Real Estate Equity - Climate Report

LGIM Real Assets 2024

LGIM

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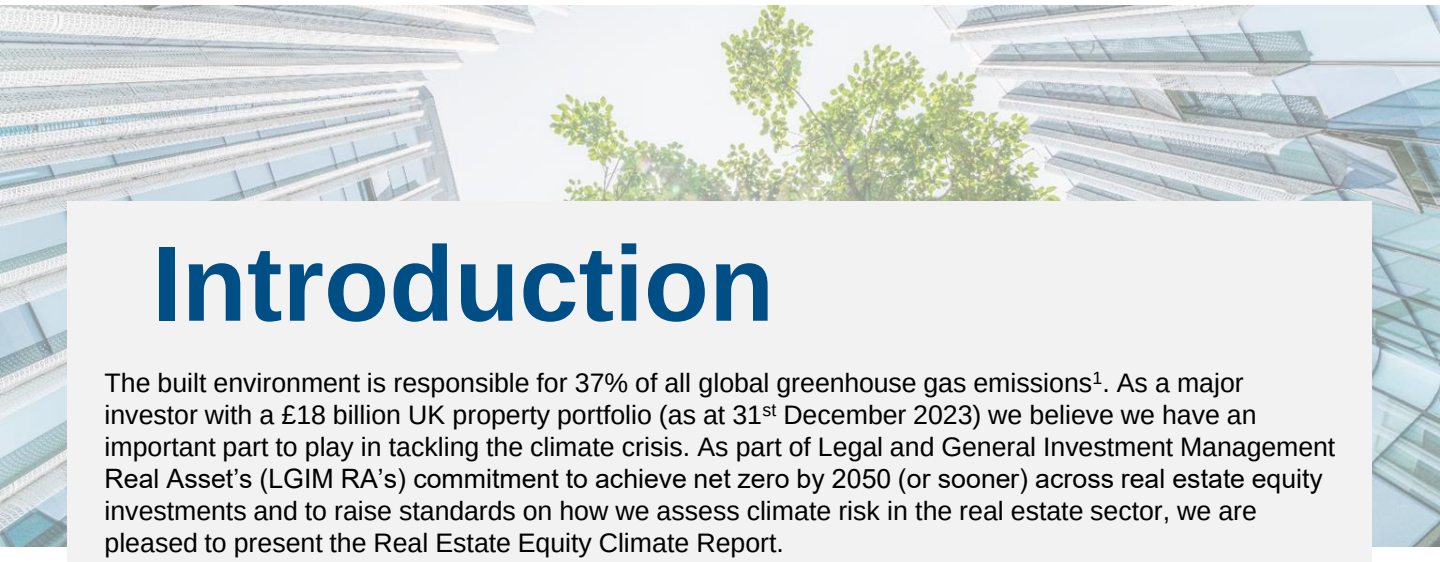


Introduction

The built environment is responsible for 37% of all global greenhouse gas emissions[1]. As a major investor with a £18 billion UK property portfolio (as at 31st December 2023) we believe we have an important part to play in tackling the climate crisis. As part of Legal and General Investment Management Real Asset's (LGIM RA's) commitment to achieve net zero by 2050 (or sooner) across real estate equity investments and to raise standards on how we assess climate risk in the real estate sector, we are pleased to present the Real Estate Equity Climate Report.

This report forms the first standalone LGIM RA disclosure aligned with the Task Force on Climate-related Financial Disclosure (TCFD) recommendations, building on the contributions the division has made as a part of L&G's Climate and Nature Report since 2017. It also aligns with the Better Buildings Partnership (BBP) guidance around climate resilience strategies for commercial real estate[2].

With this, we have taken the opportunity to consolidate and document our commitments, and the steps that we are taking to increase the resilience and sustainability of our real estate assets. It is the belief of many that the window for action to reduce the impacts of physical climate risk and achieve net zero is closing. This is why we believe that this is a crucial time to remain conscious and actively focused on future-proofing our assets against climate risk, which we believe is becoming increasingly more influential on real estate value and performance.

"We believe that building a robust strategy, applying vigorous risk management and tracking progress against targets is fundamental to achieving net zero by 2050 and minimising the impact from physical climate risks. We have taken time to identify gaps and implement improvements across the investment lifecycle and our asset management"

Shuen Chan, LGIM RA Head of Responsible Investment and Sustainability

LGIM Real Assets portfolio summary

L&G has been an investor in UK commercial, alternative and residential real estate since 1971. Today, LGIM RA is responsible for over £18 billion in UK real estate equity assets, across 20 unlisted funds, which are all included in the scope of this report.

Real Estate Equity AUM	Total Products
£18.2 bn	**20** unlisted products: • **7** balanced funds • **5** specialist funds • **4** segregated mandates • **6** joint ventures

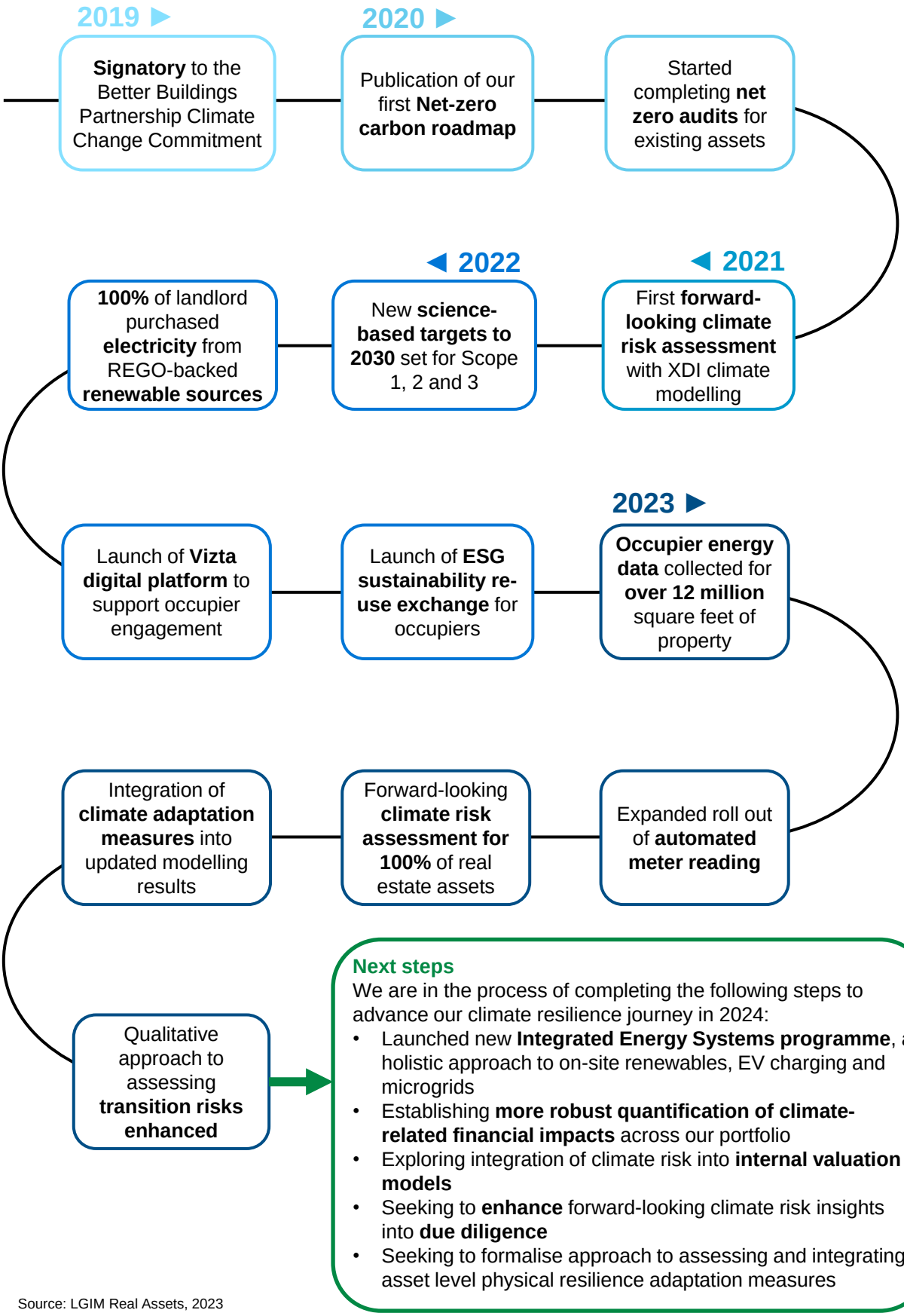
Source: LGIM Real Assets. AUM data estimates at 31 December 2023.
Assumptions, opinions and estimates are provided for illustrative purposes only. There is no guarantee that any forecasts made will come to pass.

[1]United Nations Environment Programme (2023) "Building Materials and the Climate: Construction and New Future" https://wedocs.unep.org/handle/20.500.11822/43293

[2]BBP Climate Resilience Guide for Commercial Real Estate (2022): https://www.betterbuildingspartnership.co.uk/sites/default/files/media/attachment/BBPClimate%20Resilience%20for%20Commercial%20Real%20Estate.pdf

Our climate resilience journey

LGIM RA has worked continuously improve our approach to climate resilience. We have outlined the most significant steps in our journey over the past five years below:



Source: LGIM Real Assets, 2023

LGIM Real Estate Equity initiatives in 2023

Initiative	Outcomes and metrics	Commentary
 **Asset Sustainability Plans (ASPs)** Aiming to have Asset Sustainability Plans in place for all assets within the portfolio.	**83%** of assets with completed ASPs	Short-, medium- and long-term sustainability plan for the asset. Targeting 100% of assets.
 **Landlord Gas** Aim to phase out all landlord gas by 2030.	**21%** of assets with landlord gas	Measures ongoing to phase out gas for all assets.
 **Data Coverage** Amount of occupier data obtained via of Automated Meter Readers (AMRs) and manual data collection throughout the year.	**24%** of assets by floor area with at least 1 AMR at year end[3] **55%** of assets by floor area able to report actual occupier data at year end[4]	Targeting 80% actual occupier data coverage for 2024 and 100% in the long term. AMRs have been installed throughout 2023 to help achieve this.
 **Occupier Engagement** Increase engagement with priority occupiers.	ESG-related occupier engagement through **community engagement events, tenant surveys, direct conversations** and activities	Ongoing engagement via Vizta, a dedicated occupier engagement platform. Seeking to expand occupier engagement programme.
 **Net Zero Audits** Carry out net zero carbon audits in all priority assets[4].	**21%** of all assets with net zero carbon audits (180 audits)	Learnings used to apply to all assets. Focus to expand to 100% of all priority assets[5].
 **EPC Ratings** Work to improve EPC ratings across the Fund to meet Minimum Energy Efficiency Standards (MEES).	**84%** of assets with EPC A-C rating	EPCs monitored and mitigation measures applied to meet MEES requirements.
 **Quantifying Climate Risk** Integrate current and future climate-related risks into acquisition and investment decisions.	**93%** of assets modelled to have low or medium climate risk in 2050 under a high emissions scenario[6]	Forward-looking modelling conducted for 100% of assets.

