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Real Estate transition risk

Navigating the net-zero transition for banks

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Introduction

At-a-glance

- UK banks have significant exposure to residential and commercial mortgages – a sector where UK government policy will require active and urgent efforts on decarbonisation.
- Pursuing such decarbonisation targets will generate transition risks. While banks may have identified these risks in their climate materiality risk assessment, they will now need to actively measure and manage these risks.
- To stay on course with the policy and regulatory agenda, and noting the challenges and barriers, now is the time to start measuring the transition risks associated with real estate lending.
- In this article, we provide our insights on the transition risk measurement challenges for banks. A few methods for measuring transition risk in the sector have emerged; one such method is the CRREM risk tool.
- We advocate banks adopt a proactive five-point approach to measuring transition risk in this sector as barriers to driving through changes remain high and some amount of iteration is inevitable.

1. Real Estate net-zero policy in the UK

> Residential and commercial mortgages constitute the biggest loan exposure for UK banks[1].

Residential and commercial mortgages constitute the biggest loan exposure for UK banks[1]. As the government seeks to hit its net-zero target and, in doing so, tighten its climate policies for the built environment, banks with significant real estate exposure could be adversely impacted financially. In 2008, the UK government passed the Climate Change Act, which aimed to reduce carbon emissions by 80% by 2050 compared to 1990 levels[2]. In 2019, this target was updated to reach net-zero emissions by 2050. Since the enactment of the Climate Change Act, several policy measures have been introduced that have an impact on the built environment sector, as decarbonisation in this sector is key to the UK's net-zero ambition. Figure 1 and Table 1 provide a high-level summary. It shows several key milestones of the UK government's net-zero strategy relevant to the real estate sector. Progress in the built environment is critical, given it is responsible for 42% of the UK's total carbon emissions (including transport-related emissions)[3].

