



Department
of Energy &
Climate Change

Sub-national gas consumption statistics

Regional and local authority level statistics
(2012 data)

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Local authority level statistics (2012 data)

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Background

The 2012 data analysed in this document are based on the aggregation of Meter Point Reference Number (MPRN) readings throughout Great Britain as part of DECC's annual meter point gas data exercise.

The data cover the gas year between 1 October 2011 and 30 September 2012 and are supplied to DECC as weather corrected data. In the domestic sector, gas consumption is predominately used for heating purposes and as a result usage is driven by external temperatures and weather conditions. The weather correction factor enables comparisons of gas use over time, controlling for weather changes.

This document looks at gas consumption by consuming sector (ie, domestic and non-domestic) for Great Britain, and Region¹/Devolved Administrations (these will be referred to as regions for the remainder of this document), together with some commentary relating to local authority trends. There is no sector indicator within the gas dataset, and to estimate if a meter reading is domestic or non-domestic, the gas industry cut-off point of 73,200 kWh is used – that is, if a meter consumes this value or less it is defined as a domestic meter, and non-domestic if it consumes greater than this value.

Annual data on a consistent basis are available from 2005 and can be found here:

<https://www.gov.uk/government/statistical-data-sets/gas-sales-and-numbers-of-customers-by-region-and-local-authority>.

To produce this analysis we are dependent on the excellent cooperation of the gas industry and DECC would like to thank the gas transporters and Xoserve for their on-going co-operation, help and assistance in providing these data and making it possible to produce this analysis.

Feedback from users of these data is welcomed. If you would like to comment on the data or the content of the documents or if you have any queries please send these to:

EnergyEfficiency.Stats@decc.gsi.gov.uk.

Consumption information below local authority area level

Gas and electricity consumption data are available for the years 2005 to 2011 at middle layer super output area (MSOA) level and at intermediate geography zone (IGZ) in Scotland. Also available are 2010 and 2011 estimates at lower layer super output area (LSOA) level (census geographies, each typically covering around 2,000 and 500 households respectively) in England and Wales. The 2011 data can be accessed at:

<https://www.gov.uk/government/collections/mlsoa-and-lsoa-electricity-and-gas-estimates>.

MSOA/IGZ and LSOA data for 2012 will be released on 27 March 2014.

Accompanying documentation

For further details on the methodology, assumptions and data interpretation relating to the electricity consumption statistics, please refer to the sub-national methodology and guidance booklet which can be accessed here:

¹ 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 Sub-national methodology and guidance booklet.

[https://www.gov.uk/government/publications/regional-energy-data-guidance-note.](https://www.gov.uk/government/publications/regional-energy-data-guidance-note)

Readers are highly advised to familiarise themselves with the material in the booklet before using the data.

1. Gas consumption in Great Britain

1.1 Total annual gas consumption

During 2012, the total annual gas consumption in Great Britain was 509,716 GWh (via 23,184,301 meters), 0.7 per cent lower than consumption in 2011 (513,166 GWh).

Total consumption increased in 178 local authority areas² between 2011 and 2012. The total number of gas meters increased in most local authorities with only 19 having fewer meters in 2012 than 2011.

The number of meters in an area can change as new properties are built and old properties demolished. In addition, assigning a meter to an area within the sub-national gas consumption statistics is also dependent upon the address information for each meter. During recent years, increased quality of address information (for example, a full postcode rather than a partial postcode) and improved address matching has enabled more meters to be matched to the correct geographic area rather than remaining 'Unallocated'³. This means that an increase in the number of meters in an area may reflect better address matching, rather than an actual increase in the number of meters within the year.

The changes in gas consumption in Great Britain between 2011 and 2012 are shown for each region in Table 1 below.

Table 1 Gas consumption in Great Britain by region, 2011 and 2012

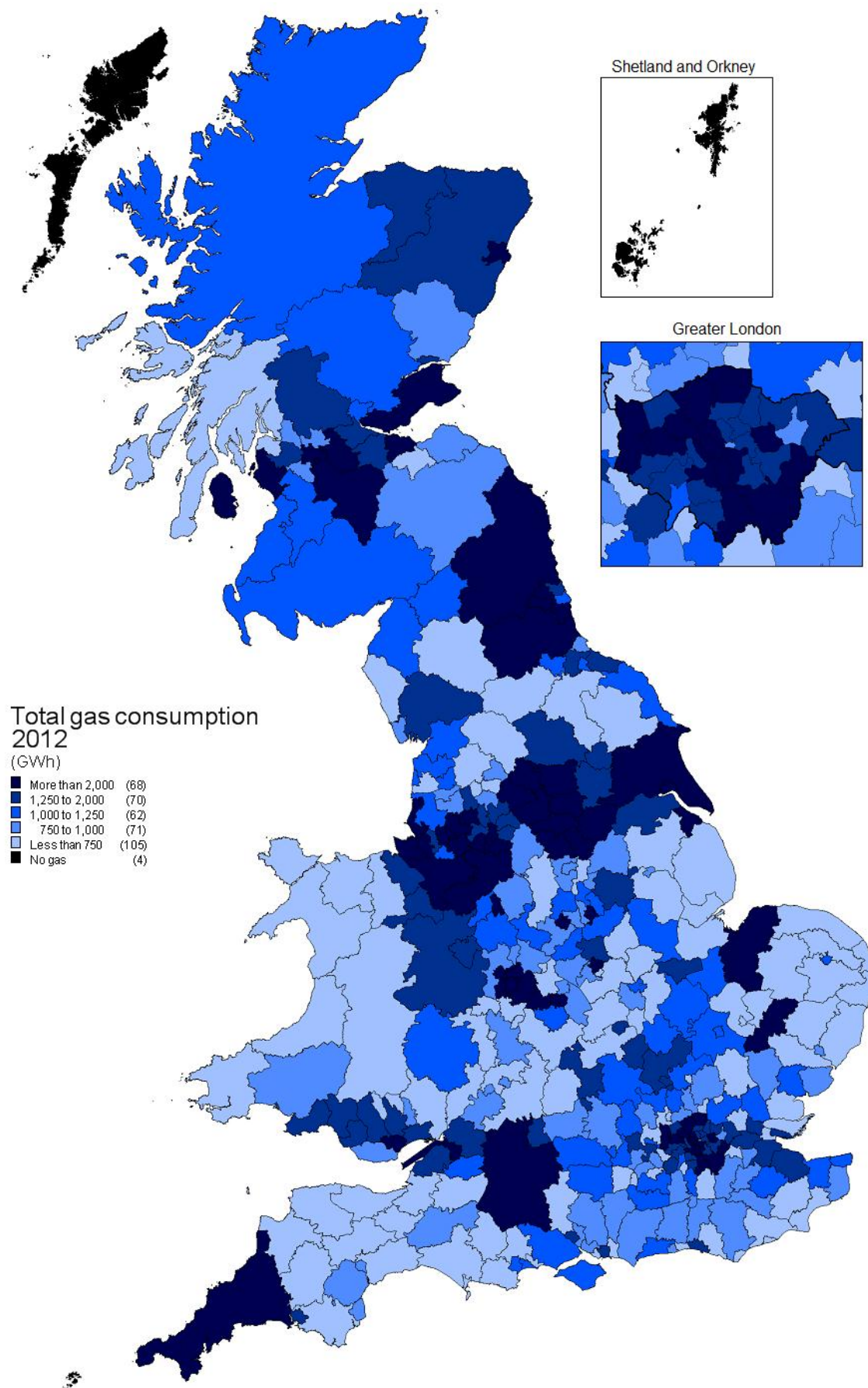
	2011		2012		Percentage change	
	Total annual gas consumption (GWh)	Number of meters (thousands)	Total annual gas consumption (GWh)	Number of meters (thousands)	Total annual gas consumption (GWh)	Number of meters (thousands)
East Midlands	39,313	1,745	39,271	1,754	-0.1%	0.5%
East of England	45,226	2,042	45,131	2,054	-0.2%	0.6%
Greater London	63,915	3,045	63,141	3,050	-1.2%	0.2%
North East	24,383	1,094	24,326	1,097	-0.2%	0.3%
North West	66,735	2,879	66,507	2,885	-0.3%	0.2%
South East	65,410	3,186	64,137	3,196	-1.9%	0.3%
South West	33,094	1,812	33,439	1,822	1.0%	0.6%
Yorkshire and The Humber	52,759	2,115	52,805	2,122	0.1%	0.3%
West Midlands	45,805	2,101	45,479	2,109	-0.7%	0.4%
Scotland	51,137	1,947	50,479	1,961	-1.3%	0.7%
Wales	24,688	1,114	24,607	1,118	-0.3%	0.4%
England	436,642	20,019	434,237	20,090	-0.6%	0.4%
Great Britain¹	513,166	23,113	509,716	23,184	-0.7%	0.3%

Map 1 below shows the variation in total annual gas consumption in 2012, by local authority.

² The local authorities of Eilean Siar (Western Isles), Orkney Islands, Shetland Islands and Isles of Scilly are not included in the sub-national gas consumption datasets due to limitations in access to gas.

³ 'Unallocated' meters are meters with insufficient address information and the consumption for these meters are unable to be assigned, or allocated, to a region. These values appear towards the end of the sub-national gas consumption statistics table which is available alongside this document.

Map 1 Total annual gas consumption by local authority, 2012



1.2 Average annual gas consumption

In 2012, the average (mean) annual consumption per meter in Great Britain was 21,985 kWh, 1 per cent lower than in 2011 when average consumption was 22,202 kWh. Scotland had the highest average consumption with 25,747 kWh per meter, with the South West having the lowest at 18,348 kWh per meter.

Table 2 shows the number of meters, total consumption and average (mean) gas consumption per meter in each region within Great Britain.

