Department for Energy Security & Net Zero

Subnational Electricity and Gas Consumption Statistics

Regional and Local Authority, Great Britain, 2022

25 January 2024 **National Statistics**

This publication provides national and subnational estimates of annual electricity and weather corrected gas consumption in Great Britain. The latest estimates are for 2022[1].

- Between 2021 and 2022 all countries/regions experienced record year-on-year falls in total domestic gas and electricity consumption (varying from 11 to 14 per cent for gas and 6 to 9 per cent for electricity), likely related to elevated energy prices as well as the generally high cost of living. In contrast for both gas and electricity, the changes in total non-domestic consumption were more in line with those seen in previous years (prior to the pandemic).
- Almost all gas consuming local authorities (98 per cent) experienced falls greater than 10 per cent in mean domestic gas consumption between 2021 and 2022. For electricity, close to a third (29 per cent) of all local authorities experienced falls greater than 10 per cent in mean domestic electricity consumption between 2021 and 2022.
- For gas, the domestic sector is the larger consumer, accounting for around 60 to 70 per cent of total consumption across all countries/regions. In contrast, for electricity the domestic sector accounts for 35 to 45 per cent of total consumption. The effect of elevated energy prices was therefore more acute for total gas consumption (with all countries/regions seeing record year-on-year falls (8 to 12 per cent) between 2021 and 2022) than for electricity (where the year-on-year falls of 0 to 5 per cent were not dissimilar to those seen in previous years).
- Out of all countries and regions, the South West has the highest proportion of domestic properties not connected to the gas grid (24 per cent compared to 15 per cent for Great Britain as a whole). For consuming gas meters, the South West has also consistently had the lowest mean domestic gas consumption at around 11 to 12 per cent below the Great Britain average. The North East has the lowest proportion of domestic properties not connected to the gas grid (7 per cent) and has consistently had the lowest mean domestic electricity consumption (around 13 to 15 per cent below the Great Britain average).

What you need to know about these statistics:

Estimates are based on meter point data provided by the electricity and gas industries from their administrative systems.

Gas meters consuming above the industry standard threshold of 73,200 GWh per annum are categorised as non-domestic, otherwise as domestic. This may result in some smaller commercial properties being classified as domestic and can affect the trends over time. Improvements to methodology and data coverage over time mean that the time series is revised. In general, data from 2017/18 onwards are more accurate and consistent.

Visit the Domestic Energy Map – an interactive map which displays average domestic electricity and gas consumption as well as the proportion of domestic properties not on the gas grid. This map will be updated with 2022 consumption data in February 2024.

[1] The current gas year of 2022 covers the period of mid-May 2022 to mid-May 2023. See “Gas years” on page 17 for more detail. The electricity year is more closely aligned with the calendar year.

Contents

1. Introduction

1.1 Background

This document provides commentary on Subnational estimates of electricity and weather corrected gas consumption for Great Britain. Estimates are based on meter point data provided by the electricity and gas industries from their administrative systems. In this document, both the gas and electricity consumption years are referred to as 2022. It should be noted that the 2022 gas year runs from mid-May 2022 to mid-May 2023, whereas the electricity year more closely aligns to the calendar year; more detail on this is provided in the electricity and gas chapters. All local authority tables from 2015 are based on the administrative boundaries as of 1 April 2023. A subnational methodology and guidance booklet is published alongside this statistical release and provides further information on the collection and compilation of these subnational estimates of consumption.

Estimates are published for domestic and non-domestic meters broken down by countries and regions[2] (within England), and local authorities. Data are also published at middle layer super output area (MSOA) and lower layer super output area (LSOA) for England and Wales, and intermediate zone (IZ) and data zone (DZ) for Scotland. Domestic electricity and gas consumption data is also provided by individual postcodes. For data presented for 2015 onwards, MSOAs and LSOAs are now based on the Census 2021 geographies.

For national estimates of domestic consumption, Table C9 of ECUK should be used. Electricity and gas consumption estimates by property attributes, household characteristics and business characteristics are available as part of the National Energy Efficiency Data-Framework (NEED).

1.2 Users

The most significant use of the subnational consumption data is by Local Authorities and devolved administrations, and other external users such as academics and industry. These data have most commonly been used for targeting, to examine trends over time, or to assess the effectiveness of carbon reduction and energy efficiency policies and initiatives.

Internally, these data are used by the Department for Energy Security and Net Zero (DESNZ) to inform policy development and help with the monitoring and evaluation of DESNZ policies. The meter point gas and electricity data collected for subnational consumption outputs are also used in NEED.

Feedback from users of these data is welcomed. If you have any queries or suggestions, please contact us using the Energy Efficiency Statistics mailbox.

[2] A region refers to areas previously known as Government Office Regions (GORs), which were the primary statistical subdivision of England in which the Government Offices for the region fulfilled their role. They closed on 31 March 2011 and have remained a static geography used for statistical reporting since then. Further information is available in section 1.3 of the Subnational methodology and guidance booklet.

2. Electricity

The statistics presented in this section are based on meter level electricity consumption data obtained from electricity data aggregators (who compile these data on behalf of electricity suppliers). The estimates presented for 2022 cover the following industry defined years:

- Electricity non-half hourly – 1 February 2022 to 31 January 2023
- Electricity half hourly – 1 January 2022 to 31 December 2022

This section presents electricity consumption by consuming sector (domestic and non-domestic) and geographic area (country, region and local authority). This report is accompanied by tables showing the full subnational electricity consumption statistics.

Electricity statistics: Background information

On site generation of electricity

An increasing proportion of domestic and non-domestic properties in the UK have installed electricity generators on-site, including solar panels and wind turbines. Some of this electricity is fed back into the grid and some is used on site. As the data reported on in this collection is based on meter readings, electricity consumed directly from on-site generation is not captured in these statistics.

Sectoral classification for electricity

The industry assigns a profile class (0-8) to each electricity meter:

Profile class	Description
1-2	Standard and Economy 7 domestic meters, respectively.
3-4	Standard and Economy 7 non-domestic meters, respectively.
5-8	Higher consuming non-domestic meters.
0	These meters tend be the very highest consuming non-domestic meters and the consumption is monitored on a half-hourly basis.

Profile class 1-8 meters are non-half hourly meters, and profile 0 meters are half hourly meters. For the purpose of these statistics, profile class 1-2 meters are assumed to be domestic (aside from a small number of exceptions – see section 3.1.2 of the methodology note), while the remainder of the profile classes are assumed to be non-domestic.

Domestic meters and domestic properties

In 2022 there were 29.1 million consuming domestic electricity meters. However, there were an estimated 27.8 million households[3] in Great Britain in 2022. Part of the reason for the difference between the number of domestic meters and households is likely to be due to non-domestic meters being incorrectly classified as being domestic, as well as some properties having more than one linked electricity meter point. Additionally, the figures on the number of households are estimates which may be revised when they are recalibrated against data from the 2021 Census.

[3] Through the Office for National Statistics, Welsh Government and Scottish Government statistics there are an estimated 27.8 million households in Great Britain. Household estimates for 2021 and 2022 were not available for Wales at time of publication, therefore for each local authority in Wales, 2021 and 2022 figures were derived by applying growth factors to the number of households in 2020. The growth factors used were the average growth rates in the number of households between 2015 and 2020.

Electricity statistics: A new production process

As was the case for gas last year, a new processing system has been built and used for producing the latest subnational electricity consumption statistics (2022), as well as revising the statistics for the years 2015 – 2021. This new system was built to improve efficiency, traceability, quality assurance and methodological consistency across the timeseries. In building the new process a few small methodological improvements were made to address various data issues including:

- The emergence of domestic electricity meters being settled on a half hourly basis.
- Meter postcode information being invalid and/or incomplete for individual years and inconsistent from one year to the next.
- Meters with zero or missing consumption values that are no longer included in the statistics.

A summary of the revisions for Great Britain as a whole is provided below:

	2015	2016	2017	2018	2019	2020	2021
All: No. of consuming meters	-1.2%	-1.4%	-1.4%	-1.5%	-1.5%	-1.5%	-1.4%
All: Total consumption	**0.3%**	**-0.3%**	**-0.1%**	**0.1%**	**0.0%**	**-0.9%**	**-0.8%**
Domestic: No. of meters	-0.9%	-1.2%	-1.2%	-1.3%	-1.2%	-1.3%	-1.1%
Domestic: Total consumption	**0.5%**	**0.3%**	**-0.2%**	**0.1%**	**0.2%**	**0.1%**	**0.2%**
Domestic: Mean cons per meter	1.4%	1.5%	1.0%	1.4%	1.4%	1.4%	1.3%
Domestic: Median cons per meter	1.2%	1.2%	0.9%	1.2%	1.2%	1.2%	1.1%
Domestic: Mean cons per household	0.5%	0.3%	-0.2%	0.1%	0.2%	0.1%	0.2%
Non-Domestic: No. of meters	-3.8%	-4.5%	-3.8%	-4.7%	-4.9%	-4.8%	-5.0%
Non-Domestic: Total consumption	**0.2%**	**-0.7%**	**-0.1%**	**0.1%**	**-0.1%**	**-1.6%**	**-1.4%**
Non-Domestic: Mean cons per meter	4.1%	4.0%	3.9%	5.0%	5.0%	3.4%	3.8%
Non-Domestic: Median cons per meter	11.1%	8.2%	8.1%	12.9%	11.0%	11.3%	10.1%

While the revisions in total consumption are generally lower than 1 per cent, the revisions for mean and median consumption per meter are higher. This reflects the fact that the means and medians no longer include any meters not recorded as consuming any electricity (as is the case for gas consumption statistics). See Charts 5, 8 and 9 which show both the revised and unrevised 2015 means/medians illustrating the discontinuity created in time series. This reclassification of meters is also the reason for the reported number of meters being revised down.

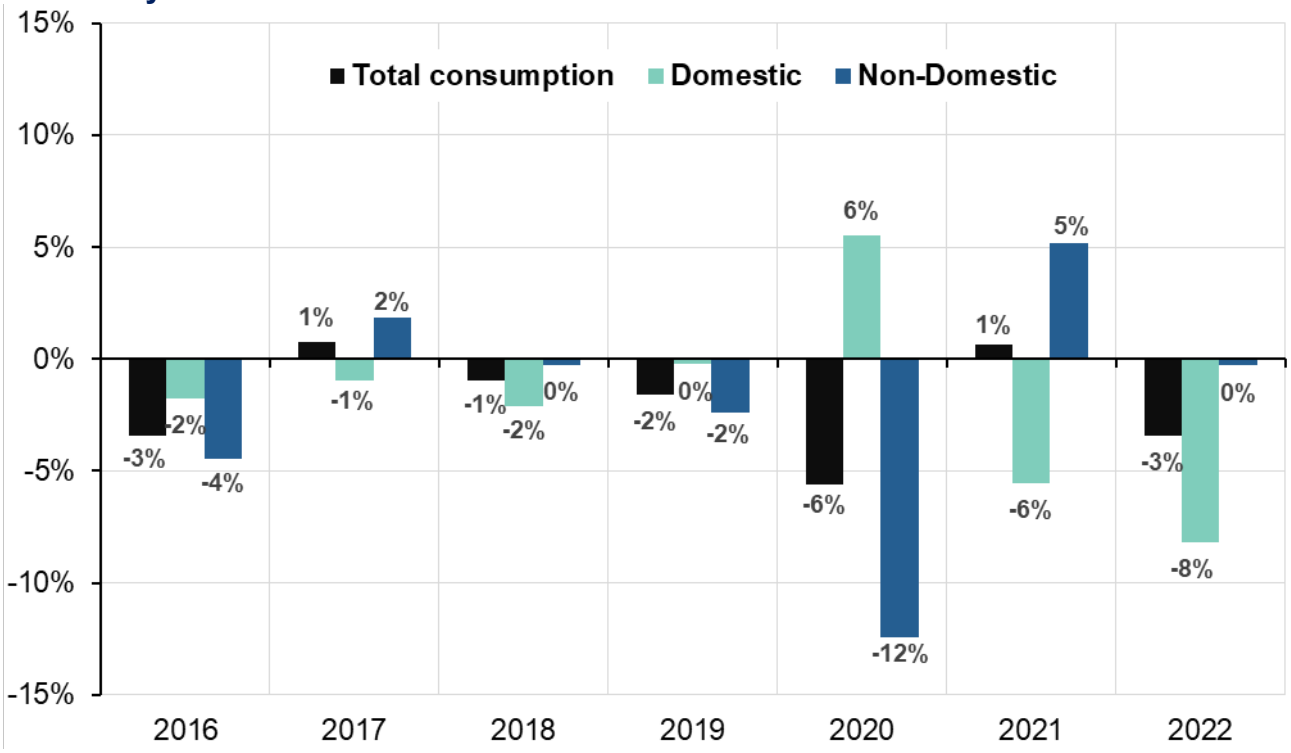
Further details are included in the accompanying methodology note (section 3.2).

2.1 Total electricity consumption

For Great Britain as a whole, a total of 250,021 GWh of electricity was consumed in 2022 via 31.5 million meters.

There was an 8.2 per cent decrease in total domestic electricity consumption in Great Britain between 2021 and 2022, a record fall since the time series began in 2005. This fall was larger than the changes in domestic electricity consumption seen around the time of the COVID-19 pandemic (a 5.5 per cent increase between 2019 and 2020 followed by a 5.5 per cent decrease between 2020 and 2021), see Chart 1. All countries/regions saw similar record falls in total domestic electricity consumption between 2021 and 2022, varying from 6 per cent to 9 per cent (see Table 1).

Chart 1: Year on year change in domestic, non-domestic and total electricity consumption in recent years: Great Britain



The record falls in domestic electricity consumption are likely to be related to particularly elevated domestic electricity prices (Table 2.1.2) which were around 40 per cent higher (in real terms) in 2022 than in 2021, as well as the generally high cost of living.

However, the domestic sector only makes up around 40 per cent of total electricity consumption in Great Britain. When the minimal year-on-year change in non-domestic electricity consumption (0.3 per cent reduction from 2021 to 2022) is included, this gives a reduction of 3.4 per cent in total electricity consumption, which is not dissimilar to year-on year falls seen previously.

Over the longer term, total electricity consumption has been falling across all countries/regions (see Chart 2 and Table 1) with total consumption around 20 per cent lower in 2022 than in 2005. Similar reductions are seen in both the domestic and non-domestic sectors. Across both the domestic and non-domestic sectors, the reductions in electricity consumption since 2005 seem to be the lowest in London and surrounding regions (South East and East).

