



Sub-regional Fuel Poverty in England, 2021 (2019 data)

29 April 2021

Experimental Statistics

Summary findings:

- These are the first sub-regional estimates to be published under the new Low Income Low Energy Efficiency (LILEE) fuel poverty metric.
- The lowest levels of fuel poverty were in the South East at 7.5 per cent and South West 10.6 per cent
- The West Midlands has the highest rate of fuel poverty (17.5 per cent) followed by Yorkshire and the Humber (16.8 per cent) and London (15.2 per cent).
- There were seven Local Authorities with a fuel poverty rate above 20 per cent in 2019. Of these, four are in the West Midlands and three in London.

What you need to know about these statistics:

Estimates of fuel poverty at the regional level are taken from the main fuel poverty statistics. Estimates at the sub-regional level should only be used to look at general trends and identify areas of particularly high or low fuel poverty. They should not be used to identify trends over time.



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Experimental Statistics¹: Sub-regional fuel poverty, 2021 (2019 data)

1 Introduction

The new fuel poverty metric Low Income Low Energy Efficiency (LILEE) was set out in the Fuel Poverty Sustainable Warmth strategy² published in February 2021. The LILEE indicator considers a household to be fuel poor if:

- it is living in a property with an energy efficiency rating of band D, E, F or G as determined by the most up-to-date Fuel Poverty Energy Efficiency Rating (FPEER)³ Methodology; and
- its disposable income (income after housing costs (AHC) and energy needs) would be below the poverty line⁴.

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. Therefore, fuel poverty is measured based on *required* energy bills rather than *actual* spending. This ensures that those households who have low energy bills simply because they actively limit their use of energy at home, for example, by not heating their home are not overlooked.

The Annual Fuel Poverty Statistics Report⁵ is a National Statistics report which provides a comprehensive view of the latest statistical trends and analysis of fuel poverty in England. These statistics report on the proportion of all households in fuel poverty in England and the depth of their fuel poverty. The report also looks at the key drivers of fuel poverty and how fuel poverty in England varies by a number of dwelling and household characteristics.

¹ They are Official Statistics which will be undergoing an evaluation process prior to being assessed as National Statistics.

² Fuel Poverty Sustainable Warmth strategy

<https://www.gov.uk/government/publications/sustainable-warmth-protecting-vulnerable-households-in-england>

³ More information on FPEER can be found here:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/332236/fpeer_methodology.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/2015>

⁵ Annual Fuel Poverty Statistics 2021 <https://www.gov.uk/government/statistics/annual-fuel-poverty-statistics-report-2021>

The sub-regional Experimental Statistics aim to complement the National Statistics on fuel poverty, by estimating the number and proportion of fuel poor households at smaller geographical levels, for example, Local Authority (LA) level. The sub-regional statistics do not report on the average fuel poverty gap.

This year's annual report, and a detailed methodology on how fuel poverty is calculated, can be found on the BEIS website at the following link(s):

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

This is the first year that sub-regional breakdowns have been produced based on the LILEE indicator, however sub-regional breakdowns are available between 2010 and 2018 based on the LIHC indicator at the following link:

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

Accompanying tables

For each of the following geographical levels, estimates are available for the total number of households, the number of fuel poor households, and the proportion of households in fuel poverty:

- Table 1: English Region (former Government Office Region)⁶
- Table 2: Region, County, Unitary & Local Authority
- Table 3: Lower Super Output Area (LSOA)
- Table 4: Parliamentary Constituency

⁶ These are National Statistics and are presented in the Annual Fuel Poverty Statistics Report.