Table 2 Average gas consumption per meter by region, 2012

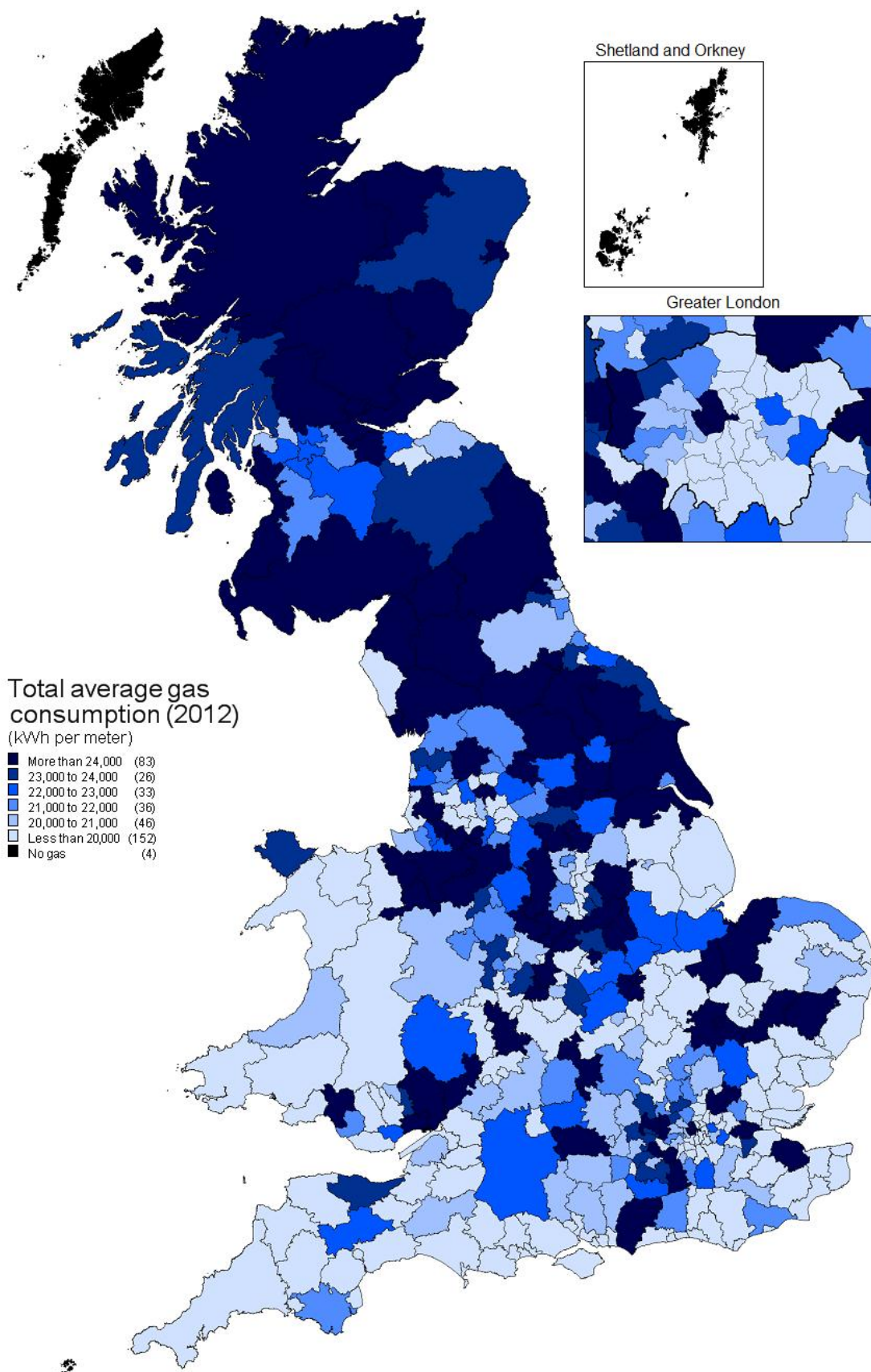
	Number of meters (thousands)	Total consumption (GWh)	Average consumption (kWh)
East Midlands	1,754	39,271	22,392
East of England	2,054	45,131	21,974
Greater London	3,050	63,141	20,702
North East	1,097	24,326	22,170
North West	2,885	66,507	23,049
South East	3,196	64,137	20,065
South West	1,822	33,439	18,348
Yorkshire and The Humber	2,122	52,805	24,887
West Midlands	2,109	45,479	21,567
Scotland	1,961	50,479	25,747
Wales	1,118	24,607	22,003
England	20,090	434,237	21,615
Great Britain¹	23,184	509,716	21,985

1. Includes 16 thousand meters, with a total consumption of 393 GWh that couldn't be allocated at local authority level, representing less than 0.1 per cent of total meters and consumption.

Map 2 below shows average gas consumption per meter in 2012, by local authority.

The remainder of this document analyses the consumption of gas across the domestic and non-domestic sectors separately.

Map 2 Average gas consumption per meter by local authority, 2012



2. Domestic gas consumption in Great Britain by region

2.1 Average annual domestic gas consumption by region

Average annual gas consumption per domestic meter was 14,080 kWh in 2012, with a total domestic gas consumption of 322,615 GWh. Both average and total consumption were 0.9 and 0.6 per cent lower respectively⁴, than in 2011 (compared with 14,205 kWh and 324,430 GWh respectively).

Table 3 shows the average (mean) domestic gas consumption per meter, the total number of domestic meters and total domestic consumption for each region in 2012.

Table 3 Average domestic gas consumption per meter by region, 2012

	Number of domestic meters (thousands)	Total domestic consumption (GWh)	Average domestic consumption (kWh)
East Midlands	1,735	24,876	14,339
East of England	2,031	28,865	14,212
Greater London	3,008	41,695	13,862
North East	1,086	15,672	14,434
North West	2,853	40,124	14,062
South East	3,156	45,386	14,379
South West	1,803	22,380	12,416
Yorkshire and The Humber	2,097	30,525	14,554
West Midlands	2,085	29,267	14,037
Scotland	1,936	28,702	14,826
Wales	1,108	14,933	13,482
England	19,854	278,790	14,042
Great Britain¹	22,913	322,615	14,080

1. Includes 15 thousand meters, with a total consumption of 191 GWh that couldn't be allocated at local authority level, representing less than 0.1 per cent of total meters and consumption.

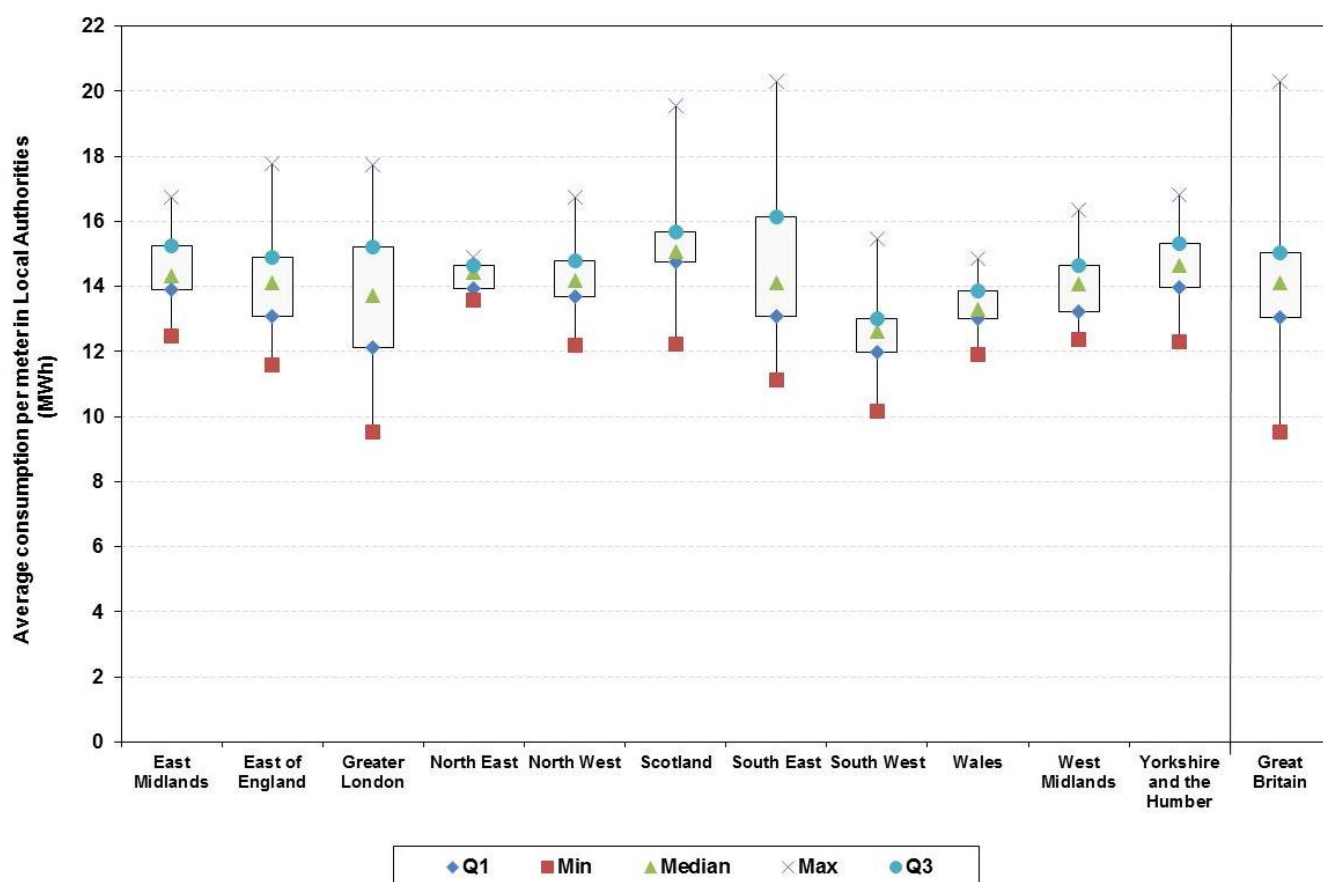
Scotland had the highest average domestic consumption with 14,826 kWh per meter, with the South West having the lowest at 12,416 kWh per meter. Average domestic consumption in 2012 was lower than 2011 in all but two regions; average domestic consumption fell the most in Scotland (with a reduction of 239 kWh, or 1.6 per cent), and the least in the South East (37 kWh lower, a 0.3 per cent reduction). The South West and the North East saw small increases in average domestic consumption of 0.1 per cent (from 12,401 kWh to 12,416 kWh and 14,420 kWh to 14,434 kWh respectively).

