

Climate Statement

Prepared for the year ended 30 June 2024



**GOVERNMENT
SUPERANNUATION FUND
AUTHORITY**



GOVERNMENT SUPERANNUATION FUND
Te Pūtea Penihana Kāwanatanga







Introduction

These climate-related disclosures address the portfolio of assets in the Government Superannuation Fund (“the Fund”), as managed by the Government Superannuation Fund Authority (“Authority”, or “we”), in line with the Crown’s expectations set out in a 2021 *Enduring Letter of Expectations to Crown Financial Institutions in Relation to Responsible Investment*.

New Zealand has committed to reduce net greenhouse gas emissions to 50% below gross 2005 levels by 2030. The New Zealand Government has introduced the Aotearoa New Zealand Climate Standards (“the Standards”, NZ CS 1, NZ CS 2, NZ CS 3) to support the allocation of capital towards activities that are consistent with a transition to a low-emissions, climate-resilient future.

The Authority is not a ‘climate-reporting entity’ under the Financial Markets Conduct Act 2013.

However, as outlined in the Crown’s expectations, this climate statement has been prepared having regard to the Standards.

When preparing this climate statement the Authority has applied the following adoption provisions:

- Adoption provision 1: Current financial impacts (CS 2.10 & CS 2.11)
- Adoption provision 2: Anticipated financial impacts (CS 2.12, CS 2.13 & CS 2.14)

These adoption provisions have been applied reflecting limitations in data quality and the varying stages and consistency of climate disclosures and reporting around the world. We use data from our climate data provider, MSCI, applied to our holdings when monitoring the Fund’s emissions and in formulating climate scenario analysis. Domestic and global issues with data availability mean we cannot yet describe specific physical and transition impacts on the Fund, nor provide a meaningful assessment of specific risks and opportunities.

The primary focus of this climate statement is to disclose the Fund’s emissions and other climate-related risks arising from the Fund’s investments. For completeness we have included the Authority’s corporate emissions.

We have produced this document for the information of the Crown, members of the GSF schemes and the general public. We have not sought external assurance for it.

This climate statement for the year ended 30 June 2024 has been prepared on a voluntary basis.

About the Authority & the Fund

The Authority was established in 2001 to manage and administer the assets of the Fund in accordance with the Government Superannuation Fund Act 1956 (the GSF Act). The Authority is an autonomous Crown entity under the Crown Entities Act 2004.

The Authority oversees management of the Fund and has outsourced many of the day-to-day activities in relation to schemes administration and investment management, including custody of most of the Fund's assets. The Authority must invest the Fund on a prudent, commercial basis and, in doing so, must manage and administer the Fund in a manner consistent with:

- a. Best practice portfolio management; and
- b. Maximising return without undue risk to the Fund as a whole; and
- c. Avoiding prejudice to New Zealand's reputation as a responsible member of the world community.

We invest the Fund's investment portfolio across a wide range of entities globally, including listed equities, private equities, alternative assets and fixed income securities.

We believe that:

- Environmental, social and governance (ESG) factors should be considered from both an investment and reputational perspective; and

- Climate change presents significant investment risks and opportunities.
- In addition, we have a responsibility to help limit global warming.

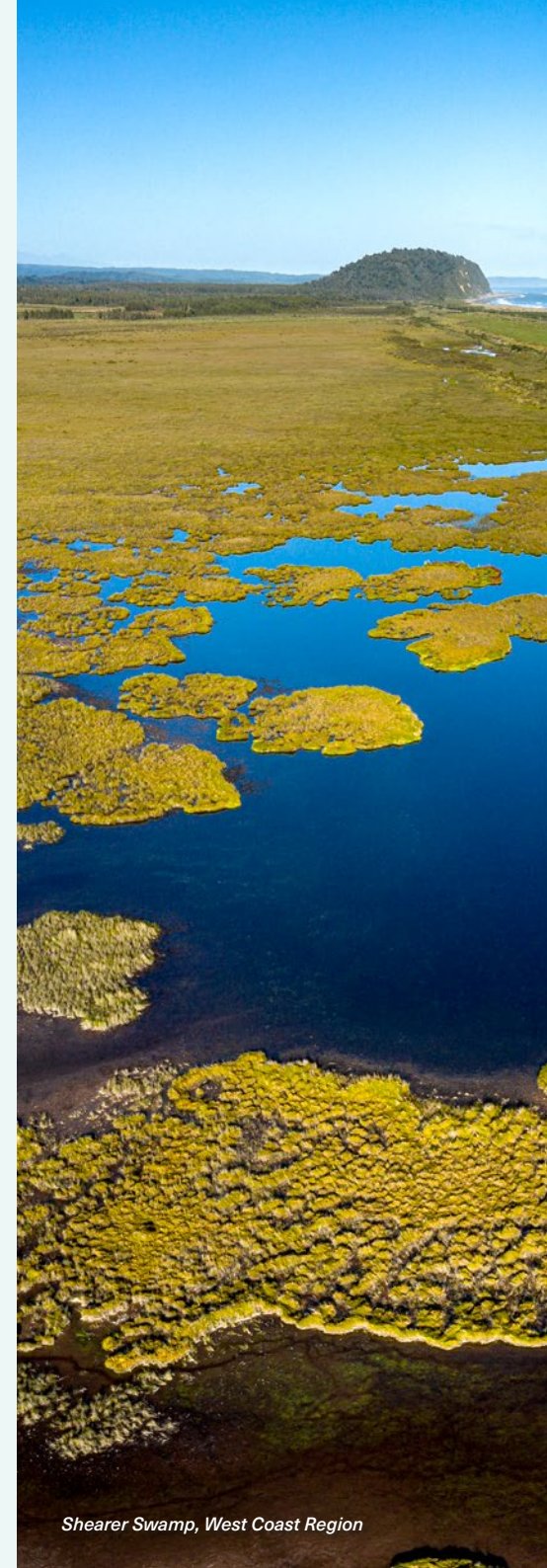
In 2021 the Minister of Finance issued an Enduring Letter of Expectations with respect to a Responsible Investment Framework for the Authority, and other Crown Financial Institutions (CFIs). We have adopted that framework, which establishes the basis for our approach to measure, reduce and influence the transition to a zero-carbon Fund by 2050.

We expect to contribute to limiting global warming utilising the Paris Aligned Investment Initiative's Net Zero Investment Framework. We have set the following targets:

- for the Fund to be carbon neutral by 2050
- to reduce the carbon intensity of the listed equity portfolio by 50% by 2025, relative to a 2019 baseline.

These targets are consistent with the ambition, set out in the Paris Agreement, to pursue efforts to limit temperature rise to 1.5°C above pre-industrial levels.

Climate-related impacts directly incurred by the Authority as a corporate entity are relatively immaterial.





Disclosures

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Understand the roles the Authority and management play in overseeing, assessing and managing climate-related risks and opportunities.

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Understand how climate change is currently impacting GSF’s investment portfolio and how it may do so in the future. This includes scenario analysis, climate-related risks and opportunities and their anticipated impacts, and how GSF will position itself in the transition towards a low-emissions, climate-resilient future.

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Understand how GSF’s climate-related risks are identified, assessed, and managed and how those processes are integrated into existing risk management processes.

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The Government Superannuation Fund Authority is not a Climate Reporting Entity under the Financial Markets Conduct Act 2013. While the Authority has had regard to the External Reporting Board’s Climate Standards in preparing this climate statement, it makes no representation that the climate statement complies with the Standards or covers all information that the Standards require to be disclosed.

Our Board

On the advice of the New Zealand Treasury, the Minister of Finance appoints Authority Board members with the range of skills and experience necessary to fulfil the Board's responsibilities. When vacancies on the Board arise, the Board Chair discusses the skills required on the Board with the Treasury.

The Board has a training and development programme to ensure that its members remain up to date with their obligations and current best practices. The programme includes formal training where required, as well as presentations and updates from management or external parties. Board members are supported to attend external training on climate-related matters.

The Board has two committees: the Audit, Risk and Review Committee (ARRC) and the Investment Committee (IC), who preview materials and, in some cases, make recommendations to the Authority Board.



