M&G Investments

M&G Investment Management Limited, M&G Alternatives Investment Management Limited and M&G Securities Limited

2023 TCFD Report

This report, covering the reporting period 1 January to 31 December 2023, sets out our disclosures in line with the recommendations of the Taskforce on Climate-related Financial Disclosures (TCFD) for assets managed and administered by the following entities in accordance with the FCA's Policy Statement 21/24:

- M&G Investment Management Limited (MAGIM)
- M&G Alternatives Investment Management Limited (MAGAIM)
- M&G Securities Limited (MGSL)

The disclosures in this report for the three legal entities, including cross-references to M&G plc group disclosures, fulfil the regulatory requirements under chapters 2.1 and 2.2 of the FCA ESG sourcebook. They outline how MAGIM, MAGAIM and MGSL consider climate-related matters when managing assets, encompassing their approach to Governance, Strategy and Risk Management, as well as relevant climate-related Metrics and Targets.

Joseph Pinto
Director of MAGIM and MAGAIM
June 2024

Laurence Mumford
Director of MGSL
June 2024

Our climate-related disclosures are consistent with the TCFD recommended disclosures, and also reflect relevant TCFD Annex material ('Guidance for All Sectors' and supplementary 'Asset Managers' guidance). The table below signposts the location of these disclosures for each entity.

MAGIM, MAGAIM and MGSL are wholly-owned subsidiaries of M&G plc (also herein referred to as 'the Group'). As there is alignment with the Group's broader strategy and approach to climate risks and opportunities, this report relies on and cross-refers to Group-level TCFD disclosures published in the **M&G plc 2023 Annual Report and Accounts (ARA)**, supplemented by entity-specific disclosure where appropriate. As required by the FCA's ESG sourcebook, this report covers the disclosures relevant to the assets managed and administered by MAGIM, MAGAIM and MGSL. Decarbonisation of operational activity is managed at Group level – more information can be found in the ARA pages 75-77.

		For further information, please refer to:			
TCFD pillars	**Recommended disclosures**	**M&G plc ARA 2023**	**MAGIM**	**MAGAIM**	**MGSL**
Governance	Board's oversight of climate-related risks and opportunities	Sustainability governance: pages 38	This report: pages 4-5		
	Management's role in assessing and managing risks and opportunities	Sustainability governance: page 39 Our approach to climate change: pages 70-71 Climate risks and opportunities: pages 72-74			
Strategy	Climate-related risks and opportunities the organisation has identified	Climate risks and opportunities: pages 72-74	This report: pages 6-7, 13-16		
	The impact on the organisation's businesses, strategy and financial planning	Our approach to climate change: pages 70-71 Climate risks and opportunities: pages 72-74 Our strategy: pages 15-17			
	Resilience of the organisation's strategy, based on different climate-related scenarios	Climate risks and opportunities: pages 72-74 Scenario analysis: pages 85-88 Financial statements: from page 184 (Notes 1, 15, 17, 31, 37)			
Risk management	Processes for identifying and assessing climate-related risks	Climate risks and opportunities: pages 72-74	This report: page 7		
	Processes for managing climate-related risks	Climate risks and opportunities: pages 72-74 Risk management (Sustainability and ESG): page 61			
	Integration of climate risks into overall risk management	Risk management (Sustainability and ESG): page 61			
Metrics and Targets	Metrics used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process (Investments)	Investments emissions metrics: pages 82-84, Supplementary climate metric and modelling information: pages 89-90	This report: pages 8-11	This report: page 11	This report: pages 12
	Greenhouse gas emissions (Investments)	Investments emissions metrics: pages 82-84	This report: pages 8-11	This report: page 11	This report: page 12
	Targets used to manage climate-related risks and opportunities and performance against targets (Investments)	Our approach to climate change: page 71 Investments – implementation strategy: page 79	This report: page 6		

Section 2.3.2 of the ESG sourcebook requires a UK Alternative Investment Fund Manager (AIFM) that manages an unauthorised Alternative Investment Fund (AIF) listed on a recognised investment exchange to reference the AIF's product TCFD report in the AIFM's entity report. MAGAIM acts as the AIFM for one such AIF – the M&G Credit Investment Income Fund. The M&G Credit Investment Income Fund's TCFD product report will be available on the **TCFD reporting page** of M&G's website when it is published in June 2024.

Entities in scope

MAGIM, MAGAIM and MGSL are regulated entities and subsidiaries of M&G Group Limited (MGG). MGG is one of the main subsidiaries of M&G plc group – it acts as the main holding entity for M&G plc's Asset Management business (also herein referred to as 'we', 'our', 'us' or 'M&G Investments') which manages assets across a broad range of investment strategies and asset classes.

As a significant component of M&G Investments, MAGIM offers wholesale and institutional clients access to a range of investment products and services covering both public and private markets. MAGAIM is an Alternative Investment Fund Manager with its portfolio primarily comprising infrastructure assets, structured under the Group's Infracapital business. MGSL is the authorised fund manager for a variety of UK collective investment schemes (including Open-Ended Investment Company funds, Alternative Investment Funds and Authorised Contractual Schemes), acting in different capacities depending on the legal structure of the fund. MGSL has appointed MAGIM to perform portfolio management functions with respect to its fund assets; for example ensuring the portfolios are managed in line with target exposures and limits, managing cash flows and other fund dynamics.

Given that the approach to Governance, Strategy, and Risk management in relation to the management of climate risks and opportunities is consistent across the three entities, we have deemed it appropriate to prepare one combined report, with separate sections provided for each entity's climate-related metrics.

Governance

MAGIM, MAGAIM and MGSL are subsidiaries of MGG and, as such, their governance arrangements sit within the wider governance framework of MGG.

