



# Wellington Management Singapore Environmental Risk Report

## ANNEX TO OUR FIRMWIDE<sup>1</sup> 2023 CLIMATE REPORT

Prepared in alignment with the Guidelines on Environmental Risk Management issued by the Monetary Authority of Singapore (MAS) and the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD).<sup>2</sup>

Wellington Management Singapore Pte. Ltd. (Wellington Management Singapore)

<sup>1</sup> "Firmwide" and "firm" describe activities undertaken at the Wellington Management group level.

<sup>2</sup> While firms can continue to use the TCFD recommendations, concurrent with the release of its 2023 status report on October 12, 2023, the TCFD has fulfilled its remit and disbanded. The Financial Stability Board (FSB) has asked the IFRS Foundation to take over the monitoring of the progress of companies' climate-related disclosures. Although the IFRS Foundation now has oversight of ongoing TCFD reporting, please note that this report has not been prepared in alignment with the IFRS Foundation's new ISSB Standards (IFRS S1 and IFRS S2).



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Wellington Management's business is global.  
All sections of this document supplement our [firmwide 2023 Climate Report](#).



# Message from Wellington Management Singapore leadership

We are pleased to share our third Wellington Management Singapore-focused environmental report. This report aligns with the Guidelines on Environmental Risk Management issued by the MAS and the TCFD recommendations. It is supplemental to our firmwide Climate Report for 2023. In addition to describing our processes and procedures for the identification, mitigation, disclosure, and oversight of environmental risks facing assets managed under client contracts, as well as all assets managed by Singapore-based asset managers, this report also highlights our progress on measuring, reporting, and reducing our operational carbon footprint.

Our Singapore affiliate, Wellington Management Singapore, has more than 75 in-scope accounts, representing US\$28 billion in assets under management (AUM) as of 31 December 2023.<sup>3</sup> We recognize that to fully satisfy our clients' investment and service expectations, assessing the materiality of and managing environmental risks in their portfolios is essential. We are committed to effective, impactful, and transparent environmental risk management across our portfolios. To that end, we have incorporated an environmental risk assessment, with an initial focus on climate risk, into our regional governance and oversight frameworks. Additionally, we continue to actively address the impact of our operations via the implementation of environmentally-conscious practices that complement day-to-day business (e.g., reduced energy consumption, recycling, and composting).

Our clients' financial interests are at the center of everything we do. We believe that our climate-related investment, research, and engagement initiatives support our pursuit of clients' desired investment outcomes. In our view, both the physical risks of climate change as well as the challenges stemming from the transition to a lower-carbon economy carry financial risks for a wide range of companies and issuers. At the same time, solutions aimed at helping society adapt to and mitigate these risks present myriad — and rapidly expanding — investment opportunities.

We appreciate the continued support of our environmental journey as we always aim to achieve the best possible financial and investment outcomes for our clients.



**KAREN AU**

Chair, Wellington Management Singapore Pte Ltd and Chief Compliance Officer



**JANET PERUMAL**

Head of Asia Pacific and Head of Investments, Asia Pacific

<sup>3</sup> The AUM of investment management mandates that terminated during the reporting period are excluded from the total AUM figure for Wellington Management Singapore as of 31 December 2023 and excluded from any calculations used for metrics throughout this report.

# Section 1: Oversight and governance

As mentioned in our firmwide Climate Report, 2023 saw us strengthen the governance for our sustainability practices. We also enhanced our governance framework for Wellington Management Singapore. This section provides additional detail on our regional structure.

Please refer to Section 1 of our firmwide [2023 Climate Report](#) for a full overview of our firmwide oversight and governance structure.

**Figure 1**

Wellington Management Singapore oversight at a glance

	Oversight	Management and accountability	Research and assessment
<b>Governance</b>			
Board of Directors	x		
APAC Investor Supervisory Group		x	
<b>Portfolio integration</b>			
Investment Product and Fund Strategies	x	x	
<b>Portfolio oversight</b>			
Portfolio management teams		x	x
Line management	x		

## 1.1 GOVERNANCE

Wellington Management Singapore's Board of Directors (the Board) believes that understanding environmental factors can be material to making better long-term investment decisions on behalf of our clients. The Board is committed to supporting Wellington Management Singapore's efforts to increase research expertise, enhance data, develop tools to better understand environmental factors, and engage with issuers on their short-, medium-, and long-term plans for managing and reducing environmental risks. While the Board is responsible for the oversight of environmental risk management, it delegates the day-to-day oversight of environmental risk management to the APAC Investor Supervisory Group (AISG).

### BOARD OF DIRECTORS

**Purpose:** Oversees the business operations of Wellington Management Singapore, setting high-level corporate direction and providing broad oversight with respect to senior management as well as implementation and performance, risk management, compliance, and internal controls. Additionally, the Board establishes risk appetite; approves the risk management framework; requires that all client portfolios be assessed for environmental risks; and, where such risks are deemed to be material and relevant, requires that thresholds be set to monitor these risks, using research and data currently reasonably available.

**Membership:** Senior leaders from our investment, client, and infrastructure platforms

**Meeting frequency:** Quarterly

**Sample activities:** Sets tone and strategy; defines roles and responsibilities; ensures that processes, governance, and the risk management framework meet regulatory requirements; reviews effectiveness of framework at least annually or at such other intervals considered appropriate by the Board, taking into account all relevant circumstances.

### APAC INVESTOR SUPERVISORY GROUP (AISG)

**Purpose:** Oversight of investment personnel and asset management activities, including environmental risk management.

**Membership:** Senior-level and experienced professionals from our investment platform, who have line management responsibility for portfolio management teams.

**Meeting frequency:** Quarterly

**Sample activities:** Assesses the effectiveness of the risk oversight conducted by the portfolio management teams and the investment directors from Investment Product and Fund Strategies (IPFS); provides timely management information to the Board; escalates any material environmental risk exposures and process exceptions to the risk management framework to the Board; and directs resources of Wellington Management to ensure adequate training and development of staff responsible for the management and day-to-day oversight of environmental risk.

## 1.2 PORTFOLIO INTEGRATION

### INVESTMENT PRODUCT AND FUND STRATEGIES (IPFS)

**Purpose:** Independent oversight of portfolios, with a focus on investment integrity, assessing whether portfolio holdings and exposures are consistent with clients' investment objectives, expectations, and risk tolerance.

**Membership:** Investment Directors, specialists, and analysts who are dedicated to specific strategies or hold broader risk-related responsibilities. IPFS is independent from each portfolio management team, with different reporting lines and the ability to escalate concerns to line management.

**Meeting frequency:** Regular and ongoing

**Sample activities:** In addition to the sample activities described in the firmwide 2023 Climate Report, IPFS assesses portfolio holdings and exposures, highlighting potential areas of inconsistency with the investment team's philosophy and process (P&P) and expected risk exposures. As part of this





regular process, members of IPFS review portfolio-level data. To support the assessment of the relevance and materiality of environmental risks, a review of environmental factors is updated monthly and a formal assessment of all client accounts that are contracted with Wellington Management Singapore or are managed by investment teams within Wellington Management Singapore is conducted semi-annually.

