UNJSPF Office of Investment Management

TCFD Report

2022

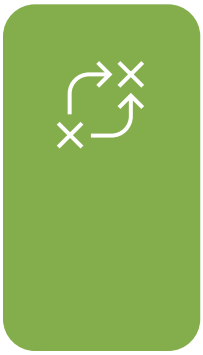
UNJSPF
United Nations Joint
Staff Pension Fund

Table of contents

Executive Summary

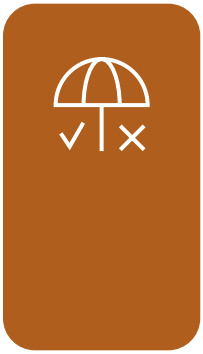
Governance

Climate-related decision making follows a well-structured channel of oversight and culminates with the United Nations Secretary General. The Investments committee advises the Secretary General on all aspects of sustainability integration.



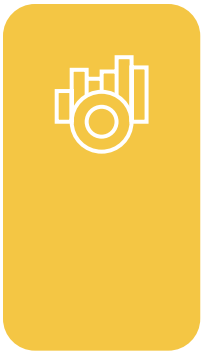
Strategy

OIM recognises the climate risks to the value of the assets of the Fund. It has strategies to reduce these risks by reaching net-zero by 2050. The Fund also follows the Asset Owner Alliance (AOA)'s recommendation to adhere to the Intergovernmental Panel on Climate Change (IPCC) "no and low" overshoot scenario. In addition, OIM integrated climate scenarios in the most recent Asset Liability Management (ALM) study of 2023.



Risk management

The Fund uses in-house methodologies and third parties to identify these risks and uses divestment, investment in transitioning companies and engagement to manage climate risks and take advantage of climate opportunities. In 2022, OIM engaged targeted companies on 81 climate engagement topics.



Metrics and targets

The Fund uses Scopes 1, 2, and 3 emissions metrics to assess the risks. OIM has a target to reduce scope 1 and 2 (GHG emissions) by 40 per cent by 2025 compared to 2019. Asset classes consist of public and private equities, corporate bonds, and real estate equity funds. Following the guidance of the UN-convened Net Zero Asset Owner Alliance (NZAOA), OIM will gradually include other asset classes in their targets. OIM is on track to achieve its 2025 emission reduction target by reducing its financed emissions by 39 per cent in 2022.

INTRODUCTION

The United Nations Joint Staff Pension Fund (UNJSPF) is a defined benefit fund serving the staff of the United Nations and 24 other organizations admitted to membership in the Fund. As such, to ensure the long-term sustainability of its activities, the UN Pension Fund takes a holistic approach in its investment process to achieve its return targets.

Over the years, the UN Joint Staff Pension Fund has built a comprehensive framework for its sustainable activities and is committed to sustainable investing. The UNJSPF aims to be at the forefront of both value preservation and climate action.

As a large and diversified asset owner (also known as a "universal owner"), the Fund acknowledges its exposure to systemic trends affecting the global economy. Therefore, it strives to avoid risks that may compromise long-term economic value and capture investment opportunities. The UN Pension Fund seeks to attain its objectives through a four-pillar framework, detailed in its Sustainable Investment Policy.

In 2021, the Office of Investment Management (OIM) of the UNJSPF published its first Task Force on Climate-Related Financial Disclosures (TCFD) report, outlining its climate strategy. This second report provides an update on the progress achieved by OIM to incorporate further climate considerations in its investment practices.

OIM committed to net zero carbon emissions by 2050 and the transition to a low carbon economy, which is outlined in its position on fossil fuels. OIM believes it is essential to limit global warming to 1.5°C, in line with the Paris Agreement. OIM's membership to the Net-Zero Asset Owner Alliance (NZAOA) shows this commitment. The objective of the following report is to review OIM's alignment with the recommendations made by the TCFD for disclosing the Fund's internal processes, commitments and actions for evaluating and acting on climate change.

Governance

Climate-related decision making at the Office of Investment Management (OIM) follows a well-structured process, which includes oversight by the Secretary-General.

Oversight on sustainability and climate

As outlined in the 2021 report and as per the UNJSPF's Regulations and Rules, the United Nations Secretary-General (SG) has the fiduciary responsibility of the UNJSPF assets. The Representative of the SG for the investment of the UNJPSF assets supervises OIM.

The Pension Board provides observations and suggestions from time to time on the investments policy, including on sustainability and climate. The investment policy is designed after consultation with the Investments Committee (IC), which also advises on sustainability.

Role of Management in sustainable and climate strategy

The Internal Investment Committee (IIC) assists and advises the Representative of the Secretary-General (RSG) and Chief Investment Officer in respect of the investment strategy and asset allocation. The committee also advises and oversees the implementation of the Sustainable Investment Strategy. OIM has strengthened the role of its IIC by frequently including ESG, climate and impact investing topics on the agenda. OIM is responsible for directing climate strategy and executing decisions, including formulating targets. The Board and the Secretary-General are regularly apprised of the working of OIM through the Annual Report, the TCFD Report and climate-related dashboards.

See Appendix for the OIM's governance structure.

Strategy

OIM has a long-term sustainable investment strategy, where both physical and transition risks are included to ultimately deliver value to its beneficiaries. Indeed, OIM fully recognises both physical and transition risks materiality on the value of the Pension Fund's holdings, affecting the stability and growth of the Fund. Climate commitments are therefore an integral part of OIM's sustainable investment approach (see figure 1).

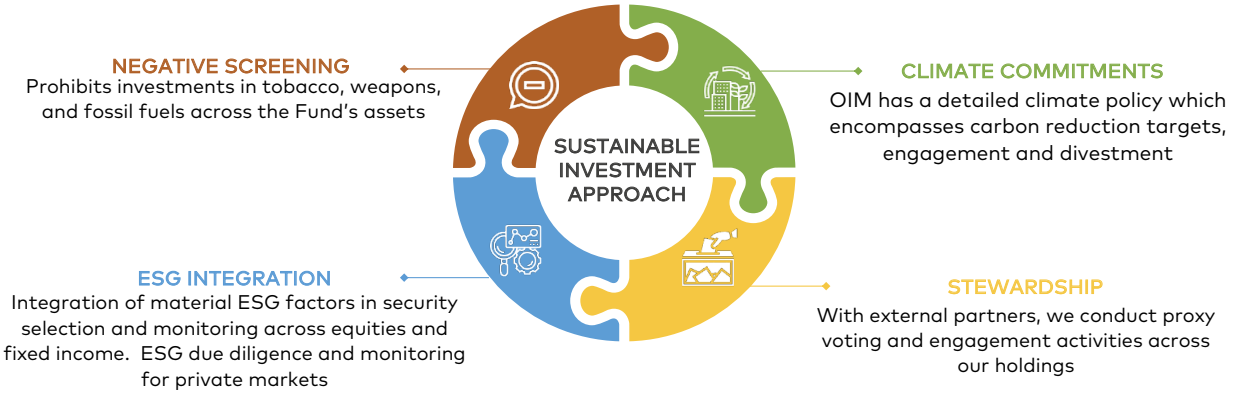


Figure 1 – OIM sustainable investment approach

This conviction and its membership in the Net Zero Asset Owners Alliance (NZAOA) led OIM to have a 1.5°C temperature target, reaching net zero by 2050 and aligning with the Paris Agreement. To better monitor and successfully reach this long-term target, OIM has also set an intermediate target by 2025 (-40 per cent compared to 2019) and is working on its commitment by 2030.

For the first time, OIM included climate considerations into its Asset-Liability Management (ALM) study, considering both climate physical and transition risks and assessing the fund resilience according to different climate scenarios.

OIM also keeps pursuing climate opportunities by investing in green and sustainable bonds and by monitoring its investments in companies developing climate solutions to finance the transition to a low carbon economy.

