Department for Environment Food & Rural Affairs

Government Statistical Service

Statistical Digest of Rural England:

8 - Energy

March 2026

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rural.statistics@defra.gov.uk

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Cover photos

		Ward 2021	Rural-Urban Classification
TL	Helmsley marketplace	Helmsley and Sinnington	Larger rural: Further from a major town or city
TC	Horton-in-Ribblesdale train station with Penyghent behind	Settle and Penyghent	Smaller rural: Further from a major town or city
TR	St Giles Church, Skelton	Rural West York	Larger rural: Nearer to a major town or city
CL	Fishing Boat, Marske-by-the-Sea with Hunt cliff in the distance	St Germain's	Larger rural: Nearer to a major town or city
CR	Thornton Force Waterfall, Ingleton Waterfalls Trail	Bentham and Ingleton	Smaller rural: Further from a major town or city
BL	Farmer working the fields in Knapton	Rural West York	Smaller rural: Nearer to a major town or city
BC	Remote pub at Ribblehead viaduct	Bentham and Ingleton	Smaller rural: Further from a major town or city
BR	Glamping pod in the North York Moors	Pickering	Larger rural: Further from a major town or city

All cover photos provided by Martin Fowell.

Contents

About the Statistical Digest of Rural England

The Statistical Digest of Rural England (hereafter the Digest) is a collection of statistics on a range of social and economic topics and provides broad comparisons between Rural and Urban areas by settlement type. For more information on our classifications, including maps and diagrams explaining the classification, see Appendix 2: Defining Rural areas.

The Digest has been restructured into thematic reports and incorporates the previously separate publication the Rural Economic Bulletin.

The Digest consists of the following thematic reports:

1. Population
2. Housing
3. Health and Wellbeing
4. Communities and Households
5. Connectivity and Accessibility
6. Education, Qualifications and Training
7. Rural Economic Bulletin
8. Energy

In March 2024 the content relating to energy that was previously split across the Housing and Communities and Households chapters has been consolidated into a new Energy report. Appendix 1, shows the sub-themes within each of the 8 Digest reports. Thematic reports will be updated individually and not every report with be updated every month. The most recent updates for this theme are shown in Table 1.
The March 2026 edition refreshed the Performance Certificate analysis and switched the data source to Parliamentary Constituency level data. A new central heating chapter was introduced September 2025 which expanded analysis that was historically part of the Fuel poverty section. In the Fuel poverty chapter, the fuel poverty analysis was updated in May 2025 and the October 2025 update was only for the off gas grid statistics, which are now at Parliamentary Constituency level instead of local authority level that was used previously. ‘Energy costs’ was withdrawn as a chapter in September 2025 and there are no plans to reinstate it, because the material was no longer current. The relevant data tables do remain on Tab WDA in the Energy data tables.

Table 1: Update monitor for Energy subsections
where "✓" indicates the topic has been updated, "✗" indicates the topic has not been updated, and “New” indicates a new topic with analysis not previously included within the Digest.

Section	November 2024	May 2025	September 2025	October 2025	March 2026
Fuel poverty	✗	✓	✗	✓	✗
Energy Performance Certificates: average Energy Efficiency Score	✗	✗	✗	✗	✓
Energy Performance Certificates: achieving energy efficiency category C	✗	✗	✗	✗	✓
Central heating			New	✗	✗
Energy consumption	✓	✗	✗	✗	✗
CO_2 emissions	New	✗	✗	✗	✗

Official Statistics

These statistics have been produced to the high professional standards set out in the Code of Practice for Official Statistics, which sets out eight principles including meeting user needs, impartiality and objectivity, integrity, sound methods and assured quality, frankness and accessibility.

More information on the Official Statistics Code of Practice can be found at: Code of Practice for Statistics.

This publication has been compiled by the Rural Statistics Team within the Rural and Place Team in Defra:

Stephen Hall
Sarah Harriss
Beth Kerwin
Martin Fowell
rural.statistics@defra.gov.uk

There is a 2011 Census version of the Digest which looks at the data from the 2011 Census and where possible makes comparisons to the 2001 Census results.

This can be found at https://www.gov.uk/government/statistics/2011-census-results-for-rural-england

The 2021 Rural-Urban Classification was released on 6 March 2025. Details of the 2021 Rural Urban Classification can be found at: https://www.gov.uk/government/collections/rural-urban-classification. It will take some time for the Digest to be updated throughout using the new classification. Where relevant Statistics drawing on the 2021 Census will be added to Digest thematic reports.

Energy

This part of the Statistical Digest of Rural England focuses on Housing, and covers the following:

- fuel poverty (Section A)
- average Energy Efficiency Scores from Energy Performance Certificates (Section B)
- properties achieving energy efficiency category C (Section C)
- central heating (Section D)
- energy consumption (Section E)
- CO_2 emissions (Section F)

The key findings from each section this report can now be found at the start of the section ahead of the summary.

A. Fuel poverty

In both Rural and Urban areas around 11% of households are regarded as fuel poor; however, the average depth of the fuel poverty for Rural households is greater, especially if their homes are pre-1919 and/or off the gas grid.

Key findings – Fuel poverty

The proportion of fuel poor households was similar in rural and urban areas

- In 2024, 11.4% of households in Rural areas were fuel poor compared to 11.0% in Urban areas. This would correspond to 515,000 households in Rural areas and 2,219,000 households in Urban areas.
- Over the 5 years to 2024, the proportion of fuel poor households has changed very little in Rural areas, but it has fallen by almost 3 percentage points in Urban areas.

Fuel poverty is deeper in Rural areas

- The fuel poverty gap estimates the depth of fuel poverty for fuel poor households as a measure of additional income needed not to be fuel poor. Households in Rural areas had an average annual fuel poverty gap of £668 in 2024. This is £322 more than the average fuel poverty gap of £346 in Urban areas.
- Since 2019 the fuel poverty gap in Rural areas has increased from £413 to £668 - an increase of £255. Whilst in Urban areas, over the same period, the fuel poverty gap increased by just £166 from £180 in 2019 to £346 in 2024.
- In 2024 Rural households in homes with the poorest energy efficiency rating of F or G had an average fuel poverty gap of almost £2,000, compared to £1,600 for Urban households in homes with the same energy efficiency rating.

Fuel poverty is more prevalent and much deeper for households off the gas grid

- In majority rural Parliamentary Constituencies 31% of properties were off the gas grid in 2023. This proportion rises to 39% when a majority live further from a major town or city. Overall, there were 945 thousand off gas grid homes in majority rural Parliamentary Constituencies and a further 473 thousand in intermediate rural Parliamentary Constituencies. In 2023 the proportion of off-grid households that were fuel poor was 17%, compared to just 10% of on-grid households.
- Back in 2010 the proportion of fuel poor households was similar for on-grid (22%) and off-grid (23%) properties. The prevalence of fuel poverty has declined at a faster rate for households on the gas grid than for those off it.
- Figures for 2024 place the average fuel poverty gap at £820 for off-grid fuel poor households and £299 for on-grid households. For off-grid households the average fuel poverty gap rose by £272 between 2020 and 2024, compared to a rise of just £116 for on-grid households over the same period.

Summary

Households in fuel poverty are those living in a property with a Fuel Poverty Energy Efficiency Rating of band D or below in a home that cannot be kept warm at reasonable cost without bringing their residual income below the poverty threshold. There are 3 key elements (drivers) in determining whether a household is fuel poor: (1) household income; (2) household energy efficiency; and (3) fuel prices. The fuel poverty gap (£) is an estimate of the depth of fuel poverty, and it can be either the reduction in fuel costs or the increase in household income needed for a household to not be in fuel poverty.

In 2024, the proportion of fuel poor households was similar in Rural areas (11.4%) to Urban areas (11.0%). This corresponds to 515,000 households in Rural areas. In Rural areas the proportion of fuel poor households in 2024 was 0.2 percentage points lower than in 2019 (the first year under the current methodology). However, in Urban areas the proportion of fuel poor households was 2.9 percentage points lower in 2024 than it was in 2019. So, over the last 5 years, the proportion of fuel poor households has changed very little in Rural areas, but has fallen in Urban areas.

Households in Rural areas had an average fuel poverty gap of £668 in 2024 - this is £322 more than the average fuel poverty gap of £346 in Urban areas. Over the last 5 years, the average fuel poverty gap for Rural households has increased from £413 (in 2019) to £668 (in 2024), which is an increase of £255 (or 62%). For the 82,000 fuel poor Rural households living in the least energy efficient houses, the average fuel poverty gap was almost £2,000, whereas in 2019, the average fuel poverty gap for those households living in houses with the poorest energy efficiency rating was £1,200.

Households living in converted flats were the most likely to be in fuel poverty (18.8%) and those living in Detached properties were the least likely to be fuel poor (7.3%). However, fuel poor households living in Detached properties had the largest average fuel poverty gap (£588). Households living in homes built before 1919 were the most likely to be fuel poor (17.1%) and in general the older the property type the greater the proportion of fuel poor households.

In majority rural Parliamentary Constituencies 31% of properties were off the gas grid in 2023. This proportion rises to 39% when a majority live further from a major town or city. Overall, there were 945 thousand off gas grid homes in majority rural Parliamentary Constituencies and a further 473 thousand in intermediate rural Parliamentary Constituencies. In urban Parliamentary Constituencies just 12% of properties were off the gas grid. Overall, there is a greater proportion of off-grid households in fuel poverty than on-grid households and over the last decade more progress has been made in moving on-grid households out of fuel poverty than for off-grid households. The depth of the fuel poverty for those who are fuel poor is also greater when the household is off-grid rather than on it. In 2024 the average fuel poverty gap for off-grid households was around £820 compared to around £300 for on-grid households.

Defining fuel poverty

Fuel poverty or being fuel poor is where a household is living in a property with a Fuel Poverty Energy Efficiency Rating (FPEER) of band D or below in a home that cannot be kept warm at reasonable cost without bringing their residual income below the poverty threshold. As explained in Note A-5, there are therefore three key elements (drivers) whose interaction determines whether a household is fuel poor: (1) household income; (2) household energy efficiency; and (3) fuel prices. Increased energy efficiency, higher incomes and lower energy prices would each have a positive impact on a fuel poor household. The 2014 fuel poverty target for England set an objective to ensure that as many fuel poor households as reasonably practicable achieved a minimum energy efficiency rating of band C by 2030 (Note A-1)

Low Income High Costs (LIHC) was the preferred metric for measuring fuel poor households from 2011 to 2018. Note A-2 explains how LIHC was defined. For data representative of 2019 onwards (Note A-3) the Department for Energy Security and Net Zero (DESNZ) uses Low Income Low Energy Efficiency (LILEE) as the preferred metric.

Based on household income and the energy efficiency of their home, all households can be divided into 4 groups (Figure A-1). If their property FPEER is of band D (Note A-4) or below (under the solid horizontal line on Figure A-1) they are defined as Low Energy Efficiency (LEE) and if the FPEER is C or above they are defined as High Energy Efficiency (HEE). When assessing fuel poverty, the income used in the assessment is the income available after housing costs, tax and national insurance. The income threshold for fuel poverty is shown as a “best fit” sloped dashed line on Figure A-1. The line is sloped because the less energy efficient the home the greater the impact of fuel costs on available income. Households to the left of the sloped line are defined Low Income (LI) and those to the right of the line are defined as High Income (HI). The lower left group therefore becomes Low Income Low Energy Efficiency (LILEE), these are the fuel poor households. In 2024 11.0% of households in England were defined as fuel poor. Note A-5 provides more details on the LILEE methodology.

The **fuel poverty gap** is an estimate of the depth of fuel poverty. The fuel poverty gap is the reduction in fuel costs needed for a household to not be in fuel poverty. As shown in Figure A-2 a household can escape fuel poverty by increasing the energy efficiency of their home to a FPEER of at least Band C or by crossing the income threshold. Crossing the income threshold could be achieved by increasing the absolute household income through things like gaining employment or increasing their salary by getting a better paid job or government intervention.

Using the two example households in Figure A-2, one household is in a home that is very energy inefficient, but their household income is close to the income threshold. For this type of household reducing fuel costs or increasing income brings them out of fuel poverty more easily than by increasing the efficiency of their home. The second illustrative household has very Low Income but a more efficient home than the first example. For this household improving energy efficiency would move them out of fuel poverty.

As shown in the Statistical Digest of Rural England: 2 – Housing, housing in Rural areas is more likely to be detached and much less likely to be flats than in Urban areas. There is also a higher proportion of Rural housing that is more than 100 years old (Note A-6). In 2019 the Energy Savings Trust stated that nearly 20% of homes in rural areas are in the very energy inefficient F and G categories, compared to just 2.4% in urban areas (Note A-7). Figures from the Annual fuel poverty statistics report: 2025 suggest that this 20% is an overestimate. These 2024 figures show that

6.9% of Rural households are living in properties that are rated F or G compared to 1.1% of households in Urban areas. More information on the energy efficiency of homes can be found in the Energy Performance Certificates sections of this report (Section B and C).

In majority rural authorities there is a greater reliance on heating oil than in urban authorities. Chapter D Central heating, shows than in majority rural authorities, 12% of homes were using oil in 2024 compared to less than 1% in urban authorities. Unlike domestic gas prices, there is no cap on domestic oil prices, so there is the potential for it to be more expensive to heat a home with heating oil than gas.

Figure A-1: A schematic diagram to show how fuel poor households were defined in 2024
The numbers in percentages are the proportion of households in 2024 in each of the 4 groups. This diagram is based on Figure 2.2 in the Annual fuel poverty statistics report: 2025 publication. FPEER on the Y-axes is Fuel Poverty Energy Efficiency Rating. HI and LI are High and Low Income respectively. HEE and LEE are High and Low Energy Efficiency respectively.

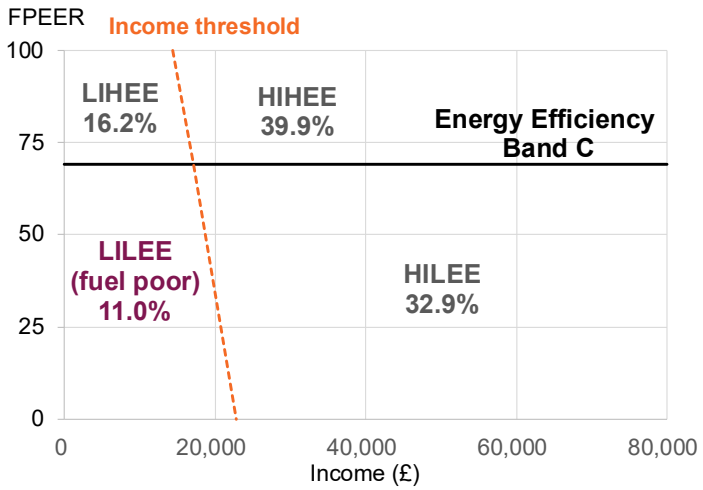
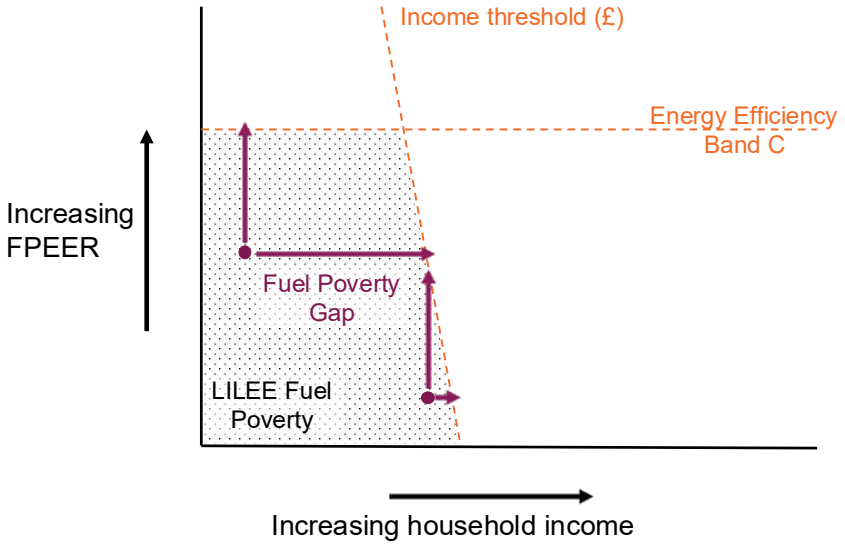


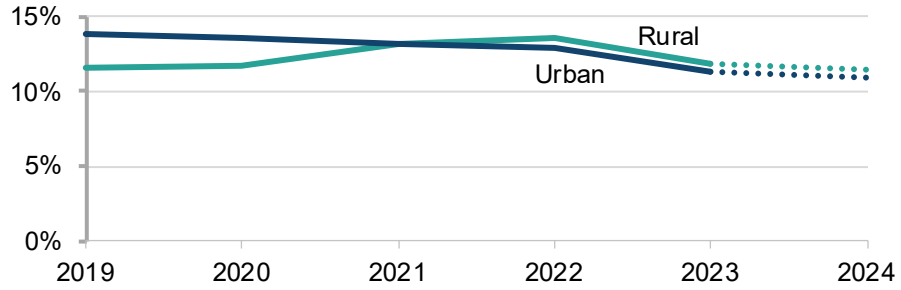
Figure A-2: A schematic diagram representing the fuel poverty gap
The hatched area represents those households in fuel poverty and the arrows represent the property energy efficiency or household income gains that 2 households (represented by the small circles) would need to make to exit fuel poverty. This diagram is based on Figure 1 in the Annual fuel poverty statistics report: 2023 publication.



Fuel poor households

There were 2.7 million fuel poor households in England in 2024 (see Figure A-1 for a definition of fuel poor). In Rural areas there were 515 thousand fuel poor households and in Urban areas there were 2.2 million fuel poor households. Figure A-3 is a line chart showing the proportion of fuel poor households (%) in Rural and Urban areas over the period 2019 to 2024. It shows that when the LILEE methodology was introduced in 2019 fuel poverty was more prevalent in Urban areas than in Rural areas. This remained the case in 2020, but since 2021 the prevalence of fuel poverty has been similar in Rural and Urban areas, with only a small difference – in 2022 fuel poverty was very slightly more prevalent in Rural areas than Urban areas.

Figure A-3: Line chart showing the proportion of fuel poor households (%) in Rural and Urban areas (2019 to 2024).
This line chart has now been truncated to show only the period from 2019 onwards when Low Income Low Energy Efficiency (LILEE) became the preferred metric (Note A-5). The full time series is still available within the supplementary tables (Note A-3). The 2024 figures are provisional and could be revised when final estimates are made in the 2026 publication (Note A-3) therefore a dotted line is used between 2023 and 2024 to represent this more uncertain trajectory.



In 2021 the proportion of Rural households in fuel poverty rose while they fell in Urban areas and the proportion of fuel poor households was 13.1% in both Rural and Urban areas. In 2022, 2023 and 2024 the proportion of fuel poor households was very slightly higher in Rural areas than in Urban areas, but in both area types it has been falling since 2022. In 2022 the proportion of fuel poor households in Rural areas was 13.6%, the proportion dropped to 11.9% in 2023. In 2024 11.4% of Rural households were fuel poor compared to 11.0% of Urban households. These 2024 values are provisional and there is the potential for DESNZ to revise them when releasing the 2026 Fuel poverty publication. This was the approach taken for 2022 and 2023 data which were revised in the 2024 and 2025 publications respectively (Note A-3). This report uses these revised final figures.

Comparing 2024 to 2019 (the first year under LILEE), we see that the proportion of fuel poor households in Rural areas in 2024 is similar to 2019, with the latest estimate being just 0.2 percentage points lower than in 2019. By contrast in Urban areas the proportion of fuel poor households was 2.9 percentage points lower in 2024 than it was in 2019.

DESNZ produces sub-regional fuel poverty data as Experimental Statistics (Note A-13). Estimates at the sub-regional level are modelled using proxy indicators available for low level geographies and 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 detailed trends over time. In 2013, The Department for Business, Energy and Industrial Strategy (BEIS) (Note A-15) 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. We therefore introduced Rural and Urban maps of the proportion of households in fuel poverty at Local Authority level (Figure A-4 and Figure A-5) to the Digest, but will not be producing them at more detailed levels of geography.

As explained in Note A-13 DESNZ are actively working to improve their methodology for sub-regional fuel poverty estimates to improve both the timeliness and accuracy of the data. However, for now, there is a lag between DESNZ producing the overall fuel poverty data and the subregional fuel poverty data. At the time of producing this update the latest sub-regional fuel poverty data released by DESNZ in December 2024 were for 2022 data.

Within Rural areas (Figure A-4) the proportion of households classified as fuel poor is high in the Local Authorities close to the England and Wales border: Herefordshire (19.7%), Shropshire (18.9%) and the Malvern Hills (19.4%). A little further east, but still within the West Midlands region were two further regions with high levels of fuel poverty: North Warwickshire (18.1%) and the Staffordshire Moorlands (19.7%). The only Predominantly Rural Local Authority outside of the West Midlands region where the proportion of fuel poor households exceeded 18% (Table A-1) was East Lindsay in Lincolnshire (18.1%).

Table A-1: The six Predominantly Rural Local Authorities where the proportion of fuel poor households (%) exceeded 18% in 2022

These are the six areas shaded black on Figure A-4

	Proportion of Fuel poor households (%)
Herefordshire	19.7
Staffordshire Moorlands	19.7
Malvern Hills	19.4
Shropshire	18.9
East Lindsey	18.1
North Warwickshire	18.1

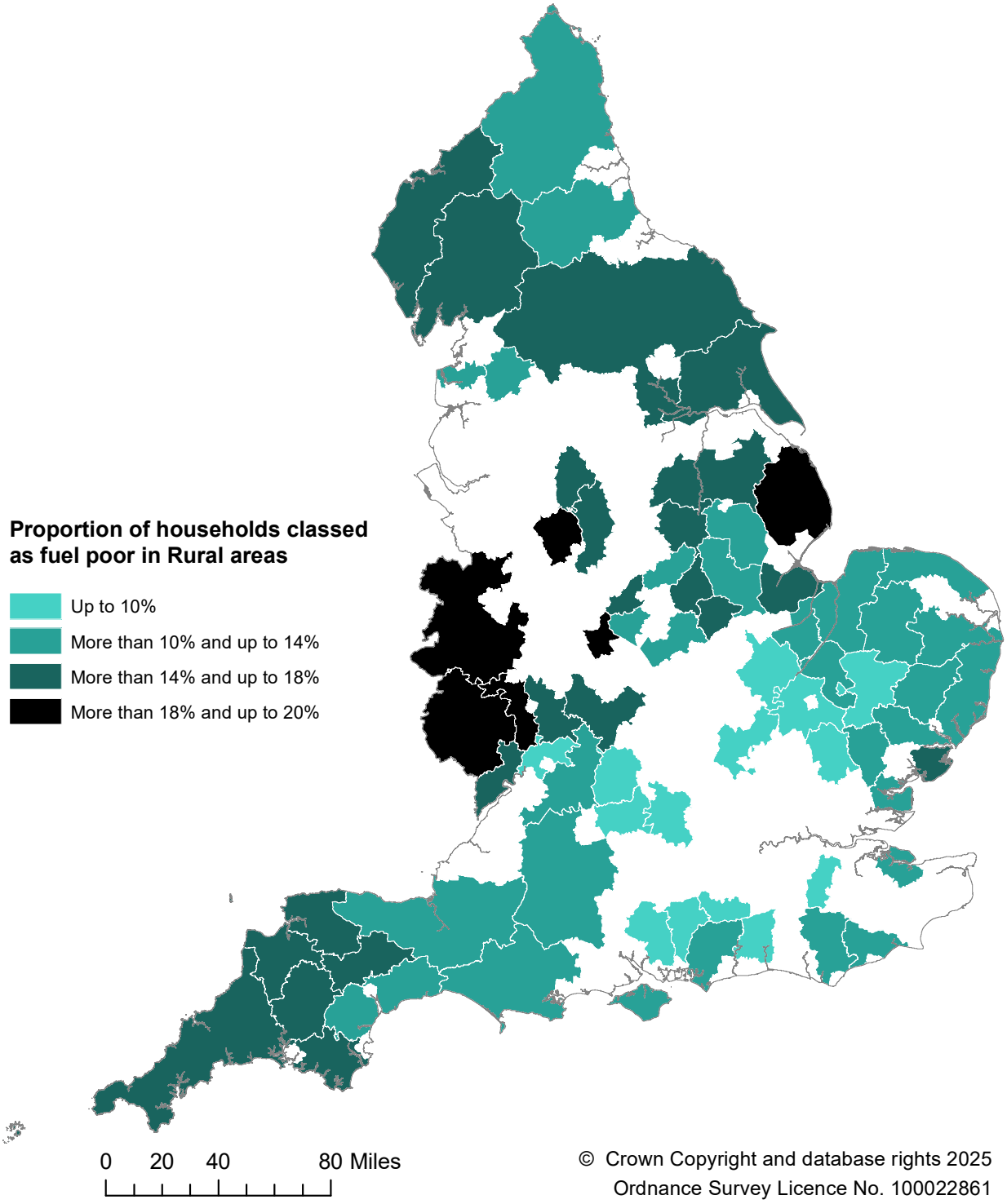
Local Authority boundaries changed in April 2023 in both North Yorkshire and Cumbria. This has reduced the number of Local Authorities in the North (Note A-16). Using these new boundaries, north of the Humber only three Local Authorities have less than 13% of households in fuel poverty. These three were: Northumberland (10.6%), County Durham (11.5%), Ribble Valley (12.8%). In other words, only three Predominantly Rural Authorities in the north had fuel poverty levels lower that the overall average of 13% for Predominantly Rural areas of England.

Moving down the South West region there is an east west split with Cornwall and the Local Authorities in northern and western Devon having above average fuel poverty levels (14.2% to 18.0%) and Devon and East Devon, Somerset, Wiltshire and Dorset (all, 11.2% to 13.3%) having fuel poverty levels close to the Predominantly Rural average of 13%.

Within the East Midlands region 10 of 15 Predominantly Local Authorities have fuel poverty levels of at least 14% of households. Within the East Midlands the levels of fuel poverty are highest in East and West Lindsey (18.1% and 16% respectively) and two Derbyshire Authorities: Derbyshire Dales (17.3%) and High Peak (15.9%).

Figure A-4: Map of the proportion (%) of households in Predominantly Rural areas that are fuel poor according to the LILEE definition in 2022

The darker the shading the higher the proportion of households that are fuel poor. White areas on the map are Predominantly Urban or Urban with Significant Rural areas. This map uses Local Authority boundaries applicable from 1 April 2023. (Note A-13, Note A-14)



In summary, Figure A 4 shows Rural fuel poverty is:

- above 14% (well above average) in Cumbria, Yorkshire, northern Derbyshire, northern and eastern Lincolnshire, eastern Nottinghamshire, the rural parts of the West Midland region (especially along the England / Wales border, Cornwall and in northern and western Devon and

- below 10% (substantially below average) in most of the Predominantly Rural Local Authorities of the South East region and in Cambridgeshire, Bedfordshire and West Suffolk from the East of England region.

Figure A-5: Map of the proportion (%) of households in Urban or Urban with Significant Rural areas that are fuel poor according to the LILEE definition in 2022

The darker the shading the higher the proportion of Predominantly Urban or Urban with Significant Rural households that are fuel poor. White areas on the map are Predominantly Rural. This map uses Local Authority boundaries applicable from 1 April 2023. (Note A-13, Note A-14)

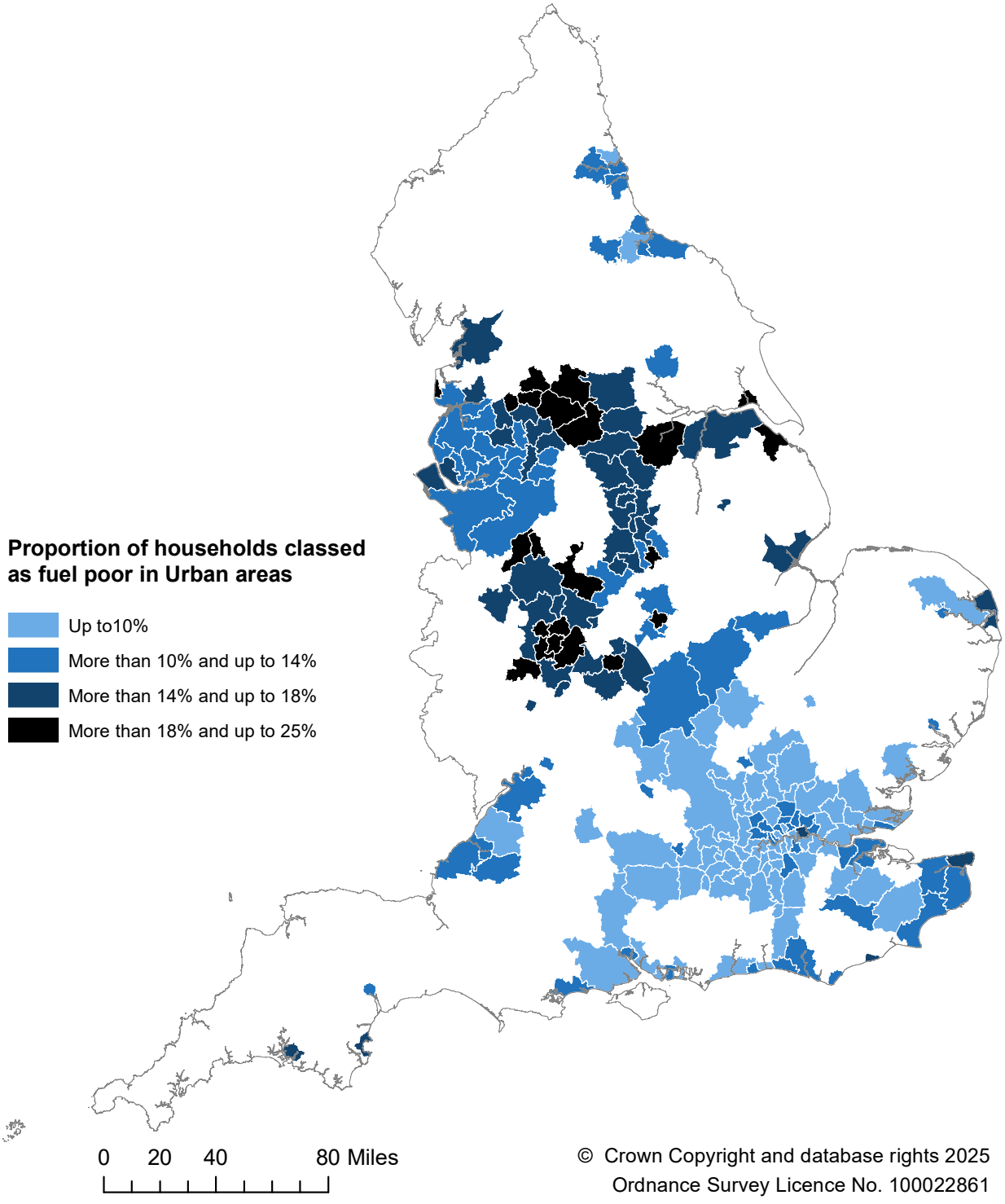


Figure A-5 shows the proportion of households classified as fuel poor in Predominantly Urban or Urban with Significant Rural Local Authorities. In general terms, as for Predominantly Rural areas, Local Authorities with below average fuel poverty tend to be in the South East and those with above average fuel poverty tend to be in the Yorkshire, Lancashire or the Midlands. Overall, 22 Predominantly Urban or Urban with Significant Rural Local Authorities had fuel poverty levels of at least 18% of households.

Within Yorkshire and the Humber region, York (13.7%) has lower levels of fuel poverty than the Urban authorities of South and West Yorkshire, for example (Bradford 19.8%), Kingston upon Hull (20.4%) and Doncaster (18.2%). In the North West region, Blackpool, Pendle and Burnley all had between 19.3% and 19.7% of the residents in fuel poverty, compared to 13.1% and 13.3% of households being fuel poor in Bury and Wigan respectively.

Notable exceptions in the South East with above average fuel poverty include the coastal communities of Thanet in eastern Kent (15.8%) and Hastings (16.1%) in East Sussex. The only Authority in London where more than 14% of households were fuel poor was Newham (14.8%).

Of the seven Predominantly Urban Local Authorities where more than 20% of households are fuel poor, six were in the West Midlands (Table A-2).

Table A-2: The seven Predominantly Urban Local Authorities where the proportion of fuel poor households (%) exceeded 20% in 2022

These are the six areas shaded black on Figure A-5.

	Proportion of Fuel poor households (%)
Stoke-on-Trent	24.7
Birmingham	24.0
Wolverhampton	23.0
Coventry	22.2
Sandwell	22.0
Walsall	21.0
Kingston upon Hull	20.4

Fuel poverty gap

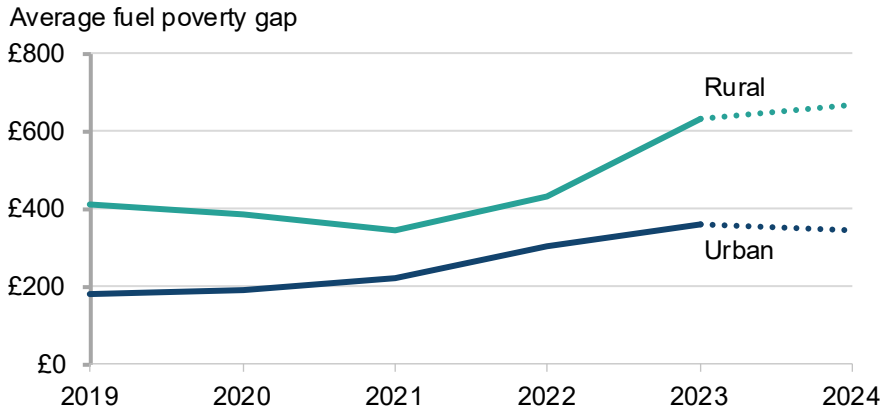
As explained in the “Defining fuel poverty” section, the fuel poverty gap (£) is an estimate of the depth of fuel poverty, and it can be either the reduction in fuel costs or the increase in household income needed for a household to not be in fuel poverty. Figure A-6 shows that over the period 2019 to 2024 the average fuel poverty gap (or depth of the fuel poverty) was greater in Rural areas than in Urban areas in every year over this 5-year period. Since 2021 the average fuel poverty gap has been growing in both Rural and Urban areas, and the growth seen has been bigger in Rural areas. In England, the provisional estimate of the average fuel poverty gap for households that were fuel poor in 2024 was £407, this is a small decrease compared to the final estimate for 2023 when it was £414.

In 2024 the average fuel poverty gap for households in Rural areas was £668, this is £322 more than the average fuel poverty gap of £346 in Urban areas. So, on average, in 2024 fuel poverty

was almost double the depth in Rural areas than in Urban areas. The fuel poverty gap for fuel poor households in Rural Villages, Hamlets and Isolated Dwellings in 2024 (£987) was much higher than for the Rural town and fringe areas (£356). It is therefore the most Rural areas where the depth of fuel poverty is the greatest.

Figure A-6: Line chart showing the average fuel poverty gap (£) in Rural and Urban areas (2019 to 2024).

This line chart has now been truncated to show only the period from 2019 onwards when Low Income Low Energy Efficiency (LILEE) became the preferred metric (Note A-5). The full time series is still available within the supplementary tables (Note A-3). The 2024 figures are provisional and could be revised when final estimates are made in the 2026 publication (Note A-3) therefore a dotted line is used between 2023 and 2024 to represent this more uncertain trajectory.



The average fuel poverty gap in 2024 in Rural areas was £36 more than it was in 2023 (6% higher), whereas for Urban areas it was £17 less than in 2023 (5% lower). When the comparison is made to 2019 (the first year under LILEE) we see that the average fuel poverty gap for Rural households has increased from £413 to £668, which is an increase of £255 (or 62%). By contrast for Urban households the fuel poverty gap has increased by £166 from £180 in 2019 to £346 in 2024.

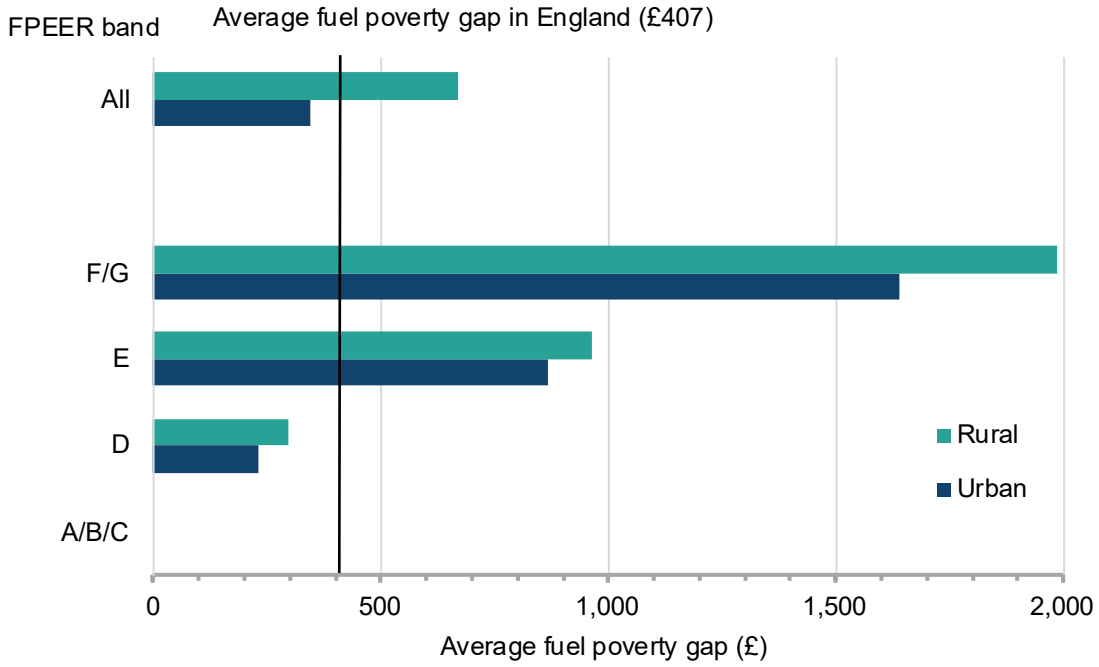
The increasing depth of fuel poverty reflects the rising energy costs in recent years. The fact that the average depth of the fuel poverty for fuel poor households has risen in Rural areas, but fallen in Urban areas over the last 12 months is likely to be as a consequence of houses in Rural areas being typically larger, and often older, than Urban ones (Statistical Digest of Rural England:2 – Housing). These two factors make them less energy efficient (sections B and C) and therefore more costly to heat (Section D).

