

Breaking the value deadlock:
enabling action on decarbonisation

CChange



The Urban Land Institute is a global, member-driven organisation comprising more than 46,000 real estate and urban development professionals dedicated to advancing the Institute's mission of shaping the future of the built environment for transformative impact in communities worldwide.

ULI's interdisciplinary membership represents all aspects of the industry, including developers, property owners, investors, architects, urban planners, public officials, real estate brokers, appraisers, attorneys, engineers, financiers, and academics.

Established in 1936, the Institute has a presence in the Americas, Europe, and Asia Pacific regions, with members in 81 countries. ULI has been active in Europe since the early 1990s and today we have more than 4,500 members and 15 National Councils.

The extraordinary impact that ULI makes on land use decision making is based on its members sharing expertise on a variety of factors affecting the built environment, including urbanisation, demographic and population changes, new economic drivers, technology advancements, and environmental concerns. Drawing on the work of its members, the Institute recognises and shares best practices in urban design and development for the benefit of communities around the globe.

C Change

The logo for C Change features a teal circle with a white 'C' inside, followed by the word 'Change' in a teal sans-serif font.

C Change is a ULI-led programme to mobilise the European real estate industry to decarbonise. We're a movement empowering everyone to work together for a sustainable future. We connect the brightest minds from across the value chain. We challenge barriers, share expertise, and champion innovation to move swiftly to accelerate solutions that will transform our industry and protect our planet. C Change means real change.

C Change was formed in late 2021 by a group of leading real estate players that was united in its aim to focus on collaboration to ensure companies large and small have access to practical solutions and education on decarbonisation.

Author

Brenna O'Roarty, Executive Director, RHL Strategic Solutions

ULI Europe project staff

Lisette van Doorn, CEO

Sophie Chick, Vice President, Research and Advisory Services

Andrea Carpenter, Consultant

Foreword

The ULI C Change programme is mobilising the real estate industry to decarbonise. With the built environment responsible for 39 percent of global emissions, the onus is on us as an industry to come together to do what we can to accelerate solutions that transform our industry and protect our planet.

Breaking the value deadlock: enabling action on decarbonisation is a companion piece to the proposed guidelines on transition risk recently published as part of the C Change programme of work.

The proposed guidelines offer a next step towards a technical solution to help the industry to standardise how it assesses and discloses transition risks as part of property valuations. However, as we put forward the guidelines for consultation, we felt it was important to set out the bigger picture on how current property valuations are holding back the industry's progress towards decarbonisation, and what could be the effect on our investment markets, as well as our cities and communities.

As an industry, decarbonising our buildings finds us working through a set of complex issues on an urgent deadline but, in the midst of this, we must not lose sight of the potential consequences of our actions.

At first glance, what looks like a building issue – the transition of physical assets to a low-carbon economy – is also a societal issue. Without care and foresight, our approach to decarbonisation could lead to our investment markets polarising and an increased risk of stranding assets in parts of our cities that require more investment not less.

The guidelines promote collaboration on transition risk, and this paper sets out why. Whether that is closing knowledge gaps, broadening industry education on decarbonisation or building standardised datasets and templates to explore risks and benefits, there is merit in working together.

The goal to preserve our planet, cities and neighbourhoods is bigger than the short-term competitive advantage for some properties.

We welcome your feedback on this paper and hope that you will also review the proposed guidelines and share your insights with us as part of the consultation process. You can find out more information on our [C Change webpage](#).



Lisette van Doorn, CEO, ULI Europe
October 2022

C Change Founding Partners



Breaking the value deadlock: enabling action on decarbonisation

1. The goal in a nutshell

The ULI C Change initiative is seeking to greatly accelerate the path to decarbonisation in real estate through identifying challenges and issues, and developing practical solutions to assist the pace of progress. Providing tools that democratise access to knowledge for all stakeholders forms part of its ambitious programme.

This short paper sets out the challenge facing the industry in respect of investors' accepting responsibility for the decarbonisation of existing portfolios, effectively pricing risks to income and growth, and deflating the carbon mis-pricing bubble in valuations.

It suggests developing an industry-wide knowledge tool as a means of reconnecting information and data streams between investors, and between investors and valuers. This would assist in preserving value and reducing the risk of stranding assets by generating explicit pricing information in respect of decarbonisation risks.

In essence a retrofit of the feedback loop between market activity, pricing and valuation so it is fit for purpose. Perhaps controversially for some stakeholders, it purports that the broader goal of decarbonisation must be seen to far outweigh any shorter-term value protection – particularly when such values are built on sand.

2. Bringing the big picture into focus

Decarbonisation is a must, not an option

The built environment is central to achieving a transition to a low carbon economy and society, accounting for almost 40 percent of global energy related CO₂ emissions and upwards of 70 percent in Europe's cities¹. The operation of buildings accounts for 28 percent of total energy consumption including power, heating and cooling.

In addition, embodied carbon emissions from materials, construction, demolition and disposal account for approximately 11 percent of total energy consumption. The International Energy Agency (IEA) stresses the importance to the survival of the planet of limiting further global

warming to 1.5 degrees by 2050. This can only be achieved by accelerating decarbonisation of economy and society. The built environment's contribution is critical to achieving this aim.

Despite gradual improvements in energy-related emissions assisted by new technologies as well as clean and renewable electricity, the built environment is not on track. From 2000 to 2017, electricity demand in buildings increased five times faster than improvements in the carbon intensity of the power sector², with emissions from the built environment increasing by 25 percent over the same period³. This is primarily due to an expansion in the development of new buildings.

Embodied carbon

The emphasis of carbon efficiency targets is on the emission generated from the operation of buildings. However, buildings also comprise embodied carbon in their construction and source materials, estimated at 11 percent of emissions.

Within Europe, regulations have required new buildings to be operationally close to net zero since end 2020. A focus on net zero has also greatly reduced the embodied carbon generated in their construction, but – given the physical fabric of assets – not eliminated it⁴. Regardless, new construction is a small proportion of overall stock.