### 1.3 PORTFOLIO OVERSIGHT

#### PORTFOLIO MANAGEMENT TEAMS

**Purpose:** Investment research; asset management of client portfolios

**Membership:** Portfolio managers, analysts, and associates

**Meeting frequency:** Regular and ongoing

**Sample activities:** Day-to-day identification, assessment, and monitoring of environmental risks relevant in the context of their investment strategy, P&P, and Wellington Management's fiduciary duty to clients.<sup>4</sup> In support of these aims, portfolio managers and investment teams are provided with a range of data and analysis regarding such risks and may integrate these insights, along with other investment criteria, into their decision making via proprietary investor tools. Examples of these tools include our proprietary Climate Exposure Risk

Application (a physical-climate-risk assessment tool) and Sustainability View (a company-level dashboard integrated into Mosaic, our collaborative research-technology platform). These and other tools support portfolio managers' and investment teams' ESG and climate investment integration efforts and inform engagement prioritization by highlighting material topics for discussion with companies. Please refer to **Section 2** of our firmwide 2023 Climate Report for more details on our climate-risk tools.

#### LINE MANAGEMENT

**Purpose:** Oversees portfolio managers and investment groups

**Membership:** Senior line managers across the investment platform

**Meeting frequency:** Regular and ongoing

**Sample activities:** Provides fiduciary oversight for portfolio managers and their risk taking. Line managers also collect and provide feedback to portfolio managers from the firm's independent oversight groups, including IPFS and Risk Management. Assists with talent resourcing and development needs, opines on advancement and compensation decisions, and meets regularly with portfolio managers to provide feedback and support.

<sup>4</sup> Wellington Management refers to the Wellington group of companies.

## Section 2: Strategy and risk management

Wellington Management Singapore has developed a materiality framework that incorporates a set of portfolio-level metrics with input from the firm's Sustainable Investment Team. This framework leverages industry research and metrics widely used in the marketplace, such as forward-looking metrics like the expected trajectory of global warming or implied temperature rise (ITR) and climate value-at-risk (CVaR), weighted average carbon intensity (WACI), and third-party company assessment scores (such as the MSCI Corporate Environmental Score). This materiality framework is systematically applied to all in-scope client accounts, resulting in a dedicated report designed to indicate the likelihood that a portfolio or client account may be exposed to material climate risk requiring additional scrutiny.

According to the materiality framework, the potential for excess or material risk exists when either the benchmark-relative or absolute metrics are found to be meaningfully higher than their respective investment opportunity sets. To further assess potential sources of risk, the framework incorporates information about benchmarks (when applicable), as well as positions with the highest likely contribution to risk. This information is made broadly available to our investment teams and updated at least quarterly. Members of our IPFS team meet with individual portfolio management teams periodically to discuss and review their portfolios' investment exposures and any material risks arising from these exposures. At these portfolio integrity meetings, IPFS covers any material environmental risk raised by the environmental-risk materiality assessment. For identified investment approaches, IPFS discusses the findings of the assessment, which may include key contributors to material environmental risk in the portfolio, and/or Wellington Management's Climate Research and ESG Research teams' perspectives.

These discussions may result in agreed-upon next steps, such as engagement with the issuers, changes to position sizing, position elimination, or ongoing monitoring given the portfolio manager's informed opinion of the risk/reward and valuation considerations of the specific investment. For continued oversight, the AISG receives semi-annual reports highlighting accounts that indicate a material level of environmental risk, as well as the implications and remediation plans. The Board is also informed of any process exceptions in relation to the assessments.

Assessment of environmental risks is complex and requires judgment often based on data that is difficult to obtain and is incomplete, estimated, out of date, or otherwise materially inaccurate. Due to these challenges, the outputs from the materiality assessment outlined above form part of the overall assessment of environmental risks within the applicable portfolio and are unlikely, on their own, to be used as a basis for an investment decision to take a particular course of action. Wellington Management is committed to enhancing data availability and developing new investor tools to facilitate better measurement of potential environmental risks. We are encouraged by the steps financial regulators have been taking to promote more detailed disclosure of data from issuers. As data availability and confidence in available data increases, the metrics and framework for identifying and assessing the relevance and materiality of environmental-related risks will evolve and this framework will be updated accordingly.

To that end, portfolio management teams will also consider whether scenario analysis is relevant and useful in evaluating the resilience of investment strategies to climate-related risks under different temperature pathways. If so, we will develop a plan to implement scenario analysis.





## Section 3: Metrics and targets

Please refer to **Section 4** of our firmwide 2023 Climate Report for additional explanation of methodologies and rationale for certain displayed metrics.

### 3.1 MEASURING CURRENT EXPOSURE

**Note:** This section focuses on Wellington Management Singapore's aggregate greenhouse gas (GHG) exposure.<sup>5</sup> The **Appendix** shows the same metrics for a sample of Wellington Management Singapore's equity and corporate fixed income strategies, as we disclose these to clients

#### WEIGHTED AVERAGE CARBON INTENSITY (WACI)

**Figure 2** shows the WACI of Wellington Management Singapore's equity and corporate credit holdings, relative to representative global universes<sup>6</sup>, as of year-end 2023. **Figure 3** and **Figure 4** provide the relative exposures and WACI (Scopes 1 and 2) at the sector level in each asset class.

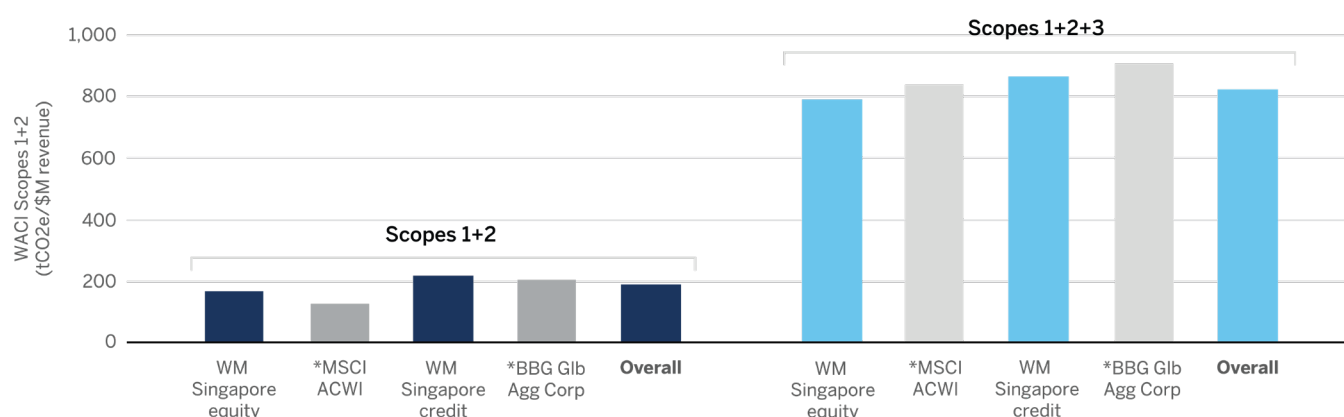
Based on an attribution analysis, Wellington Management Singapore's equity WACI (Scopes 1 and 2) is higher than the

global equity universe, at about 25% higher, as of 31 December 2023. We attributed this mainly to stock selection within materials, and in particular hard-to-abate industries such as construction materials. In addition, Wellington Management Singapore's equity exposure is comprised of more mandates invested in emerging markets strategies compared to the global equity universe. Even within hard-to-abate sectors, there is regional differentiation in the emissions intensity of the electricity grid, which generally leads to more carbon-intensive company operations in emerging markets.