Source: LGIM Real Assets, 2023

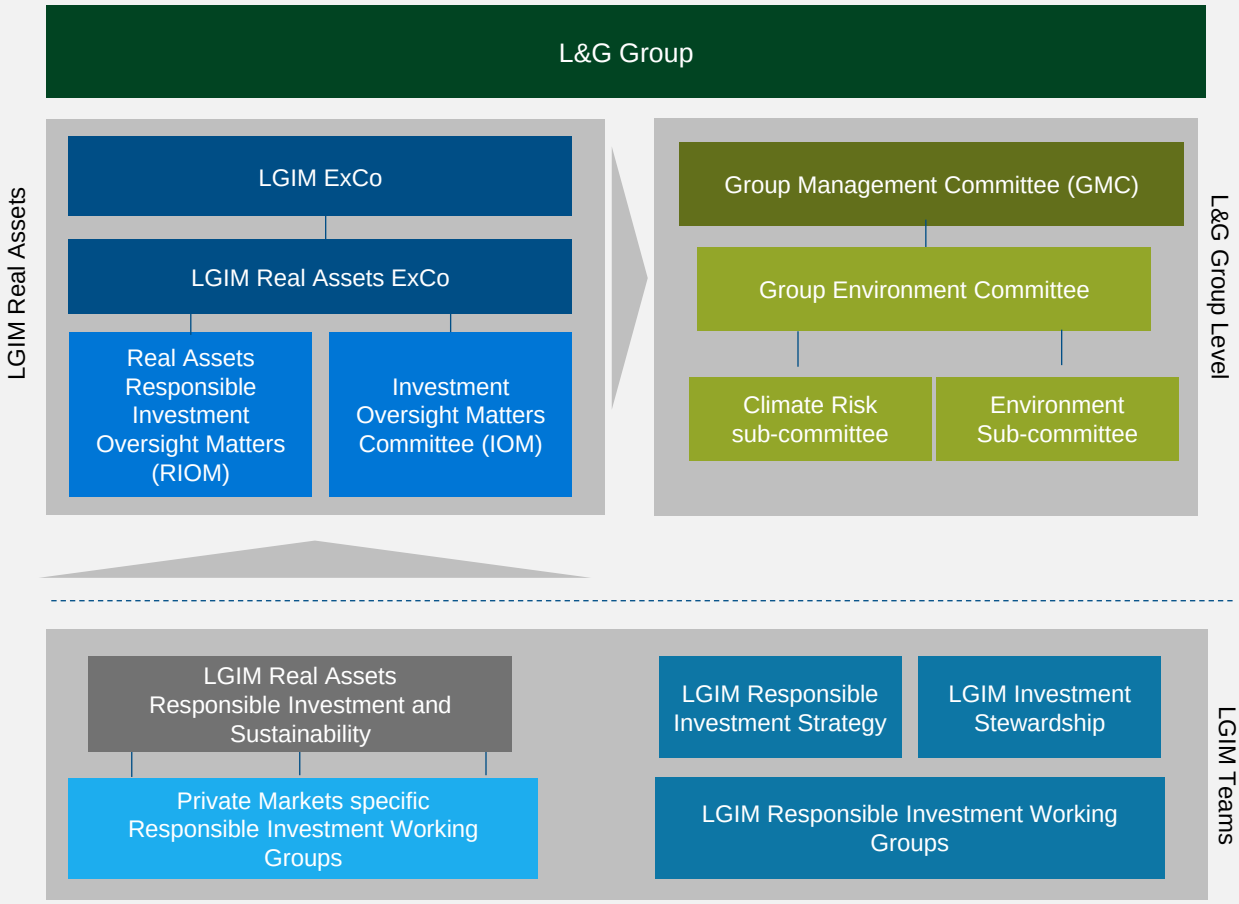
[3]Year-end data provides a snapshot of the portfolio performance as of 31st December 2023, following includes changes in portfolio assets and levels of data coverage throughout the year.
[4]Assets which have the capacity to report actual data, through AMRs, manual data readings and other methods, rather than relying on benchmarked data.
[5]Priority assets are determined on different variables such as high rent roll, strategic occupiers, asset value, and lot size.
[6]The high emissions scenario is representative of RCP 8.5, which is a climate pathway where greenhouse gas emissions continue to grow unmitigated, leading to a best estimate global average temperature rise of 4.3° C by 2100. More details provided on page 8.

1. Governance

LGIM Real Assets Responsible Investment and Climate-related Governance

Managing physical and transition climate-related risks requires us to embed ESG across L&G Group and to support our teams in building the capabilities required to deliver against our strategy. The key decision-making bodies that influence LGIM RA's climate-related strategy, as well as the process for escalating identified material ESG-related risks including climate-related risks from operational management to board-level, are outlined in the diagram below.

Committees, working groups and teams responsible for managing and overseeing climate-related risks at LGIM Real Assets



Source: LGIM Real Assets, 2023.

Board-level governance

The Real Assets Responsible Investment Oversight Matters (RIOM) committee is responsible for overseeing the responsible investment and sustainability characteristics, objectives and commitments of all portfolios managed within the LGIM Real Assets business, including governing platform-wide responsible investment and sustainability strategies. The RIOM is a sub-committee of the LGIM Real Assets Executive Committee (RA ExCo) and is chaired by the LGIM RA Head of Responsible Investments & Sustainability. RIOM members are represented by senior heads of the respective business areas and meet quarterly. The RIOM also have escalation criteria which allow the necessary LGIM-wide decision-making bodies to deliberate relevant issues when raised.

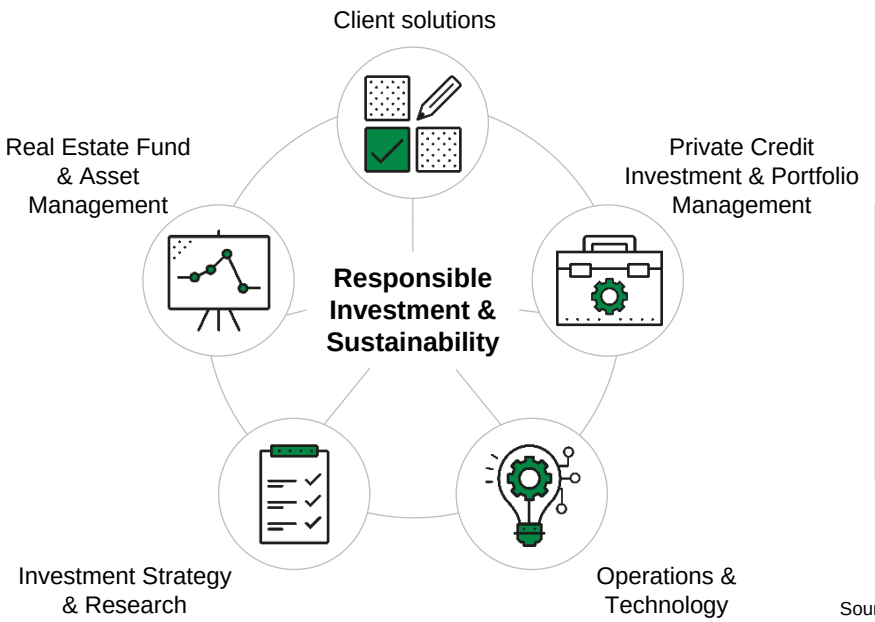
At L&G Group level, the Global Head of LGIM RA is a standing attendee on quarterly meetings of the Group Environmental Committee (GEC). The GEC has responsibility to ensure compliance with the principles of good corporate governance and is also responsible for developing and reviewing Group ESG strategy and policies, which includes climate-related risks. Under the governance of the GEC, there are two subcommittees which also meet quarterly, where LGIM RA Responsible Investment and Sustainability members are represented. These subcommittees review and challenge performance against tolerances and targets established by the GEC, one for climate risk and one for other environmental opportunities and risks. More information on can be found in the L&G Group Climate and Nature Report 2023.

LGIM Real Assets Responsible Investment and Sustainability Team

LGIM RA has a dedicated Responsible Investment and Sustainability team, led by the LGIM RA Head of Responsible Investment and Sustainability who reports into the Global Head of LGIM Real Assets. The team support ESG integration and sustainable investment efforts in the Real Assets platform and is responsible for developing the strategies and frameworks related to climate risk assessment, monitoring and management.

The Responsible Investment and Sustainability team works closely with the investment, asset management and portfolio management teams on an ongoing basis throughout the investment process – from origination to post-investment, to identify climate-related risks, monitor performance and provide guidance on the implementation of mitigation measures.

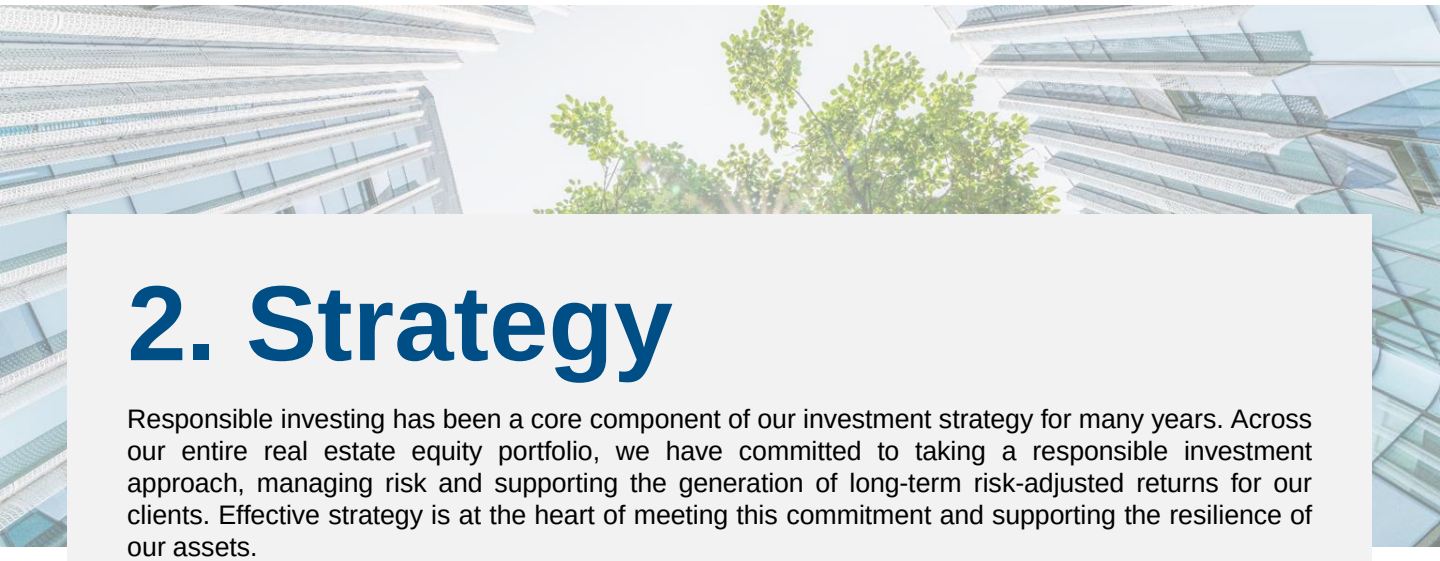
ESG engagement and collaboration within LGIM Real Assets



Key internal working groups:

- **Real Asset ESG & Operations**
- **Net Zero Development Group**
- **ESG Fund Integration Group**
- **Social Impact Group**
- **ESG Private Credit Group**

Source: LGIM Real Assets, 2023.

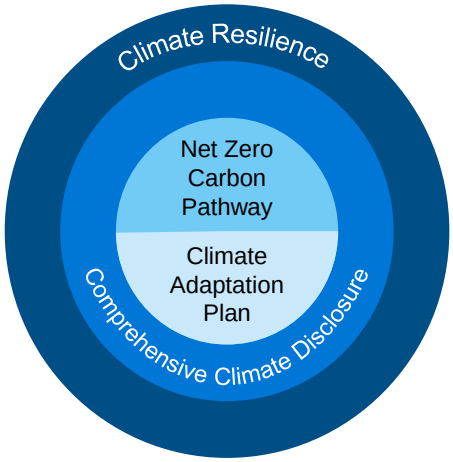


2. Strategy

Responsible investing has been a core component of our investment strategy for many years. Across our entire real estate equity portfolio, we have committed to taking a responsible investment approach, managing risk and supporting the generation of long-term risk-adjusted returns for our clients. Effective strategy is at the heart of meeting this commitment and supporting the resilience of our assets.

In 2019, we took a significant step forward in our ambition by becoming a signatory to the Better Buildings Partnership (BBP) Climate Change Commitment[7] and pledged to achieve net zero carbon emissions for our real estate platform by 2050 (or sooner). As part of this, we have also committed to the BBP's definition of climate resilience, illustrated below. Within this Climate Report we will disclose how climate resilience is integrated into the investment and asset management process in line with TCFD recommendations. LGIM RA's strategic approach to climate resilience has also been developed to align with the components of a climate resilience strategy set out in the BBP Climate Resilience Guide[8].

Components of climate resilience



A climate-resilient business has a strategy in place to:

Mitigate the worst impact of climate change by becoming 'net zero' carbon before 2050

Adapt to operating in a world in which climate-driven disruption is more frequent and severe

Disclose climate related information to investors, regulators and other stakeholders in a useful and timely way

Source: Adapted from BBP Climate Resilience Guide - Components of a climate resilience strategy, 2022

As such, in this report we use the following definitions of climate resilience:

- **Climate mitigation**: Refers to activities taken by the business to reduce or prevent greenhouse gas emissions associated with our assets
- **Climate adaptation:** Refers to activities taken to reduce the impact of physical climate-related hazards across on our assets

[7]BBP Climate Commitment: https://www.betterbuildingspartnership.co.uk/member-climate-commitment
[8]BBP Climate Resilience Guide for Commercial Real Estate (2022): https://www.betterbuildingspartnership.co.uk/sites/default/files/media/attachment/BBPClimate%20Resilience%20for%20Commercial%20Real%20Estate.pdf

Our response to responsible investment and sustainability

At LGIM RA, we believe a responsible and sustainable approach to real assets investment management will enable our business to deliver long-term positive value to all our stakeholders. As such, we have developed the LGIM's Responsible Investment Policy and Framework for Real Estate Equity (*Responsible Investment Policy - Real Estate Equity*) built on the principles of active ownership that sets out our approach to responsible investing.

Under this framework, we integrate ESG considerations into all of our investment decision making by identifying and managing the issues that are, in our view, the most material to our assets across the investment lifecycle. More detail provided in the physical and transition risk Strategy and Risk Management sections. As such, identifying climate-related risks and embedding responses to address any challenges that may have an impact on our assets has been a key focus of our strategy.

Developing our Climate Risk Strategy

By identifying and quantifying our risks, we are able to use results and insights to define and refine our strategy towards transition and physical climate risks. To do this, we have identified the most suitable time horizons and climate scenarios to support this assessment.