Chart 2: Total electricity consumption by country/region, Great Britain, (Index: 2005 = 100)

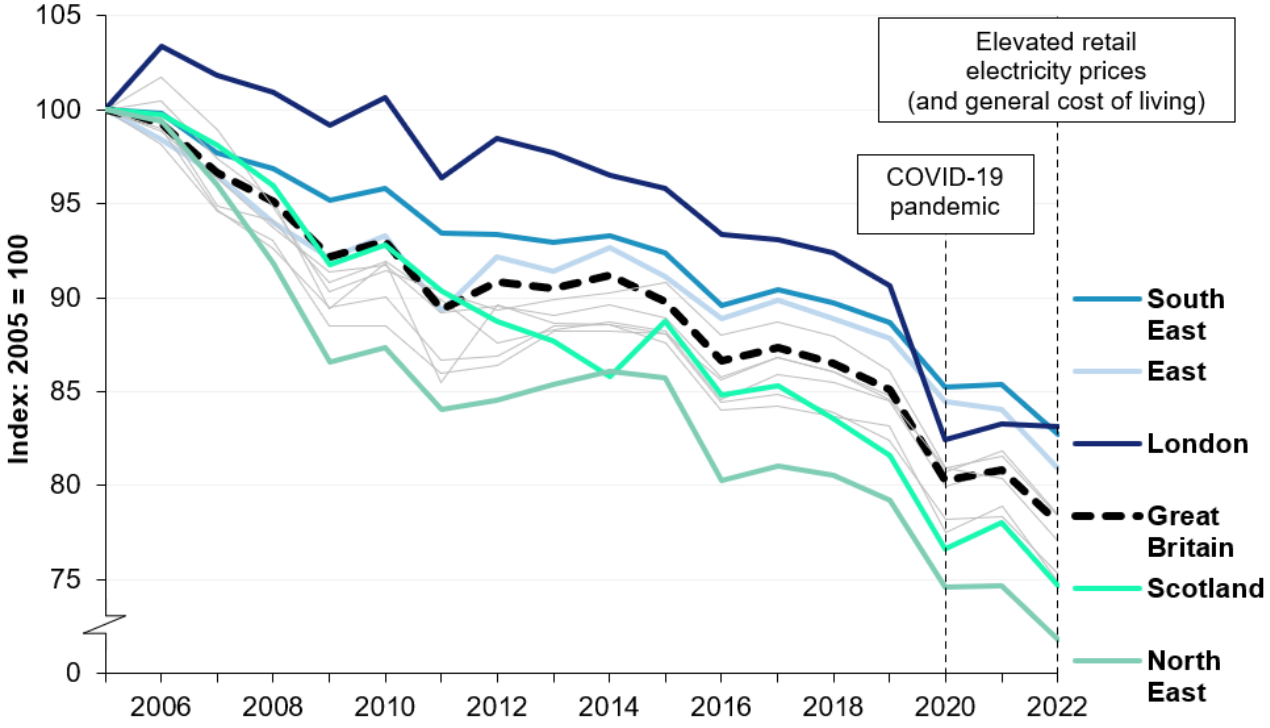
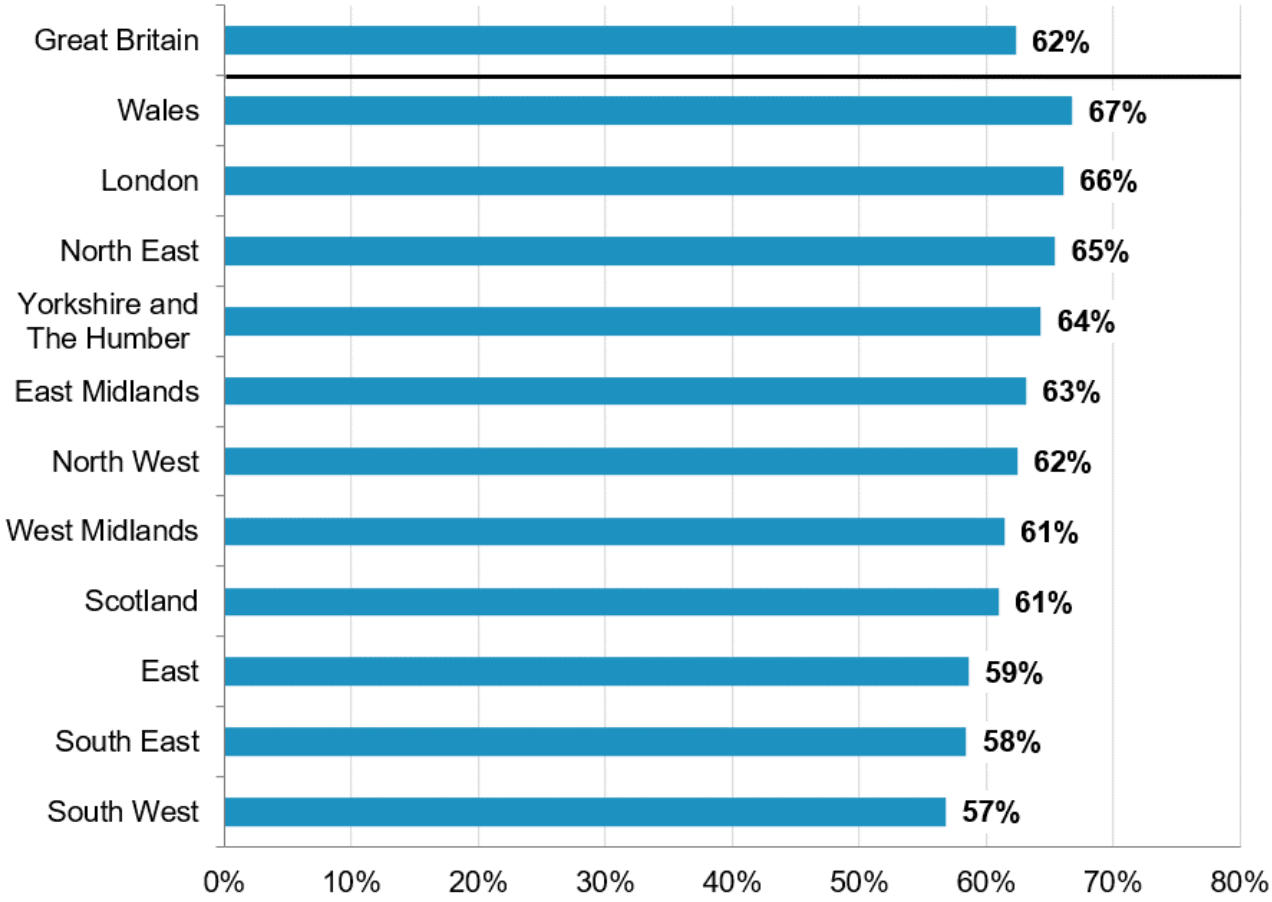


Table 1: Percentage change in total electricity consumption since 2005 and 2021, by country/region, Great Britain

	Domestic 2021-2022	Non-Domestic 2021-2022	**Total 2021-2022**	Domestic 2005-2022	Non-Domestic 2005-2022	**Total 2005-2022**
North East	-8.0%	-1.4%	**-3.8%**	-24.1%	-30.2%	**-28.2%**
North West	-8.4%	-0.9%	**-3.8%**	-22.1%	-26.1%	**-24.7%**
Yorkshire and The Humber	-9.1%	-1.8%	**-4.5%**	-24.6%	-21.7%	**-22.8%**
East Midlands	-8.5%	-1.4%	**-4.1%**	-19.9%	-22.4%	**-21.5%**
West Midlands	-8.4%	-0.8%	**-3.9%**	-20.1%	-22.5%	**-21.6%**
East	-8.4%	-0.3%	**-3.8%**	-18.9%	-19.3%	**-19.1%**
London	-5.9%	3.1%	**-0.1%**	-15.9%	-17.3%	**-16.8%**
South East	-8.0%	0.7%	**-3.1%**	-17.4%	-17.3%	**-17.3%**
South West	-8.3%	-0.6%	**-4.1%**	-20.8%	-24.5%	**-22.9%**
England	-8.0%	0.0%	**-3.3%**	-19.9%	-21.6%	**-20.9%**
Wales	-9.3%	-2.9%	**-5.1%**	-22.8%	-26.2%	**-25.1%**
Scotland	-9.1%	-0.9%	**-4.2%**	-30.6%	-21.5%	**-25.3%**
Great Britain	-8.2%	-0.3%	**-3.4%**	-21.1%	-22.4%	**-21.9%**

Chart 3: Non-domestic electricity consumption as a percentage of total electricity consumption, by country/region, Great Britain, 2022



Non-domestic electricity consumption accounts for more than half of the electricity consumed in the Great Britain (62 per cent in 2022). This is also the case for each country/region, as shown in Chart 3. Within England, in general, this proportion is lowest in the more southern regions: South West (57 per cent), South East (58 per cent) and East (59 per cent). The notable exception to this is London (66 per cent).

2.2 Domestic electricity consumption

Across Great Britain as a whole, there was a record fall (since the start of time series in 2005) in total domestic electricity consumption per meter (8.2 per cent) owing to a record fall in mean domestic consumption per meter (8.9 per cent). Similar falls were seen across all countries and regions (see Table 2), with London experiencing the smallest fall in mean domestic consumption per meter (6.6 per cent).

Over the longer term, total domestic electricity consumption in Great Britain has been on a downward trend with total domestic consumption 21.1 per cent lower in 2022 than in 2005. This reduction has happened despite a 12.1 per cent increase in the number of domestic meters, due to a 29.6 per cent reduction in mean domestic consumption per meter over this period.

Among all countries/regions, Scotland has experienced the largest percentage fall in total domestic electricity consumption between 2005 and 2022 (30.6 per cent). This is a result of Scotland experiencing the largest reduction in mean consumption per meter over this period (33.5 per cent) combined with the smallest increase in the number of domestic meters (4.5 per cent).

Table 2: Percentage change in number of domestic electricity meters and mean consumption since 2005 and 2021, by country/region, Great Britain

	Number of meters 2021-2022	Mean cons per meter 2021-2022	**Total cons 2021-2022**	Number of meters 2005-2022	Mean cons per meter 2005-2022	**Total cons 2005-2022**
North East	0.6%	-8.6%	**-8.0%**	7.0%	-29.1%	**-24.1%**
North West	0.7%	-9.0%	**-8.4%**	14.4%	-31.9%	**-22.1%**
Yorkshire and The Humber	0.4%	-9.5%	**-9.1%**	8.0%	-30.2%	**-24.6%**
East Midlands	1.0%	-9.4%	**-8.5%**	12.0%	-28.5%	**-19.9%**
West Midlands	0.7%	-9.0%	**-8.4%**	18.9%	-32.8%	**-20.1%**
East	1.0%	-9.3%	**-8.4%**	13.2%	-28.4%	**-18.9%**
London	0.8%	-6.6%	**-5.9%**	13.3%	-25.7%	**-15.9%**
South East	1.0%	-8.9%	**-8.0%**	13.8%	-27.4%	**-17.4%**
South West	0.9%	-9.2%	**-8.3%**	14.6%	-30.9%	**-20.8%**
England	0.8%	-8.8%	**-8.0%**	13.2%	-29.2%	**-19.9%**
Wales	0.7%	-10.0%	**-9.3%**	9.4%	-29.4%	**-22.8%**
Scotland	0.5%	-9.5%	**-9.1%**	4.5%	-33.5%	**-30.6%**
Great Britain	0.8%	-8.9%	**-8.2%**	12.1%	-29.6%	**-21.1%**

Chart 4: Mean domestic electricity consumption (kWh per meter) by country/region, Great Britain, 2022

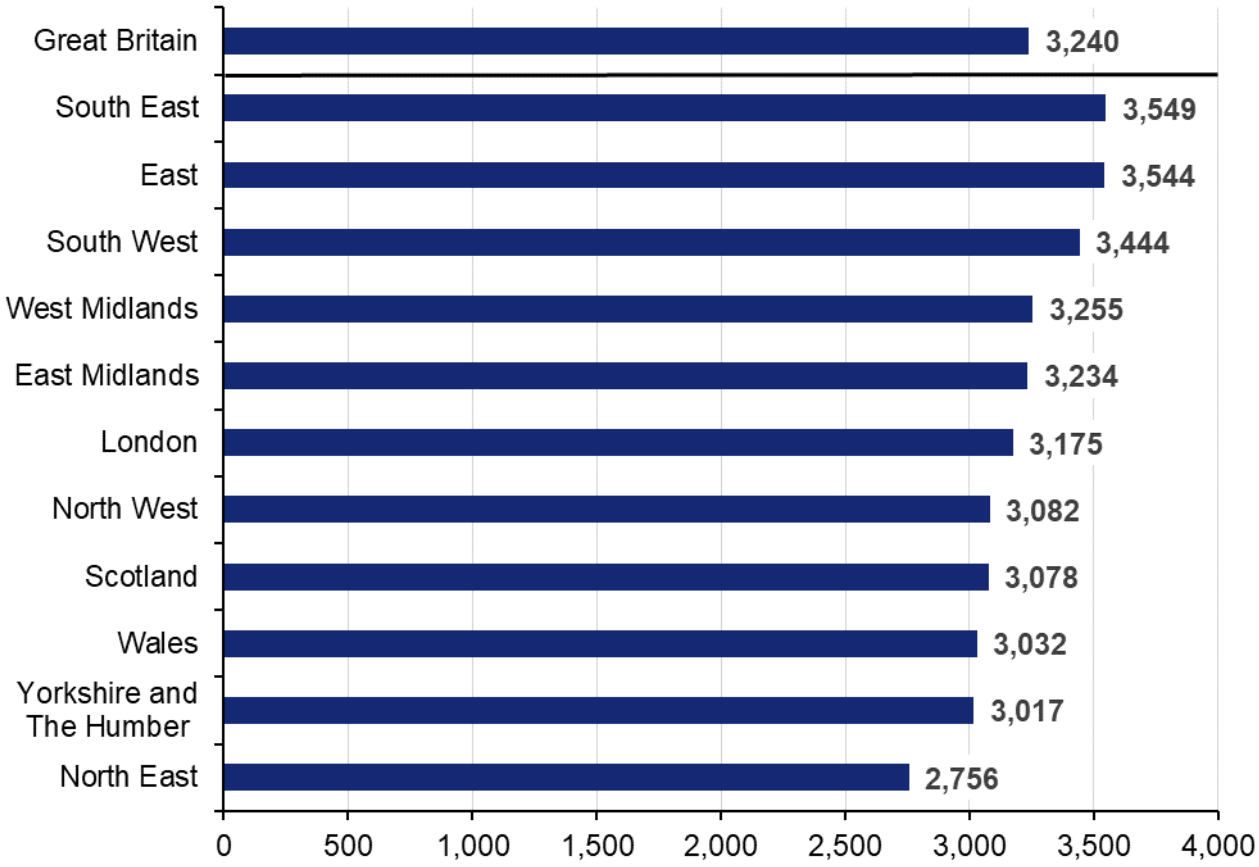


Chart 5: Mean domestic electricity consumption (kWh per meter) by country/region, Great Britain, 2005 – 2022