Achieving decarbonisation by 2050 requires an annual renovation rate of 2–3 percent of total stock⁵. Globally, renovation rates have been underperforming at between 1–2 percent of existing stock and in Europe, which has the largest and oldest stock, deep renovation rates (greater than 60 percent energy saving) in recent years are extremely low at 0.2–0.3 percent⁶.

With the majority of stock built pre-2010 and almost a quarter pre-1945, Europe cannot achieve its emissions targets – whether considered at the overall or building sector level – without retrofitting existing buildings to enhance their energy efficiency to close to net zero. Taking into account the embodied carbon of a building generated through the lifecycle of an asset – from

development to disposal – it is considerably more efficient to retrofit these assets towards net zero than to replace them with new buildings.

The task

To achieve the overriding goal of limiting further global warming to 1.5 degrees by 2050 requires the decarbonisation of existing buildings.

Operationally, this means reducing energy consumption through retrofitting to improve insulation levels, integrate efficient systems and technology, and where possible, meeting energy demands with renewable sources.

This also assists in improving the quality of stock, extending its life and reducing the requirement for, and embodied carbon associated with materials and construction of new buildings. Essentially, the sector requires the three “Rs” of sustainability – recycle, repair and reuse – to be applied to the existing built environment before “replace” can be justified on a carbon efficiency basis.

The threat

The industry’s progress on its decarbonisation path is being monitored by regulatory bodies and it is clear that if it fails to make headway, regulation will follow with the risk of cliff edges for real estate values. In this context, it is somewhat surprising that the industry is under- rather than over-performing in respect of the pace of decarbonisation required to achieve both 2030 and 2050 ambitions.

There are a number of reasons for this including lack of required skills and knowledge, uncertainty as to the financial cost and feasibility of required renovations and a need for greater alignment and collaboration of owners and occupiers to set and achieve goals for their shared responsibilities.

However, the slow pace of progress is somewhat comforted by supportive valuations, which to date, are unable to adequately reflect decarbonisation risk due to a knowledge imbalance among investors, the absence of explicit evidence provided in market pricing and the absence of regulation or a clearly articulated policy ambition in most markets.

3. Carbon mis-pricing bubble within current values

Essentially, current valuation levels of low and lower energy performing assets represent a bubble of carbon mis-pricing, which in turn increases risks of regulatory intervention and abrupt pricing corrections, market crisis and reputational risks to the industry and individual organisations. This pricing bubble is being propelled by an uneven playing field in the market as regards the specific risks of decarbonisation, supported by the absence of clear policy and/or regulatory frameworks or clear goals. The impact of this knowledge gap is two-pronged.

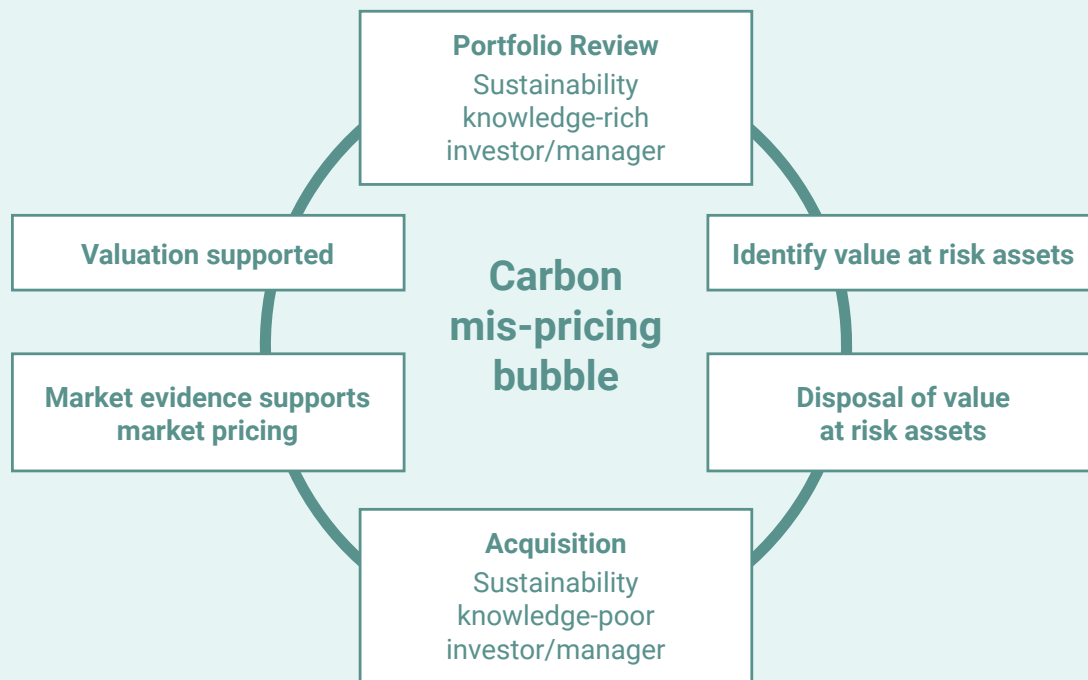
First, there is an unlevel playing field across investors as to the role of real estate in lowering carbon emissions, the requisite knowledge to effect decarbonisation strategies and its impact on risk pricing. Investors and managers alert to the transition risk associated with decarbonising real estate generally incorporate it into any assessment of worth for underwriting acquisitions, disposals and portfolio reviews.

Some investors are aware of transition risks, but have not yet developed the skills or resource to integrate it into a detailed risk pricing assessment. Other less sophisticated investors remain ignorant of the critical role of real estate to mitigating climate change and impact on risk of a failure to transition assets.

Investors and managers with transition risk expertise include detailed estimations of required capital expenditure, assessment of impact on net income and consideration of current and projected exit yields under a range of scenarios in their risk assessments. This underpins the market price they are willing to pay or accept for acquisitions and disposals, as well as the construct of asset strategies. However, this knowledge remains proprietary and is not disclosed to potential buyers or to valuers.

Although, there are numerous examples of leading investors highlighting concerns over the symbiosis of current valuation levels supported by market pricing that does not account for transition risk⁷, there is also emerging activity of some investors/managers exploiting their greater knowledge. Their expertise is being applied to portfolios as a risk

Figure 1: Pass the carbon parcel



filter, with assets exhibiting higher sustainability risk being marked for disposal.