Key Milestones of the UK Government's Climate Change Policy

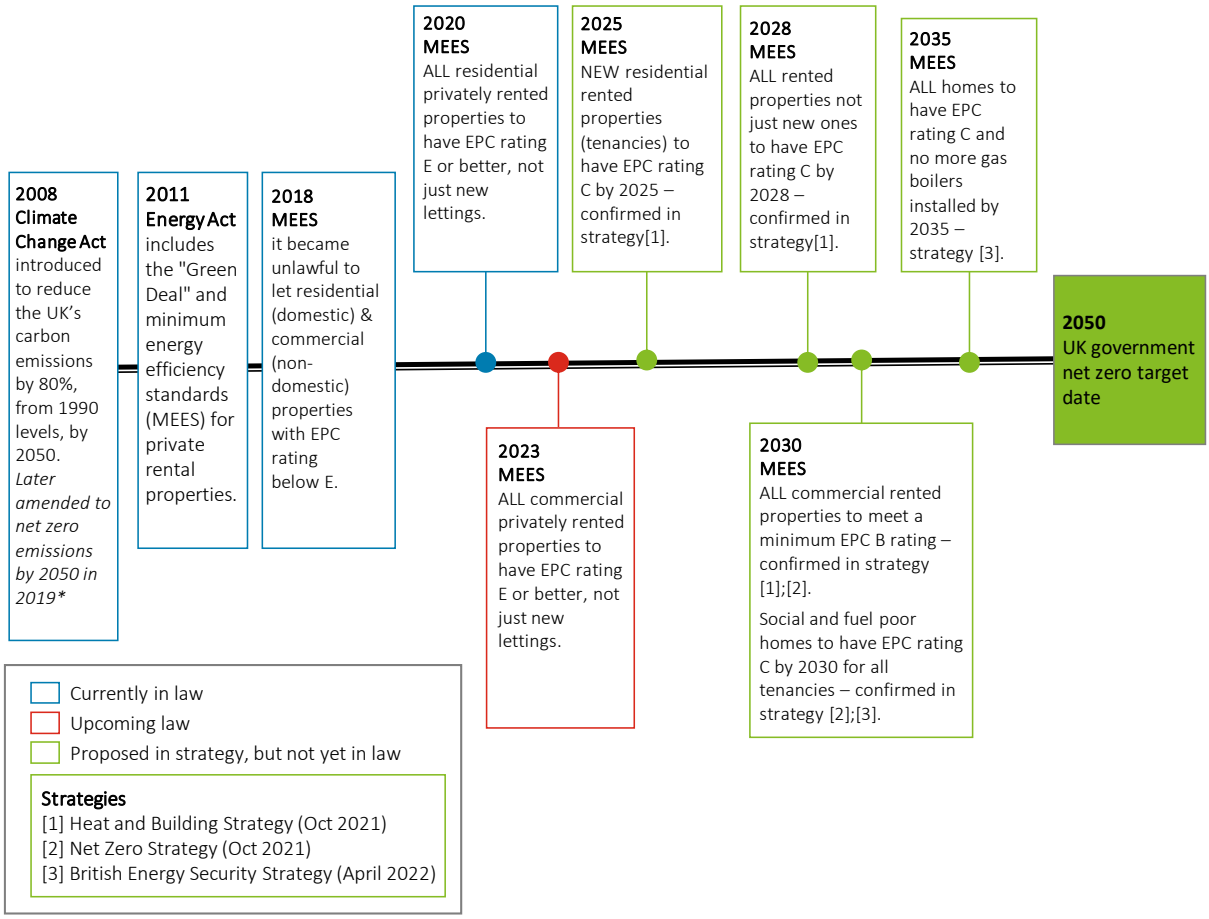


Figure 1 UK Government Policy and the built environment: high-level key milestones[5-9]

Table 1 MEES milestones in legislation and proposed in strategy (not yet in legislation)[5-9]

	Important milestones						
	2018	**2020**	**2023**	**2025**	**2028**	**2030**	**2035**
In legislation:							
Residential (private domestic)	EPC E (new lettings)	EPC E (all lettings)	EPC E (all lettings)				
Commercial (private non-domestic)	EPC E		EPC E (all lettings)				
In strategy but not yet in legislation:							
Residential (private domestic)				EPC C (new lettings)	EPC C (all lettings)		
Commercial (private non-domestic)						EPC B	
Social & fuel poor homes						EPC C (all lettings)	
All homes							EPC C

To make progress on the net-zero target, government policy is pushing for the stock of UK properties to be maintained at specific minimum energy efficiency levels, as measured by Energy Performance Certificates (EPCs). A key mechanism through which minimum energy performance levels can be attained is retrofitting. This is the practice of installing renewable or low-carbon energy technologies such as solar photovoltaics (PV), heat pumps or measures such as insulation or double glazing[4]. Success with retrofitting across the existing property stock will be a key determinant of whether net zero can be achieved in the UK. One policy measure is the Minimum Energy Efficiency Standards (MEES), which was introduced to improve the energy efficiency of privately rented properties[5,6]. MEES requires that all rental properties have a minimum EPC rating of E by 2023. In addition, there are proposals in the Heat and Buildings Strategy (2021)[7] for all residential rental properties to have a rating of C by 2028 and all commercial rental properties to have a rating of B by 2030. Different milestones have also been proposed for owner-occupied and social housing in the Net Zero Strategy (2021)[8] and British Energy Security Strategy (2022)[9], with targets set for 2030 and 2035 (see Figure 1). Many properties requiring an upgrade are decades – if not centuries – old, and retrofitting will come at a cost.

A study by the Bank of England[10] suggests that the prices of properties affected by MEES (with poor EPC ratings) may decrease compared to unaffected properties. Retrofitting the existing stock of properties poses a transition risk for banks. The devaluation of portfolios with energy-inefficient properties (not hitting expected EPC targets) could intensify as the government's climate policy poses constraints and timelines to effect necessary changes. This will require banks to measure and monitor the associated risks.

2. Transition risks for banks

As banks and mortgagors respond to the government's net-zero policy and the accompanying standards, they will continue to face numerous transition risks and will also have to carefully negotiate the associated conduct risks of pricing and collections. The specific challenges of banks and mortgagors will be different, but they are closely linked. Mortgagors face increased costs and other tangential valuation risks, such as extended void periods and will need to determine the speed at which they act and the costs they are willing to bear (or, for rental properties, pass on). Banks face the increased risk of collateral devaluations against these properties.

There is also the risk of public policy intervening through stamp duties or other taxes (e.g., carbon tax) that could be slanted against less energy-efficient properties, resulting in depressed collateral value. We should also note that the physical hazards associated with climate change, such as increased flooding and heat stress, may result in additional financial costs and property value depreciation. Figure 2 illustrates some of the transmission channels through which climate policies impact the mortgagor's financial position and property value and, in turn, the credit risk these pose to banks.

