ANNUAL FUEL POVERTY STATISTICS REPORT, 2017 (2015 DATA)

England

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https://www.gov.uk/government/collections/fuel-poverty-statistics

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Executive Summary

Aim

The aim of this publication is to provide a comprehensive view of the latest statistical trends and analysis of fuel poverty in England. Fuel poverty in England is measured using the Low Income High Costs indicator, which considers a household 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.

Headline Figures

- In 2015, the average fuel poverty gap (the amount needed to meet the fuel poverty threshold) in England was estimated at £353, which is a decrease of 5.6 per cent in real terms from 2014 and continues the steady downward trend since 2013.

- The aggregate fuel poverty gap for England also continued to decrease in 2015 (by 0.5 per cent in real terms) to £884 million.

- In 2015, the proportion of households in fuel poverty in England was estimated at 11.0 per cent (approximately 2.50 million households). This is an increase of 0.4 per cent from 2014.

- In 2015, further progress was made towards the interim 2020 fuel poverty target, with 89.7 per cent of all fuel poor households living in a property with a fuel poverty energy efficiency rating of Band *E* or above.

Year	Fuel Poverty Target	2010 (%)	2015 (%)	Percentage point change
2020	**Band *E* or above**	78.7	89.7	11.0
2025	**Band *D* or above**	29.4	63.1	33.7
2030	**Band *C* or above**	1.5	7.8	6.2

Drivers of Fuel Poverty

The relative nature of the fuel poverty indicator makes it difficult to isolate accurately absolute reason for change. The fuel poverty status of a household depends on the interaction between three key drivers; household incomes, fuel poverty energy efficiency ratings (FPEER) and required fuel costs. These are summarised below for 2015:

		Fuel poor	Non-fuel poor	All households
£	Median income	£10,118	£23,147	£21,333
🏠	Median FPEER	58.1	65.5	64.6
🔥	Median fuel costs	£1,430	£1,197	£1,236

Energy efficiency, dwelling and household characteristics

- Households with insulated cavity walls are least likely to be in fuel poverty (6.2 per cent of households with an average gap of £185), compared to households with uninsulated solid walls (18.1 per cent with an average fuel poverty gap of £482).

- Older dwellings have a higher proportion of households in fuel poverty (18.0 per cent) compared to newer dwellings (4.2 per cent). They also have a much larger fuel poverty gap. The oldest dwellings (pre-1850) have an average fuel poverty gap of £899 compared to £182 for the newest dwellings (post-1990).

- The level of fuel poverty is highest in the private rented sector (21.3 per cent of households) compared to those in owner occupied properties (7.4 per cent). Those in the private rented sector also tend to be deeper in fuel poverty, with an average fuel poverty gap of £410, compared to £175 for those in local authority housing.

- When considering household composition, those living in 'multi-person (adult) households' are deepest in fuel poverty with an average fuel poverty gap of £493 compared to a single person under 60 (£227). However, the highest prevalence of fuel poverty is seen for lone parents with dependent child(ren) (23.6 per cent).

Chapter 1: Introduction

In December 2014, the Government introduced a new statutory fuel poverty target for England[1]. The target is to ensure that as many fuel poor homes as reasonably practicable achieve a minimum energy efficiency rating of a Band C[2], by 2030. To support the implementation of this target, the Government published 'Cutting the cost of keeping warm: a fuel poverty strategy for England[3], in March 2015. The strategy also set out interim milestones to lift as many fuel poor homes in England as is reasonably practicable to Band E by 2020; and Band D by 2025, alongside a strategic approach to developing policy to make progress towards these targets.

A household is considered to be fuel poor if it has higher than typical energy costs *and* would be left with a disposable income below the poverty line[4] if it spent the required money to meet those costs. It captures the fact that fuel poverty is distinct from general poverty: not all poor households are *fuel* poor, and some households would not normally be considered *poor* but could be pushed into fuel poverty if they have high energy costs. Fuel poverty is therefore an overlapping problem of households having a low income *and* facing high energy costs.

The Government is interested in the amount of energy people need to consume to have a warm, well-lit home, with hot water for everyday use, and the running of appliances. We therefore measure fuel poverty based on *required* energy bills rather than *actual* spending. This ensures that we do not overlook those households who have low energy bills simply because they actively limit their use of energy at home, for example, by keeping their home cold.

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[1] Fuel poverty is a devolved matter, with each nation in the UK having its own policy target, measurement and outputs. See Annex B for further information.
[2] Household energy efficiency ratings are banded from G (lowest) to A (highest).
[3] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/408644/cutting_the_cost_of_keeping_warm.pdf
[4] The poverty line (income poverty) is defined as an equivalised disposable income of less than 60% of the national median:
https://www.ons.gov.uk/peoplepopulationandcommunity/personalandhouseholdfinances/incomeandwealth/articles/persistentpovertyintheukandeu/2014

1.1 Measuring Fuel Poverty in England

Fuel poverty in England is measured using the Low Income High Costs (LIHC) indicator. Under the LIHC indicator, 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.

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 non-fuel poor household threshold. This is illustrated in Figure 1.1, 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 Figure 1.1); and

- the **depth** of fuel poverty among these fuel poor households. This is measured through a **fuel poverty gap** (shown by the vertical arrows in Figure 1.1), which represents the difference between the required energy costs for each household and the nearest fuel poverty threshold.

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

The fuel poverty indicator 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 if 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, 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 1.1: Fuel poverty under the Low Income High Costs indicator
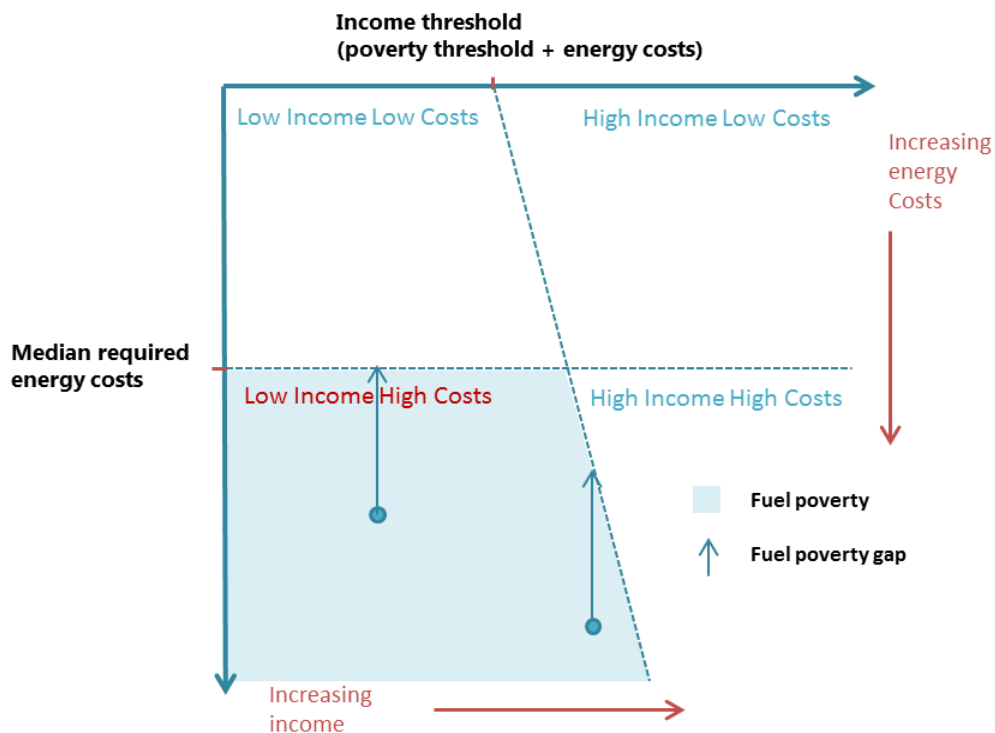
Fuel poor households (bottom left hand quadrant of Figure 1.1) include some households who may not traditionally be considered to be poor, but are pushed into fuel poverty by their high energy requirements (this is reflected in the gradient of the income threshold).

Those in the bottom right hand quadrant also have high 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 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 energy costs, and so are not considered to be *fuel* poor.

The fuel poverty status of a household depends on the interaction between three key drivers: household incomes, household energy efficiency, and fuel prices. These are explored in more detail in Chapter 2.

KEY DEFINITIONS

Fuel Poverty

A household is considered to be fuel poor if: they have required fuel costs that are above average (the national median level); and, were they to spend that amount, they would be left with a residual income below the official poverty line.

Low Income High Costs Indicator

A dual indicator, which allows us to measure both the level (number of households) and depth (fuel poverty gap) of fuel poverty.

Fuel Poverty Gap

The difference in pounds between the required energy costs for *each* fuel poor household and the nearest fuel poverty threshold.

Average Fuel Poverty Gap

The average (mean) *fuel poverty gap* across *all* fuel poor households.

Aggregate Fuel Poverty Gap

The *fuel poverty gap* for each individual household is aggregated across *all* fuel poor households to produce a national total.

Further information

Further information on how the LIHC indicator works, drivers of fuel poverty, data sources, and methodological updates for the 2015 estimates can be found in Annex A. A full Methodology Handbook[5] is also available alongside this publication.

The 2015 fuel poverty dataset with 11,955 records, will be made available later this year via the UK Data Archive, where previous year's data are also available. These releases contain the underlying data used to calculate fuel poverty and the corresponding breakdown variables used within the fuel poverty report. Documentation covering variable names and descriptions are also provided alongside the datasets.

The majority of fuel poverty variables are included in the dataset deposited at the UK Data Archive under the standard End User Licence. To comply with data protection guidance issued by the Government Statistical Service, supplementary fuel poverty variables are released under a more restricted Special Licence on the UK Data Archive. To maintain the

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

confidentiality of respondents, disclosure control is applied to both the End User Licence and Special Licence fuel poverty datasets on the UK Data Archive.

Please note: users will need to register with the UK Data Archive website to access the data: http://data-archive.ac.uk/.

Chapter 2: Summary of Fuel Poverty in England, 2015

2.1 Fuel Poverty in England Overview

In 2015, the average fuel poverty gap (in real terms[6]) was £353. This is a decrease of around 5.6 per cent from 2014[7]. The aggregate fuel poverty gap (summed across all households in fuel poverty) also decreased by 0.5 per cent in real terms to £884 million in 2015. The proportion of households in England in fuel poverty in 2015 was estimated at 11.0 per cent (approximately 2.50 million households). This is an increase of 0.4 per cent from 2014.

Table 2.1: Headline fuel poverty figures for 2015

Average fuel poverty gap	£353
Aggregate fuel poverty gap	£884 million
Proportion of households in fuel poverty	11.0 per cent

We recommend using the average fuel poverty gap as an indication of fuel poverty trends at the national level, since this is a real terms value showing how much extra money households in fuel poverty need to spend in order to cross the fuel poverty threshold.

Figure 2.1 on the next page, shows the overall trend in fuel poverty in England between 2003 and 2015, where the average fuel poverty gap has been steadily decreasing since 2012 and is now at the same level seen in 2010[8].

Due to the relative nature of the fuel poverty measure, the proportion of households in fuel poverty remains fairly stable over time, fluctuating between 10 and 12 per cent. As shown in Figure 2.1, in more recent years, the proportion of households in fuel poverty was seen to decline between 2009 and 2013 and then start to increase again in 2014 and 2015.

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[6] "in real terms" means an adjusted financial number after correcting for the effect of inflation.
[7] 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 A).
[8] Note that historic average and aggregate fuel poverty gaps have been rebased to 2015 prices, and thus differ to those presented in the previous version of this publication.

Figure 2.1: Fuel poverty in England, 2003-2015
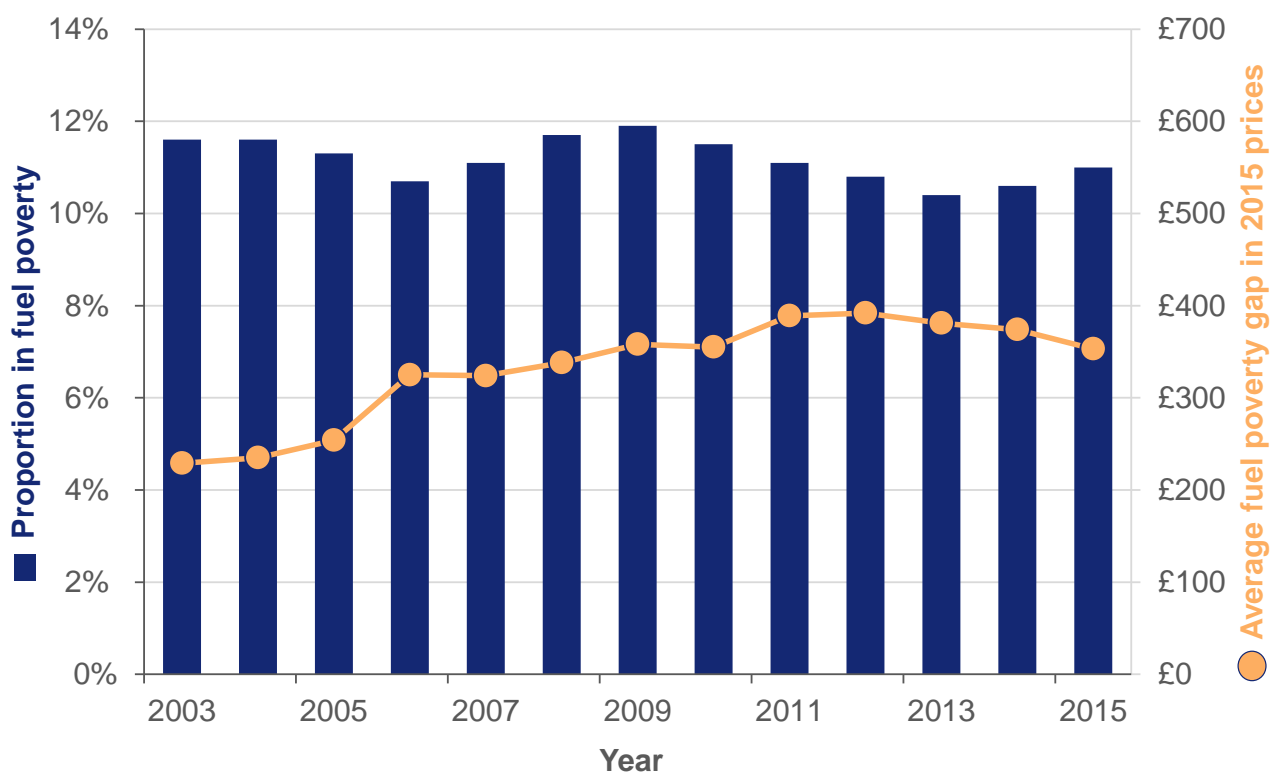
2.2 Progress Against the Target

KEY DEFINITION

Fuel Poverty Energy Efficiency Rating (FPEER) [9]
FPEER is a measure of the energy efficiency of a property based on the Standard Assessment Procedure (SAP)[10] *but* accounts for policies that directly affect the cost of energy[11]. Similar to SAP, the FPEER methodology generates a rating between 1 and 100, which is then translated into an energy efficiency Band from *G* (lowest) to *A* (highest) and underpins the Government's fuel poverty target.

[9] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/332236/fpeer_methodology.pdf
[10] See pages 18 and 19 for further detail on SAP.
[11] At present this relates to the Warm Home Discount and Government Electricity Rebate.

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 FPEER rating of Band *C* by 2030, with interim targets of Band *E* by 2020, and Band *D* by 2025. This is depicted in Figure 2.2.

Figure 2.2: Fuel poverty targets for England
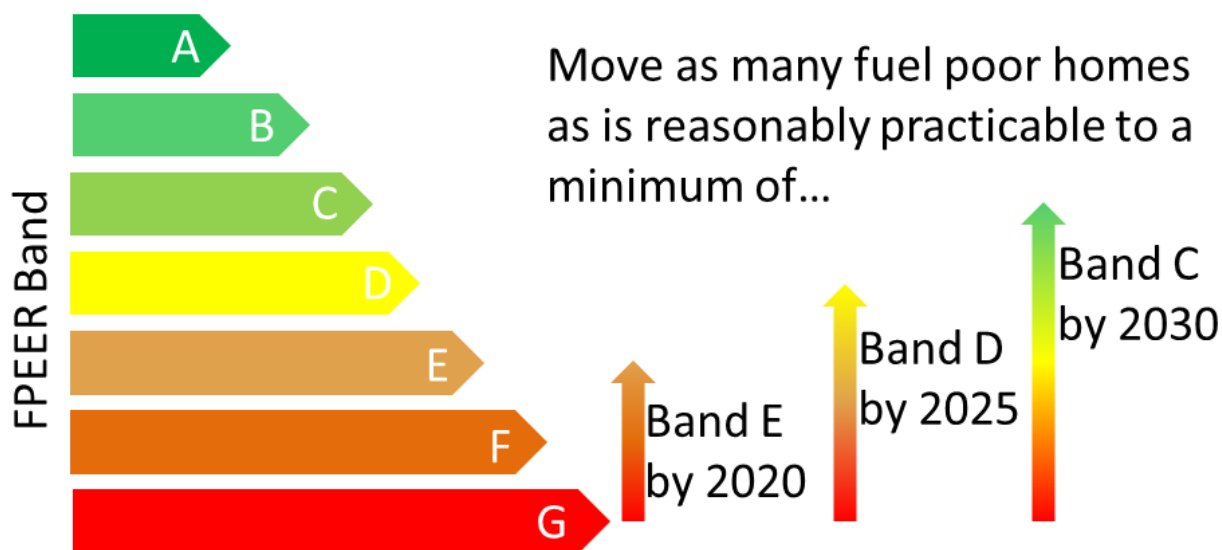
In 2015 89.7 per cent of fuel poor homes were in Band *E* or above; 63.1 per cent of fuel poor households were in Band *D* or above; and 7.8 per cent of fuel poor households were in Band *C* or above (see Table 2.2 and Figure 2.3).

In relation to the 2020 target, the proportion of dwellings in Band *E* or above has increased by 11.0 percentage points[12] since 2010, seeing a steady increase from 78.7 per cent in 2010 to 89.7 per cent in 2015. Further analysis by FPEER can be found in Chapter 3.

Table 2.2: Proportion of fuel poor by FPEER band (%)

	2010	2011	2012	2013	2014	2015
Band E or above	78.7	81.6	85.5	86.8	88.4	89.7
Band D or above	29.4	34.5	43.4	51.0	58.9	63.1
Band C or above	1.5	2.8	4.4	4.5	6.8	7.8

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[12] A percentage point is the unit for the arithmetic difference between two percentages (e.g. an increase of 20 per cent to 30 per cent is classed as a 10 percentage point increase but is a 50 per cent increase in what is being measured.

Figure 2.3: Progress towards fuel poverty targets for England
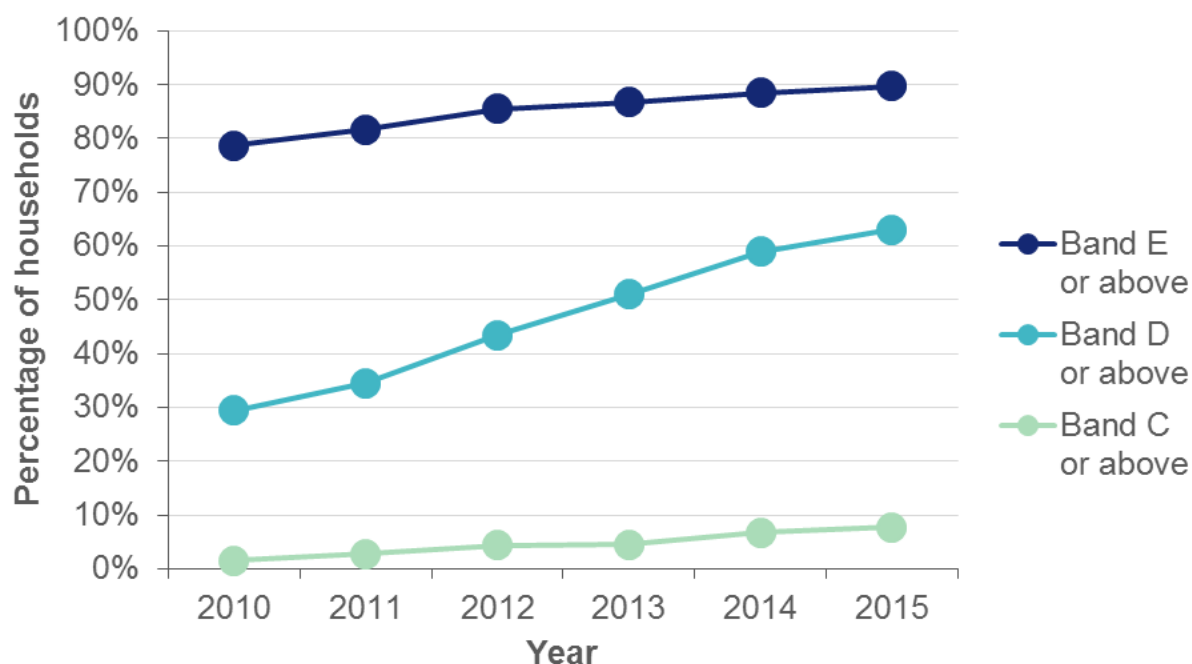
2.3 The Low Income High Costs Quadrant

Fuel poverty in England is measured under the Low Income High Costs indicator, which is defined in Section 1.1. 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:

- Low Income High Costs (LIHC)
- Low Income Low Costs (LILC)
- High Income Low Costs (HILC)
- High Income High Costs (HIHC)

The Low Income High Costs quadrant provides an estimate of those who are in fuel poverty, with Figure 2.4 showing the distribution of the population across all four quadrants of the indicator[13]. In 2015, of those households with low incomes, 43.4 per cent were classed as fuel poor. Of those households with high fuel costs, 22.1 per cent were classed as fuel poor.

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[13] Negative income values occur in a small proportion of cases, where basic income is zero *before* deduction of housing related payments, such as council tax.

Figure 2.4: The proportion of households in each quadrant of the fuel poverty indicator, 2015

2.4 The Drivers of Fuel Poverty

The fuel poverty status of a household depends on the interaction between three key drivers: household incomes, household energy efficiency and fuel prices. Due to the relative nature of the fuel poverty indicator, it is important to assess these drivers in terms of their likely effect on the fuel poor population, and their resulting depth of fuel poverty.

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 fuel poverty if households with low incomes and high fuel costs see relatively larger income changes (increases or decreases) compared to those who are not in fuel poverty.

2.4.1 Income

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KEY DEFINITION

Equivalised After Housing Cost (AHC) income
This is the official income definition used to estimate fuel poverty. It is based on a households full income *minus* housing costs (mortgage and rent payments), which is then equivalised by an adjustment factor to standardise spending requirements based on a households composition (see Annex A for further details).

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Income is an important driver of fuel poverty. By definition, fuel poverty requires households to have a low income, therefore, changes in income will impact fuel poverty estimates. In 2015, median household incomes (before housing costs have been taken into account) continued to increase, rising from £25,417 in 2014 to £26,428 in 2015 (around 4.0 per cent in cash terms[14]). However, as Figure 2.5 shows, income did not rise equally across all household income decile groups. Smaller rises were seen for the lower income groups, and larger increases seen for the higher income groups.

Those in the lowest three income deciles saw their income rise by only 1.2 to 1.9 per cent compared to all other income deciles, which saw their income rise between 2.7 per cent and 4.6 per cent.