By-and-large, they are transacting with purchasers that are less sophisticated investors, often uninformed of the role of buildings in the global decarbonisation goals, which have limited knowledge of regulatory risks, associated decarbonisation costs, or the capacity to implement a decarbonisation programme.

Such activity creates a future reputational risk for such organisations as it is the equivalent to knowingly selling a faulty item, exploiting the asymmetry in information and presence of a bubble in prevailing market values. In what is effectively a game of passing the carbon parcel, the transaction becomes comparable evidence of market pricing, feeding back into valuations that support the pricing bubble (Figure 1).

Second, where the seller and buyer both have knowledge and expertise, and decarbonisation risks and capital expenditure are reflected in pricing this is not explicitly disclosed to valuation auditors or detailed within the market evidence acquired by valuers, despite being an important component of risk analysis. This impedes valuers from attributing pricing differences to characteristics associated with the transition pathway to low/net zero.

As a result, pricing differences may end up being attributed to location, or aspects of building quality, lease terms/structures and/or quality of tenants. Worse still, many investors with expertise of transition risks are reluctant to acquire new assets with embedded transition risk. This is partly due to a lack of specific policy goals or future regulatory signalling and partly due to a lack of confidence in setting pricing strategies. The presence of the carbon pricing bubble exacerbates this; if valuations do not capture the pricing risk of decarbonisation on rents and growth, there is no capacity to reflect the value preservation that retrofitting delivers.

As the threat to both income and yield are not appropriately reflected in valuations and book values, the benefits of projected capital expenditure to achieve transition to low net zero are not applied. Indeed, the risk to income and value from a failure to address decarbonisation are ignored. In short, the risk of doing nothing is not priced.

Rather, transition activity is viewed as a cost drag on returns and benefits to income and yield preservation omitted. Yet, valuers are aware of the embedded risk of decarbonisation, but without a regulatory framework or market evidence are impeded by the valuation process from reflecting it in assessments. This raises a concern over the process of valuation itself and its effectiveness

at encapsulating known market risks in current pricing, or its ability to adapt to periods of structural change in the dynamics of real estate markets.

4. The valuation process and the deficiency of reliance on transaction evidence

In the absence of regulation, clear policy direction or targets and any direction from industry bodies regarding obligations and standards of investment behaviour, the key to deflating the real estate carbon mis-pricing bubble in a managed way lies in transparency and disclosure. This involves implanting an emergency valve between the assessment and disclosure of transition costs, market pricing and quality of transaction evidence available to valuers to support their assessments.

The move to discounted cash flow (DCF) as the primary valuation method is helpful as the model is more explicit in respect of income, costs and risks. Transitioning assets to low/net zero impacts income, capital expenditure and risk. These are reflected in the discount rate which can be used to assess the net present value of future cashflows relative to the prevailing risk-free rate, or relative to a risk hurdle rate that enables investors to assess whether a given asset can deliver a return below, above or at, a risk adjusted rate. It usually comprises:

$$R_N = R_{F+} + RP + ie$$

(Return = Risk Free rate + Risk Premium + inflation expectations)

The risk premium comprises a series of risks specific to the asset including liquidity, transparency, sector, location, lease, tenant and building quality characteristics and anticipated capital expenditure.

Real estate investors agree that on a like-for-like basis, assets that are retrofitted to be close to net zero have lower risk attributes and the converse is also true. These risk attributes comprise:

- Stronger demand from stronger occupiers; improved income certainty.
- Benefit to net income due to efficiency impact on
 - i. Total occupation costs, a proportion of which may be passed through to rental level in the short-term

- ii. Improved effective rent and lower voids including marketing period, fit out periods, lower churn, vacancy, non-payment and associated property management costs

- Assets are future proofed with lower depreciation risks from the anticipated threat of future regulation, reduced leasing risks, carbon tax, future financing risks etc.

This is difficult to reflect in valuations due to the process relying solely on evidence of market transactions, in a vacuum of wider market dynamics and a lack of transparency in the risk/pricing attribution of the comparable market evidence received. Evidence from market transactions provides many standard characteristics in respect of rent received, price achieved, physical characteristics and lease terms, but it does not provide any disclosure of how investors determined these factors influenced the agreed market price.

Being quasi-judicial in process, valuers must evidence any change of approach to attribution of value with market evidence, change in legislation, and/or support assessments with precedent of judgements from previous case law, regardless of how “obvious or accepted” a particular factor might appear.

As a result of this process that requires legal due diligence, valuers are often subject to unfair criticism. To effectively attribute transition risk into pricing, valuers require it to be explicitly detailed through transaction evidence that is reliable and repeatable in the marketplace. This renders the valuation process myopic in the face of wider structural dynamics on the market that are apparent, accepted and have the capacity to be evidenced. Market evidence of pricing, regardless of how ill-informed the buyer or seller is, is applied without being placed in the broader context of known market dynamics and behaviour. This can render valuations being based on false metrics.

For transition risk, this is exacerbated by the strong concentration of retrofitting activity in higher-valuer assets, typically in higher-value locations where the cost to value ratio of required expenditure is lower. Such assets benefit from stronger demand from occupiers with strong ESG/CSR policies, and market pricing that incorporates the expectation

that valuations in the short-term may not account for the transition to net zero (or lack thereof) appropriately. This creates a self-fulfilling prophecy in respect of valuations which may instead strengthen the value attributed to the location or tenant profile.

This in turn further concentrates demand from occupiers seeking low/net zero carbon within certain locations and high-value generating assets, in essence creating a vicious cycle as regards the locational attributes, which in turn concentrates investor activity (Figure 6). This leads to further economic and social polarisation which has a systemic effect, with lower-value assets and locations entering a spiral of decline.

In the absence of explicit evidence from available transactions valuers are unable to make reliable estimations of the expected capital expenditure due to the absence of an accepted cost estimation framework for decarbonisation, which would need to incorporate differences across countries, locations, sectors, building age and building materials.