The Fuel Poverty Energy Efficiency Rating (FPEER) is a measure of the energy efficiency of a property (Note A-4). As shown on Figure A-7, in 2024 Rural households with the poorest FPEER rating of F or G had an average fuel poverty gap of almost £2,000, compared to £1,600 for Urban households in homes with the same energy efficiency rating. This value is almost five times the average fuel poverty gap for fuel poor households in England (£407). In 2024 Rural households with homes with an FPEER rating of D had an average fuel poverty gap of around £300. Whilst this is more than the fuel poverty gap of £230 for fuel poor Urban households in FPEER rating D homes, it is less than a third of the average fuel poverty gap for fuel poor Rural households living in an FPEER rating E home (£960). This demonstrates how improving the energy efficiency of homes

can make a large reduction to the depth of fuel poverty even for those households where it cannot be eliminated.

Figure A-7: Bar chart showing average fuel poverty gap (£) in Rural and Urban areas in 2024 according to Fuel Poverty Energy Efficiency Rating (FPEER) band (Note A-2, Note A-4, Note A-5)

The legend is presented in the same order as the clusters of bars. The black vertical line represents the average fuel poverty gap for all households in fuel poverty. Only households living in a dwelling with an FPEER of band D-G (Note A-4 and Figure A-1) are categorised as 'Low Energy Efficiency' and are therefore at risk of being in fuel poverty depending on the household income. The average fuel poverty gap by Fuel Poverty Energy Efficiency Rating (FPEER) band data published by DESNZ / BEIS combines FPEER band F & G and FPEER bands A, B & C into merged categories so it is not possible to produce separate estimates for bands F & G.



In 2019, the average fuel poverty gap for those households living in houses with the poorest energy efficiency rating was £1,200 in Rural areas and £860 in Urban areas. In 2019, there were 361,000 Rural households living in homes with an FPEER rating of F or G, and by 2024 there were still 312,000 Rural households living in such energy inefficient homes. This means that in 2024 around 7% of Rural households were living in FPEER rated F or G homes, compared to around 1% of Urban households. The 82,000 fuel poor Rural households living in these energy inefficient homes have seen the average depth of their fuel poverty increase by almost £800 over a 5 year period during which energy costs have risen rapidly.

Fuel Poverty by property characteristics

In the latest Fuel Poverty Statistics DESNZ consider fuel poverty for a range of property characteristics (Note A-9). We have reproduced the key fuel poverty metrics by property type in Table A-3.

DESNZ reported that households living in converted flats were the most likely to be in fuel poverty (18.8%) and those living in Detached properties were the least likely to be fuel poor (7.3%). However, fuel poor households living in Detached properties had the largest average fuel poverty

gap (£588) followed by those in converted flats (£516). DESNZ explain that the stark difference in the fuel poverty metrics between purpose built and converted flats is largely due to the greater energy efficiency of (often newer) purpose build flats resulting in lower modelled energy costs. The relatively low proportion of fuel poor households in Detached properties is due to their relatively high equivalised income (Figure 3.6 of 2024 Fuel Poverty Statistics). For fuel poor households in Detached properties the fuel poverty gap is high because of the number of exposed walls and large floor area relative to other property types. This is an important factor to consider in Rural areas where the proportion of detached properties is high (Statistical Digest of Rural England:2 – Housing).

Table A-3: The proportion of fuel poor households (%) and their average fuel poverty gap (£) by property type in 2024

Source data: Fuel poverty detailed tables 2025 (2024 data) - Table 7

	Detached	Semi-detached	End terrace	Mid-terrace	Purpose-built flat	Converted flat
Proportion of fuel poor households (%)	7.3	11.4	17.5	12.7	8.0	18.8
Average fuel poverty gap (£)	588	374	409	326	357	516

Comparing an end terrace to a mid-terrace shows that 4.8% fewer households in a mid-terrace are in fuel poverty than for households in an end terrace and when the households are fuel poor the average depth of the fuel poverty is £83 less for a mid-terrace than an end terrace. This matters in a rural context because the average urban terrace is 50% longer than the average rural terrace, so there are proportionally fewer mid terraced properties in rural areas (Note A-6).

When it comes to floor area DESNZ report that there was a higher proportion of fuel poor households in smaller homes, in part due to lower equivalised incomes. However while the share of fuel poor households was lowest in homes with floor areas of 110m^2 or more at 7.4%, these households had the highest fuel poverty gap at £668 (Fuel poverty detailed tables 2025 (2024 data) - Table 9). In table 4 of the Fuel poverty supplementary tables 2025 (2024 data) DESNZ show that the median floor area of properties in the combined category of 'Villages, hamlets and isolated dwellings' was 115m^2, considerably larger than the median floor area for all properties (85m^2).

Proportionally more households are fuel poor if the properties have solid walls without insulation (18.7%) than if they have cavity walls with (6.6%) and without (14.1%) insulation. Where the households are fuel poor the average depth of fuel poverty is higher for households in properties with solid walls without insulation (£504) than for those in homes with cavity walls (£307 with insulation, £359 without insulation). Insulation of solid walls only reduced the average fuel poverty gap by about £30. Table 15 of Fuel poverty detailed tables 2025 (2024 data) contains data on fuel poverty by wall insulation type.

Households living in homes built before 1919 were the most likely to be fuel poor (17.1%) and in general the older the property type the greater the proportion of fuel poor households (Table A-4). The depth of fuel poverty is much higher for fuel poor households in pre-1919 properties (£612) than for households in properties built after this date, but it is not necessarily the case that the newer the property the lower the average fuel poverty gap for any fuel poor residents. For

example, the average fuel poverty gap for fuel poor households in 1919 to 1944 homes is £295, which is about £20 less than for those fuel poor households living in 1991 to 2002 properties.

Table A-4: The proportion of fuel poor households (%) and their average fuel poverty gap (£) by property age in 2024

Source data: Fuel poverty detailed tables 2025 (2024 data) - Table 8. Post 2002 properties have been excluded from the table because so few post 2002 properties are below FPEER rating C.

	Pre 1919	1919 to 1944	1945 to 1964	1965 to 1980	1981 to 1990	1991 to 2002
Proportion of fuel poor households (%)	17.1	14.3	13.4	11.5	6.7	5.4
Average fuel poverty gap (£)	612	295	330	338	307	316

Solid walls, bigger and older properties all tend to be more prevalent in Rural areas than Urban areas. For example, there are over 1 million pre-1919 homes in Rural areas and they account for 28% of rural residential properties compared to only 18% of urban residential properties (Note A-6). Thus, whilst the figures presented in this section are not Rural specific, they help to explain why the fuel poverty gap in Rural areas is larger than in Urban areas.

A much higher proportion of households in Private rented properties were fuel poor (21.5%) than for Owner-occupied properties or Social rented properties (Table A-5). However, when households are fuel poor the depth of their fuel poverty tends to be greatest when they are an Owner-occupier.

Table A-5: The proportion of fuel poor households (%) and their average fuel poverty gap (£) by property tenure 2024

Source data: Fuel poverty detailed tables 2025 (2024 data) - Table 19.

	Owner occupied	Private rented	Social housing
Proportion of fuel poor households (%)	7.5	21.5	13.1
Average fuel poverty gap (£)	472	407	261

Off the gas grid properties

There is no definitive source for the number of households not on the gas grid, so DESNZ estimate the number by subtracting the number of domestic gas meters (including non-consuming domestic meters) from the estimated number of domestic properties. DESNZ publish this information annually in “Subnational estimates of properties not connected to the gas network”. Previously the Digest used information from this DESNZ publication at Local Authority level, but in October 2025 the geographical scale was switched over to the Parliamentary Constituency level version of the data (Note A-11).

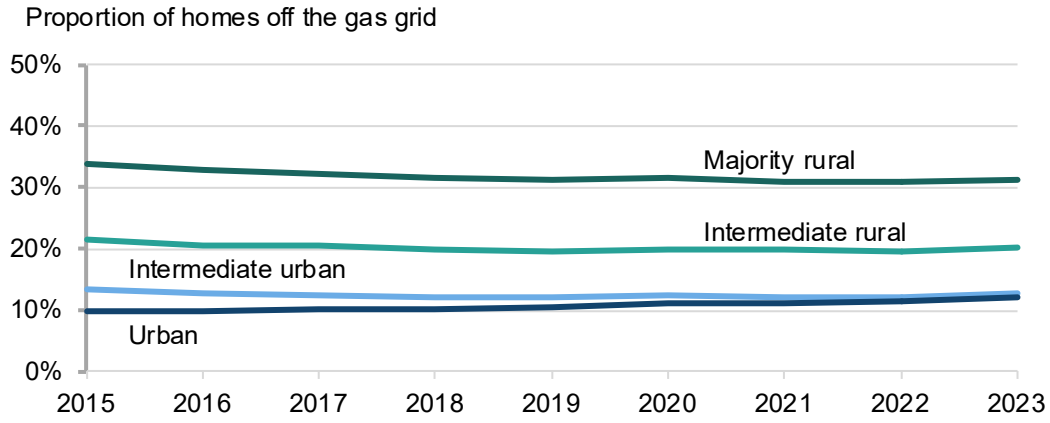
Not all households heat their home through central heating with a gas boiler. In 2023 an estimated 3.9 million properties did not have a gas network connection, which was 15% of the properties in England. Figure A-8 is a line chart showing the proportion of properties that were off the gas grid

over the period 2015 to 2023 for each of the categories within the 2021 Parliamentary Constituency Rural-Urban Classification (Parliamentary Constituency RUC21). It shows that the more rural the area the higher the proportion of off the gas grid properties across the period and that the proportion of properties that are off the gas grid is declining slowly in both majority rural and intermediate (rural or urban) Parliamentary Constituencies. However, the proportion of off the gas grid properties in urban Parliamentary Constituencies is growing. The following bullets provide the values for the proportion of off gas grid properties at the start and end of the series displayed in Figure A-8.

- In majority rural Parliamentary Constituencies, 31.1% of properties were off the gas grid in 2023. This is 2.6 percentage points lower than the 33.7% of properties in majority rural Parliamentary Constituencies that were off the gas grid in 2015.
- In intermediate rural Parliamentary Constituencies, 20.1% of properties were off the gas grid in 2023. This is 1.5 percentage points lower than the 21.6% of properties in intermediate rural Parliamentary Constituencies that were off the gas grid in 2015.
- In intermediate urban Parliamentary Constituencies, 12.7% of properties were off the gas grid in 2023. This is 0.8 percentage points lower than the 13.5% of properties in intermediate urban Parliamentary Constituencies that were off the gas grid in 2015.
- In urban Parliamentary Constituencies, 12.2% of properties were off the gas grid in 2023. This is 2.2 percentage points higher than the 10.0% of properties in urban Parliamentary Constituencies that were off the gas grid in 2015.

The proportion of properties off the gas grid in majority rural Parliamentary Constituencies in 2023 was over 2.5 times greater than the proportion of off the gas grid properties in urban authorities. As is explained in Chapter D Central heating, a much larger proportion of the properties in majority rural Parliamentary Constituencies use oil as a substitute for gas for heating than in urban Parliamentary Constituencies. The growth in the proportion of off the gas grid properties in urban Parliamentary Constituencies could be linked to both the increased number of community energy schemes (Figure D-6) and the improvements in the quality of electric heating systems relative to older systems.

Figure A-8: Line chart showing the percentage of properties without mains gas supply by 2021 Parliamentary Constituency Rural-Urban Classification (2015-2023) (Note A-11)



In absolute terms in 2023, 31% of properties in majority rural Parliamentary Constituencies being off the gas grid means that 945 thousand properties in majority rural Parliamentary Constituencies were off the gas grid (Table A-6). This value is similar to the 942 thousand that were off the gas

grid in 2015 (Table A-7). So, the fall in the proportion of off the grid properties in majority rural Parliamentary Constituencies is because the vast majority of new builds are built in places where they come with a gas connection as part of the construction process. Within intermediate rural Parliamentary Constituencies there was a further 473 thousand off the gas grid properties, slightly more than the 465 thousand that existed in 2015. However, in urban Parliamentary Constituencies there was almost 0.5 million more off the gas grid homes in 2023 (2,058,000) than in 2015 (1,571,000). A large proportion of these are likely to be modern apartments using efficient modern electric heating systems. As an example, Poplar and Limehouse, in the London Docklands, had 23 thousand off the gas grid properties in 2015 and by 2023 this had increased to 41 thousand. This changed the proportion of off the gas grid properties from 44% to 59%.

Table A-6: Estimated number and proportion of properties off the gas grid in England in 2023 by 2021 Parliamentary Constituency Rural-Urban Classification (Note A-11)

RUC2021	Number of domestic properties (thousands)	Estimated number of properties not on the gas grid (thousands)	Estimated percentage of properties not on the gas grid (%)
Majority rural	3,039	945	31.1%
Intermediate rural	2,351	473	20.1%
Intermediate urban	3,079	390	12.7%
Urban	16,878	2,058	12.2%
England	25,348	3,865	15.2%

Table A-7: Estimated number and proportion of properties off the gas grid in England in 2015 by 2021 Parliamentary Constituency Rural-Urban Classification (Note A-11)

RUC2021	Number of domestic properties (thousands)	Estimated number of properties not on the gas grid (thousands)	Estimated percentage of properties not on the gas grid (%)
Majority rural	2,792	942	33.7%
Intermediate rural	2,155	465	21.6%
Intermediate urban	2,846	384	13.5%
Urban	15,764	1,571	10.0%
England	23,557	3,362	14.3%

Figure A-8 displayed the average proportion of off the gas grid properties in majority rural Parliamentary Constituencies, but there are some Parliamentary Constituencies where the proportion of properties off the gas grid was much higher than this 31% average value. There was 5 majority rural Parliamentary Constituencies where the proportion of properties off the gas grid in 2023 exceeded 50% (Table A-8). There was also a further 11 majority rural and 3 intermediate rural Parliamentary Constituencies where the proportion of properties off the gas grid was between 40% and 50%. Overall, most of the majority rural or intermediate rural Parliamentary Constituencies where more than 40% of the properties were off the gas grid were located in either the East of England or South West regions. Worksheet AF in the Energy data tables contains

tables showing the proportion of properties off the gas grid in majority rural Parliamentary Constituencies and in intermediate rural Parliamentary Constituencies. Readers interested in knowing the local authorities where the highest proportion of homes were using oil should look at Table D-2 in chapter D of this report.

Table A-8: The 5 majority rural Parliamentary Constituencies where the proportion of properties off the gas grid in 2023 exceeded 50% (Note A-11)

Parliamentary Constituency	Number of domestic properties (thousands)	Estimated number of properties not on the gas grid (thousands)	Estimated percentage of properties not on the gas grid (%)
Waveney Valley	42	27	64%
St Ives	46	25	54%
North Cornwall	50	27	53%
South Shropshire	45	24	53%
Mid Norfolk	43	23	53%

A new feature within Parliamentary Constituency RUC21 is that it provides information regarding a locations' proximity to a major town or city to indicate relative access. As explained in Note A-17, "nearer to a major town or city" is defined as being within a 30-minute drive of a major town or city and, "further from a major town or city" is defined as being more than a 30-minute drive by car from a major town or city.

Figure A-9 is a bar chart that shows the impact of proximity to a major town or city on the proportion of properties that are off the gas grid in majority rural and intermediate rural Parliamentary Constituencies. In both majority rural and intermediate rural Parliamentary Constituencies, a higher proportion of properties were off the gas grid when the majority of the population reside further from a major town or city.

- In majority rural Parliamentary Constituencies in 2023, 39% of the properties were off the gas grid when the majority of residents were further from a major town or city. Whilst in majority rural Parliamentary Constituencies where the majority of residents were nearer to a major town or city 26% of the properties were off the gas grid.
- In intermediate rural Parliamentary Constituencies in 2023, 27% of the properties were off the gas grid when the majority of residents were further from a major town or city. Whilst in intermediate rural Parliamentary Constituencies where the majority of residents were nearer to a major town or city 16% of the properties were off the gas grid.

The values presented in Figure A-9 are all one to three percentage points lower than the equivalent estimates for 2015. These reductions were between two and three percentage points in majority rural Parliamentary Constituencies and between one and two percentage points in intermediate rural Parliamentary Constituencies.

In majority rural Parliamentary Constituencies there are more properties in Parliamentary Constituencies where a majority live nearer to a major town or city than in Parliamentary Constituencies where a majority live further from a major town or city (Table A-9). This means that in 2023 even though there were proportionally more properties off the gas grid in majority rural

Parliamentary Constituencies where a majority live further from a major town or city, in absolute numbers, the number of off gas grid properties was similar for both constituency types. Overall the 945 thousand off gas grid properties in majority rural Parliamentary Constituencies in 2023 were split as follows: 468 thousand in Parliamentary Constituencies where a majority live further from a major town or city and 477 thousand in Parliamentary Constituencies where a majority live nearer to a major town or city (Table A-9). It is a similar story for intermediate rural Parliamentary Constituencies. For these Parliamentary Constituencies, the 473 thousand off gas grid properties in 2023 were split as follows: 228 thousand in Parliamentary Constituencies where a majority live further from a major town or city and 245 thousand in Parliamentary Constituencies where a majority live nearer to a major town or city.

Figure A-9: Bar chart showing the percentage of off the gas grid properties in both majority rural, and intermediate rural, Parliamentary Constituencies by proximity to a major town or city in 2023 (Note A-11)

The legend is presented in the same order and orientation as the cluster of columns. When describing proximity, the descriptors "Majority further from" and "Majority nearer to" mean that the majority of the population reside further from, or nearer to, a major town or city (Note A-17).

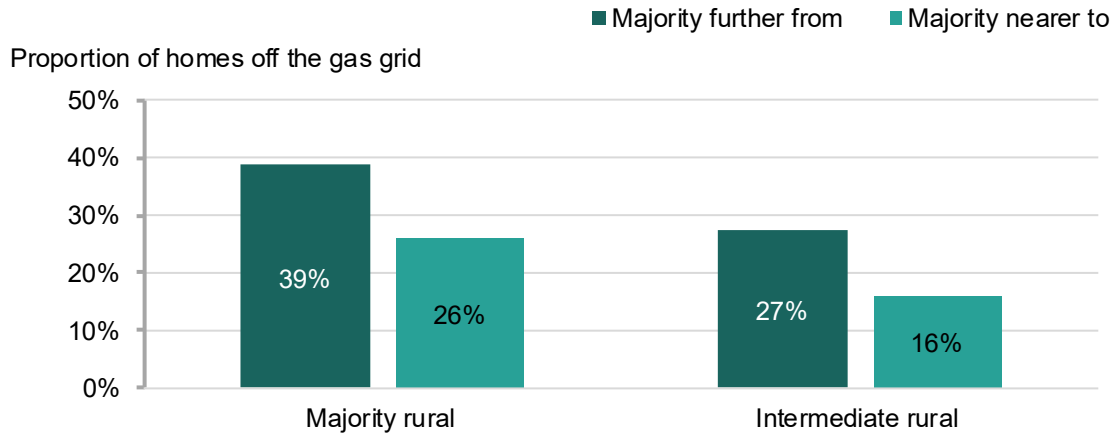


Table A-9: Estimated number and proportion of properties off the gas grid in England in 2023 in majority rural and in intermediate rural Parliamentary Constituencies by proximity to a major town or city (Note A-11, Note A-17)

Proximity to a major town or city	Number of domestic properties (thousands)	Estimated number of properties not on the gas grid (thousands)	Estimated percentage of properties not on the gas grid (%)
Majority rural – majority further from	1,207	468	38.7%
Majority rural – majority nearer to	1,832	477	26.0%
Majority rural	**3,039**	**945**	**31.1%**
Intermediate rural – majority further from	837	228	27.3%
Intermediate rural – majority nearer to	1,515	245	16.2%
Intermediate rural	**2,351**	**473**	**20.1%**

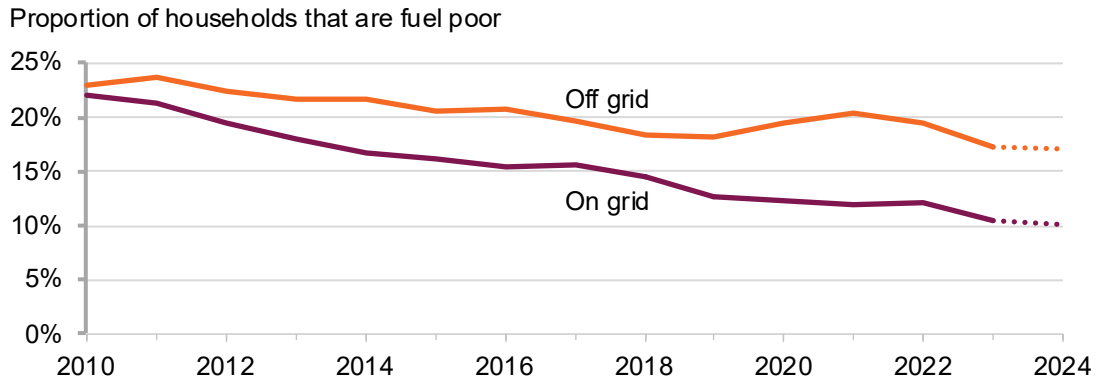
In the DESNZ 2024 Fuel Poverty Statistics publication, there is a set of long-term fuel poverty trend tables. These have been back calculated to 2010 using the LILEE approach (Note A-8). One of these tables considers fuel poverty according to whether or not the property is connected to the gas grid. Figure A-9 is a line chart and it shows that shows a time-series of the proportion of households that are fuel poor according to whether their home is on the gas grid or off it.

Back in 2010 the proportion of fuel poor households was similar for on-grid (22%) and off-grid (23%) properties. Figure A 9 is a line chart and it shows that the proportion of on-grid households that are fuel poor has declined at a much faster rate than for the proportion of off-grid households that are fuel poor. In fact, in 2020 and 2021 the proportion of off-grid households that were fuel poor rose again to 20% having been 18% in 2018 and 2019. By 2023 the proportion of off-grid households that were fuel poor had declined to 17% and this proportion remained at 17% in the provisional 2024 figures. By comparison only 10% of on-grid households were fuel poor in the provisional 2024 dataset.

As well as there being a greater proportion of off-grid households who are fuel poor, the depth of the fuel poverty for those who are fuel poor is also greater when the household is off the grid rather than on it (Figure A 10 – left-hand line chart). Back in 2010 the average fuel poverty gap in real terms (after accounting for inflation, Note A-8) was £354 for on-grid households and £611 for off-grid households.

Figure A-10: Line chart showing the proportion of on and off-grid households that are fuel poor (2010 to 2024)

All figures are based on the Low Income Low Energy Efficiency (LILEE) approach (Note A-8). The 2024 figures are provisional and could be revised when final estimates are made in the 2026 publication (Note A-3) therefore a dotted line is used between 2023 and 2024 to represent this more uncertain trajectory.

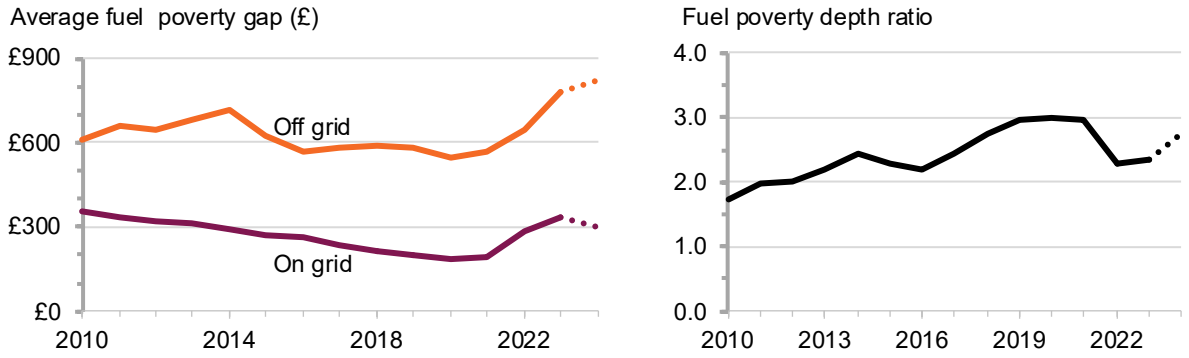


As Figure A-10 (left-hand chart) shows, the average fuel poverty gap for on-grid households dropped year-on-year every year between 2010 and 2020 from £354 to £183, before rising between 2021 and 2023 (to £334). Provisional 2024 figures place the fuel poverty gap for on-grid households at £299. By contrast for off-grid households the average fuel poverty gap rose during the first part of the 2010s hitting £715 in 2014, before falling to £548 in 2020. Since 2020, there has been a dramatic increase in the average fuel poverty gap for off-grid households, with the figure rising to £781 in the finalised 2023 data. Provisional 2024 figures place the fuel poverty gap for off-grid households at £820. For off-grid households the average fuel poverty gap rose by £272 between 2020 and 2024, this is more than double the increase in the average fuel poverty gap for on-grid households over the same period (£116).

A fuel poverty depth ratio can be calculated between the average fuel poverty gap for two related categories such as off and on-grid households. Figure A-10 (right-hand line chart) shows that in 2010 the average fuel poverty gap for those who are fuel poor was 1.7 times deeper for off the grid households than for those on the grid. This disparity has grown since 2010 and plateaued between 2019 to 2021 when the average depth of fuel poverty amongst off-grid households was 3 times that of on-grid households. Final 2022 and 2023 data show that fuel poverty was 2.3 times deeper for off the grid households than for those on the grid but the provisional 2024 data suggest that this ratio is starting to increase again, with fuel poverty once again being 2.7 times deeper for off the grid households.

Figure A-11: Line charts showing the average fuel poverty gap for those on and off-grid households that are fuel poor (2011 to 2024) and a comparison of the depth of fuel poverty in on and off-grid areas

The left-hand chart shows the average fuel poverty gap (£) for those on and off-grid households that are fuel poor. This average fuel poverty gap is in 'real terms'. The right-hand chart shows fuel poverty depth ratio by comparing the average fuel poverty gaps from the left-hand chart. All figures are based on the Low Income Low Energy Efficiency (LILEE) approach (Note A-8). The 2024 figures are provisional and could be revised when final estimates are made in the 2026 publication (Note A-3) therefore a dotted line is used between 2023 and 2024 to represent this more uncertain trajectory.



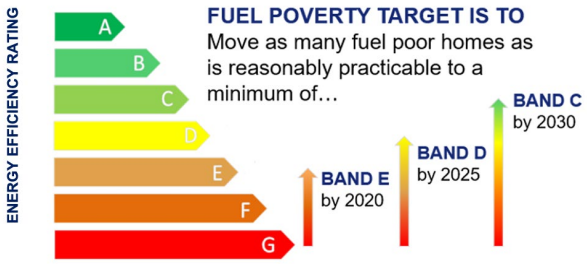
Fuel Poverty explanatory notes

- **Note A-1**

The statutory fuel poverty target was set in December 2014, binding successive Governments to the following:

> The fuel poverty target is to ensure that as many fuel poor homes as is reasonably practicable achieve a minimum energy efficiency rating of Band C, by 2030.

This target was retained in Sustainable Warmth, the updated Fuel Poverty Strategy for England, published in February 2021. This figure taken directly from the latest Fuel Poverty statistics released on 28 February 2023 shows the 2030 target and the intermediate targets.



- **Note A-2**

The 'Low Income High Costs' (LIHC) defined a household as fuel poor if: (a) the amount they would need to spend to keep their home at "an adequate standard of warmth" is above the national median level and (b) if they spent that amount, their leftover income would be below the official poverty line. LIHC was the first measure to introduce the concept of the fuel poverty gap. More information on LIHC can be found in the Fuel poverty methodology handbook 2020: Low Income High Costs (LIHC) (originally published by BEIS).

- **Note A-3**

Traditionally there has been a lag in the publication of the Fuel Poverty statics such that the publication came more than a year after the data collection. For example, the data relating to Fuel Poverty in 2019 was published in March 2021.

More recently DESNZ have changed their approach. In the latest Fuel Poverty statistics released on 27 March 2025, DESNZ gave headline figures as projections for 2024 and state that these projection are "subject to change when the final estimates are published in 2026". The March 2025 release also included the 2023 final estimates which supersede the provisional estimates published DESNZ in February 2024. Annex E of the Fuel Poverty statistics released on 27 March 2025 discusses the revision to the 2023 values. For the benefit of our users, we include final 2023 data and provisional 2024 data in our supplementary tables. The provisional 2024 and final 2023 data are included on worksheets AB and AC respectively in the Energy data tables. Whilst worksheet AA in the Energy data tables contains fuel poverty time series.

- **Note A-4**

The Fuel Poverty Energy Efficiency Rating (FPEER) uses a modified version of the standard Energy Efficiency Rating which takes into account policies that directly affect the cost of energy. In recent years this has included the rebate provided by Warm Home Discount. The FPEER methodology deducts such rebates from the overall modelled costs produced under the SAP system. 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) as follows:

Fuel poverty Energy Efficiency Rating	Band
1 to 20	G
21 to 38	F
39 to 54	E
55 to 68	D
69 to 80	C
81 to 91	B
92 +	A

Note that the RPEER methodology rating will be higher than the standard rating if the household receives additional support. The standard rating methodology is used in the Energy Performance Certificates sections of this report (Sections B and C).

- **Note A-5**

Fuel poverty in England is currently measured using the Low Income Low Energy Efficiency (LILEE) methodology. According to this methodology a household is fuel poor if:

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

There are therefore three key elements (drivers) in determining whether a household is fuel poor: (1) household income; (2) household energy efficiency; and (3) fuel prices. Increased energy efficiency, higher incomes and lower energy prices would each have a positive impact on a fuel poor household. The LILEE fuel poverty indicator sets an absolute energy efficiency threshold making it easier to identify the impact of

changes in energy efficiency. The relative nature of the income threshold means it is harder to see the impact of changes in income and the contribution of prices since this requires an assessment of how household incomes and fuel costs change relative to the median income.
It is important to note that **LILEE is not based on actual fuel costs**. The Government is interested in the amount of energy households need to consume to have a warm, well-lit home, with hot water for everyday use, and the running of appliances. Fuel poverty is therefore measured based on required fuel costs of the energy efficiency of the home rather than actual spending. An equivalisation factor is applied to reflect the different levels of energy required depending on the number of people living in the property.
The Income element of LILEE is defined as equivalised income after housing costs, tax and National Insurance. Equivalisation reflects that households have different spending requirements depending on the number and age of people living in the property. In 2024, a household was classified as low income by DESZ if their equivalised income minus their required fuel costs was less than £18,440 (60 per cent of median equivalised income for all households – which was £30,733).
Under the LILEE indicator there is no exact point on the income axis, for a given FPEER rating, where the household would be classed as Low Income since this threshold is measured using income minus fuel costs. The sloping dashed line Figure A-1 marks a line of best fit between households classed as Low Income and High Income and shows the impact of higher fuel costs in Low Energy Efficiency households. The variation in fuel costs for a given FPEER is due to factors including property size, household size, occupancy pattern.
The depth of fuel poverty is measured by the fuel poverty gap. The fuel poverty gap is the reduction in fuel costs needed for a household to not be in fuel poverty. This is either the change in required fuel costs associated with increasing the energy efficiency of a fuel poor household to a Fuel Poverty Energy Efficiency Rating (FPEER) of at least 69 (band C threshold) or reducing the costs sufficiently to meet the income threshold.
More information on the Fuel Poverty Energy Efficiency Rating (FPEER) and Low Income Low Energy Efficiency (LILEE) can be found in the Fuel Poverty Methodology Handbook (originally published by BEIS).

- **Note A-6**

An analysis of housing stock by property age and type can be found in Statistical Digest of Rural England:2 – Housing.
This report contains information on the number and proportion of pre-1919 houses in rural and urban areas as well as the number of (mid and end) terraced properties. This analysis is based on the English Housing Survey (EHS) which does not define rurality according to the RUC, it uses a looser definition based on an in-situ assessment (see the Husing report for more details). Therefore, where this data source has been used in this section, we refer to rural and urban instead of Rural and Urban to denote that these are not using the strict RUC definition.

- **Note A-7**

Energy Saving Trust blog March 2019: Why outside the grid does not mean outside of help.

- **Note A-8**

After switching to the LILEE methodology DESNZ / BEIS back calculated fuel poverty figures to 2010 using the LILEE approach to generate a consistent time series for a selection of variables. These long-term fuel poverty trend tables are updated annually as part of the Fuel Poverty Statistics publication. Table 5 of the long-term trends publication contains a breakdown for properties on and off the gas grid. In this document all the estimates of the fuel poverty gap are in 'real terms', which means that they take account of inflation. These estimates were produced by DESNZ using the Gross Domestic Product (GDP) deflators (December 2024), published in January 2025.

- **Note A-9**

Annual fuel poverty statistics report 2025 (2024 data) sections 3.1.2 to 3.1.5 cover fuel poverty by wall type, dwelling type, floor area and property age.

- **Note A-10**

Fuel poverty source data: DESNZ fuel poverty statistics: www.gov.uk/government/collections/fuel-poverty-statistics

- **Note A-11**

DESNZ produce subnational estimates of domestic properties not on the gas grid on an annual basis for Great Britain (https://www.gov.uk/government/statistics/sub-national-estimates-of-households-not-connected-to-the-gas-network). In their latest publication the data is for 2015 – 2023, these statistics are revised each year to reflect updates made to the number of properties and number of domestic gas meters.
Previously the Digest used local authority, in October 2025 data the analysis was switched over to using Parliamentary Constituency level data because it is more granular in rural areas where there are high proportions of properties off the gas grid. The latest Parliamentary Constituency level data was published in December 2024 (https://www.gov.uk/government/statistics/parliamentary-constituency-estimates-of-properties-not-connected-to-the-gas-network). This dataset uses the Westminster Parliamentary Constituencies that came into effect on 4 July 2024 for all years across the 2015 to 2023 period. Data were not presented using the previous boundaries.
The analysis presented uses the Parliamentary Constituency version of the 2021 Rural-Urban Classification published by the ONS on 23 September 2025.

- **Note A-12**

Tables showing the data behind Figure A-3, Figure A-6 and Figure A-7 are available in the Energy data tables.

- **Note A-13**

DESNZ produce sub-regional fuel poverty data as Official Statistics in Development that are there to complement the Accredited Official Statistics on fuel poverty (Note A-3). Their latest sub-regional fuel poverty report released on 5 December 2024 was for 2022 data using the 2023 Local Authority boundaries.
The sub-regional Experimental Statistics 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. However, the sub-regional statistics do not report on the average fuel poverty gap. These statistics, produced in compliance with the Code of Practice for Statistics but work is ongoing to improve the modelling approach used to produce them. DESNZ report that "work is in progress to incorporate administrative data as the base from which fuel poverty is modelled at sub-regional level, rather than using a sample-based approach such as the English Housing Survey (EHS). Under this approach fuel poverty statistics would be based on data from the Energy Performance Certificates (EPC), matched with other data sources, to form a more up to date and accurate picture of fuel poverty for small areas in England. This alternative approach should increase the reliability of estimating fuel poverty at sub-regional levels, by making more use of actual measured data through EPCs to more accurately determine the household's Energy Efficiency Rating".

- **Note A-14**

New Local Authorities came into operation in April 2023. These changes relate to 3 parts of England: (1) North Yorkshire, (2) Cumbria and (3) Somerset. This reduced the total number of Local Authorities from 309 down to 296.

  - A new unitary authority called North Yorkshire replaced the 7 existing districts of Craven, Hambleton, Harrogate, Richmondshire, Ryedale, Scarborough and Selby. We have classified this single North Yorkshire UA as Predominantly Rural.
  - The 6 districts within Cumbria were abolished and replaced with 2 new unitary authorities. Allerdale, Carlisle and Copeland have been merged to form Cumberland and Barrow-in-Furness, Eden and South Lakeland have been merged to form Westmorland and Furness. We have classified Cumberland and Westmorland and Furness as Predominantly Rural.
  - The districts of Mendip, Sedgemoor, Somerset West and Taunton, and South Somerset have been merged to form a new unitary authority known as Somerset. We have provisionally this single Somerset UA as Predominantly Rural.

- **Note A-15**

The Department for Business, Energy & Industrial Strategy, existed until 2023 when it was split to form the Department for Business and Trade (DBT), the Department for Energy Security and Net Zero (DESNZ) and

the Department for Science, Innovation and Technology (DSIT). The responsibility for fuel poverty transferred to DESNZ.

- **Note A-16**

There is no mains gas on the Scilly Isles.

- **Note A-17**

RUC21 provide information regarding the areas' proximity to a major town or city to indicate relative access. "Nearer to a major town or city" is defined as being within a 30-minute drive of a major town or city and, "further from a major town or city" is defined as being more than a 30-minute drive by car from a major town or city. In this context "a major town or city" is defined as a built-up area with a population of at least 75,000 residents. A Parliamentary Constituency is classified as "majority nearer to a major town or city" if less than 50% of their population are nearer to a major town or city a major town or city, and similarly a Parliamentary Constituency is classified as "majority further from a major town or city" if at least 50% of their population are further from a major town or city.

This proximity measure is independent of the rurality measure in that it relates to all of the population within the Parliamentary Constituency not just the rural proportion. For example, majority Parliamentary Constituency X has 50% or more of their population in rural output areas and if this same majority rural Parliamentary Constituency X is further from a major town or city it also has at least 50% of their population further from a major town or city. However, this does not automatically mean that more than 50% of the population of Parliamentary Constituency X live in rural output areas that are further from a major town or city.