Wellington Management Singapore's corporate credit exposure exhibited a similar WACI (Scopes 1 and 2) to the global corporate credit universe in aggregate. Note that the representative index is comprised of investment grade issuance, while our corporate credit exposure includes investment-grade as well as high-yield issuance. For reference, the WACI for a global high-yield universe is more than 50% higher than that of a global investment-grade universe.<sup>7</sup>

**Figure 2**

WACI of \*Wellington Management Singapore's equity and credit exposures vs relevant investment universe



Data as of 31 December 2023. | Sources: MSCI, Bloomberg, and Wellington Management

\*Hereafter, Wellington Management Singapore will be "WM Singapore," MSCI All Country World will be "MSCI ACWI," and Bloomberg Global Aggregate Corporate Index will be "BBG GIB Agg Corp."

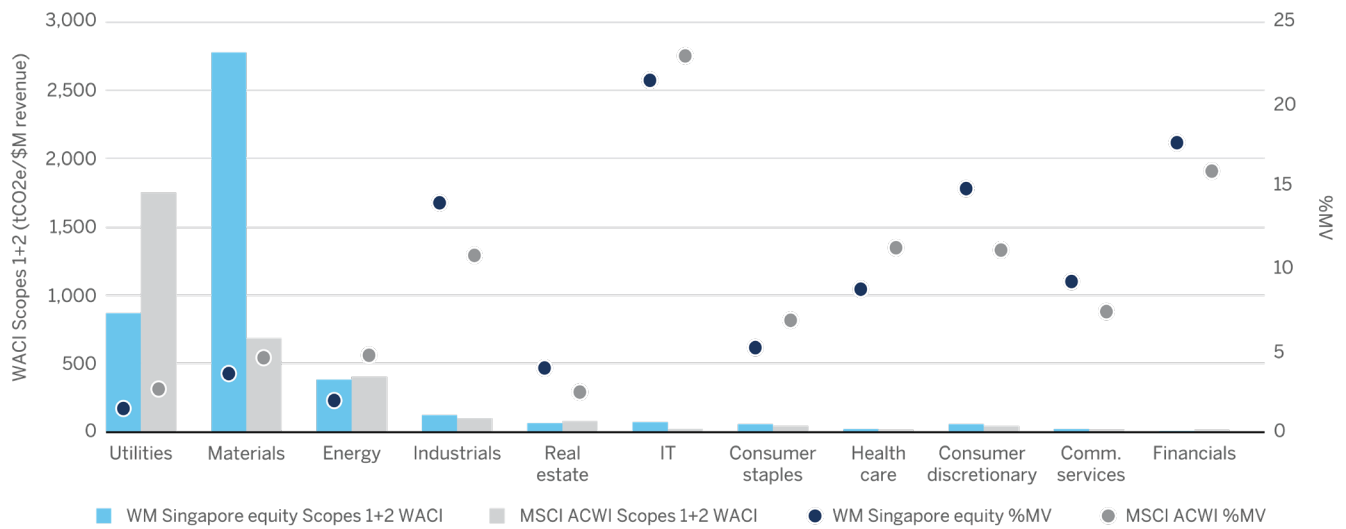
<sup>5</sup> The analysis below is based on aggregate gross long equity and corporate credit exposure, rounding to US\$15 and US\$13 billion, respectively, for total corporate exposure of more than US\$28 billion. This aggregation includes accounts managed for clients that are contracted with Wellington Management Singapore, as well as accounts managed by Singapore-based asset managers. Analysis is based on holdings and carbon data available as of 31 December 2023. Scopes 1 and 2 emissions are based on a combination of company-disclosed and estimated data to supplement data gaps, while Scope 3 emissions are based on a fully estimated dataset; both are sources from MSCI. These figures have not been independently assured or audited.

<sup>6</sup> The MSCI All Country World Index has been used to represent the global equity universe, and the Bloomberg Global Aggregate Corporate Index has been used to represent global investment-grade, fixed-rate corporate debt. Comparisons are for informational purposes only; not all assets aggregated as Wellington's equity and corporate credit exposure are managed against these indices.

<sup>7</sup> Wellington Management analysis as of 31 December 2023, based on a comparison of the BBG GIB Agg Corp and the Intercontinental Exchange BofA Merrill Lynch Global High Yield Index.

**Figure 3**

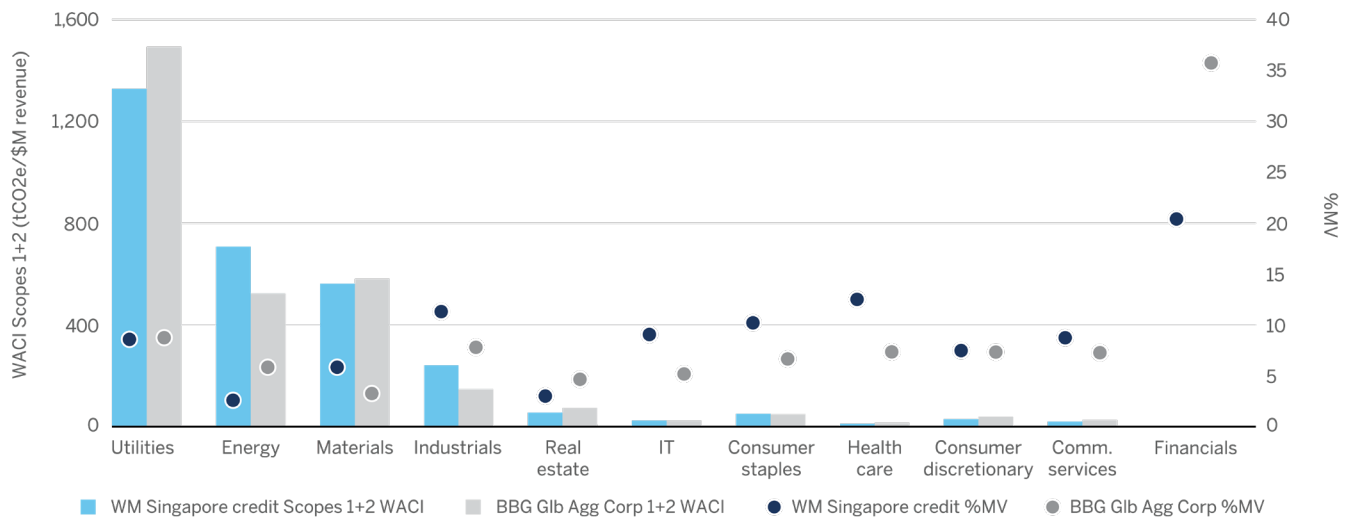
WACI of WM Singapore equity exposure by sector



Data as of 31 December 2023. | Sources: MSCI and Wellington Management.

