Department for Energy Security & Net Zero

The Non-Domestic National Energy Efficiency Data-Framework 2024 (England and Wales) Geographical Annex

19 December 2024 **Official Statistics**

This report summarises analysis of the geographical differences in the non-domestic building stock and non-domestic building energy consumption in England and Wales using the latest version of the Non-Domestic National Energy Efficiency Data-Framework (ND-NEED) published in August 2024.

The key results are:

- Electricity and gas consumption from ND-NEED non-domestic buildings varies substantially between regions in England and Wales.
    - Non-domestic buildings in London consumed the most electricity in 2022, three times more than the North East which consumed the least.
    - Non-domestic buildings in the North West consumed the most gas in 2022, three times more than the North East which consumed the least.
- The proportion of electricity and gas consumption from ND-NEED non-domestic buildings in a particular type of building varies between regions in England and Wales.
    - London accounts for 35% of electricity consumption from offices, while the North East accounts for just 3%.
    - East of England accounts for 22% of gas consumption from factories, while the North East accounts for just 3%.
- The proportion of factories, offices, shops, or warehouses in a region is broadly similar to the proportion of all non-domestic buildings in that region.
    - The exceptions to these are: London, which contains 14% of non-domestic buildings in England and Wales, but 21% of offices; and the South West, which contains 11% of non-domestic buildings but 20% of hospitality buildings.
- There are 268,700 off-gas grid ND-NEED non-domestic buildings in England and 23,500 in Wales, 17% of the ND-NEED non-domestic building stock.
- Broadly, the proportions of all non-domestic buildings that are off-gas grid by building type mirror that for all buildings, with offices accounting for the highest proportion (20%), closely followed by factory and hospitality buildings.
- The South West and East regions have the highest shares of non-domestic buildings laying off the gas grid (27% and 25% respectively), with London the lowest (10%). In the South

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West, 42% of hospitality buildings are off the gas grid. In total, off-gas grid buildings comprise 17% of the non-domestic building stock.

- This year, we have included new maps, showing the proportions of off-gas grid buildings within all non-domestic buildings in England and Wales, by region and local authorities.

What you need to know about these statistics:

The statistics in ND-NEED cover all non-domestic buildings in England and Wales, under the ND-NEED definition (see main ND-NEED 2024 report for detail).

Information on the non-domestic building stock (building number, building use, building size, off-gas grid) reflects the position at the end of March 2024.

Information on energy consumption is presented for 2022, and comprises electricity and gas consumed via the public distribution system (onsite generated electricity, oil, LPG and biomass consumption are not included).

All geographic maps and associated data are split using the administrative boundaries in England and Wales for 2024.

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1. Introduction

The Non-Domestic National Energy Efficiency Data-Framework (ND-NEED) 2024 Geographical Annex (Geographical ND-NEED) provides additional geographical insight into the ND-NEED 2024 publication.

It provides information and analysis into the differences in electricity and gas consumption of non-domestic buildings within England and Wales in 2022 by region, local authority (LA) and parliamentary constituency (PC).

Additionally, it provides information and analysis into the differences in the non-domestic building stock – under the ND-NEED definition - within England and Wales in 2024 by region, LA and PC. Further splits are provided for ND-NEED building uses, building sizes and for non-domestic buildings in areas that have no buildings connected to the gas distribution network (off-gas grid buildings). This is summarised in Table 1.

Table 1: Summary of the data presented in the Geographical ND-NEED annex

Metric	Regional	Local Authority & Parliamentary Constituency
Number of buildings	Building use Larger than or smaller than or equal to 1,000m^2 Off-gas Grid – rural or urban	Building use Off-gas Grid – rural or urban
Floor area	Aggregated building uses	Aggregated building uses
Electricity and gas consumption	Total consumption (from meter population) Building use (from weighted ND-NEED matched sample)	Total consumption (from meter population)

This is an annex to ND-NEED to provide information regarding geographical differences in non-domestic building energy use and the non-domestic building stock within England and Wales. It is intended that the data tables will be updated following the main ND-NEED publication, the next update of which is planned for the summer of 2025.

The ND-NEED geographical annex uses postcode information in the ND-NEED dataset and geographical datasets from the Office for National Statistics (ONS) to split the ND-NEED data by geography. Data from Xoserve was used to identify buildings in postcodes that have no buildings connected to the gas distribution network (off-gas grid buildings).
The datasets used in Geographical ND-NEED are:

1. The ND-NEED 2024 dataset[1] of all non-domestic buildings in England and Wales (under the ND-NEED definition) which includes information on building postcode, building use, building size, and building energy consumption.

2. The ONS National Statistical Postcode Lookup (NSPL)[2] which relates postcodes in the UK to ONS area codes (Region, Local Authority (LA) and Parliamentary Constituency (PC)). This also includes information on whether a postcode is in a rural or urban area.

3. The ONS Names and Codes lookup tables[3] which relates the names of geographical areas to ONS area codes used in the NSPL.

4. The ONS Boundary shapefiles[4] which contain the boundary shape of UK LAs and PCs. This is used to produce maps of the geographical data.

5. Xoserve off-gas grid data[5]. This lists postcodes in Great Britain in which there are no buildings, domestic or non-domestic, connected to the national gas grid.

The 1,755,000 non-domestic buildings in the ND-NEED dataset were matched by postcode to the ONS NSPL, with a 99.6% match rate. This allowed the region, LA and PC codes of the 1,749,000 matched non-domestic buildings to be identified. More information about this matching process can be found in the method section.

The ONS Names and Codes lookup tables were used to obtain the area names corresponding to these codes and the ONS Boundary shapes files were used to obtain the shape of these areas so geographical maps could be created.

The postcodes in the ND-NEED dataset were also matched to the Xoserve off-gas grid dataset and a flag was created for non-domestic buildings in postcodes where no buildings, domestic or non-domestic, are connected to the national gas grid.

What questions can be answered by ND-NEED Geographical Annex?

- How many non-domestic buildings were there in a particular geographical area (region, LA, PC) in England and Wales in 2024, split by building use?

- How much non-domestic building floor area was there in a particular geographical area (region, LA, PC) in England and Wales in 2024, split by building use?

[1] ND-NEED 2024
[2] ONS NSPL
[3] ONS LA Names and Codes and ONS PC Names and Codes
[4] ONS LA Boundaries and ONS PC Boundaries
[5] Xoserve data

- How many non-domestic buildings were there in a particular geographical area (region, LA, PC) in England and Wales in 2024 that were off the gas grid?

- How did the non-domestic electricity/gas consumption vary by geographical area (region, LA, PC) of England and Wales in 2022? How has this changed over time?

- How did the non-domestic electricity/gas consumption/intensity vary by region of England and Wales in 2022, split by building use?

What questions cannot be answered by ND-NEED Geographical Annex?

- What are the variations in characteristics or energy consumption of the non-domestic building stock across Scotland and Northern Ireland?

- How much of other fuels (e.g. biomass/LPG/oil) do non-domestic buildings consume in each geographical area?

- How has the non-domestic building stock or consumption changed over time? Currently, only the latest year is presented here, providing a snapshot. For building stock figures, comparison may be made with the previous publication. However, two caveats should be noted:

    a. The previous snapshot was three years prior, so any growth should be considered over that time.
    b. ND-NEED building stock is produced on a Unique Property Reference Number (UPRN) basis. Not every building is allocated a UPRN, however, the allocation rate may improve over time, so a small percentage of any change between the years may be due to this. As an example, in the main ND-NEED 2024, around 1% of the building stock in 2024 were buildings that existed previously but had only been allocated UPRNs in the latest edition.[6]

  To analyse consumption, by building use or size, over time, it is recommended that users refer to the main ND-NEED 2024 publication, which presents a complete time-series of this, but for England and Wales only. Alternatively, a time-series of non-domestic meter population for electricity and gas consumption for the last three years, by local authorities and regions, can be found in tables 4a, 4b, 11a and 11b of the accompanying data tables in the ND-NEED Geographical Annex 2024 publication. A longer time-series (on a slightly different basis) is available in the sub-national electricity and gas consumption statistics; however, there is no further disaggregation by building use or size presented in these. Table 14 in the method section presents the other key differences between that data, and the data presented here.

- How does non-domestic building characteristics or energy use differ in each geographical area between:
    - Rented or owner-occupied buildings?
    - Public or private buildings?

[6] See the ND-NEED 2024 methodology note (page 4) for more details on this.

- Buildings occupied by small, medium, or large businesses?

2. Changes since the ND-NEED 2023 Geographical Annex

The ND-NEED Geographical Annex was last published in February 2024 (consistent with ND-NEED 2023). Since then, several changes have been made.

The key changes are listed below – the first two of these are data updates to align with the latest ND-NEED publication, the third is a data update specific to the geographical annex publication, the fourth is a new addition to the report, while the fifth is a new addition to the accompanying data tables:

1. **Updated building stock data**. This now covers the stock as of March 2024 (March 2023 previously). This is used as the basis for creating the ND-NEED sample (where electricity and gas consumption data are matched to the building stock), and therefore impacts on the consumption data presented. More information on the building stock update can be found in the ND-NEED methodology note (page 4).

2. **Updated** electricity and gas meter consumption data. This now covers 2022 (from 2021 previously).

3. **Updated look up and boundary files**. The report uses updated boundary and lookup files from the latest NSPL (National Statistics Postcode Lookup) published in August 2024 which reflects the most recent Parliamentary Constituency (PC) breakdowns, which now takes on the July 2024 structure. The regions affected by this change are:
    a. Wales which now has 32 PCs in comparison to 40 in the 2023 Geographical Annex.
    b. North East which now has 27 PCs in comparison to 29 previously
    c. North West which now has 73 PCs in comparison to 74 previously.
    d. East Midlands which now has 47 in comparison to 45 previously.
    e. West Midlands which now has 57 in comparison to 59 previously.
    f. East of England which now has 61 in comparison to 58 previously
    g. London which now has 75 in comparison to 73 previously.
    h. South East now 91 compared to 86 previously.
    i. South West which now has 58 in comparison to 55 previously.

    Further details of these changes can be found in table 9.

4. **New off-gas grid building maps.** We have included new heat maps showing the proportions of off-gas grid buildings within all non-domestic buildings in each region and local authority.

5. **Time series of energy consumption**. The electricity and gas consumption from the ND-NEED meter population by region, local authority and parliamentary constituencies have been extended to previous years covering 2020, 2021 and 2022 data (Tables 4a, 4b, 11a and 11b of the accompanying data tables). Details of revisions to the 2021 data previously published in Tables 4 and 11 can be found in the ND-NEED methodology note (pages 6-8).

3. Results

The following data is presented in the data tables accompanying this publication. An asterisk (*) indicates that this data is also presented in this report for further analysis.

Table	Region	Local Authority	Parliamentary constituency
Table 1: the number of ND-NEED non-domestic buildings, by building use*	X	X	
Table 2: the floor area of ND-NEED non-domestic buildings, by building use*	X	X	
Table 3A: the number of ND-NEED non-domestic off-gas grid buildings, by rural and urban	X	X	
Table 3B: the number of off-gas grid ND-NEED non-domestic buildings, by building use	X		
Table 4A and 4B: the electricity and gas consumption from ND-NEED meters*	X	X	
Table 5: the ND-NEED number of non-domestic buildings larger than 1,000m^2, by building use*	X		
Table 6: the ND-NEED number of non-domestic buildings smaller than or equal to 1,000m^2, by building use*	X		
Table 7A: the scaled ND-NEED non-domestic electricity consumption, by building use*	X		
Table 7B: the scaled ND-NEED non-domestic gas consumption, by building use*	X		
Table 8: the number of ND-NEED non-domestic buildings, by building use*			X
Table 9: the floor area of ND-NEED non-domestic buildings, by building use			X
Table 10: the number of off-gas grid ND-NEED non-domestic buildings, by rural and urban*			X
Table 11A and 11B: the electricity and gas consumption from ND-NEED meters			X

England and Wales ND-NEED non-domestic building stock

Under the ND-NEED definition, there were 1,755,000 non-domestic buildings in England and Wales at the end of March 2024. Of this total, 1,749,000 were successfully matched to a location in England and Wales, and 6,000 non-domestic buildings failed to match to a location due to the postcode not being present in the NSPL. More information about this matching process can be found in the Method section.

The ND-NEED definition covers all non-domestic buildings included in the Valuation Office Agency (VOA)'s non-domestic ratings list (NDR)[7], excluding premises that are not considered to be buildings for ND-NEED purposes. These are caravan parks, advertising premises, car parks, beach huts, quarries, and telecoms units. For more information on non-buildings, see page 23 of ND-NEED Methodology Note 2024.

Note, in the NDR the data is at the hereditament[8] (Unique Address Reference Number (UARN)) level. In ND-NEED it is aggregated to the building (Unique Property Reference Number (UPRN)) level.

Number of non-domestic buildings by region

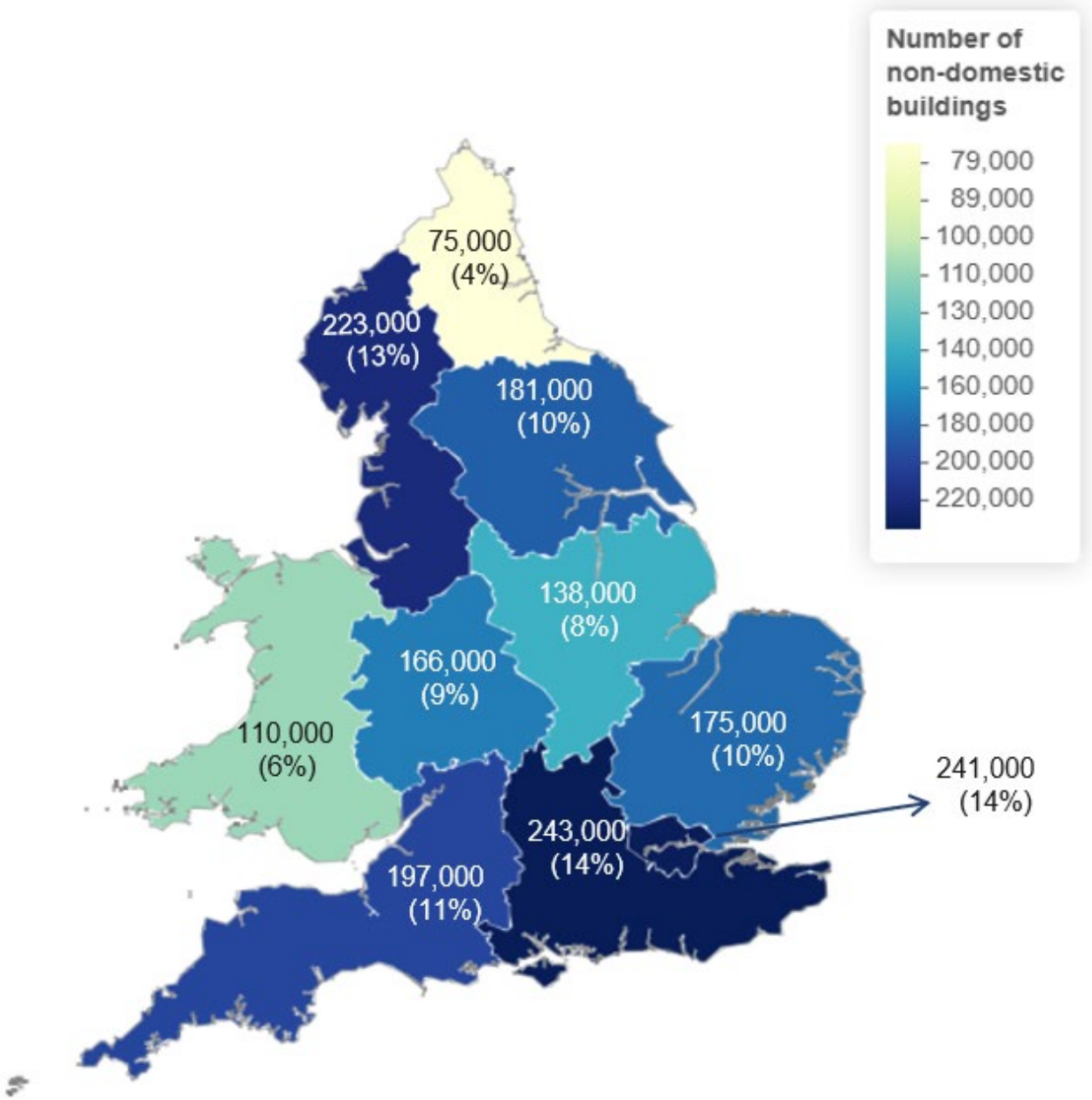
The number of ND buildings can be presented for each region of England and Wales. This is displayed as a heatmap in Figure 1. The corresponding data can be found in Table 1 in the accompanying data tables.