In terms of total domestic gas consumption for Great Britain, the South East consumed 14.1 per cent, followed by Greater London (12.9 per cent) and the North West (12.4 per cent). The North East and Wales consumed the least, 4.9 and 4.6 per cent respectively.

⁴ The sub-national data is weather corrected, however unadjusted domestic gas consumption estimates are available in Table 3.07 of Energy Consumption in the UK(ECUK): <https://www.gov.uk/government/collections/energy-consumption-in-the-uk>. Estimates in Table 3.07 show an increase in overall domestic consumption between 2011 and 2012 (from 293,400 GWh to 339,080 GWh) and average consumption (from 13,252 kWh to 15,281 kWh).

Chart 1 shows a series of box plots illustrating the distribution of average domestic gas consumption for local authorities within each region as well as a box plot for Great Britain. These have been calculated based on average (mean) consumption for each local authority within each region. The spread (inter-quartile range) between the upper (Q3) and lower (Q1) quartiles (that is, the middle 50 per cent of the data), of average domestic gas consumption in local authorities are greatest in Greater London (a difference of 3,106 kWh per meter), whereas the inter-quartile range for the North East was 709 kWh as indicated by the shorter box; however the number of points represented by each plot varies, for instance the South East covers 67 local authorities, whereas the North East covers just 12 local authorities.

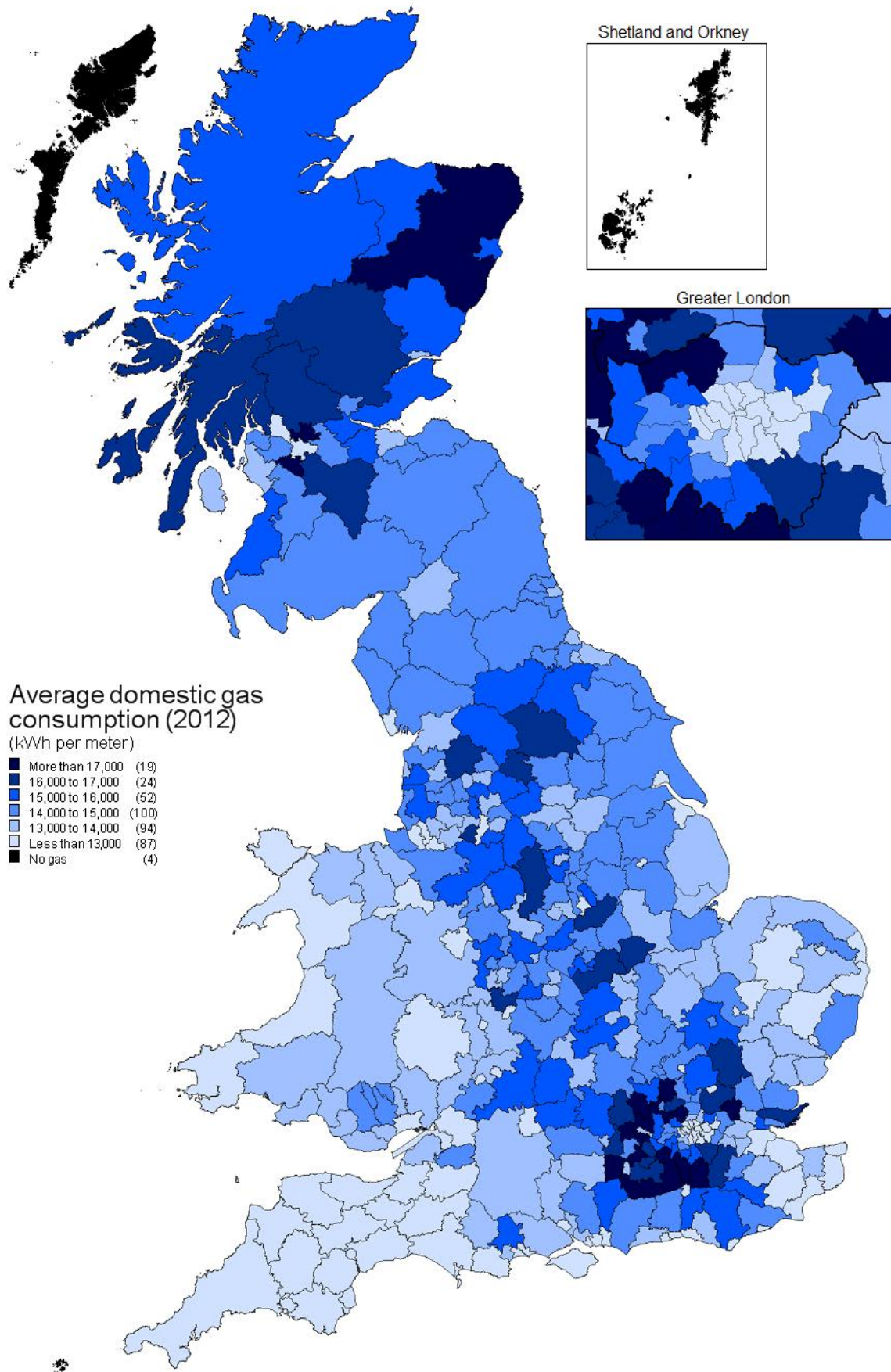
Chart 1 **Box plot of average domestic gas consumption for local authorities within each region**



The local authority with minimum average domestic consumption varies within each region from 9,518 kWh (Tower Hamlets) in Greater London to 13,561 kWh (South Tyneside) in the North East. Conversely the largest average domestic consumption per meter varies from 14,852 kWh (Blaenau Gwent) in Wales to 20,307 kWh (South Bucks) in the South East. The median is close to the lower quartile (Q1) for the majority of regions, which is indicative of a positive or right-skewed distribution.

Map 3 below shows average domestic gas consumption per meter by local authority in 2012.

Map 3 Average domestic gas consumption per meter by local authority, 2012



2.2 Longer term trends between 2005 and 2012

Average domestic gas consumption per meter in Great Britain decreased by 26 per cent between 2005 and 2012. There are a number of factors which may have contributed to the reductions in consumption, including; weather conditions, energy efficiency improvements⁵, such as increased levels of insulation, new boilers and more energy efficient appliances; increased prices⁶ and the recession; and changes in the building stock and household composition.

Chart 2 shows the decrease in average domestic gas consumption per meter point between 2005 and 2012 at regional level.

Chart 2 Decrease in average domestic consumption per meter point between 2005 and 2012, and between 2011 and 2012