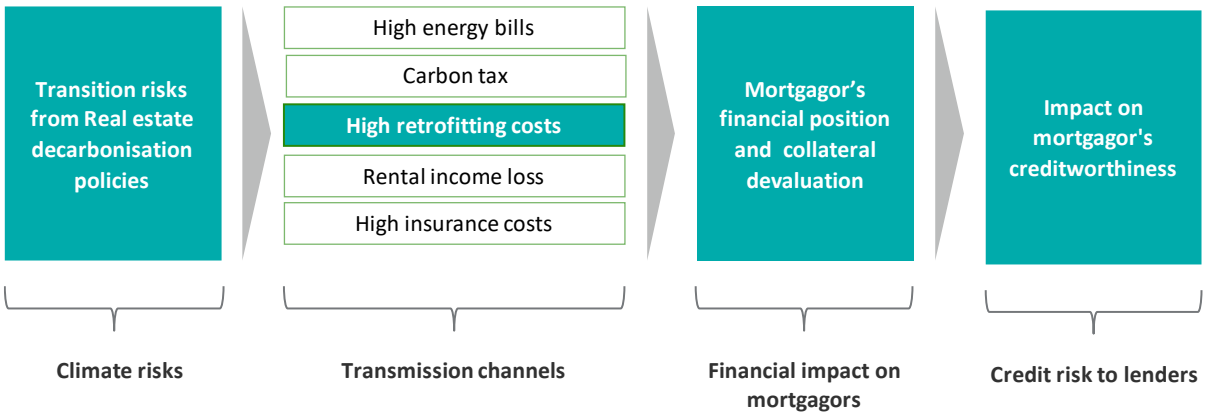
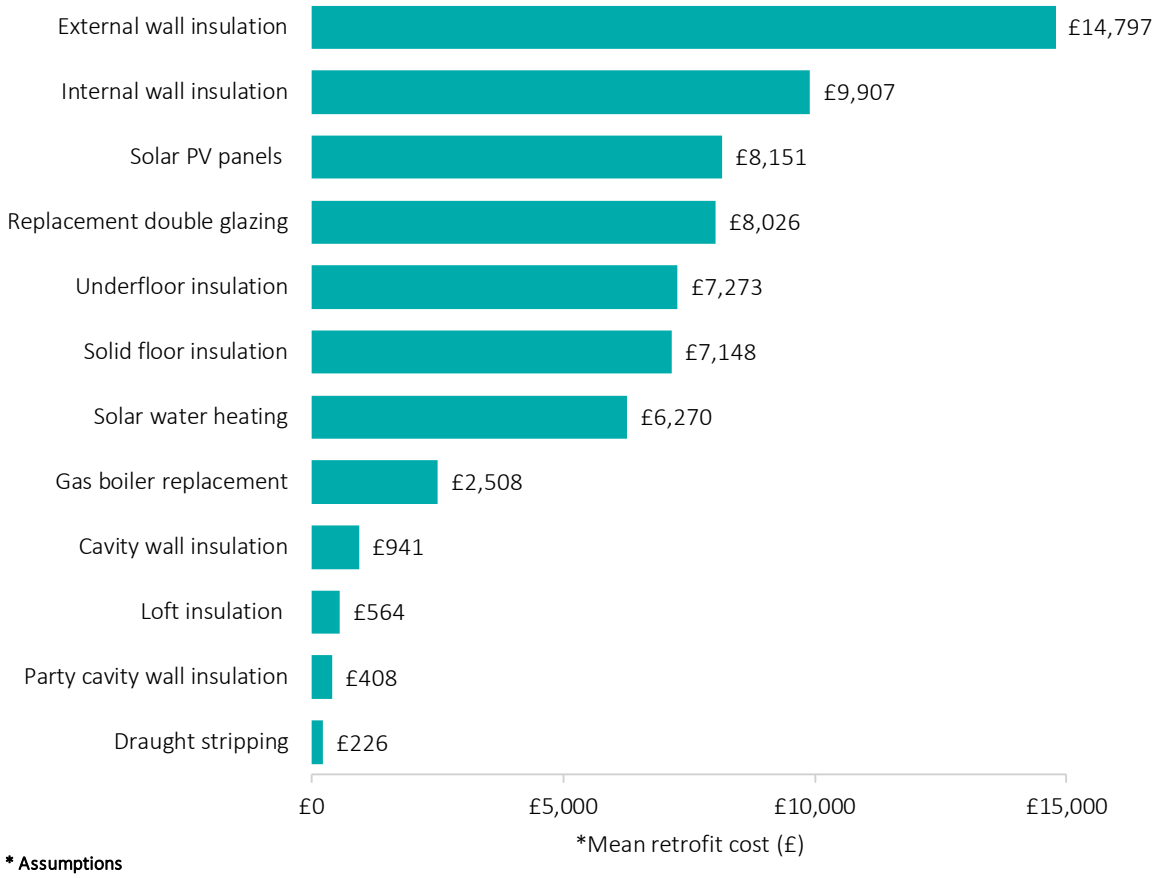


