GOVERNMENT SUPERANNUATION FUND AUTHORITY

2022 Climate-Related Disclosure Report 2022

TCFD 22

Prepared in accordance with the recommendations of the Task Force on Climate-related Financial Disclosure.

Introduction

New Zealand has committed to the Paris Accord on efforts to limit warming and is aiming to become a net zero society by 2050, via the Emissions Trading Scheme, Climate Change Response (**Zero Carbon**) Amendment Act 2019 and related policies. The Financial Sector (Climate-related Disclosures and Other Matters) Amendment Act 2021 requires Climate Reporting Entities (as defined in that Act) to publish their climate- related risks and opportunities disclosures from financial years commencing in 2023, in accordance with standards being developed by the External Reporting Board (**XRB**).

These standards will closely follow the recommendations of the global Task Force on Climate-related Financial Disclosures (**TCFD**). The Carbon Neutral Government Programme (**CNGP**) requires New Zealand public sector agencies to measure, report on and reduce their greenhouse gas (**GHG**) emissions and to offset any they do not reduce from 2025.

The Government Superannuation Fund Authority (**GSFA, the Authority**) is a Crown Financial Institution (**CFI**). It is required by its Act to:

- maximise return without undue risk
- avoid prejudice to New Zealand's reputation as a responsible member of the world community
- and follow best practice portfolio management.

These requirements are addressed by the Authority in terms of its Responsible Investment (**RI**) policies which cover environmental, social, and governance (**ESG**) matters in relation to the Fund's investment portfolio. Managing climate-related risks and opportunities is a major focus.

GSFA is neither a Climate Reporting Entity nor a public sector agency. Although not subject to the same requirements as those entities, the Fund members' entitlements are guaranteed by the Crown and the Authority must have regard to the Government's expectations set out in the Minister of Finance's annual letter of expectations.

Together with the other CFIs (The Guardians of New Zealand Superannuation and the Accident Compensation Corporation), the Authority has committed voluntarily to the Crown Responsible Investment Framework, which supports a lower carbon future by having net zero portfolio exposure to emissions by 2050.

The Crown Responsible Investment Framework includes three pillars:

- Measure
- Reduce
- Influence.

Under the 'Measure' pillar, all CFIs agreed to measure investment portfolio exposure to GHG emissions and fossil fuel reserves transparently, and to report in alignment with TCFD recommendations and the XRB's climate-related disclosure standards once issued.

Under the 'Reduce' pillar, all CFIs are committed to having carbon neutral total investment portfolios by 2050, setting challenging interim emissions exposure reduction targets for 2025, and producing refreshed targets prior to 2030.

Under the 'Influence' pillar, all CFIs have agreed to actively seek investments that help the transition to a low-carbon economy. They must also use their position as significant investors to engage with global companies on developing transition strategies.

The Authority:

- is a subscriber to the Principles for Responsible Investment (**PRI**), which is an international network of investors working together to implement its six aspirational principles
- is a subscriber to the UN-convened Net Zero Asset Owners Alliance (**NZAOA**)/ Paris Aligned Asset Owners (**PAAO**), which is a member-led initiative of institutional investors committed to transitioning their investment portfolios and
- signed the Global Investor Statement to Governments on the climate crisis in 2022.

This report is the first that the Authority has prepared consistent with the TCFD recommendations. It addresses four areas of climate-related disclosure:

1. Governance
2. Strategy
3. Risk management
4. Metrics and targets.

The report describes the Authority's approach to climate-related risks and opportunities for its investment portfolio and its commitments to a lower carbon future for both its investment portfolio and business operations. The report has not been externally assured nor verified although the Authority plans to seek external assurance for its 2023 climate- related disclosure report. While this report shows data to 30 September, future reports will record data to 30 June to align with the Authority's annual report.

1) Governance

The Government Superannuation Fund Act 1956 (**GSF Act**) established the Government Superannuation Fund (**Fund**) and Authority. The Authority is responsible for investing the Fund and must invest the Fund on a prudent, commercial basis subject to the provisions of the Act. The Authority also monitors and manages the climate-related risks of its own business operations.