Identifying climate risks and opportunities

To fulfil its fiduciary duty, a clear understanding of how climate risks and opportunities affect OIM holdings is crucial. Indeed, due to its duties towards its beneficiaries, OIM is a long-term investor and therefore will be vulnerable to systemic disruptions caused by climate change. Climate risks will materialise during its long-term investment horizon.

Climate risks OIM is exposed to are divided into the below two categories:

Physical risks	Transition risks
Chronic and acute extreme weather events that result in higher opex, capex losses and write offs/depreciation; supply chain disruptions and revenue interruptions; and health and safety threats that affect human capital, all of which will affect securities values. Delay in mitigation and abatement efforts exacerbates physical risks.	Disruptions to established ways of production, business models or even market systems as a result of low-carbon economy shocks, leading to raising opex and capex for new systems technology, obsoletion and stranding of old high carbon tech and assets
Water stress floods, heatwaves, wildfires, cold waves, hurricanes, sea level rise	Liability risks, reputational risks, technology transition risks, market adjustment risks and policy risks

Figure 2 – Climate risk exposure

To further integrate climate analysis over the short, medium and long term, OIM's exposure to climate risks has been assessed across multiple scenarios in its Asset-Liability Management (ALM) study. In 2023, OIM conducted the ALM study to review its assets and liabilities to drive decisions for the long-term sustainability of the Fund. Ortec Finance, a prominent global provider of technology and solutions for risk and return management for financial institutions, based in the Netherlands, led the research. Ortec Finance and OIM have assumed that current market valuations have not yet fully priced the impact of changes in the expected future economic growth caused by climate change. On a global level, the impact of transition risk is relatively small, although some countries and sectors will lose, and some will win. On the contrary, physical risk has a broad impact on the economy on a global level, with very few, if any, winners.

How climate risks and opportunities impact the investment strategy

OIM followed the guidance from the NZAOA and built its climate strategy from the assumptions of the mitigation pathways consistent with the 1.5°C scenario. This strategy is characterised by a combination of divestment from heavy emitters, reallocation of capital to the green economy, advocacy and engagement, as well as support for corporate and industry action and public policies to advance the low carbon economy. This strategy is for the short and long term, and subject to amendment as new information about climate risks become available. The impact of climate-related risks and opportunities is integrated in the investment strategy through the Fund's climate commitments: integration, engagement, divestments and disclosures.

Integration

OIM is improving the integration of climate indicators into investment officers' tools to facilitate further climate risks and opportunities considerations into investment decision-making. A specific in-depth assessment of green bonds, linked to their issuer's energy transition strategy is underway to better identify risks and opportunities of these products.

Engagement & Divestment

Divestment and engagement are both core climate-related strategies. OIM has divested from public companies that derive upward of 10 per cent of their revenues from fossil fuels (or 1 per cent from thermal coal) and are not shifting their business models toward a low-carbon, Paris-aligned trajectory. For private markets, OIM applies these fossil fuel exclusions to all new funds. This divestment process is complementary to OIM's engagement strategy. In 2022, OIM engaged target companies (companies which have specific climate engagement programs) on 81 climate engagement topics. Engagement topics included, but were not limited to, setting GHG reduction targets in line with the Paris Agreement and adopting Science Based Targets.

- 26 engagement topics showed progress in the engagement, with new milestones reached in 2022. Out of these engagements, 6 engagements were completed in 2022.
- 47 engagement topics were ongoing in 2022.
- 8 engagement topics showed no progress in 2022.

Engagement provides insights on companies' strategy and operations. It allows for a better understanding of climate opportunities as well as climate risks that companies are facing and how they are mitigating them. It is also a great tool to have a real-world impact and therefore OIM is prioritising dialogue with companies to foster climate action. To ensure that real changes happen and to encourage companies to adjust to a low carbon economy, OIM has defined an escalation process if companies do not achieve the targets that were set by the end of the engagement period. The escalation strategy involves voting in line with universal ownership principles.

Monitoring and reporting

OIM monitors its carbon footprint and remaining fossil fuels exposure, providing internal reporting to management teams on a regular basis. OIM reviews its equity benchmark on a quarterly basis during the rebalancing exercise, whereby transitioning companies are identified. In addition, quarterly climate and ESG reporting are provided to investment teams and integrated into public markets performance reviews. OIM also tracks the fossil fuel exposure for private markets and will expand the carbon coverage of private assets in line with the NZAOA's recommendations over the next few years.

ALM study: measuring the resilience of OIM's investment strategy

Climate change will have a profound impact on pension plans worldwide. Whether it is through physical risks, technological innovations or governmental policies, climate change impacts the economy and the financial markets, as well as life expectancy of members. This in turn affects the performance and sustainability of the Fund. The ALM study fully integrates climate risk in its modelling to help OIM understand risks and opportunities arising from climate change and make informed decisions.

Portfolio Climate Scenarios

The climate scenarios are defined by narratives, which consider both transition and physical climate risks. These include reaching global net zero carbon emissions by 2050, either in an orderly fashion or triggering a financial crisis, or resulting in a failed transition, leading to temperature increases above 1.5°C compared to pre-industrial levels. These narratives differ in terms of responses in policy and technological changes, physical risks, and pricing-in mechanisms. They result in four key climate scenarios, projecting the expected socioeconomic global changes due to climate change: Net-Zero, Net-Zero Financial Crisis, Limited Action and High Warming scenario.

All four scenarios are shaped by various assumptions about how the different climate change-related drivers evolve, including transition and physical risks. These assumptions drive the scenarios' Capital Market Assumptions (CMA). All four climate scenarios were used for sensitivity analyses.

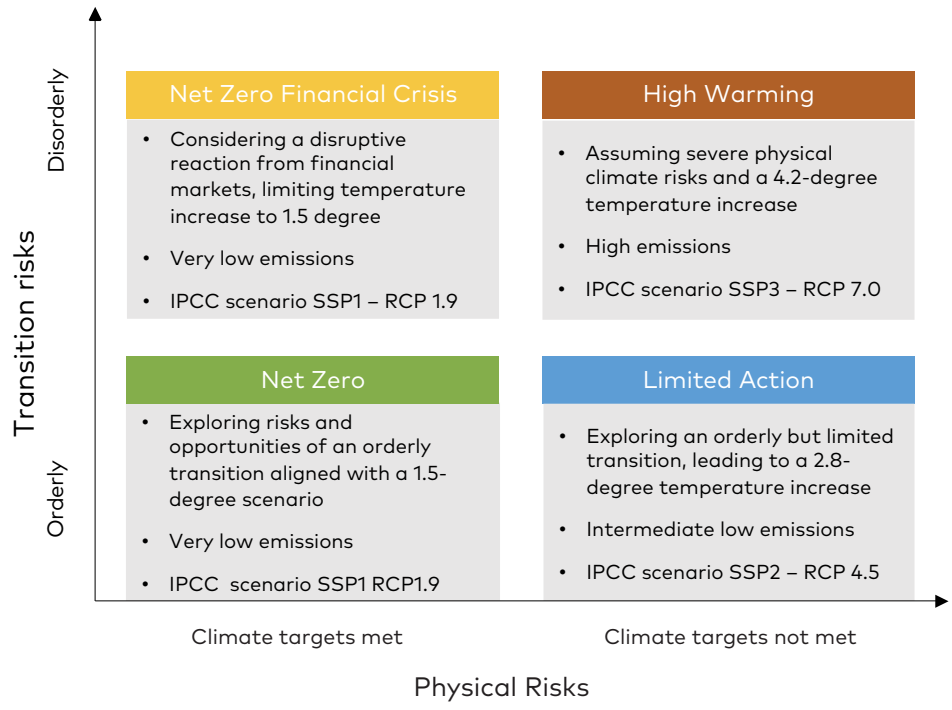


Figure 3: Key Climate Scenarios (Ortec Finance, 2023)

One of the four climate scenarios was also used to design the optimal asset allocation for the Fund (amongst two other scenarios without a specific climate narrative: the Ortec Finance Scenarios and a more positive scenario). The climate scenario OIM used is the Net-Zero Financial Crisis. This scenario strives for global carbon neutrality by 2050 and is aligned with a 1.5°C average temperature increase by 2100. It assumes sudden divestments to align portfolios to the Paris Agreement and have disruptive effects on financial markets with abrupt repricing followed by stranded assets and a sentiment shock. The Net Zero Financial Crisis scenario is used as the negative scenario in the ALM study, the other scenarios are the Ortec Finance Scenario (OFS), for the baseline and a Positive Scenario (POS) (Figure 4).