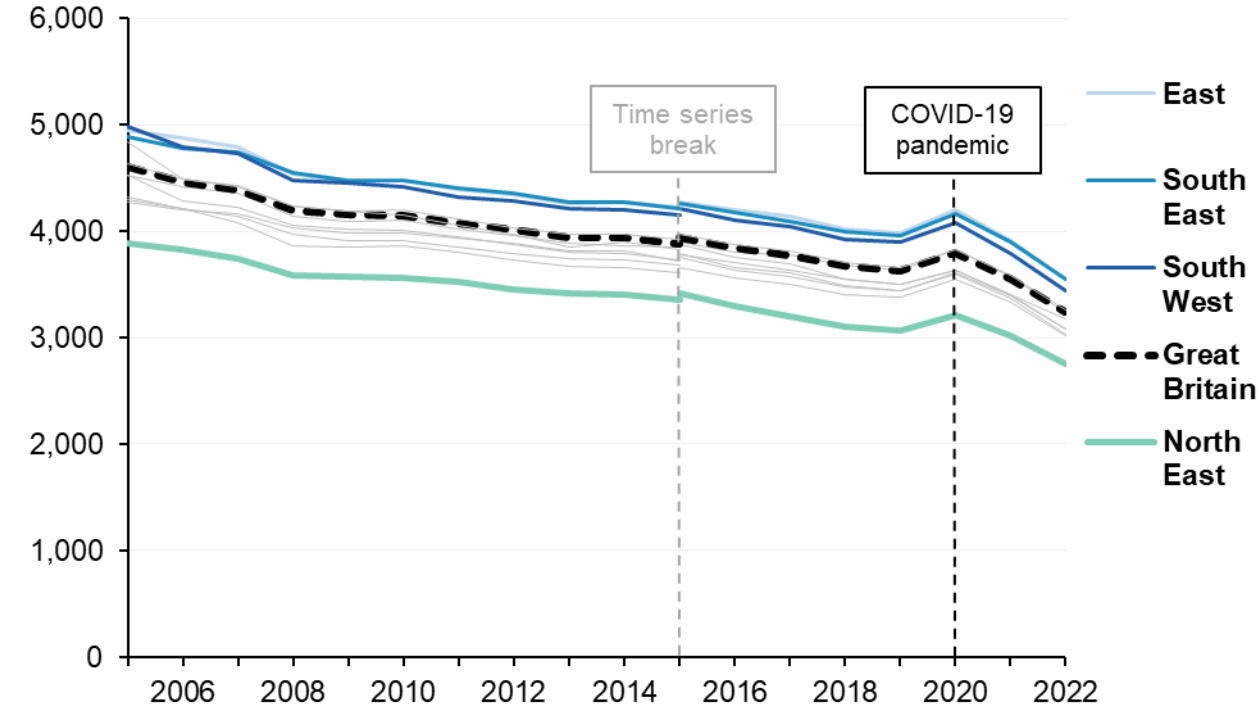
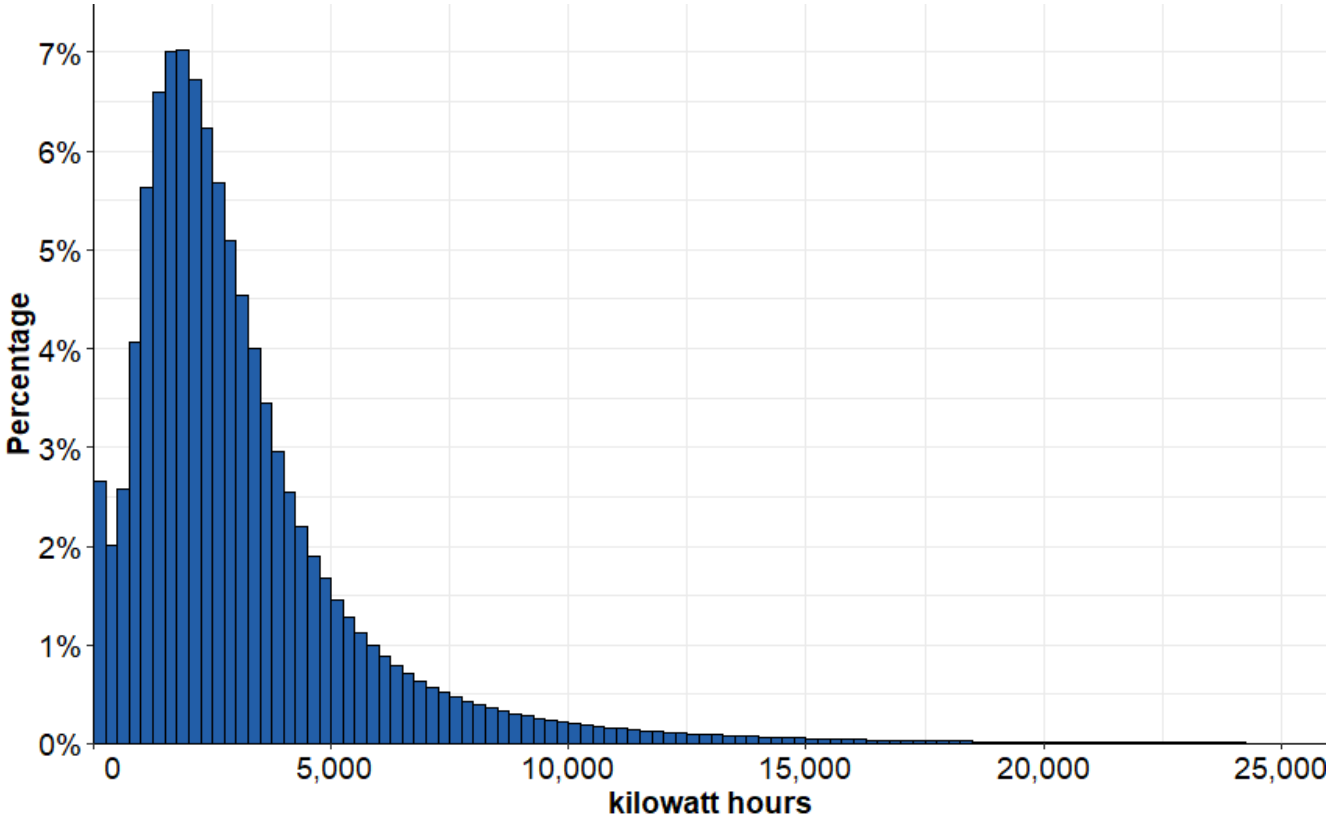


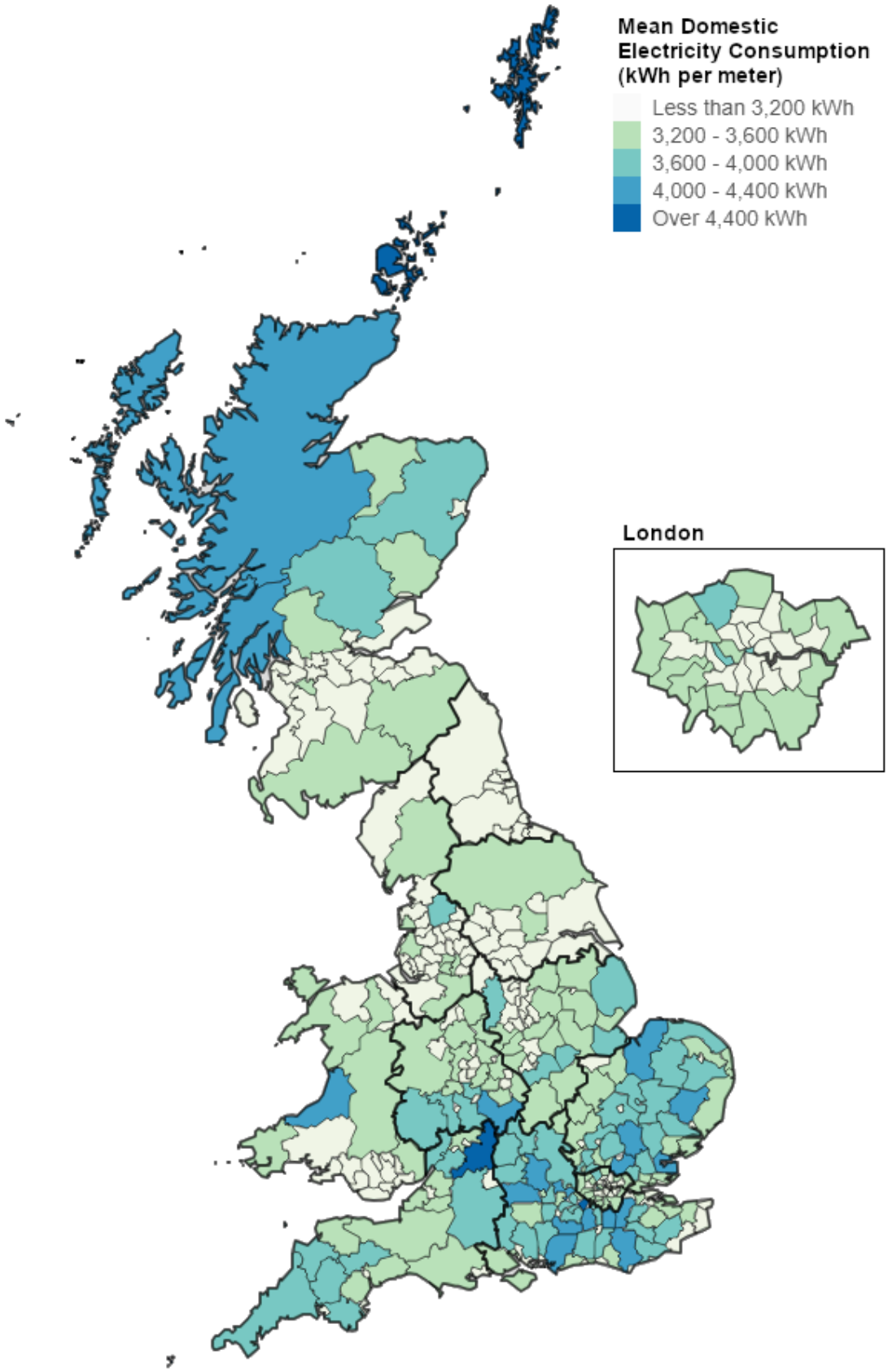
Chart 4 shows the mean domestic electricity consumption per meter for each country/region in 2022 and Chart 5 shows the trend in mean domestic consumption since 2005 with the highest and lowest consuming regions (in terms of mean domestic consumption) highlighted. The North East has always had the lowest mean domestic electricity consumption per meter, consistently remaining at around 13 to 15 per cent below the Great Britain average. In 2022, the domestic mean in the North East was 14.9 per cent lower than the Great Britain average. This is likely to be related to the North East having the lowest proportion of domestic properties not connected to the gas grid (see pages 14, 27-29). Census (2021) data on the type of central heating used by each household shows that, within England and Wales, the North East has the lowest proportion of households only using electricity for central heating (5.1 per cent compared to 8.5 per cent for England and Wales as a whole). At the other end of the scale, the most Southern regions (with the exception on London) have consistently had the highest mean domestic electricity consumption. In 2022, mean domestic consumption in the East was 9.4 per cent higher than the Great Britain average, while the South East was 9.6 per cent higher and the South West was 6.3 per cent higher. In the case of the South West, the higher than average electricity consumption per meter is likely to be related to it having the highest percentage of domestic properties not connected to the gas grid. The Census data shows that, within England and Wales, besides London, the South West has the highest percentage of households only using electricity for central heating (10.3 per cent).

Chart 6 shows the distribution of domestic electricity consumption at the level of individual meters in 2022. While most (69 per cent) domestic electricity meters consumed between 750 and 4,000 kWh, 3 per cent consumed over 10,000 kWh. As a result of these few high consuming meters the mean domestic electricity consumption of 3,239 kWh is substantially higher than the median domestic electricity consumption (the value which half of meters are above, and half are below) of 2,475 kWh.

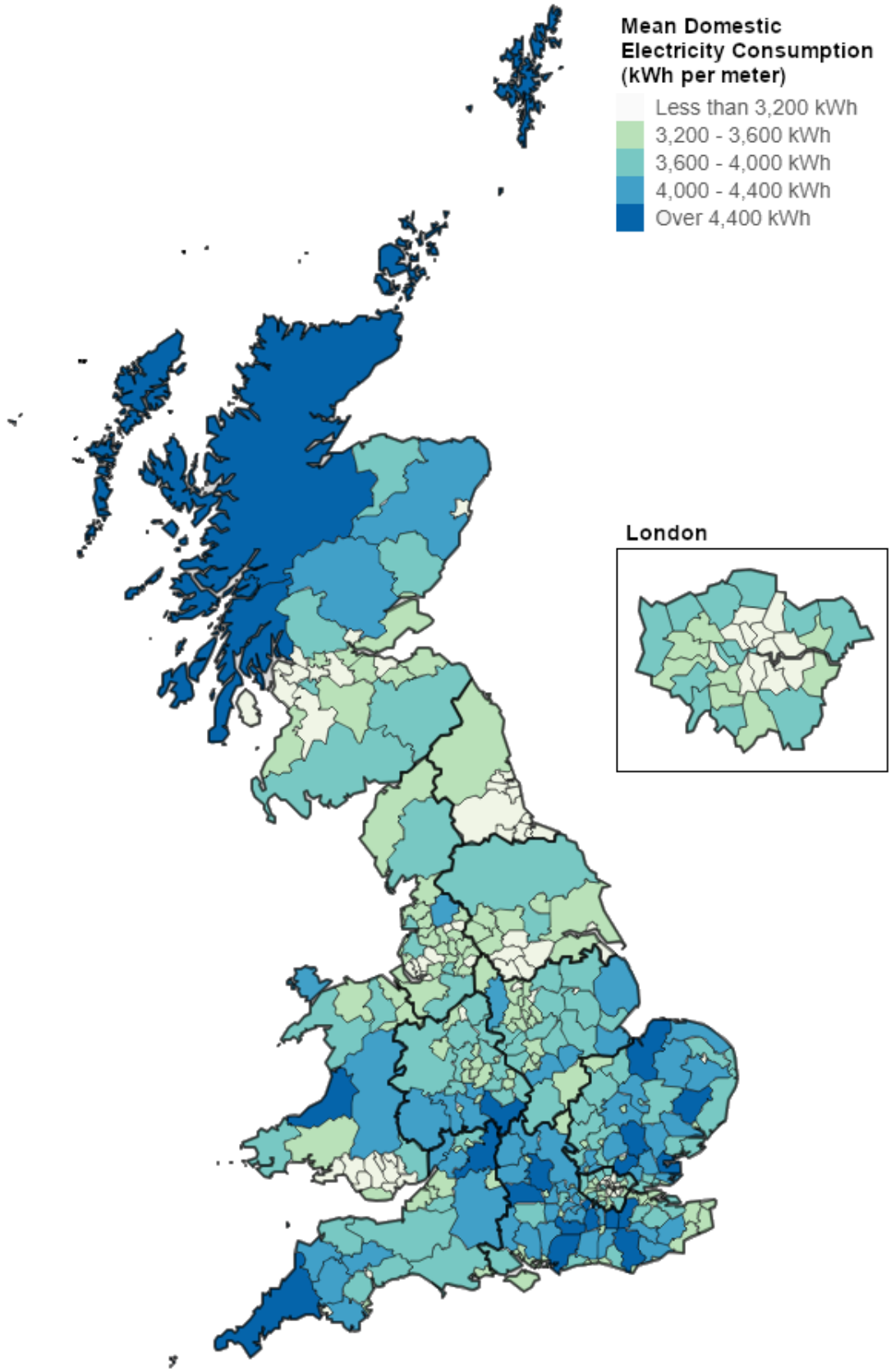
Chart 6: The distribution of domestic electricity consumption per meter, Great Britain, 2022



Map 1a: Mean domestic electricity consumption per meter by local authority, 2022



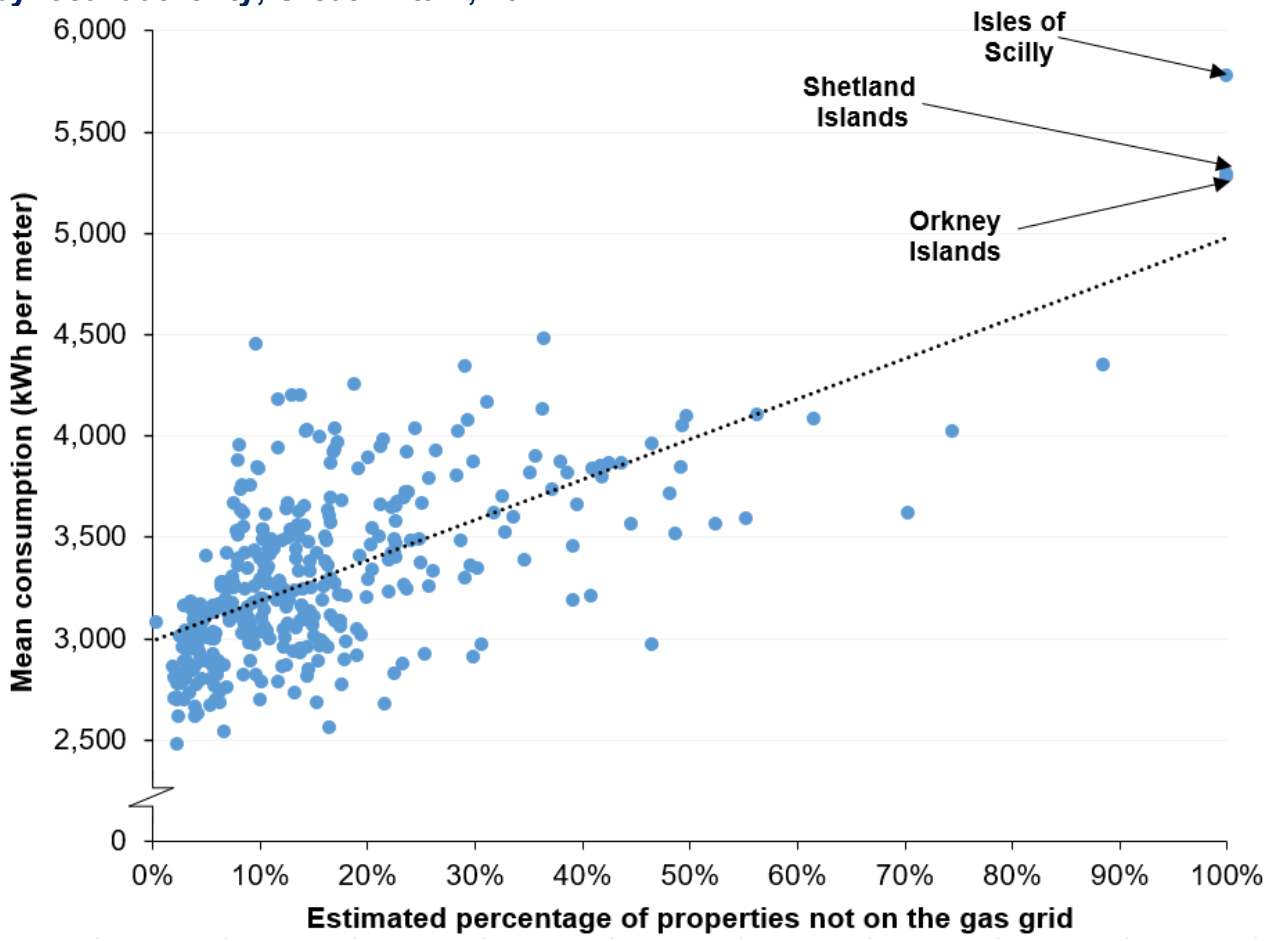
Map 1b: Mean domestic electricity consumption per meter by local authority, 2021



Maps 1a and 1b show how mean domestic electricity consumption per meter varied geographically at the level of individual local authorities in 2021 and 2022. No single factor can explain the geographical variation shown. Some local authorities, such as Ceredigion in Wales, have a higher-than-average proportion of properties off the gas grid and therefore consume more electricity for space heating. Other factors include the size of the property household income. These maps also illustrate the change in electricity consumption between 2021 and 2022. Close to a third (29 per cent) of all local authorities experienced falls greater than 10 per cent in mean domestic electricity consumption between the two years.