Disclosure	Investments	Business Operations
Describe the Board's oversight of climate-related risks and opportunities	• Board has approved the Investment Beliefs that underpin the investment strategy including beliefs that climate change presents significant investment risks and opportunities. • Board has approved, and keeps under review, investment strategy and setting of climate change objectives in strategy and governance documents, such as the Statement of Investment Policies, Standards and Procedures (**SIPSP**). • Board receives an annual letter of expectations from the Minister of Finance, which aims to ensure consistency with the Government's policies and across the Crown Financial Institutions. Attending to climate-related risks and opportunities is among those expectations. • Board reviews responsible investment policies annually. • Board has approved carbon reduction targets for the investment portfolio and receives quarterly updates on progress. Board also receives quarterly 'Responsible Investment/ ESG' updates from Management that include commentary about climate-related risks and opportunities in relation to the investment portfolio. • Board approves all external investment manager[1] appointments having regard to each manager's investment mandate and capability to add value, including how they address climate-related risks and opportunities. • Board works in consultation with other CFIs so that responses to Government's climate change-related expectations are as consistent as possible.	• Board monitors the organisation's operational GHG emissions annually. • Board will benchmark the emissions profile against peers as data and standards become available. • Board has approved plans to reduce the organisation's emissions by scheduling virtual board meetings to limit travel.

[1] *(External) investment manager is the investment management companies that GSFA appoints to manage its funds.*

Disclosure	Investments	Business Operations
Describe management's role in assessing and managing climate-related risks and opportunities	• Management[2] monitors and presents climate metrics and research to the Board including implications of climate-related factors for security valuation, risk, return and capital allocation. • Management recommends investment strategy and implements the approved programme, including external mandates and investment manager appointments to achieve performance objectives, including carbon emissions exposure targets. • Management expects the external active investment managers to integrate material climate-related factors in their investment decision-making. These investment managers report on climate-related factors as part of their regular reporting on ESG matters. • Management maintains assessments of incumbent and prospective investment managers, including their integration of ESG and climate-related risks and opportunities in their investment processes. • Management maintains a current list of excluded companies, advises external investment managers accordingly, and monitors the impact of exclusions on investment performance. • The Authority encourages active engagement with companies by its investment managers. It prefers engagement with companies that breach its RI standards but will exclude companies where engagement is unlikely to be effective, e.g., due to the context of the company's operations or a lack of responsiveness from the company to the issue. It encourages its investment managers to engage with companies on their plans to disclose climate-related risks and pursue climate-related investment opportunities. Management evaluates opportunities for investment in climate solutions. • Management consults with other CFIs on any joint collaborative engagements with companies. • Management monitors proxy voting of external investment managers. All investment managers must exercise the Authority's voting rights.	• Management measures, monitors, and reports the organisation's operational GHG emissions annually[3]. • Management will obtain independent verification of emissions measurement once standards are determined, and emissions reporting becomes more widespread.

[2] *Management is the staff of Annuitas Management Limited (**AML**), a joint venture company established by GSFA and The Board of Trustees of the National Provident Fund to provide staff who act in management and secretariat roles on behalf of both entities.*

[3] *Organisational, operational, and business emissions are the emissions produced from business operations of GSFA through AML's travel and office facilities, separate to emissions produced by the companies in the investment portfolio. The reporting on Business Operations is provided on a look through basis.*

2) Strategy

The Authority's primary channel for implementing efforts to avoid climate-related risks and for seeking climate opportunities in its investment portfolio is through its active investment managers where they believe these factors improve risk-adjusted returns. These factors are embedded in the investment managers' normal investment processes and the Authority's Management monitors and evaluates their capacity to do so. As an investor, the Authority can encourage companies to reduce emissions by engaging with them and by directing capital towards companies that contribute to lower global emissions and away from those that don't. The Authority's modest operational carbon footprint is also monitored and managed.