Equally, knowledge-rich investors also consider the cost of doing nothing in their analysis of worth in

regard to depreciating income, certainty of income and covenant strength, regulation and building obsolescence. Some investors also consider the systemic effects on the deterioration in the wider area and its impact on the locational value. As these analyses are also not disclosed to valuers, they have no evidence of their impact on current market pricing and as a result, they are also unable to consider the cost of doing nothing within any valuation to current market pricing.

5. What is the impact of mispricing on transition progress for assets, profits and organisations?

The combination of a knowledge and skills deficit and book value stability is resulting in considerable inertia across many parts of the industry.

Essentially, this results in a replay of the extend and amend and extend and pretend asset value scenario that arose in the post global financial crisis (GFC) (Figure 2).

As emission efficient assets deliver more efficient total occupation costs they support market rental values. Equally, inefficient assets put pressure on total occupancy costs and downward pressure on rental value. However, current valuations do not reflect this risk to rental levels and net income.

Figure 2: Carbon mis-pricing bubble

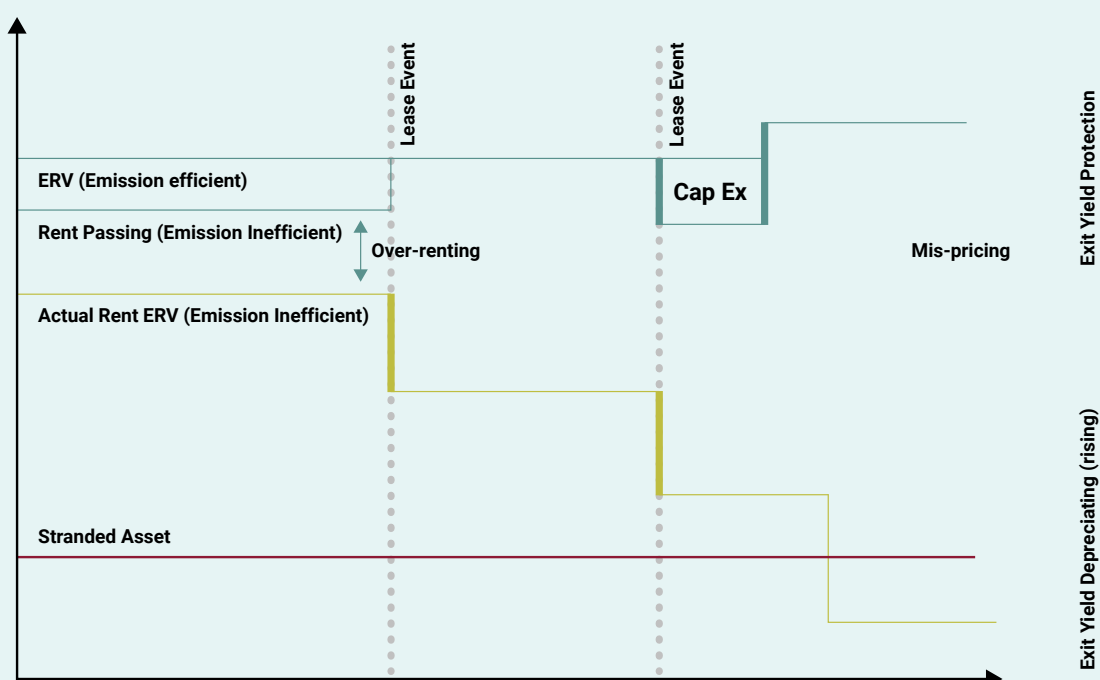
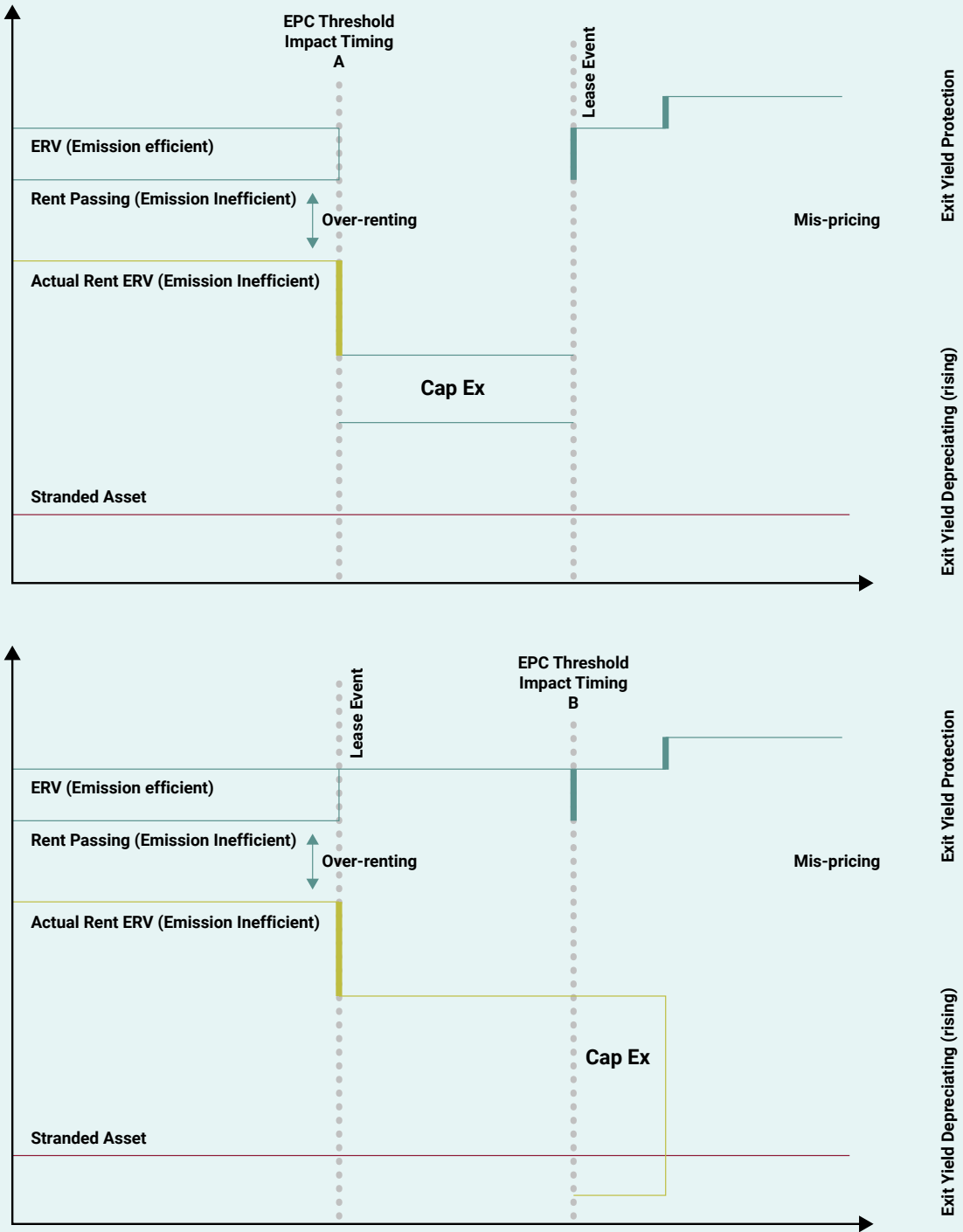


