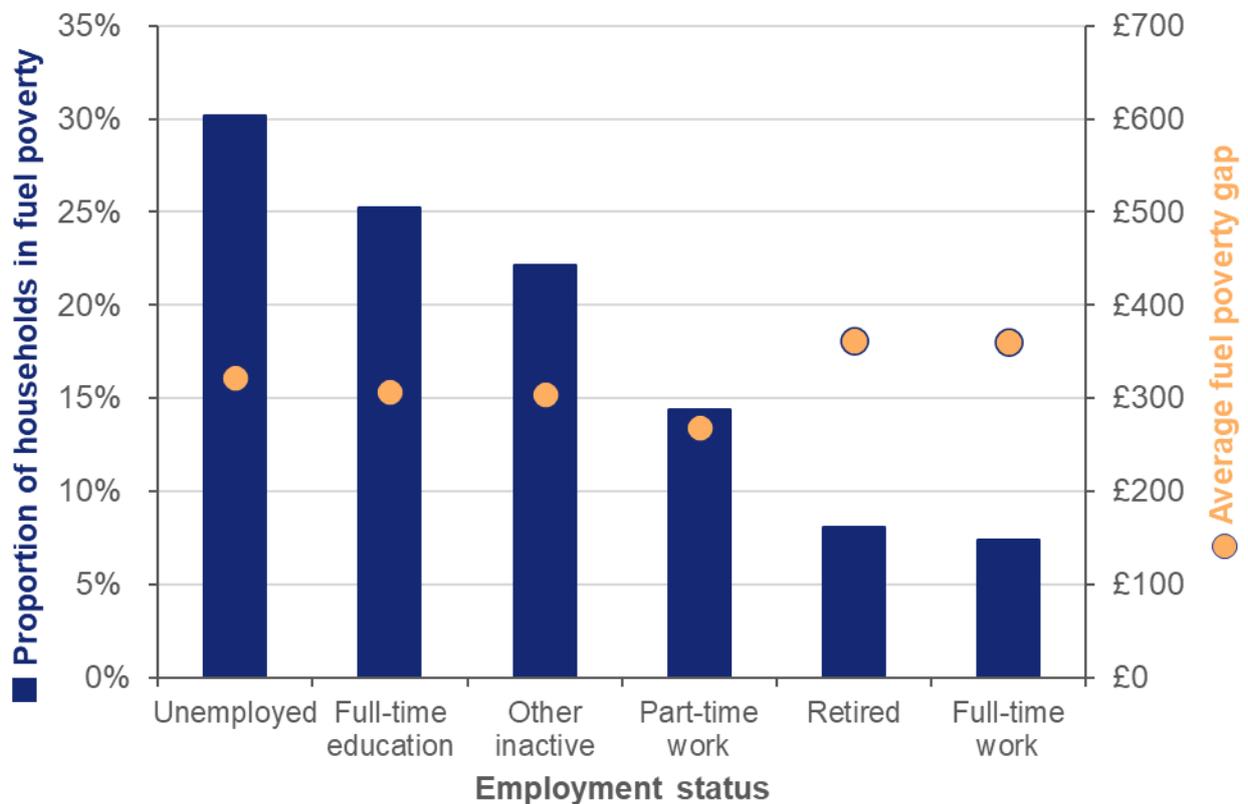
Figure 3.22 shows that although those in full-time work and retired have the lowest proportions that are classed as fuel poor (7.4% and 8.1% respectively), they have the highest average gaps. Whereas households where the HRP is unemployed have the highest likelihood of being in fuel poverty (30.2%), but a lower than average gap of £322.

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

Figure 3.23: Households where the HRP is unemployed have the lowest median income and the lowest median fuel costs
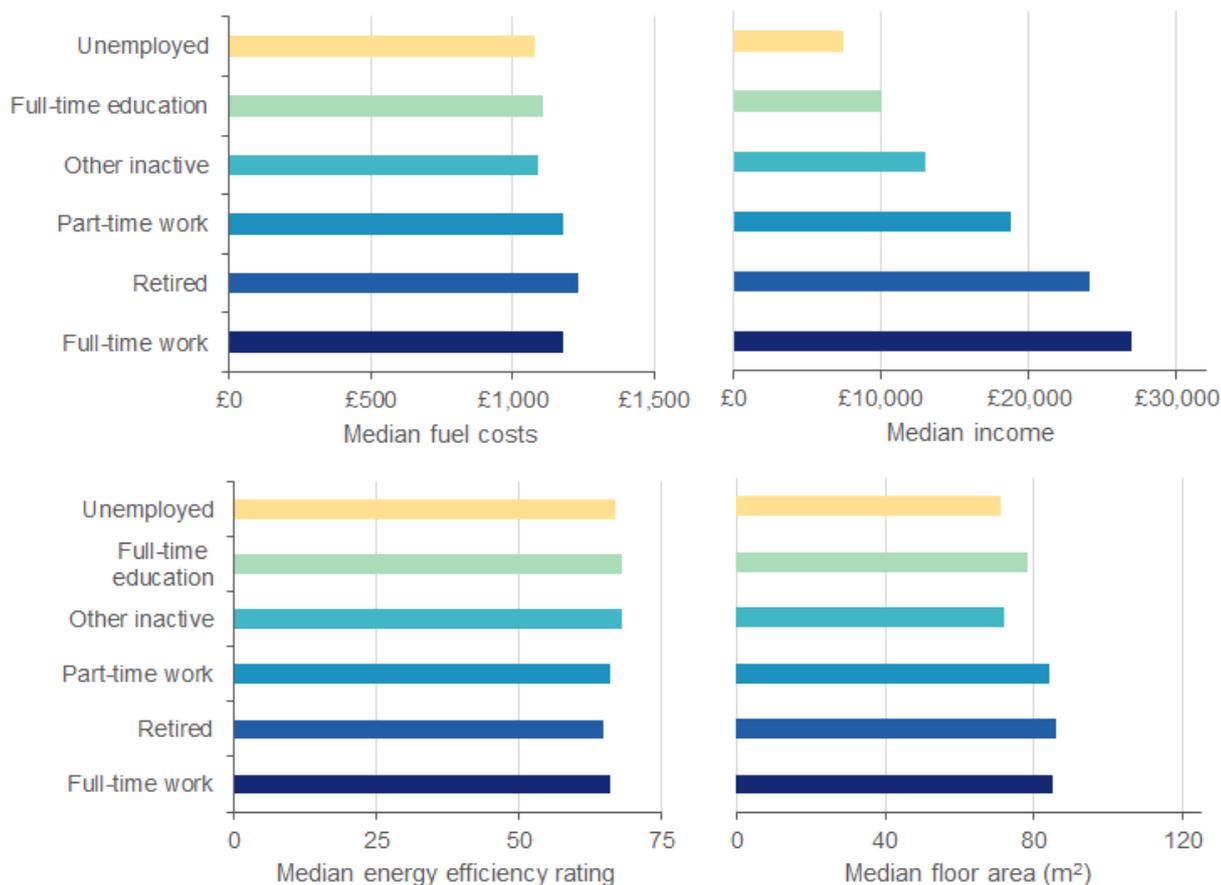
The median income for households tends to be negatively correlated with the proportion of households in fuel poverty. However, the average gap does not follow the same pattern. For example, households where the HRP is in full time work have the lowest proportion in fuel poverty (7.4%) and a higher than average gap (£361). This is likely due to the interaction between income and median fuel costs[69].

Households where the HRP is unemployed are more likely to pay for their electricity by prepayment meter (52.5%) and will have therefore benefitted from the prepayment cap, however this group continue to have the lowest median income.

3.4 Fuel payment type

Households that pay by prepayment meter have historically had the highest likelihood of fuel poverty of the payment types, however the prepayment cap has had a positive impact and in 2018 households paying by standard credit are more likely to be fuel poor (see Section 3.4.1 and 3.4.2 for more detail).

The analysis contained in this section explores the difference between fuel payment methods and fuel poverty. As such, it includes the impact of the prepayment price cap that came into force in April 2017.

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[69] See Table 17 in the supplementary tables: https://www.gov.uk/government/statistics/fuel-poverty-supplementary-tables-2020

An enquiry by the Competitions Market Authority (CMA)[70] on energy markets resulted in Ofgem introducing the prepayment cap. The cap is a set level of payment for those using prepayment meters and suppliers can then charge up to this as their highest price.

For example, for *all* households that pay for electricity by prepayment, their median fuel costs in 2018 were £1,066. This is around £127 lower than the median fuel costs in 2016 (before the prepayment price cap was introduced), which was £1,193 (in real terms)[71].

As discussed in Chapter 1, and can be seen in Figure 3.24, data relating to the fuel poverty is a combination of two English Housing Survey (EHS) years of data. The prepayment price cap was introduced at the beginning of the 2017-18 survey year, and as a result this is the first year the full impact of the cap can be seen.

Figure 3.24: English Housing Survey and fuel poverty data
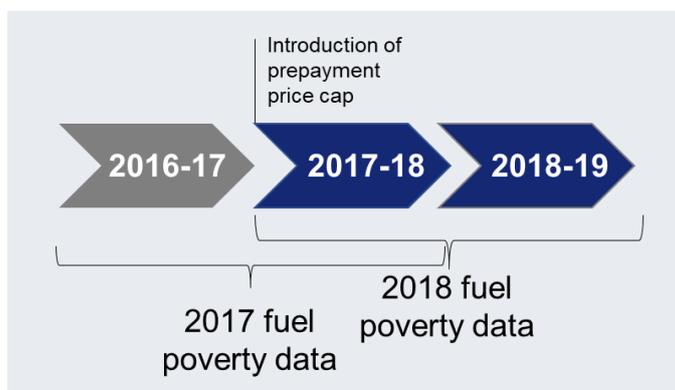
The proportion of fuel poor households using an electricity prepayment meter is around 19.7 per cent compared to 31.4 per cent in 2016. The same applies to gas which is 14.2 per cent compared to 25.0 per cent in 2016. This is likely to be as a result of the effect of the prepayment cap, pushing households who pay by prepayment meters out of fuel poverty.