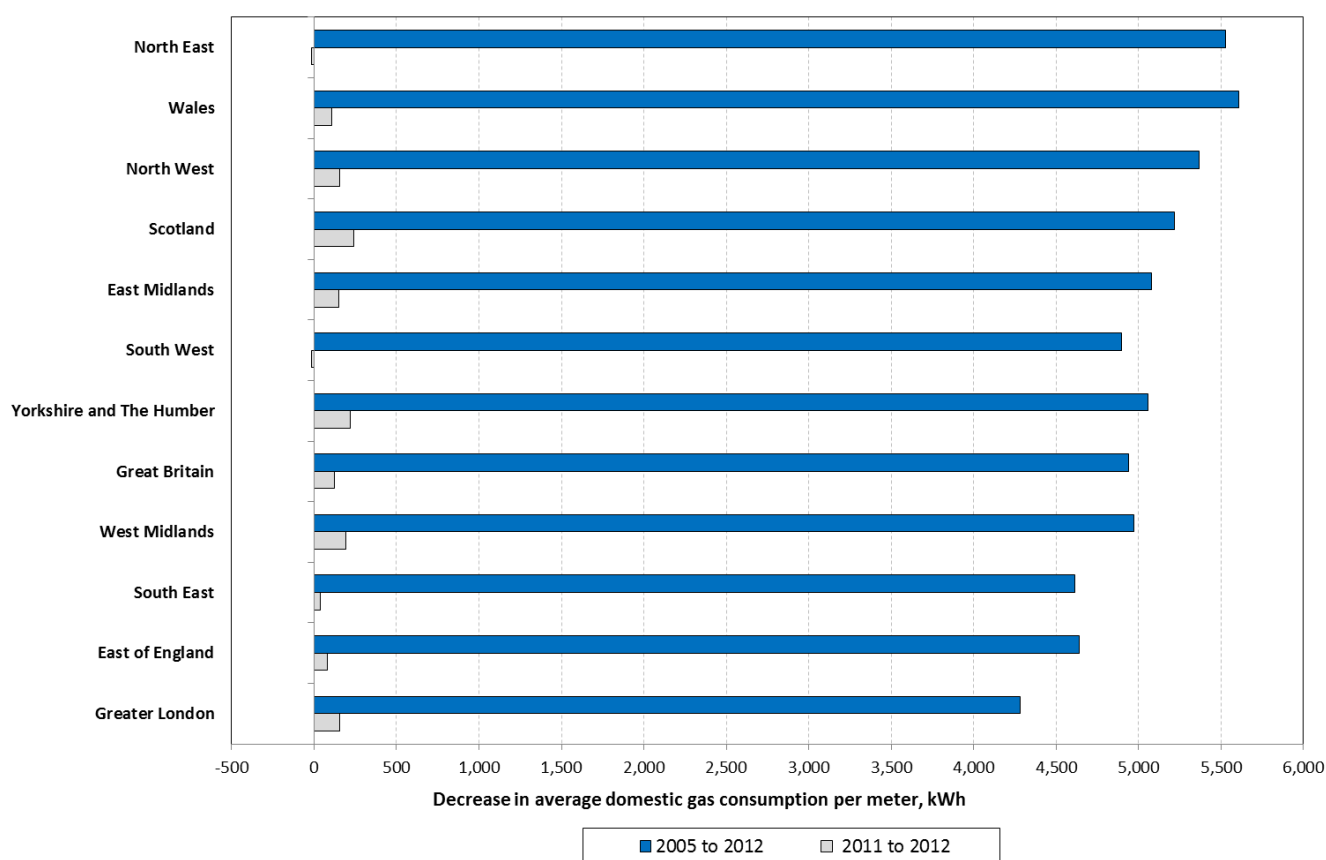


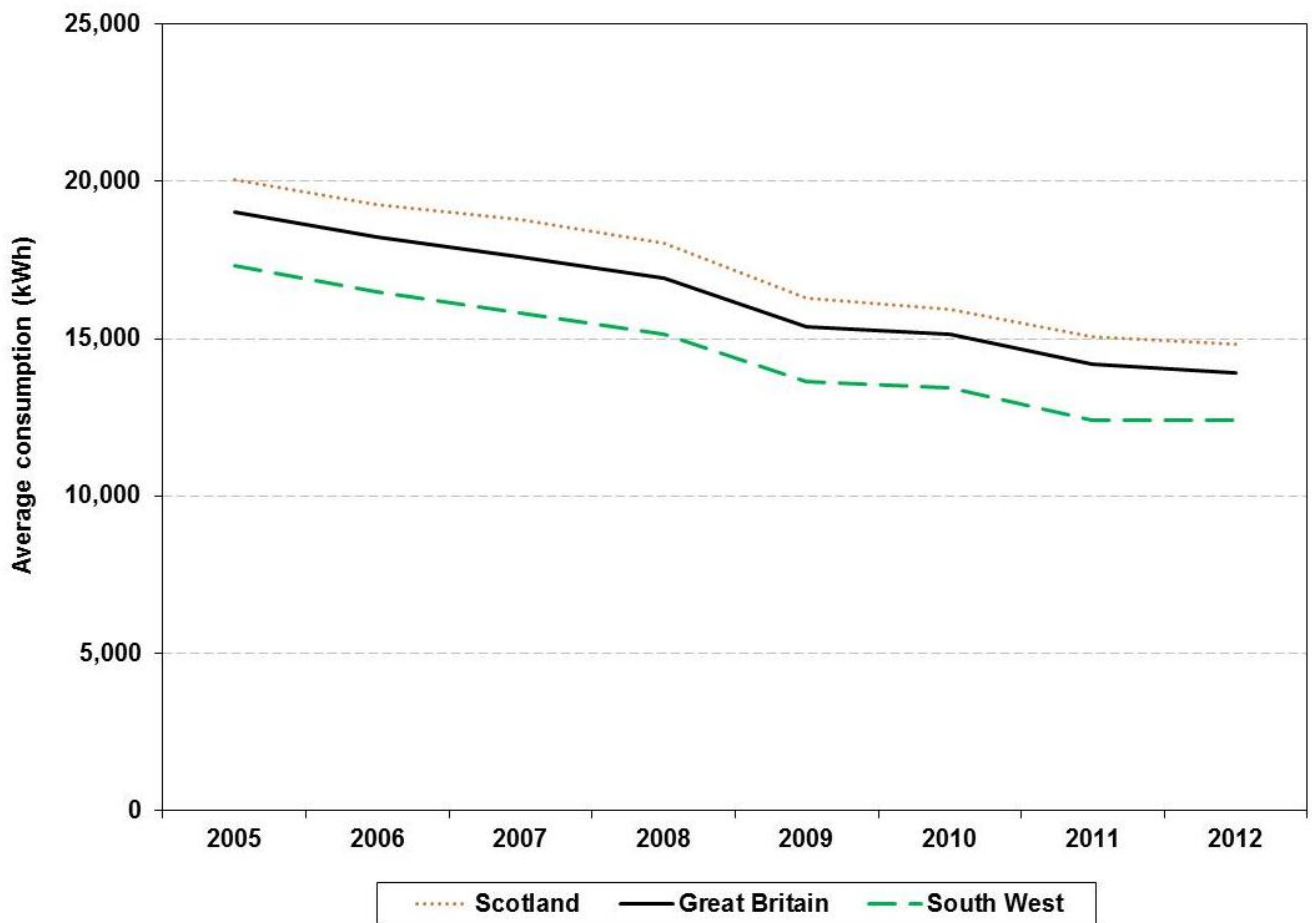
Chart 3 below shows the mean domestic gas consumption per meter for Scotland, the South West and Great Britain from 2005 to 2012. These regions have been selected as they had the highest and lowest average domestic gas consumption for each of the seven years. The average consumption for all other regions in Great Britain was between the lines shown for

⁵ The energy efficiency of the housing stock improved between 2005 and 2011, the average SAP rating of a dwelling increased by 7.7 points from 49.0 to 56.7. The SAP rating is a measure of the overall energy efficiency of the dwelling. Table 13: English Housing Survey Headline Report 2011-12: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/211288/EHS_Headline_Report_2011-2012.pdf.

⁶ Between 2005 and 2012 domestic gas prices contained within Quarterly Energy Prices show an increase of 114 per cent (83 per cent in real terms) which is likely to have influenced demand. 'Quarterly Energy Prices' can be accessed here: <https://www.gov.uk/government/collections/quarterly-energy-prices>.

Scotland and the South West and all regions followed a similar trend.

Chart 3 Average domestic gas consumption for selected regions, 2005 to 2012



3. Non-domestic gas consumption in Great Britain by region

3.1 Average annual non-domestic gas consumption by region

Average annual non-domestic gas consumption per meter was 688,941 kWh in 2012, with total non-domestic gas consumption of 187,102 GWh. Average consumption was 0.3 per cent lower than in 2011 (686,985 kWh), with total consumption 0.9 per cent lower than in 2011 (188,736 GWh). The number of non-domestic gas meters reduced by 1 per cent (271,579 meters in 2012 from 274,731 in 2011).

Table 4 shows the average (mean) non-domestic gas consumption per meter and total non-domestic consumption in each of the regions. The North West was responsible for 14 per cent of all non-domestic gas consumption compared to the North East and Wales which consumed 5 per cent each. Yorkshire and the Humber, Wales and Scotland had the highest average non-domestic consumptions, reflecting the mix of industry in the regions, which are generally more energy intensive than the South East and Greater London which are more service sector orientated and had the lowest regional average non-domestic consumption in 2012.

Table 4 Average non-domestic gas consumption per meter and total non-domestic gas consumption by region, 2012

	Number of non-domestic meters	Total non-domestic consumption (GWh)	Average non-domestic consumption (kWh)
East Midlands	18,960	14,395	759,229
East of England	22,870	16,266	711,246
Greater London	42,081	21,446	509,636
North East	11,528	8,655	750,741
North West	32,154	26,384	820,545
South East	40,048	18,750	468,200
South West	19,948	11,059	554,370
West Midlands	23,793	16,212	681,377
Yorkshire and The Humber	24,481	22,281	910,119
Scotland	24,633	21,778	884,094
Wales	10,795	9,674	896,184
England	236,151	155,650	659,111
Great Britain¹	271,579	187,102	688,941

1. Includes 288 meters, with a total consumption of 203 GWh that couldn't be allocated at local authority level, representing 0.11 per cent of both total meters and consumption.

Map 4 below shows average non-domestic gas consumption per meter by local authority in 2012. The areas with the highest average non-domestic consumption tend to be areas with relatively few meters and a number of large consumers.

