2023-24
Task Force on Climate-Related Financial Disclosures

OPTrust

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Executive Summary

We are pleased to provide an annual update on OPTrust's management of climate risks and opportunities. OPTrust has a long-standing commitment to managing climate change and other environmental risks and opportunities in our portfolio. From first formally integrating environmental, social and governance (ESG) factors into our investment policies in 2007, to releasing a Climate Change Action Plan in 2018, to launching our Sustainable Investing and Innovation team in 2020, we've continually taken action to strengthen the long-term financial sustainability of the OPSEU Pension Plan. Effective management of these risks and opportunities benefits our stakeholders by promoting stewardship of the natural and human capital essential to sustainable prosperity.

In 2022, we released an **enhanced climate change strategy** and announced the ambition to achieve net-zero emissions in our portfolio, informed by best-practice guidance from the Net-Zero Investment Framework, the recommended approach of the Paris Aligned Asset Owners Initiative.[1]

This strategy ensures OPTrust is embedding climate considerations in the way we do business across all core functions, and we are well on our way in implementing it. Highlights from the past year include:

- **Increasing our portfolio's resilience to climate change:** Our updated climate scenario analysis results show that our investment portfolio is better poised to withstand shocks from climate change than it was three years ago.
- **Achieving our goal to expand coverage for carbon footprinting[2]:** We increased the scope of assets we are footprinting from ~40% in 2022 to over 70%[3] in 2023 and achieved an 11% reduction in financed emissions intensity compared to 2022.
- **Building out more tools to better understand climate risk and opportunity:** We developed enhanced due diligence toolkits to more effectively manage our assets' exposure to climate-related risks and opportunities and their impact on the environment and designed a climate taxonomy for infrastructure and private equity assets. This will allow us to better steward these assets through the low-carbon transition.
- **Making enhancements to our investment strategy:** We strengthened our commitment to enable solutions that address climate change by continuing to build a sustainable incubation investment strategy targeting earlier-stage, climate-themed innovations as a complement to our long-standing renewable energy and green building investments.
- **Continuing improvements to risk management practices:** We enhanced our climate risk governance by implementing a monitoring process that tracks various climate risk metrics across the portfolio.
- **Engaging alongside like-minded investors to manage systemic market risk:** We signed the 2024 Global Investor Statement to Governments on the Climate Crisis, calling on governments to raise their climate ambition in line with the goal of limiting the global temperature rise to 1.5 C, and participated in the Canadian Sustainability Standards Board consultation to advocate for rigorous and high-quality sustainability disclosures for the Canadian market.

Our 2023-24 Disclosure

Governance

OPTrust's Board of Trustees (the Board) is responsible for the overall administration of the OPSEU Pension Plan (the Plan) and the investment of the OPSEU Pension Plan Trust Fund (the Fund). The Board, along with its Investment Committee (IC), oversees Fund performance and approves and receives regular updates on the implementation of OPTrust's investment policies, including its responsible investment policies. These policies encompass the Statement of Responsible Investing Principles (SRIP) and Proxy Voting Guidelines, which outline OPTrust's expectations of portfolio companies and partners regarding climate change and other ESG factors. Additionally, the Board approves and monitors (through the IC) the implementation of OPTrust's 2022 climate change strategy, with regular reporting on: (1) new initiatives or ongoing analyses; (2) insights from research with implications for our investment approach; (3) progress on strategy and metrics; and (4) regulatory or policy changes and annual Fund disclosures.

To strengthen the delivery of our climate change strategy and promote cross-organizational collaboration and accountability, climate priorities for the upcoming fiscal year are embedded into the annual performance objectives of multiple departments, the achievement of which influence compensation. Additionally, the strategy is integrated into OPTrust's five-year strategic plan, overseen by the Board and executed under the leadership of the President and CEO.

The Board delegates responsibility of OPTrust's overall Responsible Investing (RI) program to the Chief Investment Officer (CIO), who oversees its implementation, including delivery of the Fund's climate change strategy. The CIO delegates the day-to-day development and implementation of both to the Sustainable Investing and Innovation (SII) team. In addition, responsibility for the due diligence of specific climate change and other ESG factors is delegated, through our Board-approved SRIP, to the investment deal teams, which is overseen by management-led investment committees.

At the management level, implementation of our climate change strategy sits with two committees:

- **Responsible Investing Committee (RIC):** Members include the CIO and senior managing directors from all asset classes (real estate, private equity, infrastructure, public markets), portfolio construction and SII. The RIC provides strategic direction and implementation guidance for OPTrust's RI program and climate change strategy.
- **Responsible Investing Leaders Group (RLG):** Members include representatives from various corporate functions and all asset classes. RLG members identify, prioritize and execute projects to further our commitments under the climate change strategy and facilitate delivery of the annual departmental objectives mentioned above.

The SII team also provides regular updates (at least quarterly) to the Executive Team on departmental progress for key climate initiatives, and the CEO and CIO report to the Board regularly on major accomplishments throughout the year.

In addition, our Chair of the Board of Trustees from November 2022 to October 2024 works at the Ontario Ministry of the Environment, Conservation and Parks. Several Board members also completed the Institute of Corporate Directors' "Board Oversight of Climate Change" course. In an ongoing effort to improve our governance on the management of climate-related risks, our Board participated in a collaborative peer review engagement on climate change governance practices. The findings from this research will inform how we continue to evolve our structures and processes.

Strategy

The global transition toward a net-zero economy presents significant investment risks and opportunities across asset classes and industries. As countries, industries and companies chart their paths to reduce reliance on fossil fuels, the journey will be shaped by various factors, including consumer behaviour, regulatory shifts, technological advancements and actions taken by corporations and investors. While the specific risks and opportunities climate change poses may vary from investment to investment, overall risks remain consistent with those outlined in previous reports, including in our **2021 TCFD report** (pages 8-10).