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[70]https://www.ofgem.gov.uk/energy-price-caps/about-energy-price-caps/price-my-energy-bill-capped/prepayment-energy-price-cap
[71] Figures based required energy bills rather than actual spending (see Chapter 1 for further information)

3.4.1 Electricity payment method

Figure 3.25: Households that pay for their electricity by standard credit have the highest proportion in fuel poverty and the highest fuel poverty gap
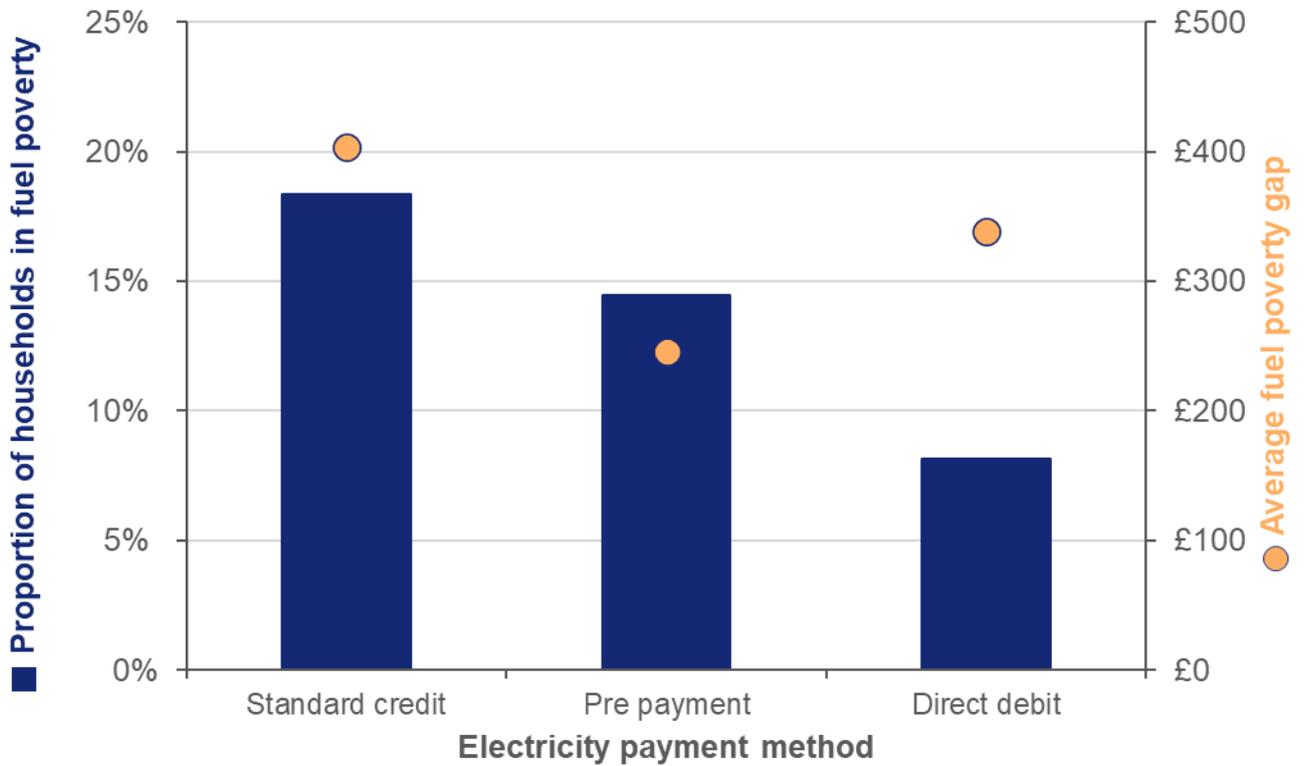

Figure 3.26: Households that pay for their electricity by prepayment no longer have the highest proportion in fuel poverty
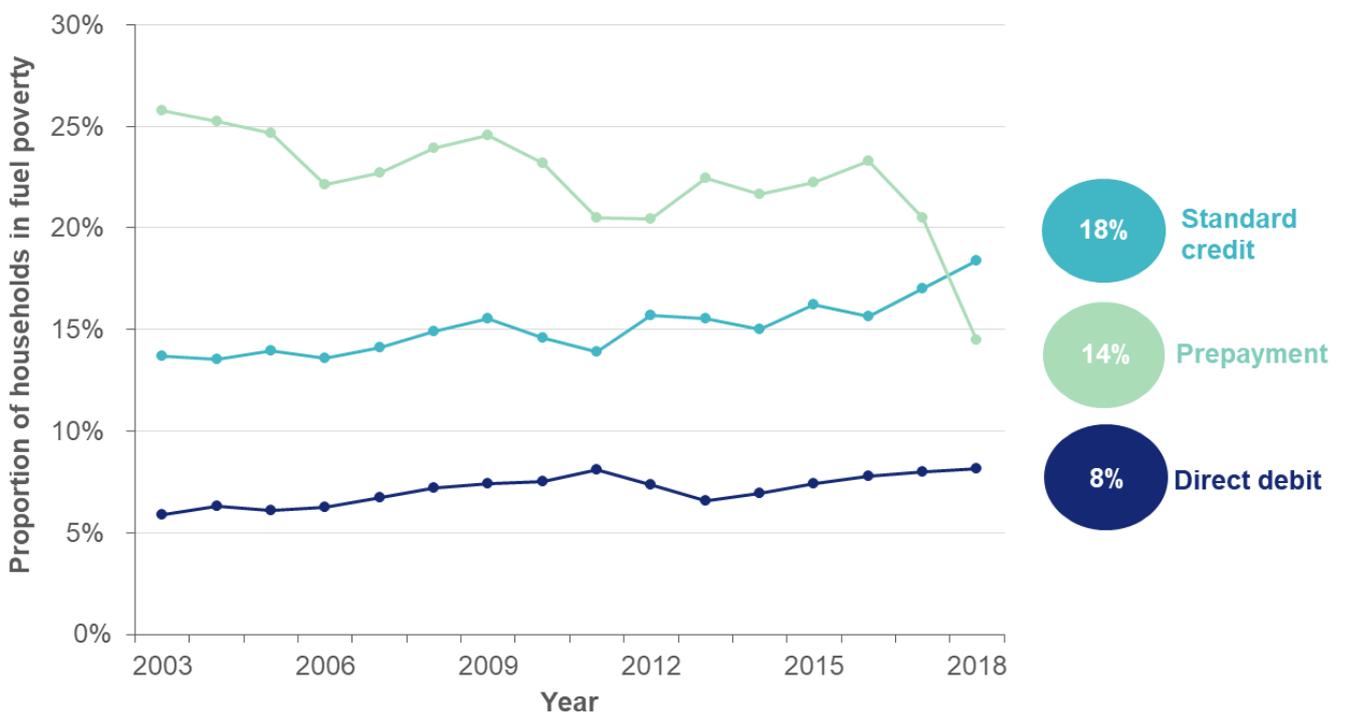
Since 2003 households that pay by prepayment meter had the highest likelihood of fuel poverty of the payment types, however this switched in 2018 due to the positive impact of the prepayment cap. The average gap for households paying their electricity by standard credit was highest at £404 and lowest for those paying by prepayment meter (£246). The lower average gap for households paying by prepayment meter is likely due to the introduction of the prepayment cap as well as being more likely to live in a combination of smaller, better insulated properties. However, those paying by prepayment meter have below average median income and households will likely be pushed back into fuel poverty if prepayment prices rise again.

Figure 3.27: Households that pay for electricity by prepayment meter tend to live in smaller properties, have a higher than average median energy efficiency rating and a lower median income
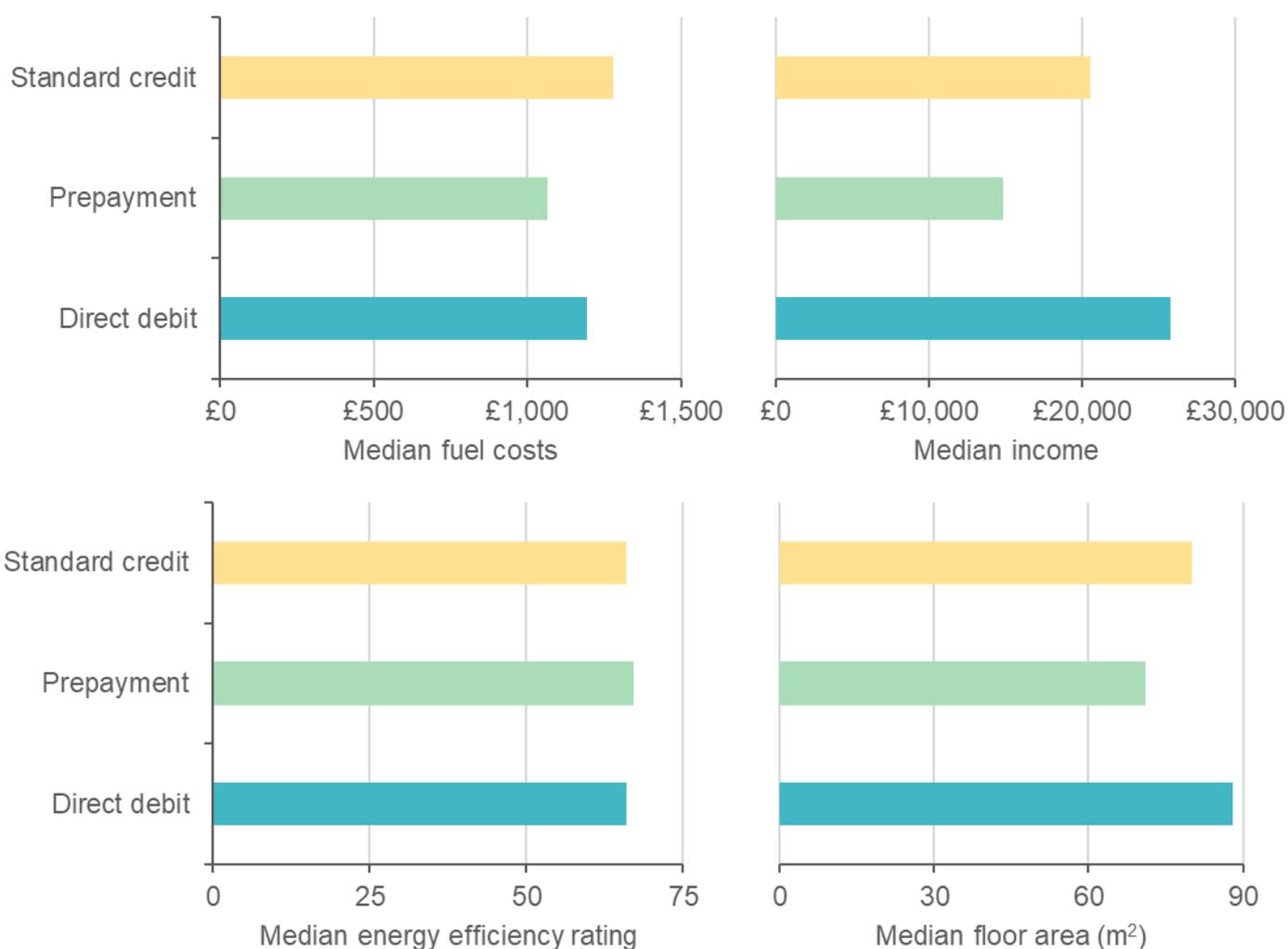
The proportion of households in fuel poverty and the average gap follows a similar pattern for a households' gas method of payment as it did for electricity method of payment.