**Figure 4**

WACI of WM Singapore credit exposure by sector



Data as of 31 December 2023. | Sources: MSCI, Bloomberg, and Wellington Management.

While we undertake the same attribution analysis for the WACI for Scopes 1, 2, and 3, we proceed with caution, as we only expect the estimated data set to be directionally accurate, given we are still reliant on estimated Scope 3 data. The analysis indicates that underweights to energy and stock selection in consumer discretionary and communication services for

Wellington Management Singapore's equity and corporate credit contribute to a lower-than-universe WACI relative to the equity and corporate credit universes. We will seek to analyze the stock selection effect as Scope 3 disclosure improves to provide more differentiation within industries.



## CARBON FOOTPRINT: EMISSIONS ASSOCIATED WITH ASSETS UNDER MANAGEMENT (AUM)<sup>8</sup>

**Figure 5** shows that Wellington Management Singapore's equity exposure contributed more Scope 1 and 2 emissions than the global universe, while Wellington Management Singapore's corporate credit exposure contributed fewer than the global corporate credit universe. For comparisons based on Scopes 1, 2, and 3, equity and corporate-credit exposure contributed fewer emissions than their respective global universes. The higher-than-benchmark performance for Wellington Management Singapore's equity exposure, focused on Scopes 1 and 2, is due in part to stock selection in sectors where Scopes 1 and 2 comprise most of the footprint, such as materials, which are tilted toward emerging markets-based production.

**Figure 5**  
Financed emissions from AUM

Equity	Scopes 1 + 2		Scopes 1, 2, + 3	
	WM Singapore equity	MSCI ACWI	WM Singapore equity	MSCI ACWI
Financed emissions (million tCO <sub>2</sub> e)	0.9	0.7	4.3	5.4
Financed emissions per US\$ million invested (tCO <sub>2</sub> e)	70.7	54.1	313.9	400.0

Credit	Scopes 1 and 2		Scopes 1, 2, and 3	
	WM Singapore credit	BBG Glb Agg Corp	WM Singapore credit	BBG Glb Agg Corp
Financed emissions (million tCO <sub>2</sub> e)	0.5	0.7	3.6	4.4
Financed emissions per US\$ million invested (tCO <sub>2</sub> e)	51.8	62.5	341.3	418.1

Data as of 31 December 2023. | Sources: MSCI, Bloomberg, and Wellington Management.

Since financial institutions must rely on estimates of carbon emissions to calculate portfolio emissions, the Partnership for Carbon Accounting Financials (PCAF) Standard suggests disclosure of a data-quality score on a scale from 1 (highest-quality, verified disclosure) to 5 (lowest-quality, estimation based on asset turnover ratios). Based on the MSCI dataset leveraged for this analysis, we conclude the data-quality score respectively for both equity and corporate credit asset classes is 2. Most of the market value within the global universe is directly reported but unverified, while the remainder is estimated by MSCI using a combination of physical activity and revenue factors. We expect the data-quality score to improve as regulators increasingly require climate disclosure and as investors pressure companies to voluntarily provide this information.

## EXPOSURE TO HIGH-IMPACT SECTORS

The Net Zero Investment Framework (NZIF) defines high-impact companies as “companies on the Climate Action 100+ focus list; companies in high-impact sectors consistent with Transition

For example, the construction materials industry is one of very few industries where Scope 3 represents less than 30% of the total footprint; this explains why performance relative to the global equity universe becomes favorable when inclusive of Scope 3. On average, every US\$1 million in AUM in Wellington Management Singapore's average equity strategy contributed 70.7 tons of carbon emissions. The same US\$1 million invested in the global equity universe contributes 54.1 tons. For Wellington Management Singapore's average corporate credit strategy, every US\$1 million invested contributed 51.8 tons, while the same amount invested in the global corporate credit universe contributed 62.5 tons.

Pathway Initiative (TPI) sectors<sup>9</sup>; banks; and real estate.” In our view, this categorization is a reasonable and comprehensive proxy for industries in which transition risk is most likely material to companies' operations and/or business model.<sup>10</sup>

**Figure 6** shows that high-impact sectors represented about 43.7% of invested corporate assets (US dollars invested as a proportion of AUM in corporate asset classes) and contributed disproportionately to the overall Scopes 1 and 2 WACI (62.8% contribution). The materials, industrials, and information technology sectors are the largest contributors to the Scopes 1 and 2 WACI of Wellington Management Singapore's equity assets, while the largest contributors for corporate credit are the utilities, materials, and industrials sectors.

Since many companies in high-impact sectors are actively reducing emissions across their operations and/or supply chains, we find this metric to be a blunt instrument with which to measure our exposure. We recognize that some companies have high Scope 1 emissions, making them likely targets of regional carbon-pricing schemes and underscoring the materiality of

<sup>8</sup> This analysis is consistent with the Public Carbon Accounting Financials (PCAF) Global GHG Accounting & Reporting Standard for the Financial Industry (PCAF Standard), based on holdings as of 31 December 2023 and carbon emissions and ownership data available from MSCI as of 31 December 2023. Given the lag in carbon-emissions disclosure and estimation, the data available at this date is a combination of 2020, 2021 and 2022 fiscal years.

<sup>9</sup> The full list of TPI sectors is in [Appendix B](#).

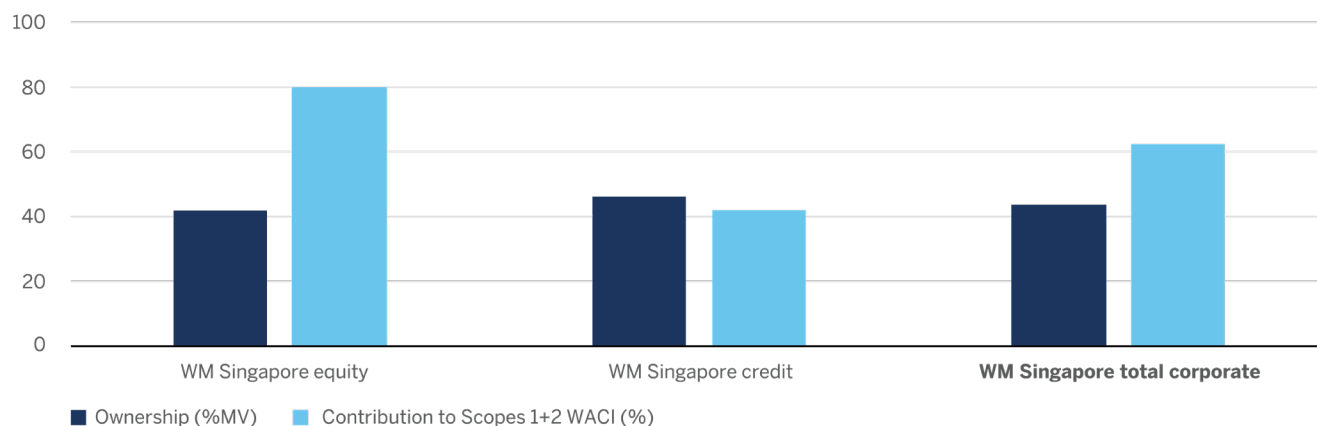
<sup>10</sup> This definition was adopted starting in this report (for the year 2023), replacing the TCFD definition of carbon-related assets from prior years' reports. The mapping from the generic NZIF definition to GICS industries was conducted internally on a discretionary basis and is subject to modest adjustment over time.