Note, as it is common for most areas to have values closer to the median than the outliers, all heat maps use a log scale to improve clarity by better highlighting differences. Darker blues indicate a comparatively higher number of non-domestic buildings, and lighter yellows indicate a comparatively lower number of non-domestic buildings.

From Figure 1, the South East and London are the regions with the highest number of non-domestic buildings while the North East and Wales have the lowest number of non-domestic buildings. This variation in non-domestic building number between regions is broadly consistent with the variation in population. South East and London have the highest populations, whilst the North East and Wales have the lowest populations (ONS, 2022)[9]. This indicates that there is a strong correlation between the number of people that live in a particular area and the number of non-domestic buildings it contains.

[7] Non-domestic rating 2024
[8] A hereditament is a rateable property for the purpose of business rates.
[9] Data from ONS population estimates

Figure 1: Number of non-domestic buildings by region in England and Wales



Number of non-domestic buildings by region and building use

The number of non-domestic buildings by region can also be disaggregated by building use. This can be seen in Table 2 for the four non-domestic building uses with the highest number of buildings (factories; offices; shops; and warehouses). Information about the other ND-NEED building uses (arts, community, and leisure; education; emergency services; health; hospitality; and other) can be found in Table 1 in the accompanying data tables.

Table 2 shows that the proportion of factories, offices, shops and warehouses in a region are all broadly in line with the proportion of all non-domestic buildings in that region. The one

notable exception is London. London has a disproportionately high number of offices (21% of all offices in England and Wales) compared to the 14% of all non-domestic buildings that are in London. London also has a disproportionately low number of factories and warehouses (9% of those in England and Wales compared to 14% for all non-domestic buildings that are in London).

Table 2: The proportion of factories, offices, shops and warehouses in England and Wales that are in each region[10]

Region	Factories	Offices	Shops	Warehouses	All Building Uses
England	**94%**	**95%**	**94%**	**94%**	**94%**
North East	5%	4%	5%	3%	**4%**
North West	12%	12%	14%	13%	**13%**
Yorkshire and The Humber	11%	10%	10%	11%	**10%**
East Midlands	10%	7%	7%	8%	**8%**
West Midlands	11%	9%	10%	11%	**9%**
East	11%	9%	9%	12%	**10%**
London	9%	21%	18%	9%	**14%**
South East	14%	15%	13%	15%	**14%**
South West	12%	9%	9%	12%	**11%**
Wales	**6%**	**5%**	**6%**	**6%**	**6%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**

Number of non-domestic buildings by region, building use and building size

The number of non-domestic buildings by region and building use can also be disaggregated further, by building size. This analysis excludes the 18% (319,000) of non-domestic buildings in the ND-NEED Geographical Annex dataset that are missing floor area data. More information about why these buildings are missing floor area data can be found in the Method section.

The proportion of buildings that are missing floor area information differs substantially between building uses, from 100% missing from emergency services buildings, to only 2% missing from factory buildings, further details on this can be seen on table 13 of the ND-NEED methodology document. Because of this, building use splits are only presented for the four that have over 80% of floor area present (factories, offices, shops, and warehouses).

[10] These four building uses are presented here as they are the four largest ND-NEED building uses by building number and because they align with the floor area figures presented later in the report.

Table 3 contains the proportion of all non-domestic buildings larger than 1,000m^2 in England and Wales in each region, split by building use[11] .

In general, the proportion of factories, offices, shops, and warehouses in a region are all similar to the proportion of all non-domestic buildings in that region. This is the same pattern as was seen for all non-domestic buildings in Table 2.

As in Table 2, the exception to this is London. London contains 10% of large non-domestic buildings in England and Wales, but 27% of offices larger than 1,000m^2. This is more than the 21% of all offices that are located in London. This could be because companies often locate their headquarters in London, which are likely to be larger than offices in other areas. London also contains 3% of factories larger than 1,000m^2 (compared to 10% of all large non-domestic buildings that are in London).

Table 3: Proportion of non-domestic buildings larger than 1,000m^2 in England and Wales that are in each region, by key building uses

Region	Factories	Offices	Shops	Warehouses	All Building uses
England	**94%**	**96%**	**94%**	**95%**	**95%**
North East	6%	4%	5%	4%	**5%**
North West	14%	13%	14%	14%	**14%**
Yorkshire and The Humber	14%	8%	10%	12%	**12%**
East Midlands	12%	6%	8%	10%	**10%**
West Midlands	15%	8%	11%	12%	**12%**
East	10%	9%	11%	12%	**11%**
London	3%	27%	10%	8%	**10%**
South East	11%	16%	14%	14%	**13%**
South West	9%	7%	11%	9%	**9%**
Wales	**6%**	**4%**	**6%**	**5%**	**5%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**

[11] This threshold has been chosen as it is an important threshold for non-domestic building decarbonisation policy. For example the performance-based policy framework.

Table 4 contains the proportion of non-domestic buildings smaller than or equal to 1,000m^2 that are in each region in England and Wales, split by building use.

Again, the proportions by region in each building use are generally in line with the proportion of all non-domestic buildings smaller than or equal to 1,000m^2 in the region. London is still an exception, but this difference is less for all non-domestic buildings or non-domestic buildings larger than 1,000m^2.

Table 4: Proportion of non-domestic buildings smaller than or equal to 1,000m^2 in England and Wales that are in each region, by key building uses

Region	Factories	Offices	Shops	Warehouses	All Building uses
England	**94%**	**95%**	**94%**	**94%**	**94%**
North East	5%	4%	5%	3%	**4%**
North West	11%	12%	14%	13%	**13%**
Yorkshire and The Humber	11%	10%	10%	10%	**10%**
East Midlands	10%	7%	7%	8%	**8%**
West Midlands	11%	9%	10%	11%	**10%**
East	11%	10%	8%	12%	**10%**
London	9%	20%	18%	9%	**15%**
South East	14%	15%	13%	15%	**14%**
South West	12%	9%	9%	12%	**10%**
Wales	**6%**	**5%**	**6%**	**6%**	**6%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**

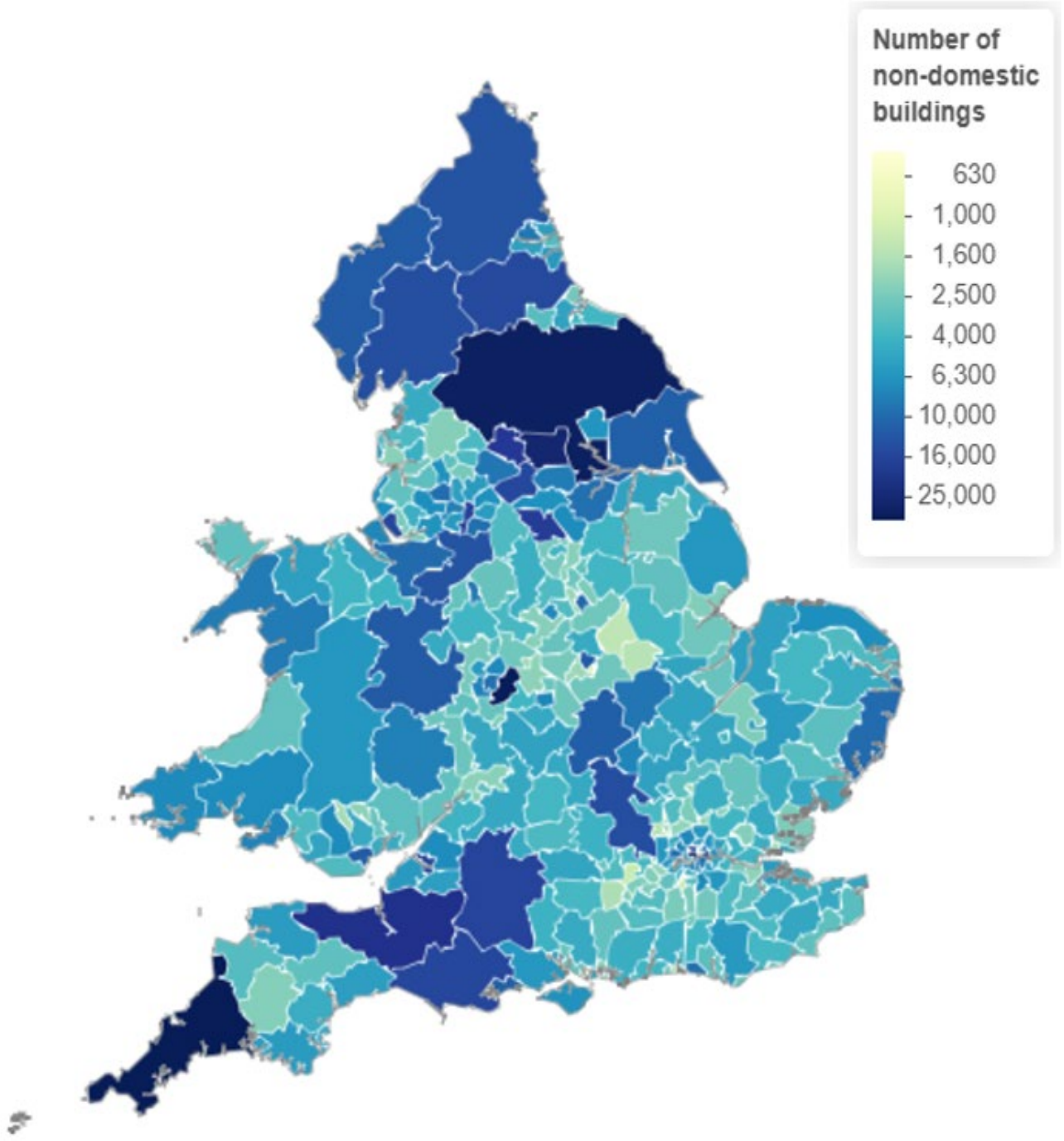
Number of non-domestic buildings by local authority (LA)

The number of non-domestic buildings in each LA was also calculated and presented as seen on the heatmap in Figure 2. The corresponding data can be found in Table 1 in the accompanying data tables.

Cornwall in the South West region has the highest number of non-domestic buildings with 32,000. LAs covering major cities including Birmingham, Leeds, Bradford, Sheffield and Manchester are all in the top 10, with 15,000 or more non-domestic buildings. Westminster in London is fourth highest with 27,000 non-domestic buildings.

The Isles of Scilly has the lowest number of non-domestic buildings at 480. All other LAs have more than 1,000 non-domestic buildings.

Figure 2: Number of non-domestic buildings by LA in England and Wales



Note, there are large variations in the population of local authorities. For example, the Metropolitan District of Birmingham has a population of 1,160,000, whilst the Isles of Scilly has a population of 2,300 (ONS, 2022) [12]

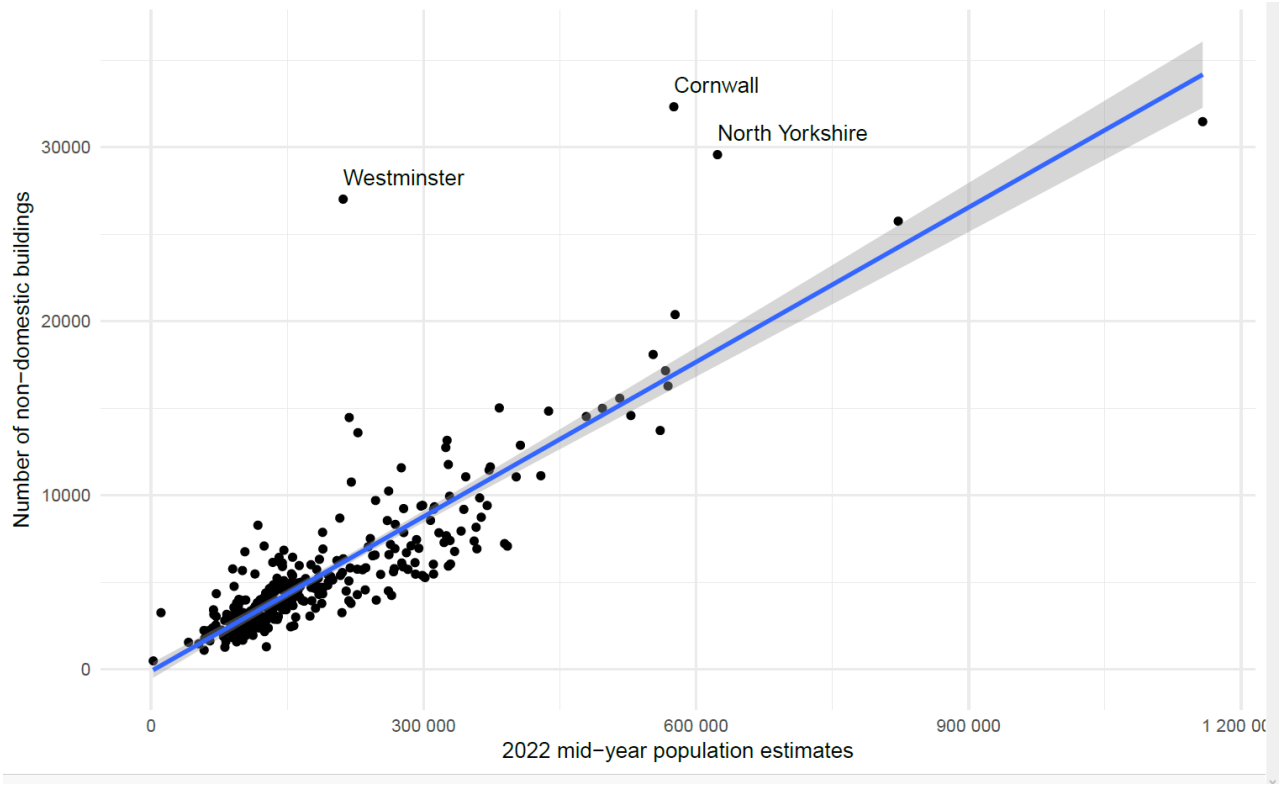
As there is a correlation between the population of a local authority and the number of non-domestic buildings it contains (see Figure 3), population differences should be considered when interpreting results at the local authority level.

To help with this, the number of buildings in a local authority per 100,000 population is also presented in the data tables (see Table 1 in the accompanying data tables).

The number of non-domestic buildings in each parliamentary constituency are also presented in this report below. Parliamentary constituencies have broadly similar populations, so patterns seen will not be driven by population differences.

From Figure 3 we can see that there is a correlation between the population of the local authority and the number of non-domestic buildings it contains, which at least partly explains the results described above. There are however three prominent outliers: Cornwall, North Yorkshire[13] and Westminster have a much higher number of non-domestic buildings than would be expected based on their population. Cornwall has a 1.8% share of the total number of non-domestic buildings (at 32,000), followed by North Yorkshire with 1.7% (30,000) and Westminster with 1.5% (27,000).

Figure 3: Variation of the number of non-domestic buildings with population for LA in England and Wales [12]



[12] ONS population estimates
[13] North Yorkshire became a local (unitary) authority as part of the restructure in 2023 – see ND-NEED 2023 Geographical Annex (page 32)

In Cornwall this could be due to the relatively high number of tourists; 17 million tourist bed nights were spent in Cornwall per year on average between 2021 and 2023, 5% of England's total[14]. Tourists increase the demand for hospitality buildings, but will not be counted in the population estimates, increasing the number of non-domestic buildings per 100,000 population. The demand for hospitality buildings in Cornwall can been seen in Table 1 (in the accompanying data tables). Cornwall has one-third of the hospitality buildings in the South-West, and the most hospitality buildings in England and Wales with almost 13,000 buildings (6.7% of hospitality buildings in England and Wales).