Of those that have a gas connection, the average gap was greater for households paying for gas by standard credit (£335) and smallest for households paying by prepayment meters (£202). Households without a gas connection rely on electricity or other fuels like oil or coal to heat their home which likely contributes to why their average gap is the highest at £558.

Similar to the trend seen in the electricity payment, households that pay for gas by prepayment meter no longer have the highest proportion of households in fuel poverty. This is likely due to the introduction of the prepayment cap as well as being more likely to live in a combination of smaller, better insulated properties.

As presented in this chapter and summarised in Chapter 2, the prevalence of fuel poverty in England varies by a number of 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:
https://www.gov.uk/government/collections/fuel-poverty-statistics.

Chapter 4: Projected Fuel Poverty Figures

4.1 Projected headline figures, 2019

Chapters 2 and 3 analyse the latest available data for fuel poverty, which has an approximate 13-month time lag[72]. To give an indication of more recent trends, the fuel poverty headline figures for 2019 are projected based on changes to the three key drivers of fuel poverty: energy efficiency, energy prices and incomes[73]. Table 4.1 summarises the projected headline figures.

This year we have decided not to publish projections for 2020 due to the unprecedented nature of the ongoing coronavirus (COVID-19) pandemic. We do not yet have enough information to develop assumptions for what is likely to happen to incomes, energy efficiency installations and energy prices between April 2020 and March 2021.

Table 4.1: Projected headline figures, 2019[3]

Headline figures	2018 See Chapter 2	2019 Projection
Average fuel poverty gap (£)	334	354
Proportion of households in fuel poverty (%)	10.3%	10.4%

Note that these figures are based on our fuel poverty projections model[74]. These should be interpreted as indicative projections, not precise point estimates.

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[72] 13-month time lag due to data collection, validation and processing for both the English Housing Survey and the fuel poverty data.

[73] Like previous years, the assumptions underlying the fuel poverty projections methodology have been reviewed in order to improve the quality of the outputs. We therefore advise against comparing this year's projections to projections published in previous annual reports.

[74] Details on the methodology for the fuel poverty projections model can be found in Chapter 7 of the methodology handbook: https://www.gov.uk/government/publications/fuel-poverty-statistics-methodology-handbook

Figure 4.1: Average gap and proportion of household in fuel poverty projected to increase slightly in 2019
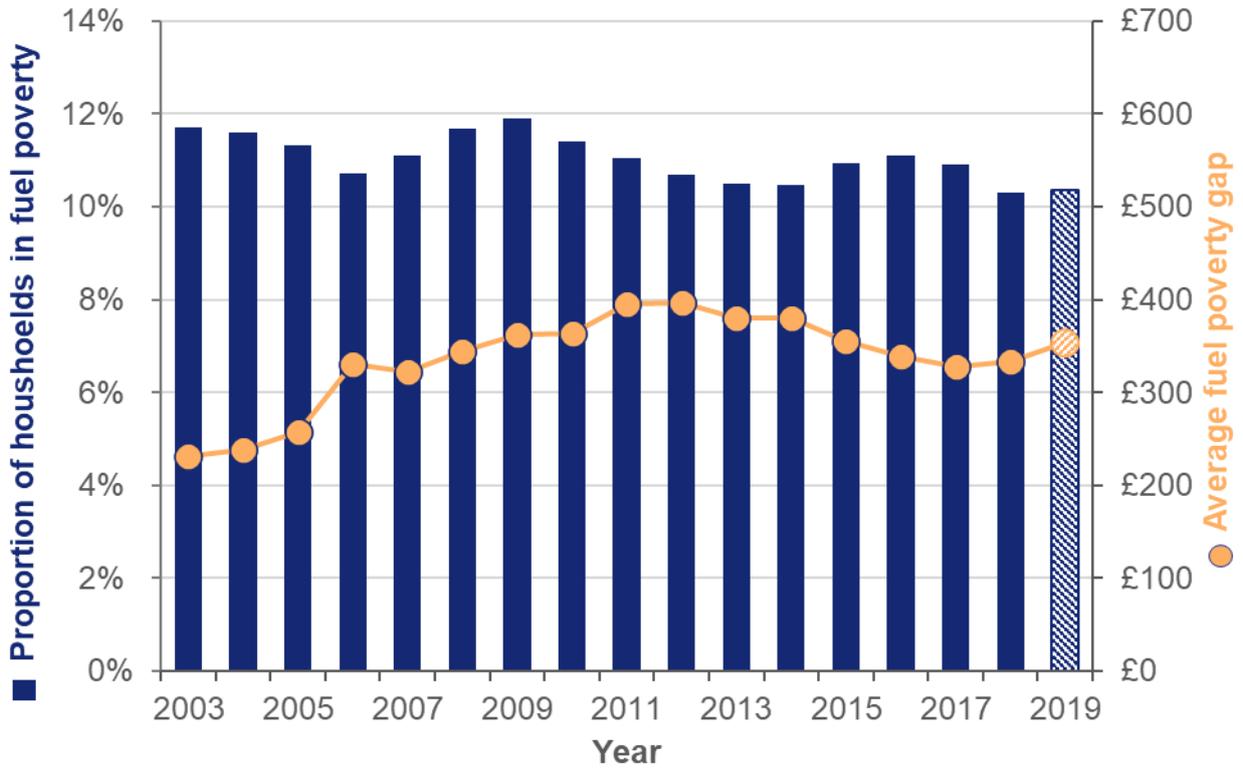
The proportion of households in fuel poverty has fluctuated between 10 and 12 per cent between 2003 and 2018 and is projected to rise in 2019 by 0.1 percentage points to 10.4 per cent. The fuel poverty gap is projected to increase slightly in 2019 from £334 to £354.

The drivers of fuel poverty are discussed in Section 4.3.

4.2 Projected progress against the target[75], 2019

Figure 4.2: Further progress is projected to be made towards the fuel poverty target and interim milestones in 2019
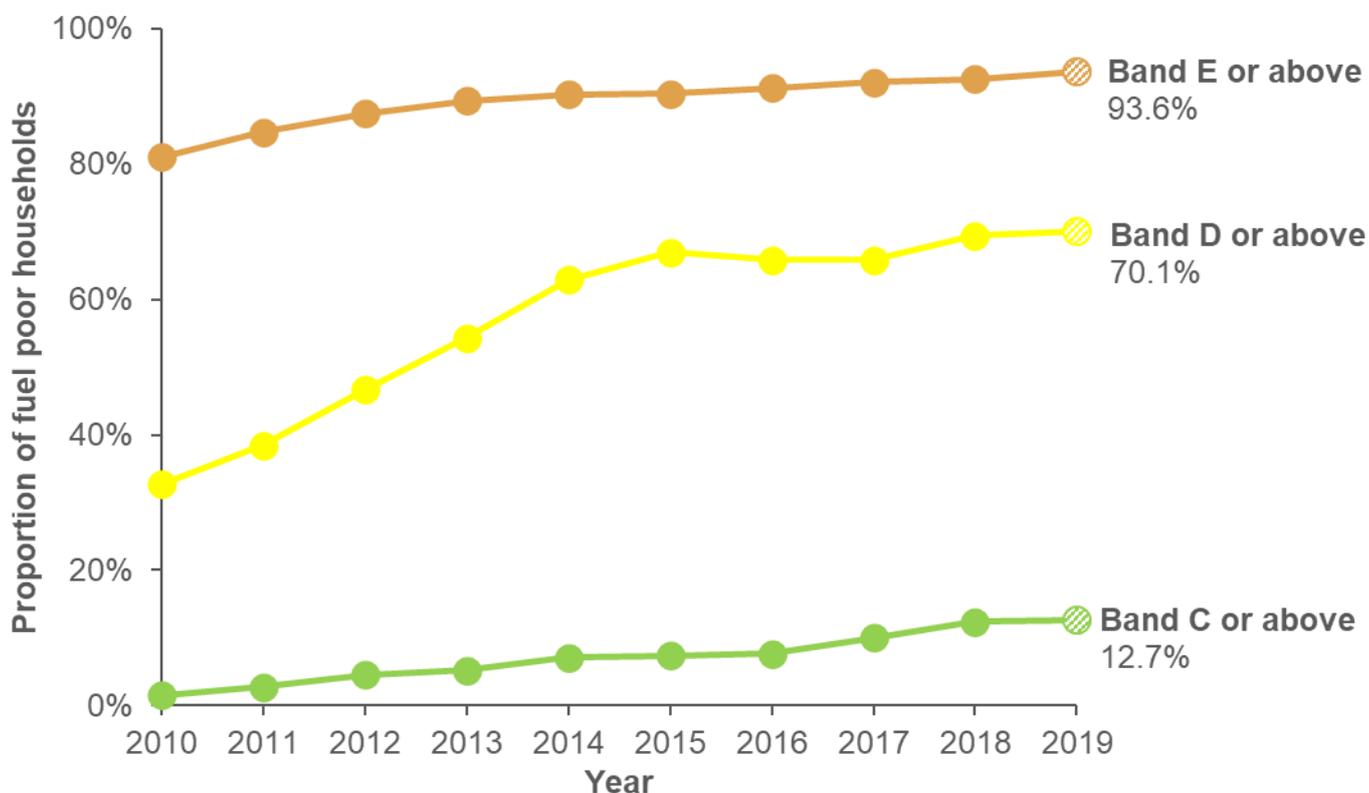
As discussed in Chapter 2, the fuel poverty target for England is that as many fuel poor households as reasonably practicable achieve a minimum energy efficiency rating of Band C[76,77] by 2030, with interim targets of Band *E* by 2020, and Band *D* by 2025 (see Figure 2.2).