Disclosure	Investments	Business Operations
Describe the climate-related risks and opportunities the organisation has identified over the short, medium, and long term	• Significant risks arise in the short term (<5 years) and medium term (5-10 years) for the value of companies in which the Authority invests that are reliant on carbon-intensive activities. This includes the risk of increasing taxes or regulation of carbon emissions and changing patterns of global consumption towards alternative energy sources. • Significant risks also arise in the longer term (>10 years) for companies whose assets and profits are exposed to the effects of higher temperatures, extreme weather, and sea level rise if emissions continue to lift mean temperatures. • Transition risks have been identified as a climate risk that affects the Fund's investment portfolio in the short, medium, and long term. The transition to a less carbon intensive world may not be in line with companies' capabilities or will cost businesses time and money. These risks affect the value of companies in the investment portfolio. • Physical risks are also a climate risk that affects the Fund's investment portfolio in the short, medium, and long term. Physical climate risks can cause severe natural disasters and therefore destruction of company facilities for example, which also affects the value of companies in the investment portfolio. • Scenario analysis can be used to quantify the investment portfolio risk that transition and physical risks present. • Many opportunities for profitable investment will arise in the medium and long term from the large-scale investment required, for example, to electrify transport, industry, and home heating, build carbon-lite electricity production and carbon sequestration plants. • Investment opportunities may be exploited by existing companies being required to respond to climate change. • GSFA will also consider investment in strategies specifically targeting solutions to climate risks, such as alternative technologies and carbon capture. GSFA expects those solutions to be developed in part by companies in the existing public equity market.	• The organisation's operational GHG emissions profile is small as it has only 14 staff and one office, shared with the Board of Trustees of the National Provident Fund. • Main sources of emissions are staff and Board travel and electricity usage. • There is an opportunity to reduce the organisation's emissions by reducing travel of both the Board and staff by increased use of online meetings and staff working from home.

Disclosure	Investments	Business Operations
Describe the impact of climate-related risks and opportunities on the organisation's businesses, strategy, and financial planning	• The Authority's investment strategy incorporates setting benchmarks consistent with net zero emissions objectives and selecting external investment managers that price and manage stocks on behalf of the Authority. Climate-related risks and opportunities are material factors that impact the valuation of portfolio securities and are expected to be integrated into the investment process of active investment managers. They are considered in evaluations of investment opportunities and external investment managers. • A target has been set by the Authority to reduce the carbon intensity of the Fund's public equity investment portfolio by 50% by 2025 compared to 2019 to align with Government commitments to global climate objectives. A new target will be set for 2030 having regard to the NZ Government's commitments. • The Authority has approved a change to the global equities benchmark of its Reference Portfolio to a low carbon index which will come into effect from 1 January 2023. • The Authority will monitor the investment managers contribution to achieving these reductions and will also consider investment in strategies specifically targeting solutions to climate risks, such as alternative technologies and carbon capture. Management expects most of those solutions, however, to be developed by companies in the Fund's existing public and private equity universe. • Management has mandated some investment managers to limit the carbon intensity of their portfolios in a way that does not adversely impact investment performance. Other investment managers are naturally 'low-carbon' because their investment style is focused on quality growth opportunities in other sectors. The Fund's private equities are also biased strongly to low carbon industries. • The active investment managers' investment performance relative to the broad market, and that of the total Fund, will be affected by how well they integrate climate risks and opportunities into their investment processes.	• Climate-related effects have a modest and manageable effect on the organisation's ability to carry out its business mission and activities.

Disclosure	Investments	Business Operations
Describe the resilience of the organisation's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario	• The Fund's active investment managers are well equipped to invest in opportunities and manage risks under various broad climate transition scenarios, providing diversified resilience to the Fund's strategy. • The Authority aims to ensure the carbon intensity of the total portfolio reduces gradually in line with agreed global targets and remains less than the market in general.	• Business operations will be more heavily impacted by lower temperature scenarios as these imply higher actual carbon emissions prices and either or both larger reductions in travel and electricity usage or more expensive offsets.

3) Risk Management

Disclosure	Investments	Business Operations
Describe the organisation's processes for identifying and assessing climate- related risks	• Management monitors and reports to the Board the exposure of the public equity portfolio and its market benchmark to carbon emissions and climate-related risks and opportunities of the underlying companies. This is primarily done through assessing portfolio carbon analytics reports through a third party ESG data provider. • Management monitors individual investment managers' portfolios in the same way. • External investment managers share their climate- related risk reports with Management. • The organisation uses a third-party engagements provider who identifies climate-related risks of the companies in the investment portfolio.	• Management measure and monitor the organisation's operational GHG emissions as part of its annual financial reporting processes. • Comparable standards will become available for use as more organisations report similar data.