The 13,000 hospitality buildings in Cornwall represents a decrease of 7% compared to the figure presented in the 2023 geographical annex , which may be partly due to the removal of holiday homes following The Non-Domestic Rating (Definition of Domestic Property) (England) Order 2022 (which means that holiday lets have to meet certain criteria to remain on the NDR list). All regions – except for London - have seen decreases of between 1% and 7% in hospitality buildings.

In Westminster, the high number of non-domestic buildings, compared with the population, could be due to the disproportionately high number of office buildings in this area. Westminster contains the largest share (4.6%) of all offices in England and Wales, but only 1.5% of all non-domestic buildings. Many of the workers in these offices will not live in the local area but will commute from elsewhere, and so will not be included in the population estimates. The high number of offices in the area will also drive demand for other non-domestic buildings such as hospitality buildings, to cater for the workforce.

Whilst the overall number of offices in England and Wales has decreased roughly in line with the overall building stock (by around 0.5%) since the last update in the 2023 geographical annex , there has been variation. The number of offices in the West Midlands increased by 1.6%, driven by a 9.5% (6,650 to 7,280) increase in Birmingham, while the South-East fell by 1.3% and London by 1.1%. Within London, most local authorities saw falls in the number of offices in 2024, with Wandsworth the largest fall. In this local authority, following a slight increase in the number of offices (2%) between 2020 and 2023, the number fell by 11%, from 1,880 to 1,670 buildings, in 2024. Slough in the South East showed a similar pattern – following an increase of 5% across 2020 to 2023 to 910 buildings, the number of offices fell by 21% to 720 buildings this year, which could be a result of offices closure and hybrid working.

Adjusting for population, the City of London, the Isles of Scilly and Westminster have the most non-domestic buildings of any LA (30,000, 21,000 and 13,000 non-domestic buildings per 100,000 population respectively). Bracknell Forest in the South East has the lowest rate, at 1,000 non-domestic buildings per 100,000 population. Bracknell Forest also has the fourth lowest number of non-domestic buildings of any LA in England and Wales at 1,000. Of the 10 LAs with the lowest number of non-domestic buildings per 100,000 population, six are in the South East and outer London areas.

[14] Visit Britain Local Authority Data

Number of non-domestic buildings by parliamentary constituency (PC)

Figure 4 shows the number of non-domestic buildings in each PC. The corresponding data can be found in Table 8 in the accompanying data tables.

> PC boundaries are drawn so that they contain voting populations of broadly the same size (House of Commons, 2023)[15]. Because of this, data presented at PC level will be relatively unaffected by variations in population. To note that this year's report takes on the 2023 review boundaries (increasing the number of PCs by two) – further information can be found in the Method section.

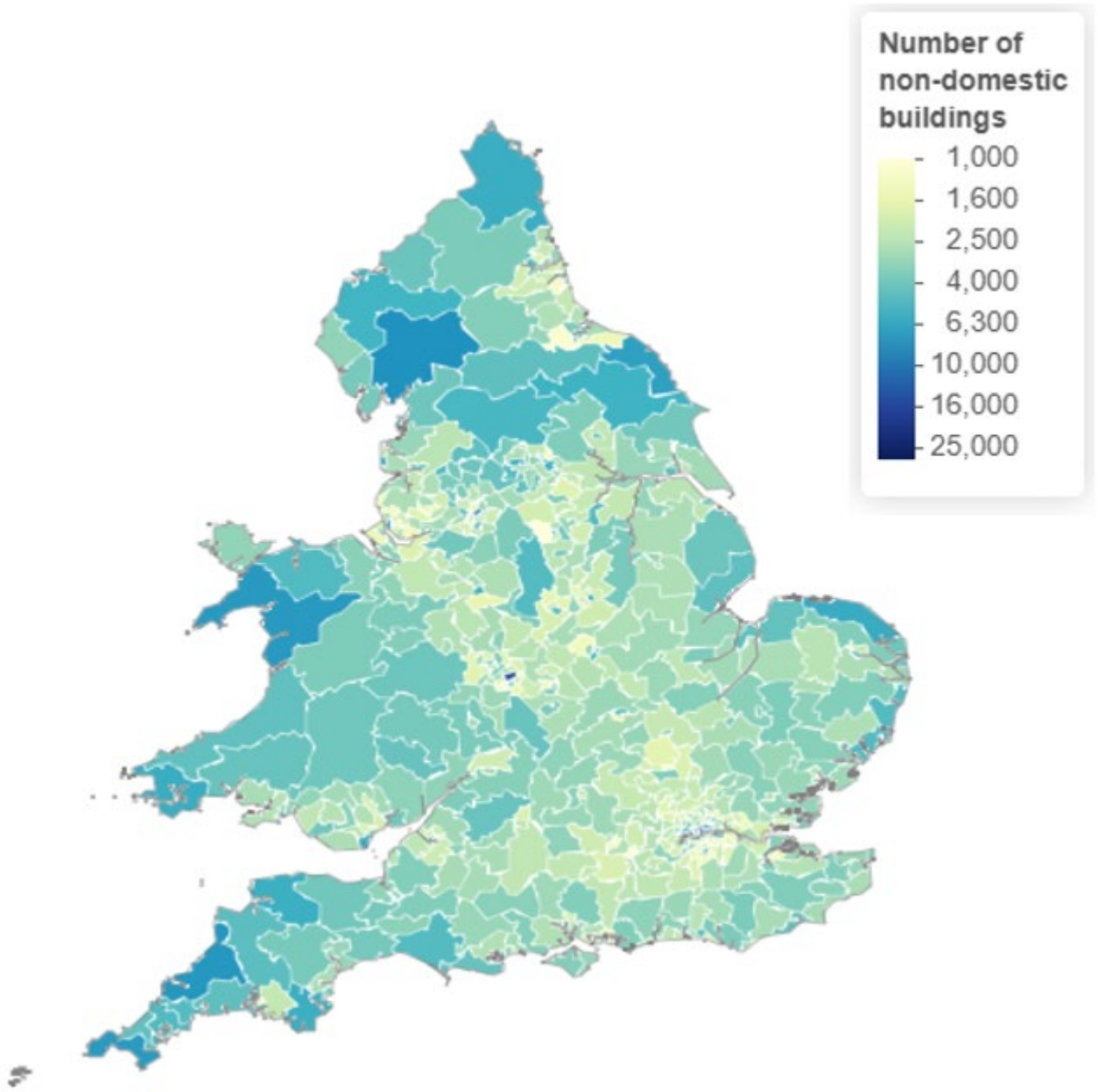
The PC of the Cities of London and Westminster has the highest number of non-domestic buildings in England and Wales, with 28,000 non-domestic buildings or 1.5% of the non-domestic buildings in England and Wales.

The PC of Birmingham Ladywood has the second highest number of non-domestic buildings with 13,000 buildings at a 0.7% share, with the constituencies of Manchester Central, Westmorland and Lonsdale, Liverpool Riverside, North Cornwall and Dwyfor Meirionnydd joining three other London constituencies to complete the ten PCs with the most non-domestic buildings. Seven of the top ten are within large cities, suggesting that perhaps city centres tend to have few domestic properties and densely packed non-domestic properties.

The PCs with the lowest number of non-domestic buildings are also in urban areas but tend to be located towards the outskirts of towns and cities, rather than in the centre. For example, Sheffield Hallam has the fewest non-domestic buildings (1,000) while Bracknell has the second fewest with 1,030 non-domestic buildings. This could be because suburban areas towards the edge of large cities/towns have a higher proportion of domestic buildings and fewer non-domestic ones.

[15] House of Commons Research Briefing on PC boundaries

Figure 4: Number of non-domestic buildings by PC in England and Wales



Number of non-domestic off-gas grid buildings

Further analysis has been undertaken to identify the geographical distribution of the non-domestic buildings in England and Wales that are off the gas grid. Full results at PC, LA and regional level can be found in the accompanying data tables (Table 3A, Table 3B and Table 10).

Buildings in the ND-NEED Geographical Annex were identified as either 'on-gas grid' or 'off-gas grid' using Xoserve data containing postcodes with no connections to the national gas grid (2024). More information on the classification of off-gas grid buildings is available in the Method section.

> The ND-NEED definition of an off-gas grid non-domestic building is a non-domestic building in a postcode where no building, domestic or non-domestic, has a connection to the gas distribution network.

This analysis shows that 17% (292,000) of non-domestic buildings in England and Wales are off-gas grid. The proportion of buildings that are off-gas grid varies substantially between regions from only 10% in London to 27% in the South West (see Table 3A and Table 3B in the accompanying data tables and Figure 5A and Figure 5B).

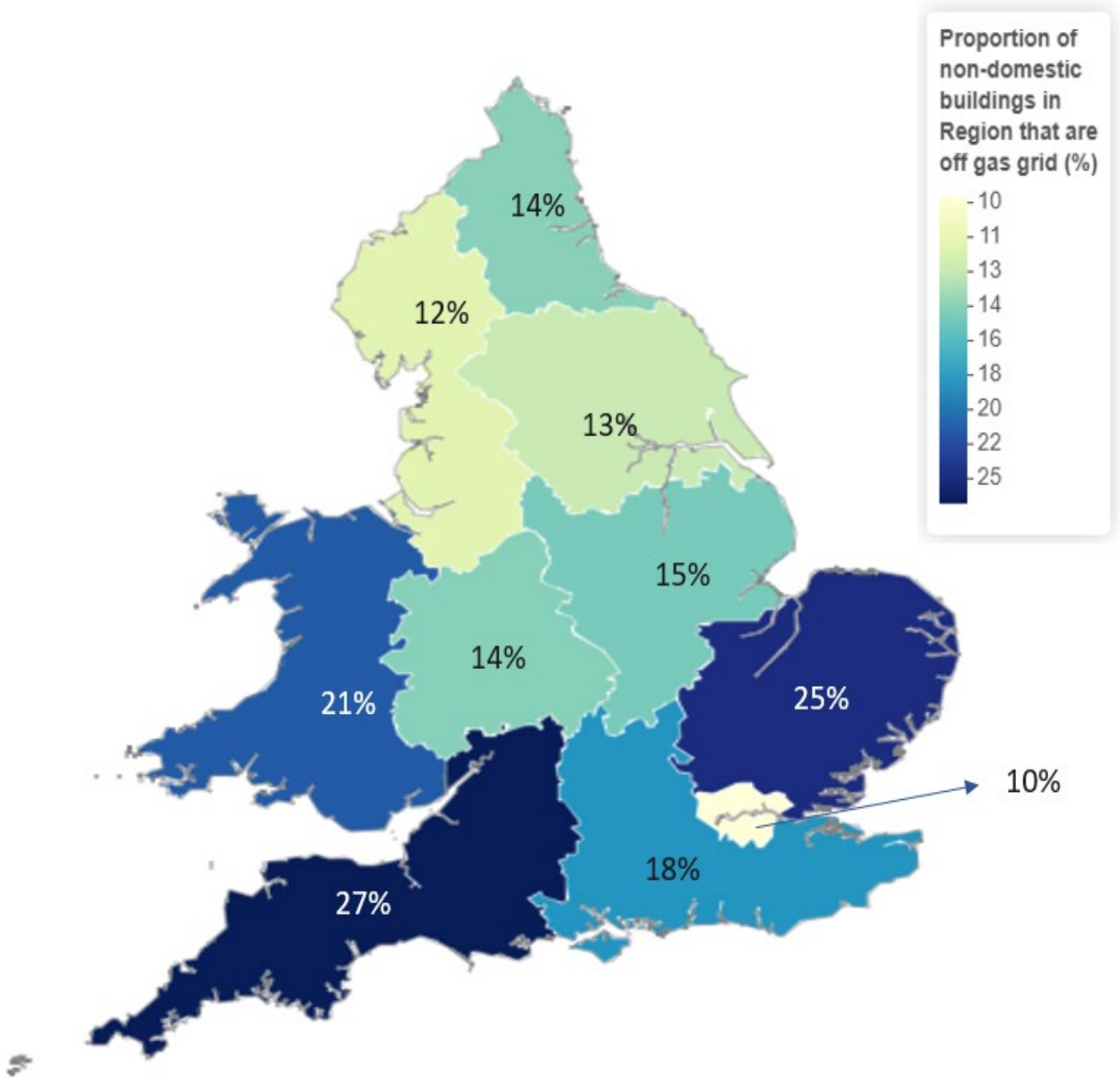
Data is also available for the number of domestic properties that are not connected to the gas grid[16]. Whilst this is on a slightly different basis from the method used for non-domestic buildings (see Method section), the headline results are similar, with 15% of domestic properties in Great Britain not connected to the gas grid[17].

Number of off-gas grid buildings by region

Figure 6a shows the proportion of the off-gas grid buildings within all non-domestic buildings by region in England and Wales. The South West has the highest share of off-gas grid buildings in the non-domestic buildings at 27%, followed by the East at 25%. London has the lowest proportion of off-gas grid buildings in non-domestic buildings at 10%, followed by the North West at 12% (See Table 3B of the accompanying data tables).

[16] Subnational estimates of properties not connected to the gas network
[17] Subnational electricity and gas consumption summary report 2022

Figure 5a: Proportion of non-domestic buildings that are off-gas grid by region in England and Wales



Number of off-gas grid buildings by region and building use

Analysis of the number of off-gas grid buildings by building use found that offices make up the highest proportion of all off-gas grid non-domestic buildings (20%), closely followed by factories (18%) and hospitality (18%). The building uses with the lowest proportion of all off-gas grid non-domestic buildings were emergency services (0.1%), health (1%) and education (2%). These proportions broadly follow a similar pattern to the proportion of each building type in England and Wales. The exceptions to this pattern are factories and hospitality buildings which make up 14% and 11% of non-domestic buildings respectively yet each account for 18% of off-gas grid buildings.

The proportion of factories, offices, shops, and warehouses in each region are also generally in line with the proportion of all non-domestic floor area in that region. Again, London is the exception, with a disproportionately high share of offices off the gas grid (21%), and a disproportionately low share of factories off the gas grid (4%), compared with an 8% share of all off-gas grid buildings.

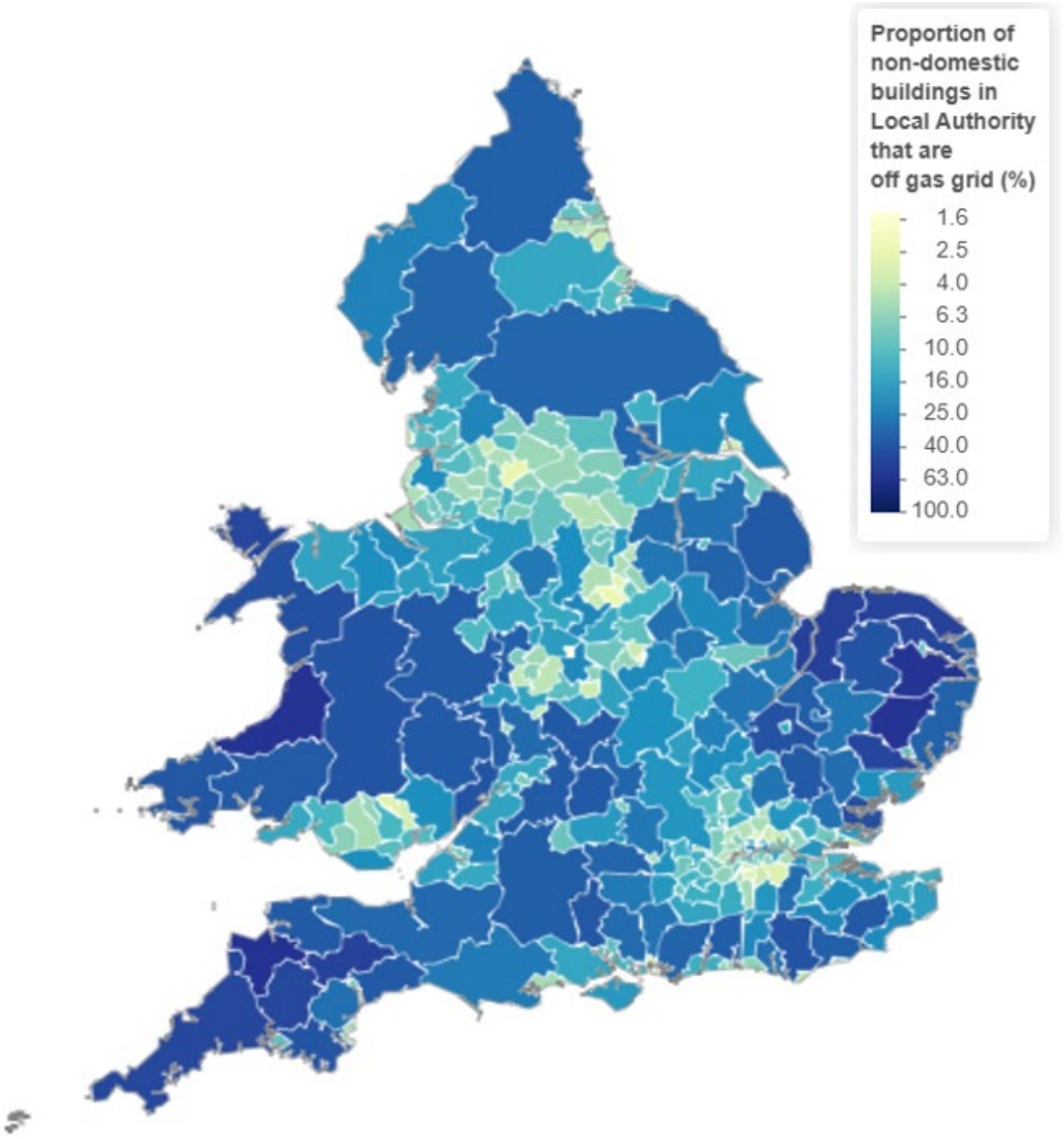
Table 5 shows the number of off-gas grid non-domestic buildings as a proportion of all non-domestic buildings of that building type by region[18]. The South West and East regions stand out in particular with relatively higher shares of their building stock laying off the gas grid. The South West has the highest proportion of off-gas grid buildings at 27%, particularly 42% of hospitality buildings in the South West lay off the gas grid. This is closely followed by East where 25% of its non-domestic buildings are off the gas grid, with around 35% of each of its factories laying off the gas grid. Across all regions, shops have the lowest proportion of buildings off the gas grid, ranging from 5 to 10%.

