Department for Business, Energy & Industrial Strategy

Subnational Electricity and Gas Consumption Statistics

Regional and Local Authority, Great Britain, 2020

23 December 2021 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 2020[1].

Electricity

- There was a 4.8 per cent fall in total electricity consumption in Great Britain between 2019 and 2020, the largest year-on-year decrease recorded in these statistics (which go back to 2005). Eight out of the eleven countries/regions experienced record falls.
- The non-domestic sector consumes the most electricity, accounting for 58 per cent of total electricity consumption in 2020. The 4.8 per cent fall in total electricity consumption was driven by a record 11.1 per cent fall in total non-domestic electricity consumption and a 5.6 per cent increase in domestic consumption; the COVID-19 pandemic was probably a key factor driving the changes in the electricity consumption between 2019 and 2020.
- For Great Britain as a whole, mean domestic electricity consumption per meter was 18.6 per cent lower in 2020 than in 2005. The reductions for individual countries/regions varied from 15.6 per cent (in the South East) to 24.0 per cent (in Scotland).

Gas

- Total gas consumption in 2020 was 1.3 per cent higher than in 2018 (a pre-COVID-19 baseline year), with a 3.3 per cent increase in domestic consumption offset by a 2.0 per cent decrease in non-domestic consumption. Unlike for electricity, the domestic sector is the larger consumer, consuming 64 per cent of 2020 total gas consumption in Great Britain.
- Mean domestic gas consumption per meter was 28.0 per cent lower in 2020 than in 2005. The downward trend in mean gas consumption per meter has levelled off in the past few years, partly due to methodological changes, and likely in part due to the COVID-19 pandemic.

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. The gas consumption year for 2020 data is from mid-May 2020 to mid-May 2021, whereas the electricity year more closely aligns to the calendar year. This means that the 2020 gas data includes the impact of various COVID-19 restrictions in place in 2020 and 2021. This includes the second national lockdown which began in November 2020 and the third national lockdown which began in January 2021. The 2019 gas data will also be impacted by the first national lockdown in March 2020. The electricity data also includes the impact of COVID-19 restrictions, including all three national lockdowns (March 2020, November 2020 and January 2021).

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 2020 consumption data in January 2022.

[1] The current gas year of 2020 covers the period of mid-May 2020 to mid-May 2021. See “Change in period covered in gas consumption statistics” on page 16 for more detail. The electric year is more closely aligned with the calendar year.

Contents

1. Introduction

1.1 Background

This document provides commentary on BEIS' 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 2020. It should be noted that the 2020 gas year runs from mid-May 2020 to mid-May 2021, whereas the electric 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 have been updated to align with the local authority administrative boundaries as of 1 April 2021. 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 from domestic and non-domestic users and broken down by countries and regions[2] (within England), and local authorities. Data[3] are also published at the middle and lower layer super output area for England and Wales, and intermediate geography zone and data zone for Scotland.

For national estimates of domestic consumption, Table C9 of ECUK should be used. Breakdowns of consumption by property attributes, household characteristics and business characteristics are available through 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 BEIS policy colleagues and other analysts to inform policy development and help with the monitoring and evaluation of BEIS 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 at energyefficiency.stats@beis.gov.uk. The team which produces this publication may hold user engagement events in the future to understand how they can better meet user needs: if you would like to be considered for an invitation to the next event, please email the above email address with information on what you use the data for and/or what changes you may wish to see made to this publication.

[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 1.2 of the Subnational methodology and guidance booklet.
[3] 2020 consumption data at MSOA, LSOA and postcode levels are due to be published in January 2022.

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). In total there were 31.5 million meter points in 2020. The estimates presented for 2020 cover the following industry defined years:

- Electricity non-half hourly – 1 February 2020 to 31 January 2021
- Electricity half hourly – 1 January 2020 to 31 December 2020

This section presents electricity consumption by consuming sector (i.e., domestic, and non-domestic), and by country/region.

Background information: electricity statistics

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. More information on installations of electricity generators in the UK under the Feed-in Tariff can be found in Feed-in Tariff 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 2020 there were 28.9 million domestic electricity meters, an increase of 0.8 per cent since 2019 (28.7 million meters). However, there were an estimated 27.4 million households[4] in Great Britain in 2020. The difference between the number of domestic meters and households is likely to be due to some non-domestic meters being incorrectly classified as being domestic, and some properties having more than one linked electricity meter (or MPAN).

[4] Through the Office for National Statistics, Welsh and Scottish Government statistics there are an estimated 27.4 million households in Great Britain:

- England - ONS household estimates based on 2018-based
- Scotland - Scottish Government estimates 2020
- Wales - Welsh Government estimates mid-2020

2.1 Total electricity consumption

For Great Britain as a whole, a total of 259,510 GWh of electricity was consumed in 2020 (via 31.5 million meters). There was a 4.8 per cent fall in total electricity consumption in Great Britain between 2019 and 2020, the largest year-on-year decrease recorded in these statistics (which go back to 2005). This fall in electricity consumption between 2019 and 2020 was driven by a 11.1 per cent reduction in non-domestic electricity consumption. The fall in non-domestic consumption was partially offset by a 5.6 per cent increase in domestic consumption.

The COVID-19 pandemic was probably a key factor driving the changes in the electricity consumption between 2019 and 2020. The record year-on-year fall in non-domestic consumption is likely to be linked to a reduction in economic activity and an increase in working from home. The increase in domestic consumption (which has been falling each year up until now) is likely to be linked to increased time spent at home during the lockdowns, as well as an increase in working from home.

Eight out of the eleven countries/regions experienced record year-on-year falls in total electricity consumption in 2020. London experienced the largest fall in total electricity consumption (8.3 per cent) with a 14.9 per cent fall in non-domestic electricity consumption partially offset by a 4.8 per cent increase in domestic electricity consumption. Within London, Inner London experienced the largest fall (12.4 per cent) in total electricity consumption (a 17.8 per cent decrease for non-domestic and 4.0 per cent increase for domestic); while in Outer London electricity consumption only fell by 3.4 per cent (with a 10.2 per cent fall for non-domestic mostly offset by a 5.2 per cent increase for domestic).

Table 1: Percentage change in of total electricity consumption since 2005 and 2019, by country/region, Great Britain, 2020

	Domestic 2019-2020	Non-Domestic 2019-2020	**Total 2019-2020**	Domestic 2005-2020	Non-Domestic 2005-2020	**Total 2005-2020**
North East	5.3%	-9.9%	**-4.7%**	-13.0%	-30.2%	**-24.6%**
North West	5.8%	-10.6%	**-4.4%**	-10.4%	-27.8%	**-21.5%**
Yorkshire and The Humber	5.6%	-7.9%	**-3.0%**	-12.7%	-21.9%	**-18.5%**
East Midlands	6.4%	-10.1%	**-4.0%**	-7.5%	-25.0%	**-18.7%**
West Midlands	5.5%	-12.4%	**-5.5%**	-7.9%	-25.5%	**-18.8%**
East	6.6%	-8.5%	**-2.2%**	-6.1%	-20.0%	**-14.2%**
London	4.8%	-14.9%	**-8.3%**	-5.6%	-23.5%	**-17.5%**
South East	6.3%	-10.0%	**-3.2%**	-5.1%	-20.5%	**-14.1%**
South West	5.6%	-9.8%	**-3.1%**	-8.1%	-25.3%	**-18.1%**
England	5.8%	-10.8%	**-4.4%**	-7.9%	-24.0%	**-17.9%**
Wales	5.2%	-11.6%	**-6.0%**	-9.7%	-26.8%	**-21.3%**
Scotland	4.2%	-12.2%	**-5.7%**	-19.0%	-25.9%	**-23.0%**
Great Britain	5.6%	-11.1%	**-4.8%**	-9.2%	-24.8%	**-19.0%**

With regards to the longer-term trend, across Great Britain as a whole, total electricity consumption was 19.0 per cent lower in 2020 than in 2005. There was 9.2 per cent reduction in total domestic consumption and a 24.8 per cent reduction in total non-domestic consumption over this period.

Chart 1 presents the trend in total electricity consumption by country/region. The countries/regions with the highest and lowest reduction in electricity consumption since 2005 are highlighted. The other countries and regions are also included to show the variability between them. The largest reductions in total consumption were in the North East (24.6 per cent) and Scotland (23.0 per cent). The smallest reductions in total electricity consumption were in London (17.5 per cent) and its two surrounding regions: East (14.2 per cent) and South East (14.1 per cent). The full breakdown by country/region and sector is shown in Table 1.

Chart 1: Total electricity consumption by country/region, Great Britain, (Index: 2005 = 100)

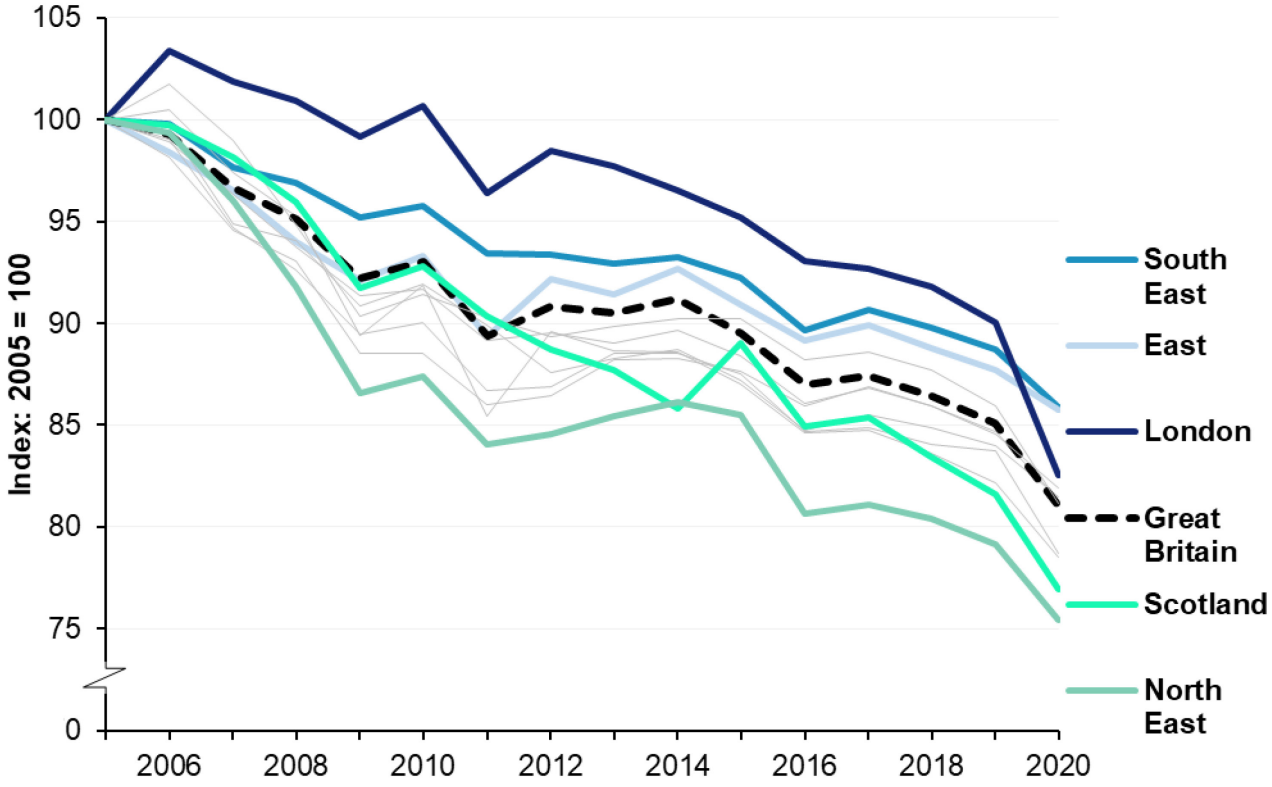
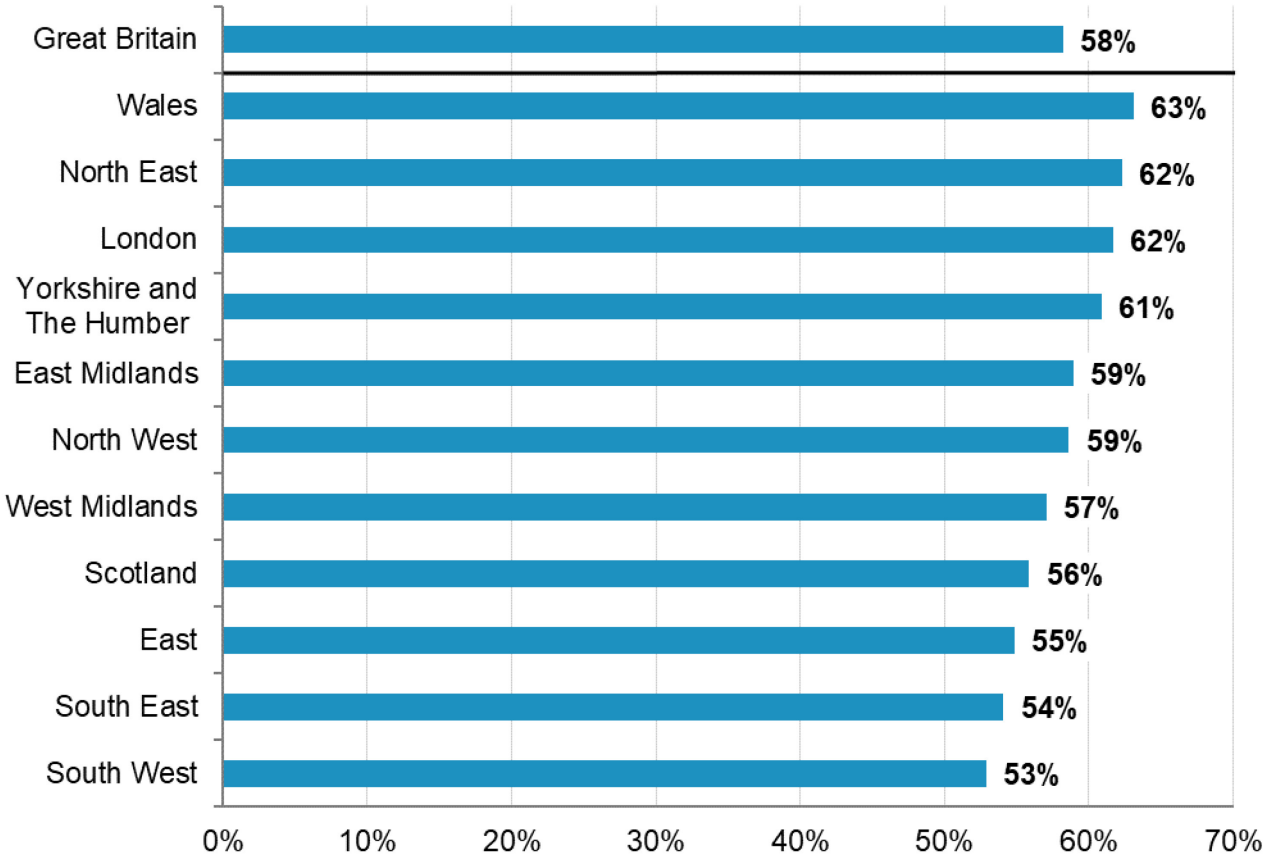


Chart 2: Non-domestic electricity consumption as a percentage of total electricity consumption, by country/region, Great Britain, 2020



Non-domestic consumption electricity consumption accounts for more than half of the electricity consumed in the Great Britain (58 per cent in 2020). This is also the case for each country/region, as shown in Chart 2. Within England, in general, the proportion of total electricity consumption that is accounted from by the non-domestic sector appears to be highest in the northern regions (for example, North East (62 per cent), Yorkshire and the Humber (61 per cent)) and lowest in the more southern regions (for example, South East (54 per cent), South West (53 per cent)). The notable exception to this is London (62 per cent).