In general, heating tends to be the main source of total energy consumption (from all energy sources) in domestic properties (61 per cent of domestic energy consumption in 2022[4] was for space heating). Properties not connected to the gas grid are more likely to use electricity for heating[5], which will raise their electricity consumption. Therefore, some correlation between electricity consumption and the percentage of properties not connected to the gas grid is expected. For each local authority, Chart 7 shows the mean domestic electricity consumption per meter against the proportion of properties not connected to the gas grid. There is indeed a moderate correlation between these variables (a correlation coefficient of 0.66 and a correlation of 0.56 if the 3 local authorities with no properties connected to the gas grid are excluded).

Chart 7: Mean annual domestic electricity consumption (kWh per meter) against the proportion of properties not connected to the gas grid, by local authority, Great Britain, 2022



[4] Source: Energy Consumption in the UK 2023, End uses data tables (XLS, 523KB), Table U1.
[5] For those properties with no gas meter present, 53 per cent use electricity as their main fuel type, followed by 27 per cent using an oil fired system. Source: English Housing Survey 2017/18, annex table 3.5.

2.3 Non-domestic electricity consumption

Across Great Britain as a whole, total non-domestic electricity consumption decreased by 0.3 per cent between 2021 and 2022. Almost all countries/regions experienced a year-on-year fall in total non-domestic consumption with London being the key exception (with a 3.1 per cent increase).

Over the longer term there has been a 22.4 per cent reduction in total non-domestic electricity consumption between 2005 and 2022, due to a 22.8 per cent reduction in mean electricity consumption per meter. A full breakdown by country/region is provided in Table 3.

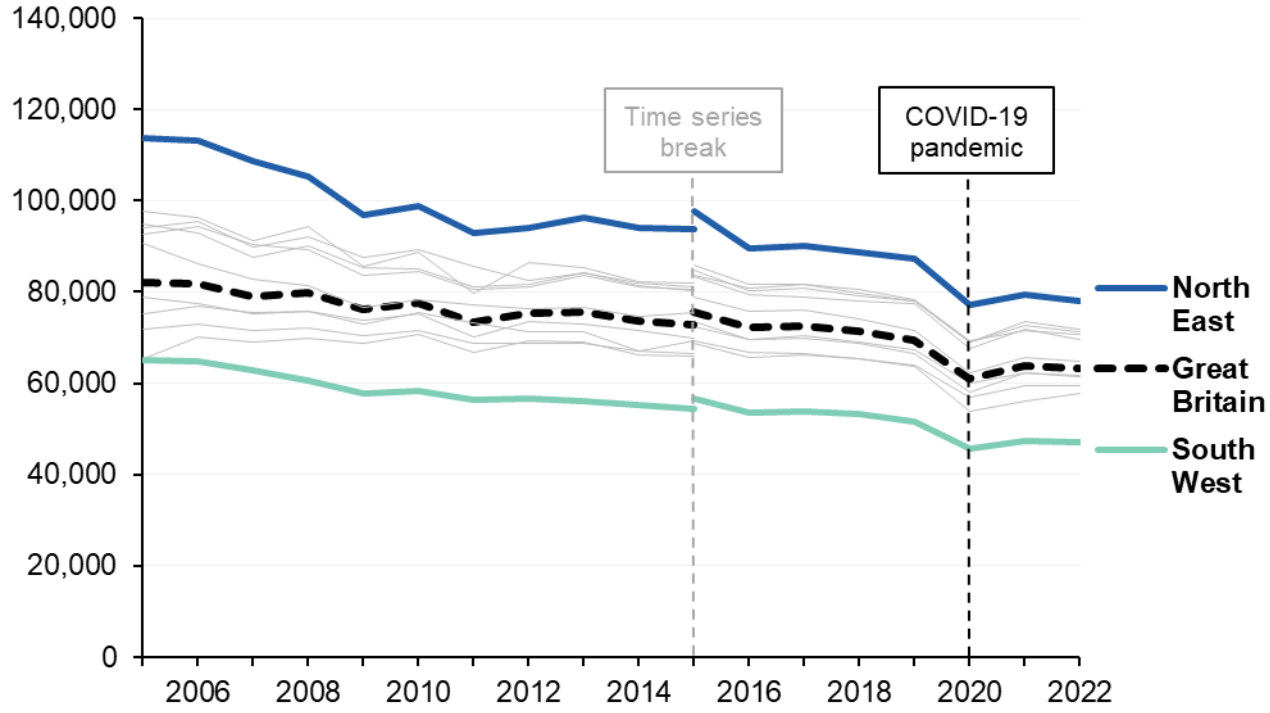
Table 3: Percentage change in the number of non-domestic electricity meters and mean consumption since 2005 and 2021 by country/region, Great Britain

	Number of meters 2021-2022	Mean cons per meter 2021-2022	**Total cons 2021-2022**	Number of meters 2005-2022	Mean cons per meter 2005-2022	**Total cons 2005-2022**
North East	0.5%	-1.9%	**-1.4%**	2.0%	-31.5%	**-30.2%**
North West	0.4%	-1.2%	**-0.9%**	2.1%	-27.6%	**-26.1%**
Yorkshire and The Humber	0.1%	-1.9%	**-1.8%**	3.4%	-24.3%	**-21.7%**
East Midlands	0.9%	-2.3%	**-1.4%**	2.4%	-24.2%	**-22.4%**
West Midlands	0.5%	-1.3%	**-0.8%**	8.4%	-28.5%	**-22.5%**
East	0.6%	-0.9%	**-0.3%**	3.4%	-21.9%	**-19.3%**
London	0.1%	3.0%	**3.1%**	-6.4%	-11.7%	**-17.3%**
South East	0.8%	-0.1%	**0.7%**	-0.1%	-17.1%	**-17.3%**
South West	0.3%	-0.9%	**-0.6%**	4.7%	-27.9%	**-24.5%**
England	0.5%	-0.5%	**0.0%**	1.1%	-22.4%	**-21.6%**
Wales	0.0%	-2.9%	**-2.9%**	-1.8%	-24.9%	**-26.2%**
Scotland	0.5%	-1.4%	**-0.9%**	-3.7%	-18.5%	**-21.5%**
Great Britain	0.5%	-0.8%	**-0.3%**	0.5%	-22.8%	**-22.4%**

Chart 8 shows the trend in mean non-domestic electricity consumption since 2005 with the highest and lowest consuming regions (in terms of mean non-domestic consumption) highlighted. The North East has consistently had the highest mean non-domestic consumption, while the South West has consistently had the lowest. Both Table 3 and Chart 8 should be treated with caution; with so many different factors involved it is difficult to make meaningful, like for like comparisons between different parts of the country. This is particularly the case for non-domestic consumption as businesses vary greatly in size and activity[6]. Moreover, changes for a very small number of large very high consuming businesses can make a very big difference to total and mean consumption.

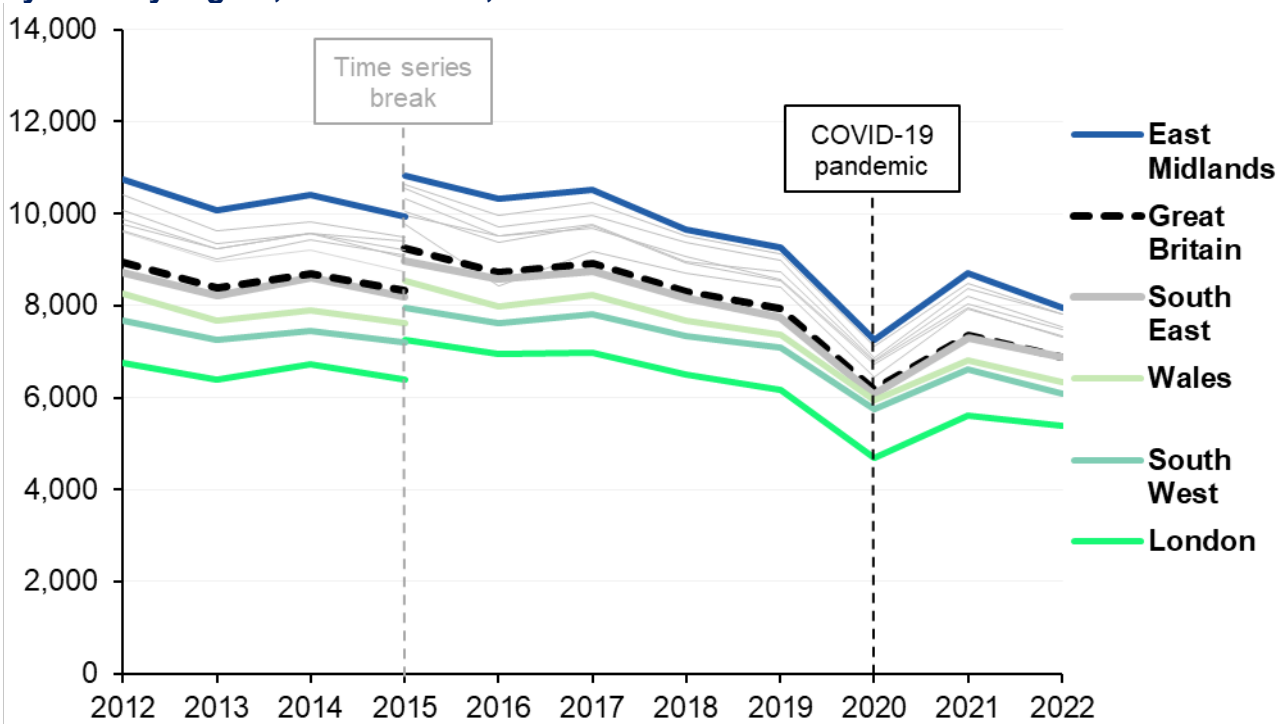
[6] Further information on the non-domestic building stock and non-domestic building energy consumption in England and Wales can be found in the Non-Domestic National Energy Efficiency Data-Framework.

Chart 8: Mean non-domestic electricity consumption (kWh per meter) by country/region, Great Britain, 2005 to 2022



While mean non-domestic electricity consumption may be heavily affected by a small number of very high consuming meters, the median consumption can give a better indication of changes in electricity consumption for more typical meters in the non-domestic sector. Trends in median non-domestic electricity consumption since 2012 are shown in Chart 9, where the impacts of COVID-19 restrictions can be seen more clearly in the time series.

Chart 9: Median non-domestic electricity consumption (kWh per meter) by country/region, Great Britain, 2012 to 2022



3. Gas

This section looks at gas consumption by domestic/non-domestic classification and geographic area (country, region and local authority). This report is accompanied by tables showing the full subnational gas consumption statistics.

Gas statistics: Background information

Sectoral classification for gas

To classify a gas meter as domestic or non-domestic, the gas industry cut-off point of 73,200 kWh is used – that is, if a meter consumes less than 73,200 kWh within the gas year it is defined as a domestic meter, and non-domestic if it consumes 73,200 kWh or more.

Unique sites in the gas consumption statistics

In addition to domestic and non-domestic meters, DESNZ is supplied with data on "Unique Sites" (also known as "Non-Standard Sites"). These are high consuming sites for which data was not available in earlier years, due to the complexities in their billing arrangements. Gas consumption from unique sites continues to be excluded in these statistics, to preserve consistency across the time series.

Break in trends

With the 2017 consumption figures, Xoserve introduced a new data collection system. Due to this, a large proportion of meters, which had not reported for some time, have had their consumption updated in 2017 leading to a sizeable increase in gas consumption reported in 2017. With most gas meters now providing timely meter readings, the figures from 2017 onwards give a more accurate reflection of gas consumption.

Weather correction

In the domestic sector, gas is predominantly used for heating purposes (75 per cent of domestic gas consumption was for space heating[7] in 2022). As a result, usage is driven by external temperatures and weather conditions. The weather correction enables more like-for-like comparisons of gas use over time, by adjusting for weather changes. However the weather correction process may not adequately compensate for extreme weather conditions as consumers may adjust their gas use sharply over short periods of time.

Gas years

The gas years used for in these statistics are not calendars years, but are as follows:

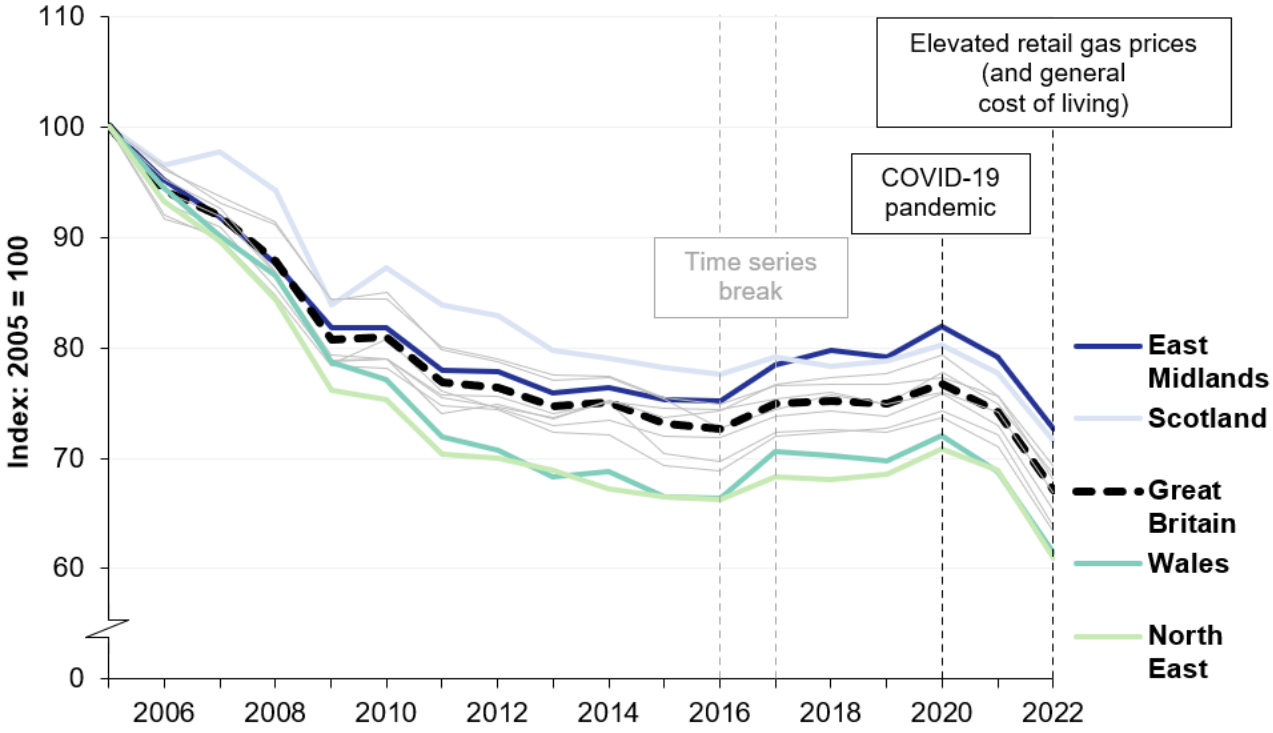
- Prior to 2014: Same October – September period as 2014 and 2015
- 2014: October 2013 – September 2014
- 2015: October 2014 – September 2015
- 2016: Mid-July 2016 – Mid-July 2017
- 2017: Mid-June 2017 – Mid-June 2018
- 2018: Mid-May 2018 – Mid-May 2019
- 2019 onwards: Mid-May – Mid-May (same as 2018)

[7] Source: Energy Consumption in the UK 2023, End uses data tables (XLS, 523KB), Table U2.