Number of off-gas grid buildings by local authority

Figure 5b shows the proportion of off-gas grid buildings within all non-domestic buildings by local authority in England and Wales. The Isles of Scilly (in the South West) has the highest share at 100%, followed by Torridge in the South West at 60%. Tamworth in the West Midlands has the lowest proportion of off-gas grid buildings in non-domestic buildings at 1%, followed by Erewash in the East Midlands at 2% (See Table 3B of the accompanying data tables).

[18] Alongside the other four building use categories that are included in previous tables, hospitality has been included in table 5 due to its significance of off-gas grid buildings. It has the second highest number of off-gas grid non-domestic buildings (after offices), and, besides the “other” category, the highest proportion of non-domestic buildings laying off the gas grid.

Figure 5b: Proportion of non-domestic buildings that are off-gas grid by local authority in England and Wales



Number of off-gas grid buildings by parliamentary constituency

Analysis of the number of off-gas grid buildings by parliamentary constituency found that the PCs with the highest proportion of off-gas grid non-domestic buildings were in the predominantly rural Ceredigion Preseli (59%) and Waveney Valley and South (58%). The PCs with the lowest proportion of off-gas grid non-domestic buildings were in Leicester East, Birmingham Hodge Hill and Solihull North, and Mitcham and Morden. All these PCs have less than 1% of non-domestic buildings off-gas grid.

Rural/Urban split

As the PC level data indicates that there is a difference between the number of off-gas grid buildings in rural and urban area, the data can be disaggregated further, using the ONS NSPL rural-urban classification method. This shows that 185,000 off-gas grid non-domestic buildings are situated in rural areas (63%), and 108,000 off-gas grid non-domestic buildings are in urban areas (37%). The number of off-gas grid non-domestic buildings in each PC that are urban or rural respectively are presented in Figures 6a and 6b.

> Note, the maps in Figure 6a and 6b are presented at the PC level, whereas the urban/rural split is at the 2024 Census Output Areas level, which are much smaller than PCs. This means the majority of PCs are coloured in both the urban and rural maps, as they contain both urban and rural Output Areas.

The PCs with the highest number of urban off-gas grid non-domestic buildings are in city centres, including the Cities of London and Westminster (7,700), Manchester Central (1,600) and Holborn and St Pancras (1,400). The PCs with the highest total number of rural off-gas grid non-domestic buildings are in North Cornwall (4,000), St Ives (3,400) and North Norfolk (2,800).

The top rural PCs have a higher number of off-gas grid buildings than the top urban PCs. As urban PCs are likely to be more densely populated, this suggests that rural PCs tend to have larger geographical areas that are off the gas grid than urban PCs. The higher number of off-gas grid buildings in rural areas also ties in with the fact that 63% of all off-gas grid buildings are in rural areas.

Figure 6a: Number of rural off-gas grid buildings by PC in England and Wales

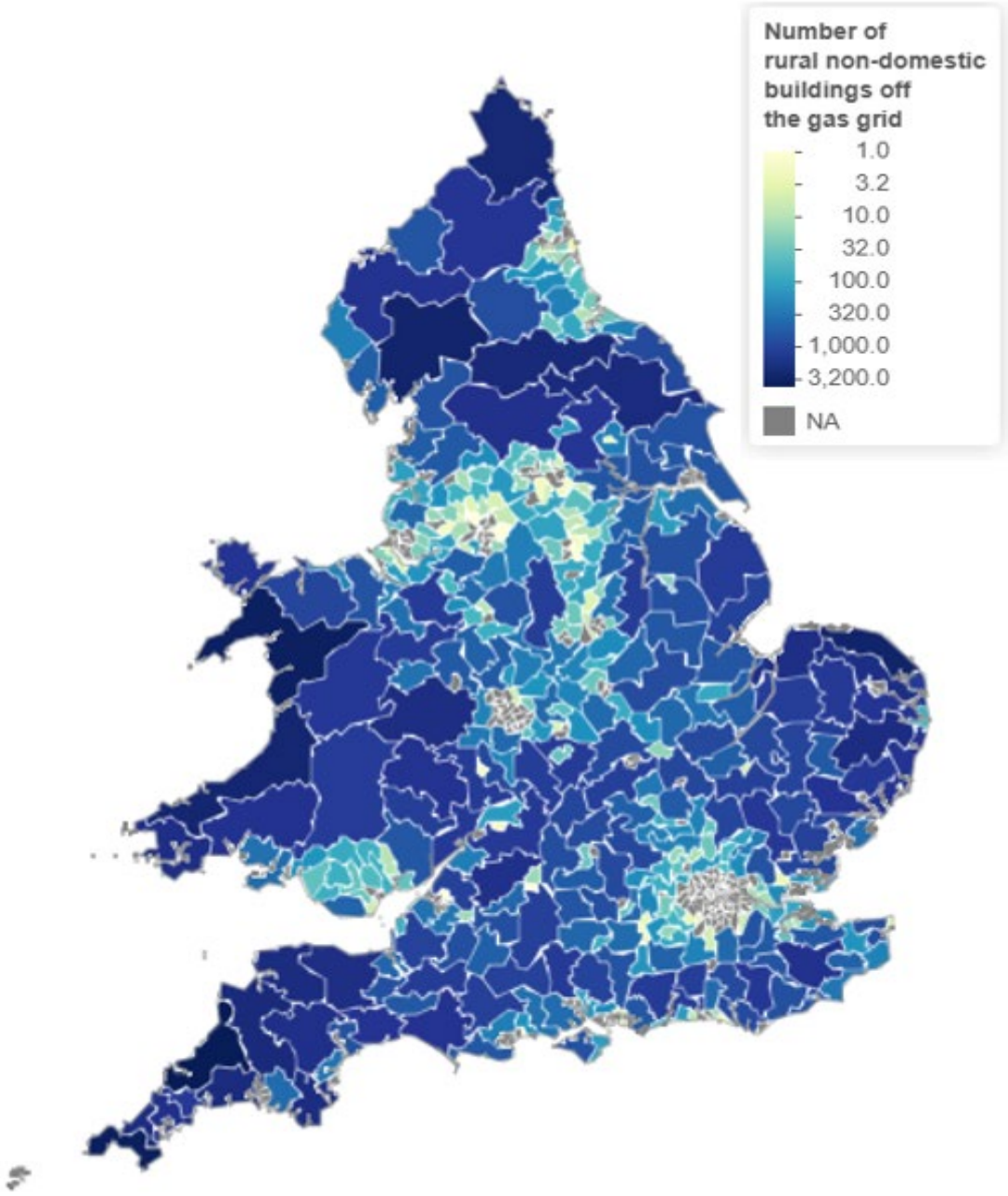
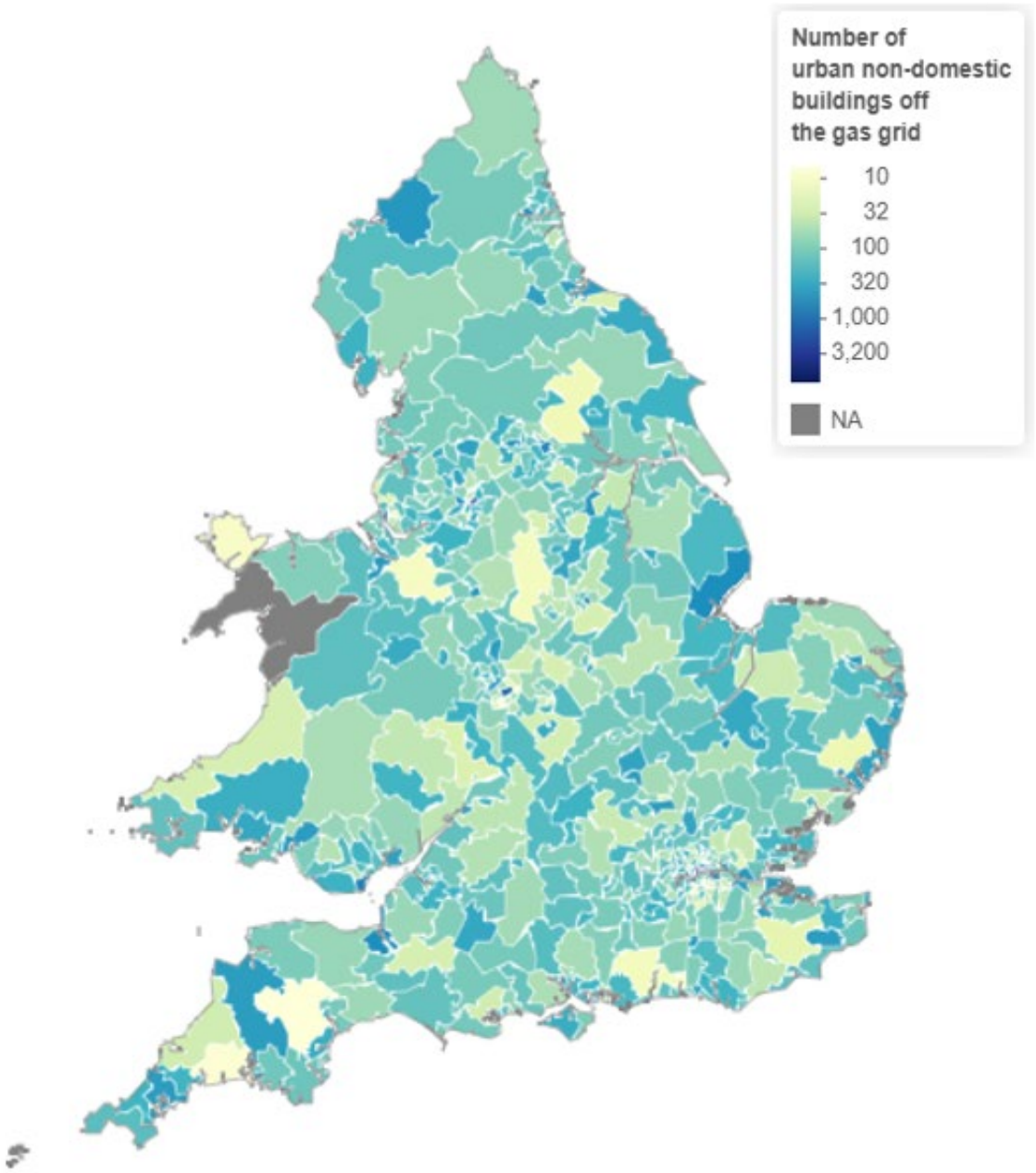


Figure 6b: Number of urban off-gas grid buildings by PC in England and Wales



Note, In Figures, 6a and 6b, NA (shaded in grey) represents areas where there are no rural or urban off-gas grid buildings, such as Dwyfor Meirionnydd in Wales in Figure 6b.

Table 5: Number of off-gas grid non-domestic buildings as a proportion of all non-domestic buildings in each region in England and Wales, by building use

Region	Factories	Hospitality	Offices	Shops	Warehouses	All Building uses
England	**21%**	**25%**	**16%**	**6%**	**22%**	**16%**
North East	15%	31%	12%	6%	17%	**14%**
North West	14%	18%	14%	5%	14%	**12%**
Yorkshire and The Humber	14%	21%	12%	5%	16%	**13%**
East Midlands	19%	19%	14%	5%	19%	**15%**
West Midlands	18%	23%	13%	6%	18%	**14%**
East	35%	33%	22%	9%	34%	**25%**
London	10%	6%	16%	6%	9%	**10%**
South East	29%	18%	19%	7%	28%	**18%**
South West	33%	42%	19%	10%	32%	**27%**
Wales	**25%**	**43%**	**14%**	**8%**	**20%**	**21%**
England & Wales	**22%**	**27%**	**16%**	**6%**	**22%**	**17%**

Floor area of non-domestic buildings by region and building use

Analysis has also been carried out to disaggregate non-domestic building floor area in England and Wales by region, local authority and parliamentary constituency. Analysis of the results at the regional level can be found below. Data at the local authority level can be found in Table 2 in the accompanying data tables, and at the parliamentary constituency level in Table 9.

Note, 319,000 (18%) of the 1,755,000 non-domestic buildings in the ND-NEED Geographical Annex dataset do not have floor area information, and so are excluded from this analysis.

The proportion of buildings missing floor area information varies slightly between regions, ranging from 14% in London to 26% in the South West (see Table 11 in the Method section). This may inflate the results from regions with a higher proportion of floor area present and deflate the results from the regions with a lower proportion of floor area present.

Table 6 shows the proportion of floor area of non-domestic buildings in each region in England and Wales, split by building use. As with Tables 2 and 3, data are only presented for building uses that have floor area for more than 80% of buildings.

Table 6: Proportion of floor area of non-domestic buildings in each region in England and Wales, by building use

Region	Factories	Offices	Shops	Warehouses	All Building uses
England	**93%**	**96%**	**94%**	**96%**	**95%**
North East	7%	4%	5%	4%	**5%**
North West	14%	12%	14%	13%	**13%**
Yorkshire and The Humber	15%	8%	10%	12%	**12%**
East Midlands	12%	6%	8%	13%	**10%**
West Midlands	13%	8%	10%	13%	**12%**
East	10%	8%	10%	13%	**11%**
London	3%	26%	14%	7%	**10%**
South East	10%	15%	14%	13%	**13%**
South West	9%	8%	10%	8%	**9%**
Wales	**7%**	**4%**	**6%**	**4%**	**5%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**

Table 6 shows that floor area has a similar pattern to building numbers (see Table 2). The proportion of factories, offices, shops, and warehouses in each region are all generally in line with the proportion of all non-domestic floor area in that region. Again, London is the exception, with a disproportionately high share of office floor area (26%), and a disproportionately low share of factory floor area (3%), compared with 10% of non-domestic building floor area in London.

England and Wales non-domestic building energy consumption

This section of the report analyses the distribution of non-domestic building electricity and gas consumption, in England and Wales.

Two methods are used to produce this analysis. A brief outline of these methods are summarised in Figure 7, and the implications this has on the resulting analysis is provided below.

Please consider this when deciding which energy consumption method is most appropriate for your work. More information and a comparison of the methods used, including how these methods compare to the sub-national statistics[19], and their impact on the energy consumption analysis, can be found in the Method section.