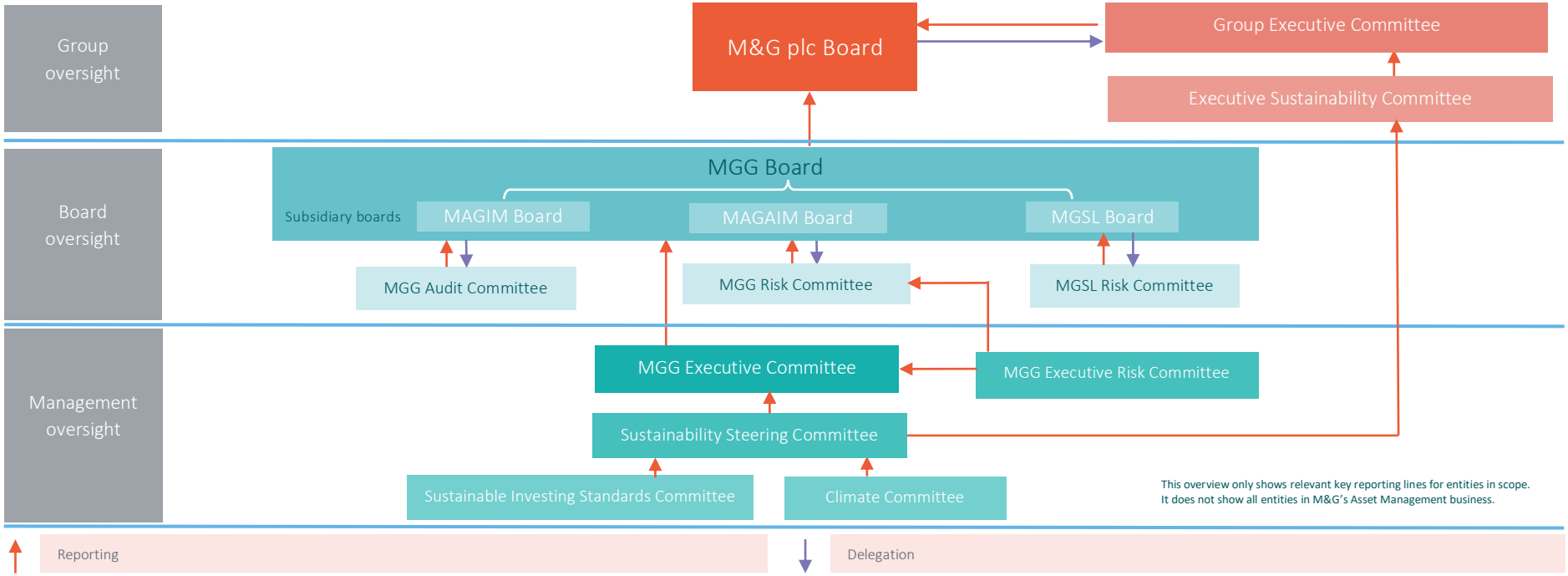
MAGIM, MAGAIM and MGSL boards are responsible for interpreting and applying the Group strategy within the context in which they operate, while accountability for setting the Group-wide sustainability strategy rests with the M&G plc Board. The membership and composition of the MAGIM and MAGAIM boards mirror that of their parent company, MGG. MAGIM and MAGAIM hold joint Board meetings with MGG. The chair of the MGG Board also sits on the M&G plc Board, facilitating information sharing on relevant issues and policy decisions.

MGSL has a standalone board arising from its role as fund manager under different regulated investment vehicle regimes. The MGSL Board holds specific oversight duties as part of its remit, including supervision of services provided by MAGIM and regulatory reporting which includes climate reporting.

The entity boards are supported by sub-committees, management-level committees, forums and teams that have responsibility for overseeing and monitoring broader sustainability and climate-related issues.

Key delegations at board sub-committee level are:

- The MGG Risk Committee oversees financial and non-financial risks faced by MGG and its subsidiaries. It is also accountable for overseeing compliance with the Group Risk Management Framework, which embeds ESG considerations, and related policies and practices. The MGG Executive Risk Committee and MGSL Risk Committee further support oversight at the entity level by, for instance, monitoring adherence to risk policy requirements.
- The MGG Audit Committee supports the entity boards in reviewing material regulatory disclosures in respect of climate and sustainability matters at the entity level including effectiveness of associated internal control systems.



Specific responsibilities for the oversight of climate change have been assigned to management as outlined below:

- The Sustainability Steering Committee (SSC) provides oversight over MGG's Sustainability Programme, including climate-related activity and associated policies and frameworks. The SSC is accountable to the MGG Executive Committee, which assists the M&G Asset Management Chief Executive Officer (CEO) in the discharge of their oversight responsibilities for MGG and its subsidiaries.
- Supporting forums under the SSC provide further focus on certain areas – the Sustainable Investing Standards Committee has responsibility for the treatment of issuers and instruments under investment frameworks, and the Climate Committee is responsible for overseeing and implementing the M&G Investments Thermal Coal Investment Policy.

The Stewardship & Sustainability function comprises multi-disciplinary teams who bring the expertise and capabilities required to execute various components of our sustainable investing architecture.

Ongoing communication is key in driving consistency with the Group-level approach to sustainability. This is supported by cross-committee membership, with the M&G Asset Management CEO being part of the M&G plc Group Executive Committee and Executive Sustainability Committee (ESC). The ESC, chaired by the Group Chief Sustainability Officer, is responsible for supporting the successful execution of the Group's sustainability strategy, and oversees delivery of public commitments and targets. Some SSC members also attend ESC meetings and provide regular updates through a standing business update agenda item.

Strategy

We believe supporting an orderly transition to net zero will reduce risk at the system level and for the issuers and assets we invest in on behalf of our clients. It will also present opportunities that we are well positioned to access as an active manager across public and private markets.

At Group level, M&G plc has pledged to achieve net zero carbon emissions across investment portfolios by 2050, in line with the Paris Agreement. At an Asset Management level, climate commitments are supported by interim decarbonisation targets set through M&G Investments' (encompassing MAGIM, MAGAIM and MGSL) membership of the Net Zero Asset Managers initiative (NZAMi). Initial interim decarbonisation targets for 2030 cover public equities, corporate bonds and real estate asset classes within funds managed on behalf of the Group's asset owner business, representing £92 billion of AUMA as at 31 December 2022 (the reference point for our last update). **An updated target disclosure was published in August 2023** and we plan to provide a progress update in 2024.