3.1 Total gas consumption

For Great Britain as a whole, a total of 447,970 GWh of gas was consumed in the 2022 gas year (via 24.8 million meters). There was a 9.6 per cent decrease in total gas consumption in Great Britain between the 2021 and 2022 gas consumption years, a record fall in total gas consumption (since the time series began in 2005). All countries/regions saw similar record falls in total gas consumption varying from 8 per cent to 12 per cent (see Chart 10 and Table 4).

Chart 10: Total gas consumption by country/region, Great Britain, (Index: 2005 = 100)



The record year-on-year falls in total gas consumption from 2021 to 2022 for each country/region were due to record falls in total domestic gas consumption, likely to be related to particularly elevated domestic gas prices (Table 2.1.1), which were twice as high (in real terms) during the year to March 2023 than they were in the previous 12 month period, as well as the generally high cost of living.

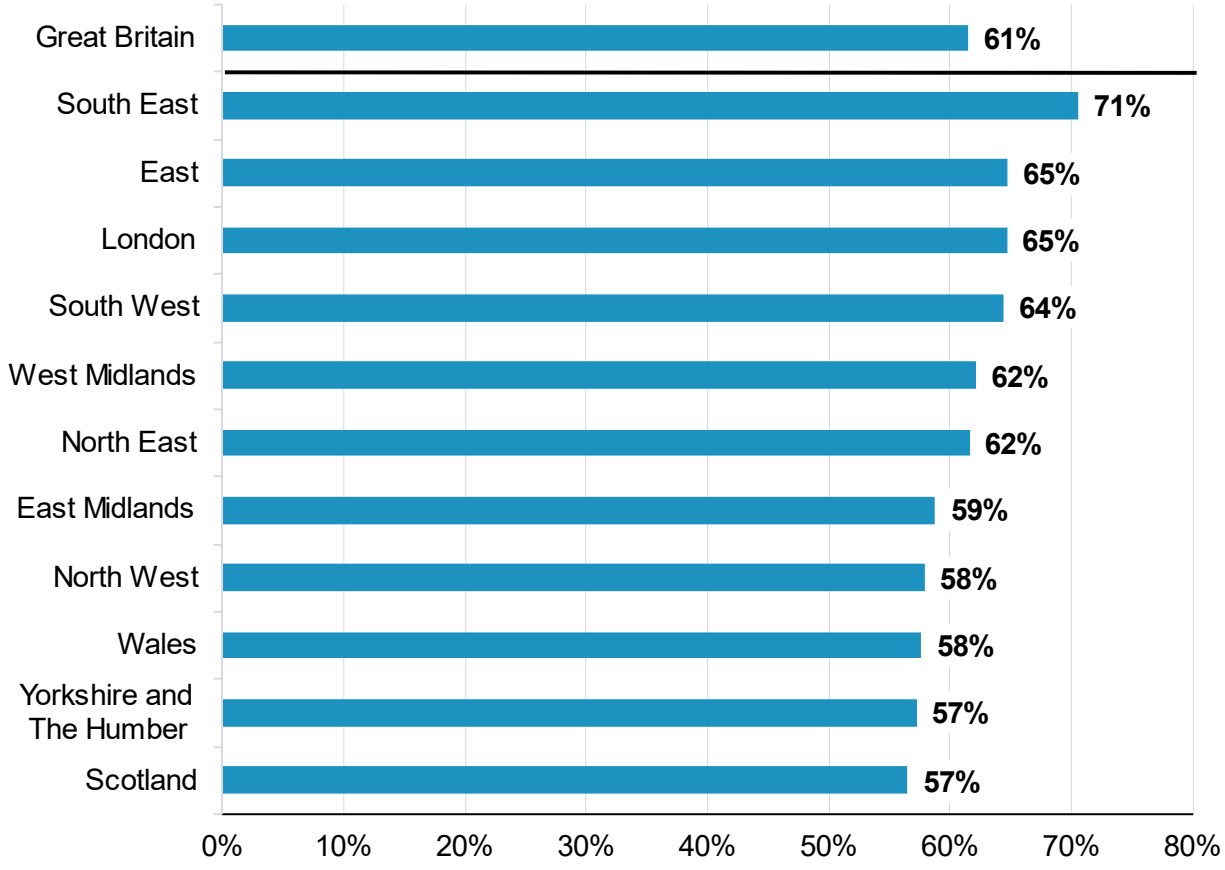
Over the longer term, total gas consumption has been falling across all countries/regions (see Chart 10 and Table 4) with total consumption around 33 per cent lower in 2022 than in 2005. Similar reductions were seen in both the domestic and non-domestic sectors.

The domestic sector is the larger consumer of gas, accounting for around 60 to 70 per cent of total gas consumption across all countries/region (see Chart 11).

Table 4: Percentage change in total gas consumption since 2005 and 2021, by country/region, Great Britain

	Domestic 2021-2022	Non-Domestic 2021-2022	**Total 2021-2022**	Domestic 2005-2022	Non-Domestic 2005-2022	**Total 2005-2022**
North East	-13.8%	-7.6%	**-11.5%**	-37.2%	-41.8%	**-39.1%**
North West	-13.9%	-7.6%	**-11.4%**	-38.1%	-33.0%	**-36.1%**
Yorkshire and The Humber	-14.1%	-5.7%	**-10.7%**	-35.2%	-38.2%	**-36.5%**
East Midlands	-12.8%	-0.8%	**-8.2%**	-31.6%	-20.2%	**-27.3%**
West Midlands	-13.6%	-2.5%	**-9.7%**	-33.1%	-32.9%	**-33.0%**
East	-11.9%	-1.3%	**-8.4%**	-29.5%	-34.5%	**-31.4%**
London	-11.1%	-2.5%	**-8.3%**	-32.0%	-28.1%	**-30.7%**
South East	-11.6%	-7.9%	**-10.6%**	-29.7%	-44.3%	**-34.7%**
South West	-11.9%	-5.5%	**-9.8%**	-31.0%	-33.2%	**-31.8%**
England	-12.6%	-4.7%	**-9.8%**	-33.0%	-34.3%	**-33.5%**
Wales	-14.0%	-5.7%	**-10.7%**	-38.9%	-38.1%	**-38.6%**
Scotland	-12.8%	-0.5%	**-7.8%**	-30.2%	-25.9%	**-28.4%**
Great Britain	-12.7%	-4.3%	**-9.6%**	-33.0%	-32.8%	**-32.9%**

Chart 11: Domestic gas consumption as a percentage of total gas consumption, by country/region, Great Britain, 2022



3.2 Domestic gas consumption

Across Great Britain as a whole, there was a record fall (since the start of time series in 2005) in total domestic gas consumption (12.7 per cent) owing to a record fall in mean domestic consumption per meter (13.3 per cent). Similar record falls were seen across all countries and regions (see Table 5).

Over the longer term, there has been a downward trend with total domestic gas consumption being 33.0 per cent lower in 2022 than in 2005. This reduction has happened despite a 13.5 per cent increase in the number of domestic meters, due to a 40.9 per cent reduction in mean consumption per meter over this period. Similar reductions were seen across all countries/regions.

Chart 12 shows the mean domestic gas consumption per meter for each country/region in 2022 and Chart 13 shows the trend in mean domestic gas consumption since 2005 with the lowest consuming regions (in terms of mean domestic consumption) highlighted. The South West has always had the lowest mean domestic gas consumption per meter, consistently remaining at around 11 to 12 per cent below the Great Britain average.

Table 5: Percentage change in number of domestic gas meters and mean consumption since 2005 and 2021, by country/region, Great Britain

	Number of meters 2021-2022	Mean cons per meter 2021-2022	**Total cons 2021-2022**	Number of meters 2005-2022	Mean cons per meter 2005-2022	**Total cons 2005-2022**
North East	0.7%	-14.4%	**-13.8%**	11.7%	-43.8%	**-37.2%**
North West	0.6%	-14.4%	**-13.9%**	9.8%	-43.6%	**-38.1%**
Yorkshire and The Humber	0.6%	-14.6%	**-14.1%**	11.2%	-41.7%	**-35.2%**
East Midlands	1.0%	-13.7%	**-12.8%**	17.3%	-41.7%	**-31.6%**
West Midlands	0.7%	-14.2%	**-13.6%**	11.9%	-40.2%	**-33.1%**
East	1.0%	-12.8%	**-11.9%**	17.2%	-39.9%	**-29.5%**
London	0.0%	-11.2%	**-11.1%**	3.5%	-34.3%	**-32.0%**
South East	0.8%	-12.3%	**-11.6%**	15.7%	-39.2%	**-29.7%**
South West	0.8%	-12.6%	**-11.9%**	21.4%	-43.2%	**-31.0%**
England	0.7%	-13.2%	**-12.6%**	12.6%	-40.5%	**-33.0%**
Wales	0.4%	-14.4%	**-14.0%**	12.2%	-45.6%	**-38.9%**
Scotland	0.9%	-13.5%	**-12.8%**	22.2%	-42.9%	**-30.2%**
Great Britain	0.7%	-13.3%	**-12.7%**	13.5%	-40.9%	**-33.0%**

Chart 12: Mean domestic gas consumption (kWh per meter) by country/region, Great Britain, 2022

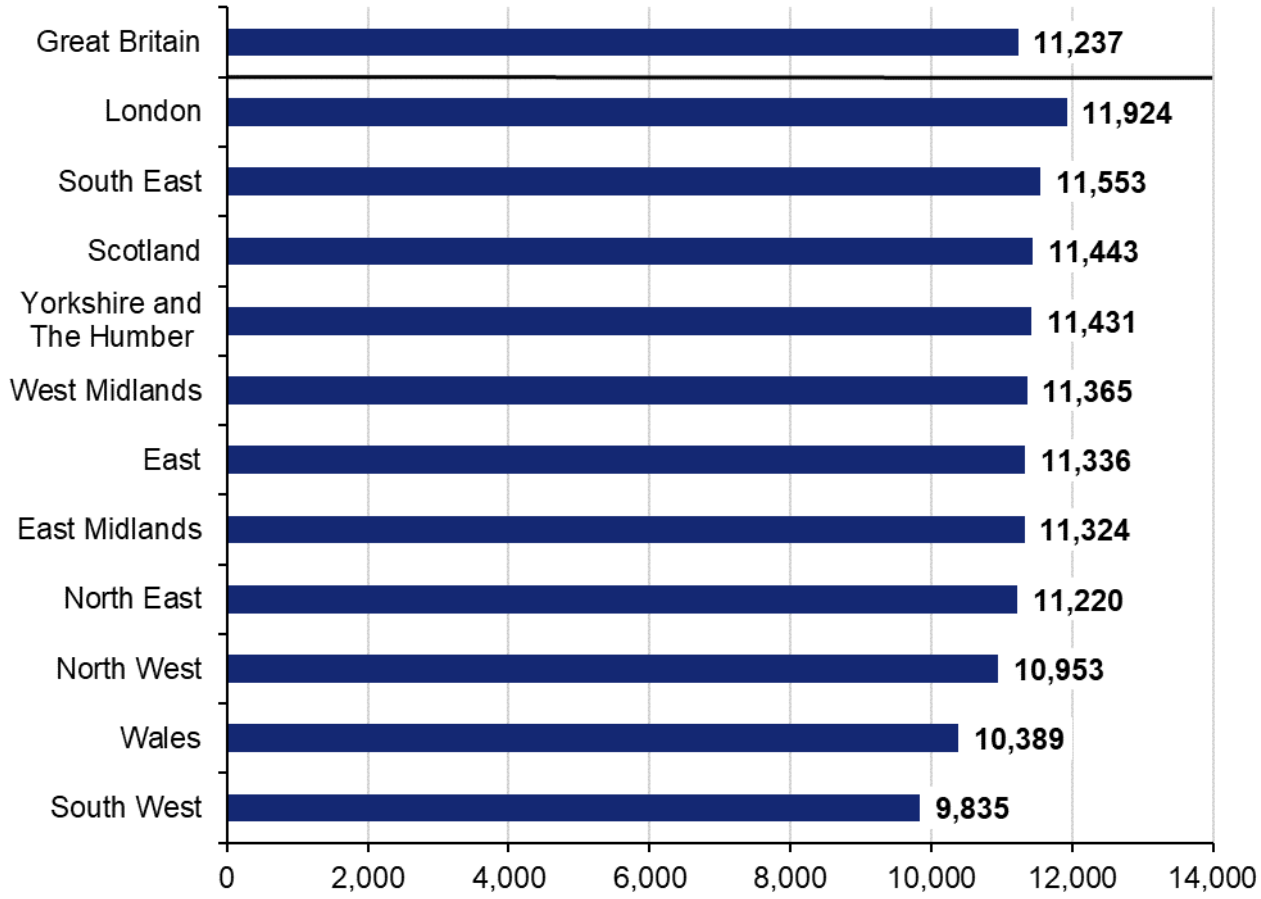


Chart 13: Mean domestic gas consumption (kWh per meter) by country/region, Great Britain, 2005 to 2022

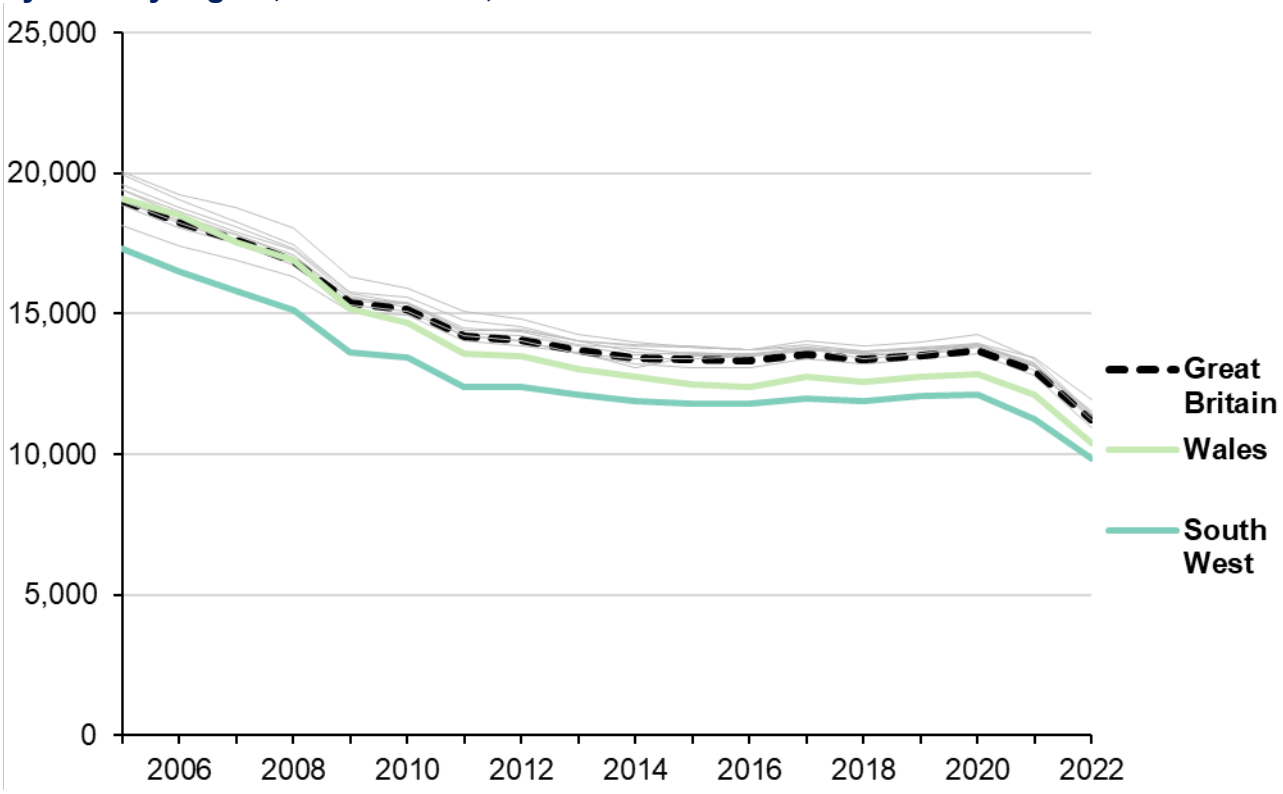


Chart 14: The distribution of domestic gas consumption per meter, Great Britain, 2022