[19] Subnational electricity and gas consumption summary report 2022

1. ND-NEED meter population total consumption

Consumption data by geographical area can be presented using the entire underlying ND-NEED meter population. This is the meter level data of all non-domestic buildings in England and Wales and is what the ND-NEED sample consumption data is scaled to (see the methodology note of the main ND-NEED 2024).

The major advantage of this method is it captures all electricity and gas consumption from non-domestic buildings. This allows meaningful comparisons of consumption between all geographical areas.

The key disadvantages of this method are that:

1. The data cannot be split by building use or building size. This is because these meters have not been matched to their corresponding buildings, so the characteristics of the buildings they are in are unknown.

2. The data includes consumption from 'non-buildings' that are excluded under the ND-NEED definition, for example car parks or quarries. This adds an extra 10-15% to the weighted matched sample consumption figures also presented here.

Due to the lack of a geographical component in the weighting method, this is the best representation of the distribution of total electricity and gas consumption across region, local authority or parliamentary constituency.

2. ND-NEED weighted matched sample consumption

Due to the limitations of the address-matching process, just over 50% of buildings in the ND-NEED stock were successfully allocated 2022 electricity consumption meter data. This creates a sample of 859,000 non-domestic buildings with 2022 electricity consumption data. Out of which, 349,000 non-domestic buildings were also matched to 2022 gas consumption data.

As the sample of matched buildings is not representative of the entire building stock, ND-NEED weights the sample to the population level. The weights scale a building in the matched sample based on its use and size. Full details of the weighting process can be found in the methodology note of ND-NEED 2024.

The key advantage of this method is that the consumption data can be split by building use since the consumption data has been linked to the corresponding ND-NEED buildings.

The key disadvantage of this method is that the number of buildings missing electricity or gas consumption information in the matched sample differs between geographical areas. This bias in the matching process is not fully accounted for in the weighting process. Because of this bias, data from the ND-NEED meter population method should be used when building use or building size splits are not needed.

Figure 7: Methods for calculating consumption of non-domestic consumption from ND-NEED data

*Includes meter data from 'non-buildings', under the ND-NEED definition

Non-domestic total consumption by region (ND-NEED meter level population)

As outlined above, this report presents consumption from the ND-NEED meter population, split by region. The results of this analysis at regional level are summarised in Figures 8a and 8b, while the ND-NEED meter population consumption data, and how this has changed in the years since 2020, at local authority and parliamentary constituency level can be found in Tables 4A, 4B, 11A and 11B in the accompanying data tables.

The ND-NEED meter population dataset (England and Wales) differs from the non-domestic subnational dataset (GB) because it includes consumption from low-consuming 'domestic-like' non-domestic meters.

Electricity consumption
The non-domestic subnational electricity consumption data contains all electricity meters in non-domestic profile classes (0, 3-8). ND-NEED meter population dataset contains all these meters and any meters in domestic profile classes (1 and 2) that can be matched to a non-domestic address.

Gas consumption
The non-domestic subnational gas consumption data contains all gas meters that consume greater than 73.2 MWh. ND-NEED meter population dataset contains all these meters and any meters that consume less than 73.2 MWh that can be matched to a non-domestic address.

More information on the differences between the ND-NEED meter population dataset and the non-domestic subnational dataset can be found in the Method section.

Figure 8a shows that meter level electricity consumption is highest in London and the South-East (16% and 14% of the total ND-NEED electricity meter level consumption respectively), and lowest in the North East and Wales (5% and 6% respectively). This is in line with the number of non-domestic building in these regions, with London and the South East containing the highest number of non-domestic buildings, and the North East and Wales containing the lowest number of non-domestic buildings.

Within London, the Cities of London and Westminster parliamentary constituency has the highest electricity consumption (3% of all of England and Wales), and at the local authority level, Westminster (1.9% of England and Wales). See Tables 4a and 11a of the accompanying data tables for more details.

Figure 8b shows that the meter level gas consumption has a slightly different regional pattern than electricity. It is highest in the North West (16%), London (13%) and Yorkshire and the Humber (12%). In the case of North West and Yorkshire and the Humber, this could be driven by the high gas demands of factories in these traditionally industrial areas, as factories consume more than twice as much gas as any other ND-NEED building use (see Table 7b in the accompanying data tables). This interpretation is supported by the fact that the North West is the region that contains the most factories floor area (14%), followed closely by Yorkshire and the Humber (15%). As with meter level electricity consumption, the regions with the lowest meter level gas consumption are in the North-East (5%) and Wales (6%).

Within the North-West, Stretford and Urmston parliamentary constituency has the highest gas consumption (1.0% of England and Wales), and at the local authority level, Trafford (1.1% of England and Wales). See Tables 4b and 11b of the accompanying data tables for more details.

Figure 8: Meter level consumption of non-domestic buildings by region in England and Wales, 2022

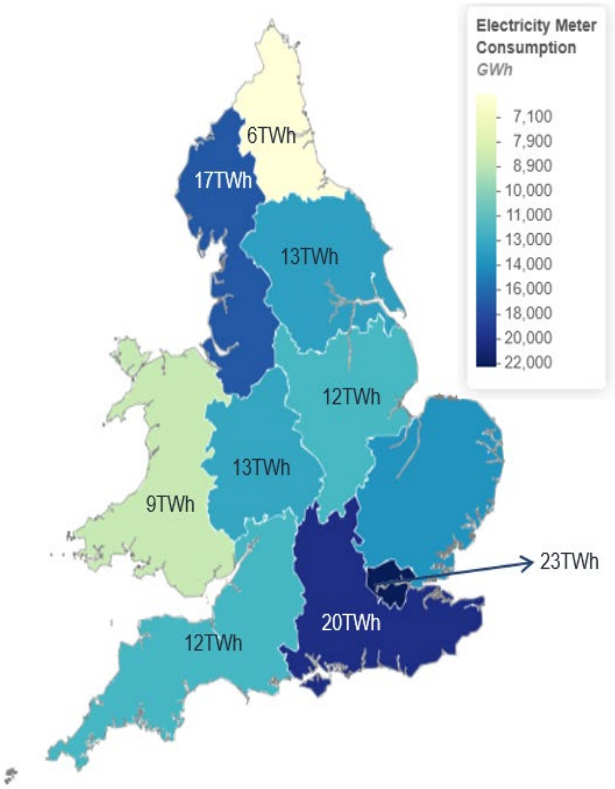


Figure 8a: Electricity meter consumption

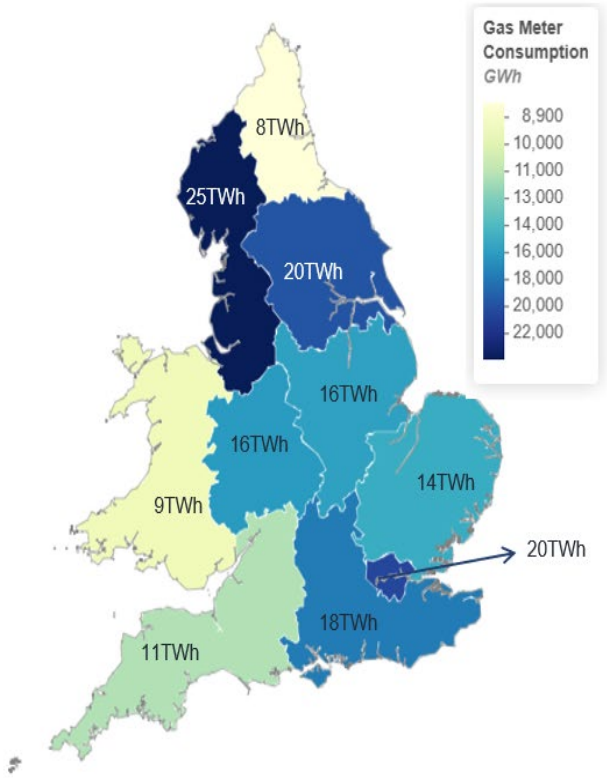


Figure 8b: Gas meter consumption

Non-domestic total consumption by region, split by building use (ND-NEED weighted matched sample)

Non-domestic building consumption can also be estimated using the ND-NEED weighted matched sample. This method relies upon a sample which is scaled up to represent the population, and therefore will be less accurate than the ND-NEED meter population data. However, this data includes building stock information, and therefore can be presented at a building use level. An analysis of the accuracy of the weighted matched sample when compared to the meter level data is available in the Method section.

Tables 7 and 8 show the proportion of electricity and gas consumed by region in England and Wales based on the weighted ND-NEED matched sample. This is shown for the four ND-NEED building uses with the largest number of buildings. These are the same building uses that were presented for the building stock in Tables 2-6. Consumption data for other building uses can be found in the Tables 7A and 7B of the accompanying data tables.

Table 7 shows that 35% of electricity consumed by offices is consumed in London. Table 2 shows that 21% of offices are in London, which suggests that offices in London consume an above average amount of electricity. On average, offices in London are larger than in other parts of England and Wales (average office floor area in London is 305m^2, compared to 234m^2 in England and Wales (see accompanying data table 2). This may contribute to their high electricity consumption.

Table 7: Proportion of electricity consumption by region in England and Wales by building use using ND-NEED weighted matched sample data

Region	Factories	Offices	Shops	Warehouses	All Building uses
England	**90%**	**95%**	**95%**	**97%**	**94%**
North East	9%	3%	5%	3%	**5%**
North West	17%	8%	12%	15%	**15%**
Yorkshire and The Humber	14%	8%	10%	10%	**10%**
East Midlands	12%	5%	8%	11%	**9%**
West Midlands	11%	5%	9%	12%	**9%**
East	9%	8%	10%	13%	**10%**
London	3%	35%	18%	11%	**15%**
South East	10%	17%	14%	14%	**13%**
South West	6%	6%	9%	8%	**8%**
Wales	**10%**	**5%**	**5%**	**3%**	**6%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**

Table 8 shows that Yorkshire and the Humber, the East and the North West are each responsible for around one fifth of the gas consumed in factories. Table 2 shows that the North West contains 12% of factories in England and Wales, East contains 11% and Yorkshire and the Humber contains 11%. Table 3 shows that Yorkshire and the Humber and the North West regions contain 15% and 14% factory floor area respectively in England and Wales. This suggests these factories are larger than average, which may contribute to their high gas consumption.

Table 8: Proportion of gas consumption by region in England and Wales by building use using ND-NEED weighted matched sample data

Region	Factories	Offices	Shops	Warehouses	All Building uses
England	**92%**	**96%**	**95%**	**95%**	**93%**
North East	3%	4%	5%	6%	**5%**
North West	18%	11%	13%	11%	**17%**
Yorkshire and The Humber	19%	9%	10%	12%	**12%**
East Midlands	12%	10%	9%	13%	**11%**
West Midlands	7%	8%	10%	12%	**8%**
East	22%	12%	10%	12%	**15%**
London	4%	23%	17%	11%	**10%**
South East	4%	12%	14%	12%	**9%**
South West	3%	7%	8%	6%	**6%**
Wales	**8%**	**4%**	**5%**	**5%**	**7%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**

Non-domestic total consumption by region, 2020 to 2022 (ND-NEED meter level population)

This year, we have extended the electricity and gas consumption data to show previous years. This section shows how meter level consumption of non-domestic buildings has changed in the last three years, by region (see Tables 4a, 4b, 11a and 11b of the accompanying data tables for more details).

In 2022, electricity consumption from the ND NEED meter population fell by 0.3% on 2021, following an increase of 5% on 2020. Meanwhile, gas consumption fell by 5% in 2022 following a similar decrease of 5% in 2021. These patterns are similar to that seen in ND NEED weighted matched electricity and gas consumption over the last three years - see tables 8a-8d of ND-NEED 2024 for further details.

Figure 9a shows how electricity consumption has changed in the last three years by region in England and Wales. After a 6% fall in 2021, consumption in England remained broadly flat in 2022, with small increases in London and the South East offsetting reductions across all other regions. Consumption in Wales also fell by around 3%, following a 7% fall in 2021.

Figure 9a: Meter level electricity consumption of non-domestic buildings by region in England and Wales, 2020 to 2022

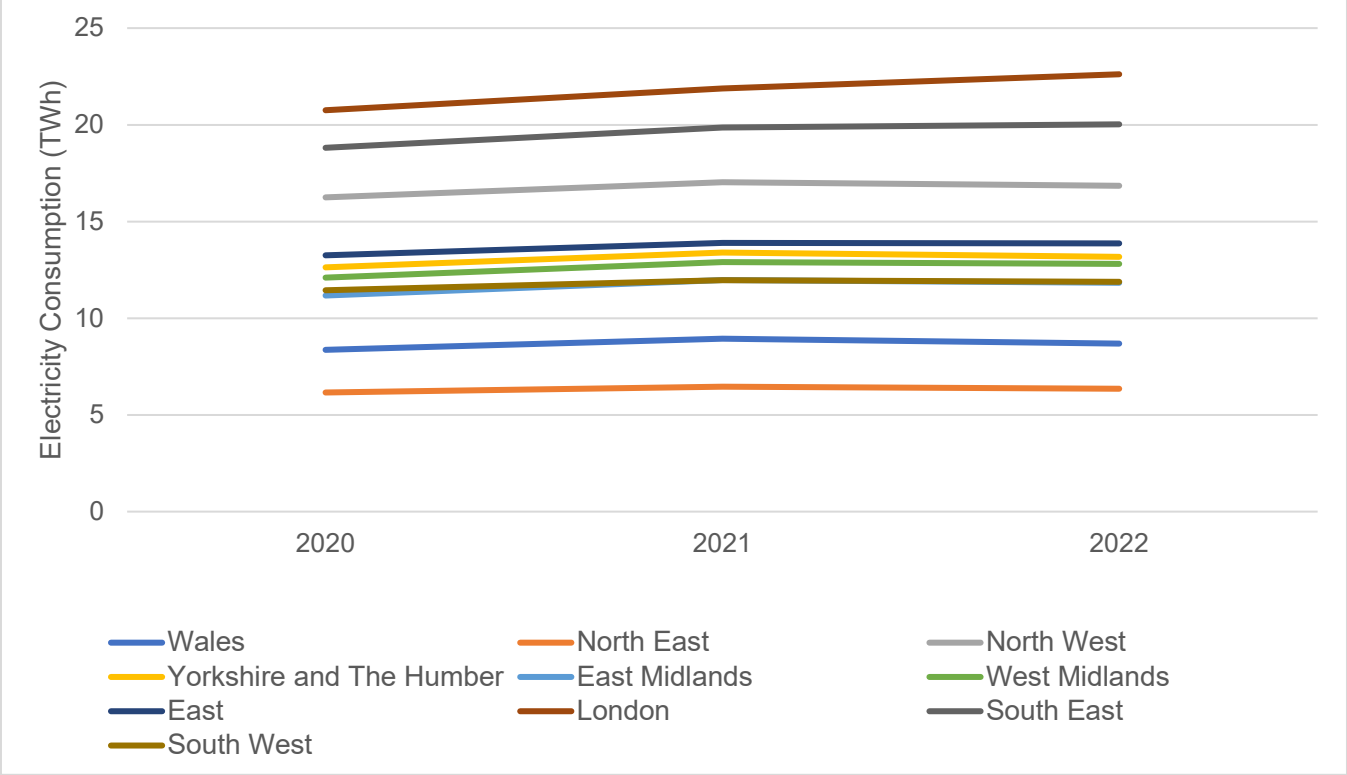
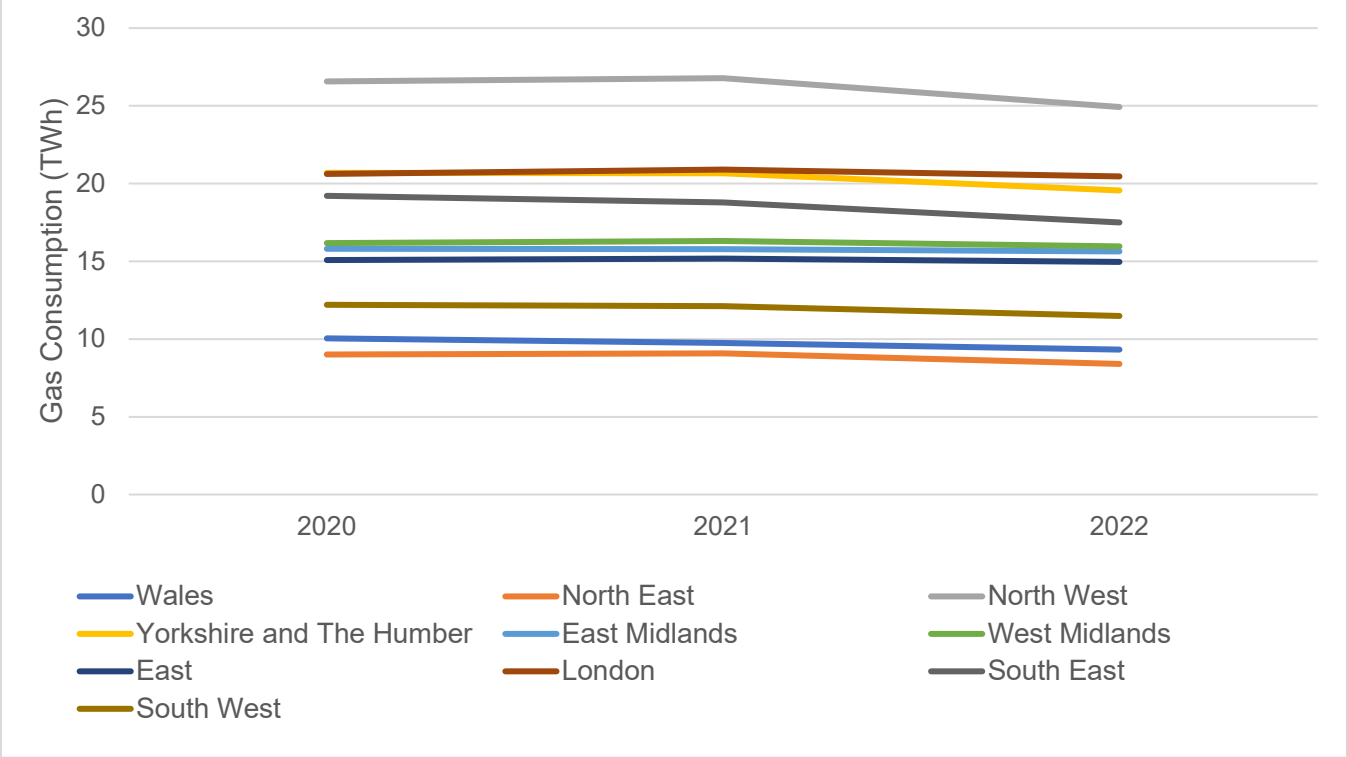