Considering LGIM RA's strategic and financial planning time horizons, and hold periods on assets, it was concluded that the climate risk assessment time horizons should be as follows:

- Short (present)
- Medium (2030)
- Long (2050)

Modelling and analysis performed for the LGIM RA portfolio, considers two distinct Intergovernmental Panel on Climate Change (IPCC) Representative Concentration Pathway (RCP) climate warming scenarios for the assessment of physical risks and three distinct transition scenarios for the assessment of transition risks.

Temperature rise	Physical risk scenarios[9]	Transition risk scenarios[10]	Impact
~+2°C by 2100	**Low emissions: IPCC RCP 2.6** A low emissions scenario that aims to keep global warming likely below 2°C above pre-industrial temperatures with significant action contributing to an emissions decline.	**'Orderly transition'** Policy action is consistent with a given emissions reduction and temperature objective begins immediately, limiting physical and transition risks and meeting the Paris Agreement by 2050.	**Transition**: Immediate, globally coordinated decarbonisation efforts achieving net-zero by 2050, associated with significant immediate costs to meet these demands. **Physical**: Physical risks less severe, but still likely to occur in the long term.
		'Disorderly transition' Delayed or divergent action towards a meeting the Paris Agreement increases the long-term costs of that transition to the economy and financial assets.	**Transition**: Delayed and uncoordinated decarbonisation efforts divergent across countries and sectors achieving net-zero by 2050, associated with higher transition risks. **Physical**: Physical risks less severe, but still likely to occur in the medium to long term.
~+4°C by 2100	**High emissions: IPCC RCP 8.5** A high emissions scenario where there is global failure to act on climate change meaning emissions continue to grow at historical rates.	**'Hothouse world'** Models the effects of a stasis in policy that is inconsistent with net zero objectives ever being met and for which financial risks primarily relate to physical climate impacts.	**Transition:** Permanently stunted GDP growth and severe economic social shifts. **Physical:** Chronic changes to weather patterns and ecosystems causing severe impacts on a global scale.

Source: LGIM RA, 2023. Assumptions, opinions and estimates are provided for illustrative purposes only. There is no guarantee that any forecasts made will come to pass.

In alignment with LGIM RA's focus on delivering long-term value to our clients, we embed a conservative and risk averse approach in our strategy. As such, physical and transition risks have been disclosed and integrated into strategy and risk management decision according to the climate scenarios in which those risks are most likely to manifest. This means that for physical risks we focus our risk management approach on a high emissions, RCP 8.5, 'hothouse world' world scenario and on a low emissions, RCP 2.6, 'orderly' transition scenario for transition risks. This helps to enhance resilience of our operations and strengthens our ability to adapt across a range of likely climate scenarios

[9]Source: IPCC 5th Assessment Report (2014): https://ar5-syr.ipcc.ch/topic_futurechanges.php.

[10]FCA transition risk scenario definitions: https://www.fca.org.uk/publication/corporate/cfrf-guide-2023-scenario-analysis-guide-asset-managers.pdf

2a. Strategy: Physical risk

Strategy: Physical climate-related risks and opportunities

We acknowledge that climate change will have a material impact on our business. Consequently, LGIM RA has proactively collaborated with climate modelling provider XDI and external climate modelling specialists at Marsh to deepen our understanding of physical climate risks and their impacts on our assets. This has been crucial in responding to risks and strengthening the resilience of our portfolio and business governance and strategy in line with TCFD recommendations.

Approach to physical climate risk modelling

To obtain a comprehensive understanding of the current and future level of risk exposure associated with climate change, we have utilised physical climate models. We have performed a comprehensive re-evaluation of our portfolio using physical climate risk modelling to determine the materiality of physical hazards across the real estate equity portfolio as of 31 December 2023. This approach enables us to conduct a comprehensive evaluation of the risk exposure that our portfolio currently faces across a broad range of physical climate hazards, and how this is likely to change in the future under different climate warming scenarios. Additionally, we also quantify the physical damage, allowing us to project the financial impacts across the portfolio and integrate these findings into our investment strategies going forward.

Our Climate Modelling 4 Step Process

APPROACH OVERVIEW	2023/24 UPDATES
1 Define modelling variables and set-up model • Define climate scenarios for analysis: 2x climate pathways, high emissions scenario, RCP 8.5 (~+4°C) and low emissions scenario, RCP 2.6 (~+2°C) • Determine climate perils to be modelled: River Flood; Surface Water Flood; Coastal Flood; Wildfire; Windstorm; Subsidence; Freeze-Thaw • Define modelling timeframe: 2020 to 2100 with a focus on the period to 2050	✓ Quantification and modelling of asset level impacts under high (RCP 8.5) and low (RCP 2.6) emissions scenarios
2 Collect asset data and geocode assets • Geolocate assets at building level accuracy • Assign Unique Property reference Number (UPRNs) • Allocate vulnerability archetypes across the portfolio • Enhance asset-level data by using existing available asset information, including building characteristics and adaptation measures	✓ Assignment of bespoke archetypes for all assets ✓ Improved asset level data for assets above a medium flood risk (based on flood zones)
3 Quantify climate financial impacts • Measure and quantify relative expected cost of damage of physical climate perils in the short, medium, and long term for all assets • Establish standardised risk score thresholds throughout the portfolio to enable assignment of RAG aligned climate risk scores relating to average annual proportion of damage to an asset due to climate hazards	✓ Started to explore development of financial adjustments
4 Inform climate strategy and resilience decisions • Identify the assets that are at the highest risk • Classify the key perils that contribute to the risk exposure of each asset • Quantify the change in risk exposure over time and how this may influence investor strategy • Consider and implement adaptation measures	✓ For pilot assets, started to conduct detailed asset level surveys to further assess risk and review adaptation options

Source: LGIM Real Assets, 2023

An update on our climate modelling progress

Following our work in 2022, LGIM RA's climate database has been further enhanced to include improved asset-level data. This enhancement was risk-based, focused primarily on assets with medium to high flood risk. The enhancements seek to improve our understanding of the climate impacts for the assets that are at greatest risk today, through undertaking climate analysis that utilises improved accuracy and granularity of asset-level input data. This includes incorporation of:

- **Asset type:** e.g. low/high-rise office, high-rise residential, industrial
- **Structural design specification:** e.g. material of walls
- **Extreme wind:** e.g. details on roof design
- **Flooding:** Resilience measures such as flood protection, height of ground floor level above ground surface, height of electrical plugs, key asset location and below ground space

We have run a high-level comparison of previous LGIM RA portfolio analysis completed (i.e. climate risk data that omits above enhancements and physical risk adaptation factors) against our most recent portfolio analysis, where these factors have been included. Applying this enhanced analysis shows an overall reduction in the risk of assets. A summary of the impacts (when comparing high emissions warming scenario outputs[11]) of incorporating enhanced asset-level data for high and medium assets is as follows:

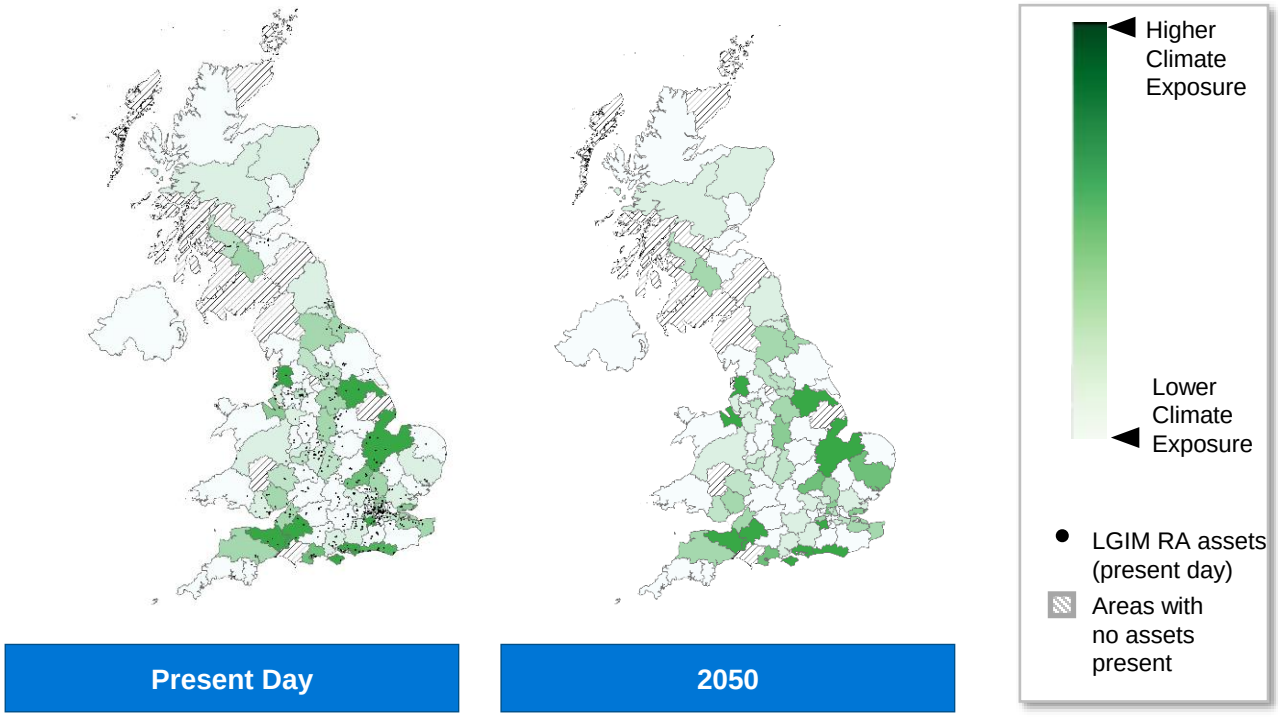
- Aggregate damage ratios[12] show a percentage change of -**10% in 2020** and **-36% in 2050**, compared to the previous analysis which did not include risk adaptation factors, demonstrating that overall, the measures incorporated is increasing asset resilience
- Overall, exposure to flooding-related perils reduces, with most assets moving to lower risk categories
  - In particular by 2050, **17%** of assets show a reduced climate risk score across all flood perils
- **~22%** of our assets have moved from a low to medium climate risk score for soil subsidence
  - Whilst this is due to incorporating details on building type into the modelling (e.g. high rise structures are modelled to be more vulnerable to this hazard), we are exploring risks identified to gather better construction design information to further improve modelling for this peril

Moving forward we are using this analysis to help understand which adaptation measures had a material impact on the climate resilience of our assets, which will help to develop informed, data-driven adaptation plans with positive intended implications for the portfolio's climate risk profile.

[11]Enhanced data from XDI and LGIM RA assessment of assets as at 31 December 2023. Previous assessment from XDI and LGIM RA assessment in April and November 2023.

[12]Damage ratio is the average proportion of damage to an asset each year due to climate- relative hazards and produces a 'risk score' per asset. Climate risk score analysis is based on LGIM RA's assets aggregated across all perils. Risk score bandings are based on the projected average damage ratio at an asset level

Average climate risk across the LGIM RA portfolio in present day and 2050 (high emissions scenario)[13]



Source: XDI and LGIM RA assessment of assets as at 31 December 2023 for the high emissions scenario, note assets in the Channel Islands not shown.
Assumptions, opinions and estimates are provided for illustrative purposes only. There is no guarantee that any forecasts made will come to pass.

The current climate risk exposure under the high emissions scenario is primarily focused in the Central and Southwest regions of England, and this pattern is expected to continue until 2050. Conversely, climate risk exposure in the Northeast of England is relatively low and remains low risk throughout 2020 to 2050.