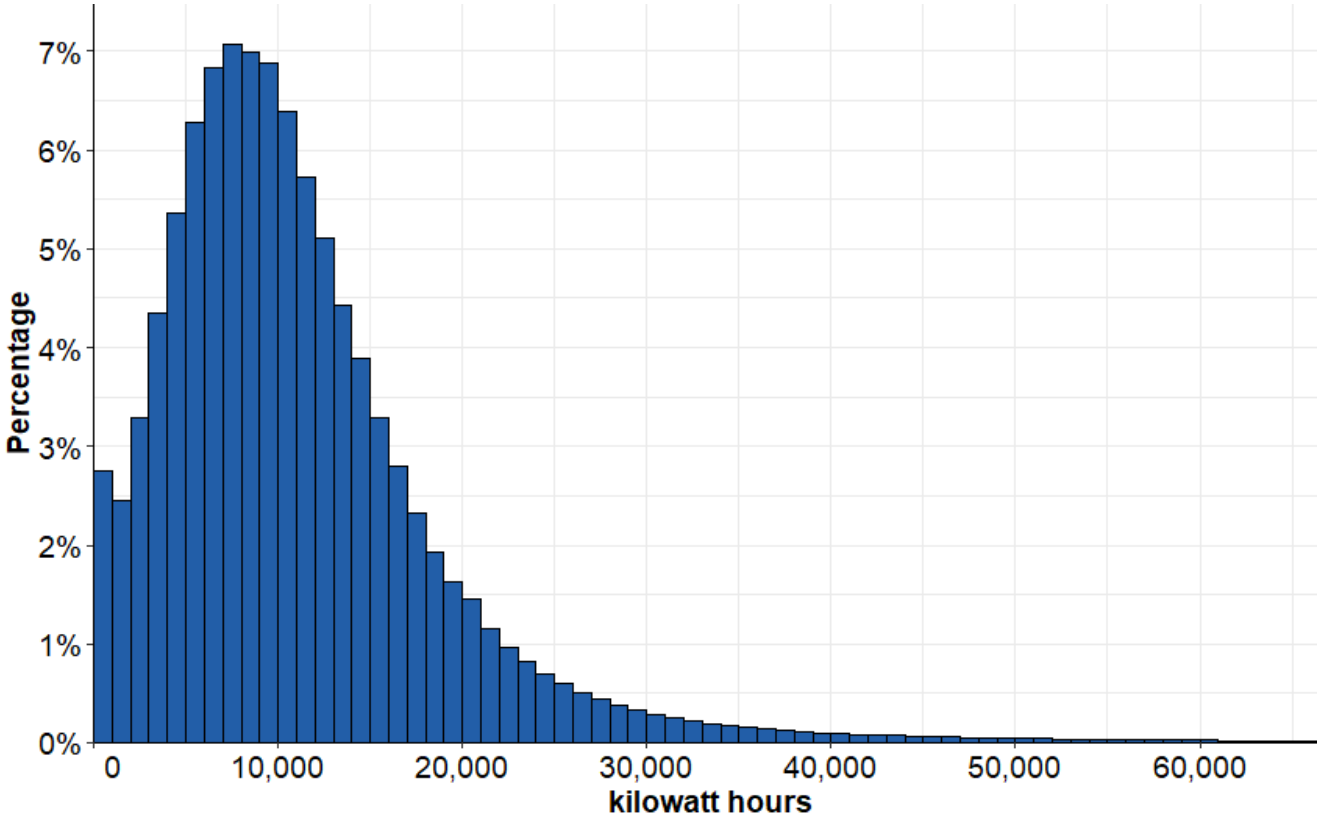
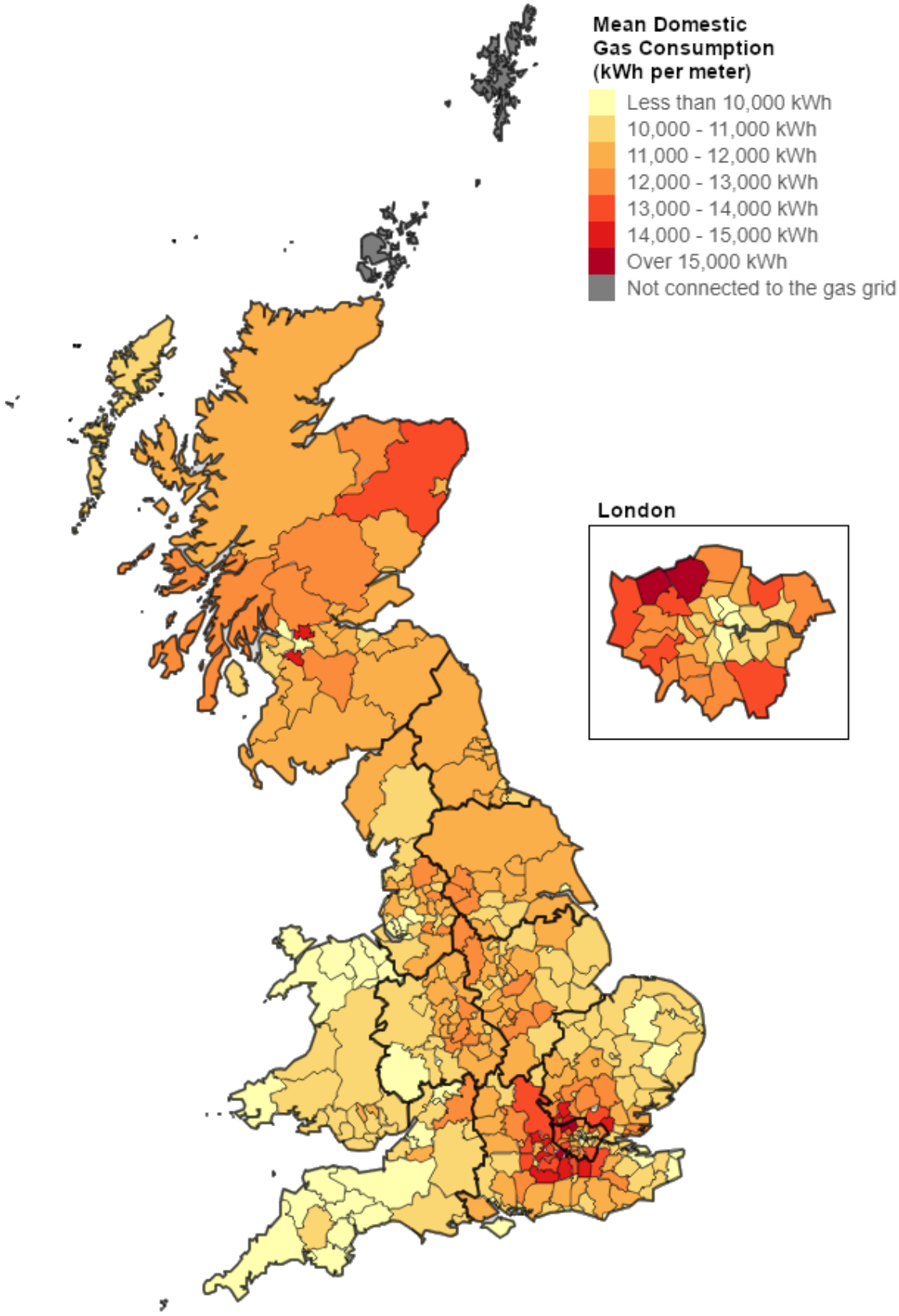


Chart 14 shows the distribution of domestic gas consumption at the level of individual meters in 2022. While most domestic gas meters (69 per cent) consumed between 3,000 kWh and 15,000 kWh, 3 per cent consumed over 30,000 kWh. As a result of these few high consuming meters the mean gas domestic consumption of 11,237 kWh is substantially higher than the median domestic gas consumption (the value which half of meters are above, and half are below) of 9,677 kWh.

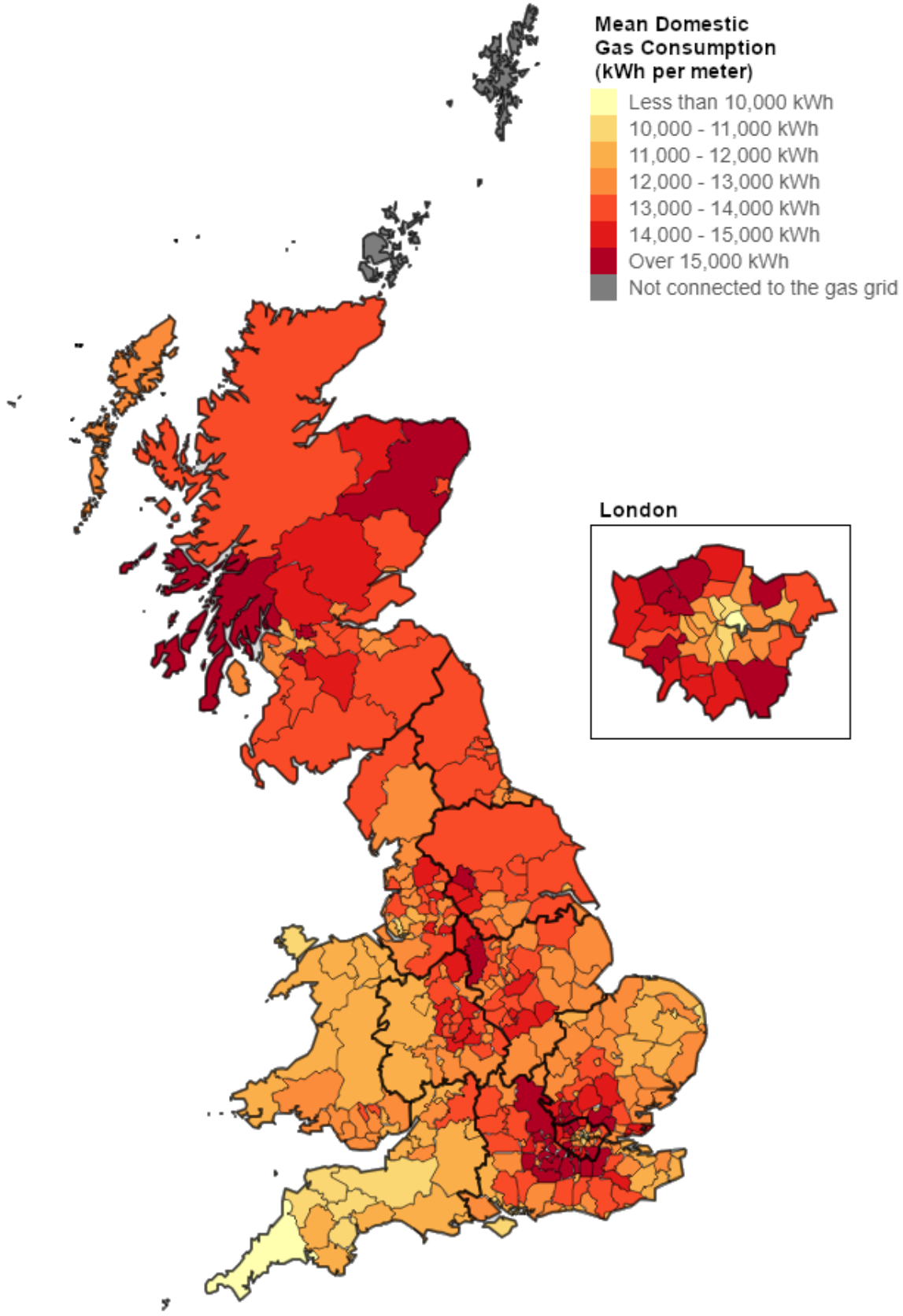
There are a variety of factors which may be influencing the variation in domestic gas consumption, for example property type, property age, energy efficiency of a property and number of occupants. Analysis presented in the NEED Annual report: NEED Annex D: Determinants of domestic gas consumption (PDF, 1.46MB), looks at how various factors affect household gas use, including property age, property type, household income and number of occupants.

Maps 2a and 2b show how mean domestic gas consumption per meter varied geographically at the level of individual local authorities for both 2021 and 2022. They also illustrate the record fall in mean domestic consumption between the two years. All gas consuming local authorities saw year-on-year decreases in mean domestic gas consumption per meter with almost all (98 per cent) seeing a decrease greater than 10 per cent.

Map 2a: Mean domestic gas consumption per meter by local authority, 2022



Map 2b: Mean domestic gas consumption per meter by local authority, 2021



3.3 Non-domestic gas consumption

Across Great Britain as a whole, total non-domestic gas consumption fell 4.3 per cent between the 2021 and 2022. Over the longer term, total non-domestic gas consumption in Great Britain has been on a downward trend, with total non-domestic consumption in 2022 being 32.8 per cent per cent lower than in 2005.

The use of the consumption threshold of 73,200 kWh for categorising gas meters as domestic or non-domestic, means that some smaller commercial properties are classified as domestic. Our mean and median consumption estimates for the non-domestic sector can be distorted by meters artificially switching classification from one year to the next. While these distortions have been minor in previous years, this has a much larger impact on the 2022 estimates[8] due to the large changes in gas consumption which are likely to be related to high energy prices:

- For mean non-domestic gas consumption per meter the 3.9 per cent increase between 2021 and 2022 (according to the statistics), turns to a 3.1 per cent decrease when gas meters which changed classification between the two years are removed.
- The 2.1 per cent increase in median gas consumption per meter between 2021 and 2022, turns to a 6.2 per cent decrease when the meters switching classification are removed.

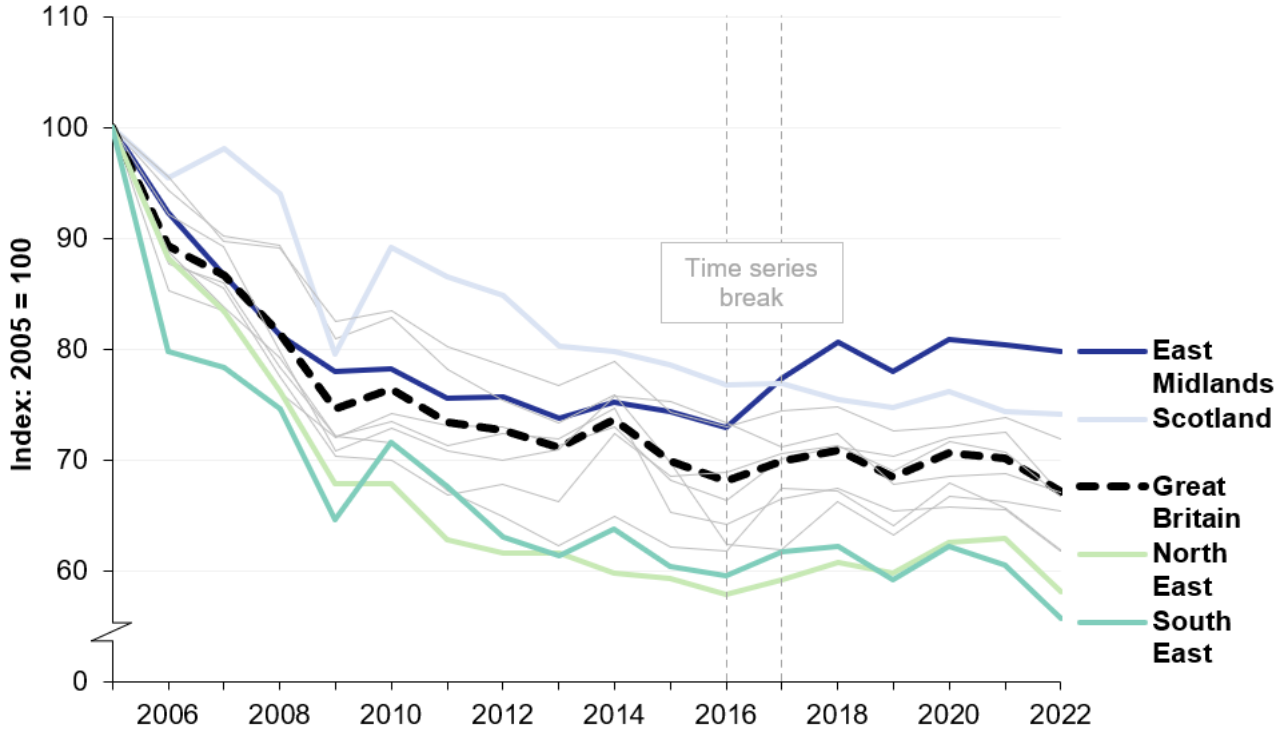
Table 6: Percentage change in number of non-domestic gas meters and mean consumption since 2005 and 2021, by country/region, Great Britain

	Number of meters 2021-2022	Mean cons per meter 2021-2022	**Total cons 2021-2022**	Number of meters 2005-2022	Mean cons per meter 2005-2022	**Total cons 2005-2022**
North East	-7.9%	0.3%	**-7.6%**	-35.1%	-10.4%	**-41.8%**
North West	-8.6%	1.1%	**-7.6%**	-41.9%	15.3%	**-33.0%**
Yorkshire and The Humber	-9.5%	4.2%	**-5.7%**	-41.5%	5.6%	**-38.2%**
East Midlands	-7.5%	7.2%	**-0.8%**	-38.3%	29.2%	**-20.2%**
West Midlands	-7.8%	5.7%	**-2.5%**	-39.8%	11.4%	**-32.9%**
East	-8.5%	7.9%	**-1.3%**	-38.8%	6.9%	**-34.5%**
London	-5.6%	3.3%	**-2.5%**	-35.0%	10.7%	**-28.1%**
South East	-9.1%	1.4%	**-7.9%**	-39.2%	-8.3%	**-44.3%**
South West	-7.9%	2.5%	**-5.5%**	-34.8%	2.3%	**-33.2%**
England	-8.0%	3.5%	**-4.7%**	-38.5%	6.8%	**-34.3%**
Wales	-7.1%	1.5%	**-5.7%**	-38.9%	1.4%	**-38.1%**
Scotland	-7.6%	7.8%	**-0.5%**	-35.3%	14.6%	**-25.9%**
Great Britain	-7.9%	3.9%	**-4.3%**	-38.1%	8.5%	**-32.8%**

[8] In previous years, in general, meters switching artificially from non-domestic to domestic were counteracted by a similar number switching in the opposite direction. However, between 2021 and 2022, 49 thousand meters switched from non-domestic to domestic and only 28 thousand switched in the other direction.