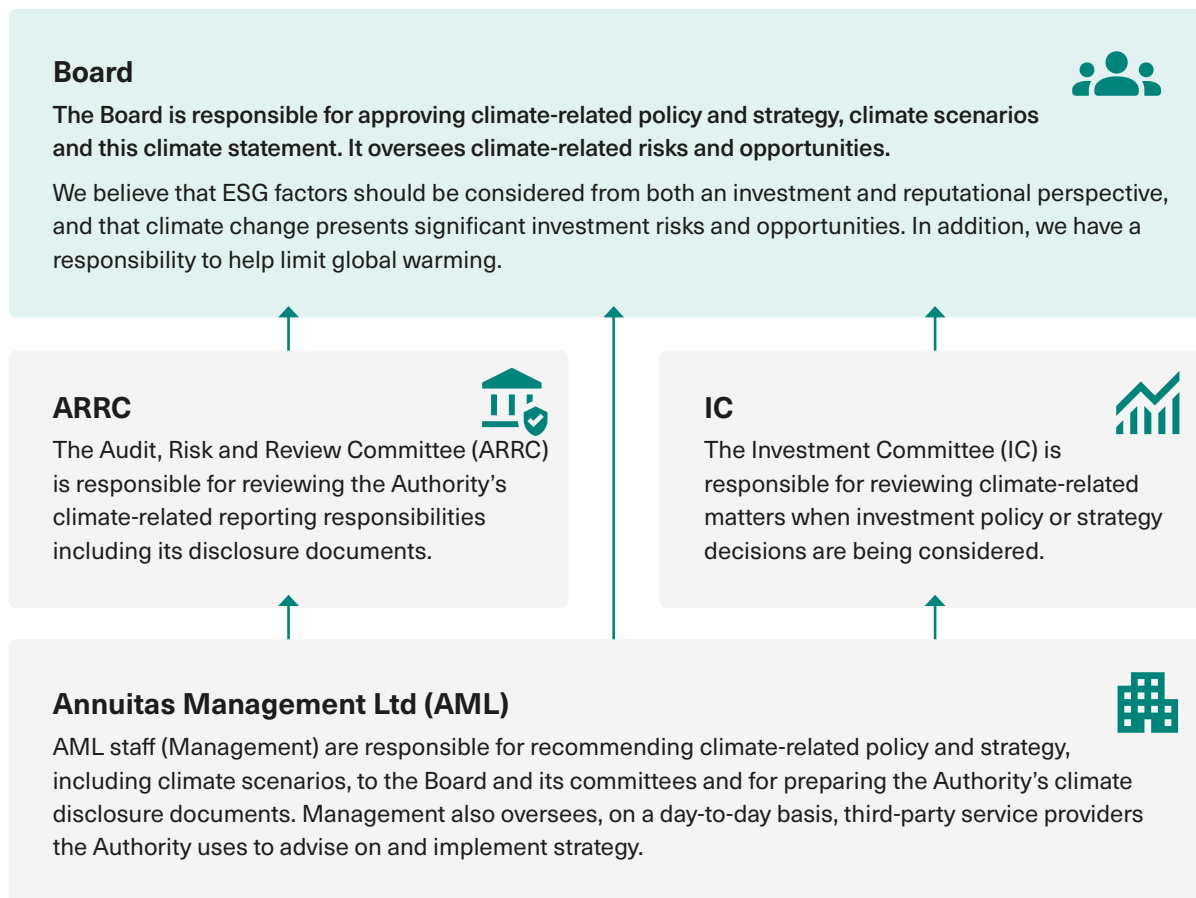
Net Zero and aligned targets are approved by the Board. Climate risks and opportunities are reviewed by the Board on a quarterly basis.



Progress against short-term carbon targets is reviewed by the Board on a quarterly basis.



Policies related to climate change, from both an investment and corporate perspective, are reviewed as required by the Committees and Board.





Net Zero and aligned targets are recommended to the Board by Management, for approval.



Progress against short-term climate targets is measured and assessed by Management.



Management reviews climate-related risks and opportunities regularly.

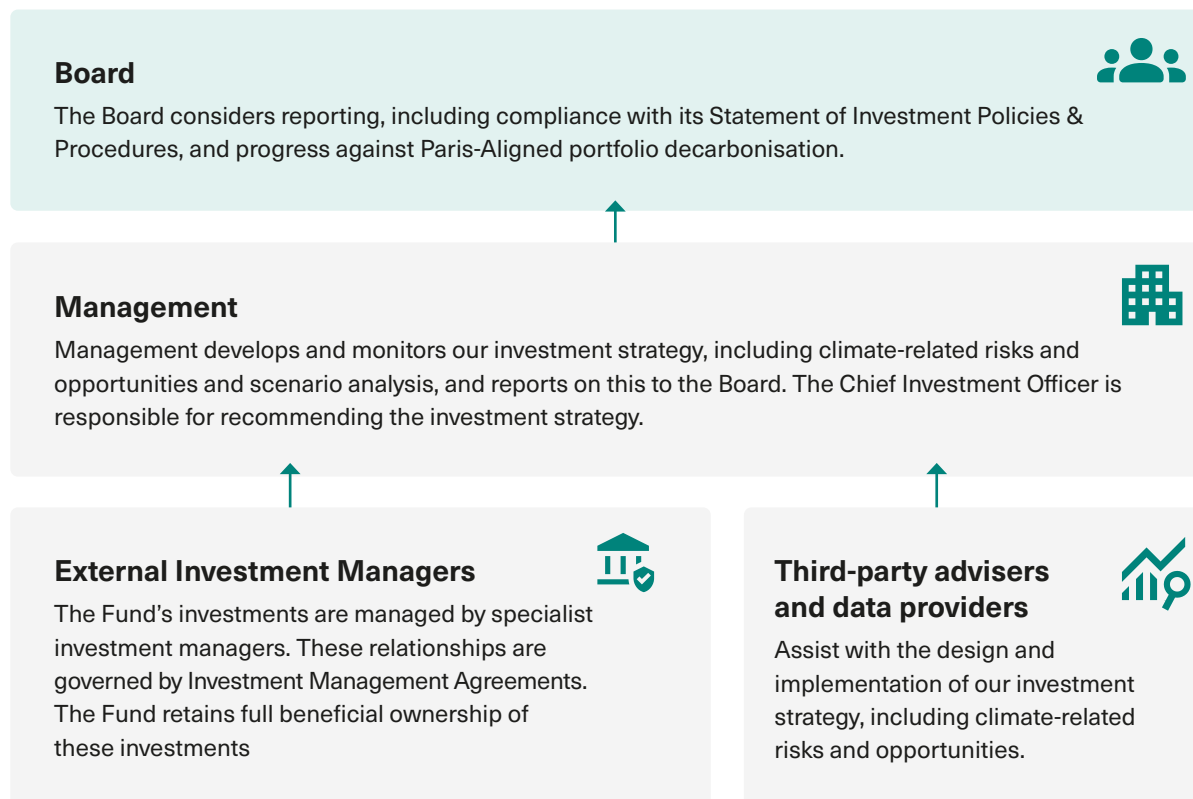
Management

Management functions are provided to the Authority by Annuitas Management Limited (AML), a joint venture between the Authority and the Board of Trustees of the National Provident Fund (NPF).

AML's Board members consist of representatives from both the Authority and the NPF Boards.

The AML Board sets objectives for AML staff (Management), including climate-related responsibilities. Management remuneration is not explicitly linked to climate objectives or outcomes.

Within AML, staff with objectives or responsibilities related to climate-related investment risks and opportunities are the Chief Executive and Chief Investment Officer. Staff with objectives or responsibilities related to GSF's corporate emissions and project managing the climate-related disclosures process are the Chief Financial Officer and Business Analyst.





