2023

University of Toronto
Asset Management Corporation

Carbon Footprint Report

Introduction

As global efforts to address climate change have grown more urgent over the past decade, UTAM has developed increasingly sophisticated processes for measuring and managing climate-related investment risks and opportunities. One of the pillars of our reporting to University of Toronto stakeholders is our annual carbon footprint report, which we've produced in various forms since 2018.

Evolution of our carbon reporting

In September 2017, UTAM became a signatory to the Montréal Carbon Pledge and committed to reporting annually on carbon emissions associated with the long-term investment portfolios we manage for U of T. The following year, we published our first carbon footprint report, which provided metrics for the public equity holdings within our two main long-term portfolios. We subsequently expanded the scope of our analysis to include private equity, private real estate, and private infrastructure investments.

In 2020, UTAM committed to reducing the carbon footprint of the equity (and equity-like) investments in the Endowment portfolio by at least 40% relative to 2017 levels by 2030. Then, in the fall of 2021, the University, as part of a major announcement on climate action, pledged to achieve net zero emissions in the Endowment portfolio by 2050. Coinciding with this announcement, U of T (through UTAM) joined the United Nations–convened Net-Zero Asset Owner Alliance (NZAOA), becoming the first university in the world to do so. The Alliance provides a framework for setting interim targets on decarbonization initiatives to guide members pursuing net zero emissions in their portfolios.

Guided by the Alliance's Target Setting Protocol, UTAM established interim targets in 2022 for the Endowment's carbon footprint, as well as engagement with emitting companies and transition financing. Having met our previous carbon footprint target for the Endowment nearly a decade ahead of schedule, we built on this momentum to set an ambitious goal: **UTAM's new carbon footprint target is a further 50% reduction in emissions by 2030, measured against a 2019 baseline.** Going forward, all UTAM carbon footprint reporting will gauge our progress against this target.

When Alliance members establish an overall carbon reduction target, they're also required to set comparable targets – where credible methodologies and sufficient data coverage exist – for each asset class in the sub-portfolios. (The Alliance defines a sub-portfolio as the asset classes within an asset owner's total portfolio that are included in the carbon footprint calculation.) Under the Target Setting Protocol, UTAM is expected to include public equity and publicly traded corporate bonds in carbon footprint calculations for the LTCAP Sub-Portfolio within the Endowment portfolio. Therefore, beginning with our 2021 carbon footprint update, we now include publicly traded corporate bonds along with equities and equity-like securities in the LTCAP Sub-Portfolio. Holdings in hedge funds in the absolute return portfolio, government bonds, and alternative credit strategies are currently excluded from the LTCAP Sub-Portfolio.

PwC limited assurance review

Since 2021, PwC (PricewaterhouseCoopers LLP) has undertaken a limited assurance engagement of our reported absolute emissions and carbon footprint for the LTCAP Sub-Portfolio. The current report presents PwC's opinion of the reported footprint beginning on page 3.

Previous reports

UTAM's previous carbon footprint reporting can be found in the Reports section of our website, where we also discuss our approach to climate risk analysis under the framework of the Task Force on Climate-related Financial Disclosures (TCFD).

Independent practitioner's limited assurance report

on the select performance metrics of University of Toronto Asset Management Corporation (UTAM) as presented in the 2023 Carbon Footprint Report

To the Board of Directors and Management of UTAM:

We have undertaken a limited assurance engagement of the select performance metrics included below (the select performance metrics) for the year ended December 31, 2023 as presented within UTAM's Carbon Footprint Report.

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

Performance metrics	2023
Absolute emissions	**96,760.05 tCO_2e**
Carbon footprint	**32.4 tCO_2e/$M invested**

Management's responsibility

Management is responsible for the preparation of the select performance metrics in accordance with the applicable criteria established in Exhibit 1 (the applicable criteria). Management is also responsible for such internal control as management determines necessary to enable the preparation of the select performance metrics that are free from material misstatement, whether due to fraud or error.

Our responsibility

Our responsibility is to express a limited assurance conclusion on the select performance metrics based on the 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*. This standard requires 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 performing procedures (primarily consisting of making inquiries of management and others within the entity, as appropriate, and applying analytical procedures) and evaluating the evidence obtained. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the decisions of users of our report. The procedures are selected based on our professional judgment, which includes identifying areas where the risks of material misstatement, whether due to fraud or error, in preparing the select performance metrics in accordance with the applicable criteria are likely to arise.

Our engagement included, among others, the following procedures performed:

- Reviewed UTAM's methodology and evaluated whether UTAM'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 UTAM'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 UTAM'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; and
- Reviewed the select performance metrics disclosure in UTAM's 2023 Carbon Footprint 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 and, consequently, the level of assurance obtained is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed.