The following section provides an update on the implementation of our 2022 climate change strategy, along with commentary on our investment portfolio.

Climate change strategy implementation

Our 2022 climate change strategy outlines 10 key areas of work, or commitments, that OPTrust will advance over the next few years to address the impacts of climate change on our core financial purpose. These 10 cross-organizational commitments are centered on four pillars designed to better integrate climate considerations across OPTrust's investment portfolio and supporting operations: investment strategy and selection, asset management, portfolio analytics, and advocacy and disclosure.

Climate Change Strategy: Summary

Investment Strategy and Selection

- **Asset class diligence:** Integrate climate considerations into due diligence and valuations.
- **Portfolio construction:** Stress-test portfolio using climate scenarios.
- **Allocations:** Develop climate-related taxonomy to track asset allocations and understand implications for investment strategies.

Asset Management

- **Stewardship:** Establish stewardship plans for our highest-risk assets and strategies.
- **Reporting and monitoring:** Integrate climate change into portfolio reporting.
- **Corporate engagement and proxy programs:** Maintain and enhance corporate engagement and proxy programs.

Portfolio Analytics

- **Risk assessment:** Identify sources of high risk across asset classes and strategies.
- **Metrics and targets:** Track exposure to climate risks and opportunities and use identified targets to manage exposures over time.

Advocacy and Disclosure

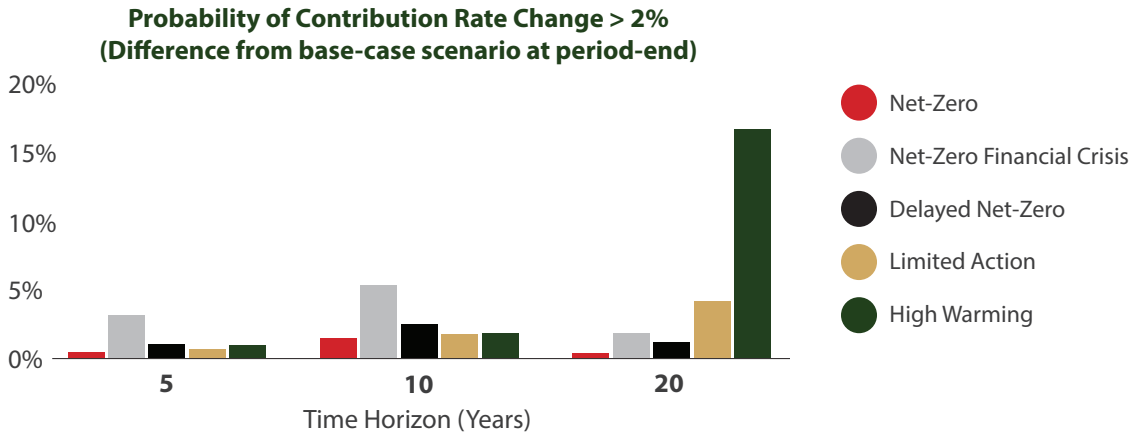
- **Investor collaborations and consultations:** Contribute to investor initiatives that advance policy conversations in Canada or elsewhere.
- **Disclosure:** Enhance internal and external climate reporting.

This year, we advanced the following:

- **Delivered on our commitment to increase the scope of our portfolio's climate footprint** to include nearly all assets for which footprinting is possible (over 70% of the total fund). Although we are still heavily reliant on proxied data, this effort allows us to restate our baseline to reflect our portfolio as accurately as possible given current data availability and industry standards.

- **Updated our climate stress testing via climate scenario analysis** to understand climate change's impact on our portfolio. First conducted in 2021 (see our **discussion paper**), this analysis assesses asset returns and plan sustainability across various global warming scenarios[4] over five-, 10- and 20-year horizons. The results indicate that, compared to the base case, we can generally expect slower growth and higher inflation in the U.S. and Canada due to the transition to a lower-carbon economy aimed at mitigating global warming. Scenarios where the global temperature rise is somewhat contained could lead to more immediate disruptions in financial markets in the short- to medium-term, creating higher funding risk[5] in the five- to 10-year horizon. In contrast, scenarios involving higher levels of global warming present heightened funding risks over the 20-year horizon. The updated findings are less severe than those observed three years ago. Among many potential factors, this improvement likely reflects improved modelling, a more climate-aware global stance (i.e. increased penetration of renewable energy around the world and tougher clean energy policies) and OPTrust's strengthened funded ratio, underscoring the benefits of building financial resilience. This top-down, Total Portfolio-based approach complements other work underway in the organization's climate change strategy that focuses more on the bottom-up, asset class-driven responses to climate change. This work includes more robust due diligence, improved risk mapping through the development of a bespoke taxonomy and metrics and targets to guide our climate work going forward.

Figure 1: Impact on our funding risk under various global warming scenarios (2024)



- **Gathered new information under our climate metrics framework,** allowing us to progressively build a comprehensive understanding of climate-related risks and opportunities across our portfolio. While emissions measurement is a core component, we are capturing a broader set of data points that encompass various dimensions of climate impact, including transition risks, physical risks, regulatory shifts and the resilience of assets under different climate scenarios (see our **discussion paper**). By tracking these multiple dimensions, we are establishing a foundation for a more holistic climate evaluation that moves beyond emissions alone. This layered approach both enables us to assess immediate risks and opportunities while also equipping us to adapt and refine our strategy as climate dynamics and market conditions evolve.
- **Developing a taxonomy[6] for infrastructure and private equity assets**, which will be tested and implemented in the coming months. This assessment focuses on each asset's exposure to market, regulatory and physical risks related to climate change, as well as on its ability to address these risks. This approach will allow us to track investment allocations more comprehensively from a climate perspective and enhance our understanding of how our portfolio is positioned for the green transition, along with any related implications for investment strategies. In 2025, we plan to expand this framework to include other asset classes.

