

# THE CARBON IMPACT

OF U.S. COMPANY-SPONSORED 401(K) PLANS



20  
22



CFA Institute

BUSINESS  
**CLIMATE**  
FINANCE

INCUBATED BY IMPACT EXPERIENCE

# TABLE OF CONTENTS

<b>INTRODUCTION</b> .....	<b>3</b>
<b>WHY IS IT IMPORTANT?</b> .....	<b>4</b>
<b>FINDINGS BY THE NUMBERS</b> .....	<b>5</b>
Absolute carbon emissions in 401(k) plans .....	<b>5</b>
Retirement assets in climate reporting frameworks .....	<b>6</b>
Carbon intensity in 401(k) plans .....	<b>8</b>
Overview of target date funds .....	<b>9</b>
<b>CONSIDERATIONS</b> .....	<b>12</b>
Understanding the current state .....	<b>12</b>
Moving forward .....	<b>13</b>
<b>APPENDIX</b> .....	<b>15</b>
Methodology .....	<b>15</b>
Glossary .....	<b>16</b>
References .....	<b>18</b>
Important Notices .....	<b>20</b>

## INTRODUCTION

Retirement assets in the US totaled \$37.5 trillion in Q1 2022,<sup>1</sup> with defined contribution (“DC”) plans making up around 28% (\$10.4 trillion<sup>1</sup>) of the total – almost half of the nation’s \$24.4 trillion GDP during the same period.<sup>2</sup> Where and how this capital is allocated can play an instrumental role in financing or decarbonizing our current fossil-fuel-based economy. However, corporate climate pledges and actions rarely consider carbon emissions and financial climate risks and opportunities relating to retirement plans. There are many reasons for this oversight. First, DC plans are participant directed and not carried on corporate balance sheets in the same way as a company’s business operations. This historically has removed the onus to include associated emissions in a corporate’s greenhouse gas (“GHG,” “carbon”) inventory. Second, DC plans are governed by the Employee Retirement Income Security Act (“ERISA”), which is regulated by the Department of Labor (“DOL”), and mandates private retirement plan fiduciaries make decisions solely in the interest of plan participants and beneficiaries. In its regulatory role, the DOL has issued guidance related to ESG investing that has varied over the years allowing for many interpretations.

Keeping in mind these unique considerations as well as current carbon accounting and regulatory developments, the following report explores the question: Should corporate plan sponsors in the United States account for climate metrics in their DC plans not only to capture the extent of their carbon footprint, but also to understand the potential material climate risks and opportunities posed to plan participants’ long-term financial outcomes?



## WHY IS THIS IMPORTANT?

In 2021, global carbon emissions reached record levels in spite of increasingly stark warnings of a growing climate crisis driven by anthropocentric greenhouse gas emissions.<sup>3</sup> In light of this challenging context, corporate climate action is accelerating. Driven by stakeholder demand, there has been a proliferation of voluntary GHG and climate risk disclosure on behalf of corporates.<sup>4,5</sup> In the U.S, the next evolution of reporting may be mandatory. Financial regulators are indicating that they will push for corporate climate disclosures, such as with the US Securities and Exchange Commission (“SEC”) proposed rulemaking to enhance and standardized climate-related disclosures for listed issuers in 2022.<sup>6</sup>

