

Ready for net zero?

With the UK government committed to net-zero carbon emissions by 2050, there's a growing focus on the transition readiness of UK real estate sectors, and the implications for portfolios.



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Key takeaways:

- The average costs of transitioning buildings to net zero range from 2% to 15% of an asset's value depending on the real estate sector
- These average costs could be significantly higher for lower value and less energy efficient buildings
- Higher construction prices and a more challenging financing environment could increase the scarcity of net-zero buildings
- We expect energy prices to remain higher over the medium term, giving landlords an opportunity to collaborate with occupiers over on-site energy generation and storage
- We see stronger prospects for modern, purpose-built residential buildings, high quality offices, industrial and operational assets
- By contrast, lack of pricing power¹ and a relatively challenging transition are reasons to be cautious around secondary retail and office spaces
- Sustainability should be an increasingly important factor in stock selection within the hotel and leisure sectors
- Embodied carbon, while not the focus of this research, is an increasingly important element of the net-zero transition

1. We define pricing power as the ability of different real estate sectors to pass through increased management and capital expenditure costs to their occupiers. This is a function of underlying occupational demand for that type of real estate.

Potential sustainability-related investment opportunities

The UK government's decision in 2019 to enshrine a target of net-zero carbon emissions by 2050 into law, in line with the 2015 Paris Agreement, has made sustainability non-negotiable for many investors. Real estate has a fundamental role in achieving net zero, with 11% of carbon emissions generated from the construction of buildings and the operation of buildings accounting for a further 28% of global carbon emissions.²

The regulatory, social and investment case for incorporating net zero into strategies is broadly accepted by institutional real estate investors within the UK and Europe. However, the definition, targets and standards associated with net-zero carbon buildings are still evolving and, as a result, the investment implications are arguably less well understood. The [UK Green Building Council](#) (GBC) estimates that 80% of the buildings that will exist in 2050 have already been built, therefore the cost of retrofitting buildings to align with net zero is likely to be an increasingly important differentiator of investment returns. In our view, net zero is an additional dimension of risk that should be overlaid on top of all investment decisions.

Transition risk – one of the greatest drivers of investment returns?

Our research suggests that there are significant differences between real estate sectors in terms of their relative readiness to transition to net zero. This is determined primarily by the reductions in energy intensity required, the cost of retrofitting buildings, and the ability of the assets to absorb these additional costs, either through stronger rental growth or higher capital values.

There is growing evidence to suggest that the current scarcity of net zero-aligned buildings can provide superior investment and occupational outcomes. Research from the CBRE found that buildings with an environmental certification in the US and UK found on average a 6% to 8% premium in gross rents and a 7.6% to 15.6% capital value premium to those without.³ This provides an indicator of the potential upside associated with the early adoption of sustainability strategies.

Inaction is not an option

The surge in energy prices seen over 2022 highlights the growing importance of energy efficiency and utilisation. We expect energy prices to remain materially higher over the medium term as countries look to reduce their reliance on Russian-imported gas and improve their energy security. This presents a commercial opportunity for owners of more energy efficient buildings to differentiate assets based on the relative energy costs of occupying a building, in turn incentivising an acceleration of decarbonisation strategies.

While carbon offsetting may play a modest role as part of a net-zero strategy, the focus should be on reducing energy consumption and its associated emissions, along with reducing the embodied carbon associated with new build, refurbishment and operations. In our view, there is no route to net zero purely through offsetting and our estimates suggest that the carbon offsetting liability for a building where emissions are static, versus one that is on a net-zero trajectory, is 14 times higher.⁴

