CREATING RESILIENCE

Energy analysis and prospects of the German housing stock

VIEWPOINT

The German housing stock offers great potential for energy-efficient improvements and thus for sustainable value enhancement.

CBRE RESEARCH
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Sustainability becomes a must – buildings in transition

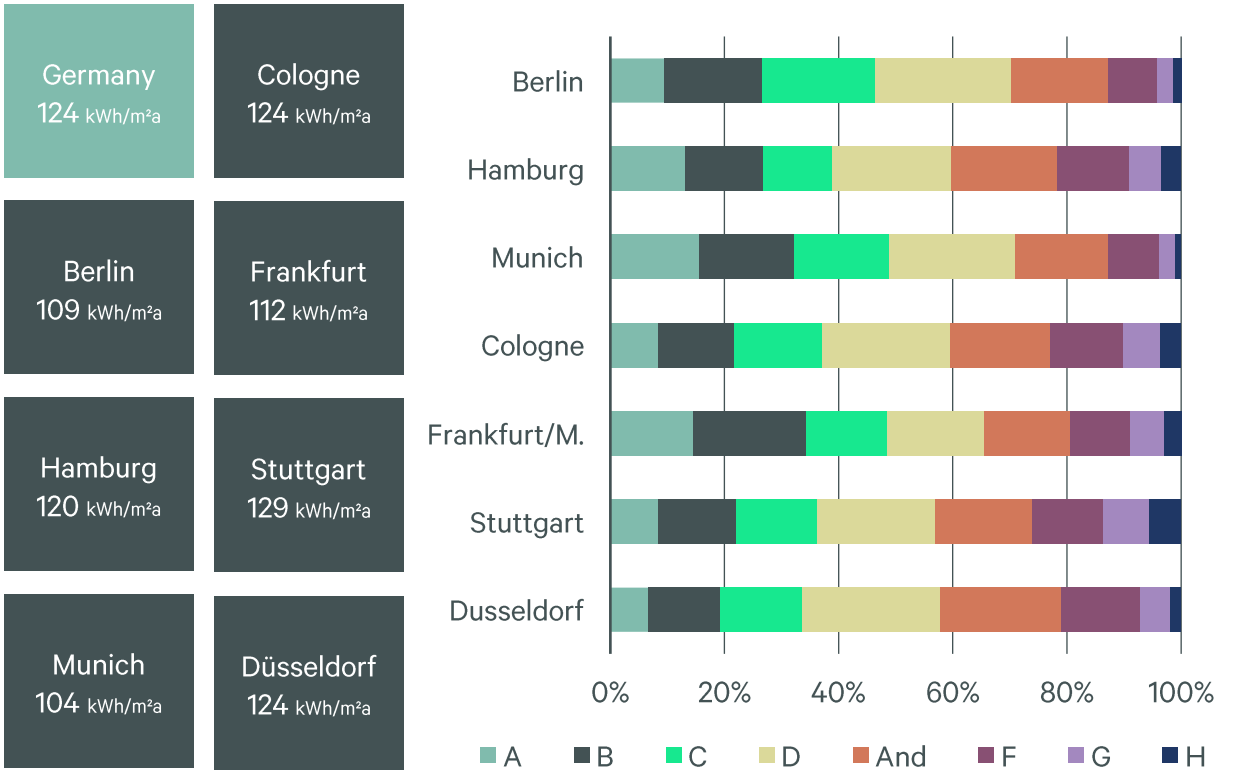
Rising CO_2 costs and depreciation of energy-inefficient buildings make the transformation of the building sector an economic necessity. Poor energy performers are increasingly losing market value and causing higher operating costs.

