MANAGING MATERIAL CLIMATE CHANGE RISKS

UC Investments, 2024

Table of Contents

Table of Charts 2

I. Executive Summary 3

II. Introduction 4

III. The Task Force on Climate Related Financial Disclosures 5

IV. Governance 6

V. Strategy 7

VI. Risk Management 9

VII. Refining our Approach: Metrics 13

VIII. Conclusion 24

APPENDIX A: Summary of Climate Metrics Used by UC Investments 24

APPENDIX B: Climate Change Related Investment Risks 25

APPENDIX C: Glossary of Key Terms 27

Table of Charts

Chart 1: **Climate Change Journey** 5

Chart 2: **Climate Strategy** 8

Chart 3: **Climate Change in Investment Process** 9

Chart 4: **Overview of ex Fossil Index Exclusions as of Nov. 1, 2024** 10

Chart 5: **Ex Fossil Fuel Index Performance** 11

Chart 6: **Proxy Voting to Address Climate Change Risks** 12

Chart 7: **Climate Risk-Related Shareholder Engagement, 2023-2024** 13

Chart 8: **Carbon Data by Asset Class** 14

Chart 9: **Value at Risk from the Physical Impacts of Climate Change** 15

Chart 10: **Exposure to Low Carbon Transition Risk** 16

Chart 11: **Potential Carbon Emissions** 17

Chart 12: **Potential Carbon Emissions – EVIC** 18

Chart 13: **Absolute Emissions – Market Capitalization** 19

Chart 14: **Absolute Emissions – EVIC** 19

Chart 15: **Absolute Emissions of the Private Equity & Credit Portfolios** 20

Chart 16: **Carbon Emissions Rate** 21

Chart 17: **Carbon Emissions Rate of Public Equities Portfolio by Sector** 21

Chart 18: **Carbon Emissions Rate – EVIC** 22

Chart 19: **Carbon Emissions Rate – Private Equity & Private Credit** 22

Chart 20: **Weighted Average Carbon Intensity** 23

Chart 21: **Weighted Average Carbon Intensity – Private Equity & Private Credit** 24

I. Executive Summary

This annual climate risk report integrates UC Investments' climate-related strategies, metrics, and targets. Like our previous reports, the 2024 report aligns with the Financial Stability Board's Task Force on Climate-Related Financial Disclosure (TCFD). We have undertaken this reporting in the spirit of learning and with the hope it helps advance the institutional investment community's efforts to address the material risks of climate change.

Since our inaugural 2021 report, UC Investments has, consistent with our fiduciary duty, continued to manage the material risks to our portfolio stemming from climate change. Notable highlights in 2024 include:

- As a shareholder, UC Investments engaged directly with executive and board level leadership of more than 400 companies we own regarding material risks related to climate change and their risk mitigation strategies.
- Greenhouse gas emissions from UC Investments' public equities portfolio rose by 12.7% from 2023 – to roughly 6.2 million metric tons – even as the dollar value of that portfolio increased by 24.4% (see Chart 13). The emissions rate of UC's public equities portfolio decreased by 7.8% from 2023 (see Chart 16).
- UC Investments' public equities portfolio is 22% less exposed to low carbon transition risk than the "parent" index due to our decision to exclude fossil fuel reserve owning companies from our portfolio (see Chart 10).
- Our negative screening of fossil fuel reserves has proven to be an effective way to manage climate-related transition risks. At the same time, excluding fossil fuel reserve owning companies has resulted in higher one-year, five-year and 10-year net returns versus the MSCI ACWI IMI Index (see Chart 5).
- In 2023, UC was the first major US university endowment to report on greenhouse gas emissions from private equity and private credit assets. We share this information for the second year in a row. The greenhouse gas emissions from our private equity and private credit portfolios rose by 57.5% to roughly 337,000 metric tons (see Chart 15). The emissions rate of our private equity and private credits portfolios increased by roughly 26% since 2023 (see Chart 19). We attribute these increases largely to the increased availability of carbon data for those portfolios. In 2023, we had data for roughly 78% of the private equity and credit portfolios, while in 2024, data availability increased to roughly 93%.

II. Introduction

The Office of the Chief Investment Officer of the Regents of the University of California (UC Investments) manages the pension, endowment, retirement savings, and working capital of the University of California (UC). We think of ourselves as an organization that invests for the next 100 years by seeking the best long-term return on investments for our university and its stakeholders. When we make investment decisions, our centennial orientation and fiduciary duty lead us to actively consider the fundamental challenges and risks facing society, including climate change.[1]

The University of California is a leader in sustainability. Building upon the successes of our 2013 Carbon Neutrality Initiative, UC is committed to reducing total emissions (scope 1, 2, and 3) systemwide by at least 90% by 2045 without relying on carbon offsets.[2] Our pioneering faculty and researchers advance knowledge of climate change science and solutions and our dedicated staff integrate climate change considerations into the operations of our 10 campuses, six academic medical centers, extensive network of agricultural and natural resource centers and the Lawrence Berkeley National Laboratory. The University of California supports the Paris Agreement.[3]

UC Investments manages six distinct investment products, including the defined benefit UC Retirement Plan (UCRP), the defined contribution UC Retirement Savings Program (UCRSP), the General Endowment Pool (GEP), the Blue & Gold Endowment Pool (BGP), the Short-Term Investment Pool (STIP), and the Total Return Investment Pool (TRIP). As of June 30, 2024, the total value of assets across these funds stood at $180 billion, with 78.5% invested in public markets and the remaining 22.5% in private markets and cash.[4] Of the public market assets, roughly 88% were managed through passive indices, with the remaining 12% in actively managed accounts.

UC Investments began its climate change journey in 2014, the same year we joined the UN Principles for Responsible Investment (UNPRI). In 2016, as a signatory to the PRI's Montreal Carbon Pledge, we began publicly reporting the "carbon footprint" –

[1] For more information on UC Investments, see: **https://www.ucop.edu/investment-office/annual-report-240923_ucar24_final.pdf**

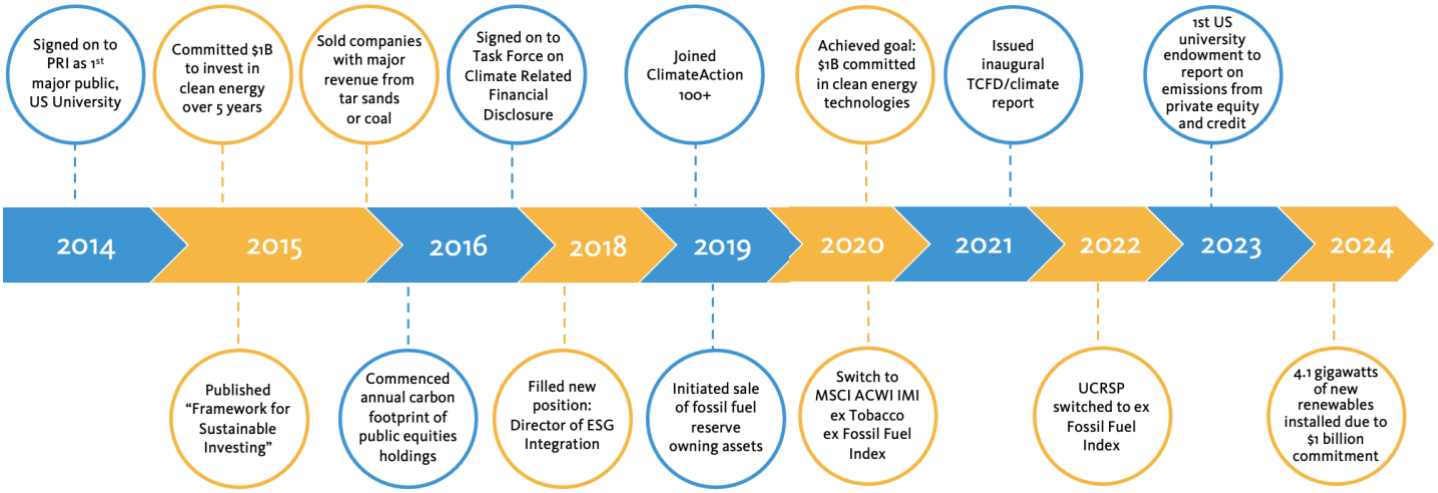
[2] **Climate Action | UCOP**

[3] See: **https://www.universityofcalifornia.edu/press-room/uc-president-drake-lauds-us-return-paris-agreement** One of the goals of the Paris Agreement is holding the increase in the global average temperature to less than 2°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change.

[4] Unless otherwise noted, all data on UC Investments' holdings are as of June 30, 2024.

metric tons of greenhouse gas emissions – of our portfolio. We also signed onto the Financial Stability Board's Task Force on Climate-Related Financial Disclosure recognizing that robust and consistent corporate and asset owner disclosure of climate-related financial risks and opportunities can lead to more informed investment decisions.

CHART 1



III. The Task Force on Climate Related Financial Disclosures

Following the 2015 Paris Agreement, the Financial Stability Board, an international body that monitors and makes recommendations about the global financial system, developed a framework of consistent climate-related financial disclosures for corporations and investors. The recommendations report, released in 2017, focused disclosures on four areas:

1. **Governance**: An organization's governance around climate-related risks and opportunities.

2. **Strategy**: The actual and potential impacts of climate-related risks and opportunities on an organization's businesses, strategy, and financial planning.

3. **Risk management**: The processes used to identify, assess, and manage climate-related risks.

4. **Metrics and targets**: The metrics and targets used to assess and manage relevant climate-related risks and opportunities.[5]

IV. Governance

The Board of Regents of the University of California oversees UC Investments' strategy on climate change and UC's chief investment officer (CIO) develops and implements that strategy.