Recent progress

- Increased scope of carbon footprint and reduced emissions intensity
- Updated climate stress testing
- Developed new diligence and risk management tools
- Increased allocation to climate solutions
- Advocated for improved climate management and standards

- **Strengthened investment teams' due diligence process** to more effectively manage our assets' exposure to climate-related risks and opportunities and their impact on the environment. This enhanced approach incorporates a thorough assessment of climate-related factors at the early stages of the investment process, ensuring we evaluate each asset's vulnerability to transition and physical climate risks, its environmental footprint and its ability to play an active part in the low-carbon transition. By integrating these insights into our decision-making, we can more precisely gauge an asset's resilience and readiness for a low-carbon future, better positioning our portfolio for long-term stability. This rigorous due diligence helps mitigate climate risks and aligns with our commitment to responsible investment and environmental stewardship. Further, our external manager due diligence includes criteria on how the managers evaluate, monitor and report climate risks in their investments, including any initiatives to track emissions data and set decarbonization targets.
- **Continued to allocate to climate solutions:** In 2024, OPTrust strengthened its commitment to climate-focused investments by continuing to build out the SII team's early-stage, externally managed portfolio. Through partnerships with leading climate and energy transition-focused investors, OPTrust has gained exposure to new technologies in clean energy, sustainable transportation, industrial transformation and food and agriculture. These early-stage fund commitments complement the total fund's direct investing activities, providing insights into potential market disruptors and positioning OPTrust to capitalize on the opportunities presented by the energy transition over the coming decade, as well as enabling us to support innovative technologies that address climate change. In our infrastructure and real estate portfolios, we have long invested in renewable energy platforms and environmentally certified buildings to ensure that our assets are poised to benefit from the climate transition, in addition to providing a path to a sustainable future. For more information on our climate-focused investments, please see **our progress report on climate change**.

- **Collaborated with like-minded investors and implemented our proxy voting program:** OPTrust may be a relatively small investor, but we are committed to continue making a meaningful contribution to global initiatives. We are actively engaged in several investor climate collaborations, including Climate Action 100+, Ceres and its net-zero working groups, the UN Principles for Responsible Investment's private equity advisory committee, SHARE, CDP, Canadian Coalition for Good Governance, Thinking Ahead Institute, Transition Pathway Initiative and the International Center for Pension Management. This year we continued our support of The Investor Agenda's advocacy work by signing the 2024 Global Investor Statement to Governments on the Climate Crisis, calling on governments to raise their climate ambition in line with the goal of limiting global temperature rise to 1.5 C. We continue to vote proxies as an active owner, in line with our climate-informed **Proxy Voting Guidelines**. We support resolutions requesting climate disclosures (including TCFD), resolutions encouraging companies to have climate-competent boards with oversight of climate risk and reasonable proposals calling for companies to improve oversight and management of climate risks, including setting clear performance targets aligned with the Paris Agreement's goals. Given our small holdings of voteable securities, our execution of these climate guidelines is less prevalent, and proxy voting is a small lever in our overall approach.
- **Engaged with policymakers to promote transparency on climate in capital markets:** This year, we participated in the Canadian Sustainability Standards Board consultation on its proposed Canadian Sustainability Disclosure Standards, submitting our own response as well as a joint one with several Canadian peer plans. We advocated for alignment with the global International Sustainability Standards Board standards to ensure high quality and comparable disclosures on climate and other material sustainability issues in the capital markets.

Investment portfolio commentary

OPTrust's investment strategy, Member-Driven Investing (MDI), is our application of a Total Portfolio Approach, in which we strive to deliver the total return needed, minus costs, to keep the Plan sustainable without taking excessive risk. This differs from other investment approaches where management is focused on outperforming benchmarks. At OPTrust, investment returns account for more than 70% of the benefits we pay to members when they retire, so balancing return expectations against risks ensures we have sufficient assets to pay pensions now and in the future.

With MDI, we allocate capital to where we have the greatest potential for value creation — in illiquid assets (e.g. private markets, including real estate, private equity and infrastructure) — and augment this with liquid strategies to complete our desired total fund risk-return profile.

The energy transition, marked by a fundamental shift in how energy is produced and consumed globally, is anticipated to require the largest capital outlay in recent history, creating compelling long-term investment opportunities across asset classes and sectors.

Our public markets portfolio largely comprises passive public equity instruments (e.g. derivative instruments), currencies, commodities, hedge funds and government bonds versus cash equity positions. As a result, typical climate measurement tools (e.g. carbon footprinting) either do not apply, or it is difficult to engage with issuers (e.g. government bonds and derivative instruments, which do not confer voting rights). While we undertake climate due diligence where possible and capture carbon footprint data where available, our focus is on collaborating with like-minded investors to engage with regulators and high-emitting companies to manage the systemic risk in the public market.

As such, we are initially focusing on climate management and emissions reduction in our illiquid portfolios. While much of this is managed externally through funds in low-emitting industries, as outlined in our 2022-23 TCFD report, we continue to engage with those managers to get actual emissions data on their portfolios. For the remaining investments where climate risk is high, and where we have meaningful direct ownership, we continue to support those companies in their transition to lower-carbon operations. We also work to identify, manage and mitigate other climate risks — such as extreme weather events and climate impacts on real estate and infrastructure — to build resilience across our portfolio.

Looking ahead, we seek to position our portfolio to best capitalize on energy transition opportunities, as decarbonization, geopolitical risks and the need to power new technologies can impact the supply of energy and drive investment returns. The energy transition, marked by a fundamental shift in how energy is produced and consumed globally, is anticipated to require the largest capital outlay in recent history, creating compelling long-term investment opportunities across asset classes and sectors. OPTrust already has significant exposure to climate-friendly investments (e.g. renewables), across asset classes, which we will further define in our taxonomy. We plan to grow our exposure to climate-friendly investments, while continuing to strengthen the total fund via assets and industries in transition. In addition, our sustainable incubation investment strategy allocates capital to companies whose innovations play leading roles in clean technology, transportation, agriculture and resource efficiency.