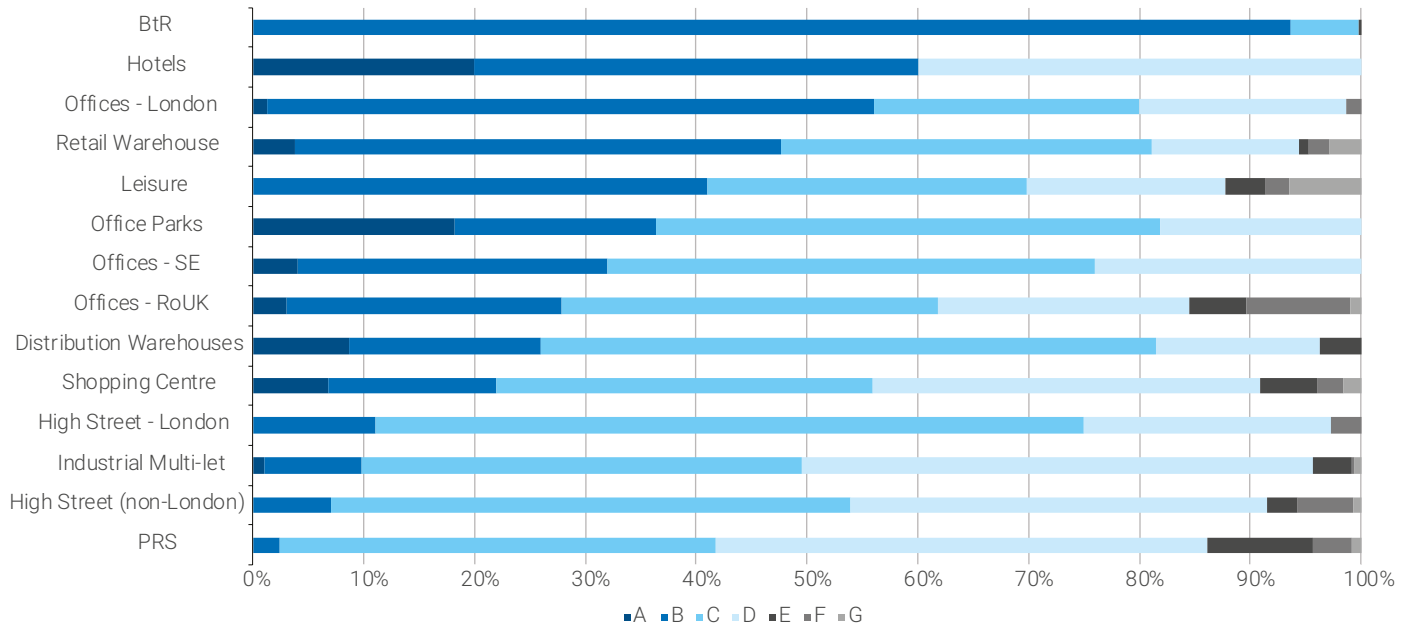


2. https://www.legalandgeneral.com/landg-assets/institutional/real-assets/_files/the-investment-case-for-net-zero.pdf

3. The Value of Green Building Features, CBRE Research, August 2022. Premiums are based on five academic studies.

4. Analysis based on Aurora estimates of carbon price versus CRREM projections of the energy intensity of buildings that are successful in delivering a net zero strategy.

EPC rating by sector (LGIM RA)



Breakdown of LGIM RA EPC ratings as of end 2021 by sub-sector. This relates to the current status of the whole stock of EPCs. Latest data available.

Energy efficiency action increasingly urgent

Minimum Energy Efficiency Standards (MEES) came into force in 2018 and are designed to encourage landlords of both residential and commercial property to improve the energy efficiency of their assets. For residential, since 2020, landlords can no longer let properties with an EPC rating below E, unless they have a valid exemption in place, with the minimum criteria increasing to C in 2025. For commercial properties, from 1 April 2023, landlords will be unable to continue to let a property with an EPC rating below E without a legitimate reason for exemption,⁵ with current proposals suggesting this threshold will increase to C in 2027 and B in 2030.

According to the [Department for Levelling Up, Housing and Communities](#), as of 2021, 43% of UK commercial property had an EPC below C and 81% had an EPC below B. The situation is equally stark for private rented housing, where 59% of properties had an EPC below C, therefore would theoretically be unlettable by April 2025. Significant action is required, with the capacity for bottlenecks (and therefore added cost inflation) to emerge as these deadlines draw closer.

As the above chart shows, there are notable challenges within the broader private rented sector in terms of improving EPCs. For example, whereas more modern Build to Rent (BtR) stock is typically better placed there is significant divergence within the hotel sector. Assuming no action is taken, over 50% of multi-let industrial units would be unlettable by 2027 due to having EPC ratings below C.