The Board of Regents, pursuant to the California Constitution, has "full powers of organization and governance" subject only to very specific areas of legislative control.[6] The board defines the goals and objectives of UC's investment funds, and is responsible for establishing and approving changes to each fund's investment policy statements. Further, "[t]he Board of Regents may delegate the implementation of this policy to committees, the Chief Investment Officer and investment advisors."[7] The Investments Committee is tasked with "provid[ing] strategic direction and oversight, mak[ing] recommendations to the Board, and tak[ing] action pursuant to delegated authority on matters pertaining to University investment strategy and operations and pertaining to the review and reporting of investment results."[8]

Specifically related to climate and sustainability risks and opportunities, the board charges UC Investments with the following responsibilities:

> The Office of the Chief Investment Officer shall incorporate environmental sustainability, social responsibility, and governance (ESG) into the investment evaluation process as part of its overall risk assessment in its investments decision making. ESG factors are considered with the same weight as other material risk factors influencing investment decision making.[9]

The CIO, who reports to the Board of Regents, is responsible for integrating climate risk into the investment process. To implement this charge, the CIO's team, including

---

[5] TCFD, "Recommendations of the Task Force on Climate-related Financial Disclosures" (2017). Available at: **https://www.fsb-tcfd.org/publications/**. For updated and expanded implementation guidance, see: TCFD, "Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures" (2021). Available at: **https://www.fsb-tcfd.org/publications/#implementing-guidance**

[6] California Constitution, Article 9. Available at: **https://policy.ucop.edu/delegations-of-authority/california-constitution-article-9-education.html.**

[7] UC Board of Regents, "University of California Retirement Plan Investment Policy Statement" (2020). Available at: **https://regents.universityofcalifornia.edu/policies/6101.pdf**.

[8] UC Board of Regents (2019). "Appendix F – Charter of the Investments Committee." Available at: **https://regents.universityofcalifornia.edu/governance/committee%20charters/appendix-f.html**.

[9] UC Board of Regents, "University of California Retirement Plan: Investment Policy Statement," July 1, 2020. Available at: **6101.pdf (universityofcalifornia.edu)**

the chief operating officer, the director of ESG integration, the chief risk officer, and the investments team, analyzes and incorporates material climate-related data into investment decisions. Both the CIO and COO have a portion of their compensation linked to the entity's performance on ESG integration.

V. Strategy

Since the 2015 publication of our Framework for Sustainable Investing,[10] UC Investments has proactively addressed ESG-related risks, including climate-related risks, within our investment practices. The framework identified eight ESG factors most relevant to UC Investments' work, including climate change, food and water security, and a circular economy. As shown in Chart 2, UC Investments built on the 2015 framework and developed a four pillared climate change strategy which applies broadly to all our assets under management, with some UCRSP-related exceptions.[11]

[10] UC Investments, "Framework for Sustainable Investing," (2015). Available at: **sustainable-investment-framework.pdf (ucop.edu)**

[11] Unlike the pension and endowment, participants are outright owners of the accumulated assets within their individual UCRSP accounts. Asset allocation and investment decisions ultimately rest with individual plan participants. UC Investments' responsibility is to curate an investment lineup that allows participants to build a cost effective and diversified portfolio.

CHART 2

Climate Solutions

UC Investments believes the transition to a low carbon economy can create compelling investment opportunities; in 2015, we set a goal of investing $1 billion in climate change solutions over five years. This commitment is in addition to our investments in climate tech products and services created by publicly owned companies. In 2020, we surpassed our $1 billion investment goal through capital commitments that have generated strong returns, contributed to a cleaner electric grid, and accelerated new technologies.

Cumulatively, UC's capital commitments to clean energy projects have led to the acquisition or development of more than 4.1 gigawatts of wind and solar projects and an additional 0.6 gigawatts worth of battery energy storage projects in the US, Canada, Ireland, India, and Japan.[12]

Our investments have also accelerated the scaling of new technologies that can mitigate climate change. For example, since 2017, UC Investments has committed

[12] 4.7 gigawatts are equivalent to roughly eight fossil fuel plants' worth of electricity generation.

roughly $177 million to two climate tech venture capital teams, Congruent Ventures[13] and the Engine Fund.[14] Start-ups funded by Congruent and The Engine enable and accelerate the transition to a clean, resilient energy system by helping to bridge the gap between discovery and commercialization.

VI. Risk Management

The TCFD broadly categorizes climate-related financial risks as either transition risks (those stemming from the transition to a lower carbon economy) or physical risks (those stemming from the physical impacts of climate change).[15] UC Investments manages material climate change risks throughout our investment process, as shown in Chart 3 and described more fully below.

CHART 3

Negative Screening

UC Investments considers stranded asset risk as a key climate change transition risk. To mitigate this risk to our portfolio, UC Investments sold its assets related to coal and oil sands in 2015. In 2019, UC Investments announced it would sell its shares in companies held in separately managed accounts in our endowment and pension plan that owned any amount of "proved and probable" fossil fuel (defined as thermal coal, oil, and/or gas) reserves. In 2020, we expanded this commitment to cover working capital and private market assets as well. In 2022, the University of California removed all companies that own fossil fuel reserves from our defined contribution plan fund offering.[16]

---

[13] See, **https://congruentvc.com/**

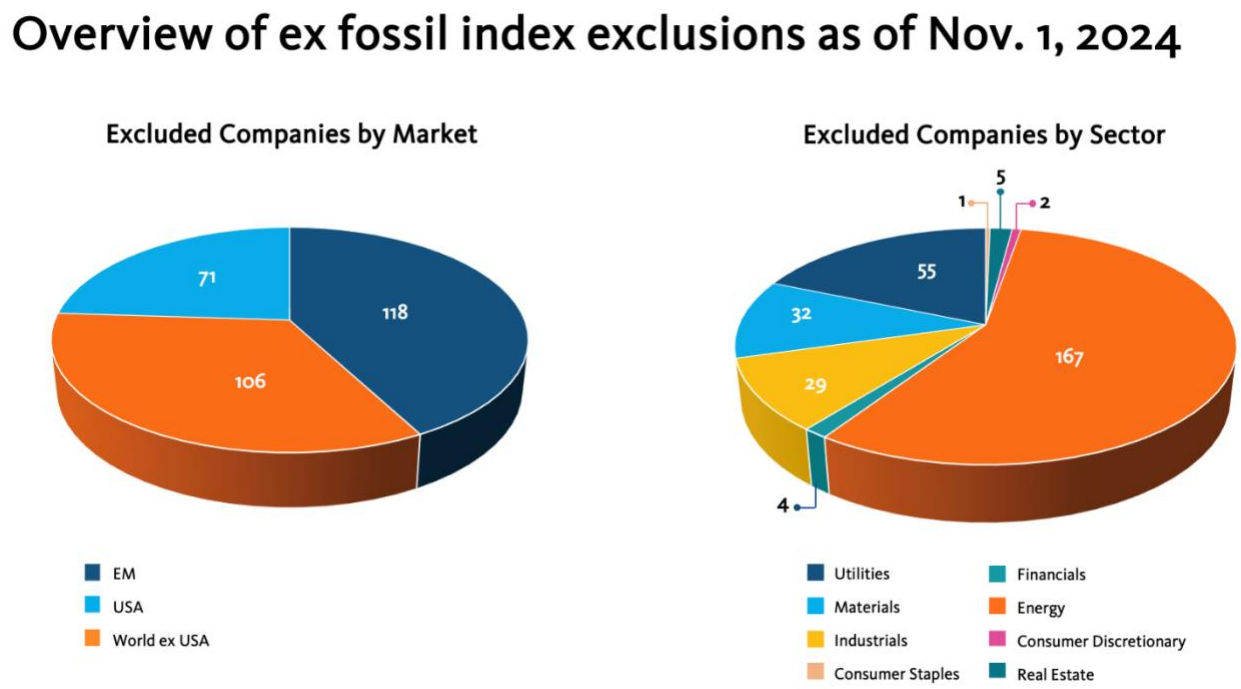
[14] See, **https://engine.xyz/about/our-mission**

[15] TCFD, "Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures," at 9 (2021). Available at: **https://www.fsb-tcfd.org/publications/#implementation-guidance**. For specific examples of transition and physical risks, please see Appendix A.

[16] For more information, see: **https://www.myucretirement.com/Resource/2312**

To achieve our fossil fuel exclusion goal, UC Investments uses negative screening across all asset classes. Our largest asset class, public equities, tracks the MSCI All-Country World Index (ACWI) Investable Market Index (IMI) ex Tobacco ex Fossil Fuel Index, which excludes approximately 300 fossil fuel reserve owning companies.[17] We also exclude these companies from our investments in corporate debt. Chart 4 provides a breakdown – by market and sector – of companies screened by the MSCI ACWI IM *ex* Tobacco *ex* Fossil Fuel Index (as of November 2024).

CHART 4



For investments in private equity, private credit, real assets, absolute return and real estate (which account for 19.4% of our AUM), we screen fossil fuel reserve owning assets using a bespoke process that synthesizes relevant data on portfolio companies.

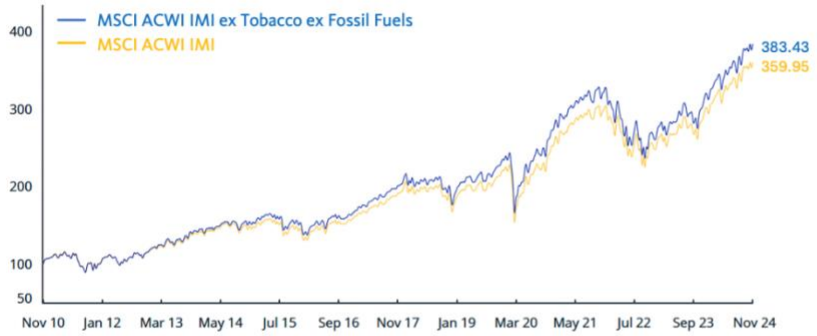
As discussed in Section VII, negative screening of fossil fuel reserves has proven to be an effective way to manage climate-related transition risks. At the same time, excluding fossil fuel reserve owning companies has yielded higher one-year, five-year and 10-year net returns versus the MSCI ACWI IMI Index, as shown in Chart 5

[17] This index contains the same roughly 9,000 securities as its "parent" index, with the exception of roughly 300 fossil fuel reserve owning companies. UC Investments tracked the parent index until July 2020, when we began tracking the ex-Fossil Fuel Index. For more information, see: **https://www.msci.com/our-solutions/indexes/index-categories/esg-indexes/global-fossil-fuels-exclusion-indexes**.