Risk Management

OPTrust's investment strategy is founded on robust risk management practices and a risk-conscious culture. We use a combination of bottom-up and top-down approaches to identify and manage climate-related risks. As climate risk is always evolving, we strive to continually improve our processes while investing in new approaches to enable us to develop a more comprehensive view on how climate change could impact our portfolio. Below is an update on our recent activities, both from the top-down and bottom-up perspective.

Top-down climate risk analysis

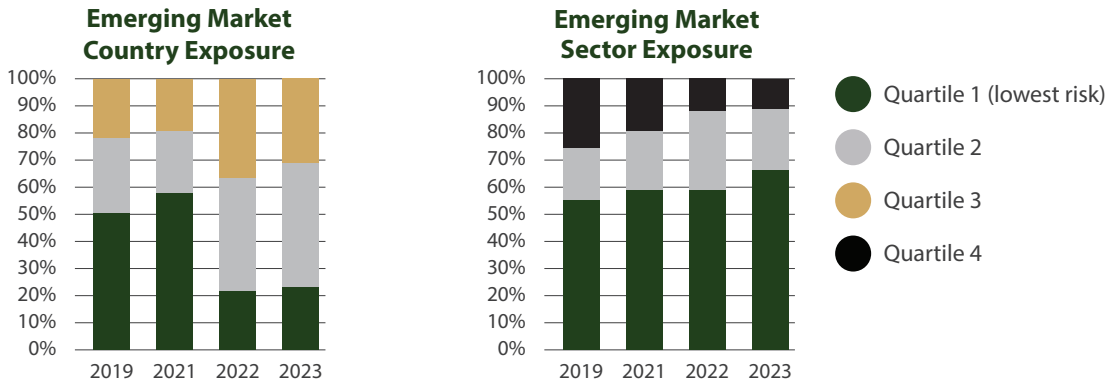
From a top-down perspective, OPTrust considers both the country and sector allocation across the total fund, along with scenario analysis to understand climate risk exposures.

To understand country-level exposure, OPTrust uses the **University of Notre Dame Global Adaptation Index**, which ranks a country's exposure to climate risks on two dimensions: vulnerability to climate disruptions (e.g. exposure, adaptive capacity) and economic readiness (e.g. leveraging public and private capital for adaptive actions).

At the sector level, OPTrust references a climate risk intensity score that is estimated using the Scope 1 & 2 emissions of over 10,000 public companies (including estimates of Scope 3) to understand the relative climate risk across sub-industries.

OPTrust evaluates these top-down measures to monitor trends in total fund allocations year-over-year. The charts below display an illustrative example of country and sector exposures in emerging market equity portfolios. OPTrust's Investment Risk team performs this analysis across public and private market exposures to better understand the impacts of national climate policies at the country level and identify strategies that are comparatively more allocated to high climate risk sectors. While this analysis is still in its early stages, it enables us to better understand a portfolio's climate profile and engage with our external managers on the approach they are taking to address climate change. It also has the potential to inform risk limits in the future across asset classes.

Figure 2: Emerging market country and sector risk exposure (2019-23)



Note 1: Country risk scores are an aggregate of readiness and vulnerability factor exposures from 187 countries and categorized across four quartiles.

Note 2: Exposures are expressed on the y-axis as a % of NAV allocated to Emerging Market strategies (i.e. in 2019, ~50% of emerging market country exposures were in lowest risk countries).

In 2024, OPTrust undertook research to evaluate the climate targets and ambitions of all G7 countries to understand how much progress has been made and what still needs to be done to reach 2030 national commitments. The analysis considered multiple factors, including each country's carbon emission reduction trajectory, power sector transition (e.g. year-over-year renewable power generation), climate policies (including tariffs), grid access and green bond issuances. This research, anticipated to be completed in FY25, provides an insightful view of climate progress across the globe and will help us inform thinking on potential country or sector risk limits over time.

Bottom-up climate risk analysis

OPTrust has significantly advanced our ability to identify and monitor climate risks at the organization level. In 2024, we began operationalizing several climate risk initiatives started in 2023. In addition to advancing our taxonomy, other initiatives include:

- **Climate due diligence:** In addition to the enhanced due diligence performed by deal teams, as outlined in the Strategy section, our Investment Risk team implemented a review process for larger direct deals where the asset operates within a climate-relevant sector[7] . The scope of climate risk due diligence includes a review of climate risks at the sectoral level, transition risks, physical risks and organization-specific climate governance practices. The Chief Risk Officer reviews the outputs of this due diligence analysis before deals can be approved.
- **Climate risk reporting:** In 2024, we also began implementing a climate risk report for OPTrust's public market exposures. The report serves as a tool to track climate risk exposures across multiple metrics, including carbon emissions and data quality, transition preparedness, climate commitments and Climate Value-at-Risk, among others. The report provides an in-depth assessment of where various climate risks exist at the individual public market company level. While the climate taxonomy described earlier categorizes our holdings in various risk buckets to enable stewardship, the climate risk report identifies those holdings where individual climate risk factors are highest. The climate risk report will be expanded to private market exposures in 2025. This report will be regularly reviewed by the Chief Risk Officer to better understand how climate risks are evolving in the portfolio over time.

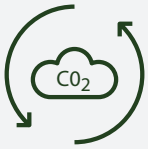
Metrics and Targets

OPTrust's climate metrics framework

In 2023, we designed a bottom-up metrics framework for tracking and managing climate considerations across our portfolio.

The framework organizes metrics into five categories, as outlined below, that enable us to classify climate information in a decision-useful way. This framework recognizes that while carbon emissions are currently the accepted proxy for investors' exposure to risks associated with the transition to a lower-carbon economy, this metric in isolation paints an incomplete picture of climate risk and opportunity.

As such, tracking and managing a broader set of metrics will provide our investment teams with a more comprehensive view of climate factors and better facilitate measuring progress over time.