B. Energy Performance Certificates: average Energy Efficiency Score

Whether the property is a house or a flat and the age of the property are far more important factors in determining its energy efficiency than its level of rurality.

Key findings – Average Energy Efficiency Score

Average energy efficiency ratings are similar in rural and urban constituencies

- In 2025 the average median Energy Efficiency Score (EES) in majority rural Parliamentary Constituencies was 68.4 and in urban Parliamentary Constituencies outside of London it was 68.8.

At constituency level older rural homes are less energy efficient than older urban homes

- In 2025, pre-1930 properties in majority rural Parliamentary Constituencies had an average median Energy Efficiency Score (EES) of 54.1 compared to a score of 61.2 for homes in urban Parliamentary Constituencies outside of London. This score for Predominantly Rural areas is on the boundary of Energy Efficiency Rating (EER) categories D and E.
- For modern homes (2012 onwards) there is little difference in the average median EES across rural-urban classification categories. The score was around 84.0 and this equated to an EER of a mid-level B.
- In half of majority rural Parliamentary Constituencies, the median EES was 54 or lower for pre-1930 properties, whereas all urban Parliamentary Constituencies (including those in London) had a median EES of at least 55 for pre-1930 properties.

Flats have the highest energy efficiency in both rural and urban constituencies

- In 2025, Flats and maisonettes had an average median Energy Efficiency Score (EES) of 74.1 in majority rural Parliamentary Constituencies and 73.4 in urban Parliamentary Constituencies meaning that they achieved an EER of C.
- The EES for other property types ranged between 66.7 (Detached) and 68.4 (Terraced) in majority rural Parliamentary Constituencies and between 66.7 (Semi-detached) and 68.3 (Detached) in urban Parliamentary Constituencies outside of London. In all cases these equated to an EER of D.

Proximity to a major town or city has a small effect on Energy Efficiency Scores

- In majority rural Parliamentary Constituencies, for all property types and all property age bands the average median Energy Efficiency Score (EES) was slightly lower when the Parliamentary Constituency has the majority of its population further from a major town or city than when it has the majority of its population nearer to a major town or city. This difference was larger for (a) pre-1930 houses (1.9 EES points) than newer ones and (b) Detached properties (3.8 EES points) than other property types.

Summary

An Energy Performance Certificate (EPC) provides information on the energy efficiency of a building. Since 2007, an EPC is required when a building is constructed, sold or let; the higher the Energy Efficiency Score the more efficient the building. Low Income Households can only be in fuel poverty if the Fuel Poverty Energy Efficiency Rating of their home is band D or below (an Energy Efficiency Score less than 69).

In 2025 the average Energy Efficiency Score differed little between homes in majority rural Parliamentary Constituencies (68.4) and homes in urban Parliamentary Constituencies outside of London (68.8). Both scores are equivalent to the top end of an Energy Efficiency Rating (EER) band D, but in London Parliamentary Constituencies the average score (70.3) was higher and equivalent to the bottom end of Energy Efficiency Rating (EER) band C. Within majority rural Parliamentary Constituencies, the average median EES was 2.5 points lower for Parliamentary Constituency with the majority of the population further from a major town or city than for those with the majority of the population nearer to a major town or city (66.9 versus 69.3).

On average, older dwellings have a lower average Energy Efficiency Score. In 2025, with the exception of post 2012 properties (which had an average median EES of 84 in all area types) for all property age bands those in majority rural Parliamentary Constituencies had the lowest average median Energy Efficiency Scores and London had the highest. For pre-1930 properties in majority rural Parliamentary Constituencies the average median EES in 2025 was 54.1, which is 7.1 points lower than the average median EES of 61.2 recorded in urban Parliamentary Constituencies outside of London. For context, 7.1 points is more than half an Energy Efficiency Rating band and means that pre-1930 properties in majority rural Parliamentary Constituencies have an average Energy Efficiency rating of E, whilst pre-1930 properties in all other RUC21 categories have an average Energy Efficiency rating of D.

In 2025 Flats and maisonettes had the highest average median Energy Efficiency Score (EES) of all domestic property types scoring 74.1 in majority rural Parliamentary Constituencies. In majority rural Parliamentary Constituencies Detached properties had the lowest average median EES of all property types at 66.7, which was 1.6 points below the average median EES of 68.3 for Detached properties in urban Parliamentary Constituencies outside of London. For Detached properties the average median EES for majority rural Parliamentary Constituencies where the majority of the population is further from a major town or city was 64.4. This was 3.8 points lower than the average median EES when the majority of the population lives nearer to a major town or city.

There were 7 majority rural Parliamentary Constituencies where the median EES was less than 50 for pre-1930 properties. No intermediate, urban or London Parliamentary Constituencies had a median EES for pre-1930 properties less than 50. In six of these seven Parliamentary Constituencies the majority of the population live further from a major town or city and the proportion of properties not connected to the gas grid was well above average for majority rural Parliamentary Constituencies.

Converting Energy Performance Certificate ratings to scores

The ONS publish Energy Efficiency of Housing on an annual basis (see Note B-2 and Note B-3). The most recent edition (published in October 2025) provides the source data for this chapter. In previous editions of the Digest the Energy Performance Certificate analysis was undertaken at Local Authority level, **for this edition the analysis has been switched to Parliamentary Constituency level** (Note B-4). This change was made for several reasons including (a) Parliamentary Constituencies offer greater spatial resolution that Local Authorities in many rural areas, particularly in northern England and (b) Parliamentary Constituencies are a more stable geography than Local Authorities with a set of boundaries persisting for longer, and this will be better for any subsequent time-series analysis. As explained in Note B-4, London has been defined as the 75 "inner London" Parliamentary Constituencies and therefore appears as London (75) in tables and on charts. This new analysis also uses the 2021 rural-urban classification (RUC21) that was published in 2025 (Note B-5).

An Energy Performance Certificate (EPC) provides information on the energy efficiency of a building. Since 2007, an EPC is required when a building is constructed, sold or let. The Energy Efficiency Score (EES) shows the energy efficiency of a building at the time of its EPC assessment. The higher the score, the more energy efficient a building is. An Energy Efficiency Rating (EER) band from A to G can also be used to interpret this score, where A is very energy efficient, and G is very energy inefficient (Table B-1). Low-income households can only be in fuel poverty if the Energy Efficiency Rating of the home, as defined by the latest Fuel Poverty Energy Efficiency methodology, is band D or below (Note B-6, Note B-7).

Table B-1: Lookup table to aid interpretation of energy efficiency scores

Energy Efficiency Score (EES)	Energy Efficiency Rating (EER) band
More than 91	A
81 to 91	B
69 to 80	C
55 to 68	D
39 to 54	E
21 to 38	F
1 to 20	G

These data do not reflect all dwellings in England, because not every dwelling has an EPC. Table 1a of Percentage of dwellings covered by an Energy Performance Certificate, England and Wales shows the percentage of dwellings covered by an Energy Performance Certificate since records began, in England and Wales, as at 31 March 2025. Overall, in England 71% of domestic properties are covered by valid EPCs. In general, the coverage is higher for:

- newer properties (94% coverage of post 2012 properties) than older ones (61% of pre-1930s properties); and
- Flats and maisonettes (86% coverage) than houses (65% coverage for Detached properties).

Note B-3 contains more details about EPCs.

Average energy efficiency

In the ONS release called Energy Efficiency of Housing the median energy efficiency score was calculated across all domestic properties for each Parliamentary Constituency in England. When these Parliamentary Constituency median values are grouped by RUC21 category and a further average is taken the data show that the average median Energy Efficiency Score (EES) was lowest for majority rural Parliamentary Constituencies (68.4), only very slightly lower than for urban Parliamentary Constituencies excluding London (68.8), and highest in London (70.3). In majority rural Parliamentary Constituencies this average median EES equates to an average Energy Efficiency Rating (EER) of D, whereas for other RUC21 categories their average median EES equated to an average EER of C. The value for each RUC21 category is shown in Table B-2.

Table B-2: Average Energy Efficiency Scores (EES) by 2021 Parliamentary Constituency rural-urban classification in 2025 (Note B-2, Note B-4, Note B-5)
Parliamentary Constituencies in London are presented separately from the other urban Parliamentary Constituencies as the average of the 75 Parliamentary Constituencies in London.

RUC21 category	Energy Efficiency Score (EES)
Majority rural	68.4
Intermediate rural	69.2
Intermediate urban	69.3
Urban (excluding London)	68.8
London (75)	70.3

A new feature within RUC21 is that it provides information regarding the population's proximity to a major town or city to indicate relative access. As explained in Note B-5, "nearer to a major town or city" is defined as being within a 30-minute drive of a major town or city and, "further from a major town or city" is defined as being more than a 30-minute drive by car from a major town or city.

The data in Table B-2 shows that within majority rural Parliamentary Constituencies the average median EES was 2.5 points lower when the Parliamentary Constituency has the majority of its population further from a major town or city than when it has the majority of its population nearer to a major town or city. For majority rural Parliamentary Constituencies where the majority of the population live nearer to a major town or city the average median EES was similar to the average median EES in intermediate (rural or urban) Parliamentary Constituencies (Table B-2) and marginally higher than the average median EES in urban Parliamentary Constituencies outside of London. In other words, the lower average median EES across the majority rural Parliamentary Constituencies that have the majority of their population further from a major town or city is pulling down the overall majority rural average median EES.

Table B-3: Average Energy Efficiency Scores (EES) by proximity to a major town or city for Parliamentary Constituencies classified as majority rural using the 2021 Parliamentary Constituency rural-urban classification in 2025 (Note B-2, Note B-5)

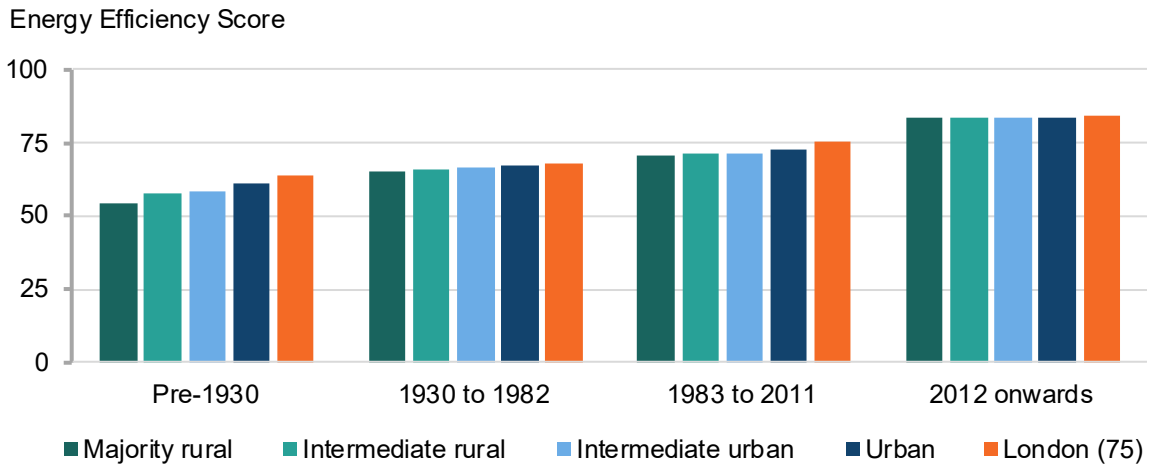
Proximity to a major town or city	Energy Efficiency Score
Majority further from	66.9
Majority nearer to	69.3

Average Energy Efficiency Scores (EES) by housing age

There are several factors that can influence the Energy Efficiency Rating of homes. One of the most important factors is the age of the dwelling. Figure B-3 is a bar chart showing average Energy Efficiency Score (EES) by property age band and Parliamentary Constituency rural-urban classification (RUC21) in 2025. This chart shows that on average, older dwellings had a lower average Energy Efficiency Score. It also shows that with the exception of post 2012 properties (which had an average median EES of 84 in all area types) for all other property age bands, homes in majority rural Parliamentary Constituencies had the lowest average median Energy Efficiency Scores and London had the highest. London has marginally higher average median Energy Efficiency Scores than other RUC21 categories due to the prevalence of flats in London which, as explained in the next section, have a higher average EES than houses.

Figure B-1: Horizontal bar chart showing average median Energy Efficiency Score (EES) by property age band and Parliamentary Constituency rural-urban classification in 2025 (Note B-2, Note B-4, Note B-5)

The legend is presented in the same order and orientation as the cluster of bars. London is presented separately and is not included in the urban category.



The following bullets describe the information visualised in Figure B-1 in more detail focusing mainly on the scores for majority rural, intermediate rural and urban Parliamentary Constituencies outside of London, but the values for all age bands and RUC21 categories are included in Table B-4.

- For pre-1930 properties in majority rural Parliamentary Constituencies the average median EES in 2025 was 54.1, which is 7.1 points lower than the average median EES of 61.2 recorded in urban Parliamentary Constituencies outside of London. For context, 7.1 points is more than half an Energy Efficiency Rating band. This means that pre-1930 properties in majority rural Parliamentary Constituencies have an average Energy Efficiency rating of E, whilst pre-1930 properties in all other RUC21 categories have an average Energy Efficiency rating of D. Pre-1930s homes in intermediate rural Parliamentary Constituencies performed better than those in majority rural and achieved an average median EES of 57.4 (3.4 points higher than majority rural Parliamentary Constituencies).
- For properties built between 1930 and 1982 the average EES equated to an Energy Efficiency rating of D in all RUC21 area types. In 2025 the average median EES for 1930 to 1982 homes

was 64.9 in majority rural Parliamentary Constituencies and 67.1 in urban Parliamentary Constituencies areas outside of London. This makes the EES in majority rural Parliamentary Constituencies just two points lower than in urban Parliamentary Constituencies outside of London. In majority rural Parliamentary Constituencies in 2025 the average median EES for 1930 to 1982 homes was 10.8 points higher than the Score for pre-1930 homes.

- In 2025 the average EES for homes built between 1983 and 2011 was 70.4 in majority rural Parliamentary Constituencies and 72.8 in urban Parliamentary Constituencies outside of London. For 1983 to 2011 homes the average EES was just 1 point higher in intermediate rural Parliamentary Constituencies than in majority rural Parliamentary Constituencies. In terms of Energy Efficiency Ratings these values equate to a low-level C in majority rural Parliamentary Constituencies and a mid-level C in London.
- For modern homes (2012 onwards) there is little difference in the average EES across rural-urban classification categories, and their score equated to an Energy Efficiency Rating of a mid-level B.

Table B-4: Average median Energy Efficiency Scores (EES) by property type and 2021 Parliamentary Constituency rural-urban classification in 2025 (Note B-2, Note B-4, Note B-5)
Parliamentary Constituencies in London are presented separately from the other urban Parliamentary Constituencies as the average of the 75 Parliamentary Constituencies in London. The Rural-urban difference row shows the difference in average median EES in majority rural and urban (excluding London) Parliamentary Constituencies. Where the difference is negative it means that the EES was higher in majority rural Parliamentary Constituencies.

RUC21 category	Pre-1930	1930 to 1982	1983 to 2011	2012 onwards
Majority rural	54.1	64.9	70.4	83.7
Intermediate rural	57.4	66.0	71.4	83.8
Intermediate urban	58.7	66.4	71.5	83.9
Urban (excluding London)	61.2	67.1	72.8	83.5
London (75)	63.6	67.7	75.5	84.1
Rural-urban difference	**7.1**	**2.2**	**2.4**	**-0.3**

To simplify the picture, properties can be split into new dwellings and existing dwellings, noting that any property that has undergone a conversion to change its use is considered to be a new property from an EPC perspective (Note B-8). The bar chart in Figure B-2 shows that new dwellings had a higher EES than existing dwellings.

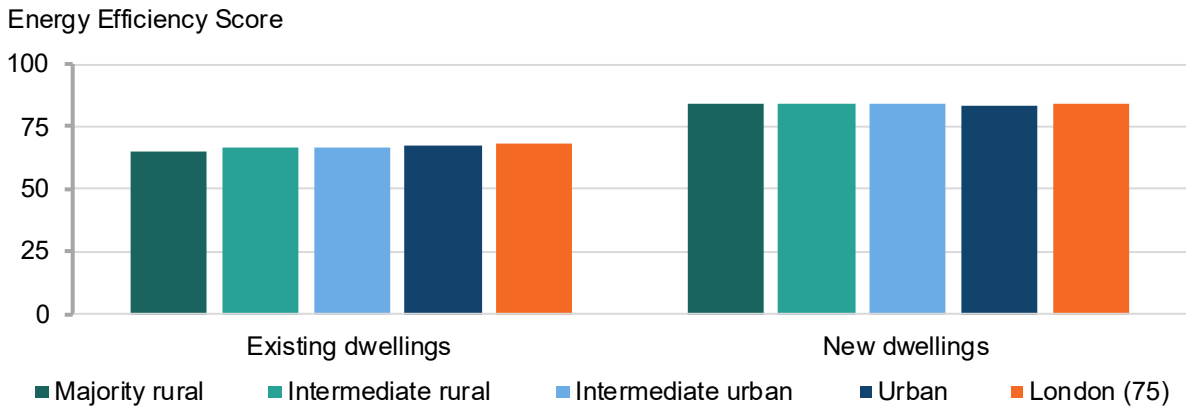
For new homes there is little difference in the average EES across rural-urban classification categories. It was around 84.0 in all cases, and this equated to an Energy Efficiency Rating of a mid-level B. However, for existing buildings, average median EES reduces with rurality. The average EES was 64.9 in majority rural Parliamentary Constituencies, 66.5 in intermediate rural Parliamentary Constituencies and 67.3 in urban Parliamentary Constituencies outside of London. This means that the average median EES was 2.4 points lower in majority rural Parliamentary Constituencies than in urban Parliamentary Constituencies outside of London.

A new feature within RUC21 is that it provides information regarding the population's proximity to a major town or city to indicate relative access. As explained in Note B-5, "nearer to a major town or city" is defined as being within a 30-minute drive of a major town or city and, "further from a major town or city" is defined as being more than a 30-minute drive by car from a major town or city. In

majority rural Parliamentary Constituencies for all property age bands the average median EES was lower when the Parliamentary Constituency has the majority of its population further from a major town or city than when it has the majority of its population nearer to a major town or city (Table BF2a in the Energy data tables). However, the difference is negligible for properties built from 2012 onwards and only increases slightly as the properties get older. The difference was largest for pre-1930s properties where the average median EES of 52.9 for majority rural Parliamentary Constituencies where the majority of the population was further from a major town or city was 1.9 points lower than the average median EES (54.8) when the majority of the population lived nearer to a major town or city. In intermediate rural Parliamentary Constituencies (Table BF2b in the Energy data tables) this trend of proximity to a major town or city had even less of an impact having an increased impact on the average median EES.

Figure B-2: Bar chart showing average Energy Efficiency Score (EES) for existing dwellings and new dwellings by Parliamentary Constituency rural-urban classification in 2025 (Note B-2, Note B-4, Note B-5, Note B-8)

The legend is presented in the same order and orientation as the cluster of columns. London is presented separately and is not included in the Urban category.



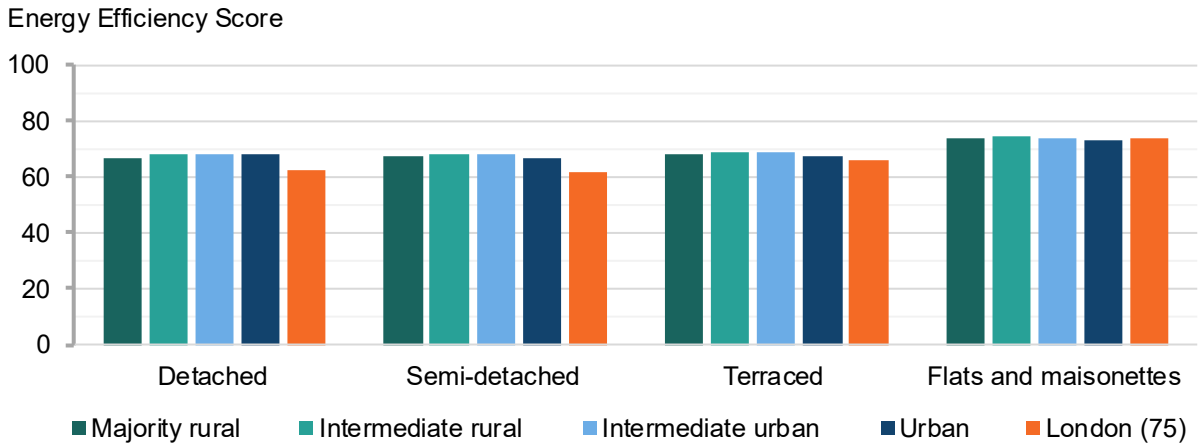
Average Energy Efficiency Score (EES) by housing type

In addition to the age of the property, housing type can also be an important factor in determining the EES of the dwelling. Figure B-4 is a bar chart showing average median EES by property type and Parliamentary Constituency rural-urban classification in 2025 and it shows that Flats and maisonettes had the highest average median EES of all domestic property types for all five RUC21 categories and would correspond to an Energy Efficiency Rating of C. For Detached and Semi-detached properties, the average median EES was lower in London than for the other RUC21 categories (which showed little variation) and in all cases the average median EES corresponded to an EER of D.

For all property types the average median EES score in intermediate rural and intermediate urban Parliamentary Constituencies was very similar (differences of 0.16 or less) so these categories have been combined as intermediate in Table B-6. The following bullets focus mainly on the difference in EES between majority rural and urban (excluding London) Parliamentary Constituencies with one bullet for each property type.

Figure B-3: Bar chart showing average Energy Efficiency Score (EES) by property type and Parliamentary Constituency rural-urban classification in 2025 (Note B-2, Note B-4, Note B-5, Note B-9)

The legend is presented in the same order and orientation as the cluster of bars. London is presented separately and is not included in the urban category.



- In majority rural, intermediate and London Parliamentary Constituencies Detached properties had the lowest average median EES of all property types. For majority rural Parliamentary Constituencies, the average median EES for Detached properties was 66.7, which was 1.6 points below the average median EES of 68.3 in urban Parliamentary Constituencies outside of London. For London Parliamentary Constituencies the average median EES for Detached properties was just 62.3 which was six points lower than the value for urban Parliamentary Constituencies outside of London.
- For Semi-detached properties the average median EES of 67.6 for majority rural Parliamentary Constituencies was 0.9 points higher than the average median EES for Semi-detached homes in urban Parliamentary Constituencies outside of London. This average median EES for Semi-detached homes in majority rural Parliamentary Constituencies was similar to the value in intermediate Parliamentary Constituencies and over six points higher than in London. In urban Parliamentary Constituencies outside of London Semi-detached properties had the lowest average median EES.
- For Terraced properties the average median EES of 68.4 was 1.3 points higher than the average median EES for Terraced homes in urban Parliamentary Constituencies outside of London but around 0.5 points lower than in intermediate Parliamentary Constituencies. In majority rural Parliamentary Constituencies, the average median EES for Terraced homes is higher than for Detached homes, but the reverse is true for urban Parliamentary Constituencies outside of London.
- For Flats and maisonettes, the average median EES was 74 for majority rural, intermediate and London Parliamentary Constituencies and 73 for urban Parliamentary Constituencies outside of London. This leads to a small difference in the average median EES for flats and maisonettes of 0.7 points between majority rural and urban Parliamentary Constituencies outside of London.

Table B-5: Average median Energy Efficiency Scores (EES) by property type and 2021 Parliamentary Constituency rural-urban classification in 2025 (Note B-2, Note B-4, Note B-5, Note B-9)

Parliamentary Constituencies in London are presented separately from the other urban Parliamentary Constituencies as the average of the 75 Parliamentary Constituencies in London. Intermediate rural and intermediate urban have been combined as a single intermediate category.

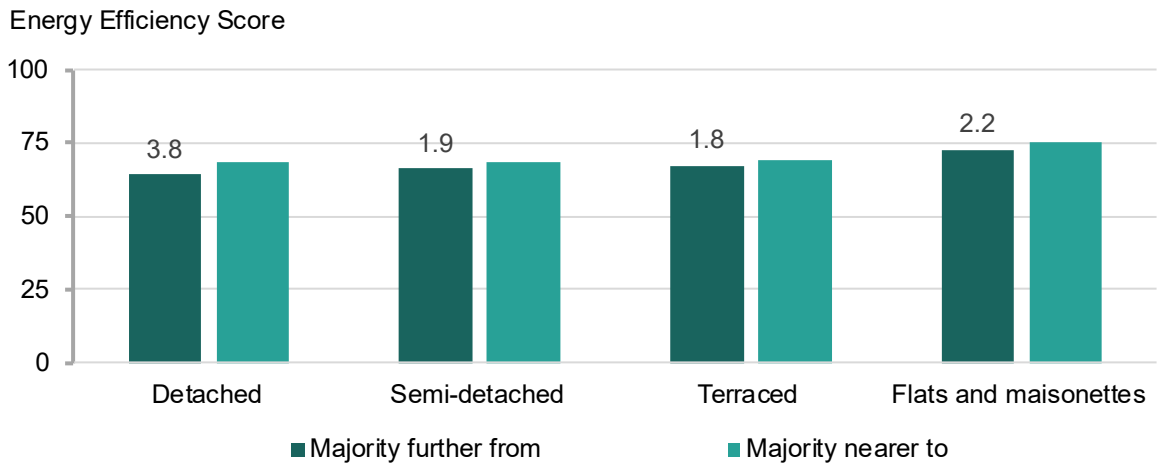
RUC21 category	Detached	Semi-detached	Terraced	Flats and maisonettes
Majority rural	66.7	67.6	68.4	74.1
Intermediate	68.2	67.8	68.9	74.1
Urban (excluding London)	68.3	66.7	67.1	73.4
London (75)	62.3	61.5	65.7	73.6

A new feature within RUC21 is that it provides information regarding a locations' proximity to a major town or city to indicate relative access. As explained in Note B-5, "nearer to a major town or city" is defined as being within a 30-minute drive of a major town or city and, "further from a major town or city" is defined as being more than a 30-minute drive by car from a major town or city.

Figure B-5 is bar chart that shows that in majority rural Parliamentary Constituencies for all property types average median EES was lower when the Parliamentary Constituency has the majority of its population further from a major town or city than when it has the majority of its population nearer to a major town or city. For Detached properties the average median EES for the 26 majority rural Parliamentary Constituencies where the majority of the population was further from a major town or city was 64.4. This was 3.8 points lower than the average median EES when the majority of the population lived nearer to a major town or city. The difference in average median EES due to proximity to a major town or city was twice as big for Detached homes as it was for Semi-detached (1.9) or Terraced (1.8) homes.

Figure B-4: Bar chart showing average Energy Efficiency Score (EES) by proximity to a major town or city and property type for Parliamentary Constituencies classified as majority rural using the 2021 Parliamentary Constituency rural-urban classification in 2025 (Note B-2, Note B-5, Note B-9)

The legend is presented in the same order and orientation as the cluster of bars. The values presented above the "Majority further from" bars represent how much lower that average EES score is than the average EES score for "Majority nearer to a major town or city".



In both Parliamentary Constituencies with the majority of their population further from a major town or city and those with the majority of their population nearer to a major town or city Detached homes had the lowest average median EES, followed by Semi-detached, then Terraced and Flats and maisonettes had the highest average median EES.

Similar overall patterns for average median EES by property type and proximity to a major town or city occurred in intermediate rural Parliamentary Constituencies (not shown graphically). However, the differences in average median EES are lower for each property type. For Detached properties the average median EES was 1.8 points lower when the majority of the population lived further from a major town or city than when they lived nearer to a major town or city. For the other property types the differences in average median EES due to proximity to a major town of city ranged from 0.4 for Terraced to 0.6 for Flats and maisonettes.

Average Energy Efficiency Score distributions

Amongst majority rural Parliamentary Constituencies, the median Energy Efficiency Score (EES) for all properties was 68, the lower quartile score was 67 and the upper quartile score was 70. Whilst in urban Parliamentary Constituencies (excluding London) the lower quartile, median and upper quartile values were 68, 69 and 70 respectively. So, there was not a great deal of variation in average EES across most Parliamentary Constituencies classified as either majority rural or urban. In both types of constituency, the lowest median EES was 62, in St Ives (majority rural) and Bradford West (urban). The section covering EES by the age of the property showed that pre-1930 houses had lower EES than newer houses. These are some of the worst performing homes in terms of energy efficiency therefore it is useful to compare the bottom ends of the distributions in majority rural and urban Parliamentary Constituencies for pre-1930 properties.

Table B-6: Median Energy Efficiency Scores (EES) for the majority rural Parliamentary Constituencies with a median EES less than 50 for pre-1930 properties in 2025 and the proportion of all properties in the Parliamentary Constituency that were off the gas grid in 2023

With the exception of North Cotswolds all of these are Parliamentary Constituencies where the majority of the population lived further from a major town or city (Note B-2, Note B-5, Note B-10)

Parliamentary Constituency	EES	Estimated percentage (%) of all properties not on the gas grid
South Shropshire	47	53.0
North Cotswolds	48	31.2
North Herefordshire	48	45.7
St Ives	49	54.2
North Cornwall	49	53.4
South West Norfolk	49	48.2
Waveney Valley	49	63.8

Half of majority rural Parliamentary Constituencies had a median EES of 54 or lower (an EER of E). Whereas all urban Parliamentary Constituencies (excluding London) had median EESs for pre-

1930 properties of at least 55. There were 7 majority rural Parliamentary Constituencies where the median EES was less than 50 for pre-1930 properties. For majority rural Parliamentary Constituencies just 2 of 63 (3%) had a median EES for pre-1930 properties of at least 61.

Variation in settlement type within Local Authorities

Within the 2025 Energy Efficiency of Housing release new tables were added to the median energy efficiency score dataset. Tables 5C and 5D in this dataset calculate the median energy efficiency score (EES) for domestic properties in the rural and urban parts of each local authority separately where such parts exist. Table 5C is for all properties and Table 5D provides separate figures for new properties and existing properties (Note B-8). As an example of how these tables work, North Yorkshire is a large authority that overall is classified as majority rural. However, within the authority there are areas classified as urban, larger rural and smaller rural. ONS have calculated that the median EES in North Yorkshire was 69 in the urban parts, 70 in the larger rural settlements and just 61 in the smaller rural settlements.

It was already shown in Figure B-2 that there is limited variation in the EES for new properties so this analysis will focus solely on **existing properties** in the 41 local authorities classified as majority rural to highlight how the median EES can vary across authorities reflecting the level of rurality. Table BD1 in the Energy data tables contains the full list median EES discussed in the bulleted list below.

- For every majority rural authority, the median EES was lower in smaller rural settlements than in larger rural settlements for existing properties. In 16 of 41 (39%) of majority rural authorities the difference in median EES was at least 10 points.
- For larger rural settlements all authorities had a median EES between 62 (Cornwall) and 69 (South Cambridgeshire). With the exception of Rutland, smaller settlements in all majority rural authorities had a median EES between 51 (West Devon) and 63 (North Warwickshire).
- With the exception of Ribble Valley, with majority rural authorities, the median EES in urban settlements was the same as or higher than in their larger rural settlements. However only 3 of 41 authorities (7%) had a difference of at least five points; these three authorities were: ‘Cornwall’, ‘West Oxfordshire’ and ‘Kings Lynn and West Norfolk’.
- In 25 of the 41 majority rural authorities (37%) the median EES in smaller rural settlements was at least 10 points lower than the median EES in urban settlements. In the case of West Devon, the median EES was 16 points lower in the small rural settlements (51) than in the urban parts (67).

EPCs: average Energy Efficiency Score explanatory notes

- **Note B-1**

Tables showing additional data breakdowns for Section B are available in the Energy data tables.

- **Note B-2**

The Office for National Statistics (ONS) publish Energy Efficiency of Housing on an annual basis for financial years. This section primarily uses the Median energy efficiency score, England and Wales dataset for the

financial year ending March 2025. For the first time in the Digest, the analysis was switched from Local Authority level data to Parliamentary Constituency level data. Therefore, no time series are presented, and the figures are not comparable with previous Digest publications.
The source data for this ONS publication is Department for Levelling up, Housing and Communities – Energy Performance Certificate data on Open Data Communities and Valuation Office Agency - Property Attributes data (https://epc.opendatacommunities.org/).

- **Note B-3**

An Energy Performance Certificate (EPC) provides information on the energy efficiency of a building. Since 2007, an EPC is required when a building is constructed, sold or let and it is valid for 10 years. There can be multiple EPC lodgements for the same dwelling, but only the latest lodgement is analysed to avoid double counting dwellings. Analysis includes the latest EPC lodgements for a 10-year period, from Q2 2014 to Q1 2024. So this data does not reflect all dwellings in England, because not every dwelling has an EPC.
EPCs are based on data about a building's energy features (like the building materials used, heating systems and insulation, for example), which are collected by an accredited energy assessor and are entered into a government-approved software to generate the EPC.
The median energy efficiency scores are calculated based on the energy efficiency scores at the time the EPC lodgement was assessed. This means that these statistics do not necessarily reflect energy efficiency improvements as the majority of alterations don't require a new EPC to be generated.

- **Note B-4**

The Independent Parliamentary Standards Authority (IPSA) hold a list of 98 London-area constituencies that are eligible for the London-area Living Payment. Included within this group of 98 constituencies is a subset of 23 outer London Constituencies. Subtracting these 23 from the 98 leaves a further 75 Parliamentary Constituencies which can be classified as "Inner London" Parliamentary Constituencies. All 75 "Inner London" Parliamentary Constituencies are classified as urban in the RUC21. However, for the 23 Outer London Parliamentary Constituencies some are not classified as urban in RUC21. Therefore these 75 Parliamentary Constituencies are our definition for London and are labelled on charts and in tables as London (75).

- **Note B-5**

The 2021 rural-urban classification was released on 6 March 2025. Details of the 2021 rural-urban classification can be found at: https://www.gov.uk/government/collections/rural-urban-classification
RUC21 provide information regarding the areas' proximity to a major town or city to indicate relative access. "Nearer to a major town or city" is defined as being within a 30-minute drive of a major town or city and, "further from a major town or city" is defined as being more than a 30-minute drive by car from a major town or city. In this context "a major town or city" is defined as a built-up area with a population of at least 75,000 residents. A Parliamentary Constituency is classified as "majority further from a major town or city" if they have at least 50% of their population further from a major town or city, and similarly a Parliamentary Constituency is classified as "majority nearer to a major town or city" if less than 50% of their population are further from a major town or city.
This proximity measure is independent of the rurality measure in that it relates to all of the population within the Parliamentary Constituency not just the rural proportion. For example, majority rural Parliamentary Constituency X has 50% or more of their population in rural output areas and if this same majority rural Parliamentary Constituency X is further from a major town or city it also has at least 50% of their population further from a major town or city. However, this does not automatically mean that more than 50% of the population of Parliamentary Constituency X live in rural output areas that are further from a major town or city.

- **Note B-6**

Fuel poverty or being fuel poor is where a household is living in a property with a Fuel Poverty Energy Efficiency Rating (FPEER) of band D or below in a home that cannot be kept warm at reasonable cost without bringing their residual income (after housing and energy costs) below the poverty threshold. As

explained in Section A Fuel poverty, Fuel Poverty in England is defined using the Low Income Low Energy Efficiency approach.
Figure 2.2 in the Annual fuel poverty statistics report: 2023 graphically displays how fuel poor households are defined.

- **Note B-7**

The FPEER uses a modified version of the standard Energy Efficiency Rating which considers policies that directly affect the cost of energy. In recent years this has included the rebate provided by the Warm Home Discount. The FPEER methodology deducts such rebates from the overall modelled costs produced under the Standard Assessment Procedure (SAP) system. This gives an energy efficiency rating (again from 1-100), which will be higher than the standard rating if the household receives additional support. This modified rating is also translated to a band (A to G) on the same bases as the original system displayed in Table B-1. The document Fuel poverty methodology handbook 2023: Low Income Low Energy Efficiency (LILEE) gives further details.

- **Note B-8**

Statistics for **new properties** were generated using data from new dwelling EPC records, which include new builds, conversions and change of use. Statistics for **existing properties** were generated using the latest EPC lodgement available for a property, within the existing dwellings records. An existing dwelling may have undergone several EPC assessments for different reasons (for example, due to a marketed sale, for a green deal assessment, or following the implementation of the changes suggested in a green deal assessment).

- **Note B-9**

ONS break down houses (including bungalows and park homes) into Detached, Semi-detached and Terraced property types and group Flats and maisonettes together as the final property type.

- **Note B-10**

DESNZ produce subnational estimates of domestic properties not on the gas grid on an annual basis for Great Britain (https://www.gov.uk/government/statistics/sub-national-estimates-of-households-not-connected-to-the-gas-network). This report used the Parliamentary Constituency level data that was published in December 2024 using the Westminster Parliamentary Constituencies that came into effect in July 2024 for all years across the 2015 to 2023 period.

C. Energy Performance Certificates: achieving energy efficiency category C

For pre-2012 properties the more rural the area the lower the proportion of domestic properties that reach an Energy Performance Certificate (EPC) rating of C or better.

Key findings – Achieving energy efficiency category C

A slightly smaller proportion of homes are rated EPC C or better in rural constituencies than in urban constituencies

- In 2025 in majority rural Parliamentary Constituencies, 50.1% of the domestic properties had an EPC rating of C or better, whilst in urban Parliamentary Constituencies outside of London it was 51.6% of properties.

In both rural and urban constituencies few pre-1930s homes are rated EPC C or better

- For pre-1930 properties in majority rural Parliamentary Constituencies, only 11.5% of them had an EPC rating of C or better in 2025 compared to 20.2% of pre-1930 properties in urban constituencies outside of London.
- In 19 of the 67 majority rural Parliamentary Constituencies (28%) less than 10% of the pre-1930 properties were at least EPC category C. Just 11 of 280 urban Parliamentary Constituencies (4%) had less than 10% of the pre-1930 properties at EPC category C or above.