CHART 5

Ex Fossil Fuel Index Performance

CUMULATIVE INDEX PERFORMANCE – NET RETURNS (USD)
(NOV 2010 – NOV 2024)



ANNUAL PERFORMANCE (%)

Year	MSCI ACWI IMI ex Tobacco ex Fossil Fuels	MSCI ACWI IMI
2023	22.71	21.58
2022	-20.42	-18.40
2021	17.70	18.22
2020	18.52	16.25
2019	27.33	26.35
2018	-9.77	-10.08
2017	24.93	23.95
2016	7.15	8.36
2015	-0.60	-2.19
2014	5.54	3.84
2013	25.21	23.55
2012	18.32	16.38
2011	-8.50	-7.89

INDEX PERFORMANCE – NET RETURNS (%) (NOV 29, 2024)

					ANNUALIZED				**FUNDAMENTALS (NOV 29, 2024)**			
	1 Mo	3 Mo	1 Yr	YTD	3 Yr	5 Yr	10 Yr	Since Nov 30, 2010	Div Yld (%)	P/E	P/E Fwd	P/BV
MSCI ACWI IMI ex Tobacco ex Fossil Fuels	3.97	4.08	26.66	20.07	6.80	11.09	9.44	10.07	1.71	23.60	18.83	3.19
MSCI ACWI IMI	3.90	3.83	25.86	19.59	7.25	11.04	9.12	9.57	1.82	22.67	18.29	3.03

Source: MSCI, 2024

Manager Selection

In addition to excluding investments in fossil fuel reserve owning assets, we seek to integrate climate change transition risk into our processes for selecting and monitoring active managers.[18] Depending on a manager's strategy, climate change transition risks may be material; during our due diligence process, we evaluate the manager's climate risk and risk mitigation strategy, where material, using quantitative and qualitative measures.[19]

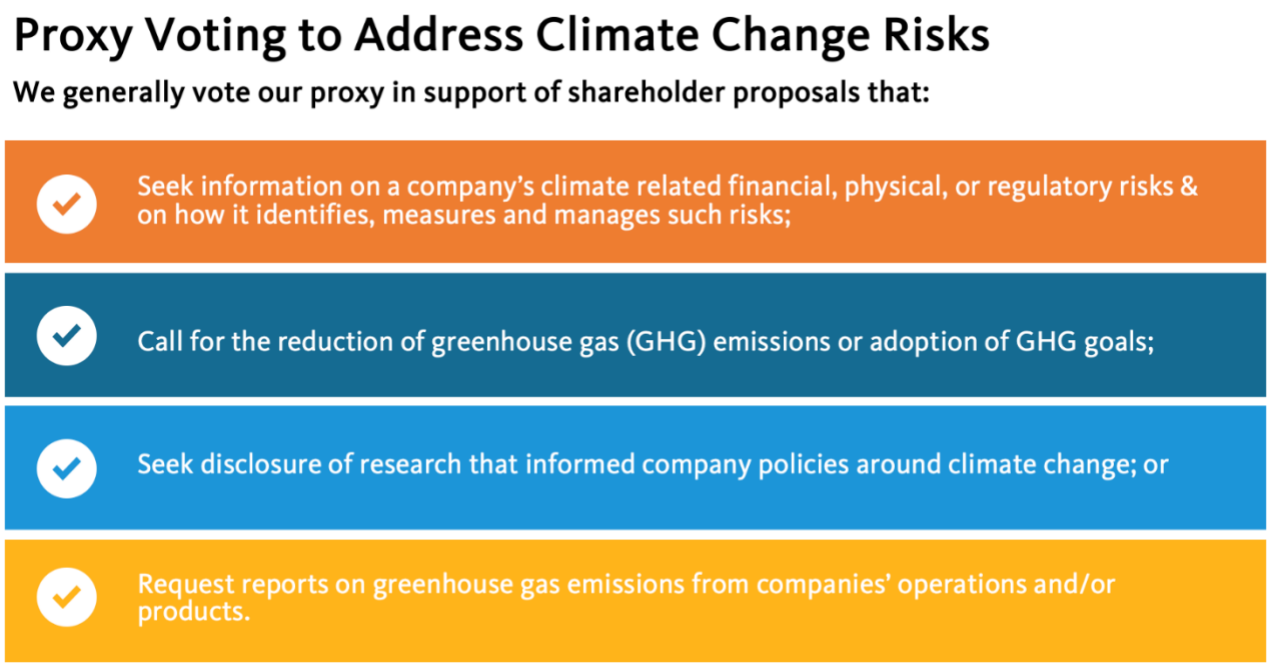
Asset Stewardship

Asset stewardship – voting our proxies and engaging directly with publicly listed companies on material risks – is a core element of our fiduciary duty and climate-related risk management approach. Through proxy voting and shareholder

[18] UC Investments does not manage investments directly; rather, we select external managers to do so.
[19] To inform our integration of climate risk analysis into manager selection processes, UC Investments incorporates data, data analytics, materiality frameworks and other decision support tools from third party providers and experts.

engagement, we generally encourage the companies we invest in to monitor, assess, disclose, and manage their material climate risks to help create long-term value. UC Investments' proxy voting guidelines address climate change related risks and opportunities, as shown in Chart 6.[20]

CHART 6



In addition to exercising our proxy votes, UC Investments engaged directly with more than 400 companies in which we own shares regarding material risks related to climate change as summarized in Chart 7. We retain a consulting service that engages on our behalf with executive management and boards of companies in which we are a shareholder.[21] We identify companies with material climate change risks and then enter a sustained dialogue with their leadership to advance our recommended climate risk mitigation strategies.

For example, we have engaged with the multinational utility company, National Grid, since 2022, advocating for its effective management of climate risks and embrace of opportunities from the energy transition. This year, we met several of our

[20] "UC Investments Proxy Voting Guidelines." Available at: **https://www.ucop.edu/investment-office/sustainable-investment/active-ownership/custom-proxy-guidelines.pdf**.
[21] See, **https://www.hermes-investment.com/uk/en/institutions/eos-stewardship/**
Our shareholder engagement consultant represents institutional investors, including UC Investments, with roughly $2.1 trillion worth of combined assets.

engagement goals for National Grid, which now has in place group-level near-term greenhouse gas emissions reduction targets aligned to a 1.5°C temperature increase ("Paris aligned"). These targets have been validated by the Science Based Targets initiative (SBTi) and are supported by a significant capital expenditure plan, focused on energy transition opportunities.

CHART 7

Engagement Goals	Sectors Engaged	Topics Engaged
✓ Strategy and greenhouse gas emissions reduction targets aligned with the Paris Agreement to build resilience vs. climate-related financial risks;	Consumer Goods	Emissions Reduction
✓ Strong governance oversight of climate-related financial risks & opportunities, including through transition planning, scenario analysis & advocacy;	Transportation	Governance and Transparency
✓ Competitively leverage opportunities to provide low-carbon goods & services;	Real Estate	Energy Transition
✓ Use of best available commercial technology to identify and mitigate methane emissions sources;	Financial Services	Resilience and Adaptation
	Health Care & Pharmaceuticals	Climate-Related Capital Expenditure
	Industrials	Physical climate risks
	Information Technology	Just Transition
	Mining & Materials	Climate Change Lobbying
	Chemicals	
	Energy & Utilities	

Source: EOS at Federated Hermes Limited, 2024

VII. Refining our Approach: Metrics

We refine our climate change strategy and risk management actions over time, informed by three main sources of information: UC faculty, researchers, staff and students focused on addressing climate change, peer learning with other investors and stakeholders, and our metrics and targets.

UC Investments began tracking emissions of carbon dioxide equivalent (CO2e) for public equities in 2016.[22] In 2021, we started tracking CO2e emissions for corporate debt. Last year, we expanded our carbon data coverage to include two more asset classes: private equity and private credit. As a result, UC Investments now quantifies the CO2e emissions for roughly 78% (by dollar value) of our assets

[22] Carbon dioxide equivalent (CO2e) is a catch-all term that includes emissions of all seven greenhouse gases, not just carbon dioxide. Each greenhouse gas has a different global warming potential (GWP); CO2e normalizes the values by converting them all to the GWP of CO2.

(excluding cash), as indicated in Chart 8.

CHART 8

Carbon Data by Asset Class

UC Investments' Asset Classes	Value as of June 30, 2024	Carbon Data Used in Report?
Public Equity	$107 billion	Yes
Fixed Income: Government	$18.2 billion	No
Private Equity	$14.5 billion	Yes
Fixed Income: Corporate	$11.5 billion	Yes
Real Estate	$10.4 billion	No
Cash	$3.8 billion	N.A.
Real Assets	$3.7 billion	No
Private Credit	$3.6 billion	Yes
Absolute Return	$2.4 billion	No
Fixed Income: Other	$4.5 billion	No
Total AUM=$180 billion. Percentage of portfolio AUM (except cash) covered by carbon analytic data=78%.		