Projected proportion of damage in climate risk scores over time

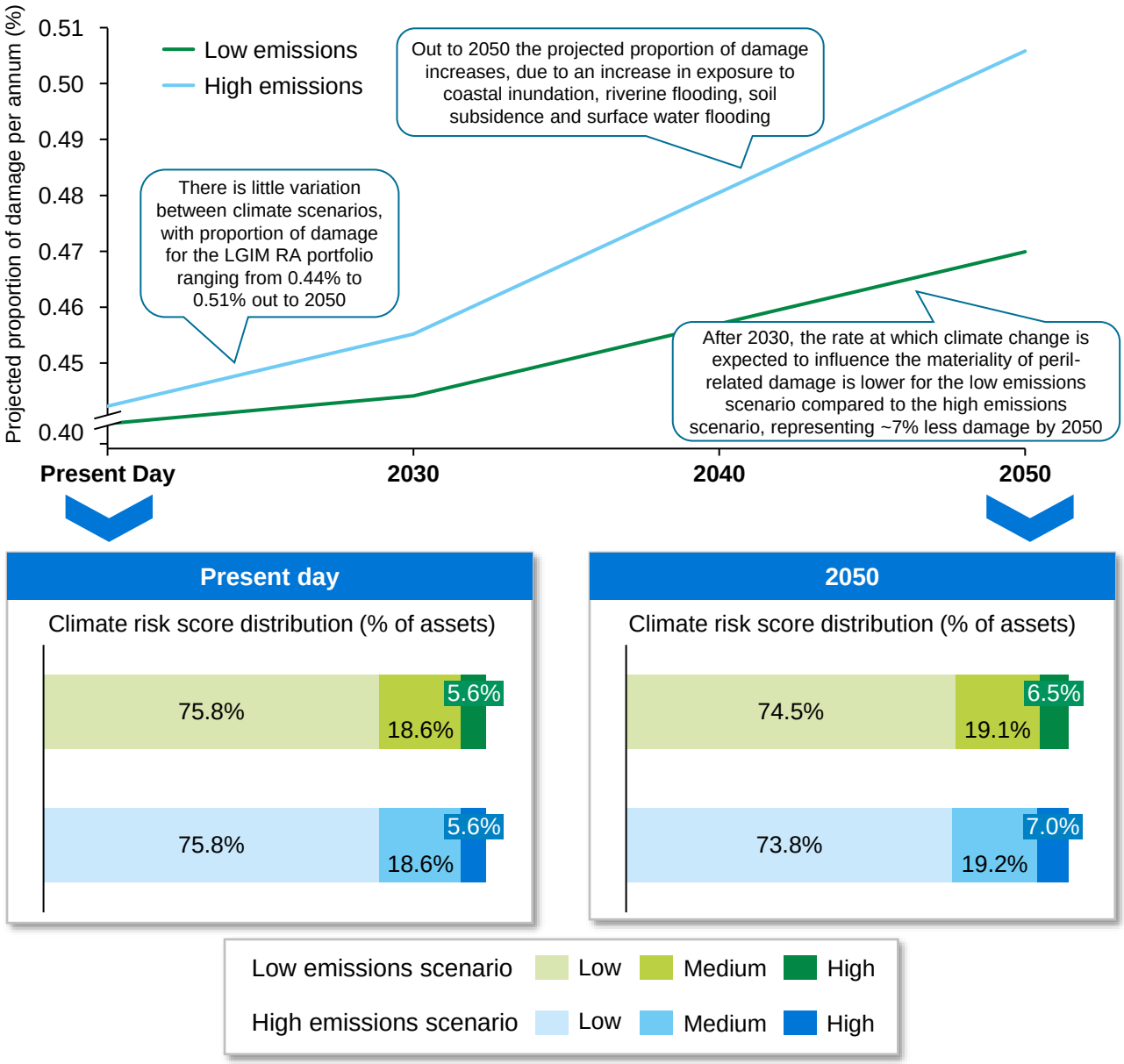
The below graph illustrates the results of the LGIM RA analysis, showing the projected change in climate-related damage across all real estate equity assets. This metric is derived from the projected average proportion of damage that an asset could face in a given year as a result of climate hazards. For the analysis below we have assumed that all assets have the same value and this is kept constant over time. Climate risk scores are assigned to each asset based on projected proportion of damage per annum aggregated across all perils.

Based on the conducted modelling, our assessment is that the risk exposure of the LGIM RA portfolio is relatively low at present. ~7% of assets are categorised as having a high-risk exposure in 2050 under the high emissions scenario, which is an increase of ~1.5% from 2020.

There is a similar trajectory in modelled results from 2020 to 2050 under both high and low emissions scenario, with a slight divergence in the projected average proportion of damage in high emissions scenario after 2030. We can estimate the potential financial implications arising from physical climate impacts by multiplying this metric with an asset's reinstatement value to get a total modelled cost of damage on an annualised basis.

[13]Statistics have been calculated based on the mean damage ratio across all assets falling into each UK postcode

Projected proportion of damage in climate risk scores over time



Source: XDI and LGIM RA assessment of assets as of 31 December 2023 for the low and high emissions scenario. The expected proportion of damage for all LGIM RA assets in the portfolio and percentage (%) of high, medium and low risk assets in Present Day and 2050. Assumptions, opinions and estimates are provided for illustrative purposes only. There is no guarantee that any forecasts made will come to pass.

Peril level risk score analysis (high emissions scenario)

LGIM RA assesses climate risk to seven key climate perils, with the main driver of climate exposure identified as flooding, including riverine flooding, coastal inundation, and surface water flooding. In the present day, 11% of LGIM RA's assets that are exposed to any coastal inundation and 10% of assets that are exposed to any surface flood risk are considered high risk, and the number of high-risk assets is increasing out to 2050. As part of our risk management process related to floods, we examine existing mitigation measures and are exploring opportunities to enhance our resilience against future flooding events. The below figure shows the risk profile by peril and projected change out to 2050. This figure separates assets that have no risk exposure and analyses risk scores for assets that have exposure.

Peril level risk score analysis (high emissions scenario)

Peril	Low Risk		Medium Risk		High Risk		% of assets exposed present day
	% present day assets exposed	Projected change to 2050	% present day assets exposed	Projected change to 2050	% present day assets exposed	Projected change to 2050	
Coastal Inundation	80%	↓	8%	↗	11%	↑	**9%**
Surface Water Flooding	69%	↘	21%	↘	10%	↗	**27%**
Riverine Flooding	61%	↘	32%	↗	8%	↗	**17%**
Soil Subsidence	88%	→	12%	→	0%	→	**90%**
Extreme Wind	100%	→	0%	→	0%	→	**100%**
Freeze Thaw	100%	→	0%	→	0%	→	**1%**
Wildfire	0%	n/a	0%	n/a	0%	n/a	**0%**
	↑ 5 to 10% ↗		0 to 5% → 0% ↘		0 to -5% ↓ -5 to -10%		

Analysis presented under low, medium and high risk columns is representative of percentage of assets which are exposed to that peril, for example 27% of assets have some level of surface water flood risk, of which 10% are high risk, and the number of assets at high risk is increasing by 0 to 5% out to 2050. Arrows are based on assets changing risk scoring bands from present day to 2050.
Source: XDI and LGIM Real Assets. Assessment of assets by peril for present day and in 2050, high emission scenario as of 31 December 2023. Note that discrepancies in percentages summing to 100% is due to rounding.

Integration of physical risk into strategy

Based on our analysis, we have identified key metrics that accurately represent the current and future risk exposure of the portfolio. LGIM RA understands that integrating these modelling metrics into current decision making and future strategy formulation is critical to improving the resilience of our portfolio. The assessment of physical climate risk is used throughout the asset lifecycle to inform decision making.

We use the high emissions scenario to determine our risk management strategies to ensure that climate-related risks are thoroughly assessed and effectively mitigated across the portfolio. More detail on this can be found in the risk management section.

Addressing climate-related flood risk

LGIM RA recognises flood risk as the greatest exposure to the portfolio and addresses it as a priority. A high-level overview of activities undertaken is detailed below:

Climate due diligence	• Flood risk assessed as part of standard acquisition due diligence process. • Reject properties in high-risk flood zones (Environment Agency (EA) Flood Zone 2 and 3[14]), unless a detailed review confirms no risk to structure or operation and investigate properties in medium-risk zones for resilience.
Forward-looking flood risk assessments	• Annually conduct forward-looking flood risk assessments at building level to assess how assets may be impacted by more severe and frequent flooding in the future.
Increasing asset level granularity	• For assets identified as medium (Flood Zone 2) or high risk (Flood Zone 3), now or in the future, we capture and assess more granular, asset specific information, including building age, floor height, existing asset level flood defences and emergency response plans to feed into the climate risk model to provide a more accurate risk profile. • If assets are still expected to remain at risk, an adaptation plan is required.

[14]The UK Environment Agency categorises flood zones into flood zone 1: areas least likely to flood, with a less than 0.1% annual probability of flooding; Flood Zone 2: Medium risk areas, with a 1% chance of flooding from rivers or 0.5% from the sea; and Flood Zone 3: more likely to flood, covering catchments greater than 3 km². https://www.gov.uk/guidance/flood-risk-assessment-flood-zones-1-2-3-and-3b

2b. Strategy: Transition risk

Strategy: Transition climate-related risks and opportunities

As a long-term investor, LGIM RA has a responsibility to protect our clients' capital by mitigating the risk of stranded assets and increasing the long-term value of our real estate portfolios. To support this, our real estate equity platform aims to work towards achieving its net zero carbon target by 2050 (or sooner). We've implemented a number of initiatives to help our decarbonisation ambitions, including assessing the materiality of transition risks to help identify priority areas of strategic focus and risk management.

Approach to transition climate risk assessment

As part of the continual development of our strategy, LGIM RA has continued to improve its approach to identifying and assessing transition climate-related risks. In 2023, LGIM RA conducted a qualitative review to determine the most material transition risks to the business based on an assessment of the impact and probability of a range of risks across the 'orderly', 'disorderly' and 'hothouse world' transition scenarios, aligning with an industry standard approach to materiality assessments. The risks used for the assessment stem from a list of risks and opportunities that LGIM RA identified for the real estate sector in 2022.

The impact of risks was assessed based on the business impact, financial impact and ease/cost of mitigation, ranging from minimal or no impact to catastrophic impact threatening the future of the business. Probability was assessed considering the likelihood, accounting for when the risk is likely to materialise across our short-, medium- and long-term time horizons, the frequency of the risk materialising, and the duration of impact if it materialises. The most significant risks identified in the qualitative materiality review, were then assessed in more depth and are actively being addressed by mitigating measures. We continue to monitor and assess these risks on an ongoing basis to ensure we remain abreast of changes in the market and improve our approach to managing them.

Transition climate risks identified for the real estate sector

Risks		Impacts	Opportunities
Policy and legal	**Carbon policy** Policy mandating building stock and developments to improve efficiencies and operational practices and embed climate resilience on-site	• Increased resources and costs associated with aligning assets to evolving regulatory landscape, including efficiency requirements • Financial risk for assets with high emissions	• Proactively aligning assets ahead of policy will improve the desirability of assets • Action ahead of regulation will minimise costs through planned interventions • Carbon pricing or penalties could increase demand for more efficient assets
	Disclosure requirements Increase in policy mandating the disclosure of ESG performance, integration and impact	• Increase resources and costs to meet disclosure requirements • Increased transparency around carbon performance	• Publicly disclosing actions to minimise risks and improve performance will support transparency and reputation
	Insurance costs The physical impacts of climate change are extensive and cause the insurance industry to reassess premiums or withdraw cover	• Increase insurance costs and premiums • Inability to secure insurance for high-risk assets	• Actively review existing insurance contracts, and those up for renewal, considering climate risk insights to ensure best insurance prices
	Liability Financial penalties or sanctions for non-compliance on regulation.	• Reputational risks, fines and business disruption for not meeting regulatory or reporting requirements	• Remaining abreast of upcoming regulation will reduce liability risks
Market	**Investor sentiment** Shift in investor demand and attitude for more sustainable and energy efficient assets	• Reduction in asset values and rental income for assets with weaker sustainability credentials • Stranding risk for assets that do not meet demand	• Exhibiting high sustainability credentials and low energy consumption will help increase valuations and returns and help secure investment • Focusing upon planned intervention opportunities now will help to minimise costs of unplanned actions in the future

Risks		Impacts	Opportunities
Market	**Pricing impacts** Markets shift to meet growing demand for low or NZC assets with on-site climate resilience embedded. Demand shift away from certain geographies or sectors and changing consumer preferences.	• Reduced asset values ('brown discount') and stranding asset risk for high carbon, inefficient assets • Capex and retrofit costs to meet market expectations • Tenant default risk due to changing consumer preferences	• Meeting and getting ahead of market expectations will help increase asset valuations, rental values and tenancy demand
	Energy market shift Sustained damage from climate-related physical impacts or persistent transition-related market movements causing energy market volatility and supply chain risks.	• Increase in transition and supply chain costs from increased cost and availability of materials, technology and skills required to meet net zero • Increased exposure to energy market volatility impacting energy costs and security	• Reducing risk through reduced asset energy demand, increased energy efficiency, procurement of renewable energy and on-site renewables
Technology	**Decarbonisation technology** The decarbonisation pathway demands an energy shift from fossil fuels to renewables. This will stimulate low carbon technological solutions. Buildings must adapt with these technologies to meet energy efficiency targets and reduce rising operational costs.	• Application of solutions at scale carries risks associated with supply chain, costs and skills to implement • Emerging technologies bring 'first mover' risks • Obsolescence risk if technological change in assets does not keep up with market demand • Electricity grid and infrastructure risks due to increase in electrification required for decarbonisation	• Low carbon technologies have been available for many years and there are more opportunities to adopt now that also offer a good ROI • Early adoption of newer technology can help mitigate supply chain issues. • Proactive development of new energy data management approaches using new technology will close data gaps • Mitigating risks through integrated energy solutions combined with efficiency increase to reduce reliance on the grid
Reputation	**Reputation** Potential harm to reputation for not being seen to be supporting the transition to a low carbon economy and/or mitigating physical climate risks	• Inability to meet legal requirements and market expectations could have financial impacts • Increased scrutiny of climate commitments set against actual actions being implemented, contributing to green washing risk	• Transparency of reporting coupled with frequent investor engagement, results in increased confidence in ability of business to deliver on sustainability goals • Disclosure of robust plans and implementation strategy can give confidence to investors

Source: LGIM Real Assets, 2023. Assumptions, opinions and estimates are provided for illustrative purposes only.