EPC ratings – a poor indicator of potential transition risk

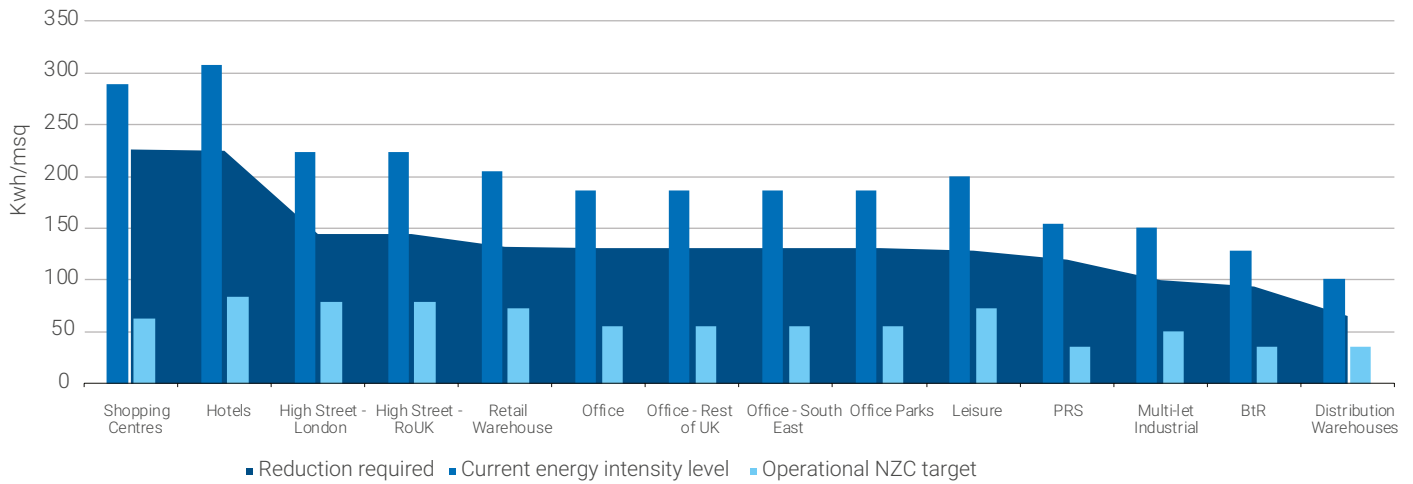
While compliance with MEES regulations requires urgent action, the costs associated with the net-zero transition are likely to be more material. For context, research by [Savills](#) in 2021 found that the costs associated with improving an average residential apartment to EPC C were approximately £6,000 or c.2% of asset value; in contrast, the cost of decarbonising to meet net-zero standards was £24,250, close to 9% of asset value. Moreover, there is no consistent relationship between EPC ratings, a theoretical model focused on a building’s energy efficiency, and operational net-zero buildings, which is dependent on real-world energy usage and emissions emitted from the building; EPC ratings, therefore, are a poor indicator of potential transition risk.

We believe there are three themes that influence the relative readiness of different real estate sectors to transition to net zero:

- the scale of the challenge (the energy usage reductions required by a typical building within the sector)
- the cost as a percentage of asset value
- operational control and potential for owner / occupier collaboration

5. Examples of exemptions: listed buildings, leases shorter than 6 months or longer than 99 years, cost implications (impact to value of over 5% of payback of more than 7 years), no tenant consent or efforts made (if all possible improvements have been made but the building cannot meet the target)

Operational energy intensity reductions required, by sector



Source: CRREM, 2021; LETI, 2020; REEB, 2020; BEES, 2015; UKGBC, 2020; JLL, 2022. Private rented sector (PRS) figures derived by utilising JLL research into the annual energy costs of EPC A/B/C versus EPC D residential property (D is the dominant EPC of PRS stock). This approach indicates PRS is c.20% more energy intensive than BtR. Note: energy intensity measures relate to both landlord and occupier-controlled areas of the building. Source data as of 2021-22.