These scenario assumptions are then integrated into a macroeconomic model: they drive macro-economic changes per region and sector. The economic impacts from the above climate change-related drivers are estimated using an econometrics model that considers interactions between the environment, energy, and the economy. Ortec Finance then uses a stochastic financial model to define climate systemic risk through climate change-adjusted economic and financial outlooks for a 40-year horizon, as well as climate impacts on asset return projection per asset class, country and sector.

Ortec Finance Scenarios (OFS) Baseline – neutral scenario	Net Zero Financial Crisis (NZFC) Negative scenario	Growth picking up Positive scenario (OPS)
Moderate growth outlook Risk premia lower than historical average Rates remain higher than past 2 decades	Sudden divestments to align portfolios to the Paris Agreement goals (net zero 2050 – 2070) have disruptive effects on financial markets with abrupt repricing in the period 2025 – 2030 followed by stranded assets and a sentiment shock	A more optimistic outlook Energy prices drop, causing a steep reduction in inflation This will improve purchasing power of households, and allows central banks to cut rates, which will restart global growth in 2024

Figure 4 – Ortec Finance's stochastic scenarios used for optimization (Ortec Finance, 2023)

Integration of the Net Zero Financial Crisis (NZFC) scenario in Asset-Liability Study

These climate scenarios provide climate-informed risk-return metrics, including in absolute dollar value, that quantify exposure to systemic climate risks and opportunities across asset classes, regions, sectors, and holdings. This enables OIM to consistently integrate climate risk into risk management, strategic asset allocation and asset liability management for investment decision-making. Climate scenarios were fully integrated in:

- The evaluation of the current status;
- The Strategic Asset Allocation (SAA) optimization process. From a financial impact point of view, the NZFC scenario has been used as the negative scenario. It is one of the three stochastic scenario sets that were used in optimizations (see figure 4);
- Stress-testing of the current SAA and recommended portfolios.

Relative to the Ortec Finance Scenarios (OFS), the NZFC scenario is mainly characterized by lower returns and higher inflation levels. When running optimizations, the distribution of allocations across the optimal portfolios for the NZFC scenario shows clear differences with the OFS. Nearly all portfolios allocate substantially more to fixed income products, while the allocation to public equities is comparably small. The latter is driven by the unfavorable equity return expectation, especially for the first ten-years as financial markets are disrupted by sudden divestments. The exposure to real assets ends up being similar or smaller in size than under the OFS and positive scenario. More differences could be observed within these three main groups at the asset class level[1]. The conclusion of the optimizations was combined with sensitivity analyses and qualitative considerations. This resulted in two portfolios being recommended.

Climate Stress test and Sensitivity analysis

In its analysis, Ortec Finance also runs climate change stress tests and compares the performance of the two recommended portfolios to the current SAA under various climate scenarios:

- Baseline (OFS)
- Net Zero
- Net Zero Financial Crisis
- Limited Action
- High Warming

Although it is impossible to predict which scenario would unfold, let alone its financial impact, these climate scenario-driven stress tests provide valuable information into the risks faced by OIM and the robustness of the current and proposed strategies under various economic and financial market conditions. The main purpose of this analysis is to assess that the proposed portfolios do not deteriorate results under various potential climate scenarios.

Ortec Finance found that both proposed portfolios outperform the current SAA in all the analysed climate risk scenarios.

[1] More information on climate scenarios can be found in the Resilience section and in Ortec Finance's methodology in Appendix.

Completed and planned actions

OIM planned the following actions in its 2021 TCFD Report:

- OIM recognised the role the impact of physical risks can have on the stability and growth of UNJSPF and will integrate a broader physical risk analysis by the end of 2023.
- OIM planned to extend the scenario analysis over other major asset classes by 2025.
- OIM planned to extend climate scenario cost and revenue projections into benchmark analysis for fixed income.
- OIM planned to monitor priority sectors emissions reduction targets and focus.

Completed

- In the ALM study conducted with Ortec Finance, which is the basis of the allocation of the investments across asset classes, physical risks were an integral part of the assessment of risks for the investments.
- In the same study, scenario analyses were also included across all asset classes.
- Climate scenarios were applied to fixed income portfolios through the ALM study.
- OIM engaged with 110 companies operating in priority sectors (Utilities, Mining and Materials, Transportation) through its service provider EOS, on 22 different sub-themes including but not limited to climate change, forestry and land use or water.

Planned

- Continue monitoring decarbonization commitments of priority sectors, as well as ongoing engagement, implementing escalation process if needed, and engaging with any new climate laggards.
- Continue to further integrate transition and physical risks into the investment process across asset classes.
- Continue to perform climate stress test to assess the resilience of the Fund.

Risk management

OIM's climate risk management process involves risks assessment, mitigation strategies, and incorporation into its overall risk management process to ensure a convergence of all risk-related issues. OIM uses a mix of in-house methodologies and third-party data sources for divestments, transition assessments, engagement and scenario analysis to mitigate its climate risk.

Assessing risks through metrics and engagement

Carbon footprint and climate-related metrics

OIM assesses its exposure to climate risk by evaluating the total carbon footprint of its portfolio in terms of GHG emissions. To do so, OIM has built an internal dashboard to continuously track the evolution of its portfolio, using MSCI ESG carbon data.

OIM also uses other metrics from MSCI to:

- Evaluate other climate change risk indicators such as fossil fuel exposure, transition risk metrics or green activities,
- Monitor identified investable transitioning companies and potential new candidates.

In addition, OIM uses RepRisk data to monitor reputational risks. It also commonly receives research and brokers reports, used to keep abreast of the latest scientific, political, and regulatory information related to climate change.

Climate engagement

OIM's engagement provider EOS and its other engagement networks (such as Ceres and CA100+) provide regular updates on engagement progress and outcomes concerning climate risk considerations in the investee companies.

Through Federated Hermes EOS' services, OIM's engagement is conducted with companies that form part of OIM public equity and corporate fixed-income holdings and covers climate change issues such as:

- Greenhouse gas emissions,
- Physical risk actions,
- Climate-related governance, lobbying and disclosures.

Environmental topics featured in 28.4 per cent of OIM engagements over 2022 and 72 per cent of environmental engagement was focused on climate change (see figure 5). Engagement with companies allows a better understanding and assessment of companies' climate risks. In 2022, EOS made solid progress in delivering engagement objectives across regions, reaching milestones for about 62 per cent of OIM environmental objectives.

OIM engagement remains focused on companies having a strategy and greenhouse gas reduction targets aligned with the Paris Agreement, together with aligned financial accounts and political lobbying. EOS has started engaging more systematically on physical climate risk at exposed companies, targeting the development of adaptation plans that will bring much needed resilience. OIM service provider will also strengthen its focus on the need for a 'just transition' and address the human rights impacts of climate change.