Map 4 Average non-domestic gas consumption per meter by local authority, 2012

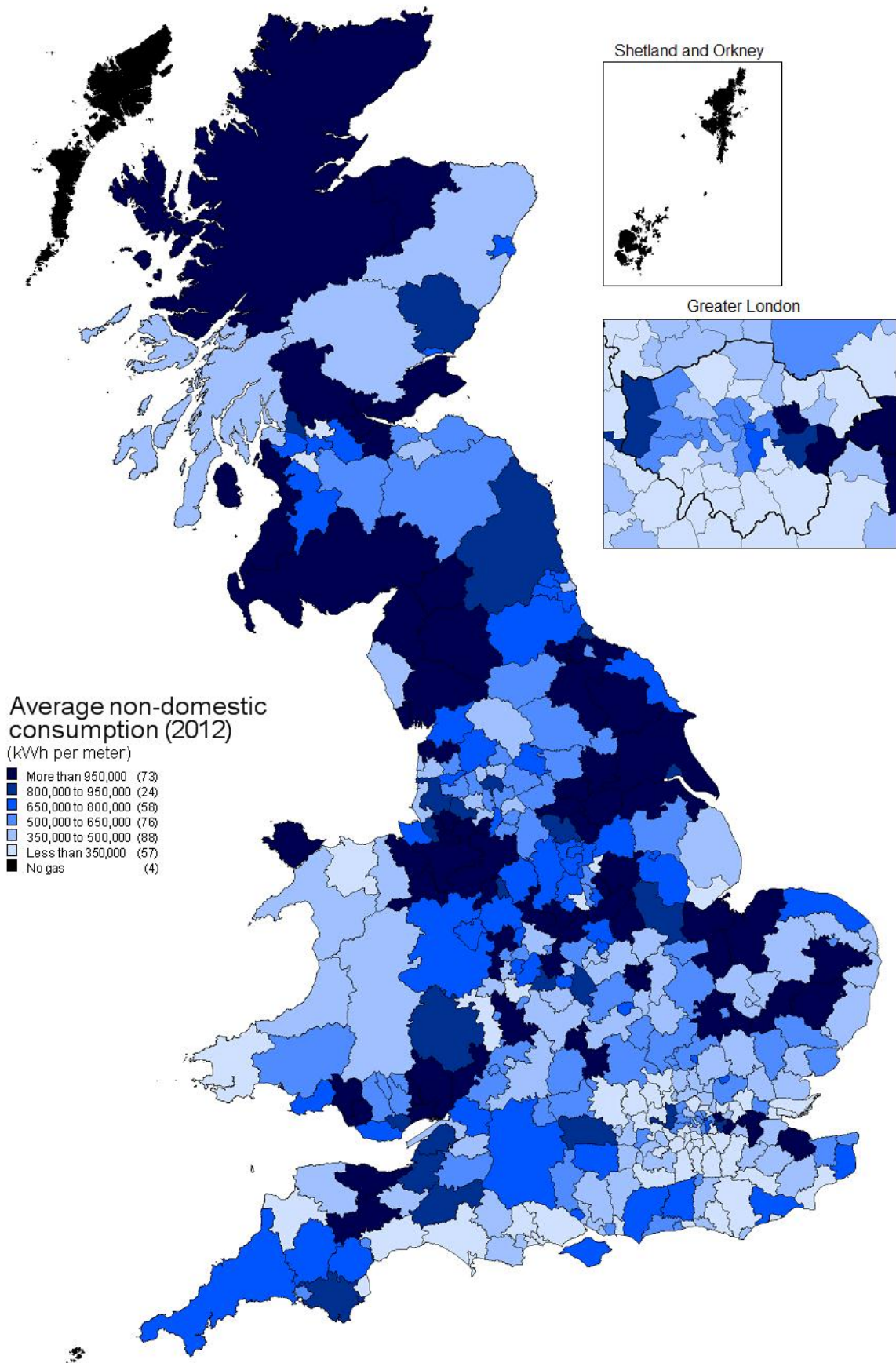
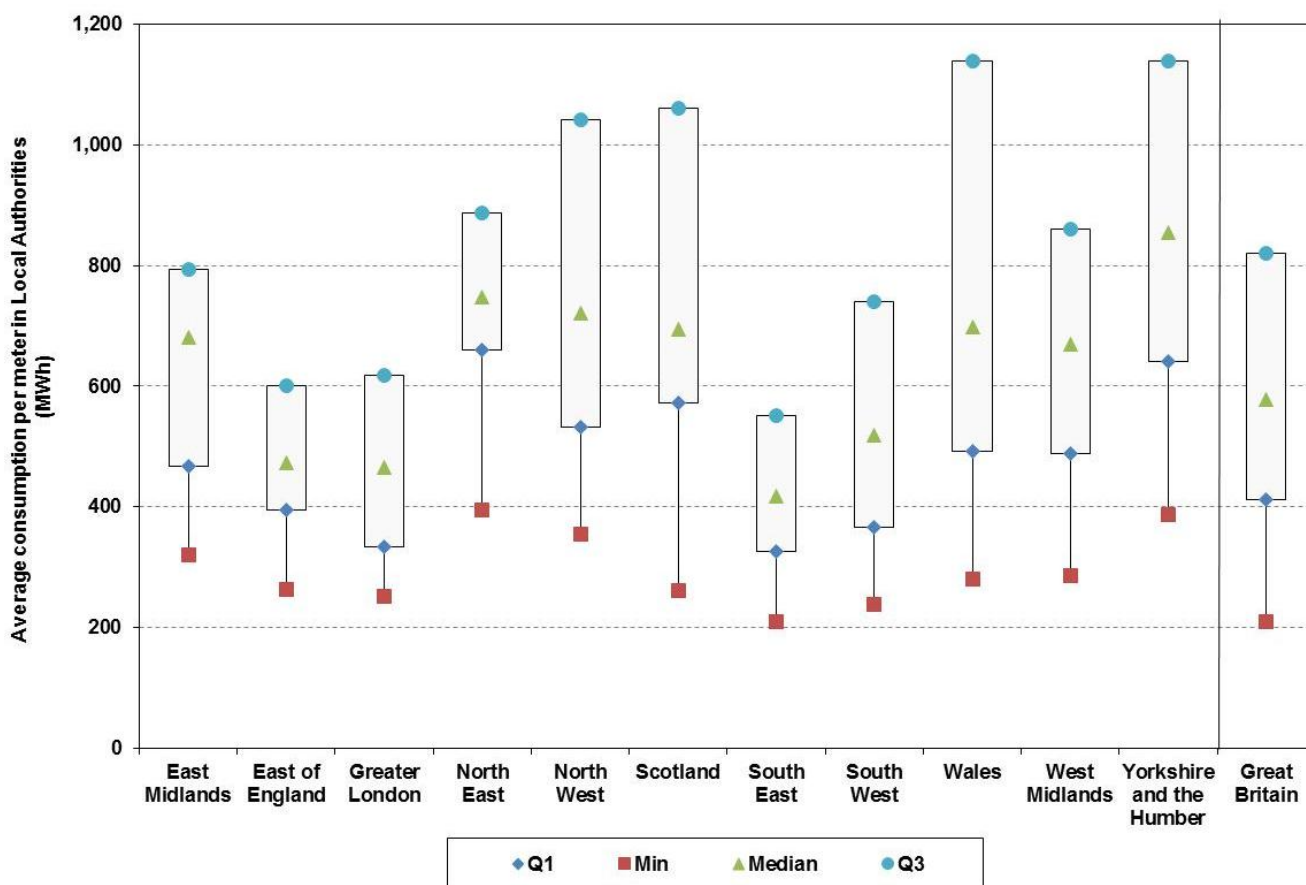


Chart 4 shows a box plot displaying aspects of the distribution of average non-domestic gas consumption for local authorities for each of the regions, as well as one for local authorities in Great Britain as a whole. For each region, the box plot shows the minimum average (mean) non-domestic gas consumption, the upper and lower quartile and the median average gas consumption. The maximum average non-domestic gas consumption values have been excluded due to the magnitude which distorted the scales.

From the chart it can be seen that the inter-quartile range of average gas consumption in local authorities was greatest in Wales, whereas the East of England had the smallest spread of average non-domestic gas consumption per local authority, reflecting the difference and similarities in businesses in the areas respectively. The median value was close to the lower quartile (the values such that 25 per cent of all data are lower) for the majority of regions, indicating a positive or right skewed distribution. The degree of variability between regions is much greater for non-domestic consumption than domestic.

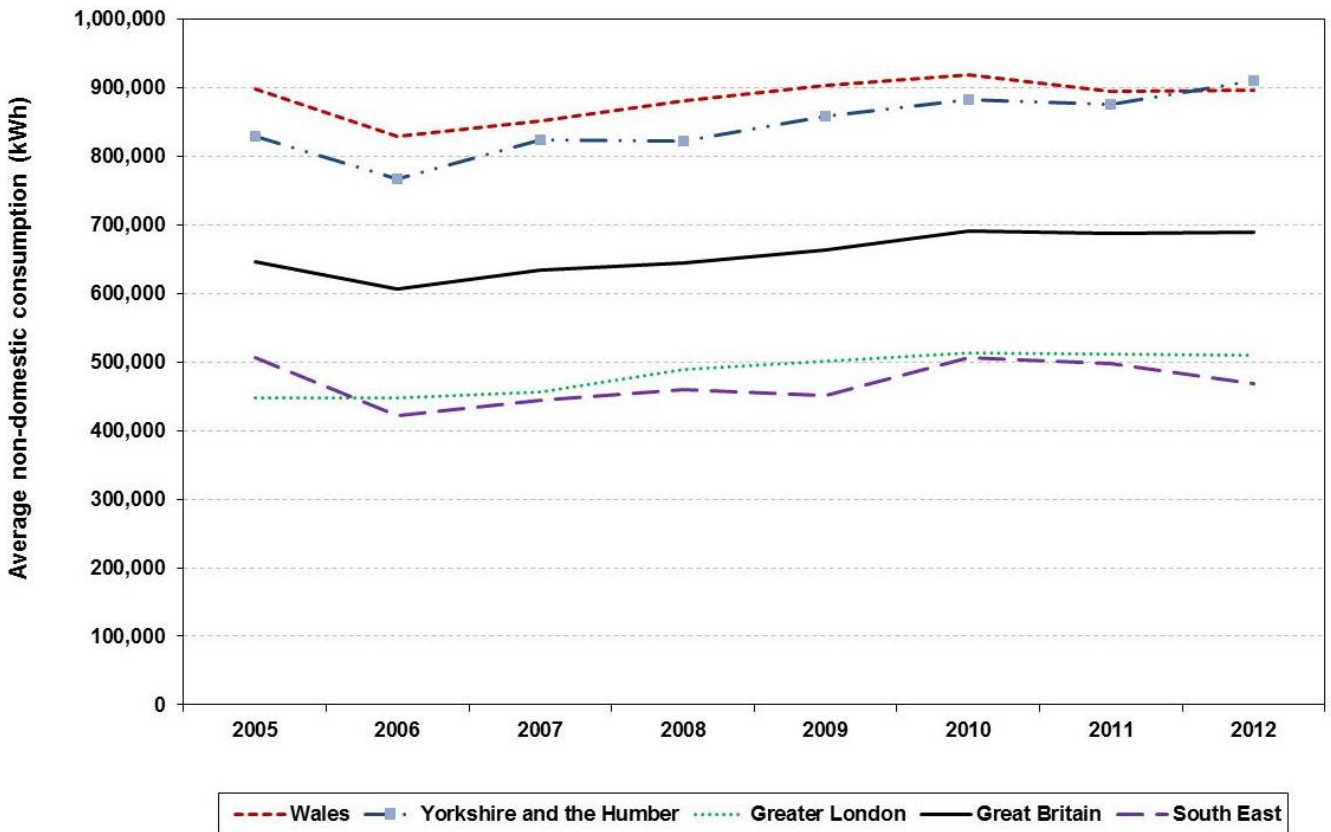
Chart 4 Box plot of average non-domestic gas consumption for local authorities within each region



3.2 Longer term trends between 2005 and 2012

Chart 5 shows the trends in average non-domestic gas consumption for Yorkshire and the Humber, Wales, Greater London and the South East, and Great Britain as a whole. In comparison to domestic gas consumption, different trends can be seen for the average annual non-domestic gas consumption between 2005 and 2012 and also between 2011 and 2012. The average consumption for all other regions was between the levels of consumption for Yorkshire and the Humber / Wales and Greater London / South East.