Disclosure	Investments	Business Operations
Describe the organisation's processes for managing climate-related risks	• The primary process for managing climate related risks is through the active investment managers whose stock selection takes account of these risks. • The Authority requires the public equity investment managers with more carbon intensive portfolios to limit exposure relative to the market index. • The Authority amends investment managers' mandates to constrain emissions exposure and considers versions of funds offered by current public equity managers with a clear climate focus. • The Authority targets a reduction of total portfolio carbon intensity at least in line with the current commitment to be net zero by 2050, consistent with Government policies, and has committed to a target of 50% reduction in carbon intensity of the public equity portfolio by 2025, compared to the baseline year of 2019. • The external investment managers are encouraged to engage with investee companies to promote climate- related disclosure and transparency in line with global standards and develop plans for a lower-carbon future. • The Authority engages with companies on climate, and other ESG issues, globally through a specialist service provider. • The Authority engages collaboratively with peer organisations such as Crown Financial Institutions in New Zealand and global initiatives such as PRI and NZAOA.	• As transport and electricity usage drive the Authority's organisational GHG emissions profile, the Board and Management have agreed to increase the use of online meetings by carrying out some 2023 Board meetings over zoom. • The Board and Management will also encourage more efficient commuting for staff coupled with some working from home and reduced office space. • Beyond the above, offsets may be required.
Describe how processes for identifying, assessing and managing climate-related risks are integrated into the organisation's overall risk management	• The processes for managing climate-related investment risks are distinct from the processes for limiting the carbon intensity of operations. • The processes for managing climate-related investment risks are integrated into the Authority's investment beliefs, how investment objectives are set, benchmarking risk and performance, how the target portfolio is developed, how investment managers are selected and monitored and how performance is reported.	• The organisation's emissions monitoring and management is embedded in the organisation's financial budgeting reporting and risk management systems. • The Authority's operational emissions are limited as much as possible.

4) Metrics and Targets

Disclosure	Investments	Business Operations
Disclose the metrics used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process	• Management measures, and the Board monitors, the public equity investment managers portfolios' exposure to a range of GHG emissions metrics and climate solutions measures[4]. The primary metric monitored is carbon intensity relative to the market index.	• The Authority has committed to meeting targets for the business operations that align with the targets set for New Zealand public sector entities in the Carbon Neutral Government Programme (**CNGP**). • Management has gathered operational emissions data from April 2019 to June 2022. The Authority will continue to measure and report publicly its emissions annually and will adopt a base year quantified using an average of two or more years once activities stabilise. • External assurance of operational emissions has not been obtained. • Benchmarking the Authority's emissions against similar organisations is currently not possible due to the lack of readily accessible reported data from similar organisations. It is expected that as the CNGP develops, access to benchmarking data will be available in future years.

[4] The Authority defines scope 1, scope 2, and scope 3 GHG emissions using the following definitions from MSCI ESG Research:

- *Scope 1 GHG emissions are those directly occurring "from sources that are owned or controlled by the institution, including: on-campus stationary combustion of fossil fuels; mobile combustion of fossil fuels by institution owned/controlled vehicles; and "fugitive" emissions. Fugitive emissions result from intentional or unintentional releases of GHGs, including the leakage of hydrofluorocarbons (HFCs) from refrigeration and air conditioning equipment as well as the release of CH4 from institution-owned farm animals."*
- *Scope 2 emissions are "indirect emissions generated in the production of electricity consumed by the institution."*
- *Scope 3 emissions are 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" such as commuting, waste disposal; embodied emissions from extraction, production, and transportation of purchased goods; outsourced activities; contractor-owned vehicles; and line loss from electricity transmission and distribution".*

The Authority uses individual securities holding reports of its investment portfolio for all climate-related measurement. MSCI ESG Research provides scope 1 and scope 2 emissions data on the companies and Bloomberg is used for current scope 3 emissions data of fossil fuel-producing companies. MSCI ESG Research is also used for other climate-related data.