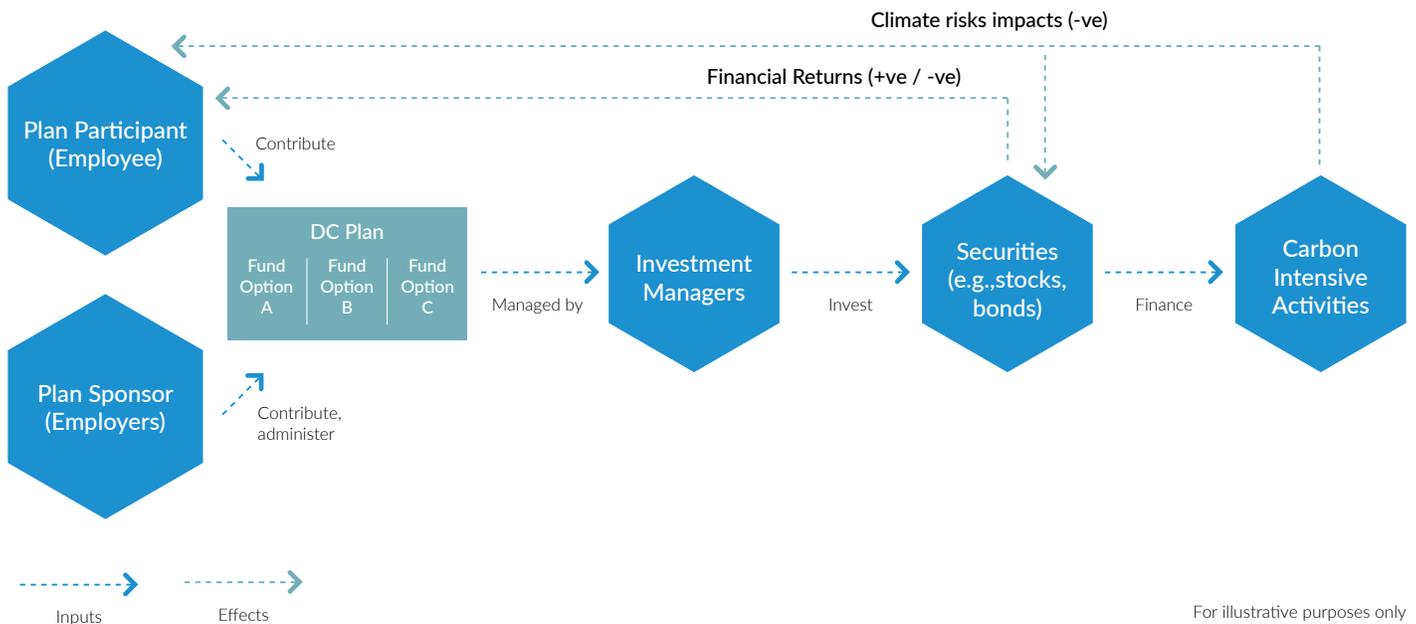
As climate-related disclosures come under increasing scrutiny from a range of stakeholders,

understanding and considering accurate and comprehensive data will be essential for corporates and investment managers in this new paradigm. However, since DC assets are not carried on a corporate’s balance sheet, associated emissions have been historically excluded from GHG accounting. The forthcoming update of the Greenhouse Gas Protocol (GHGP) is expected to provide further guidance as to this and other aspects of Scope 3, Category 15.<sup>7</sup> Understanding the carbon impact of this category may materially affect a plan sponsor’s total GHG footprint and their climate strategy, therefore warranting further evaluation.

The nature of a 401(k) plan means that investment risks are borne by the employee as an investor, not the corporate plan sponsor. The plan sponsor, however, often chooses which products

are available to the employee, therefore bearing responsibility for the field of choices and the associated risks and opportunities. If physical (climate events such as wildfires, storms) and transition (policy actions, regulations, market demand) climate risks have a financially material impact on returns, it is the employee who accepts the outcome. Research shows climate risks have the potential to reduce US GDP 13% by 2048.<sup>8</sup> Such risks can have adverse impacts on corporate profitability, potentially affecting company valuations and consequently their stock prices. On the other hand, climate innovations may present upside opportunities. As illustrated in Figure 1, the interplay between climate risks and financial returns can trickle down to retirement accounts, impacting employee financial wellness and participant outcomes.

**Figure 1: How a DC plan may fund carbon-intensive activities**



# ABSOLUTE CARBON EMISSIONS IN 401(K) PLANS



The following findings were based on a random sample of 38 non-financial DC plans from S&P 500 index companies (“S&P 500”) as of July 2022. DC plan information was obtained from companies’ 2020 Form 5500, which are made publicly available by the Internal Revenue Service.<sup>9</sup> Fund carbon metrics were obtained from MSCI ESG Manager as of August 15, 2022. Due to data availability, only mutual funds and collective investment funds (pooled funds) were considered. Please see the Methodology section in the Appendix for more detail.