Chart 5 Average non-domestic gas consumption for selected regions, 2005 to 2012



Between 2011 and 2012 four of the eleven regions saw a reduction in average consumption per non-domestic gas meter – the South East (a decrease of 5.8 per cent⁷), Scotland (1.6 per cent decrease), the North East (1.5 per cent decrease) and Greater London (0.4 per cent decrease). The remaining regions saw an increase in average consumption ranging from 0.3 per cent in Wales to 4 per cent in Yorkshire and the Humber.

⁷ This reduction is largely driven by the reduction in consumption in Swale as a result of the closure of Thamesteel in January 2012.

4. Comparison of meter point data with other DECC publications and external temperature

DECC publish estimates of gas consumption in other sources, which can be used to derive estimates of average domestic gas consumption (Table 5 below contains estimates between 2005 and 2012). These sources include:

- **Digest of UK Energy Statistics (DUKES)⁸.**
DUKES contains DECC's headline gas consumption estimates. These estimates differ from the sub-national statistics as they are not weather corrected, cover the calendar year and contain total consumption for the UK. Average consumption can be calculated by dividing this total by the number of gas meters in the sub-national consumption statistics.
- **Energy Trends**
There are two estimates available in the quarterly edition of Energy Trends⁹:
 1. Un-weather corrected gas consumption estimates¹⁰.
These data are not weather corrected, but cover the same time period as the sub-national data estimates (1 October to 30 September) presented in this document. Average consumption is calculated based on number of meters in the sub-national statistics.
 2. Temperature adjusted gas consumption estimates¹¹
These estimates are based on the same data source but have a temperature adjustment applied. Further information about the methodology used to derive these estimates can be found in the September edition of Energy Trends¹².

Weather correction factors and temperature adjustments can cause variability between the estimates and Table 5 below also contain data for average external temperatures during the heating season (defined as January to March and October to December), for both calendar years and the gas year (October to March).

⁸ Gas estimates are included in Chapter 4 of DUKES, which can be accessed here:

<https://www.gov.uk/government/publications/natural-gas-chapter-4-digest-of-united-kingdom-energy-statistics-dukes>.

⁹ The most recent editions of Energy Trends can be accessed here: <https://www.gov.uk/government/collections/energy-trends>.

¹⁰ Estimates are taken from Table 1.3 of Energy Trends (<https://www.gov.uk/government/publications/total-energy-section-1-energy-trends>) and are updated quarterly.

¹¹ These estimates were published for the first time in September 2013 and are updated each quarter thereafter in Table 1.3 of Energy Trends <https://www.gov.uk/government/publications/total-energy-section-1-energy-trends>.

¹² The September edition of Energy Trends can be accessed here: <https://www.gov.uk/government/publications/energy-trends-september-2013>.

Table 5 Average domestic gas consumption (kWh) and heating season external temperatures (Celsius), 2005 to 2012

	2005	2006	2007	2008	2009	2010	2011	2012
Sub-national statistics <i>(October [y-1] to September, weather corrected basis)</i>	19,020	18,241	17,614	16,906	15,383	15,156	14,205	14,080
DUKES <i>(Calendar year, non-weather corrected basis)</i>	17,684	16,767	15,878	16,104	14,723	17,148	12,828	14,799
Quarterly Energy Trends <i>(Non-weather corrected estimates, October [y-1] to September)</i>	16,971	16,597	14,594	15,902	15,109	15,615	14,890	13,891
Quarterly Energy Trends <i>(Temperature adjusted estimates, October [y-1] to September)</i>	18,128	17,382	17,076	16,498	15,066	14,975	14,480	14,875
Average temperature <i>(January to March, October to December)</i>	7.1	6.9	7.3	6.4	6.3	4.3	7.5	6.6
Average temperature <i>(October [y-1] to March)</i>	7.1	6.4	7.9	6.9	5.9	5.6	5.4	7.7

There are differences in average temperature depending upon whether the calendar or gas year is used, more noticeably during the varying weather patterns between the 2010 and 2012 calendar years. January to March of 2010 was significantly colder than usual, as was the October to December period. These colder temperatures resulted in the 2010 calendar year average temperature to be much lower than when compared with 2009 and 2011. In contrast, 2011 had milder weather conditions and this also impacts the averages in Table 5.

However, if the gas year is used, the effects can be flattened out – for example, the warmer conditions of October to December 2009 are included in the 2010 gas year, and the colder October to December 2010 counted in the 2011 gas year.

These comparisons show that – in broad terms – the data series are consistent, which provides reassurances to users of the sub-national data provided here.

5. Estimating the number of households not connected to the gas network

5.1 Background

The Department receives regular requests for information on the number and proportion of households which do not have access to gas. This is important for a range of policies as having no access to gas can lead to higher costs for heating a home. The proportion of homes with access to gas is also a key driver of total domestic gas consumption in an area.

There is no definitive source of information on households that are off the gas grid. However, DECC has produced estimates of the number of households without gas based on data collected for the sub-national consumption estimates set out earlier in this document.

DECC has previously published estimates of the number of properties without gas at regional level. These were based on the difference between the number of gas meters and the number of electricity meters in each region. Where the number of electricity meters¹³ was used as a proxy for the number of households. The same methodology has also been used for estimates at local authority level in order to respond to parliamentary questions.

For the first time, DECC is now publishing estimates at local authority (2012) and lower level super output area (2011). These estimates are based on a refined methodology. Rather than use the number of electricity meters as a proxy for households, the household estimates from the 2011 Census are used to produce these estimates¹⁴.

5.2 Limitations

Estimates are based on administrative data from Xoserve¹⁵ and Independent Gas Transporters (IGTs)¹⁶ on the location of gas meters. Subtracting the number of gas meters from the number of households in each area produces a broad estimate of the number of properties without a gas connection.

The data give a strong indication of where there are high proportions of properties without a gas connection. However there are a number of limitations which should be considered when using these estimates:

- The gas meter point consumption data is not supplied with a domestic indicator and instead DECC use the gas industry cut off threshold of 73,200kWh to determine whether a gas meter is domestic or not, with all meters with consumption of 73,200 kWh or below assumed to be domestic. This means a number of smaller commercial/industrial consumers are allocated as domestic and therefore estimates of

¹³ 2012 estimates for the number of electricity meters can be found here: <https://www.gov.uk/government/statistical-data-sets/regional-and-local-authority-electricity-consumption-statistics-2005-to-2011>.

¹⁴ Prior to the recently published 2011 Census data, the latest available data were 2001 Census estimates. These were not as it was felt that the housing market had changed considerably between 2001 and 2011. Therefore, the number of domestic electricity meters from the sub-national electricity dataset was used to estimate the number of households in each area of Great Britain; assuming that each household had just one electricity meter. However, the recently published Census data and future mid-year estimates for number of households at Local Authority level should provide a more robust estimate of the number of households in each area.

¹⁵ Further information about Xoserve can be found on their website: <http://www.xoserve.com/>.

¹⁶ IGTs operate and maintain local gas transportation networks. Domestic and industrial and commercial premises are connected to IGT networks, but the new housing market constitutes the largest share of the IGT market. For more information on IGTs, please visit the National Grid website: <http://www.nationalgrid.com/uk/Gas/Connections/IGT/>.

the number of households without gas are an underestimate of the true number. The impact of this assumption on estimates will vary by area.

- Some meters cannot be allocated to a local authority or LSOA due to insufficient or incomplete address information¹⁷. Approximately 0.1 per cent of domestic meters could not be allocated to a local authority in 2012.
- In some cases incorrect address information may mean meters are allocated to the wrong area. The number of meters which are incorrectly allocated will vary by area.
- In this dataset, 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).
- For these estimates it is assumed that each property always has one gas meter. Occasionally a property may have more than one gas meter, which would again mean the estimates provided are an underestimate of the true value. In 2012, approximately one per cent of properties allocated as domestic in this dataset had more than one meter.
- Data refer to the data collection during 2012 (or 2011 for LSOA) and therefore does not include any changes which may have occurred since 2012.

5.3 Estimating the number households that do not have access to gas

Bearing in mind the limitations outlined in 5.2 above, Table 6 below shows the estimated proportion and number of households that are not connected to the gas network in each region of Great Britain.

Table 6 Estimated proportion of households not connected to the gas network using 2011 Census data, by region (2012)

	Number of domestic gas meters (thousands)	Number of households as in 2011 Census (thousands)	Estimated proportion of "off gas" households	Estimated number of "off gas" households (thousands)
East Midlands	1,735	1,896	8%	161
East of England	2,031	2,423	16%	392
Greater London	3,008	3,266	8%	258
North East	1,086	1,130	4%	44
North West	2,853	3,010	5%	156
South East	3,156	3,555	11%	399
South West	1,803	2,265	20%	462
Yorkshire and The Humber	2,097	2,224	6%	127
West Midlands	2,085	2,295	9%	210
Scotland	1,936	2,373	18%	437
Wales	1,108	1,303	15%	195
England	19,854	22,063	10%	2,209
Great Britain¹	22,913	25,739	11%	2,826

1. Includes 15 thousand gas meters, which could not be allocated at Local Authority level.

¹⁷ These meters are included in the overall estimates for Great Britain, but are aggregated in the 'Unallocated' row in the sub-national statistics outputs.