2.2 Domestic electricity consumption

Across Great Britain as a whole, total domestic electricity consumption rose by 5.6 per cent between 2019 and 2020, as shown in Table 2. This 5.6 per cent rise is the largest year-on-year increase in total domestic consumption since the start of the time-series (2005) and is driven by a 4.7 per cent increase in the mean consumption per meter.

Over the longer term, total domestic electricity consumption in Great Britain has been on a downward trend with total domestic consumption in 2020 being 9.2 per cent lower than in 2005. This reduction has happened despite an 11.5 per cent increase in the number of domestic meters, due to an 18.6 per cent fall in mean consumption per meter.

Among all countries/regions, Scotland has experienced the largest fall in total domestic electricity consumption between 2005 and 2020 (19.0 per cent). This is a result of Scotland having the largest reduction in mean consumption per meter over the period (24.0 per cent) combined with the smallest increase in the number of domestic meters (6.5 per cent).

Table 2: Percentage change in number of domestic electricity meters and their mean consumption since 2005 and 2019, by country/region, Great Britain, 2020

	Number of meters 2019-2020	Mean cons per meter 2019-2020	**Total cons 2019-2020**	Number of meters 2005-2020	Mean cons per meter 2005-2020	**Total cons 2005-2020**
North East	0.7%	4.6%	**5.3%**	6.8%	-18.5%	**-13.0%**
North West	0.9%	4.9%	**5.8%**	13.9%	-21.4%	**-10.4%**
Yorkshire and The Humber	0.7%	4.9%	**5.6%**	7.6%	-18.9%	**-12.7%**
East Midlands	1.0%	5.4%	**6.4%**	10.5%	-16.3%	**-7.5%**
West Midlands	0.9%	4.6%	**5.5%**	18.0%	-21.9%	**-7.9%**
East	0.9%	5.6%	**6.6%**	11.8%	-16.0%	**-6.1%**
London	1.0%	3.8%	**4.8%**	12.9%	-16.3%	**-5.6%**
South East	1.0%	5.3%	**6.3%**	12.5%	-15.6%	**-5.1%**
South West	0.8%	4.7%	**5.6%**	13.6%	-19.1%	**-8.1%**
England	0.9%	4.9%	**5.8%**	12.3%	-18.0%	**-7.9%**
Wales	0.6%	4.5%	**5.2%**	9.5%	-17.5%	**-9.7%**
Scotland	0.5%	3.8%	**4.2%**	6.5%	-24.0%	**-19.0%**
Great Britain	0.8%	4.7%	**5.6%**	11.5%	-18.6%	**-9.2%**

Chart 3: Mean domestic electricity consumption (kWh per meter) by country/region, Great Britain, 2020

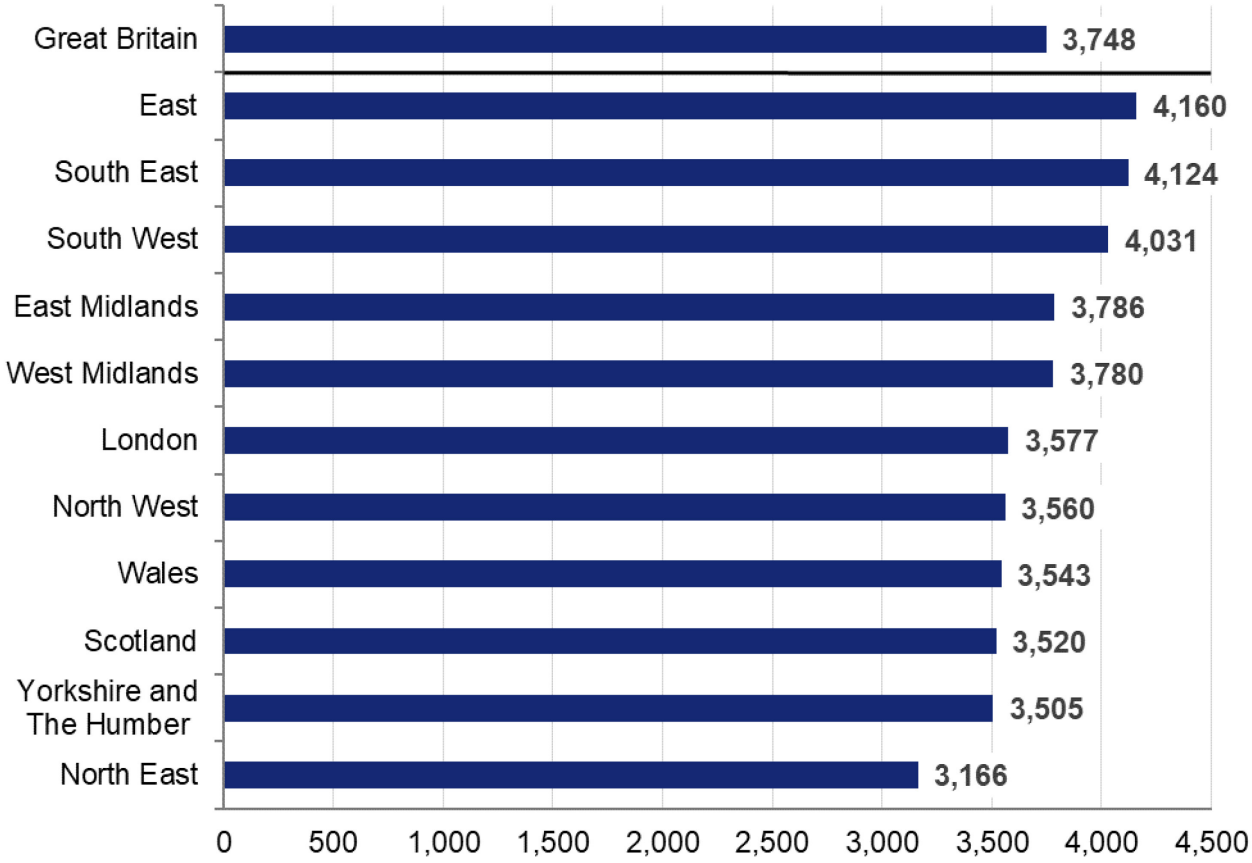


Chart 3 shows the mean domestic electricity consumption per meter for each country/region in 2020. Chart 4 shows the trend in mean domestic consumption since 2005 with the highest and lowest consuming regions (in terms of mean domestic consumption) highlighted. For Great Britain as a whole, mean domestic electricity consumption per meter was 18.6 per cent lower in 2020 than in 2005.

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 2020, the domestic mean in the North East was 15.5 per cent lower the Great Britain average.

At the other end of the scale, the East, South East and South West regions have consistently had the highest mean domestic electricity consumption. In 2020, mean domestic consumption in the East was 11.0 per cent higher than the Great Britain average, while the South East was 10.0 per cent higher and the South West was 7.6 per cent higher.

Chart 5 shows the distribution of domestic electricity consumption at the level of individual meters in 2020. While most (60 per cent) domestic electricity meters consumed between 750 and 5,000 kWh, 5 per cent consumed over 10,000 kWh. Domestic electricity consumption per meter is positively skewed and so the mean consumption (3,748 kWh) is distorted by a small number of high consuming meters. The median domestic electricity consumption (the value which half of meters are above, and half are below), 2,902 kWh, gives a better summary of the typical consumption per meter.

Chart 4: Mean domestic electricity consumption (kWh per meter) by country/region, Great Britain, 2005 – 2020

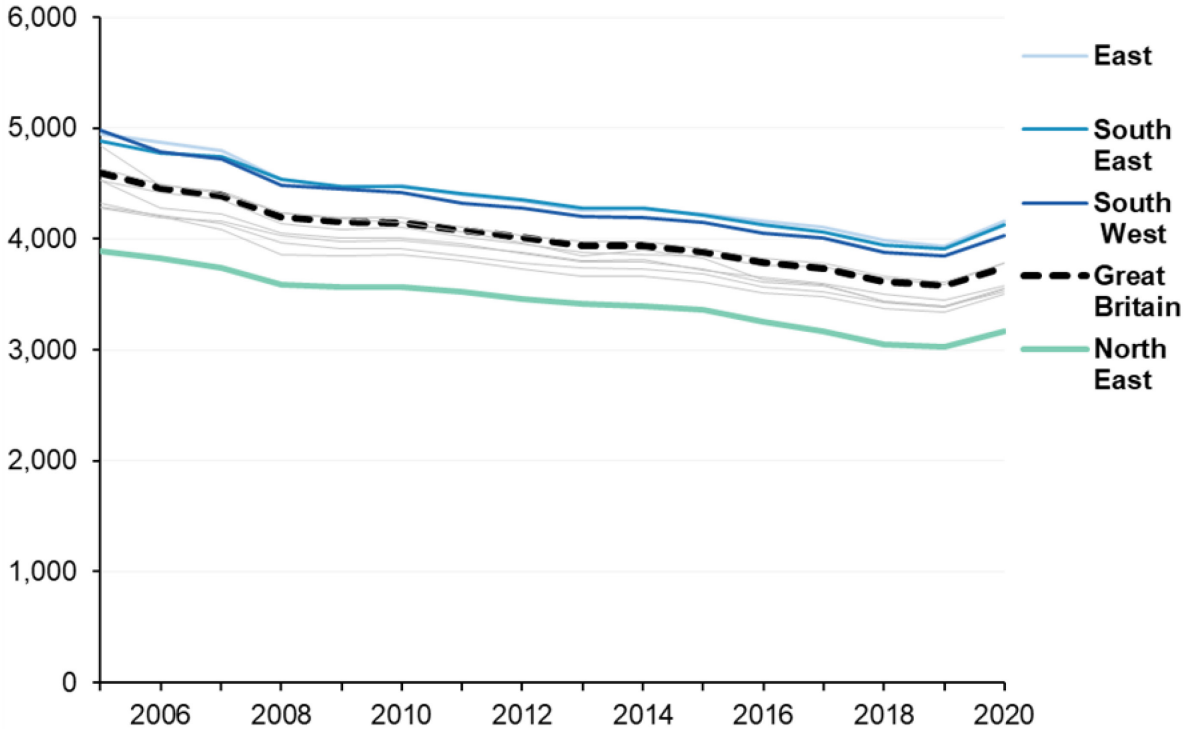
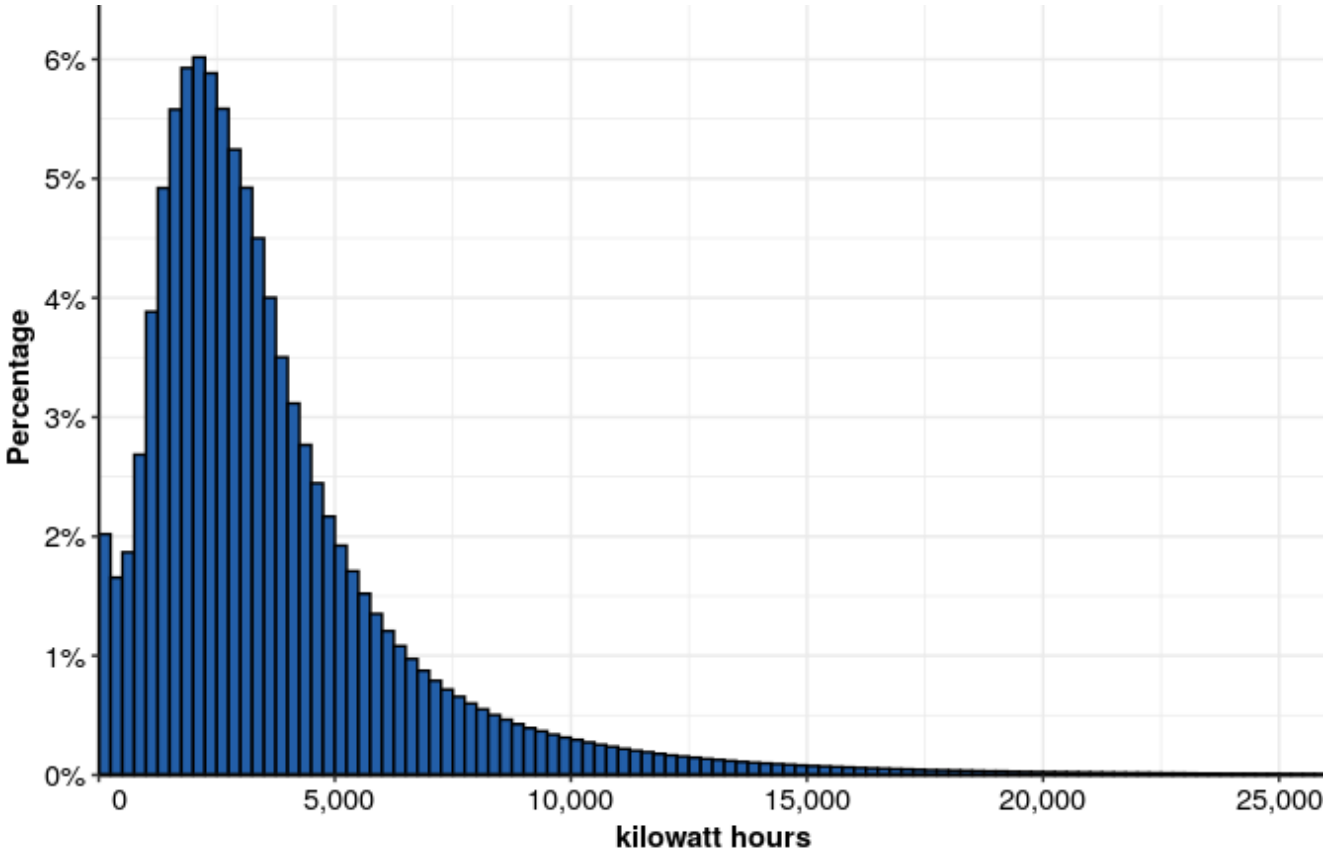
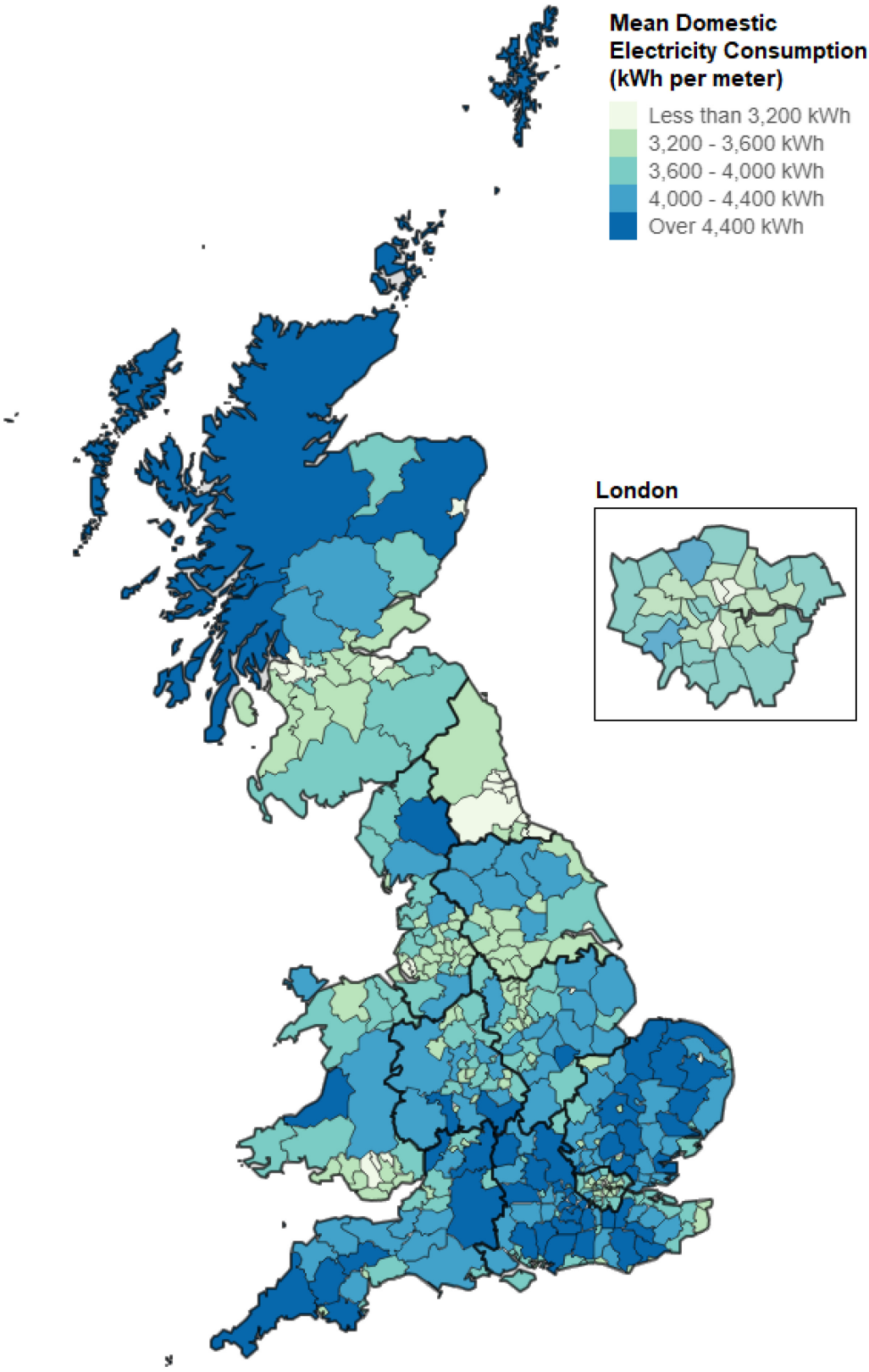