Proximity to a major town or city affects the proportion of homes at EPC C or better

- In majority rural Parliamentary Constituencies, for all property types, the proportion of properties with an EPC rating of C or better was lower when the Parliamentary Constituency has the majority of its population further from a major town or city than when it has the majority of its population nearer to a major town or city.
- In majority rural Parliamentary Constituencies 39.4% of Detached properties reached EPC C or better when the majority of the population lived further from a major town or city. Whereas in those where the majority of the population live nearer to a major town or city 49.2% of Detached properties reached EPC C or better.

Smaller rural settlements have a lower proportion of homes at EPC C or better

- For every majority rural authority, the proportion of existing homes with an EPC rating of C or above was lower in smaller rural settlements than in larger rural settlements.

Summary

An Energy Performance Certificate (EPC) provides information on the energy efficiency of a building. Since 2007, an EPC is required when a building is constructed, sold or let; the higher the Energy Efficiency Score, and consequently the higher the EPC category, the more efficient the building. Low Income Households can only be in fuel poverty if the Fuel Poverty Energy Efficiency Rating of their home is category D or below.

In 2025 in majority rural Parliamentary Constituencies, 50.1% of the domestic properties had an EPC rating of C or better compared to 51.6% in urban Parliamentary Constituencies outside of London.

For pre-2012 properties the more rural the area the lower the proportion of domestic properties that reach an Energy Performance Certificate (EPC) rating of C or better. For pre-1930 properties in majority rural Parliamentary Constituencies only 11.5% of them had an EPC rating of C or better compared to 20.2% of pre-1930 properties in urban Parliamentary Constituencies outside of London. There was only one majority rural Parliamentary Constituencies where the proportion of pre-1930 properties with an EPC rating of category C exceeded 20% ('Newton Aycliffe and Spennymoor' in North East England). By contrast 123 of 280 urban Parliamentary Constituencies outside of London (44%) had at least 20% of domestic properties with an EPC rating of at least C. In 19 of the 67 majority rural Parliamentary Constituencies (28%) less than 10% of the pre-1930 properties were at least EPC category C. This means that the EPC rating of at least 90% of the pre-1930 homes in these Parliamentary Constituencies is low enough that any low-income households could be at risk of fuel poverty due to rising fuel costs or significant changes in household circumstances that further reduce their household income.

In 2025, in majority rural Parliamentary Constituencies 71.4% of Flats and maisonettes had an EPC rating of at least C which was very similar to the 71.6% of Flats and maisonettes in urban Parliamentary Constituencies areas outside of London. For Detached properties the proportion of properties with an EPC rating of at least C in 2025 was 45.4% in majority rural Parliamentary Constituencies, this was the lowest of all property types. This was slightly lower than the 47.6% of detached properties in urban Parliamentary Constituencies outside of London. In majority rural Parliamentary Constituencies, for all property types, the proportion of properties with an EPC rating of C or better was lower when the Parliamentary Constituency has the majority of its population further from a major town or city than when it has the majority of its population nearer to a major town or city. This difference was largest for Detached properties (9.8 percentage points) and smallest for Terraced properties (6.1 percentage points). This means that within majority rural Parliamentary Constituencies, the difference in the proportion of properties with an EPC rating of C is influenced more by proximity to a major town or city than it is by property type. Moreover, with majority rural Parliamentary Constituencies those with the lowest proportion of properties with an EPC rating of C or above tended to have coastal communities.

For every majority rural authority, the proportion of existing homes with an EPC rating of C or above was lower in smaller rural settlements than in larger rural settlements.

Minimum energy efficiency of Category C and the link to fuel poverty

Fuel Poverty is discussed in detail in Section A Fuel poverty including a full explanation of how fuel poverty is defined alongside statistics showing the proportion of fuel poor households and the depth of their fuel poverty (known as the fuel poverty gap). There are two aspects that define whether a household can be fuel poor: (1) the household income and (2) the energy efficiency of their home.

Low Income Households can only be in fuel poverty if the Fuel Poverty Energy Efficiency Rating (FPEER) of their home is band D or below (Note C-1). Section B explains how Energy Efficiency Scores map to Energy Efficiency Ratings using Table B-1.

The 2014 fuel poverty target for England set an objective to ensure that as many fuel poor households as reasonably practicable achieved a minimum Fuel Poverty Energy Efficiency Rating (FPEER) of band C by 2030 (Note C-2). It is therefore relevant to consider what proportion of homes already have an Energy Efficiency Rating of at least 69 (the minimum for category C) and whether there is any difference in the proportions between rural and urban areas. In other words, the properties that have energy efficiencies high enough that low-income households would not be regarded as living in fuel poverty (Note C-3).

Section C primarily uses the Energy Performance Certificate (EPC) Band C or above, England and Wales dataset for the financial year ending March 2025 (Note C-4). As was explained in the Section B section called “Converting Energy Performance Certificate ratings” EPCs, and therefore this dataset, do not offer coverage of all English dwellings. In previous editions of the Digest the Energy Performance Certificate Band C or above analysis was undertaken at Local Authority level, for this edition the analysis has been switched to Parliamentary Constituency level (Note C-5). This change was made for several reasons including (a) Parliamentary Constituencies offer greater spatial resolution that Local Authorities in many rural areas, particularly in northern England and (b) Parliamentary Constituencies are a more stable geography than Local Authorities with a set of boundaries persisting for longer, and this will be better for any subsequent time-series analysis. As explained in Note C-5, London has been defined as the 75 “inner London” Parliamentary Constituencies and therefore appears as London (75) in tables and on charts. This new analysis also uses the 2021 rural-urban classification (RUC21) that was published in 2025 (Note C-6)

Progress towards achieving all homes having a minimum EPC rating of Category C

In 2025 in majority rural Parliamentary Constituencies 50.1% of the domestic properties had an EPC rating of C or better, whilst in urban Parliamentary Constituencies outside of London it was 51.6% of properties (see Table CA1a in the Energy data tables). This was a difference of 1.6 percentage points. For the 75 Parliamentary Constituencies within London (Note C-5) 55.8% of the properties had an EPC rating of at least C. This value is influenced by the higher proportion of Flats and maisonettes in London than elsewhere.

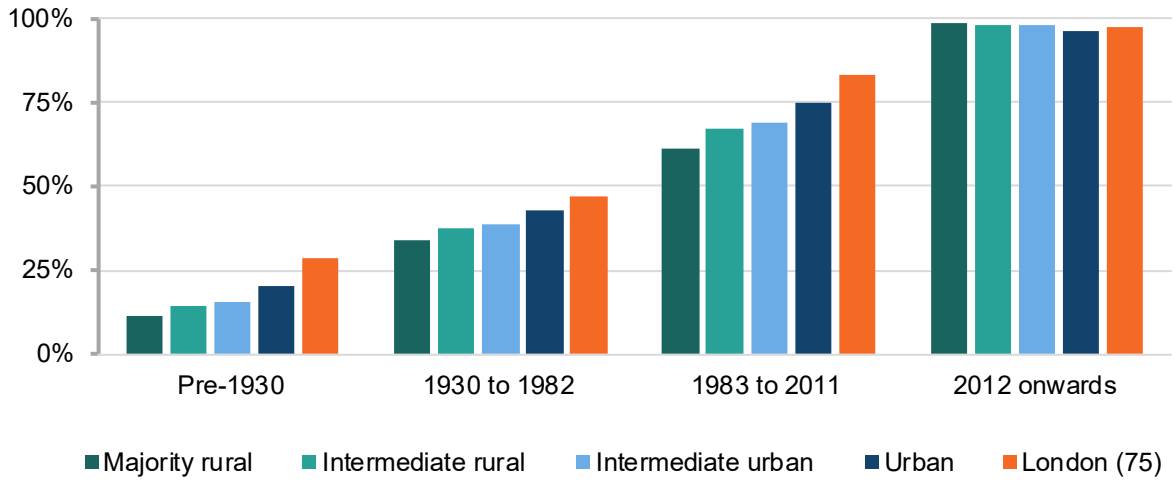
Mid Bedfordshire was the majority rural Parliamentary Constituency with the highest proportion of properties with an EPC rating of at least C with 65.0% and the lowest was St Ives with 35.4%. In half of the majority rural Parliamentary Constituencies (34 of 67) less than 50% of the domestic properties had an EPC rating of at least C. Salford was the urban Parliamentary Constituency (outside of London) with the highest proportion of properties with an EPC rating of at least C with

80.4% and Birmingham Yardley was the urban Parliamentary Constituency with the lowest proportion of properties with an EPC rating of at least C with 28.5%. Tables CE1 and CE2 in the Energy data tables show the proportion of all properties with an EPC rating of at least C in majority rural and urban Parliamentary Constituencies respectively.

Proportion of Category C properties by property age

In Section B it was shown that the average Energy Efficiency Score was lower for older properties, and therefore it should be expected that the newer the property the higher the proportion of homes with an EPC rating of at least C. This is demonstrated by the bar chart in Figure C-1. Figure C-1 also shows that with the exception of newer properties (2012 onwards), the more rural the area the smaller the proportion of domestic properties with an EPC rating of at least C. For all three property ages bands where there was a clear difference in the proportion of homes with an EPC rating of at least C, the proportion was at least nine percentage points lower in majority rural Parliamentary Constituencies than in urban Parliamentary Constituencies (outside of London).

Figure C-1: A bar chart showing the percentage of domestic properties with Energy Performance Certificate (EPC) ratings of C or better by property age and Parliamentary Constituencies rural-urban classification in 2025 (Note C-4, Note C-5, Note C-6)
London is presented separately and is not included in the urban category. The legend underneath the chart is presented in the same order and orientation as the cluster of bars.



For pre-1930 properties in majority rural Parliamentary Constituencies only 11.5% had an EPC rating of at least C in 2025 compared to 20.2% in urban Parliamentary Constituencies outside of London and 28.3% for those within London. There are over a million pre-1930 domestic properties in rural areas (Table A-3, Statistical Digest of Rural England - Housing). The EPC rating of over 88% of the pre-1930 homes in majority rural areas is low enough that any low-income households would be at risk of fuel poverty due to rising fuel costs or significant changes in household circumstances that further reduce their household income.

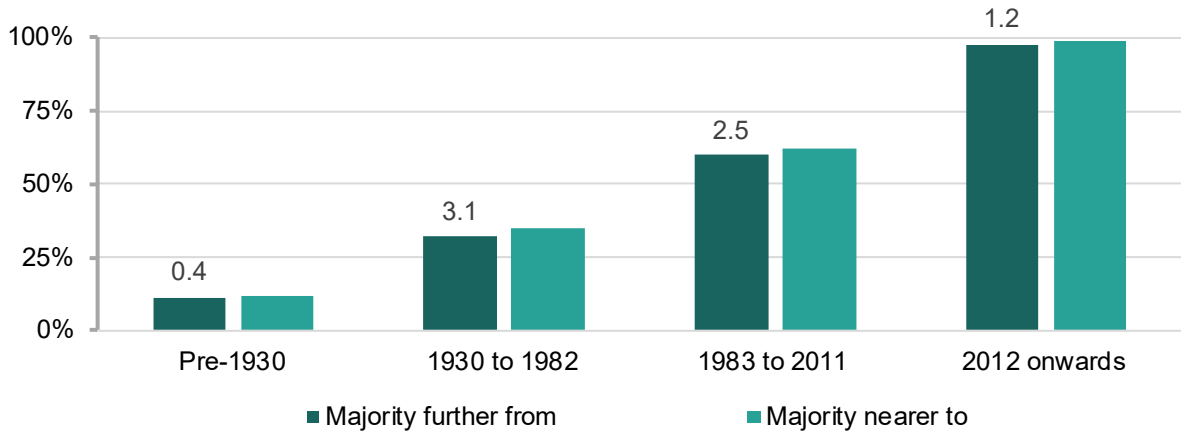
For domestic properties built between 1930 and 1982, 33.9% of those in majority rural Parliamentary Constituencies had an EPC rating of C or better in 2024 compared to 42.9% in urban Parliamentary Constituencies outside of London. For homes built between 1983 and 2011, majority rural Parliamentary Constituencies had a lower proportion of homes with an EPC rating of

C and above than urban Parliamentary Constituencies outside of London (61.2% compared to 74.7%). In London 83.2% of 1983 to 2011 homes were at least EPC category C.

Within the 2021 rural-urban classification (RUC21), information is provided regarding a locations' proximity to a major town or city to indicate relative access. As explained in Note C-6, "nearer to a major town or city" is defined as being within a 30-minute drive of a major town or city and, "further from a major town or city" is defined as being more than a 30-minute drive by car from a major town or city.

Figure C-2 is bar chart that shows that in majority rural Parliamentary Constituencies, proximity to a town or city has limited impact upon the proportion of domestic properties that achieved an EPC rating of at least category C. For all age bands, the proportion of properties with an EPC rating of C or better was lower when the Parliamentary Constituency has the majority of its population further from a major town or city than when it has the majority of its population nearer to a major town or city. However, the difference in these proportions was at most three percentage points, and therefore proximity had a much smaller impact than property age band. When displayed graphically on Figure C-2, this means that the difference in height of the pairs of bars for each age band is much smaller than the step change in height between age bands.

Figure C-2: A bar chart showing the percentage of domestic properties with Energy Performance Certificate (EPC) ratings of C or better by proximity to a major town or city and property age for Parliamentary Constituencies classified as majority rural using the 2021 Parliamentary Constituency rural-urban classification in 2025 (Note C-4, Note C-5, Note C-6)
The legend, under the chart, is presented in the same order and orientation as the cluster of bars. The values presented above the "Majority further from" bars represent how much lower that proportion is than proportion for "Majority nearer to a major town or city".



Splitting domestic properties into new dwellings and existing dwellings simplifies the picture. Any property that has undergone a conversion to change its use is considered to be a new property from an EPC perspective (Note C-7). Figure C-3 is a bar chart, and it shows that almost all new dwellings achieved EPC category C or better, including on average 98.0% in majority rural Parliamentary Constituencies in 2025. This was higher than the proportions in all other RUC21 area types, including the 94.7% for urban Parliamentary Constituencies outside of London.

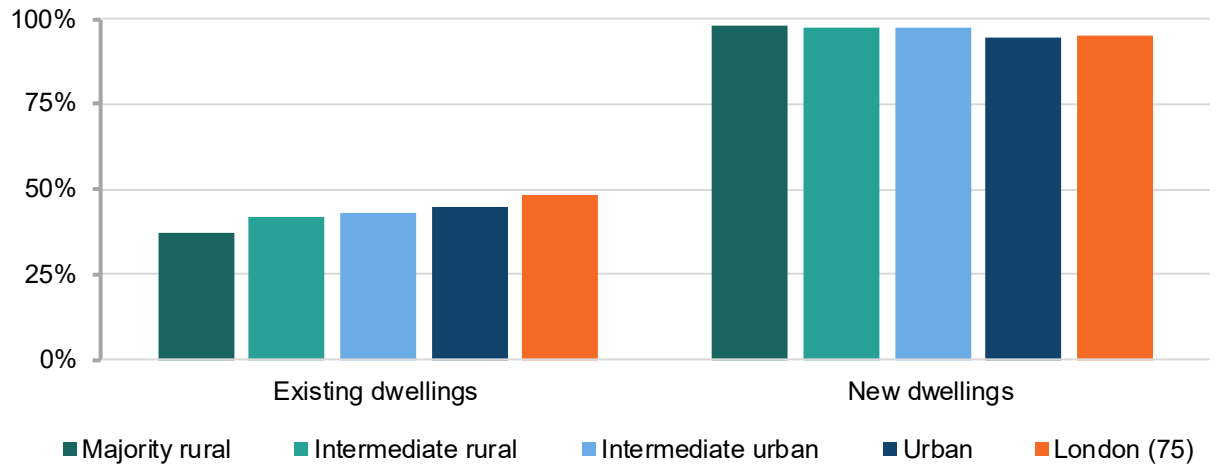
Whereas for existing dwellings the more rural the area the lower the proportion of properties with an EPC rating of C or better. For majority rural Parliamentary Constituencies, 36.9% of domestic properties had an EPC rating of C or better in 2025 compared to 45.0% in urban Parliamentary Constituencies outside of London. This means that a lower proportion of existing domestic homes

reached EPC rating C in majority rural Parliamentary Constituencies than in urban Parliamentary Constituencies outside of London (a gap of 8 percentage points).

Within majority rural Parliamentary Constituencies, proximity to a town or city has more impact upon the proportion of domestic properties that achieved an EPC rating of at least category C for existing properties than new ones (see table CD4a in the Energy data tables). For existing dwellings, the proportion of properties that achieved an EPC rating of C or better was 3.7 percentage points lower when the Parliamentary Constituency has the majority of its population further from a major town or city than when it has the majority of its population nearer to a major town or city. Whereas for new dwellings the proportion of homes with an EPC rating of C of better was just 1.6 percentage points lower when the Parliamentary Constituency has the majority of its population further from a major town or city.

Figure C-3: A bar chart showing the percentage of domestic properties with Energy Performance Certificate (EPC) ratings of C or better for new and existing dwellings by Parliamentary Constituency rural-urban classification in 2025 (Note C-4, Note C-5, Note C-6, Note C-7)

London is presented separately and is not included in the urban category. The legend is presented underneath the chart in the same order and orientation as the cluster of bars.



In majority rural Parliamentary Constituencies, the median for the proportion of pre-1930 homes with an EPC rating of at least category C was 10.9% in 2025 (Table C-1). Whereas in urban Parliamentary Constituencies outside of London, the median for the proportion of pre-1930 homes with an EPC rating of at least category C was 18.9% in 2025 (Table C-2).

There was only one majority rural Parliamentary Constituencies where the proportion of pre-1930 properties with an EPC rating of category C exceeded 20%. This was ‘Newton Aycliffe and Spennymoor’ in North East England where 25% of properties had an EPC rating of C or above. By contrast 123 of 280 urban Parliamentary Constituencies outside of London (44%) had at least 20% of domestic properties with an EPC rating of at least C. In Liverpool Riverside, 45.9% of the pre-1930 properties had an EPC rating of at least C.

At the bottom end of the distribution, in 19 of the 67 (28%) majority rural Parliamentary Constituencies less than 10% of the pre-1930 properties were at least EPC category C. North Cotswolds had the lowest proportion of pre-1930 properties that were at least EPC category C or above – just 5% of properties (Table C-3). This means that the EPC rating of 95% of the pre-1930 homes in the North Cotswolds Parliamentary Constituency is low enough that any low-income

households would be at risk of fuel poverty due to rising fuel costs or significant changes in household circumstances that further reduce their household income.

Table C-1: Distribution statistics for the proportion of pre-1930 homes with an EPC rating of at least C in majority rural Parliamentary Constituencies in 2025 (Note C-4, Note C-6)

Distribution statistic	%
Minimum	5.0
Lower quartile	9.6
Median	10.9
Upper quartile	13.3
Maximum	25.0

Table C-2: Distribution statistics for the proportion of pre-1930 homes with an EPC rating of at least C in urban Parliamentary Constituencies outside of London in 2025 (Note C-4, Note C-5, Note C-6)

Distribution statistic	%
Minimum	8.6
Lower quartile	15.7
Median	18.9
Upper quartile	24.3
Maximum	45.9

Table C-3: The 19 majority rural Parliamentary Constituencies where the proportion of pre-1930 properties with an EPC rating of at least C was less than 10%. (Note C-4, Note C-5, Note C-6)

Parliamentary Constituency	Proportion of properties with an EPC rating of at least C	Proximity to a major town or city
North Cotswolds	5.0	Majority nearer to
Waveney Valley	7.4	Majority further from
South West Norfolk	7.4	Majority further from
South Suffolk	7.9	Majority nearer to
North Herefordshire	7.9	Majority further from
Arundel and South Downs	8.0	Majority nearer to
Mid Norfolk	8.1	Majority nearer to
South Cotswolds	8.4	Majority nearer to
Penrith and Solway	8.5	Majority nearer to
East Wiltshire	8.6	Majority further from
Sleaford and North Hykeham	8.7	Majority nearer to
South Shropshire	8.7	Majority further from
South Norfolk	9.0	Majority nearer to
South Northamptonshire	9.0	Majority nearer to
St Ives	9.4	Majority further from
Tiverton and Minehead	9.5	Majority further from
North Dorset	9.6	Majority further from
Broadland and Fakenham	9.7	Majority nearer to
Mid Buckinghamshire	9.8	Majority nearer to

For urban Parliamentary Constituencies outside of London just 11 of 280 Parliamentary Constituencies (4%) had less than 10% of the pre-1930 properties at EPC category C or above. (These 11 Parliamentary Constituencies can be identified from Table CC2 in the in the Energy data

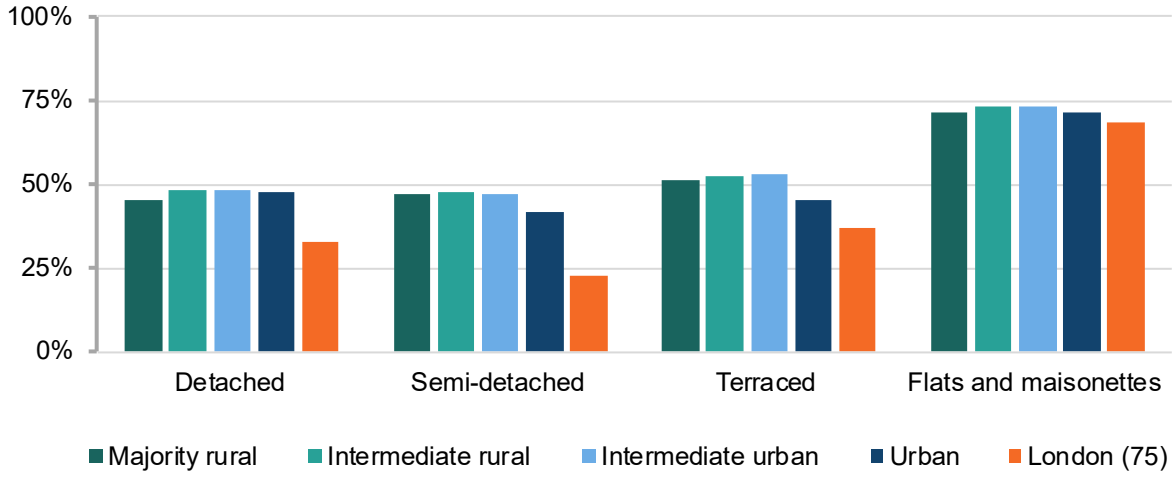
tables). The urban Parliamentary Constituency with the lowest proportion of pre-1930 properties at EPC category C or above was Bradford East (8.6%) - nine majority rural Parliamentary Constituencies had lower proportions than this for pre-1930 properties (Table C 3).

Worksheet CC in the energy supplementary data tables contains tables showing the percentage of domestic properties with Energy Performance Certificate (EPC) ratings of C or better in 2025 by property age for all Parliamentary Constituencies.

Proportion of category C properties by property type

Figure C-4 is a bar chart showing the percentage of domestic properties with Energy Performance Certificate (EPC) ratings of C or better by property type and Parliamentary Constituency rural-urban classification in 2025. The chart shows that for all property types and especially for Detached and Semi-detached homes the proportion of properties with an EPC rating of C or better was lower in London than in other area types. Intermediate Parliamentary Constituencies had the highest proportion of domestic properties with an EPC rating of at least C. For Semi-detached properties, intermediate rural Parliamentary Constituencies had the highest proportion of properties with EPC ratings of category C or better (47.7%). Whilst for Detached, Terraced and Flats and maisonettes, intermediate urban Parliamentary Constituencies had the highest proportions of properties with EPC ratings of category C or better (48.5%, 53.1% and 73.4% respectively).

Figure C-4: A bar chart showing the percentage of domestic properties with Energy Performance Certificate (EPC) ratings of C or better by property type and rural-urban classification in 2025 (Note C-4, Note C-5, Note C-6, Note C-8)
London is presented separately and is not included in the urban category. The legend is presented below the chart and is in the same order and orientation as the cluster of bars.



Section B showed that, on average, Flats and maisonettes had a higher Energy Efficiency Score and consequently in 2025 there were proportionally more Flats and maisonettes with an EPC rating of at least C than for any other domestic property type in all area types. In majority rural Parliamentary Constituencies, 71.4% of Flats and maisonettes had an EPC rating of at least C which was very similar to the 71.6% of Flats and maisonettes in urban Parliamentary Constituencies areas outside of London.

For Semi-detached and Terraced properties, the proportion of properties that were at least EPC category C was at least five percentage points higher in majority rural Parliamentary

Constituencies than in urban Parliamentary Constituencies outside of London. For Terraced houses the proportion of properties with an EPC rating of at least C in 2025 was 51.0% in majority rural Parliamentary Constituencies and 45.2% in urban Parliamentary Constituencies outside of London. For Semi-detached houses, the proportion of properties with an EPC rating of at least C in 2025 was 47.0% in majority rural Parliamentary Constituencies and 41.8% in urban Parliamentary Constituencies outside of London.

For Detached properties the proportion of properties with an EPC rating of at least C in 2025 was 45.4% in majority rural Parliamentary Constituencies, this was the lowest of all property types. This value was 2.2 percentage points lower than the 47.6% for Detached properties in urban Parliamentary Constituencies outside of London and 2.6 percentage points lower than the 48.1% for Detached properties in intermediate rural Parliamentary Constituencies. Whilst these differences are small, they are still important given that a large proportion of the Rural housing stock is Detached (Section A - Housing stock: age and type, Statistical Digest of Rural England - Housing).

Within the 2021 rural-urban classification (RUC21), information is provided regarding the population's proximity to a major town or city to indicate relative access. As explained in Note C-6, "nearer to a major town or city" is defined as being within a 30-minute drive of a major town or city and, "further from a major town or city" is defined as being more than a 30-minute drive by car from a major town or city.

Figure C-5 is bar chart that shows that in majority rural Parliamentary Constituencies, for all property types, the proportion of properties with an EPC rating of C or better was lower when the Parliamentary Constituency has the majority of its population further from a major town or city than when it has the majority of its population nearer to a major town or city. The difference in these proportions was largest for Detached properties (9.8 percentage points) and smallest for Terraced properties (6.1 percentage points). In majority rural Parliamentary Constituencies 39.4% of Detached properties reached EPC C or better when the majority of the population lived further from a major town or city. Whereas in majority rural Parliamentary Constituencies where the majority of the population live nearer to a major town or city 49.2% of Detached properties reached EPC C or better.

Focusing on just houses, within majority rural Parliamentary Constituencies, the difference in the proportion of properties with an EPC rating of C or better differs by: (a) 1.6 percentage points between Detached and Semi-detached; (b) 4.0 percentage points between Semi-detached and Terraced; and (c) 5.6 percentage points between Detached and Terraced. This is the difference in height in the dark green bars (the first bar) in the first three clusters on Figure C-4. Therefore, within majority rural Parliamentary Constituencies, the difference in the proportion of properties with an EPC rating of C is influenced more by proximity to a major town or city than it is property type. When displayed graphically on Figure C-5, this means that the difference in height of the pairs of bars for each property type is bigger than the step change in height between property types for majority rural Parliamentary Constituencies on Figure C-4.

Table C-4 and Table C-5 show the majority rural Parliamentary Constituencies with the lowest and highest proportion of properties with an EPC rating of at least C for each property type. Whilst St Ives had the lowest proportion for two property types and South Norfolk had the highest proportion for two property types there is not one Parliamentary Constituency that has the lowest or highest proportion of properties that were at least EPC category C across the 4 property types.

Figure C-5: A bar chart showing the percentage of domestic properties with Energy Performance Certificate (EPC) ratings of C or better by proximity to a major town or city and property type for Parliamentary Constituencies classified as majority rural using the 2021 Parliamentary Constituency rural-urban classification in 2025 (Note C-4, Note C-6, Note C-8)
The legend, under the chart, is presented in the same order and orientation as the cluster of bars. The values presented above the "Majority further from" bars represent how much lower that proportion is than the proportion for "Majority nearer to a major town or city". Flats and maisonettes have not been included given that they make up a small portion of the majority rural housing stock.

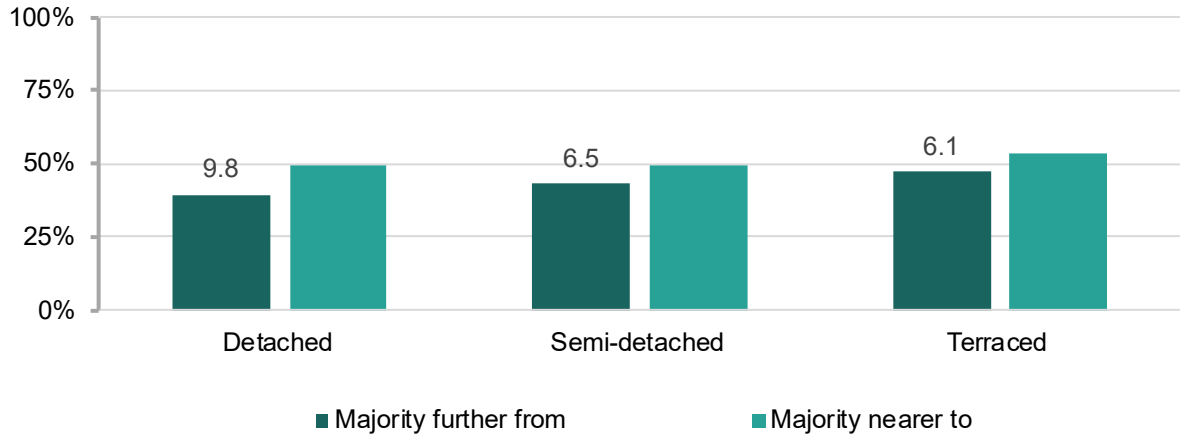


Table C-4: The majority rural Parliamentary Constituency with the lowest proportion of properties with an EPC rating of at least C for each property type.
(**Note C-4, Note C-6, Note C-8**)

	Detached	Semi-detached	Terraced	Flats and maisonettes
Parliamentary Constituency	South Shropshire	Morecambe and Lunesdale	St Ives	St Ives
Proportion of properties with an EPC rating of at least C (%)	28.1	26.7	28.1	53.5

Table C-5: The majority rural Parliamentary Constituency with the highest proportion of properties with an EPC rating of at least C for each property type.
(**Note C-4, Note C-6, Note C-8**)

	Detached	Semi-detached	Terraced	Flats and maisonettes
Parliamentary Constituency	Newton Aycliffe and Spennymoor	South Norfolk	South Norfolk	North Bedfordshire
Proportion of properties with an EPC rating of at least C (%)	68.8	60.3	72.8	85.3

Across all property types, the 67 majority rural Parliamentary Constituencies and the 280 urban Parliamentary Constituencies outside of London were ranked in ascending order in terms of their

proportion of properties with an EPC rating of category C of better. Table C-6 and Table C-7 show the five Parliamentary Constituencies with the lowest and highest average ranks respectively. Now it becomes clearer that the 3 majority rural local authorities that appeared in Table C-4 rank lowly overall. ‘‘St Ives’ ranked in the bottom three for Detached, Terraced and Flats and maisonettes and ‘Morecambe and Lunesdale’ ranked in the bottom two for Semi-detached, Terraced and Flats and maisonettes. At the other end of the scale, despite not ranking top for any specific property type, across all properties, North-West Essex and Stratford-on-Avon ranked first and second respectively. Four of the five Parliamentary Constituencies with the lowest average ranks have coastal communities within the Parliamentary Constituencies. By contrast none of all five of the Parliamentary Constituencies with the highest ranks have a coastal boundary.

Table C-6: The 5 majority rural Parliamentary Constituencies with the lowest proportion of homes with an EPC rating of at least C across all property types in 2025 (Note C-4, Note C-6, Note C-8)

Parliamentary Constituency	Proportion of properties with an EPC rating of at least C (%)	Rank
St Ives	35.42	1
Morecambe and Lunesdale	36.74	2
South Shropshire	36.75	3
North Norfolk	38.62	4
Westmorland and Lonsdale	41.05	5

Table C-7: The 5 majority rural Parliamentary Constituencies with the highest proportion of homes with an EPC rating of at least C across all property types in 2025 (Note C-4, Note C-6, Note C-8)

Parliamentary Constituency	Proportion of properties with an EPC rating of at least C (%)	Rank
North West Essex	61.89	63
Stratford-on-Avon	62.31	64
South Norfolk	62.85	65
North Bedfordshire	62.96	66
Mid Bedfordshire	65.04	67

Worksheet CB in the energy supplementary data tables contains tables showing the percentage of domestic properties with Energy Performance Certificate (EPC) ratings of C or better in 2024 by property type for every Parliamentary Constituency.

Variation in settlement type within Local Authorities data

Within the 2025 Energy Efficiency of Housing, new tables were added to the Energy Performance Certificate (EPC) Band C or above dataset. Tables 5C and 5D in this dataset calculate the proportion of homes with an EPC rating of C or better in the rural and urban parts of each local authority separately - where such parts exist. Table 5C is for all properties and Table 5D provides

separate figures for new properties and existing properties (Note C-7). As an example of how these tables work, North Yorkshire is a large authority that overall is classified as majority rural. However, within the authority there are areas classified as urban, larger rural and smaller rural. ONS have calculated that for existing homes in North Yorkshire the proportion that had an EPC rating of at least C was 39.9% in the urban settlements, 39.4% in the larger rural settlements and just 20.5% in the smaller rural settlements.

It was already shown in Figure C-3 that there is limited variation in the proportions of new properties with an EPC rating of at least C, so this analysis will focus solely on **existing properties** in the 41 local authorities classified as majority rural (Note C-6) to highlight how the proportion of domestic properties with an EPC rating of at least C can vary across authorities in response to the level of rurality. Table CF1 in the Energy data tables contains the data for individual majority rural authorities discussed in the bulleted list below.

- For every majority rural authority, the proportion of homes with an EPC rating of C or above was lower in smaller rural settlements than in larger rural settlements for existing properties. In almost half of majority rural authorities (20 of 41) this difference in the proportion of properties with an EPC rating of at least C was at least 20 points. Whilst in the Forest of Dean and South Norfolk the - difference between larger and small rural settlements in the proportion of homes with an EPC rating of at least C was over 30 percentage points.
- For larger rural settlements, all authorities had a proportion of homes with an EPC rating of at least C between 31.6% (Malden) and 52.6% (Uttlesford). For smaller rural settlements, all local authorities had a proportion of homes with an EPC rating of at least C between 13.9% (Torridge) and 29.9% (Rutland).
- There were six majority rural authorities where the proportion of homes with an EPC rating of at least C was higher in the larger rural settlements than in urban settlements, but in five of these six cases the difference was less than 1.5 percentage points. By contrast in 12 of the 41 majority rural authorities (29%) the proportion of homes with an EPC rating of at least C was at least 10 percentage points lower in the larger rural settlements than in urban settlements. Whilst in West Oxfordshire the proportion of homes with an EPC rating of at least C was over 20 percentage points lower in the larger rural settlements than in urban settlements.
- In 32 of the 41 majority rural authorities (78%) the proportion of homes with an EPC rating of at least C in smaller rural settlements was at least 20 percentage points lower than the proportion of homes with an EPC rating of at least C in urban settlements. For 16 of the 41 majority rural authorities (39%) this difference exceeded 30 percentage points. Ribble Valley was the only majority rural authority where the proportion of homes with an EPC rating of at least C in the small rural settlements was within 10 percentage points of the proportion of homes with an EPC rating of at least C in urban settlements.

EPCs: achieving energy efficiency Category C explanatory notes

- **Note C-1**

Fuel poverty or being fuel poor is where a household is living in a property with a Fuel Poverty Energy Efficiency Rating (FPEER) of band D or below in a home that cannot be kept warm at reasonable cost without bringing their residual income (after housing and energy costs) below the poverty threshold. As explained in Section A Fuel poverty, Fuel poverty in England is defined using the Low Income Low Energy Efficiency approach.

Figure 2.2 in the Annual fuel poverty statistics report: 2023 graphically displays how fuel poor households are defined.

- **Note C-2**

The statutory fuel poverty target was set in December 2014, binding successive Governments to the following:
The fuel poverty target is to ensure that as many fuel poor homes as is reasonably practicable achieve a minimum Energy Efficiency Rating of Band C, by 2030.
This target was retained in Sustainable Warmth, the updated Fuel Poverty Strategy for England, published in February 2021. There is also an interim "target" in relation to band D and 2025.

- **Note C-3**

The FPEER uses a modified version of the standard Energy Efficiency Rating which considers policies that directly affect the cost of energy. In recent years this has included the rebate provided by the Warm Home Discount. The FPEER methodology deducts such rebates from the overall modelled costs produced under the Standard Assessment Procedure (SAP) system. This gives an energy efficiency rating (again from 1-100), which will be higher than the standard rating if the household receives additional support. This modified rating is also translated to a band (A to G) on the same bases as the original system displayed in Table B-1. The document Fuel poverty methodology handbook 2023: Low Income Low Energy Efficiency (LILEE) gives further details.

- **Note C-4**

The Office for National Statistics (ONS) publish Energy Efficiency of Housing on an annual basis for financial years. This section primarily uses the Energy Performance Certificate (EPC) Band C or above, England and Wales dataset for the financial year ending March 2025. For the first time in the Digest, the analysis was switched from Local Authority level data to Parliamentary Constituency level data. Therefore, no time series are presented, and the figures are not comparable with previous Digest publications.
The source data for this ONS publication is Department for Levelling up, Housing and Communities – Energy Performance Certificate data on Open Data Communities and Valuation Office Agency - Property Attributes data (https://epc.opendatacommunities.org/).

- **Note C-5**

The Independent Parliamentary Standards Authority (IPSA) hold a list of 98 London-area constituencies that are eligible for the London-area Living Payment. Included within this group of 98 constituencies is a subset of 23 outer London Constituencies. Subtracting these 23 from the 98 leaves a further 75 Parliamentary Constituencies which can be classified as "Inner London" Parliamentary Constituencies. All 75 "Inner London" Parliamentary Constituencies are classified as urban in the RUC21. However, for the 23 Outer London Parliamentary Constituencies some are not classified as urban in RUC21. Therefore these 75 Parliamentary Constituencies are our definition for London and are labelled on charts and in tables as London (75).