Our strategy is focused on positive real-world outcomes, using the levers[1] available to us to support the climate transition and help our clients manage the risks and opportunities brought by climate change. It is built upon three key actions, through which we can support decarbonisation and real-world transformation:

- Growing our allocations to companies and assets critical to the transition that are already aligned, to help them prosper and displace higher emitting activities;
- Aligning issuers and assets with a net zero pathway through active ownership to reduce emissions in the real economy; and
- Reallocating away from risky high-emitting issuers or assets that aren't able or willing to transition.

These actions areas map into our investment activity in three core areas:

1. Investment strategy: actioned through portfolio management, product design and capital allocation to climate solutions. Addressing thermal coal is an important component of our strategy because of its global emissions impact and the risk of stranded assets as the transition gathers pace – the M&G Investments Thermal Coal Investment Policy, available on **our website,** frames our approach towards coal phase-out across public equities and corporate bonds investments portfolios (including assets of MAGIM and MGSL). Alongside portfolio decarbonisation, we can play an important role in helping to finance and enable climate solutions, which we are well-placed to support through our private asset capabilities. For public assets, our emphasis is on stewardship and alignment with positive climate outcomes, as described below.
2. Stewardship: by engaging with the highest Financed Carbon Emissions contributors in our public markets portfolio, we can encourage them to adopt credible targets and transition plans to support the acceleration of decarbonisation and reduce our investment-related emissions. In 2023, we undertook a review of the first three years of M&G Investments' Hot 100 Engagement Programme, which covers the 100 companies that account for a majority of our financed emissions in public equities and corporate bonds (including assets of MAGIM and MGSL). Our focus for 2024 will be to review the progress of each of the companies we have engaged, and also to identify companies further down our focus list that require engagement. We also have a public asset engagement programme specifically targeting investee companies with exposure to thermal coal, to determine if they are compliant with the M&G Investments Thermal Coal Investment Policy.

   We have been an active member of Climate Action 100+ (CA100+) since 2017, an investor-led initiative that exists to help ensure that the world's largest corporate greenhouse gas emitters take necessary action on climate change. In 2023, we joined a broader initiative, the IIGCC Net Zero Engagement Initiative, to ratchet up engagement with some of the highest emitters we own that do not feature in CA100+. During the year, we also became members of Nature Action 100 (NA100), which is modelled on CA100+, but targets companies with high exposure to biodiversity and nature loss – we are co-leads on five NA100 companies, three of which also feature on our climate-related engagements as part of CA100+. For private investments, engagement is an important tool. A key focus in this area is to encourage improved climate-related disclosure, to help track decarbonisation efforts and better understand risk exposure. Further information on our engagement with investee companies can be found in the M&G Investments Stewardship Report, the latest version of which is available in the 'Responsible investing' section of **our website**.

[1] The levers outlined do not rely on services or products supplied by third parties or delegates.

3. Advocacy: we recognise that the climate transition will not reach the necessary pace and scale without the right public policy frameworks, and remain committed to advocacy and industry collaboration, to create a more supportive environment for ambitious climate action. For instance, as part of our memberships of the Investment Association, Principles for Responsible Investment, and the Investor Forum, among others, we continue to participate in a range of meetings and discussions, with climate change being a key focus.

Over 2023, our Net Zero Investment Framework has evolved in line with guidance from the Institutional Investors Group on Climate Change (IIGCC). This framework now provides a clearer differentiation of issuers' net zero commitments and maturity, helping our engagement efforts, and giving us a more accurate view of the transition alignment of the portfolios we manage.

We have also introduced a separate and complementary climate solutions investment framework, aligned with existing and emerging taxonomies. The framework will provide consistency in measurement and allow us to better categorise and monitor issuers' exposure to the structural growth themes of climate mitigation and adaptation. Together these frameworks will provide a more holistic and decision-useful transition 'dashboard' for our investment teams.

Financial planning is conducted at a Group level, and includes inputs from MGG. The plan includes income or expenditure related to our climate actions where we have a reasonable estimate of the value that is expected to materialise over the plan period (three years).

M&G plc's ARA (pages 72-74) sets out how climate risks and opportunities are being addressed by the wider business, including considerations of time horizons.

Risk management

The identification, assessment and management of climate-related risks, along with other ESG-related risks, is embedded into the Group's ESG Risk Management Framework. Various frameworks and processes structured under the three lines of defence model support implementation of the risk management approach.

From a first line perspective, our Stewardship and Sustainability teams play an important role in supporting the identification and management of climate risks relevant to investment portfolios. Examples of day-to-day management of climate risks include the application of M&G Investments' ESG Investment Policy and Thermal Coal Investment Policy into portfolio construction and investment decision-making.

Climate scenario modelling at an asset level is also one of the tools supporting the risk identification process – it helps identify how a range of climate change pathways may impact investments over time and broadens understanding of the dynamics driving long-term investment opportunities across asset classes and markets. However, we do recognise climate scenario analysis is subject to inherent limitations, and the impacts modelled are not intended to be predictive forecasts.

Through research integration tools available to investment desks, scenario model outputs allow for screening of issuers to assess relative climate risks and opportunities for physical, transitional and temperature alignment metrics, as well as to aid comparison across subsectors. Illustratively, our proprietary ESG scorecard may be used to screen for issuers that do not meet set climate criteria or exclusions (among other ESG metrics).

Our Risk and Compliance functions serve as a key part of the second line of defence, responsible for reviewing and challenging risk management practices by the first line and providing guidance. During the year, greenwashing risk controls were assessed, with mandatory anti-greenwashing training being developed and rolled out across the business.

The Group's Internal Audit function represents the third line. It supports the entity boards and senior management by providing independent assurance over the first and second lines of defence. This includes assessment of governance arrangements, risk and controls practices as they relate to climate risk, and thematic reviews such as evaluation of external climate disclosures.