While the trends in total gas consumption (mainly driven by the domestic sector) are fairly uniform across the countries/regions (see Chart 10), the same is not the case when looking specifically at the non-domestic sector (see Chart 15). The is because gas consumption in the non-domestic sector is heavily influenced by the small number of high consuming sites.

Chart 15: Total non-domestic gas consumption by country/region, Great Britain, (Index: 2005 = 100)



3.4 Domestic properties not connected to the gas grid

Properties not connected to the gas grid: Background information

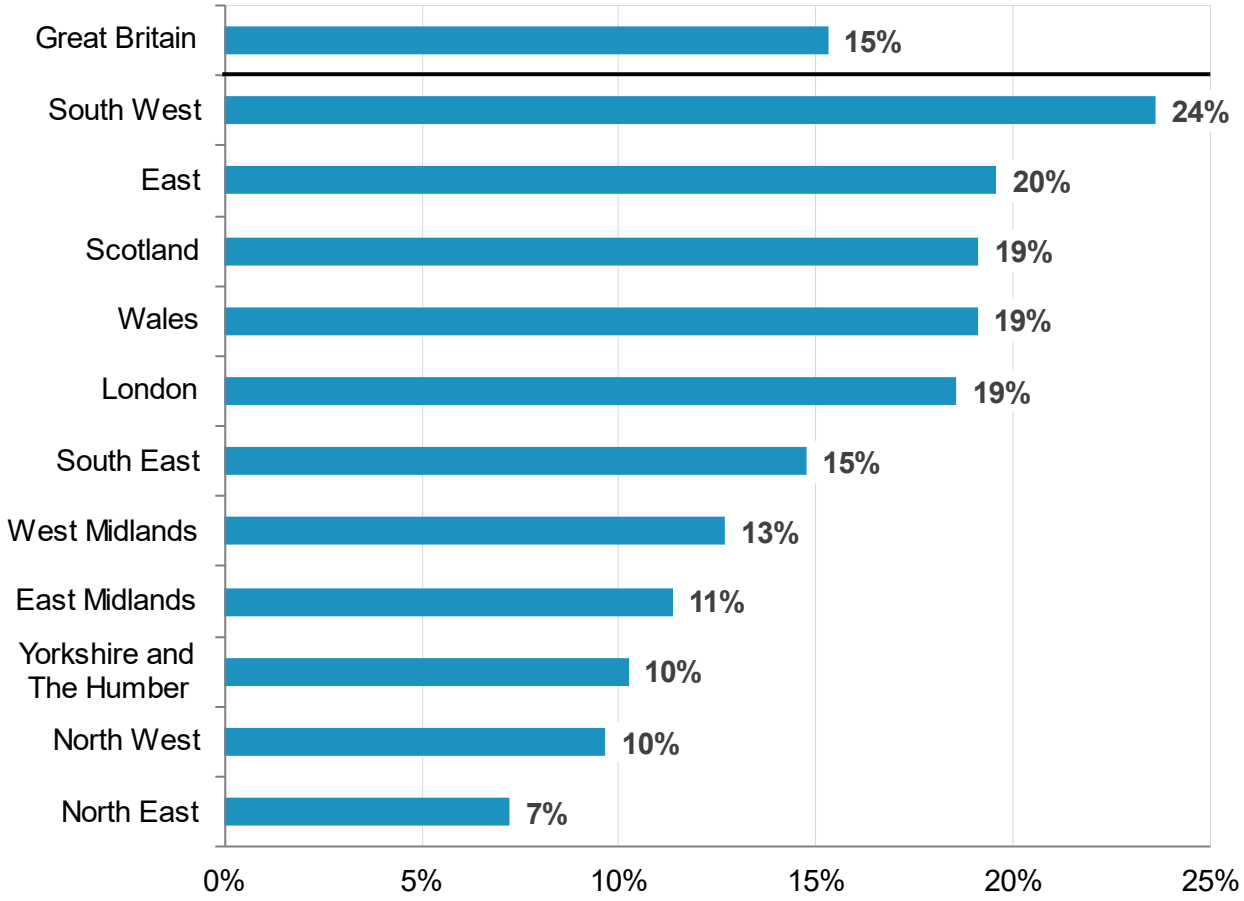
There is no definitive source of information on properties that are not connected to the gas grid. However, DESNZ produces estimates of the number of domestic properties not connected to the gas grid based on the difference between the number of properties and the number of domestic gas meters in each area.

DESNZ is not able to identify specific properties within an area which are not connected to the gas grid but estimates the identification of areas which have few or no gas meters. Some limitations which should be considered when using these estimates include:

- Each gas meter is assigned as domestic or non-domestic based on the gas industry threshold of 73,200 kWh, with all meters consuming below 73,200 kWh per gas year assumed to be domestic. This means that the meters for smaller consuming commercial/industrial consumers are inadvertently classified as domestic. Therefore, estimates of the number of properties without gas are an underestimate of the true number. The impact of this assumption on estimates will vary by area.
- Approximately 0.1 per cent of domestic meters could not be allocated to a local authority region in 2022 as the postcode provided could not the matched to the National Statistics postcode lookup. These unallocated meters are included in the overall estimates for Great Britain, England and Wales, and Scotland but excluded from all other geographical breakdowns.

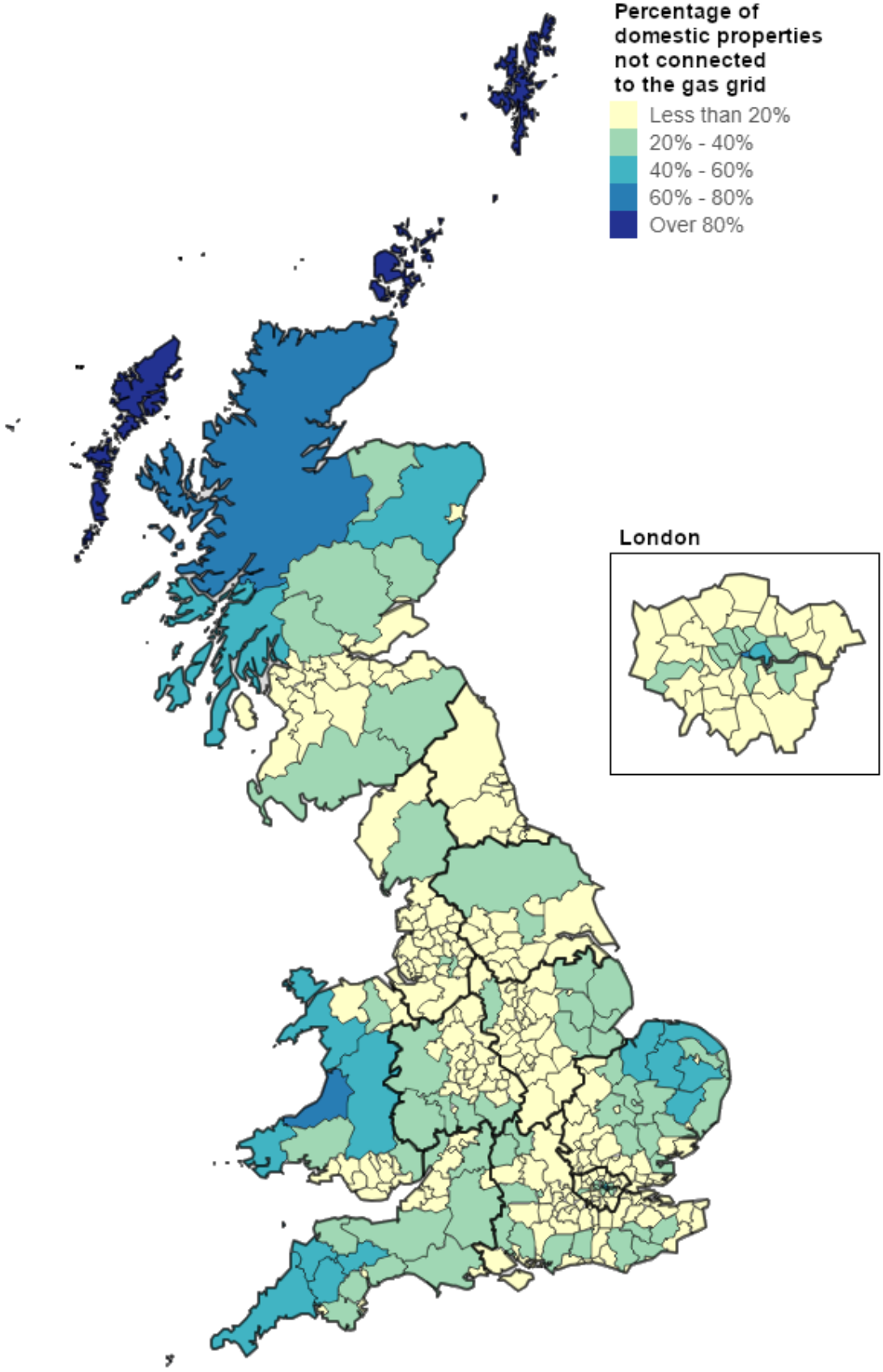
Chart 16 shows the estimated proportions of properties not connected to the gas grid for each country/region. Across Great Britain in 2022, an estimated 15 per cent of domestic properties were not connected to the gas grid, a similar proportion to 2015. The percentage not connected to the gas grid was lowest in the North of England: North East (7 per cent), North West (10 per cent) and Yorkshire and The Humber (10 per cent). The South West had by far the highest percentage of properties not connected to the gas grid (24 per cent). Within London, the percentage of domestic properties not connected to the gas grid was almost twice as large in Inner London (25 per cent) as in Outer London (14 per cent).

Chart 16: Percentage of domestic properties not connected to the gas grid, by country/region, Great Britain, 2022



Map 3 shows how the proportion of domestic properties not connected to the gas grid varies geographically at the level of individual local authorities in Great Britain in 2022. The only local authorities with no domestic properties connected to the gas grid are the Shetland Islands and the Orkney Islands north of mainland Scotland, and the Isles of Scilly off the coast of Cornwall. Na h-Eileanan Siar (the Western Isles of Scotland) has the next highest proportion of domestic properties not connected to the gas grid (88 per cent in 2022).

Map 3: Percentage of domestic properties not connected to the gas grid, by local authority, Great Britain, 2022



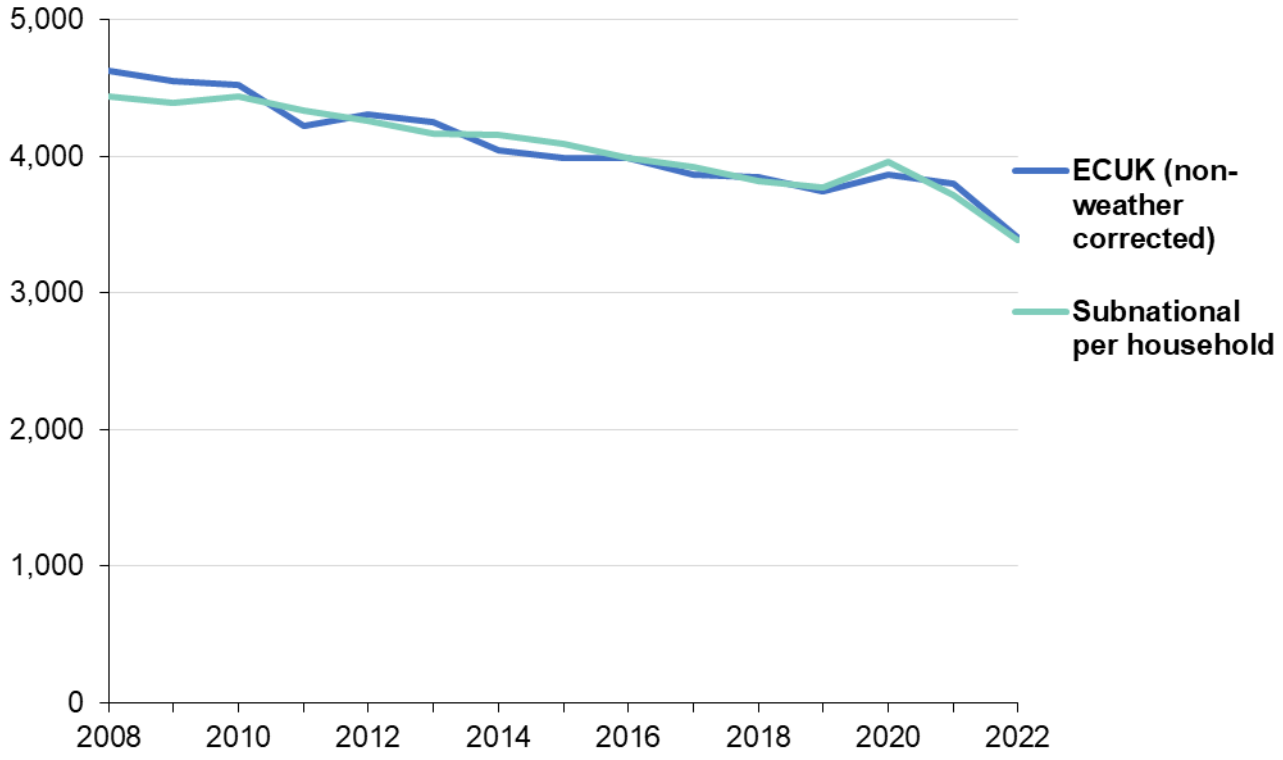
4. Comparison with other sources

4.1 Electricity

Domestic Electricity

Chart 17 presents a comparison of the subnational data with the average annual consumption per household published in Energy Consumption in the UK (ECUK) Table C9 (derived from DUKES Table 1.1.5). It shows that both sources gradually decrease between 2008 and 2022 with a temporary rise over the COVID-19 period. The latest statistics show a 9 per cent year-on-year decrease in mean annual electricity consumption per household in 2022 compared to 2021, with ECUK showing a 10 per cent decrease.