Figure 9b shows how gas consumption has changed in the last three years by region in England and Wales. With consumption in 2021 broadly unchanged from 2020, consumption in England fell by around 4% in 2022. Whilst all regions saw a fall in gas consumption in 2022, this was principally driven by 7% falls in each of the North West (the region with the highest gas consumption), the North East and the South East. Consumption in Wales also fell by around 4%, following a 3% fall in 2021.

Figure 9b: Meter level gas consumption of non-domestic buildings by region in England and Wales, 2020 to 2022



4. Method

To produce the results in the ND-NEED geographical annex two new datasets are created. These are:

The ND-NEED Geographical Annex dataset.

The ND-NEED Geographical Annex dataset is the ND-NEED dataset used in the main report, with geographical area information added.

The ND-NEED dataset contains all ND-NEED non-domestic buildings in England and Wales. It is based on the non-domestic ratings data from the VOA which contain all non-domestic hereditaments that pay business rates. This data is aggregated to the building level. Certain building uses are excluded as they are not considered to be buildings. This creates a dataset of 1,755,000 ND-NEED non-domestic buildings with information on their building use and building size.

These 1.8 million non-domestic buildings are then matched to electricity and gas consumption information held by DESNZ, using address matching. This matches around 51% of buildings to their electricity consumption data and 20% of buildings to their gas consumption data. Consumption from these 'matched' buildings is weighted to produce consumption figures for the whole non-domestic building population.

This dataset is used to produce geographical breakdowns of non-domestic building number, non-domestic floor area and non-domestic electricity/gas consumption (by building use only).

The ND-NEED Geographical meter dataset.

The ND-NEED Geographical meter dataset is the ND-NEED meter population dataset with geographical area information added.

The ND-NEED meter population dataset contains all non-domestic meters and is used in the main ND-NEED report to inform the weights used to scale up consumption of the matched buildings in the ND-NEED dataset.

This dataset is used to produce geographical breakdowns of non-domestic electricity and gas consumption.

Creating the ND-NEED Geographical Annex Dataset

The ND-NEED dataset contains all non-domestic buildings in England and Wales with information about their building use and building size. The following steps were taken to convert this to a geographical annex dataset.

Adding geographical area information

The ND-NEED dataset contains postcode information for over 99.6% of the UK's 1,755,000 non-domestic buildings. This enabled 1,749,000 buildings in the ND-NEED dataset to be matched against the ONS NSPL (May 2024) by postcode. This is summarised in Figure 10.

During matching, 6,000 buildings failed to match because their postcodes were not in the NSPL, leaving an ND-NEED Geographical dataset of 1,749,000 non-domestic buildings which have associated geographical area codes (region, LA, PC). This is 99.6% of the main ND-NEED dataset.

The region, LA and PC codes were matched against the codes in the ONS Names and Codes lookup tables to provide names for the PC, LA and regions (last updated May 2024 for PC and regions, and April 2024 for LA).

This year, we have changed our PC breakdowns in line with the new structure (under the 2023 boundary review). For more information, see Table 9 and House of Commons Research Briefing on PC boundaries. This has led to an increase in the number of parliamentary constituencies from 573 in 2023 to 575 this year.

Table 9: Change in parliamentary constituencies (PC's) from 2023 to 2024

Region	Old (removed) Parliamentary Constituencies	New (added) Parliamentary Constituencies
North East	Berwick-upon-Tweed Blaydon Blyth Valley Gateshead Jarrow Middlesbrough Newcastle upon Tyne Central Newcastle upon Tyne East North Tyneside North West Durham Sedgefield Stockton South Wansbeck Washington and Sunderland West	Blaydon and Consett Blyth and Ashington Cramlington and Killingworth Gateshead Central and Whickham Jarrow and Gateshead East Middlesbrough and Thornaby East Newcastle upon Tyne Central and West Newcastle upon Tyne East and Wallsend Newton Aycliffe and Spennymoor North Northumberland Stockton West Washington and Gateshead South
North West	Blackley and Broughton Blackpool North and Cleveleys Bolton South East City of Chester Copeland Denton and Reddish Eddisbury Ellesmere Port and Neston Garston and Halewood Halton Heywood and Middleton	Blackley and Middleton South Blackpool North and Fleetwood Bolton South and Walkden Chester North and Neston Chester South and Eddisbury Ellesmere Port and Bromborough Gorton and Denton Heywood and Middleton North Lancaster and Wyre Leigh and Atherton Liverpool Garston

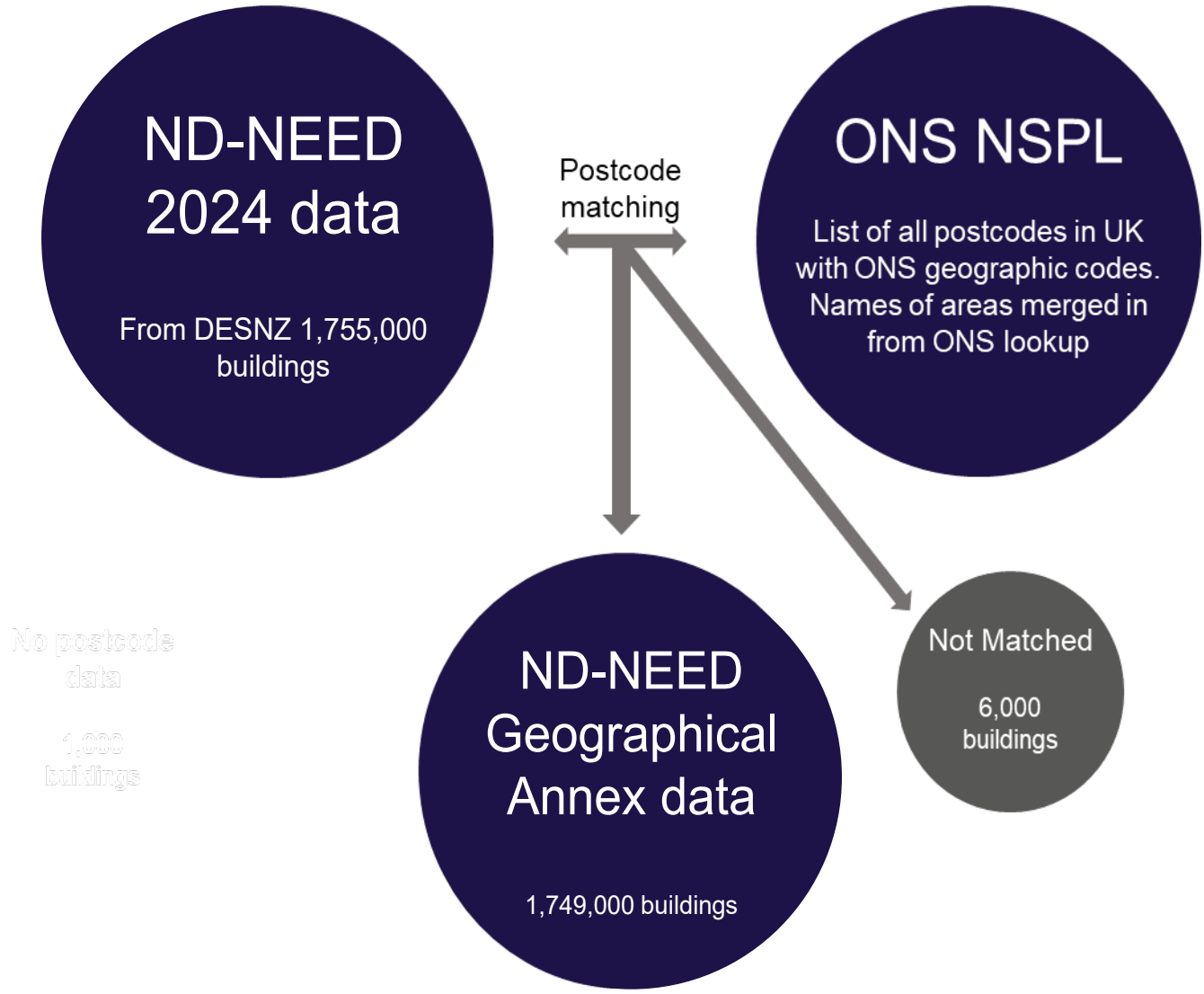
	Lancaster and Fleetwood Leigh Manchester, Gorton Oldham West and Royton Pendle Penrith and The Border Salford and Eccles Weaver Vale Wirral South Workington Worsley and Eccles South Wyre and Preston North	Manchester Rusholme Mid Cheshire Oldham West, Chadderton and Royton Pendle and Clitheroe Penrith and Solway Runcorn and Helsby Salford Whitehaven and Workington Widnes and Halewood Worsley and Eccles
Yorkshire and The Humber	Barnsley Central Barnsley East Batley and Spen Brigg and Goole Cleethorpes Dewsbury Don Valley East Yorkshire Elmet and Rothwell Great Grimsby Haltemprice and Howden Hemsworth Keighley Kingston upon Hull North Kingston upon Hull West and Hessle Leeds Central Leeds West Morley and Outwood Normanton, Pontefract and Castleford Pudsey Richmond (Yorks) Selby and Ainsty Wakefield Wentworth and Dearne Corby	Barnsley North Barnsley South Bridlington and The Wolds Brigg and Immingham Dewsbury and Batley Doncaster East and the Isle of Axholme Goole and Pocklington Great Grimsby and Cleethorpes Keighley and Ilkley Kingston upon Hull North and Cottingham Kingston upon Hull West and Haltemprice Leeds Central and Headingley Leeds South Leeds South West and Morley Leeds West and Pudsey Normanton and Hemsworth Ossett and Denby Dale Pontefract, Castleford and Knottingley Rawmarsh and CSouth Westonisbrough Richmond and Northallerton Selby Spen Valley Wakefield and Rothwell Wetherby and Easingwold
East Midlands	Bosworth Charnwood Corby Grantham and Stamford	Corby and East Northamptonshire Grantham and Bourne Harborough, Oadby and Wigston

	Harborough Nottingham North Rutland and Melton Sherwood Wellingborough	Hinckley and Bosworth Melton and Syston Mid Leicestershire Nottingham North and Kimberley Rutland and Stamford Sherwood Forest Wellingborough and Rushden
West Midlands	Birmingham, Hall Green Birmingham, Hodge Hill Burton Coventry North East Dudley North Dudley South Halesowen and Rowley Regis Ludlow Meriden Mid Worcestershire North Warwickshire Shrewsbury and Atcham Solihull South Staffordshire Stone Walsall North Walsall South Warley West Bromwich East West Bromwich West	Birmingham Hall Green and Moseley Birmingham Hodge Hill and Solihull North Burton and Uttoxeter Coventry East Droitwich and Evesham Dudley Halesowen Kingswinford and South Staffordshire Meriden and Solihull East North Warwickshire and Bedworth Shrewsbury Smethwick Solihull West and Shirley South Shropshire Stone, Great Wyrley and Penkridge Tipton and Wednesbury Walsall and Bloxwich West Bromwich
East of England	Broadland Bury St Edmunds Hitchin and Harpenden Luton South North East Bedfordshire Rochford and Southend East Saffron Walden South East Cambridgeshire South West Bedfordshire Southend West Waveney	Broadland and Fakenham Bury St Edmunds and Stowmarket Dunstable and Leighton Buzzard Ely and East Cambridgeshire Harpenden and Berkhamsted Hitchin Lowestoft Luton South and South Bedfordshire North Bedfordshire North West Essex Southend East and Rochford Southend West and Leigh St Neots and Mid Cambridgeshire Waveney Valley

London	Beckenham Bethnal Green and Bow Brent Central Brent North Bromley and Chislehurst Camberwell and Peckham Croydon Central Croydon North Edmonton Eltham Enfield, Southgate Hammersmith Hampstead and Kilburn Hornsey and Wood Green Kensington Lewisham West and Penge Lewisham, Deptford Streatham Vauxhall West Ham Westminster North	Beckenham and Penge Bethnal Green and Stepney Brent East Brent West Bromley and Biggin Hill Clapham and Brixton Hill Croydon East Croydon West Edmonton and Winchmore Hill Eltham and Chislehurst Hammersmith and Chiswick Hampstead and Highgate Hornsey and Friern Barnet Kensington and Bayswater Lewisham North Lewisham West and East Dulwich Peckham Queen's Park and Maida Vale Southgate and Wood Green Stratford and Bow Streatham and Croydon North Vauxhall and Camberwell Green West Ham and Beckton
South East	Brighton, Kemptown Brighton, Pavilion Buckingham Dover Fareham Henley Hove Isle of Wight Maidstone and The Weald Meon Valley Milton Keynes South Mole Valley North Thanet Reading East Reading West South Thanet South West Surrey Tonbridge and Malling Wantage Wealden	Bicester and Woodstock Brighton Kemptown and Peacehaven Brighton Pavilion Buckingham and Bletchley Didcot and Wantage Dorking and Horley Dover and Deal Earley and Woodley East Grinstead and Uckfield East Thanet Fareham and Waterlooville Farnham and Bordon Godalming and Ash Hamble Valley Henley and Thame Herne Bay and Sandwich Hove and Portslade Isle of Wight East Isle of Wight West Maidstone and Malling Mid Buckinghamshire Milton Keynes Central Reading Central Reading West and Mid Berkshire

		Sussex Weald Tonbridge Weald of Kent
South West	Bridgwater and West Somerset Bristol West Devizes East Devon Kingswood North East Somerset North Swindon North Wiltshire Somerton and Frome South Swindon Taunton Deane The Cotswolds Tiverton and Honiton Torridge and West Devon Totnes Wells	Bridgwater Bristol Central Bristol North East East Wiltshire Exmouth and Exeter East Frome and East Somerset Glastonbury and Somerton Honiton and Sidmouth Melksham and Devizes North Cotswolds North East Somerset and Hanham South Cotswolds South Devon Swindon North Swindon South Taunton and Wellington Tiverton and Minehead Torridge and Tavistock Wells and Mendip Hills
Wales	Aberavon Aberconwy Arfon Blaenau Gwent Brecon and Radnorshire Cardiff Central Carmarthen East and Dinefwr Carmarthen West and South Pembrokeshire Ceredigion Clwyd South Clwyd West Cynon Valley Delyn Islwyn Merthyr Tydfil and Rhymney Monmouth Montgomeryshire Neath Newport West Ogmore Preseli Pembrokeshire Rhondda Swansea East Vale of Clwyd	Aberafan Maesteg Bangor Aberconwy Blaenau Gwent and Rhymney Brecon, Radnor and Cwm Tawe Caerfyrddin Cardiff East Ceredigion Preseli Clwyd East Clwyd North Merthyr Tydfil and Aberdare Mid and South Pembrokeshire Monmouthshire Montgomeryshire and Glyndwr Neath and Swansea East Newport West and Islwyn Rhondda and Ogmore

Figure 10: Production of the ND-NEED geographical annex dataset



Rural/urban flag

The NSPL also contains information on whether a building is in a rural or urban location. This is used to add a flag to all non-domestic buildings in a rural rather than urban postcode, according to the ONS definition.