Chart 5: The distribution of domestic electricity consumption per meter in Great Britain, 2020



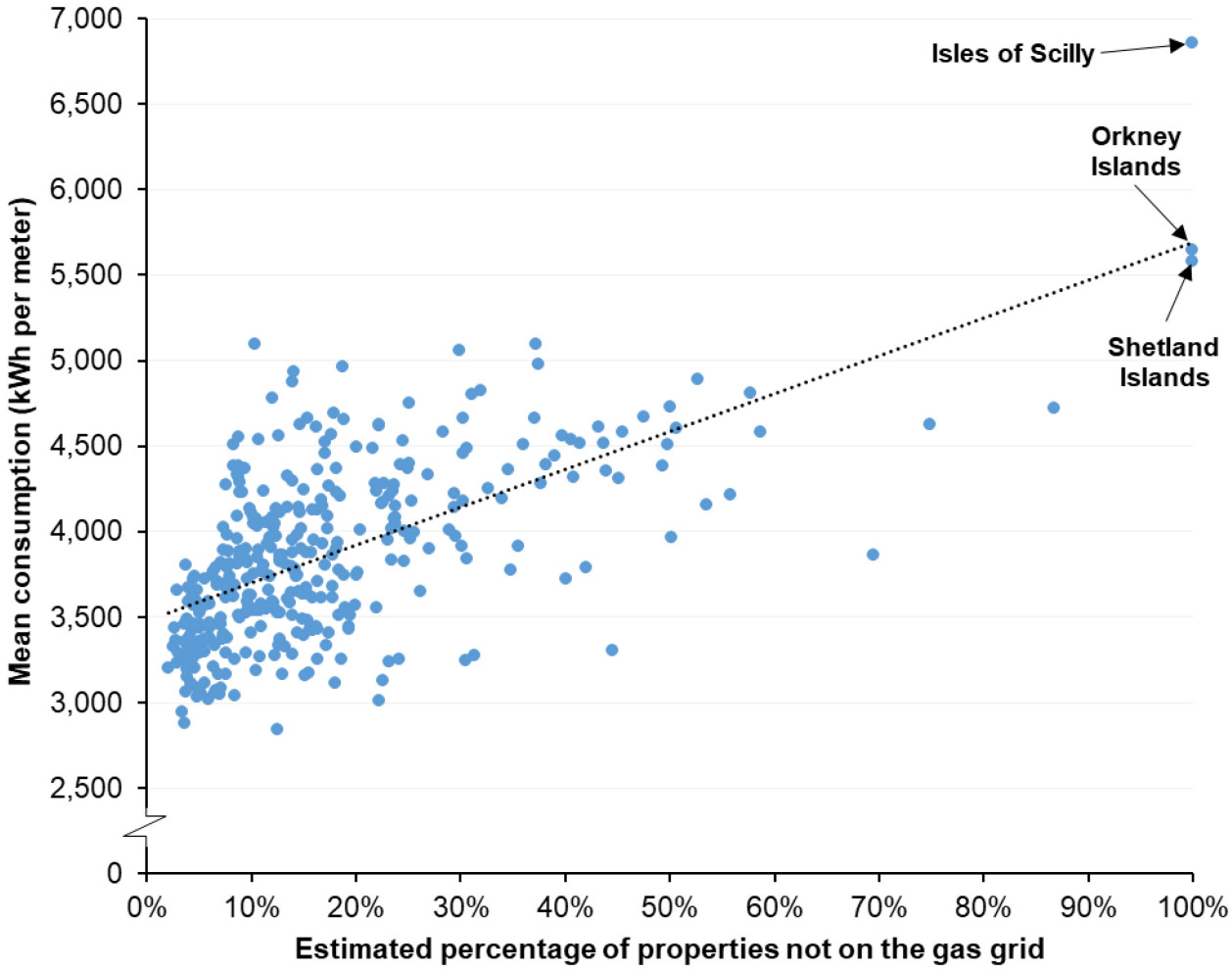
Map 1: Mean domestic electricity consumption per meter by local authority, 2020



Map 1 shows how mean domestic electricity consumption per meter varies geographically at the level of individual local authorities. No one single factor can explain the geographical variation we see. Some local authorities, such as the Scottish Highlands or Cornwall, have a higher than average proportion of properties off the gas grid and are therefore expected to consume more electricity for space heating. Other factors that may help explain the geographical variation are property characteristics, such as floor area, and household characteristics, such as household income.

In general, heating tends to be the main source of energy consumption in domestic properties (62 per cent of domestic energy consumption in 2020[5] was for space heating) and those which are not connected to the gas grid tend to use electricity for heating[6], which will raise their electricity consumption. Chart 6 shows, for each local authority, 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 0.63; and a correlation of 0.55 if we exclude the 3 local authorities with no properties connected to the gas grid).

Chart 6: Mean annual domestic electricity consumption (kWh per meter) against the proportion of properties not connected to the gas grid, by local authority, Great Britain, 2020



[5] Source: Energy Consumption in the UK 2021, table U1.
[6] For those properties with no gas meter present, 53% use electricity as their main fuel type, followed by 27% 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 fell by 11.1 per cent between 2019 and 2020. This was the largest year-on-year decrease since the start of the time-series (2005) and was primarily driven by a 10.9 per cent fall in the mean consumption per meter. Total non-domestic electricity consumption in Great Britain has also been falling over the longer term with a reduction of 24.8 per cent between 2005 and 2020 (compared to a 9.2 per cent reduction in total domestic consumption over the same period). This reduction in total non-domestic consumption has happened despite a 4.6 per cent increase the number of non-domestic meters, due to a 28.1 per cent reduction in mean consumption per meter. A full breakdown by country/region is provided in Table 3.

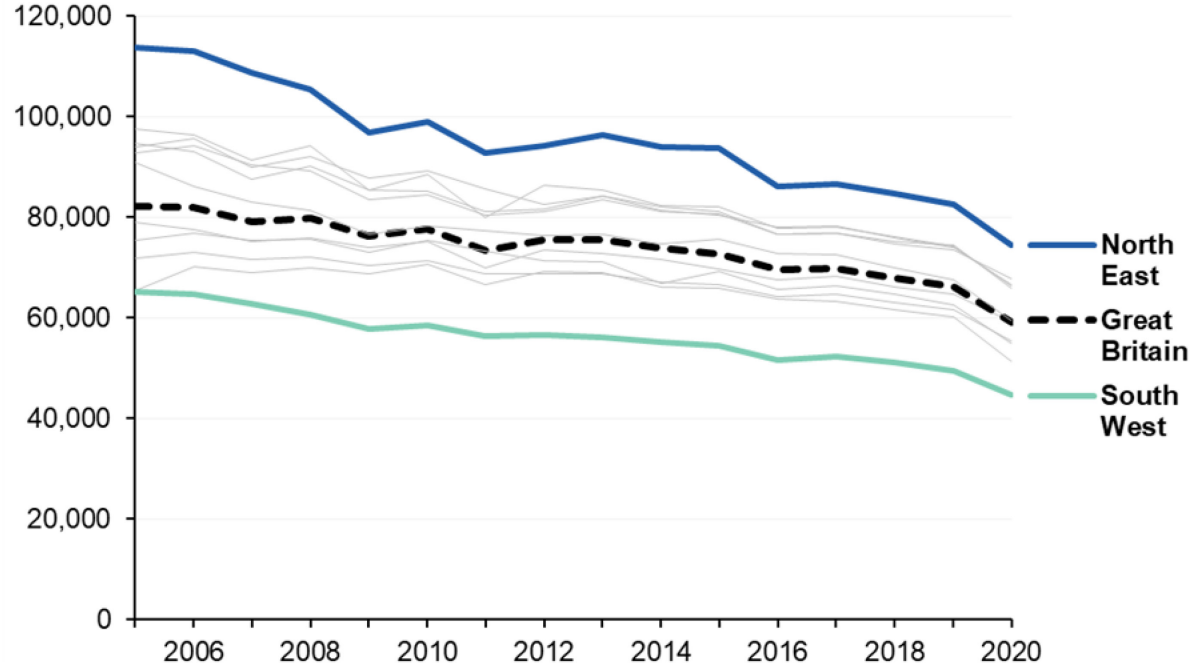
Table 3: Percentage change in the number of non-domestic electricity meters and their mean consumption since 2005 and 2019, by country/region, Great Britain, 2020

	Number of meters 2019-2020	Mean cons per meter 2019-2020	**Total cons 2019-2020**	Number of meters 2005-2020	Mean cons per meter 2005-2020	**Total cons 2005-2020**
North East	-0.1%	-9.8%	**-9.9%**	6.6%	-34.5%	**-30.2%**
North West	0.1%	-10.6%	**-10.6%**	6.4%	-32.1%	**-27.8%**
Yorkshire and The Humber	-0.2%	-7.7%	**-7.9%**	8.5%	-28.0%	**-21.9%**
East Midlands	-0.1%	-10.1%	**-10.1%**	6.9%	-29.8%	**-25.0%**
West Midlands	-0.4%	-12.1%	**-12.4%**	13.9%	-34.6%	**-25.5%**
East	-0.1%	-8.4%	**-8.5%**	6.7%	-25.0%	**-20.0%**
London	-0.4%	-14.5%	**-14.9%**	-2.6%	-21.4%	**-23.5%**
South East	-0.1%	-10.0%	**-10.0%**	3.0%	-22.8%	**-20.5%**
South West	0.1%	-9.8%	**-9.8%**	9.0%	-31.5%	**-25.3%**
England	-0.2%	-10.7%	**-10.8%**	5.2%	-27.8%	**-24.0%**
Wales	0.0%	-11.6%	**-11.6%**	3.0%	-28.9%	**-26.8%**
Scotland	0.0%	-12.3%	**-12.2%**	1.5%	-27.1%	**-25.9%**
Great Britain	-0.1%	-10.9%	**-11.1%**	4.6%	-28.1%	**-24.8%**

Chart 7 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 non-domestic mean consumption, while the South West has consistently had the lowest. Both Table 3 and Chart 7 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[7]. Moreover, changes for a very small number of large very high consuming businesses can make a very big difference to total and mean consumption.