- **Note C-6**

The 2021 rural-urban classification was released on 6 March 2025. Details of the 2021 rural-urban classification can be found at: https://www.gov.uk/government/collections/rural-urban-classification
RUC21 provide information regarding the areas' proximity to a major town or city to indicate relative access. "Nearer to a major town or city" is defined as being within a 30-minute drive of a major town or city and, "further from a major town or city" is defined as being more than a 30-minute drive by car from a major town or city. In this context "a major town or city" is defined as a built-up area with a population of at least 75,000 residents. A Parliamentary Constituency is classified as "majority further from a major town or city" if they have at least 50% of their population further from a major town or city, and similarly a Parliamentary Constituency is classified as "majority nearer to a major town or city" if less than 50% of their population are further from a major town or city.
This proximity measure is independent of the rurality measure in that it relates to all of the population within the Parliamentary Constituency not just the rural proportion. For example, majority rural Parliamentary Constituency X has 50% or more of their population in rural output areas and if this same majority rural

Parliamentary Constituency X is further from a major town or city it also has at least 50% of their population further from a major town or city. However, this does not automatically mean that more than 50% of the population of Parliamentary Constituency X live in rural output areas that are further from a major town or city.

- **Note C-7**

Statistics for **new properties** were generated using data from new dwelling EPC records, which include new builds, conversions and change of use. Statistics for **existing properties** were generated using the latest EPC lodgement available for a property, within the existing dwellings records. An existing dwelling may have undergone several EPC assessments for different reasons (for example, due to a marketed sale, for a green deal assessment, or following the implementation of the changes suggested in a green deal assessment). New and existing dwellings are assessed using slightly different methodologies.

- **Note C-8**

ONS break down houses (including bungalows and park homes) into Detached, Semi-detached and Terraced property types and group Flats and maisonettes together as the final property type.

- **Note C-9**

Tables showing the data in Section C are available in the energy supplementary tables.

D. Central heating

Gas is the dominant method for heating homes, but in majority rural authorities oil is an important fuel especially for older detached homes in authorities with a majority of the population further from a major town or city.

Key findings – Central heating

Homes in rural areas are more likely to use oil than homes in more urban areas

- In majority rural authorities, 12% of homes were using oil in 2024 compared to 6% of homes in intermediate rural authorities and less than 4% in intermediate urban authorities.
- In 2024 in the 16 majority rural authorities with a majority of the population further from a major town or city on average 14% of homes used oil. Whilst in the 26 majority rural authorities with a majority of the population nearer to a major town or city 11% of homes used oil.
- In five majority rural local authorities and one intermediate rural local authority more than 20% of their homes used oil as their main fuel type. Five of these six authorities were in East Anglia.

Gas is the main heating method in all local authorities

- In majority rural authorities, 69% of homes were using mains gas in 2024 compared to 82% of homes in both intermediate authorities and urban authorities.
- In 2024 in the 16 majority rural authorities with a majority of the population further from a major town or city on average 63% of homes used mains gas. Whilst in the 26 majority rural authorities with a majority of the population nearer to a major town or city 72% of homes used mains gas.

New homes in rural areas are less likely to use oil for heating than existing homes

- For new homes the proportion in majority rural authorities that used oil or electricity for heating was just 2% and 4% respectively, compared to 14% and 12% respectively for existing homes.
- In 2024, 77% of new homes in majority rural authorities used gas, this is 10 percentage points more than for existing homes in majority rural authorities.
- There is also a move towards renewables, 11% of new homes in majority rural authorities used at least two heating methods including one that is a renewable energy compared to 2% of existing homes.

Community heating schemes are more common in urban areas

- Under 2% of homes were heated with a community energy scheme either in majority rural or intermediate authorities compared to 6% in all urban authorities. For those urban authorities in London, 18% of homes used a community heating scheme.
- In majority rural authorities, community heating schemes provide the heating for 5% of new homes in authorities with a majority of the population nearer to a major town or city but this this compares with 19% of new homes heated by community schemes in urban authorities.

Summary

The type of central heating used in homes and how this is changing over time is important for both our journey towards net zero and for moving households out of fuel poverty.

The most common way of heating a home is through mains gas central heating. In majority rural authorities, 69% of homes used mains gas in 2024 compared to 82% in in both intermediate and urban authorities. In majority rural authorities, 12% of homes were using oil in 2024 compared to 6% of homes in intermediate rural authorities, less than 4% in intermediate urban authorities and less than 1% in urban authorities. In authorities with a majority further from a major town or city a smaller proportion used gas than in authorities with a majority nearer to a major town or city and the balance is largely made up by an increased proportion using either oil or electricity for heating.

When considering central heating by property type, detached houses were the most likely to use oil, and oil was used in 21% of detached homes in majority rural authorities and by 12% of detached homes in intermediate rural authorities. In majority rural authorities, 64% of Detached homes used gas. Flats and maisonettes tend to have a different energy mix, with around six in every ten (57%) using gas in 2024 in majority rural authorities. The balance is made up by almost one in three (32%) Flats and maisonettes in these authorities using electricity for heating. For all property types, electricity and oil fuel a larger proportion of houses when the majority of the population lived further from a major town or city. For Detached properties, 26% of them use oil when the majority of the population lived further from a major town or city compared to 19% when the majority of the population lived nearer to a major town or city.

It is possibly to consider central heating types for new and existing homes separately to determine if new homes have a different distribution of central heating systems. In majority rural authorities, for existing homes, 67% heated their home with gas, 14% used oil and 12% used electricity. For new homes the proportion in majority rural authorities that used oil or electricity was just 2% and 4% respectively. In urban authorities for existing homes 85% heated their home with gas and 11% used electricity. For new homes in urban authorities the proportion using gas was 66% and the proportion using electricity was 14%. Community energy schemes were the heating source for 19% of new homes in urban authorities compared to just 3% of existing homes in these authorities. New homes in majority rural authorities are more likely to have a multi-fuel heating system, 11% of new homes in majority rural authorities used at least two heating methods including one that is a renewable energy compared to less than 2% of new homes in urban authorities.

Central heating data from Energy Performance Certificates

An Energy Performance Certificate (EPC) provides information on the energy efficiency of a building. Since 2007, an EPC is required when a building is constructed, sold or let (Note D-1). The ONS use information from EPCs for their Energy Efficiency of Housing publication (Note D-2). There is a March 2024 dataset covering information on the main fuel type or method of heating used in central heating of domestic properties (Note D-3) Strictly speaking this analysis reflects home with a valid EPC rather than all homes (Note D-4).

An updated Rural-Urban Classification based on the 2021 Census was released on 6 March 2025 by the Office for National Statistics (Note D-5). This 2021 Rural-Urban Classification (RUC21) was applied to the 2024 central heating data. Previously when we published an analysis of central

heating data this was done using the 2011 Rural-Urban Classification (RUC11) and an older set of local authority boundaries. **This current analysis is therefore not comparable with the numbers we have previously published on this topic**.

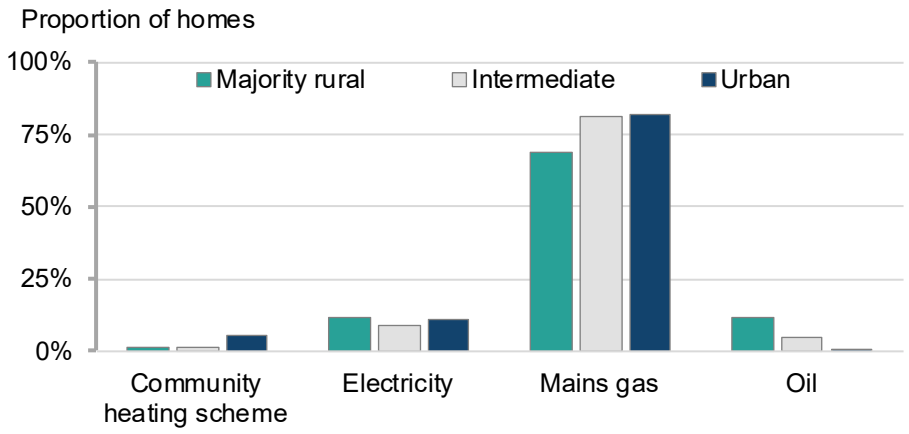
Fuel types used for central heating

The type of central heating used in homes and how this is changing over time is important for several reasons. Firstly, the emissions from space heating and hot water account for a large proportion of overall UK emissions (Note D-12) and reducing them is an important part of our journey towards net zero. Secondly, different heating methods have different levels of efficiency and overall costs for the user. The method used to heat the home is therefore a factor in determining whether or not a household is in fuel poverty. Defining fuel poverty in Section A explains the concept of fuel poverty.

Figure D-1 is a bar chart and it shows that in 2024 the most common way of heating a home was through mains gas central heating but that in majority rural authorities it is used in a smaller proportion of homes and the difference is largely made up by oil. In majority rural areas 69% of homes used mains gas compared to 82% in both intermediate and urban authorities. Under 2% of homes were using a community energy scheme in majority rural or intermediate areas compared to 6% in urban authorities. In London 18% of homes used a community heating scheme.

Figure D-1: Bar chart showing the percentage of domestic properties by main fuel type or method of heating used in central heating by the 2021 Local Authority Rural-Urban Classification, 2024

This analysis is based on Energy Performance Certificate (EPC) information up to March 2024. (Note D-2, Note D-6). The legend is presented in the same order and orientation as the cluster of columns. The category intermediate includes intermediate rural and intermediate urban and the urban category includes London. Some heating types are not included so the bars for each specific area type do not sum to 100%



Around 12% of homes in majority rural authorities used electricity for their heating in 2024. This is similar to the proportion using electricity in urban authorities (11%) and slightly higher than the proportion using electricity in intermediate authorities. Figure 3.9 in the Annual fuel poverty statistics report: 2025 shows that households using electricity for their heating had the highest likelihood of fuel poverty (20.7% compared to 10.0% for households using gas). For those that were fuel poor the average depth of their fuel poverty was £780 compared to £288 for those using gas. DESNZ explain that the higher rate of fuel poverty for those using electric relative to gas is

because of their high fuel expenditure and their lower median household income. Table D-1 contains the average income and fuel costs for homes using gas and electricity. Section A of this report explains how fuel poverty depth is calculated.

Table D-1: Factors influencing fuel poverty for homes using gas and electricity
These values are taken directly from section 3.1.6 of the Annual fuel poverty statistics report: 2025 (Note D-7).

	Gas	Electricity
Proportion of fuel poor households	10.0	20.7
Average fuel poverty gap	£288	£780
Median energy efficiency rating of the home	70	63
Median fuel costs (£ per year)	£2,210	£2,690
Median equivalised income (£ per year)	£30,700	£27,400

From Figure D-1, it is clear that oil played a greater part as a source of heating fuel in majority rural authorities than in other authorities. To demonstrate this more clearly, Figure D-2 is a bar chart showing the proportion of homes using oil in majority rural authorities, intermediate rural authorities and intermediate urban authorities. This chart shows that the more rural the area the higher the proportion of homes using oil. In majority rural authorities, 12% of homes were using oil in 2024 compared to 6% of homes in intermediate rural authorities and less than 4% in intermediate urban authorities. An intermediate urban authority has at least 20%, and up to 35%, of its population living in rural areas within the authority. The households using oil in intermediate urban authorities are likely to reside in these rural parts of the authority.

A new feature within RUC21 is that it provides information regarding a locations' proximity to a major town or city to indicate relative access. As explained in Note D-8, "nearer to a major town or city" is defined as being within a 30-minute drive of a major town or city and, "further from a major town or city" is defined as being more than a 30-minute drive by car from a major town or city.

Figure D-2: Bar chart showing the percentage of domestic properties using oil fuelled central heating by 2021 Local Authority Rural-Urban Classification, 2024
This analysis is based on Energy Performance Certificate (EPC) information up to March 2024. (Note D-2, Note D-6). The proportion using oil in urban authorities is less than 0.5%.

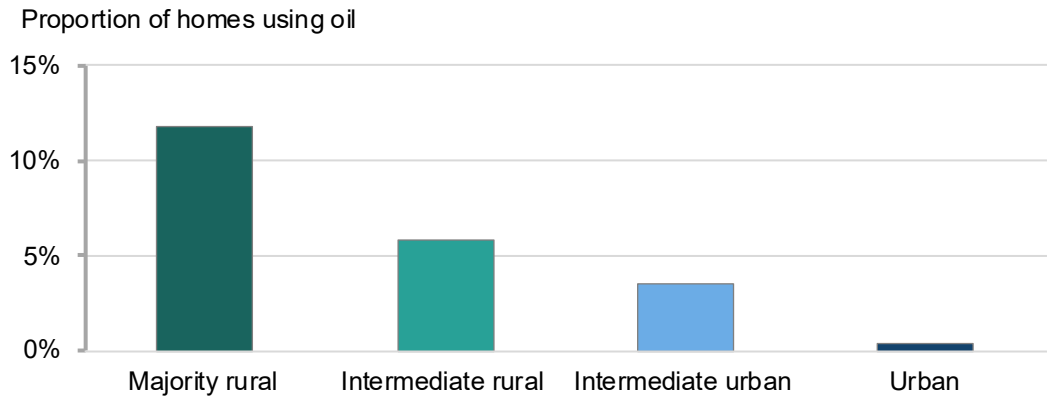
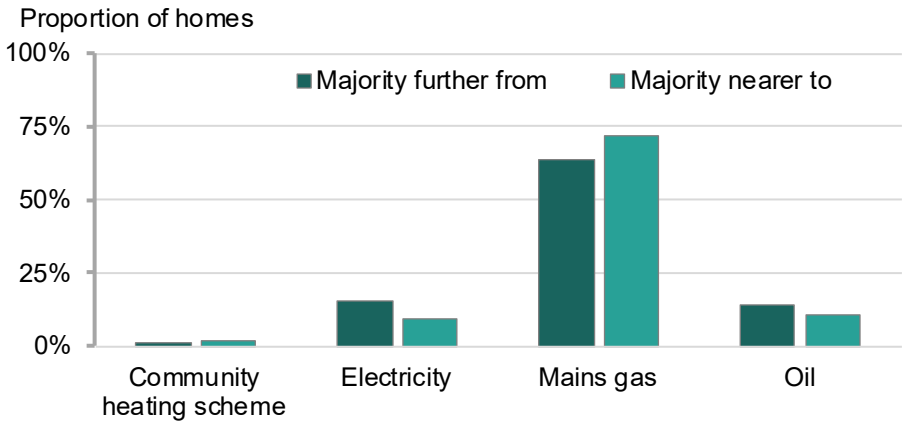


Figure D-3 is a bar chart showing fuel type used for central heating in majority rural authorities by proximity to a major town or city. Figure D-3 shows that in authorities with a majority further from a

major town or city a smaller proportion used gas than in authorities with a majority nearer to a major town or city and the balance is largely made up by an increased proportion using either oil or electricity.

Figure D-3: Bar chart showing the percentage of domestic properties by main fuel type or method of heating used in central heating by proximity to a major town or city for Local Authorities classified as majority rural using the 2021 Local Authority Rural-Urban Classification, 2024.

This analysis is based on Energy Performance Certificate (EPC) information up to March 2024. (Note D-2, Note D-6). The legend is presented in the same order and orientation as the cluster of columns. When describing proximity, the descriptors "Majority further from" and "Majority nearer to" mean that the majority of the population is further from, or nearer to, a major town or city (Note D-8).



In 2024 in the 16 majority rural authorities with a majority further from a major town or city on average 63% of homes used mains gas, 16% used electricity and 14% used oil. Whilst in the 26 majority rural authorities with a majority nearer to a major town or city 72% of homes used mains gas, 9% used electricity and 11% used oil. This implies that there is a larger proportion of homes off the gas grid in majority rural authorities with a majority further from a major town or city than in majority rural authorities with a majority nearer to a major town or city. This is something that will be investigated more fully later this year once a Parliamentary Constituency version of the RUC has been made available because the local authority data no longer offers sufficient granularity for off the gas grid data due to local authority reorganisation in northern England (Note D-3). Section A of this report covers fuel poverty for properties that are off the gas grid in greater detail.

Fuel Poverty Statistics showed that in 2023 (Note D-7), 122 thousand households using oil central heating were fuel poor (Fuel poverty detailed tables 2024 (2023 data) - Table 13). These households accounted for 4.4% of all fuel poor households and their average fuel poverty gap was £525. This was over £200 per year more than the average fuel poverty gap for fuel poor households who heated their home with gas (£314).

Worksheet DE in the Energy data tables includes a local authority breakdown of the proportion of properties using oil as their main fuel type. Five majority rural local authorities and one intermediate rural local authority had more than 20% of their homes using oil as their main fuel type (Table D-2). Five of the six authorities were in East Anglia and the remaining one was Torridge in Devon. Some but not all of these authorities have a majority further from a major town or city. The dispersed settlements and large agricultural holdings found in East Anglia historically

might have limited the extent of the gas network in East Anglia. The complex network of waterways, including rivers, canals and fens, create physical barriers to laying gas pipelines. In some instances, extending the gas network in this area requires complex and specialist engineering solutions thereby pushing up the cost of extending the gas network. Extensions are therefore only likely if they will add enough properties to offset set these additional costs.

Table D-2: The 6 local authorities with the highest proportion (%) of homes using oil for heating and their RUC21 classifications.
This analysis is based on Energy Performance Certificate (EPC) information up to March 2024. (Note D-2, Note D-6). When describing proximity, the descriptors "Majority further from" and "Majority nearer to" mean that the majority of the settlement is further from, or nearer to, a major town or city (Note D-8).

	RUC21	Proximity to a major town or city	Gas (%)	Electricity (%)	Oil (%)
Mid Suffolk	Majority rural	Majority nearer to	53.3	9.7	23.9
North Norfolk	Majority rural	Majority further from	49.1	16.7	23.4
King's Lynn and West Norfolk	Majority rural	Majority further from	49.8	15.3	22.3
Breckland	Intermediate rural	Majority further from	57.4	10.5	20.3
South Norfolk	Majority rural	Majority nearer to	60.3	9.4	20.3
Torridge	Majority rural	Majority further from	49.7	15.7	20.1

Fuel types used for central heating by property type and tenure within rural areas

The Energy Efficiency of Housing publication also includes information on the main fuel type used for heating split by property type and tenure. For this more detailed analysis we have chosen to consider only the subset of authorities that are classified as either majority rural or intermediate rural.

Central heating by property type

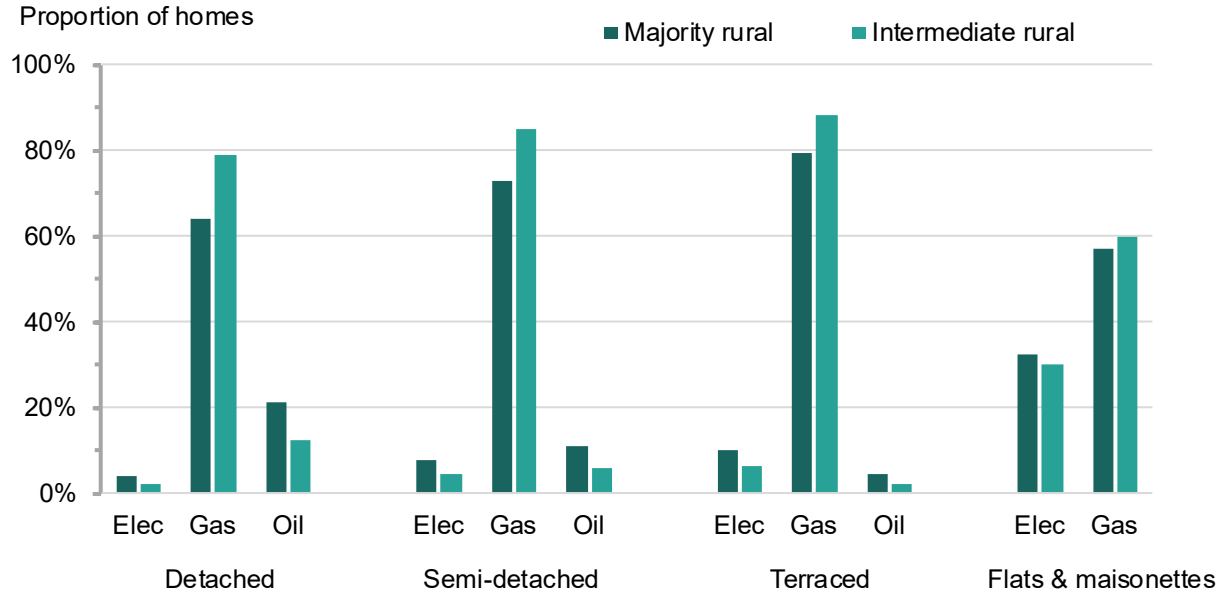
Figure D-4 is a bar chart that shows the proportion of homes within majority rural and intermediate rural authorities using each of the main heating types split by property type. Overall, for all property types, gas is the dominant central heating fuel type; but for all property types there was a lower proportion of properties using gas in majority rural authorities than in intermediate rural authorities.

Detached houses were the most likely to use oil (21% in majority rural authorities and 12% in intermediate rural authorities) resulting in a lower proportion of Detached homes using gas (just 64% in majority rural authorities) than for either Terraced homes or Semi-detached homes (79% and 73% respectively in majority rural authorities). Semi-detached houses were the second most likely to use oil and accounted for 11% in majority rural authorities and 6% in intermediate rural authorities. Flats and maisonettes tend to have a different energy sources, with only around six in every ten using gas in 2024 (57% in majority rural authorities and 60% in intermediate rural authorities). Electricity is more important for flats than for houses and accounted for 32% of Flats

and maisonettes in majority rural authorities and 30% in intermediate rural authorities. For the one in ten flats in majority rural or intermediate rural authorities that use neither gas nor electricity most used a community scheme (8% in majority rural authorities and 9% in intermediate rural authorities).

Figure D-4: Bar chart showing the percentage of domestic properties by main fuel type or method of heating used in central heating in 2024 by property type in majority rural and intermediate rural authorities as classified by the 2021 Local Authority Rural-Urban Classification.

This analysis is based on Energy Performance Certificate (EPC) information up to March 2024. (Note D-2, Note D-6). The legend is presented in the same order and orientation as the cluster of columns. Oil has been not been presented for Flats and maisonettes because 31 of the 78 authorities had missing data for this category (Note D-9).



For majority rural authorities when proximity to a major town or city is considered, for all three house types the proportion using gas reduced when the majority of the population lived further from a major town or city (Table D-3). The reduction in the proportion of properties using gas was biggest for detached (12 percentage points) and smallest for terraced (six percentage points). For all property types, electricity and oil heat a larger proportion of houses when the majority of the population live further from a major town or city. For oil the difference is most notable for Detached properties where 26% of properties use oil when the majority of the population live further from a major town or city compared to 19% when the majority of the population live nearer to a major town or city. In other words when majority rural authorities have a majority nearer to a major town or city one in five Detached homes used oil and when they have a majority further from a major town or city one in four used oil.

Table D-3: The percentage of domestic properties by main fuel type or method of heating used in central heating by property type and proximity to a major town or city for Local Authorities classified as majority rural using the 2021 Local Authority Rural-Urban Classification, 2023.

This analysis is based on Energy Performance Certificate (EPC) information up to March 2024. (Note D-2, Note D-6). When describing proximity, the descriptors "Majority further from" and "Majority nearer to" mean that the majority of the settlement is further from, or nearer to, a major town or city (Note D-8).

	Proximity to a major town or city	Gas (%)	Electricity (%)	Oil (%)
Detached	Majority further from	56.1	5.4	25.7
Detached	Majority nearer to	68.4	2.8	18.9
Semi-detached	Majority further from	67.1	10.3	12.9
Semi-detached	Majority nearer to	76.2	6.3	9.9
Terraced	Majority further from	75.6	12.6	5.1
Terraced	Majority nearer to	81.7	8.6	3.8

Central heating by property tenure

Figure D-5 is a bar chart that shows the proportion of homes within majority rural and intermediate rural authorities using each of the main heating types split by property tenure. For all tenure types gas is the dominant fuel type but for all property tenures there was a lower proportion of properties using gas in majority rural authorities than in intermediate rural authorities. In the rented sector electricity is the second most common heating type, but for Owner-occupied homes oil is the second most common.

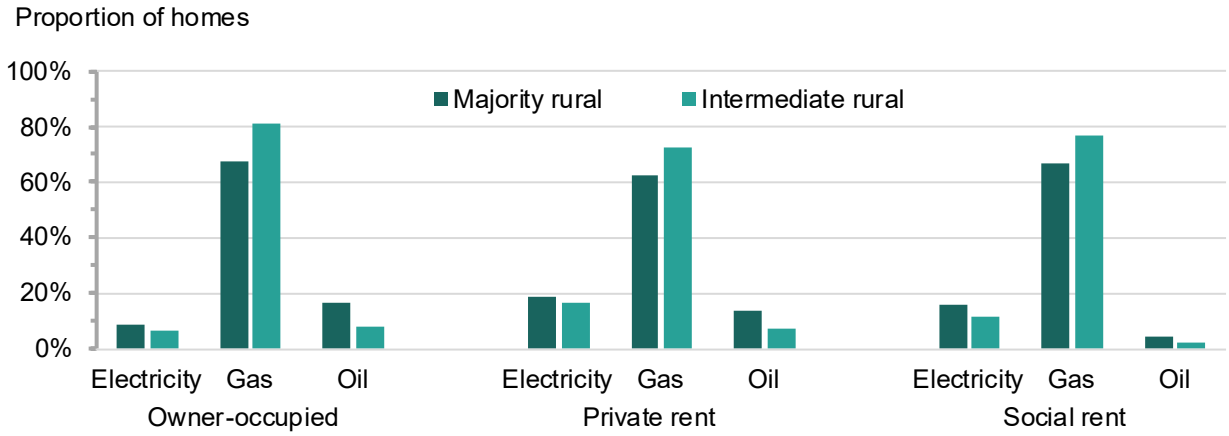
For Owner-occupied homes, 68% used gas in majority rural authorities compared to 81% in intermediate rural authorities. A large proportion of this difference reflects 16% of Owner-occupied homes using oil in majority rural authorities compared to 8% using oil in intermediate rural authorities.

For Private rented homes, 62% used gas in majority rural authorities compared to 72% in intermediate rural authorities. These proportions are lower than for Owner-occupied because a much higher proportion of private rental homes use electricity for heating. In majority rural authorities in 2024, 19% of private rental homes used electricity for heating compared to 9% of Owner-occupiers in majority rural authorities. Oil is still an important source for heating in the Private rented sector, 14% of private rented homes used oil in majority rural authorities and 8% used oil in intermediate rural authorities.

For the Social rent sector oil is used by just 4% of homes in majority rural authorities and by less than 2% in intermediate rural authorities. The proportion of Social rented properties using gas and electricity falls between the proportions for Owner-occupied and Private rental properties. Community heating schemes are not shown on Figure D-5 but these account for the heating method in 5% of Social rented homes in both majority rural and intermediate rural authorities. Whereas such schemes are used by less than 1% of Owner-occupied homes in majority rural and intermediate rural authorities.

Figure D-5: Bar chart showing the percentage of domestic properties by main fuel type or method of heating used in central heating in 2024 by property tenure in majority rural and intermediate rural authorities as classified by the 2021 Local Authority Rural-Urban Classification.

This analysis is based on Energy Performance Certificate (EPC) information up to March 2024. (Note D-2, Note D-6). The legend is presented in the same order and orientation as the cluster of columns. Some heating types are not included so the bars for each specific area and tenure type do not sum to 100%.



For majority rural authorities when proximity to a major town or city is considered, for all three tenure types the proportion using gas was lower when the majority of the population lived further from a major town or city (Table D-4). However, this was more marked for Owner-occupied properties (lower by 10 percentage points) than for either Private rental properties (lower by four percentage points) or Social rental properties (lower by six percentage points).

Table D-4: The percentage of domestic properties by main fuel type or method of heating used in central heating by property tenure and proximity to a major town or city for Local Authorities classified as majority rural using the 2021 Local Authority Rural-Urban Classification, 2023.

This analysis is based on Energy Performance Certificate (EPC) information up to March 2024. (Note D-2, Note D-6). When describing proximity, the descriptors "Majority further from" and "Majority nearer to" mean that the majority of the settlement is further from, or nearer to, a major town or city (Note D-8).

	Proximity to a major town or city	Gas (%)	Electricity (%)	Oil (%)
Owner-occupied	Majority further from	61.3	10.3	19.5
Owner-occupied	Majority nearer to	71.2	7.7	14.4
Private rent	Majority further from	59.9	20.3	14.1
Private rent	Majority nearer to	64.2	17.5	13.8
Social rent	Majority further from	63.4	18.7	5.0
Social rent	Majority nearer to	69.0	13.9	4.0

For rented properties there was a larger proportion that were using electricity when the majority of the population lived further from a major town or city. Whereas for Owner-occupied homes, larger proportions were using electricity or oil when the majority of the population lived further from a major town or city. For Owner-occupied homes 19% used oil when the majority of the population lived nearer to a major town or city compared to 14% when the majority lived further from a major town or city. In other words when majority rural authorities have a majority nearer to a major town or city almost one in five Owner-occupiers used oil and when the majority are further from a major town or city just one in seven used oil.

Fuel types used for central heating in new homes compared to existing homes

The Energy Efficiency of Housing publication includes information on the main fuel type used for heating recorded in the EPCs of new homes and existing homes as separate categories. For this more detailed analysis we also consider the homes using at 'least two methods, including one that is a renewable energy'.

New properties versus existing properties

Within the EPC dataset both new builds and conversions to domestic use are considered as new domestic properties, or new homes for short (Note D-10). Figure D-6 is a bar chart that shows the proportion of homes using each of the main heating types split between new and existing properties. The chart shows that when we compare new homes to existing ones, gas is still the dominant fuel type, but a transition is starting to take place.

In majority rural authorities, for existing homes, 67% heated their home with gas, 14% used oil and 12% used electricity. For new homes the proportion in majority rural authorities that used oil and electricity was just 2% and 4% respectively. Just over one in every four existing homes in majority rural authorities used oil or electricity but for new homes the proportion using oil or electricity drops to about one in every sixteen homes. Some, but not all, of this difference can be explained by an increased proportion of new homes in majority rural authorities using gas. In majority rural authorities, 77% of new homes used gas, this is 10 percentage points more than for existing homes in majority rural authorities. The rest of the difference comes from (a) an increased proportion of homes using community energy schemes (4% for new homes and just 1% for existing homes) and (b) an increased proportion of homes using more than one fuel type for their heating (see the next section on properties using at least two heating methods).

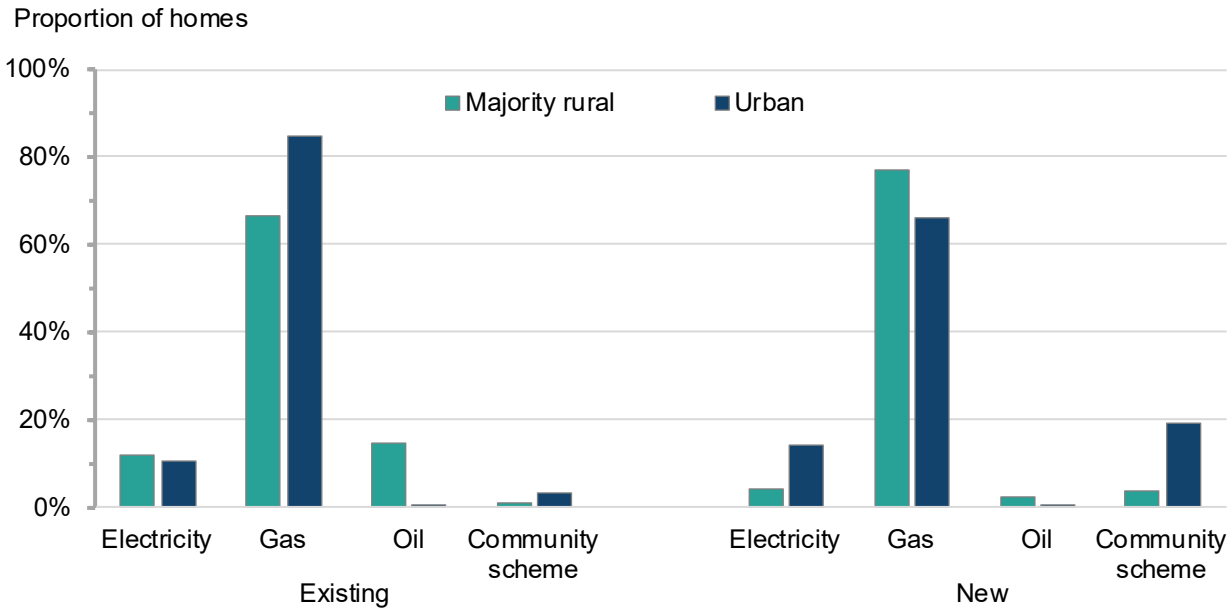
In urban authorities for existing homes, 85% heated their home with gas and 11% used electricity. For new homes in urban authorities the proportion using gas was 66% (19 percentage points lower than for existing properties) and the proportion using electricity was 14% (4 percentage points higher than for existing properties). Community energy schemes were the heating source for 19% of new homes in urban authorities compared to just 3% of existing homes in these authorities.

In summary, central heating types are changing in a different way in majority rural authorities than they are in urban authorities. In majority rural authorities the balance is tilting away from oil and electricity and towards both gas and multiple heat sources and in urban authorities the balance is tilting away from gas and towards electricity and particularly community schemes.

In intermediate rural authorities (not shown on a chart) the differences in fuel use between new and existing properties are in the same direction as for majority rural authorities but the magnitude of

the changes was smaller. For example, in intermediate rural authorities, 79% of existing properties use gas and this proportion increases to 83% for new properties.

Figure D-6: Bar chart showing the percentage of 'existing' and 'new' domestic properties by main fuel type or method of heating used in central heating in majority rural and urban authorities as classified by the 2021 Local Authority Rural-Urban Classification, 2024
This analysis is based on Energy Performance Certificate (EPC) information up to March 2024. (Note D-2, Note D-6, Note D-10). The legend is presented in the same order and orientation as the cluster of columns. The urban category includes London. The sets of bars on the left are for 'existing' homes and the sets of bars on the right are for 'new' homes. Some heating types are not included so the bars for each area type do not sum to 100%.



RUC21 provides information regarding a locations' proximity to a major town or city to indicate relative access. As explained in Note D-8, "nearer to a major town or city" is defined as being within a 30-minute drive of a major town or city and, "further from a major town or city" is defined as being more than a 30-minute drive by car from a major town or city.

Figure D-7 is a bar chart showing fuel type used for central heating in both new and existing homes in majority rural authorities by proximity to a major town or city. Figure D-7 shows that irrespective of whether authorities have a majority nearer to or further from a major town or city there is a move away from oil and electricity and towards gas in new properties when compared to existing properties.

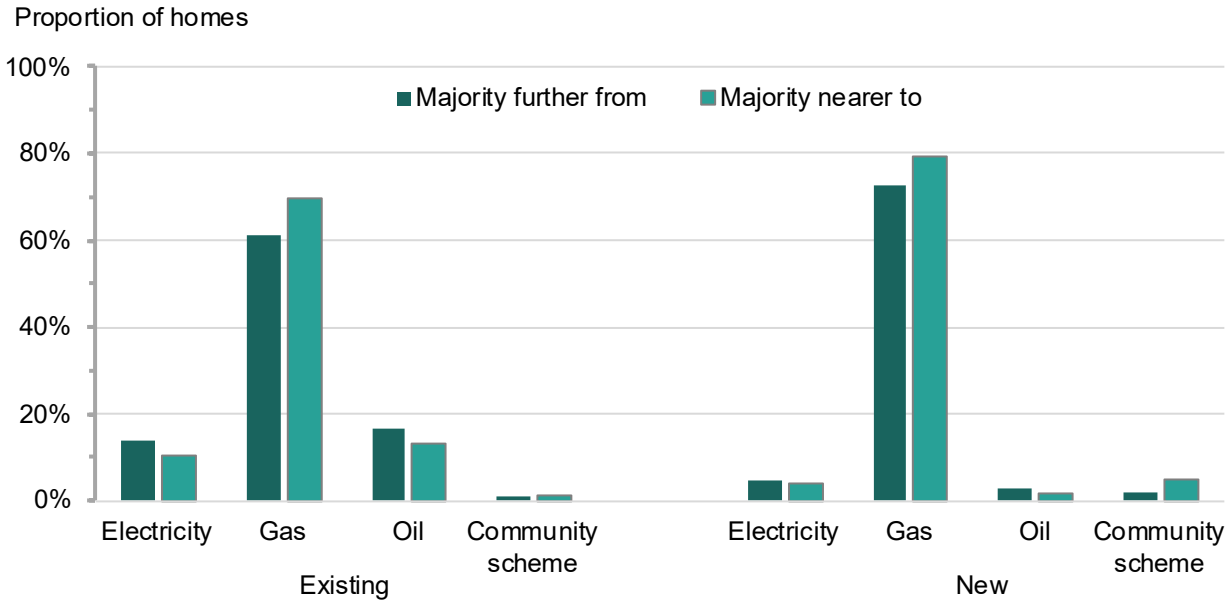
In majority rural authorities with a majority further from a major town or city, oil heated 17% of existing homes but only 3% of new homes. Electricity heated 14% of homes in majority rural authorities with a majority further from a major town or city but just 5% of new homes in such authorities. The proportion of new homes in majority rural with a majority further from a major town or city with gas heating is 73% (almost 3 in every 4) compared to just 61% of existing homes using gas in such authorities.

In majority rural authorities with a majority nearer to a major town or city 70% of existing homes used gas heating and for new homes this proportion was higher by 10 percentage points to 80% of new homes. Oil was used by 13% of existing and 2% of new homes in majority rural authorities with a majority nearer to a major town or city.

In majority rural authorities, community heating schemes are a more important part of the fuel mix for new homes than for existing homes, especially in authorities with a majority nearer to a major town or city where they provide the heating for 5% of new homes. In authorities with a majority further from a major town or city these schemes supply 2% of homes.