Metrics

Emissions metrics across our portfolios have been calculated based on the Partnership for Carbon Accounting Financials (PCAF) principles. Carbon measurement methodologies, including PCAF, are continually evolving and we will consider updated guidance as it is issued. This year, we are including a data quality score covering public equities, public corporate bonds, and sovereign debt asset classes. The data quality score, based on PCAF methodology, indicates the quality of the source data used to derive emissions for individual issuers – the score ranges from 1 to 5, where 1 represents the highest data quality and 5 the lowest.

In our analysis, 'coverage' refers to the proportion of in-scope assets under management and administration (AUMA) for which we have sufficient environmental, financial, or other such data required for the calculation of the given metric (reported or estimated). In-scope asset classes include public equities and corporate bonds, sovereign debt, real estate and Infracapital assets. We have increased coverage in the year for public assets, due to the addition of a new third-party data source. We expect further improvements as availability of data improves, and industry guidance extends to a broader range of asset classes. Asset classes such as cash, derivatives, and asset-backed securities (ABS) are not included at present, reflecting a lack of either climate accounting standards or mature data sources for these types of assets.

All figures presented reflect the annual emissions calculated with reference to in-scope AUMA of each asset class as at 31 December for each year.

We use a range of metrics to identify and assess climate-related risks and opportunities across investment portfolios. Scope 1 and 2 greenhouse gas (GHG) emissions are used to inform investment decisions and engagement efforts. While we monitor Scope 3 emissions as a proxy for risk exposure to inform targeted actions, such as engaging companies on transition plans, disclosure of this emissions category remains poor, which makes it less reliable for decision-making.

Information on definitions of metrics reported and limitations relating to data used are detailed in the Group's 2023 Environmental Metrics Basis of Reporting ('Basis of Reporting'), published on **M&G plc's website**. In particular, it should be noted that we use data sourced from third-party data providers (eg, MSCI and Bloomberg) to calculate the emissions metrics. While we perform high-level checks on the data received, we are reliant on the accuracy of source data received from these external vendors.

We have restated certain metrics for the year ended 31 December 2022, in line with the policy set out in our Basis of Reporting. Further details of the restatements and the impact on the previously presented metrics are set out in the relevant sections below.

Climate metrics (MAGIM)

MAGIM's in-scope assets that we report on cover public equities, corporate bonds, sovereign debt and real estate investments.

Public equities and corporate bonds

The table presents emissions metrics relating to MAGIM's public equities and corporate bonds. The underlying emissions data is sourced from MSCI and Bloomberg.

	2023		2022 (restated)		2022 (previously presented)	
	Value	Coverage	Value	Coverage	Value	Coverage
AUMA in-scope for metrics presented (£bn)	**170.0**	N/A	165.0[2]	N/A	165.3[2]	N/A
Financed carbon emissions (FCE) Scope 1 and 2 ($ktCO_2e$)	**12,684**	87%	12,825	84%	9,499	69%
Data quality score – Scope 1 and 2	2.2	N/A	N/A	N/A	N/A	N/A
Financed carbon emissions (FCE) Scope 3 ($ktCO_2e$)	**73,175**	83%	80,328	80%	58,254	69%
Data quality score – Scope 3	2.2	N/A	N/A	N/A	N/A	N/A
Carbon footprint Scope 1 and 2 (tCO_2e/£m invested)	**86**	87%	93	84%	84	69%
Carbon footprint Scope 3 (tCO_2e/£m invested)	**519**	83%	609	80%	514	69%
Weighted average carbon intensity (WACI) Scope 1 and 2 (tCO_2e/£m sales)	**158**	83%	176	81%	176	81%
Weighted average carbon intensity (WACI) Scope 3 (tCO_2e/£m sales)	**947**	82%	977	78%	1,046	78%

Analysis of 2023 compared with restated 2022 metrics

For 2023, despite an increase in coverage we have seen a fall in Scope 1, 2 and 3 FCE due to a lower carbon footprint of the portfolio, as holdings in several issuers with a high carbon footprint were reduced. For Scope 1 and 2, this was offset by an underlying increase in real-world emissions of investee companies that remained in the portfolio.

Restatement of 2022 metrics previously presented

In 2023, we changed our data hierarchy for the use of third-party emissions data for public equities and corporate bonds to include Bloomberg as a secondary source with a view to increasing coverage - further details on our data hierarchy is set out in the Basis of Reporting, available on our website. As a result of this change, we have restated the 2022 metrics previously presented to include the additional source. The increase in coverage has resulted in a rise in reported absolute emissions for these public assets. The increase in absolute emissions for the restated 2022 figures is larger than the relative increase in coverage, reflecting a number of high-emission intensity issuers being captured within the additional coverage. This can also be seen through the increased carbon footprint of the assets in the restated 2022 figures.

We have also made a refinement in the year to our methodology for the emissions data used for green bonds, to base this on the estimated emissions of the project funded by the bond rather than the emissions of the issuers, where the data is available. Green bonds account for a small proportion of the in-scope portfolio and therefore this revision has had minimal impact on the restated metrics.

[2] In-scope AUMA has been restated due to a re-classification of bonds from corporate bonds to sovereign debt in the year.

Sovereign debt

In the table below, we have included financed domestic production and consumption emissions, and their respective weighted average intensities. The presentation has been updated this year to show metrics both as including and excluding Land Use, Land Use Change and Forestry (LULUCF).