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[14] Cash terms means a nominal value which has not been adjusted for inflation

Figure 2.5: Comparison of annual percentage change in median household full income by income deciles, 2014-2015
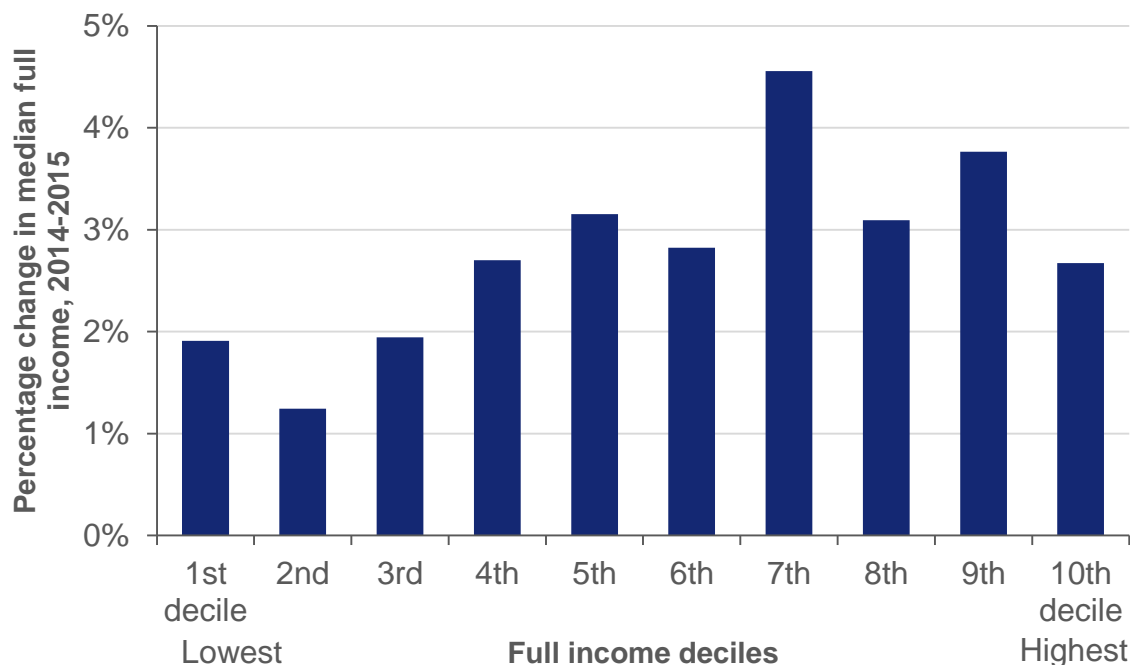
Under the LIHC indicator, housing costs are taken off the full income of each household; this is referred to as the 'After Housing Costs' (AHC) income, since money spent on housing costs cannot be spent on energy costs. In 2015, median housing costs continued to increase, rising from £4,400 in 2014 to £4,600 in 2015 (around 4.5 per cent).

As with income, year on year changes to housing costs are not equal across the income deciles. Housing costs consist of mortgage repayments and/or rent for either private or social renting, which do not change at the same rate. As can be seen in Figure 2.6, housing costs in 2015 decreased for the highest two income deciles, whilst rising for all others.

Figure 2.6: Comparison of annual percentage change in median housing costs by income deciles, 2014-2015
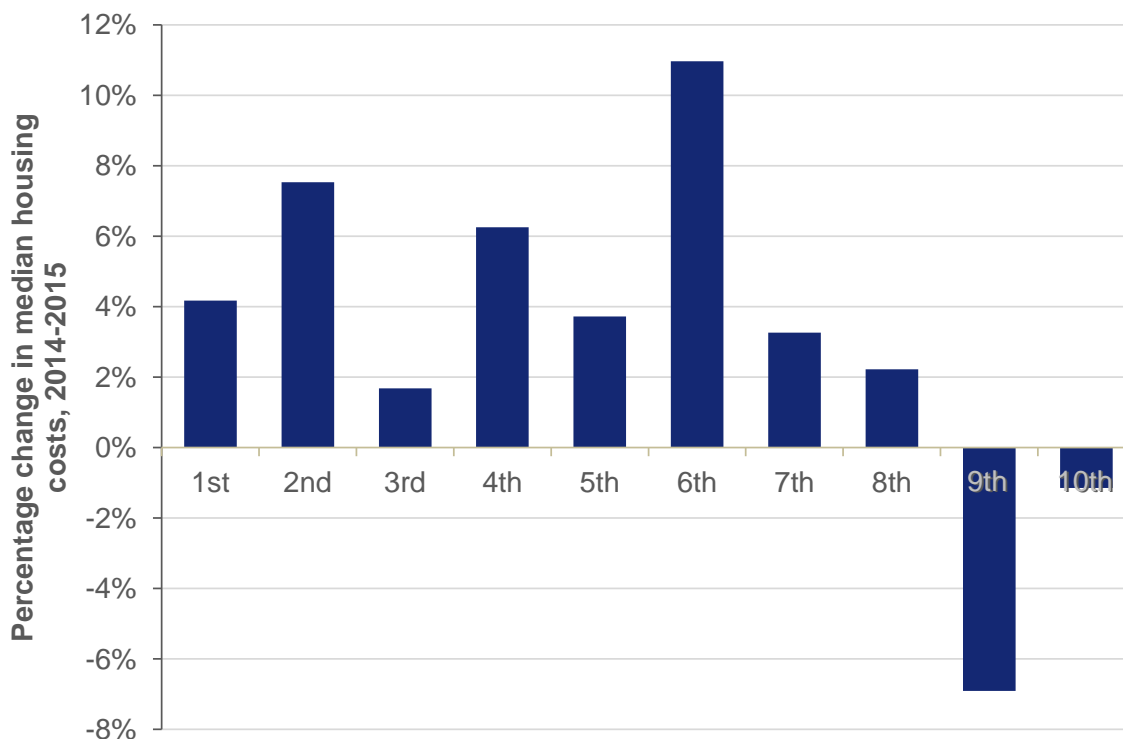
In 2015, the disproportionate changes in household income and housing costs feeding into the equivalised AHC income, will have an impact on fuel poverty. Not only have households in the lower income deciles seen lower income increases, they have also seen an increase in their housing costs. This will have resulted in these households being relatively worse off when looking at equivalised AHC income compared to the overall population.

This contributes to the shifting of households across the income threshold into fuel poverty. In particular, those in the fourth income decile (on the border of fuel poverty) may have been pushed into fuel poverty due to their high housing cost increase.

2.4.2 Energy efficiency

The energy efficiency rating of a property is a key indicator of its energy saving potential. The standard definition for measuring the energy efficiency of the housing stock in

England is described using the Standard Assessment Procedure (SAP[15]) for the Energy Rating of Dwellings[16]. SAP differs slightly from FPEER, as it does not take into account policies aimed at reducing the cost of energy. However, at a national level, it is relevant to fuel poverty as the higher a household's energy efficiency level, the lower the energy requirements should be for the dwelling, all else being equal.

Table 2.3 shows the continued increase in the energy efficiency rating of the English housing stock over the past decade. There was a further increase in the median SAP value from 63.2 in 2014 to 63.7 in 2015.

Table 2.3: Median SAP energy efficiency ratings, 2003, 2010-2015

Year	All households
2003	49.3
2010	57.9
2011	59.2
2012	61.0
2013	62.2
2014	63.2
2015	63.7

Fuel poverty and energy efficiency are closely linked. When looking at energy efficiency improvements across the fuel poor quadrant (Figure 2.7), we can see that *high* energy cost households (LIHC, HIHC) have lower SAP ratings compared to *low* energy cost households (LILC, HILC).

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[15] BRE 2012. The Government's Standard Assessment Procedure for energy rating of dwellings: 2012 edition. http://www.bre.co.uk/filelibrary/SAP/2012/SAP-2012_9-92.pdf

[16] SAP is based up on the predicted running costs of a dwelling per square metre of floor area (independent of occupancy) under a defined set of conditions. SAP ratings run from 1 (lowest level of energy cost efficiency) to 100 (highest level). These ratings can also be banded into *A* to *G* bands (with *A* being the highest).

Figure 2.7: Median SAP ratings by each quadrant of the fuel poverty indicator, 2015
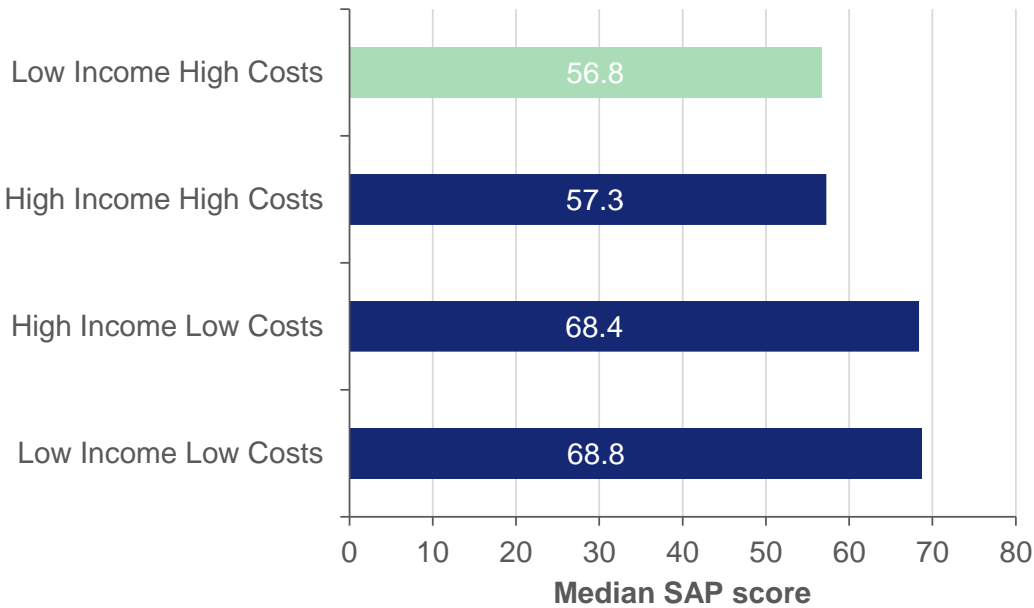
As energy efficiency improves, the amount of energy required to heat the dwelling will lower. This is evident in Figure 2.8, which shows that as the median SAP scores have increased over time (blue lines), the median energy requirements (orange lines) have decreased. This figure also shows that as the fuel poor population have lower average SAP scores than the non-fuel poor population, their average energy requirements are greater.

Figure 2.8: Change in median energy requirements and median SAP score, 2010-2015
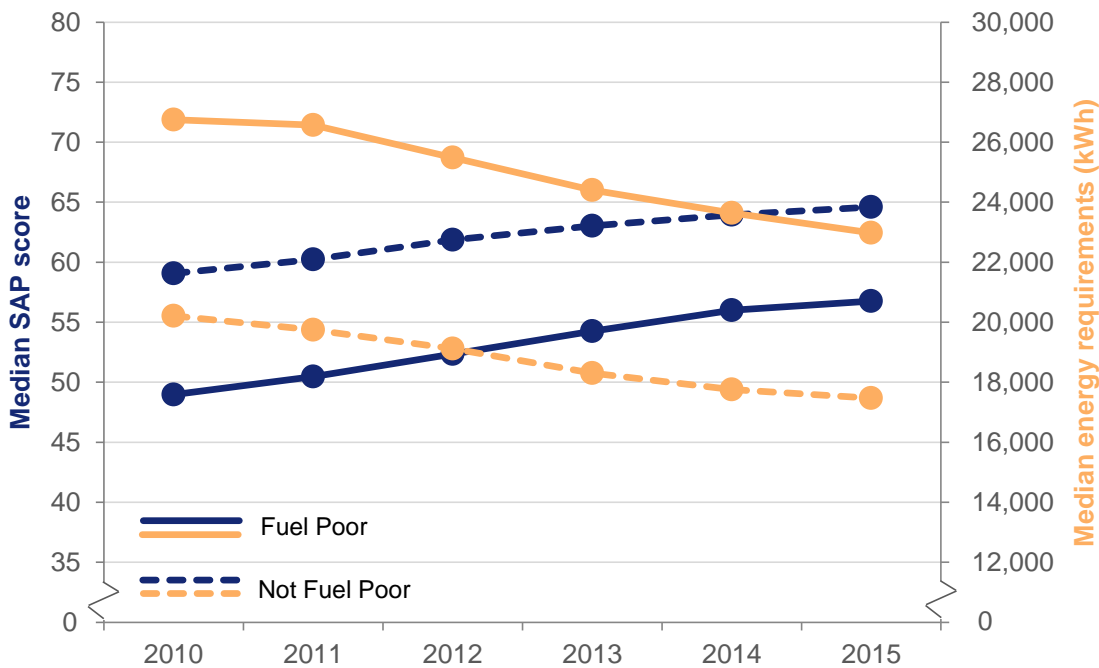
2.4.3 Energy Prices

In order to estimate fuel poverty, we need to calculate how much the required energy for that household would cost. In 2015, domestic energy prices decreased by approximately 3.8 per cent in real terms compared to 2014. As Figure 2.9 shows, 2015 is the first year since 2010 where energy prices have decreased. If all else was held constant, a decrease in energy prices would reduce the average fuel poverty gap. This is because households with higher energy requirements will be affected more by energy price changes (see Figure A2, Annex A, for a full explanation).

There is a strong correlation (r_s=0.868, *p*<0.001) between fuel prices in real terms and the depth of fuel poverty (i.e. the average fuel poverty gap), as seen in Figure 2.9. As prices steadily increased between 2003 and 2009, the fuel poverty gap also increased; and when prices fell in 2010, the average fuel poverty gap showed a corresponding reduction. However, a divergence in the trend between 2012 and 2014 can be seen. This is likely related to the downward trend in household energy requirements due to improving energy efficiency of the English housing stock (see Section 2.4.2) outweighing any price increases in these years. In 2015, both the real term price index and the average fuel poverty gap decreased, resulting in a downward trajectory for both measures.

Figure 2.9: Average fuel poverty gap and real term fuel prices, 2003-2015
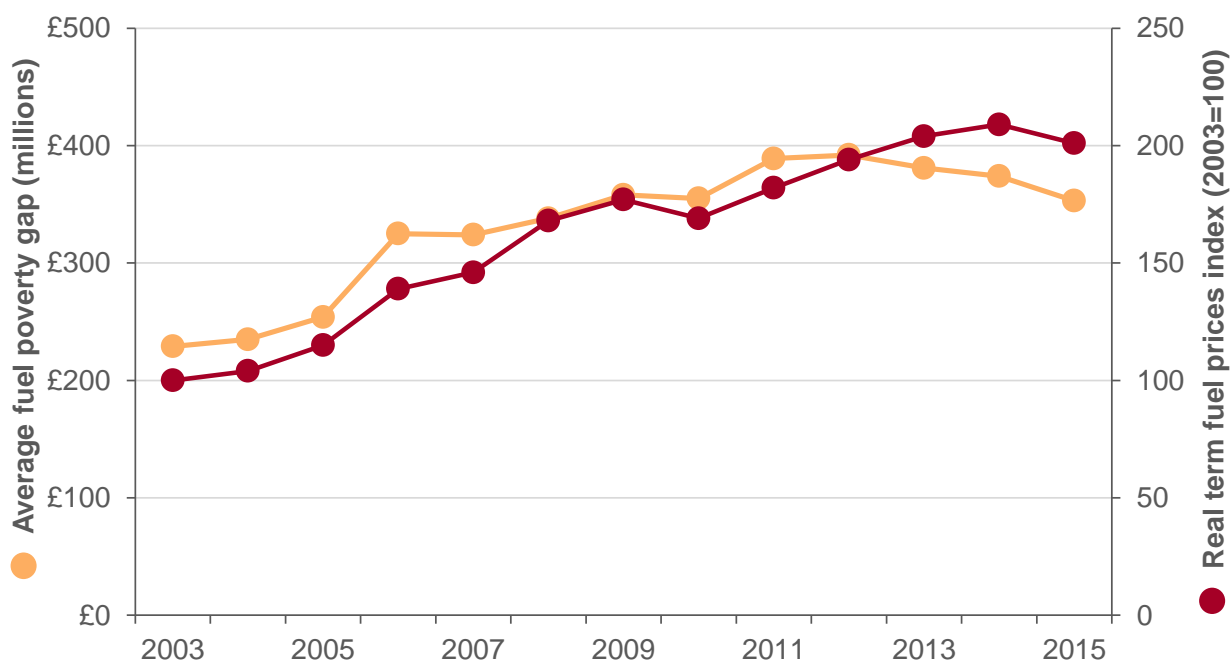
In relation to Figure 2.9, it should be noted that fuel poverty data is a combination of two consecutive years (i.e. 2014 and 2015). This means that the effects of price changes are staggered over a two year period. Therefore, when considering changes in fuel poverty from one year to the next, it is useful to consider national price changes over a two year

period. Fuel prices increased between 2013 and 2014, but then decreased from 2014 to 2015. This means that the benefit of reduced fuel prices will only be seen in the more recent half of the fuel poverty sample; the full impact of this drop in prices will only become clear in next year's data. In real terms comparing prices in 2015 to 2013, there was a 1.5 per cent decrease over the two year period.

2.4.4 Household energy requirements

To calculate fuel poverty, a household's required energy costs are calculated by multiplying the cost of a unit of energy (plus standing charges) by the estimated number of units of energy required for each household. This is then equivalised to reflect each household's composition, which allows direct comparisons across the data. As shown in Table 2.4, required household energy costs (median equivalised fuel costs) decreased for *all* quadrants of the fuel poverty indicator in 2015 compared to 2014. This is a result of both energy prices (Figure 2.9) and the amount of energy required (Figure 2.8), decreasing over this period.

Table 2.4: Median required fuel costs by fuel poverty quadrant, 2014-2015[17]

	Median equivalised fuel costs (£)		
	2014	2015	% change
Low Income High Costs	£1,485	£1,430	-3.8%
Low Income Low Costs	£1,053	£1,038	-1.4%
High Income Low Costs	£1,085	£1,056	-2.7%
High Income High Costs	£1,523	£1,489	-2.3%
Overall population	£1,266	£1,236	-2.4%

2.5 Interaction of Key Drivers

The relative nature of the fuel poverty indicator makes it is difficult to accurately isolate individual reasons for change. In order for any factor to affect the level or depth of fuel poverty, the factor must change by a greater amount for those in fuel poverty, than for those not in fuel poverty.

Figure 2.10 shows the distribution of all households in relation to the interaction of income and energy cost thresholds, which result in the fuel poverty status of a household. The colours of the points on the chart represent different income deciles. From this, you can

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[17] Median fuel costs are based on the median energy consumption. This is based on assuming households heat their home to a minimum heating standard. See section 5 of the Methodology Document.

see that, from one year to the next, if a household had a lower than average increase in income, they would shift to the left of the chart. This could potentially mean that they cross the income threshold into fuel poverty.

Figure 2.10: Distribution of households across the fuel poverty quadrants, 2015
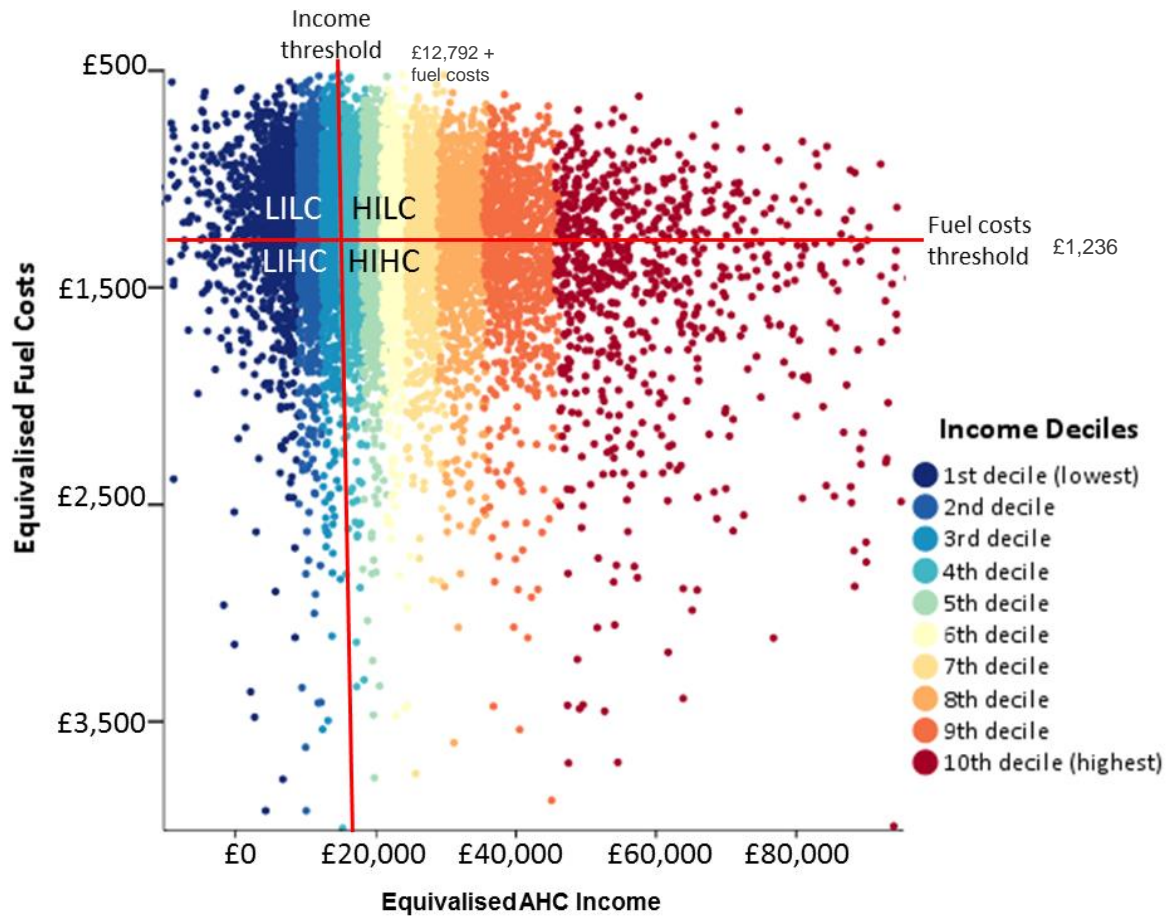
Households with high energy requirements would have seen a larger impact on their energy costs as a result of price changes compared to those with low energy requirements (see Annex A). As prices decreased, the impact would have resulted in a decrease in energy costs. Therefore, in relative terms, fuel poor households have seen larger decreases in energy costs than the overall population. Although this is unlikely to have changed their fuel poverty status, it will have moved them closer to the fuel costs threshold and reduced the average fuel poverty gap.

Figure 2.11: Distribution of fuel poor households by poverty gap, 2015

Figure 2.Figure 2.11 shows the distribution of fuel poor households in the LIHC quadrant, grouped by the depth of their fuel poverty gap. Households with the smallest fuel poverty gaps are in the first quintile (the lowest 20 per cent of values closest to the energy threshold) and the biggest fuel poverty gaps are seen in the fifth quintile (the highest 20 per cent of values). This chart indicates that the majority of households in quintiles one to four are clustered quite close to the thresholds but households in quintile five, are widely spread out. These are the households in extreme fuel poverty with the largest fuel poverty gaps.

Chapters 3 and 4 explore dwelling and household characteristics that help to identify which households are in fuel poverty and where the most severe fuel poverty gaps exist.

# Chapter 3: Who are the Fuel Poor (2015)?

3.1 Who are the Fuel Poor?

The prevalence of fuel poverty in England varies by a number of dwelling and household characteristics.

Identifying the dwelling and household characteristics that are most prevalent in the fuel poor population allows us to evaluate if certain characteristics are over-represented in the fuel poor population compared to the non-fuel poor population.

3.1.1 Dwelling characteristics

Dwellings rated as FPEER Bands *D*, *E*, *F* and *G* are over-represented in the fuel poor population compared to the non-fuel poor population; whereas, there is a much higher proportion of dwellings rated as *A*/*B*/*C* in the non-fuel poor population. Only 8 per cent of fuel poor dwellings are rated as *A*/*B*/*C*, compared to 36 per cent of non-fuel poor dwellings.