Figure 2 The transmission of policy-related transition risk to lenders.

The retrofitting costs to meet certain energy standards in line with MEES can pose a financial burden. They could also increase the risk of defaults on mortgage borrowing for properties of a certain vintage and certain income demographics. The cost-of-living crisis in the UK, the trend in property prices and other inflationary pressures may also be key determinants of the speed at which retrofitting is adopted. Mortgagors already face the risk of penalties. They could face a financial penalty of up to £5,000 and loss of rental income for non-compliance with MEES. Predictably, the risks are likely to be most pronounced for properties that are currently within the lowest EPC rating band, where the cost of retrofitting then becomes significantly higher on a relative basis. Figure 3 provides the average cost of different retrofit activities for domestic (residential) properties.

The Bank of England's 2021 Climate Biennial Exploratory Scenario (CBES) stress test results[11] show that mortgage losses are higher in the late action scenario, which assumes a slower and disorderly transition to a low-carbon economy compared to the early action scenario. The CBES result projects that households are expected to bear the cost of improving energy efficiency in their homes, which may affect their ability to afford mortgage payments. The estimated aggregate cost for such improvements for mortgagors is approximately £75 billion. Projected mortgage impairment rates differ based on potential energy efficiency ratings, with the highest rates seen in properties with the lowest ratings.



*** Assumptions**

- Cost adjusted with CPI from 2016 cost estimates
- All assuming a semi-detached home with a floor area of 90m^2, wall area of 60m^2, glazing ratio of 0.25. Assumes 150mm loft insulation.
- Costs include materials and installation but exclude VAT

Figure 3: Estimated costs of retrofitting domestic properties in the UK[12]

The policy environment, time constraints to effect change, and the associated costs could elevate the transition risk of banks exposed to the real estate sector. While different milestones are being set for rental properties, social housing, and owner-occupied properties (as shown in Figure 1), all milestones need to be tracked by banks. The ratings of properties will inevitably be linked to property values (and hence property prices, loan to value and related credit attributes). Banks with portfolios of very low energy efficiency properties will find it difficult to effect change or exit, especially if properties fall below the minimum requirement for MEES during the loan term. To better manage this risk, banks need to *measure* the financial impact of climate policies, such as MEES, on their real estate portfolios. The key challenges of doing so are covered in the next section.

3. Transition risk measurement challenges

Credit risk is the key risk stripe of commercial banks. As such, credit risk management is typically a bank's most mature risk management practice. So, in principle, managing the increased credit risk from climate should be a manageable problem for banks. However, what makes rapid progress in measuring and managing the interplay between climate and credit risk particularly challenging are the barriers to measuring transition risks for this sector. The two main measurement hurdles are the quality and completeness of emissions data and the lack of a standardised measurement methodology. We comment on these hurdles below and provide some guidance on how to overcome them.