Taranaki Maunga, Taranaki Region

Management's Role

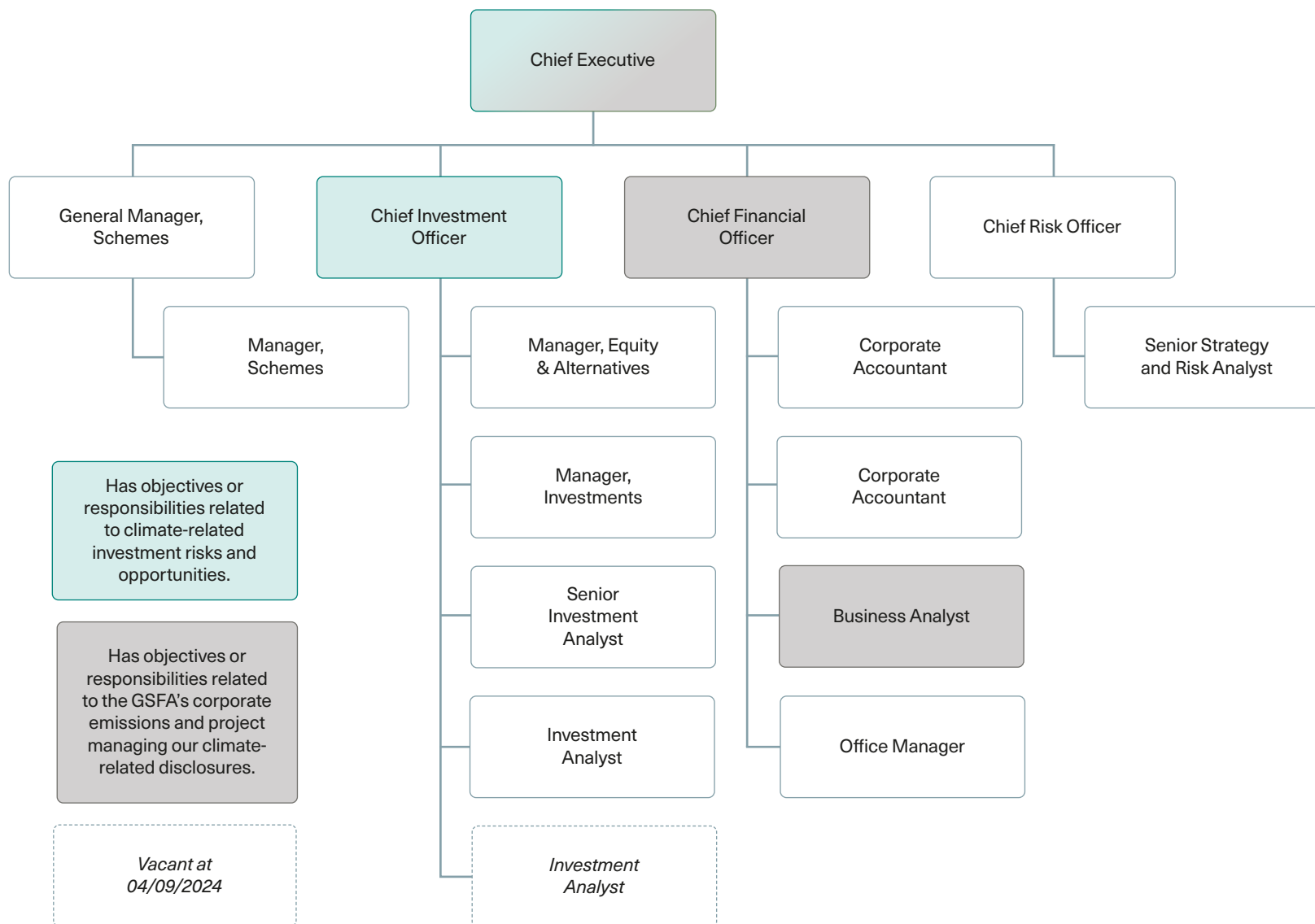
Management reviews regular (usually quarterly) reporting from the Fund's investment managers, analysing alignment with proxy voting, stewardship and exclusion lists in relation to carbon intensive or climate-reliant investments. We use this information to monitor our managers' decision-making and form the basis of relevant reporting to the Board.

Management engages with the Board and its committees regularly and provides quarterly analysis of the Fund investment portfolio's alignment with mandates and targets. Management also annually provides the Board with data on emissions from Board activities and those generated by AML on the Board's behalf.

Management keeps informed about climate issues through research, conferences and engagement with relevant peer organisations. Climate issues are covered in regular portfolio reviews with the Authority's external managers. Management has a close relationship with the Guardians of NZ Superannuation who provide assistance on climate issues.

Management engage with, and monitor, our investment managers through regular reporting, climate-related disclosures and 1:1 meetings. We measure our global listed equity portfolio against the MSCI ACWI Low Carbon Target Index, and we have included explicit carbon exposure expectations in some of our listed equity mandates.

The **Morgan Stanley Capital International All Country World Index (MSCI ACWI) Low Carbon Target Index** includes large and mid-cap stocks across 23 Developed and 24 Emerging Market countries. The Index is a benchmark for investors who wish to manage potential risks associated with the transition to a low carbon economy.



Acknowledging a Changing Climate

We believe that climate change presents significant investment risks and opportunities and that we have a responsibility to help limit global warming. This timeline shows our progress with regards to managing those risk and opportunities.

Climate-related activities to date and future objectives

2006

Signed the UN PRI

The Authority becomes a Founding Signatory to the Principles of Responsible Investment, led by then UN Secretary-General to encourage a sustainable global financial system.

2021

Board commits to Paris Aligned Asset Owners commitment to achieve a Net Zero Portfolio by 2050

The Authority became a signatory of the Paris Aligned Asset Owners, a global group of 56 asset owners, with over \$3.3 trillion in assets.

2022

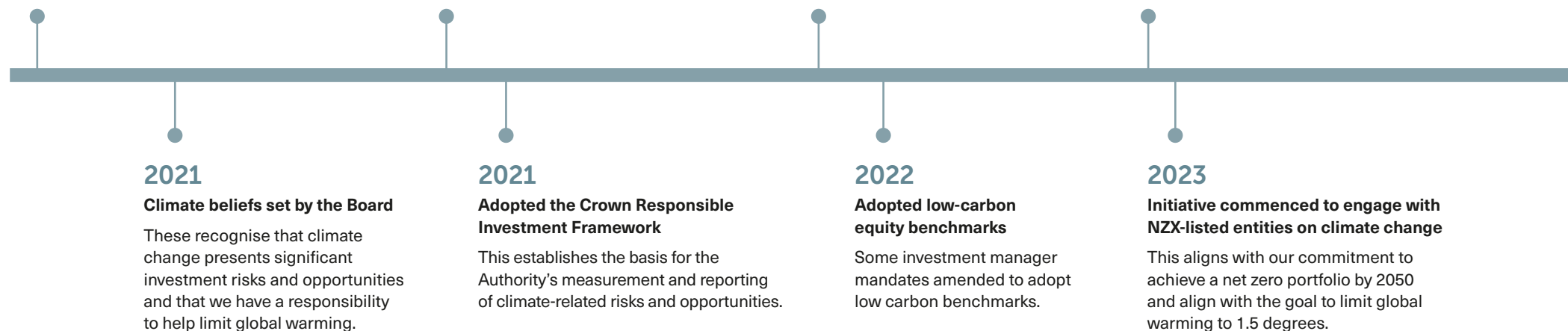
Published first annual Task Force on Climate-Related Financial Disclosures (TCFD) Report

The initial framework for entities and financial organisations to disclose climate-related risks and opportunities.

2023

Climate integration included in Investment Management Agreements

Climate-related risks and opportunities explicitly considered in capital deployment and decision-making.



2021

Climate beliefs set by the Board

These recognise that climate change presents significant investment risks and opportunities and that we have a responsibility to help limit global warming.

2021

Adopted the Crown Responsible Investment Framework

This establishes the basis for the Authority's measurement and reporting of climate-related risks and opportunities.

2022

Adopted low-carbon equity benchmarks

Some investment manager mandates amended to adopt low carbon benchmarks.

2023

Initiative commenced to engage with NZX-listed entities on climate change

This aligns with our commitment to achieve a net zero portfolio by 2050 and align with the goal to limit global warming to 1.5 degrees.

2024

2023

Submitted first progress report of Paris-Aligned Asset Owners commitments

Asset owner signatories report annually on their net zero strategy and actions taken.