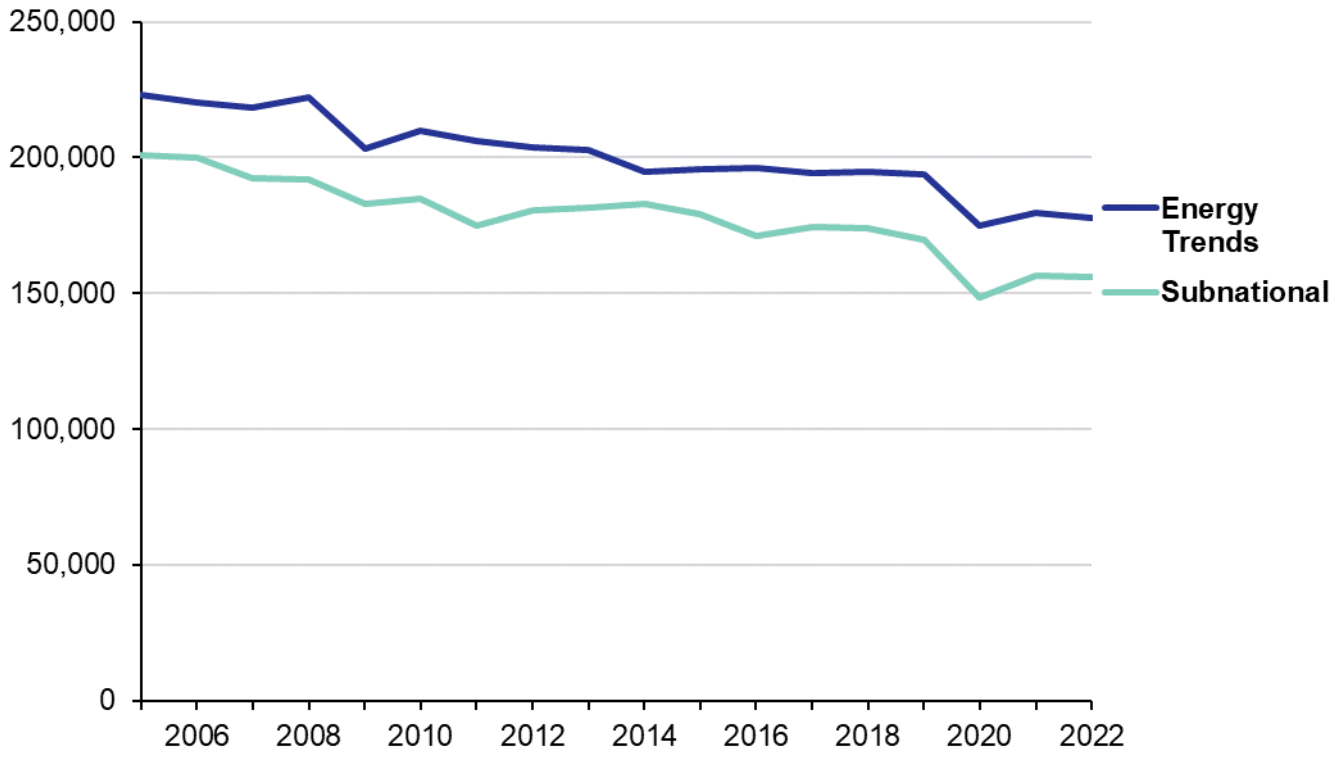
Chart 17: Comparison of sources, mean annual domestic electricity consumption per household (kWh), 2008 to 2022



Non-domestic Electricity

Chart 18 presents a comparison of the subnational data with the total annual non-domestic consumption for the UK as published in Energy Trends Table 5.2. This shows that whilst the methodology for calculating non-domestic consumption between the two sources is different, the trend over time is broadly consistent.

Chart 18: Comparison of sources, annual non-domestic electricity consumption (GWh), 2005 to 2022



4.2 Gas

Domestic gas consumption

DESNZ publish estimates of gas consumption from other sources, which can be used to derive estimates of average domestic gas consumption as published in ECUK Table C9 (derived from DUKES Table 1.1.5).

Chart 19 shows estimates between 2008 and 2022. In broad terms the data series are consistent. The difference between the ECUK and subnational average domestic gas consumption figures will in part be driven by the different denominators used to calculate the two figures. ECUK data uses the number of billed customers collected by DESNZ as part of its survey of gas suppliers, whereas subnational data uses the number of consuming domestic meters as the denominator. There will be some non-domestic meters incorrectly included in the domestic subnational gas data as the domestic split is based on those with an annual consumption of 73,200 kWh or lower. Therefore, some small industrial and commercial consumers may impact the average. In addition, ECUK data covers the 2022 calendar year, whereas subnational gas data covers the period mid-May 2022 to mid-May 2023.

Non-domestic gas consumption

Chart 20 compares the total annual UK non-domestic gas consumption published in Energy Trends (Table 1.3) with subnational non-domestic gas consumption. Both sets of statistics are weather corrected. Although the methodology for counting non-domestic consumption between the two sources is different, the trend over time is consistent.

Chart 19: Comparison of sources, mean domestic gas consumption (kWh), 2008 to 2022[9]

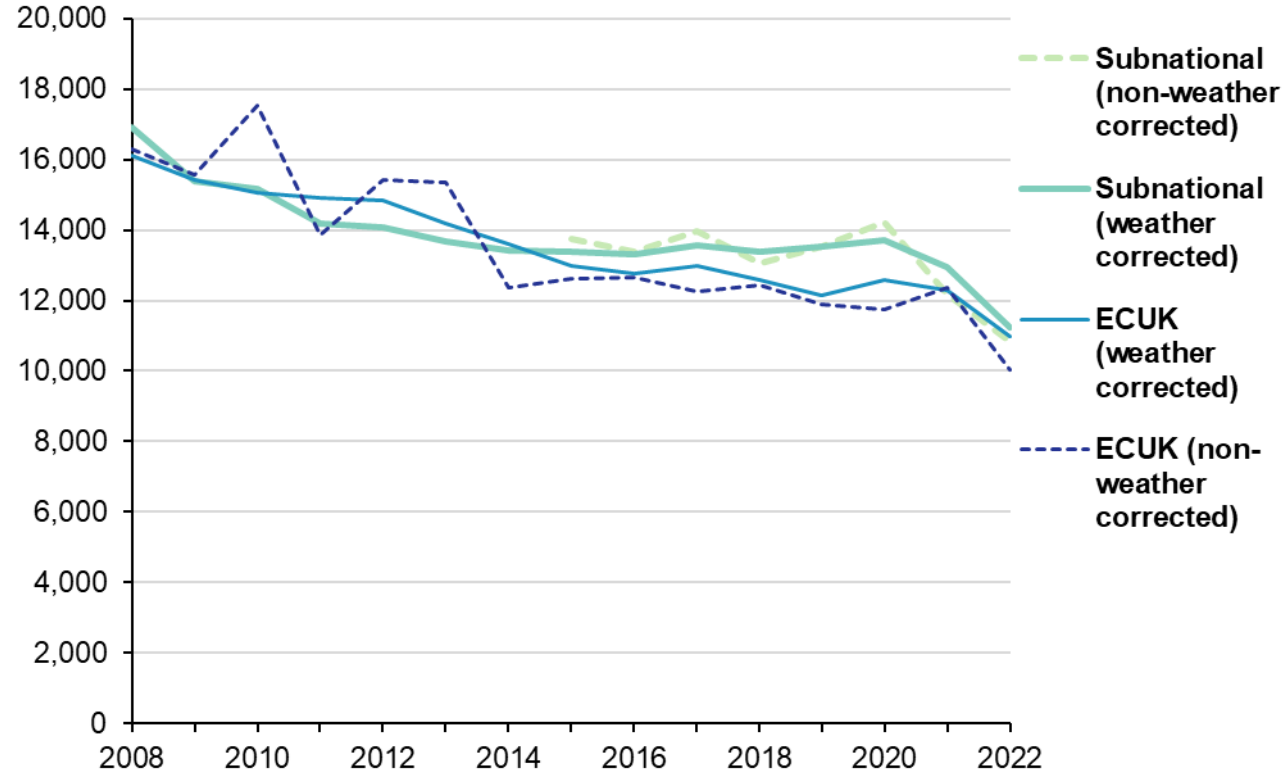
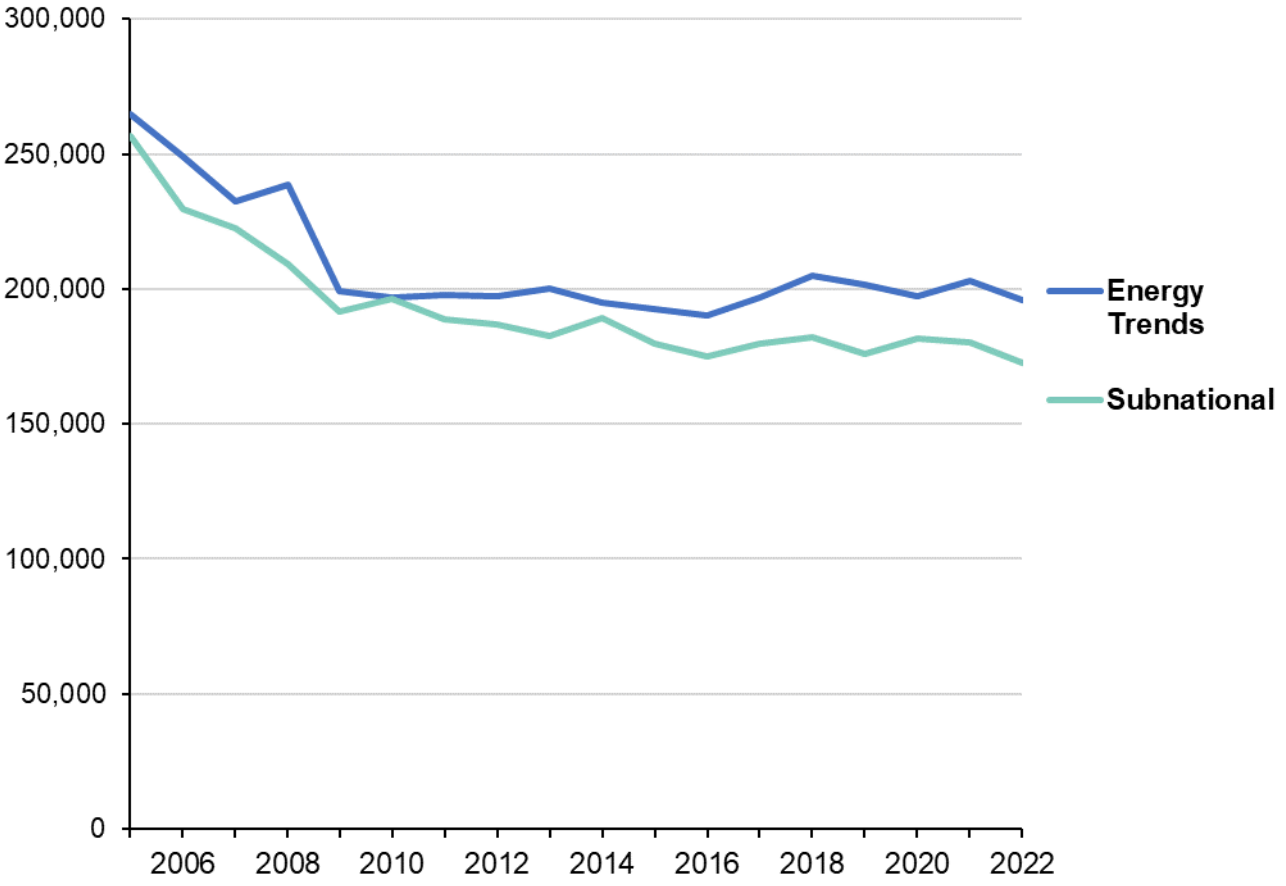


Chart 20: Comparison of sources, annual non-domestic gas consumption (GWh), 2005 to 2022



[9] Note that due to a methodological change, subnational gas consumption from 2017/18 is not directly comparable to previous years.

Accompanying tables

The following electricity consumption tables accompany this report:

- Regional and local authority electricity consumption (domestic and non-domestic)
- Middle Layer Super Output Areas electricity consumption (domestic and non-domestic)
- Lower Layer Super Output Areas electricity consumption (domestic)
- Stacked electricity consumption data (domestic and non-domestic)
- Postcode level electricity consumption (domestic).

The following gas consumption tables accompany this report:

- Regional and local authority gas consumption (domestic and non-domestic)
- Middle Layer Super Output Areas gas consumption (domestic and non-domestic)
- Lower Layer Super Output Areas gas consumption (domestic)
- Stacked gas consumption data (domestic and non-domestic)
- Postcode level gas consumption (domestic).

The following estimates of domestic properties not connected to the gas network tables accompany this report:

- Regional and local authority estimates of domestic properties not connected to the gas network
- Middle Layer Super Output Area estimates of domestic properties not connected to the gas network
- Lower Layer Super Output Area estimates of domestic properties not connected to the gas network.

Technical information

For full details on the methodology, assumptions and data interpretation relating to these statistics, please refer to the Methodology and Guidance booklet. Users are highly advised to familiarise themselves with the material in the booklet before using the data.

Related statistics

Comparison between subnational electricity and gas data

Subnational electricity and gas consumption statistics use varying methodologies to compile the datasets and cover different time periods. A key difference to bear in mind is that electricity consumption data are not weather corrected while gas consumption data have a weather correction factor applied to them. Despite these differences, the combined electricity and gas figures provide a good indication of overall annual household energy consumption in Great Britain at local authority, MSOA/IZ and LSOA/DZ level.

Comparison to DUKES

Digest of United Kingdom energy statistics (DUKES) is an annual DESNZ publication which provides a detailed and comprehensive picture of energy production and use, with extensive tables, charts and commentary covering all the major aspects of energy.

There are differences in reported electricity and gas figures in the subnational and DUKES publications as DUKES data:

- Are based on a calendar year. Subnational electricity meter estimates cover the calendar year for half-hourly data, but an annual period starting on 31 January for non-half hourly data (see section 2 for full details). The subnational gas year starts in mid-May (see section 3 for full details).
- Covers consumption for the United Kingdom, whereas the subnational consumption statistics cover Great Britain.
- Are compiled using a top-down approach, where statistics are gathered by energy companies on a national level, whereas subnational datasets are created from aggregating the consumption figures for individual electricity and gas meters.
- Include electricity consumption from Central Volume Allocation (CVA) users and electricity generated and consumed onsite in its totals, which are not included in the subnational data.
- Include gas consumption from large power stations in its totals, which are not included in subnational data.
- Does not include weather correction for gas consumption, whereas subnational gas data are weather corrected.

Comparison to ECUK

There are also points the user needs to be aware of when comparing subnational data to Energy Consumption in the UK (ECUK). ECUK is an annual DESNZ publication which includes a detailed overview of energy consumption at a UK-wide level.

Differences occur between ECUK and subnational figures as data in ECUK are, in many cases, modelled and obtained from secondary analysis performed by DESNZ on data from several sources, including DUKES. ECUK contains a more comprehensive sector split than subnational statistics and gives information on end use for majority of fuels.

Further information

Future updates to these statistics

Great Britain:

The next publication of subnational electricity and gas data will be in December 2024 when 2023 data will be available.

Northern Ireland:

The next publication of Northern Ireland electricity and gas data will be in December 2024 when 2023 data will be available.

Revisions policy

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

Uses of these statistics

The most significant use of the subnational consumption data is by local authorities and devolved administrations for targeting and monitoring a range of carbon reduction and energy efficiency policies. For example, they have told us they use it to:

- identify areas with high consumption to identify reasons and target measures.
- enable more effective deployment of renewable energy schemes by knowing where energy is consumed.
- estimate the proportion of energy reduced or replaced through local sustainable energy projects.
- help identify areas off the gas grid.
- establish a baseline consumption figure to set targets for reduction.
- enable more efficient targeting of investments and interventions.
- help in planning to improve the energy efficiency of homes.

Other external users include academics and members of industry who use the data for a variety of purposes. Most commonly, data has been used to examine trends over time or assess the effectiveness of energy efficiency initiatives.

Internally, data are used by DESNZ policy colleagues and other analysts within the department to inform policy development and help with monitoring and evaluation of DESNZ policies. The

meter point gas and electricity data collected for subnational consumption outputs are also the most important input for the National Energy Efficiency Data-Framework (NEED).

They also form the basis of responses to parliamentary questions and general enquiries.

User engagement

Users are encouraged to provide comments and feedback on how these statistics are used and how well they meet user needs. Comments on any issues relating to this statistical release are welcomed and should be sent to the Energy Efficiency Statistics mailbox.

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

National Statistics designation

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

The continued designation of these statistics as National Statistics was confirmed in September 2018 following a compliance check by the Office for Statistics Regulation. The statistics last underwent a full assessment in 2014.

Pre-release access to statistics

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

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If you need a version of this document in a more accessible format, please email energyefficiency.stats@energysecurity.gov.uk Please tell us what format you need. It will help us if you say what assistive technology you use.