The current housing stock in Germany corresponds to energy efficiency class D

With the revised EU Building Directive Energy Performance of Buildings Directive 2024 (EPBD 2024) and the national CO_2 price, real estate companies, investors and planners are facing a profound change. The EPBD obliges Member States to gradually introduce minimum energy performance requirements (MEPS) for existing buildings. The directive provides for staggered renovation targets up to 2030 and beyond, covering both non-residential and residential buildings. The focus is on the most energy-inefficient portfolios. These regulatory developments mark the transition from voluntary sustainability to binding decarbonization.

Against this background, the current energy performance of the housing stock in Germany was analysed on the basis of a representative sample of housing advertisements based on data from Value AG. As a result, statements can be made about the energy potential in existing buildings and aspects for the successful transformation of the building sector can be identified.

Figure 1: Primary energy consumption in the top 7 cities and distribution of energy efficiency classes



Source: CBRE Research based on Value AG

Overview: Energy efficiency classes – differences between Germany and Europe

Almost 40% of global CO_2 emissions are attributable to the building and construction sector. The European Building Directive EPBD 2024 aims to significantly reduce energy consumption and thus emissions in existing buildings, thus placing the energy efficiency of real estate at the centre of regulation. To this end, energy efficiency classes from A (best) to H (worst) have been introduced based on primary energy consumption per square metre and year. These will be an important value driver of real estate in the future.

Implementation will be carried out via binding restructuring targets. For non-residential buildings, the worst 16% by 2030 and the worst 26% by 2033 will have to meet the minimum standards set. For residential buildings, the national average consumption* is reduced by at least 16% by 2030 and by 20-22% by 2035. At least 55% of these savings must be achieved by renovating the buildings with the worst energy efficiency. These requirements de facto create a remediation obligation for classes H, G, F and in parts of E.

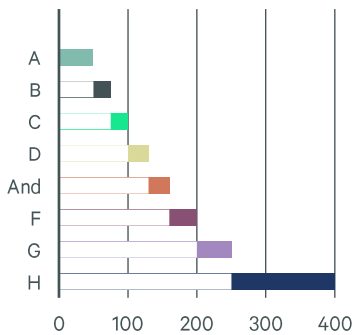
While the EPBD sets uniform targets, there are national differences in the thresholds, as climate, building stock and energy infrastructure vary. A class D building in Germany can be assessed differently in other EU countries. These divergences complicate international comparability and require locally adapted risk analyses.

On the market side, two effects are gaining in importance: the 'Green Premium' for rents and the 'Brown Discount' for purchase prices. Energy-efficient apartments (class A) achieved rent premiums of up to more than 30% compared to class H between Q1 2022 and Q2 2025. Even if the year of construction and equipment play a role, there is an independent price effect of energy efficiency. This premium is reflected in the transaction market, where renovation costs are priced in accordingly. Evaluations by Value AG** data show discounts of over 40% for unrefurbished portfolios compared to top assets.

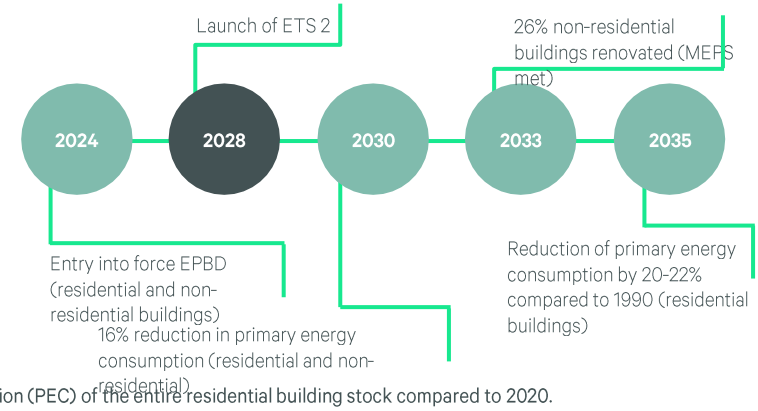
The costs of CO_2 emissions will rise in the medium term. The Fuel Emissions Trading Act regulates the CO_2 costs for heating energy in Germany. While a price corridor of 55-65 euros per emission allowance will be set until the end of 2026, from 2028 onwards the price will be determined within the framework of the European Emissions Trading Scheme (EU-ETS 2) via a free trading mechanism. It can be assumed that CO_2 costs will rise significantly.