EOS engaged on climate change issues with companies in carbon intensive sectors, such as Utilities, Transportation and Mining & Materials, on OIM's behalf (see figure 6). OIM is also part of CA100+ initiative. 68 portfolio companies were covered by the initiative engagement in 2022. Moreover, OIM service provider EOS is leading or co-leading CA100+ engagement with several companies in the

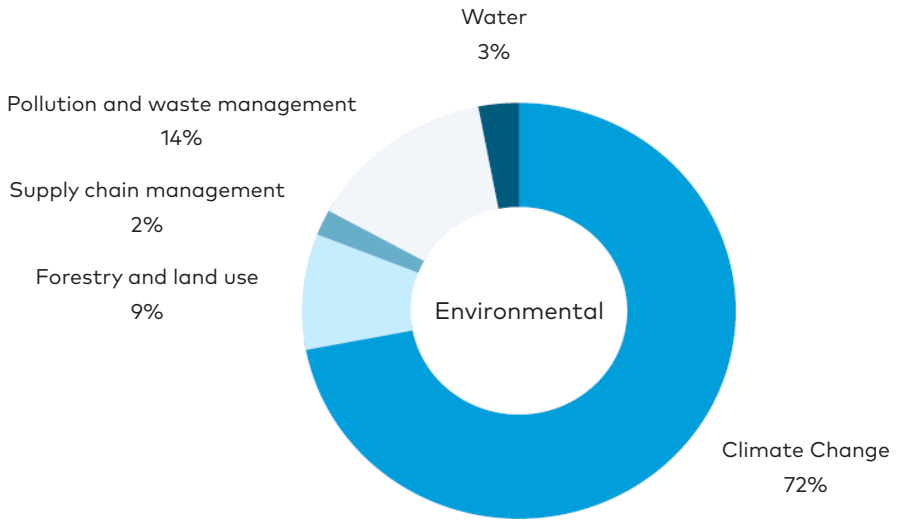


Figure 5 – Environmental engagement theme breakdown in 2022 (EOS, 2022)

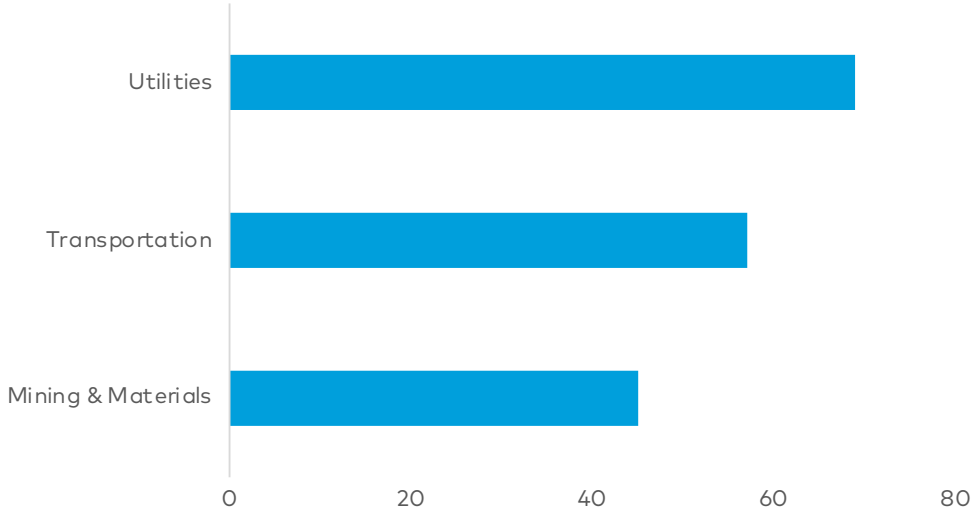


Figure 6 – Number of engagements on climate change in carbon intensive sectors in 2022 (EOS, 2022)

Automobiles, Chemicals, Industrials, Mining & Metals and Transportation sectors (see figure 7).

Even if progress is made via CA100+, companies still need to match their long-term ambitions with comprehensive 1.5°C-aligned short- and medium-term targets and disclose credible strategies to achieve these. For example, only half of the CA100+ focus companies have net-zero targets that include material Scope 3 emissions, only half have disclosed decarbonization strategies, and just 20 per cent have medium-term targets that were assessed by CA100+ as aligned with 1.5°C. EOS will keep engaging on matching long-term commitments with a Paris-aligned strategy and targets, while also supporting action to ensure that published financial accounts and political lobbying are similarly aligned. Indeed, only 23 per cent of companies have committed to aligning their lobbying activities with the Paris Agreement, despite the importance of policy support for achieving company decarbonization.

When tackling carbon intensive companies, investors also must think about financial companies. Banks are significant allocators of capital and serve as financiers for the most carbon-intensive sectors and operators. But they can also play a critical role in supporting their corporate clients in transitioning their operations. EOS is broadening out its climate engagement to include banks, ensuring that their net-zero ambitions match those of asset managers.

Company Name	EOS Sector	Participation
Mercedes-Benz Group	Automobiles	Lead
Bayerische Motoren Werke	Automobiles	Co-lead
Volkswagen	Automobiles	Co-lead
Dow	Chemicals	Co-lead
Walmart	Food, Beverages & Forestry	Co-lead
Hon Hai Precision Industry	Industrials	Co-lead
POSCO Holdings	Mining & Metals	Co-lead
BP	Oil & Gas	Co-lead
Chevron	Oil & Gas	Co-lead
Kinder Morgan	Oil & Gas	Co-lead
PetroChina	Oil & Gas	Co-lead
Petroleos Mexicanos	Oil & Gas	Co-lead
TotalEnergies	Oil & Gas	Co-lead
Enbridge	Oil & Gas	Support
AP Moller - Maersk	Transportation	Co-lead
Stellantis	Transportation	Co-lead
Lockheed Martin	Transportation	Support

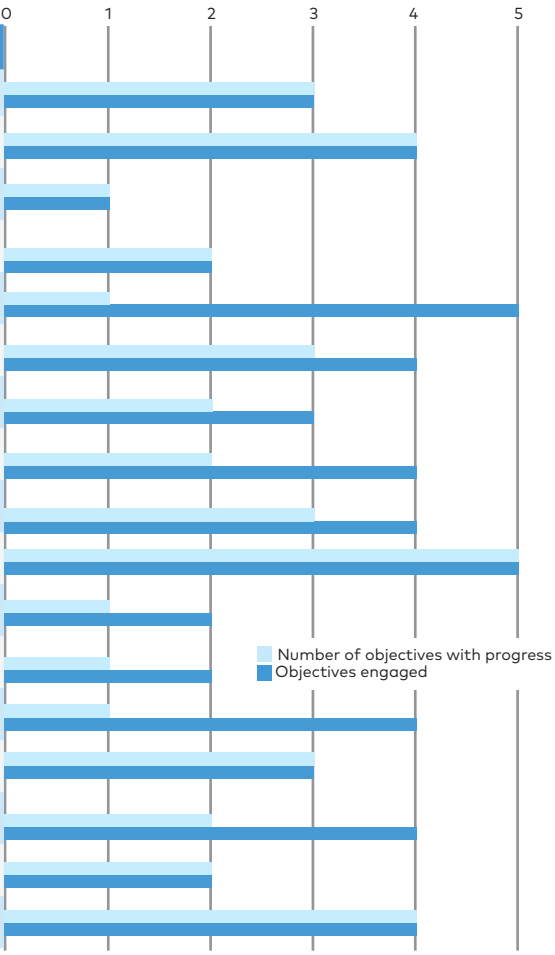


Figure 7 – Progress of environmental objectives for selected CA100+ companies engaged by EOS (EOS, 2022)

Climate risk management

OIM's climate risk mitigation strategy is structured around the following pillars:

- Net zero targets with intermediary reduction thresholds,
- Divestment from fossil fuel companies,
- Engagement with major carbon emitters via Hermes EOS and external networks such as CA100+,
- Regular monitoring of key performance indicators (KPIs) for all portfolio companies.

OIM identifies the most material climate-related risks using its third-party data providers. The quarterly portfolio carbon footprint identifies the most at-risk issuers. The assessment is complemented with a quantitative and qualitative evaluation of company's transition plans and stewardship activities. The Investment Teams adjust their investment strategies to ensure alignment with international climate targets and frameworks such as the Paris Agreement.

OIM uses a series of KPIs to monitor the progress of its climate risk management strategy. These include absolute scope 1 and 2 emissions, intensity of scope 1 and 2 emissions (intensity – tCO2e/$M sales), fossil fuel revenue and MSCI Low-Carbon Transition Score.