In calculating the data for Charts 9-21 below, we rely on reports prepared by MSCI and Burgiss that analyze UC Investments' holdings.[23] MSCI makes its carbon data methodologies publicly available.[24] The carbon data calculations are based on available data for the dollar value of approximately 99% of UC's public equities and corporate debt portfolios (excluding cash) and approximately 93% of UC's private equity and private credit portfolios. We include Scope 1 and 2 – but not Scope 3 -

[23] Although UC Investments' information providers, including without limitation, MSCI ESG Research LLC and its affiliates (the "ESG Parties") obtain information from sources they consider reliable, none of the ESG Parties warrants or guarantees the originality, accuracy and/or completeness of any data herein. None of the ESG Parties makes any express or implied warranties of any kind, and the ESG Parties hereby disclaim all warranties of merchantability and fitness for a particular purpose, with respect to any data herein. None of the ESG Parties shall have any liability for any errors or omissions in connection with any data herein. Further, without limiting any of the foregoing, in no event shall any of the ESG Parties have any liability for any direct, indirect, special, punitive, consequential or any other damages (including lost profits) even if notified of the possibility of such damages.

[24] Please see https://www.msci.com/legal/disclosures/climate-disclosures

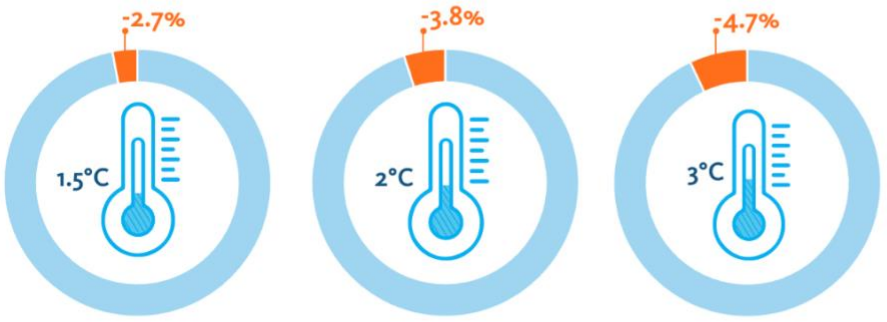
emissions data, due to the lack of reliable, verifiable and/or standardized data for Scope 3 emissions.[25]

Metrics: Physical Risk

Climate change will cause physical impacts that affect the companies in which we invest. To gain a better understanding of the value at risk to our public equities portfolio from potential impacts - such as the increased frequency and magnitude of coastal flooding - we rely on scenario analysis conducted by MSCI, as shown in Chart 9.[26]

CHART 9

Potential Value at Risk from the Physical Impacts of Climate Change



This chart shows the percentage of the value of the UC Investments' public equities portfolio at risk from the potential future costs of physical impacts of climate change. The value at risk estimates are conservative - they include business disruption and asset damage from climate impacts but do not include supply chain impacts.

The climate scenario analysis above compares the potential climate value at risk in different warming scenarios (i.e., 1.5°, 2° and 3°C). The analysis incorporates a comprehensive set of extreme weather hazards, including heat and cold, wind gusts, heavy snowfall and precipitation, and coastal and fluvial flooding.

Source: MSCI, 2024

Metrics: Low Carbon Transition Risk

The term "low carbon transition" refers to the global economy's shift to low or no greenhouse gas emitting sources of energy. This transition poses risks to - and opportunities for – companies due to regulatory, technological and market forces.[27]

---

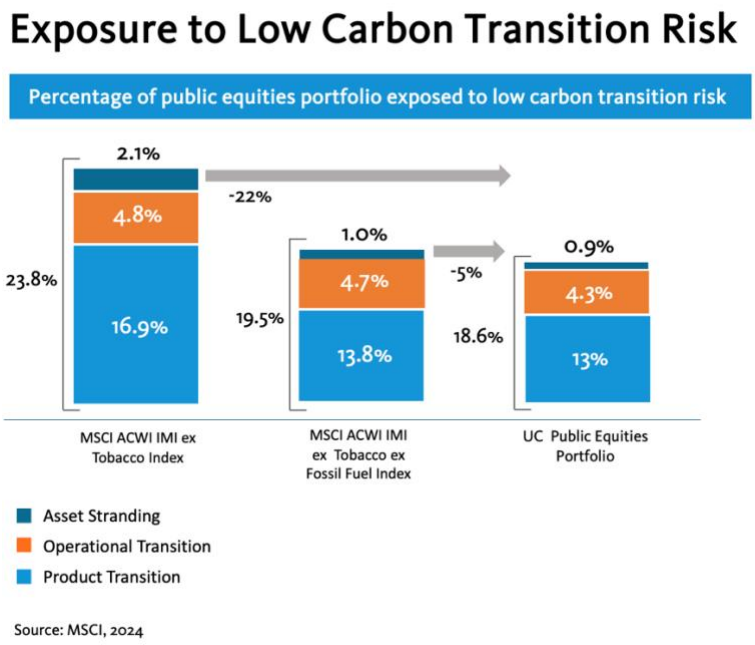
[25] Scope 1 emissions are direct emissions of greenhouse gases, such as direct combustion of fuel from owned or controlled sources of a company. Scope 2 emissions are indirect emissions of greenhouse gases from the generation of purchased energy. Scope 3 emissions are all indirect emissions of greenhouse gases (not included in scope 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions.

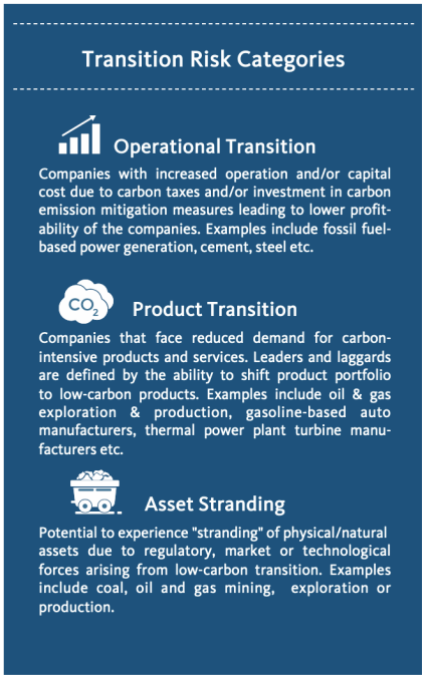
[26] MSCI's data sources and assessment methods have been established with input from the renowned Potsdam Institute for Climate Impact Research (PIK). MSCI ESG Research utilizes a global facility database to assess the impact of physical risks on company assets such as warehouses, factories and offices.

[27] For more information on low carbon transition risks, see Appendix A.

On the one hand, companies that create low carbon products and services – such as electric vehicles and renewable energy – could benefit from the transition to a low carbon economy. On the other hand, most companies face varying types and degrees of risk. The chart below illustrates the exposure of our $107 billion public equities portfolio to low carbon transition risk – 18.6%, or roughly $19.9 billion, is exposed.[28]

CHART 10





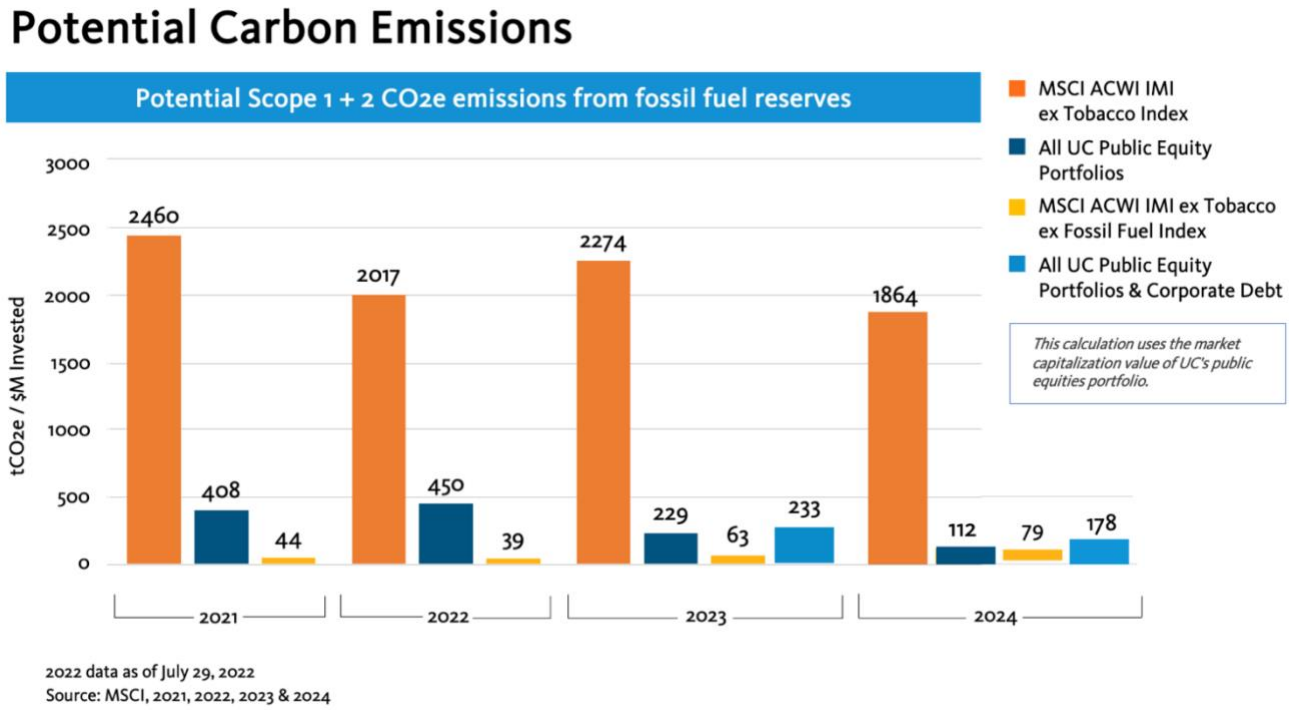
As Chart 10 indicates, our public equities portfolio is 22% less exposed to low carbon transition risk than the MSCI ACWI IMI ex Tobacco Index, primarily due to our decision to exclude fossil fuel reserve owning companies.[29] The value of UC Investments' public equities portfolio is 5% less exposed to low carbon transition risk than the MSCI ACWI IMI ex Tobacco ex Fossil Fuel Index, primarily due to our selection of public equity managers.