Top transition climate risks and opportunities

Following the qualitative materiality review, three risk groups were identified to be most significant. For these we have identified in which time horizon there is the highest potential risk under 'orderly', 'disorderly' and 'hothouse world' transition scenarios. Overall, our net zero carbon strategy enables effective management of these risks. More details on these actions can be found in the *Risk Management section*.

For the purposes of this RAG rating, red, amber and green are defined as:

- **Red** denotes a high level of financial exposure to the risk under consideration
- **Amber** denotes a medium level of financial exposure to the risk under consideration
- **Green** denotes a low level of financial exposure to the risk under consideration

Risk and impacts	Time horizon			Scenario where risk is most material
	Short (present day)	Medium (2030)	Long (2050)	
1. Carbon policy: Increasing burden on regulatory requirements (e.g. EPCs under MEES)	X	X	X	'Orderly' transition
2. Investor sentiment, disclosure requirements and reputation: Ability to meet increasing investor requirements and expectations on sustainability disclosure and performance	X	X	X	'Disorderly' transition
3. Pricing impact and demand: Increasing link between market performance & carbon performance, increasing risk of asset devaluation & stranding	X	X	X	'Disorderly' transition

Source: LGIM Real Assets, 2023.

Addressing transition risk through responsible investment

Supporting the transition to a low-carbon world is a core component of our responsible investment framework. As an investor, lender, builder and landlord, we recognise that the built environment is a significant contributor to climate change. Through our engagement with stakeholders and particularly occupiers, we seek to effect positive change in the assets in which we invest and are committed in our efforts to advance the transition to a low-carbon world, taking action to achieve net zero emissions.

Our net zero strategy

In 2019, LGIM RA committed to achieve net-zero carbon for our real estate equity platform by 2050 (or sooner). At the end of 2020 we published our first Real Estate Net Zero Carbon Roadmap, which laid out LGIM RA's strategy to transition our real estate portfolio to net zero carbon, an essential step in anticipating policy responses to the climate crisis and future proofing our assets. We now update our *Real Estate Equity: Net Zero Carbon Roadmap* annually to monitor and report our decarbonisation progress.

Since the net-zero roadmap was published, we have continued to implement this strategy for the LGIM RA platform. Highlights are outlined in the *Risk Management section* of this report and include rolling out processes to improve data quality via automatic data collection and occupier engagement and introducing net-zero carbon audits for new and targeted assets.

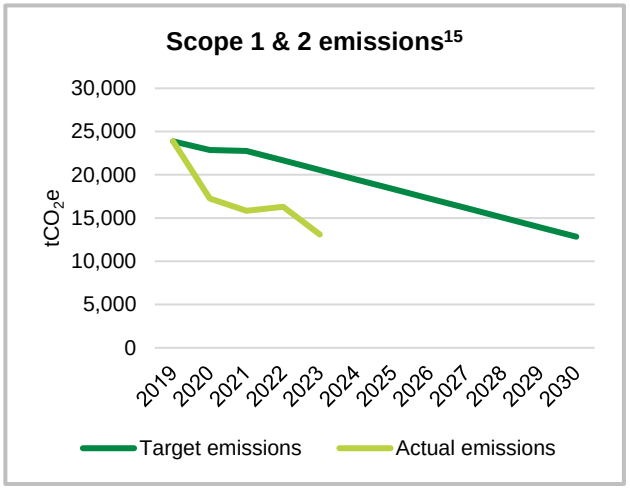
Our net zero journey

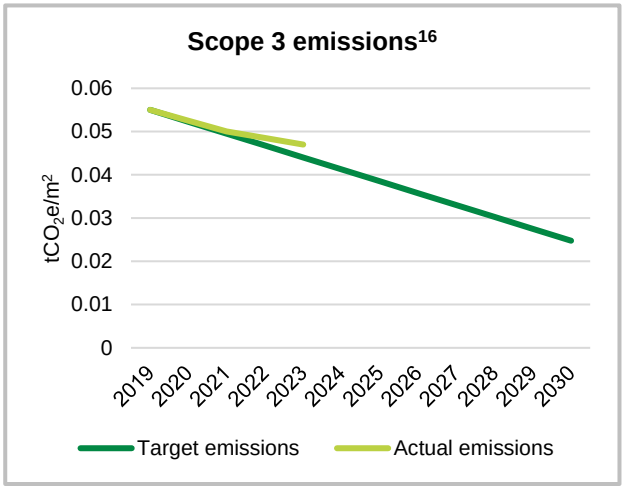
In addition to our target for net zero carbon by 2050 (or sooner), we recently updated our science-based targets to 2030, in line with L&G Group's commitment to the science-based approach. This involved re-baselining against 2019 performance. And expanded the scope of the targets from Scope 1 and 2 (our landlord-controlled areas) to include the wider Scope 3 emissions associated with the energy that our occupiers procure and control. These targets are outlined in the *L&G Group Climate Report* and are used to set annual fund and asset level energy reduction targets for Scope 1 and 2 across LGIM RA, which are monitored on a quarterly basis.

Our net zero carbon targets and performance

2030	**2050**
Science based targets	Net-zero carbon

Platform performance against 2030 SBTi Pathways:





Source: LGIM RA, 2023. Assumptions, opinions and estimates are provided for illustrative purposes only. There is no guarantee that any forecasts made will come to pass.

[15]Measured Scope 1 and 2 carbon emissions data, compared with science-based target initiative (SBTi) pathway (tonnes since 2019). The impact of COVID-19 in terms of reduced building occupancy and consequentially lower energy use can be seen during 2020 and 2021.

[16]For Scope 3 carbon emissions data, data is only reported for the years 2019, 2021 and 2023. LGIM RA will aim to report Scope 3 carbon intensity per annum in consecutive reported periods. The current Scope 3 data reported here is based on actual (29% or reported data) and benchmarked data (71% of reported data). We are working to improve the volume and quality of our Scope 3 data and have established an occupier engagement programme and a range of new data collection and engagement tools to support this process. At present, changes in Scope 3 emissions intensity can be primarily attributed to an increase in real data coverage vs benchmarked data and grid decarbonisation.

Transition risk strategy integration across the investment lifecycle

LGIM RA embeds transition risks across strategic decision making across all stages of the investment lifecycle. LGIM RA takes advantage of strategic intervention points throughout the investment life cycle to implement measures to better assess and manage decarbonisation risks. Key intervention points include new developments, acquisitions, lease events, refurbishments and void periods. The key activities LGIM RA implement to ensure transition risks are assessed and managed, include, but are not limited to:

Initiative	Progress
New development & refurbishment guidance	Development of guidance and minimum standards on material climate related factors, including embodied & operational carbon
ESG integration at acquisition	Integration of key ESG-related indicators into investment committee decision-making, including EPC and NZC audit data
Net zero carbon (NZC) audits	To assess net zero transition paths and associated costs for all new and targeted existing assets
Performance analysis & reporting	Comprehensive ESG data strategy to improve coverage and quality, and quarterly performance reporting and review
Occupier engagement	Targeted approach to occupier engagement, which takes into account the materiality of an occupier's impact and nature of their operations
Scenario analysis	New approach to assessing the transition risk profile of climate change scenarios at business level, taking into account the likelihood and impact of transition-related risks
Internal communications & governance	Regular meetings with fund and asset manager[17] sustainability champions to further support implementation of strategy

Progress made in enhancing our transition risk strategy

We have started work to understand the impact that the climate is having on real estate valuation and understand how climate transition factors into valuation models to enable enhanced portfolio analysis and quantification of exposures. The decision to establish financial levers and directional valuation adjustments indicates the importance that is placed on climate change. Since the net-zero roadmap was published, we have continued to implement this strategy for the LGIM RA platform, maintaining focus through annual updates.

[17]In this context, asset manager refers to the individuals responsible for managing the real estate assets within each fund in LGIM RA.

3. Risk Management

LGIM RA is committed to addressing physical and transition risk and aim to integrate climate mitigation and adaptation throughout the portfolio where it is deemed appropriate. To do this, our four-stage risk management process of identification, assessment, management and monitoring is integrated across the three stages of the investment lifecycle and asset management process.

We take a holistic view to risk management across the short, medium, and long-term for both physical and transition risks identified. This allows us to build a full picture of the types of risks we will be facing and how we should implement policies and processes across our real estate equity portfolios.

Risk management focus areas across the property lifecycle

Source: LGIM Real Assets, 2023.

This section will outline the steps taken across intervention points at the different stages of the asset life cycle to identify and assess climate-related risks as well as implement climate mitigation measures to manage and reduce climate-related risks.

Our overall approach for managing risks

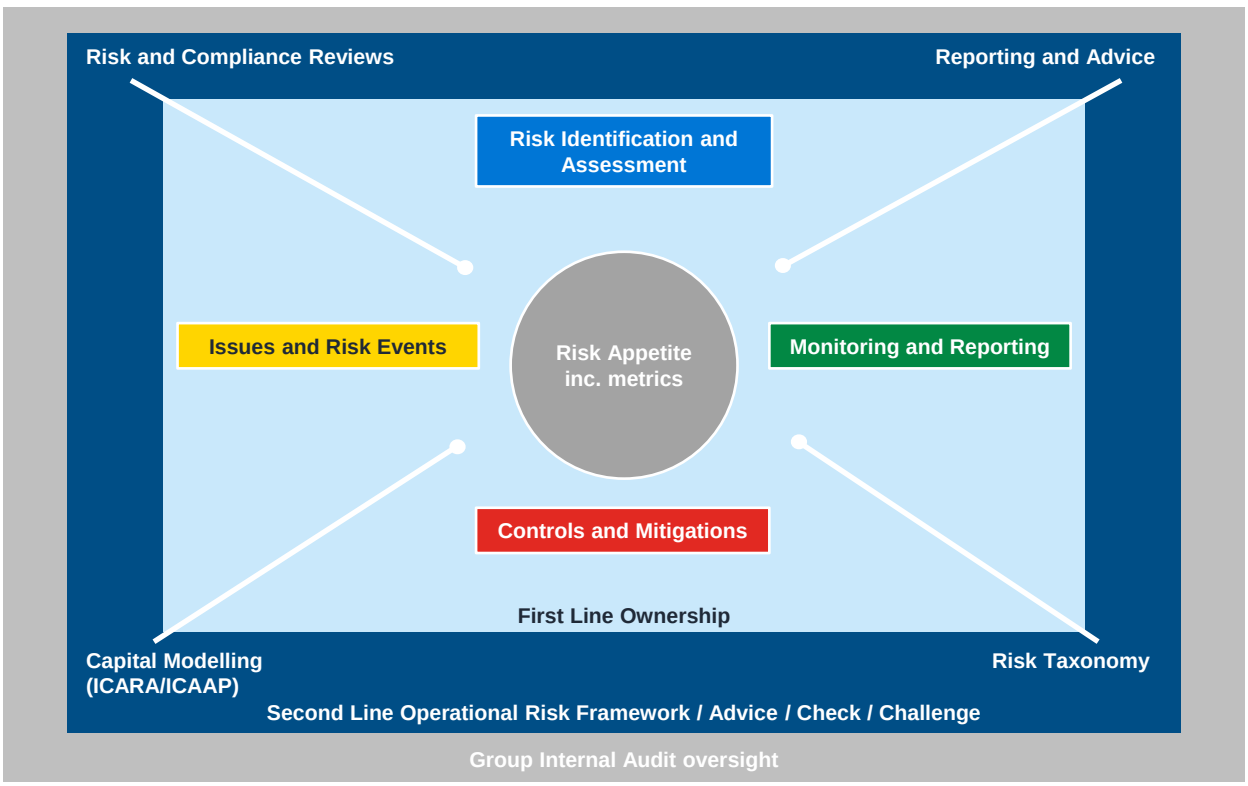
The board of Legal & General Investment Management (Holdings) Limited (LGIM(H)) have overall responsibility for the management of risk. To support this, a risk management framework is in place comprising individual company boards and formal committees responsible for overseeing risk review functions, risk management policies and risk assessment processes. These are underpinned by defined risk principles describing the behaviours, practices and culture to support effective risk governance. The framework provides assurance that risks are being appropriately identified and managed and that an independent assessment of risks is being performed.

In order to design, implement and maintain suitable internal controls, key risks which could jeopardise the business in achieving its objectives and all areas where failure could lead to major loss or impact on reputation, are identified. This includes risks related to ESG, and where relevant, would include climate-related risks. These risks are then reviewed and assessed by board directors in terms of the impact and likelihood, which enables them to prioritise the establishment of internal risk control objectives. Achievement of internal control objectives is regularly reported to directors

Risk management framework – practices for the management and supervision of operational risk

LGIM adopt a three lines of defence model to risk management, as outlined in the diagram below. LGIM's risk framework is fully embedded within operational procedures and is designed to facilitate the identification, assessment, monitoring and control of risks across the business. There is a well-established process for documenting and escalating any issues or errors, including an analysis of the cause of the issue and tracking any corrective or preventative actions through to completion, including notification to the client. The appropriateness of actions is independently monitored by both the Operational Risk Management and Compliance teams.