Carbon Exposure

Calculating the portfolio's GHG footprint to understand exposure to transition risks.

Climate Exposure

Tracking allocations to high-risk sectors and geographies (e.g. oil and gas, flood-prone regions).

Stewardship

Tracking engagement activities with companies and external managers to promote their climate resiliency.

Solution

Tracking capital allocations that support climate mitigation/ adaptation efforts (e.g. renewables, green bonds, etc.).

Process

Tracking efforts to improve data coverage and quality across the portfolio.

Emissions attributable to our investment portfolio

In 2022, we set an ambition to achieve a net-zero emissions portfolio by 2050 to align our investments with global decarbonization over that timeframe and position the Fund for pension sustainability over the long term. In 2023, we set the foundation for working towards that objective by completing our first comprehensive carbon footprint to establish a baseline level of emissions on our end-of-year 2022 portfolio, the results of which are detailed in our **2022-23 TCFD report**. In that report, we also set an interim emissions intensity reduction target of 30%[8] by 2030.

To track our progress towards this emission reduction target, we calculate our emissions annually on our end-of-year portfolio. Calculating our 2023 footprint marks the second year conducting this exercise. This year, we have enhanced our footprinting process by improving our data coverage and quality. The footprint results, methodology and considerations are provided below, alongside details of our methodological enhancements.

Our portfolio carbon footprint

PwC has provided limited assurance on select environmental KPIs, marked with a check mark below. The reporting scope, definitions and methodology are outlined in the Methodology and Scope sections below. See the appendix (page 20) for PwC's limited assurance report in its entirety.

Additional details and considerations relating to these metrics and calculations are noted in the following sections.

Total fund carbon footprint:

Portfolio	Value of assets analyzed ($M)	Financed emissions (tCO_2e)	Emissions intensity (tCO_2e/$M invested)	Weighted average PCAF data quality score
Public Markets	1,540	108,520 ✓	70.5 ✓	2
Private Markets	11,145	780,027 ✓	70.0 ✓	3
Total	**12,685**	**888,547** ✓	**70.0** ✓	**3**

Our government bond portfolio was footprinted for the first time this year:

Emissions category[9]	Financed emissions (tCO_2e)	Emissions intensity (tCO_2e/$M invested)
Production (excl. LULUCF)	1,358,306	171.8
Production (incl. LULUCF)	1,289,821	163.2
Consumption emissions	792,853	281.0

Methodology

In line with industry best practice, our methodological approach is informed by the Partnership for Carbon Accounting Financials (PCAF) Global GHG Accounting & Reporting Standard. The PCAF-financed emissions methodology attributes an asset's emissions on a financial exposure and ownership basis that facilitates consistent accounting across the many asset classes where OPTrust invests. The emissions intensity metric normalizes financed emissions based on portfolio size and enables comparison of our portfolio's carbon footprint over time.

Reported emissions are in terms of tonnes of carbon dioxide equivalent (tCO_2e) and include Scope 1 and Scope 2 emissions of the underlying assets based on asset-reported data where available, supplemented with proxied data where the assets themselves do not report. Scope 1 emissions include all direct emissions from the activities of an organization under their control, while Scope 2 emissions are associated with energy the organization purchases and uses.

Scope 3 emissions, which encompass other indirect emissions throughout an organization's value chain, are currently excluded from the footprint scope due to the early stage and unreliability of associated methodologies and data, particularly in the private markets where we have significant allocations and for which we require proxies to calculate much of these portfolios' emissions. We will look to incorporate Scope 3 emissions into our measurement and reporting as data availability and quality improve.

Our investments' emissions are attributed to OPTrust as follows:

$$\textbf{OPTrust's financed emissions} = \sum_{i}^{n} \frac{\textit{OPTrust's exposure to Asset}_i}{\textit{Asset}_i\textit{'s total value}} \times \textit{Asset}_i\textit{'s emissions}$$

The asset total values used in the equation above are specific to asset classes:

Asset class	Asset total value
Public markets equities and debt	Enterprise Value Including Cash (EVIC)
Private equity and infrastructure	Enterprise Value (EV)
Real estate	Gross Asset Value (GAV)

To provide emissions transparency on as much of the total fund as possible, our sovereign and provincial bond investments were also footprinted for the first time this year. However, these emissions cannot be aggregated with the rest of the portfolio's carbon footprint due to their substantially different calculation methodologies and double-counting with respect to asset-level emissions. Given the significant data uncertainty and lack of industry alignment regarding the accounting of land use, land-use change and forestry (LULUCF) emissions, we report (per PCAF guidance) our financed production emissions both including and excluding LULUCF emissions. The current emissions accounting methodology does not factor in distinct emissions profiles for green bonds, of which we hold $653 million.

Scope

The following assets are included in our 2023 portfolio carbon footprint. Assets that were footprinted and added to scope for the first time in 2023 are denoted by an asterisk (*).

Public markets assets	• Public equity: Long-only cash equity strategies, index total return swap • Public credit
Private markets assets	• Internally managed investments in private equity, infrastructure and real estate[10] • Externally managed fund investments in private equity, infrastructure and real estate*

The public equity portfolio includes a total return swap[11] (TRS) with a notional value of $830 million and an emissions intensity of 13.4 tCO_2e/$M invested.

Our methodology is based on leading industry guidance and market practice from peer organizations. We endeavour to measure and report emissions for all investments in our portfolio for which a footprinting methodology is established and emissions data are available and of sufficiently high quality.

This year, we have improved our coverage by expanding our footprinting capabilities to our externally managed fund investments in private equity, infrastructure and real estate, bringing our total fund coverage to 46%. Factoring in our newly footprinted government bonds (whose emissions are calculated and reported separately), our emissions disclosures now cover 72% of our total fund.