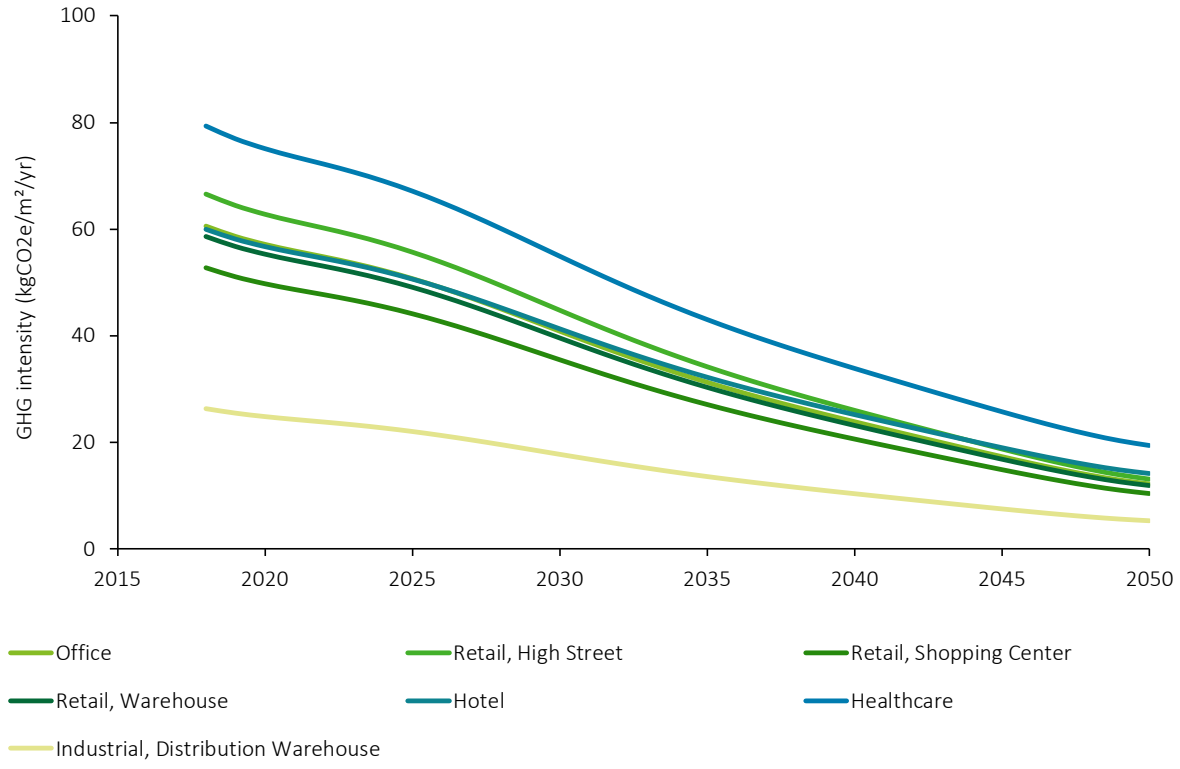
a. **Quality and completeness of emissions data:** As risk managers know, it is hard to manage what can't be measured. Banks need carbon emissions data at the property level to measure and then aggregate the transition risk across their real estate portfolios. EPCs are currently the best source of property-level carbon emissions. Its limitation as an accurate data source is well-recognised. According to a government consultation[13], EPC data are considered to have low quality. Also, at present, only 40-50% of UK properties have confirmed EPCs[14] creating a large data gap to be filled. In addition, EPC data typically captures the theoretical energy performance and emissions of properties (based on property design details) rather than the actual operational energy consumption and emissions (from utility meters). Furthermore, the embodied emissions (i.e., the emissions generated from retrofit measures, including retrofit construction, processes, and materials) are not included in EPCs, which is an important caveat considering the importance of retrofits to achieving minimum energy efficiency standards.

b. **Lack of a standardised transition risk measurement methodology:** A single standard for measuring the transition risk of properties is yet to emerge. Some institutions are turning to tools from research and innovation projects. One such tool is the Carbon Risk Real Estate Monitor (CRREM) Risk assessment tool[15]. The CRREM Risk tool provides Paris-aligned decarbonisation pathways for different property types in the EU and the UK. This tool provides one methodology for quantifying the carbon transition cost of properties and generating carbon intensity metrics for different property types. Figure 4 illustrates the CRREM pathways.

The CRREM Risk assessment tool provides science-based carbon reduction pathways at property and portfolio levels and measures the alignment of properties and real estate portfolios against these pathways. Other tools and initiatives, such as the "Carbon Value Analyser" and the "Hotel Footprint Tool" exist but provide limited geographical and property type coverage and target-setting capabilities.