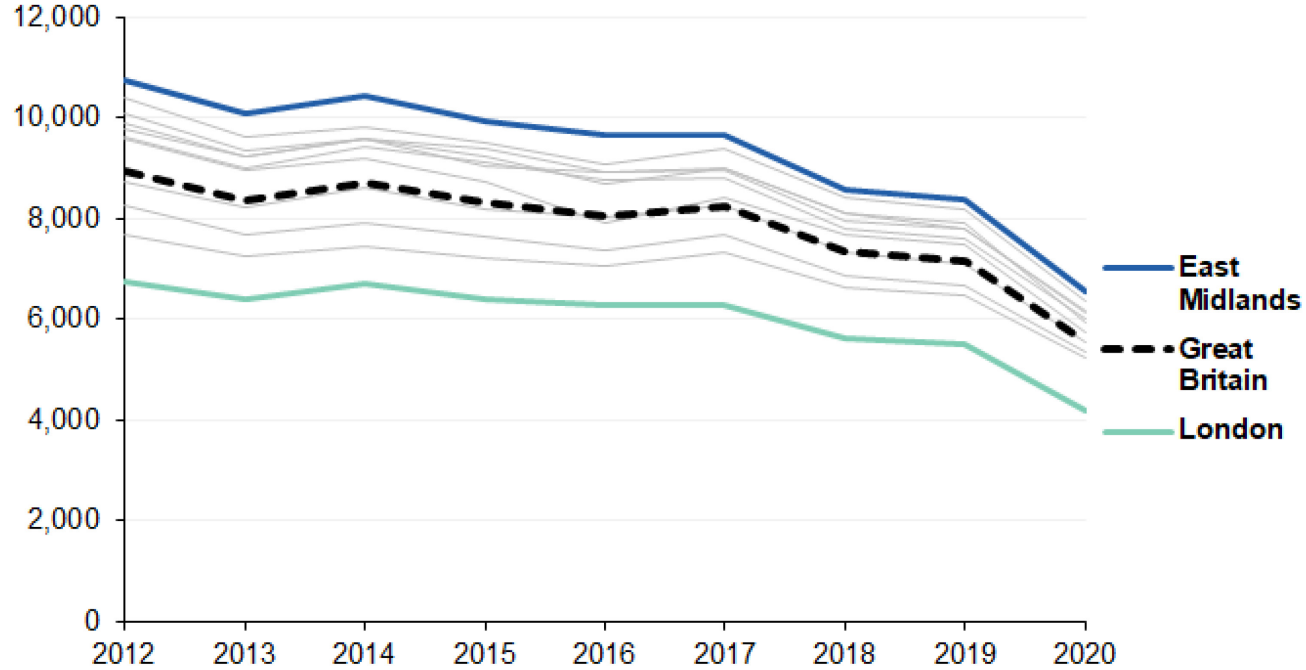
[7] Further information on the non-domestic building stock and non-domestic building energy consumption in England and Wales can be found in the Non-Domestic National Energy Efficiency Data-Framework.

Chart 7: Mean non-domestic electricity consumption (kWh per meter) by country/region, Great Britain, 2005 to 2020



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 8.

Chart 8: Median non-domestic electricity consumption (kWh per meter) by country/region, Great Britain, 2012 to 2020



3. Gas

The statistics presented in this section are based on meter point gas consumption data provided by Xoserve (who compile these data from gas shippers, who in turn receive the data from gas suppliers). The estimates for 2020 cover the gas period between mid-May 2020 and mid-May 2021. These data are weather corrected.

In the domestic sector, gas consumption is predominantly used for heating purposes and, as a result, usage is driven by external temperatures and weather conditions. The weather correction factor enables more like-for-like comparisons of gas use over time, by controlling for weather changes. It should be noted that the weather correction process may not adequately compensate for extreme weather conditions where consumers may adjust their gas use radically in short spaces of time. An overview of the weather correction process is available. BEIS publish weather uncorrected gas consumption data to complement these data.

This section looks at gas consumption by domestic/non-domestic classification and geographic area (country, region and local authority). For the published gas data tables see gas consumption data.

Background information: gas statistics

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, BEIS is supplied with data on “Unique Sites” (also known as “Non-Standard Sites”). These are high consuming sites which have, in earlier years, been unreported due to the complexities in their billing arrangements. Up until 2015, Unique Sites had higher total consumption than the rest of the meters in the UK combined.

The data on unique sites show extreme changes in reported annual consumption. Because of this and to ensure consistency in the time series, gas consumption from unique sites and other large consumers are not included in the published tables.

Issues with the trends for gas

Break in trends

Gas meter readings are received by BEIS from Xoserve, who compile these data from gas shippers, who in turn receive the data from gas suppliers. If any meter reading does not progress through one of these stages, then BEIS' record of the Annual Quantity (AQ) isn't updated and the previous AQ is used in the subnational figures.

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 AQs updated in the 2017 gas consumption figures. This large update led to an increase in the total AQ reported in 2017 gas consumption data. With most gas meters now providing timely meter readings, the figures from 2017 onwards give a more accurate reflection of gas consumption.

Because some meters did not submit readings for multiple years prior to 2017, the figures for these years are likely to underestimate total gas consumed. The figures from 2017 represent a break in trends, with gas consumption not being comparable to previous years.

Change in period covered in gas consumption statistics

The summer of 2017 saw the implementation of new gas meter point management and settlement processes, which caused a change in the period covered by gas data from 2016 onwards. For the previous year (2015's gas year), the average meter read period was October 2014 – September 2015. For 2016, it was July 2016 – July 2017, a forward movement of almost 22 months, rather than the usual 12 months. For 2017, it was June 2017 – June 2018, for 2018, it was May 2018 to May 2019, and for 2019, it is May 2019 to May 2020. In summary, the gas consumption periods each year refers to are:

- 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: Mid-May 2019 – Mid-May 2020
- 2020: Mid-May 2020 – Mid-May 2021

All references to gas consumption years in this report signify the gas period for that year (e.g.: "gas consumption 2015" refers to consumption of gas between October 2014 and September 2015). Note that in recent years of the timeseries the mean read date of gas meters is roughly five months ahead of the mean read date of electricity meters.

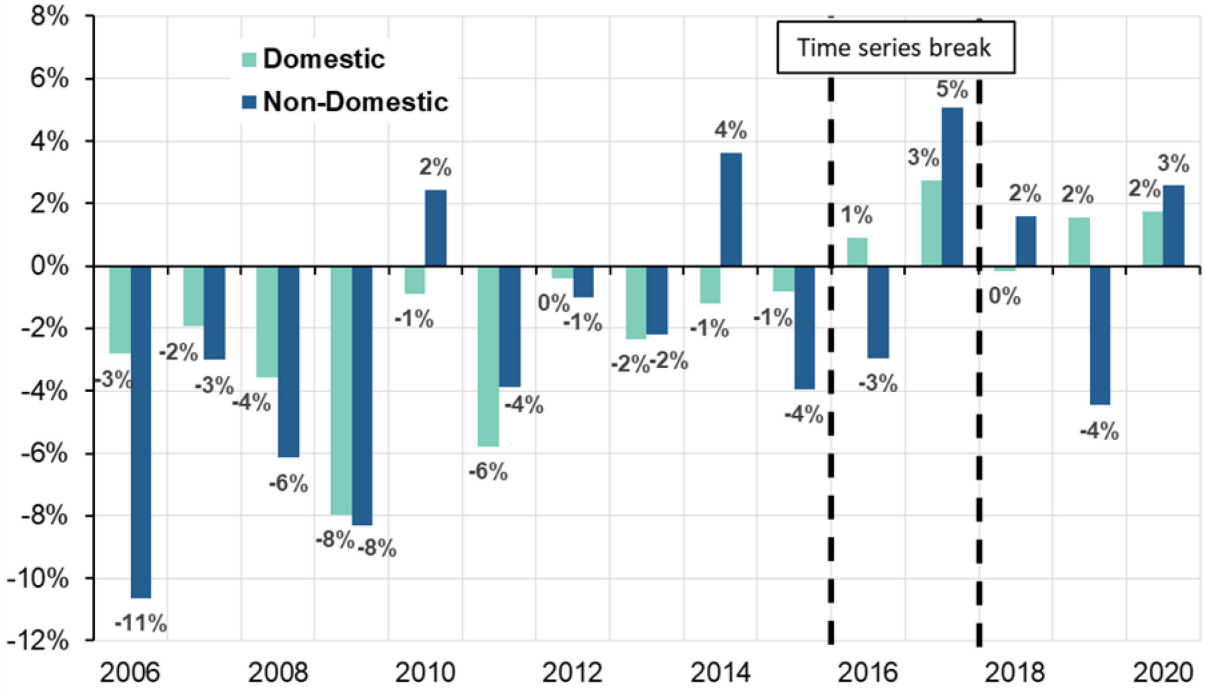
3.1 Total gas consumption

For Great Britain as a whole, a total of 515,498 GWh of gas was consumed in the gas year 2020 (via 24.4 million meters). There was a 2.0 per cent increase in total gas consumption in Great Britain between 2019 (mid-May 2019 to mid-May 2020) and 2020 (mid-May 2020 to mid-May 2021).

Unlike for electricity (for which reporting years are more closely aligned to calendar years), a comparison between 2019 and 2020 does not provide a comparison of gas consumption before and after the start of the COVID-19 pandemic. This is because the 2019 gas year (mid-May 2019 to mid-May 2020) includes the first two months of the first national lockdown. It is for this reason that, in this chapter, the 2020 gas year will be compared 2018 gas year (which ended in May 2019, before the start of the pandemic).

Chart 9 shows year-on-year changes in total gas consumption for both the domestic and non-domestic sectors. For the domestic sector there were year-on-year increases in total gas consumption for both 2019 and 2020, where total domestic gas consumption has tended to decrease each year in the past. The only other years to see increases in domestic gas consumption were 2016 and 2017. It is likely that 2017, in particular, will have been affected by Xoserve (who provide the meter point level gas data) introducing a new improved processing system in this year.

Chart 9: Year-on-year percentage changes in total domestic and non-domestic gas consumption, 2006 to 2020



For the non-domestic sector, the 4.5 per cent fall between 2018 and 2019 provides some indication of an impact from the pandemic. It should be noted that non-domestic trends can be more volatile and can be influenced by a small number of high consuming gas meters. Additionally, using the consumption threshold of 73,200 kWh to categorise gas meters as domestic or non-domestic, means some smaller commercial properties are classified as domestic, making reliable assessments of the impact of the pandemic more difficult.

Table 4: Percentage change in total gas consumption since 2005 and 2018, by country/region, Great Britain, 2020

	Domestic 2018-2020	Non-Domestic 2018-2020	**Total 2018-2020**	Domestic 2005-2020	Non-Domestic 2005-2020	**Total 2005-2020**
North East	4.6%	3.2%	**4.0%**	-23.6%	-32.5%	**-27.1%**
North West	3.7%	1.2%	**2.7%**	-24.2%	-26.7%	**-25.2%**
Yorkshire and The Humber	4.3%	-5.4%	**0.2%**	-20.2%	-30.6%	**-24.7%**
East Midlands	3.9%	-0.5%	**2.2%**	-17.6%	-21.2%	**-18.9%**
West Midlands	3.0%	-3.3%	**0.6%**	-19.4%	-25.0%	**-21.6%**
East	3.7%	-6.6%	**0.0%**	-15.8%	-26.1%	**-19.6%**
London	2.2%	-4.6%	**-0.1%**	-20.5%	-27.1%	**-22.8%**
South East	2.8%	-0.8%	**1.7%**	-17.1%	-37.7%	**-24.2%**
South West	3.7%	-1.9%	**1.9%**	-16.3%	-29.5%	**-21.1%**
England	3.4%	-2.3%	**1.3%**	-19.5%	-28.7%	**-23.0%**
Wales	3.5%	0.0%	**2.0%**	-25.1%	-32.4%	**-28.2%**
Scotland	3.5%	0.3%	**2.2%**	-16.8%	-25.4%	**-20.4%**
Great Britain	3.3%	-2.0%	**1.3%**	-19.5%	-28.1%	**-22.8%**

Total gas consumption increased by 1.3 per cent between 2018 and 2020, with a 3.3 per cent increase in domestic consumption partially offset by a 2.0 per cent decrease in non-domestic consumption (see Table 4).

Chart 10 shows the longer-term trend in gas consumption. Since 2005, total gas consumption has decreased by 22.8 per cent, with total domestic consumption decreasing by 19.5 per cent and total non-domestic consumption decreasing by 28.1 per cent over this period.

Unlike for electricity, the domestic sector is the larger consumer accounting for 64 per cent of total gas consumption in Great Britain in 2020 (Chart 11). The proportion of total gas consumed by the domestic sector was highest in the South: South East (72 per cent), London (68 per cent) and South West (68 per cent).