Figure 2: Energy efficiency and decarbonisation pathway

Energy efficiency classes (in kWh/m²a)



Milestones for Energy Efficiency and Emissions Trading: EPBD & ETS 2 at a Glance



*The reduction refers to the average primary energy consumption (PEC) of the entire residential building stock compared to 2020.

**Note: The rental and purchase prices shown are based on asking prices from apartment advertisements that have been evaluated by Value AG. They do not represent the actual portfolio and transaction prices.

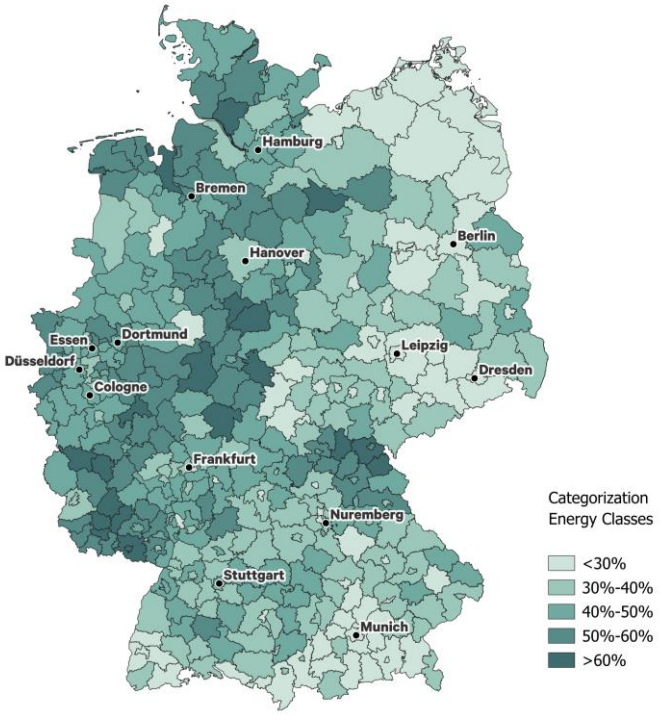
Regional differences in the energetic condition of the housing supply

In order to assess the need for renovation regionally, housing offers with energy certificates were aggregated at district level on the basis of data from Value AG. Especially when analysing the distribution of properties with energy efficiency class E or worse, regional differences in the energy condition of the German housing stock become clear.

In the north-western German districts, the proportion of buildings with poor energy efficiency is sometimes over 50%. In contrast, numerous districts in southern and eastern Germany show a significantly better condition of buildings. In some cases, the proportion of buildings with energy class E or worse is less than 30%, which indicates a comparatively high-quality and energy-efficient renovated building stock.

The reasons for this are manifold and range from structural peculiarities, such as a stronger connection to the district heating network or standardised buildings with few external walls, to comprehensive modernisation measures, e.g. through various funding programmes. Often the stands are also much younger than in the northwest.

Figure 3: Proportion of existing buildings with energy class E and worse



Source: CBRE Research based on Value AG

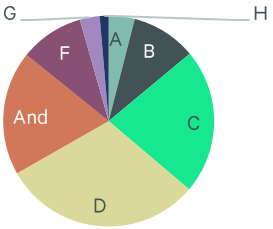
Analyzed energy certificates of housing offers

2.1 million

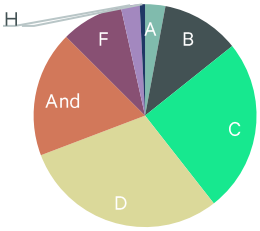
Average primary energy consumption in Germany (kWh/m²a)