Figure 3.1: Fuel poor vs non-fuel poor by FPEER, 2015
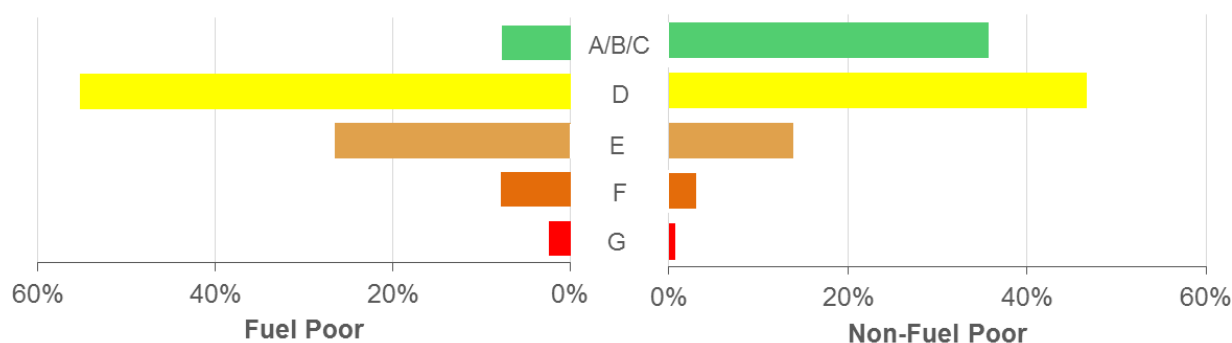
As shown in Figure 3.2, 43 per cent of the fuel poor population have uninsulated solid walls (SW) compared to only 24 per cent of the non-fuel poor population. Around a quarter of fuel poor households have insulated cavity walls (CW), which is approximately half the amount compared to the non-fuel poor population. This is unsurprising, as a household is more likely to be classed as fuel poor if they live in an uninsulated dwelling.

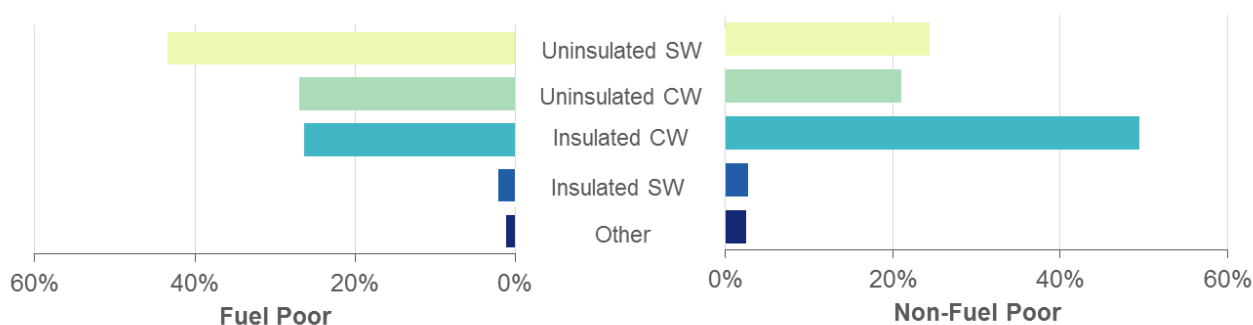**Figure 3.2: Fuel poor vs non-fuel poor by wall type, 2015**[18]

Figure 3.3: Fuel poor vs non-fuel poor by dwelling age, 2015
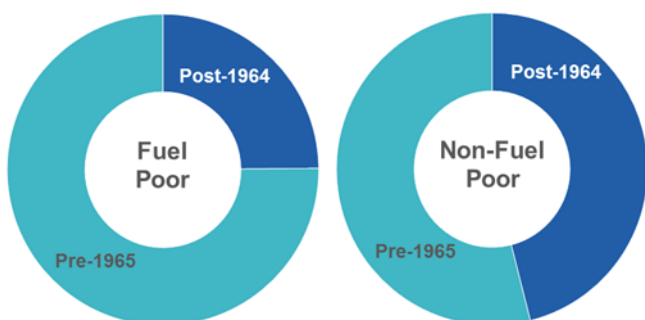
As shown in Figure 3.3, 75 per cent of households that are classed as fuel poor live in a dwelling that was built pre-1965, whereas only 54 per cent of non-fuel poor households lived in similarly aged dwellings. This shows that older dwellings are over-represented in the fuel poor population.

3.1.2 Household characteristics

Of those households that are fuel poor there is a much larger proportion living in private rented properties (38 per cent) than for those that are non-fuel poor (17 per cent). However, of those that are non-fuel poor there is a much higher proportion of owner occupied properties (66 per cent) in comparison to fuel poor properties (42 per cent).

[18] CW – Cavity Walls; SW – Solid Walls

Figure 3.4: Fuel poor vs non-fuel poor by tenure, 2015
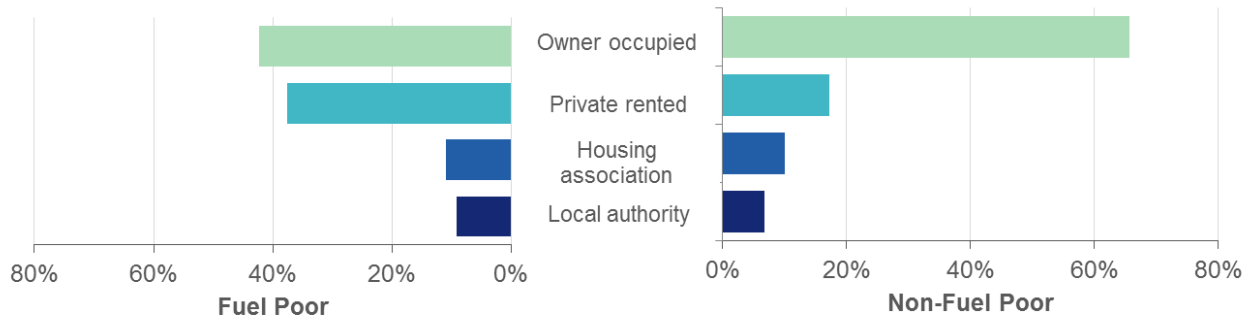
Of those that are fuel poor there is a larger proportion that are unemployed or 'other inactive' (27 per cent) compared to 9 per cent of those that are non-fuel poor. This is likely due to a number of factors including income, quality of the housing stock and required heating costs, and is explored further in Chapter 4.

Figure 3.5: Fuel poor vs non-fuel poor by employment status, 2015

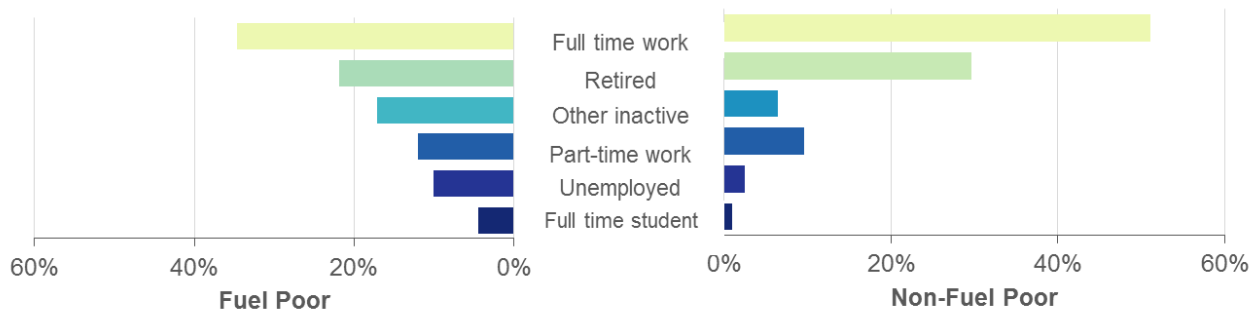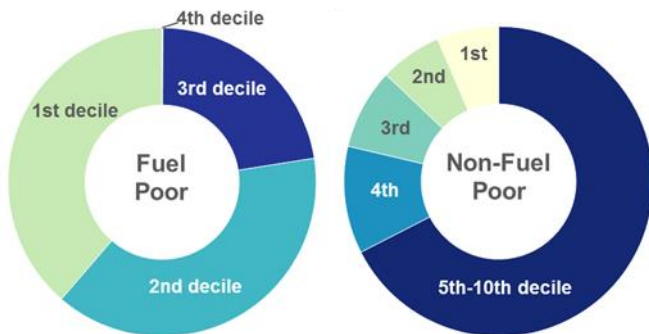**Figure 3.6: Fuel poor vs non-fuel poor by income decile, 2015**

77 per cent of households that are classed as fuel poor are situated in the first or second income deciles, in comparison to only 13 per cent of households that are non-fuel poor.

3.2 Who are Most Severely Impacted by Fuel Poverty?

The depth of fuel poverty in England varies by a number of dwelling and household characteristics.

Identifying the dwelling and household characteristics that are prevalent in those that are the most severely impacted by fuel poverty, allows us to evaluate if there are any common characteristics among these households.

3.2.1 Dwelling characteristics

Fuel poor households with an FPEER rating of Band *G* are most severely impacted, with an average fuel poverty gap of £1,568 compared to the national average of £353. As a household's FPEER rating improves, the average fuel poverty gap decreases, with the lowest levels seen for those in properties rated as Band *D* or Bands *A/B/C*.

Figure 3.7: Average fuel poverty gap by FPEER, 2015

| £1,568 | £918 | £427 | £205 | £202 |
| G | F | E | D | A/B/C |

Figure 3.8: Average fuel poverty gap by wall type, 2015

Fuel poor households with uninsulated walls are most severely impacted by fuel poverty with an average fuel poverty gap of £482 for dwellings with uninsulated solid walls, and £313 for dwellings with uninsulated cavity walls.

Solid uninsulated £482   Cavity uninsulated £313

Insulated solid £232   Insulated cavity £185
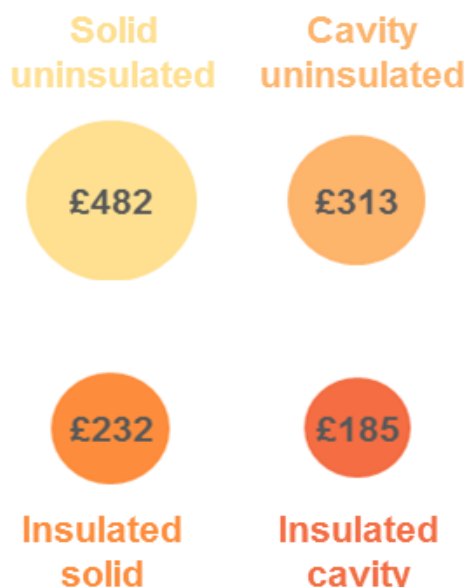
3.2.2 Household characteristics

Multi-person households are the most severely impacted by fuel poverty with a fuel poverty gap of £493, followed by couples with dependent child(ren) at £412. Households that are least impacted by fuel poverty are couples under 60 and single person households under 60, with fuel poverty gaps of £273 and £227, respectively.

Figure 3.9: Average fuel poverty gap by household composition, 2015

£493 £412 £364 £310 £291 £273 £227

Figure 3.10: Average fuel poverty gap by tenure, 2015

The fuel poverty gap is lowest for the social rented sector (housing association and local authority), which are substantially below the average fuel poverty gap for England. The fuel poverty gap sits around the average for households in the owner occupied sector; with the highest depth of fuel poverty seen for private rented households (£410).

Private rented £410

Owner occupied £381

Housing association £200

Local authority £175
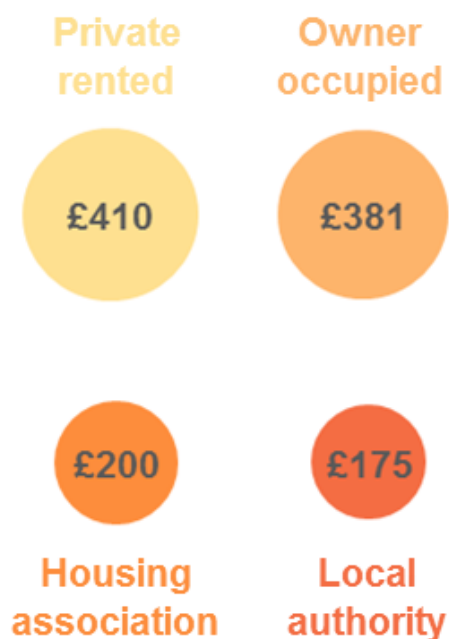
Chapter 4: Further Analysis of Fuel Poverty in England, 2003-2015

The prevalence of fuel poverty in England varies by a number of dwelling and household characteristics. Many of these characteristics are inter-related and assigning causality to one factor alone is not possible. Therefore, while the analysis looks at individual characteristics, users should be aware of the inherent inter-correlations likely to exist between them.

The data behind this analysis is available in the fuel poverty detailed tables and trend tables online, which can be accessed at the following links:

https://www.gov.uk/government/statistics/fuel-poverty-detailed-tables-2017

https://www.gov.uk/government/statistics/fuel-poverty-trends-2017

4.1 Comparison of the Main Drivers of Fuel Poverty

Chapter 2 explored the three main drivers of fuel poverty and their interaction with the fuel poverty measure – income, energy efficiency and energy prices. Figure 4.1 shows the difference in these drivers when split by fuel poor, non-fuel poor and all households.

Households that are classed as fuel poor have a median equivalised after housing cost (AHC) income less than half that of the non-fuel poor population.

The median FPEER for fuel poor households is 7.4 points less than the median FPEER of households that are classed as non-fuel poor.

The median (annual) equivalised fuel costs for a household that is fuel poor is over £230 more than the median for non-fuel poor households.

KEY TERMINOLOGY USED IN THIS CHAPTER

To simplify terminology used in this chapter, unless stated otherwise, we refer to:

'equivalised after housing cost (AHC) income' as *income,* **and**

'equivalised fuel costs' as *fuel costs*

Figure 4.1: Fuel poor vs. non-fuel poor households by the three key drivers of fuel poverty, 2015

		Fuel poor	Non-fuel poor	All households
£	Median income	£10,118	£23,147	£21,333
🏠	Median FPEER	58.1	65.5	64.6
🔥	Median fuel costs	£1,430	£1,197	£1,236

4.2 Fuel Poverty Energy Efficiency Rating (FPEER)

As discussed in Chapter 2, energy efficiency is strongly linked to the energy costs incurred by households, which impacts the likelihood of being fuel poor. If households require a greater amount of energy to run their homes, they will have higher fuel costs. Heating a household to an adequate standard of warmth[19] is dependent on the energy efficiency of the dwelling. As expected, households with a lower energy efficiency rating have a higher likelihood of being fuel poor.

In 2015, 30.7 per cent of properties in *G* rated homes in England were classed as fuel poor, compared to only 2.6 per cent of *C* rated properties and above, see Figure 4.2. The average fuel poverty gap for *G* rated properties is over seven times higher than for *D* rated properties and above (£1,568 versus £205); and over four times higher than the average fuel poverty gap for all fuel poor households (£353).

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[19] 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

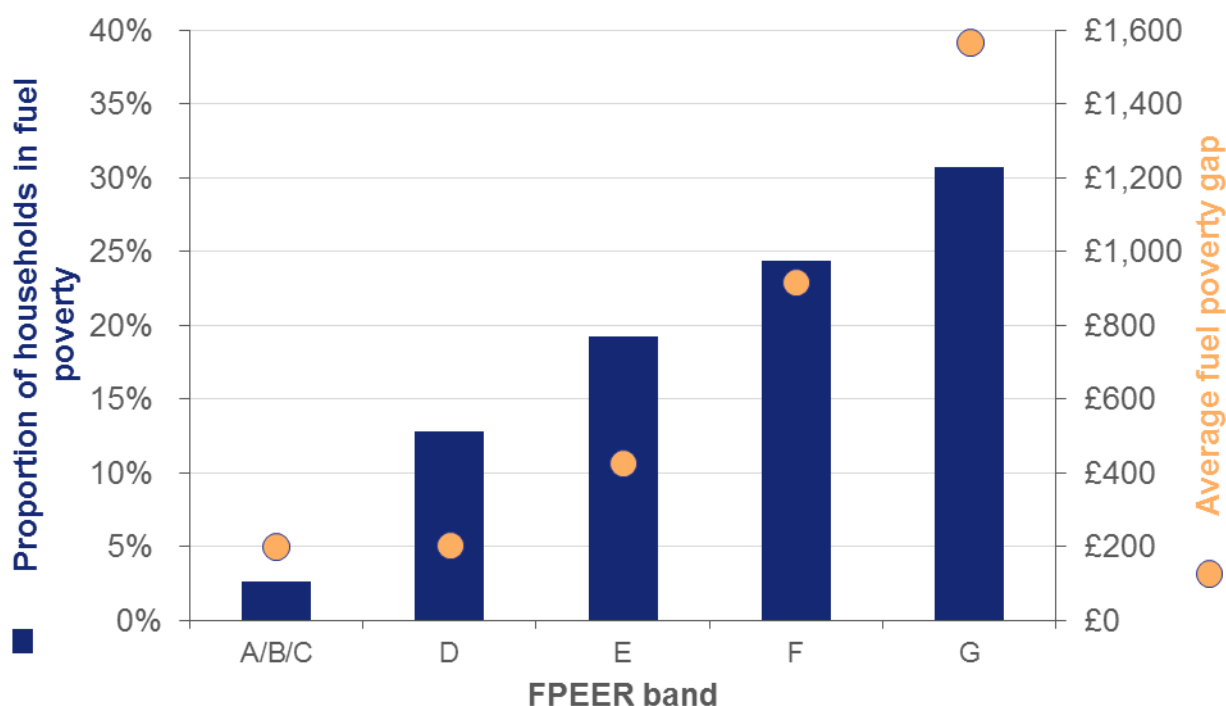**Figure 4.2: Fuel poverty and average fuel poverty gap by FPEER Band, 2015**

Figure 4.3 presents the proportion of *all* households in each FPEER Band between 2010 and 2015. This shows that the largest proportion of households in the English housing stock sit within Band *D* (around 50 per cent), and this has stayed relatively stable since 2010. The proportion of properties rated *C* and above has increased year on year while the proportion of households in *E*, *F* and *G* has steadily decreased. Households rated as *F* and *G* Bands account for a small proportion of all households in the English housing stock (around 5 per cent).

Figure 4.4 looks specifically at the *fuel poor population* by FPEER Bands between 2010 and 2015. This shows that the proportion of fuel poor households in Band *C* and above and Band *D* has increased over time, while the proportion in Bands *E*, *F* and *G* has decreased, showing clear progress against the fuel poverty targets

The proportion of *fuel poor* households in each Band shows a different distribution compared to *all households*. There is a disproportionately large amount of fuel poor households in Bands *E*, *F* and *G* compared to the overall population. This is unsurprising, given the large difference in median FPEER between fuel poor and non-fuel poor populations, as shown in Figure 4.1.

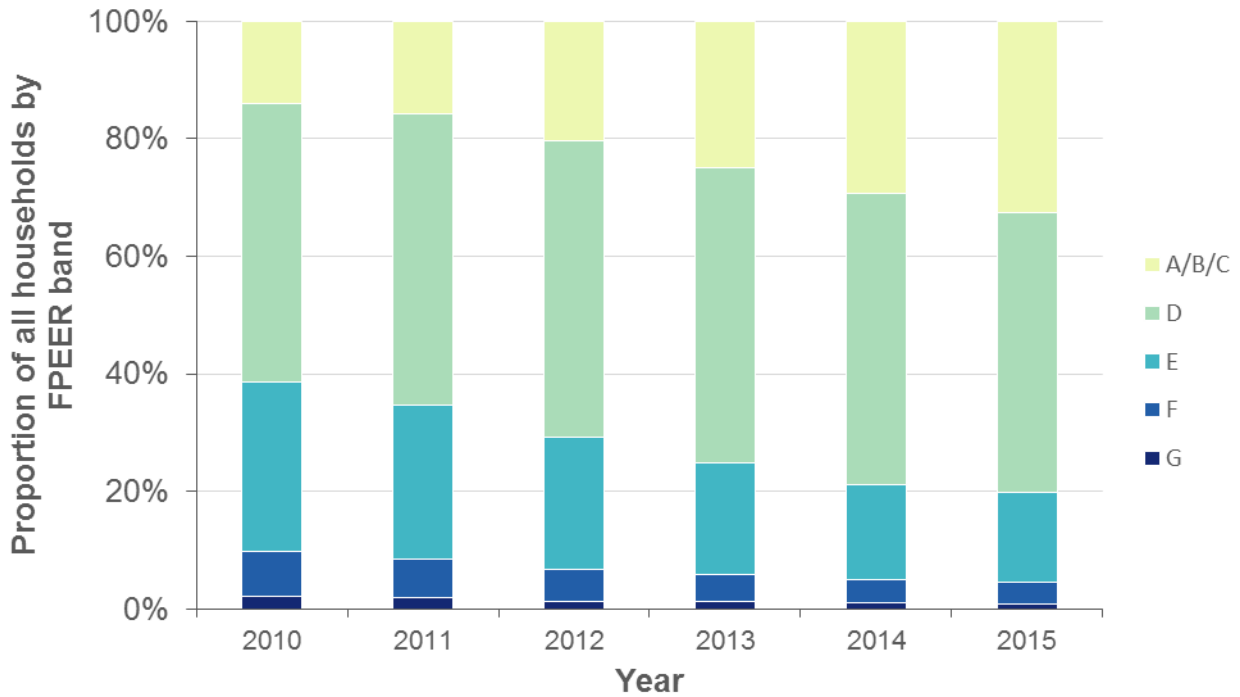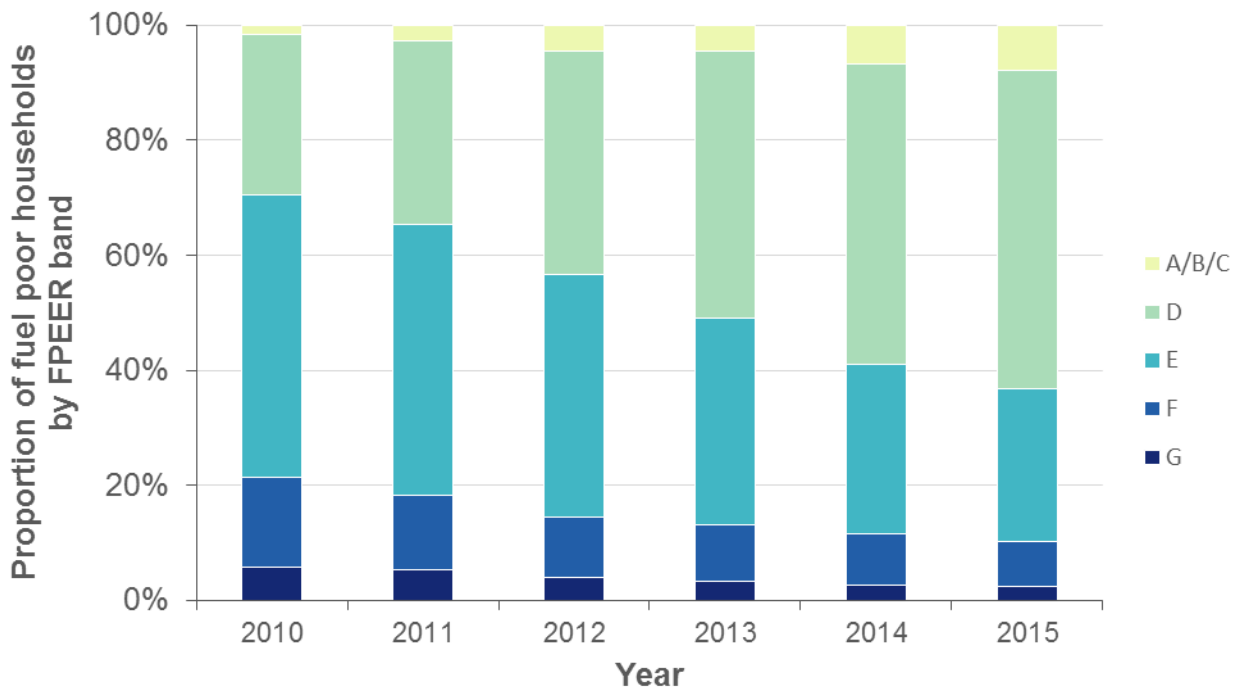**Figure 4.3: Proportion of *all* households by FPEER Band, 2010-2015**

Figure 4.4: Proportion of *fuel poor* households by FPEER Band, 2010-2015

4.3 Dwelling Characteristics

In addition to the Fuel Poverty Energy Efficiency Rating (FPEER) of a household, some specific features of the dwelling will also affect the levels of fuel poverty. Overall, patterns in dwelling characteristics for 2015 are broadly similar to those seen in previous years.