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

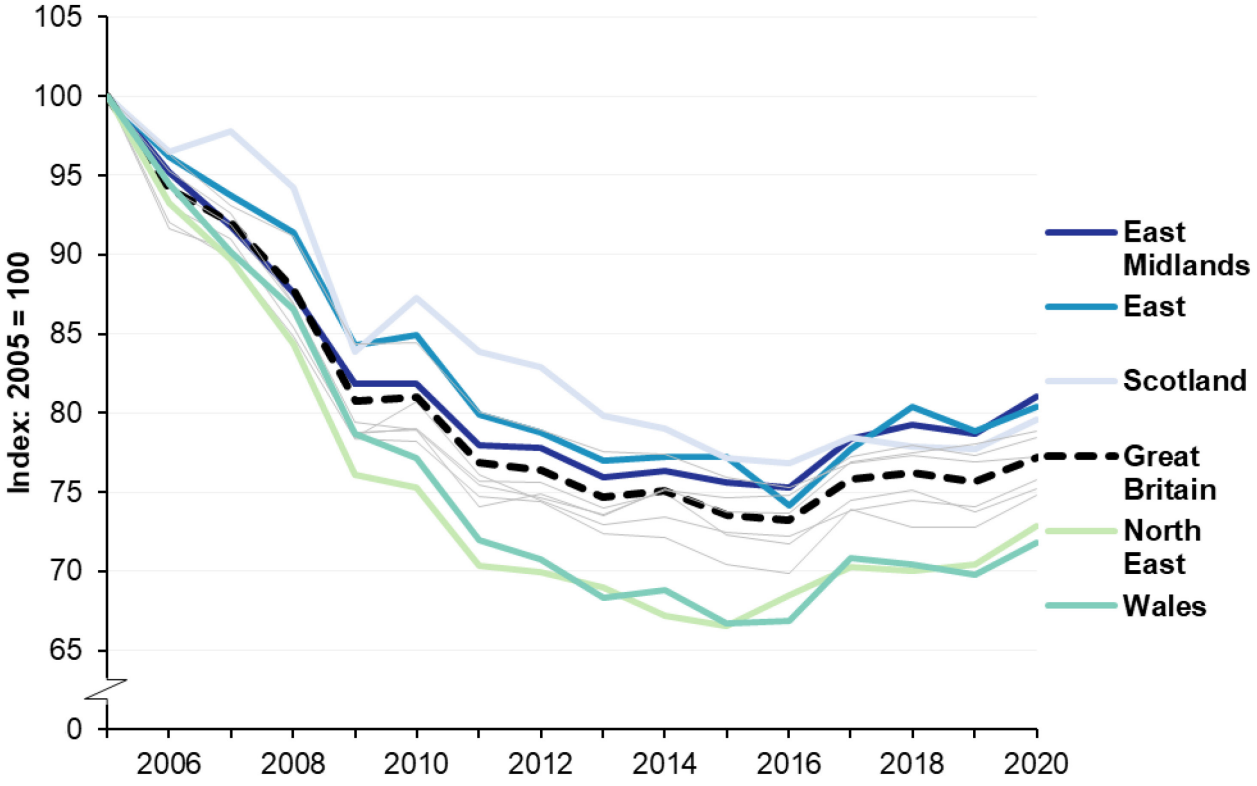
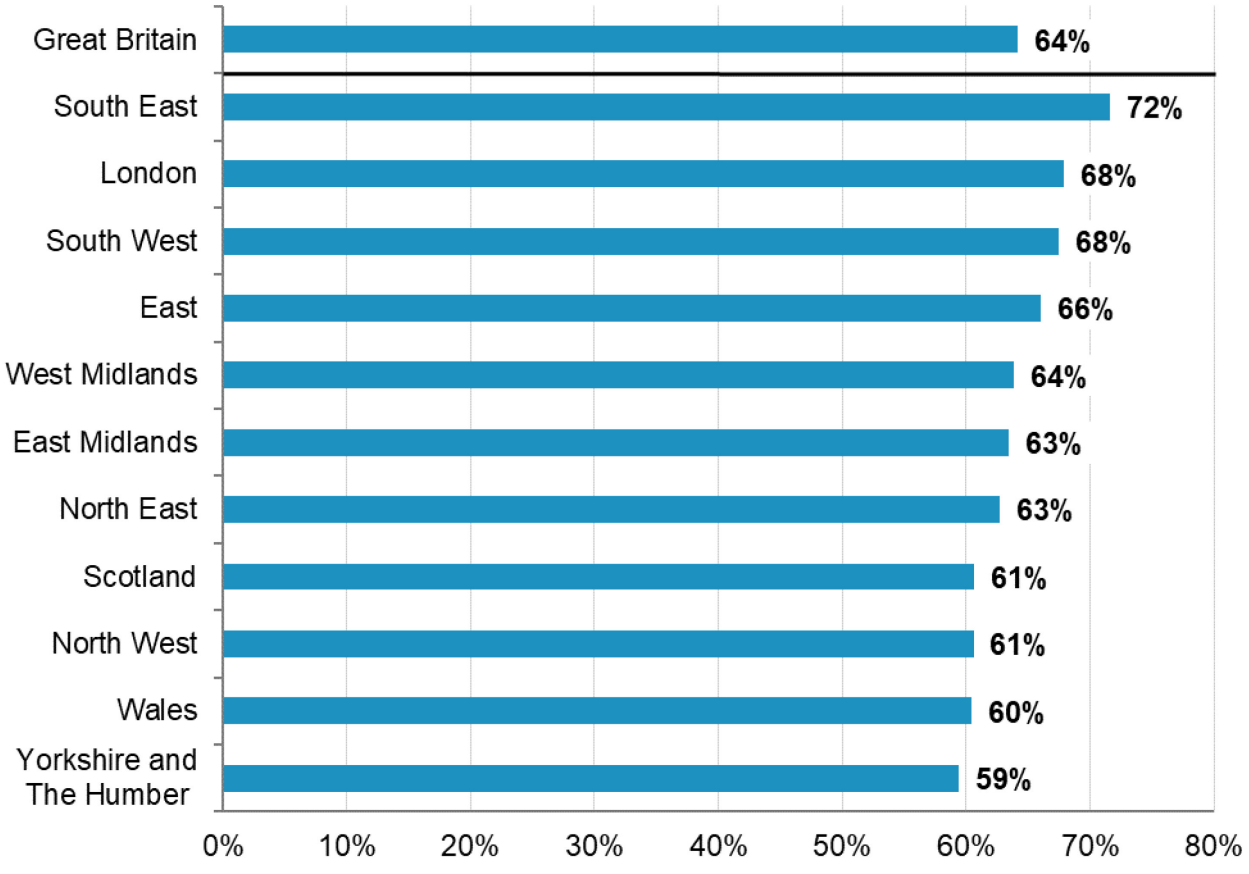


Chart 11: Domestic gas consumption as a percentage of total gas consumption, by country/region, Great Britain, 2020



3.2 Domestic gas consumption

Across Great Britain as a whole, domestic gas consumption was 3.3 per cent higher in 2020 (mid-May 2020 to mid-May 2021) than in 2018 (mid-May 2018 to mid-May 2019, the last gas year which excluded the COVID-19 pandemic). There was a 1.6 per cent increase in 2019 (mid-May 2019 – mid-May 2020, which included almost 2 months of the first national lockdown) compared to 2018. This was followed by a 1.7 per cent increase in 2020, when compared to 2019.

The 3.3 per cent increase in total domestic gas consumption in Great Britain, between 2018 and 2020, was primarily driven by a 2.4 per cent increase in mean gas consumption per meter.

Over the longer term, total domestic gas consumption in Great Britain has been on a downward trend, with total domestic consumption in 2020 being 19.5 per cent per cent lower than in 2005. This reduction has happened despite an 11.8 per cent increase in the number of domestic meters, due to a 28.0 per cent fall in mean consumption per meter.

Table 5: Percentage change in number of domestic gas meters and their mean consumption since 2005 and 2018, by country/region, Great Britain, 2020

	Number of meters 2018-2020	Mean cons per meter 2018-2020	**Total cons 2018-2020**	Number of meters 2005-2020	Mean cons per meter 2005-2020	**Total cons 2005-2020**
North East	1.0%	3.5%	**4.6%**	10.1%	-30.6%	**-23.6%**
North West	0.7%	3.0%	**3.7%**	8.3%	-30.0%	**-24.2%**
Yorkshire and The Humber	0.9%	3.4%	**4.3%**	9.7%	-27.2%	**-20.2%**
East Midlands	1.3%	2.6%	**3.9%**	14.8%	-28.2%	**-17.6%**
West Midlands	1.1%	1.9%	**3.0%**	10.2%	-26.9%	**-19.4%**
East	1.3%	2.4%	**3.7%**	14.8%	-26.6%	**-15.8%**
London	0.0%	2.2%	**2.2%**	3.4%	-23.1%	**-20.5%**
South East	1.3%	1.5%	**2.8%**	13.6%	-27.0%	**-17.1%**
South West	1.5%	2.2%	**3.7%**	19.3%	-29.8%	**-16.3%**
England	1.0%	2.4%	**3.4%**	11.0%	-27.5%	**-19.5%**
Wales	1.1%	2.4%	**3.5%**	11.1%	-32.6%	**-25.1%**
Scotland	1.6%	1.9%	**3.5%**	20.0%	-30.7%	**-16.8%**
Great Britain	0.9%	2.4%	**3.3%**	11.8%	-28.0%	**-19.5%**

Chart 12: Mean domestic gas consumption (kWh per meter) by country/region, Great Britain, 2020

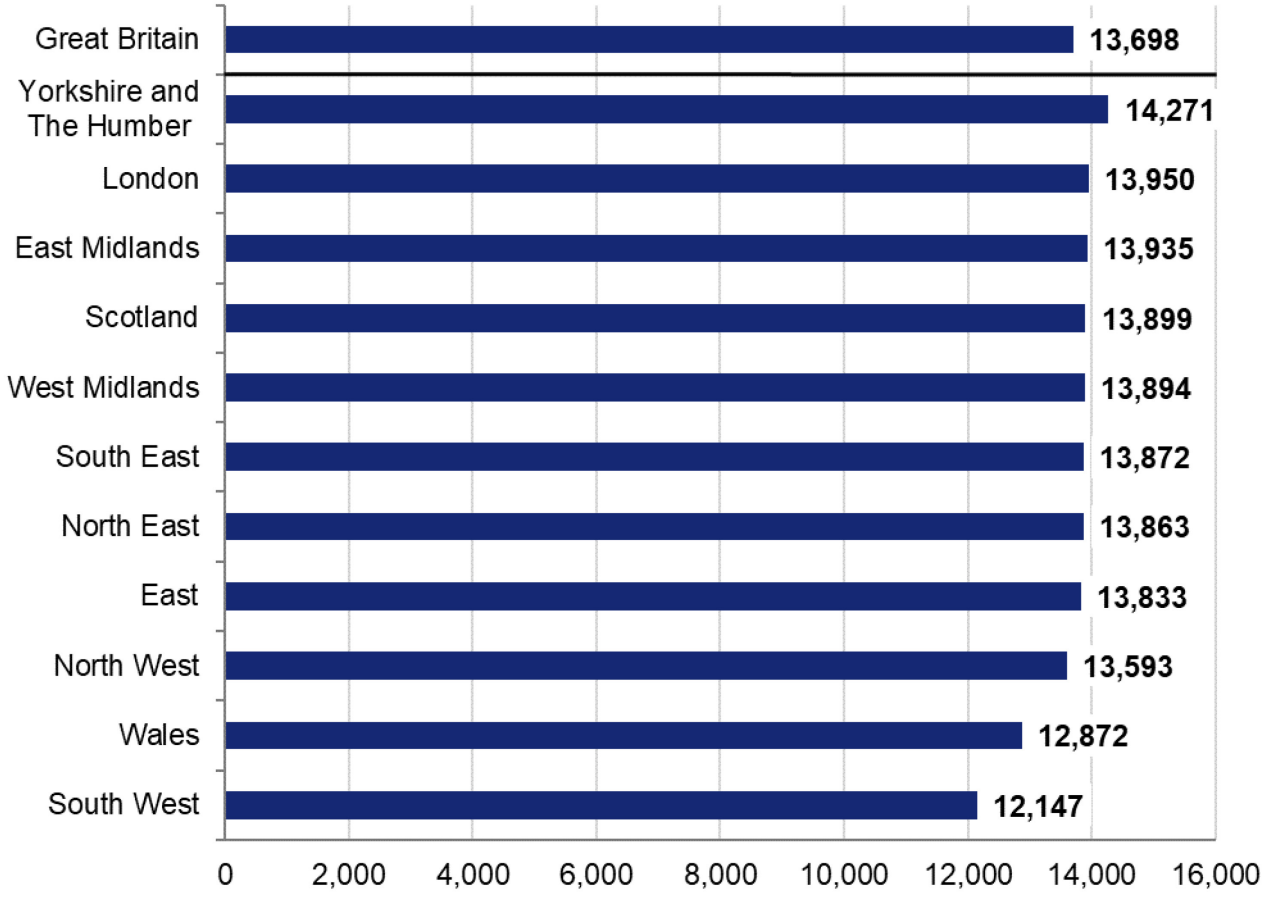


Chart 13: Mean domestic gas consumption (kWh per meter) by country/region, Great Britain, 2005 to 2020

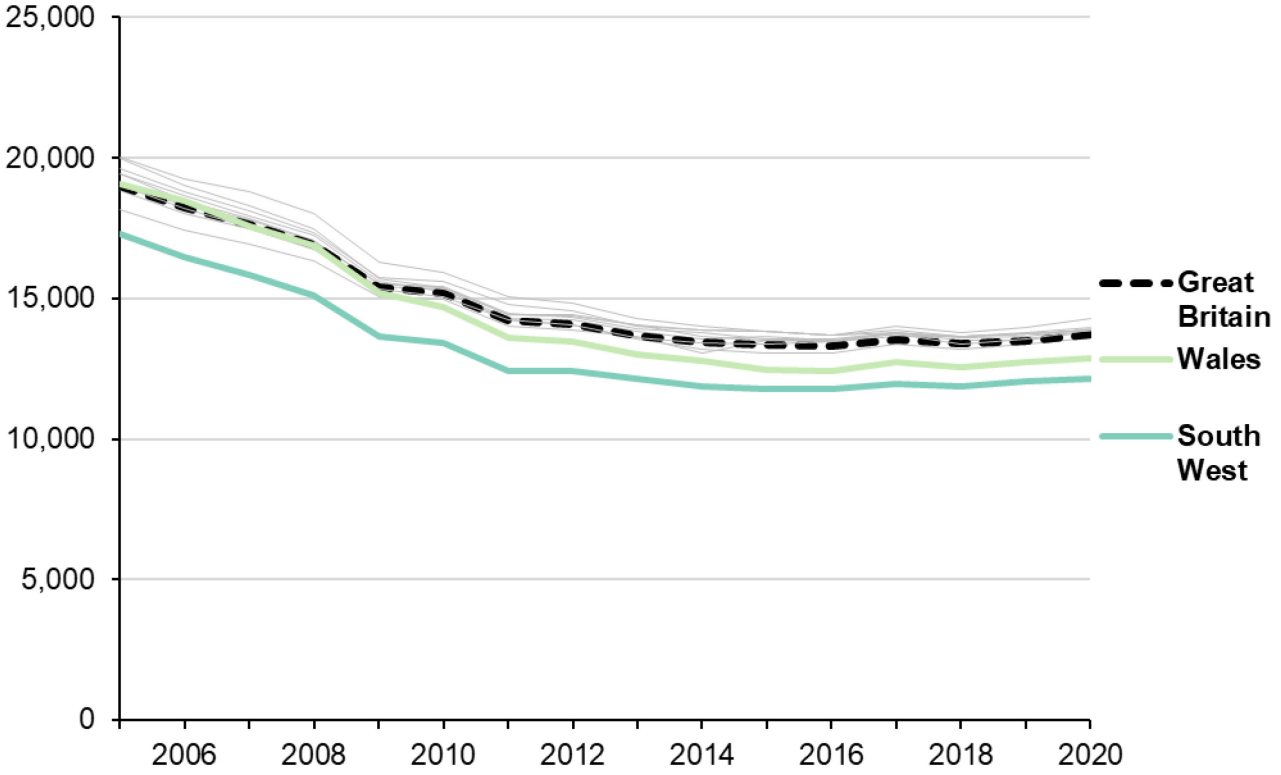


Chart 12 shows the mean domestic gas consumption per meter for each country/region in 2020. Chart 13 shows the trend in mean domestic gas consumption since 2005 with the lowest consuming regions (in terms of mean domestic consumption) highlighted. For Great Britain as a whole, mean domestic gas consumption per meter was 28.0 per cent lower in 2020 than in 2005. But the downward trend in mean gas consumption per meter may have levelled off in the latest years of the timeseries, which is likely to be due to breaks in the subnational timeseries (see “Change in period covered in gas consumption statistics” on page 16 for more detail) around 2016 and 2018, followed by the impacts of the COVID-19 pandemic.