124,1

Distribution of energy efficiency classes for condominium purchase offers



Distribution of energy efficiency classes for rental offers



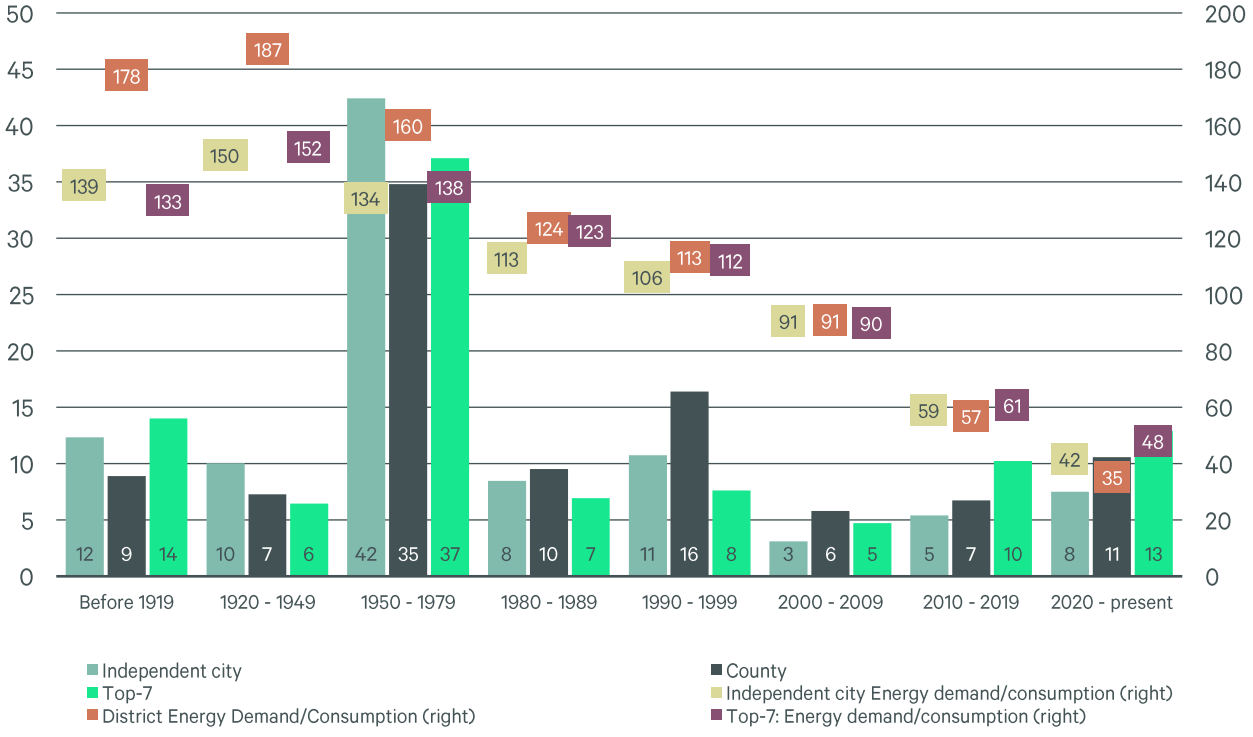
Energy efficiency differences between urban and rural areas depending on the years of construction

In the last century, the energy efficiency of buildings has improved significantly through innovations such as heating technologies and insulation. As a result, energy consumption fell sharply. Today, new buildings require around 45 kWh/m² p.a., 70% less than unrenovated buildings from the 1920–1949 construction period.

There are significant differences in energy efficiency between urban and rural areas, which are influenced by the construction period. Many buildings in German cities date from the years 1950 to 1979. At that time, the most important thing was the rapid provision of housing, energy standards played a subordinate role. rban densification has provided advantages, e.g. because district heating networks have been expanded and more efficient heating systems have been used in apartment buildings. In rural areas, detached and semi-detached houses with less efficient individual heating systems dominate, which increases the energy consumption of buildings in this construction period. The renovation of existing buildings in this age group would have the greatest effect on overall efficiency in Germany.