Progress towards the interim milestones and the 2030 target is projected in 2019, with 12.7 per cent of fuel poor households projected to be in Band A, B or C, 70.1 per cent of fuel poor households projected to be in Band A to D and 93.6 per cent of fuel poor households projected to be in Band A to E. In other words, 6.4 per cent of households in 2019 are projected to be in Band F or G.

4.3 Changes to key drivers, 2018 to 2019

The key drivers will be assessed in turn to explore their effect on the 2019 projections. *Higher* incomes, *increased* energy efficiency and *lower* energy prices would each have a positive impact on a fuel poor household. More information on key drivers can be found in Section 2.3.

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[75] For more information on the fuel poverty target, see Section 2.2.
[76] Energy efficiency rating is measured using Fuel Poverty Energy Efficiency Rating (FPEER), see Section 2.3.3 and glossary for more detail.
[77] Household energy efficiency ratings are banded from *G* (lowest) to *A* (highest).

The relative nature of the fuel poverty indicator makes it difficult to accurately isolate individual reasons for change.

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

- **Energy efficiency** – improvement in energy efficiency between 2018 and 2019.

- **Energy prices** – the default tariff price cap resulted in standard credit and direct debit energy prices increasing at a slower rate between 2018 and 2019 than between 2017 and 2018.

- **Incomes** – earnings increased more for households in higher income deciles in 2019.

4.3.1 Energy efficiency

Sensitivity analysis suggests that changes in energy efficiency between 2018 and 2019 has a minimal impact on fuel poverty. This is likely due to churn in the fuel poor group – as the energy efficiency of fuel poor households improve this pushes households out fuel poverty and other, less efficient households into fuel poverty[78] resulting in, on balance, a slightly decreased average fuel poverty gap.

Changes to ECO (Energy Company Obligation) eligibility criteria introduced as part of ECO 3[79]. 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.

From 1st April 2019, the Private Rented Sector Minimum Energy Efficiency Standards[80] regulations for the domestic private rented sector required private landlords to improve their properties to an efficiency of at least an E, to meet the minimum standards. This is captured in the 2019 projections.

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

Policy	Incentive	Type of measure covered
Energy Company Obligation (ECO)[81]	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[82]
Minimum Energy Efficiency	Landlords of households in Band F and G and are private rented can get a grant to cover, or contribute to	Replacement boiler, heating improvements, insulation,

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[78] More information on fuel poverty churn can be found at the following link: https://www.gov.uk/government/publications/energy-trends-december-2018-special-feature-article-do-households-move-in-and-out-of-fuel-poverty

[79] For more detail on ECO3 eligibility, please refer to Ofgem's website: https://www.ofgem.gov.uk/environmental-programmes/eco/support-improving-your-home

[80] http://www.legislation.gov.uk/ukdsi/2018/9780111175217/contents

[81] ECO statistics: https://www.gov.uk/government/collections/household-energy-efficiency-national-statistics

[82] For more information on innovative measures under ECO3, see: https://www.ofgem.gov.uk/publications-and-updates/eco3-innovation

Standards (MEES)[83]	the costs of, home energy efficiency improvement	double glazing, additional innovative measures[84]
Feed in Tariff Scheme (FiTs)[85],[86]	Householders who generate their own renewable electricity receive payments from their energy supplier	Solar panels, wind turbines, anaerobic digestion, hydro power, micro CHP

4.3.2 Energy prices

The prepayment cap introduced in April 2017 has overall had a beneficial impact on fuel poverty with the price increases for pre-payment customers between 2017 and 2019 being lower than those for other payment methods. The default tariff price cap[87,88] introduced in January 2019 has a positive impact on fuel poverty by capping the price increase for households paying by direct debit and standard credit. Ofgem estimates the default tariff price cap will reduce bills for 11 million households[89]. As a result, households paying by prepayment meter have seen a *relatively* larger increase in their fuel bills between 2018 and 2019 due to their lower baseline. This relative increase should not detract from the positive impact the of the prepayment cap.

Sensitivity analysis suggests that changes in energy prices between 2018 and 2019 contributes to the increase in the average fuel poverty gap *and* the increase in the proportion of households in fuel poverty. These increases would likely have been larger without the prepayment cap and default tariff price cap.

In 2018 (see Section 3.4) households paying by prepayment were no longer more likely to be in fuel poverty than those paying by standard credit and direct debit due to the impact of the prepayment cap. As a result households paying their fuel bills by standard credit were more likely to be in fuel poverty. The default tariff price cap has resulted in an increase of only 1.5 per cent for this payment method, compared to 2.9 per cent for direct debit and 3.9 per cent for prepayment. This change is anticipated to have limited the increase of the number of households in fuel poverty and the average gap in 2019.

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[83] MEES: https://www.gov.uk/guidance/domestic-private-rented-property-minimum-energy-efficiency-standard-landlord-guidance

[84] For more information on innovative measures under ECO3, see: https://www.ofgem.gov.uk/publications-and-updates/eco3-innovation

[85] FiTs statistics: https://www.gov.uk/government/collections/feed-in-tariff-statistics

[86] FiTs closed to new applications at end March 2019. Support for householders generating their own electricity may come from the Smart Export Guarantee (SEG) scheme in the future. The implementation and design of this policy is, however, still to be confirmed[86].

[87] https://www.ofgem.gov.uk/publications-and-updates/ofgem-s-response-cma-s-consultation-proposed-prepayment-ppm-cap-review

[88] https://www.gov.uk/government/news/cma-recommends-protecting-prepayment-energy-customers-beyond-2020

[89] https://www.ofgem.gov.uk/publications-and-updates/ofgem-proposes-price-cap-give-11-million-customers-fairer-deal-their-energy

Figure 4.2: Energy prices for households paying by standard credit have increased at a slower rate between 2018 and 2019 than other payment types (real terms)[90]

Method of payment	2017 (£)	2018 (£)	2019 (£)	Percentage change 2018-2019 (%)
Prepayment	1,047	1,040	1,081	3.9%
Standard Credit	1,139	1,179	1,198	1.5%
Direct debit	1,010	1,051	1,081	2.9%

4.3.3 Income

Sensitivity analysis suggests that changes in income between 2018 and 2019 had an impact on the increase in the average fuel poverty gap. Incomes are projected to increase at a slightly lower rate than average for households in the lowest income deciles (1-4)[91] resulting in an increase in the average fuel poverty gap.

The components that comprise a household's full income[92] (after income tax and National Insurance contributions) are categorised as follows:

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

4.5 Future changes to key drivers

As mentioned above, this year we have taken the decision not to publish projections for 2020 due to the unprecedented nature of the ongoing coronavirus (Covid-19) pandemic. We do not yet have enough information to develop assumptions for what is likely to happen to incomes, energy efficiency installations and energy prices between April 2020 and March 2021. The 2021 annual publication will explore the impact of the coronavirus (Covid-19) pandemic further, depending on the availability of data sources.

The effect of Minimum Energy Efficiency Standard regulations in the private rented sector [93] will continue to impact the projections. Furthermore, the change in ECO eligibility criteria to focus on low income vulnerable households will continue to be captured.

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[90] Source: Annual domestic price statistics, Table 2.2.2 and Table 2.3.2: https://www.gov.uk/government/statistical-data-sets/annual-domestic-energy-price-statistics. Figures are based on Standard Electricity tariffs, are in real terms and cover England and Wales. Data for gas and electricity separately can be found in Annex A.
[91] Further information on income in 2019 can be found in the Average household income report published by the ONS: https://www.ons.gov.uk/peoplepopulationandcommunity/personalandhouseholdfinances/incomeandwealth/bulletins/householddisposableincomeandinequality/financialyearending2019
[92] See Chapter 3 for details (https://www.gov.uk/government/publications/fuel-poverty-statistics-methodology-handbook).
[93] https://www.gov.uk/government/publications/the-private-rented-property-minimum-standard-landlord-guidance-documents

For prices and income, the prepayment and default tariff price caps will be captured when projecting 2020 and 2021 fuel poverty headline figures, as will changes to the National Living Wage and benefits.

Annex A: Additional Data and Figures

Figure A.1: Proportion in fuel poverty, 2003 to 2018 - 95 per cent confidence intervals dictated by the light blue bars
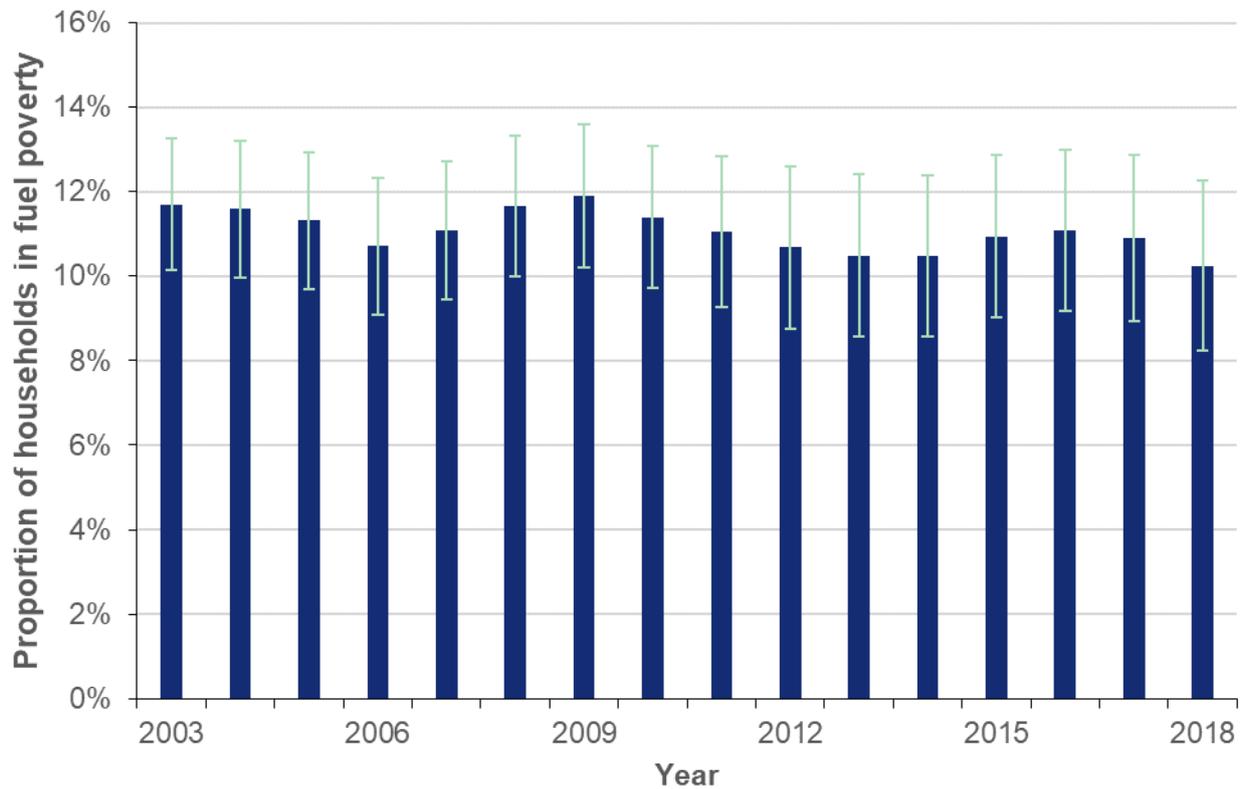
In 2018, the proportion of households in fuel poverty is an estimate based on a sample of 12,203 households from the EHS. Individual cases in the EHS are weighted up to give the total number of households in the UK[94]. The estimated 2,400,000 fuel poor households in 2018 is based on 1,246 individual households.