4.3.1   Wall type[20]

Walls can be constructed in different ways and are dependent on the building regulations at the time of construction. However, modifications can be made to walls after they have been built to improve insulation. The two main types of walls are *cavity* walls and *solid* walls. Cavity walls have a gap between two walls which, on its own, provides some level of insulation but this gap can be filled with insulating materials to provide a greater level of insulation. Solid walls are typically used in older builds, with no gap to add insulation as they are simply a single wall. They can be insulated post-construction by adding a layer of insulation around them.

Between 2003 and 2015 the proportion of dwellings with *insulated* cavity walls has increased by 22 percentage points[21] to 46.9 per cent; the proportion of dwellings with *uninsulated* cavity walls has halved to 21.6 per cent in 2015. The proportion of dwellings with solid walls remained relatively constant over the same time period, and in 2015, 31.5 per cent had a solid wall construction.

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[20] In 2015, to better align with SAP assumptions, an improvement to the EHS methodology was implemented, where dwellings with cavity walls, built after 1995, are assumed to be insulated. More information can be found in the EHS housing stock tables: https://www.gov.uk/government/statistics/english-housing-survey-2015-to-2016-headline-report.
[21] A percentage point is the unit for the arithmetic difference between two percentages (e.g. an increase of 20 per cent to 30 per cent is classed as a 10 percentage point increase but is a 50 per cent increase in what is being measured.

Figure 4.5: Proportion of *all* households by wall type and fuel poverty status, 2003-2015
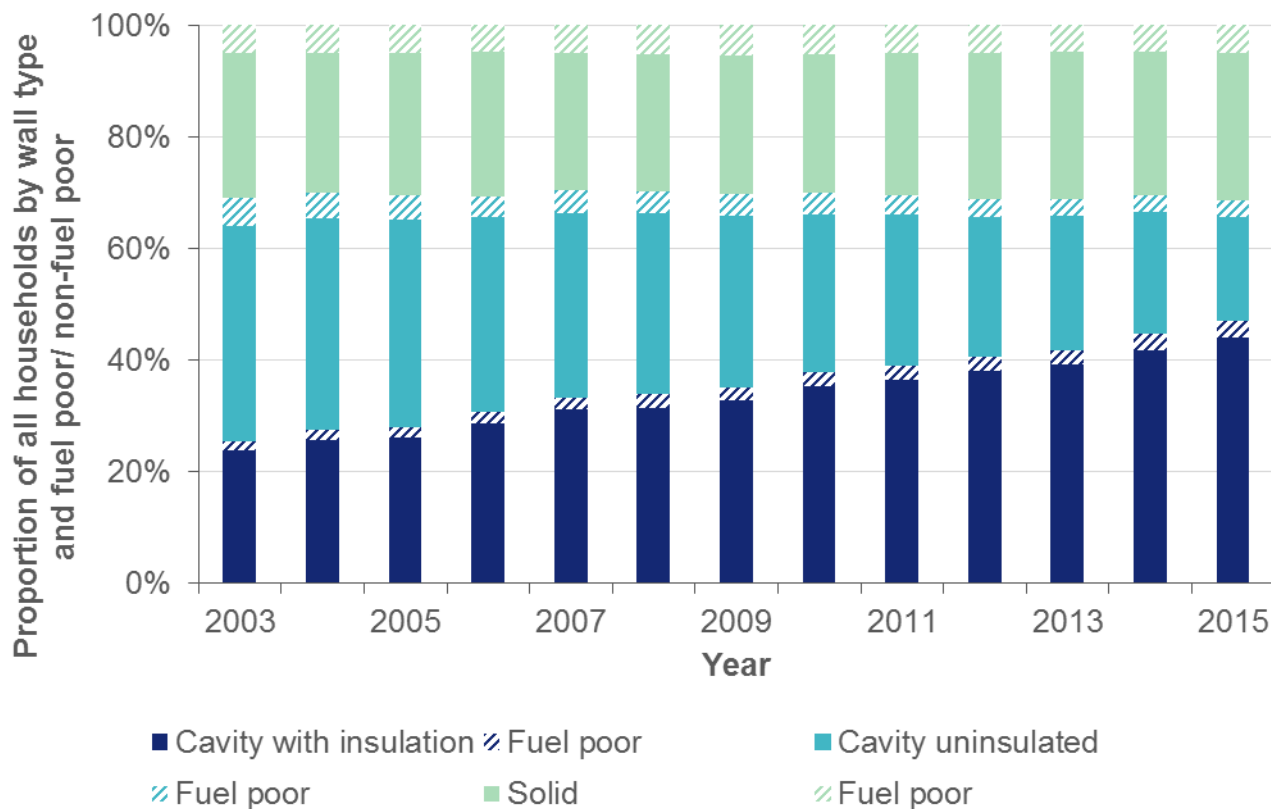
Figure 4.6 shows that households with *uninsulated* walls, whether solid or cavity, have a higher prevalence of fuel poverty and a larger fuel poverty gaps than their *insulated* equivalents. Figure 4.6 also shows that dwellings with solid walls have a higher likelihood of being fuel poor and a larger average fuel poverty gap.

Dwellings with *uninsulated* solid walls are the most likely to be fuel poor (18.1 per cent) with an average fuel poverty gap of £482. Excluding those whose wall type is classed as 'Other', *Insulated* cavity walls are the least likely to be fuel poor (6.2 per cent) with an average gap of £185[22].

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[22] 'Other' is based on a small sample size on which inferences cannot be made.

Figure 4.6: Fuel poverty and average fuel poverty gap by wall type, 2015
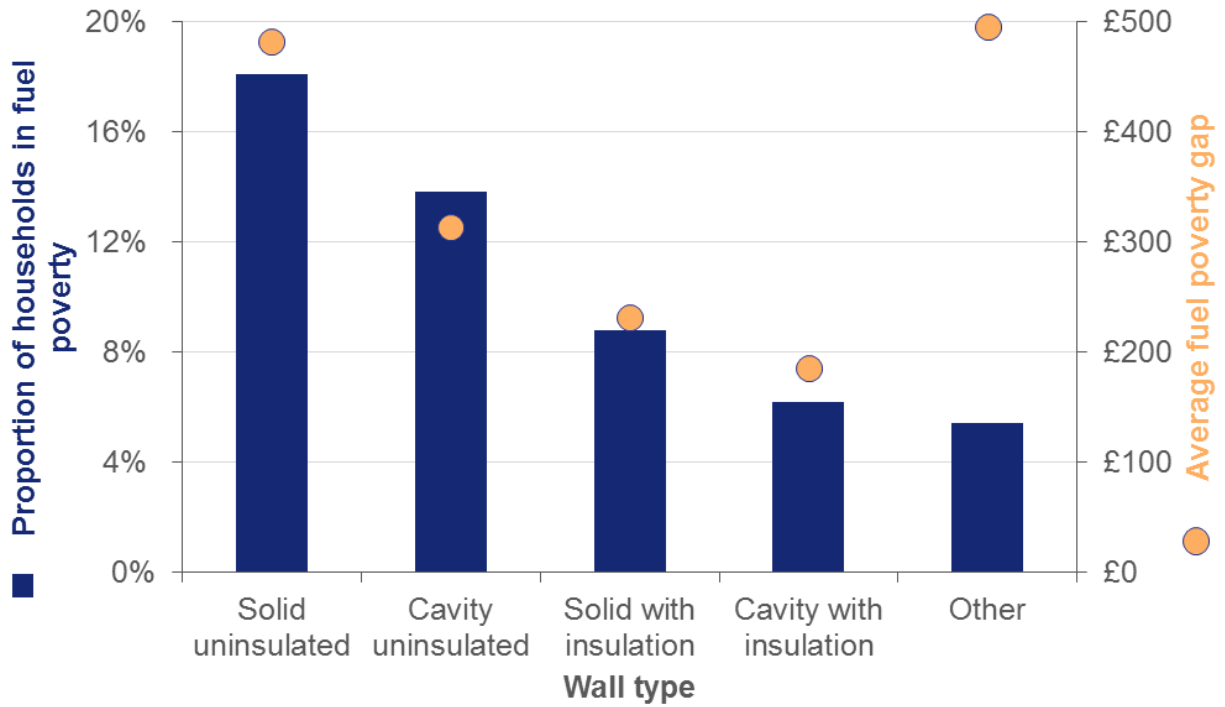
Figure 4.7: Proportion of all households with each wall type and FPEER band, 2015
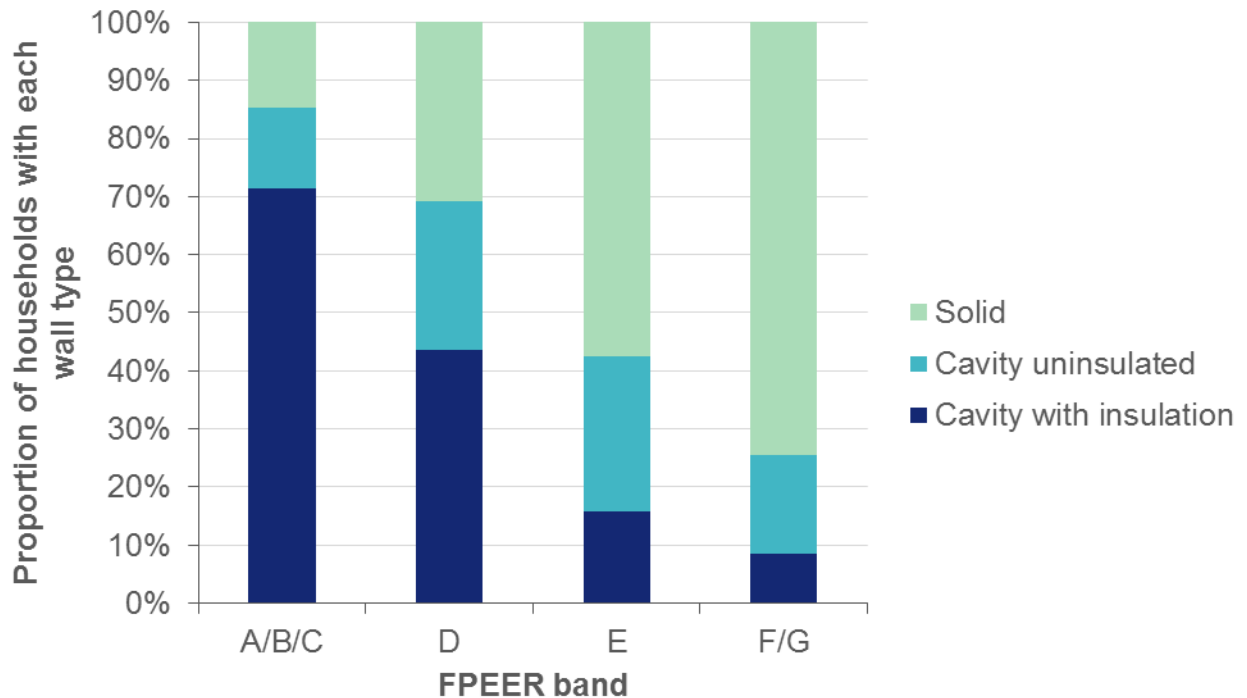
As shown in Figure 4.7, wall type is closely related to FPEER for all dwellings. The majority of dwellings rated as *C* or above, have *insulated* cavity walls. In contrast, the majority of dwellings rated *F* and *G* are of *solid* wall construction. When looking at the fuel

poor population, the pattern between wall type and FPEER Band is very similar to that for all dwellings.

4.3.2 Floor area

The likelihood and depth of fuel poverty tends to increase as floor size increases. The likelihood of being fuel poor rises from 5.8 per cent for the smallest dwellings (less than 50 square metres) to a maximum of 14.3 per cent for dwellings that are 90 to 109 square metres (see Figure 4.8). Those in the smallest dwellings have a much smaller average fuel poverty gap (£179) than those in the largest dwellings (£595).

Larger dwellings tend to have larger median energy requirements compared to smaller dwellings (see Table 4.1), which is due to having a larger area to heat and may help to explain the much larger fuel poverty gap for dwellings with a floor area of 110 square metres or more.

Figure 4.8: Fuel poverty and average fuel poverty gap by floor area, 2015
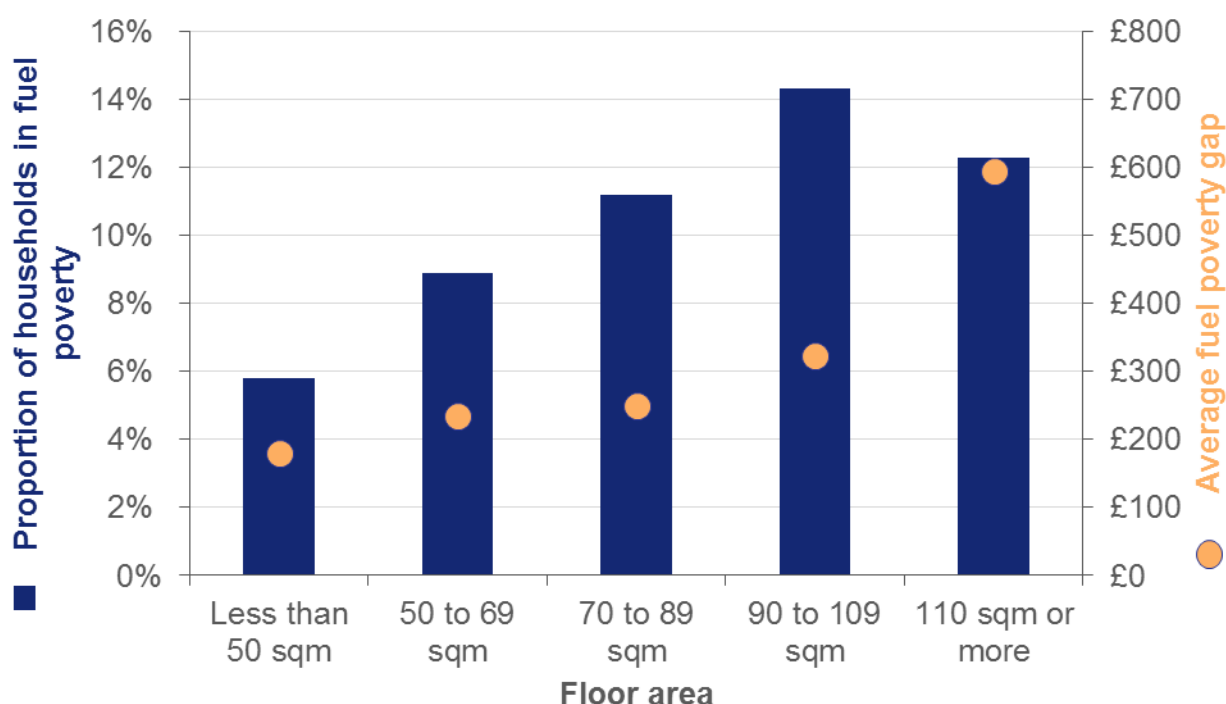
Table 4.1: Median energy requirements by floor area, 2015

	Median energy requirements (kWh)
Less than 50 sqm	9,644
50 to 69 sqm	13,793
70 to 89 sqm	17,699
90 to 109 sqm	20,532
110 sqm or more	25,648
All households	18,025

4.3.3 Dwelling Age

Those that live in older dwellings are more likely to be classed as fuel poor and also have a higher fuel poverty gap, than those living in newer dwellings, which is likely due to the differing energy efficiency levels at the point of construction.

In 2015, 18.0 per cent of households living in a dwelling built pre-1850 were fuel poor; this is compared to just 4.2 per cent of those living in dwellings built post-1990. There is also a large difference in the average fuel poverty gap between the oldest and newest builds, with pre-1850 dwellings at £899 compared to the newest at £182. Figure 4.9 shows categories of dwelling age by the proportion and depth of fuel poverty.

Figure 4.9: Fuel poverty and average fuel poverty gap by age of dwelling, 2015
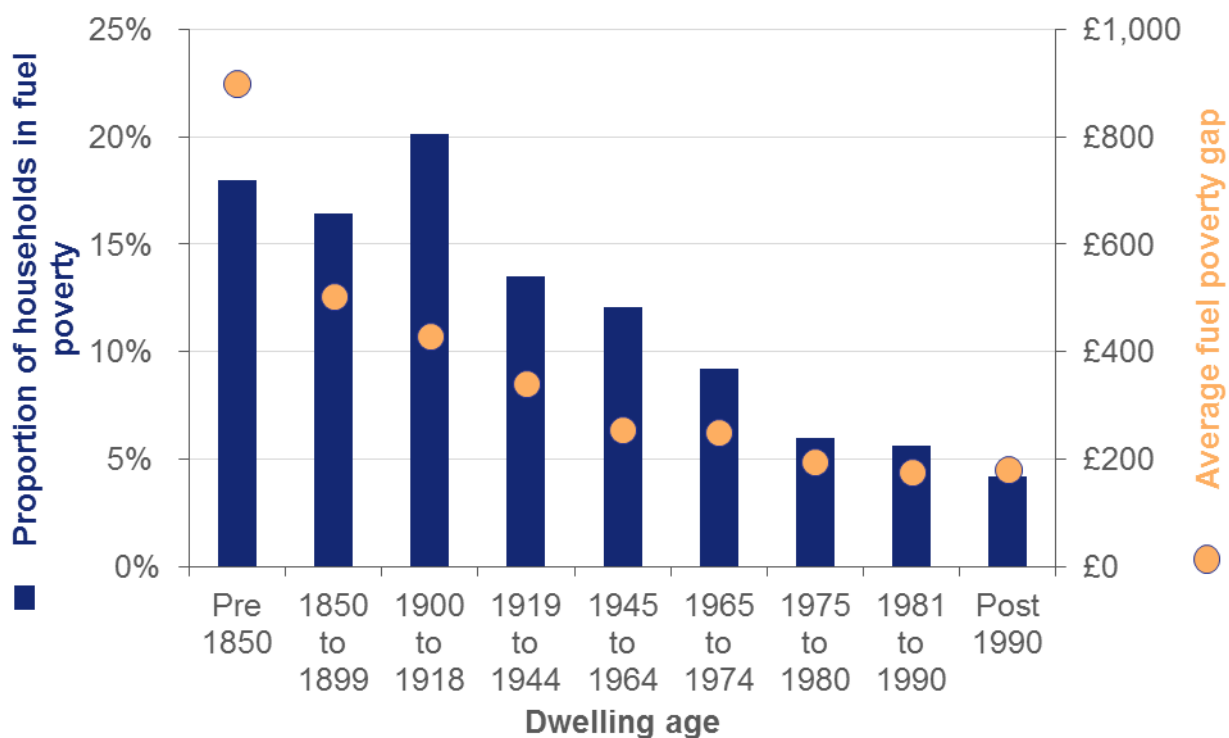
The median FPEER value is closely linked to the average fuel poverty gap (see Figure 4.10), suggesting that the large differences in fuel poverty levels between different dwelling ages are likely due to energy efficiency levels, which impact a household's energy requirements. The median FPEER value for dwellings built pre-1850 (50.8) is much lower than the median FPEER value for all households (64.6), which helps to explain why the average fuel poverty gap is largest for this group.

Figure 4.10: Median FPEER by age of dwelling, 2015
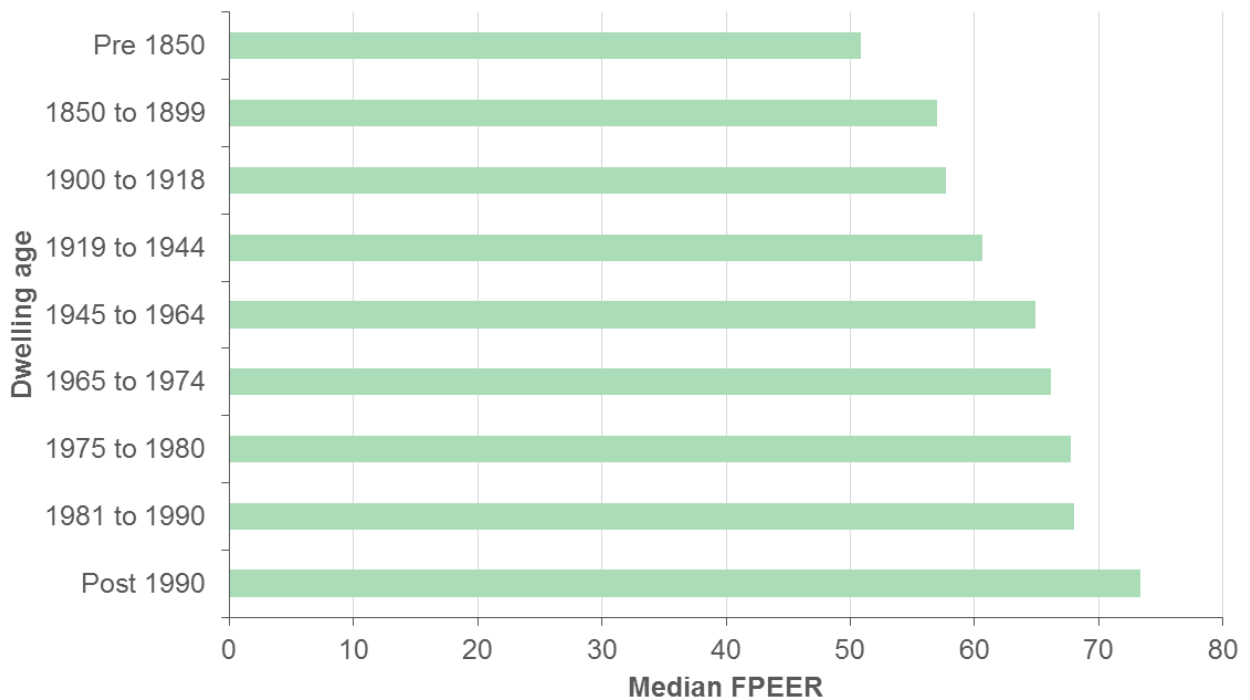
4.3.4 Main fuel type

Main fuel relates to the *type* of fuel that is used to heat a house. Mains gas is the most common type with 85.1 per cent of all households using this. 98.3 per cent of properties that have a gas grid connection use gas as their main fuel type. All other households use electricity, or 'other'[23] fuels. Those with electricity as their main fuel type are more likely to be fuel poor (see Figure 4.11). However, the average fuel poverty gap is greatest for those using other fuel types. This is likely due to the higher cost associated with these fuels.