[28] MSCI's low carbon risk transition methodology now captures a broader scope of risk, including an improved analysis of Scope 3 emissions across all industries, as well as a more comprehensive look at asset stranding potential across the fossil fuel value chain.

[29] These two indices contain the same roughly 9,000 securities, except that the latter excludes fossil fuel reserve owning companies. UC Investments tracked the former index until July 2020, when we began tracking the ex-Fossil Fuel Index.

Charts 11 and 12 below quantify the potential future emissions from the stranded fossil fuel reserve assets in our public equity portfolio. Using a market capitalization value of UC's portfolio, Chart 11 indicates that UC's potential future CO2e emissions from fossil fuel reserves have decreased by 72% since 2022. Chart 11 also indicates that the potential future CO2e emissions from fossil fuel reserves in UC's public equities portfolio are 94% lower than those of a portfolio that tracks the MSCI ACWI IMI ex Tobacco Index, but 41% higher than those of a portfolio that tracks the MSCI ACWI IMI ex Tobacco ex Fossil Fuel Index.[30]

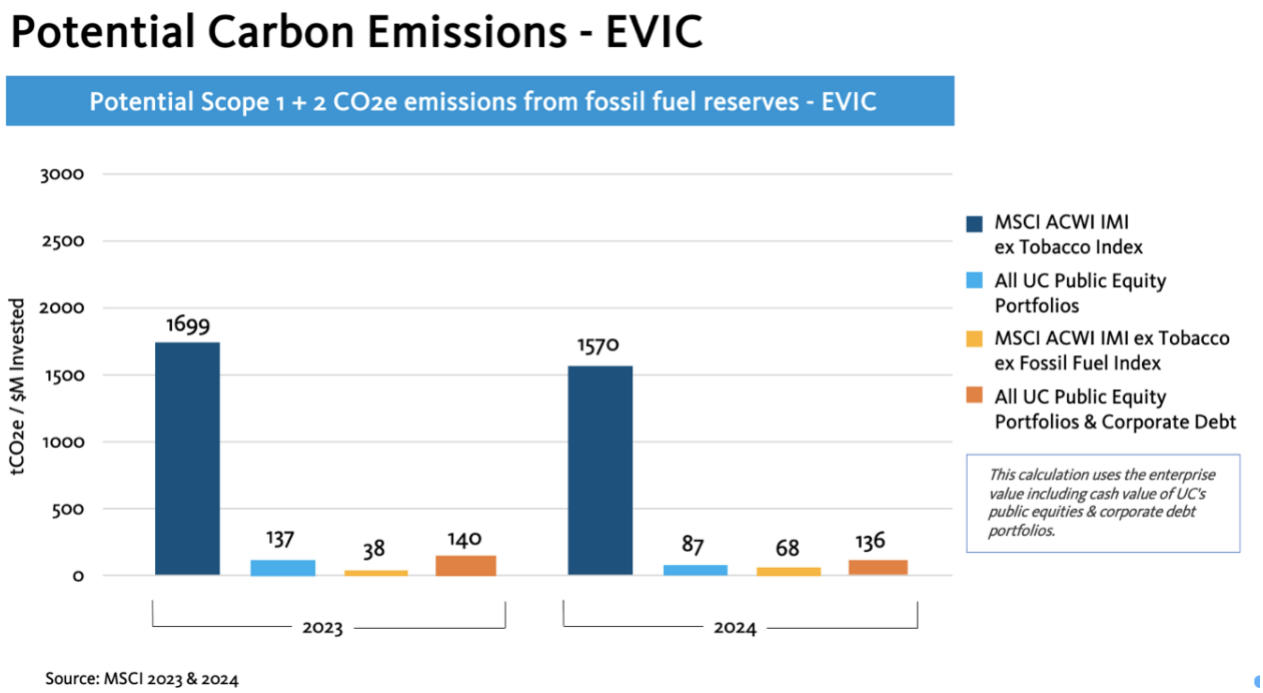
CHART 11



Using an enterprise value including cash (EVIC) value, the results are similar, as shown in Chart 12.

[30] There are fossil fuel reserves even in the MSCI ACWI IMI ex Tobacco ex Fossil Fuel Index, as Chart 11 indicates. As outlined in the MSCI Global ex Fossil Fuel Exclusion Indexes Methodology, the Fossil Fuel Reserves screen applied does not exclude metallurgical coal reserve ownership and companies with fossil fuel reserves used for other applications such as industrial application (e.g., companies classified in the Steel, Diversified Chemicals or Commodity Chemicals sub-industries). Source: https://www.msci.com/our-solutions/indexes/index-categories/esg-indexes/global-fossil-fuels-exclusion-indexes.

CHART 12

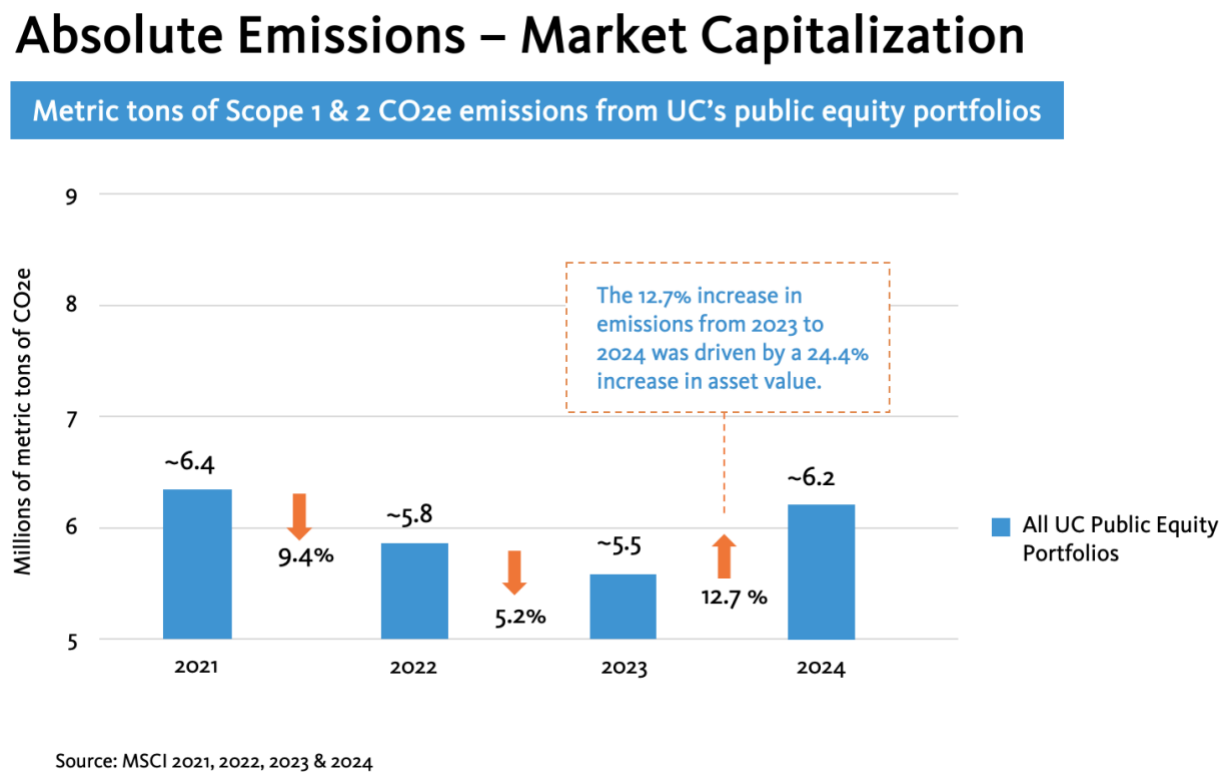


Metrics: Carbon Footprints

The "carbon footprint" of an investment portfolio, broadly speaking, measures the greenhouse gas emissions stemming from the portfolio companies. UC Investments tracks three different types of carbon footprints. One type (Charts 13-15) shows the emissions of CO2e in metric tons – i.e., the climate impact of UC's portfolio; the next (Charts 16-19) shows emissions of CO2e per million dollars invested – i.e., the climate impact of UC's portfolio normalized by the amount invested; and the third type of footprint (Charts 20-21) shows the weighted average carbon intensity of UC's portfolio –i.e., UC's exposure to carbon intensive companies.