OIM monitors KPIs via different reports and dashboards including but not limited to the ESG Footprint Report, Climate Risk Report, Engagement Report and Proxy Voting Report.

Climate risk integration across OIM

Climate risk is integrated through OIM's governance structure. At the highest governance body, the Secretary General and the UNJSPF Pension Board are informed on climate-related metrics through reporting. The Risk and Compliance teams are monitoring sustainable targets and restrictions, including quarterly rebalancing, whereby companies with exposure to fossil fuel, that are not identified as transitioning companies, are excluded.

OIM's current strategy is based on divestment and transitioning companies' assessment, engagement and KPI monitoring as mentioned above. OIM is further building a process to systematically integrate climate-related risks into the organization's overall risk management strategy.

Completed and planned actions

OIM planned following risk management projects in its 2021 TCFD Report:

- Expanding the use of scenario analysis and carbon metrics insights into fixed income and private markets assessment.
- OIM is gradually building a process to systematically integrate transition risk and scenario analysis as a fundamental additional factor into investment decision-making processes.

Completed	Planned
• Scenario analyses were expanded to fixed income and private markets assessment during the ALM study.	• Join climate-related engagement initiatives on sovereign issuers • OIM will continue to assess how to fully integrate systematic climate risks factors into its investment processes.

Metrics and targets

Use of metrics

To assess climate-related risks, OIM measures the carbon footprint (scope 1 and 2) of 60 per cent of the portfolio. The asset classes included in the analysis consist of equities, corporate bonds, and real estate equity funds. OIM tracks scope 3 emissions for the equity portfolio, which includes tracking the priority sectors.

Revenues from climate opportunities and natural capital are monitored in the equity and corporate bond portfolios. OIM invests in labelled bonds[2], including green and sustainable bonds, and tracks its investments therein. By investing in these bonds, OIM can help support sustainable and responsible initiatives to achieve its goal of promoting long-term, sustainable returns for its beneficiaries. OIM's green and sustainable bond investments totalled USD $400 million at the end of 2022.

Within private and public markets, OIM's impact investing strategy focuses on 4 distinct themes addressing several of the Sustainable Development Goals (SDGs), of which 2 pillars are specifically focused on environmental topics: climate and energy; and natural resources (see figure 8).

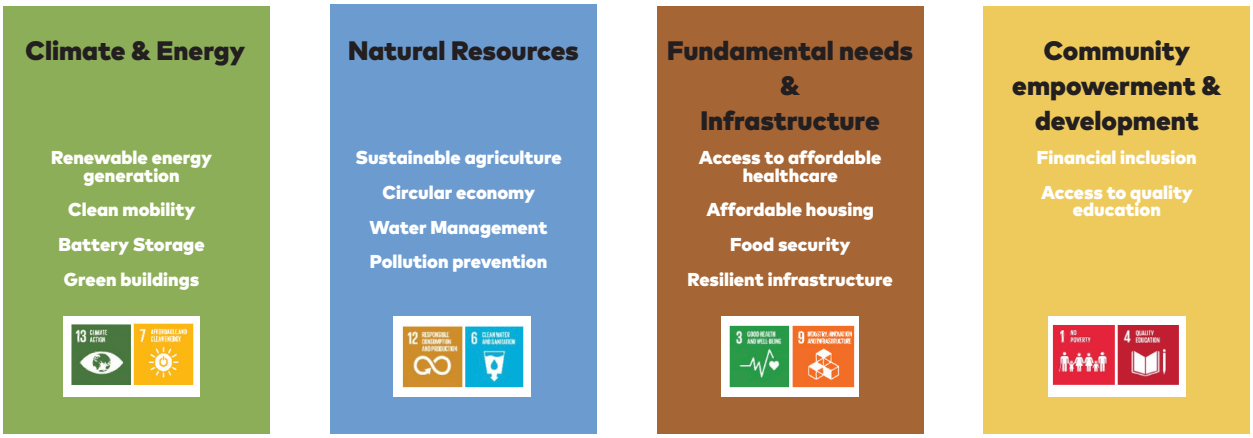


Figure 8 – OIM impact strategy

[2] Labelled bonds are issued by companies, governments, or other entities to finance projects or initiatives that have a positive social or environmental impact, such as renewable energy projects, affordable housing initiatives, or sustainable marine preservation programmes.

Measurement of GHG emissions

The Fund's carbon footprint currently covers scope 1 and 2 emissions from the total equity, corporate bonds portfolios and Real Estate Equity funds, equivalent to 60 per cent of the total portfolio. The absolute carbon footprint decreased by 39 per cent over the past 4 years, with corporate bonds representing a small but growing share[3]. Real Estate Equities has been added to the carbon footprint calculation of 2022. The Fund measures its emissions both in absolute and relative terms.

The indicators disclosed are measured as follows:

- Absolute emissions: The total GHG emissions of a portfolio in tCO2e.
- Economic emission intensity[4]: Absolute emissions divided by the investment volume in USD, expressed in tCO2e/$M invested.

Figure 9 represents the total carbon footprint for Equity, Corporate Debt and Equity Real Estate Funds in 2022.

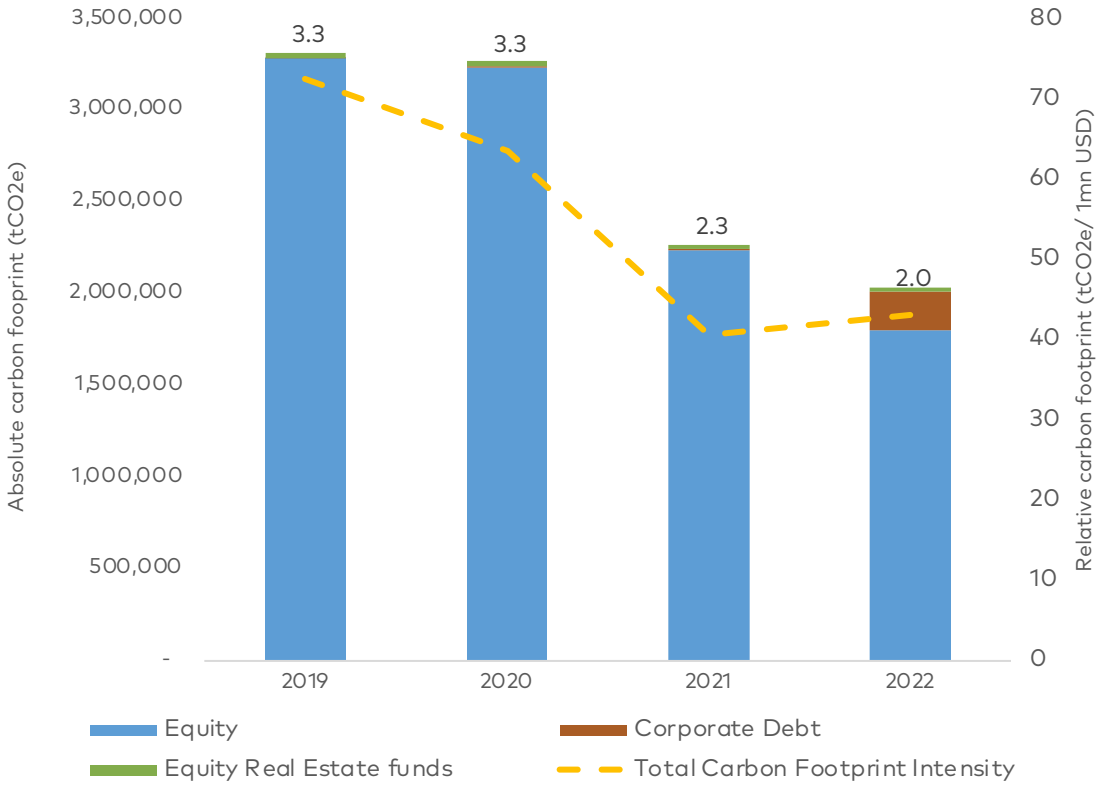


Figure 9 – OIM's portfolio carbon footprint

[3] Due to changes in portfolio allocation, the corporate bonds portfolio grew 8.6x since 2019.