Based on the nature of the EHS sample, the 95 per cent confidence interval for the proportion of households in fuel poverty in 2018 is 10.3 per cent +/- 2.0 percentage points. We can be 95 per cent sure that the true proportion of households in fuel poverty in 2018 is between 8.2 and 12.3 per cent.

The size of the 95 per cent confidence interval around the proportion of households in fuel poverty increases between 2003 and 2018. This is because the total sample size of the EHS has decreased by 25 per cent across this time period. This has therefore reduced the number of cases that make up the fuel poor population each year, and the confidence we have in our estimates of the proportion has decreased.

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[94] https://www.gov.uk/government/publications/english-housing-survey-weighting-methodology-introduced-in-2013-to-2014

Figure A.2: Average fuel poverty gap, 2003 to 2018 - 95 per cent confidence intervals dictated by the red bars
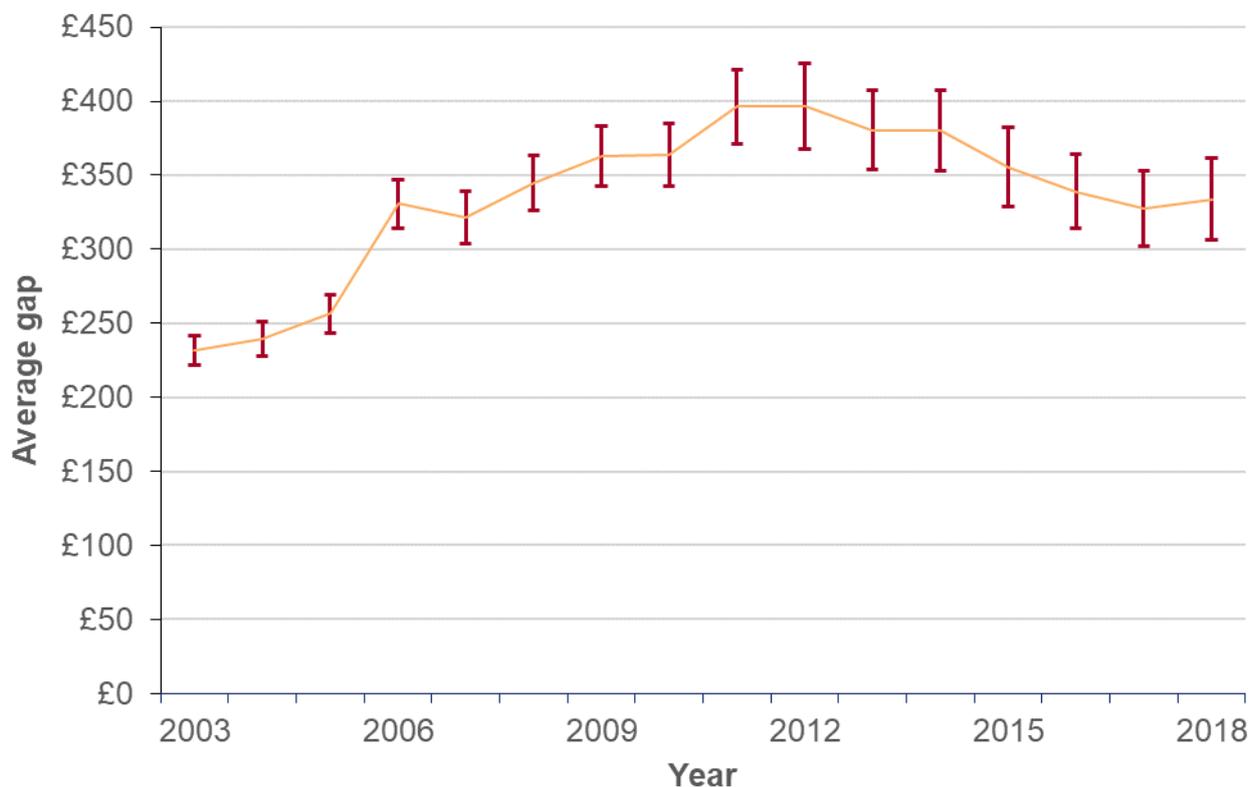
All fuel poor households have a fuel poverty gap based on their fuel expenditure and income. The calculation of the average gap is, therefore, based on the same number of cases as the proportion of households in fuel poverty each year. In 2018 this is 1,246.

The 95 per cent confidence interval for the average gap in 2018 is £334 +/- £28[95]. We can be 95 per cent certain that the true average gap in 2018 is between £306 and £362.

Similar to the proportion of households in fuel poverty, the size of the 95 per cent confidence interval around the average gap increases between 2003 and 2018, as the total sample size of the EHS has decreased.

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[95] Calculated using the following formula: $p \pm 1.96(design\ factor * standard\ error)$ where $p = £321$ and the $design\ factor = 1.2$ (average design factor for the EHS sample).

Table A.1: Raw data behind Table 2.2: Progress against the fuel poverty target and milestones

Proportion of fuel poor households	2010	2011	2012	2013	2014	2015	2016	2017	2018
Band E or above	81.1	84.8	87.5	89.4	90.3	90.4	91.3	92.2	92.6
Band D or above	32.7	38.5	46.7	54.3	62.9	67.0	65.9	65.9	69.4
Band C or above	1.5	2.7	4.6	5.2	7.1	7.4	7.7	10.0	12.4

Figure A.3: Progress against the fuel poverty target, 2010 to 2018 - 95 per cent confidence intervals dictated by the bars
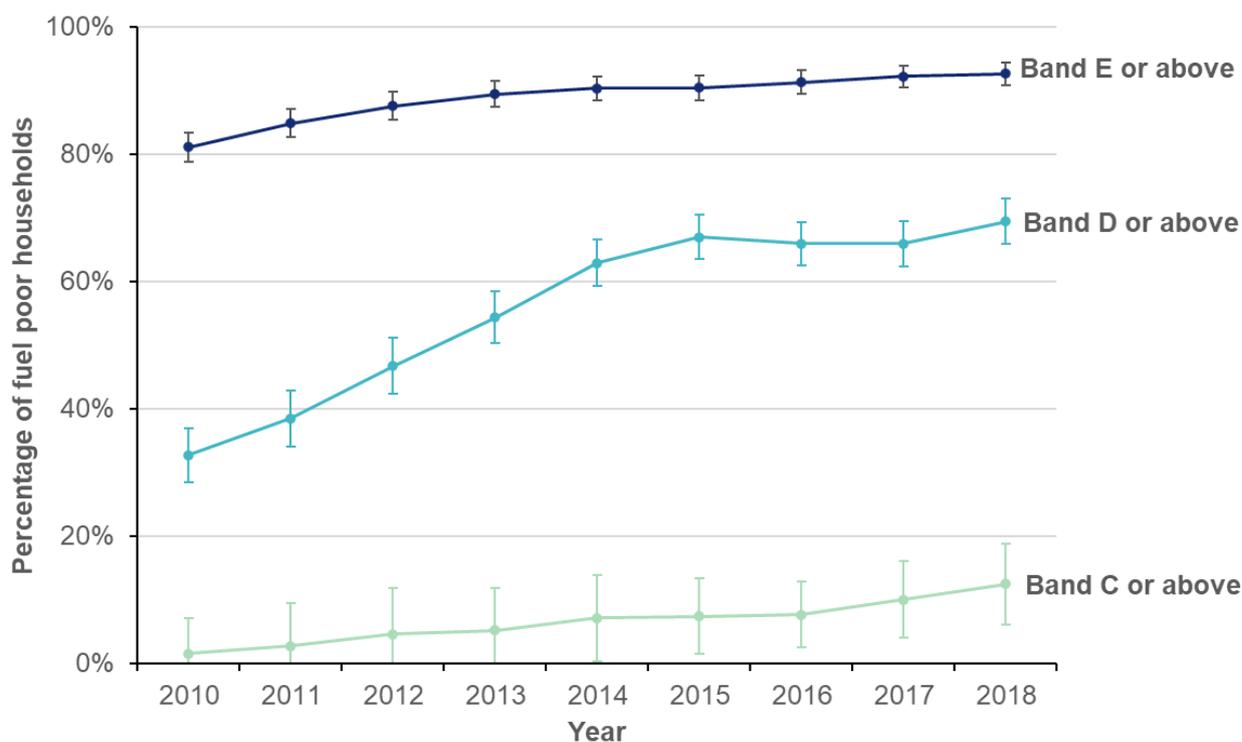
The 95 per cent confidence interval around the estimate of the proportion of households in Band C or above in 2018 is +/- 6.4 percentage points. We can be 95 per cent certain that the true proportion of fuel poor Band C and above households in 2017 is between 6.0 and 18.8 per cent.

The 95 per cent confidence interval around the estimate of the proportion of households in Band D or above in 2018 is +/- 3.6 percentage points. We can be 95 per cent certain that the true proportion of fuel poor Band D and above households in 2017 is between 65.8 and 73.1 per cent.