A significant portion of our total fund is invested in strategies (such as complex derivatives strategies, commodities, currencies and long-short strategies) where emissions data are not available. Moreover, particularly in our private markets investments, data availability and quality are largely dependent on our degree of ownership in each investment and the climate materiality of the asset.

Further, our emissions coverage within certain asset classes is contingent on the existence of footprinting methodology and availability of data for given strategies. For example, our externally managed real estate fund portfolio contains a breadth of strategies, including development strategies and secondaries funds, for which obtaining emissions data is not currently possible. We obtained as much emissions data as possible from our external fund managers and were able to footprint over 45% of that portfolio.

As the emissions data landscape matures and we continue to work with our data providers and investment partners to secure additional and better-quality data, we intend to improve our portfolio emissions coverage wherever possible.

Data quality

Emissions data is graded on its quality according to PCAF's data quality scoring framework that ranks emissions from Score 1 (highest quality) to Score 5 (lowest quality):

Data quality score	Description
1	Audited asset-reported data
2	Unaudited asset-reported data
3	Proxied data based on asset activity levels and sector averages
4	Proxied data based on asset revenues and sector averages
5	Internally estimated proxied data

At a portfolio level, we calculate an average of the data quality scores (weighted by the financed emissions).

We use the most current emissions data available. However, since emissions reporting can significantly lag financial reporting (especially in private markets), some emissions data corresponds to previous fiscal years.

Caveats and considerations

Carbon footprinting has emerged as the preeminent climate risk metric. While it is an important tool in quantifying our portfolio's carbon risk exposure, it is important to keep in mind the many limitations of emissions accounting and the challenges the investment industry faces in interpreting and using this data:

- Emissions are a backward-looking indicator of transition risk that may not reflect an asset's overall exposure to climate risk or future climate management.
- Emissions metrics can be challenging to contextualize in the absence of standardized industry benchmarks and the many unknowns around the global transition to net zero.
- Methodologies are still evolving. While PCAF has emerged as a leading standard, many financial instruments and strategies that we hold in our portfolios are still not covered by the guidance.
- Data quality is not yet on par with financial accounting. Emissions figures can be difficult to verify and, in many asset classes and markets, are heavily proxy-based (i.e. based on sector averages rather than individual assets' actual performance) in the absence of self-reported data from portfolio assets. The data should therefore be viewed as directional.
- While carbon intensity metrics can help enable comparison over time even as our assets grow, they can be prone to fluctuations from variables, such as exchange rates and valuations, that are out of our control and do not impact actual climate risk or emissions performance.

We strive for transparency around how these challenges affect our footprint and are complementing this analysis with other forms of climate risk measurement to build a more fulsome view of our portfolio's climate profile. We continue to monitor developments in industry guidance and best practices, with the aim of enhancing our data quality and disclosures on an ongoing basis.

Our climate targets

In our 2022-23 TCFD report, we established a set of interim climate targets to guide our progression towards our net zero by 2050 ambition and enhance climate risk management more broadly. Please refer to the targets section of that report (page 15-16) for the full set and description of those targets. We will report on the achievement of the 2025 process and stewardship targets in our 2025-26 TCFD report.

Our interim emissions target was to reduce our emissions intensity by 30% by 2030 against a 2022 baseline. As previewed in our 2022-23 TCFD report, the significant one-time scope expansion that we achieved for the 2023 end-of-year footprint by adding in the private markets external funds this year necessitates establishing a new emissions baseline and an associated recalibration of this emissions intensity target.

OPTrust's 2023 emissions intensity of 70.0 tCO_2e represents a 28% reduction against our original 2022 baseline of 97.2 tCO_2e. A portion of this decrease is a result of the addition of our private markets external funds (which are relatively lower emitting) to our scope; this is not counted as progress towards our original 30% target. If we compare only the like-for-like parts of our portfolio between 2022 and 2023, the emissions reduction we achieved is 11%.

Since our private markets external funds will remain in scope for our carbon footprint, establishing our 2023 footprint of 70.0 tCO_2e (that includes these external funds) as our baseline moving forward will allow for comparisons and benchmarking of our progress over time. It is important that we maintain the ambition of our original reduction target on our public markets assets and private markets internally managed assets (where we have reasonably high-quality emissions data and the ability as an investor to effectuate decarbonization levers[12]). With this new, lower, baseline that is broader in scope and reflects the 11% reduction we have already achieved, this translates to a recalibration of our 2030 target to a 20% reduction against our 2023 emissions intensity.

To meet this 20% reduction on our 2023 baseline, it will require a degree of decarbonization that is equivalent to our original 30% target. Over the coming years, we will build on the 11% reduction that we achieved in 2023 as we progress towards 2030 and net zero in 2050.

Progress against targets

- Delivered on commitment to increase assets in scope for footprinting
- Reduced emissions intensity by 11%
- Restated baseline and targets to account for expanded scope and progress achieved
- Positively progressed 2025 stewardship and process targets. (More detail to be reported on this next year).

Barring substantial restructuring of our investment strategy or significant developments in footprinting methodology for the types of assets that are not currently covered, there should be no further recalibration required to our baseline and target ahead of 2030, and our 2023 carbon footprint will continue to serve as our baseline moving forward.

Our Commitment

As transition pathways emerge, the global economy's journey to net-zero emissions will be a highly complex one. OPTrust remains committed to providing transparency around our climate change strategy and progress through our ongoing disclosure against the TCFD framework and regular updates to our members.