[4] Note that these numbers are currently not adjusted for inflation.

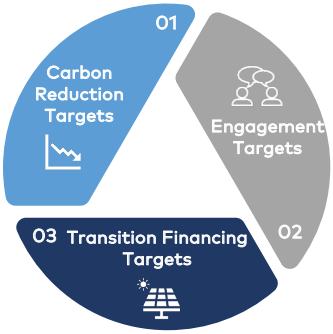
OIM uses MSCI data to calculate scope 1 & 2 emissions across equity and corporate holdings, with a coverage of approximately 100 per cent for both asset classes. For equity real estate funds, OIM uses GRESB. 46 per cent of the Fund's real estate general partners report on their scope 1 & 2 emissions to GRESB. Tenant activities, which are classified under scope 3 emissions, are not covered.

Asset Class	2019	2022	
	MtCO2	MtCO2	Coverage
Equity	3.28	1.80	100%
Corporate Debt	0.00	0.21	100%
Equity Real Estate Funds	0.02	0.02	46%
Total Carbon Footprint	3.31	2.03	60%

Figure 10 – OIM's Portfolio carbon footprint and coverage[5]

Set targets

OIM has set targets across the three pillars of OIM's Net Zero Strategy: carbon emission reduction targets, engagement targets, and financing the transition targets.



OIM has publicly formulated its position on fossil fuels, addressing the coal, oil, and gas sectors[6]. The policy includes divestment from coal mining, applying a threshold of 1 per cent revenues coming from thermal coal mining and divestment from companies with revenues from fossil fuels exceeding 10 per cent across the entire value chain (upstream, midstream, and downstream) and including unconventional fossil fuels (shale oil & gas, oil sands production, unconventional drilling techniques)[7].

OIM has set ambitious scope 1 and 2 emission reduction targets, in line with the recommendations of the NZAOA and TCFD. OIM committed to 29 per cent of emission reduction by 2021, and 40 per cent emission reduction by 2025 from 2019 levels (figure 11). The scope of these targets includes equities, corporate bonds and real estate equity funds. It has already achieved its 2021 targets and is well under way to reach the 2025 targets, with a reduction of 39 per cent to date.

[5] The carbon footprint calculations are based on emission data from MSCI.

[6] https://www.unjspf.org/the-fund/sustainable-investing/environmental-social-and-governance/

[7] Note that green bonds and transitioning companies are still part of our investment universe and fall under specific considerations.

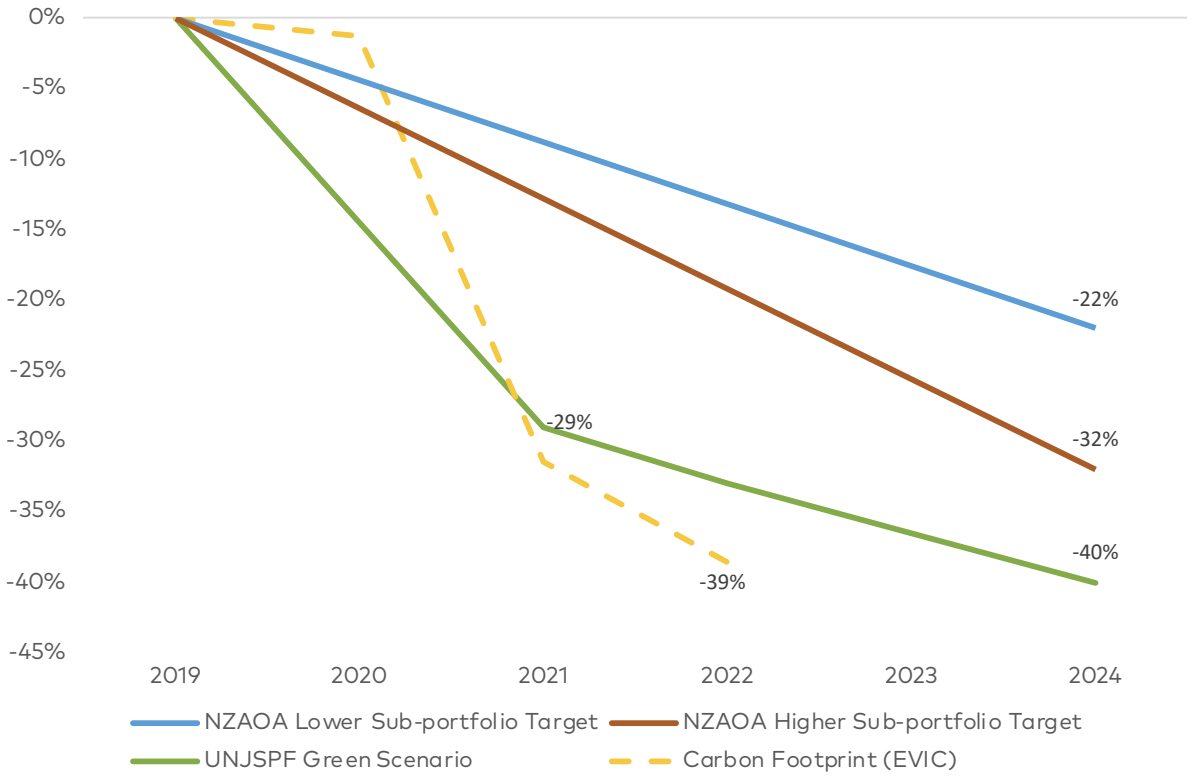


Figure 11 – OIM's sub-portfolio targets

OIM has also set engagement targets. It engages with 82 targeted companies, representing the top carbon emitters of its investment portfolio. Moreover, 72 per cent of its environmental engagements were related to climate change, encouraging carbon disclosure and adoption of science based decarbonization targets. OIM adopted an escalation process for companies that do not reach its engagement targets (voting against board re-election). Engagement targets apply to both external asset managers and corporate engagement actions. In 2022, 21 companies set carbon reduction targets in line with its objectives, and as a result the engagements were successfully closed.

- Asset manager engagement targets include commitment to strengthen the engagement on climate change policies and stewardship practices
- Corporate engagement targets include:
  - » Single engagements contributing to net-zero with delegated execution to an asset manager or external third party through an explicit request or monitoring
  - » Collaborative engagements supported by OIM via CA100+ Investees having set science-based targets (and verified by a reputable organization, like SBTi for example) or having publicly committed to achieving net zero in their business operations before 2050, following an engagement

OIM's objective is to identify and invest in companies that are most effectively managing transition risks and are well positioned for the long term. Using a proprietary model, OIM monitors the current exposure to this theme and identifies, within the fossil fuel industry (as quantified by revenues), companies that are already transitioning their business models and that the Fund should still get exposure to.

Completed and planned actions

OIM planned following metrics and targets related project in the 2021 TFCD Report:

- The evaluation of climate transition risk was completed on OIM's equity holdings, OIM will extend this into additional asset classes.
- OIM defined a timeline for having all asset classes tested against climate risks. Climate proofing of 100 per cent of public equities and corporate bonds took place through its decarbonization approaches shown under the risk management pillar.
- The real estate portfolio was tested at the end of 2022, and other asset classes will undergo testing by 2025.
- OIM committed to pursuing GHG emissions reductions of 40 per cent against 2019 levels by 2025. Short-term portfolio carbon emissions reduction targets have been achieved chiefly through divestment efforts.
- 2025 targets are actively being fulfilled via a combination of portfolio allocation, and engagement with OIM's portfolio companies.