Sovereign debt	2023			2022 (restated)			2022 (previously presented)		
	Value		Coverage	Value		Coverage	Value		Coverage
	Incl. LULUCF	Excl. LULUCF		Incl. LULUCF	Excl. LULUCF		Incl. LULUCF	Excl. LULUCF	
AUMA in-scope for metrics presented (£bn)	**37.2**		**N/A**	21.9[3]		N/A	21.6[3]		N/A
Financed sovereign production emissions Scope 1 ($ktCO_2e$)	**8,924**	**8,563**	99.5%	4,953	4,947	99.4%	6,039	5,985	99.7%
Data quality score – Scope 1	**1.7**	**1.7**	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Financed sovereign consumption emissions Scope 1,2,3 ($ktCO_2e$)[4]	**8,946**	**8,760**	95.2%	5,155	5,249	95.4%	12,488	12,541	95.7%
Data quality score – Scope 2 and 3[5]	**4.0**	**4.0**	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Weighted average sovereign production intensity Scope 1 (tCO_2e/PPP-adj GDP (USDm))	**0.2**	**0.2**	99.5%	0.2	0.2	99.4%	0.3	0.3	99.7%
Weighted average sovereign consumption intensity Scope 1,2,3 (tCO_2e/Capita)[4]	**10.0**	**10.3**	95.2%	10.8	11.3	95.4%	22.3	22.6	95.7%

Analysis of 2023 compared with restated 2022 metrics

In 2023, sovereign emissions increased in line with the increase of in-scope AUMA. This increase in in-scope AUMA is largely driven by larger allocations to gilts and treasuries, through new bond fund mandates from M&G plc Group's internal asset owner, and also partly from market movements – with bond values having a strong end to 2023.

Restatement of 2022 metrics previously presented

We have reviewed our methodology for sovereign debt emissions against PCAF's Financed Emissions Standard and as a result have restated the 2022 sovereign debt emissions for the following methodology changes:

i. The calculation of sovereign production emissions relies on the determination of an attribution factor, using data on the sovereign's gross domestic product (GDP) adjusted for the purchasing power parity (PPP) rates in international $. Previously this was converted using the World Bank's PPP conversion factor for the UK and used along with the investment holding in GBP to determine the attribution factor. We have updated our methodology to determine the attribution factor using PPP-adjusted GDP (international $) and the sovereign bond market value (USD). The change in production emissions following restatement is primarily a result of this change. Financed sovereign production emissions have also been recalculated using a higher quality data source where this source is available for the assets in-scope.

ii. In addition to the changes above, financed sovereign consumption emissions are now reported excluding exported emissions. Previously no adjustment was made for exported emissions, which is the main driver for the change in restated consumption emissions. There has also been a change in the scope of OECD data used for imported emissions which are included in the overall calculation.

The restatements set out above in relation to the absolute values of emissions have resulted in the restatement of weighted average intensity metrics for production and consumption metrics. There has been no other changes to methodology to produce these metrics.

[3] In-scope AUMA has been restated due to a re-classification of bonds from corporate bonds to sovereign debt in the year.
[4] 2023 and 2022 (restated) exclude exported emissions whereas 2022 (previously presented) includes exported emissions. Refer to section on 'Restatement of 2022 metrics previously presented' for further details.
[5] The data quality score for Scope 2 and 3 metrics are based on economic activity-based emissions from the OECD, which attracts a lower score than emissions based on reported or physical activity-based data.

Real estate

The table presents emissions metrics relating to MAGIM's real estate portfolio.

Private assets – Real estate	2023		2022 (restated)		2022 (previously presented)	
	Value	Coverage	Value	Coverage	Value	Coverage
AUMA in-scope for metrics presented (£bn)	**31.6**	N/A	36.0	N/A	36.0	N/A
Financed carbon emissions Scope 1 and 2 ($ktCO_2e$)	**92.4**	85%	106.5	85%	123.5	85%
Financed carbon emissions Scope 3 ($ktCO_2e$)	**583.2**	85%	554.9	85%	600.6	85%
Carbon footprint Scope 1 and 2 (tCO_2e/£m invested)	**3.5**	85%	3.5	85%	4.0	85%
Carbon footprint Scope 3 (tCO_2e/£m invested)	**21.8**	85%	18.1	85%	19.6	85%

Real estate assets recorded a decrease in absolute Scope 1 and 2 emissions over the year primarily due to a reduction of in-scope AUMA, as some assets were sold in the year combined with lower market values. Scope 3 emissions have increased due to a higher energy consumption across the assets occupied and run by tenants, as activity has continued to pick up post COVID. Real estate emissions have been restated in the year to reflect that some emissions for certain assets were included twice in 2022.

Climate metrics (MAGAIM)

This is the first time that we have presented results for MAGAIM, so we do not include prior year figures. MAGAIM funds primarily invest in private infrastructure assets, for which the metrics are presented below. While MAGAIM has a small exposure to public corporate debt and real estate assets, these have not been disclosed on the basis of materiality. MAGAIM does not have exposure to sovereign debt.

Private assets – Infracapital	2023	
	Value	Coverage
AUMA in-scope for metrics presented (£bn)	**3.8**	N/A
Financed carbon emissions Scope 1 and 2 ($ktCO_2e$)	**626.2**	91%
Financed carbon emissions Scope 3 ($ktCO_2e$)	**13.1**	72%
Carbon footprint Scope 1 and 2 (tCO_2e/£m invested)	**180.9**	91%
Carbon footprint Scope 3 (tCO_2e/£m invested)	**4.8**	72%

Infracapital emissions data is based on numbers reported directly from the underlying investee companies, which have not been externally verified. We expect Scope 3 emissions to increase in coming years as investee company reporting becomes more mature, with additional data across the supply chain and other Scope 3 categories being added.

Climate metrics (MGSL)

This is the first time that we have presented results for MGSL, so we do not include prior year figures. The methodology applied to the MGSL metrics below is consistent with that of the MAGIM metrics for 2023. MGSL funds primarily operate in public markets, so do not have a material exposure to private assets. While MGSL has a small exposure to real estate assets, these have not been disclosed on the basis of materiality.