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.

Chart 14: The distribution of domestic gas consumption per meter in Great Britain, 2020

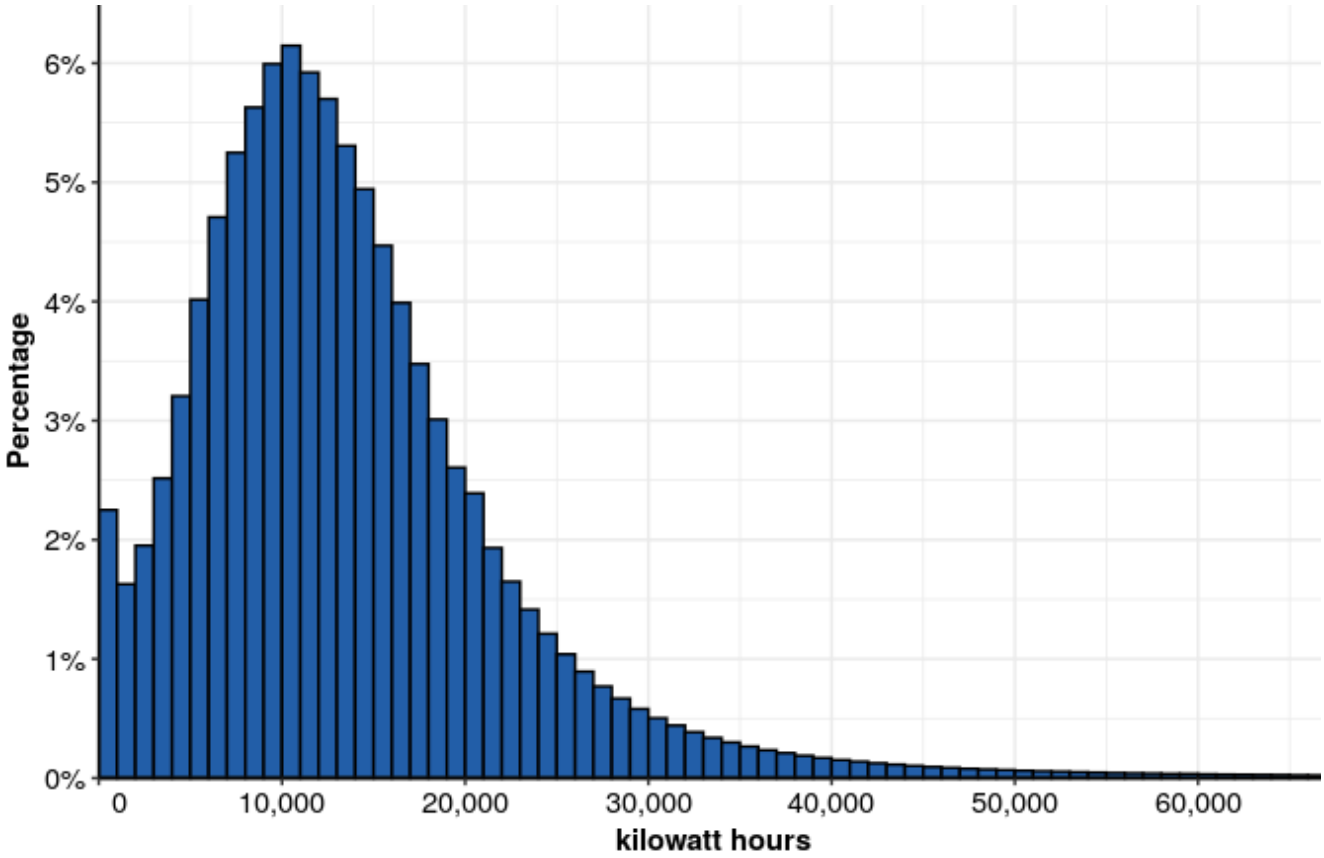
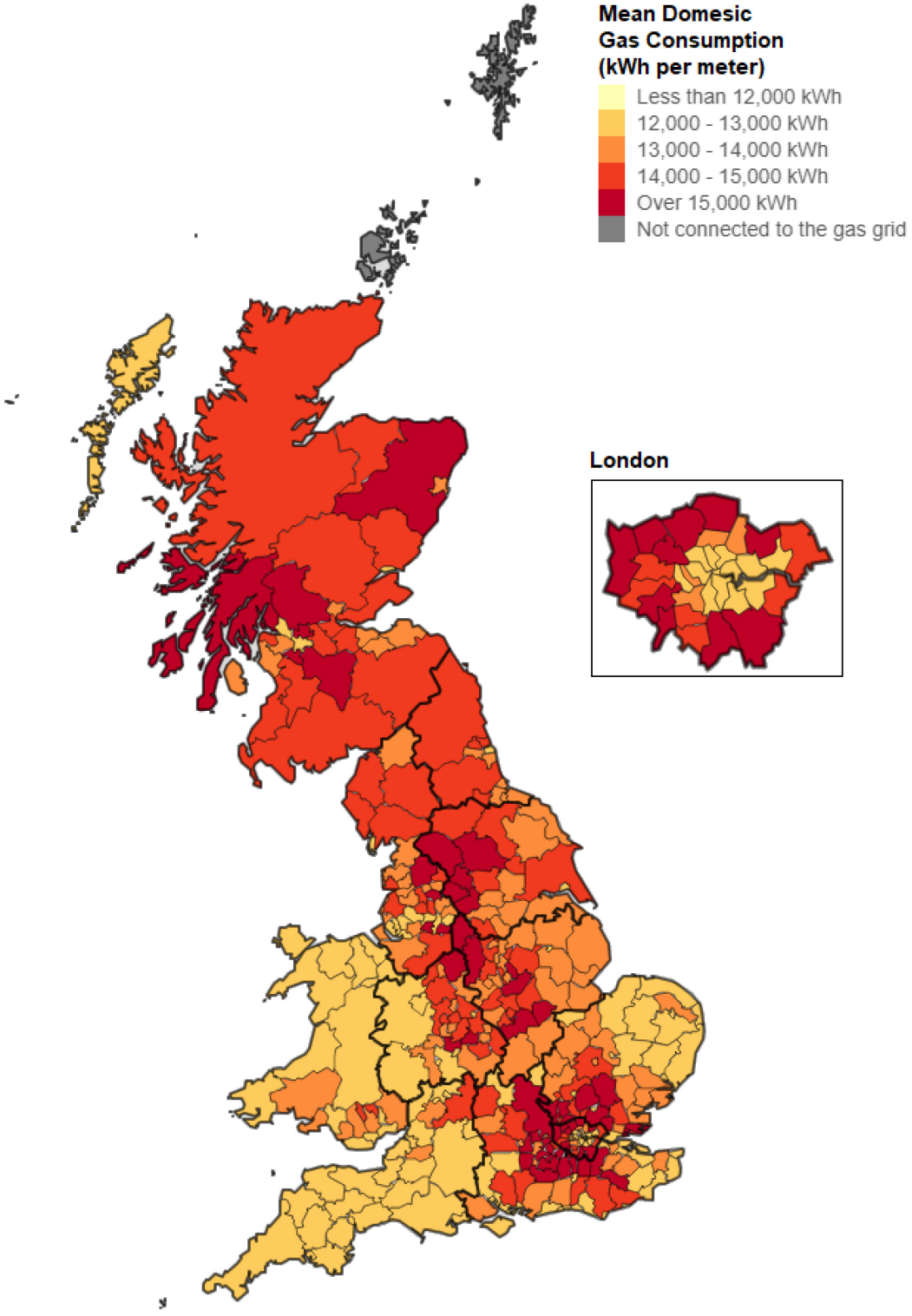


Chart 14 shows the distribution of domestic gas consumption at the level of individual meters in 2020. Half (54 per cent) of domestic gas meters consumed between 6,000 and 16,000 kWh, and 5 per cent consume over 30,000 kWh. The effect of these few large consuming meters means that the mean consumption of 13,698 kWh is significantly higher than the median domestic gas consumption (the value which half of meters are above, and half are below) of 12,145 kWh.

Map 2 shows how mean domestic gas consumption per meter varies geographically at the level of individual local authorities.

Map 2: Mean domestic gas consumption per meter by local authority, 2020



2.3 Non-domestic gas consumption

Across Great Britain as a whole, non-domestic gas consumption was 2.0 per cent lower in 2020 (mid-May 2020 to mid-May 2021), than in 2018 (mid-May 2018 to mid-May 2019, the last gas year which excluded the COVID-19 pandemic). There was a 4.5 per cent fall in 2019 (mid-May 2019 – mid-May 2020, which included almost 2 months of the first national lockdown) compared to 2018. This was followed by a rebound in 2020 (a 2.6 per cent increase compared with 2019).

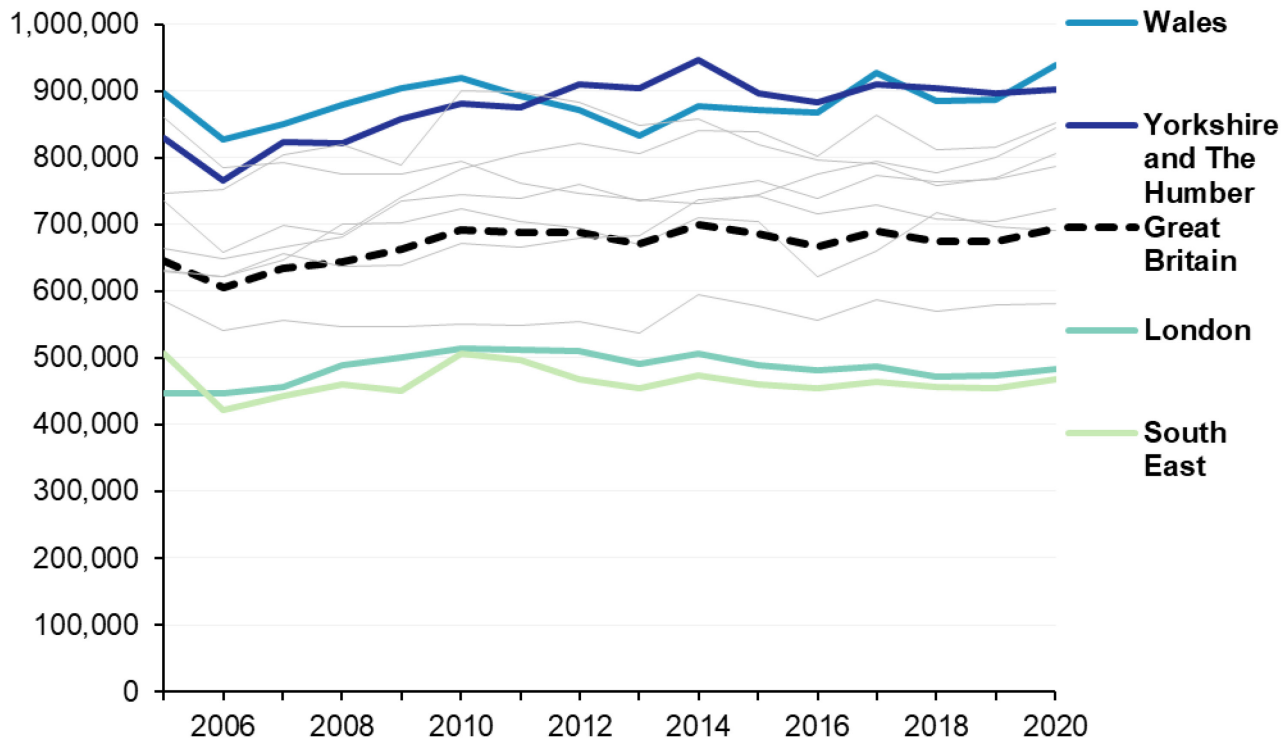
Over the longer term, total non-domestic gas consumption in Great Britain has been on a downward trend, with total non-domestic consumption in 2020 being 28.1 per cent lower than in 2005. This reduction was driven by a 33.2 per cent decrease in the number of consuming non-domestic meters, while mean consumption per consuming meter increased by 7.6 per cent.