Scale of the challenge

When it comes to energy usage intensity (EUI), not all real estate is equal. The chart above highlights the current energy intensity levels of different real estate sectors, versus the target usage required in order to align with the transition pathway.

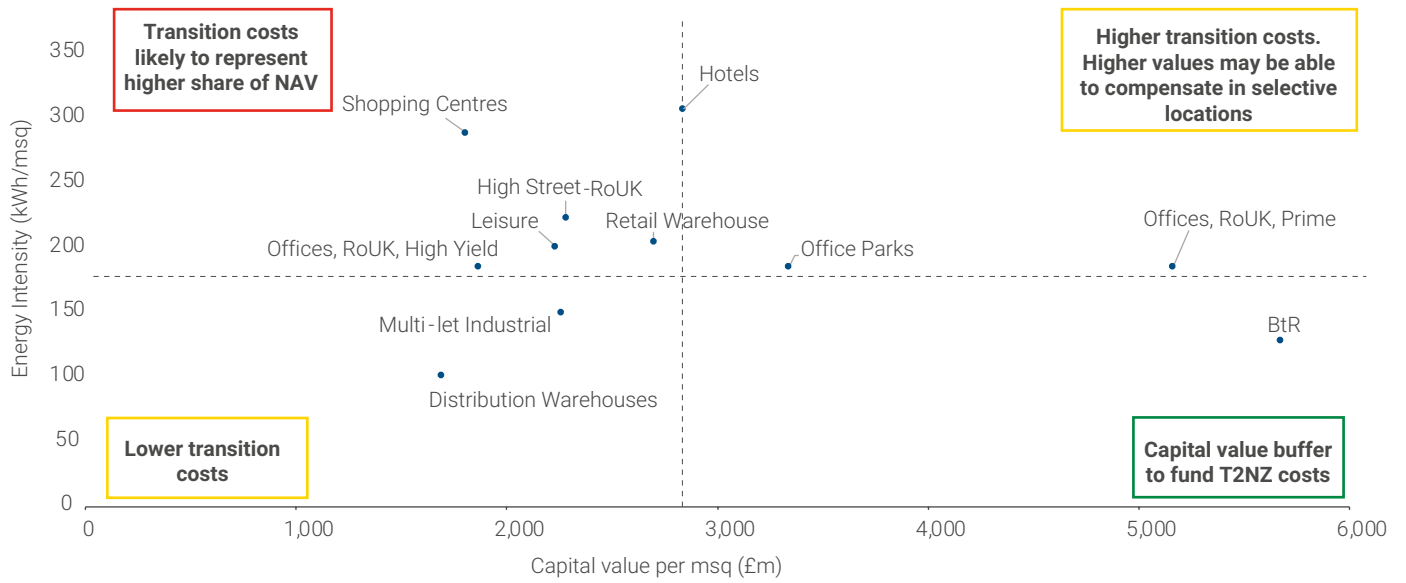


Cost as a percentage of asset value

Industry knowledge around the costs associated with retrofitting existing buildings is still developing. We utilised 56 net-zero carbon audits conducted across our own UK assets in order to assess the typical costs of retrofitting, encompassing assets across a range of ages, sectors and quality. Our findings highlight the relative strength of BtR residential, the low energy intensity (at a sector-level) of industrial assets, while we learned the relatively higher value of London office and retail assets also helps to insulate these assets from transition costs. The contrast in viability between prime and higher yielding office assets is also evident. We note the large number of sectors sitting in the top left quadrant of the chart below, implying a more challenging transition.