Public equities and corporate bonds

Public equities and corporate bonds	2023	
	Value	Coverage
AUMA in-scope for metrics presented (£bn)	50.8	N/A
Financed carbon emissions Scope 1 and 2 ($ktCO_2e$)	3,962	97%
Data quality score – Scope 1 and 2	2.1	N/A
Financed carbon emissions Scope 3 ($ktCO_2e$)	29,368	96%
Data quality score – Scope 3	2.1	N/A
Carbon footprint Scope 1 and 2 (tCO_2e/£m invested)	80	97%
Carbon footprint Scope 3 (tCO_2e/£m invested)	602	96%
Weighted average carbon intensity (WACI) Scope 1 and 2 (tCO_2e/£m sales)	164	95%
Weighted average carbon intensity (WACI) Scope 3 (tCO_2e/£m sales)	956	95%

Sovereign debt

Sovereign debt	2023		
	Value		Coverage
	Incl. LULUCF	excl. LULUCF	
AUMA in-scope for metrics presented (£bn)	5.5		N/A
Financed sovereign production emissions Scope 1 ($ktCO_2e$)	1,538	1,494	99%
Data quality score – Scope 1	1.8	1.8	N/A
Financed sovereign consumption emissions Scope 1,2,3 excl. exported emissions ($ktCO_2e$)	1,388	1,400	90%
Data quality score – Scope 2 and 3[6]	4.0	4.0	N/A
Weighted average sovereign production intensity Scope 1 (tCO_2e/PPP-adj GDP (USDm))	0.2	0.2	99%
Weighted average sovereign consumption intensity Scope 1,2,3 excl. exported emissions (tCO_2e/Capita)	11.4	12.1	90%

[6] The data quality score for Scope 2 and 3 metrics are based on economic activity-based emissions from the OECD, which attracts a lower score than emissions based on reported or physical activity-based data.

Scenario analysis

In addition to backward-looking data, which indicates the current emissions profile of an asset or portfolio, we also use forward-looking metrics to assess transition alignment and potential impacts on asset values over time by leveraging scenario analysis tools.

The key forward-looking metrics that we monitor for public assets are:

- Implied temperature rise (ITR): this metric allows a user to quickly gauge if a portfolio and issuer's GHG emissions' trajectory is aligned with the Paris Agreement through sub-industry and regional benchmark comparisons. It is a simplified tool allowing us to assess the transition profile of the companies we invest in and their progress toward driving down greenhouse gas emissions, while also measuring the effect of any changes we make to our portfolios during the year.
- Climate adjusted value (CAV): this metric is equivalent to value at risk (VaR), but is calculated on a bottom-up basis, by assessing the impact of different climate scenarios on an issuer's financial position, which we disclose by industry.

We use Aladdin Climate to model CAV across our public equities, corporate bonds and sovereign debt portfolios and ITR across public equities and corporate bonds portfolios. It assesses the financial impact of climate change based on three Network for Greening the Financial System (NGFS) scenarios: orderly, disorderly and hot house. Aladdin Climate was updated in 2023, to better reflect the latest scientific developments, as well as new data sets, including issuer net zero target information (eg, Science Based Targets initiative and CDP data).

ITR is presented for the public equities and corporate bonds held by MAGIM and MGSL. CAV is presented at MAGIM level; as MGSL delegates portfolio management of fund assets to MAGIM, its portfolios are also covered as part of the broader CAV output for MAGIM.

For private assets, we engaged risk advisory firm Marsh to assess our real estate and infrastructure portfolios' exposure to physical climate risk. Marsh uses XDI, a climate risk analysis platform, which quantifies the cost of extreme weather and climate change impacts to physical assets, taking into account asset-specific information. The scenarios used in this model are based on Representative Concentration Pathway (RCP) 2.6 and 8.5, as produced by the IPCC. These broadly align to the public asset orderly and hot house scenarios.

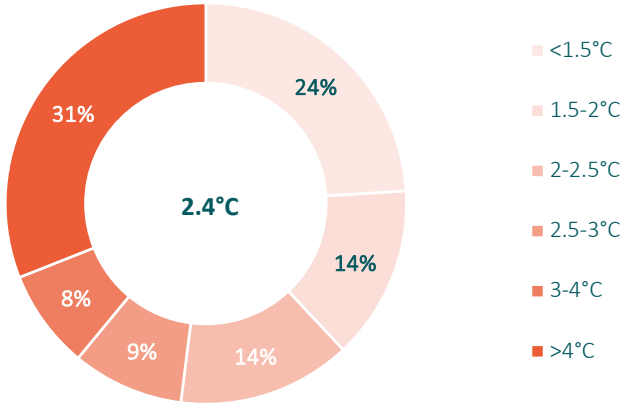
Real estate and infrastructure assets modelling is shown for MAGIM and MAGAIM respectively, reflecting each entity's exposure to these asset classes.

As with any model, the scenario analysis results are heavily influenced by the assumptions made. We recognise that the climate models are based on stylised scenarios, and attempt to capture the possible future interplay between physical climate impacts, policy and regulation, and consumer behaviour at a global scale. The scenarios are not predictive, but rather help us explore a range of potential outcomes, and serve as a useful tool for interrogating and understanding how climate-related developments could impact the assets we manage and administer.

Implied temperature rise (public equities, corporate bonds) – MAGIM

As part of our modelling, we have calculated the implied temperature rise (ITR) for each individual issuer where data is available (covering 88% of public equities and corporate bonds for MAGIM as at 31 December 2023). The chart below shows the relative ITR exposure based on portfolio weightings to a range of temperature levels.

Temperature alignment of investees

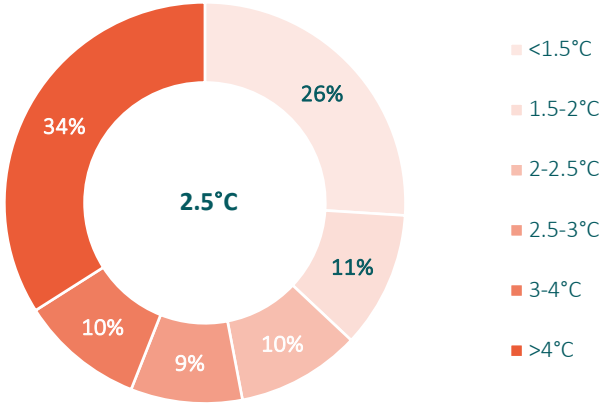


The analysis shows that investee companies are aligned to a broad range of temperature outcomes. While 38% of the modelled AUMA is projected to achieve alignment with a 2°C world by 2030, 39% of modelled assets exceed 3°C. The weighted average warming potential across modelled issuers is 2.4°C. Using the updated climate model outputs on a like-for-like basis, there has been a small decrease in the overall portfolio's temperature alignment since 2022 (2.5°C).