This report builds on our long history of disclosure. OPTrust is frequently consulted by peers, especially smaller pension funds in North America and globally, for our approach to responsible investing — particularly in relation to climate change — so we aim to summarize our research wherever possible:

- **Our Climate Change Strategy in Action (2023)**: An update on the implementation of our climate strategy and profiles of climate-oriented investments across all asset classes.
- **Designing a Climate Metrics Framework for Investment Portfolios (2023)**: A research paper that shares learnings on how we designed bespoke, bottom-up metrics for tracking and managing climate considerations across our portfolio.
- **Preparing our Portfolio for the Future: Integrating Climate Scenarios into Asset-Liability Management (2022)**: A research paper that shares how we are using climate scenarios to understand the impact of climate change on pension assets and liabilities.
- Prior TCFD reports
  - **2022-23**
  - **2021**
- **Annual Responsible Investing reports** (these include TCFD reports from prior years)
- Our **Climate Change** and **Responsible Investing** websites

Endnotes

[1] Our approach, designed with the recognition that we are a mid-sized asset owner, is centred on reducing emissions in alignment with the implementation of global climate goals. Net zero means that we aim to balance any remaining emissions with equivalent removals, ensuring over time that our investments contribute no additional greenhouse gases to the atmosphere. While offsets can play a role, we view them as a tool for addressing only residual emissions that cannot be eliminated through direct action, rather than a primary strategy.

[2] Calculated on the portfolio as of December 31, annually.

[3] This covers all assets where a carbon footprinting methodology exists and data are available to us.

[4] We use the five climate scenarios provided by Ortec Finance in our updated analysis. Net-Zero: 1.5 C of warming. Optimistic, ambitious but orderly transition; Net-Zero Financial Crisis: Same as Net-Zero scenario except for disruptive effects in financial markets, as climate risks are abruptly priced-in in 2025; Delayed Net-Zero: 2 C of warming, emissions trending towards net-zero after 2050; Limited Action: 2.6 C of warming, increased risks from extreme weather events, material financial market implications in the 2020s and 2030s; High Warming: 3.7 C of warming, high temperature affects human health, damages crop yields, and reduces labour and agricultural productivity. Infrastructure damage leads to direct losses and supply chain disruptions.

[5] While OPTrust uses several metrics to assess the pension plan's funding risk holistically, this analysis focuses on just one: the probability of a contribution rate increase in excess of 2%. This metric measures the likelihood that we would need to increase members' contribution rates by more than 2% to bring the pension plan back to fully funded status (i.e. a funding ratio of 100%). This probabilistic measure is a good quantification of the true risks faced by our pension plan members. A contribution rate increase of 2% or more is deemed material.

[6] Climate taxonomies began as national project finance-related frameworks to direct spending towards green or transition projects (primarily focusing on managing their impact on global warming), but the concept can also be applied to categorize portfolios based on assets' climate risk/opportunity profiles and level of preparedness to respond to climate change. At OPTrust, a taxonomy is a climate risk categorization tool that is tailored to our assets and has a different purpose than national taxonomies.

[7] Climate-relevant sectors are defined as having medium-to-high climate risks and includes the energy, materials, utilities, industrials, real estate and transportation sectors.

[8] We based our final reduction target on two factors: (1) The practicality of achieving decarbonization in our portfolio, given our significant reliance on proxies in private markets and the substantial portions of our public markets portfolio invested in assets that cannot be footprinted; and (2) General guidance from the UN Environmental Program that emissions must fall by 28% to 42% by 2030 (compared to 2019 levels) to keep warming in the range of 1-2.5 C.

[9] Production emissions are those attributable to emissions produced domestically and include domestic consumption and exports. Consumption emissions reflect the demand side of sovereign emissions and account for consumption patterns and trade effects (e.g. carbon leakage). LULUCF refers to land use, land-use change and forestry emissions. For more information, see page 14. (Source: PCAF)

[10] We use emissions calculated by a leading global data provider and for Canadian real estate direct investments, the methodology relies on electricity emissions factors from International Energy Agency (IEA) from the 2019 period. A methodology adjustment to integrate more current emissions factors is being addressed by the provider for the next calculation period as part of their strategic business plan.

[11] We include our TRS exposure, and not our other derivatives exposures, in our carbon footprint for several reasons. While PCAF does not provide guidance on footprinting derivatives and these exposures could therefore be categorically excluded from scope, many investors feel it is important to footprint these strategies wherever reasonable and practical. For OPTrust, our TRS represents a large, stable percentage of our public equity holdings and involves a straightforward, passive implementation. We apply an approach that computes the carbon intensity of the underlying index and scales the financed emissions according to the notional value of our exposure in order to achieve near-comparability to our standard public equities' exposures.

[12] Currently most of our private markets external funds emissions data is based on proxies (with a poorer data quality score of 4 or 5), since measurement and reporting of real emissions is not yet a common practice in the private markets. Therefore, we have not set a quantitative decarbonization objective on this portion of the portfolio due to the unreliability of the data. However, as outlined in our 2025 stewardship and process targets, we are actively engaging with our private markets investment partners to source better quality data over time, with the aim of measuring and targeting their decarbonization in a future interim target.

Appendix

Independent practitioner's limited assurance report

To the Board of Trustees of OPSEU Pension Plan Trust Fund,

We have undertaken a limited assurance engagement of the select performance metrics included below (the select performance metrics) of OPTrust for the year ended December 31, 2023 as presented within OPTrust's 2023-24 TCFD report.

Our limited assurance engagement was performed on the following select performance metrics:

Portfolio	Financed emissions (tCO_2e)	Emissions intensity (tCO_2e/$M invested)
Public Markets	108,520	70.5
Private Markets	780,027	70.0
Total	888,547	70.0

OPTrust's responsibility for the select performance metrics

OPTrust is responsible for the preparation of the select performance metrics in accordance with the applicable criteria established in Exhibit 1 (the applicable criteria). OPTrust is also responsible for the design, implementation and maintenance of internal control relevant to the preparation of the select performance metrics that is free from material misstatement, whether due to fraud or error.

Our independence and quality management

We have complied with independence and other ethical requirements of the relevant rules of professional conduct / code of ethics applicable to the practice of public accounting and related to assurance engagements, issued by various professional accounting bodies, which are founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.