2023

Asset Owner signatory to CA100+

The Authority became a signatory to Climate Action 100+, supporting the initiative's goal to ensure the world's largest greenhouse gas emitters take appropriate action on climate change.

2023

Began internally reporting on the Crown RI Framework

- **Measure:** publicly report consistent, transparent carbon metrics for our investment portfolios
- **Reduce:** set challenging minimum carbon reduction interim targets for 2025 and refresh every five years
- **Influence:** as significant investors, engage with New Zealand and global entities on developing transition strategies.

Proxy voting

Where possible, we expect the voting policies of our global equity managers to align with Net Zero stewardship.

Climate Solutions

There may be potential for increased opportunities to invest in renewable energy and technology sectors, which are expected to grow as the transition to a low-carbon economy accelerates. Green bonds and other financial instruments that support climate-related projects potentially offer stable returns and mitigate exposure to climate-vulnerable carbon-intensive industries. Entities with strong climate adaptation and resilience may become more attractive as investors increasingly consider climate risks, carbon pricing and the potential for policy responses.

Halving of emission intensity (since 2019) of listed equities anticipated by 2025

Global equity portfolios shift to low-carbon indexes where possible to support our first emissions reduction target.

Physical and Transition Risk

Subject to improving data quality, we will work to understand the climate factors that could materially impact on the Fund, and how investment managers incorporate physical and transition risks or opportunities into portfolio construction.

Net Zero

We have committed to transition the Fund's investment portfolios to achieve net zero portfolio greenhouse gas (GHG) emissions by 2050.

Forward looking statements are based on what we know at this point in time and are subject to change.

Time Horizons

Based on existing commitments in relation to the Crown’s Responsible Investment Framework and the Paris-Aligned Asset Owners Net Zero 2050, we use the following timeframes.



Relative to our 2019 base year we define short-term as up to 2025.

In 2021 we set our first decarbonisation target. We set a Paris Aligned Asset Owners target to achieve a 50% percent reduction in carbon intensity (tons CO₂e/US\$m sales) of the listed equity portfolio by 2025. Progress toward this target can be found in our **Metrics and Targets** section.

We define medium-term as up to 2030.

We define long-term as beyond the period for which incremental targets have been set, through to 2050.

We aim to have a Net Zero portfolio by 2050.

We have set a Paris Aligned Asset Owners target to achieve a carbon neutral investment portfolio by 2050. We expect our investment managers to evolve our portfolios towards this long-term target. Progress toward this target can be found in our **Metrics and Targets** section.

Horizons are updated periodically. In 2025 we will reach the first short-term horizon since we set our first decarbonisation target. From 2025 our short-term horizon will become 2030, and the medium term 2035.





Assessing the Impact of Climate Change

In our inaugural report under the Aotearoa NZ Climate Standard we adopt provisions (CS 2.10 through CS 2.15) which allow for an exemption in the first year from the disclosure requirement to describe current climate-related impacts including the current physical and transition impacts and anticipated impacts of climate-related risks and opportunities.

To accurately assess impacts at the portfolio level we require underlying issuers to report their impacts and costs in their annual reporting. This is not yet legislated across the jurisdictions we invest in and so is not consistently available. The parallel adoption of the climate standards by some NZX-listed entities we invest in means that we will only be able to see their disclosed impacts for the first time under this legislation in 2024. Despite these limitations, we use the best available data from our climate data provider, MSCI, when monitoring our portfolio's carbon intensity and in formulating climate scenario analysis.

In June 2023, the International Sustainability Standards Board (ISSB) issued International Financial Reporting Standards (IFRS) S1 and IFRS S2. These standards matter for the foreign entities we invest in.

IFRS S1 provides a set of disclosure requirements designed to enable entities to communicate to investors about the sustainability-related risks and opportunities they face over the short, medium, and long term. IFRS S2 sets out specific climate-related disclosures and is designed to be used with IFRS S1. Both fully incorporate the recommendations of the Taskforce for Climate-related Financial Disclosures (TCFD).

With IFRS S1 and IFRS S2 applying to reporting periods after 01 January 2024, the ISSB will work across 140 jurisdictions and entities to support adoption in the coming years. We will continue to monitor developments in this area and will incorporate relevant insights in future years.



Remutaka Hill Road, Wellington Region

Scenario Analysis

Climate-related scenarios are plausible, challenging descriptions of how the future may unfold. These descriptions are based on sets of assumptions about the drivers of future physical and transition risk and opportunity (and the relationships between them).

We emphasise that these are scenarios and not forecasts. At this stage there are significant gaps in our understanding of the interaction between the changing climate, economic variables and entity profitability. Together with current (global) issues with data availability and quality, this means we cannot provide a complete picture of risks and opportunities in this report.

We have applied three scenarios, published by the NGFS, and undertaken analysis to systematically explore the potential physical and transition risks affecting the investment portfolio. This process has provided us an opportunity to better understand how climate-related risks and opportunities could impact our

investment strategy, including risk budgets and asset allocation, and business models over time.

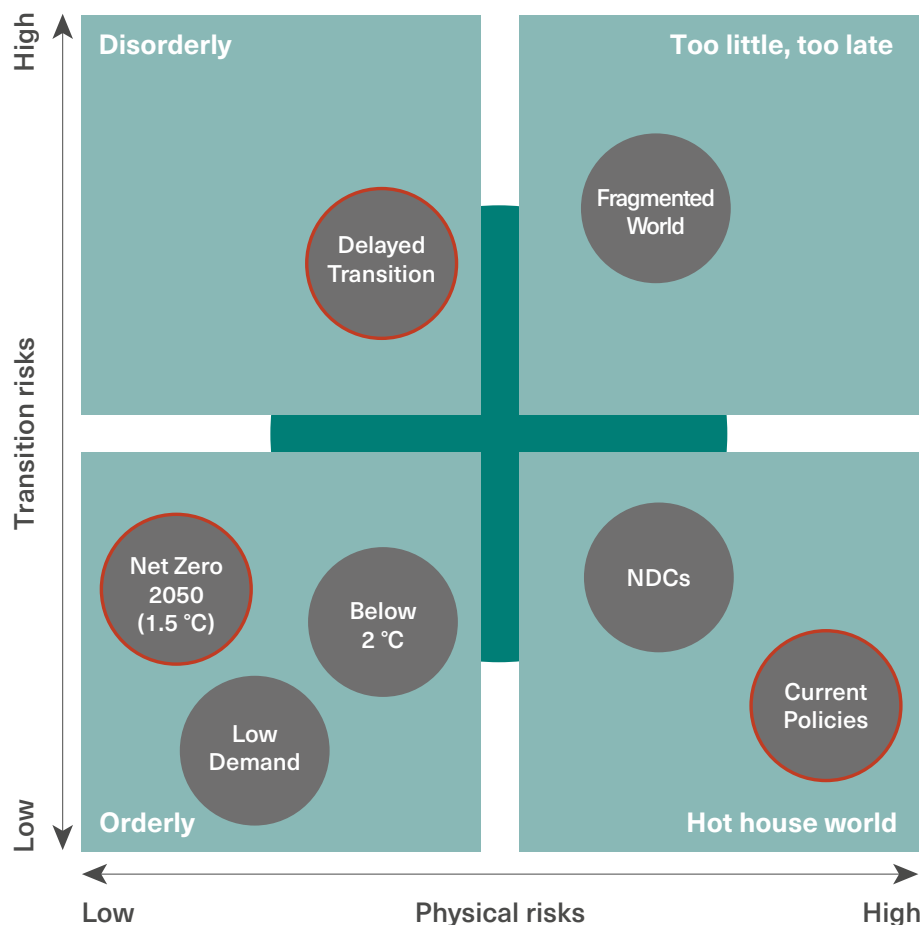
The NGFS scenarios emphasise that an accelerated and coordinated transition will have a lower overall impact on the portfolio than a disorderly or delayed transition in the long run. The macroeconomic costs and financial risks associated with unmitigated climate change will surpass the costs or risks associated with an effective transition.

Scenario analyses are prepared by Management and reviewed by the Board. We aim to review how regularly we complete scenario analysis at the end of reporting year one.