From the 1980s onwards, this development was reversed. The strong suburbanisation, first in western Germany and from the 1990s also in eastern Germany, led to a construction boom in rural areas. As a result, the housing stock in the countryside was renewed, which also favoured the use of more efficient heating systems. In the larger cities, there is currently an area of tension between sharply increased construction costs, high land prices and investments in modern heating technology. For economic reasons, compromises are often made here, which can lead to higher energy consumption in new urban buildings. In contrast, technical advances in single-family homes, especially the combination of heat pumps and photovoltaic systems, enable a significant reduction in energy consumption in them.

Figure 4: Proportion of year of construction classes in the respective rooms (%) and energy efficiency in kWh/s qm*a (right)



Source: CBRE Research based on Value AG;
Notes: Germany without top 7 cities; Year of construction classes according to the Federal Statistical Office (Destatis)

Energy distribution in comparison: Top 7 cities compared to Germany as a whole

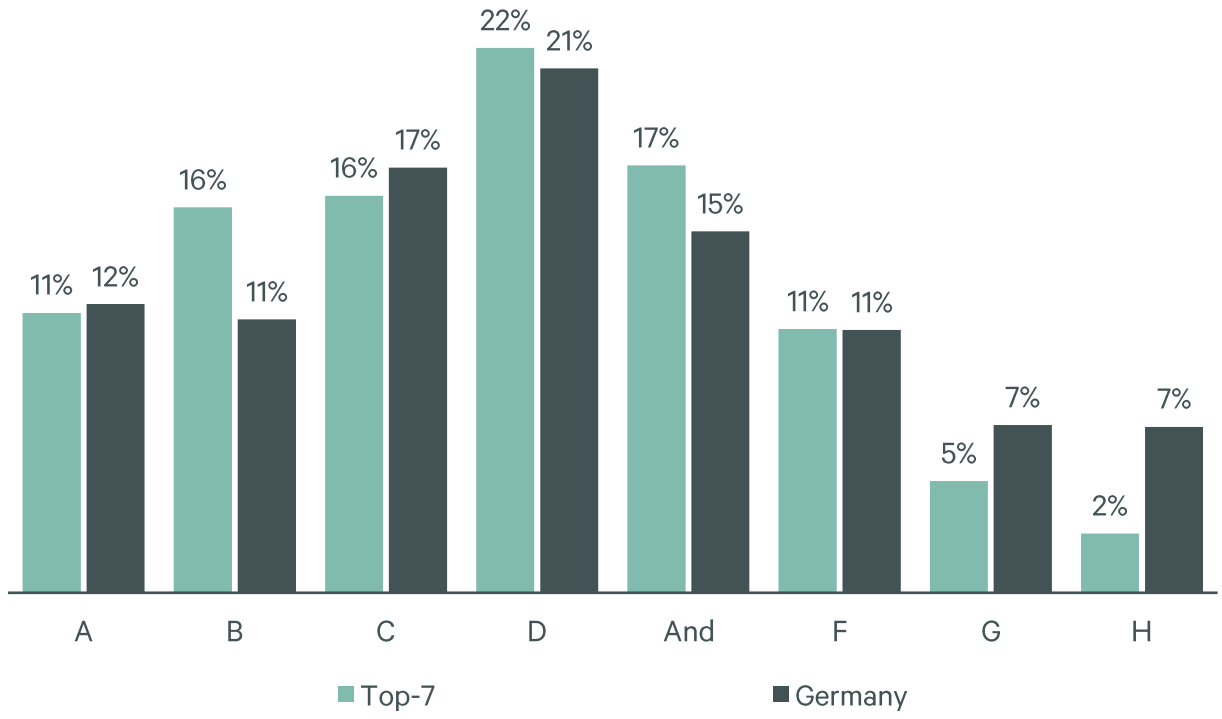
Despite regionally different modernization needs, energy efficiency measures are having an effect: Nationwide, 61% of the rental and purchase properties examined already achieve an energy class D or better, and in the top 7 cities as much as 65%. The difference is mainly at the lower end of the scale, where G- and H-Classes are much rarer in metropolises, a result of more frequent modernizations of rental properties and also due to the increased new construction activity before the pandemic and the interest rate turnaround.