Where relevant, climate-related risks related to LGIM RA operations that meet the thresholds outlined in the risk management framework will be escalated through this process. As a part of our ongoing work to strengthen our climate-related risk processes, we will be reviewing the extent to which additional considerations may be required to be incorporated in this process.



Source: LGIM Real Assets, 2023.

Climate risk management overview

As a core part of the risk management process, we have taken time to identify and implement activities within the asset and investment lifecycle for physical and transition risks. These have been detailed in the diagram below and are explored in more detail later in this section. We have made significant progress in the 2023/2024 period, with key progress identified below.

Lifecycle stage:	Risk management activities:	Progress to date:
Acquisitions	• Net zero carbon audits • EPC reviews • Flood risk assessments	• Net zero carbon audits carried out as part of due diligence process for acquisition of existing properties to develop decarbonisation plans, including EPC impacts • Flood risk assessments included as part of the due diligence process
Existing assets: Operational stage	• Net zero carbon audits • Green lease clauses • Asset Sustainability Plans • Performance management & monitoring • Data quality • On-site renewable energy strategy • Occupier engagement • Forward-looking climate risk modelling • Offset using recognised framework & disclosure[18]	• Improving occupier data quality and coverage by launching a programme to sub-meter occupier energy use and continuing roll out of landlord Automatic Meter Readings (AMRs) • Developed partnership with Deepki in December 2022 to support remote data collection and reporting capabilities • Continued roll out of net zero carbon audits for all priority assets • Findings of audits incorporated into Asset Sustainability Plans, which are in place for all assets, providing short- and long-term plans for driving sustainability improvements • Occupier engagement and data sharing strengthened with Vizta, our digital occupier engagement platform • Standard lease agreements updated to incorporate requirements on collaboration around net-zero • Launched an Integrated Energy Solutions strategy to assess opportunities to develop on-site renewable generation, electric vehicle charging and microgrids. Pilot project being rolled out in 2024. • Forward-looking flood risk assessments conducted for all existing assets • Improved granularity of climate risk analysis through new building-level risk information and on-site intelligence • New approach to assessing the transition risk profile of climate change scenarios at business level • Regular meetings with fund and asset manager sustainability champions to ensure implementation of strategy
New developments and major refurbishments	• Briefs for Sustainable Works • Regulated against sustainability targets • Net zero carbon study pilots	• New net zero requirements incorporated into Brief for Sustainable Works for all new developments and major refurbishments to set net-zero targets and carry out operational and embodied carbon studies • NABERS Design for Performance adopted for all new office developments and major refurbishments over 2,000m^2 • Developing new tools to support net-zero refurbishments including a shed modelling tool, an industrial refurbishment guide and a new office fit-out guide

Source: LGIM Real Assets, 2023.

[18]Our approach to carbon offsetting is currently under review and will be informed by the requirements of the emerging UK Net Zero Carbon Building Standard and the objectives of our funds.

3a. Risk management: Physical risk

LGIM RA's physical risk management processes cover the identification, evaluation, and control of climate-related risks, actively focusing on risk management to enhance asset and portfolio resilience. We are actively monitoring and staying informed about emerging best practices and industry standards related to physical risk management. This allows us to continuously improve our approach and effectively implement various measures across the asset and risk management lifecycle.

Below we have outlined our LGIM RA portfolio-wide management and monitoring processes. These examples serve to highlight LGIM RA's commitment to implementing risk management strategies across the three steps of the asset lifecycle.

Acquisitions

LGIM RA places high priority on conducting a thorough due diligence process in pre-acquisition, which includes the assessment of flood risk. As part of this process, if certain thresholds are exceeded in the initial assessment, an additional deep-dive flood analysis is conducted on the asset. This enhanced flood risk assessment incorporates climate change considerations and aims to provide a detailed understanding of the potential flood risks associated with the asset. The analysis informs the investment decision and ongoing resilience actions. Flood risk zones are used to guide our flood risk policy and aid our assessment of flood risk during property acquisitions.

Planned improvements

In our ongoing efforts to build on risk management processes and enhance our current due diligence process, LGIM RA is exploring other climate perils that may pose significant threats to assets. We are currently focusing on incorporating forward-looking climate change adjusted physical climate impacts for all relevant perils into our investment decision-making. Assets that are identified as high risk will be explored in more detail to ensure acquisition decisions are fully informed on climate-related risk.

Existing assets

Addressing flood risk for existing assets has been a key part of our investment and asset management strategy. The analysis presented in the strategy section of this report identified that flood risk is considered the most significant physical climate hazard for LGIM RA. We have also incorporated an assessment of future precipitation change to project potential shifts in flood zone distribution. This allows LGIM RA to integrate effective risk management strategies and assist funds in portfolio management to facilitate investment decisions. In 2023, we enhanced our portfolio forward-looking risk assessment by including additional asset-level characteristics and adaptation measures in the modelling process to gain a more accurate understanding of the resilience of our assets and portfolio.

LGIM RA also takes into account the resilience of assets by considering measures and conducting desktop research on external flood defences and flood emergency plans. These are supported by on-the-ground assessments to evaluate the risk levels associated with various assets. For assets identified as high risk, LGIM RA may conduct cost-benefit analyses to determine the feasibility and effectiveness of integrating potential adaptation measures, where appropriate for the given asset.

By incorporating this granular data and considering various resilience measures, we aim to develop a more comprehensive view of the vulnerability and resilience of each asset in our portfolio. This will enable us to make informed decisions and implement appropriate strategies to mitigate climate-related risks effectively.

Planned improvements

LGIM RA are currently looking to develop a climate resilience framework which lays out the governance processes and responsibilities for identifying, assessing and implementing climate adaptation decisions, as well as an overview of actions to enhance the resilience of assets for relevant physical climate risks. It will serve as a reference document that provides a structured approach for managing ongoing physical risks and implementing effective mitigation methods.

Case study: Climate resilience - fund-level physical climate risk analysis

Identify and engage:

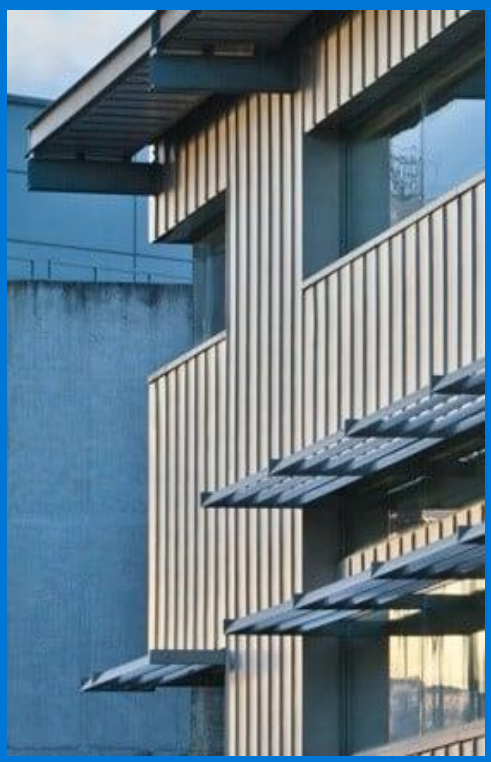
As with all portfolios in our UK-based real estate equity platform, flood risk is recognised as one of the most material ESG-related risks for the Industrial Property Investment Fund (IPIF). As such, the fund has conducted an in-depth review to further understand its exposure to this risk, both now and in the future.

To do this, the fund utilised a forward-looking risk scan provided by XDI, cross referenced with Environment Agency data, to identify potentially higher flood risk assets. They then engaged flood risk specialists to carry out further investigations on these targeted assets.

Deliver positive outcomes:

This additional analysis resulted in a reduction in the risk category for over half of the originally flagged assets. For assets still considered to be higher risk, a review of the potential risk reduction measures was conducted to build an understanding of how resilience could be increased across these assets, and the associated costs.

The fund will continue to monitor and update this process in order to ensure that the best available flood risk assessment information is used to inform decision making.



*Case study shown for illustrative purposes only. The above information does not constitute a recommendation to buy or sell any security

New developments and major refurbishments

Where LGIM is involved in the development and refurbishment of assets, we proactively focus on understanding risks and responding to the impacts that climate change may have. This is supported by minimum development standards in our Brief for Sustainable Work and the assessment and incorporation of additional adaptation measures where required.

To address extreme heat for example, we have been implementing measures such as increased insulation, shading, and considering the maximum design temperature during the planning stage. LGIM RA also ensures that AC systems have the capability to counteract rising temperatures, while simultaneously considering sustainability and energy efficiency concerns. We have also raised floor heights to mitigate potential flood risks in assets.

Planned improvements

LGIM RA will continue to collaborate with developers during the planning and design phase of assets. This allows us to effectively integrate physical risk adaptation measures that enhance the resilience of development assets. We will continue to review and update our minimum development standards by incorporating climate-related considerations, so that our investments align with the need to address climate change and associated risks. By proactively integrating physical risk mitigations early on, we can optimise the effectiveness and efficiency of our investments, avoiding the need for costly retrofitting measures in the future.

3b. Risk management: Transition risk

We recognise that actions taken today will influence our future risk exposure and have put in place risk management processes that will help us to achieve the goals that we have set to transition to a low carbon economy and reach net zero by 2050. Our *Responsible Investment Policy - Real Estate Equity* sets out our overarching approach to managing transition risks and is regularly reviewed and updated to ensure compatibility with regulatory requirements. Additionally, we have developed the following process across the asset lifecycle to help manage and mitigate these risks.

Acquisitions

Prior to acquisition, all potential assets undergo an assessment of sustainability risks. All risks, including flagged risks, are considered by the Investment Committee ahead of investment decisions. As part of this, our standard due diligence procedure includes an assessment of energy and carbon performance, including EPC assessments and alignment with our net zero carbon commitments. In recent years we have also expanded this to include:

- **Green lease clauses:** lease agreements incorporate enhanced net-zero requirements, changes to MEES data requirements and enhanced occupier engagement on ESG.
- **Net-zero audits:** for new acquisitions, net zero audits are completed to understand the practicalities and costs of aligning the asset to our net zero commitments. The findings of this audit are incorporated into the Asset Sustainability Plan of any purchased assets. These plans retain the identified opportunities over the short, medium and long term.

Planned improvements

We are continuing to actively monitor and review our acquisition process and requirements to ensure that changing transition risks are understood prior to acquisition, integrated into investment decisions and managed with suitable plans once acquired.

Existing assets

Across our existing portfolio, we are dedicated to working with our occupiers and intervene directly to help improve the energy and carbon performance of our assets in line with our decarbonisation targets and manage any associated transition risks. Further details are provided in our Real Estate Equity: Net-zero Carbon Roadmap. Key actions are included below:

Action	Details	Progress to date and planned improvements
Asset Sustainability plans (ASPs)	• All assets are required to have an ASP, which includes short- and long-term plans with asset specific measures to improve the asset's social and environmental impact. ASPs are part of an integrated ESG reporting platform providing full transparency and accountability. • Where required, an EPC improvement plan and outcomes of net zero carbon (NZC) audits caried out on targeted assets, are key inclusions of an ASP.	• Continued roll out of ASPs for all assets. • NZC audits conducted to investigate performance and practicality of transitioning existing real estate have indicated that so far minimal intervention is required to reach net zero.
Data quality strategy	• Enhancing our ESG monitoring, analysis, and reporting through strengthening our ESG data strategy, which aims to achieve full platform data coverage, using automated data to provide real-time analytics. • Work with data platform provider Deepki to support our remote data collection and reporting capabilities.	• Continued improvements in occupier data quality and coverage by launching a programme to sub-meter occupier energy use and continued roll out of landlord Automatic Meter Readings (AMRs). • In 2024 we are working to map data gaps and assess available enhancements to translate data into financial model outputs.

Action	Details	Progress to date and planned improvements
Performance management and monitoring	• Fund and asset management teams have annual internal energy and carbon reduction targets. Performance against these targets is monitored and reported in quarterly sustainability meetings. • Additionally, there are regular meetings with fund and sustainability leads (asset managers leading and supporting ESG integration across the fund), and the Responsible Investment and Sustainability team to ensure implementation of the *Responsible Investment Policy - Real Estate Equity*. • Fees of management agents and facility managers are also linked to energy and carbon performance to help incentivise decarbonisation. • Technical building performance engineers are responsible for planned maintenance on assets and ensure the maintenance work align with net zero carbon roadmaps and ASPs.	• In 2023, we updated our approach to assessing transition risks across climate change scenarios. • All relevant teams continue to monitor and report sustainability performance and associated risks, as well as implement measures to support sustainability goals.
Renewable energy	• Carrying out a platform wide renewable energy feasibility assessment of existing assets. This is to identify which priority categories exist and commercial models for occupier collaboration. • Launched an Integrated Energy Solutions Strategy to assess opportunities to develop on-site renewable generation, electric vehicle charging and microgrids.	• Continued roll-out of on-site renewables where feasible • Pilot projects for implementing Integrated Energy Solutions being rolled out in 2024.
Occupier engagement	• Extensive and ongoing engagement and collaboration with occupiers, to help achieve sustainability objectives and identify opportunities to reduction initiatives. • An engagement programme is being rolled out across assets and includes data coverage improvements through installation of sub-metering, net zero collaboration projects and enhanced green lease clauses. • Occupier engagement and data sharing strengthened with Vizta, our digital occupier engagement platform.	• Continued roll out of occupier engagement strategy with increased engagement via Vizta, as well as ad-hoc and ongoing engagement activities.