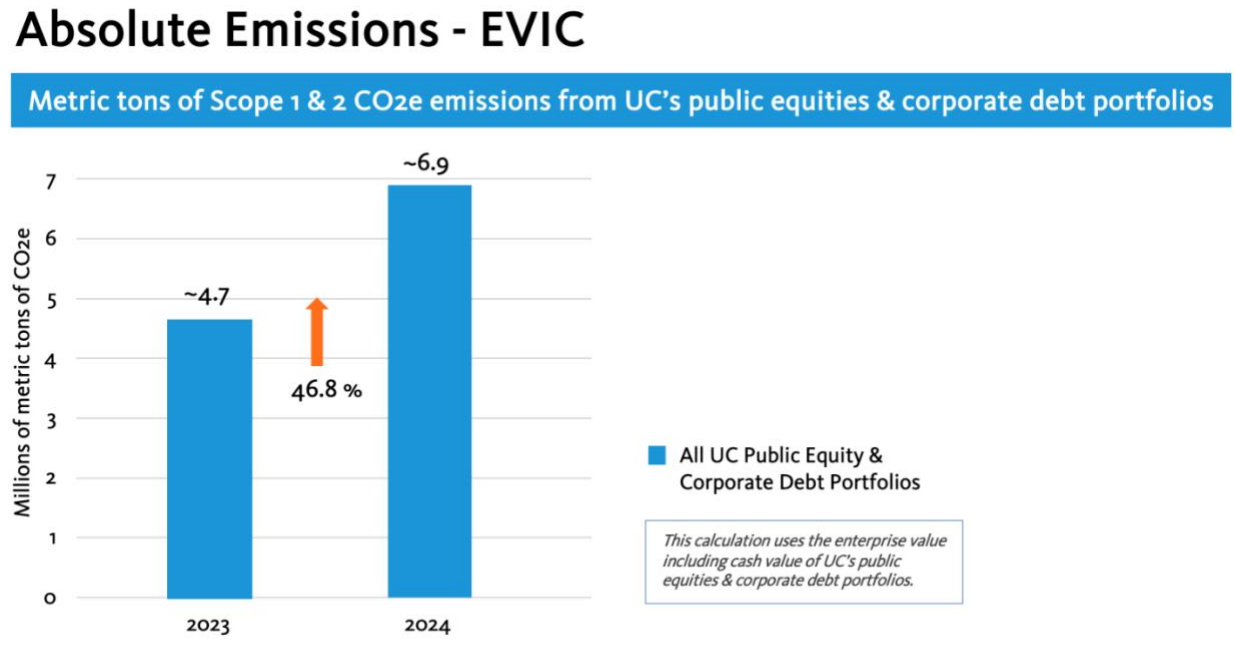
As shown in Chart 13 below, the metric tons of greenhouse gases emitted from the companies in UC Investments' public equities portfolio increased by 12.7% from 2023 to roughly 6.2 million metric tons of CO2e in 2024. This increase is driven by the growth in value of our public equities portfolio – up 24.4% year over year. Chart 14 shows a similar growth in the emissions data using an EVIC value. Chart 15 shows that the CO2e emissions of UC's private equity and private credit portfolios grew by 57.5% from 2023 to 2024, which was largely because we were able to obtain climate data for significantly more companies in these private portfolios than in 2023. In 2023, we had data for roughly 78%, while in 2024 data availability increased to roughly 93%.

CHART 13



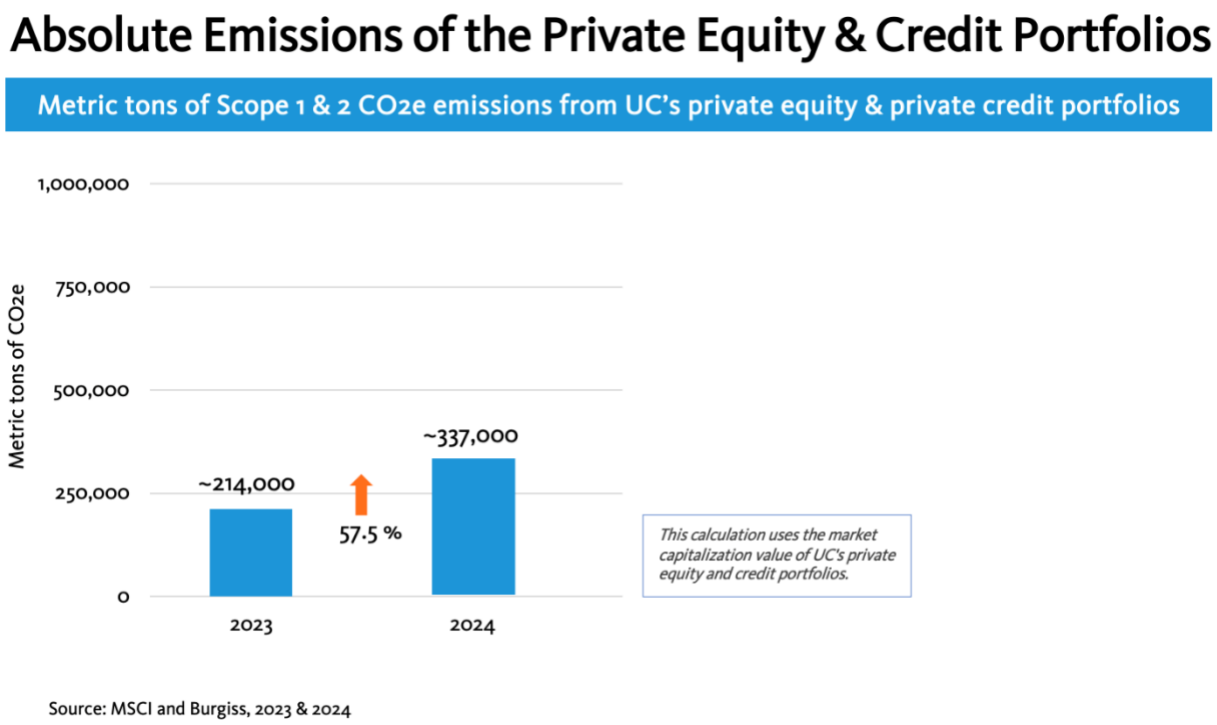
Source: MSCI 2021, 2022, 2023 & 2024

CHART 14



Source: MSCI 2023 & 2024

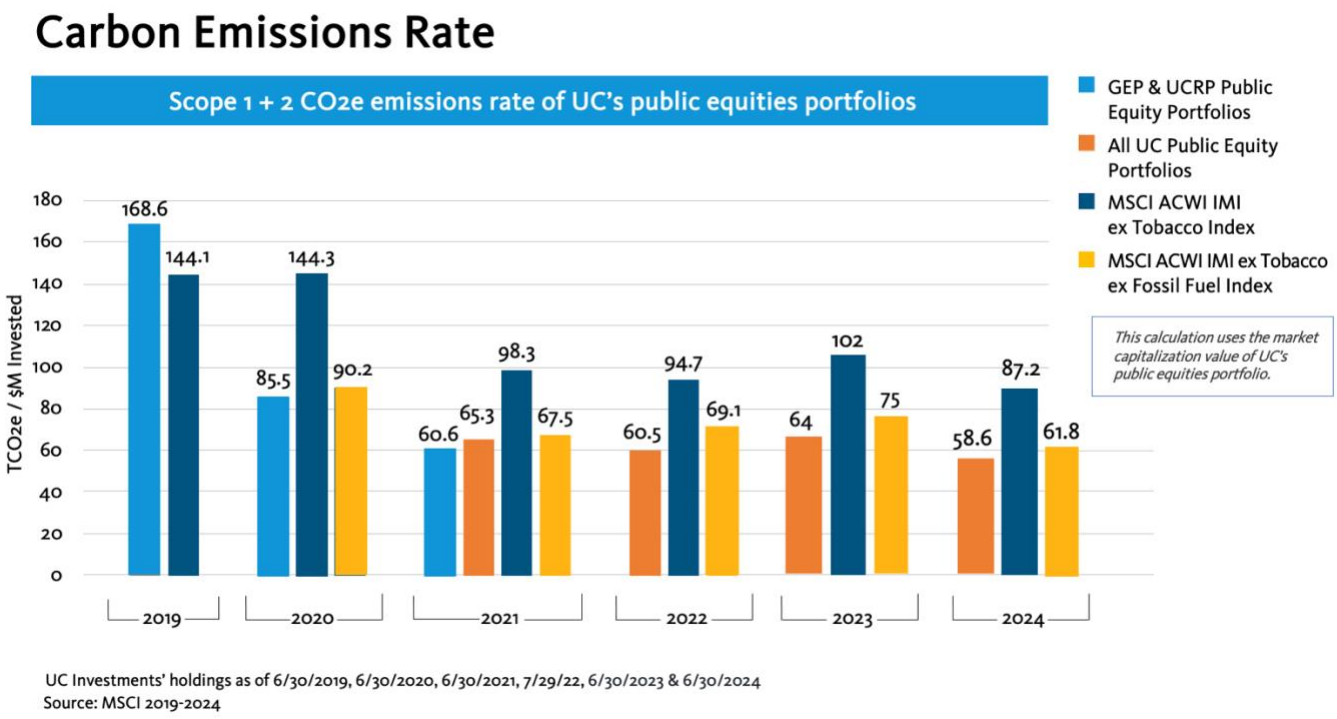
CHART 15



Source: MSCI and Burgiss, 2023 & 2024

To compare the carbon footprints of portfolios of different dollar amounts, asset owners use a standardized measurement: metric tons of CO2e per million dollars invested. UC's emissions rate is 5.5% lower than its benchmark index and 48.8% lower than that of the "parent" index, the MSCI ACWI IMI ex Tobacco Index, as indicated in Chart 16.