Off-gas grid flag

To determine whether a building was in an area where it could not reasonably connect to the gas National Transmission System – Great Britain's interconnected gas supply network ('the gas grid') - the Xoserve off-gas grid postcode dataset is used, as outlined below and summarised in Figure 11.

The Xoserve dataset contains all postcodes in the Great Britain that have no connections to the gas grid in 2024. This is then matched against the ND-NEED data by postcode. Where a building is in a postcode identified by the Xoserve dataset to have no buildings, domestic or non-domestic, with a connection to the gas distribution network, it is initially flagged as 'off-gas grid'. A total of 296,000 non-domestic buildings were flagged as off-gas grid.

The buildings flagged as off-gas grid were checked to see if they had a gas meter reading in 2022. There were 3,700 buildings marked as in a postcode with no buildings connected to the gas grid in 2024 but had a gas meter reading in 2022. The off-gas grid flag was removed from these buildings, leaving 292,000 off-gas grid buildings.

However, an unknown number of buildings are missing gas consumption data as described in the ND-NEED matched sample method section. It is therefore likely that more than 2,500 buildings marked as in an off-gas grid postcode consumed gas in 2022. Assuming that the address matching success rate for gas meters is similar to electricity data (about 51%), this suggests that the true number of buildings marked as in on off-gas grid postcodes, but consuming gas, to be 4,000-5,000. This would suggest that 292,000 off-gas grid buildings is a small overestimate.

All buildings not matched to an off-gas grid postcode, with no postcode or with a gas meter reading of greater than 0 kWh are considered to be 'on-gas grid'. This means that buildings that have chosen not to be connected to the gas grid are considered to be 'on-gas grid'.

Figure 11: Merging ND-NEED with Xoserve Off-Gas Grid data

Comparison with domestic off-gas grid method

The method used for estimating the number of domestic properties not connected to the gas grid differs slightly from that used here. It deducts the number of gas meters in a region from the number of properties. This method is less suitable for non-domestic buildings due to:

1. Deducting the number of gas meters in a region from the number of non-domestic buildings would overestimate the number of off-gas grid buildings. This is because low consuming non-domestic buildings are identified by address-matching; if a gas meter matches to an ND-NEED non-domestic building address, it is considered to be non-domestic. However, due to limitations of the address-matching algorithm, not all low consuming non-domestic meters are detected in ND-NEED. The number of gas meters is therefore an underestimate, causing the difference between the number of buildings and the number of gas meters to be too large.
2. The domestic approach would also capture buildings that lay in on-grid areas but have chosen not to connect.

Weighted Matched Sample Consumption Data

The ND-NEED Geographical Annex dataset contains 1,749,000 non-domestic buildings all of which have geographic area information, information about building use and building size (though 18% of buildings are missing building size information as described in the 'missing floor area' section) and rural/urban and off-gas grid flags.

A sample of around 51% of the buildings in this dataset also have electricity consumption information, and around 20% also have gas consumption information. This sample is scaled up with weights calculated based on a building's use and size, to remove bias in the matching process. This weighting does not take into consideration geographical biases in the matching process. This is described in the 'missing consumption data' section.

Information about the non-domestic building stock and energy use in each region, LA and PC could then be obtained by summarising this dataset. This could optionally be split or filtered by building use or building size.

This data was calculated based on the methods described in Table 10.

Table 10: Methods for summarising non-domestic building data by geography

Variable	Method
Total Number	Count the number of rows of data.
Floor Area, Weighted Electricity or Gas Consumption	Sum all values of non-domestic buildings' floor area or weighted electricity and gas consumption data, including zero values where the data is missing from ND-NEED.
Sample size of *variable*	Count the number of non-domestic buildings in the ND-NEED dataset with a non-zero and non-NA value for: Floor area; Electricity and Gas Consumption.
Share of *variable*	Divide variable for each geography by the England and Wales total and multiply by 100. The England and Wales total is taken as the matched ND-NEED Geographical Annex total, ignoring buildings that were not matched to a geography, to allow for direct comparisons between geographies. This was done for the following variables: Number of Buildings; Floor area; Energy, Electricity and Gas Consumption.

Disclosure: where there are fewer than five buildings in a consumption data point, or a building represents over 90% of the total, consumption data will be removed. Where there is only one geographical area (for example, region) that meets this condition, to avoid disclosure by residual, the next closest data point laying within the same upper level area (for example, country) is also supressed.

Missing floor area data in ND-NEED Geographical Annex dataset

In ND-NEED 2024 dataset, 319,000 (18%) of buildings do not have floor area data. This is because:

1. This information is missing from the VOA data that ND-NEED is based on (12%).

2. The floor area information is removed from the ND-NEED dataset because the data is believed to be unreliable - around 1% of the total ND-NEED floor area.
    a. This is done for all buildings with a floor area of less than 15m^2 (17%). This removes around 1,466,000m^2 of floor area.
    b. This is done for buildings in subsectors not used to inform the VOA's building rating (9%). This removes around 4,000,000m^2 of floor area. [20]

[20] For a full list of subsectors that have floor area removed for all ND-NEED buildings, please see Annex D in the methodology note of ND-NEED 2024.

This means that 319,000 (18%) of buildings in the ND-NEED Geographical Annex are also missing floor area data. The remaining buildings failed to match into the Geographical Annex due to missing or incorrect postcodes.

The exact amount of floor area missing from ND-NEED is not known and therefore cannot be accounted for. All floor area data presented is therefore believed to be an underestimate.

Table 11 shows the proportion of non-domestic buildings that are missing floor area data in each region, for the largest ND-NEED building uses. The 'Totals' column shows that there is not a huge difference between the number of non-domestic buildings in each region that are missing floor area data, so comparisons between regions can reasonably be made.

However, this is not the case for building uses. From Table 11, it can be seen that the proportion of buildings missing floor area information in the ND-NEED Geographical Annex dataset varies substantially between building uses. Floor area data has therefore only been presented for building uses where less than 20% of buildings are missing floor area data. For all of these building uses, the principal reason floor area data is missing is because it was removed from buildings with a floor area of <15m^2. This suggests that the absence of this floor area data doesn't have a large effect on the total floor area presented.

These building uses missing less than 20% of floor area data were: Factories; Offices; Shops; and Warehouses. The following remaining building uses were combined to create an 'All other building uses' category: Arts, Community and Leisure; Education; Emergency Services; Health; Hospitality; and Other. Around 54% of buildings in the 'All other building uses' category are missing floor area data.

Due to variations, floor area comparisons between building uses must be done with caution.

A full breakdown of total floor area and proportion of buildings missing floor area, by region and building use, is available in Table 2 in the accompanying data tables.

Floor area data is also presented at the LA and PC level for the four building uses where more than 80% of buildings have floor area present in the accompanying data tables (Table 2 and 9).

Table 11: Percentage of non-domestic buildings missing floor area data

Region	Factories	Offices	Shops	Warehouses	All other building uses	All building uses
England	**2%**	**14%**	**3%**	**6%**	**53%**	**18%**
North East	1%	12%	2%	9%	55%	**19%**
North West	2%	13%	2%	5%	53%	**17%**
Yorkshire and The Humber	3%	13%	3%	8%	55%	**19%**
East Midlands	1%	12%	3%	4%	51%	**16%**
West Midlands	2%	12%	3%	3%	49%	**14%**
East	1%	13%	3%	6%	53%	**19%**
London	9%	17%	4%	7%	35%	**14%**
South East	2%	14%	3%	6%	50%	**17%**
South West	2%	13%	3%	7%	67%	**26%**
Wales	**1%**	**14%**	**3%**	**11%**	**62%**	**24%**
England & Wales	**2%**	**14%**	**3%**	**6%**	**54%**	**18%**

Weighting the ND-NEED matched sample consumption dataset

ND-NEED matches VOA building stock data to meter level energy consumption data held by DESNZ using an address matching algorithm. However, this matching process is only able to match 2022 electricity consumption meter data to 859,000 buildings out of the 1,755,000 buildings in the ND-NEED dataset. Of these 859,000 buildings, 349,000 were also successfully matched to 2022 gas consumption meter data.

This means that consumption data for 896,000 non-domestic buildings is not available. In ND-NEED 2024, weights are used to scale up the ND-NEED sample consumption to the ND-NEED population level.

The ND-NEED weights take into account differences in the address matching rate between building use and building size. This is done by stratifying the building population and the matched sample based on a building's use and size, creating a matrix. For each cell, the population count is divided by the matched sample count. This creates a weight for each building.

This weighting for each building is then adjusted for electricity and gas consumption. The number of electricity or gas meters in the matched sample multiplied by their building weight is compared with the number of meters in the ND-NEED meter level population, split by consumption band and meter profile. The difference gives an electricity and gas weighting for each building in the matched sample. These weights allow the matched sample to represent the non-domestic building population in England and Wales.

However, this weighting process does not account for geography. Therefore, the ability to compare the data between geographical areas is dependent on the proportion of buildings that are missing consumption data being consistent between these areas.

Table 12 shows that this is broadly true for electricity consumption at the regional level with the number of non-domestic buildings missing 2022 electricity consumption data broadly similar (ranging from 46% to 52%) across the regions.

Note, it is assumed that all non-domestic buildings use electricity from the Great Britain National Grid, and therefore should have electricity consumption data in ND-NEED. Any building that does not have electricity consumption information is therefore considered to be missing this information.

Table 12: Number of non-domestic buildings with 2022 electricity consumption data in ND-NEED 2024

Region	Number of buildings	Number of buildings with electricity data	Proportion of buildings with electricity data
England	**1,638,000**	**807,000**	**49%**
North East	75,000	39,000	52%
North West	223,000	108,000	49%
Yorkshire and The Humber	181,000	88,000	49%
East Midlands	138,000	69,000	50%
West Midlands	166,000	81,000	49%
East	175,000	86,000	49%
London	241,000	114,000	47%
South East	243,000	121,000	50%
South West	197,000	101,000	51%
Wales	**110,000**	**50,000**	**46%**
Total	**1,749,000**	**857,000**	**49%**

Table 13 shows the number of non-domestic buildings with 2022 gas meter readings in the ND-NEED matched sample, split by region. It shows that the proportion of all non-domestic buildings that have gas meter data is similar (18% to 22%) across the regions. This suggests that regional comparisons are reasonable.

Note, as not all non-domestic buildings are thought to have a gas connection the proportion of non-domestic buildings missing gas consumption information cannot be calculated. To assess the validity of comparing gas consumption data between regions we therefore rely on the assumption that the proportion of buildings with gas connections is similar between regions.

Table 13: Sample size of non-domestic buildings with 2022 gas consumption data in unscaled ND-NEED matched sample

Region	Number of buildings	Number of buildings with gas data	Proportion of buildings with gas data
England	**1,638,000**	**328,000**	**20%**
North East	75,000	15,000	20%
North West	223,000	49,000	22%
Yorkshire and The Humber	181,000	38,000	21%
East Midlands	138,000	28,000	21%
West Midlands	166,000	33,000	20%
East	175,000	31,000	18%
London	241,000	50,000	21%
South East	243,000	48,000	20%
South West	197,000	36,000	18%
Wales	**110,000**	**20,000**	**18%**
Total	**1,749,000**	**348,000**	**20%**

This data is also available split by building uses in Tables 7A and 7B of the accompanying data tables.

However, this data cannot be presented at PC and LA level. The extra granularity means that there are large differences in the proportion of buildings missing consumption data between geographies. As the weighting process does not take into account these differences between geography, the weighted matched sample does not represent the population at these levels.

Creating the Geographical ND-NEED meter dataset

This method uses meter-level data from the 2,332,000 electricity and 621,000 gas meters in non-domestic buildings in England and Wales (the ND-NEED meter population).

The electricity and gas meters are matched to the ONS NSPL (May 2024) by postcode to obtain their associated geographical area codes (region, LA, PC). Due to missing postcodes, 12,800 electricity meters and 7,100 gas meters could not be matched. A further 40,900 electricity and 3,700 gas meters with postcodes failed to match to an active postcode in the NSPL.

The region, LA and PC codes were then matched against the codes in the ONS Names and Codes lookup tables to provide names for the PC, LA and regions (last updated July 2024 for PC and regions, and April 2024 for LA). This created the Geographical ND-NEED meter dataset which contains 2,332,000 electricity meters and 621,000 gas meters, with information about their geographical location. This is summarised in Figure 12.

Information about the energy use in each region, LA and PC could then be obtained by summarising this dataset.

The key advantage of this method is that all electricity and gas consumption from all non-domestic buildings is captured. This allows meaningful comparisons of consumption between all geographical area.

However, as the meters have not been matched to the corresponding non-domestic building the data cannot be broken down by building use or building size or provide any information on the distribution of the non-domestic building stock.

In keeping with the method use for the Subnational consumption data, which provides the basis for this dataset, data for any geographical areas that contain less than five meters, or where two meters represent over 90% of the total, will be removed. Where there is only one geographical area (for example, parliamentary constituency) that meets this condition, to avoid disclosure by residual, the next closest data point - laying within the same upper level area (for example, region) - to also meeting the condition is also suppressed. The total for the upper level area remains unchanged. In this year's data, no areas have been suppressed.