4.11: Fuel poverty and average fuel poverty gap by main fuel type, 2015
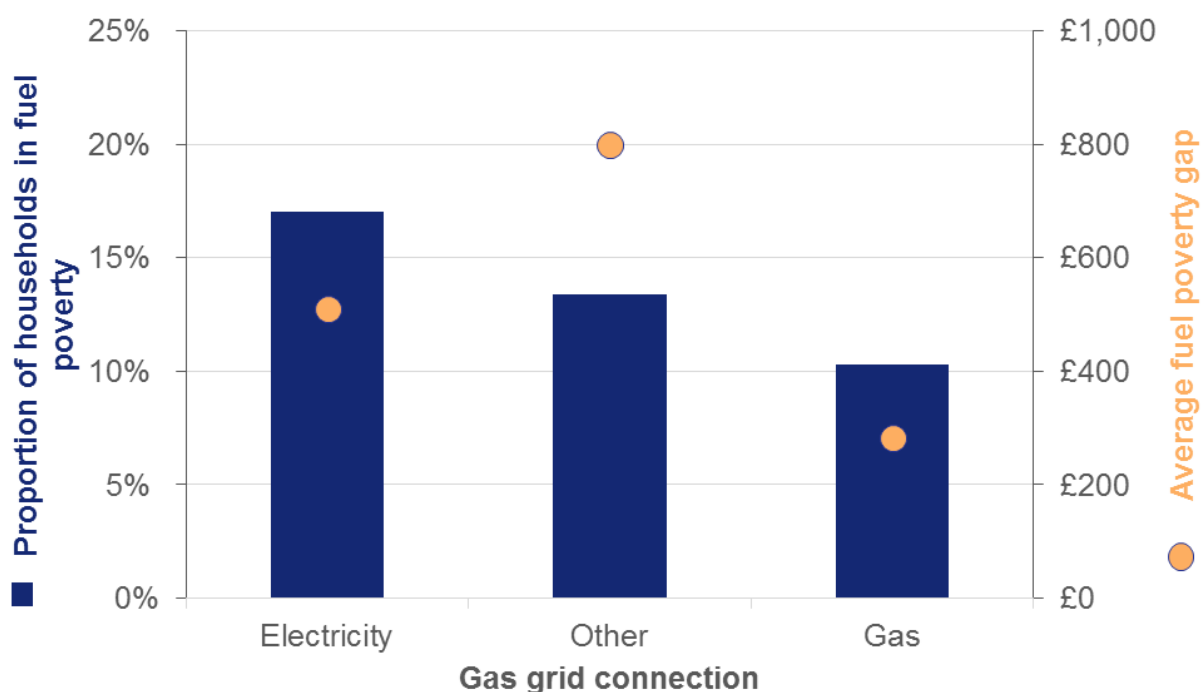
The majority of households with an FPEER rating of *D* or above use mains gas as their primary fuel type (see Figure 4.12). However, households rated as *F* or *G* have the highest proportion of households using 'other' fuel types, showing a marked difference to the higher rated categories. This increases their likelihood of being fuel poor.

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[23] 'other' includes heating oil, solid fuels, bottled gas and heating from a communal boiler.

Figure 4.12: Proportion of households by main fuel type[24], 2015
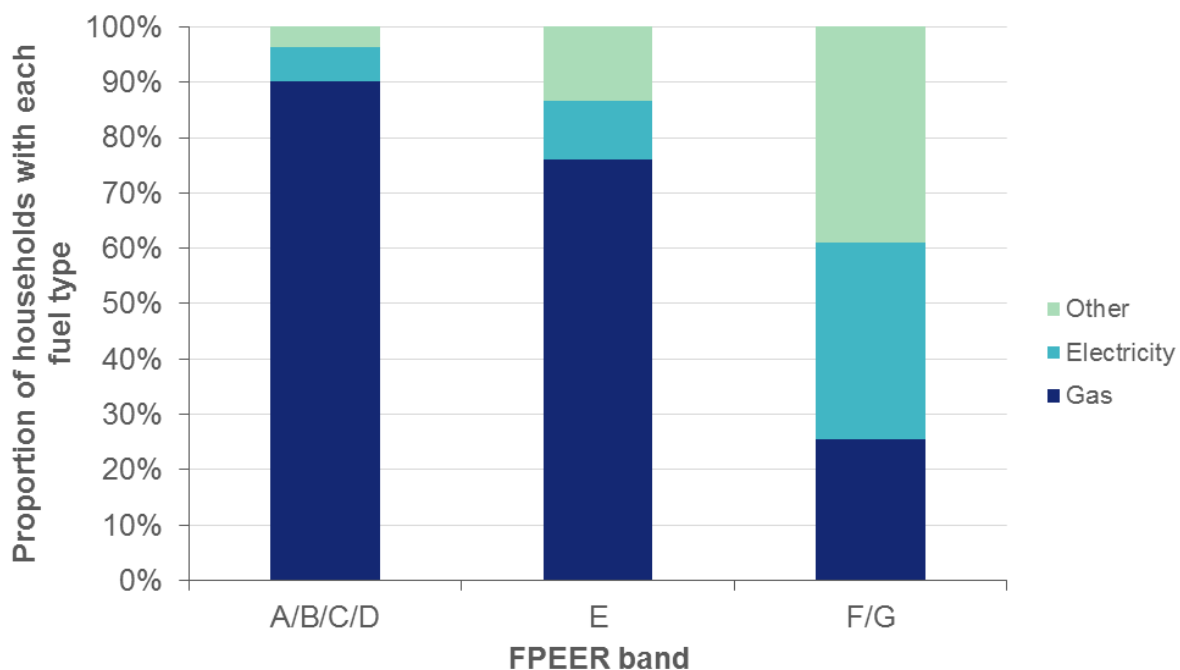
[24] The A/B/C FPEER category has been combined with Band D due to small sample sizes.

4.3.5. Rurality

Households living in an area classified as *rural*[25], have both a higher proportion of households living in fuel poverty and a larger fuel poverty gap than households classed as semi-rural or urban.

Around 90 per cent of urban (91.1 per cent) and semi-rural (87.1 per cent) households have a gas connection compared to only 42.2 per cent of those in rural areas. Therefore, more isolated households may have higher levels and depth of fuel poverty due a higher proportion being off the gas grid.

Figure 4.13: Fuel poverty and average fuel poverty gap by rurality, 2015
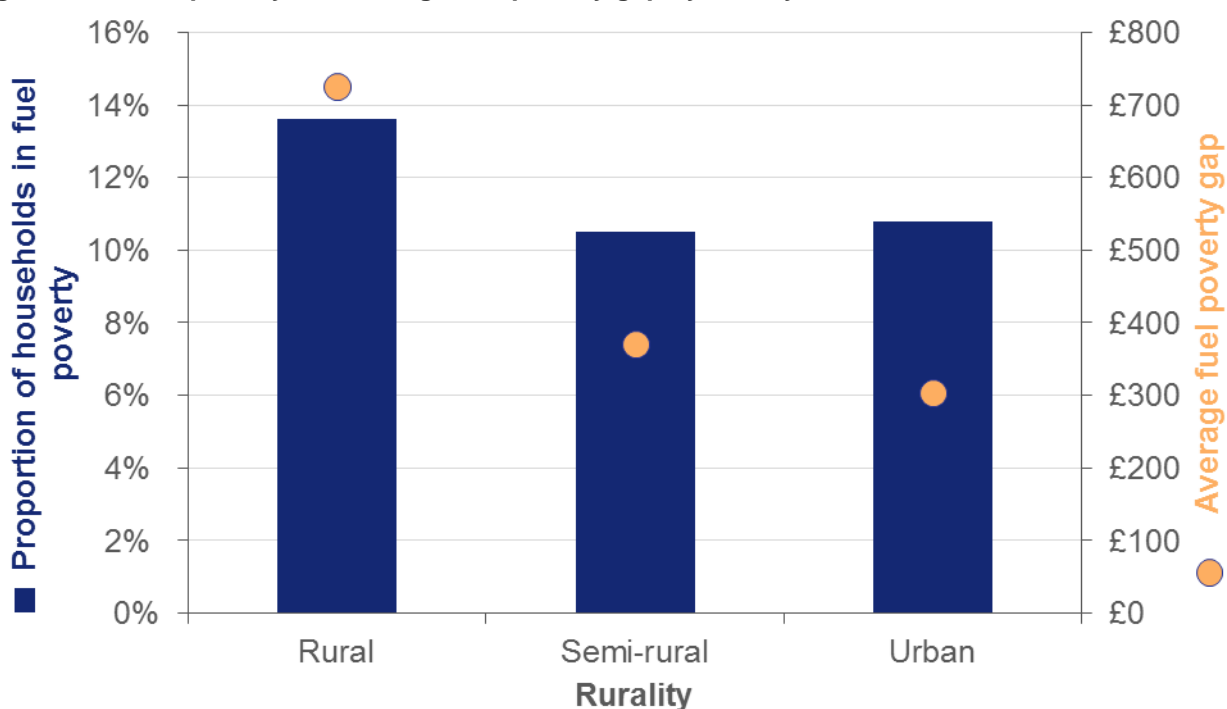
The proportion of households within each FPEER Band differs by rural classification. Overall, urban and semi-rural properties have a lower proportion of households rated as *F* or *G*, and more households rated as *C* or above. Rural areas have a much greater proportion of *F* and *G* rated households; 20.6 per cent compared to just 2.8 per cent for urban areas (see Figure 4.14). This could provide an explanation as to why there is a much higher proportion of rural households in fuel poverty, and why their average gap is much greater.

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[25] 'Rural' – Villages, hamlets and isolated dwellings; 'Semi-Rural' – Towns and fringe; 'Urban' – Urban.
Rurality definitions from ONS https://www.gov.uk/government/collections/rural-urban-definition

Figure 4.14: Proportion of households by rurality and FPEER Band[26], 2015
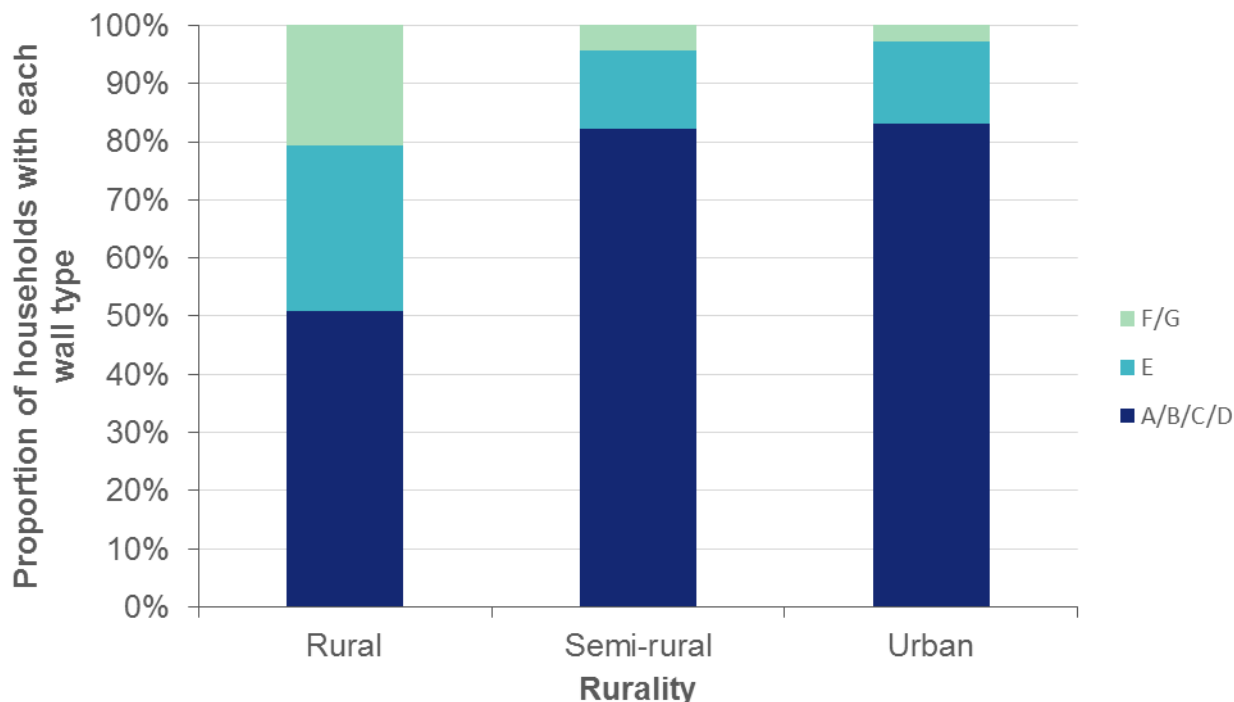
4.3.6. Region

There are a number of regional differences affecting the level and depth of fuel poverty. These differences tend to reflect the age of the housing stock, climatic conditions and relative income levels across the country.

Figure 4.15 shows the proportion of fuel poor households mapped by region at the top, with the three main drivers mapped beneath for *all* households, illustrating how these drivers differ by region. For example, the West Midlands has a lower than average income, lower than average FPEER and higher than average fuel cost, which results in a higher than average proportion of fuel poor households for the region.

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[26] The A/B/C FPEER category has been combined with band D due to small sample sizes.

Figure 4.15: Proportion of fuel poor households (and the three main drivers of fuel poverty) by region, 2015

Proportion of Fuel Poor Households (%)

	< 10
	10 - 12
	> 12
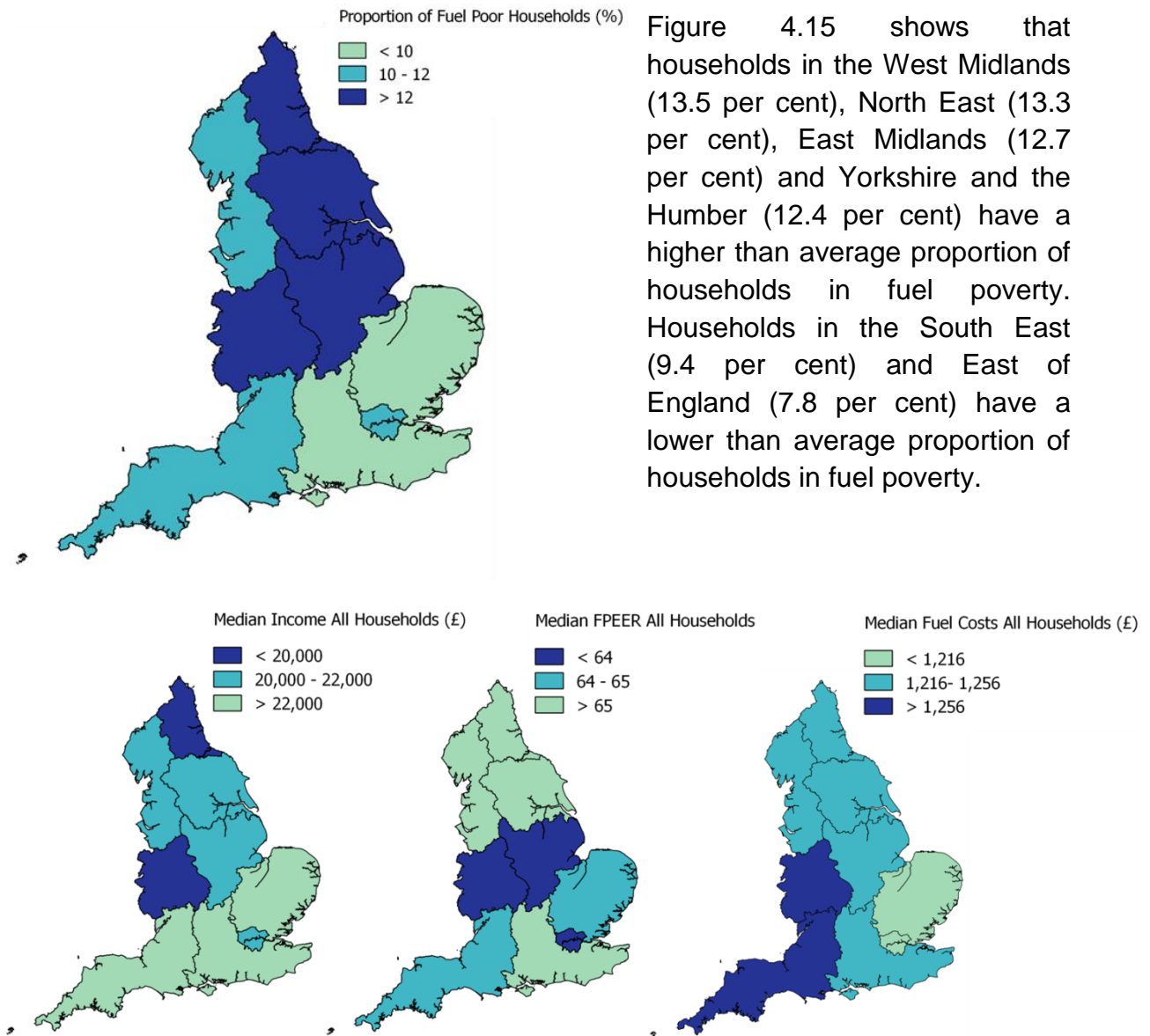
Figure 4.15 shows that households in the West Midlands (13.5 per cent), North East (13.3 per cent), East Midlands (12.7 per cent) and Yorkshire and the Humber (12.4 per cent) have a higher than average proportion of households in fuel poverty. Households in the South East (9.4 per cent) and East of England (7.8 per cent) have a lower than average proportion of households in fuel poverty.

Median Income All Households (£)

	< 20,000
	20,000 - 22,000
	> 22,000

Median FPEER All Households

	< 64
	64 - 65
	> 65

Median Fuel Costs All Households (£)

	< 1,216
	1,216- 1,256
	> 1,256

Regions where the fuel poverty levels are above average tend to have an average or below average income, and average or above average fuel costs. Of those regions with higher than average fuel poverty levels, there is a mixed picture with average FPEER values across the regions.

Figure 4.16 shows the average fuel poverty gap mapped by region with the three main drivers mapped for the *fuel poor* population, which helps illustrate the complex interaction between the three key drivers of fuel poverty. For example, the fuel poor in the West Midlands have an average median income, average FPEER and average fuel costs, which results in an overall average fuel poverty gap.

Figure 4.16: Average fuel poverty gap (and the three main drivers of fuel poverty) by region, 2015

Average Fuel Poverty Gap (£)

	< 333
	333 - 373
	> 373

Figure 4.16 shows that households in the South West (£459) and the South East (£419) have a higher than average fuel poverty gap. Households in Yorkshire and the Humber (£306), North East (£308), North West (£312) and East of England (£322) have a lower than average fuel poverty gap.

Median Income Fuel Poor Households (£)

	< 10,000
	10,000 - 10,500
	> 10,500

Median FPEER Fuel Poor Households

	< 57
	57 - 59
	> 59

Median Fuel Costs Fuel Poor Households (£)

	< 1,420
	1,420- 1,440
	> 1,440

Notably, regions where the fuel poverty gap is above average tend to have average or below average FPEER values, above average fuel costs and average or above incomes across the fuel poor population.

Figure 4.17 shows that between 2003 and 2011 the average fuel poverty gap increased for all households, which has then gradually decreased through till 2015. The South West has consistently had the largest average fuel poverty gap, with the North East seeing, on average, one of the lowest fuel poverty gaps.

This pattern is partly due to lower than average fuel costs for the North East (fuel poor population) and higher than average fuel costs for the South West (fuel poor population), which can be seen in Figure 4.16, and is further related to differences in access to the gas grid and installation of energy efficiency measures.

Figure 4.17: Average fuel poverty gap by region[27], 2003-2015
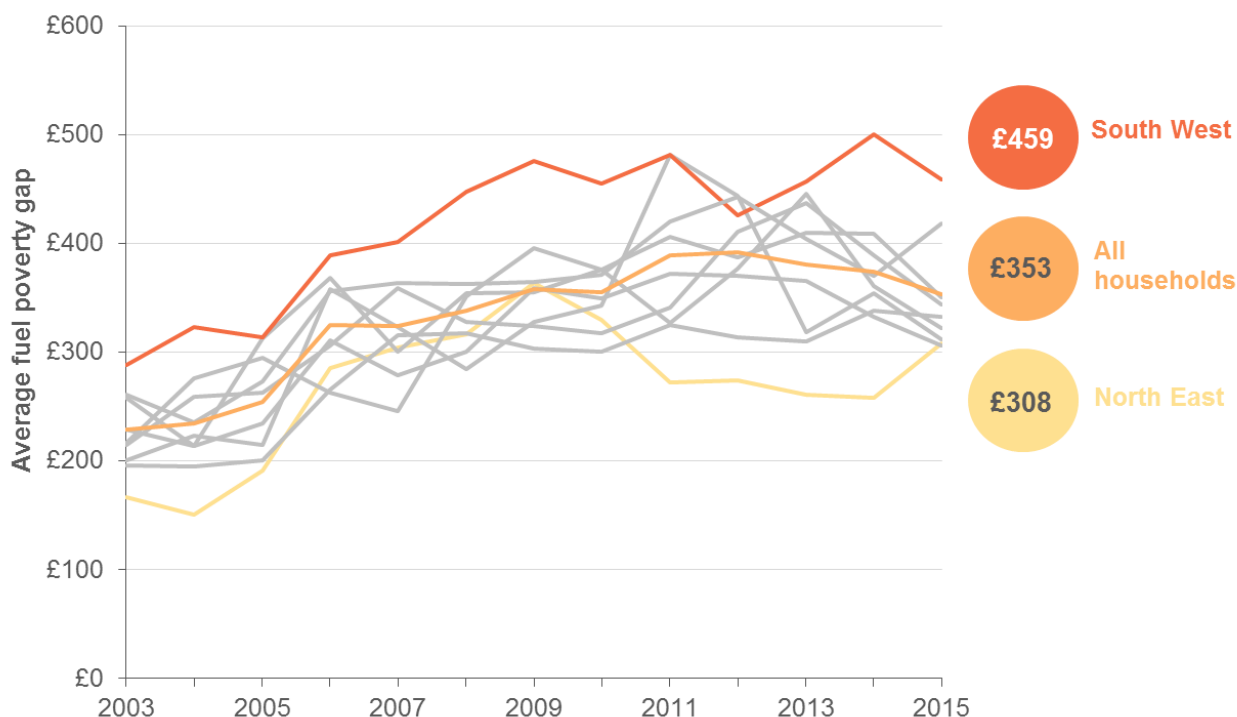
More information and further geographical breakdowns can be found in the sub-regional experimental statistics publication at the following link:

https://www.gov.uk/government/collections/fuel-poverty-sub-regional-statistics

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[27] Data in real terms (2015 prices), adjusting for inflation using the GDP (market prices) deflator.

4.4 Household Characteristics

Fuel poverty levels and the fuel poverty gap vary notably across household characteristics. This may be due to differences in income, different energy requirements, or a combination of both, dependent on a household's composition.

4.4.1 Tenure

There are clear differences in fuel poverty rates and the average fuel poverty gap by tenure[28]. These reflect both the nature of the housing stock and household characteristics typical to a households' tenure.

Figure 4.18 shows that the level of fuel poverty is highest in the private rented sector, with 21.3 per cent of households in fuel poverty, and lowest in owner occupied properties, with 7.4 per cent in fuel poverty. The *depth* of fuel poverty, however, follows a slightly different pattern; private rented properties have the largest average fuel poverty gap (£410), followed by owner occupied properties (£381), housing association properties (£200) and local authority properties (£175).

Figure 4.18: Fuel poverty and average fuel poverty gap by tenure, 2015

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[28] https://www.gov.uk/guidance/definitions-of-general-housing-terms
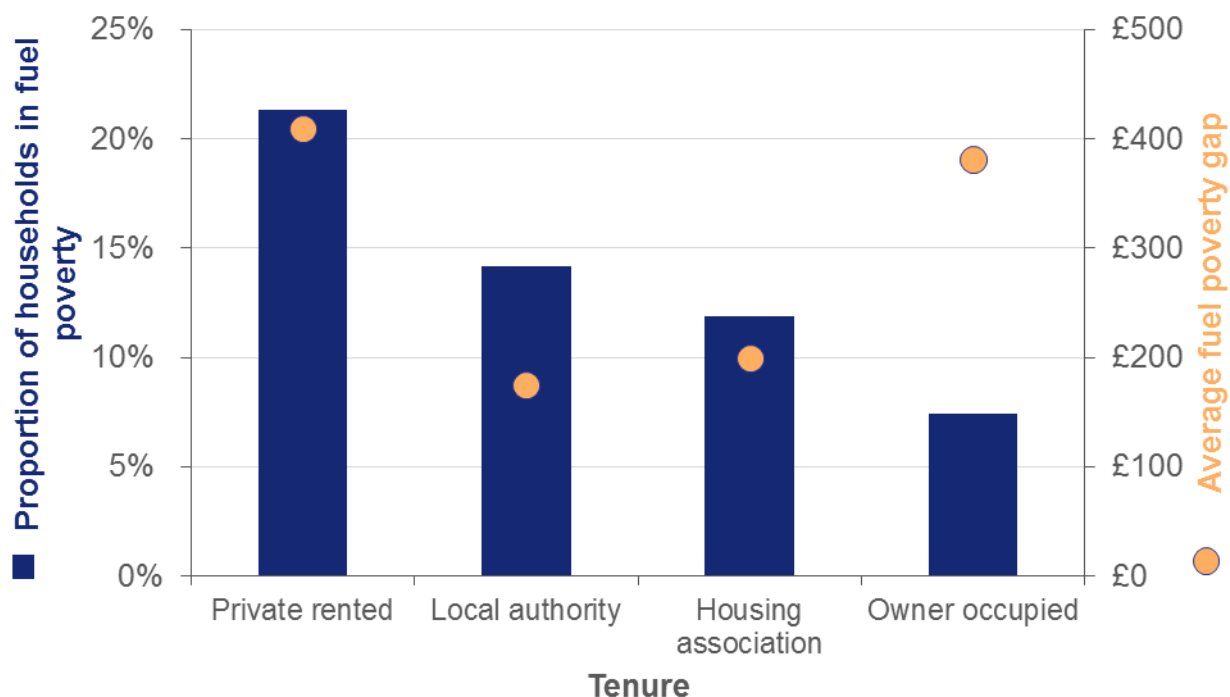
Table 4.2 shows that the median FPEER score is much higher for local authority and housing association properties than it is for owner occupied and private rented properties. This helps explain why the *depth* of fuel poverty is higher for owner occupied and private rented properties. Social housing tends to have greater levels of insulation, resulting in lower energy costs, and therefore, limiting the depth of fuel poverty within these property types.