Our independence and quality management

We have complied with 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.

Significant inherent limitations

Emissions data is subject to inherent limitations given the nature and the methods used for determining such data. The selection of different but acceptable measurement techniques can result in materially different measurements. The precision of different measurement techniques may also vary.

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 UTAM'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 statement and restriction on distribution and use of our report

The select performance metrics have been prepared in accordance with the applicable criteria to report to UTAM's management to report to the Board of Directors. As a result, the select performance metrics may not be suitable for another purpose. Our report is intended solely for UTAM.

We acknowledge the disclosure of our report, in full only, by UTAM at its discretion, to the Board of Directors without assuming or accepting any responsibility or liability to the Board of Directors or any other third party in respect of this report.

PricewaterhouseCoopers LLP

Chartered Professional Accountants

Toronto, Ontario
April 30, 2024

Exhibit 1

Select performance metrics and criteria

1. Carbon Footprint

Description: Total carbon emissions for a portfolio normalized by the market value of the portfolio, expressed in tonnes CO_2e/\$M (tCO_2eq) invested for the year ended 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 Absolute Emissions. The portfolio value on the measurement date is used to normalize the data.

Investment portfolios: Endowment (Long-Term Capital Appreciation Pool or LTCAP).

Scope by asset class: Public equity and equity-like assets (including private equity, real estate, and infrastructure), and fixed income (corporate bonds only) in the LTCAP portfolio are included in the footprint (referred to as the “LTCAP Sub-Portfolio” or the “Sub-Portfolio”). All other strategies and holdings in the LTCAP portfolio are currently excluded. All holdings in the absolute return hedge fund portfolio and the alternative credit portfolio are excluded from the footprint.

2. Absolute Emissions

Description: The absolute GHG emissions associated with the measured portfolio, expressed in tonnes CO_2-equivalent (tCO_2eq) for the year ended December 31, 2023.

Methodology: Scope 1 and Scope 2 GHG emissions are allocated to investors based on an enterprise value including cash approach.

Investment portfolios: Endowment (Long-Term Capital Appreciation Pool or LTCAP).

Scope by asset class: Public equity and equity-like assets (including private equity, real estate, and infrastructure), and fixed income (corporate bonds only) in the LTCAP portfolio are included in the footprint (referred to as the “LTCAP Sub-Portfolio” or the “Sub-Portfolio”). All other strategies and holdings in the LTCAP portfolio are currently excluded. All holdings in the absolute return hedge fund portfolio and the alternative credit portfolio are excluded from the footprint.

The **reporting criteria** against which the select performance metrics will be assessed as follows:

Management’s internally developed criteria as outlined in UTAM’s 2023 Carbon Footprint Report.

The Global GHG Accounting and Reporting Standard Part A: Financed Emissions Second Edition, developed by the Partnership for Carbon Accounting Financials (PCAF). Available at: https://carbonaccountingfinancials.com/files/downloads/PCAF-Global-GHG-Standard.pdf

The Greenhouse Gas Protocol, A Corporate Accounting and Reporting Standard, Revised Edition. Available at: https://ghgprotocol.org/sites/default/files/standards/ghg-protocol-revised.pdf

University of Toronto Asset Management Corporation

Carbon Footprint Report

Sub-Portfolio carbon footprint

Dates are at December 31 in each year referenced unless otherwise specified.

Starting point 2019†	Results 2023	Change
Absolute emissions	**Absolute emissions**	**Absolute emissions**
145,404.2 tCO_2e	96,760.1* tCO_2e	-33.5%
Carbon footprint	**Carbon footprint**	**Carbon footprint**
64.4 tCO_2e/$M invested	**32.4*** tCO_2e/$M invested	-49.6%

tCO_2e/$M = tonnes of carbon dioxide equivalent per million dollars invested

Carbon footprint over time compared to the 2030 target

By calculating the annual reduction in the carbon footprint of the LTCAP Sub-Portfolio, we are able to track the tangible impact of our efforts over time. One of the virtues of this approach is that the impact will be felt not only in high-emitting sectors but across all sectors within the Sub-Portfolio. By identifying the climate-related risks associated with actual and prospective investments – as part of our broader responsible investing framework and also through our stewardship activities (proxy voting, engagement, and advocacy) – we continue to expect the carbon footprint of LTCAP's investments to decrease over time. As the companies in the LTCAP Sub-Portfolio adopt more sustainable practices, their collective absolute emissions and carbon footprint should shrink, and as a result, LTCAP should become more resilient to climate-related risks.