Disclosure	Investments	Business Operations
Disclose Scope 1, Scope 2 and, if appropriate, Scope 3 GHG emissions, and the related risks	• The Authority measures and discloses scope 1 and scope 2 GHG emissions for all investments in the public equity portfolio, and scope 3 emissions of investments only in fossil fuel producers. The 4 Global industry classification standard (**GICS**) sub-industries that are included for scope 3 emissions are oil and gas exploration and production, coal and consumable fuels, diversified metals and mining, and integrated oil and gas. Although the Authority doesn't exclude fossil fuel producers from the portfolio, management does measure their downstream emissions and include them in the targets for reduced emissions exposure. The charts below show these metrics over time. • The Authority plans to extend the measurement of the portfolio's GHG emissions to other asset classes as well as equities. Currently public equities are measured and reported, and private equities are estimated. The Authority's focus is on carbon intensity, i.e., emissions per dollar of revenue. • Investment performance risk is considered when the Authority imposes carbon restrictions on investment managers or adjusts manager weights to reduce carbon intensity.	• Management measures scope 1, scope 2, and scope 3 emissions as reported in table 2. • As an indication of potential cost, the Authority's 2022 total operational GHG emissions of 14.7023 tonnes of CO2 equivalent would cost approximately NZD $1,400 to offset at carbon credit prices from Toitu Envirocare as of 25 November 2022.

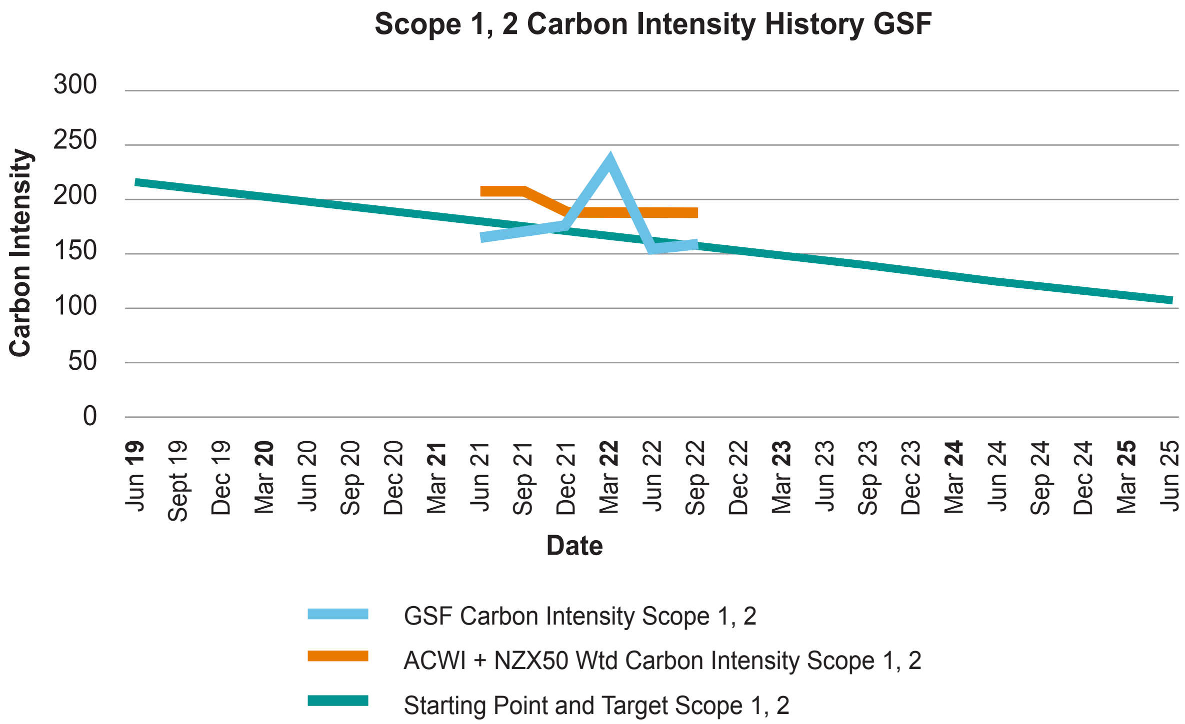
Disclosure	Investments	Business Operations
Describe the targets used by the organisation to manage climate- related risks and opportunities and performance against targets	• The Authority does not set targets to manage investment risks: the targets that are currently imposed are to support global efforts to limit warming. • The Authority has set a target to reduce the carbon intensity of the public equity portfolio by 50% in 2025 compared to June 2019 and for the total portfolio to be net zero by 2050. Asset classes included in the total portfolio are global and domestic public and private equities, global fixed income, and insurance linked securities. There is also a target in place to consistently reach lower carbon intensity than the broad market index. The targeted reductions of portfolio carbon intensity are in line with the current commitment by New Zealand to reach net zero emissions by 2050. This is also consistent with the Paris Agreement to which New Zealand has committed. These goals determine a target level that limits the global average temperature to 1.5 degrees of global warming. • Investment risks are considered by the active investment managers in their stock selection processes. The Authority expects these managers to take material climate considerations into account when ranking stocks and building portfolios. Although the Authority has not yet set a quantitative target, it will invest in climate solutions that contribute to achieving the Paris Agreement goals and meet its investment performance criteria. The Authority expects that an initial investment in climate solutions will be at least 1% of the total Fund (approximately NZD 50m). As of 30 September, the Authority had 33.4% of its public equities invested in companies that derive revenue from clean technology solutions in any strategy, as defined by MSCI ESG.	• The Authority has not yet set quantitative targets for the organisational emissions, other than to manage and reduce emissions consistent with achieving the business mission.