Figure D-7: Bar chart showing the percentage of 'existing' and 'new' domestic properties by main fuel type or method of heating used in central heating by proximity to a major town or city for Local Authorities classified as majority rural using the 2021 Local Authority Rural-Urban Classification, 2024.

This analysis is based on Energy Performance Certificate (EPC) information up to March 2024. (Note D-2, Note D-6, Note D-10). The legend is presented in the same order and orientation as the cluster of columns.When describing proximity, the descriptors "Majority further from" and "Majority nearer to" mean that the majority of the settlement is further from, or nearer to, a major town or city (Note D-8). The sets of bars on the left are for 'existing' homes and the sets of bars on the right are for 'new' homes. Some heating types are not included so the bars for each area type do not sum to 100%.



Properties using at least two heating methods including one that is a renewable energy

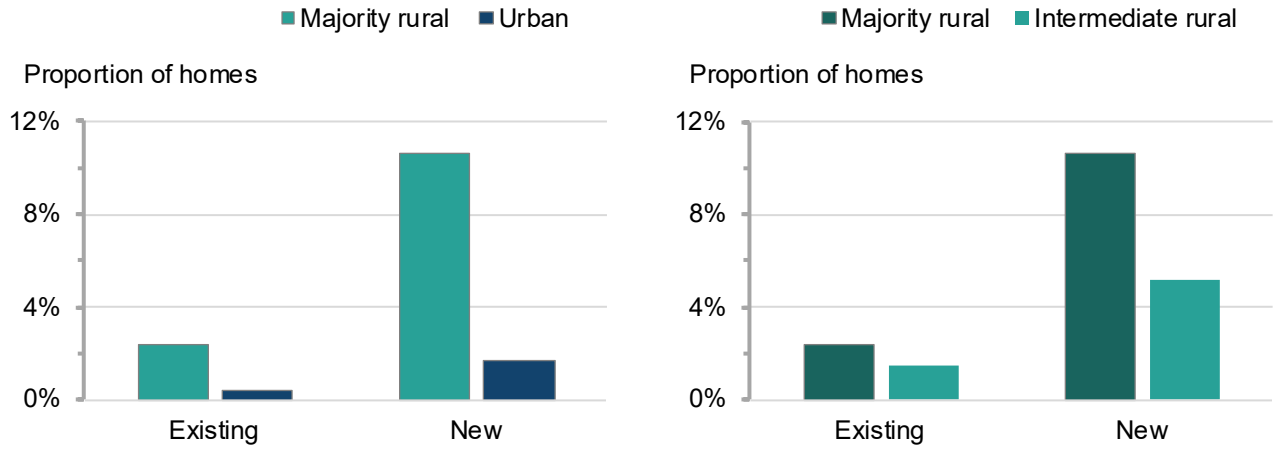
The proportion of properties that exclusively used renewable energy for heating is very small. Even for new builds the average is just 0.4% of properties in both majority rural and urban authorities (and around 0.2% in intermediate authorities). So, we have focused on properties using two or more heating methods including one that is renewable.

The left-hand chart of Figure D-8 is a bar chart that shows that both new and existing homes in majority rural authorities are more likely to have a heating system that uses at least two heating methods, including one that is a renewable energy, than homes in urban authorities. For existing homes, 2% in majority rural authorities and less than 0.5% in urban authorities used at least two heating methods including one that is a renewable energy. For new homes the difference between majority rural and urban authorities was even bigger, 11% of new homes in majority rural

authorities used at least two heating methods including one that is a renewable energy compared to less than 2% of new homes in urban authorities.

Figure D-8: Bar charts showing the percentage of 'existing' and 'new' domestic properties that used at least two heating methods including one that is a renewable energy in majority rural, intermediate rural and urban authorities as classified by the 2021 Local Authority Rural-Urban Classification, 2024

This analysis is based on Energy Performance Certificate (EPC) information up to March 2024. (Note D-2, Note D-6, Note D-10). The left-hand chart compares majority rural and urban areas and urban category includes London. The right-hand chart compares majority rural and intermediate rural authorities. The legend is presented in the same order and orientation as the cluster of columns.



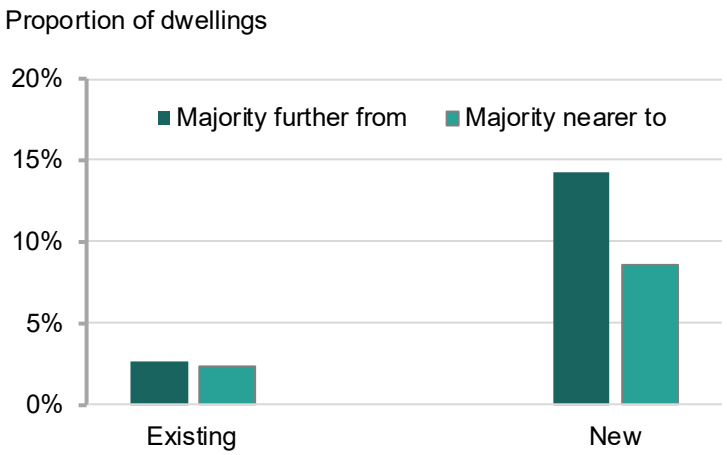
One plausible explanation for this difference is that in majority rural authorities a larger proportion of the homes are Detached. Detached homes, irrespective of whether they are in majority rural or urban authorities typically have a larger plot of land and a larger floor plan than other property types. If installing a heat pump as the secondary device, a detached home is likely to have more space for additional components like the hot water tank that is much larger than a combi boiler. Whilst outside the home the larger plot means that the unit can be sited further from a major town or city neighbours thereby avoiding the need for planning permission (Note D-11).

For new homes in majority rural authorities using at least two heating methods including one that is a renewable energy is now the second most popular heating method after gas. Given the large number of photovoltaic (solar) installations in majority rural authorities, it is likely that a large proportion of these new homes are combining solar with gas or possibly oil. Similarly to heat pumps, larger detached homes have more potential for photovoltaic installations. They can often accommodate more panels and there is less potential for shadowing from adjacent properties. Both of these factors increase the potential yield of a photovoltaic setup. More details on photovoltaic installations will be added in a new chapter later in the year.

The right-hand chart of Figure D-8 is a bar chart that shows that both new and existing homes in majority rural authorities were more likely to have a heating system that uses at least two heating methods, including one that is a renewable energy, than homes in intermediate rural authorities. However, the difference is smaller than it was between majority rural authorities and urban authorities. In intermediate rural authorities, 5% of new homes had a heating system that uses at least two heating methods including one that is a renewable energy.

Within majority rural authorities we can consider whether an authorities' proximity to a major town or city affects the likelihood of homes using at least two heating methods including one that is a renewable energy. Figure D-9 is a bar chart that shows the proportion of 'existing' and 'new' domestic properties in majority rural authorities that used at least two heating methods, including one that is a renewable energy, by proximity to a major town or city. It shows that for existing properties proximity to a major town or city has little impact, 3% of existing homes in authorities with a majority further from a major town or city used at least two heating methods including one that is a renewable energy compared to 2% of homes in authorities with a majority nearer to a major town or city. For new homes, however, 14% of homes in authorities with a majority further from a major town or city used at least two heating methods including one that is a renewable energy compared to 9% of homes in authorities with a majority nearer to a major town or city. This is a difference of 6 percentage points.

Figure D-9: Bar chart showing the percentage of 'existing' and 'new' domestic properties in majority rural authorities that used at least two heating methods including one that is a renewable energy by proximity to a major town or city in 2024.
This analysis is based on Energy Performance Certificate (EPC) information up to March 2024. (Note D-2, Note D-10). The legend is presented in the same order and orientation as the cluster of columns. When describing proximity, the descriptors "Majority further from" and "Majority nearer to" mean that the majority of the settlement is further from, or nearer to, a major town or city (Note D-8).



Central heating explanatory notes

- **Note D-1**

Energy Performance Certificate (EPC) are described in more detail in Section B Energy Performance Certificates: average Energy Efficiency Score and Section C Energy Performance Certificates: achieving energy efficiency category C.

- **Note D-2**

The Office for National Statistics (ONS) publish Energy Efficiency of Housing at local authority level on an annual basis for financial years. This section uses data for the financial year ending March 2024.
The source data for this ONS publication is Department for Levelling up, Housing and Communities – Energy Performance Certificate data on Open Data Communities and Valuation Office Agency - Property Attributes data (https://epc.opendatacommunities.org/).

There were 27 local authorities where the proportion of properties using oil was supressed in the source data and they were therefore excluded from our analysis. All of them were urban local authorities and were mainly within London. The local authorities excluded can be determined from worksheet DE in the Energy data tables.

- **Note D-3**

• New local authorities came into operation in April 2023. These changes relate to 3 parts of England: (1) North Yorkshire, (2) Cumbria and (3) Somerset. This reduced the total number of local authorities from 309 down to 296.

  - A new unitary authority called North Yorkshire replaced the 7 existing districts of Craven, Hambleton, Harrogate, Richmondshire, Ryedale, Scarborough and Selby.
  - The 6 districts within Cumbria were abolished and replaced with 2 new unitary authorities. Allerdale, Carlisle and Copeland have been merged to form Cumberland and Barrow-in-Furness, Eden and South Lakeland have been merged to form Westmorland and Furness.
  - The districts of Mendip, Sedgemoor, Somerset West and Taunton, and South Somerset have been merged to form a new unitary authority known as Somerset.

- **Note D-4**

• The central heating data used in this section does not reflect all dwellings in England, because not every dwelling has an EPC. Table 1a of Percentage of dwellings covered by an Energy Performance Certificate, England and Wales shows the percentage of dwellings covered by an Energy Performance Certificate since records began, in England and Wales, as at 31 March 2024. Overall, in England almost 70% of domestic properties are covered by valid EPCs.

- **Note D-5**

The 2021 Rural-Urban Classification was released on 6 March 2025. Details of the 2021 Rural Urban Classification can be found at: https://www.gov.uk/government/collections/rural-urban-classification

- **Note D-6**

There is no mains gas on the Scilly Isles.

- **Note D-7**

In the Annual fuel poverty statistics report: 2025 DESNZ no longer provide information on the fuel poverty statistics specifically for households using oil in table 12 of their detailed tables that support the publication. Instead, all fuels that are neither gas nor electric are grouped under the other category.

- **Note D-8**

RUC21 provide information regarding the areas' proximity to a major town or city to indicate relative access. "Nearer to a major town or city" is defined as being within a 30-minute drive of a major town or city and, "further from a major town or city" is defined as being more than a 30-minute drive by car from a major town or city. In this context "a major town or city" is defined as a built-up area with a population of at least 75,000 residents. A local authority is classified as "majority nearer to a major town or city" if less than 50% of their population are nearer to a major town or city a major town or city, and similarly a local authority is classified as "majority further from a major town or city" if at least 50% of their population are further from a major town or city.

This proximity measure is independent of the rurality measure in that it relates to all of the population within the local authority not just the rural proportion. For example, majority rural authority X has 50% or more of their population in rural output areas and if this same majority rural authority X is further from a major town or city it also has at least 50% of their population further from a major town or city. However, this does not automatically mean that more than 50% of the population of authority X live in rural output areas that are further from a major town or city.

- **Note D-9**

ONS break down houses (including bungalows and park homes) into Detached, Semi-detached and Terraced property types and group Flats and maisonettes together as the final property type. For 10 majority rural and 21 intermediate rural authorities the value for the proportion of Flats and maisonettes was recorded as [X] in the source dataset. This notation is used where either there are no EPCs, or there were fewer than five EPCs, for that particular dwelling type, in the given financial year and for the selected geography. These data were supressed because ONS deemed that fewer than five EPCs are not enough to produce a robust median statistic.

- **Note D-10**

• Statistics for **new properties** were generated using data from new dwelling EPC records, which include new builds, conversions and change of use. Statistics for **existing properties** were generated using the latest EPC lodgement available for a property, within the existing dwellings records. An existing dwelling may have undergone several EPC assessments for different reasons (for example, due to a marketed sale, for a green deal assessment, or following the implementation of the changes suggested in a green deal assessment).

- **Note D-11**

In 2024 the existing permitted development rights still placed restrictions upon heat pump installations. There was a 1m boundary rule meaning that permissions were needed to install them within 1m of the property. They were also restricted to a single heat pump of a maximum size of 0.6m^3. As reported by MHCLG in their blog of November 2024 (https://mhclgmedia.blog.gov.uk/2024/11/21/warm-homes-plan-and-heat-pumps/) plans were in place to remove these restrictions during 2025.
The new rules effective as of 29 May 2025 (https://www.gov.uk/government/news/rooftop-solar-for-new-builds-to-save-people-money) allowed 2 heat pumps per home each up to 1.5m^3 and it also removed the 1m rule.

- **Note D-12**

In the Seventh Carbon Budget, the Climate Change Committee report that “emissions in residential buildings were 52.2 MtCO2e in 2023, making it the UK’s second highest-emitting sector” but that this was “35% lower than 1990 levels”. They further report that for the residential buildings sector the “largest source of emissions (96%) is the use of fossil fuels for space heating and hot water”.

E. Energy Consumption

Average domestic electricity consumption is higher in Predominantly Rural areas than Predominantly Urban areas, but the reverse is true for domestic gas consumption.

Key findings – Energy consumption

Domestic electricity consumption is higher in Rural areas than in Urban areas

- In 2022, the average median domestic electricity consumption was 2,700 kWh per meter in Predominantly Rural areas and 2,500 kWh per meter in Predominantly Urban areas.

Non-domestic electricity consumption is lower in Rural areas than in Urban areas

- In 2022, the average median non-domestic electricity consumption was 7,000 kWh per meter in Predominantly Rural areas and 7,300 kWh per meter in Predominantly Urban areas.

Gas consumption is lower in Rural areas than in Urban areas

- In 2022, the average median domestic gas consumption was 9,500 kWh per meter in Predominantly Rural areas and 9,800 kWh per meter in Predominantly Urban areas.
- Average median gas consumption for non-domestic premises in 2022 stood at 140,000 kWh per non-domestic meter in Predominantly Rural areas and 150,000 kWh per non-domestic meter in Predominantly Urban areas.

Summary

Energy consumption will be affected by a number of factors including differences in the sizes and types of properties and premises in rural and urban areas.

Rural domestic electricity consumption is higher than Urban domestic consumption. In 2022, the average median domestic electricity consumption was 2,700 kWh per meter in Predominantly Rural areas and 2,500 kWh per meter in Predominantly Urban areas. When compared to consumption in 2015, the 2022 average median domestic electricity consumption was 800 kWh per meter (23%) lower in Predominantly Rural areas and 700 kWh per meter (21%) lower in Predominantly Urban areas.

In 2022, the average median non-domestic electricity consumption was lower in Predominantly Rural areas than in Predominantly Urban areas and stood at 7,000 kWh per meter in Predominantly Rural areas and 7,300 kWh per meter in Predominantly Urban areas. When compared to consumption in 2015, the 2022 average median non-domestic electricity consumption was 2,100 kWh per meter (23%) lower in Predominantly Rural areas and 2,600 kWh per meter (26%) lower in Predominantly Urban areas.

Domestic gas consumption was changed little in both Predominantly Rural and Predominantly Urban areas between 2015 and 2020 at around 12,000 kWh per meter, but has dropped markedly since 2020. In 2022 in Predominantly Rural areas average median domestic gas consumption was 9,500 kWh per meter, a drop of 2,500 kWh per meter (21.2%) from 2020. In Predominantly Urban areas it was 9,800 kWh per meter, a drop of 2,400 kWh per meter (19.9%) from 2020. Since 2017 domestic gas consumption has been lower in Predominantly Rural areas than in Predominantly Urban areas.

Average median gas consumption for non-domestic premises in 2022 stood at 143,000 kWh per non-domestic meter in Predominantly Rural areas and 152,000 kWh per non-domestic meter in Predominantly Urban areas. These values correspond to an increase in average median gas consumption for non-domestic premises since 2020 of 3.4% in in Predominantly Rural areas and 1.3% in Predominantly Urban areas.

The Department for Energy Security and Net Zero produce local authority level gas and energy consumption data based on meter level data. A third party collects and aggregates the data from gas and electricity suppliers. Note that the gas data is weather corrected to allow for comparisons over time.

Energy consumption data

The Department for Energy Security & Net Zero (DESNZ) produce National Statistics on gas and electricity consumption annually.

Sub-national electricity consumption data is available for all of the Local Authorities in Great Britain for the period 2005 to 2022 in their most recent publication from January 2024. The electricity figures are based on meter level electricity consumption data provided by data aggregators (who compile this data on behalf of electricity suppliers).

Sub-national gas consumption data is available for all of the Local Authorities in Great Britain for the period 2005 to 2022 in their most recent publication from January 2024. These figures are based on meter level gas consumption data provided by Xoserve (who compile meter level data from gas shippers, who in turn receive the data from gas suppliers). Xoserve provide annualised estimates of consumption for all gas meters. These estimates are weather-corrected to enable better comparisons over time (Note E-5).

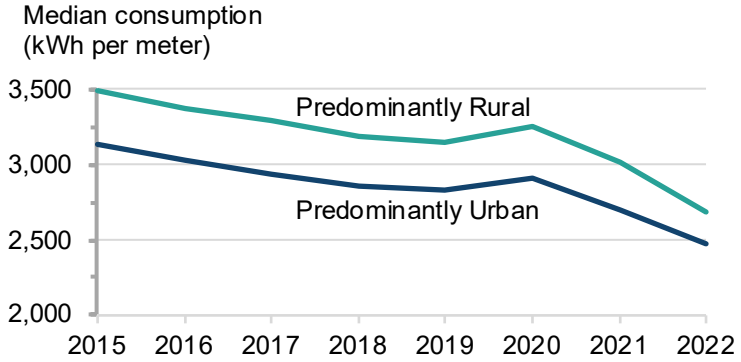
In the January 2024 publication DESNZ switched to using the Local Authority boundaries that came into effect from April 2023. Note E-10 describes these boundary changes. In this report we have recalculated figures for the period 2015 to 2021 so that we can present a consistent time-series comparable with the data for 2022. The data for the period 2015 to 2021 will therefore differ from those previously published.

Electricity consumption: Domestic

Electricity data is divided between domestic and non-domestic categories according to the meter's profile class (Note E-4). This section addresses domestic consumption.

The proportion of total domestic electricity consumption assigned to Predominantly Rural Local Authorities remained at 25% across the period 2015 to 2022 (Note E-1). Figure E-1 is a line chart showing that the average median domestic electricity consumption in Predominantly Rural areas is higher than in Predominantly Urban areas and that the general trend over the period 2015 to 2022 was one of falling consumption. This reflects the larger properties and greater proportion of older and detached properties in Predominantly Rural areas.

Figure E-1: Line chart showing the estimated average median domestic electricity consumption (kWh per meter) by broad Local Authority Rural-Urban Classification 2015 to 2022 (Note E-2)
Note that the scale on the y-axis differs between this chart and Figure E-2.



Over the period from 2015 to 2019 electricity consumption declined year-on-year in both Predominantly Rural and Urban areas. In 2020 when COVID-19 pandemic hit the UK and people were forced to stay at home, median electricity consumption went up in both Predominantly Rural and Predominantly Urban areas. For Predominantly Rural areas the average median domestic electricity consumption went up by 110 kWh per meter, whilst for Predominantly Urban areas the absolute increase was smaller (90 kWh per meter). In percentage terms this is a 3% increase in domestic electricity consumption in both Predominantly Rural and Predominantly Urban areas. With the stay-at-home restrictions largely removed the average median domestic electricity consumption reduced again in 2021 by 8% (250 kWh per meter) in Predominantly Rural areas and 7% (210 kWh per meter) in Predominantly Urban areas.

In 2022, the average median domestic electricity consumption was 2,690 kWh per meter in Predominantly Rural areas and 2,470 kWh per meter in Predominantly Urban areas. This difference in average median domestic consumption between Predominantly Rural and Predominantly Urban areas of 220 kWh per meter was the smallest difference recorded over the period 2015 to 2022. In Predominantly Rural areas this is a fall of 320 kWh per meter (or 11%) compared to 2021 whilst in Predominantly Urban areas the fall over the same period was smaller at 230 kWh per meter (or 9%). In both cases these are probably reflecting a consumer response to energy prices, their energy usage and ways to save energy.

Domestic electricity consumption has reduced by slightly more in Predominantly Rural areas than in Predominantly Urban area. When compared to consumption in 2015, the 2022 average median domestic electricity consumption was 810 kWh per meter lower in Predominantly Rural areas and 670 kWh per meter lower in Predominantly Urban areas. This equates to a reduction in consumption over the period 2015 to 2022 of 23% in Predominantly Rural areas and a 21% reduction in Predominantly Urban areas.

Electricity consumption: Non-Domestic

Electricity data is divided between domestic and non-domestic categories according to the meter's profile class (Note E-4). This section addresses non-domestic consumption.

Figure E-2 is a line chart showing that average median non-domestic electricity consumption was lower in Predominantly Rural areas than in Predominantly Urban areas for every year between 2015 and 2022 except for 2020 when COVID-19 disrupted typical consumption patterns.

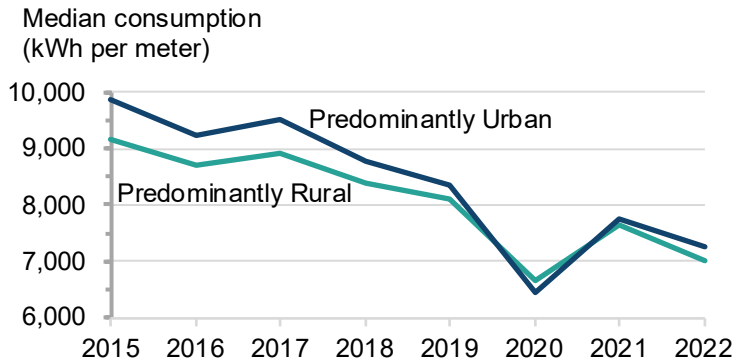
In 2015, the average median non-domestic electricity consumption was 9,150 kWh per meter in Predominantly Rural areas and 9,860 kWh per meter in Predominantly Urban areas. With the exception of 2017, when there was a modest rise, the average median non-domestic electricity consumption fell year on year between 2015 and 2019 in both Predominantly Rural and Predominantly Urban areas, but it fell at a faster rate in Predominantly Urban areas. In 2019, the average median non-domestic electricity consumption was 8,090 kWh per meter in Predominantly Rural areas and 8,370 kWh per meter in Predominantly Urban areas. Average median non-domestic electricity consumption was 12% lower in Predominantly Rural areas in 2019 than in 2015, whilst in Predominantly Urban areas it was 15% lower in 2019 than in 2015.

In 2020, when stay-at-home orders led to the closure of many non-domestic premises for a period of time to combat the spread of COVID-19, the average median non-domestic electricity consumption fell by 1,440 kWh per meter in Predominantly Rural areas and by 1,940 kWh per

meter in Predominantly Urban areas. In percentage terms this was a fall in consumption of 18% in Predominantly Rural areas and a fall of 23% in Predominantly Urban areas relative to 2019 average median consumption levels. This sharper fall in Predominantly Urban areas led to a higher average median non-domestic electricity consumption in Predominantly Rural areas (6,650 kWh per meter) than in Predominantly Urban areas (6,430 kWh per meter). Whilst average median non-domestic electricity consumption rose again in 2021, it only rose by 1,010 kWh per meter to 7,650 kWh per meter in Predominantly Rural areas and by 1,320 kWh to 7,750 kWh per meter in Predominantly Urban areas. This 2021 average median non-domestic consumption was therefore 440 kWh per meter (5%) lower than the 2019 pre-Covid-19 average median non-domestic consumption in Predominantly Rural areas; whilst in Predominantly Urban areas the 2021 consumption was 620 kWh per meter (7%) lower.

Figure E-2: Line chart showing the estimated average median non-domestic electricity consumption (kWh per meter) by broad Local Authority Rural-Urban Classification 2015 to 2022 (Note E-2)

Note that the scale on the y-axis differs between this chart and Figure E-1.



In 2022 average median non-domestic electricity consumption in Predominantly Rural areas fell by 640 kWh per meter (8%) compared the 2021 consumption levels. The fall was larger than the one seen for average median non-domestic electricity consumption in Predominantly Urban areas which fell by 490 kWh per meter (6%).

In 2022, the total non-domestic electricity consumption in Predominantly Rural Local Authorities was 29,800 GWh (Note E-2), which is 3,500 GWh (10%) lower than in 2015 (Table E-1). In Predominantly Urban Local Authorities the total non-domestic electricity consumption fell by 13,400 GWh (14%) over the same period and stood at 83,600 GWh in 2022. In 2015 Predominantly Rural Local Authority areas accounted for 22.2% of total non-domestic electricity consumption; in 2022 their share had risen to 22.8%. Overall, Predominantly Rural Local Authority areas made up a smaller proportion of non-domestic electricity consumption than they did of domestic electricity consumption.

Table E-1: Total non-domestic electricity consumption (GWh) in England split by the Local Authority Rural-Urban Classification (2015 to 2022)

	2015	2016	2017	2018	2019	2020	2021	2022
Predominantly Rural	33,300	31,800	32,800	32,700	31,800	28,600	30,100	29,800
Predominantly Urban	97,000	92,800	94,100	94,000	91,600	79,200	83,100	83,600

Gas consumption: Domestic

Gas data is divided between domestic and non-domestic categories according to the gas consumption relative to an industry standard cut-off value, thereby risking some small non-domestic premises being miss-classified (Note E-8).

Figure E-3 is a line chart that shows that Predominantly Rural Local Authority areas account for a larger proportion of non-domestic gas consumption than they do for domestic gas consumption. This is the reverse of the situation seen for electricity. The reason for this difference is likely to be because there are many more domestic properties in Predominantly Rural areas that are off the gas grid than properties that do not have mains electricity and rely on solutions like stand-alone generators. The proportion of total domestic gas consumption assigned to Predominantly Rural Local Authorities remained between 19.2% and 19.5% across the period 2015 to 2022 as shown on Figure E-3.

Figure E-3: Line chart showing the proportion of total Gas consumption in both the domestic and non-domestic markets accounted for by Predominantly Rural Local Authorities, 2015 to 2022 (Note E-2)

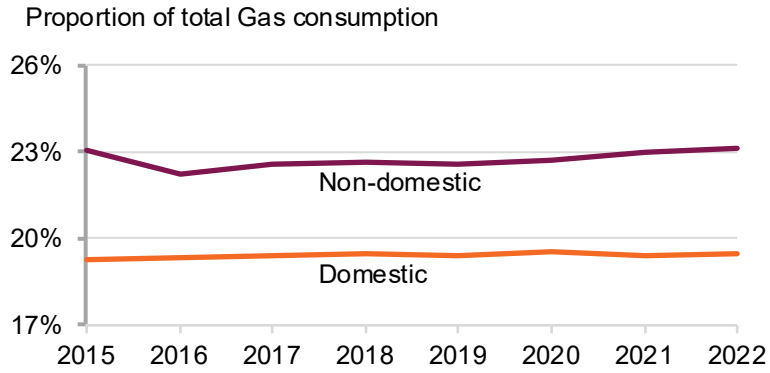


Figure E-4 is a line chart showing the average median domestic gas consumption over the period 2015 to 2022, it shows that gas consumption remained around 12,000 kWh per meter in both Predominantly Rural and Predominantly Urban areas over the period 2015 to 2020. Consumption then fell sharply over the period 2020 to 2022 in both Predominantly Rural and Predominantly Urban areas.

The following bullets describe the information presented in Figure E-4 in more detail.

- In 2015 and 2016 the average median domestic gas consumption was around 11,900 kWh per meter and the consumption was marginally higher in Predominantly Rural areas than in Predominantly Urban areas.
- In 2017 the average median domestic gas consumption increased to 12,100 kWh per meter and was very similar in Predominantly Rural and Predominantly Urban areas.
- From 2018 onwards the average median domestic gas consumption was lower in Predominantly Rural areas than in Predominantly Urban areas. Over the period 2018 to 2020 the gap between the average median domestic gas consumption in Predominantly Rural and Predominantly Urban areas widened as consumption grew less in Predominantly Rural areas that in Predominantly Urban areas. Over this 3-year period the average median domestic gas consumption in Predominantly Rural areas increased from 11,800 kWh per

meter to 12,000 kWh per meter, whilst in Predominantly Urban areas the increase was from 11,900 kWh per meter to 12,200 kWh per meter.

- Between 2019 and 2020 this average median gas consumption rose by 170 kWh per meter in Predominantly Rural areas and by 200 kWh per meter in Predominantly Urban areas. The stay-at-home measures in spring 2020 used to combat the spread of COVID-19 will have contributed to this increased consumption. However, with households often starting to reduce the amount they use their central heating as spring progresses, a larger contribution to this increase probably came from the second wave of restrictions in November and December 2020.
- Average median domestic gas consumption fell dramatically in 2021 and in 2022 in both Predominantly Rural and Predominantly Urban areas. In Predominantly Rural areas it fell by 900 kWh per meter in 2021 and by a further 1,600 kWh per meter in 2022. Overall, this is a drop in consumption across the two years of 2,500 kWh per meter (21.2%). By comparison, in Predominantly Urban areas the drop was slightly smaller in 2021 and slightly larger in 2022 leading to an overall drop of in consumption in Predominantly Urban areas of 2,400 kWh per meter (19.9%).
- These drops over the period 2020 to 2022 left average median domestic gas consumption at less than 10,000 kWh per meter, it was 9,500 kWh per meter in Predominantly Rural areas and 9,800 kWh per meter in Predominantly Urban areas. This decline in consumption reflects a customer reaction to rising energy prices and being more cautious about when to use their central heating because of the rising cost of doing so.

Figure E-4: Line chart showing the estimated average median domestic gas consumption (kWh per meter) by broad Local Authority Rural-Urban Classification 2015 to 2022 (Note E-2, Note E-6)

Note that the scale on the y-axis differs between this chart and Figure E-5.

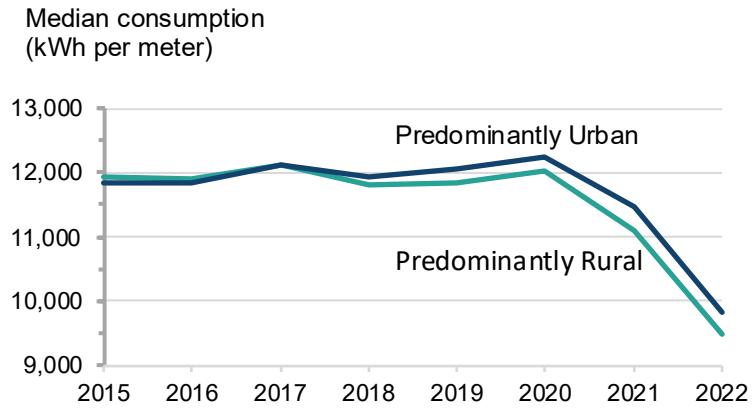
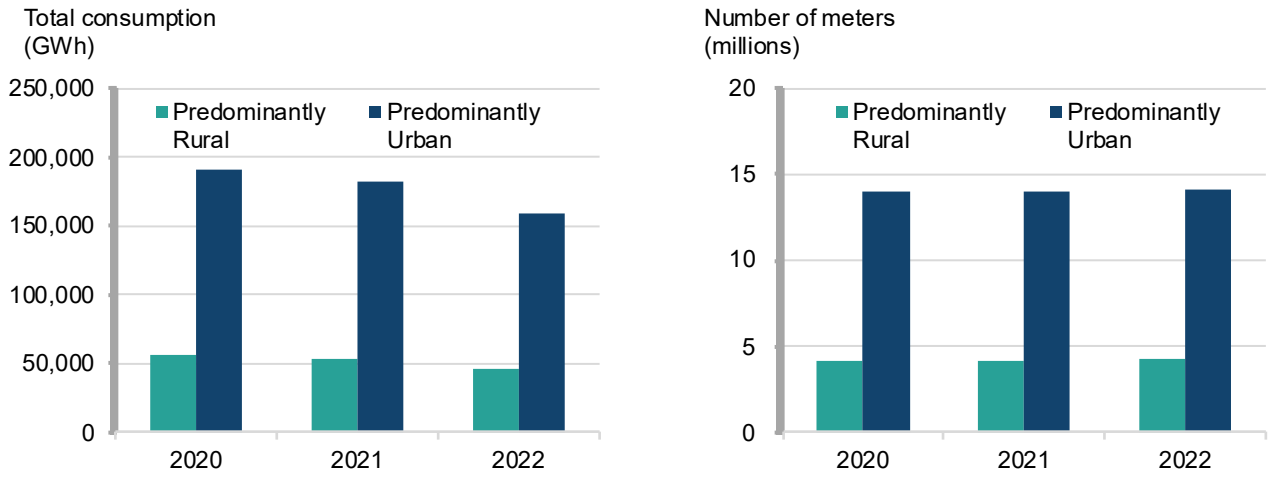


Figure E-5 is a pair of bar charts showing the total domestic gas consumption on the left-hand chart and the total number of gas meters contributing to this consumption on the right-hand chart.

The left-hand chart of Figure E-5 shows that in Predominantly Rural areas the total domestic gas consumption fell from 55,900 GWh across the 75 Predominantly Rural Local Authorities in 2020 to 46,300 GWh in 2022. This is a fall of 17% in the total consumption across this 2-year period. Total consumption also fell by 17% across the 175 Predominantly Urban Local Authorities and stood at 159,500 GWh in 2022.

Figure E-5: Bar charts showing the estimated total domestic gas consumption (GWh) and the number of domestic gas meters in Predominantly Rural and Predominantly Urban areas in 2020, 2021 and 2022 (Note E-2, Note E-6)

The legend is presented in the same order as the clusters of columns. The left-hand chart shows total consumption, and the right-hand chart shows number of meters. Note that the scale is different on the two charts.



The right-hand chart of Figure E-5 shows that there are around 4 million domestic gas meters in Predominantly Rural areas and 14 million domestic gas meters in Predominantly Urban areas. The numbers of gas meters in Predominantly Rural areas rose by 3% (111,500 meters) over the period 2020 to 2022 and in Predominantly Urban areas the number of domestic gas meters increased by 1% (124,300 meters).

In every Local Authority (Note E-3) the total domestic gas consumption decreased between 2020 and 2022. With the exception of three London Local Authorities (Kensington and Chelsea, City of London and Westminster), the total domestic gas consumption decreased by at least 10% between 2020 and 2022.There were nine Local Authorities where the total consumption fell by at least 20%, only one of these Local Authorities was in a Predominantly Rural area (Staffordshire Moorlands).

Gas consumption: Non-domestic

Gas data is divided between domestic and non-domestic categories according to the gas consumption relative to an industry standard cut-off value, thereby risking some small non-domestic premises being miss-classified (Note E-8).

Figure E-3 is a line chart that also showed the proportion of total non-domestic gas consumption assigned to Predominantly Rural Local Authorities over the 2015 to 2022 period. Predominantly Rural Local Authority areas accounted for 23.1% of consumption in 2015 and then the proportion fell to 22.2% in 2016. For the next 4 years the proportion of non-domestic consumption accounted for by Predominantly Rural Local Authority areas averaged 22.6%, but since 2020 this proportion has climbed and in 2022 stood at 23.2%.

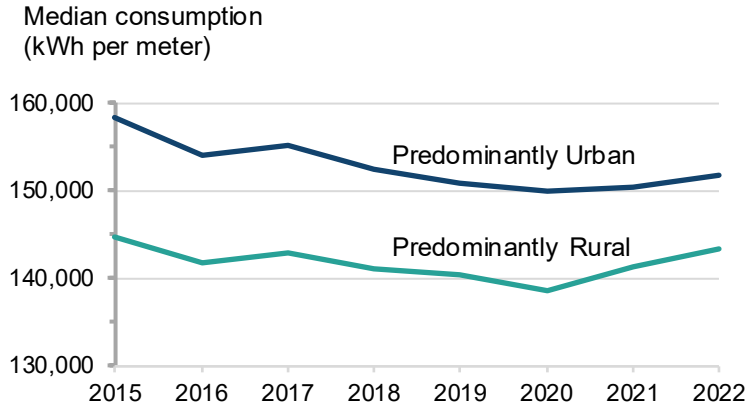
Figure E-6 is a line chart showing that average median non-domestic gas consumption over the period 2015 to 2022 was lower in Predominantly Rural areas than in Predominantly Urban areas. It also shows that the general trend was for falling average median non-domestic gas consumption between 2015 and 2020 followed by rising consumption after 2020.

The following bullets describe the information presented in Figure E-4 in more detail.

- In 2015 the average median non-domestic gas consumption was 145,800 kWh per meter in Predominantly Rural areas and 158,300 in Predominantly Urban areas.
- Between 2015 and 2020 the average median non-domestic gas consumption in Predominantly Rural areas fell by 6,300 kWh per meter (4.3%). Over the same period the average median non-domestic gas consumption in Predominantly Urban areas fell by 8,400 kWh per meter (5.3%). This left the average median non-domestic gas consumption in 2020 at 138,500 kWh per meter in Predominantly Rural areas and 149,900 in Predominantly Urban areas.
- Between 2020 and 2022 the average median non-domestic gas consumption in Predominantly Rural areas increased by 4,800 kWh per meter (3.4%). Over the same period the average median non-domestic gas consumption in Predominantly Urban areas increased by 2,000 kWh per meter (1.3%). This left the average median non-domestic gas consumption in 2022 at 143,300 kWh per meter in Predominantly Rural areas and 151,900 in Predominantly Urban areas.
- The larger increase in average median non-domestic gas consumption in Predominantly Rural areas than in Predominantly Urban areas means that in Predominantly Rural areas the average median non-domestic gas consumption in 2022 was just 1.0% (1,500 kWh per meter) lower than in 2015. Whereas in Predominantly Urban areas the average median non-domestic gas consumption in 2022 was 4.1% (6,400 kWh per meter) lower than in 2015.

Figure E-6: Line chart showing the estimated average median non-domestic gas consumption (kWh per meter) by broad Local Authority Rural-Urban Classification 2015 to 2022 (Note E-2, Note E-6)

Note that the scale on the y-axis differs between this chart and Figure E-4.