both transition risk and the importance of assessing transition plans in these industries. Within high-impact sectors, we seek to pair Scopes 1 and 2 intensities with a more forward-looking approach integrating companies' emissions reduction targets.

We also leverage supplemental disclosures about capital expenditure plans to gain conviction in companies' credibility in achieving stated targets.

**Figure 6**

WM Singapore's exposure to high-impact sectors



Data as of 31 December 2023. | Sources: MSCI, Climate Action 100+, TPI, Bloomberg, and Wellington Management.

## INTEGRATING FORWARD-LOOKING METRICS

### Science-based targets (SBTs) for emissions reductions

In **Figure 7**, we mirrored the bottom-up approach to portfolio-level analysis (described above) for Wellington Management Singapore's equity and corporate credit assets. Across Wellington Management Singapore's equity exposure, exposure to companies with validated SBTs or commitments to SBTs was approximately 39.5%, which is lower than the global equity universe for market value (MV). This lower representation in MV terms is due in part to underweights in sectors with a significant proportion of companies with targets, such as consumer staples and information technology, relative to the global equity universe. It is also the result of lower uptake in emerging markets in SBTi validation of targets relative to developed

markets. However, Wellington Management Singapore's equity exposure compared favorably for the contribution to the carbon footprint covered (% Contribution to WACI). This indicates that, on average, Wellington Management Singapore's equity holdings with targets are more intensive, which can be indicative of the materiality of transition risk and therefore the importance of setting a robust transition risk management strategy, indicated by an SBT. Wellington Management Singapore's corporate credit exposure to companies with SBTs or commitments to SBTs was 48.8%, which is higher than global corporate credit market coverage for both market value and carbon footprint.<sup>11</sup> This may be attributable to the overweight in sectors with relatively higher adoption rates of SBT validation and commitment, including information technology and health care.

**Figure 7**

Portfolio companies with SBTs and contribution to WACI vs index

Equity				
	Exposure to SBTs (%MV of WM Singapore equity)	Contribution to WM Singapore equity Scopes 1+2 WACI (%)	Exposure to SBTs (%MV of MSCI ACWI)	Contribution to MSCI ACWI Scopes 1+2 WACI (%)
Targets set	29.5	36.6	39.2	22.5
Committed	9.9	4.7	12.9	6.7
<b>Total</b>	<b>39.5</b>	<b>41.3</b>	<b>52.1</b>	<b>29.2</b>
Credit				
	Exposure to SBTs (%MV of WM Singapore credit)	Contribution to WM Singapore credit Scopes 1+2 WACI (%)	Exposure to SBTs (%MV of BB Gbl Agg Corp)	Contribution to BBG Glb Agg Corp Scopes 1+2 WACI (%)
Targets set	39.3	23.1	29.6	15.4
Committed	9.5	3.8	9.2	3.9
<b>Total</b>	<b>48.8</b>	<b>26.9</b>	<b>38.8</b>	<b>19.3</b>

Data as of 31 December 2023. | Sources: MSCI, Bloomberg, SBTi, Wellington Management.

<sup>11</sup> Equities are proxied by the MSCI All Country World Index. Credit is proxied by the Bloomberg Global Aggregate Corporate Index.

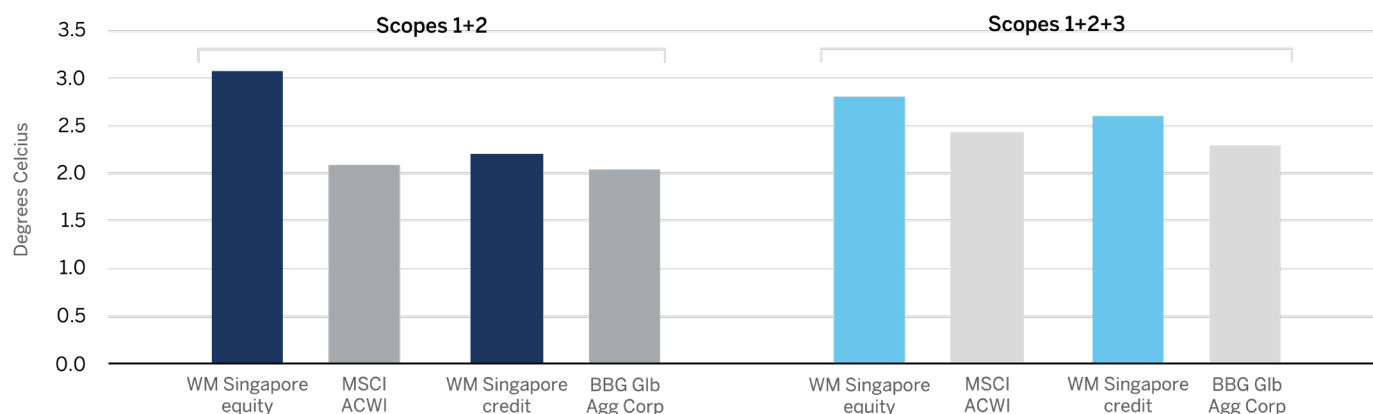
## IMPLIED TEMPERATURE RISE (ITR)

**Figure 8** shows that Wellington Management Singapore's equity ITR – inclusive of Scopes 1 and 2 as well as Scopes 1, 2, and 3 – was higher than the global equity universe. This is consistent with the SBT exposure results above. Wellington Management Singapore's corporate credit ITR inclusive of Scopes 1 and 2 as

well as inclusive of Scopes 1, 2, and 3 was slightly higher than the global corporate credit universe. Many of the top contributors to ITR across both asset classes are oil, gas, and consumable-fuel and chemicals companies, given their high Scope 3 emissions and low prevalence of incorporating Scope 3 emissions into a medium- or long-term target at this time.

**Figure 8**

ITR of WM Singapore equity and WM Singapore credit vs relevant investment universe



Data as of 31 December 2023. Please see the paragraph below for the assumptions and limitations associated with ITR.  
Sources: MSCI, Wellington Management.