New developments and major refurbishments

New developments and major refurbishments offer the most efficient and cost-effective route to align our properties with the net zero transition and with industry best practice. We recognise that sustainable construction must include the close measurement and minimisation of whole life carbon. To support this, we have introduced the following:

- **Embodied and operational carbon targets:** these ensure that all such projects are completed in line with industry best practice.
- **Minimum sustainability certification requirements:** consisting of achieving a NABERS Design for Performance adopted for all new office developments and major refurbishments over 2,000m^2 and BREEAM Excellent for all new developments and major refurbishments with a fall back of BREEAM Very Good if we have no direct control over the refurbishment.
- **Brief for sustainable works:** sets out sustainability-related minimum standards and building requirements for all new development and major refurbishment projects, including net-zero targets and operational and embodied carbon study requirements. It is shared by our design teams and supply chain partners and has been updated to include new requirements around carbon and certifications.

Planned improvements

We are continuing to actively monitor and review carbon targets, certification requirements and minimum development standards to manage transition risks into the future and will adapt these to best respond to changing risks, as necessary. We are currently developing new tools to support net-zero refurbishments, including a big shed modelling tool, an industrial refurbishment guide and a new office fit-out guide.

Case study: Tempo, Maidenhead - reducing embodied carbon through refurbishment

Identify and engage:

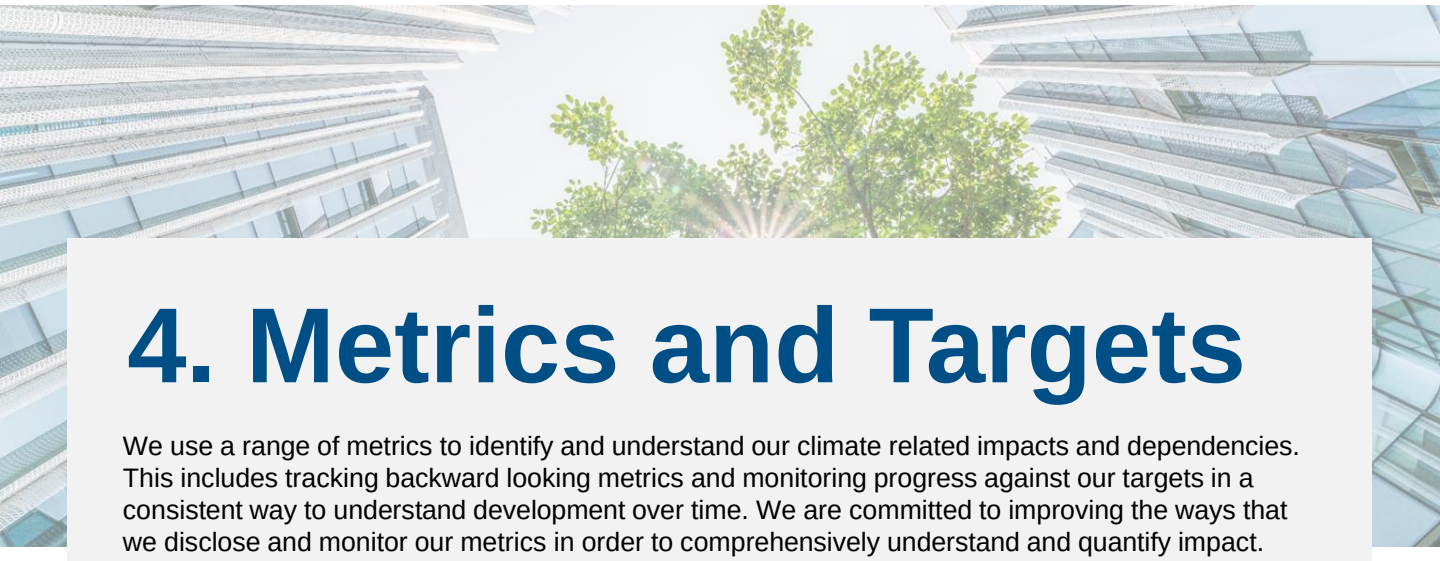
A major refurbishment has recently been undertaken at Tempo, a 150,000 square ft office development in Maidenhead. Here achievement of strong sustainability credentials, including low-embodied and operational carbon impacts, were key drivers behind decision making during the development. A whole-life carbon assessment was also integral into the design process. Refurbishments offer significant carbon savings over redevelopment and in this case, the foundations, superstructure, and approximately 40% of the original façade were able to be retained. The impact of carbon initiatives was tracked closely through procurement and construction.

Deliver positive outcomes:

The asset outperforms several industry benchmarks, for both operational and embodied carbon. Design considerations, including removal of natural gas, addition of 280 photovoltaics panels and efficient glazing, have resulted in a projected 23% reduction in energy use when compared to UK Green Buildings Council net zero operational energy trajectory[19]. Health and wellbeing considerations have been prioritised throughout the design, through inclusion of additional communal and green spaces, and extensive occupier amenities. These achievements have results in rental uplift or around 20% above local market rates.

*Case study shown for illustrative purposes only. The above information does not constitute a recommendation to buy or sell any security

[19]UK Green Buildings Council net zero operational energy trajectory: https://ukgbc.org/wp-content/uploads/2021/11/UKGBC-Whole-Life-Carbon-Roadmap-A-Pathway-to-Net-Zero.pdf



4. Metrics and Targets

We use a range of metrics to identify and understand our climate related impacts and dependencies. This includes tracking backward looking metrics and monitoring progress against our targets in a consistent way to understand development over time. We are committed to improving the ways that we disclose and monitor our metrics in order to comprehensively understand and quantify impact.

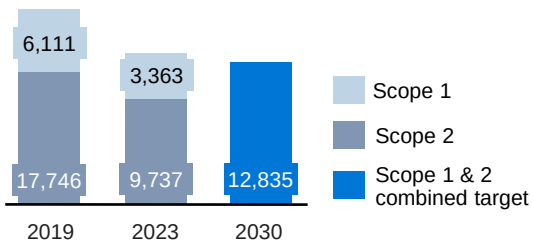
Our targets and commitments are integral to our business strategy and risk management frameworks, informing the ways that we approach our businesses development. They are also fundamental to enhancing transparency and accountability and to demonstrate our performance against our longer-term commitments. We have made progress against existing targets and invested in new initiatives to iteratively improve the way we monitor development. The targets that have been set and included in this report are mainly focused on transition risk.

Performance against targets

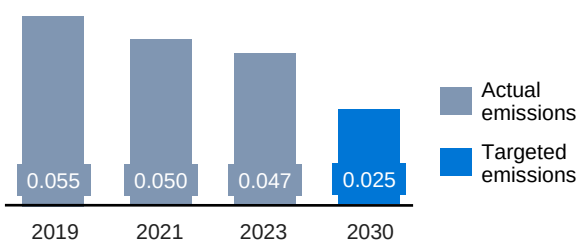
Metric	Description	Targets
Total carbon emissions (Scope 1, 2 and 3)	**Scope 1 and 2** emissions reflect the energy associated with landlord-purchased gas and electricity. **Scope 3** emissions refers to the energy purchased by our occupiers.	**1. 2030 Science-based targets (SBTi):** **Scope 1 and 2 target -** 42% reduction in absolute emissions by 2030 (2019 baseline) **Scope 3 target -** 55% reduction in carbon intensity (2019 baseline) **2. 2050 Net-zero carbon target**

Progress against 2030 SBTI targets

Scope 1 and 2 emissions target (tCO_2e)[20]



Scope 3 emissions target (tCO_2e/m^2)[21]



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[20]Measured Scope 1 and 2 carbon emissions data, compared with science-based target initiative (SBTi) pathway (tonnes since 2019). The impact of COVID-19 in terms of reduced building occupancy and consequentially lower energy use can be seen during 2020 and 2021.

[21]For Scope 3 carbon emissions data, data is only reported for the years 2019, 2021 and 2023. LGIM RA will aim to report Scope 3 carbon intensity per annum in consecutive reported periods. The current Scope 3 data reported here is based on actual (29% or reported data) and benchmarked data (71% of reported data). We are working to improve the volume and quality of our Scope 3 data and have established an occupier engagement programme and a range of new data collection and engagement tools to support this process. At present, changes in Scope 3 emissions intensity can be primarily attributed to an increase in real data coverage vs benchmarked data and grid decarbonisation.

Performance against metrics

The following metrics form part of our public disclosure, indicating how we define and measure success in managing climate related issues. The data is reported for the period 1st January 2023 to 31st December 2023.

Detailed performance breakdown

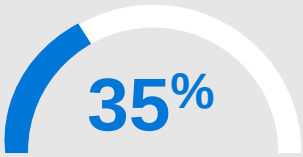
Key metrics	2022	2023	Y-o-y change
Electricity (landlord purchased) (kWh)	56,416,696	46,151,426	↘ 18%
Gas (landlord purchased) (kWh)	25,034,282	18,345,149	↘ 27%
Scope 1 emissions (tCO_2e)[22]	4,570	3,363	↘ 26%
Scope 2 emissions (tCO_2e) (location based)[23]	11,723	9,737	↘ 17%
Total Scope 1 and 2 emissions (tCO_2e)	16,292	13,100	↘ 20%
Scope 1 and 2 carbon intensity (tCO_2e / m^2)[24]	0.0022	0.0018	↘ 28%
Carbon footprint (tCO_2e per £1 million invested at origination) [25]	-	0.9232	-
Total Scope 3 emissions (tCO_2e)[26]	-	335,069	-
Scope 3 - Occupier gas use	-	163,014	-
Scope 3 - Occupier electricity use	-	170,606	-
Scope 3 – Other	-	1,449	-
Total Scope 3 reported energy (kWh)	-	1,723,086,517	-
Total Scope 3 actual energy (kWh)	-	494,451,732	-
Scope 3 carbon intensity (tCO_2e / m^2)	-	0.0470	-

Source: LGIM Real Assets, 31st December 2023

Please note the "-" denotes no data available to report, whereas "0" denotes a performance of 0 for the applicable metric. Past performance is not indicative of future results.

2023 whole year emissions data coverage

Scope 1 & 2 emissions data coverage by floor area



Scope 3 actual emissions data coverage by floor area at whole building level over the reporting year[27]

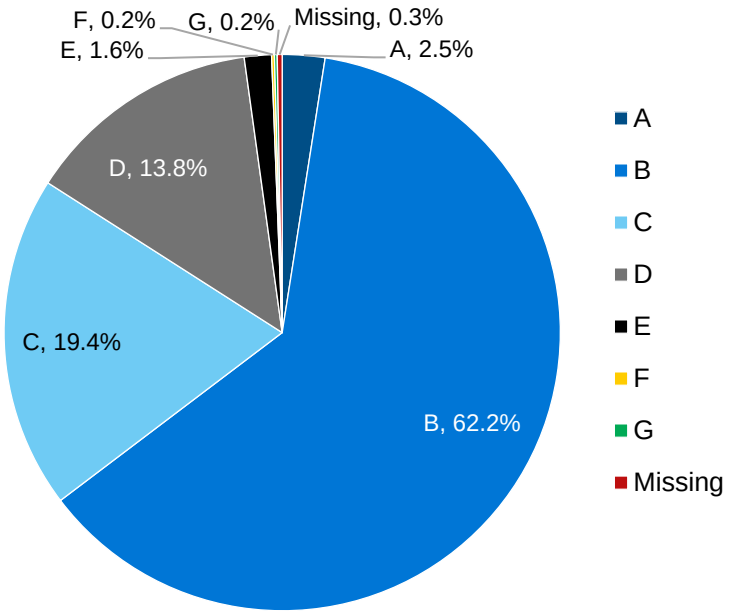
Source: LGIM Real Assets, 31st December 2023

[22]Gas carbon emissions are calculated using government conversion factors. Gas conversion factors increased in 2023, causing the year-on-year change in Scope 1 emissions to be greater than the reduction in gas (landlord purchased).
[23]Electricity carbon emissions are calculated using government conversion factors. Scope 2 emissions are location based for which we use UK national grid emission factors. All electricity purchased by LGIM RA is from 100% natural renewable sources, for which we possess REGO certificates. Electricity conversion factors increased in 2023, causing the year-on-year change in Scope 2 emissions to be greater than the reduction in electricity (landlord purchased).
[24]Carbon intensity is calculated using the net lettable area of the fund. We use this metric instead of Weighted Average Carbon Intensity (WACI), as it is the most appropriate approach for a real estate equity fund and is recommended by PCAF.
[25]The carbon footprint metric is calculated using the total Scope 1 and 2 emissions and the purchase price of the assets of the Fund. Purchase price is used as a proxy for money invested. This is in line with the Partnership for Carbon Accounting Financials (PCAF) Global GHG Standard. The valuation of the assets in the fund has no direct relationship to the emissions associated with those assets. By using the asset purchase price as the denominator instead of market value, this allows for more appropriate year-on-year comparison of the carbon footprint metric.
[26]The energy purchased by our occupiers represents our Scope 3 emissions. The current Scope 3 data reported is based on actual and benchmarked data. We have only begun to report Scope 3 data for the 2023 reporting period. We are working to improve the volume and quality of our Scope 3 data and have established an occupier engagement programme and a range of new data collection and engagement tools to support this process.
[27]Scope 3 emissions data coverage refers to the total floor area of the fund for which we have been able to report Scope 3 data at a whole building level over the whole reporting year as at 31 Dec. 2023. This does not include assets which have been purchased or disposed of throughout the reporting year or assets where Scope 3 data reporting capabilities have been installed throughout the year, as this would not provide a whole year's worth of data.