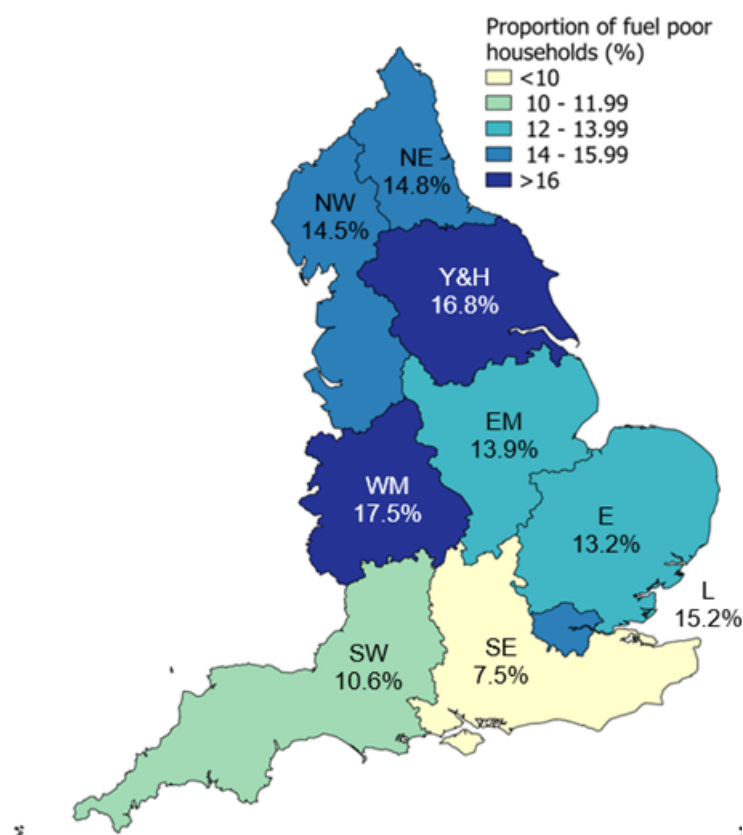
2 Regional fuel poverty

There is a high level of variation in the rates of fuel poverty between regions. This is analysed in the annual fuel poverty statistics and supporting tables. There is a strong correlation between high fuel poverty and low median incomes⁷.

The highest fuel poverty rates were in the West Midlands (17.5%) and Yorkshire and the Humber (16.8%) which both had median incomes under £22,200. These regions also had the lowest share of overall homes reaching band A-C. The lowest fuel poverty rates are South East (7.5%) and South West (10.6%) which had median incomes greater than £24,500.

In the annual fuel poverty statistics (section 3.1.7) an additional indicator of the fuel poverty gap is used to measure the depth of fuel poverty but this is not modelled at sub-regional level. This indicator shows that fuel poor households in the South West, East of England and West Midlands have the deepest levels of fuel poverty due to larger sized homes than in the northern regions and hence higher bills.