Table 4.2: Median FPEER by tenure, 2015

	Median FPEER
Private rented	63.4
Local authority	68.9
Housing association	70.6
Owner occupied	63.3
All households	64.5

Figure 4.19 shows that, overall, the average fuel poverty gap has increased across all tenure types since 2003, with the largest increase seen within owner occupied and private rented properties. The average fuel poverty gap for owner occupied properties peaked in 2013 where they had a gap of £469, much higher than the average gap of private rented properties (£344). In 2015, private rented properties now have the largest average fuel poverty gap (£410), whereas the average fuel poverty gap for all other tenures has been decreasing since 2013.

Figure 4.19: Average fuel poverty gap by tenure[29], 2003-2015
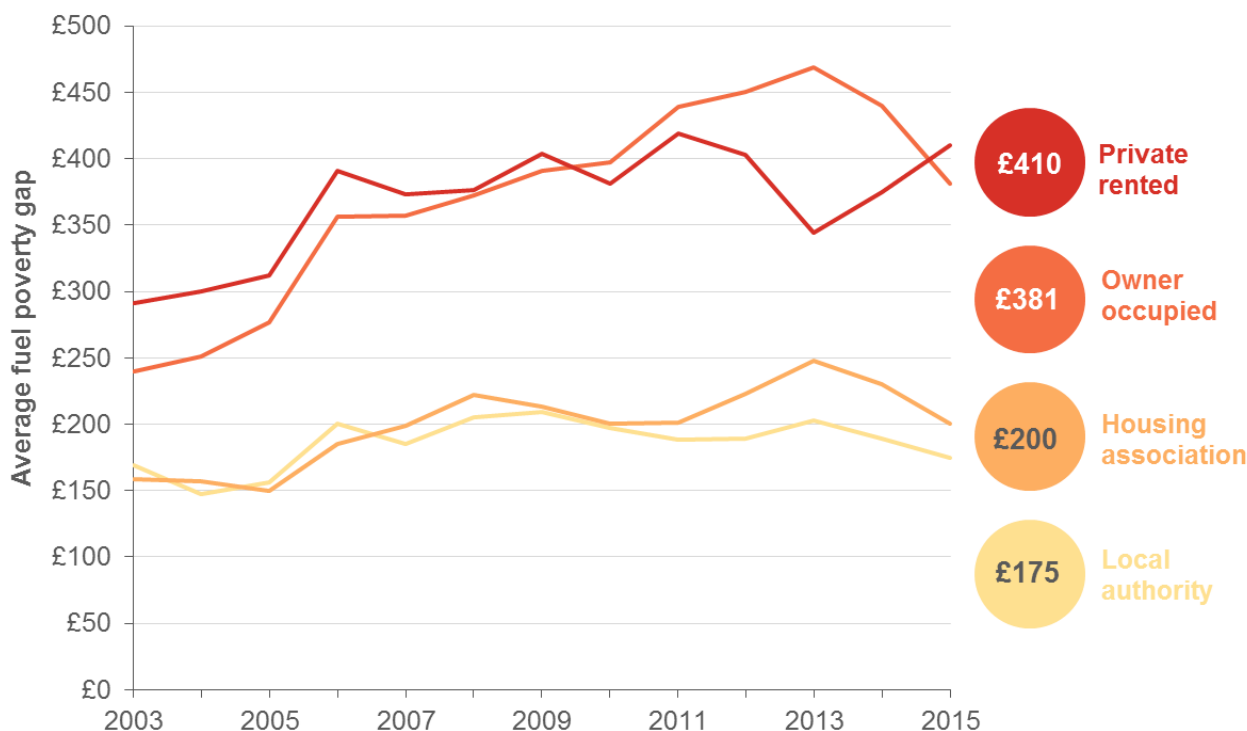
4.4.2 Household composition

The proportion of households in fuel poverty varies depending on a household's composition[30]. In 2015, those categorised as *single parents* saw the highest proportion of households in fuel poverty (23.6 per cent) which can be seen in Figure 4.20. However, the average fuel poverty gap for this group is among the lowest at £291, with households classified as 'other multi-person households' seeing the highest at £493.

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[29] Data in real terms (2015 prices), adjusting for inflation using the GDP (market prices) deflator.
[30] '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 4.20: Fuel poverty and average fuel poverty gap by household composition, 2015
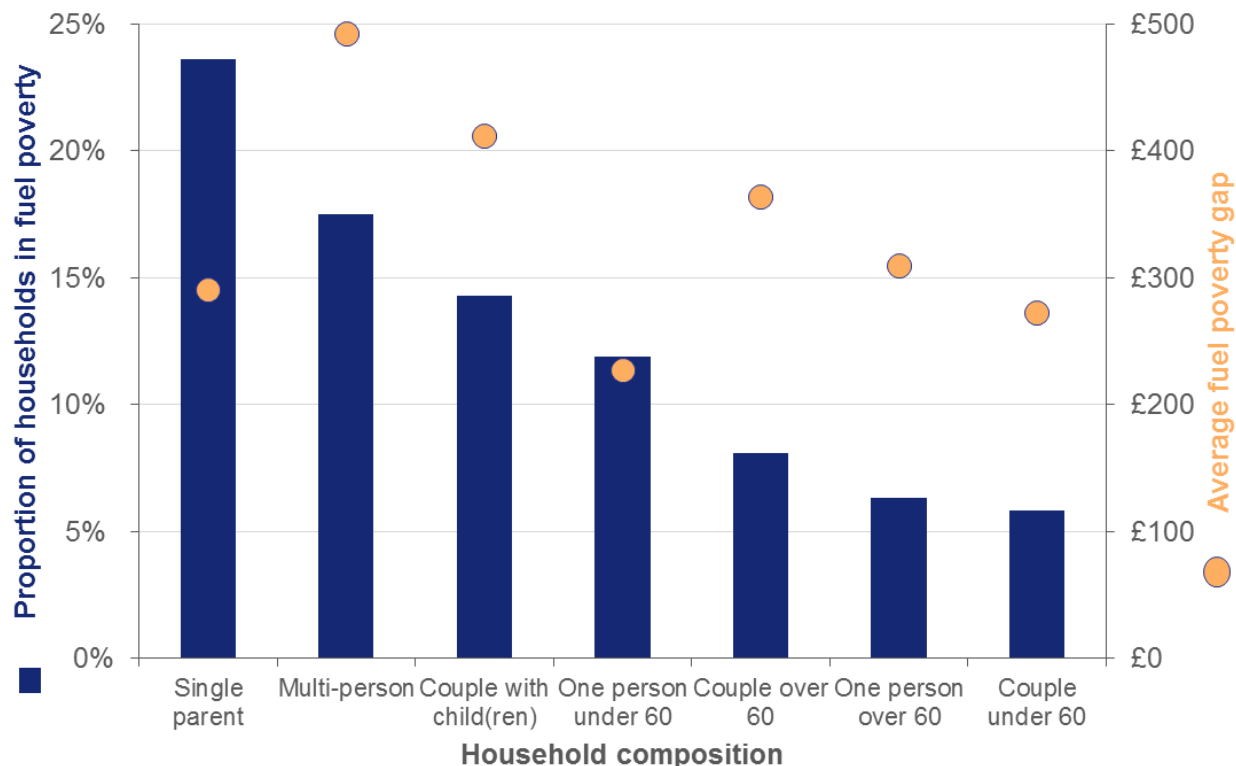
Since 2003, single parents have consistently seen the highest proportion of households in fuel poverty, although this level has decreased over time from 27.0 per cent in 2003 to 23.6 per cent in 2015 (Figure 4.21 below). This is most likely related to income. Single parents must support themselves, *as well as* their child(ren), which leaves them with less income to pay for energy costs and a higher likelihood of being in fuel poverty. The median income for this group is the lowest, at around £13,000 a year compared all other household compositions, where the average income is approximately £21,333.

When looking at the average fuel poverty gap, this was seen to increase between 2003 and 2012 for all household composition types. The average gap has fallen since 2013, this trend holds for all composition types with the exception of multi-person households (see Figure 4.22). Households consisting of either one person over 60 or a couple under 60, saw the largest reduction in their average fuel poverty gap over this time period.

Figure 4.21: Proportion of households in fuel poverty by household composition, 2003-2015

Legend:
- Couple under 60
- Couple over 60
- Couple with child(ren)
- Single parent
- Multi-person
- One person under 60
- One person over 60

Figure 4.22: Average fuel poverty gap by household composition[31], 2003-2015
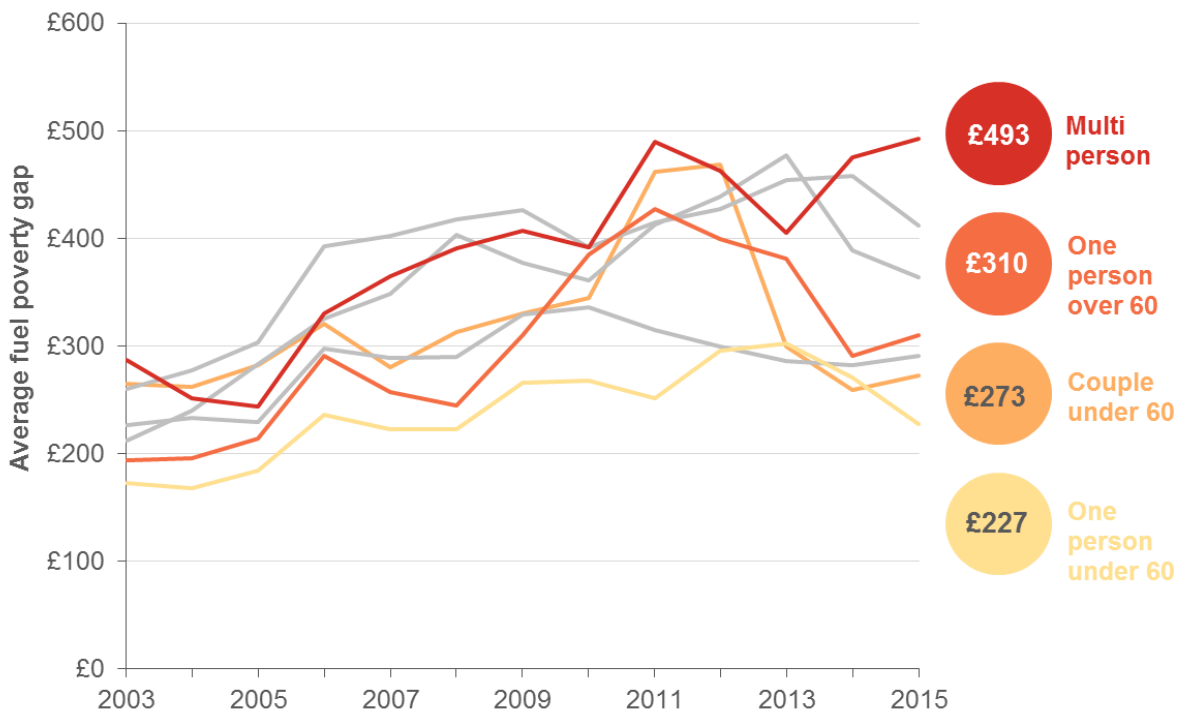
[31] Data in real terms (2015 prices), adjusting for inflation using the GDP (market prices) deflator.

4.4.3 Ethnicity

On 27 August 2016, the Prime Minister announced an audit of public services to highlight racial disparities[32]. As part of this audit, fuel poverty has been explored by ethnicity, with headline analysis presented in this report. It should be noted that when looking at fuel poverty by ethnicity, data is based on the household reference person. However, some households will contain members from more than one ethnic group, which is not reflected in this analysis.

In 2015 a higher proportion of ethnic minority households were living in fuel poverty (16.4 per cent) compared to the proportion of white households living in fuel poverty (10.4 per cent). As can be seen in Figure 4.23, these proportions have remained fairly stable between 2003 and 2015.

In 2015, white households had a higher fuel poverty gap (£358) compared to ethnic minority households (£331), a difference which can be seen overtime (see Figure 4.23). In line with the overall trend, both white and ethnic minority households have seen a continued decrease in their average fuel poverty gap since 2013.

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[32] https://www.gov.uk/government/news/prime-minister-orders-government-audit-to-tackle-racial-disparities-in-public-service-outcomes

Figure 4.23: Proportion of households in fuel poverty and the average fuel poverty gap by ethnicity[33], 2003-2015
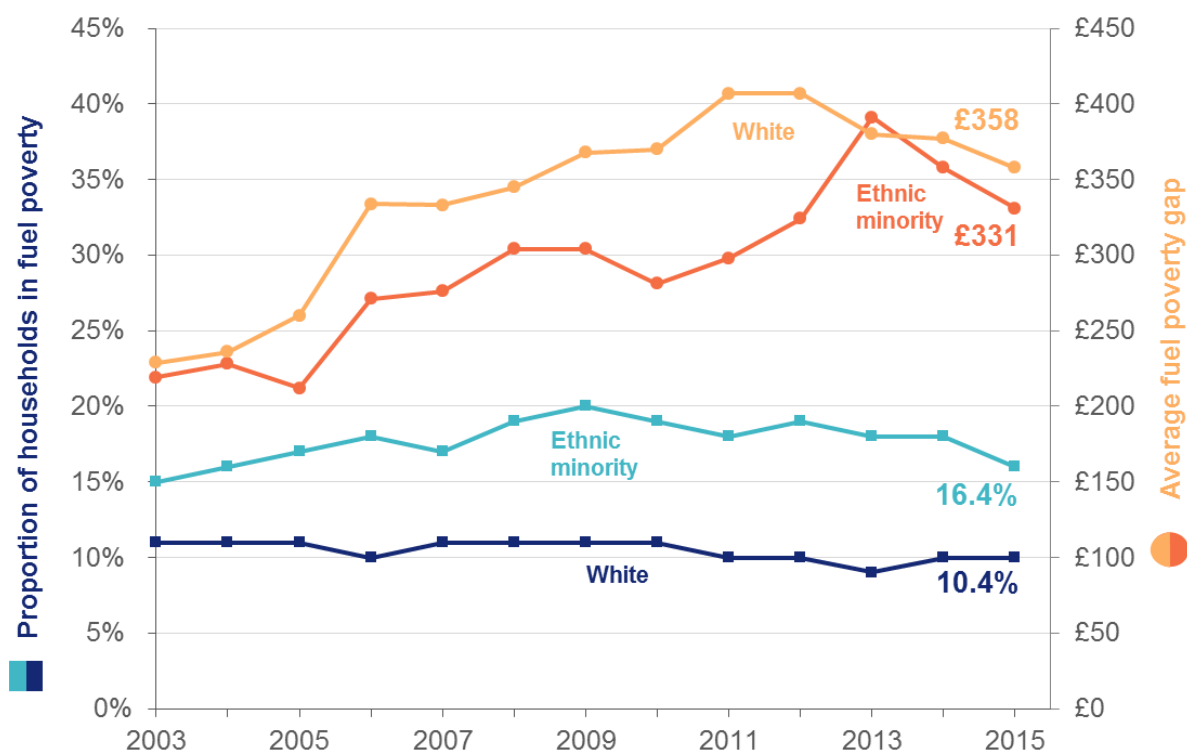
Further information and data on racial disparities across public services will be published later this summer, where difference between the levels and depth of fuel poverty by ethnicity has been further explored as part of this audit.

4.4.4 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.

In young households (where the oldest member is aged 16 to 24 years), 27.6 per cent were fuel poor, which is likely to be a result of lower incomes for these households. This can be seen in Table 4.4, which shows that average income is much lower for the youngest households, with a median income of around £10,529 compared to £21,333 for *all* households.

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[33] Data in real terms (2015 prices), adjusting for inflation using the GDP (market prices) deflator.

Table 4.4: Median income by age, 2015

	Median Equivalised AHC income (£)
16 – 24	10,529
25 – 34	19,277
35 – 49	19,701
50 – 59	23,468
60 – 74	20,989
75+	20,867
All households	21,333

Figure 4.24: Fuel poverty and average fuel poverty gap by age of the *oldest* member of the household, 2003 and 2015
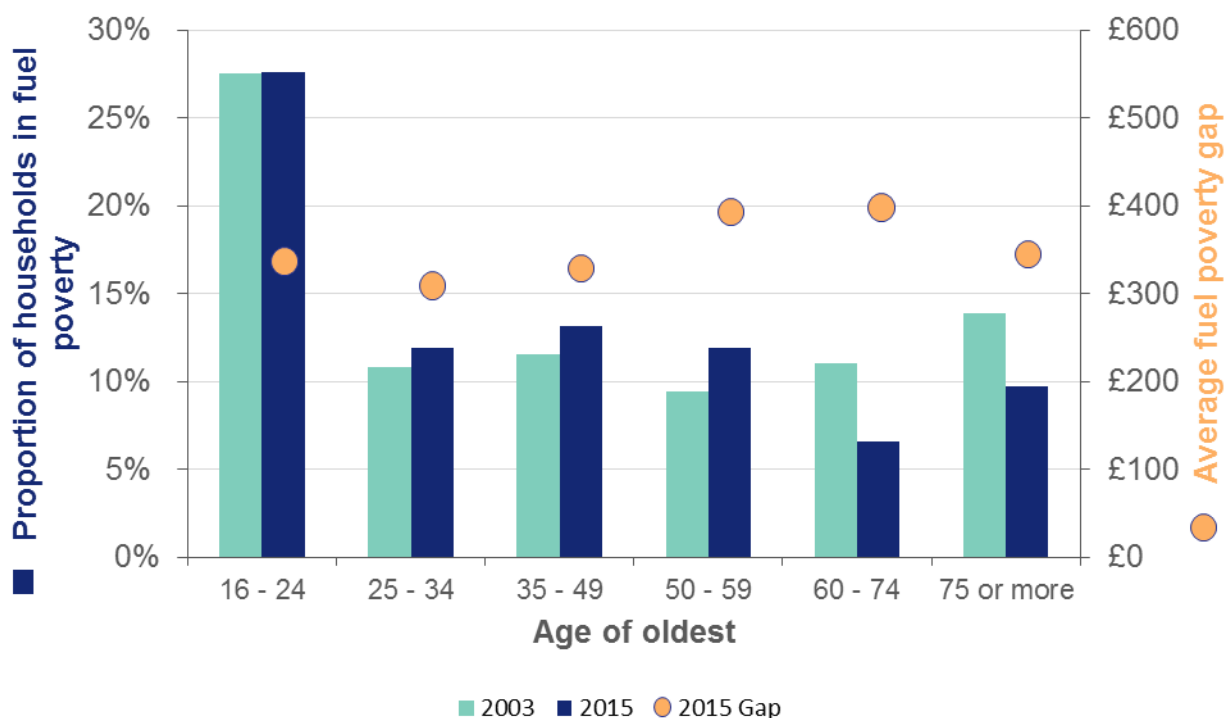
Figure 4.24 above, shows how the proportion of each age category in fuel poverty has changed since 2003. Those living in households where the oldest person was aged 75 or over had the second highest proportion living in fuel poverty in 2003. Since then, there has been a downward trend within this age group, and in 2015, they had the second *lowest* proportion living in fuel poverty, a fall of almost a third on the 2003 level. The average fuel poverty gap is highest in 2015 for those where the oldest member of the household is between 50 and 74 and lowest for those aged between 25 and 34.

Age of the *youngest* member of the household is also important to consider when looking at the effects of age on fuel poverty. Figure 4.25 below shows the proportion of households in fuel poverty by age band of the youngest person. The two dark blue lines highlight the two oldest household categories: ages 60 to 74 and 75 plus. There has been an overall downward trend in the proportion in fuel poverty within these age groups, suggesting that the prevalence of fuel poverty has improved for the older ages. However, since 2013 the proportion has been increasing for those ages 75 and over. Those where the youngest member of the household is aged 16 to 24 has seen an overall increase in fuel poverty levels, however this year, the proportion in fuel poverty has dropped. Households where the youngest member is 16 years or under, consistently have the highest fuel poverty level.

Figure 4.25: Proportion of households in fuel poverty by age of the *youngest* member, 2003-2015[34]
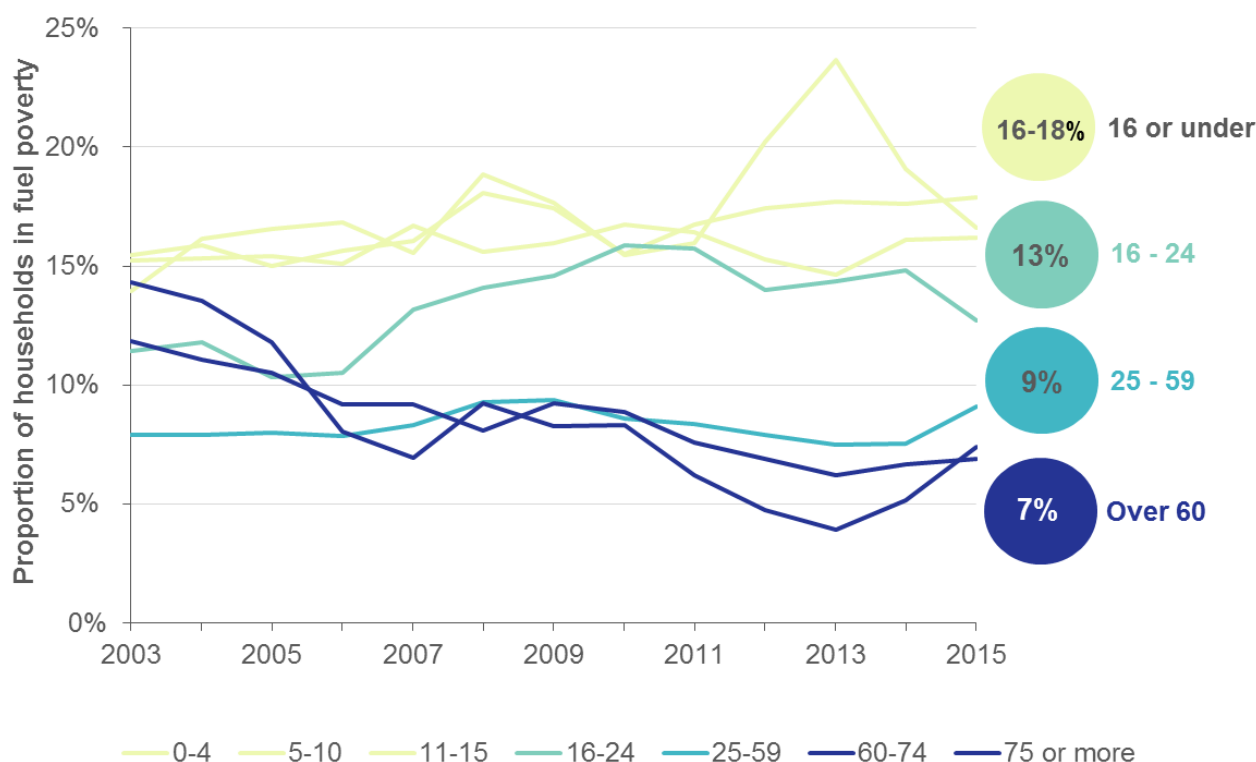
[34] In 2013, households where the youngest member is aged 11 to 15 saw a sharp increase in fuel poverty. However, this has since fallen in line with previous levels.