## PORTFOLIO-LEVEL CLIMATE SCENARIO ANALYSIS

ITR, as shown above, is sometimes considered a form of scenario analysis because it quantifies the transition pathway to which a particular portfolio is currently aligned, presuming underlying holdings' announced targets are implemented. When compared to a benchmark or global trajectory based on current national policies, it can highlight any implicit active position being taken by a portfolio. If the global trajectory represents a baseline level of transition risk that is priced into the market, then a portfolio with a higher-than-average temperature rise could be considered to have "active" transition risk or be a "long" transition risk. This is one component of our environmental risk oversight process.

Importantly, no matter which temperature pathway, ITR does not consider physical risks presented to the portfolio. For this reason, we also consider another form of scenario analysis in this oversight process: climate value-at-risk (CVaR). Please refer to **Section 4.1** of our firmwide 2023 Climate Report (including **Figure 26**) for an overview of our firmwide approach to climate-related scenario analysis, as well as a complete discussion and quantitative case -study example of how third-party CVaR tools are considered as part of portfolio oversight.



## Section 4: Addressing our operational footprint in Singapore

### WELLSUSTAIN SINGAPORE GROUP

The WellSustain Singapore Group is comprised of conservation-minded employees who lead and manage operational sustainability initiatives in our office. These initiatives include efforts to reduce single-use plastic, encourage recycling, reduce paper use and waste, and install efficient energy and water systems.

Examples of the WellSustain Singapore Group's initiatives include:

#### Reduce electricity use

- ENERGY STAR®-rated multifunctional devices and personal computers
- Motion sensors installed in all rooms
- Lighting controlled by a remote timer

#### Reduce water use

- Water-efficient systems installed in the kitchen and bathrooms

#### Reduce paper use

- Default double-sided printing
- Secured print release ensures only necessary printing

#### Improve employee health and well-being

- Installation of sit/stand desks
- Use of low-volatile--organic-compounds (low-VOC) paint
- Air purifiers placed throughout the office to remove particulates

The Singapore office has been awarded the BCA Green Mark Gold (office interior) Award based on the BCA-HPB Green Mark for Healthier Workplaces (HW: 2018), and it adopts a sustainable design and planning approach. The WellSustain Singapore Group also spends time helping educate employees about sustainability topics and encouraging them to consider ways to reduce their personal carbon footprint at home and at the office.

More details about WellSustain and our firmwide approach to operational emissions reduction can be found in **Section 5** of our firmwide 2023 Climate Report.

### OPERATIONAL CARBON FOOTPRINT IN SINGAPORE

Our 2023 company emissions (**Figure 9**) have been calculated in line with the World Resources Institute and World Business Council for Sustainable Development's Greenhouse Gas Protocol Corporate Accounting and Reporting Standard (revised). The emissions reported are for Wellington Management Singapore's financial year and relate to operations in our Singapore office. The boundaries of the GHG inventory are defined using the operational control approach and cover the emissions for which Wellington Management Singapore is responsible. Emissions for previous years are retrospectively adjusted as more accurate data becomes available.

**Figure 9**

Operational emissions in relation to our Singapore office

	2023	2022	2021	2020	2019
<b>Scope 1 emissions (tCO<sub>2</sub>e)</b>	<b>30</b>	<b>30</b>	<b>36</b>	<b>37</b>	<b>37</b>
Combustion of gas	25	25	31	31	31
Diesel combustion	1	1	1	1	1
Fugitive refrigerants	5	5	5	5	5
<b>Scope 2 total emissions (tCO<sub>2</sub>e)</b>	<b>95</b>	<b>66</b>	<b>101</b>	<b>106</b>	<b>118</b>
Purchased electricity	95	66	101	106	118
<b>Scope 3 total emissions (tCO<sub>2</sub>e)</b>	<b>3698</b>	<b>1002</b>	<b>23</b>	<b>113</b>	<b>1,341</b>
Business travel	3698	1002	23	113	1,341
<b>Energy consumption (kWh)</b>					
Electricity	227,457	162,108	245,906	256,134	280,793
Natural gas	135,628	135,628	170,649	170,649	170,649
Diesel	3,559	3,478	3,316	4,206	3,963
<b>Intensity ratios</b>					
Full-time-equivalent employees	144.5	113	93	89	83
Occupied office space (sq m)	2,135	2,019	2,019	2,019	2,019
tCO <sub>2</sub> e/employee	26.46	9.72	1.90	3.17	19.87
tCO <sub>2</sub> e/sq m	1.7906	0.5440	0.0795	0.1269	0.7410

**Notes:**

Wellington Management is not the sole owner or entity of the building occupied in Singapore.

**Scope 1:** Our independent consultant has considered the following three factors in calculating our Scope 1 emissions in Singapore, all of which remained constant from 2019 to 2021: estimated gas usage based on the firm's share of the total square footage situated under the utility account (given the absence of invoiced actuals); commercial Building Energy Consumption Data (CBECS); diesel and fugitive refrigerants usage.

**Scope 2:** Emissions resulting from the generation of electricity Wellington Management purchases. Calculated using average grid mix factor for Singapore.

**Scope 3:** Emissions from employee air travel.

The table contains Wellington Management Singapore's chosen intensity ratios of tons of carbon dioxide equivalent per square meter and tons of carbon dioxide equivalent per employee. For the purposes of this reporting, "employees" includes both full-time employees and contingent workers.



# Appendix: Sample strategies' carbon footprints

These approaches and funds represent Wellington Management Singapore's highest market value accounts (in USD) for clients that are contracted with Wellington Management Singapore, as well as for accounts managed by Singapore-based asset managers, ranked from highest to lowest. Accounts and

approaches were included based on carbon eligibilities of greater than 70%. Portfolio-level emissions analytics are available to all portfolio managers but may or may not be used in security selection and portfolio construction.