Completed:

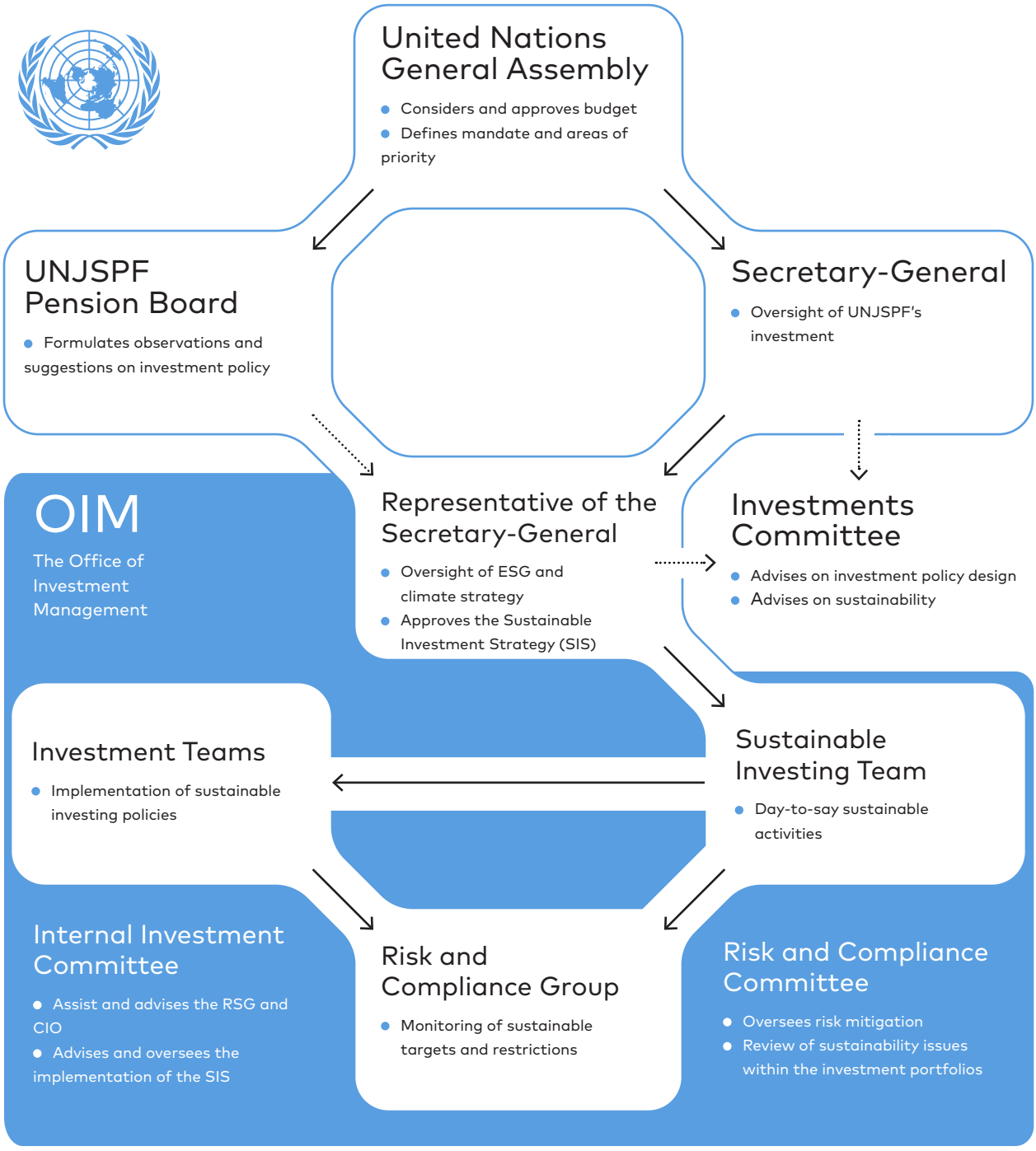
- Through its recent ALM study, OIM integrated climate transition risk across all asset classes through scenario analysis and integration of the Net-Zero pathway.
- The asset class coverage for the 40 per cent emission reduction targets by 2025 was expanded to include the equity real estate fund.
- OIM continued to work with third party providers to achieve its engagement targets for high-risk sectors through both collaborative engagement and third-party provider EOS Hermes. OIM closed 21 engagements by 2022 and added 12 new companies that were identified as high risk.
- OIM is on track to achieve its 2025 carbon emission reduction target, with a reduction of 39 per cent carbon emissions.
- OIM reported its climate solutions investments on a yearly basis to the NZAOA.

Planned:

- Extending coverage of carbon footprint emission measurement to other asset classes, including Sovereign issuers (2023), Direct Private Equity (2024), Private Equity & Infrastructure Funds (2025), and other fixed income asset classes (TBD).
- Extending coverage of the equity real estate fund carbon emissions in line with the Alliance recommendations, using MSCI's financed emissions estimates for the remaining 54 per cent AUM in the real estate portfolio by 2025.
- Increasing investments in climate opportunities through labelled bonds and impact investing.
- OIM will be setting carbon emission reduction targets for direct Private equity by 2025 and Private Equity and Infrastructure funds by 2026 (see timeline in appendix)
- OIM continues to monitor engagement targets for corporates and external managers set by 2025 from a 2021 baseline.

Appendix

I Governance Structure



II Ortec Finance Asset Liablility Management Study

Macroeconomic model & physical risks considerations

The ALM study fully integrates climate risk in the modelling to help the Fund understand risks and opportunities arising from the climate transition and make informed asset and liability decisions. The study is based on four climate narratives. These scenarios stem from narratives that differ in terms of responses in policy and technological changes, physical risks and pricing-in mechanisms. They project the expected socioeconomic global changes due to climate change.

Scenario assumptions are then integrated into a macroeconomic model: they drive macro-economic changes per region and sector. The economic impacts from the above climate change-related drivers are estimated using an econometrics model that considers interactions between the environment, energy, and the economy. The Cambridge Econometrics E3ME model considers worldwide macro-economic interactions and industry supply chain inter-dependencies. The key outputs from the model include country-level impacts on inflation, GDP and GVA per sector.

E3ME model also estimates CO2 emissions from fossil fuel combustion and industrial processes per country and sector. By using a global warming and probability model (based on transition climate response to cumulative carbon emissions), Ortec Finance gets the scenario probability of reaching Paris Agreement goals and global temperature anomalies. In this estimate, high-latitude regions (the Nordics or parts of Canada for example) warm up faster than regions in lower latitudes. This is known as the latitude effect and driven by the disappearance of the Artic ice sheet.

These anomalies are then used in a chronic physical risks model to obtain a yearly GDP impact compared to climate-uninformed baseline. This model relies on the relationship between temperature and GDP, and between climate change and inflation through damages to agriculture and change in food prices. In this estimate, countries close to the equator are more sensitive to gradual physical risks than Northern Europe and Canada. More northern latitudes, however, see a faster rate of change due to the latitude effect. When the transition fails, increasing temperatures will put a significant drag on future economic growth, especially via impact on agricultural productivity and on labour productivity.

In addition to these gradual physical risk considerations, Ortec Finance has also developed a model to predict climate-related extreme weather risks. Leveraging data such as decile-based risk factors for each physical hazard type[8] and location or NOAA's[9] global, ocean and land surface temperature anomalies, the PREDICT Acute Physical Risk model estimates acute physical risk impact on GDP depending on event frequency, direct losses, and economic amplification ratio per hazard type. These forward-looking GDP impacts are relatively worse in less developed countries.

[8] Hazard types refer to meteorological (i.e., hurricane), climatological (i.e., drought), hydrological (i.e., flooding) and geological (i.e., earthquake), though this latter is not considered to be influenced by climate change

[9] The National Oceanic and Atmospheric Administration (NOAA)

Limitations of Ortec Finance's methodology

As with any modelling approach, Ortec Finance's has its limitations, and it seems important to keep them in mind. They can be split into three main categories:

- Climate Modelling, including:
  - Slow onset physical risks are not all captured explicitly but modelled by a non-linear damage function proxy from literature.
  - Economic impacts of land-use are not yet captured.
- Macro-economic modelling, including:
  - Challenges with quality and availability of the input data.
  - The model deals with structural changes based on historical relationships.
- Financial modelling, including:
  - The impacts of climate-related physical risks on volatility are not captured.
  - Physical risk associated with supply side inflation impacts is not yet fully captured.
  - Economic and financial impacts of tipping points, climate-related health impacts, biodiversity loss, geopolitical conflict and migration are not captured as it is really challenging to model them.