The decision to renovate energy-efficiently is a calculation of costs compared to expected rental income. In the top 7 cities and also in the extended surrounding areas of the metropolises, this value-add strategy works thanks to the recent high rent dynamics. In many rural regions, on the other hand, this strategy fails due to the low rent level and the limited potential for increase at the same time. Demographic change is increasingly having an impact outside the metropolises and is causing the demand for housing in rural areas to fall in the long term, which makes it even more difficult to make energy investments more economical.

The greatest potential is currently in classes D, E and F. In the medium term, classes G and H will disappear, especially in metropolises, also because landlords will have to bear a large part of the CO_2 costs themselves in the future. For the renovation of the middle classes, the costs for them are decisive.

For a complete renovation from H/G to C, 400–700 €/m² are to be calculated. In the case of buildings that have already been insulated (EPC rating D to C), the conversion to a heat pump costs about €100/m² without a PV system. Upgrading from class C to A, which includes a PV system in addition to the heat pump, is correspondingly higher. Homeowners must also ask themselves whether they don't want to make a bigger leap and what rental approach they can then choose.

Fig. 5: Distribution of energy efficiency classes



Source: CBRE Research based on Value AG;
Notes: Germany without top 7 cities

Sustainability becomes mandatory: The German housing market undergoing regulatory restructuring

The German housing market is entering a phase of "mandatory sustainability". What has long been considered a voluntary quality feature is becoming a binding economic and legal imperative due to the EU Building Directive (EPBD), the nationally increasing CO_2 pricing and the announced introduction of the EU emissions trading system ETS 2. ETS 2, which will directly price fossil fuels in the building sector, was recently postponed from 2027 to 2028 – a year of gained but lost time, as the postponement creates investment uncertainty while pressure to adapt remains. With the milestones of 2030 and 2035 – a reduction in primary energy consumption of 16% and 20% to 22% respectively – the era of postponed maintenance is ending. Regulatory compliance becomes a question of liability: Assets of classes F, G or H quickly lose their marketability without substantial investment plans. In already tense conurbations, this threatens to further exacerbate the housing shortage.

The current regulations on the modernisation levy (Section 559 of the German Civil Code (BGB)), with their capping at 8% of the investment costs, hardly cover the high renovation costs. In the absence of government subsidies to close this gap, owners could avoid renovations and take properties off the market, with serious social consequences. Without reliable funding policies and protection mechanisms for tenants, the energy transformation threatens to exacerbate the affordability crisis in cities.

This transformation process is currently being made more difficult by a “mixed signals" from Berlin. While the EU's long-term goals remain as hard guardrails, recent national decisions are creating temporary uncertainty. The reform sends contradictory signals: the Climate Protection Act, which softened rigid sector targets in favor of an overall bill, and the “construction turbo” (Section 246e of the German Building Code), which prioritizes speed and simplified construction over the highest efficiency standards in some cases. Investors find themselves in a dilemma between short-term policy relief and the physical reality of the decarbonization obligation. This inconsistency carries the risk of an investment backlog, as many market participants take a wait-and-see attitude until the tension between short-term pragmatism and long-term commitment is resolved.

Against this background, CBRE will carry out in-depth analyses of other key areas of action: affordability (in particular the "second rent"), competition between centralised and decentralised heat supply solutions, innovation in construction and European best practices. The aim is to show concrete ways to accelerate the German renovation backlog and to provide investors and political decision-makers with sound guidance.

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