Figure 1: Proportion of households in fuel poverty, by Region, 2019

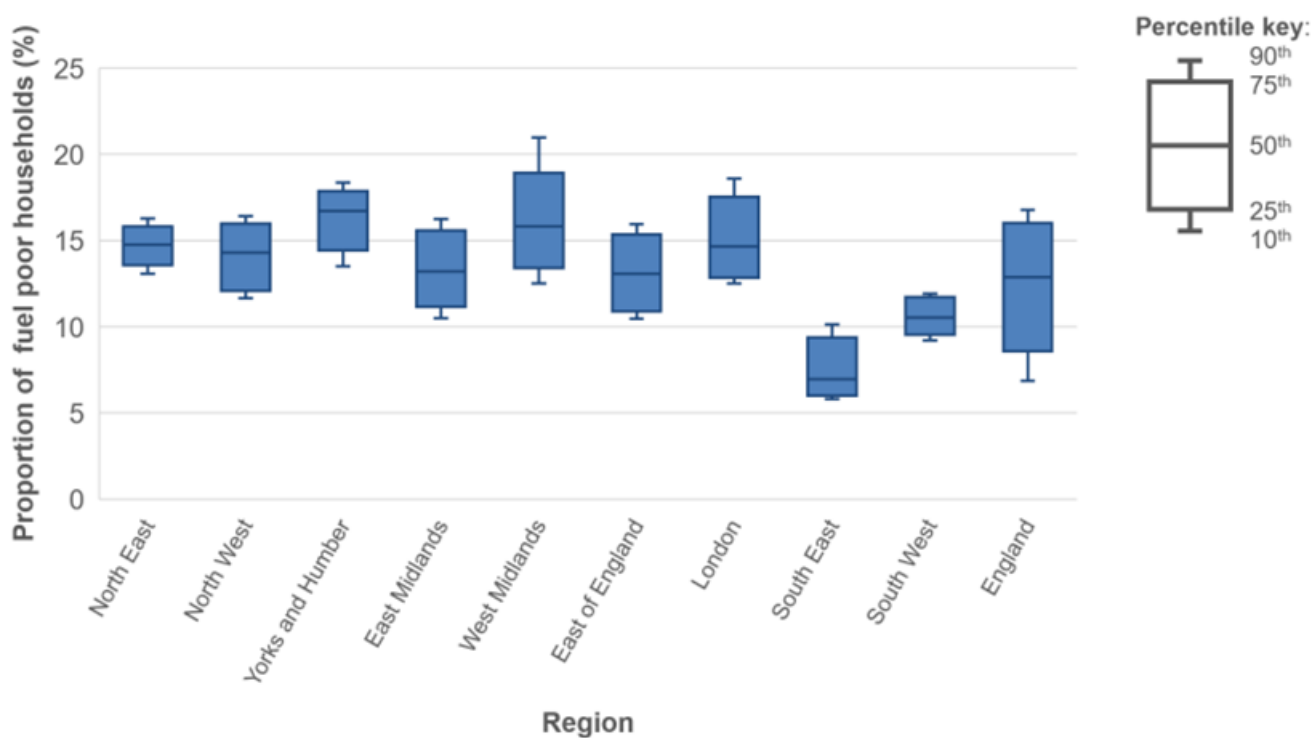


⁷ Median incomes and FPEER ratings by region are shown in table 5 of the Fuel Poverty Supplementary tables <https://www.gov.uk/government/statistics/fuel-poverty-supplementary-tables-2021>

3 Sub-regional fuel poverty

The variation in the rate of fuel poverty between Local Authorities within a region differs across regions. The largest difference between the top and bottom 10 per cent of Local Authorities was in the West Midlands where the 90th percentile was more than 8 percentage points higher than the 10th percentile. The second highest was London with a gap of 6 percentage points. The South West had the smallest variation in fuel poverty rates with a difference of 3 percentage points between the 90th and 10th deciles.