The average fuel poverty gap has been increasing overall since 2003 for all age categories, except for the eldest households (where the age of the youngest member is 75 or more). They saw a sharp decrease in their fuel poverty gap between 2011 and 2013, falling from £512 to £209. This coincides with the introduction of the Warm Home Discount policy[35] and is also the age category where the higher rate of winter fuel payment comes in[36].

Figure 4.26: Average fuel poverty gap by age of *youngest* member[37], 2003-2015
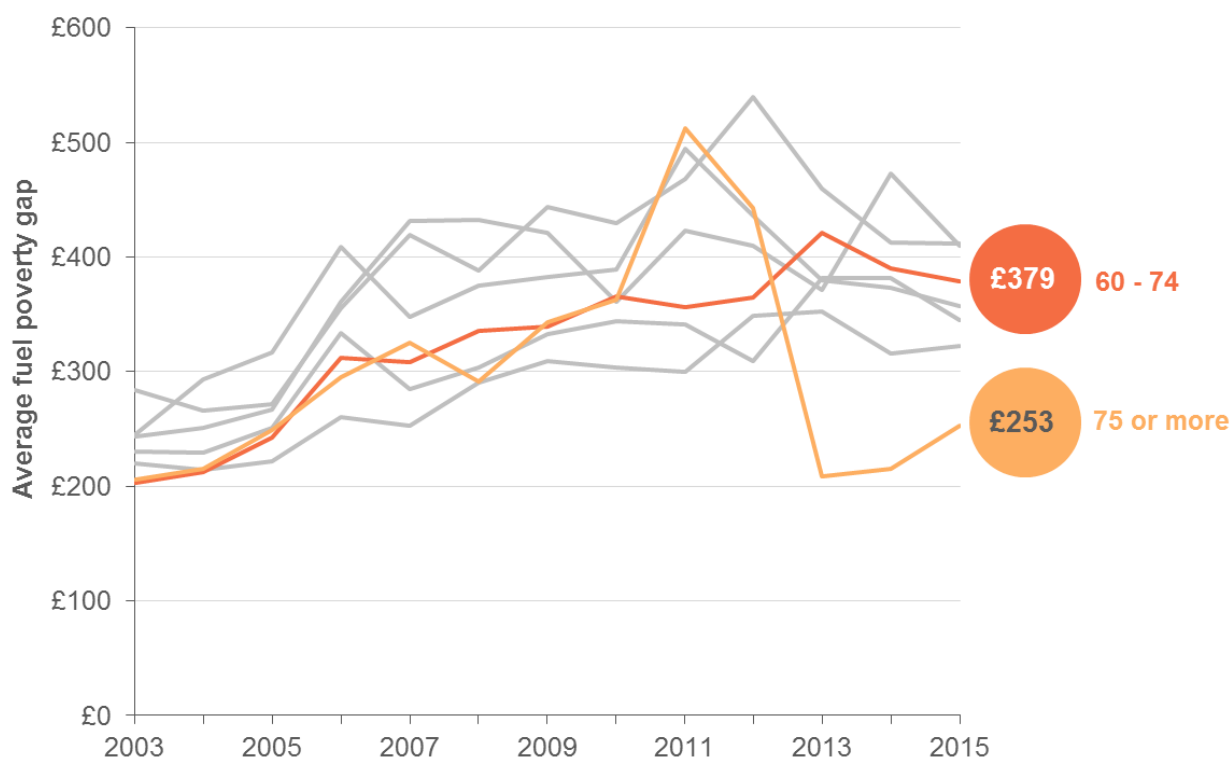
The number of households with children living in fuel poverty has remained fairly stable over time. In 2015, there were approximately 1.03 million fuel poor households with one or more children under 16 (around 4.6 per cent of all households).

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[35] https://www.gov.uk/the-warm-home-discount-scheme/what-youll-get
[36] https://www.gov.uk/winter-fuel-payment/overview
[37] Data in real terms (2015 prices), adjusting for inflation using the GDP (market prices) deflator.

4.5 Household Income

By definition of the fuel poverty indicator (see key definition box on page 9), only households with *low* incomes can be classified as being fuel poor. Around 42.6 per cent of households in the lowest and second lowest income deciles are classed as fuel poor, and 12.5 per cent of those in the third and fourth income deciles. In 2015, the average fuel poverty gap did not differ greatly between income deciles, sitting around the average (£353) for each group.

Table 4.5: Average fuel poverty gap by income decile, 2015

	Average fuel poverty gap (£)
1st decile	368
2nd decile	344
3rd and 4th deciles	345
5th – 10th deciles	-
All households	353

4.5.1 Employment status

When looking at fuel poverty by employment status, data is based on the household reference person. However, some households will contain members with a mixture of employment statuses, which is not reflected in this analysis.

Those in full time education have the highest proportion in fuel poverty and the highest average gap - this is likely due to having the lowest median income[38], however almost half of the *fuel poor population* are in employment (see Chapter 3). Households where the household reference person is unemployed or inactive have the second and third highest proportion in fuel poverty but the lowest and second lowest average fuel poverty gaps, respectively. This is due to a combination of low median income, low median fuel costs and a high median FPEER (Figures 4.28 and 4.29).

Figure 4.28 shows the median income for all households, which helps to explain the impact income has on the proportion of households in fuel poverty – the median income for all households is negatively correlated with the proportion of households in fuel poverty. Figure 4.28 shows that the median income for the fuel poor population in part-time work, retired or full-time work is much lower than the overall population in the same employment status – this helps explain why there are much fewer in fuel poverty within these

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[38] Caution should be given to this finding as there are known quality issues with income data for student households.

categories but their average fuel poverty gap is larger than those that are unemployed or 'other inactive'.

Figure 4.27: Fuel poverty and average fuel poverty gap by employment status, 2015
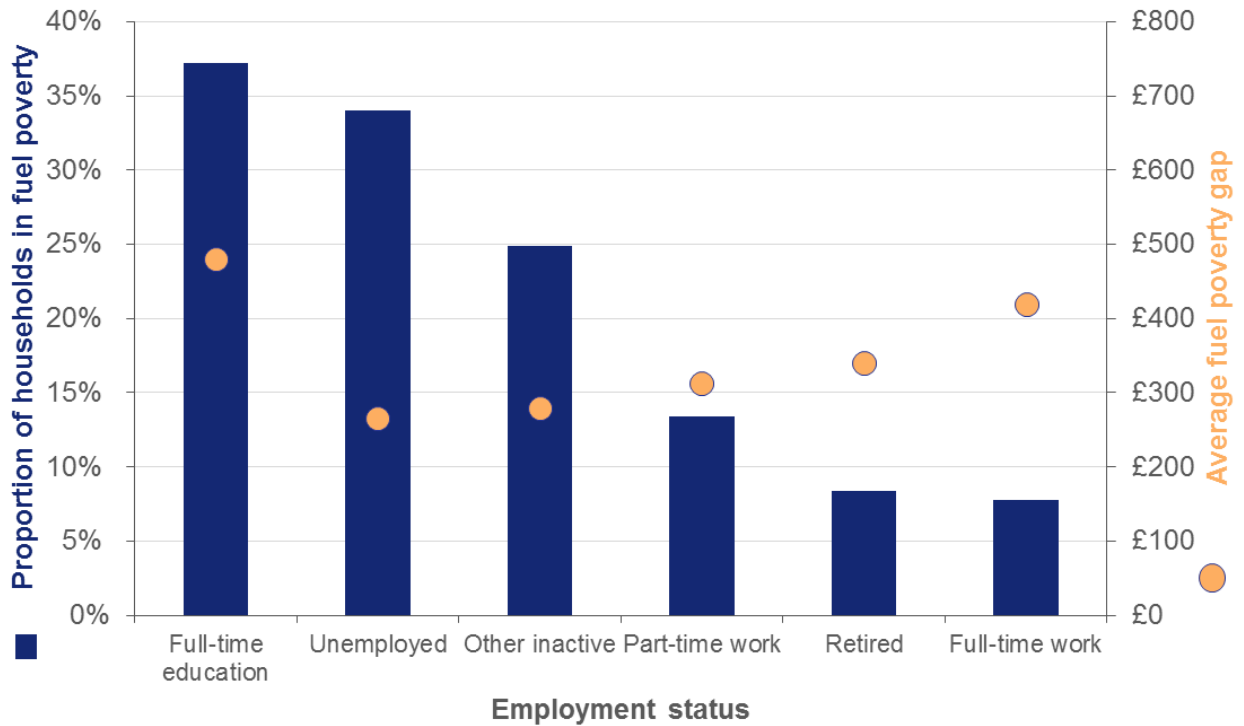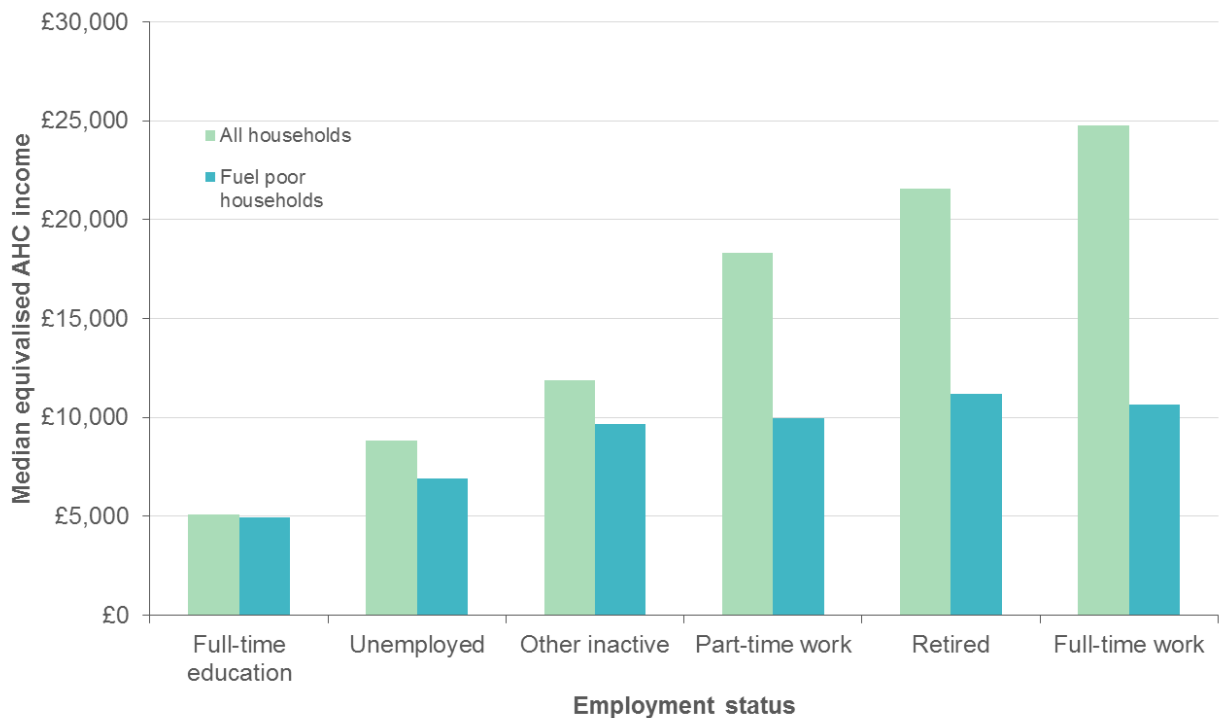

Figure 4.28: Median income by employment status, 2015

Although those in work or who have retired have the lowest proportion that are classed as fuel poor, they have higher average fuel poverty gaps. This is likely due to the fuel poor population having low median incomes compared to all households, high fuel costs and low median FPEER values.

Those that are not in employment, are on average, living in better energy efficiency rated housing, which can result in lower energy costs. Those in full time education have the second largest median FPEER. This is likely due a greater than average proportion living in both flats and newer dwellings, which have higher energy efficiency ratings compared to other dwelling types.

Figure 4.29: Median FPEER and fuel costs by employment status for all households, 2015
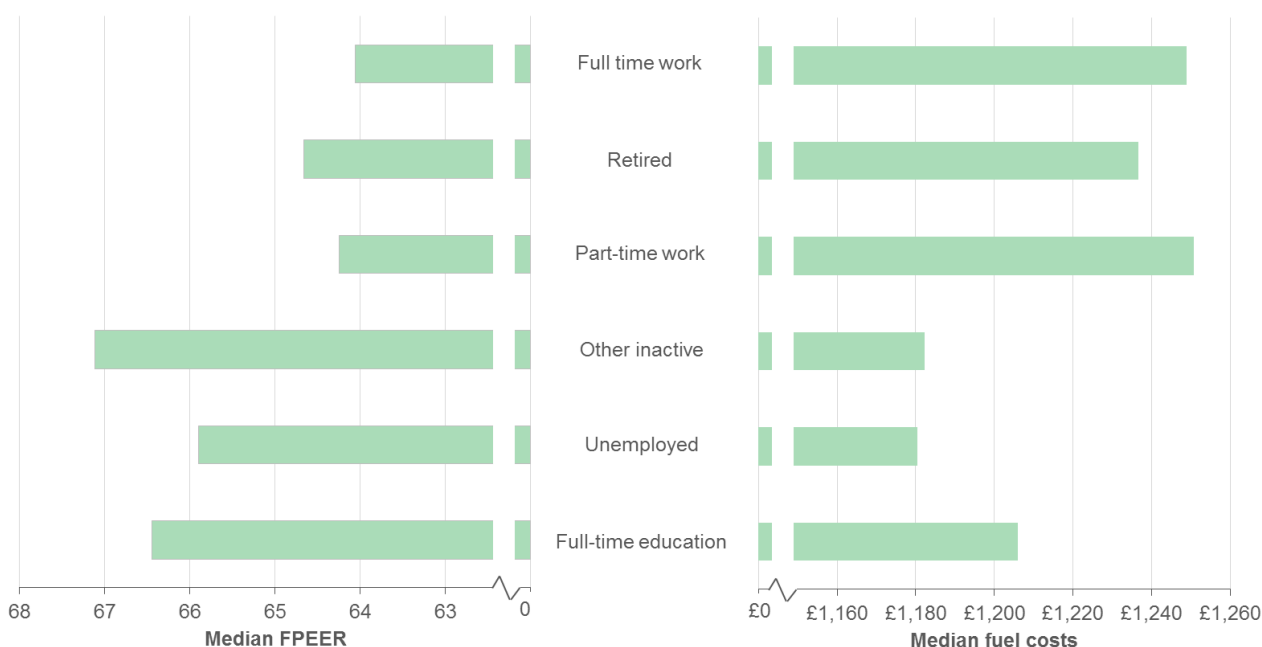
4.6 Fuel Payment Type

For both gas and electricity, direct debit is the most common method of payment. The proportion of households paying by this method has increased steadily since 2003[39]. The proportion of fuel poor households is lower for direct debit customers for both gas and electricity (around seven per cent), compared to all other payment types. This may be attributed to the lower costs associated with this payment method. For both gas and electricity, a household is more likely to be fuel poor if using a pre-payment meter.

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[39] Average prices by method of payment can be found in the quarterly energy prices publication:
https://www.gov.uk/government/statistical-data-sets/annual-domestic-energy-price-statistics

4.6.1 Gas payment method

Figure 4.30 shows the average fuel poverty gap was greater for households paying by direct debit (£326) and smallest for households paying by pre-payment meters (£252). However, households with no gas had the largest average fuel poverty gap (£605) with 15.5 per cent of this group being classed as fuel poor.

Figure 4.30: Fuel poverty and average fuel poverty gap by gas payment method, 2015
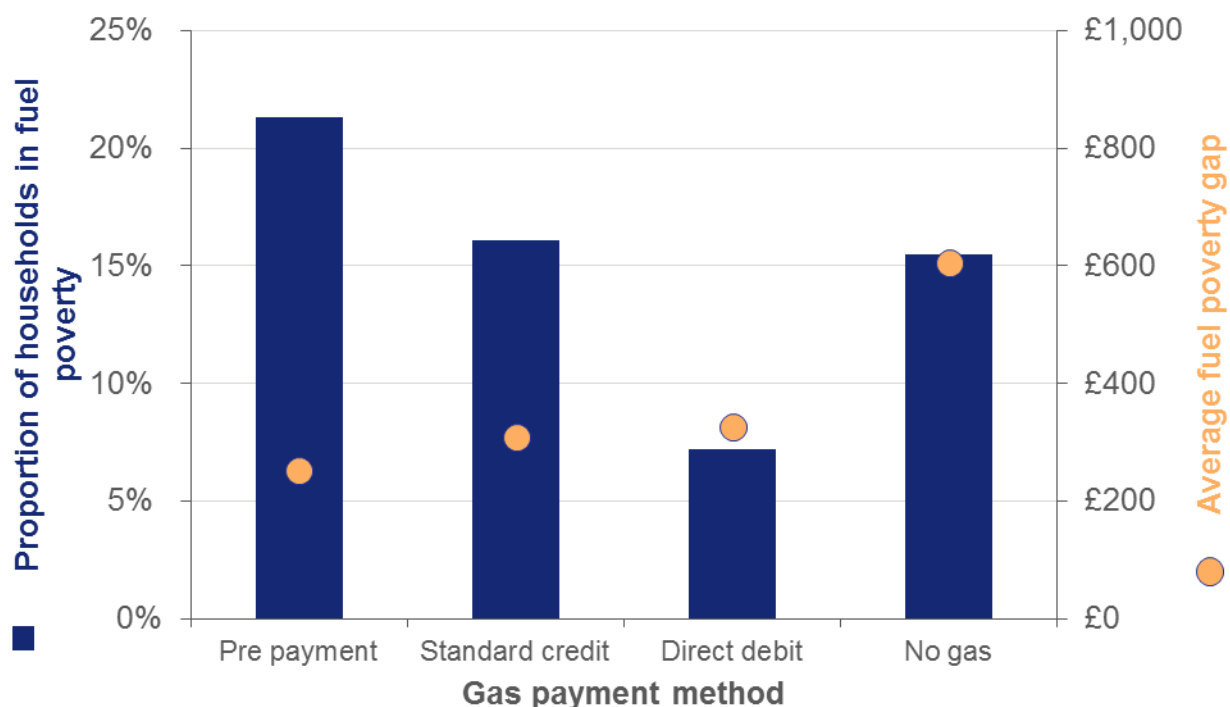
Pre-payment has the highest proportion of households in fuel poverty, but the lowest fuel poverty gap, which is likely due to a combination of factors. They have both, on average, higher FPEER scores compared to other households, *and* smaller properties, as seen in Table 4.6.

Table 4.6: Median FPEER score and floor area by payment type - gas, 2015

	Median FPEER	Median Floor area (m^2)
Pre-payment	67.2	73.0
Standard credit	64.6	78.6
Direct debit	64.7	88.8
No gas	56.8	73.9
All households	64.6	83.4

4.6.2 Electricity payment method

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

Figure 4.31: Fuel poverty and average fuel poverty gap by electricity payment method, 2015
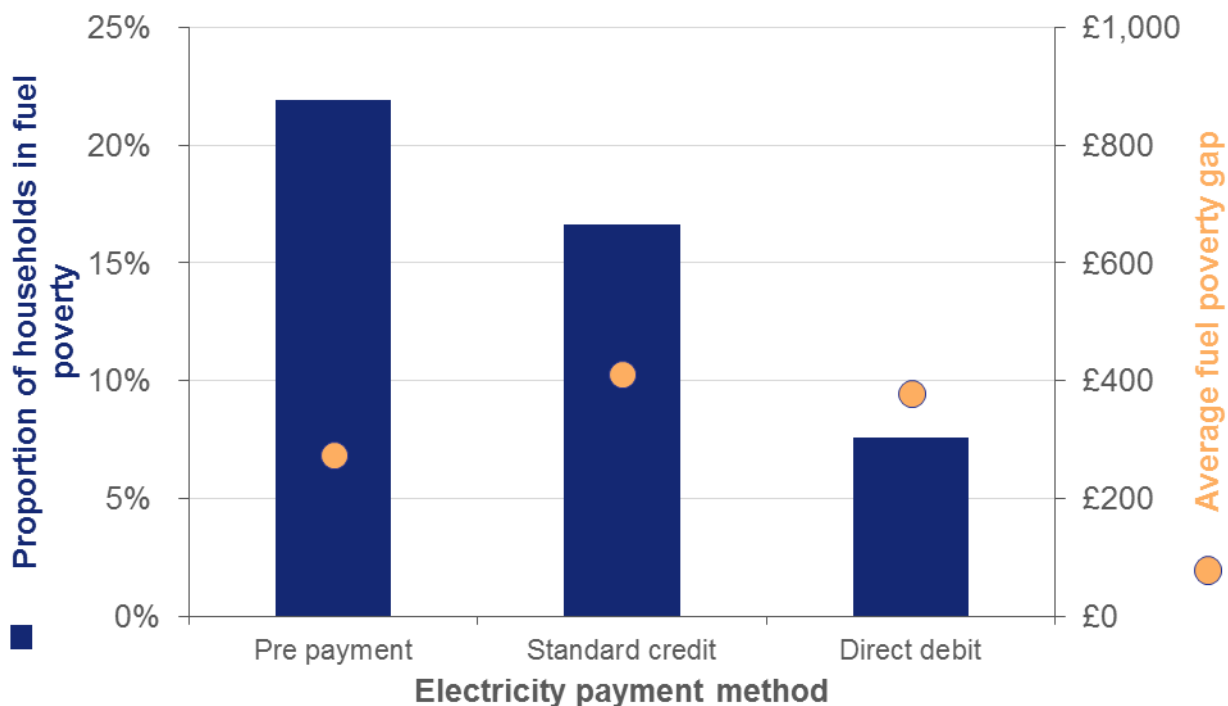
Similarly to gas, the lower average fuel poverty gap seen in pre-payment households is likely due to the combination of smaller, better insulated households. Table 4.7 shows the average FPEER score by floor area.

Table 4.7: Median FPEER score and floor area by payment type - electricity, 2015

	Median FPEER	Median Floor area (m^2)
Pre-payment	66.7	71.0
Standard credit	63.6	77.0
Direct debit	64.1	88.5
All households	64.6	83.4

As presented in this chapter, and summarised in Chapter 3, 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 and trends tables for fuel poverty in England: https://www.gov.uk/government/collections/fuel-poverty-statistics

Chapter 5: Fuel Poverty Projections

Chapters 2, 3 and 4 analyse the latest available data for fuel poverty, which has an approximate 15 month time lag. This chapter looks at fuel poverty projected through to the end of 2016 and 2017. An overview of changes expected within the drivers of fuel poverty over this period, and how they interact in the context of fuel poverty is given. Headline fuel poverty projections and progress against the target are then presented.

Some of the assumptions behind the fuel poverty projections methodology have been reviewed and updated this year to improve the quality of the outputs. Users are, therefore, advised to interpret last year's projections with caution, as they were based on what we have now established was a less robust methodology. In last year's publication, both the fuel poverty gap and fuel poverty level were projected to decrease in 2015. The actual 2015 estimates for the fuel poverty gap did decrease, but not by as much as projected. The number of households in fuel poverty, however, increased in 2015, which is in contrast to the projected decrease in last year's publication. These differences are likely due in part to deficiencies in the old projection methodology; however, due to the paucity of timely data by income decile for key drivers of fuel poverty, and the relative nature of the measure, projections should be treated as indicative. More detail behind the updated projections methodology can be found in Chapter 7 of the Methodology Handbook.

5.1 Changes to the Drivers of Fuel Poverty

As explored in earlier chapters, the relative nature of the fuel poverty indicator means that the three main drivers of fuel poverty (income, energy efficiency and energy prices), interact, and this needs to be taken into account when looking at projecting fuel poverty.