At the end of 2023, the carbon footprint of the LTCAP Sub-Portfolio was 32.4 tCO_2e/$M (based on total emissions of 96,660.1 tCO_2e). This calculation follows the EVIC ownership approach‡ for the Sub-Portfolio and includes the impact of carbon contributions from equities (including equity-like assets) and corporate bonds.§ The year-over-year changes in absolute emissions and carbon footprint since 2019, using calendar year periods, are summarized in Table 1.

Table 1

Carbon Footprint of the LTCAP Sub-Portfolio

Year	tCO_2e	tCO_2e/$M	Cumulative change in tCO_2e	Cumulative change in tCO_2e/$M
2019	145,404.2	64.4	-	-
2020	143,188.2	55.7	-1.5%	-13.5%
2021	132,991.1*‖	45.2*‖	-8.5%	-29.8%
2022	99,307.8*¶	37.8*¶	-31.7%	-41.3%
2023	96,760.1*∞	32.4*|∞	-33.5%	-49.6%

* We engaged PricewaterhouseCoopers LLP, an independent third party, to conduct a limited assurance engagement on reported values indicated by an asterisk.

† UTAM has set a target end date of December 31, 2029, and a baseline year starting from December 31, 2019. Although the Alliance publishes targets on a five-year cycle, members who join the Alliance mid-cycle have the flexibility to extend the length of their initial target period.

‡ For sub-portfolios with multiple asset classes (e.g., equities and corporate bonds), the Net-Zero Asset Owner Alliance recommends using enterprise value, including cash (EVIC), to determine an asset owner's proportional share of an issuer's emissions.

§ All public equity holdings (long and short) and equity-like private investments (private equity, private real estate and private infrastructure), as well as publicly traded corporate bonds within the LTCAP portfolio, were included in the analysis, except for these holdings in the absolute return hedge fund portfolio and the alternative credit strategies. As stated in Methodology (page 8), public market indexes are used to proxy the emissions contributions of the private investments that are included in the LTCAP Sub-Portfolio.

‖ Refer to PwC's limited assurance report in the 2021 Responsible Investing Report (page 15).

¶ Refer to PwC's limited assurance report in the 2022 Carbon Footprint Report (page 3).

∞ Refer to PwC's limited assurance report in this report (page 3).

Since 2019, the LTCAP Sub-Portfolio's carbon footprint has realized a cumulative decrease of 49.6%. In the past few years, substantial progress has been made toward meeting the targeted 50% reduction goal set for 2030. Nonetheless, the current cumulative changes can and may partially revert in the short term due to external factors such as changes in economic activity and capital market movements. For example, absolute emissions for many companies have increased post-2020 as the economy has recovered from the COVID pandemic. Similarly, the carbon footprint is sensitive to swings in the value of the Sub-Portfolio, and all things equal, a weak capital market environment will result in a higher carbon footprint. For example, in 2022, a key contributor to the decrease in the carbon footprint was the transition to ex-fossil fuel mandates for much of the passive exposure in the Sub-Portfolio, despite the market value of the LTCAP Sub-Portfolio falling. While we will continue to look for opportunities to reduce emissions in LTCAP further, we believe we have now tackled many of the most accessible and readily achievable reductions. As a result, further emission reductions are expected to be increasingly challenging to achieve over the coming years.

Sector and country contributions

Sector attribution

Table 2 shows the carbon emission contribution by the different sectors in the Sub-Portfolio (denoted in the table as % of Sub-Portfolio). Just over 80% of emissions come from only four sectors: Materials, Energy, Utilities, and Industrials. These four sectors have been the primary contributors to the Sub-Portfolio's total emissions in the past four years. On a year-over-year basis, Materials, and Energy saw an overall decrease in their emissions contribution. Out of the top four sectors, Utilities and Industrials sectors saw an increase in their year-over-year contribution to emissions. It is also worth noting that, similar to past years, despite these four sectors driving the Sub-Portfolio's emissions, they represent a relatively small exposure in dollars invested. At December 31, 2023, these four sectors represented less than 18.0% of the Sub-Portfolio's net asset value.

Table 2
Sector attribution

Sector	Emissions Contribution	% of Sub-Portfolio
Materials	36.9%	2.8%
Energy	20.8%	2.3%
Utilities	13.3%	1.1%
Industrials	12.2%	11.7%
Consumer Discretionary	4.3%	11.8%
Information Technology	4.1%	19.8%
Consumer Staples	3.9%	5.4%
Health Care	1.4%	10.4%
Communication Services	1.0%	8.5%
Financials	0.7%	16.9%
Real Estate	0.5%	3.8%
Cash and Others	0.9%	5.3%
TOTAL	100.0%	100.0%

Numbers may not add up to 100% due to rounding.