Figure 3 and 4: Carbon mis-pricing bubble with regulatory shock timing A and B



Rather the rental income projection for assets that aside from their transition risk status are otherwise similar, is considered to share the same trajectory within valuations. The reality is quite different. Retrofitted assets will preserve value, while inefficient assets will experience rental and value decline.

The cost of energy is an important driver of the scale of this impact. In the current energy crisis, in

markets where the customer is directly exposed to escalating unit costs of energy, this impact is expected to be readily identifiable. Energy efficient assets, especially those with the capacity to generate their own energy, will have a positive impact on rents relative to inefficient assets. Indeed, with energy costs for a range of occupiers now exceeding rents, energy inefficiency may directly impact on both rental levels and risk of voids.

However, even should the energy crisis abate there is no expectation of a market recovery that might ease the value impact entirely. Rather such assets face the risk of a gradual value decline as rental levels deteriorate at lease events or an abrupt value decline from the risk of regulation or other new industry standards, which may leave lower-value assets stranded. Indeed, the greater the delay in upgrading the asset, the greater the decarbonisation risk as the ratio of transition costs to value increases as rental value declines (Figure 3 and 4).

Such risks are coming from multiple directions including government and other public authorities, finance and insurance industries. Being pivotal to 2030 and 2050 climate targets, the built environment is a focus of policy at regional, national and metropolitan levels. Presently, much of the recent and emerging regulation is focused at a national and city level, with disparity in requirements and progress towards decarbonisation across Europe.

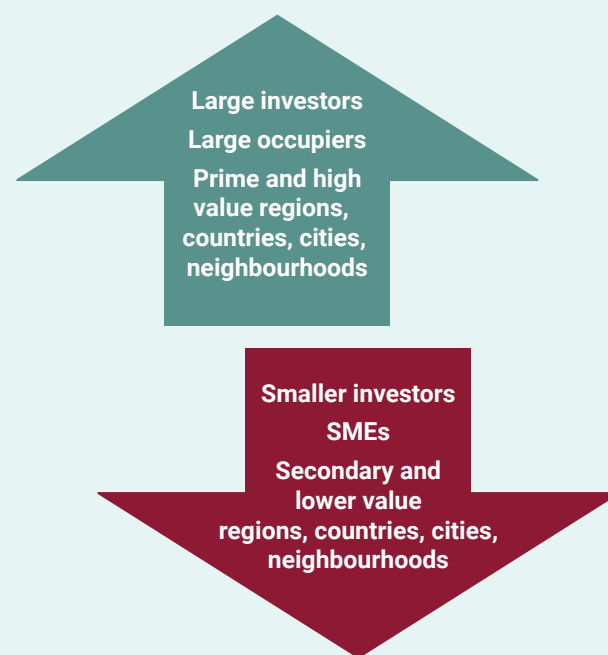
For example, in France the Décret Tertiaire is focused on the tertiary use of buildings and sets targets for the reduction of final energy consumption in existing buildings to at least 40 percent in 2030, 50 percent in 2040 and 60 percent in 2050 compared to a base year not earlier than 2010. It requires collaboration between owners and occupiers to achieve reporting capacity and targets, and the target is a relative reduction.

In the Netherlands, a more absolute target has been set for office buildings focused on supply more than use. This creates a cliff edge for real estate values, with assets not achieving an Energy Performance Certificate (EPC) C or above, being prohibited from leasing to third parties by 2023. The Dutch Government has indicated that it anticipates that all leased office buildings will have an EPC A grading by 2030. Similarly, the Glasgow Finance Alliance for net zero indicates that it will create an energy performance threshold for finance eligibility at some point in the future.

Two-tier market

As the bubble inevitably bursts, it increases the proportionate costs of capital expenditure required to decarbonise relative to the adjusted value, increasing the risk of stranding the asset,