The Network for Central Banks and Supervisors for Greening the Financial System (NGFS)

Launched at the Paris One Planet Summit in December 2017, the NGFS is a group of Central Banks and Supervisors willing, on a voluntary basis, to share best practices and contribute to the development of environment and climate risk management in the financial sector and to mobilise mainstream finance to support the transition toward a sustainable economy. Their models (see below) form the basis of our scenario analysis. After consideration of available options for scenario analysis we chose to align with the Crown Financial Institutions (CFIs).

NGFS scenarios framework in Phase IV



Positioning of scenarios is approximate, based on an assessment of physical and transition risks out to 2100.

Image: NGFS

Scenario Descriptions

1.5°C Net Zero

New Zealand's Net Zero target, keeping the temperature rise to 1.5°C above pre-industrial levels. This scenario is based on data from the Intergovernmental Panel on Climate Change, the National Institute of Water and Atmospheric Research, and the NGFS. This scenario assumes climate policies are introduced immediately and innovation is incentivised to enable net zero emissions. This is expected to give at least a 50% chance of limiting global warming to below 1.5°C by 2100.

- **Aligns with Net Zero Asset Owners Commitment (NZPAAO)**

2.0°C Delayed Transition

The Delayed Transition (or SSP2-RCP2.6) scenario where global emissions do not decrease until 2030. Stringent policies are then implemented to limit warming to below 2°C. The level of policy action is expected to differ across countries. Emissions exceed the carbon budget before declining to ensure a 67% chance of limiting global warming to below 2°C. This scenario has higher transition and physical risks than the 1.5°C scenario.

- **Reflects stop/start nature of Paris Accord/COPs**
- **Reflects lower end of emissions trends and market pricing**

3.0°C Current Policies

The Current Policies (or SSP2-RCP6.0) scenario where only currently implemented policies are preserved, leading to high physical risks. Emissions grow through 2080 leading to 3°C of warming, severe physical risks, and irreversible sea level rise.

The implications of reaching climate tipping points, which are also becoming more probable, have also not been captured by available macroeconomic models.

- **Aligns with current trajectory**
- **Reflects higher end of emissions trends and inconsistency of global climate policy implementation**

1.5°C Net Zero

How could a concentrated effort to keep the temperature rise to 1.5°C above pre-industrial levels affect our investment strategy and portfolio returns?

Characteristics of this scenario

- Rising social demand of decarbonisation through government policy and consumer purchasing power.
- Aggressive technological innovation in developing climate solutions.
- Government/regulatory policy that rapidly increases the cost of emissions released into the atmosphere (carbon pricing).
- Increased cost of insurance due to more severe weather events than experienced previously.
- Increasing consensus in climate science pathways based on modelling.
- Domestically, rising flood risk for coastal areas, currently home to NZX-listed entities, advances investor appetite for emission reductions and investment in resilience.

Efficient carbon markets are integral to this scenario. The increased cost of carbon, and reduction in sovereign carbon budgets would drive the transition to a low carbon economy, creating risks for carbon intensive industries and opportunities for transition enablers.

Potential broad impacts of the scenario

Following this 1.5°C pathway, we would expect:

- A rapid reduction in the quantity of fossil fuel consumed by commercial and individual users as they adopt transport modes and source energy with lower emissions profiles.
- An increased likelihood of some oil and gas, and coal assets becoming stranded, reducing the viability of this sector's profitability to the extent it is not already pivoting towards renewable energy sources.
- Increased scrutiny of the source of carbon credits, potentially benefiting countries with stronger governance and evidenced based creation of credits (with the benefit being through premium prices for their carbon credits).
- Other sectors like steel, electricity, cement and chemicals face transition risks.
- The share of wind and solar in electricity generation reaches 70% (from 12% in 2022).

Technological opportunities exist based on the quality and quantity of low carbon patents held by a range of energy, manufacturing and transport companies.

Alongside this, successful carbon capture and storage would be financially rewarded for investors.

Risks to the portfolio

The largest potential impact of this scenario is from sudden and rapid global policy change that significantly raises the cost of carbon.

These transition risks would negatively affect the value of the utilities, energy, and transport sectors currently held in the portfolio.

Physical risks are relatively lower in this scenario, with Coastal Flooding the largest physical risk via listed entities with ports, land and buildings potentially exposed.

How we manage risks to the portfolio (mitigants):

We monitor the evolving policy and regulatory landscape.

We engage with investment managers and investee entities.

We review our Statement of Investment Policies, Standards and Procedures, including our investment objectives, regularly.

Our investment managers actively position the portfolios relative to the benchmarks adopted and their perception of risk and return, of which climate risk is one aspect.

2.0°C Delayed Transition

How could a temperature rise to 2°C above pre-industrial levels affect our investment strategy and portfolio returns?

Characteristics of this scenario:

- A delayed response in reducing emissions until at least 2030. Less coordinated, disorderly policy-making and high regional variance in implementation of Paris Accord goals.
- Economic outcomes become less equitable for countries with higher physical risks in producing economic output.
- In 2030 stringent policies are implemented to limit warming to below 2°C. Emissions exceed the carbon budget before declining, giving a 67% chance of limiting global warming to below 2°C.
- In a delayed transition the limited use of carbon dioxide removals results in the release of more emissions ahead of an eventual net zero economy in 2060.
- Rising annual rainfall leads to an increase in flood risks in most parts of the world.

Potential broad impacts of the scenario:

This scenario has lower immediate transition risks/costs (than the 1.5°C scenario), but higher physical risks. Other potential impacts:

- A rising cost of borrowing due to sovereign credit rating downgrades in countries slow to implement policy change.

- Increased physical risks from increasingly severe weather events, including drought, flooding and lower river flow than in the 1.5°C scenario.
- Increased physical risk is anticipated to affect sovereign states and local economies differently based on their sensitivity to chronic weather-related risk.
- Inherent in the scenario is that over the long-term the cost of transition risks under the 1.5°C scenario is less than the cost of the higher physical risks under the 2°C scenario.
- Some countries defer their goals, and this affects purchasing power and socio-economic outcomes for those in countries slower to adopt policy change in the medium/long-term. It is plausible these citizens/countries would be content with the lower costs in the short term from keeping the status quo.

Risks to the portfolio:

Overall, the short-term value at risk from policy aligned to a delayed transition is lower in this scenario (than for the 1.5°C scenario). This is because sectors with higher emission profiles, or less willingness or ability to transition to a lower carbon economy, would have their short-term profitability impacted by the policy levers that would be required under the 1.5°C scenario.

In the longer term, under this 2°C scenario, GSF portfolio entities (and our holdings in sovereign bonds) most at risk of lower valuations are those sensitive to coastal flooding, river low flow (e.g. river flow hydro electricity generation), and extreme heat (in Australia, the US, and parts of Asia).

How we manage risks to the portfolio (mitigants):

We monitor the evolving policy and regulatory landscape.

We engage with investment managers and investee entities.

We review our Statement of Investment Policies, Standards and Procedures, including our investment objectives, regularly.

Our investment managers actively position the portfolios relative to the benchmarks adopted and their perception of risk and return, of which climate risk is one aspect.

We would expect significant changes to investment portfolios in the medium term to adjust to this scenario.

3.0°C Current Policies

How could a temperature rise to 3°C above pre-industrial levels affect our investment strategy and portfolio returns?

Characteristics of this scenario:

- Some climate policies are implemented in some jurisdictions, but globally efforts are insufficient to halt significant global warming.
- The scenario results in severe physical risk including irreversible impacts like sea-level rise.
- Assumes only currently implemented policies are preserved, and the carbon price remains near zero, alongside low use of carbon dioxide removals.
- Acute impacts from extreme weather events lead to business disruption and damage to property.
- Chronic impact, particularly from increased temperatures, sea level rise and precipitation, may affect labour, capital, land and natural capital in specific areas. These changes will require a significant level of investment and adaptation from entities, households and governments.
- Slow technology change.

Potential broad impacts of the scenario:

This scenario has low transition risk from policy changes but high physical risks which lead to:

- Increased variability in reliability of energy and utilities providers. Oil remains a key fuel source and oil prices rise.