	Scopes 1+2 WACI <sup>1</sup> tCO2e/ \$M revenue	Scope 3 WACI <sup>1</sup> tCO2e/\$M revenue	Scopes 1+2 total financed emissions <sup>2</sup> tCO2e	Scope 3 total financed emissions <sup>2</sup> tCO2e	Scopes 1+2 financed emissions per \$M invested <sup>3</sup> tCO2e/\$M invested	Scope 3 financed emissions per \$M invested <sup>3</sup> tCO2e/\$M invested	Exposure to SBTs (target set) <sup>4</sup> %MV	Exposure to SBTs (target set + committed) <sup>4</sup> %MV	Scopes 1+2+3 ITR <sup>5</sup> °C
<b>WM SINGAPORE EQUITY</b>									
<b>Asia Pacific Quality Equity</b>	<b>203.7</b>	<b>1,039.4</b>	<b>104,654.9</b>	<b>513,675.0</b>	<b>77.9</b>	<b>382.4</b>	<b>12.4</b>	<b>18.6</b>	<b>2.8</b>
Data availability <sup>6</sup> (99.8% of eligible MV <sup>7</sup> )	99.1	99.1	99.1	99.1	99.1	99.1	-	-	99.1
<b>MSCI SAMA AC AP x JP Cust</b>	<b>275.2</b>	<b>1,099.4</b>	<b>182,570.0</b>	<b>739,406.8</b>	<b>135.9</b>	<b>550.5</b>	<b>16.6</b>	<b>25.6</b>	<b>2.8</b>
Data availability (100% of eligible MV)	99.8	99.6	99.7	99.6	99.7	99.6	-	-	99.6
<b>Asia Quality Equity</b>	<b>218.1</b>	<b>732.6</b>	<b>47,412.5</b>	<b>167,877.0</b>	<b>82.5</b>	<b>284.9</b>	<b>12.4</b>	<b>16.8</b>	<b>2.7</b>
Data availability (99.2% of eligible MV)	98.9	98.9	98.9	98.9	98.9	98.9	-	-	98.9
<b>MSCI All Country Asia ex Japan</b>	<b>297.3</b>	<b>809.8</b>	<b>18,762.8</b>	<b>61,608.5</b>	<b>145.5</b>	<b>477.6</b>	<b>17.3</b>	<b>25.2</b>	<b>2.8</b>
Data availability (100% of eligible MV)	99.8	99.6	99.6	99.6	99.6	99.6	-	-	99.6
<b>Global Quality Growth</b>	<b>31.3</b>	<b>478.5</b>	<b>4,366.9</b>	<b>130,378.9</b>	<b>8.1</b>	<b>241.1</b>	<b>43.9</b>	<b>58.1</b>	<b>1.8</b>
Data availability (99.7% of eligible MV)	98.9	98.9	98.9	98.9	98.9	98.9	-	-	98.9
<b>MSCI All Country World</b>	<b>128.7</b>	<b>705.7</b>	<b>9,719.7</b>	<b>62,172.8</b>	<b>54.1</b>	<b>345.9</b>	<b>39.2</b>	<b>52.1</b>	<b>2.4</b>
Data availability (100% of eligible MV)	99.9	99.7	99.8	99.7	99.8	99.7	-	-	99.6
<b>Strategic European Equity</b>	<b>84.9</b>	<b>557.4</b>	<b>29,056.2</b>	<b>159,309.5</b>	<b>55.4</b>	<b>303.6</b>	<b>50.5</b>	<b>71.0</b>	<b>1.8</b>
Data availability (97.7% of eligible MV)	99.1	99.1	99.1	99.1	99.1	99.1	-	-	97.0
<b>MSCI Europe &amp; Middle East</b>	<b>92.7</b>	<b>767.5</b>	<b>18,218.1</b>	<b>133,677.9</b>	<b>68.7</b>	<b>504.3</b>	<b>57.8</b>	<b>70.4</b>	<b>2.1</b>
Data availability (100% of eligible MV)	100.0	99.7	99.9	99.7	99.9	99.7	-	-	99.4
<b>Emerging Asia Quality Equity</b>	<b>226.6</b>	<b>630.9</b>	<b>36,905.8</b>	<b>111,833.6</b>	<b>85.8</b>	<b>263.8</b>	<b>11.6</b>	<b>16.3</b>	<b>2.7</b>
Data availability (99.6% of eligible MV)	98.9	98.9	98.9	98.9	98.9	98.9	-	-	98.9
<b>MSCI Emerging Markets As</b>	<b>305.8</b>	<b>839.9</b>	<b>41,747.2</b>	<b>140,285.9</b>	<b>152.5</b>	<b>512.3</b>	<b>16.0</b>	<b>24.1</b>	<b>2.8</b>
Data availability (100% of eligible MV)	99.8	99.6	99.6	99.6	99.6	99.6	-	-	99.6



	Scopes 1+2 WACI <sup>1</sup> tCO2e/ \$M revenue	Scope 3 WACI <sup>1</sup> tCO2e/\$M revenue	Scopes 1+2 total financed emissions <sup>2</sup> tCO2e	Scope 3 total financed emissions <sup>2</sup> tCO2e	Scopes 1+2 financed emissions per \$M invested <sup>3</sup> tCO2e/\$M invested	Scope 3 financed emissions per \$M invested <sup>3</sup> tCO2e/\$M invested	Exposure to SBTs (target set) <sup>4</sup> %MV	Exposure to SBTs (target set + committed) <sup>4</sup> %MV	Scopes 1+2+3 ITR <sup>5</sup> °C
<b>WM SINGAPORE CREDIT</b>									
<b>Investment Grade Credit FRM</b>	<b>228.2</b>	<b>628.9</b>	<b>92,962.4</b>	<b>504,405.2</b>	<b>52.7</b>	<b>283.1</b>	<b>42.5</b>	<b>51.7</b>	<b>2.1</b>
Data availability <sup>6</sup> (99.5% of eligible MV <sup>7</sup> )	97.9	97.7	89.4	89.3	89.4	89.3	-	-	89.3
<b>Non-benchmark Relative</b>									
<b>Global Credit</b>	<b>133.7</b>	<b>673.9</b>	<b>17,691.9</b>	<b>113,235.6</b>	<b>44.1</b>	<b>283.8</b>	<b>27.8</b>	<b>39.2</b>	<b>2.3</b>
Data availability (83.1% of eligible MV)	99.5	99.0	88.4	88.4	88.4	88.4	-	-	88.4
<b>BBG Global Agg Credit H</b>	<b>228.6</b>	<b>724.5</b>	<b>29,822.8</b>	<b>164,079.8</b>	<b>66.4</b>	<b>365.5</b>	<b>28.5</b>	<b>37.4</b>	<b>2.3</b>
Data availability (80.1% of eligible MV)	96.6	96.2	85.2	85.2	85.2	85.2	-	-	84.7
<b>Global Corporate Credit</b>	<b>92.9</b>	<b>691.1</b>	<b>9,702.9</b>	<b>78,780.5</b>	<b>36.4</b>	<b>298.4</b>	<b>24.9</b>	<b>39.2</b>	<b>2.4</b>
Data availability (95.1% of eligible MV)	99.6	99.1	90.3	90.3	90.3	90.3	-	-	90.3
<b>BBG DM Crp Cust+SG hgd</b>	<b>97.6</b>	<b>684.2</b>	<b>5,962.4</b>	<b>48,880.9</b>	<b>39.9</b>	<b>327.0</b>	<b>30.7</b>	<b>42.5</b>	<b>2.3</b>
Data availability (98.9% of eligible MV)	99.5	99.4	93.6	93.6	93.6	93.6	-	-	93.5
<b>Core High Yield</b>	<b>189.6</b>	<b>1,036.2</b>	<b>15,999.1</b>	<b>128,454.7</b>	<b>75.7</b>	<b>607.6</b>	<b>7.8</b>	<b>12.5</b>	<b>2.9</b>
Data availability (98.6% of eligible MV)	77.4	75.9	73.8	73.8	73.8	73.8	-	-	69.3
<b>ICE BofAML US HY Constrained</b>	<b>274.6</b>	<b>990.7</b>	<b>31,793.4</b>	<b>142,983.2</b>	<b>150.4</b>	<b>676.4</b>	<b>12.0</b>	<b>16.8</b>	<b>3.0</b>
Data availability (99.2% of eligible MV)	77.5	77.0	74.0	73.9	74.0	73.9	-	-	71.2