Figure 5: Two-tier market across multiple dimensions

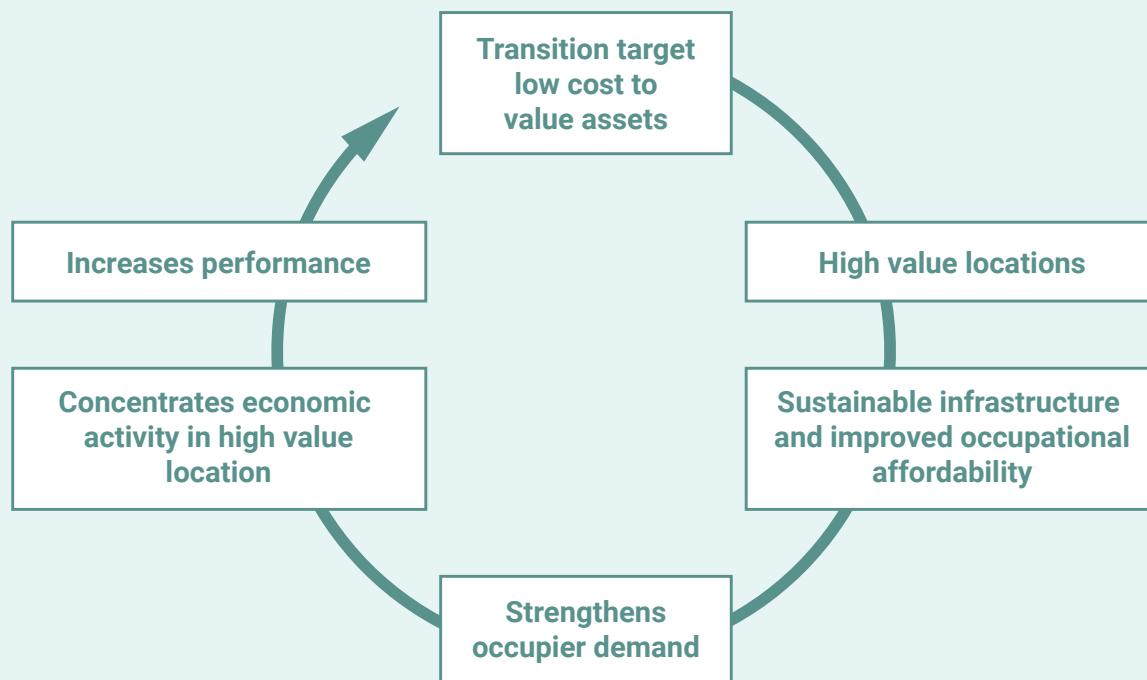


especially if recently acquired at an inflated value. This cycle of decline from a lack of capital expenditure on assets that are feared to be at risk is steadily creating a two-tier market that is accelerating economic and social polarisation.

The presence of a two-tier market is between assets in high and lower-value locations, large and smaller investors, and large multi/national occupiers, and the small and medium sized enterprises (SMEs) that comprise the wider market. Assets in strong locations, benefitting from a national/multinational occupier base striving for a low/net zero footprint are better able to off-set the costs of remediation with net income, certainty of income and reduced risks of obsolescence (Figure 5).

This is due to a number of inter-related factors. First, the ratio of the cost of transition to value is lower for higher-value assets, predominantly in high-value locations as transition costs do not vary significantly with the value of the asset. Second, the higher concentration of leading investors and managers in higher-value locations is matched by an occupier base of large, often multinational organisations that are by-in-large, transitioning their own organisations towards a low/net zero carbon footprint (Figure 6).

Figure 6: Vicious cycle for assets in high-value locations



As such they place value on having a sustainable operational portfolio, recognising its contribution to their organisation’s values, often driven by their own underlying investors, clients/customers/ guests and talent pool, as well as the direct benefits to operational efficiency in respect of reduced energy and other costs.

This often gives rise to the expectation of a “green” rental premium and while there may be some short-term evidence of this arising in certain markets where there is scarcity of sustainable product, such premiums will not endure as efficient, low carbon assets become ubiquitous to Grade A stock. However, as for many forms of operational real estate, there are a number of benefits to net income including:

- Greater occupational efficiency, particularly lower energy costs, supporting rental affordability and reducing non-payment and associated property management costs
- In some sectors/asset types the potential for a new renewable energy income stream
- Lower voids due to reduced marketing periods and speed of lease-up, higher rates of lease renewal, improved tenant quality, lower vacancy and reduced property management costs.

As for investors and investment managers, the knowledge and expertise associated with transition risks is uneven across the wide range of organisations across every industry comprising the occupational base of real estate. As a result, many small- and medium-sized enterprises may lack the knowledge and resource of their larger peers, even where they share their transition values.

In the near term, underlying occupiers in lower-value locations may not value – or be able to prioritise – their sustainability agenda to the same degree. However, improved affordability from energy efficiency will support leasing activity and rental income. This will intensify in markets where end users are exposed to spiralling unit costs of energy. However, given the more fixed nature of associated transition costs, the cost to value ratio is likely to be higher. Even where the benefits to net income are proportionately equal to those of prime locations, the absolute benefit will be lower relative to cost.

Developing a business case for retrofitting such assets is made more difficult by the issues underlying consideration of transition risks in the valuation process, currently. For low efficiency buildings, prevailing rents and those incorporated into valuations are not adjusted for what is essentially obsolescence risk and neither are exit yields, thereby artificially supporting book values.

This is because the valuation process relies on market evidence.

Although it is apparent that sustainability knowledge-rich investors have withdrawn acquisition activity of such assets, the effect is difficult to quantify as market evidence represents activity from investors the least alert to decarbonisation risks. With limited regulatory targets, valuation assessments solely reflect pricing in transactions, in a vacuum of their rationality in respect of wider market behaviour or known risks.

This also underpins finance terms, further exposing investors with less knowledge and expertise of transition risks. This represents a real estate market pricing bubble built upon false metrics that is disincentivising transition activity.

If not burst by a regulatory shock, the pricing bubble will rapidly deflate at lease events that will inevitably erode net rental income. The failure to invest in energy efficient retrofits translates into a failure to preserve income and value. Indeed, the energy crisis has heightened occupiers focus on the energy component of total occupation costs.

The impact of the differential in energy costs between efficient and inefficient buildings on affordability in the current energy crisis may bring such adjustments ahead of lease events as total occupancy costs threaten the viability of business or capacity of residents to pay current rental levels. This may result in earlier and sharper rental decline and/or low renewal rates for inefficient buildings. The impact on voids, rental level and net income will put upwards pressure on exit yields, and a corresponding impact on performance fees.

Yet, if an energy and carbon efficient retrofit occurred, value could be preserved. If transition risks were more appropriately incorporated into valuations currently, the business case would be assisted by the projected income preservation and risk management that transition activity delivers.

The reliance of the valuation process on market transactions as the sole evidence of pricing dynamics, coupled with a lack of transparency in

the risk characteristics underpinning market pricing is fuelling a carbon pricing bubble in real estate values. This fundamental flaw impedes widely accepted transition risks from being reflected in underlying values and is impeding progress in the decarbonisation of real estate.

Meanwhile, the built environment's major contribution to global emissions remains, with increasing risks to climate and climate-related extreme events. This heightens reputational risks for the industry and increases the probability of abrupt regulatory impacts that have the potential to generate a real estate centric financial crisis.