Implied temperature rise (public equities, corporate bonds) – MGSL

Similarly, for MGSL, we have calculated the implied temperature rise (ITR) for each individual issuer where data is available (covering 97% of public equities and corporate bonds for MGSL, as at 31 December 2023). The chart below shows the relative ITR exposure based on portfolio weightings to a range of temperature levels.

Temperature alignment of investees



Our analysis of the temperature alignment of investees shows that they are aligned to a broad range of temperature outcomes. While 37% of the modelled AUMA is projected to achieve alignment with a 2°C world by 2030, 44% of modelled assets exceed 3°C. The weighted average warming potential across modelled issuers is 2.5°C.

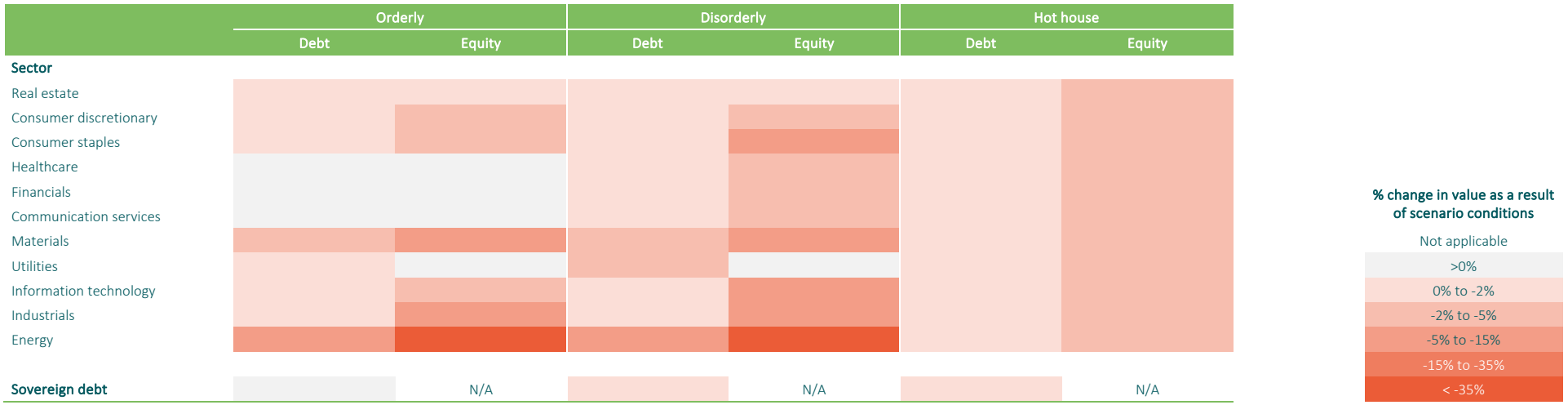
While the average across our modelled assets is higher than the Paris Agreement goals, this is consistent with the broader economy and therefore not surprising at this stage in the climate transition. We would expect the figure to improve as we work to meet our 2030 targets for in-scope assets and continue to carry out climate engagements with investees as part of our stewardship.

We acknowledge that ITR is subject to a range of inherent limitations, including the absence of a commonly accepted calculation approach, and sensitivity to sector and geographical emission assumptions. We do not use ITR in isolation but believe it provides useful indications of alignment when viewed in conjunction with other information. For a more detailed overview of ITR limitations, please refer to M&G plc's ARA (page 86).

Climate adjusted value (public equities, corporate bonds and sovereign debt) – MAGIM

As part of our forward-looking analysis we model our public asset portfolios against three scenarios to help us quantify the relative financial impacts of climate change across different outcomes. This assessment is based on a bottom-up approach and provides estimates of the financial impact on all issuers modelled, as well as the impact on asset valuations. The adjusted value is calculated separately for physical and transition risks as part of the scenario model that we use across our public portfolios (Aladdin Climate). The orderly and disorderly scenarios presented in the heatmap below reflect transition risk impacts only, with a coverage of 87%, and the hot house scenario reflects physical risk impacts only, with a coverage of 88%.

Climate adjusted value impact by sector (current to 2050)

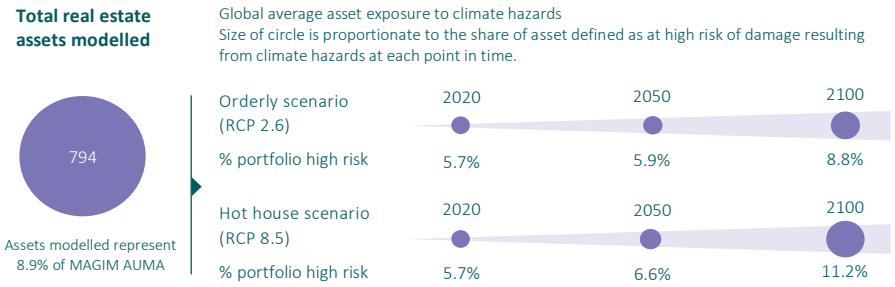


The results show that the orderly and disorderly scenario impacts are most pronounced in the energy, materials and industrials sectors (where significant change is required to decarbonise and align with the transition). By contrast, under the hot house scenario – physical impact only – asset valuations are impacted fairly evenly across all sectors.

We recognise that the outputs from this analysis are subject to limitations, and the results should be interpreted with these in mind. The underlying NGFS scenarios do not include all relevant factors that may impact outcomes, for example so-called climate tipping points and nature-related impacts, which could significantly impact the results presented. The outputs should not be treated as forecasts but as an iterative process and exploration of possible futures. They are best viewed in conjunction with other data and qualitative information.

Private assets (real estate) – MAGIM

The analysis below presents the proportion of MAGIM's real estate assets that are at high risk from future climate conditions.