EPC rating performance

The graph demonstrate the proportion of units per EPC rating across the Fund. A brief description of current and upcoming EPC requirements for commercial properties is also provided.

EPC Ratings by number of certificates (%)*



Source: Greenrock, 31st Dec 2023.
*Please note, that the chart above shows all units within the portfolio that are obliged to have an EPC rating. Includes all assets (England, Wales, and Scotland). Assets and units that still have an EPC F and G rating will have an exemption from MEES.

Policy update:

The UK the Energy Act 2011 made it unlawful to let residential or commercial properties for new leases from 1 April 2018 (existing leases from 1 April 2023), with an Energy Performance Certificate (EPC) rating of F or G.

The minimum energy efficiency standards (MEES) are currently under review with proposals for a minimum EPC rating of C by 2027 and B by 2030 for leased properties.

In light of this, LGIM RA will continue to stay abreast of changing legislation and ensure that we either meet the minimum standards or improve upon them.

Performance-linked objectives

In order to drive progress against our decarbonisation targets, we have developed performance-linked objectives at a fund level. Each fund manager is responsible for managing their Fund's ESG initiatives, working with the asset managers who are responsible for the individual assets. All fund and asset managers have objectives directly linked to sustainability-related initiatives, with performance against these targets linked to their remuneration. This ensures that all fund and asset managers are aligned with the *Responsible Investment Policy - Real Estate Equity*.

Future targets

Our performance so far has been in line with targets set, however we recognise that changes in the global and political landscapes may cause fluctuations and introduce volatility into the system. We remain focused on our medium- and long-term decarbonisation targets. In 2024, we are endeavouring to re-baseline our net zero carbon and energy reduction targets, due to changes across out portfolio. This will provide us with a more accurate understanding of the progress we need to make to reach our decarbonisation commitments. This year we have also worked to advance our methods and analysis of physical climate risk, and with this, we are now looking to explore possible metrics to quantify our physical risk.

Appendix

Assumptions & Limitations

Carbon data limitations and assumptions	• Third party data and proprietary systems aggregate and monitor our ESG data. Reference to industry standards is used to understand in greater depth the sustainability-related performance of the assets. Carbon data is also independently assured. • ESG data may be based on certain assumptions, forecasts, calculations, views and opinions of LGIM RA or third-party providers which may be based on current market trends or anticipated future events. Given the developing and innovative nature of these models, methodologies and assumptions and the inherent uncertainty in predicting forward-looking events, it cannot be guaranteed that the ESG data is always accurate or correct or that the ESG data will satisfy the aims or requirements of any specific client or investor. Any opinions, calculations or forecasts are not a guarantee of future events and LGIM RA may update its models, methodologies and/or assumptions at any time. External factors and limitations on the data may result in differences between actual and calculated figures. • Furthermore, there may be ESG data that LGIM RA or its third-party providers are unable to source due to the lack of availability of data sources. Where this occurs, LGIM RA and its service providers will use industry best practice methodologies to estimate ESG data where appropriate. The proportion of estimated ESG data varies based on a number of factors, including the supplier and data type.
Climate model Input Data Limitations & Assumptions	• Location data quality for assets can limit accuracy of modelled outputs (e.g postcode). Where assets cannot be accurately geolocated, the modelled climate exposure may not be reflective of the risk exposure. We have used manual data validation to check each asset location based on the Unique Property Reference Number (UPRN), and limit the impact of poor geolocation where longitude and latitude data was not provided. Where asset data was limited (e.g. incomplete number of units, incomplete addresses, etc.), the centroid of the best approximation of asset location was modelled.
Climate Model Limitations & Assumptions	• Baseline climate peril data is used to model climate perils globally. The availability of data and historical monitoring of perils is limited in some regions. Where this is the case, the model is enhanced using simulated event sets to forecast the impact of projected climate perils (in line with standard Natural Catastrophe modelling practices). • Forecasts will become more refined over time, as all climate models contain assumptions about current and future risks and model simulations that will improve over time • Specific peril by peril limitations exist. Windstorm risk only considers extreme wind speeds from temperate windstorm and does not consider tropical cyclone / hurricane hazards (not relevant for assets located within UK and Europe). The model only accounts for current national defences (where data is available) and does not incorporate the assumption that defences may improve over time. • Each asset type is assigned an XDI archetype to allow the Climate Risk Engines to assess vulnerability. An XDI archetype is a generic analogue used to represent the characteristics of a subclass of assets, which can then be applied across multiple assets of the same kind. For this analysis, LGIM RA has refined and develop specific archetypes for each asset type which has enabled a more accurate representation of the asset's resilience to physical climate risk.

Glossary

Asset sustainability plan (ASP)	Asset sustainability plans are developed for all assets and provide short- and long-term plans for driving sustainability improvements.
Assets under management (AUM)	Funds that are managed by our fund managers on behalf of investors. AUM represents the total amount of money that investors have entrusted with our fund managers to invest across our investment products.
Better Buildings Partnership (BBP)	The BBP is a collaboration of the UK's leading commercial property owners who are working together to improve the sustainability of existing commercial building stock.
BREEAM	Developed by the Building Research Establishment, BREEAM (Building Research Establishment Environmental Assessment Method) is a widely used method of assessing, rating, and certifying the sustainability of buildings.
Carbon emissions intensity	Carbon emissions intensity is the amount of emissions released per unit of another variable, such as CO_2e per £m. This enables a comparison of the emissions efficiency to be made between different sized operations.
Carbon footprint	Carbon footprint is the amount of emissions as a result of the associated activity. The carbon footprint metric is calculated using the total scope 1 and 2 emissions and the purchase price of the assets of the fund. Purchase price is used as a proxy for money invested. This is in line with the Partnership for Carbon Accounting Financials (PCAF) Global GHG Standard for real estate investments. The valuation of the assets in the fund has no direct relationship to the emissions associated with those assets. By using the asset purchase price as the denominator instead of market value, this allows for more appropriate year-on-year comparison of the carbon footprint metric.
Carbon offsetting	The process of financing schemes designed to either reduce or remove CO_2 in the atmosphere to compensate for carbon emissions that have occurred elsewhere.
Climate mitigation	Action to limit the greenhouse gases in the atmosphere that cause climate change.
Climate pathways	Scenarios that describe pathways to particular climate outcomes.
Climate resilience	The ability to prepare for, recover from, and adapt to physical impacts associated with climate change and impact associated with a transition to a low-carbon economy.
Climate transition plan	Sets out how an organisation plans to transition to a low-carbon economy. It includes not only its climate commitments, but the roadmap (and associated risks) to achieving them. For a UK-based financial services company, the plan should align with guidance from Glasgow Financial Alliance for Net Zero and the UK Transition Plan Taskforce.
Design for Performance (DfP)	The Design for Performance (DfP) initiative is an industry backed project established to tackle the performance gap and provide an approach, based on measurable performance outcomes, to ensure new office developments deliver on their design intent.
Ecosystem	A dynamic complex of plant, animal and microorganism communities and the non-living environment, interacting as a functional unit.
Embodied carbon	Embodied carbon means all of the carbon dioxide emitted in producing materials or products. This includes the energy used to extract and transport raw materials as well as emissions from manufacturing processes and production.
Energy system	The energy system describes the system for supplying energy services to end users, encompassing the production, conversion, delivery, and use of energy.
EPC	An Energy Performance Certificate (EPC) provides a rating of the energy efficiency of a property on a scale of A-G. It is an estimate based upon a model of the intrinsic design of the building.
ESG	ESG stands for Environmental, Social and Governance.
Freeze thaw	Freeze-thaw weathering is a process of erosion that happens in cold areas where ice forms. A crack in a rock can fill with water which then freezes as the temperature drops. As the ice expands, it pushes the crack apart, making it larger
Greenhouse gas (GHG)	Any of the seven gases covered by the Greenhouse Gas Protocol Corporate Accounting and Reporting Standard – carbon dioxide (CO_2), methane (CH4), nitrous oxide (N2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF6) and nitrogen trifluoride (NF3).
Green lease	Refers to a lease of a property, or a lease supplementary document, that includes clauses which are intended to help manage and improve the environmental and social performance of a building.

Intergovernmental Panel on Climate Change (IPCC)	Created to provide policymakers with regular scientific assessments on climate change, its implications and potential future risks, as well as to put forward adaptation and mitigation options.
LGIM	Legal & General Investment Management.
LGIM RA	Legal & General Investment Management Real Assets.
Low carbon economy	An economic system that aims to reduce carbon dioxide emissions and other greenhouse gas emissions, with the aim of achieving a balance between amount of emissions emitted and absorbed
MEES	The Minimum Energy Efficiency Standards (MEES) is a set of Minimum Energy Efficiency Standards set out by the Government for commercially-let properties.
Net zero	Achieving an overall balance between anthropogenic carbon emissions produced and carbon emissions removed from the atmosphere.
Operational carbon	Operational carbon is the term used to describe the emissions of carbon dioxide and other greenhouse gases during the in-use operation phase of a building.
Paris Agreement	The Paris Agreement was an agreement within the United Nations Framework Convention on Climate Change effective 4 November 2016. The objective is to limit the increase in average global temperatures to below 2°C, preferably to 1.5°C, compared to pre-industrial levels.
Physical risks	The risks from climate change that arise as a result of more frequent and severe weather events and longer-term shifts in climate.
REGO	The Renewable Energy Guarantees of Origin (REGO) scheme provides transparency to consumers, through certificates, about the proportion of electricity that suppliers source from renewable generation.
Representative Concentration Pathways (RCP)	Greenhouse gas concentration trajectories that indicate uncertainty in climate models to generate data on possible future climates. These scenarios are adopted by the IPCC. In this report LGIM RA have used 2 RCP scenarios (RCP2.6 and RCP8.5).
Riverine flooding	When streams and rivers exceed the capacity of their natural or constructed channels to accommodate water flow and water overflows the banks, spilling out into adjacent land.
Scenario analysis	Scenario analysis models the overall impact that a given top-down climate scenario has on the value of a financial asset by modelling the various transmission mechanisms between the projected scenario variables and the value of the asset in question.
Science Based Target Initiative (SBTI)	The Science Based Targets initiative (SBTi) is a joint initiative by CDP, the UN Global Compact (UNGC), the World Resources Institute (WRI) and WWF which aims to increase corporate ambition on climate action by enabling companies to set emission reduction targets consistent with the decarbonisation required by science to limit warming to less than 1.5°C / 2°C compared to preindustrial temperatures.
Scope 1 emissions	These are the direct emissions from the activities of an organisation or under their control. For example the emissions directly from burning gas in a boiler at an asset.
Scope 2 emissions	These are the indirect emissions from sources that are owned or controlled by on organisation. For example from the electricity purchased for an asset.
Scope 3 emissions	These are all of the other indirect emissions from activities of the organisation, occurring from sources not owned or controlled by the organisation. For example from procured goods and services.
Soil subsidence	Downward movement of the ground, causing the property's foundation to sink. Can be caused by changes in groundwater level and drought.
Surface water flooding	Surface water flooding is also known as pluvial flooding. It occurs when the volume of rainfall exceeds the capacity of drains and surface water sewers and is unable to drain away through drainage systems or soak into the land, and instead flows over the land.
TCFD	The Task Force on Climate-Related Financial Disclosures (TCFD) is an organization that was set up with the goal of developing a set of climate related financial risk disclosures, which can be adopted by companies to inform investors and other stakeholders about climate related risks and mitigation.
tCO_2e	Tonnes of carbon dioxide equivalent (CO_2e).
Transition risks	The risks from climate change that arise from the process of adjustment towards a low-carbon economy.

Contact us

For further information about LGIM Real Assets, please visit lgim.com/realassets or email contactrealassets@lgim.com




Key risks
The value of investments and the income from them can go down as well as up and you may not get back the amount invested. Past performance is not a guide to future performance.

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