6. Economic polarisation, spiral of social decline and stranded assets

The road to decarbonisation in real estate is leading to polarisation of locations – at regional, country, sub-regional and city level – creating a spiral of economic decline beyond the strongest markets, stifling broader economic growth and locking in social disadvantage.

This is already being recognised as a structural risk and being embedded in wider investment and occupational real estate strategies. Institutional investors consider environmental risks core to investment decision-making. The feasibility of retrofitting towards decarbonisation, especially in the context of inflated underlying valuations, inevitably prioritises higher-value assets given the more favourable cost-to-value metrics. In turn, the availability of low carbon premises is increasingly concentrated in these higher-value locations.

Equally, across all sectors major occupiers that represent the lowest risk in terms of income certainty are seeking operationally efficient portfolios. Although for client-/customer-facing activities, market access will remain a first priority above energy efficiency, all other business activities are prioritising access to low carbon, energy efficient buildings.

For many, this is also impacting on occupational portfolio strategies and business decision-making in respect of location at the macro and micro level. For example, those requiring data centre facilities are selecting locations and – where relevant – partners, that adopt sustainable practices in their operations.

In the corporate sector, large business organisations report that although they may have a large number of locations, 80–90 percent of business is concentrated in between 10–20 percent of these locations. Access to low carbon and efficient accommodation is an important aspect of their selection of location for such global, regional and sub regional hubs.

For other sectors such as retail and logistics, although the greater dispersal of end customers is reflected in a wider distribution of business activity, the availability of carbon emission efficient premises is influencing location decision-making for non-customer facing or location agnostic functions. In turn, this drives the demand for wider services and amenities, including accommodation such as housing and hotels, customer facing retail and leisure amenities and public services, such as healthcare and education.

This is resulting in lower-value locations beginning to spiral downwards in terms of real estate quality, energy efficiency and hence affordability, and in turn, occupier demand (Figure 7). This results in value decline and ultimately stranded assets.

Across commercial sectors, occupiers with a requirement for customer-facing/-adjacency premises in locations with low supply of energy efficient buildings indicate that they undertake some works themselves, however they tend to seek new or recent stock as retrofitting the building beyond renewable energy sources is beyond their capacity. This results in unnecessary embodied carbon in new construction.

7. The issues the industry must address

Valuation inertia is the result of disparities in knowledge of decarbonisation risks across the wider investment market, a lack of easily accessible resources for costing required works, non-disclosure of such decarbonisation risks where identified, and opacity in market pricing in respect of transition risk.

Skills deficit

Despite the increasing importance of decarbonisation both holistically to decelerating climate change and more specifically to managing real estate risks and preserving real estate value, many real estate professionals remain

Figure 7: Downward spiral in locations beyond high-value locations



ill-equipped to respond in terms of knowledge and skills. Decarbonising real estate requires real estate professionals to extend their knowledge base into the materials, processes, systems and technologies that enable decarbonisation, and to understand their impact on revenues.

This requires all real estate investment professionals to develop a detailed understanding of not merely the cost of capital expenditure, but in tandem, also the net benefits for perceived building quality, underlying occupier demand, duration of occupancy, voids and property management costs for net income and the yield protection afforded through future proofing, especially in regard to anticipated regulatory activity.

The lack of clarity as to regulatory goals is itself an impediment as there is a lack of consensus as to the standards that should be targeted. Although CRREM is emerging as a useful tool, the lack of differentiation between new and old buildings in respect of operational targets is a weakness that is inhibiting progress among many owners.

Real estate professionals should have a level of knowledge and available resources that enable them to be able to instinctively consider issues around operational efficiency and potential expenditure required within any assessment of value as they might now with location, rental dynamics and cap rate. Indeed, a number of large investors/managers as well as specialist impact investors have developed this capacity, but it is not ubiquitous across the industry. This is exacerbating the disconnect between price, value and worth in respect of decarbonised assets.

Conflict between UN PRI and capitalising on transition risks

In real estate markets, investors and managers generate their investment performance from their ability to understand cyclical and structural risk, its pricing and opportunities and execute it through investment and asset strategies that maximise returns through optimising income and risk. This expertise represents the value add of the organisation. Providing explicit cashflows that detail where they identify value and how they price it is sensitive, proprietary information, especially when it applies to a risk or opportunity that they have either uniquely identified and/or created a solution for.

However, transition risk is widely accepted within the institutional market, with most institutional investors and managers signatories to the United Nations Principles of Responsible Investing (UN PRI) and the subsequent United Nations' Agenda 2030 Sustainable Development Goals (SDGs).

Anticipated regulation is also widely expected by these market participants. Amongst their peers, there is little proprietary advantage in respect of transition risks and indeed, their commitment to the UN SDGs includes a pledge to forward sustainability objectives through leadership, cooperation, transparency and education.

The only two advantages to maintaining a pricing bubble through opacity in the market are for short-term performance gains on the mis-pricing of existing portfolios, or through retaining the capacity to dispose of assets at risk of becoming stranded – and their responsibility to transition them – to less sophisticated market participants who lack the knowledge to identify transition risks, or the resource to remedy.

However, these advantages offer a short-term gain that, by greatly impeding decarbonisation of the built environment, threaten the long-term performance of all assets. Failure to accelerate activity in the built environment towards the UN's 2030 targets threatens the viability of the planet. That risk is not ethereal, but present.

Institutional investors and managers have a stark choice.

- i. Withhold the data and information on transition risk pricing to prioritise short-term profits and/or exploit less sophisticated investors, in the knowledge that they are impeding the pace of decarbonisation in the built environment. As a direct result, this makes limiting further global warming to 1.5 degrees an impossibility, threatening the very stability of the planet;

or,

- ii. Undertake explicit costings for transition risk and disclose them to valuation assessors, for market transaction provide the detailed transaction data required in respect of the pricing of transition risk in market transactions, enabling deflation of the pricing bubble and assisting the development of business cases for the transition of assets at risk of being out-of-the money.

8. Solutions

Differences between price, value and worth are the bedrock of any market, but given the lower transparency, asymmetrical information bias and heterogeneity involved in real estate, these differences are an important aspect of return generation for real estate investors.