Country attribution

Table 3 shows the top 10 countries (based on securities' place of issue) that contribute most to the LTCAP Sub-Portfolio's emissions. These countries accounted for 82.3% of the Sub-Portfolio's market value and represent 83.2% of total emissions. The top three countries with the largest share of emissions are the United States (24.8%), China (13.1%) and Ireland (9.4%). The US and China have consistently contributed the most to the Sub-Portfolio's total emissions since the inception of the calculations, although the order may change from year to year.

Table 3

Country attribution

Country	Emissions Contribution	% of Sub-Portfolio
United States	24.8%	50.4%
China	13.1%	4.9%
Ireland	9.4%	2.3%
Japan	7.8%	4.1%
Canada	7.2%	11.9%
United Kingdom	5.4%	4.0%
Switzerland	4.6%	2.4%
India	4.5%	0.8%
South Korea	3.3%	1.4%
Luxembourg	3.0%	0.1%
Top 10 Countries	83.2%	82.3%

Carbon footprint methodology and limitations

UTAM's carbon footprint calculation follows a systematic process grounded in current leading practices within the investment industry.

Methodology

- We use a carbon footprint calculation methodology based on the following:
  - The Global GHG Accounting and Reporting Standard for the Financial Industry (November 2020), developed by the Partnership for Carbon Account Financials (PCAF).
  - Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures (October 2021), published by the Task Force on Climate-related Financial Disclosures (TCFD).
  - Target Setting Protocol, third edition (January 2023), published by the Net-Zero Asset Owner Alliance.
  - UTAM's internally developed criteria for year-end carbon footprint calculations. We typically use emissions data available one month after the reporting date.
  - The total absolute emissions and carbon footprint metrics reported by UTAM follow the financed emissions approach: a portfolio's share of emissions is calculated based on proportional ownership relative to a company's enterprise value, including cash (EVIC).

Carbon emissions (tonnes CO_2e) per $million invested

$$\frac{\sum_{i=1}^{n}\left(\frac{C_i}{EV_i}\times I_i\right)}{\sum_{i=1}^{n} I_i}$$

I: Current value of investment in issuer i
EV: Enterprise value of issuer i
C: Carbon emissions of issuer i

- Both Scope 1 and Scope 2 emissions are currently included in the footprint calculations and results.
- The PCAF standard provides guidance on how to score the quality of emissions data. We obtain position data from our risk aggregator, State Street's truView, and emissions data from MSCI Inc. On this basis, we estimate the average data quality score for public equities and public fixed income to be 2 and 3, respectively. For private assets where public equities are used as proxies, an average data quality score of 5 is implied.
- All assets classified within the Equity component of the Reference Portfolio, as well as publicly traded corporate bonds in the Canadian Corporate Bonds component of the Reference Portfolio, are included in carbon footprint calculations.
- For private market investments, primarily in private equity and private real estate investments, we use public indexes to proxy the emissions contributions to the LTCAP Sub-Portfolio.

Limitations

- The methodologies used in UTAM's carbon footprint calculation, as well as the scope of assets covered, will continue to evolve. As new methods and data become available, we will evaluate how they can best be incorporated into our calculation process. For example, private equity and real estate assets were added to the footprint calculation in 2018, while corporate bonds and the EVIC approach were integrated for 2021 year-end calculations.
- We also recognize that there are limitations to the footprint metrics themselves. Calculated results can be affected by factors outside UTAM's control, including lags in emissions reporting or missing emissions data, shifts in foreign exchange rates and changes in the market values of the securities included in the LTCAP Sub-Portfolio. We endeavour to use the most recently available information in our calculations and have adopted a standardized approach to data gathering and the treatment of missing data. For the 2023 carbon footprint results, emissions data available by January 31, 2024, was used in the calculations.
- The carbon emissions of Sovereign Bond holdings (specifically Canadian Federal Government Bonds) are also being calculated and monitored following the methodology recommended by PCAF and the NZAOA. This calculation is not within the scope of the limited assurance process as it cannot be readily aggregated into the total reported carbon footprint for LTCAP (for example, the methodology recommends the usage of Purchasing Power Parity (PPP) GDP to attribute emissions as opposed to EVIC). As this is a new data gathering and calculation process, UTAM will continue to monitor how the measurement process evolves and may incorporate enhancements as they are established as valid and reliable.
- Carbon footprint metrics are not a forward-looking measure of the LTCAP Sub-Portfolio's exposure to climate risk (i.e., its climate risk sensitivity). By the nature of the calculations and data used, metrics are snapshots at one point in time of the Sub-Portfolio's attributed emissions.

The Reference Portfolio is a benchmark (currently 60% equity exposure and 40% fixed income) that serves as an objective yardstick for measuring active risk and value gained or lost through investment management activities. It is developed jointly by UTAM and the University's Investment Committee and approved by the University Administration.

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