Investment portfolio carbon metrics

The following charts are based on third party analysis of company data, some of which is estimated rather than actual because not all companies report their emissions information. The Authority does not accept responsibility for errors and omissions in third party data.

The first chart shows carbon intensity including scope 1 and 2 GHG emissions. The second chart shows carbon intensity including scope 1 and 2 GHG emissions plus scope 3 emissions of fossil fuel producers. In each chart, the green line ( ) represents the Authority's target to reduce the carbon intensity of the Fund's global and NZ public equities portfolio by 50% by 2025. It is based on the market index level of carbon intensity in June 2019 as the starting point, then decreasing carbon intensity evenly each month until a 50% reduction is met in June 2025. The market index used is a weighted average blend of the MSCI ACWI and NZX50 (using the Authority's Reference Portfolio weights at Jun 2019). The blue line ( ) represents the carbon intensity of the Fund's global and NZ public equities portfolio. The orange line ( ) represents the carbon intensity of the actual market index at each measurement period. The actual market index is weighted according to the Fund's actual allocation to global and NZ equities at the respective dates.

The Fund's carbon exposure in global public equities is as follows:



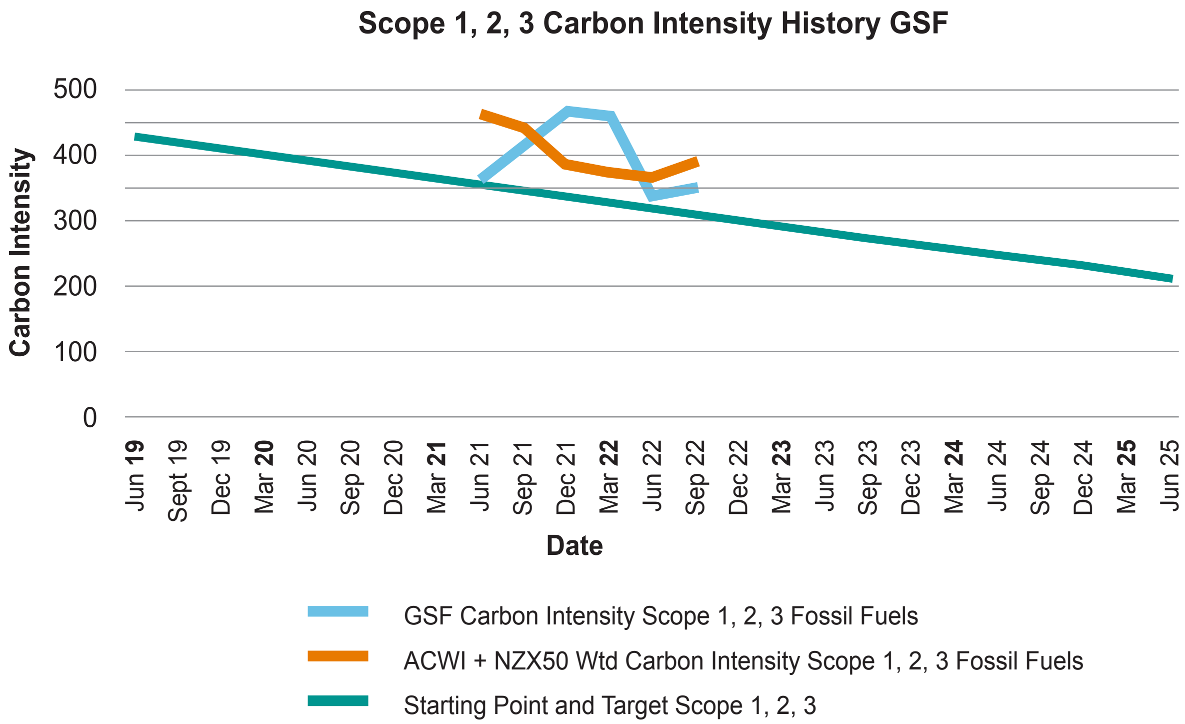


Table 1: Global Public Equities Carbon Intensity

The table below shows the carbon intensity of the Fund's global public equities portfolio and the market index. The change in figures over time reflects active investment managers' decisions and, more recently, changes to manager mandates to lower portfolio emission levels. Percentage (%) of market means the Fund's figures as a percentage of the market index figures. Data below is influenced by a number of factors including active managers' investment decisions and improving data quality.

GSF	30 Jun 2021	30 Sept 2021	31 Dec 2021	31 Mar 2022	30 June 2022	30 Sept 2022