For the reasons outlined above, most significantly the misallocation of some non-domestic properties in the gas dataset, these estimates are an underestimate of the number of households without access to gas. However, they do give a good indication of the variation across areas of Great Britain.

Approximately 11 per cent of households in Great Britain are not connected to the gas grid; however the proportions vary across each region. Scotland and the South West have the highest proportion of households without access to gas; 18 and 20 per cent respectively. In the North East and North West only around four and five per cent of households respectively are not connected to the gas network.

These estimates for local authority (2012 data) and lower level super output area (2011 data) have been published at: <https://www.gov.uk/government/collections/sub-national-gas-consumption-data>.

5.4 Comparison with previous methodology

The off gas estimates outlined above show a lower proportion of households without access to gas than the previously published estimates. This is because the previous estimates used number of electricity meters, and in a number of cases households may have had more than one meter, leading to an over estimate of the number of households. Table 7 below shows the estimates based on the previous methodology for comparison. In this table, the overestimate of the number of households as a result of using electricity meters as a proxy for households will to some extent have been cancelling out the overestimate of gas meters in the domestic sector due to the inclusion of lower consuming non-domestic meters. However, these two issues will have impacted on different areas by differing amounts and therefore the new methodology (in table 6) should provide a better approach than the previously published estimates shown below.

Table 7 Estimated proportion of households not connected to the gas network using the sub-national electricity meter point data, by region (2012)

	Number of domestic gas meters (thousands)	Number of domestic electricity meters (thousands)	Estimated proportion of "off gas" households	Estimated number of "off gas" households (thousands)
East Midlands	1,735	1,991	13%	257
East of England	2,031	2,562	21%	531
Greater London	3,008	3,421	12%	413
North East	1,086	1,197	9%	111
North West	2,853	3,145	9%	292
South East	3,156	3,737	16%	580
South West	1,803	2,445	26%	642
Yorkshire and The Humber	2,097	2,344	11%	246
West Midlands	2,085	2,381	12%	296
Scotland	1,936	2,750	30%	814
Wales	1,108	1,381	20%	273
England	19,854	23,221	15%	3,367
Great Britain¹	22,913	27,413	16%	4,501

1. Includes 15 thousand gas meters, and 62 thousand electricity meters which could not be allocated at Local Authority level.

5.5 Other related off the gas network estimates

In addition to the new outputs which have been published alongside DECC's sub-national consumption estimates there are also two other new sources of information on off gas properties which will help with understanding of the location and types of households which do not have gas in the property:

i. Xoserve list of off gas postcodes – published November 2013

Xoserve published a list containing all postcodes - based on the Royal Mail postcode list - where Xoserve hold no record of a gas supply (domestic or non-domestic) by either large or small gas transporters. The list of postcodes is available on the Xoserve website: www.xoserve.com/wp-content/uploads/Off-Gas-Postcodes.xlsx.

ii. DECC's National Energy Efficiency Data-Framework (NEED) estimates of proportion of properties without a gas meter – published August 2013

NEED provides estimates of the number of properties without a gas meter by property attributes and household characteristics. Available here: www.gov.uk/government/collections/national-energy-efficiency-data-need-framework.

Further details about all the recently published off gas data have been discussed further in Article 5 of the December 2013 edition of Energy Trends which can be accessed here: <https://www.gov.uk/government/collections/energy-trends>.

Annex A Selected sub-national gas consumption statistics (highest and lowest local authority averages), 2012

LAU1 Area ⁽¹⁾	Domestic consumers ⁽²⁾		Commercial and industrial consumers		All consumers		Sales per meter (kWh)	
	Sales 2012 (GWh)	Number of meters (thousands)	Sales 2012 (GWh)	Number of meters (thousands)	Sales 2012 (GWh)	Number of meters (thousands)	Average domestic consumption	Average commercial and industrial consumption
Blaenau Gwent	463.3	31.2	176.7	0.3	640.0	31.5	14,852	588,926
Gwynedd	348.3	29.3	185.6	0.5	533.9	29.7	11,903	401,680
Wrexham	642.4	49.5	1,209.9	0.5	1,852.3	50.0	12,976	2,531,079
Conwy	590.1	44.9	157.2	0.6	747.4	45.5	13,143	279,256
TOTAL WALES	14,932.8	1,107.6	9,674.3	10.8	24,607.1	1,118.4	13,482	896,184
East Renfrewshire	666.5	34.1	107.7	0.4	774.2	34.5	19,559	260,774
Glasgow City	2,980.4	243.6	2,522.1	3.6	5,502.5	247.3	12,233	693,658
Clackmannanshire	319.4	21.8	809.0	0.2	1,128.4	22.0	14,665	3,711,211
East Dunbartonshire	785.7	41.6	150.8	0.4	936.5	42.0	18,907	337,358
TOTAL SCOTLAND	28,701.5	1,936.0	21,777.9	24.6	50,479.4	1,960.6	14,826	884,094
Northumberland	1,729.9	116.2	1,097.8	1.3	2,827.7	117.5	14,884	839,934
Hartlepool	548.5	40.3	334.1	0.4	882.7	40.7	13,611	818,991
Darlington	662.6	45.2	556.3	0.5	1,218.9	45.7	14,653	1,209,422
South Tyneside	914.5	67.4	246.5	0.6	1,161.0	68.1	13,561	393,735
TOTAL NORTH EAST	15,671.9	1,085.7	8,654.5	11.5	24,326.4	1,097.3	14,434	750,741
Ribble Valley	338.2	20.2	228.0	0.3	566.3	20.5	16,733	794,572
Barrow-in-Furness	385.7	31.6	498.3	0.3	884.0	31.9	12,196	1,655,325
Eden	155.4	10.5	352.1	0.1	507.5	10.6	14,864	2,363,054
Sefton	1,706.3	116.9	427.8	1.2	2,134.1	118.1	14,601	355,338
TOTAL NORTH WEST	40,123.6	2,853.3	26,383.8	32.2	66,507.4	2,885.5	14,062	820,545
Harrogate	949.9	56.5	520.6	1.0	1,470.5	57.5	16,809	526,353
Kingston upon Hull, City of	1,354.7	110.1	1,064.3	1.2	2,419.0	111.3	12,309	854,861
Selby	385.1	26.4	989.6	0.2	1,374.8	26.6	14,593	4,417,939
Craven	320.9	20.6	120.5	0.3	441.3	20.9	15,580	386,100
TOTAL YORKSHIRE AND THE HUMBER	30,524.8	2,097.3	22,280.6	24.5	52,805.5	2,121.8	14,554	910,119
Rushcliffe	728.2	43.5	488.3	0.4	1,216.5	43.9	16,737	1,165,295
Lincoln	499.4	40.0	334.6	0.5	834.0	40.5	12,487	675,876
Corby	351.8	26.2	887.4	0.3	1,239.2	26.5	13,446	2,594,622
Mansfield	662.7	45.2	127.1	0.4	789.7	45.6	14,670	320,044
TOTAL EAST MIDLANDS	24,875.9	1,734.9	14,395.0	19.0	39,270.9	1,753.8	14,339	759,229

Annex A (continued)

Selected sub-national consumption statistics (highest and lowest local authority averages), 2012

LAU1 Area ⁽¹⁾	Domestic consumers ⁽²⁾		Commercial and industrial		All consumers		Sales per meter (kWh)	
	Sales 2012 (GWh)	Number of meters (thousands)	Sales 2012 (GWh)	Number of meters (thousands)	Sales 2012 (GWh)	Number of meters (thousands)	Average domestic consumption	Average commercial and industrial consumption
Bromsgrove	589.5	36.0	124.5	0.4	714.0	36.5	16,364	285,004
Worcester	493.4	39.9	238.3	0.5	731.7	40.4	12,362	517,997
East Staffordshire	580.6	41.7	643.1	0.5	1,223.7	42.2	13,918	1,345,350
Malvern Hills	293.2	21.2	77.1	0.3	370.3	21.5	13,831	287,577
TOTAL WEST MIDLANDS	29,266.7	2,084.9	16,212.0	23.8	45,478.8	2,108.7	14,037	681,377
Three Rivers	593.7	33.4	138.3	0.5	732.1	33.9	17,789	263,459
Norwich	673.0	58.0	494.9	0.8	1,168.0	58.9	11,594	616,367
King's Lynn and West Norfolk	463.4	35.5	2,556.1	0.4	3,019.5	35.9	13,046	5,944,481
Rochford	505.8	31.4	71.4	0.3	577.2	31.6	16,124	282,028
TOTAL EAST OF ENGLAND	28,865.3	2,031.0	16,266.2	22.9	45,131.5	2,053.9	14,212	711,246
Harrow	1,445.3	82.0	507.9	0.9	1,953.2	82.9	17,624	548,472
Tower Hamlets	733.8	77.1	729.6	1.2	1,463.3	78.3	9,518	624,656
Newham	1,120.8	92.8	1,017.8	0.9	2,138.6	93.7	12,071	1,193,206
Barnet	2,247.3	126.7	547.5	2.2	2,794.8	128.9	17,738	251,841
TOTAL GREATER LONDON	41,694.5	3,007.8	21,446.0	42.1	63,140.5	3,049.9	13,862	509,636
South Bucks	519.3	25.6	147.1	0.7	666.4	26.2	20,307	222,946
Portsmouth	873.8	78.6	416.2	0.8	1,290.0	79.4	11,120	511,948
Gravesham	518.5	38.4	379.5	0.3	897.9	38.6	13,506	1,482,389
Elmbridge	987.5	51.1	308.4	1.5	1,295.9	52.6	19,313	208,770
TOTAL SOUTHEAST	45,386.4	3,156.4	18,750.5	40.0	64,136.8	3,196.5	14,379	468,200
Cotswold	358.3	23.5	143.0	0.4	501.3	23.9	15,232	359,258
Plymouth	1,064.1	104.5	451.6	0.8	1,515.6	105.3	10,181	546,676
Forest of Dean	275.6	20.9	295.9	0.2	571.4	21.1	13,196	1,549,047
East Dorset	511.4	33.1	64.3	0.3	575.8	33.4	15,456	238,314
TOTAL SOUTH WEST	22,380.5	1,802.5	11,058.6	19.9	33,439.0	1,822.5	12,416	554,370
England	278,789.6	19,854.0	155,447.2	235.9	434,236.8	20,089.8	14,042	659,057
Scotland	28,701.5	1,936.0	21,777.9	24.6	50,479.4	1,960.6	14,826	884,094
Wales	14,932.8	1,107.6	9,674.3	10.8	24,607.1	1,118.4	13,482	896,184
Unallocated	190.6	15.2	202.5	0.3	393.2	15.5	12,533	703,263
GREAT BRITAIN	322,614.5	22,912.7	187,101.9	271.6	509,716.5	23,184.3	14,080	688,941

(1) Customers with an annual consumption of 73,200 kWh or lower which will include some small industrial and commercial consumers.