III Carbon methodology and target setting timeline

Denominator change in the carbon footprint computation

Since a significant share of corporate bonds has been added to the portfolio, market capitalization is not the most appropriate denominator to compute the carbon footprint anymore. Instead, Enterprise Value including Cash (EVIC) is used as the denominator.

The formula used to calculate the financed emissions of the equity and corporate bond portfolios equates to:

$$\sum_{i=1}^{n} \frac{Ii}{EVICi} \; x \; Ci$$

I: Current value of investment in issuer i
EVIC: Enterprise Value including Cash of issuer i
C: Carbon emissions of issuer i

In line with the Partnership for Carbon Accounting Financials (PCAF)[9] recommendations, EVIC is defined as: the sum of the market capitalization of ordinary shares at fiscal year-end, the market capitalization of preferred shares at fiscal year-end, and the book values of total debt and minorities' interests. No deductions of cash or cash equivalents are made to avoid the possibility of negative enterprise values.

EVIC was selected as the attribution metric for listed equities and corporate bonds by PCAF[10]. The PCAF methodology states the following reasons supporting the use of EVIC as a denominator:

- It includes both equity and debt in line with PCAF attribution principles and other asset classes, ensuring alignment with similar asset classes (e.g., business loans).
- Adoption by the EU TEG and the benchmark regulation.
- Based on company data (market value of equity and total book value of debt), which is generally available to financial institutions and data providers.
- Includes market valuation of equity, which is the most common approach in the financial sector to determine company ownership.
- Avoids issues with negative enterprise values due to the inclusion of cash (not deducting cash as in the regular enterprise value definition) as well as issues with attributing more than 100% of a company's emissions to financial institutions.

Green bonds Carbon Footprint Methodology

Another addition to the corporate bond methodology includes adding a distinct methodology for the calculation of the green bonds carbon footprint. Project-level data has been used to determine the financed emissions.

Equity Real Estate Carbon Footprint Methodology

Following the guidance of the NZAOA, the private real estate carbon footprint must be reported in 2025 and integrated in the Fund's targets in 2026. The scope of the Equity Real Estate Carbon footprint is focused on non-listed real estate assets, listed assets Real Estate Investment Trusts (REITs) are already embedded in the equities carbon footprint. The real estate carbon footprint from non-listed assets represents 1.3 per cent of the Fund's total emissions. Going forward, OIM is planning to cover 100 per

[9] PCAF is a global partnership of financial institutions that work together to develop and implement a harmonized approach to assess and disclose the greenhouse gas (GHG) emissions associated with their loans and investments. https://carbonaccountingfinancials.com/en/

[10] https://carbonaccountingfinancials.com/en/standard#the-global-ghg-accounting-and-reporting-standard-for-the-financial-industry

cent of the emissions from the equity real estate portfolio, OIM is working with MSCI to evaluate non-reported emissions.

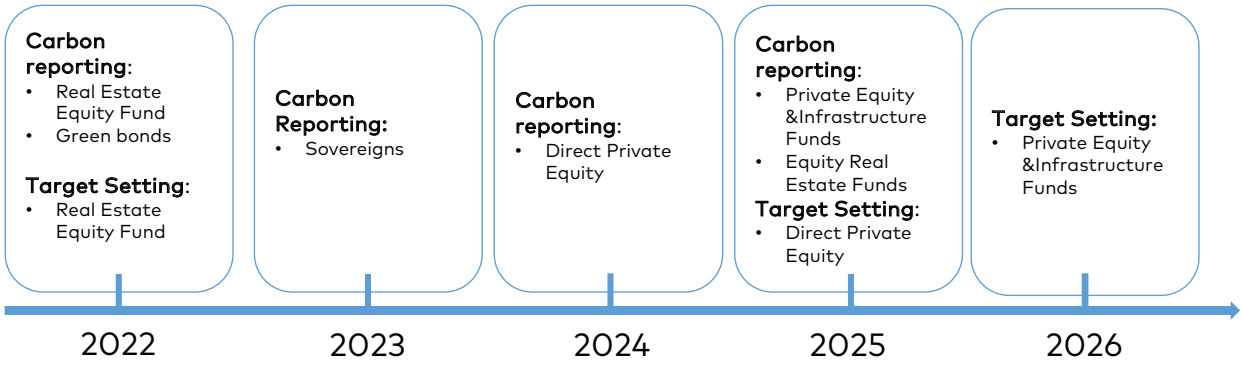
The financed emissions of the real estate portfolio are calculated as follows:

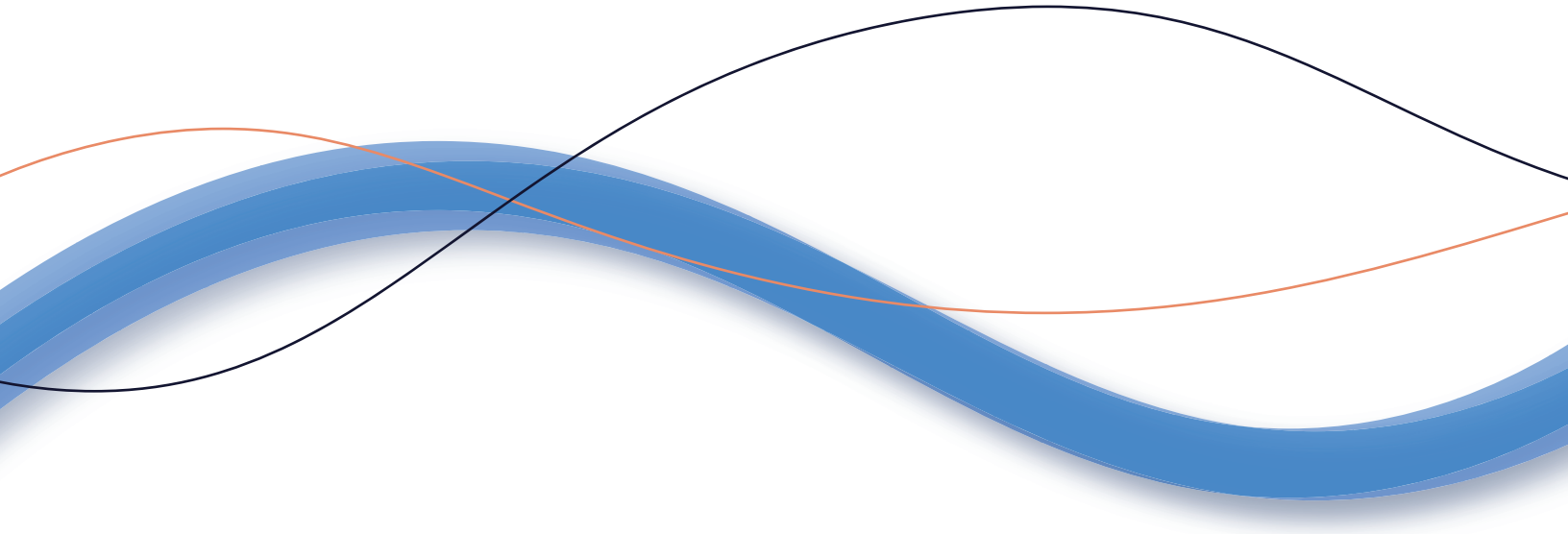
$$\text{Financed Emissions} = \frac{\text{Total Fund GHG emissions}}{\text{Investment ownership percentage*}}$$

*Investment ownership percentage = commitment/fund size

Timeline carbon target setting

OIM is following the recommendations of the NZAOA for carbon emission reporting and target setting for its additional asset classes.





UNJSPF

United Nations Joint
Staff Pension Fund