- Escalating climatic consequences resulting from increased greenhouse gas (GHG) emissions impose a financial burden and opportunity on businesses. This impact affects their customers, supply chains, and facilities.
- Regional rivalry for resources; countries most prone to dramatic changes in temperatures have less capacity to adapt.
- Paris Accord pledges fail to detail how states intend to reduce emissions increasing opacity of sovereign bond issuance.
- A warmer planet would result in lower productivity of human capital, increased heating/cooling costs, reduced reliability and mobility of transportation affecting the majority of other sectors, including consumer goods, materials and food & beverage distribution

Risks to the portfolio:

Physical risks severely reduce the predictability of returns for banks' lending on physical assets. Physical risks raise the cost of maintaining and obtaining insurance on real estate. Transportation routes become less predictable due to lower resilience of roads, rail and shipping routes.

Rising oil prices would result in higher costs for sectors that have been slow to transition to alternative fuels, eroding profitability.

Under this scenario coastal flooding is overtaken as our highest physical risk by river low flow, while extreme heat exposed assets remain the third highest physical risk.

How we manage risks to the portfolio (mitigants):

We monitor the evolving policy and regulatory landscape.

We engage with investment managers and investee entities.

We review our Statement of Investment Policies, Standards and Procedures, including our investment objectives, regularly.

Our investment managers actively position the portfolios relative to the benchmarks adopted and their perception of risk and return, of which climate risk is one aspect.

Increasing corporate targets and disclosures would help investors identify risks and opportunities resulting from intense physical change.

We would expect significant changes to investment portfolios in the medium term to adjust to this scenario.

Risk Framework

The Authority's Risk Policy provides a framework for managing risk including assessing climate-related risks. We maintain a strategic risk register which is reviewed by the ARRC and approved by the Board.

Risks are managed using a six-step process: establish context, risk identification, risk assessment, risk management, monitoring and testing, and reporting. Risks are prioritised based on likelihood and materiality. Risk issues are discussed as required at the weekly meeting of AML's Leadership team.

We have identified climate change commitments as a strategic risk. This includes the risk of:

- negatively affecting the value of the Fund by transitioning to a low-carbon investment portfolio, and
- not meeting our climate-related action commitments.

Key risk controls include:

- The Crown Responsible Investment Framework in place to reduce carbon intensity of the investment portfolio
- Quarterly monitoring of GHG emissions metrics of portfolio companies for use as criteria for investment decisions
- Keeping up to date with best practices in portfolio monitoring and reporting for climate exposures.
- Engaging with peers to collaborate and coordinate climate-related action.

Management completes a portfolio review on an annual basis, with quarterly reporting to the Board to escalate risks and present opportunities from climate change alongside data points relevant to public commitments for decarbonisation.

Our investment managers are mandated to manage portfolios on our behalf. We expect managers to integrate responsible investment into investment analysis where the manager believes these factors will affect long-term investment performance. We regularly engage with our managers on these issues. We review and monitor managers' performance against their mandates on a regular basis.

We use climate data from third-party providers to better understand which parts of the Fund have more or less carbon intensity and consider how this impacts on our decarbonisation commitments. We take insights from this process to have deeper discussions with our managers and, where appropriate, modify their mandates to ensure better tracking to our commitments. We also engage in collaborative climate related projects with CFIs.



Miramar Peninsula, Wellington Region

Metrics

All portfolio metrics involve estimated data for companies we invest in and encompass a high degree of uncertainty, specifically in regard to:

- Scope 3 emissions, and
- potential double-counting in fixed income data (country data affecting both sovereign bonds and the corporate bonds issued in that country).

We use third-party data and tools from MSCI for our metrics. In these metrics and targets we are reporting financed emissions. These are not emissions by the Authority or AML through our own activities.

Financed emissions are those 'owned' by the Fund through its investments. Technically, these are the Fund's scope 3 emissions.

To illustrate the emissions that are directly under the control of the companies we invest in, we report on their scope 1 and 2 emissions. For completeness we show their scope 3 emissions separately.

In calculating these emissions we have included equities and bonds in the portfolio, but have not included cash and cash equivalents, and insurance linked assets. We include unlisted assets (e.g. Private Equity) by proxying the sector exposure of the unlisted assets with the listed market equivalent sector.

Asset allocation is depicted in the chart to the right.

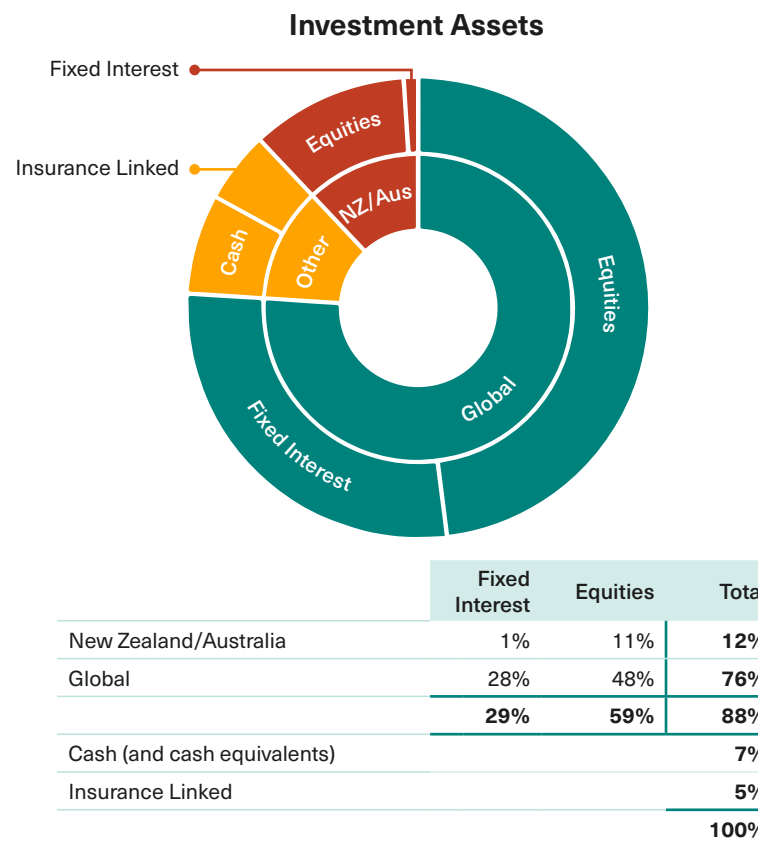
| As at 30 June 2024 | Total Emissions tCO2e | Carbon Intensity tCO2e/\$m sales |
|--------------------------------------------------------------|--------------------------|-------------------------------------|
| Financed Emissions | | |
| Scope 1 & 2 | 40,632.7 | 97.0 |
| Scope 3 | 306,047.4 | 725.1 |
| <i>Assets not included: Cash and Insurance Linked Assets</i> | | |

Total emissions measures the total carbon emissions for which an investor is responsible due to their ownership of the underlying holdings.

Carbon intensity measures the carbon efficiency of the portfolio, via the ratio of carbon emissions for which an investor is responsible to the sales of the underlying holdings.

For Scope 1 & 2, when reported data is not available, emissions are estimated using MSCI's estimation model. 11.5% of the securities have Scope 1 & 2 emissions estimated using MSCI's model, while 78.4% are based on reported, nonaudited data.

All Scope 3 emissions in this report are estimated using MSCI's model, due to un-usability (inconsistency, volatility) of the reported Scope 3 data.