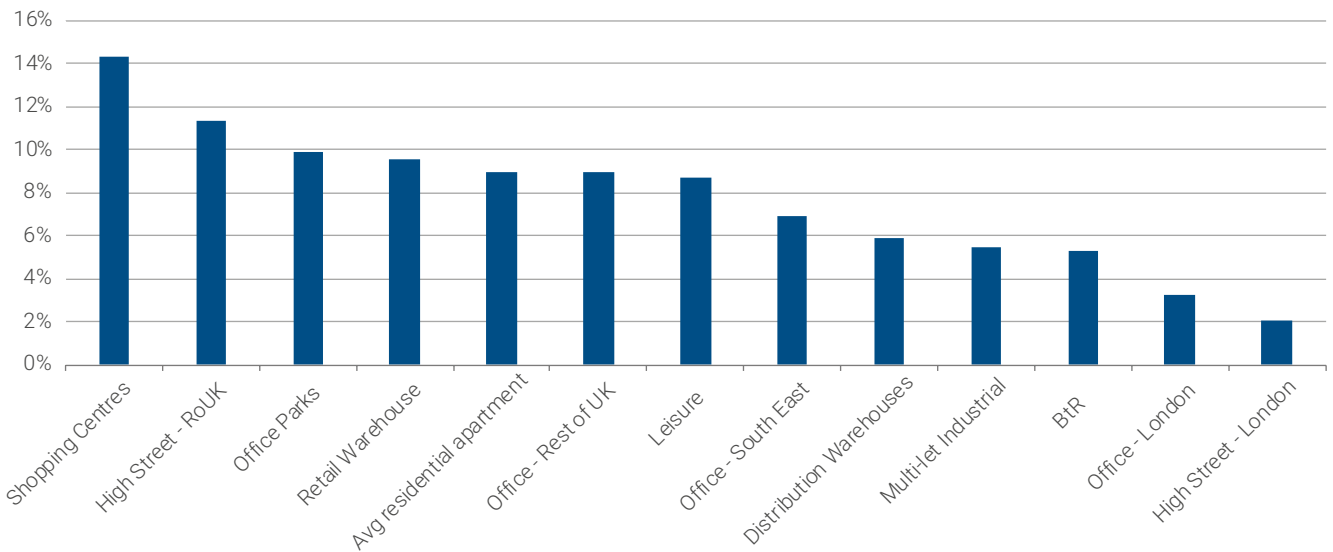
In contrast, the chart hints at more significant challenges for, in particular, secondary retail and office assets, where net-zero costs are likely to constitute a larger share of asset values, with limited potential for stronger rental growth to help compensate owners for this additional investment.

Energy intensity vs average asset capital value



Horizontal and vertical lines are drawn to reflect the average level of EUI and capital value per msq across residential and commercial property sectors. London offices and retail assets excluded due to distorting the horizontal axis; these would sit much further to the right-hand side of the chart. Sources: CRREM, 2021; LETI, 2020; REEB, 2020; BEES, 2015; UKGBC, 2020; JLL, 2022; MSCI Quarterly Index, 2022.

Cost as a percentage of asset value



Source: LGIM RA, CRREM, 2021; LETI, 2020; REEB, 2020; BEES, 2015; UKGBC, 2020; JLL, 2022; MSCI Quarterly Index, 2022. Limited data on NZ costs as % of asset value for hotels.

Operational control

As part of net-zero guidelines, owners are responsible for scope 1, 2 and 3 emissions, with the latter incorporating occupier energy usage and typically accounting for around 85% of emissions.⁶ Owners have limited control over the activities conducted by the occupier from the building, with most traditional leases inhibiting owners from making energy efficiency changes. This leaves owners dependent on either having an occupier that is aligned in achieving a net zero strategy or to wait until a lease event to make the requisite changes to a building. New leases will be crucial to incorporating provisions enabling owner-driven improvements.

This places an additional emphasis on developing stronger and more collaborative relationships with occupiers to decarbonise buildings. For energy intensive buildings where there is a long lease or no constructive relationship with the occupier this prompts the question as to whether divestment may be an appropriate course of action.

By contrast, the need for greater operational control increases the attractiveness of assets that either have shorter lease lengths in attractive growth areas of the market, particularly where energy efficiency improvements or renewable energy generation can help deliver improved leasing outcomes, or operational real estate assets. Operational real estate (assets where the revenues are deliberately linked to the underlying revenues of the business conducted on the premises) provides an owner with far greater operational control over the building, with owners also benefiting from investment in improved energy efficiency through lower energy costs and, consequently, a higher net operating income.

Operational control is of particular importance in the hotel sector. As our analysis shows, hotels are one of the more energy intensive real estate sectors, driven by a range of energy intensive activities conducted on site (e.g. laundry and restaurants), a lack of control over the end user's (i.e. hotel visitor) energy usage and the need to conduct these activities seven days a week. In our view this requires greater selectivity

and scrutiny into the operations of hotels.