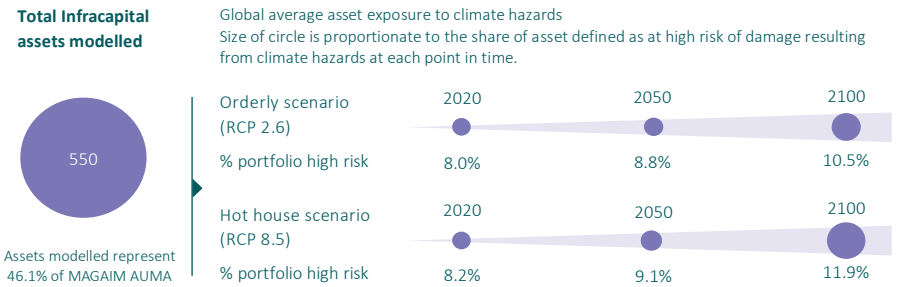


Under each scenario, assets were rated low, medium or high risk (high risk meaning at least 1% of an asset's value being at risk of damage per year). The results of the physical climate risk analysis have remained similar to last year's levels, identifying only a relatively small proportion of assets that are at high risk from future climate conditions, and draws the following conclusions:

- Under an orderly scenario (RCP 2.6) between 5.9% and 8.8% of assets will be rated high risk by 2050 and 2100, respectively; and
- Under a hot house scenario (RCP 8.5), these percentages increase to 6.6% and 11.2%.

Private assets (Infracapital) – MAGAIM

The analysis below presents the proportion of MAGAIM's private infrastructure asset locations that were identified as high risk.



As with the real estate model, assets were rated low, medium or high risk under each scenario. The analysis shows a relatively small proportion of the modelled assets are at high risk from future climate conditions, and draws the following conclusions:

- Under an orderly scenario (RCP 2.6) between 8.8% and 10.5% of assets will be rated high risk by 2050 and 2100, respectively; and
- Under a hot house scenario (RCP 8.5) these percentages increase to 9.1% and 11.9%.

Similar to other analysis above, we recognise that the outputs from this analysis are subject to inherent limitations and do not consider second-order impacts which could affect asset values beyond what is modelled. The output of this model is limited to the identification of risk level and reinstatement value at risk, partly due to the fact that the model assesses only direct climate risk and partly due to the nature of the investments.

Glossary

Term	Definition
Aladdin Climate	Aladdin Climate is a BlackRock software application which enables investors to measure the physical risk of climate change and the transition risk to a low-carbon economy on portfolios with climate-adjusted security valuations and risk metrics.
Carbon footprint	Carbon footprint refers to financed emissions normalised by the market value of a portfolio (GHG emissions per million pounds of investment). This indicator is particularly useful for comparative purposes, but similar to FCE is sensitive to financial factors that do not relate to decarbonisation.
Climate Action 100+ (CA100+)	Climate Action 100+ is an investor-led initiative to ensure the world's largest corporate greenhouse gas emitters take necessary action on climate change.
Disorderly scenario	The disorderly scenario used in this report broadly aligns with Representative Concentration Pathway 2.6 and predicts a temperature rise lower than 2°C by the end of century. However, climate action to achieve this is not taken until 2030, which delays transition impacts and makes them more drastic.
Financed carbon emissions (FCE)	Financed carbon emissions represent the absolute greenhouse gas emissions associated with a portfolio of investments, where there is available reported data or estimates. Financed emissions are influenced by change in financial factors such as market movements and portfolio values, which are separate to real world emissions.
Financed scope 1 emissions	Financed scope 1 emissions include direct emissions from an issuer's owned or controlled sources, eg, emissions associated with fuel combustion in boilers, fleet vehicles.
Financed scope 2 emissions	Financed scope 2 emissions include indirect emissions from purchased or acquired energy, eg, electricity, steam, heat, or cooling, that is generated off-site and consumed by an issuer.
Financed scope 3 emissions	Financed scope 3 emissions are all other indirect emissions (not included in Scope 2) that occur in the value chain of an issuer, including both upstream and downstream emissions.
Greenhouse gases (GHG)	Greenhouse gases are gases that trap heat from the sun in our planet's atmosphere, keeping it warm. The main greenhouse gases released by human activities are carbon dioxide, methane, nitrous oxide, and fluorinated gases used for cooling and refrigeration.
Hot house scenario	The hot house scenario used in this report broadly aligns with Representative Concentration Pathway (RCP) 8.5 and predicts an average temperature change above 3°C by the end of the century, assuming no global response to climate change beyond what has already been committed to.
Institutional Investors Group on Climate Change (IIGCC)	The Institutional Investors Group on Climate Change (IIGCC) is the European forum for investor collaboration on climate change. It works with business, policy makers and fellow investors to help define the investment practices, policies and corporate behaviours required to address climate change.
Intergovernmental Panel on Climate Change (IPCC)	The Intergovernmental Panel on Climate Change (IPCC) is the United Nations body for assessing the science related to climate change. It provides policymakers with regular scientific assessments on climate change, its implications and potential future risks, as well as puts forward adaptation and mitigation options.
Network for Greening the Financial System (NGFS)	The NGFS is a group of central banks and supervisors committed to sharing best practices, contributing to the development of climate and environment-related risk management in the financial sector and mobilising mainstream finance to support the position toward a sustainable economy.
Net Zero Asset Managers initiative (NZAMi)	The Net Zero Asset Managers initiative (NZAMi) is an international group of asset managers committed to supporting the goal of net zero greenhouse gas emissions by 2050 or sooner, in line with global efforts to limit warming to 1.5°C.
Orderly scenario	The orderly scenario used in this report broadly aligns with Representative Concentration Pathway 2.6 and predicts a temperature rise below 2°C by the end of the century, in line with the Paris Agreement.
Paris Agreement	The Paris Agreement is an agreement within the United Nations Framework Convention on climate change, dealing with greenhouse gas emissions mitigation, adaptation, and finance. Its overarching goal is to hold the increase in the global average temperature to well below 2°C above pre-industrial levels and pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels.
Weighted average carbon intensity (WACI)	Weighted average carbon intensity provides a single metric summing the individual emissions intensities (by million pounds of issuer sales) of companies in a portfolio based on their weightings, indicating a portfolio's exposure to carbon-intensive issuers.