Table 6: Percentage change in the number of consuming non-domestic gas meters and their mean consumption since 2005 and 2018, by country/region, Great Britain, 2020

	Number of meters 2018-2020	Mean cons per meter 2018-2020	**Total cons 2018-2020**	Number of meters 2005-2020	Mean cons per meter 2005-2020	**Total cons 2005-2020**
North East	-5.1%	8.7%	**3.2%**	-31.2%	-1.8%	**-32.5%**
North West	-3.7%	5.1%	**1.2%**	-36.8%	16.0%	**-26.7%**
Yorkshire and The Humber	-5.1%	-0.3%	**-5.4%**	-36.2%	8.9%	**-30.6%**
East Midlands	-3.2%	2.8%	**-0.5%**	-33.4%	18.3%	**-21.2%**
West Midlands	-5.4%	2.2%	**-3.3%**	-34.6%	14.7%	**-25.0%**
East	-2.9%	-3.7%	**-6.6%**	-32.6%	9.7%	**-26.1%**
London	-6.6%	2.2%	**-4.6%**	-32.5%	7.9%	**-27.1%**
South East	-3.4%	2.7%	**-0.8%**	-32.8%	-7.4%	**-37.7%**
South West	-3.8%	2.1%	**-1.9%**	-29.1%	-0.6%	**-29.5%**
England	-4.5%	2.3%	**-2.3%**	-33.5%	7.3%	**-28.7%**
Wales	-5.9%	6.2%	**0.0%**	-35.5%	4.8%	**-32.4%**
Scotland	-5.7%	6.4%	**0.3%**	-31.1%	8.1%	**-25.4%**
Great Britain	-4.7%	2.8%	**-2.0%**	-33.2%	7.6%	**-28.1%**

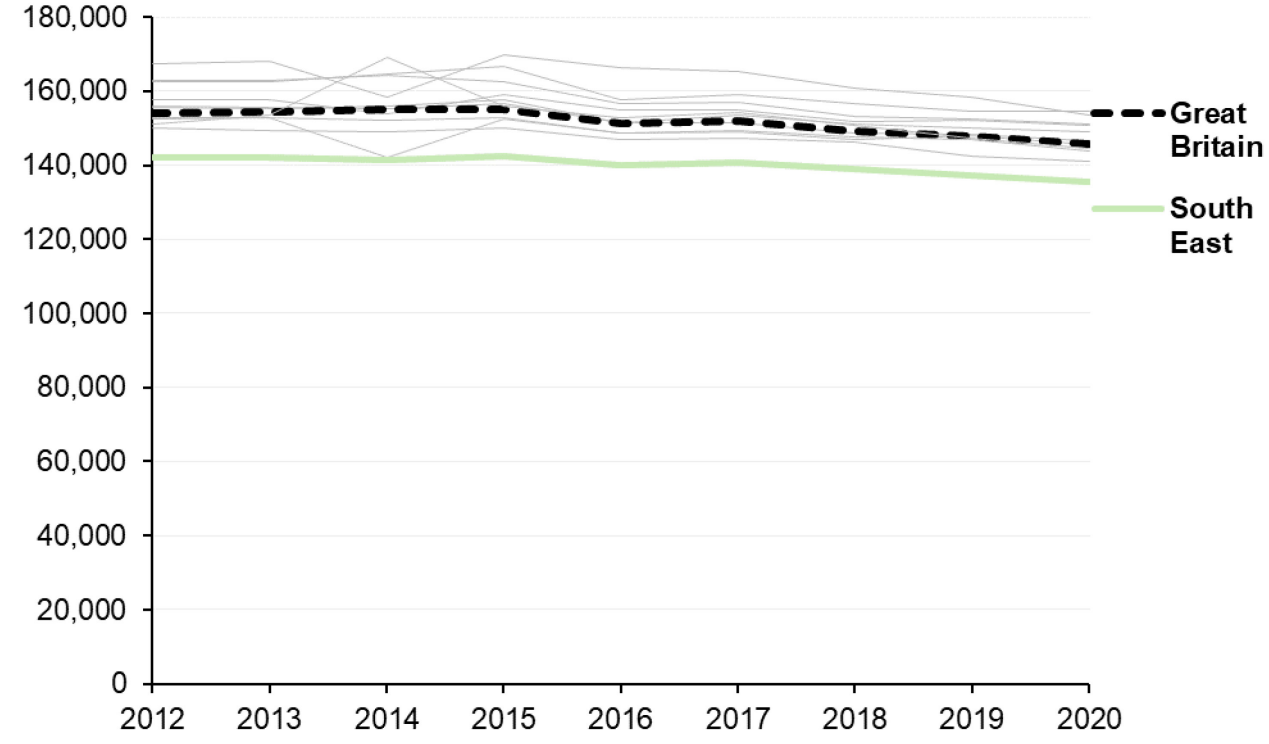
There is considerable variation in mean non-domestic gas consumption per meter between countries/regions as shown in Chart 15. While Wales and ‘Yorkshire and the Humber’ have consistently been broadly around 30 per cent above the Great Britain mean, London and the South East have consistently been around 30 per cent below the Great Britain mean.

Chart 15: Mean non-domestic gas consumption (kWh per meter) by country/region, Great Britain, 2005 to 2020



Mean non-domestic gas consumption is heavily influenced by a small number of high consuming gas meters. The median consumption per non-domestic meter can give a better indication of gas consumption for more typical non-domestic meters. On this basis, there is much more consistency between regions as shown in Chart 16.

Chart 16: Median non-domestic gas consumption (kWh per meter) by country/region, Great Britain, 2012 to 2020



3.4 Domestic properties not connected to the gas grid

Background information: Properties not on the gas grid

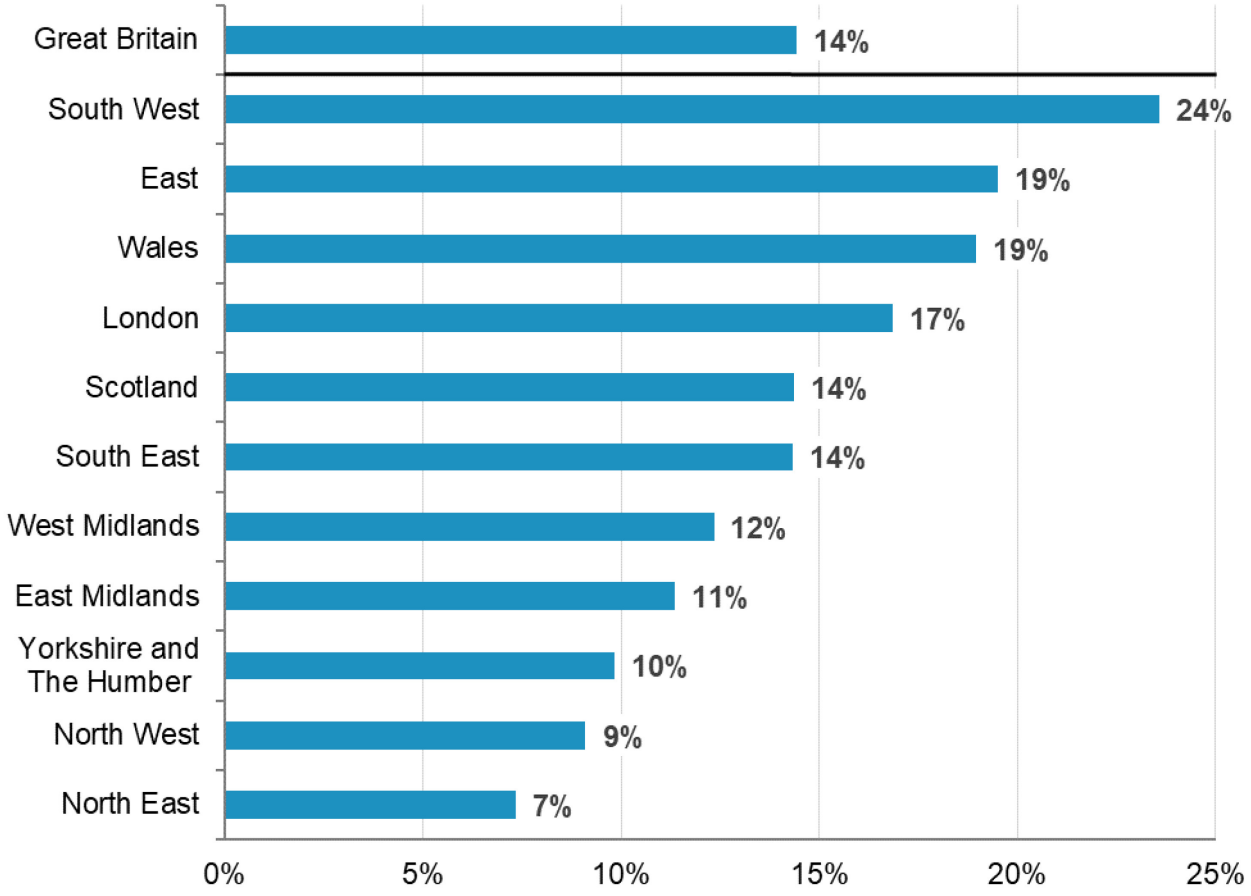
There is no definitive source of information on properties that are off the gas grid. However, BEIS produces estimates of the number of domestic properties without gas based on the difference between the number of domestic gas meters and the number of properties in each area.

BEIS is not able to identify specific properties within an area which are off 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 smaller consuming commercial/industrial consumers are allocated 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 0.2 per cent of domestic meters could not be allocated to a local authority region in 2020, 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.
- In these statistics, there is no differentiation between properties which do not have a gas meter because they are in an area which is off the gas grid and those which are in an area on the gas grid but have a property which is not connected to it (such as inner-city blocks of flats).

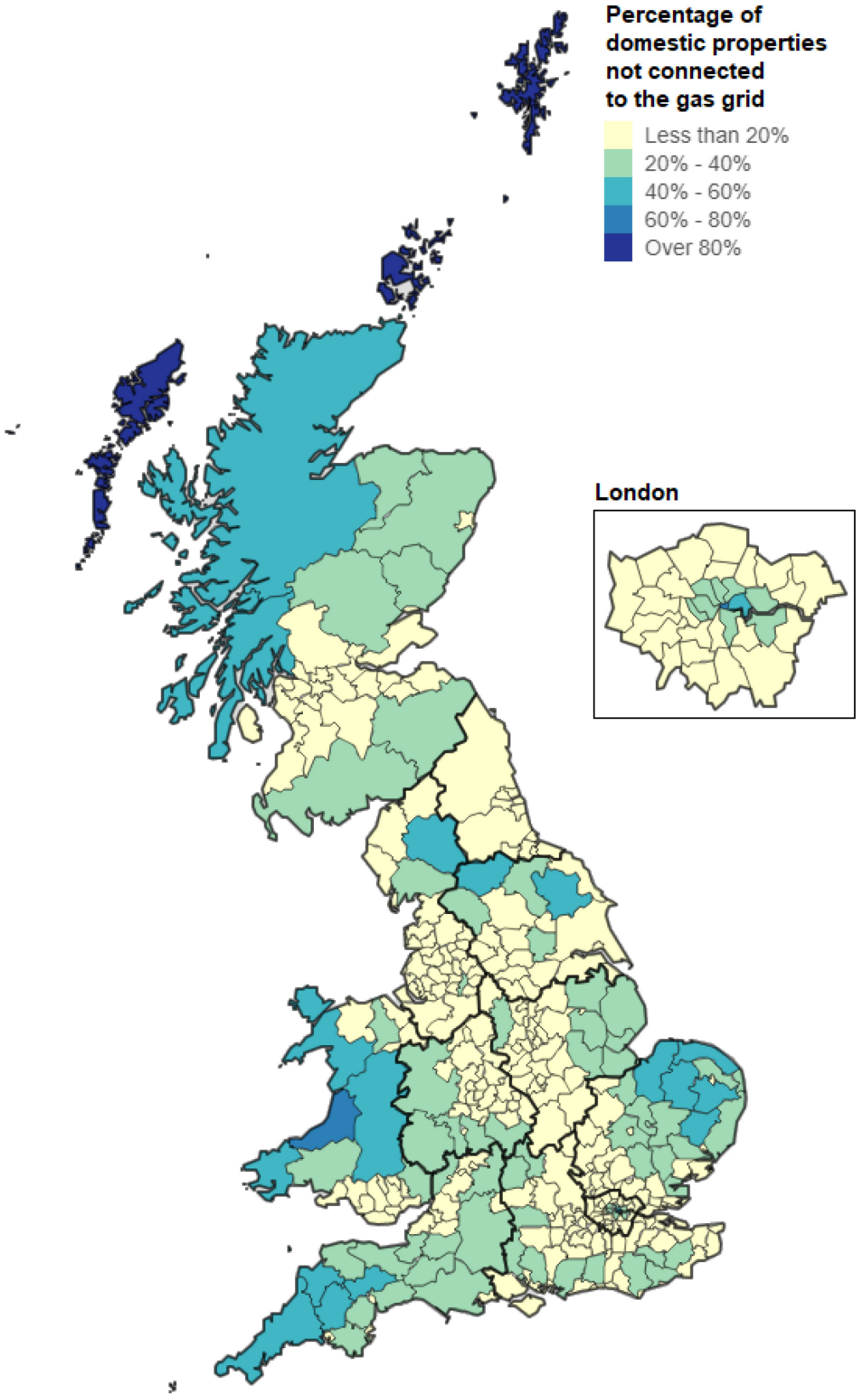
Chart 17 shows the estimated proportions of properties not on the gas grid for each country/region. Across Great Britain in 2020, an estimated 14 per cent of domestic properties were not connected to the gas grid, a similar proportion to 2015. The percentage not on the gas grid was lowest in the North of England: North East (7 per cent in 2020), North West (9 per cent) and Yorkshire and The Humber (10 per cent). The South West had by far the highest percentage of properties not on 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 (23 per cent) as in Outer London (12 per cent).

Chart 17: Percentage of domestic properties not on the gas grid, by country/region, Great Britain, 2020



Map 3 shows how the proportion of properties without a gas meter varies geographically at the level of individual local authorities in Great Britain in 2020. 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 (86 per cent in 2020).

Map 3: Percentage of domestic properties not connected to the gas grid, by local authority, Great Britain, 2020



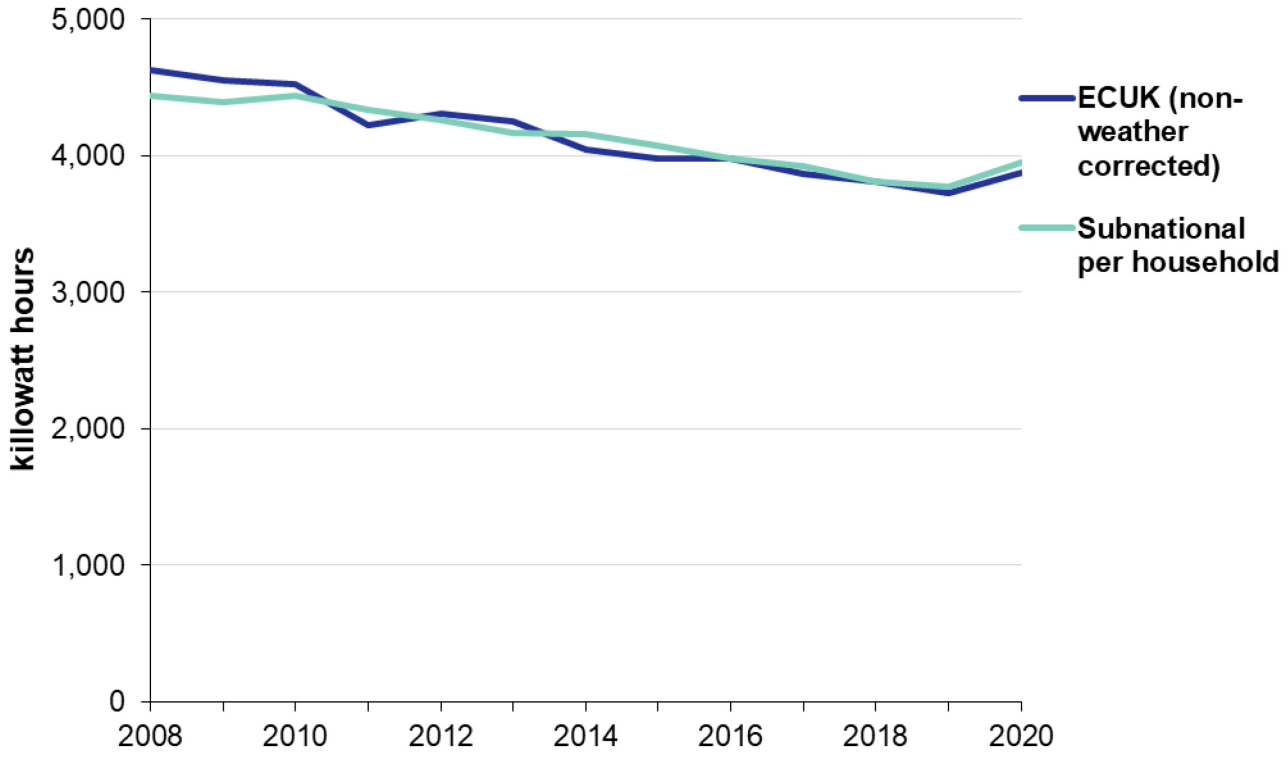
4. Comparison with other sources

4.1 Electricity

Domestic Electricity

Chart 18 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). This shows that the trend over time is consistent between the two sources.