Figure 2: Proportion of households in fuel poverty, by Region 2019

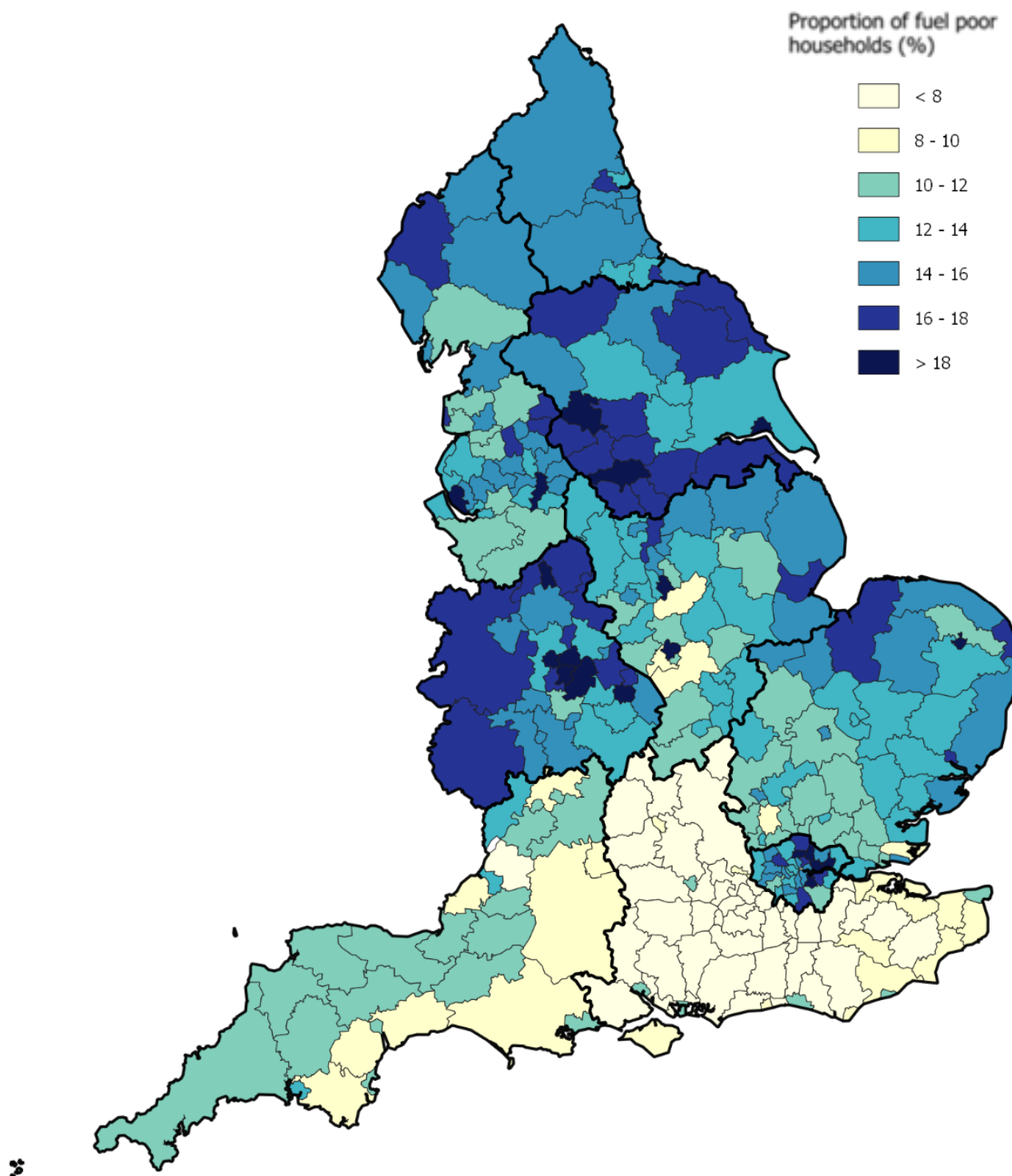


The box plot shows the values for the median Local Authority and interquartile range in the box and 10th and 90th percentile Local Authorities in the whiskers⁸.

⁸ These statistics are calculated by ranking the LAs within a region. The median (50th percentile) represents the middle LA, lower quartile (25th percentile) the LA ¼ through the distribution and upper quartile (75th percentile) ¾ through the distribution.

Maps provide a useful way of comparing fuel poverty across different geographical areas. Figure 3 shows the proportion of households in fuel poverty in England at Local Authority level.

Figure 3: Proportion of households in fuel poverty, by Local Authority, 2019



All of Local Authorities in the South East had below average fuel poverty levels, whilst of 21 Local Authorities with a fuel poverty rate of 18 per cent or above, 8 were in the West Midlands, 5 in London and 3 in Yorkshire and the Humber.

In 2019, the Local Authorities with the lowest proportion of households in fuel poverty were all in the South East and included Wokingham, Hart, Surrey Heath, Elmbridge, Fareham, and Bracknell Forest; all of which were estimated to have fewer than 5.5 per cent households in fuel poverty.

Barking and Dagenham, Stoke-on-Trent, Newham, Birmingham, Wolverhampton, Waltham Forest and Sandwell had the highest proportion of fuel poor households. All were estimated to have more than 20 per cent households in fuel poverty.

4 Methodology

Fuel poverty statistics are based on data from the English Housing Survey (EHS). Given the sample size of the EHS (11,974 households in the combined 2018/19 and 2019/20 dataset⁹), it is not possible to reliably estimate fuel poverty levels in small geographical areas, such as Local Authorities, without the use of modelling.

A logistic regression model is created, matching data from the EHS on whether a household is fuel poor or not (as the binary dependent variable) with data from other sources available for all Census Output Areas (OA)¹⁰, e.g. Census 2011 data (as the independent variables).

While the approach to the modelling used for these estimates is similar to previous years, the adoption of the LILEE metric for the 2019 statistics has changed some of the independent variables selected in the sub-regional modelling. The precise factors used in the modelling are set out in the sub-regional methodology documentation¹¹.

The model is used to estimate the levels of fuel poverty for all OAs across England; these are then aggregated to higher level geographies, which are constrained to the regional totals. This modelling approach introduces the possibility that small, atypical areas are not accurately picked up by the model. It is therefore essential to compare, where possible, the modelled sub-regional level results to the national and regional statistics.

⁹ More information on the EHS combined dataset can be found in the Annual Fuel Poverty Statistics report: <https://www.gov.uk/government/collections/fuel-poverty-statistics>

¹⁰ More information on ONS census geography: <http://www.ons.gov.uk/methodology/geography/ukgeographies/censusgeography>

¹¹ Fuel Poverty Sub-Regional methodology <https://www.gov.uk/government/publications/fuel-poverty-sub-regional-methodology-and-documentation>

In 2013, BEIS undertook an internal review of the methodology used to produce sub-regional estimates of fuel poverty, in conjunction with Office for National Statistics (ONS) Methodology Advisory Service. This review found that estimates of fuel poverty were robust at Local Authority level, but not robust at lower levels of geography. In particular, estimates of fuel poverty at Lower Super Output Area (LSOA) should be treated with caution. The estimates should only be used to look at general trends and identify areas of particularly high or low fuel poverty. They should not be used to identify trends over time within an LSOA, or to compare LSOAs with similar fuel poverty levels due to very small sample sizes and consequent instability in estimates at this level.

Annex: Further information

Revisions policy

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

User engagement

Users are encouraged to provide comments and feedback on how these statistics are used and how well they meet user needs. Comments on any issues relating to this statistical release are welcomed and should be sent to: fuelpoverty@beis.gov.uk

The BEIS statement on statistical public engagement and data standards sets out the department's commitments on public engagement and data standards as outlined by the Code of Practice for Statistics.

Pre-release access to statistics

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

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