This increase in average median non-domestic gas consumption comes despite the increase in the cost of gas over the 2020 to 2022 period. However, the total non-domestic gas consumption across all 75 Predominantly Rural Local Authorities fell from 34,200 GWh in 2015 to 33,000 GWh in 2022, a fall of 3.6%. Similarly total non-domestic gas consumption across all 75 Predominantly Rural Local Authorities was 3.1% lower in 2022 than it was in 2020.

Energy Consumption explanatory notes

- **Note E-1**

Tables showing additional data and the data behind the figures in this section are available in the Energy data tables.

- **Note E-2**

The figures for median electricity or gas consumption per meter point are presented in kilowatt hours (kWh). The figures for total gas consumption are presented in gigawatt hours (GWh). 1GWh = 1 million kWh. Median electricity consumption figures in the commentary have been rounded to the nearest 10 kWh per meter. Annual median gas consumption figures have been rounded to 100 kWh per meter, while year to year changes in gas consumption have been rounded to the nearest 10 kWh per meter.

- **Note E-3**

There is no mains gas on the Scilly Isles.

- **Note E-4**

Electricity consumption figures are based on meter level electricity consumption data provided by data aggregators (who compile this data behalf of electricity suppliers).
Electricity data is divided between domestic and non-domestic categories according to the meter's profile class. Domestic consumption is based on Non-Half Hourly (NHH) meters with profiles 1 and 2 (these are the standard domestic and economy 7 tariffs respectively). Non-domestic consumption is based on NHH meters with profiles 3 to 8 and all Half Hourly meters. In addition, profile 1 and 2 meters are re-allocated to the non-domestic sector if their annual consumption is greater than 100,000 kWh; or if their annual consumption is greater than 50,000 kWh and the address information for meter suggests that it is non-domestic.
The electricity consumption years used in these statistics cover two slightly different periods. Half-hourly data (higher-consuming non-domestic meters) covers consumption over the calendar year (January to December). For non-half hourly data (domestic and the vast majority non-domestic meters) the electricity years cover the months February to January (for example the 2022 electricity year was February 2022 to January 2023).
For more information about these electricity consumption statistics, see Section 3 of the BEIS / DESNZ guidance note: Sub-national methodology and guidance 2024

- **Note E-5**

These estimates used in this analysis are weather-corrected. This means that the effect of differences in weather conditions between years has been removed to provide more like for like comparisons over time. A non-weather corrected version of these statistics is also published for the years 2015 and 2022 and can be found at: Regional and local authority gas consumption statistics

- **Note E-6**

The gas consumption years used in this analysis are as follows:

Year	Gas Year
2015	October 2014 – September 2015
2016	mid-July 2016 – mid-July 2017
2017	mid-June 2017 – mid-June 2018
2018	mid-May 2018 – mid-May 2019
2019	mid-May 2019 – mid-May 2020
2020	mid-May 2020 – mid-May 2021
2021	mid-May 2021 – mid-May 2022
2022	mid-May 2022 – mid-May 2023

- **Note E-7**

BEIS / DESNZ built a new processing system for producing the 2021 subnational gas consumption statistics and for producing the 2022 subnational electricity consumption statistics. They therefore revised their gas consumption statistics for the years 2015 to 2020 in 2021 and the electricity consumption statistics for the years 2015 to 2021 in 2022. We therefore use data from 2015 onwards to ensure we are using consistent data. For this latest analysis have recalculated all of the Predominantly Rural and Predominantly Urban figures from 2015 onwards to account for the boundary changed discussed in Note E-10.

- **Note E-8**

BEIS / DESNZ gas consumption figures are based on meter level gas consumption data provided by Xoserve (who compile meter level data from gas shippers, who in turn receive the data from gas suppliers). Xoserve provide annualised estimates of consumption (AQs) for all gas meters. Xoserve provide the AQs on a weather corrected basis by a process which accounts for regional temperatures and wind speed and incorporates trends.

The gas meters are classified as being domestic or non-domestic according to their (weather-corrected) gas consumption. Those with an annual consumption less than the industry cut-off of 73,200 are classified as domestic and the rest are classified as non-domestic. This means that some small industrial and commercial consumers will be classified as domestic.

For more information about these gas consumption statistics, see Section 2 of the BEIS / DESNZ guidance note: Sub-national methodology and guidance 2024.

- **Note E-9**

Where a Local Authority area contains one or more major power station or other large industrial consumer the consumption of these sites has not been included in the meter level gas consumption data due to complexities in their billing arrangements.

- **Note E-10**

New Local Authorities came into operation in April 2023. These changes relate to 3 parts of England: (1) North Yorkshire, (2) Cumbria and (3) Somerset. This reduced the total number of Local Authorities from 309 down to 296.

1. A new unitary authority called North Yorkshire replaced the 7 existing districts of Craven, Hambleton, Harrogate, Richmondshire, Ryedale, Scarborough and Selby. We have provisionally classified this single North Yorkshire UA as Predominantly Rural.
2. The 6 districts within Cumbria were abolished and replaced with 2 new unitary authorities. Allerdale, Carlisle and Copeland have been merged to form Cumberland and Barrow-in-Furness, Eden and South Lakeland have been merged to form Westmorland and Furness. We have provisionally classified Cumberland and Westmorland and Furness as Predominantly Rural.
3. The districts of Mendip, Sedgemoor, Somerset West and Taunton, and South Somerset have been merged to form a new unitary authority known as Somerset. We have provisionally classified this single Somerset UA as Predominantly Rural.

F. Estimated carbon dioxide (CO_2) emissions from domestic properties

Factors such as whether a home is a flat or a house, whether it is Owner-occupied or Socially rented and whether or not it is a new house are far more important to determining the CO_2 emissions from the property than whether it is in a Predominantly Rural or Predominantly Urban area.

Key findings – Estimated Carbon dioxide (CO2) emissions from domestic properties

The rurality of a home is not the key factor in determining its CO_2 emissions

- Across all homes the estimated average median CO_2 emissions as at March 2023 was 3.4 tonnes/year in Predominantly Rural areas and 3.1 tonnes/year in Predominantly Urban areas.
- Factors such as the building type, its tenure and whether or not it is a new house are far more important to determining the CO_2 emissions than its rurality.

New homes emit less CO_2 than existing homes

- An existing home in either Predominantly Rural or Predominantly Urban areas, on average, emits 2.7 times the CO_2 of a new home.
- For existing homes in Predominantly Rural areas the average CO_2 emissions were 15% higher than in Predominantly Urban areas.

Detached homes emit more CO_2 than flats

- A Detached home in Predominantly Rural areas emitted an average of 4.6 tonnes/year of CO_2 compared to 2.0 tonnes/year for a flat or maisonette in Predominantly Rural areas.
- A Detached home in Predominantly Urban areas emitted an average of 4.8 tonnes/year of CO_2 compared to 1.9 tonnes/year for a flat or maisonette in Predominantly Urban areas.

Owner-occupied homes emit more CO_2 than social rent homes

- An Owner-occupied home in Predominantly Rural areas emitted an average of 4.3 tonnes/year of CO_2 compared to 2.6 tonnes/year for a social rent home in Predominantly Rural areas.
- An Owner-occupied home in Predominantly Urban areas emitted an average of 3.7 tonnes/year of CO_2 compared to 2.4 tonnes/year for a social rent home in Predominantly Rural areas.

Summary

An Energy Performance Certificate (EPC) provides information on the energy efficiency of a building. Since 2007, an EPC is required when a building is constructed, sold or let. As part of the EPC process an estimate of CO_2 emissions from the property is made based on standardised assumptions about how residents will use the property.

Across all homes the estimated average median CO_2 emissions as at March 2023 was 3.4 tonnes/year in Predominantly Rural areas and 3.1 tonnes/year in Predominantly Urban areas. In both Predominantly Rural and Predominantly Urban areas, on average new homes emit at least 2 tonnes/year less CO_2 than existing homes. An existing dwelling in either Predominantly Rural or Predominantly Urban areas, on average, emits 2.7 times the CO_2 of a new dwelling. Average median CO_2 emissions were higher for homes in Predominantly Rural areas than for those in Predominantly Urban areas for both Existing dwellings (15% higher) and New dwellings (16% higher), in part reflecting differences in the types of dwellings and the age of dwellings found in Predominantly Rural and Predominantly Urban areas. Within Predominantly Rural areas, the more Rural the area the higher the CO_2 emissions for existing dwellings.

In both Predominantly Rural and Predominantly Urban areas CO_2 emissions were highest from Detached properties followed by Semi-detached, then Terraced and finally Flats and maisonettes. For Flats and maisonettes, the average median CO_2 emissions were similar in Predominantly Rural and Predominantly Urban areas at 2 tonnes/year. Whereas for all 3 house types, the average median CO_2 emissions were between 4% and 15% lower in Predominantly Rural areas than in Predominantly Urban areas. The 10 Local Authorities with the highest median CO_2 emissions for Detached and Semi-detached properties were in London. These Local Authorities with high median CO_2 emissions help make the average median emissions in Predominantly Rural areas lower than Predominantly Urban area for Detached and Semi-detached homes. Once London Authorities are removed, the average median CO_2 emissions for Detached properties are 6% higher in Predominantly Rural areas than for Detached properties in Predominantly Urban areas outside of London. In Predominantly Rural areas, on average, a Detached home emits 1.5 times the CO_2 of a Terraced home.

For all 3 types of tenure, median CO_2 emissions were higher in Predominantly Rural areas than in Predominantly Urban areas. There was a hierarchy for each area type such that median CO_2 emissions were highest for Owner-occupied homes followed by Private rented homes and then Social rented homes had the lowest CO_2 emissions. For Social rented homes the median emissions were 0.2 tonnes/year more in Predominantly Rural areas than in Predominantly Urban areas, but for Owner-occupied and Private rented homes this emissions difference was bigger at 0.5 tonnes/year.

Approach for estimating Carbon dioxide (CO_2) emissions from domestic properties

The ONS publish Energy Efficiency of Housing on an annual basis (see Note F-2 and Note F-3). The most recent edition was published in November 2023. An Energy Performance Certificate (EPC) provides information on the energy efficiency of a building. Since 2007, an EPC is required when a building is constructed, sold or let. As part of the EPC process an estimate of CO_2 emissions from the property is made. These estimated **CO_2 emissions are based on standardised assumptions about how residents will use the property.** These assumptions

include things such as the number of occupants, heating and lighting patterns and hot water usage. They are done this way to make properties directly comparable to each other for prospective buyers or tenants. These estimates therefore do not reflect how residents actually use the property.

This emissions data does not reflect all dwellings in England, because not every dwelling has an EPC. Table 4a of Median energy efficiency score, England and Wales shows the percentage of dwellings covered by an Energy Performance Certificate since records began, in England and Wales, as at 31 March 2023. Overall, in England around two-thirds of domestic properties are covered by EPCs. In general, the coverage is higher for:

- newer properties (95% coverage of post 2012 properties) than older ones;
- rented properties than Owner-occupied; and
- flats and maisonettes (83% coverage) than houses (60% coverage for detached properties).

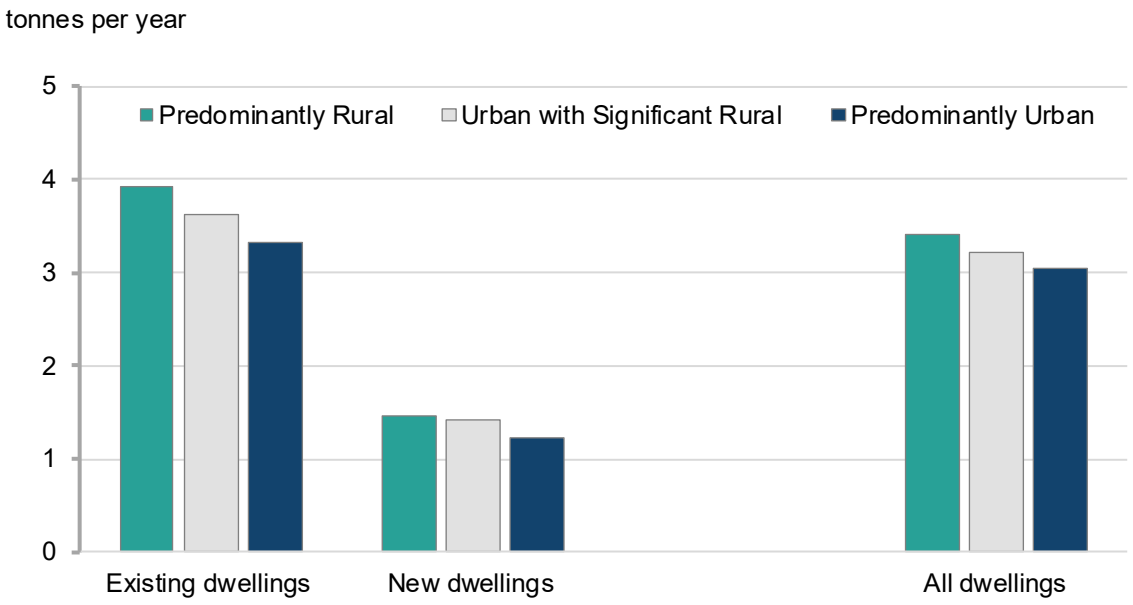
The source data tables offer a median CO_2 emissions for each Local Authority for the given property characteristic being analysed. For example, a median CO_2 emissions value for all of the Detached properties in each Local Authority. When producing the overall estimates for Predominantly Rural and Predominantly Urban areas we take the mean as a simple unweighted average of these median values. **So strictly speaking when these overall estimates are presented, they are average median CO_2 emissions; although to simplify the commentary they will often be referred to as just median CO_2 emissions or average CO_2 emissions**.

Median Carbon Dioxide (CO_2) emissions for New and Existing homes

As discussed in Energy Performance Certificates: average Energy Efficiency Score, the average energy efficiency of homes in Predominantly Rural areas was marginally lower than for homes in Predominantly Urban areas (66.8 compared to 67.5). This leads to estimated median CO_2 emissions as at March 2023 of 3.4 tonnes/year in Predominantly Rural areas and 3.1 tonnes/year in Predominantly Urban areas (Figure F-1). So, the median emissions were 0.4 tonnes/year (or 11%) more in Predominantly Rural areas than in Predominantly Urban areas. Given that Section B showed that the Energy Efficiency Rating is quite different for New dwellings (Note F-4) compared to Existing dwellings it is interesting to see how this translates through to CO_2 emissions.

Figure F-1 is a bar chart that shows the median CO_2 emissions for New dwellings, Existing dwellings and All dwellings by Local Authority Rural-Urban Classification in 2023. Figure F-1 shows that median CO_2 emissions are higher for homes in Predominantly Rural areas than for those in Predominantly Urban areas for both Existing dwellings and New Dwellings. It also shows that estimated emissions are much lower for New Dwellings and, when measured in absolute terms, the difference between the average emissions in Predominantly Rural and Predominantly Urban areas is smaller for new homes than for existing homes. Average emissions for homes in Urban with Significant Rural regions are between those for Predominantly Rural and Predominantly Urban areas.

Figure F-1: Bar chart showing median CO_2 emissions for New, Existing and All dwellings by Local Authority Rural-Urban Classification in 2023 (Note F-2, Note F-3, Note F-4)
The legend is presented in the same order and orientation as the cluster of columns.



The following set of bullets provide more detailed findings from Figure F-1.

- For new homes, the estimated median CO_2 emissions as at March 2023 was 1.5 tonnes/year in Predominantly Rural areas and 1.2 tonnes/year in Predominantly Urban areas. So, the median emissions were 0.2 tonnes/year (or 16%) more in Predominantly Rural areas than in Predominantly Urban areas.
- For existing homes, the estimated median CO_2 emissions as at March 2023 was 3.9 tonnes/year in Predominantly Rural areas and 3.3 tonnes/year in Predominantly Urban areas. So, the median emissions were 0.6 tonnes/year (or 15%) more in Predominantly Rural areas than in Predominantly Urban areas.
- In both Predominantly Rural and Predominantly Urban areas, on average, new homes emit at least 2 tonnes/year less CO_2 than existing homes. An existing dwelling in either Predominantly Rural or Predominantly Urban areas, on average, emits 2.7 times the CO_2 of a new dwelling.

Figure F-2 is a bar chart that shows the median CO_2 emissions for New dwellings, Existing dwellings and All dwellings in Mainly Rural and Largely Rural areas. It shows that the more rural the area the higher the CO_2 emissions for both New dwellings and existing dwellings. In the most rural areas (Mainly Rural) the median CO_2 emissions were 4.1 tonnes/year for existing homes and 1.5 tonnes/year for new homes. These emissions were 0.4 tonnes/year more than the 3.7 tonnes/year that was estimated for existing homes in Largely Rural areas. An existing dwelling in Mainly Rural areas, on average, emits 2.8 times the CO_2 of a new dwelling in these areas.

Figure F-2: Bar chart showing median CO_2 emissions for New, Existing and All dwellings in Mainly Rural and Largely Rural Local Authorities in 2023 (Note F-2, Note F-3, Note F-4)
The legend is presented in the same order and orientation as the cluster of columns.

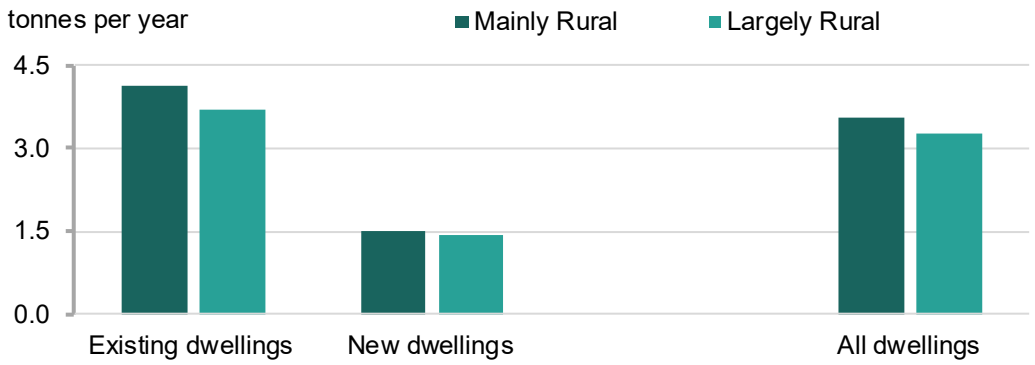
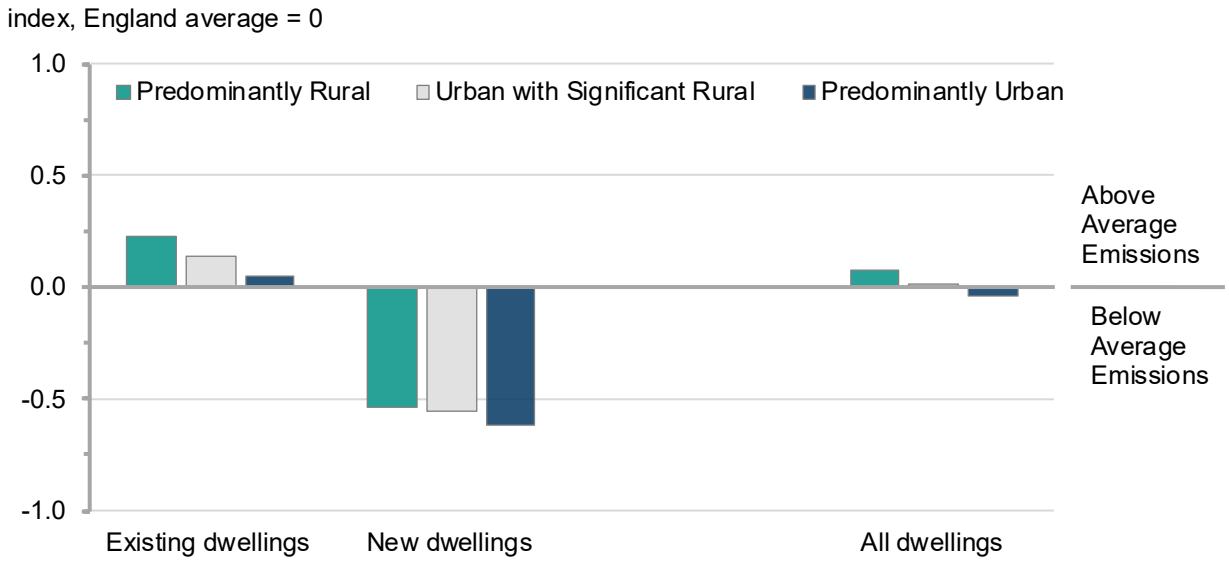


Figure F-3 is a bar chart showing indexed median CO_2 emissions for New dwellings, Existing dwellings and All dwellings by Local Authority Rural-Urban Classification in 2023. Overall homes in Predominantly Rural areas had average CO_2 emissions that were above the England average but in Predominantly Urban areas homes had average CO_2 emissions that were below the England average. The CO_2 emissions for New Dwellings were well below the England average (index = 0 on Figure F-3) with index values of less than -0.5 for all settlement types. This means that New dwellings had less than half of the average emissions in England. This was the case in both Predominantly Rural and Predominantly Urban areas. For the existing homes in Predominantly Rural areas the index value was 0.2, so their average CO_2 emissions were 20% higher than the England average CO_2 emissions. By contrast in Predominantly Urban areas the average CO_2 emissions from existing homes was just 5% higher than the England average CO_2 emissions.

Figure F-3: Bar chart showing indexed median CO_2 emissions for New dwellings, Existing dwellings and All dwellings by Local Authority Rural-Urban Classification in 2023 (Note F-2, Note F-3, Note F-4)

The legend is presented in the same order and orientation as the cluster of columns. Data has been indexed against the overall England average emissions such that bars below the horizontal axis represent below average emissions and bars above the horizontal axis represent above average emissions.



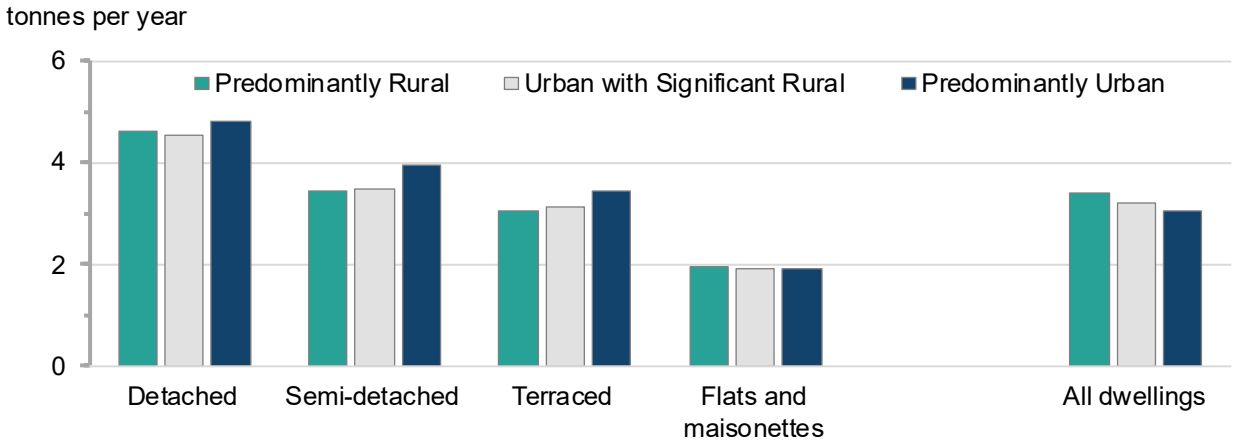
Median Carbon Dioxide (CO_2) emissions by housing type

As discussed in Energy Performance Certificates: average Energy Efficiency Score, Flats and maisonettes had a much higher average energy efficiency score than any other housing type. This led to estimated median CO_2 emissions as at March 2023 that were lower for Flats and maisonettes than for either Detached, Semi-detached or Terraced housing within all area types of the Broad Rural Urban Classification (Figure F-4).

Figure F-4 is a bar chart that shows the median CO_2 emissions by housing type and Local Authority Rural-Urban Classification in 2023. Figure F-4 shows a hierarchy such that CO_2 emissions were highest from Detached properties followed by Semi-detached, then Terraced and finally Flats and maisonettes. This pattern holds for Predominantly Rural, Predominantly Urban and Urban with Significant Rural areas. For Flats and maisonettes, the average CO_2 emissions were similar in all 3 area types. Whereas for all 3 house types, the average CO_2 emissions were lower in Predominantly Rural areas than in Predominantly Urban areas. The set of bullets below the chart provide more detailed findings.

Figure F-4: Bar chart showing median CO_2 emissions by housing type and Local Authority Rural-Urban Classification in 2023 (Note F-2, Note F-3, Note F-5)

The legend is presented in the same order and orientation as the cluster of columns



- For Detached homes, the estimated median CO_2 emissions as at March 2023 was 4.6 tonnes/year in Predominantly Rural areas and 4.8 tonnes/year in Predominantly Urban areas. So, the median emissions were 0.2 tonnes/year (or 4%) less in Predominantly Rural areas than in Predominantly Urban areas.
- For Semi-detached homes, the estimated median CO_2 emissions as at March 2023 was 3.4 tonnes/year in Predominantly Rural areas and 3.9 tonnes/year in Predominantly Urban areas. So, the median emissions were 0.5 tonnes/year (or 15%) less in Predominantly Rural areas than in Predominantly Urban areas.
- For Terraced homes, the estimated median CO_2 emissions as at March 2023 was 3.1 tonnes/year in Predominantly Rural areas and 3.5 tonnes/year in Predominantly Urban areas. So, the median emissions were 0.4 tonnes/year (or 13%) less in Predominantly Rural areas than in Predominantly Urban areas.
- For Flats and maisonettes, the estimated median CO_2 emissions as at March 2023 was 2.0 tonnes/year in Predominantly Rural areas and 1.9 tonnes/year in Predominantly Urban areas. So, the median emissions were less than 0.1 tonnes/year (or 1%) more in Predominantly Rural areas than in Predominantly Urban areas.

- The difference between the estimated median CO_2 emissions for a Detached home and a Flat or maisonette was slightly smaller in Predominantly Rural areas (2.7 tonnes/year) than in Predominantly Urban areas (2.9 tonnes/year). A Detached home in Predominantly Rural areas, on average, emits 2.4 times the CO_2 of a Flat or maisonette. In Predominantly Urban areas this ratio is 2.5 times the CO_2 emitted.
- When all dwellings are considered the estimated median CO_2 emissions were higher in Predominantly Rural areas than in Predominantly Urban areas despite them being lower for all 3 types of house and similar for Flats and maisonettes. This can be explained by considering the composition of the housing stock in Predominantly Rural and Predominantly Urban areas. Predominantly Rural areas have a much higher proportion of Detached homes and a lower proportion of Flats and maisonettes than Predominantly Urban areas. The higher median CO_2 emissions for these Detached properties therefore raises the estimated median CO_2 emissions in Predominantly Rural areas relative to Predominantly Urban areas when all properties are considered.

Figure F-5 is a bar chart that shows the median CO_2 emissions by property type in Mainly Rural and Largely Rural areas. It shows that the more rural the area the higher the CO_2 emissions for all 3 house types, but the average emissions for Flats and maisonettes are similar in Mainly Rural and Largely Rural areas. In the most rural areas (Mainly Rural) the median CO_2 emissions were 4.8 tonnes/year for Detached homes, 3.5 tonnes/year for Semi-detached and 3.2 tonnes per year for Terraced homes. When compared to homes in Largely Rural areas, these emissions were 0.4 tonnes/year more for Detached homes and 0.2 tonnes/year more for both Semi-detached and Terraced homes. In Predominantly Rural areas, on average, a Detached home emits 1.5 times the CO_2 of a Terraced home.

Figure F-5: Bar chart showing median CO_2 emissions by property type in Mainly Rural and Largely Rural Local Authorities in 2023 (Note F-2, Note F-3, Note F-5)

The legend is presented in the same order and orientation as the cluster of columns.

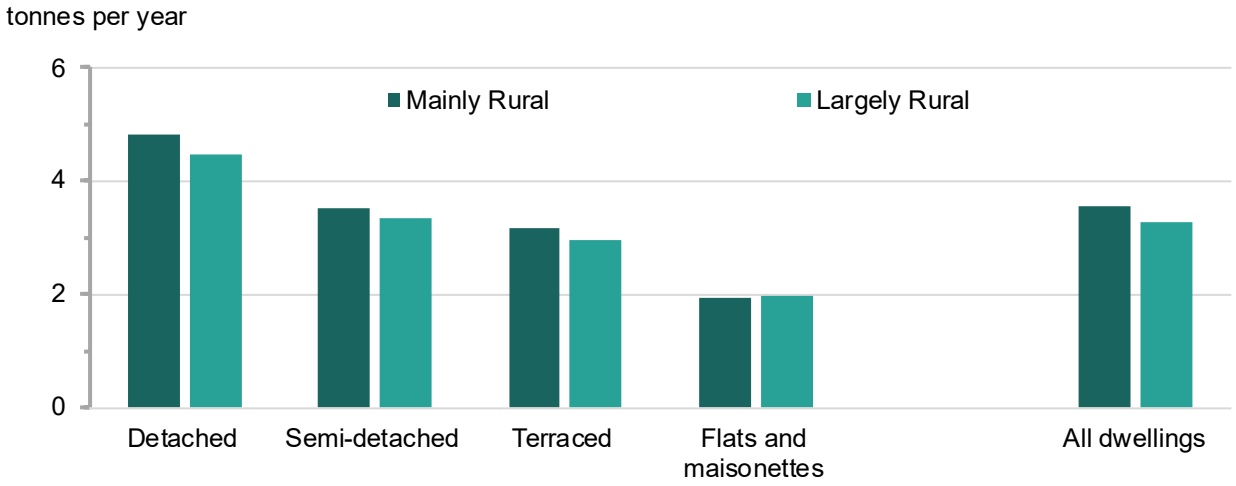
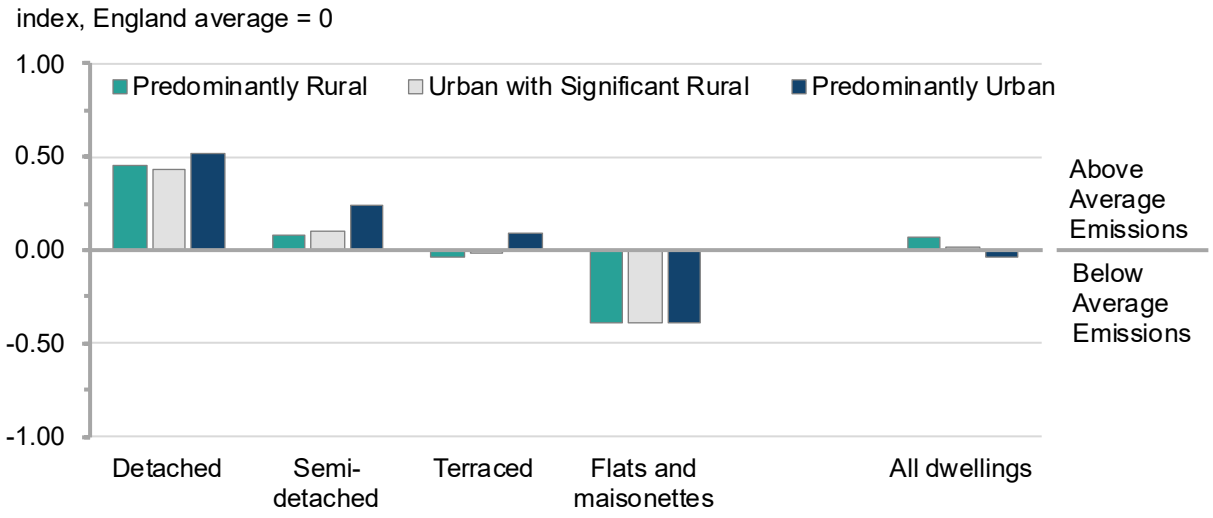


Figure F-6 is a bar chart showing indexed median CO_2 emissions by property type and Local Authority Rural-Urban Classification in 2023. It shows that median CO_2 emissions are well above average for Detached and well below average for Flats and maisonettes. Detached homes in both Predominantly Rural and Predominantly Urban areas had average CO_2 emissions that were around 50% higher than the England average (their index value on Figure F-6 is around 0.5). Flats and maisonettes in all three broad RUC areas had average CO_2 emissions that were equivalent to

60% of the England average CO_2 emissions (their index value on Figure F-6 is -0.4). Terraced homes and Semi-detached homes in Predominantly Rural areas had average CO_2 emissions that were within 10% of the England average, but Semi-detached homes in Predominantly Urban areas had average CO_2 emissions that were 25% higher than the England average.

Figure F-6: Bar chart showing indexed median CO_2 emissions by property type and Local Authority Rural-Urban Classification in 2023 (Note F-2, Note F-3, Note F-5)

The legend is presented in the same order and orientation as the cluster of columns. Data has been indexed against the overall England average emissions such that bars below the horizontal axis represent below average emissions and bars above the horizontal axis represent above average emissions.



Lower CO_2 emissions from all 3 house types in Predominantly Rural areas than in Predominantly Urban areas was contrary to expectations and therefore required further investigation to understand this finding. This additional analysis (Note F-8) showed that there was a smaller spread between the Local Authority with the lowest median CO_2 emissions and the one with the highest median CO_2 emissions in Predominantly Rural areas than in Predominantly Urban areas for all property types. Some Predominantly Urban Local Authorities had much higher median CO_2 emissions and this raises the overall Predominantly Urban average emissions for each of the 3 house types. As an example of this effect, the median CO_2 emissions for "Kensington and Chelsea" were 19.0 tonnes per year for Detached properties, almost 4 times the median CO_2 emissions for Detached properties in Predominantly Urban areas. The large size of the properties in "Kensington and Chelsea" is a large contributing factor to these high emissions.

"Eden" with 6.7 tonnes/year had the highest median CO_2 emissions in Predominantly Rural areas for Detached properties. As mentioned in Fuel types used for central heating, Eden is one of 8 Predominantly Rural Local Authorities where more than 20% of the dwellings used oil as their main fuel type. A higher proportions of properties using oil for heating can, but does not automatically, lead to higher average CO_2 emissions. For example, Mid Suffolk has a higher proportion of homes using oil than Eden but lower median CO_2 emissions. So, oil use is just one of the factors that has the potential to increase CO_2 emissions, along with size of the property, number of occupants, the energy efficiency of the property and so on.

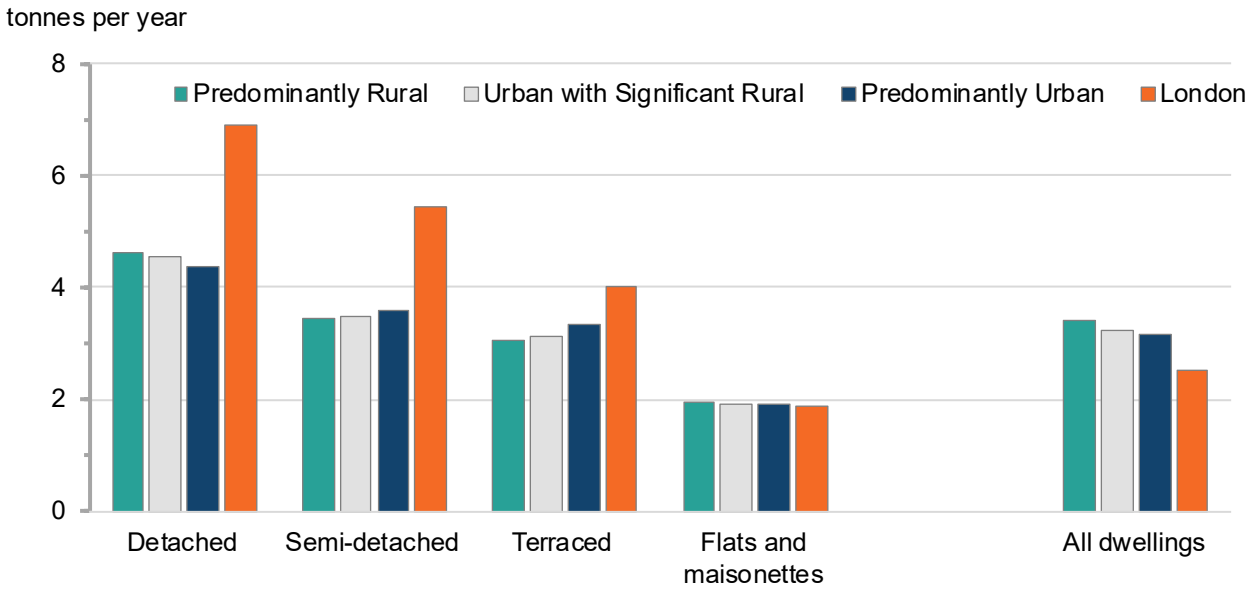
Given the high CO_2 emission values for London Local Authorities, the estimated emissions by property type were recalculated after separating London out from the other Predominantly Urban

areas and are presented as a bar chart in Figure F-8. The hierarchy previously seen where CO_2 emissions were highest from Detached properties followed by Semi-detached, then Terraced and finally Flats and maisonettes remains. For Flats and maisonettes, the average CO_2 emissions were similar in all 4 area types. Whereas for all 3 house types, the average CO_2 emissions were much higher in London than in the other area types. Outside of London average CO_2 emissions showed little variation and differed by 0.3 tonnes per year or less between area types.

When all home types are considered the more rural the area the higher the median CO_2 emissions. This situation occurs because the proportion of Detached homes is bigger, and the proportion of flats is smaller in Predominantly Rural areas than in Predominantly Urban areas and particularly in London (Note F-7). Therefore, the point at which the median value in the full distribution is reached in Predominantly Rural areas is more likely to be representative of the emissions of a Detached home.

Figure F-7: Bar chart showing median CO_2 emissions by housing type and Local Authority Rural-Urban Classification, with London separated from other Predominantly Urban areas, in 2023 ((Note F-2, Note F-3, Note F-5)

The legend is presented in the same order and orientation as the cluster of columns



The following set of bullets below the chart provide more detailed findings.