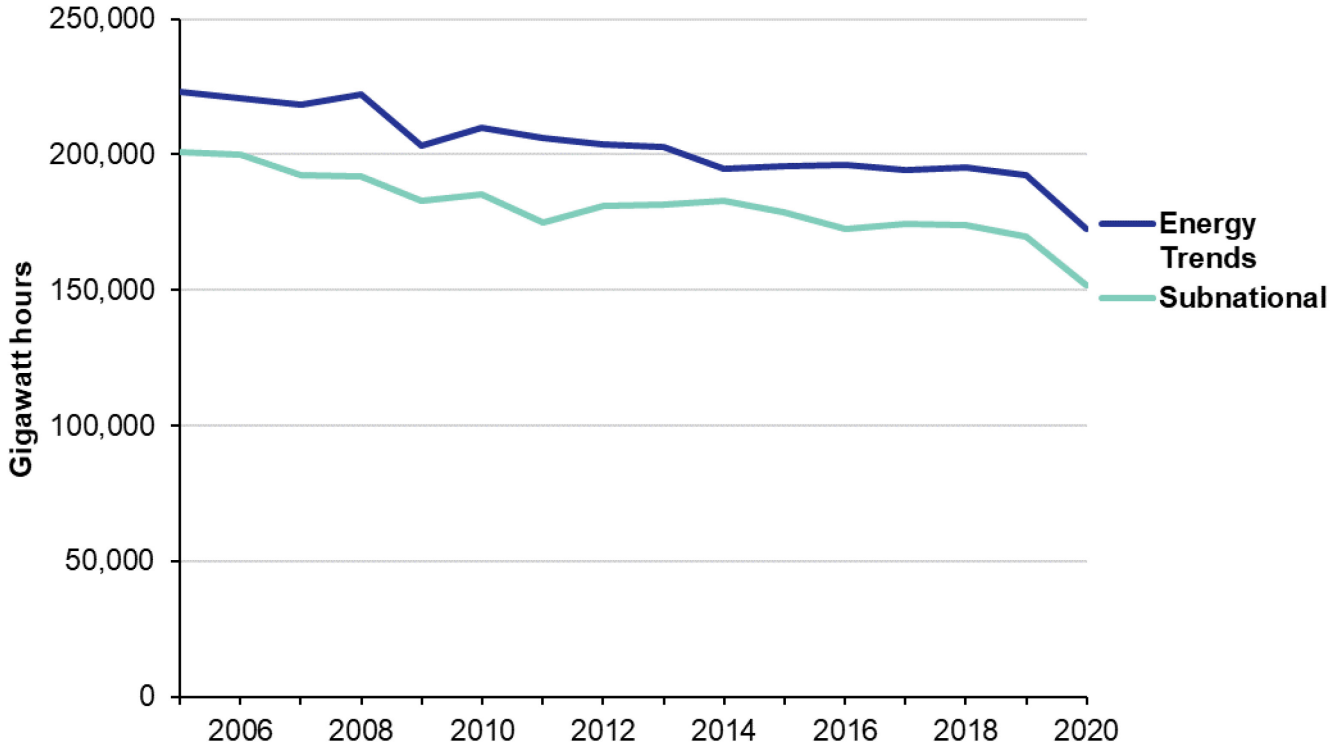
Chart 18: Comparison of sources, mean annual domestic electricity consumption per household, 2008 to 2020



Non-domestic Electricity

Chart 19 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 19: Comparison of sources, annual non-domestic electricity consumption, 2005 to 2020



4.2 Gas

Domestic gas consumption

BEIS 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 20 shows estimates between 2008 and 2020, note that weather correction can cause variability between the estimates. In broad terms the data series are consistent, which provides reassurance to users of the subnational data. 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 BEIS as part of its survey of gas suppliers, whereas subnational data uses the number of domestic meters as the denominator. There will be some non-domestic meters incorrectly included in the domestic subnational gas data, since 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 2020 calendar year, whereas subnational gas data covers the period mid-May 2020 to mid-May 2021.

Non-domestic gas consumption

Chart 21 compares the total annual UK non-domestic gas consumption published in Energy Trends (Table 4.1) with subnational non-domestic gas consumption. Both of these 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 20: Comparison of sources, mean domestic gas consumption (kWh), 2008 to 2020[8]

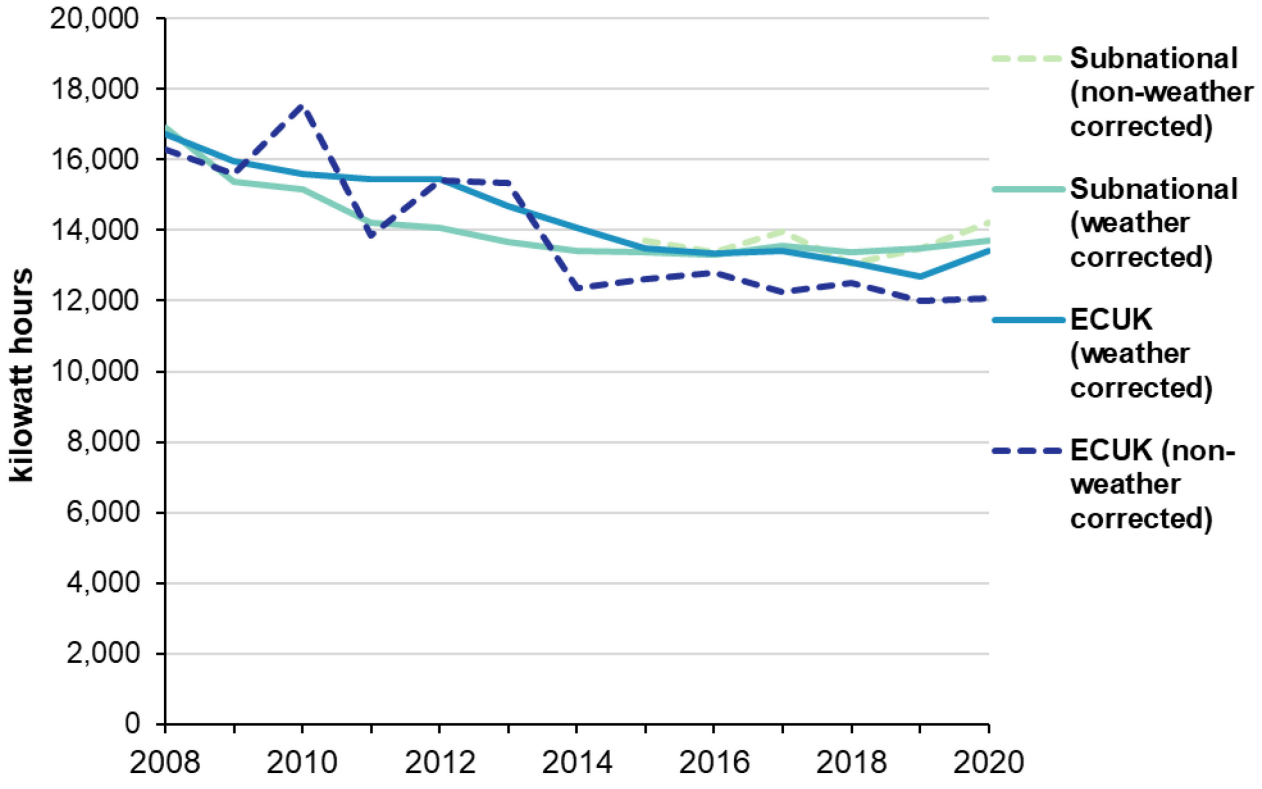
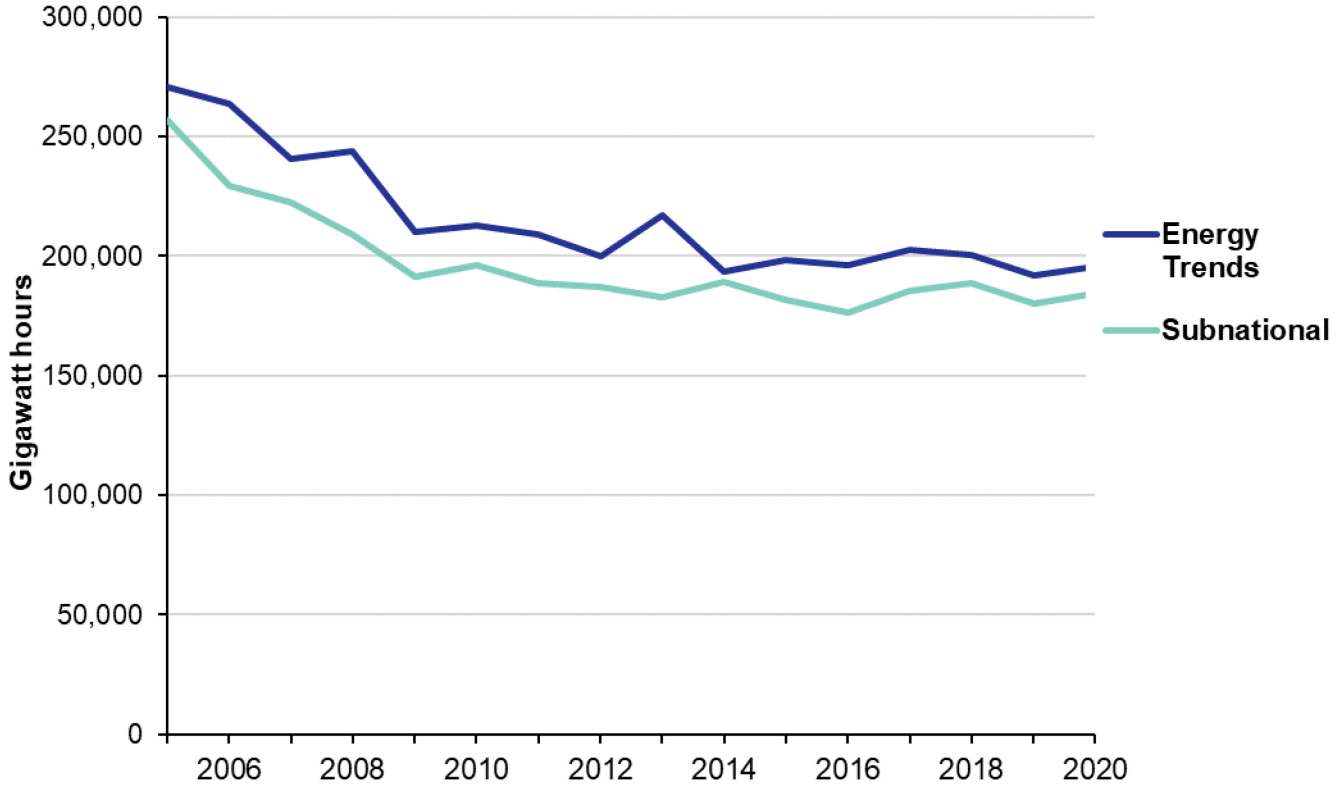


Chart 21: Comparison of sources, annual non-domestic gas consumption, 2005 to 2020



[8] 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 statistics (domestic and non-domestic).
- Middle Super Output Areas electricity consumption (domestic and non-domestic), to be published in January 2022.
- Lower Super Output Areas electricity consumption (domestic), to be published in January 2022.
- Postcode level electricity statistics: 2020 (domestic, experimental statistics), to be published in January 2022.
- Stacked electricity consumption statistics data (domestic and non-domestic), to be published in January 2022.

The following gas consumption tables accompany this report:

- Regional and local authority gas consumption statistics (domestic and non-domestic).
- Middle Super Output Areas gas consumption (domestic and non-domestic), to be published in January 2022.
- Lower Super Output Areas gas consumption (domestic), to be published in January 2022
- Postcode level gas statistics: 2020 (domestic, experimental statistics), to be published in January 2022.
- Stacked gas consumption statistics data (domestic and non-domestic), to be published in January 2022.

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/IGZ and LSOA level.

Comparison to DUKES

Digest of United Kingdom energy statistics (DUKES) is an annual BEIS 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 Jan 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 only.
- 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 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 BEIS 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 BEIS on data from several sources, including DUKES.
- Contain a more comprehensive sector split than subnational statistics and give information on end use for majority of fuels.

Further information

Future updates to these statistics

Great Britain:

The next publication of subnational gas and electric data will be in December 2022 when 2021 data will be available.

Northern Ireland:

The next publication of Northern Ireland electric and gas data will be in December 2022 when 2021 electric and 2021 gas data will be available.

Revisions policy

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

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 BEIS policy colleagues and other analysts within the department to inform policy development and help with monitoring and evaluation of BEIS policies. The meter point gas and electricity data collected for subnational consumption outputs are also the most important input for BEIS's 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 BEIS statement on statistical public engagement and data standards sets out the department's commitments on public engagement and data standards as outlined by the Code of Practice for Statistics.

National Statistics designation

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

The continued designation of these statistics as National Statistics was confirmed in 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 BEIS statement of compliance with the Pre-Release Access to Official Statistics Order 2008.

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