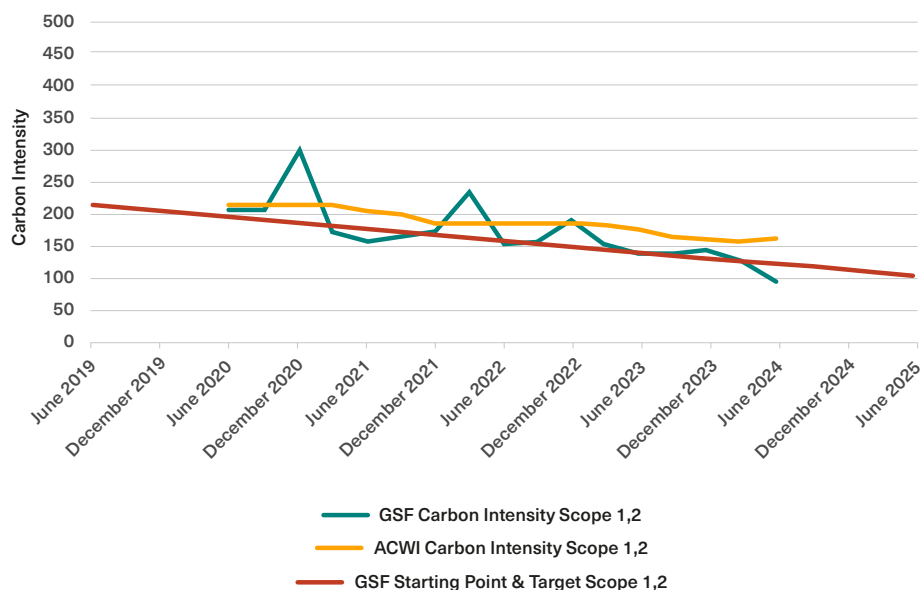
Targets

We have a target for the Fund to be carbon neutral by 2050. This target requires further maturity of transition pathways over the medium term before a decision on offsets (and their verifiability) can be determined.

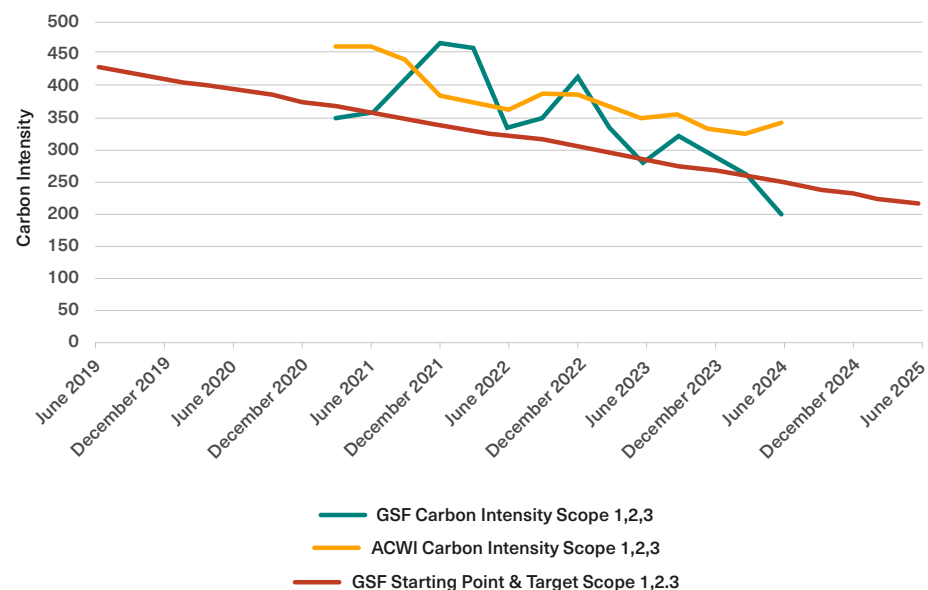
We also have a 2025 target to achieve a 50% reduction (relative to a 2019 baseline) in carbon intensity (tCO2e/\$m sales) of the listed equity portfolio. Progress against the 2025 target is presented to the Board on a quarterly basis. This 2025 target does not rely on offsets.

The 2025 target has two measures. The first is the carbon intensity of the listed equity portfolio using Scope 1 & 2 (with progress shown in the left hand chart below). The second measure (shown in the right hand chart below) is Scope 1 & 2 carbon intensity plus Scope 3 carbon intensity of fossil fuel producers – i.e. adding the the indirect emissions from carbon embodied in fossil fuel production.

Scope 1,2 Carbon Intensity History GSF



Scope 1,2,3 Carbon Intensity History GSF



At June 2024 we are on track to meet the 2025 target across both measures.

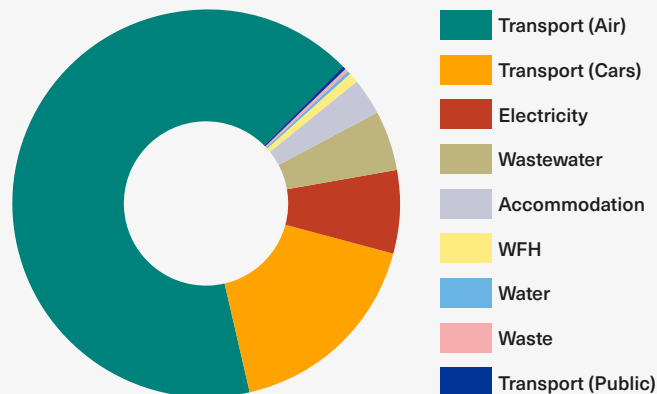
Appendix One Corporate Emissions

We provide climate-related information at a corporate level, encompassing the activities of the Authority as a corporate entity and AML, separately from climate-related information about the Fund's investment portfolios.

The location of AML in Wellington presents some physical climate-related risks due to the city's geographical and climatic characteristics. While impacts on Wellington's infrastructure could interrupt AML's day-to-day operations, this risk is mitigated by remote-working capabilities. This means that all AML staff can work from home at short notice by using work-allocated laptops and phones.

Climate-related impacts currently being experienced by the Authority and AML are minor but are expected to increase as the impact of climate change increases. We aim to establish targets and a transition plan to mitigate, adapt and reduce our emissions. Both the Board and AML have developed use of online and hybrid meetings to reduce travel, which is our biggest source of corporate emissions.

Scope 3 Emissions



| | TOTAL Tonnes Carbon Dioxide Equivalent tCO ₂ e | % of Total tCO ₂ e | Carbon Dioxide (tCO ₂) | Methane (tCO ₂ e) | Nitrous Oxide (tCO ₂ e) |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|-------------------------------|------------------------------------|------------------------------|------------------------------------|
| Scope 1 | | | | | |
| Direct GHG emissions from sources owned or controlled by the organisation. | 0.00 | 0% | 0.00 | 0.00 | 0.00 |
| Scope 2 | | | | | |
| Indirect GHG emissions from the generation of purchased energy that the organisation uses. | 1.96 | 6.59% | 1.90 | 0.05 | 0.00 |
| Scope 3 | | | | | |
| Other indirect GHG emissions occurring because of the activities of the organisation but generated from sources that it does not own or control (eg, air travel). | | | | | |
| Accommodation | 0.84 | 2.83% | 0.84 | 0.00 | 0.00 |
| Transport (Air) | 19.64 | 66.07% | 19.51 | 0.01 | 0.84 |
| Transport (Cars) | 4.97 | 16.72% | 4.77 | 0.49 | 0.14 |
| Transport (Public) | 0.08 | 0.26% | 0.08 | 0.00 | 0.00 |
| Waste | 0.13 | 0.43% | 0.00 | 0.13 | 0.00 |
| Wastewater | 1.56 | 5.25% | 0.19 | 0.61 | 0.76 |
| Water | 0.14 | 0.47% | 0.13 | 0.00 | 0.00 |
| WFH | 0.41 | 1.38% | 0.31 | 0.09 | 0.01 |
| Scope 3 Total | 27.76 | 93.41% | 25.83 | 1.34 | 1.75 |
| Total | 29.72 | 100.00% | 27.74 | 1.39 | 1.75 |