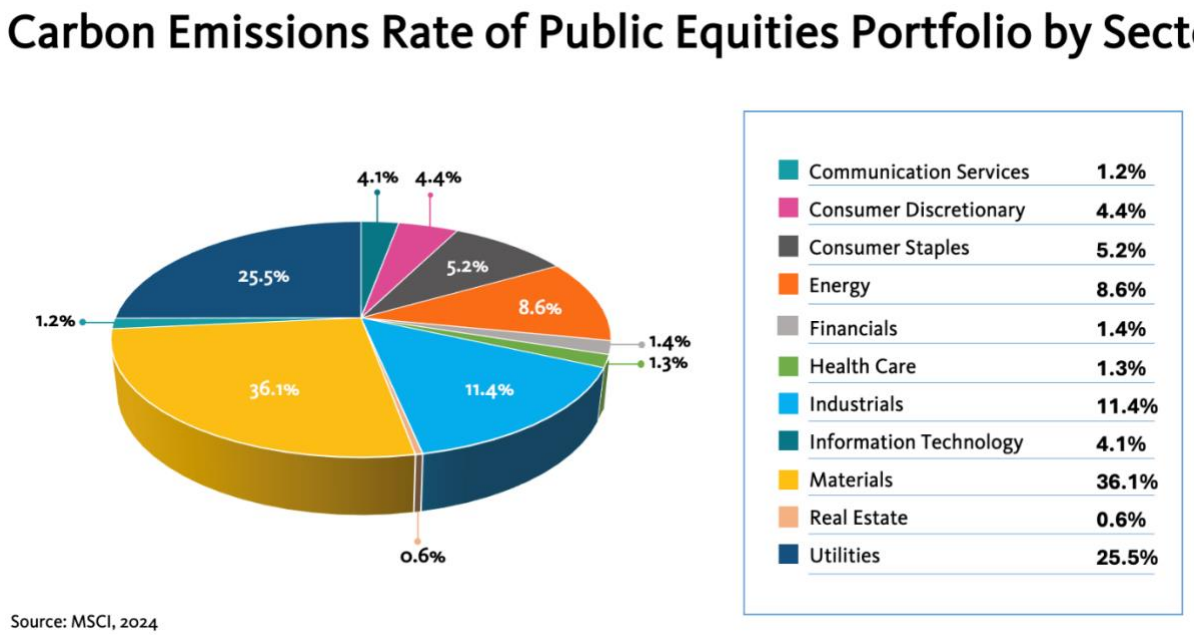
CHART 16



UC Investments' holdings as of 6/30/2019, 6/30/2020, 6/30/2021, 7/29/22, 6/30/2023 & 6/30/2024
Source: MSCI 2019-2024

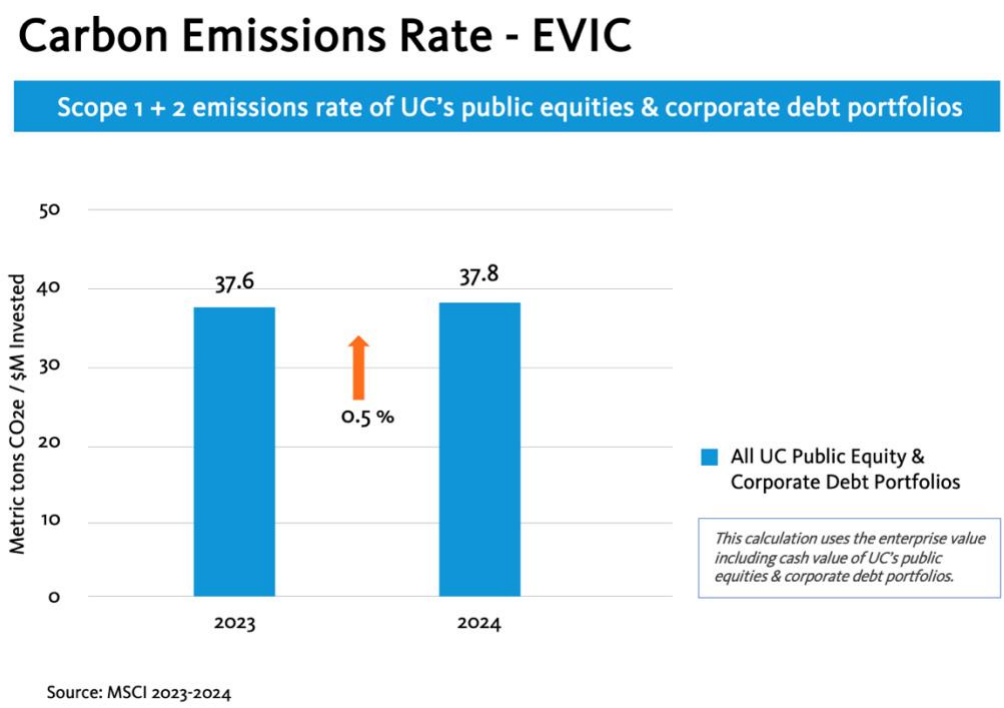
Chart 17 illustrates the contribution by sector to UC Investments' public equity carbon emissions rate. As indicated, the most significant emitting sectors in our portfolio are industrials, materials and utilities, which are also among the smallest sectors, by weight, in the portfolio.

CHART 17



Source: MSCI, 2024

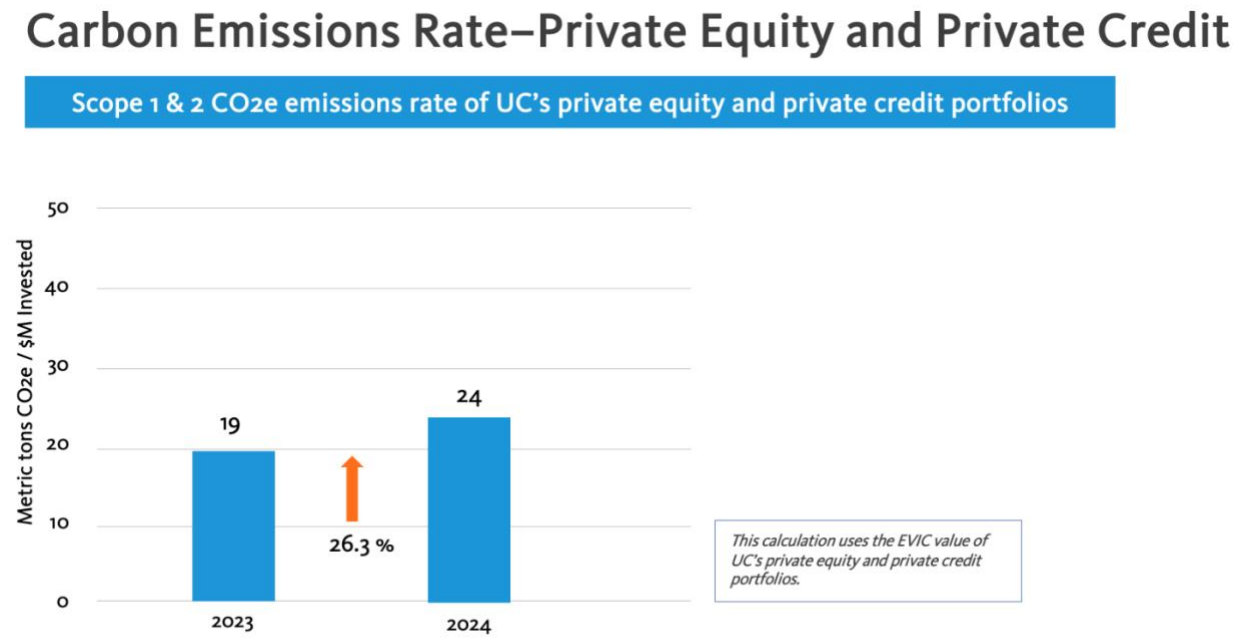
CHART 18



Source: MSCI 2023-2024

The carbon emissions rate of our private equity and private credit portfolios increased in 2024, due to an increase in data availability as shown in Chart 19.

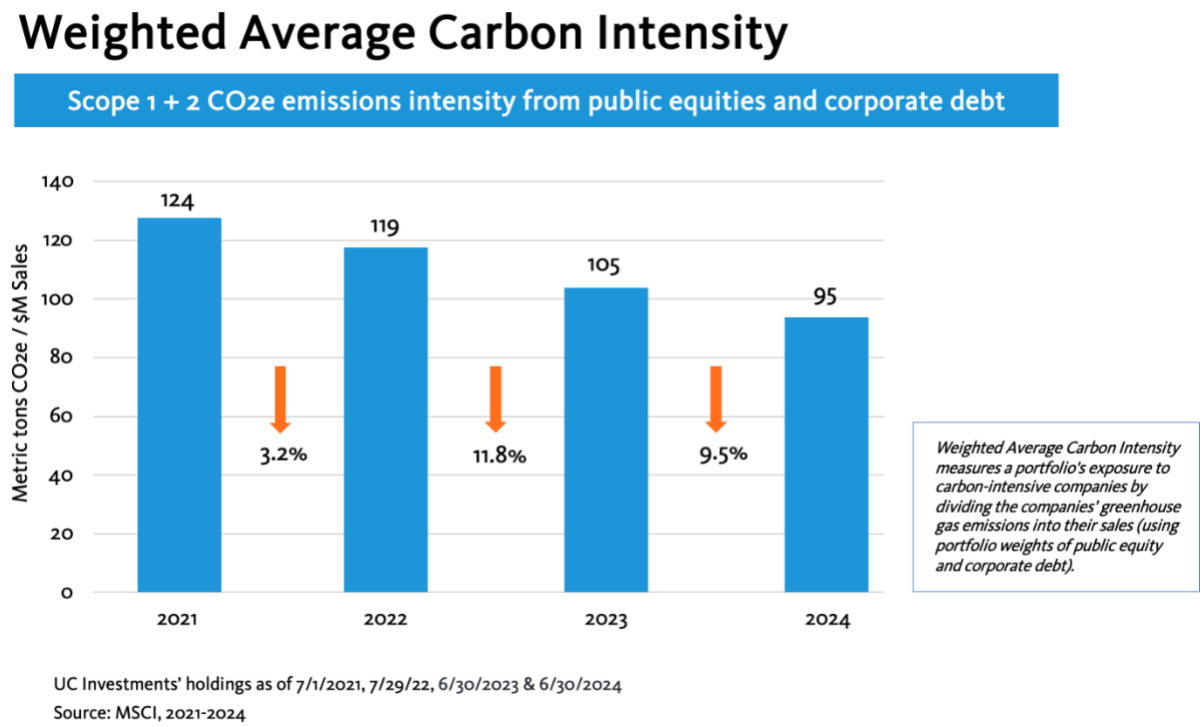
CHART 19



Source: MSCI and Burgiss, 2023 & 2024

The weighted average carbon intensity (WACI) measures a portfolio's exposure to carbon-intensive companies as determined by the portfolio companies' carbon intensities (normalized over sales) and portfolio weights. The WACI methodology enables inclusion of emissions intensity of corporate debt as well as public equities. Chart 20 below shows that the weighted average carbon intensity of our combined public markets portfolios fell by 9.5% from 2023 to 2024.