(2) The LAU1 name has replaced the previous term NUTS4 but covers the same level of administrative geography.

Annex B Selected sub-national estimates of households connected to the gas network (highest and lowest proportions), 2012

LAU1 Area	Number of domestic gas meters (thousands)	Number of households from 2011 Census (thousands)	Estimated number of households not connected to the gas network (thousands) ⁽¹⁾	Estimated percentage of households not connected to the gas network (gas meters to number of households) ⁽¹⁾
Ceredigion	8.5	31.6	23.1	73%
Powys	27.2	58.3	31.1	53%
Caerphilly	74.9	74.5	-	-
Rhondda Cynon Taf	103.3	99.7	-	-
TOTAL WALES	1,107.6	1,302.7	195.1	15%
Highlands	37.7	102.1	64.4	63%
Argyll & Bute	20.0	40.1	20.1	50%
Fife	155.0	161.0	5.9	4%
East Ayrshire	52.1	53.9	1.9	3%
TOTAL SCOTLAND	1,936.0	2,372.8	436.8	18%
Northumberland	116.2	138.5	22.3	16%
Newcastle upon Tyne	109.0	117.2	8.2	7%
South Tyneside	67.4	67.2	-	-
Stockton-on-Tees	79.4	79.2	-	-
TOTAL NORTH EAST	1,085.7	1,129.9	44.2	4%
Eden	10.5	23.0	12.6	55%
South Lakeland	39.1	46.6	7.5	16%
Warrington	85.6	85.1	-	-
Tameside	95.1	95.0	-	-
TOTAL NORTH WEST	2,853.3	3,009.5	156.2	5%
Ryedale	13.1	22.5	9.5	42%
Richmondshire	12.2	20.2	8.0	40%
Barnsley	101.5	100.7	-	-
Rotherham	109.6	108.3	-	-
TOTAL YORKSHIRE AND THE HUMBER	2,097.3	2,224.1	126.7	6%
East Lindsey	38.5	60.9	22.4	37%
South Holland	27.2	37.3	10.0	27%
Mansfield	45.2	44.9	-	-
Broxtowe	47.2	46.8	-	-
TOTAL EAST MIDLANDS	1,734.9	1,895.6	160.7	8%

Annex B (continued)

Selected sub-national estimates of households connected to the gas network
(highest and lowest proportions), 2012

LAU1 Area	Number of domestic gas meters (thousands)	Number of households from 2011 Census (thousands)	Estimated number of households not connected to the gas network (thousands) ⁽¹⁾	Estimated percentage of households not connected to the gas network (gas meters to number of households) ⁽¹⁾
Herefordshire, County of	49.7	78.3	28.6	37%
Malvern Hills	21.2	32.2	11.0	34%
Stoke-on-Trent	107.5	107.6	0.0	0%
Sandwell	121.8	121.5	-	-
TOTAL WEST MIDLANDS	2,084.9	2,294.9	210.0	9%
Mid Suffolk	18.4	40.3	21.9	54%
South Norfolk	29.2	52.8	23.7	45%
Hertsmere	38.6	39.8	1.2	3%
Harlow	34.2	34.6	0.4	1%
TOTAL EAST OF ENGLAND	2,031.0	2,423.0	392.0	16%
City of London	2.7	4.4	1.7	39%
Tower Hamlets	77.1	101.3	24.2	24%
Havering	95.2	97.2	2.0	2%
Bromley	128.6	130.9	2.3	2%
TOTAL GREATER LONDON	3,007.8	3,266.2	258.3	8%
West Berkshire	44.9	62.3	17.5	28%
Test Valley	35.2	47.6	12.5	26%
Surrey Heath	32.9	33.5	0.7	2%
Thanet	58.9	59.5	0.6	1%
TOTAL SOUTH EAST	3,156.4	3,555.5	399.0	11%
West Somerset	8.2	15.6	7.4	47%
Torridge	15.4	28.0	12.6	45%
Gloucester	49.2	50.4	1.1	2%
Poole	62.2	63.5	1.3	2%
TOTAL SOUTH WEST	1,802.5	2,264.6	462.1	20%
Scotland	1,936.0	2,372.8	436.8	18%
Wales	1,107.6	1,302.7	195.1	15%
England	19,854.0	22,063.4	2,209.4	10%
Unallocated meters	15.2			
GREAT BRITAIN	22,912.7	25,738.8	2,826.1	11%

(1) When the number of gas meters in a local authority exceeds the number of households it is assumed that all of the households in the local authority are connected to the gas network, and the number/proportion of households not connected to the gas network is denoted by a dash (-).

Annex C Sub-national consumption publications

Electricity consumption statistics

- Electricity consumption statistics at local authority level (Great Britain): <https://www.gov.uk/government/statistical-data-sets/regional-and-local-authority-electricity-consumption-statistics-2005-to-2011>.
- Electricity consumption statistics at MSOA/LSOA level (England and Wales): <https://www.gov.uk/government/organisations/department-of-energy-climate-change/series/mlsoa-and-lsoa-electricity-and-gas-estimates>.
- Experimental statistics are also available for Northern Ireland: <https://www.gov.uk/government/organisations/department-of-energy-climate-change/series/sub-national-electricity-consumption-in-northern-ireland>.

Gas consumption statistics

- Gas consumption statistics at local authority level (Great Britain): <https://www.gov.uk/government/organisations/department-of-energy-climate-change/series/sub-national-gas-consumption-data>.
- Gas consumption statistics at MSOA/LSOA level (England and Wales): <https://www.gov.uk/government/organisations/department-of-energy-climate-change/series/mlsoa-and-lsoa-electricity-and-gas-estimates>.

Road transport consumption statistics

- Road transport consumption statistics at local authority level (United Kingdom): <https://www.gov.uk/government/statistical-data-sets/road-transport-energy-consumption-at-regional-and-local-authority-level>.

Residual fuel (non-electricity, non-gas, non-road transport fuels) consumption statistics

- Residual fuel consumption statistics at local authority level (United Kingdom): <https://www.gov.uk/government/organisations/department-of-energy-climate-change/series/sub-national-consumption-of-other-fuels>.

Total final energy consumption statistics

- Total final energy consumption statistics at local authority level (Great Britain): <https://www.gov.uk/government/organisations/department-of-energy-climate-change/series/total-final-energy-consumption-at-sub-national-level>.

Before using any of the above datasets, it is highly advised to refer to the related chapter in the Sub-national methodology and guidance booklet:

<https://www.gov.uk/government/publications/regional-energy-data-guidance-note>.

Annex D Tools available to analyse sub-national consumption statistics

DECC has published three tools to aid the user to further explore the data:

1. Sub-national electricity and gas consumption statistics analytical tool

This tool has been created for analysing electricity and gas consumption at the local authority level, and has been produced to help local authorities and other regional bodies use DECC's sub-national gas and electricity data to better understand changes in consumption over time. The tool allows for three distinct types of analysis:

- Analysis of individual local authority data in comparison to its respective regional average and the Great Britain average;
- Comparison between a selected local authority and five additional local authorities;
- Change between all local authorities in Great Britain.

The tool can be accessed here: <https://www.gov.uk/government/collections/analytical-tools>.

2. Look-up spreadsheets

The look-up spreadsheets are published alongside the SOA datasets, and are aimed at users interested in which SOA codes are included in a local authority, or for users who would like to determine which NUTS4 corresponds to which local authority. The spreadsheet also collates annual consumption (kWh), the number of meters and average consumption (kWh) for each SOA, or LA of interest.

The MSOA look-up spreadsheet is available here:

<https://www.gov.uk/government/statistical-data-sets/mlsoa-electricity-and-gas-2011>.

The LSOA look-up spreadsheet is available here:

<https://www.gov.uk/government/statistical-data-sets/lsoa-electricity-and-gas-2011-experimental>.

3. Change over Time Analysis (CoTA) Viewer

CoTA is a visual tool which assists the analysis of change over time for English regions, local authorities and MSOA areas. The purpose of the viewer is to help local authorities and other regional bodies create an evidence base when developing and monitoring policies for small geographic areas. Information on changes in total consumption, number of meters, and average consumption between two years can be analysed at either local authority or MSOA level for domestic (ordinary and economy 7) and non-domestic electricity consumption, and domestic and non-domestic gas consumption.

The tool helps users to explore questions like:

- Has the areas energy consumption changed compared to others in the region?
- Has much change occurred within a local authority?
- Which MSOAs have experienced significant change?

A user guide and tool can be accessed from the following page:

<https://www.gov.uk/government/publications/change-over-time-analysis-cota-tool>.

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