Relative transition readiness by sector

Based on the three components of transition risk that we have identified, and a series of metrics relating to these themes, we have ranked real estate sectors according to their transition readiness. The higher the rank, the more 'transition-ready' the sector.

The metrics on page seven look at the transition challenges for an average asset within each real estate sub-sector. We expect net zero to be an additional driver of polarisation between assets within UK real estate, increasing the risk of stranded assets. The net-zero costs as a percentage of asset value are market averages; we expect significant divergence around this average transition cost depending on asset-specific factors.



6. UK GBC: <https://www.ukgbc.org/ukgbc-work/scope-3-reporting-in-commercial-real-estate/>

Summary table of transition risks

Sector	Rank	Transition costs				Scale of challenge			Operational influence	
		Historic rental growth (5y)	NZC Costs as % of asset value	Hypothetical carbon liability as % of asset value	Renewables generation potential	EPC B or above	Current energy Intensity level (kwh/msq)	Absolute EUI reduction required (kwh/msq)	Occupier size: % SME occupiers	Intervention points (avg lease length)
BtR	1	3.0	5.3%	0.4%	No	94%	128	93	100%	2.0
Multi-let industrial	2	4.2	5.5%	1.3%	Yes	10%	150	100	38%	5.4
Office - London	3	0.4	3.3%	0.4%	No	56%	186	131	16%	5.3
Distribution warehouses	4	2.8	5.9%	1.1%	Yes	26%	101	65	25%	8.4
PRS	5	1.9	6.4%	0.6%	No	2%	154	119	100%	15.4
Office - South East	6	1.6	6.9%	0.9%	No	32%	186	131	16%	7.9
High street - London	7	-2.9	2.1%	0.4%	No	11%	223	144	25%	4.5
Leisure	8	-0.8	8.7%	2.1%	Yes	41%	201	128	19%	14.0
Office - rest of UK	9	1.1	8.9%	1.2%	No	28%	186	131	16%	9.7
Retail warehouse	10	-3.0	9.6%	1.6%	Yes	48%	205	132	25%	6.2
Office parks	11	0.9	9.9%	1.3%	No	36%	186	131	16%	5.6
Hotels	12	0.7	8.7%	2.1%	No	60%	308	225	57%	19.5
Shopping centres	13	-4.9	14.3%	2.1%	No	22%	289	226	25%	4.6
High street - RoUK	14	-6.4	11.3%	2.1%	No	6%	223	144	25%	4.9

Note: ■ Green = 20% better than mean ■ Red = 20% below mean ■ Amber = within 20% of mean

All fields relate to market-level data, with the only exception being the EPC data (which is based on LGIM RA's portfolio) and renewables generation potential, which is a subjective assessment of the ability to install meaningful amounts of renewables (primarily solar panels) on site. The latest available data source, as of December 2022, has been utilised. LGIM RA, CRREM, 2021; LETI, 2020; REEB, 2020; BEES, 2015; UKGBC, 2020; JLL, 2022; MSCI Quarterly Index, 2022, Aurora, 2022; ONS

Implications for owners: why now?

In our view, current energy cost challenges for business and consumers provide a rare opportunity to proactively engage with occupiers and deliver solutions that reduce costs for both parties, thereby accelerating a building's transition to net zero. On-site renewables have become increasingly feasible because of higher energy prices and we believe there is a clear opportunity for owners and occupiers to align themselves to address these challenges.

Investors with longer-term horizons could potentially benefit from accelerating buildings' transition to net zero, in the

process benefiting from a 'scarcity premium' given the lack of net-zero stock within the market. Beyond the potential upside from creating highly sustainable buildings, we believe that the risks and costs associated with the climate transition should increasingly be incorporated into portfolio construction, as well as stock selection and asset underwriting. We do not believe it is too early to consider divestment where an asset's transition is uneconomic.

In our view, long-term investors should see the transition as part of their responsibility to actively contribute to the decarbonisation of our built environment, with early adoption likely to deliver enhanced investment outcomes.

Contact us

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