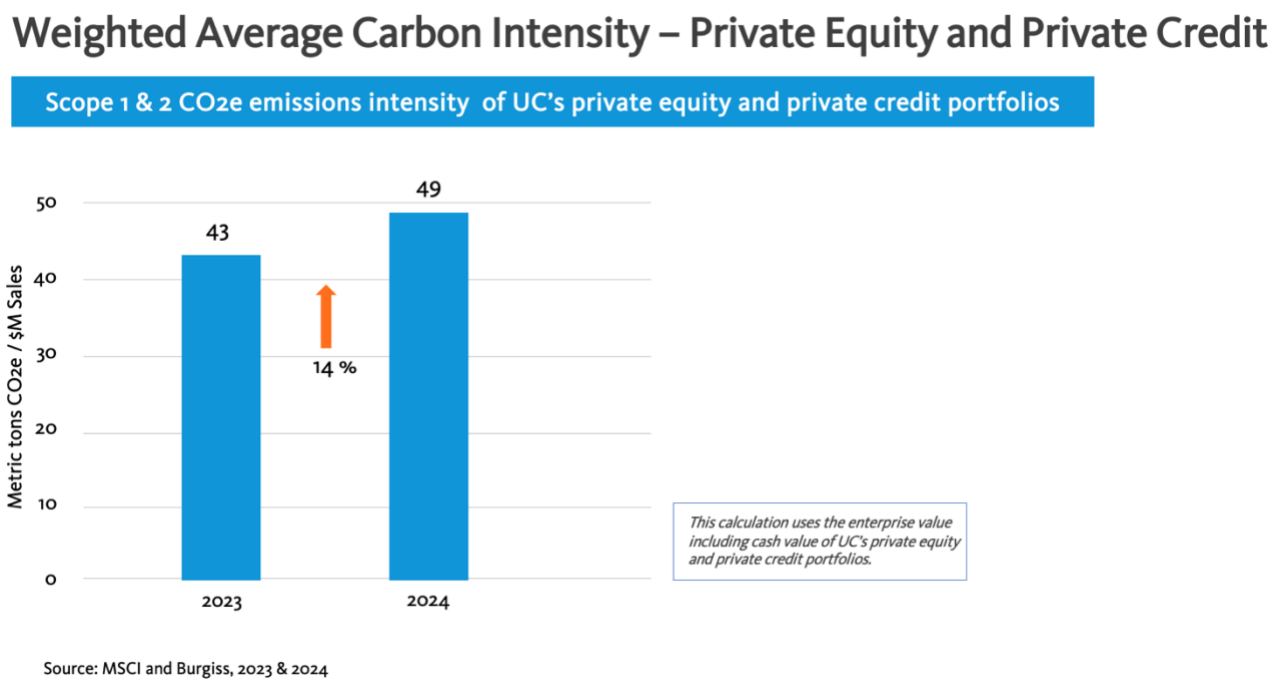
CHART 20



UC Investments' holdings as of 7/1/2021, 7/29/22, 6/30/2023 & 6/30/2024
Source: MSCI, 2021-2024

The WACI for private equity and private credit increased by 14% from 2023 to 2024, largely because we were able to obtain climate data for significantly more companies in these private portfolios than in 2023.

CHART 21



Source: MSCI and Burgiss, 2023 & 2024

Metrics: Dollars Invested in Fossil Fuel Reserve Owning Assets

Through negative screening and sales of assets, the endowment, pension, retirement savings and working capital portfolios contain *de minimis* exposure to fossil fuel reserve owning assets – significantly less than 1% by dollar value of our assets under management.

VIII. Conclusion

In 2015, UC Investments began integrating environmental sustainability into our investment process in the belief that doing so would lead to the most accurate risk-reward calculation. Ten years on, UC Investments remains at the forefront of addressing climate change in our investment portfolio. We hope this report will serve as the basis for robust dialogue, learning, and continued improvement.

By continuing to assess financially material climate risks and opportunities, UC Investments will preserve its ability to achieve sustainable long-term returns for the University of California.

APPENDIX A:
Summary of Climate Metrics Used by UC Investments

Summary of MSCI ESG Research's Climate Metrics

Climate Metric	Unit	Investment Question Answered
Carbon Footprint	tCO_2e	What is the annual amount of CO_2e emissions from the companies in the portfolio?
Carbon Footprint Normalized	tCO_2e/$million invested (EVIC and/or market cap)	For every USD 1 million of financing of the companies in the portfolio, what is the amount of carbon emissions an investor will be responsible for?
Weighted Average Carbon Intensity	tCO_2e/USD million revenues	What is the amount of carbon emissions the companies in the portfolio emit to generate every USD 1 million of revenue?
Potential Carbon Emissions	tCO_2e/$million invested (EVIC and/or market cap)	What is the amount of potential carbon emissions (in tons of CO_2e) embedded in the fossil-fuel reserves (coal, oil and gas) owned by the companies in the portfolio?
Low Carbon Transition Risk Exposure	% of market value	What percentage of the portfolio's market value is exposed to climate transition risks?
Physical Climate Value at Risk	% of portfolio value at risk	What is the potential value at risk to the portfolio from the physical impacts of climate change under different global temperature warming scenarios?

Adapted from MSCI ESG Research, 2023

APPENDIX B:
Climate Change Related Investment Risks

Examples of Climate-Related Risks and Potential Financial Impacts

Type	Climate-Related Risks	Potential Financial Impacts
Transition Risks	**Policy and Legal**	
	• Increased pricing of GHG emissions • Enhanced emissions-reporting obligations • Mandates on and regulation of existing products and services • Exposure to litigation	• Increased operating costs (e.g., higher compliance costs, increased insurance premiums) • Write-offs, asset impairment, and early retirement of existing assets due to policy changes • Increased costs and/or reduced demand for products and services resulting from fines and judgments
	Technology	
	• Substitution of existing products and services with lower emissions options • Unsuccessful investment in new technologies • Costs to transition to lower emissions technology	• Write-offs and early retirement of existing assets • Reduced demand for products and services • Research and development (R&D) expenditures in new and alternative technologies • Capital investments in technology development • Costs to adopt/deploy new practices and processes
	Market	
	• Changing customer behavior • Uncertainty in market signals – Increased cost of raw materials	• Reduced demand for goods and services due to shift in consumer preferences • Increased production costs due to changing input prices (e.g., energy, water) and output requirements (e.g., waste treatment) • Abrupt and unexpected shifts in energy costs • Change in revenue mix and sources, resulting in decreased revenues • Re-pricing of assets (e.g., fossil fuel reserves, land valuations, securities valuations)
	Reputation	
	• Shifts in consumer preferences • Stigmatization of sector • Increased stakeholder concern or negative stakeholder feedback	• Reduced revenue from decreased demand for goods/services • Reduced revenue from decreased production capacity (e.g., delayed planning approvals, supply chain interruptions) • Reduced revenue from negative impacts on workforce management and planning (e.g., employee attraction and retention) • Reduction in capital availability

APPENDIX C:
Glossary of Key Terms

Greenhouse gases (GHGs): Greenhouse gas emissions trap heat in the atmosphere and cause the greenhouse effect (climate change). There are seven GHGs: carbon dioxide, methane, sulfur hexafluoride, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and nitrogen trifluoride.

CO2e: This acronym stands for carbon dioxide equivalent. It is a catch-all term that includes emissions of all seven greenhouse gases, not just carbon dioxide. Each greenhouse gas has a different global warming potential; CO2e normalizes the global warming potential.

Scope 1 emissions: Direct emissions of greenhouse gases, such as direct combustion of fuel from owned or controlled sources of a company.

Scope 2 emissions: Indirect emissions of greenhouse gases from the generation of purchased energy.

Scope 3 emissions: All indirect emissions of greenhouse gases (not included in scope 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions.

Decarbonization: The process by which countries, individuals or other entities aim to achieve zero fossil carbon existence. Typically refers to a reduction of the carbon emissions associated with electricity, industry, and transport.

Physical risks: Risks related to the physical or natural environment such as flooding and wildfires that pose a threat to physical assets e.g., buildings, equipment, and people.

Transition risks: Risks from policy changes, reputational impacts and shifts in market preferences, norms, and technology. See Appendix A for more information.

Stranded assets: Assets exposed to devaluations or conversion to "liabilities" because of unanticipated changes in their initially expected revenues due to innovations and/or evolutions of the business context, including changes in public regulations at the domestic and international levels.

Net zero CO2 emissions: Net zero carbon dioxide (CO2) emissions are achieved when anthropogenic CO2 emissions are balanced globally by anthropogenic CO2 removals over a specified period. The term "net zero" is also typically associated with the 2050 date or earlier, as this is aligned with the scientific recommendations to achieve a 1.5°C scenario.

Benchmark index: A market index that may be used as the benchmark against which portfolio performance is evaluated.

MSCI ACWI IMI ex Tobacco Index: This index is based on the MSCI ACWI IMI Index and designed to represent performance of the full opportunity set of large and mid-cap stocks across 23 developed and 27 emerging markets, excluding companies classified under the tobacco sub-industry based on the Global Industry Classification Standard.

MSCI ACWI IMI ex Tobacco ex Fossil Fuel Index: This index is based on the MSCI ACWI IMI Index and designed to represent performance of the full opportunity set of large and mid-cap stocks across 23 developed and 27 emerging markets. It excludes companies that own oil, natural gas, or thermal coal reserves and those classified under the tobacco sub-industry based on the Global Industry Classification Standard.

Office of the Chief Investment Officer of the Regents of the University of California (UC Investments)

1111 Franklin Street

Oakland, CA 94607

(510) 987-9005

www.ucop.edu/investment-office/index.html