Assessments of worth inform investors as to the maximum price they might be prepared to

pay, although the worth to an investor may be influenced by their own insights, specialist skills, capacity and resources. An investor generating such additional value (delta) from their unique capability will seek to pay the marginal price increment required to secure an acquisition in the market, not necessarily their assessment of what it is worth, which may be higher. Valuation is an estimation of the market price a willing buyer and seller would achieve in the open market.

As a result of these relationships, models of investment worth represent investors and investment managers specialist expertise and their ability to generate real value. Understandably, essentially representing a company's intellectual capital, they are confidential.

However, markets continue to evolve as investors active in the marketplace observe, learn and replicate market practices that add value. Arguably, the decarbonisation of existing real estate stock has evolved to a stage where the expertise is relatively widely dispersed across the major investors in the institutional market. Moreover, the rationale for decarbonising the built environment extends far beyond the real estate industry and decarbonisation of the wider environment is fundamental to long-term risk management.

Therefore, the industry must collaborate to accelerate the path to net zero and by doing so preserve value and reduce the risk of stranding assets across the investment universe, not merely within proprietary portfolios. To achieve this, the industry needs to remedy three issues. First, develop, extend and share a transition risk knowledge base that allows all stakeholders to assess the costs of transition (or lack thereof) and their relationship with income and value.

Second, increasing transparency to close information gaps between price, value and worth. Third, stop exploiting knowledge asymmetry in respect of transition risk by selling assets with inflated pricing to less sophisticated investors.

This could be achieved by the following, inter-related initiatives that seek to democratise access to data and knowledge on this issue by:

- Supporting the development of a market-accepted data warehouse providing detailed, reliable capital expenditure and risk impact data.
- Contributing to this data warehouse by determining and disclosing the risk premium ascribed to decarbonisation for individual assets, potentially enabling market benchmarks to be derived across locations, sectors, building ages, materials etc.
- In advance of regulation and clear targets, temporarily disclose investment management portfolio risk and contingency analyses in respect of retrofitting and decarbonisation asset strategies to valuation professionals through secure holding rules.
- Providing explicit detailed data on estimated capital expenditure and anticipated impact on income level, certainty and depreciation for transaction evidence feeding into valuations. Such evidence to be subject to secure holding rules.

9. Benefits of progress and risks of inaction

There are many benefits to developing an industry-wide knowledge bank, transition risk disclosure and supplying valuation professionals with the market evidence they require to support rational valuations. First, by deflating the carbon mispricing bubble in real estate values it safeguards the industry against a real estate crisis. Second, it assists in accelerating the transition of the built environment to low/net zero, greatly contributing to efforts to respond to the climate emergency and limit further global warming to 1.5 degrees by 2050. In doing so, it enables the industry to provide economy and society with the built infrastructure it requires for business, commerce, services and homes. It also reduces the concentration of activity on higher-value assets, thereby providing for a greater distribution of economic opportunity across regions, countries and within individual cities.

The OECD suggest that the activity itself also generates substantial economic benefits in respect of employment growth, well-being of occupiers and energy affordability, especially for housing⁸ Importantly, by enabling such activity across all locations, economic growth and opportunity

is more dispersed. This also leads to a wider dispersal of the demand for electricity and generation of renewable electricity lowering the pressure on electricity grids in high-value locations that are in the process of adapting to the surge in renewable supplies to the grid and the greater volatility in both demand and supply.

The risks of inaction are severe for the industry and for the wider economy and society. In addition to the risk of generating a real estate crisis with the potential for systemic impact on the financial and economic markets, continued inertia would result in:

- Failure of the built environment to provide necessary infrastructure requirements for commerce, public services and society, with systemic impacts on economy and society.
- Failure to address the built environment's major contribution to emissions and assist in the response required to meet the needs of the climate emergency.
- Failure to risk manage assets and preserve income and value.

The benefits of any information advantage may prove short-lived and greatly out-weighed by the medium and longer-term consequences for real estate markets specifically and for the planet more globally. It is crucial that the industry works to develop an accessible, accepted knowledge base that enables the impact of decarbonisation risk on income and value to be assessed. This approach should capture the risk management benefits to income and value preservation achieved through decarbonisation retrofitting and importantly, also assess the cost of doing nothing on projected income and exit yield.

-
- 1 https://www.oecd-ilibrary.org/sites/a48ce566-en/index.html?itemId=/content/publication/a48ce566-en&csp_ab2217643181306c21a0ad1b6627da65&itemIGO=oecd&itemContentType=book#
 - 2 Ibid
 - 3 mailto:https://www.oecd-ilibrary.org/sites/a48ce566-en/1/3/2/index.html?itemId=/content/publication/a48ce566-en&csp_ab2217643181306c21a0ad1b6627da65&itemIGO=oecd&itemContentType=book-section-d1e2233
 - 4 EU Energy Performance of Buildings Directive, EC 2019
 - 5 mailto:https://www.oecd-ilibrary.org/sites/a48ce566-en/1/3/2/index.html?itemId=/content/publication/a48ce566-en&csp_ab2217643181306c21a0ad1b6627da65&itemIGO=oecd&itemContentType=book-section-d1e2233
 - 6 https://www.bpie.eu/wp-content/uploads/2021/09/Glossary-of-terms-Energy-efficiency-and-building-policies-in-the-EU_rev3.pdf
 - 7 See for example, <https://www.egi.co.uk/legal/valuing-sustainability-and-net-zero-carbon-by-sector/>; https://www.mandg.com/investments/institutional/en-gb/insights/2022/q3/decarbonisation?utm_source=linkedin&utm_medium=social-paid&utm_campaign=decarb-2022-organic&hsamp_network=linkedin&hsamp=bYZPFRqoLeVb; <https://irei.com/publications/article/unlocking-virtuous-circle-valuation-transition-net-zero/>;
 - 8 https://www.oecd-ilibrary.org/sites/a48ce566-en/1/3/2/index.html?itemId=/content/publication/a48ce566-en&csp_ab2217643181306c21a0ad1b6627da65&itemIGO=oecd&itemContentType=book#section-d1e2701