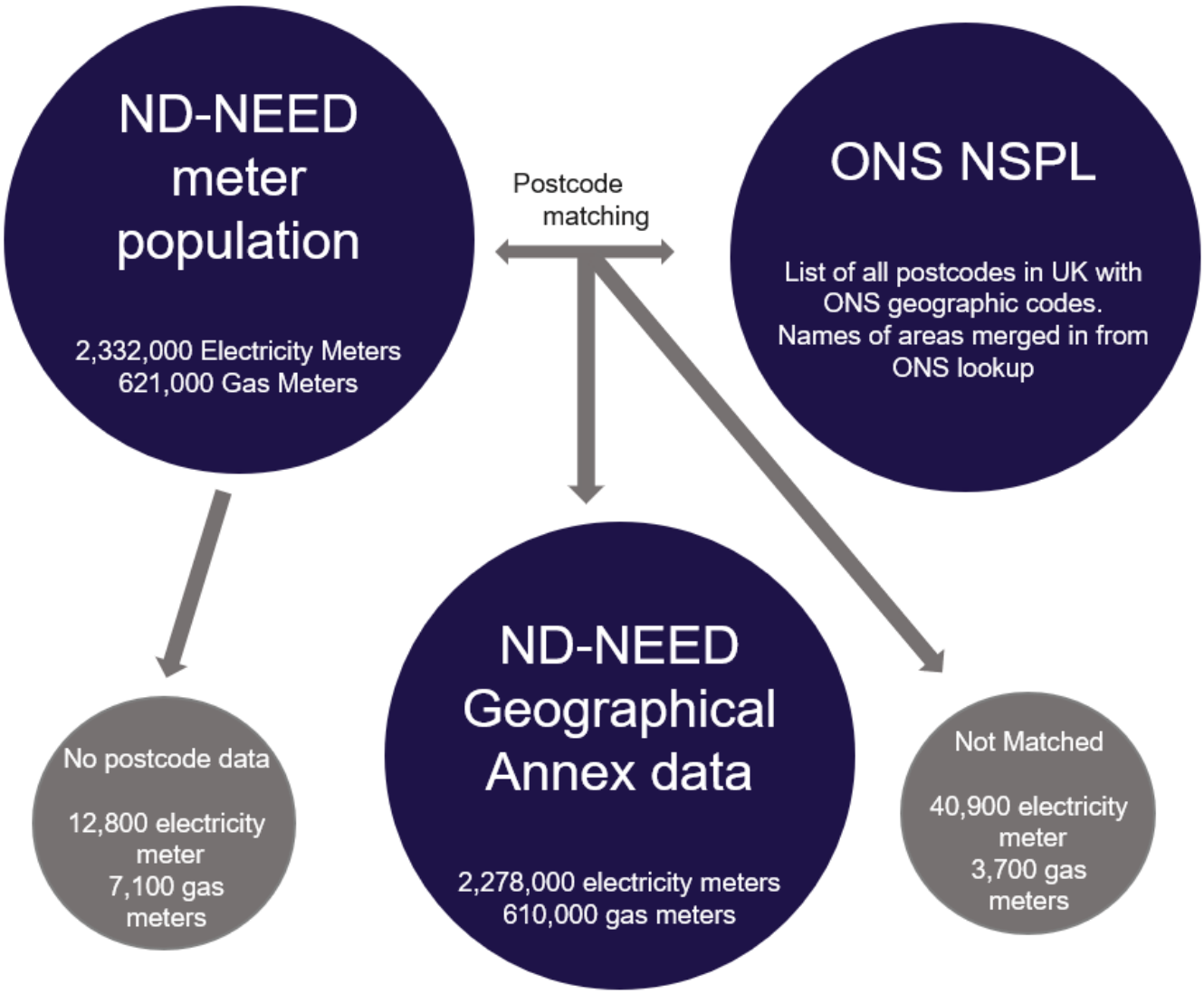
Note, the ND-NEED meter population dataset contains all non-domestic electricity and gas meters in England and Wales. This means it includes meters that are located in 'non-buildings' such as car parks.

Consumption from these 'non-buildings' is excluded from the ND-NEED 2024 consumption totals. However, as the meters in the ND-NEED meter population dataset have not been associated with their corresponding building, the meters in these 'non-buildings cannot be identified for removal.

The inclusion of these 'non-buildings' will inflate the consumption of the ND-NEED meter population by 10-15%.

More information on non-buildings can be found on page 23 of the ND-NEED 2024 report.

Figure 12: Production of the Geographical ND-NEED meter dataset



Comparing the measures of non-domestic consumption

Two methods of presenting non-domestic electricity and gas consumption have been presented: the weighted version of the matched ND-NEED sample; and the ND-NEED electricity and gas meter population used to create the sample. A third way is published in the Subnational electricity and gas consumption statistics. Table 14 summarises the key differences between these measures.

Table 14: Comparison of measures of non-domestic consumption

Comparison		ND-NEED buildings: weighted matched sample	ND-NEED meter population	Subnational consumption statistics: Non-domestic consumers
Non-domestic coverage		All non-domestic buildings that pay business rates, excluding 'non-buildings'	All electricity meters of profile 3+ and gas meters with annual consumption of >73 MWh, *plus* smaller non-domestic building consumers falling outside these bands	All electricity meters of profile class 3 to 8 and half-hourly meters + and gas meters with annual consumption of >73 MWh
Geographical coverage		England and Wales	England and Wales	Great Britain
England & Wales 2022 consumption	**Electricity (GWh)**	122,452	143,011	142,384
	Gas (GWh)	156,064	160,853	153,631
England & Wales 2022 meters	**Electricity**	n/a	2,331,729	2,239,837
	Gas	n/a	620,636	224,467
Geography split		Regions	LA and PC	LA (and below)
Non-Domestic building use split		ND-NEED categories	No	No
Includes non-domestic "non-buildings"?		No	Yes	Yes
Includes smaller[21] non-domestic building consumers?		Yes	Yes	No

[21] Non-domestic buildings with electricity meters in profiles 1 or 2, and/or gas meters with consumption of less than 73.2MWh. These would be considered domestic in Subnational energy consumption data.

Validating the regional breakdown of ND-NEED weighted matched sample consumption data against ND-NEED meter level consumption data

The assumption that the ND-NEED matched sample is not regionally biased can be checked by comparing the ND-NEED weighted matched sample against the ND-NEED meter level population.

The ND-NEED meter level dataset includes consumption from 102,000 establishments that ND-NEED considers not to be buildings ('non-buildings'), and therefore are excluded from the ND-NEED 2024 dataset. The 21 TWh electricity and 5 TWh gas consumption difference between the meter level data and the weighted sample is therefore likely to be due to consumption from the 'non-buildings'.

However, assuming that the proportion of consumption from non-buildings is evenly distributed between the regions, a direct comparison, shown in Table 15, can be made between the proportion of consumption between the meter level data and the weighted matched sample.

Table 15: Comparison of proportion of non-domestic building consumption between meter level data and weighted matched sample.

Region	Share of electricity consumption (%)			Share of gas consumption (%)		
	Meter level	Weighted Matched Sample	Meter level minus sample difference (Percentage Point)	Meter level	Weighted Matched Sample	Meter level minus sample difference (Percentage Point)
England	**93.7%**	**94.0%**	**-0.3%**	**94.1%**	**92.6%**	**+1.5%**
North East	4.6%	5.4%	-0.8%	5.3%	4.5%	+0.8%
North West	12.2%	15.1%	-2.9%	15.8%	17.0%	-1.2%
Yorkshire and The Humber	9.5%	10.5%	-1.0%	12.4%	12.2%	+0.2%
East Midlands	8.6%	8.9%	-0.3%	9.9%	10.5%	-0.6%
West Midlands	9.3%	9.1%	+0.2%	10.1%	7.9%	+2.2%
East	10.0%	9.5%	+0.5%	9.5%	14.5%	-5.0%
London	16.4%	14.5%	+1.9%	12.9%	10.0%	+2.9%
South East	14.5%	13.1%	+1.4%	11.1%	9.5%	+1.6%
South West	8.6%	7.8%	+0.8%	7.3%	6.4%	+0.9%
Wales	**6.3%**	**6.0%**	**+0.3%**	**5.9%**	**7.4%**	**-1.5%**

This shows that the proportion of electricity and gas consumed by non-domestic buildings in each region is quite strongly correlated with the meter level consumption data and the weighted matched sample data (92% correlation for electricity and 80% for gas).

For example, according to ND-NEED meter level data, electricity consumption in the North East makes up 4.6% of the total for England and Wales and 5.4% of the total electricity consumption in the ND-NEED matched sample, a difference of 0.8%. For both electricity and gas consumption, there is less than 2.9 percentage points difference in the proportions between meter level data and weighted matched sample data for most regions, with the exception of gas in the East at 5.0 percentage points.

Consumption data using both meter level data and weighted matched sample data is available in the accompanying tables at regional level.

The strong correlation at regional level between the meter population and the weighted matched sample is not seen once the consumption is broken down into smaller geographical areas. The extra granularity in the breakdown of the data makes any geographical bias in the weighted matched sample more visible. This causes the correlation between meter level consumption and the weighted matched sample consumption at PC level to drop to 72% for electricity and 61% for gas. Furthermore, in 12% of PCs the weighted matched sample consumption value is more than 50% larger or smaller than the meter level data. This data is therefore not presented in the data tables.

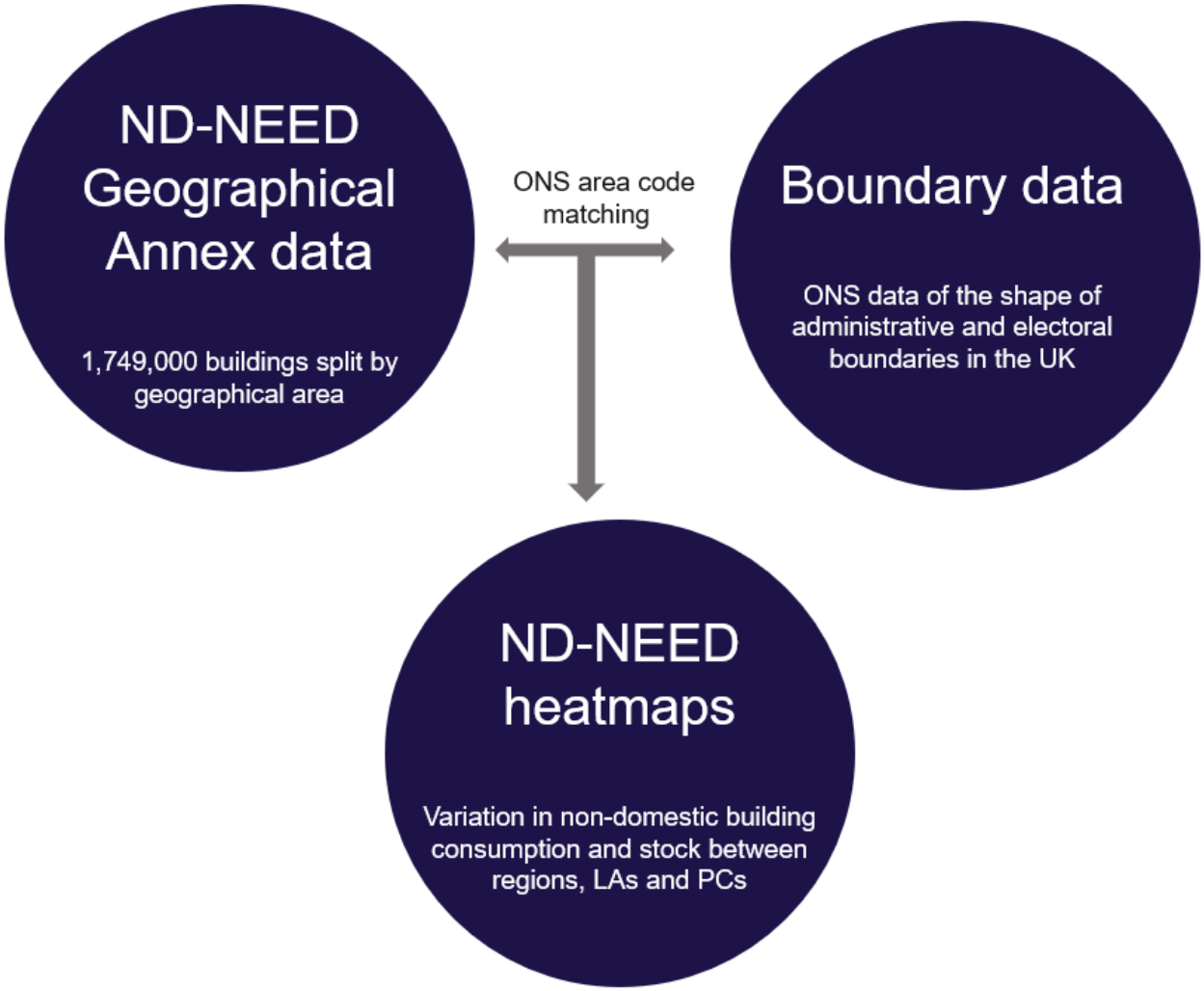
Creating Geographical ND-NEED maps

The ND-NEED Geographical Annex dataset was also matched to ONS boundary shapefiles of each PC (updated July 2024) or LA (updated May 2024) by PC code or LA code respectively. This is summarised in Figure 13

Region boundaries were calculated by grouping PCs together by region and merging boundaries to form regional boundaries. The regional boundaries could then be matched to the regional ND-NEED data by region name.

Heatmaps could then be produced, by filling each PC’s, LA’s or region’s boundaries with a colour based on the concentration of a variable in each geography. This was done using the R Leaflet package. As it was common for most areas to have values closer to the median than to the outliers, a base 10 log scale was used to determine the colour scales, allowing the heatmaps to show differentiation between areas more clearly.

Figure 13: Production of the Geographical ND-NEED heatmaps



5.Further information

Accompanying tables

The following tables are available on the department's statistics webpage for ND-NEED:

At regional level:

- Table 1 shows the number of ND-NEED non-domestic buildings, by building use*.
- Table 2 shows the floor area of ND-NEED non-domestic buildings, by building use*.
- Table 3A shows the number of ND-NEED non-domestic off-gas grid buildings, by rural and urban.
- Table 3B shows the number of off-gas grid ND-NEED non-domestic buildings, by building use.
- Table 4A shows the electricity consumption from ND-NEED meters*.
- Table 4B shows the gas consumption from ND-NEED meters*.
- Table 5 shows the ND-NEED number of non-domestic buildings larger than 1,000m^2, by building use*.
- Table 6 shows the ND-NEED number of non-domestic buildings smaller than or equal to 1,000m^2, by building use*.
- Table 7A shows the scaled ND-NEED non-domestic electricity consumption, by building use*.
- Table 7B shows the scaled ND-NEED non-domestic gas consumption, by building use*.

At local authority level:

- Table 1 shows the number of ND-NEED non-domestic buildings, by building use*.
- Table 2 shows the floor area of ND-NEED non-domestic buildings, by building use*.
- Table 3A shows the number of ND-NEED non-domestic off-gas grid buildings, by rural and urban.
- Table 4A shows the electricity consumption from ND-NEED meter population, over time*
- Table 4B shows the gas consumption from ND-NEED meter population, over time*

At parliamentary constituency level:

- Table 8 shows the number of ND-NEED non-domestic buildings, by building use. *
- Table 9 shows the floor area of ND-NEED non-domestic buildings, by building use.
- Table 10 shows the number of off-gas grid ND-NEED non-domestic buildings, by rural and urban*.
- Table 11A shows the electricity consumption from ND-NEED meter population, over time.
- Table 11B shows the gas consumption from ND-NEED meter population, over time.

Future updates to these statistics

The next release of these statistics is intended to be following the main ND-NEED publication, the next update of which is planned for the summer of 2025.

The following updates will also be considered for future editions:

- With regards to the ND-NEED matched sample consumption data, an improved weighting method will be considered. This may include adapting the weighting methodology to take into account geographical biases in the ND-NEED matched sample. This would allow building use level consumption data to be presented at a LA and PC level.
- Additional analysis and weighting will be considered to improve the reliability of floor area data. This would allow floor area data to be presented for more building uses.
- The publication of geographical breakdowns of ND-NEED consumption and building stock data for additional years, prior to those presented here, will be considered.

Related statistics

The Non-Domestic National Energy Efficiency Data-Framework 2024

Previous release of the ND-NEED statistics, August 2024.

Non-domestic National Energy Efficiency Data-Framework: energy statistics 2006-2012

Previous release of the ND-NEED statistics, March 2015.

The non-domestic National Energy Efficiency Data-Framework (ND-NEED)

Overview of the concept of ND-NEED, known issues, plans for improvement, preliminary results and the proposed weighting methodology, May 2014.

National Energy Efficiency Data-Framework (NEED)

Summary statistics of domestic energy consumption 2005-2022, June 2024.

Revisions policy

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

Code of Practice for Statistics compliance

These official statistics comply with the standards of trustworthiness, quality and value in the Code of Practice for Statistics.

These data support geographical analysis of non-domestic buildings electricity and gas consumption, as well as off-gas grid analysis. Data and processing undergo careful quality assurance, and users are kept informed about significant changes. Details of key data limitations can be found within the relevant coverage and data limitation sections of the method section, as well as the main ND-NEED 2024 methodology note.

Our statistical practice is regulated by the Office for Statistics Regulation (OSR). OSR sets the standards of trustworthiness, quality and value in the Code of Practice for Statistics that all producers of official statistics should adhere to. You are welcome to contact us directly (energyefficiency.stats@energysecurity.gov.uk) with any comments about how we meet these standards. Alternatively, you can contact OSR by emailing regulation@statistics.gov.uk or via the OSR website.

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: energyefficiency.stats@energysecurity.gov.uk.

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

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This publication is available from: https://www.gov.uk/government/collections/non-domestic-national-energy-efficiency-data-framework-nd-need

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