The firm applies Canadian Standard on Quality Management 1, *Quality Management for Firms that Perform Audits or Reviews of Financial Statements*, or *Other Assurance or Related Services Engagements*, which requires the firm to design, implement and operate a system of quality management, including policies or procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

PricewaterhouseCoopers LLP
PwC Tower, 18 York Street, Suite 2500, Toronto, Ontario, Canada M5J 0B2
T: +1 416 863 1133, F: +1 416 365 8215, ca_toronto_18_york_fax@pwc.com

Our responsibility

Our responsibility is to express a limited assurance conclusion on the select performance metrics based on the procedures we have performed and evidence we have obtained. We conducted our limited assurance engagement in accordance with Canadian Standard on Assurance Engagements (CSAE) 3000, *Attestation Engagements Other than Audits or Reviews of Historical Financial Information* and, in respect of greenhouse gas emissions, Canadian Standard on Assurance Engagements (CSAE) 3410, *Assurance Engagements on Greenhouse Gas Statements* issued by the Auditing and Assurance Standards Board.

These standards require that we plan and perform this engagement to obtain limited assurance about whether the select performance metrics are free from material misstatement.

A limited assurance engagement involves assessing the suitability in the circumstances of OPTrust's use of the applicable criteria as the basis for the preparation of the select performance metrics, assessing the risks of material misstatement of the select performance metrics whether due to fraud or error, responding to the assessed risks as necessary in the circumstances, and evaluating the overall presentation of the select performance metrics. A limited assurance engagement is substantially less in scope than a reasonable assurance engagement in relation to both the risk assessment procedures, including an understanding of internal control, and the procedures performed in response to the assessed risks.

The procedures we performed were based on our professional judgment and included inquiries, observation of processes performed, inspection of documents, analytical procedures, evaluating the appropriateness of quantification methods and Our engagement included, among others, the following procedures performed:

- reviewed the OPTrust methodology and evaluated whether OPTrust's methods for determining the boundaries and quantification of the select performance metrics were appropriate and consistent with the applicable criteria;
- through inquiries, obtained an understanding of OPTrust's control environment and the information systems relevant to the select performance metrics quantification and reporting. Our procedures did not evaluate the design of particular control activities, obtain evidence about their implementation or test their operating effectiveness;
- evaluated whether OPTrust's methods for developing estimates are appropriate and consistently applied;
- for a limited sample of assets, reconciled the select performance metrics data back to the underlying records;
- made inquiries of the persons responsible for the select performance metrics, including analytical reviews for select performance metrics; and
- reviewed the select performance metrics disclosure in OPTrust's 2023-24 TCFD Report to ensure consistency with our understanding and procedures.

The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for, a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had we performed a reasonable assurance engagement. Accordingly, we do not express a reasonable assurance opinion about whether OPTrust's select performance metrics have been prepared, in all material respects, in accordance with the applicable criteria applied as explained in Exhibit 1.

Significant inherent limitations

Non-financial data is subject to more limitations than financial data, given both the nature and the methods used for determining, calculating, sampling or estimating such data. Qualitative interpretations of relevance, materiality and the accuracy of data are subject to individual assumptions and judgments.

Greenhouse gas emissions quantification is subject to inherent uncertainty because of incomplete scientific knowledge used to determine emissions factors and the values needed to combine emissions of different gases.

Limited assurance conclusion

Based on the procedures we have performed and the evidence we have obtained, nothing has come to our attention that causes us to believe that OPTrust's select performance metrics for the year ended December 31, 2023 are not prepared, in all material respects, in accordance with the applicable criteria.

Purpose of select performance metrics and restriction on use of our report

The select performance metrics have been prepared in accordance with the applicable criteria to assist OPTrust in reporting on its sustainable reporting activities. As a result, the select performance metrics may not be suitable for another purpose. Our report is intended solely for OPTrust.

We neither assume nor accept any responsibility or liability to any third party in respect of this report.

PricewaterhouseCoopers LLP

Chartered Professional Accountants, Licensed Public Accountants
Toronto, Ontario
December 4, 2024

Exhibit 1

Select performance metrics and criteria

1. Financed Emissions **Description:** The absolute GHG emissions associated with the measured portfolio, expressed in tonnes CO_2-equivalent (tCO_2e) as at December 31, 2023. **Methodology:** Scope 1 and Scope 2 GHG emissions are allocated to investors based on the following asset total value specific to asset classes: • Public markets equities and debt: Enterprise Value Including Cash • Private equity and infrastructure: Enterprise Value • Real estate: Gross Asset Value
2. Emissions Intensity **Description:** Absolute Emissions for a portfolio normalized by the market value of the portfolio, expressed in tCO_2e/$M invested as at December 31, 2023. **Methodology:** Scope 1 and Scope 2 GHG emissions are allocated to investors based on an equity ownership approach as described under methodology for Financed Emissions. The portfolio value on the measurement date is used to normalize the data.
3. Mathematical accuracy of: • Aggregated total of Public markets and Private markets financed emissions; • Emission Intensity of total portfolios of Public markets and Private markets.
Investment portfolio and scope by asset class for the select performance metrics: **Public Markets** • Public equity: Long-only cash equity strategies, index total return swap; • Public credit. **Private Markets** • Private equity and infrastructure: Direct investments, co-investments, fund investments; • Real estate: Direct equity investments (including direct investments, co-investments, joint ventures and separately managed accounts), equity fund investments. All other strategies and holdings are currently excluded. The reporting criteria against which the select performance metrics will be assessed is as follows: • Management's internally developed criteria as outlined in OPTrust's 2023-24 TCFD Report; • The Global GHG Accounting and Reporting Standard Part A: Financed Emissions Second Edition developed by the Partnership for Carbon Accounting Financials (PCAF); and • The Greenhouse Gas Protocol, A Corporate Accounting and Reporting Standard, Revised Edition.

OPTrust

1 Adelaide Street East, Suite 2900
Toronto, ON M5C 3A7

Tel: **416-681-6161** in Toronto
1-800-906-7738 toll-free in Canada

optrust.com

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