Carbon intensity (scope 1 and 2) of GSF global public equities tonnes CO_2e/\$m sales	164	171	175	238	155	160
Carbon intensity (scope 1 and 2) of market index	207	206	189	188	188	189
% of market	79	83	97	127	82	85
Carbon intensity (scope 1, 2, 3) of GSF global public equities tonnes CO_2e/\$m sales	361	411	467	458	336	351
Carbon intensity (scope 1, 2, 3) of market index	464	444	385	374	365	389
% of market	78	93	121	122	92	90

Table 2: Operational GHG emissions

The following table and charts show the Authority's organisational emissions, distinct from that of the investment portfolio. The data is a quantification of GHG emissions that can be attributed to the Authority's operations, covering the year ending June 2022. The Authority outsources its schemes administration, and investment management to Annuitas Management Limited (**AML**). The main function of AML is to provide staff who act in managerial and secretarial roles on behalf of the Authority. AML typically comprises up to 14 staff based in commercial office space.

Due to the impacts that COVID-19 has had on work and travel it is not an accurate representation of the Authority's typical emissions. The Authority will continue to measure and report its emissions on an annual basis and will adopt a base year quantified using an average of two or more years once activities stabilise.

The figures below have been prepared in accordance with the *Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (2004) (GHG Protocol)*. The standard covers the accounting and reporting of seven greenhouse gases covered by the Kyoto Protocol – carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PCFs), sulphur hexafluoride (SF6) and nitrogen trifluoride (NF_3).

Greenhouse Gas Emissions Inventory Summary

GSF	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.	0.0126	0.09%	0.0126	0.000	0.000
Scope 2 Indirect GHG emissions from the generation of purchased energy that the organisation uses.	3.9749	27.04%	3.8636	0.1030	0.0083
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).	10.7147	72.88%	7.6089	0.7751	0.9984
Grand Total	**14.7023**	**100.00%**	**11.4852**	**0.8782**	**1.0066**