The 95 per cent confidence interval around the estimate of the proportion of households in Band E or above in 2018 (+/- 1.8 percentage points) is smaller than the confidence intervals around Band D and Band C or above, as this estimate is based on a larger sample size.

Figure A.1 shows that the confidence intervals around the proportion of households in fuel poverty widen over time, due to the decrease in the EHS sample. The size of the confidence intervals around progress towards the target figures, however, remains similar between 2003 and 2018. This is because, although the EHS sample is decreasing, 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.

As discussed in Section 2.3.5, Tables A.2 and A.3 show the change in annual domestic electricity and gas bills for each payment method between 2017 and 2018.

Table A.2 Annual domestic gas bills for prepayment customers decreased by 3.6 per cent between 2017 and 2018 (real terms) 2018[96]

Gas method of payment	2017 (£)	2018 (£)	Percentage change 2017-2018 (%)
Prepayment	517	498	-3.6
Standard Credit	567	573	1.1
Direct debit	498	504	1.2

Table A.3: Annual domestic electricity bills for prepayment customers increased by 2.1 per cent between 2017 and 2018 (real terms) 2018[97]

Electricity method of payment	2017 (£)	2018 (£)	Percentage change 2017-2018 (%)
Prepayment	530	541	2.1
Standard Credit	572	607	6.0
Direct debit	512	547	6.9

---

[96] Source: Annual domestic price statistics, Table 2.2.2: https://www.gov.uk/government/statistical-data-sets/annual-domestic-energy-price-statistics. Figures are based on Standard Electricity tariffs, are in real terms and cover England and Wales.
[97] Source: Annual domestic price statistics, Table 2.3.2: https://www.gov.uk/government/statistical-data-sets/annual-domestic-energy-price-statistics. Figures are in real terms and cover England and Wales.

Figure A.4: The proportion of *all* households split by energy efficiency rating bands
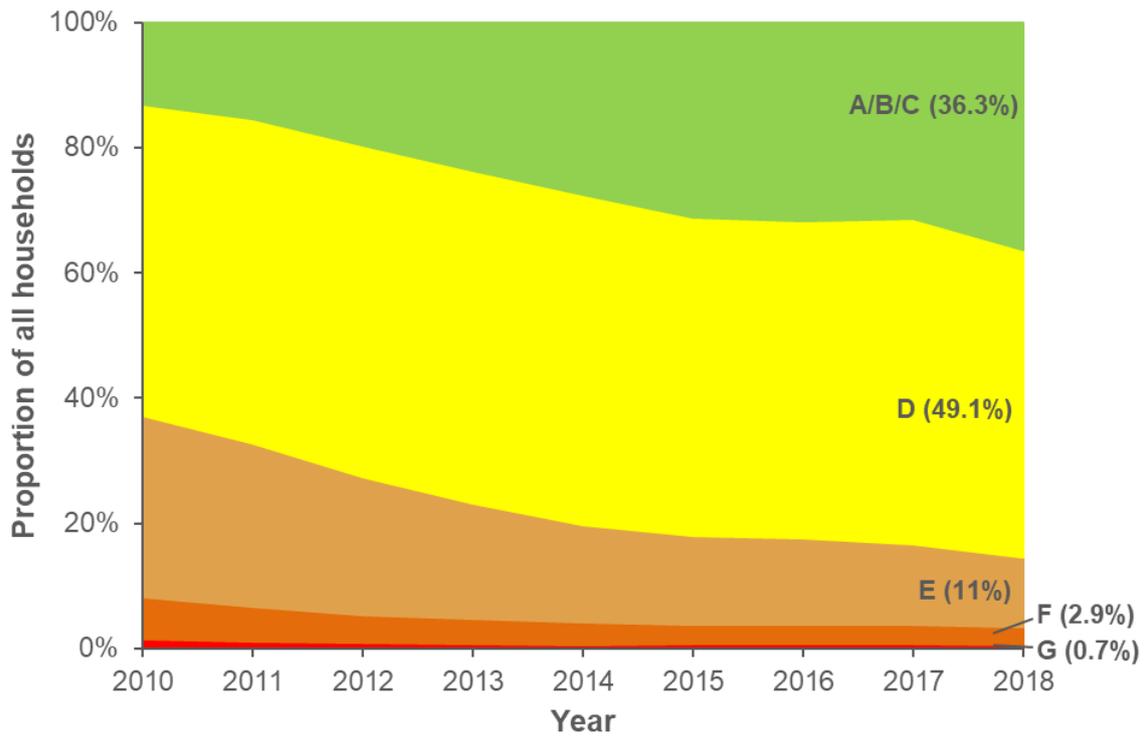
Annex B: Measuring Fuel Poverty in England

This annex provides more detailed information on the following: how the Low Income High Costs (LIHC) indicator of fuel poverty works, understanding the drivers of fuel poverty, data sources, and methodological updates for the 2018 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 High Costs

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

- they have required fuel costs[98] that are above average (the national median level); and

- were they to spend that amount, they would be left with a residual income[99] below the poverty line[100].

Low Income High Costs 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 to meet the threshold that would make them non-fuel poor. This is illustrated in Figure A1, where the indicator consists of:

- the **number** of households that have both low incomes *and* high fuel costs (shown by the shaded area in the bottom left hand quadrant in B1; 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 B1), 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**.

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[98] Fuel costs required to have a warm, well-lit home, with hot water and the running of appliances. An equivalisation factor is applied to reflect that households require different levels of energy depending on who lives in the property. Further information on how fuel costs are calculated can be found in Section 5 of the Methodology Handbook: https://www.gov.uk/government/publications/fuel-poverty-statistics-methodology-handbook

[99] Residual income is defined as equivalised income after housing costs, tax and National Insurance. Equivalisation reflects that households have different spending requirements depending on who lives in the property. Further information on how income is modelled can be found in Section 3 of the Methodology Handbook (above).

[100] The poverty line (income poverty) is defined as an equivalised disposable income of less than 60% of the national median (Section 2): https://www.ons.gov.uk/peoplepopulationandcommunity/personalandhouseholdfinances/incomeandwealth/articles/persistentpovertyintheukandeu/2015

The fuel poverty indicator is a *relative* measure, as it compares households to national income thresholds and national median energy costs. A change in income will only have an impact on fuel poor households when they see relatively larger income changes (increase or decrease) than the overall population; the same is true for household energy costs. As a result, the proportion of households in fuel poverty remains, on the whole, stable over time since 2003 (between 10-12 per cent), whereas the fuel poverty gap (which is measured in pounds) is more closely linked to changes in energy prices and the economy and therefore, a more informative measure when looking at the direct impacts of fuel poverty over time.

Figure B1: Fuel poverty under the Low Income High Costs indicator
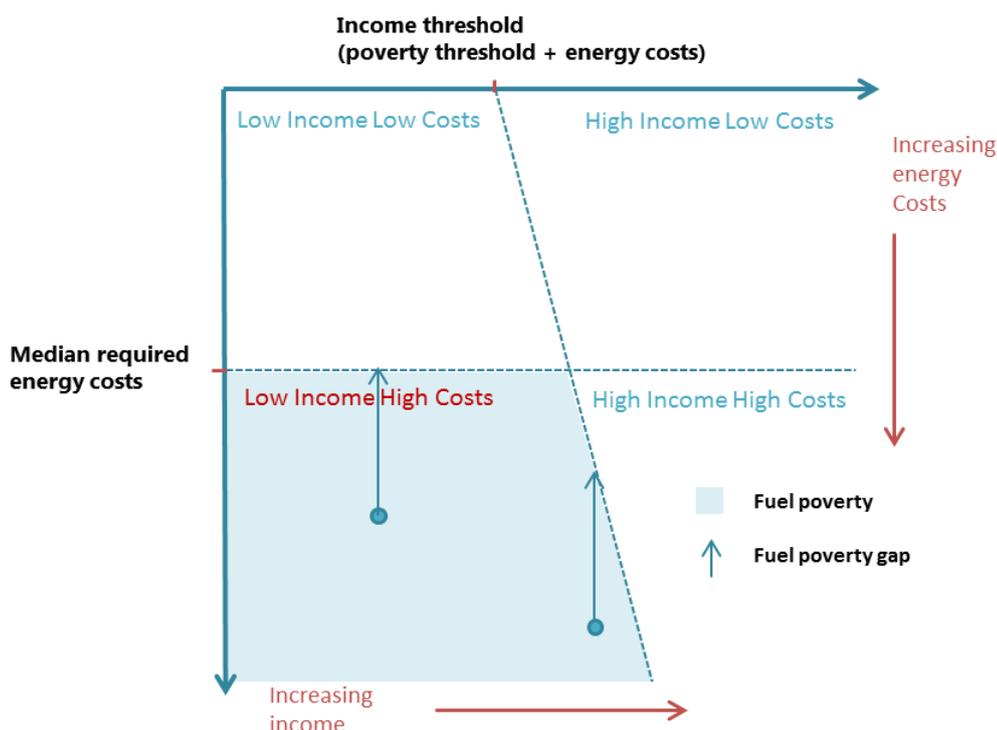
Fuel poor households (bottom left hand quadrant of Figure B1) include some households who may not traditionally be considered to be poor but are pushed into fuel poverty by their high energy requirements (this is reflected in the gradient of the income threshold).

Those in the bottom right hand quadrant also have high required energy costs 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 low required energy costs and are not fuel poor.

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

B.2 How the Low Income High Costs (LIHC) indicator of fuel poverty works

Fuel poverty is estimated by calculating each household's position relative to two thresholds (illustrated in Figure B1). The first threshold, the median energy cost, is set by ranking households equivalised[101] energy requirements and using the median value of the dataset. The second threshold, After Housing Cost (AHC) income, is calculated in a similar way. Each household's required energy costs are deducted from their equivalised income. These are then ranked and 60 per cent of the median value is calculated. This is the income threshold. To be fuel poor, a household's required energy costs must be higher than the median energy threshold *and* their equivalised AHC income must be below the income threshold.

As mentioned in Section B.1 for any factor to affect the number of households in fuel poverty, it must change by a greater or lesser amount for those *in* fuel poverty, than for those *not* in fuel poverty.