Adoption of this tool will advance risk measurement at a bank. But additional steps remain, primarily translating these transition parameters into familiar credit risk parameters for assessing mortgagors' creditworthiness. Across the industry, this translation to credit parameters is still under development. Due to the lack of industry-wide ratification, the quality of emissions (EPC) data, the somewhat incompatible horizons of the credit cycle, and the expected impact of climate change, there is no *single* accepted way to model this risk.

For banks with substantial real estate lending, the impact of not measuring this risk, however tentatively, on the business model, on the risk weights and, ultimately, on capital could become significant. Hesitation to be a first mover and disclose prematurely has already resulted in slower penetration of such transition risks into credit risk measurement and modelling.



Sources: CRREM - Make decarbonisation measurable & Manage Carbon Risk

Figure 4: CRREM-based illustrative decarbonisation pathways for UK commercial property types[15]

4. Our five-step plan to prepare for transition risk measurement

> Global GHG emissions need to fall by over 40% before 2030 if we are to reach net zero by 2050. Given that urgency, banks with property lending should already be taking their 'no-regret actions', which we elaborate on below. Even if progress may feel intermittent and iterative, over the long run, banks should find their risks become easier to mitigate.

i. **Engage:** Banks should engage early with their borrowers to establish data ownership and clarify intent. To accelerate the decarbonisation of their mortgage books, banks may need to consider expanding their offering to become part climate advisors and integrators, helping mortgagors understand their retrofitting options, financing choices and decarbonisation journeys, and, where relevant, providing support to implement energy efficiency measures. Banks that actively engage with borrowers and their energy providers on these matters will also be better equipped to quickly identify and fill emission data gaps and therefore get a better handle on their transition risk measurement.

ii. **Measure:** Given the limitations of EPCs in terms of data quality, public sources databases of emissions, such as the one produced by the Partnership for Carbon Accounting Financials (PCAF), can be used as proxy data. For commercial real estate lending, banks could incentivise their corporate borrowers to provide verified carbon emission data from standardised life cycle carbon reporting frameworks, such as EN 15978 and ISO 14040/64, as part of the lending process. These verified carbon emissions data cover a broader scope of emissions than those provided in EPCs, e.g., embodied emissions data. In addition, accurately assessing the scale of potential risks within a portfolio requires modelling retrofit costs.

