

Classification of energy inefficiency in the private rental sector for England and Wales: Cluster names and descriptions

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Pen portraits

This document provides a pen portrait for each of the nine clusters identified as part of the classification of energy inefficiency in the private rental sector for England and Wales. Pen portraits provide a description of the likely characteristics of the population and housing in areas classified in the same cluster type. They are descriptive and intended to be for illustrative purposes only. Further details of the methodology used to derive the clusters are available in the accompanying publication: “A spatial typology of energy (in)efficiency in the private rental sector in England and Wales using Energy Performance Certificates” in Environment and Planning B.

	Cluster name	Cluster characteristics based on EPC variables	Geography of clusters	Number OA	Demographic characteristics based on comparison with Census 2021
	Sparse energy efficiency	This cluster type has the lowest median number of private rental properties of all cluster types. Low values are reported across all energy inefficiency variables, and few properties have an energy rating of D or below.	Geographically spread across England and Wales, especially the suburbs of major cities, and less remote rural areas.	89188	Population in these areas largely consist of larger families with children, more likely than other cluster types to be living in a property that they own. Families are more likely to have at least 3 children, however, this does not have a big impact on the floor-space population density. Population is less likely to have attended higher education, more likely to be UK born and to work flexible hours. A higher proportion of people report bad or very bad health.
	Remote intense inefficiency	High number of properties are off the gas grid, built prior to 1900. Houses with rating F or below play a disproportionate role in the private rental sector in these areas. Although the role of the private rental sector is lower in these areas, they have the highest proportion of private rental properties compared to other relatively rural clusters.	Spatially concentrated in relatively remote rural areas.	919	Population in these areas is typically older and more likely to be economically inactive or work part time. They are more likely to own at least one car and very unlikely to be socially rented. These areas have the highest proportion of people born in UK of all cluster types.
	Dense electrified efficiency	These areas have the highest proportion of private rental properties. They are often off-gas properties relying on electricity due to the high number of high-rise buildings. Properties are primarily flats and terraced properties that are relatively energy efficient, but there is still a proportion of private rental properties with D or E rating.	Spatially concentrated in city centres, typically where new flat buildings are constructed.	806	This cluster has the most clearly defined population. There is a low proportion of families, with more couples and single households that do not own a car. Properties are very unlikely to be owned by their occupants and very likely to be privately rented. Mainly young professionals working full-time or full-time students with a university education and good health. The proportion of people not born in the UK is high in this cluster type.
	Diverse efficient pockets	Relatively low values are reported across all energy inefficiency variables, although there is a slightly	Sparsely distributed across cities,	13393	Population is mainly older, likely to be economically inactive, and more likely to work part time. They are likely

		higher proportion of properties rated F or below, without mains gas heating access, when compared to the <i>Sparse energy efficiency</i> cluster.	towns and rural areas.		to own at least one car and own their property. Other demographic variables indicate a mixed population, however there is a lower likelihood of people being born outside UK.
	Peripheral inefficient houses	There is a relatively high number of private rental properties in these areas, with a typically low energy efficiency rating of D or below but with access to the mains gas network. Areas have a high number of terraces and houses that tend to have inefficient walls.	Primarily concentrated in cities (but not the centre) and towns. Tendency to spatially cluster where properties have been built at the same time.	4888	There is a tendency for larger (especially 5-7 member) households that are more likely than other cluster types to have at least 1 or 2 children. The population are more likely to have no qualifications. People living in these areas are more likely to occupy smaller spaces based on the floor-space population density.
	Electrified terraces and flats	Areas in the cluster type typically have a high proportion of private rental properties. Properties are less likely to have an efficiency rating of D or below than many other clusters. However, they are often off the gas grid and reliant on electricity. This means that mains heating and hot water are often inefficient.	Primarily spread across cities, and towns, in a relatively fragmented way.	4223	The population in this cluster is less well defined compared to other types, however, there is a lower likelihood of older persons or families with a high number of children. There is a slightly higher proportion of people in full time employment, live in socially rented properties and be born outside of UK. This cluster has the highest floor-space population density, meaning the population here is more likely to live in smaller spaces.
	Energy efficient suburbs	Relatively efficient houses on the peripheries of cities with a lower number of private rental properties. Slightly high proportion of privately rented houses compared to the <i>Sparse energy efficiency</i> and <i>Diverse efficient suburbs</i> cluster types.	Often concentrated in the suburbs and peripheries of major cities and towns.	25240	Population in these areas are characterised by a high proportion of families with children. Moreover, the number of children in each family is likely to be higher, which makes the floor-space population density slightly elevated. They are more likely to own their house but less likely to have participated in higher education.
	Older intensely inefficient pockets	High number of private rental properties are found in these areas. A particularly high proportion of houses were built prior to 1900, with many rated D and below, or F and below.	Concentrated spatially in city centres, especially coastal towns and Greater London.	2512	The population in these areas is more likely to be childless and younger, less likely to own a property and slightly more likely to live in privately rented property. Some of the population is educated to a

		This is the least energy efficiency urban cluster. Properties are primarily houses and terraces, with energy inefficient walls.			higher level, but there is a high proportion of students and unemployment.
	Peripheral inefficient flats and terraces	There is a relatively low number of private rental properties in these areas that tend to be moderately inefficient and have access to the gas network. Properties are typically houses or terraces with poor quality walls.	Spatially concentrated on the peripheries of cities, and towns.	10721	The demographics of this cluster are mixed compared to other types however we observe a higher proportion of socially rented properties.