Price changes can have a more limited effect than income on the number of households in fuel poverty when prices rise equally across all households, as households are measured by the proportion by which their energy costs are greater or less than the average. When prices rise equally across all households, these proportions do not change. For example, if all prices were to rise by 10 per cent for *all* households, then a household that previously had costs that were five per cent above the median required energy threshold will still have costs that are approximately five per cent above the *new* median required energy cost – assuming all other factors remain the same. As a result, the fuel poverty status of the household will not change.

The depth of fuel poverty, on the other hand, is measured in pounds rather than proportions. In the example above, a 10 per cent rise in energy costs for all households will result in a greater increase, in pounds, of the energy costs of households above the median energy threshold. For example, if the median required energy costs are £1,000, then an increase of 10 per cent will result in a rise in the median to £1,100. A household with required energy costs above the median, say £1,500, will see an increase in their energy costs to £1,650. Their fuel poverty gap will therefore increase from £500 to £550.

Figure B2, below, illustrates how fuel poor households may move out of fuel poverty, either due to a reduction in required energy costs, an increase in income, or by a combination of both. However, due to the relative nature of the LIHC measure, it is difficult to isolate accurately an absolute reason for change.

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[101]Equivalisation is an adjustment factor to standardise spending and energy requirements across households.

Figure B2: Movement across the income and fuel costs threshold due to either increases in income, reductions in energy consumption or a combination of both

Income threshold
(poverty threshold + energy costs)

Increasing energy costs

Median required energy costs

Increasing income

Households moving out of fuel poverty due to:

→ Increases in income

→ Reduction in fuel consumption

→ Combination of both
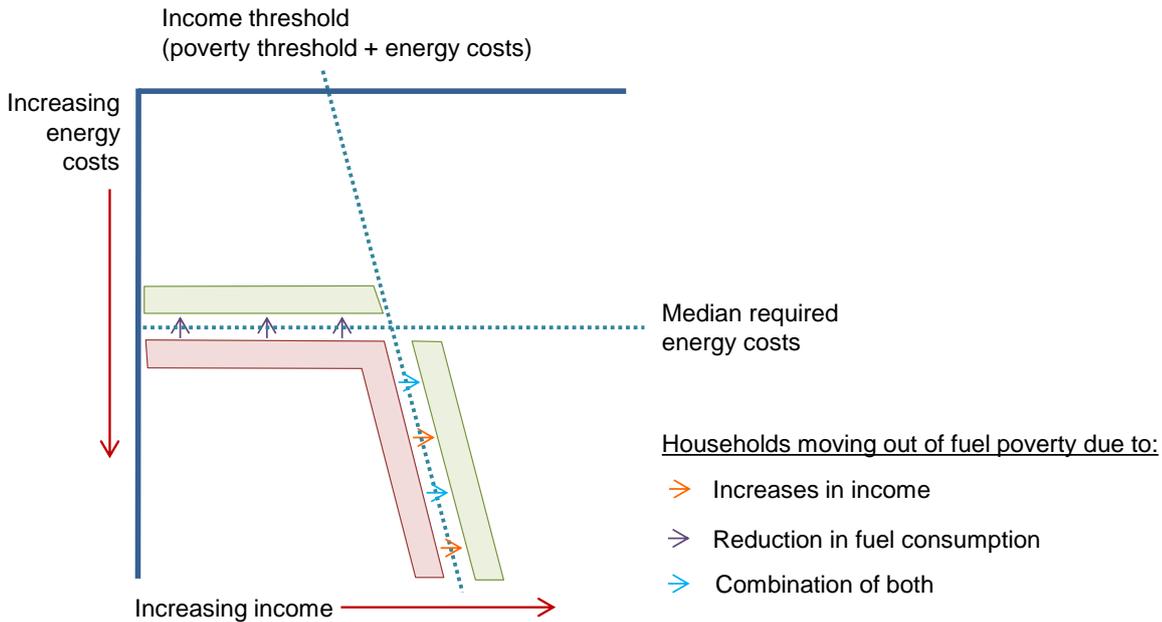
Figures B3 and B4 highlight the different responses to the fuel poverty LIHC indicator under a scenario where fuel prices rise by 10 per cent. In relation to fuel poverty levels, the energy costs of all households should increase by the same amount in proportional terms. For the fuel poverty gap, households with larger energy requirements will see greater increases in their energy costs (and thus greater fuel poverty gaps for those in the LIHC quadrant), in monetary terms.

Figure B3: Fuel poverty *levels* under the scenario where fuel costs increase by 10% for all households


% of median income
60%

% of median energy costs
100%

New median energy costs
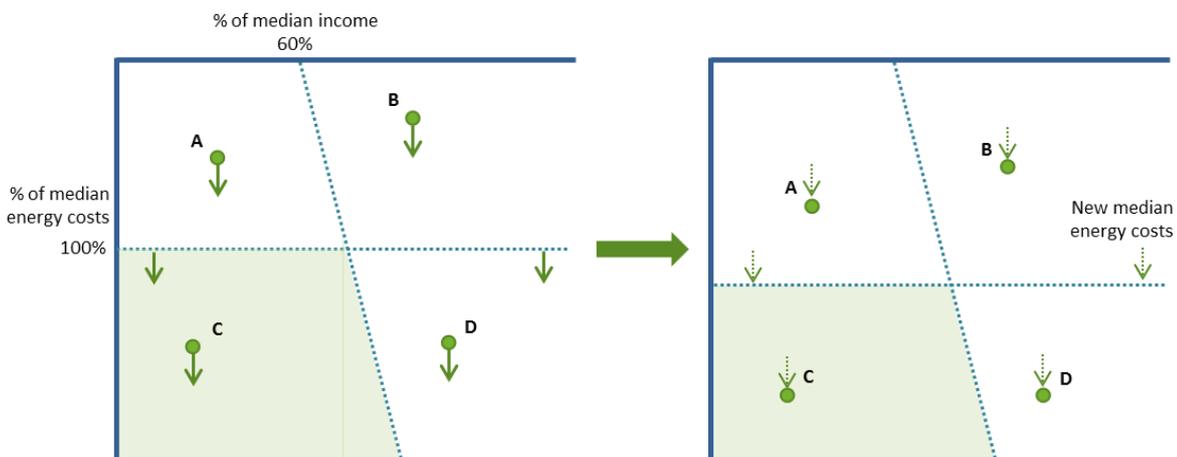
Figure B.4: Fuel poverty *gap* under the scenario where fuel costs increase by 10% for all households
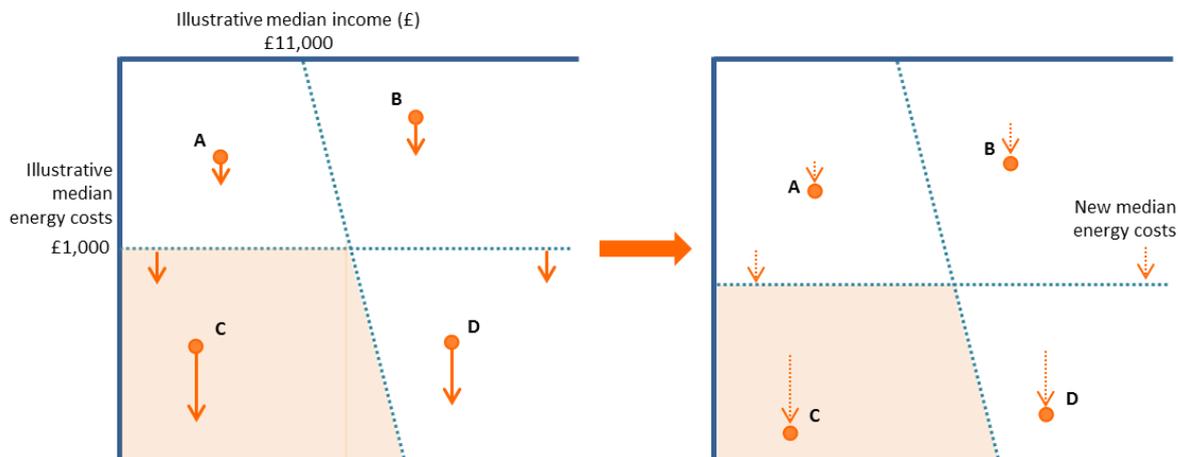
In this example (where there are no changes in energy requirements or income), households whose fuel costs are below the median (households A and B) will see their costs increase by less, in pounds, than the median. As a result, these increases will never take them over the threshold into fuel poverty, as the median fuel costs will always increase by more than the individual fuel costs. However, households with fuel costs *above* the median (households C and D) will see a larger increase in their energy costs, in pounds, compared to the median. These households will therefore spend increasingly more than median costs, such that the difference between their fuel costs and the median costs will widen.

Consequently, there will be no change in the number of households in fuel poverty, but households already in fuel poverty will move deeper into fuel poverty. The gap, which represents the difference between household fuel costs and the median fuel costs, will therefore increase.

B.3 Drivers of Fuel Poverty

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

Measuring household income

The Low Income High Costs 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 and 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[102]. 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 of household energy requirements includes fuel for heating the home, heating water, lighting, appliance usage and cooking. In calculating a household's energy requirements, the energy costs are modelled, dependent on the following factors:

- The economic circumstances of householders (for example, if they are 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[103] 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.

In order to calculate fuel poverty, a household's required energy costs are 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.

Similar to 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)[104]

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 Ministry of Housing,

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[102] https://www.gov.uk/government/collections/households-below-average-income-hbai--2

[103] An adequate standard of warmth is defined as 21ºC for the main living area and 18 ºC for other occupied rooms. Further detail can be found in the Methodology Handbook at: https://www.gov.uk/government/publications/fuel-poverty-statistics-methodology-handbook

[104] https://www.gov.uk/government/collections/english-housing-survey

Communities and Local Government (MHCLG), 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.

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 2018 data, this covers the period between 1 April 2017 and 31 March 2019, and comprises 12,203 households over two consecutive data collection years (2017/18 and 2018/19). Therefore, users are advised to use caution when looking at year on year changes in fuel poverty, as the samples will not be independent. Headline results from the 2013 EHS were published on 23 January 2020[105]. Full data relating to the 2018 EHS, will be made available by MHCLG 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: BEIS Quarterly Energy Prices[106]; ONS Consumer Price Index[107]; and Sutherland Tables[108]. Further information on modelled fuel price data is available in the Methodology Handbook[109].