Appendix Two

Climate Standards Index

| Climate Standard | Page |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| CS 1.6 Governance – The role our governance body plays in overseeing climate-related risks and climate-related opportunities, and the role management plays in assessing and managing those climate-related risks and opportunities. | 4-7 |
| CS 1.7a The identity of the governance body responsible for oversight of climate-related risks and opportunities. | 4 |
| CS 1.7b A description of the governance body’s oversight of climate-related risks and opportunities. | 4 |
| CS 1.7c A description of management’s role in assessing and managing climate-related risks and opportunities. | 5-7 |
| CS 1.10 Strategy – How climate change is currently impacting the Government Superannuation Fund and how it may do so in the future. | 1, 8-16 |
| CS 1.11a A description of our current climate-related impacts. | 12, 20 |
| CS 1.11b The scenario analysis we have undertaken to help identify our climate-related risks and opportunities and better understand the resilience of our business model and strategy. | 12-16 |
| CS 1.11c A description of the climate-related risks and opportunities we have identified over the short, medium, and long term. | 9, 17 |
| CS 1.11d A description of the anticipated impacts of climate-related risks and opportunities. | 17, 20 |
| CS 1.11e A description of how we will position ourselves as the global and domestic economy transitions towards a low-emissions, climate-resilient future state. | 2, 9-10 |
| CS 1.17 Risk – How our climate-related risks are identified, assessed, and managed and how those processes are integrated into existing risk management processes. | 17 |
| CS 1.18 A description of our processes for identifying, assessing and managing climate-related risks. | 17 |

| Climate Standard | Page |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| CS 1.20 Metrics and Targets – How we measure and manage our climate-related risks and opportunities. Metrics and targets also provide a basis upon which you can compare entities within a sector or industry. | 18-20 |
| CS 1.22a Greenhouse gas (GHG) emissions | 18 |
| CS 1.22b GHG Emissions Intensity | 18 |
| CS 1.22c Assets vulnerable to transition and physical risks; assets aligned with climate-related opportunities. | <i>Given our use of adoption provisions one and two of the Climate Standards (see below), we are not yet able to provide this information.</i> |
| CS 1.22d | |
| CS 1.22e | |
| CS 1.22f <i>Capital expenditure is immaterial.</i> | |
| CS 1.22g <i>We have not set an internal emissions price.</i> | |
| CS 1.22h Management remuneration linked to climate-related risks and opportunities. | 5 |
| CS 1.25 Application date | |
| CS 1.26 CS 1.B2 states that these assurance standards apply to annual reporting periods that end on or after 27 October 2024. (CS 1.B2) | |

Exemption Provisions Adopted

| |
|----------------------------------------------------------------------------------------------------------------------|
| CS 1.12b Adoption Provision One: Current financial impacts |
| CS 1.12c CS 2.10 and CS 2.11 provides an exemption from these disclosure requirements in our first reporting period. |
| CS 1.15b Adoption Provision Two: Anticipated financial impacts |
| CS 1.15c CS 2.12, CS 2.13 and CS 2.14 provide exemptions from these disclosure requirements |
| CS 1.15d in our first reporting period. |

Appendix Three

Glossary

Annuitas Management Limited (AML): The company that employs the Management team. AML is a joint venture between the Authority and the Board of Trustees of the National Provident Fund (NPF), working on behalf of GSF members to increase the value of their investment.

Aotearoa New Zealand Climate Standards (CS): Standards issued by the External Reporting Board to support the allocation of capital towards activities that are consistent with a transition to a low-emissions, climate-resilient future.

Climate Action 100+ (CA100+): Climate Action 100+ is an investor-led initiative to ensure the world's largest corporate greenhouse gas emitters take appropriate action on climate change in order to mitigate financial risk and to maximize the long-term value of assets.

Crown Financial Institutions (CFIs): Accident Compensation Corporation, the Government Superannuation Fund Authority and the Guardians of New Zealand Superannuation. While not strictly a CFI, the National Provident Fund is usually included when referring to this group.

Crown Responsible Investment Framework (CRIF): This provides a framework for CFIs to set transition plans consistent with Government policy, the Paris Agreement and global investment leadership to support the transition to a lower carbon economy.

Environmental, Social, and Governance (ESG): A set of issues, including environmental issues, social issues and corporate governance that can be considered in investing.

Greenhouse Gases (GHG): Gases that trap heat in the atmosphere. GHG emissions are a key metric for assessing a company's environmental impact and its contribution to climate change.

International Financial Reporting Standards (IFRS): Sets of standards issued by the International Accounting Standards Board (IASB) and the International Sustainability Standards Board (ISSB). They standardise the way companies' financial and sustainability performance are described, making statements understandable and comparable across international boundaries.

Morgan Stanley Capital International (MSCI): A global firm providing financial climate data and financial markets indexes for benchmarking purposes.

Net Zero Investment Framework (NZIF): Paris Aligned Asset Owners publication defines methodologies and approaches for investors to align portfolios to the goals of the Paris Agreement and maximise the contribution they can make to achieving global net zero global emissions by 2050.

Paris Agreement: An international treaty on climate change that was adopted in 2015. The treaty covers climate change mitigation, adaptation, and finance. The Paris Agreement was negotiated by 196 parties at the 2015 United Nations Climate Change Conference near Paris, France.

Paris Aligned Investment Initiative (PAII): established in May 2019 as a collaborative investor-led forum, to support investors to align their portfolios and investment activities to the goals of the Paris Agreement.

Paris Aligned Asset Owners (PAAO): A global group of asset owners, with over \$3.3 trillion in assets. Consistent with their fiduciary obligations to clients and beneficiaries to avoid financial risk and to maximise long-term value of assets, committing to transition their investments to achieve net zero portfolio GHG emissions by 2050, drawing on the PAII Net Zero Investment Framework to deliver these commitments.

Principles of Responsible Investment: The PRI is the world's leading proponent of responsible investment. It works: to understand the investment implications of environmental, social and governance (ESG) factors; to support its international network of investor signatories in incorporating these factors into their investment and ownership decisions. GSF has been a signatory since 2006.

Scopes 1, 2 and 3: The Scope 1 category includes the direct emissions from an organisation's facilities. Scope 2 includes the emissions from energy purchased by the organisation. Scope 3 includes other indirect emissions, e.g, such as those from suppliers, used in the manufacture of products.

Taskforce for Climate-related Financial Disclosures (TCFD): The precursor to Climate-related Disclosures, which GSF reported against in the 2022 and 2023 financial year. Due to emerging global regulation to standardise climate-related financial information, the TCFD was disbanded in November 2023.

Appendix Four

About Our Data

During the reporting period we:

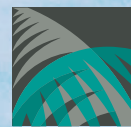
- Changed how we weighted the equities benchmark to calculate carbon intensity. We now exclusively use the MSCI ACWI as our comparator (we previously blended the MSCI ACWI with the NZX based on asset allocation).
- Noted the continuous change to underlying data in MSCI's ESG Manager tool, enhanced by disclosures in reporting and methodology changes. This has contributed to changes in the emissions data of our holdings over the course of the reporting period.
- Relied exclusively on MSCI data for producing the carbon emissions metrics disclosed in this report.
- Included fixed income and private equity assets in our carbon emission analysis (the latter using proxy data); and continued to exclude cash and insurance-linked assets due to lack of data.
- Did not seek assurance of the disclosures associated with our metrics and targets. Part 7A of the Financial Markets Conduct Act 2013 has not been applied as it is not applicable to this voluntary disclosure.
- Did not predict the future in our climate scenario analysis; we use third party developed scenarios with a range of underlying assumptions to assess plausible pathways that may impact the portfolio through time.

Limitations in our disclosure:

- This data is a snapshot at a point in time, for both the underlying data and methodology. Our metrics reflect the investments held by our investment managers on a specific date. This point in time on its own does not reflect our medium and long-term decarbonisation expectations for investment managers with low carbon targets in the equities portfolio.
- Understanding the severity of climate change and its impact on our portfolio is a best estimate based on data available today. This data is evolving rapidly and we anticipate that its coverage and quality will improve through time. The carbon data does not fully cover the holdings in the portfolio.
- Cash and insurance linked securities have been excluded from our portfolio emissions. While financed emissions of these assets may have a carbon footprint, we assume this is immaterial compared to our equities and fixed income assets held in the portfolio.
- Business models and their alignment to a lower carbon economy continue to evolve. Our investment managers evolve our portfolio holdings accordingly based on their views of risk and return.
- Most entities in our portfolio are at varying stages of their own disclosure journey. The underlying methodology to determine carbon emissions is based on numerous assumptions, reducing accuracy. We expect this to improve as regulators mandate further disclosure and assurance over time.



Shearer Swamp, West Coast Region



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