- For Detached homes, the estimated median CO_2 emissions as at March 2023 was 4.6 tonnes/year in Predominantly Rural areas and 4.4 tonnes/year in Predominantly Urban areas outside of London. So, the median emissions were 0.3 tonnes/year (or 6%) more in Predominantly Rural areas than in Predominantly Urban areas outside of London.
- For Semi-detached homes, the estimated median CO_2 emissions as at March 2023 was 3.4 tonnes/year in Predominantly Rural areas and 3.6 tonnes/year in Predominantly Urban areas outside of London. So, the median emissions were 0.1 tonnes/year (or 4%) less in Predominantly Rural areas than in Predominantly Urban areas outside of London.
- For Terraced homes, the estimated median CO_2 emissions as at March 2023 was 3.1 tonnes/year in Predominantly Rural areas and 3.3 tonnes/year in Predominantly Urban areas

outside of London. So, the median emissions were 0.3 tonnes/year (or 9%) less in Predominantly Rural areas than in Predominantly Urban areas outside of London.

- For Flats and maisonettes, the estimated median CO_2 emissions as at March 2023 was 2.0 tonnes/year in Predominantly Rural areas and 1.9 tonnes/year in Predominantly Urban areas outside of London. So, the median emissions were less than 0.1 tonnes/year (or 1%) more in Predominantly Rural areas than in Predominantly Urban areas outside of London.
- For houses, the difference between the estimated median CO_2 emissions in Predominantly Rural areas and London increased from London being 1 tonne per year more for Terraced, to 2 tonnes per year more for Semi-detached and to 2.3 tonnes per year more for Detached homes.
- For all homes the estimated median CO_2 emissions as at March 2023 was 3.4 tonnes/year in Predominantly Rural areas, 3.2 tonnes/year in Predominantly Urban areas outside of London and 2.5 tonnes/year in London. So, the median emissions were 0.2 tonnes/year (or 7%) more in Predominantly Rural areas than in Predominantly Urban areas outside of London and 0.9 tonnes/year (or 26%) more than in London.

Median Carbon Dioxide (CO_2) emissions by home tenure

As discussed in Energy Performance Certificates: average Energy Efficiency Score the average energy efficiency of homes in the Social rent sector is higher than for either Owner-occupied or Private rented homes. For Social rented properties the average Energy Efficiency Score equates to a C rating in both Predominantly Urban and Predominantly Rural areas, whilst for Owner-occupied and Private rented the average score equates to a D rating. This leads to an estimated median CO_2 emissions as at March 2023 that is lower for Social rent properties than for either Owner-occupied or Private rented homes for all 3 area types within the Broad Rural Urban Classification (Figure F-4).

Figure F-9 is a bar chart showing median CO_2 emissions by tenure and Local Authority Rural-Urban Classification in 2023 and it shows that for all 3 types of tenure, median CO_2 emissions were higher in Predominantly Rural areas than in Predominantly Urban areas and that the value for Urban with Significant Rural areas slotted in between these values. The chart also shows that there was a hierarchy for each area type such that median CO_2 emissions were highest for Owned-occupied homes followed by Private rented homes and then Social rented homes had the lowest CO_2 emissions. The difference between median emissions in Predominantly Rural areas and Predominantly Urban areas was smaller for the Social rent sector than the private sector.

The following set of bullets provide more detailed findings.

- For Social rent homes, the estimated median CO_2 emissions as at March 2023 was 2.6 tonnes/year in Predominantly Rural areas and 2.4 tonnes/year in Predominantly Urban areas. So, the median emissions were 0.2 tonnes/year (or 7%) more in Predominantly Rural areas than in Predominantly Urban areas.
- For Private rent homes, the estimated median CO_2 emissions as at March 2023 was 3.6 tonnes/year in Predominantly Rural areas and 3.0 tonnes/year in Predominantly Urban areas. So, the median emissions were 0.5 tonnes/year (or 15%) more in Predominantly Rural areas than in Predominantly Urban areas.

- For Owner-occupied homes, the estimated median CO_2 emissions as at March 2023 was 4.3 tonnes/year in Predominantly Rural areas and 3.7 tonnes/year in Predominantly Urban areas. So, the median emissions were 0.5 tonnes/year (or 13%) more in Predominantly Rural areas than in Predominantly Urban areas.
- The difference between the estimated median CO_2 emissions for a Private rented home and a Social rented home was bigger in Predominantly Rural areas (1.0 tonnes/year) than in Predominantly Urban areas (0.6 tonnes/year).
- The difference between the estimated median CO_2 emissions for an Owner-occupied home and a Social rented home was bigger in Predominantly Rural areas (1.7 tonnes/year) than in Predominantly Urban areas (1.3 tonnes/year). An Owner-occupied home in Predominantly Rural areas, on average, emits 1.7 times the CO_2 of a Social rent home. In Predominantly Urban areas this ratio is 1.6 times the CO_2.

Figure F-8: Bar chart showing median CO_2 emissions by tenure and Local Authority Rural-Urban Classification in 2023 (Note F-2, Note F-3, Note F-6)

The legend is presented in the same order and orientation as the cluster of columns.

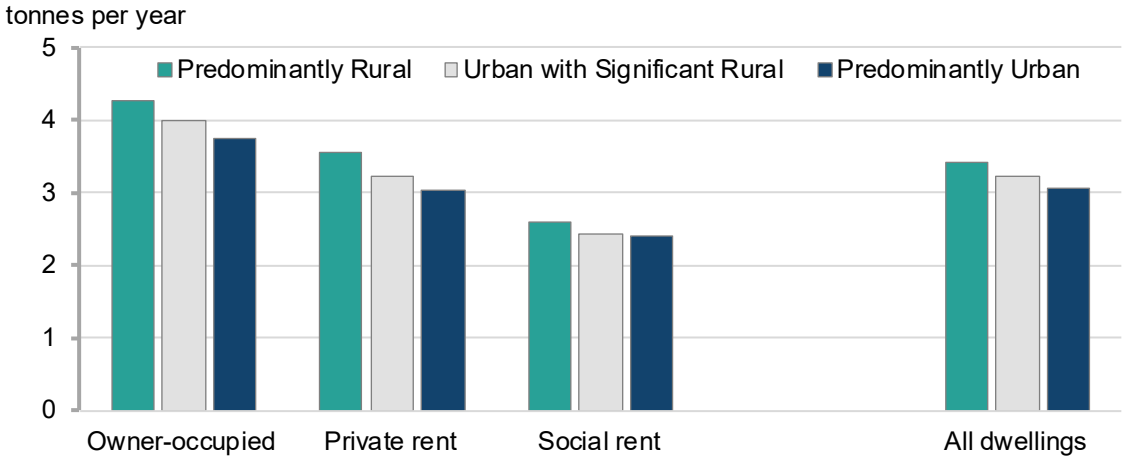
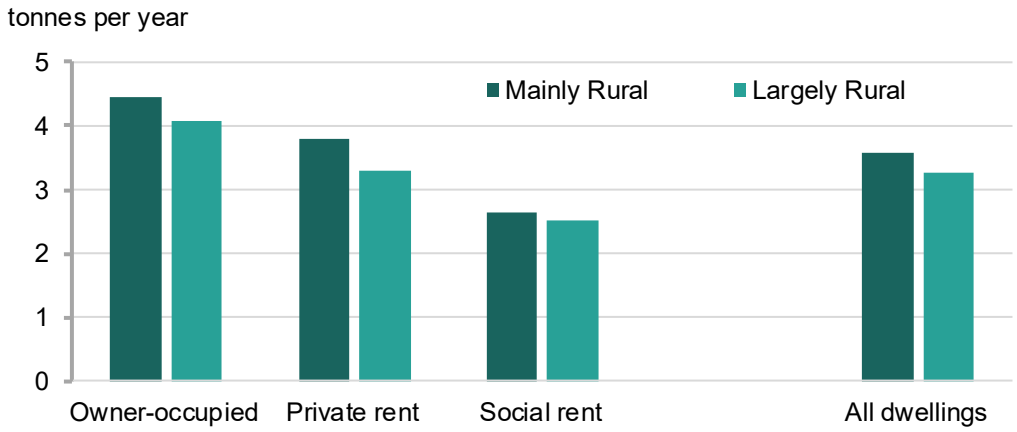


Figure F-5 is a bar chart that shows the median CO_2 emissions by home tenure in Mainly Rural and Largely Rural areas. It shows that the more rural the area the higher the CO_2 emissions for all tenure types. In the most rural areas (Mainly Rural) the median CO_2 emissions were 4.5 tonnes/year for Owner-occupied homes compared to 2.7 tonnes/year for Social rent homes. This is a difference of 1.8 tonnes/year. Whilst in Largely Rural areas, the median CO_2 emissions were 4.1 tonnes/year for Owner-occupied homes compared to 2.5 tonnes/year for Social rent homes – a difference of 1.6 tonnes/year. The difference in median CO_2 emissions between homes in Mainly Rural and Largely Rural is smaller for Social rent homes (0.1 tonnes/year) than for those homes in the private sector (0.4 tonnes/year for Owner-occupied and 0.5 tonnes/year for Private rented).

Figure F-9: Bar chart showing median CO_2 emissions by tenure in Mainly Rural and Largely Rural Local Authorities in 2023 (Note F-2, Note F-3, Note F-6)

The legend is presented in the same order and orientation as the cluster of columns.



Energy efficiency of Rural homes explanatory notes

Note F-1

Tables showing the data in Section F are available in the Energy data tables.

Note F-2

The Office for National Statistics (ONS) publish Energy Efficiency of Housing at Local Authority level on an annual basis for financial years. This section primarily uses the Median estimated carbon dioxide (CO_2) emissions, England and Wales dataset for the financial year ending March 2023. Data has been used at Local Authority level from tables 2b, 2c and 2d.

The source data for this ONS publication is Department for Levelling up, Housing and Communities – Energy Performance Certificate data on Open Data Communities and Valuation Office Agency - Property Attributes data (https://epc.opendatacommunities.org/).

Note F-3

An Energy Performance Certificate (EPC) provides information on the energy efficiency of a building. Since 2007, an EPC is required when a building is constructed, sold or let and it is valid for 10 years. There can be multiple EPC lodgements for the same dwelling, but only the latest lodgement is analysed to avoid double counting dwellings. Analysis includes the latest EPC lodgements for a 10 year period, from Q2 2013 to Q1 2023. So this data does not reflect all dwellings in England, because not every dwelling has an EPC.

EPCs are based on data about a building's energy features (like the building materials used, heating systems and insulation, for example), which are collected by an accredited energy assessor and are entered into a government-approved software to generate the EPC.

The median CO_2 emissions are calculated at the time the EPC lodgement was assessed. This means that these statistics do not necessarily reflect energy efficiency improvements as the majority of alterations don't require a new EPC to be generated.

Note F-4

Statistics for **new properties** were generated using data from new dwelling EPC records, which include new builds, conversions and change of use. Statistics for **existing properties** were generated using the latest EPC lodgement available for a property, within the existing dwellings records. An existing dwelling may have undergone several EPC assessments for different reasons (for example, due to a marketed sale, for a green deal assessment, or following the implementation of the changes suggested in a green deal assessment). New and existing dwellings are assessed using slightly different methodologies.

Note F-5

ONS break down houses (including bungalows and park homes) into Detached, Semi-detached and Terraced property types and group Flats and maisonettes together as the final property type.

Note F-6
Tenure is more likely to change over time in comparison to other housing variables. The tenure is that given at the time of the EPC assessment. It is less likely to have tenure data for newly-built dwellings because they have just been constructed and do not yet have a tenure.

Note F-7
Section A of the Statistical Digest of Rural England: 2 - Housing contains information on the stock of housing by house type and how it varies between Rural and Urban areas. Census 2011 data revealed that the majority of dwellings in both Rural Villages and Rural Hamlets and Isolated Dwellings were 'detached' properties and that the proportion of dwellings which were 'flats' decreases as the settlement becomes more rural, falling from 32% in Urban Conurbations to only 4% in both Rural Villages and Rural Hamlets and Isolated Dwellings.

Note F-8
Tables showing distribution summary statistics for CO_2 emissions by property type at Local Authority level are available in the Energy data tables

Appendix 1: The 8 thematic reports that make up the Statistical Digest of Rural England (and the topics included within them)

1. Population

A. Population: Small area-based
B. Population: Constituency-based
C. Population: Local Authority-based
D. Internal migration
E. Census 2021: Population

2. Housing

A. Housing stock: age and type
B. Housing stock: additions and affordable housing
C. Housing market
D. Second and empty homes
E. Homelessness
F. Land use change for housing
G. Housing quality

3. Health and Wellbeing

A. Life expectancy and Mortality
B. Wellbeing
C. NHS Dentistry provision
D. NHS General Practices
E. Childcare provision
F. Loneliness
G. Volunteering and charity

4. Communities and Households

A. Index of Multiple Deprivation
B. English Indices of Deprivation
C. Poverty due to low income
D. Household expenditure
E. Police recorded crime and outcomes
F. Crime surveys: local police and businesses
G. Feelings about the local neighbourhood

5. Connectivity and Accessibility

A. Broadband
B. Mobile coverage
C. Travel behaviours
D. Access to personal transport
E. Access to services
F. Home working

6. Education, Qualifications and Training

A. Schools and their workforce
B. Class sizes
C. Secondary education attainment
D. School inspections
E. Free school meals – eligibility
F. Alternative and specialist education provision
G. Progression to higher education
H. Apprenticeships and on-the-job training
I. Workforce education level

7. Rural Economic Bulletin

A. Employment
B. Earnings
C. Redundancies
D. Unemployment-related benefits
E. Output and productivity measured by Gross Value Added (GVA)
F. Business demographics
G. Businesses by industry
H. Business survival and growth
I. Innovation and investment

8. Energy

A. Fuel poverty
B. Energy Performance Certificates: average Energy Efficiency Score
C. Energy Performance Certificates: achieving energy efficiency category C
D. Central heating
E. Energy consumption
F. CO_2 emissions

Each of the 8 themes also has their own set of supplementary data tables that include the larger source data that could not be included in the presented document. The chapter headings above are hyperlinked to the home page for that specific digest theme. The supplementary tables can be accessed from these home pages.

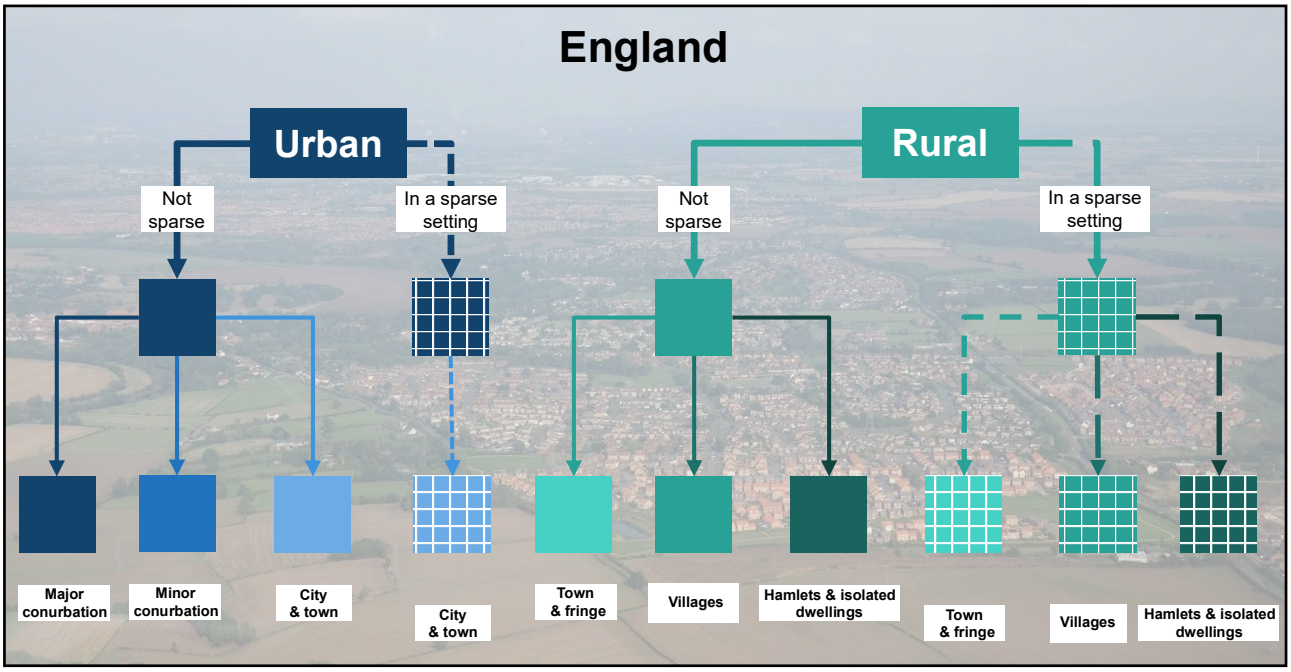
There is a further document including the individual Local Authority data tables, which have been separated for ease of use.

Appendix 2: Defining Rural areas

Wherever possible, the Rural-Urban Classification is used to distinguish Rural and Urban areas. The Classification defines areas as Rural if they fall outside of settlements with more than 10,000 resident population.

Census Output Areas are the smallest areas for which data are available from Censuses. These Census Output Areas are assigned to one of four Urban or six Rural categories (Figure X-1) based on dwelling densities. Those described as “in a sparse setting” reflect where the wider area is sparsely populated (again based on dwelling densities). From Census Output Areas, other small area geographies can be classified based on how they map to Census Output Areas (such as Lower Super Output Areas (LSOAs), Wards, and postcodes – Note 1).

Figure X-1: Classifying Rural and Urban areas for small geographical areas



A map showing the distribution of the Rural and Urban Census Output Areas is shown in Figure X-2.

When data are not available at a small geographical scale, it may be possible to apply the Rural-Urban Local Authority Classification or a similar classification for other larger geographies. This classification categorises districts and unitary authorities on a six-point scale from Rural to Urban. It is underpinned by Rural and Urban populations as defined by the Census Output Area Classification. A map of the geographical distribution of the Rural and Urban Local Authorities is shown in Figure X-3.

However, the Local Authority Classification also considers some Urban areas as Hub Towns (with populations of between 10,000 and 30,000). These Hub Towns have met statistical criteria (based on dwelling and business premise densities) to be considered hubs for services and businesses for a wider rural hinterland and their populations are therefore classified as effectively Rural for the purposes of determining the classification of the authority.

Figure X-2: Map of the 2011 Rural-Urban Classification for Census Output Areas in England

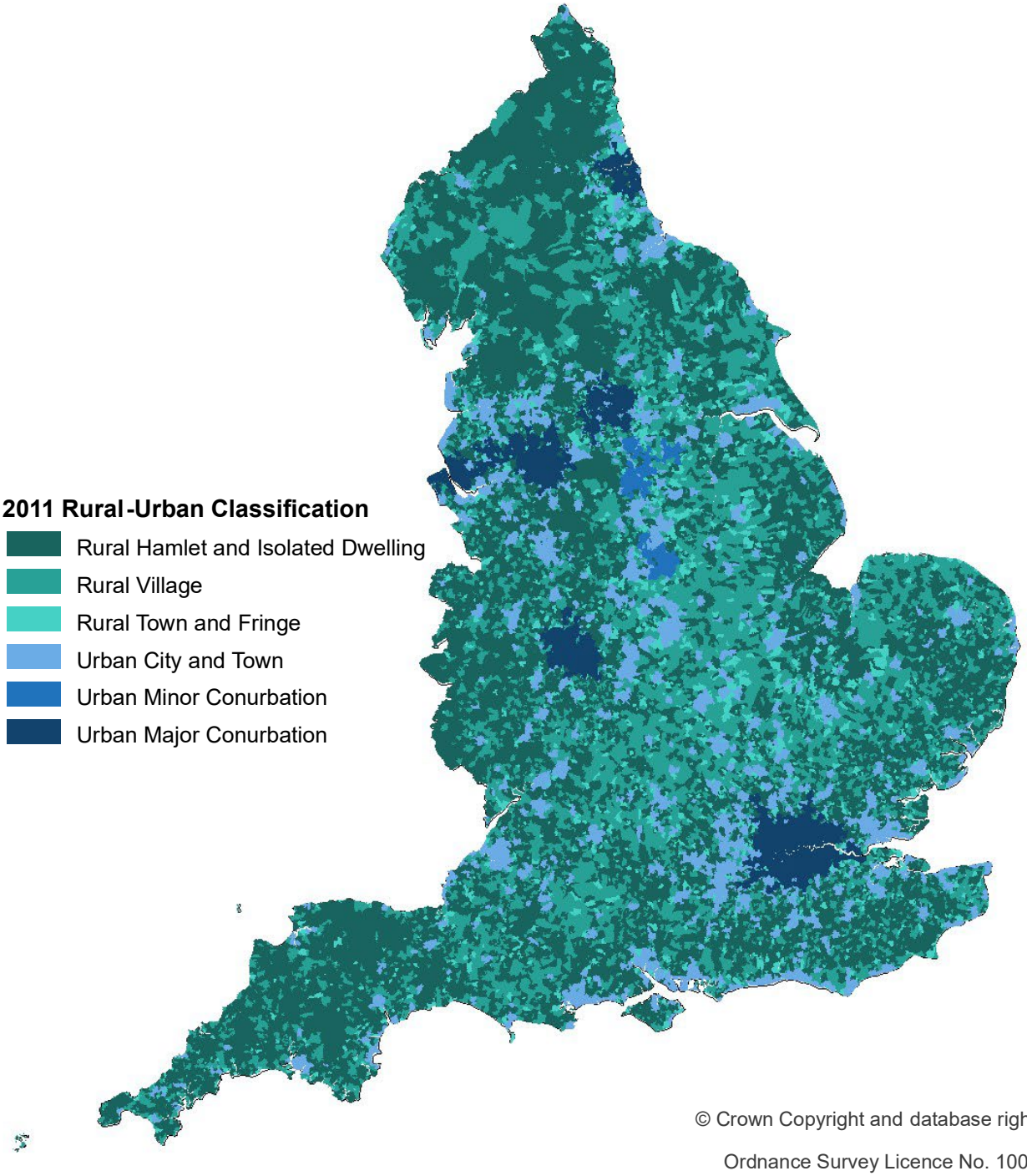
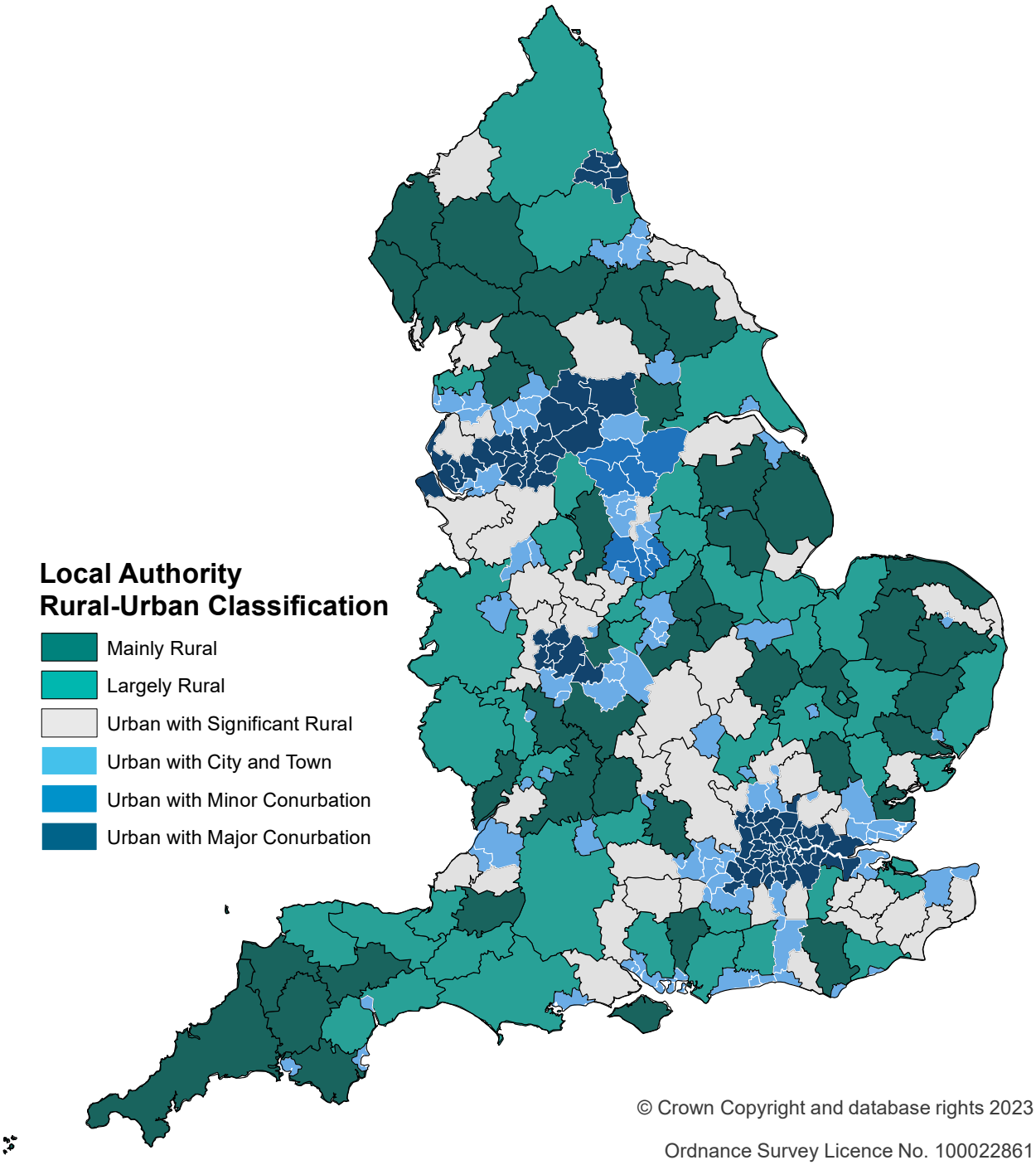
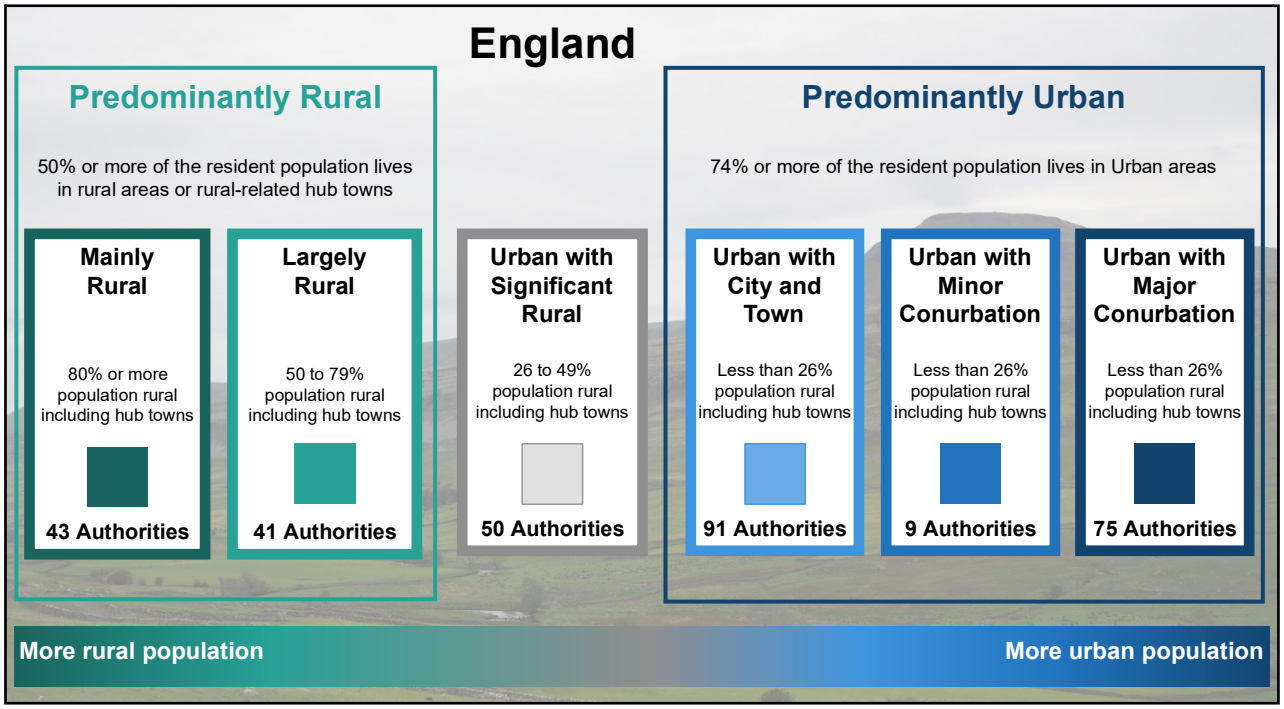


Figure X-3: Map of the 2011 Rural-Urban Classification for Local Authority Districts and Unitary Authorities in England



Under the classification, which is shown in Figure X-4, each Local Authority is assigned to one of six categories on the basis of the percentage of the total resident population accounted for by the combined Rural and Hub Town components of its population and its 'conurbation context'. The Local Authority Classification categories are frequently aggregated to ‘Predominantly Rural’, ‘Urban with Significant Rural’ and ‘Predominantly Urban’ as shown on Figure X-4.

Figure X-4: 2011 Rural-Urban Classification for Local Authorities in England



The Local Authority Rural-Urban Classification is based on populations and settlement patterns, not on how much countryside there is. Authorities classified as Urban may have wide areas of countryside and may have sizeable Rural populations. The classification has been made according to the proportions of the population residing in Urban settlements and outside Urban settlements. More information on the classifications can be found at: The Rural-Urban Definition.

A similar approach to that for Local Authorities was used to create a classification for Westminster Parliamentary Constituencies. Under this classification, which is shown in Figure X-5, each Parliamentary Constituency is assigned to one of six categories on the basis of the percentage of the total resident population accounted for by the combined Rural and Hub Town components of its population and its 'conurbation context'. A map of the geographical distribution of the Rural and Urban Westminster Parliamentary Constituencies is shown in Figure X-5. This map depicts a classification for the new rebalanced Parliamentary Constituencies that were introduced for 2024 General Election. The Parliamentary Constituency Classification categories are frequently aggregated to ‘Predominantly Rural’, ‘Urban with Significant Rural’ and ‘Predominantly Urban’ as shown on Figure X-6.

Figure X-5: Map of the 2011 Rural-Urban Classification for Westminster Parliamentary Constituencies in England

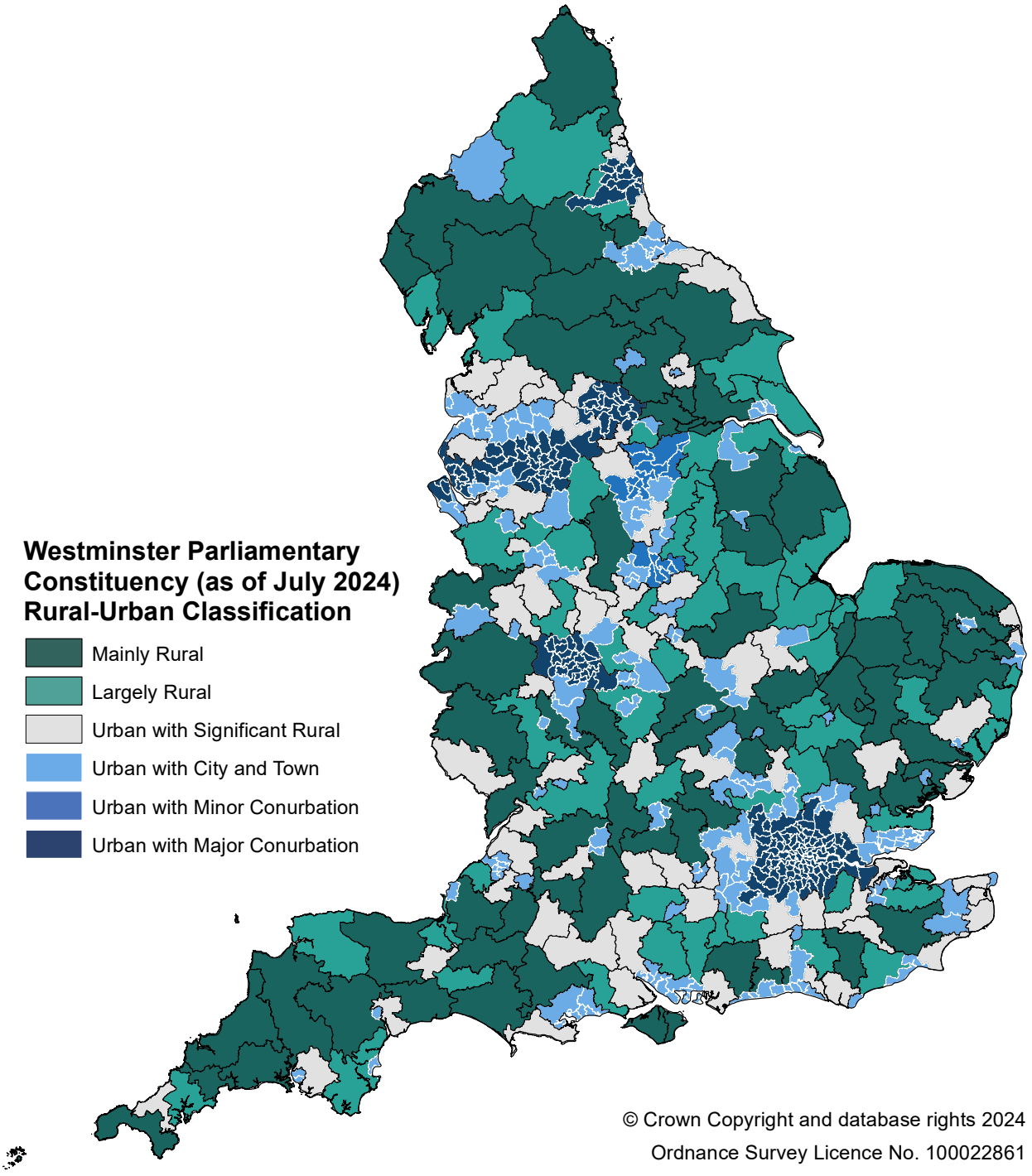
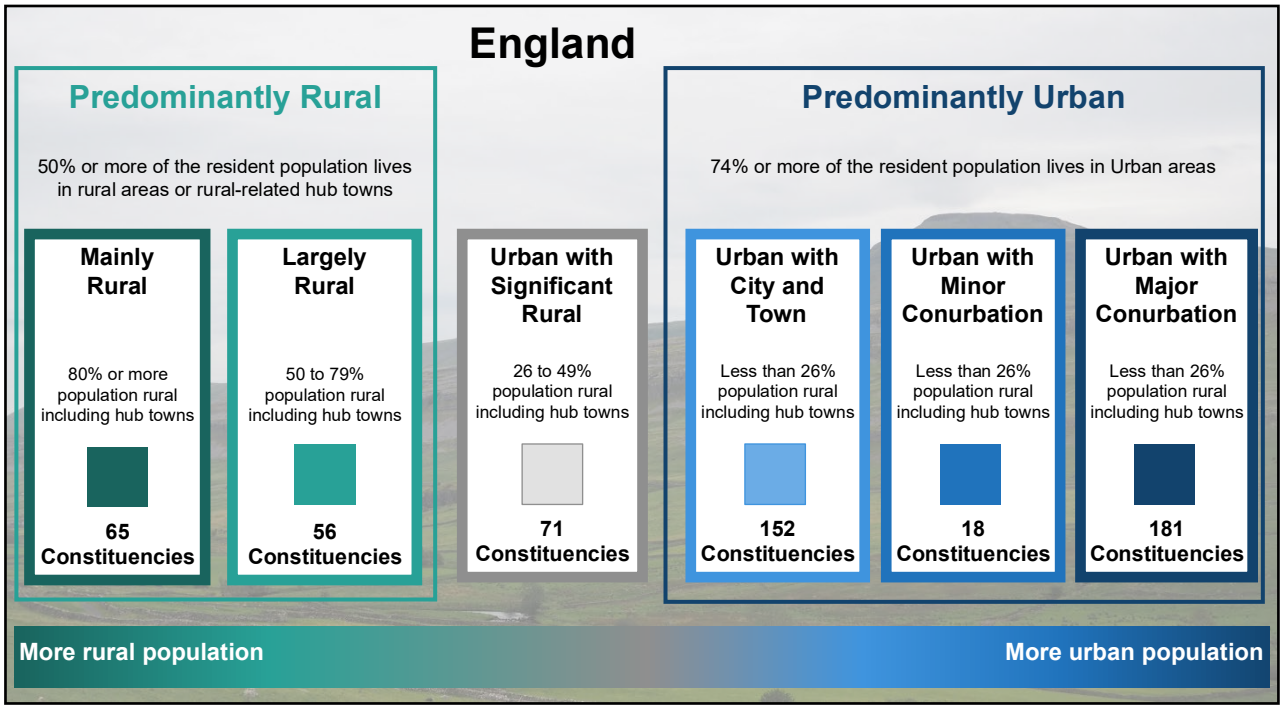


Figure X-6: 2011 Rural-Urban Classification for Westminster Parliamentary Constituencies in England



Defining Rural areas explanatory notes

- **Note 1:** Defining Super Output Areas and Wards

Census Output Areas (OAs) were created for publication of the results of the recent Censuses. They cover around 125 households. In practice few datasets are produced at OA level. However, other larger geographies can be built up from OAs. These include *Lower Layer Super Output Areas* (LSOAs) which typically contain 5 OAs, so contain approximately 625 households or a population of approximately 1,500 and a minimum 1,000. Their Rural-Urban Classification is based on the majority category of OAs they contain. Some other geographies, for example postcodes are classified based on the location of their central point and the classification of respective OA.

Note 2: Accessibility of Figure X-2

We accept that this map might not be accessible for all users, but it is difficult to develop a map containing six colours that will provide enough contrast between all colours to enable every user to see them, especially when the shaded areas are small. Separate maps (showing only three levels of shading) for Rural and Urban areas are available on request from: rural.statistics@defra.gov.uk