5.1.1 Income
A household's full income can come from multiple sources, which may change year on year by varying amounts. As fuel poverty is relative, if income changes for households in the lower income deciles by a different rate compared to higher incomes deciles, a household's fuel poverty status may change. The elements that comprise a household's full income are categorised as follows:

- Earnings
- Savings
- Benefits
- Other
- Winter fuel payments
- Warm home discount

In 2016 and 2017, income from earnings is expected to have increased compared to 2015 and have been uprated by the 'average earnings' forecast[40] in the fuel poverty projections. Benefits are also expected to have increased but by a lower amount than earnings, and are instead, uprated in line with the Retail Price Index (RPI)[40] forecast. Savings and income from 'other' sources are also expected to have increased and have been uprated in line with GDP[40] forecast. These non-uniform increases across the income sources will shift the income threshold upwards, as well as changing each household's full income. The forecasted value of Consumer Price Index (CPI) is deducted from each of the indices for the relevant year to account for inflation. The values each element was uprated can be found in table 5.1.

Table 5.1 Percentage increase in forecasted income by income type

	Source of value	2015-2016	2016-2017
Earnings	Average Earnings – CPI	1.8	3.4
Benefits	RPI – CPI	1.0	2.0
Savings	GDP – CPI	2.2	3.4
Other	GDP – CPI	2.2	3.4

It is recognised that income will not move equally across all income deciles, as seen in Section 2.3.1 of Chapter 2). This is captured to some extent in the projections, by uprating different categories of income separately. However, the full extent of income changes within *each* income decile is unknown, due to a paucity of official data in this area, and therefore, not modelled here.

5.1.2 Energy Efficiency

Changes to energy efficiency will have an impact on a household's energy requirement. If the dwelling is insulated well or has a more efficient boiler, less energy will be required to heat a dwelling to the minimum standard temperatures[41].

Certain policies are targeted at those who are less able to pay for improvements to their home. These installations should help towards reducing the fuel poverty gap, as these will lower household's energy requirements, and therefore lower their energy costs.

Current policy areas under which energy efficiency measures are installed, and have therefore been modelled, include: Energy Company Obligation (ECO)[42], Renewable Heat

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[40] Economic and Fiscal outlook: http://budgetresponsibility.org.uk/efo/economic-fiscal-outlook-march-2017/
[41] 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
[42] ECO statistics: https://www.gov.uk/government/collections/household-energy-efficiency-national-statistics

incentive[43] (RHI) and Feed in Tariffs[44] (FiTs). To model energy efficiency improvements to the English housing stock between 2015 and 2017, known or estimated energy efficiency measures are randomly allocated to eligible dwellings based on National Statistics for relevant policies in 2016, and internal BEIS estimates of what is expected to be delivered under these policies in 2017. Estimates of self-improvement to the home are also included.

5.1.3 Prices

In 2016, domestic energy prices decreased compared to 2015. These changes can be seen in the CPI in both cash and real terms. Additionally, average annual bills produced in the quarterly energy prices (QEP)[45] publication shows how the average domestic energy bill has fallen. These year on year changes can be seen in Table 5.2 below.

Table 5.2: Percentage change in prices, 2015-2016

	Gas	Electricity	Domestic fuels/ Combined bills
CPI cash terms	-5.9	-0.2	-3.0
CPI real terms	-7.5	-1.9	-4.7
Average annual bills cash terms	-8.9	+0.4	-4.7

The price decrease will have had a greater impact on those people who have high energy requirements, as it will reduce their total energy costs further than those with low energy costs. This means that those with high energy requirements will move in relation to the energy threshold.

In the second year that is projected, 2017, domestic energy prices are expected to increase, as announced by the main energy companies[46]. Using these announcements and some assumptions around changes in fixed tariffs, the 2016 prices have been uprated to give estimates for the unit costs and standing charges for 2017 gas and electricity prices.

These changes in prices are expected to impact the average fuel poverty gap in both years of the projections. In 2016 it is expected to follow the prices and continue to decrease; whereas the expected price increase in 2017 is likely to be outstripped by the continued improvements to energy efficiency, and therefore reduction in energy requirements. This is projected to result in a continued decrease in the average fuel poverty gap.

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[43] RHI statistics: https://www.gov.uk/government/collections/renewable-heat-incentive-statistics
[44] FiTs statistics: https://www.gov.uk/government/collections/feed-in-tariff-statistics
[45] Quarterly Energy Prices (March 2017): https://www.gov.uk/government/statistics/quarterly-energy-prices-march-2017
[46] Price announcement: https://www.uswitch.com/gas-electricity/guides/gas-electricity-prices/

5.2 Fuel Poverty Projections for England 2016 and 2017

Due to changes in energy efficiency, and therefore energy requirements, as well as changes in energy prices, the average fuel poverty gap is projected to decrease in 2016 to around £330. In 2017, more energy efficiency measures are expected to be installed, therefore the average fuel poverty gap is projected to continue decreasing to around £315. This can be seen in Figure 5.1 below. As the fuel poverty measure is relative, the proportion of households in fuel poverty is expected to remain at similar levels.

Figure 5.1: Actual fuel poverty for England 2003-2015; projected fuel poverty for England 2016-2017
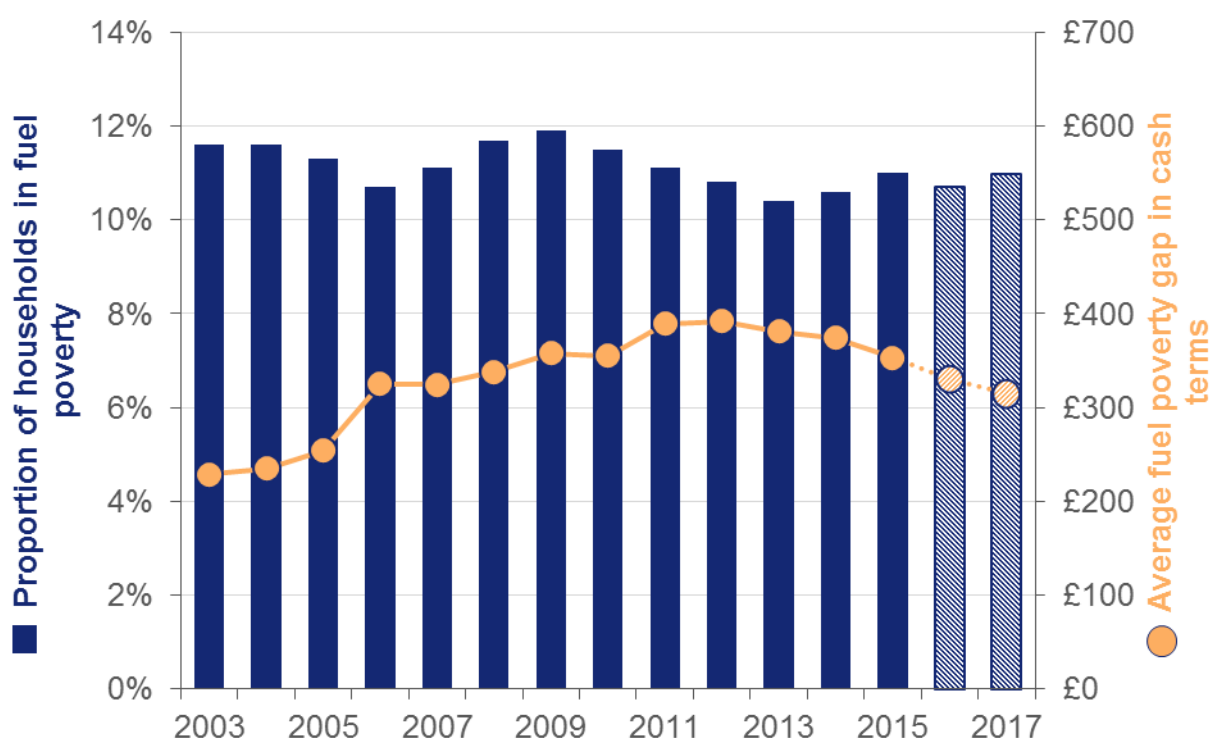
The statutory fuel poverty target for England is to ensure that as many fuel poor households as reasonably practicable achieve a minimum FPEER rating of Band *C* by 2030, with interim targets of Band *E* by 2020, and Band *D* by 2025.

By modelling the energy efficiency measures that have been installed in 2016, and that are expected to be installed by 2017, it is possible to project what progress may have been made towards the targets in 2016 and 2017. Figure 5.2 shows that progress towards each element of the target is expected to be made, with the proportion of the fuel poor in Band *E* and above increasing each year. The proportions of the fuel poor in both Band *D* and above and Band *C* and above are also expected to increase each year.

Figure 5.2: Proportion of fuel poor households in Band *E* and above, Band *D* and above, Band *C* and above, 2010-2015, projected to 2017
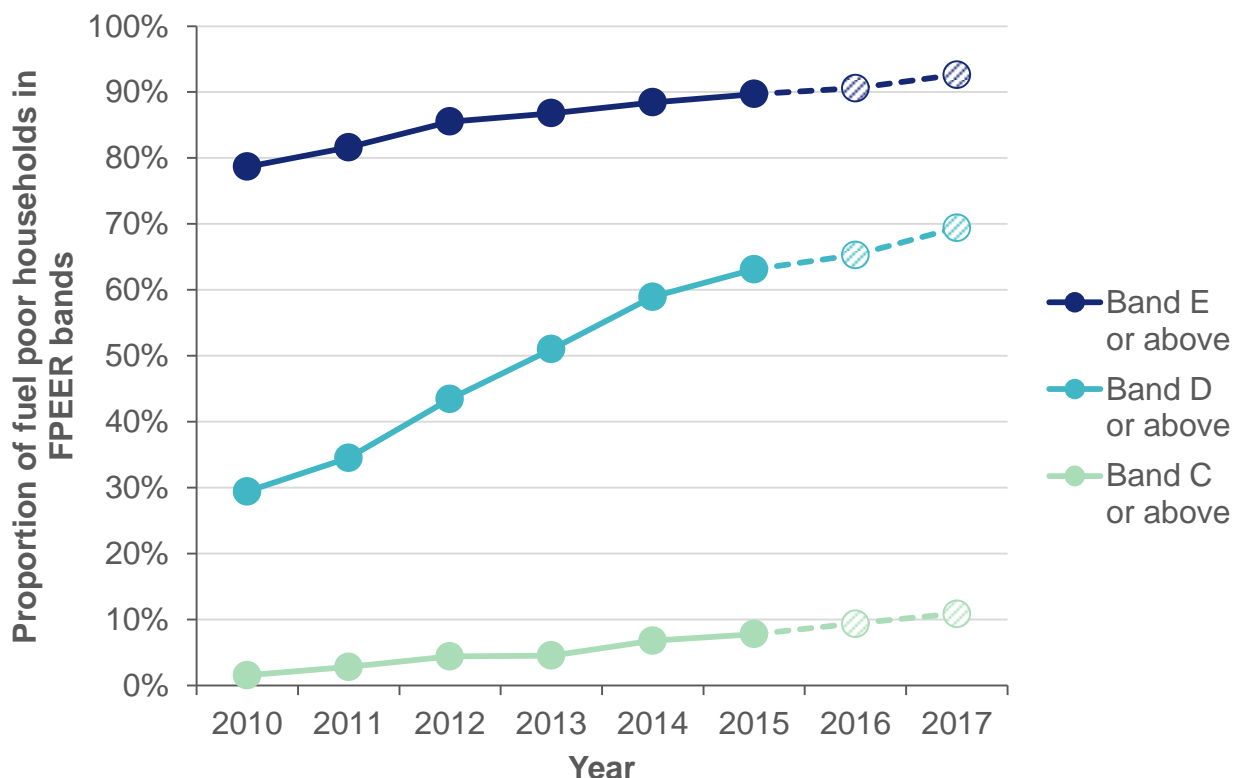
The table below shows the progress against each stage of the targets from 2010 to 2015, as well as the projected figures for 2016 and 2017, which are expected to continue rising.

Table 5.3: Proportion of fuel poor households by FPEER band, 2010–2015, projected 2016-2017

	2010	2011	2012	2013	2014	2015	Projected 2016	Projected 2017
Band E or above	78.7	81.6	85.5	86.8	88.4	89.7	90.6	92.7
Band D or above	29.4	34.5	43.4	51.0	58.9	63.1	65.3	69.4
Band C or above	1.5	2.8	4.4	4.5	6.8	7.8	9.4	10.9

As seen throughout earlier chapters, multiple factors impact fuel poverty. Within this chapter, the projections have aimed to capture high level movements expected to occur over the next two years, and the impact this is likely to have on fuel poverty. Due to the relative nature of the measure, this is a complex task. The projections presented here do not capture change in every factor that may impact fuel poverty. Therefore, the fuel poverty projections should be interpreted as indicative rather than precise point estimates.

ANNEX A: Further explanation of the fuel poverty methodology

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 2015 estimates. A glossary of key terms used throughout this report and supporting can be found at the end of the end of the Annexes.

A.1 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 Chapter 1, Figure 1.1). The first threshold, the median energy cost, is set by ranking households equivalised[47] 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.

Due to the relative nature of the Low Income High Costs indicator, 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 fuel poverty if households with low incomes and high fuel costs see relatively larger income changes (increases or decreases) compared to those who are not in fuel poverty.

Price changes have a more limited effect than income on the number of households in fuel poverty, 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

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

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 A1, 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.

Figure A1: Movement across the income and fuel costs threshold due to either increases in income, reductions in energy consumption or a combination of both
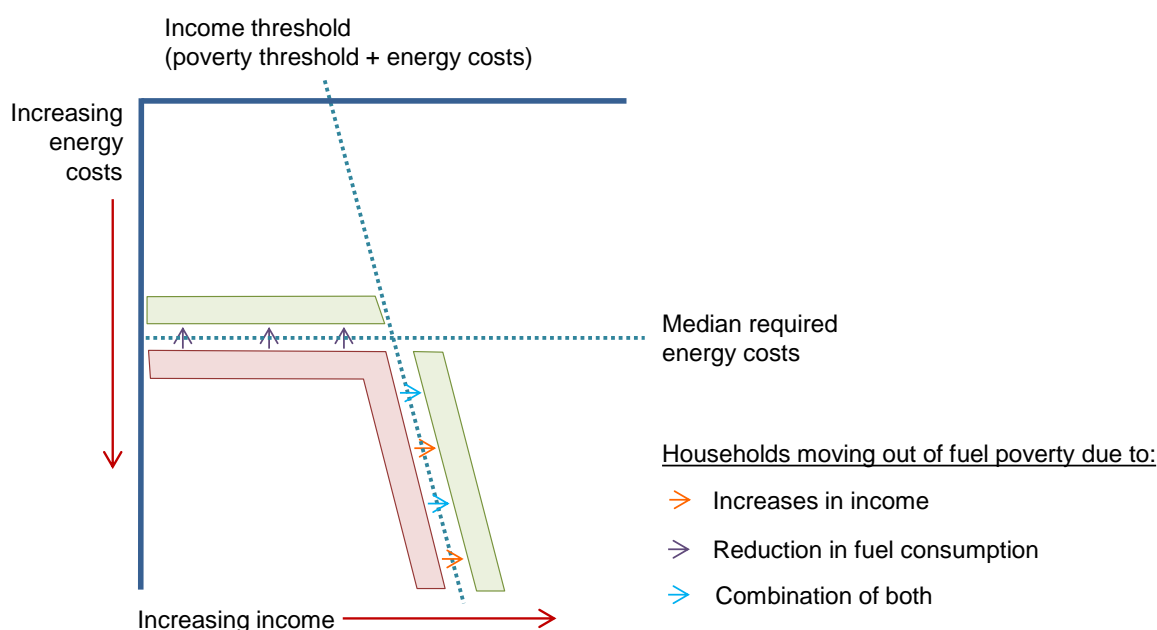
Figures A2 and A3 highlight the different responses to the fuel poverty LIHC indicator under a scenario where fuel prices rise by 10 per cent. In relation to fuel poverty levels, the energy costs of all households should increase by the same amount in proportial terms. For the fuel poverty gap, households 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 A2: Fuel poverty *levels* under the scenario where fuel costs increase by 10%
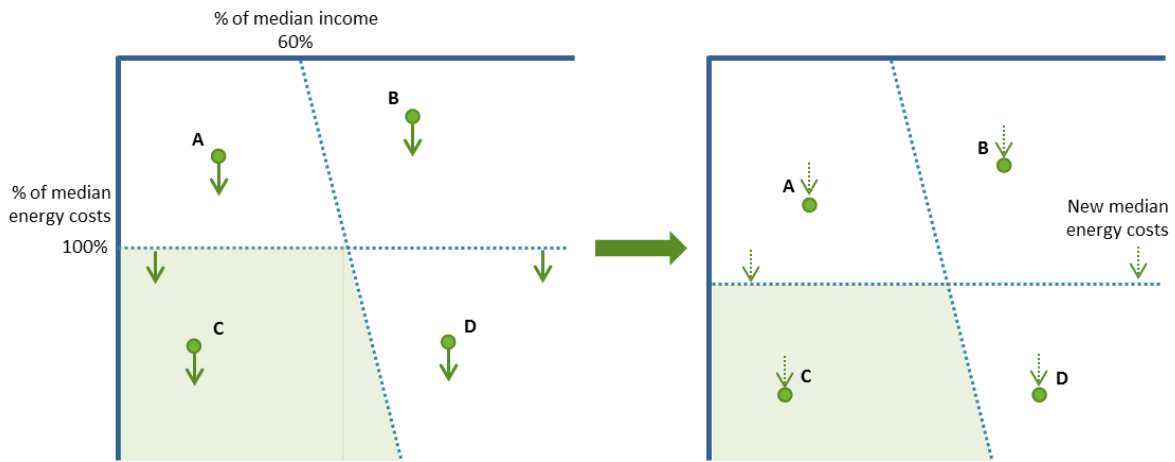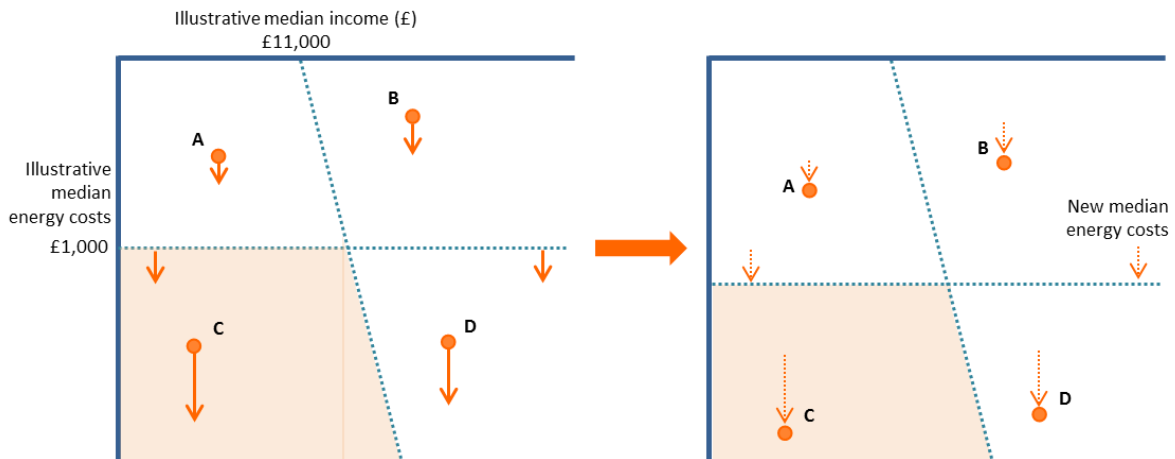

Figure A3: Fuel poverty *gap* under the scenario where fuel costs increase by 10%

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.

A.2 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 have been taken into account, since money spent on housing costs cannot be spent on fuel. Mortgage and rent payments 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[48]. These equivalisation factors were devised by the Organisation for Economic Co-operation and Development (OECD), and are widely used across Europe, including by Eurostat.

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[49] based on their household composition and energy set-up. In reality, households may under or over-heat their home, relative to the recommended levels.

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

[49] 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

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.

A.3 Data Sources

The English Housing Survey (EHS)[50]

Fuel poverty is modelled using data from the English Housing Survey (EHS). The EHS is an annual national survey of people's housing circumstances, household income and the condition and energy efficiency of housing in England. It is commissioned by the Department for Communities and Local Government (DCLG), 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 2015 data, this covers the period between 1 April 2014 and 31 March 2016, and comprises 11,955 households over two consecutive data collection years (2014/15 and 2015/16). Therefore, users are advised to use caution when looking at year

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

on year changes in fuel poverty, as the samples will not be independent. Headline results from the 2015 EHS were published on 02 March 2017[51]. Full data relating to the 2015 EHS, will be made available by DCLG later this year through the UK Data Archive.

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[52]; ONS Consumer Price Index[53]; and Sutherland Tables[54]. Further information on modelled fuel price data is available in the Methodology Handbook[55].

A.4 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 (BREDEM 2012 version 1.0, January 2015)[56].

Changes to the English Housing Survey (EHS)

In 2014/15, a small number of minor form changes to the EHS physical survey were incorporated into the fuel poverty energy modelling. These included improvements to the way PV, biomass fuels and wall insulation are collected. These had a very small effect on the overall household energy requirements.

Changes to income methodology

In 2015, a clustered smoothing routine was introduced to the derivation of council tax data for disclosure control purposes. More detail can be found in the Methodology Handbook[9].

Changes to fuel prices methodology

In 2015, there were no changes to the fuel prices methodology.

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[51] https://www.gov.uk/government/statistics/english-housing-survey-2014-to-2015-headline-report
[52] https://www.gov.uk/government/collections/quarterly-energy-prices
[53] http://www.ons.gov.uk/economy/inflationandpriceindices/bulletins/consumerpriceinflation/previousReleases
[54] http://www.sutherlandtables.co.uk/
[55] https://www.gov.uk/government/publications/fuel-poverty-statistics-methodology-handbook
[56] http://www.bre.co.uk/filelibrary/bredem/BREDEM-2012-specification.pdf

ANNEX B: 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[57]

The Scottish Government uses a 10 per cent measure of fuel poverty, under which a household is considered fuel poor if it would need to spend more than 10 per cent of its income on adequate energy in the home. The Scottish Government has a legal target to eradicate fuel poverty, as far as is reasonably practicable, by 2016. Scotland publishes its own report on the national level of fuel poverty. In 2015, 748,000 households (30.7 per cent of the total) were in fuel poverty.

Wales[58]

Like Scotland, Wales use a 10 per cent indicator. However, their methodology differs from Scotland in relation to the heating assumptions used. Wales has a target to eradicate fuel poverty, as far as reasonably practicable, by 2018. In 2012 (the last year for which data is available), 386,000 households were classed as fuel poor (30 per cent of the total).

Northern Ireland[59]

Northern Ireland Northern Ireland use a 10 per cent indicator, but has no statutory target. Fuel poverty was last reported for Northern Ireland in 2011, estimating that 294,000 households were fuel poor (42 per cent of the total). The Executive is focussed on removing poor energy efficiency as a cause of fuel poverty.

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[60].

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[57] http://www.gov.scot/Publications/2016/12/1539
[58] http://gov.wales/docs/caecd/research/130430-wales-fuel-poverty-projection-tool-2011-12-report-en.pdf
[59] http://www.nihe.gov.uk/index/corporate/housing_research/house_condition_survey.htm
[60] https://www.gov.uk/government/publications/fuel-poverty-statistics-methodology-handbook

ANNEX C: Relevant Links

C.1 Income Indicators

Households below average income
https://www.gov.uk/government/statistics/households-below-average-income-199495-to-201516

Winter fuel payments
https://www.gov.uk/government/statistics/winter-fuel-payment-recipient-and-household-figures-2015-to-2016

Cold weather payments
https://www.gov.uk/government/statistics/cold-weather-payment-statistics-2016-to-2017

C.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/statistical-data-sets/monthly-domestic-energy-price-stastics

Number of customers on pre-payment
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/511466/table_221.xls
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/511470/table_231.xls

Fuel debt and disconnections
https://www.ofgem.gov.uk/publications-and-updates/domestic-suppliers-social-obligations-2015-annual-report

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

C.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/2015to2016provisionaland2014to2015final

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

Glossary

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
DCLG	Department for Communities and Local Government
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
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