All calculations are scaled such that covered securities are reweighted to 100% market value; this means that covered holdings have an outsized impact on the portfolio. Portfolios with lower coverage can be especially influenced by outliers. Data may not be representative of the actual portfolio in cases where coverage of carbon data availability or eligible securities is between 50% and 75%. Within the Appendix, carbon-related reporting accounts for Scopes 1 and 2 GHG emissions and is expressed in carbon dioxide equivalents. Scope 1 emissions are those occurring from sources that are directly controlled by the entity, meaning the operations that create products and services. Scope 2 emissions measure indirect emissions generated by the production of electricity that the entity consumes. Scope 3 emissions measure all the other indirect emissions that are a consequence of the activities of the institution but occur from sources not owned or controlled by the institution.

All data is as of 31 December 2023. SBTs are validated by SBTi. All other data is sourced from MSCI.

<sup>1</sup> Weighted average carbon intensity (WACI): Proxy for carbon efficiency of fund construction when compared to benchmark. This metric is calculated as a weighted average of each holding's carbon intensity, using % market value in the fund. Each holding's carbon intensity normalizes its total emissions by output and is calculated as the company's total emissions divided by its revenue.

<sup>2</sup> Total financed emissions: Total emissions financed by the fund. This metric accounts for mandate size by summing the result of "% enterprise value incl cash financed x emissions" for each holding.

<sup>3</sup> Financed emissions per US\$M invested (tCO2e): the result of "% enterprise value incl cash financed x emissions" for each holding and then divided by the fund's total market value.

<sup>4</sup> Science-Based Targets (SBTs): Through the SBTi, companies are recognized as having either set footprint reduction targets (Targets Set) or having signed a commitment to set a target within 24 months (Committed). Upon validation, SBTi provides companies with technical assistance, resources, and assessments to reduce their GHG emissions in order to meet their targets. % of eligible MV with SBTs is calculated as a percentage of the carbon-eligible market value with SBTs committed and/or set and is the same as data availability %. SBT results are based on Scope 1 and Scope 2 emissions only.

<sup>5</sup> Implied temperature rise (ITR): Expressed in degrees Celsius, implied temperature rise is a forward-looking metric that seeks to indicate whether funds are aligned with global temperature goals. The ITR scenario is created with the assumptions of a 2° C rise by 2070. Please see more information on ITR methodology on MSCI's website linked here: <https://www.msci.com/our-solutions/climate-investing/implied-temperature-rise>. ITR is calculated on a per-issuer level by summing each company's data availability and is represented as a % of carbon-eligible securities, which may be less than the total market value of the fund.

<sup>6</sup> Data availability is the % of carbon-eligible securities, which may be less than the total market value of the portfolio. Data availability of Scopes 1 and 2 may differ from the data availability for Scope 3 metrics; therefore, Scope 3 metrics are not calculated by netting Scopes 1 and 2 metrics from Scopes 1, 2, and 3 metrics. Scope 3 is inclusive of upstream and downstream emissions. Data availability for the financed emissions metrics may be different from data availability for weighted average carbon intensity. This is because the metrics require availability of both carbon emissions and another financial metric (enterprise value including cash for financed emissions, revenue for WACI) for each holding.

<sup>7</sup> Carbon eligibility indicates the extent to which carbon data is available within the fund and benchmark and includes only corporate holdings. For equity accounts, eligibility is currently based on exposure to long-only, direct corporate holdings and excludes look-through to pools. For fixed income accounts, eligibility is based on exposure to long-only, direct corporate holdings and includes look-through to Wellington-only pools.

## NOTES ON METHODOLOGY AND CURRENT LIMITATIONS ON CARBON FOOTPRINTING

Since emissions are self-disclosed and audited inconsistently, there is a lack of uniformity from one company to another. Estimation methodologies by third parties are imperfect because they are based on assumptions about business operations, peers, and industry averages. There is also a time lag associated with disclosures as companies disclose emissions at the end of each fiscal year, so the holdings date does not exactly match the emissions year.

Where a strategy incorporates transition-risk management into its P&P, Wellington Management Singapore currently focuses portfolio construction and target setting on Scopes 1 and 2 emissions, where we have the most confidence in the data due to corporate disclosure. However, consideration of Scope 3 is important because it often provides the strongest tie to business strategy. For example, Scope 3 downstream (use of sold products) provides the strongest tie to top-line opportunities, which allows us to differentiate companies' current exposure to demand for low-carbon products, such as the electric vehicle offering of automobile manufacturers.

Because carbon emissions are a moment-in-time snapshot, they fail to capture companies' future transition strategy. Companies with forward-looking reduction targets may nonetheless seem

carbon-intensive today. We encourage portfolio managers to consider multiple metrics, including forward-looking transition alignment ratings, ESG ratings, and capital spending plans, when analyzing companies.

At cyclical companies, carbon intensity can fluctuate dramatically without a change in business processes, as revenue is the denominator in the formula. Currency translation for companies reporting in currencies other than the US dollar can also impact revenue-based intensity figures. When the ESG Research team looks at individual sectors, they tend to use units of production rather than revenue, especially for cyclical industries.

Additional challenges arise when footprinting corporate credit strategies. Propagation from a parent issuer to a subsidiary issuer is done to improve coverage of the portfolio. However, if a parent issuer is the disclosing entity, this parent may or may not be representative of the subsidiary issuer owned, particularly if the issuance is a green or other labeled bond. This may be resolved over time as investors come to expect enhanced emissions disclosures directly from the issuing entity.

Please refer to the discussion and footnotes within **Section 3** of this report for further consideration of our climate-related metrics.





# Important disclosures

This report aligns with the Guidelines on Environmental Risk Management issued by the Monetary Authority of Singapore (MAS) and the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). The TCFD has established recommendations for disclosing comparable, reliable, and decision-useful information about the risks and opportunities presented by climate change. The TCFD structured its recommendations around four core elements, which the MAS incorporated into its Guidelines:

1. **Governance** — The organization's governance around climate-related risks and opportunities
2. **Strategy** — The actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material
3. **Risk management** — The processes used by the organization to identify, assess, and manage climate-related risks
4. **Metrics and targets** — The metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material

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## RISKS

All investments involve risks. Given the lengthy time frames for most impact projects and many companies' reliance on disruptive technologies, investments may be subject to volatility and are therefore more suited to longer investment horizons. The following are some general risks associated with various approaches discussed in this report. This is not an all-inclusive list. Each specific investment approach and product will have its own specific risks and risks will vary.

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