Figure 1: GSF 2022 emissions by scope

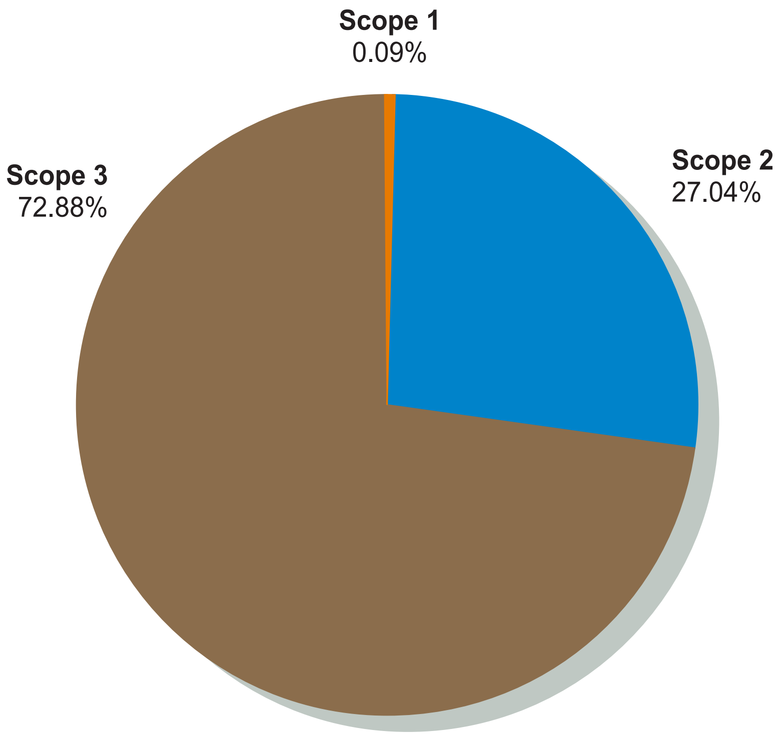
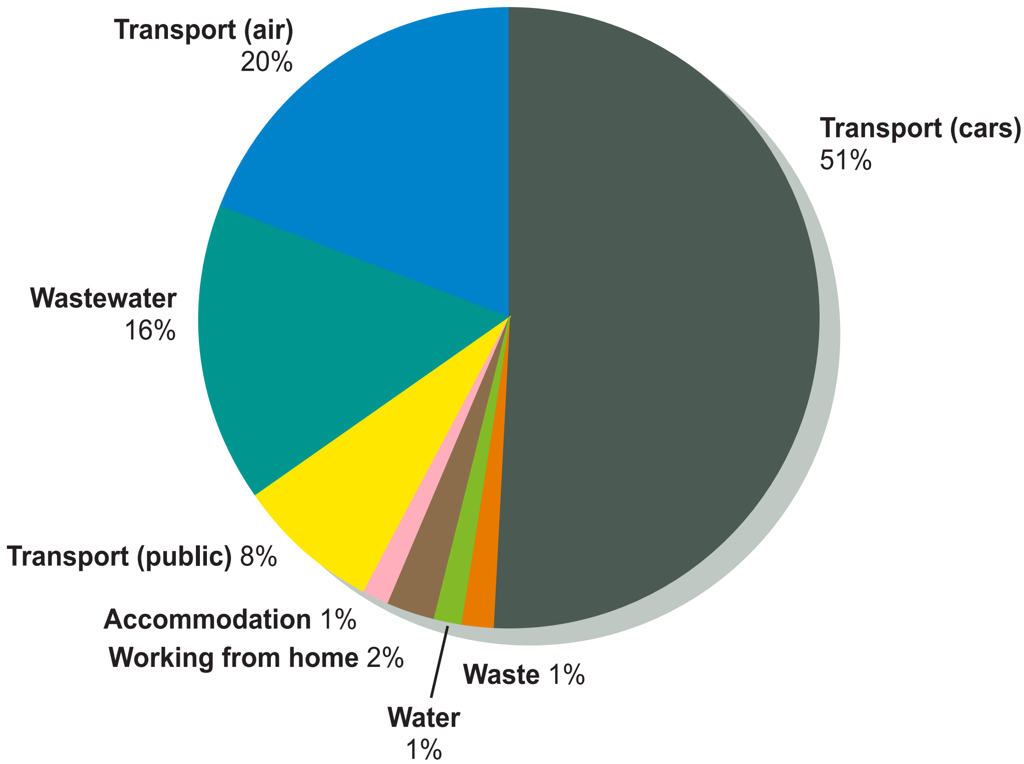


Figure 2: GSF 2022 emissions by category



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TCFD 2022