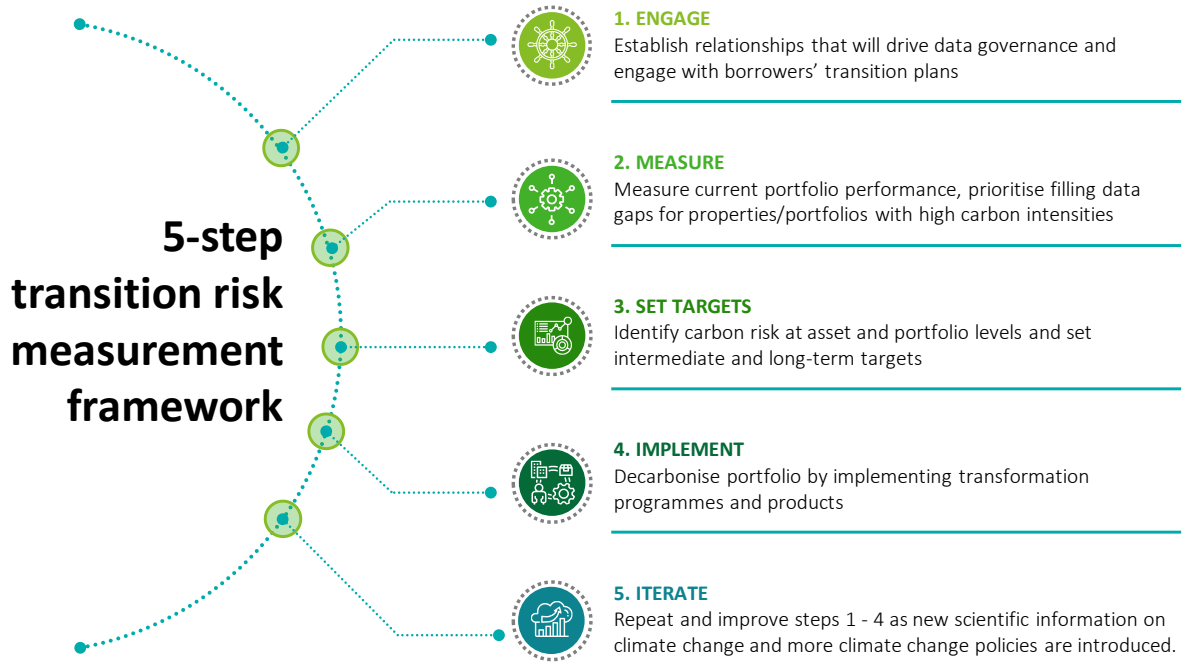


Figure 5: Transition risk measurement framework

iii. **Set targets:** Banks should set targets for their property portfolios. The science-based targets initiative (SBTi) provides a framework and methods for setting measurable and transparent emission reduction targets. Setting science-based targets involves establishing a carbon budget that limits global warming well below 2°C, choosing an emissions scenario that outlines the necessary magnitude and timing of emissions reductions and identifying approaches for allocating emissions among different regions, sectors, and individual companies. Scenario providers, such as the International Energy Agency (IEA) and the Network for Greening the Financial System (NGFS), offer global net-zero emission scenarios that cover the property sector. These scenarios can then be downscaled into regional and property-specific target pathways, such as those provided within the CRREM tool. To support target-setting, downscaled net-zero pathways would provide insight into how mortgages in the bank's loan book can transition in the future. Credible targets need to be set with near-term and longer-term milestones that can then be reviewed by the bank's key stakeholders. Some points to consider for such reviews include:
   - The trade-off between operational emission reduction from retrofit strategies and retrofitting cost.
   - The magnitude of financial cost if carbon taxes are directly levied and its impact on mortgagors' earnings and property valuation.
   - Stranded asset valuation (i.e., premature devaluation and write-off of properties) and implied risk concentration of the portfolio across different property types and risk concentration profiles over the target horizon.

iv. **Implement:** banks are uniquely placed to support the climate transition by influencing mortgagors at critical trigger points such as the point of purchase, a period of renovation, or the point of a re-mortgage request. While current green mortgage products 'reward' customers for buying more energy-efficient properties, they may be less effective at incentivising the overall transition to make properties greener. It has been estimated that c. £250 billion must be invested to upgrade the UK housing stock by 2050[16], signifying future capital flows into green financial products. The provision of green loans focused on retrofits may therefore incentivise borrowers to invest in property despite sub-optimal current EPC ratings, noting these happen to be the most significant chunk of the UK property stock. Where this is perceived as financially unviable, without further (national and local) government policy support, banks could also consider adopting an advocacy role as part of their implementation strategy.

v. **Iterate:** Transition risk measurement and management is at a nascent stage for this sector. Methodologies are emerging, and so is the data. Banks should therefore adopt a modular (and tactical) approach to risk management and be prepared to iterate. As new scientific information about climate change emerges, more policies aimed at mitigating climate change are introduced, and the data quality improves; the calculations and risk assessments will need to be revised. Early action should still be advantageous; the bank's borrowers (mortgagors) will be better prepared to take action; this will lower transition risks and result in easier conversations with the regulators on how climate risk is embedded in risk management practices.

In the UK, an indirect environmental tax on carbon, known as the climate change levy, has been implemented for energy providers serving businesses, but residential households are currently exempt. This cost is indirectly passed on to commercial property owners through their energy and fuel bills. In the event that a direct carbon tax is implemented in the future, it is important to identify which properties will be affected.

5. Closing remarks

> Government policies to accelerate the decarbonisation of the real estate sector presents transition risks for banks.

Managing these risks is key, given the importance of this asset class for most UK (and European) banks. Doing so is still fraught with data challenges and methodological considerations. The transition risk measurement and management challenge may get harder as the policy targets draw closer. Our suggestion is for banks to adopt a proactive approach to transition risk measurement, exploring tools such as CRREM and building a borrower-lender-energy vendor data ecosystem that fast-tracks customer engagement. In addition, it is essential to recognise that there are other potential drivers of transition risks, such as reputational risk and conduct risk, that are currently not yet possible to model accurately. Despite this, banks should be aware of these risks and take them into consideration. All in all, banks should also be prepared for more iterations in transition risk measurement.

Our dedicated Real Estate, Financial Risk Measurement and Sustainable Finance teams would be pleased to discuss any aspects of the transition risk measurement journey with you. Please reach out to the authors and partners below to arrange for a discussion.

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