B.5 Methodological Updates

Changes to the BREDEM model

Since the last fuel poverty statistics publication, there have been no changes to the 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[110]) incorporating the latest U-value assumptions from RdSAP (version 9.93).

Changes to the English Housing Survey (EHS)

In 2018 there were no major form changes to the EHS interview or physical survey.

Changes to income methodology

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[105] https://www.gov.uk/government/statistics/english-housing-survey-2018-to-2019-headline-report
[106] https://www.gov.uk/government/collections/quarterly-energy-prices
[107] http://www.ons.gov.uk/economy/inflationandpriceindices/bulletins/consumerpriceinflation/previousReleases
[108] http://www.sutherlandtables.co.uk/
[109] https://www.gov.uk/government/publications/fuel-poverty-statistics-methodology-handbook
[110] http://www.bre.co.uk/filelibrary/bredem/BREDEM-2012-specification.pdf

For the 2018 statistics there were relatively minor changes to the methodology used for the calculation of household income. More detail can be found in the Methodology Handbook[109].

Changes to fuel prices methodology

In 2018, there were no major changes to the fuel prices methodology.

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.

Scotland[111]

The Fuel Poverty (Targets, Definition and Strategy) (Scotland) Bill[112] was introduced to the Scottish Parliament on 26 June 2018 and the Fuel Poverty (Targets, Definition and Strategy) (Scotland) Act 2019[113] 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 in order to maintain a satisfactory heating regime[114]:

- total fuel costs necessary for the home are more than 10 per cent of the household's adjusted net income (after housing costs),

- and if after deducting fuel costs, benefits received for a care need or disability and childcare costs, the household's remaining adjusted net income is insufficient to maintain an acceptable standard of living. The remaining adjusted net income must be at least 90 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.

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

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 would be in fuel poverty
- no more than 1 per cent of households in Scotland would be in extreme fuel poverty
- the median fuel poverty gap of households in Scotland in fuel poverty would be no more than £250 adjusted to take account of changes in the value of money.

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[111] https://www.gov.scot/publications/scottish-house-condition-survey-2017-key-findings/
[112] https://www.parliament.scot/parliamentarybusiness/Bills/108916.aspx
[113] http://www.legislation.gov.uk/asp/2019/10/contents/enacted
[114] See section 4 of the SHCS 2018 methodology notes for further details https://www.gov.scot/publications/scottish-house-condition-survey-methodology-notes-2018/

This target recognises that there will always be households that move in and out of fuel poverty due to changes in their incomes and energy costs.

Scotland publishes fuel poverty data in the annual Key Findings report of its Scottish House Condition Survey (SHCS). The figures presented in the 2018 report[115] are a best estimate of fuel poverty rates, extreme fuel poverty rates and the median fuel poverty gap under the new definition of fuel poverty, following amendments agreed at Stage 2 of the Fuel Poverty (Targets, Definition and Strategy) Bill. The first set of fuel poverty estimates fully compatible with all of the elements of the new definition in the Act are expected to be published in December 2021. This requires additional information being collected in the 2020 SHCS and the production of a new MIS for Remote Rural, Remote Small Town and Island areas, which, for the Stage 2 estimates contained in the 2018 Key Findings, has been estimated based on previous studies.

In 2018, 619,000 households (25.0 per cent of all households in Scotland) were in fuel poverty, a broadly similar level to 2017 (583,000 households or 23.7 per cent). The 2018 fuel poverty rate (25.0%) under the new definition is lower than that recorded between 2012 and 2015 (ranging between 27.7 per cent - 31.7 per cent).

It is estimated that 279,000 households (or 11.3 per cent) were living in extreme fuel poverty in 2018. This follows a period of annual decreases since 2013 and is the lowest rate recorded by the survey since 2012, the first year of data available under the new definition.

The actual median fuel poverty gap for fuel poor households in 2018 was similar to 2017 (£650 and £690, respectively). The median fuel poverty gap (adjusted for 2015 prices) for fuel poor households in 2018 (£610) has decreased from £710 in 2012.

Wales[116]

Like Scotland's current definition, Wales use a 10 per cent indicator. Households that need to spend more than 20 per cent of their income 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. Wales had a target to eradicate fuel poverty, as far as reasonably practicable, by 2018. The Welsh Government is planning to consult on a new plan to tackle fuel poverty, which is expected to take place in 2020.

In 2018, 155,000 households in Wales were living in fuel poverty, equivalent to 12 per cent of all households. Of these, 32,000 households were living in severe fuel poverty, equivalent to 2 per cent of all households. The percentage of households in fuel poverty has decreased from 26 per cent in 2008. Initial indications show that this is a result of increased household incomes and reduced household energy requirements due to energy efficiency improvements outweighing increases in fuel prices.

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[115] https://www.gov.scot/publications/scottish-house-condition-survey-2018-key-findings/
[116] https://gov.wales/fuel-poverty-estimates-wales

Northern Ireland[117]

Northern Ireland uses a 10 per cent indicator but has no statutory target. The approach has been to assist those households most at risk of fuel poverty through schemes such as Affordable Warmth. In 2016, an estimated 160,000 households were fuel poor, 22 per cent of the total. This represents a significant improvement since 2011 when the figure was 42 per cent (294,000) of the total. This improvement is a result of a focus from the Northern Ireland Housing Executive (NIHE) and the Department for Communities (DfC) to tackle poor energy efficiency in the housing stock since 2011 and lower than average fuel prices (particularly gas and electricity – depending on payment method) and a decrease in household energy use.

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 in 2017 and 2018. Using 2016 Northern Ireland House Condition Survey (NIHCS) data as a base, BRE adjusted fuel prices and household incomes, and simulated the installation of energy efficiency improvement measures, all to 2017 and 2018 levels. The number of fuel poor households in 2017 was estimated to be 128,0000, equivalent to 17 per cent of all households. In 2018, the estimated fuel poverty figure is 131,000, equivalent to 18 per cent of all households.

The 2016 NIHCS reported[118], for the first time, on the 'Low Income High Costs' fuel poverty indicator. The findings show that 7 per cent of households were in fuel poverty under this definition. The average fuel poverty gap for all Northern Ireland households was estimated at £436.

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[119].

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[117] https://www.nihe.gov.uk/getmedia/1f9e55a1-66c2-46b7-bf92-9ee192ce355f/estimates-of-fuel-poverty-northern-ireland-2017-and-2018-revised.pdf.aspx?ext=.pdf

[118] https://www.nihe.gov.uk/Working-With-Us/Research/House-Condition-Survey

[119] https://www.gov.uk/government/publications/fuel-poverty-statistics-methodology-handbook

Annex D: Relevant Links

D.1 Income Indicators

Households below average income
https://www.gov.uk/government/collections/households-below-average-income-hbai--2

Winter fuel payments
https://www.gov.uk/government/collections/winter-fuel-payments-caseload-and-household-figures

Cold weather payments
https://www.gov.uk/government/collections/social-fund-cold-weather-payments

D.2 Fuel Price Indicators

Actual expenditure on fuel (as percentage of total income)
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/487649/table_261.xls

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/487650/table_262.xls

Fuel prices
https://www.gov.uk/government/collections/domestic-energy-prices

Number of customers on prepayment
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/511476/table_242.xls
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/511479/table_252.xls

Average annual bills by payment method

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/875737/table_222.xlsx

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/875743/table_232.xlsx

Consumer vulnerability
https://www.ofgem.gov.uk/about-us/how-we-work/working-consumers/protecting-and-empowering-consumers-vulnerable-situations/consumer-vulnerability-strategy/consumer-vulnerability-strategy-reporting-progress

Switching stats

https://www.gov.uk/government/statistical-data-sets/quarterly-domestic-energy-switching-statistics

D.3 Housing Indicators

Indicator SAP rating
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/395007/stats_summary_2015.pdf

Excess winter deaths
https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/bulletins/excesswintermortalityinenglandandwales/previousReleases

Number of insulated homes
https://www.gov.uk/government/collections/household-energy-efficiency-national-statistics

Local Authority housing investment on energy efficiency improvements
https://www.gov.uk/government/collections/local-authority-housing-data

Annex E: Accompanying tables

The following tables are available in Excel format on the department's statistics website
https://www.gov.uk/government/collections/fuel-poverty-statistics:

Detailed tables (2018 data):
https://www.gov.uk/government/statistics/fuel-poverty-detailed-tables-2020

Trends tables (2003-2018):
https://www.gov.uk/government/statistics/fuel-poverty-trends-2020

Supplementary tables (2018 data):
https://www.gov.uk/government/statistics/fuel-poverty-supplementary-tables-2020

A fuel poverty dataset containing the underlying data will be made available on the UK Data Service in summer 2020:
https://ukdataservice.ac.uk/

Annex F: Technical information

A methodology handbook has been published alongside this publication. This sets out the method for calculating the headline statistics using the LIHC indicator and the detailed

methodology for calculating the income, energy efficiency and fuel prices for each household. It is available at:
https://www.gov.uk/government/publications/fuel-poverty-statistics-methodology-handbook

Annex G: 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.
BEIS	Department for Business, Energy an Industrial Strategy
BREDEM	Build Research Establishment Domestic Energy Model
CW	Cavity Wall
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
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
FiTs	Feed in Tariffs
FPEER	Fuel Poverty Energy Efficiency Rating
Fuel Poverty	A household is considered to be fuel poor if: they have required fuel costs that are above average (the national median level); were they to spend that amount, they would be left with a residual income below the official poverty line.

Term / Acronym	Definition
Fuel poverty gap	The difference in pounds between the required energy costs for each fuel poor household and the nearest fuel poverty threshold
HILC	High Income, Low Costs
MHCLG	Ministry of Housing Communities and Local Government
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 H: Further information

Revisions policy

The BEIS 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

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@beis.gov.uk

The BEIS 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.

National Statistics designation

National Statistics status means that our statistics meet the highest standards of trustworthiness, quality and public value, and it is our responsibility to maintain compliance with these standards.

The continued designation of these statistics as National Statistics was confirmed in August 2017 following a compliance check by the Office for Statistics. The statistics last underwent a full assessment against the Code of Practice for Statistics in 2014.

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 BEIS statement of compliance with the Pre-Release Access to Official Statistics Order 2008.

Contact

- Responsible statistician: Katie Allison

- Email: fuelpoverty@beis.gov.uk

- Media enquiries: 020 7215 1000

- Public enquiries: 0300 068 8499