On average, 401(k) plans in the study have financed carbon emissions of **64 tCO<sub>2</sub>e per \$1M retirement assets invested** (tCO<sub>2</sub>e/\$M invested). In other words, a \$1 billion retirement plan with financed emissions of 64 tCO<sub>2</sub>e/\$M invested can be responsible for 64,000 metric tons of absolute CO<sub>2</sub>e.<sup>a</sup> Financed carbon emissions from DC plans as a percent of a corporate’s GHG footprint can vary across, and even within, sectors (Figure 2). Emissions will be dependent on variables specific to a company such as plan participation, number of employees, employer matching contributions and vesting schedules. Nevertheless, the measure may offer stakeholders a holistic view of a plan’s attributable emissions across the entire value chain.

**Figure 2: Illustrative example showing financed emissions from DC plans compared to Scope 1-2 absolute emissions.**



**Company A**

Company A has 100,000 tCO<sub>2</sub>e of operational emissions (Scope 1 & 2)

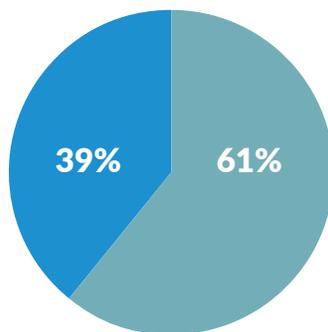
Company A’s 401(k) plan has \$1 billion in assets invested in mutual funds therefore, the carbon footprint is at least 64 tons per \$million invested, which is roughly 64,000 tons CO<sub>2</sub>e



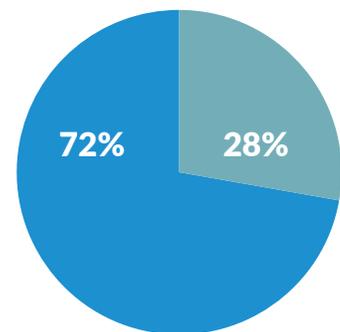
**Company B**

Company B has 50,000 tCO<sub>2</sub>e of operational emissions (Scope 1 & 2)

Company B’s 401(k) plan has \$2 billion in assets invested in mutual funds therefore, the carbon footprint is at least 64 tons per \$million invested, which is roughly 128,000 tons CO<sub>2</sub>e



Company A



Company B

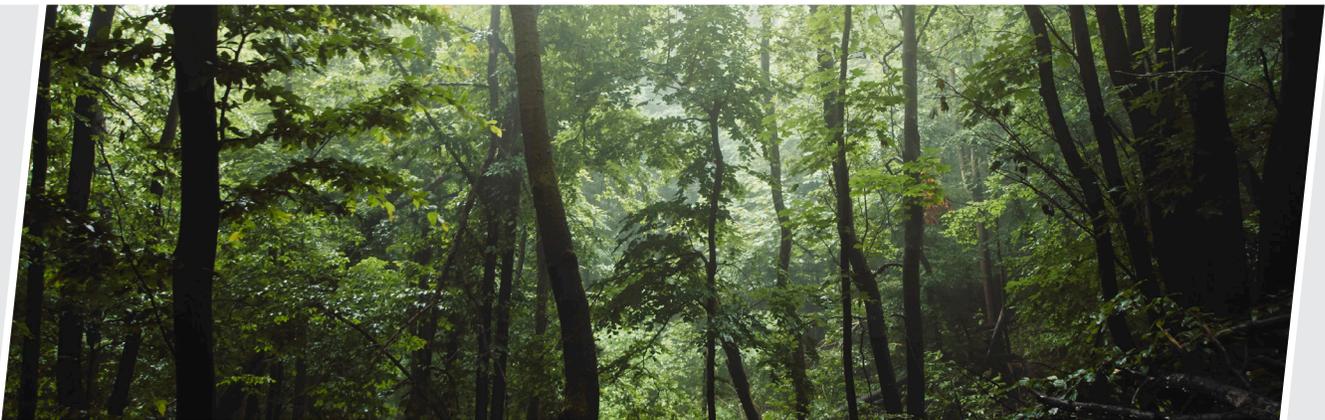
■ 401(k) emissions (tCO<sub>2</sub>e absolute)

■ Operational emissions (tCO<sub>2</sub>e absolute)

<sup>a</sup>Carbon dioxide equivalent (CO<sub>2</sub>e): Carbon dioxide equivalent or CO<sub>2</sub>e means the number of metric tons of CO<sub>2</sub> emissions with the same global warming potential as one metric ton of another greenhouse gas (US EPA).

# RETIREMENT ASSETS IN CLIMATE REPORTING FRAMEWORKS

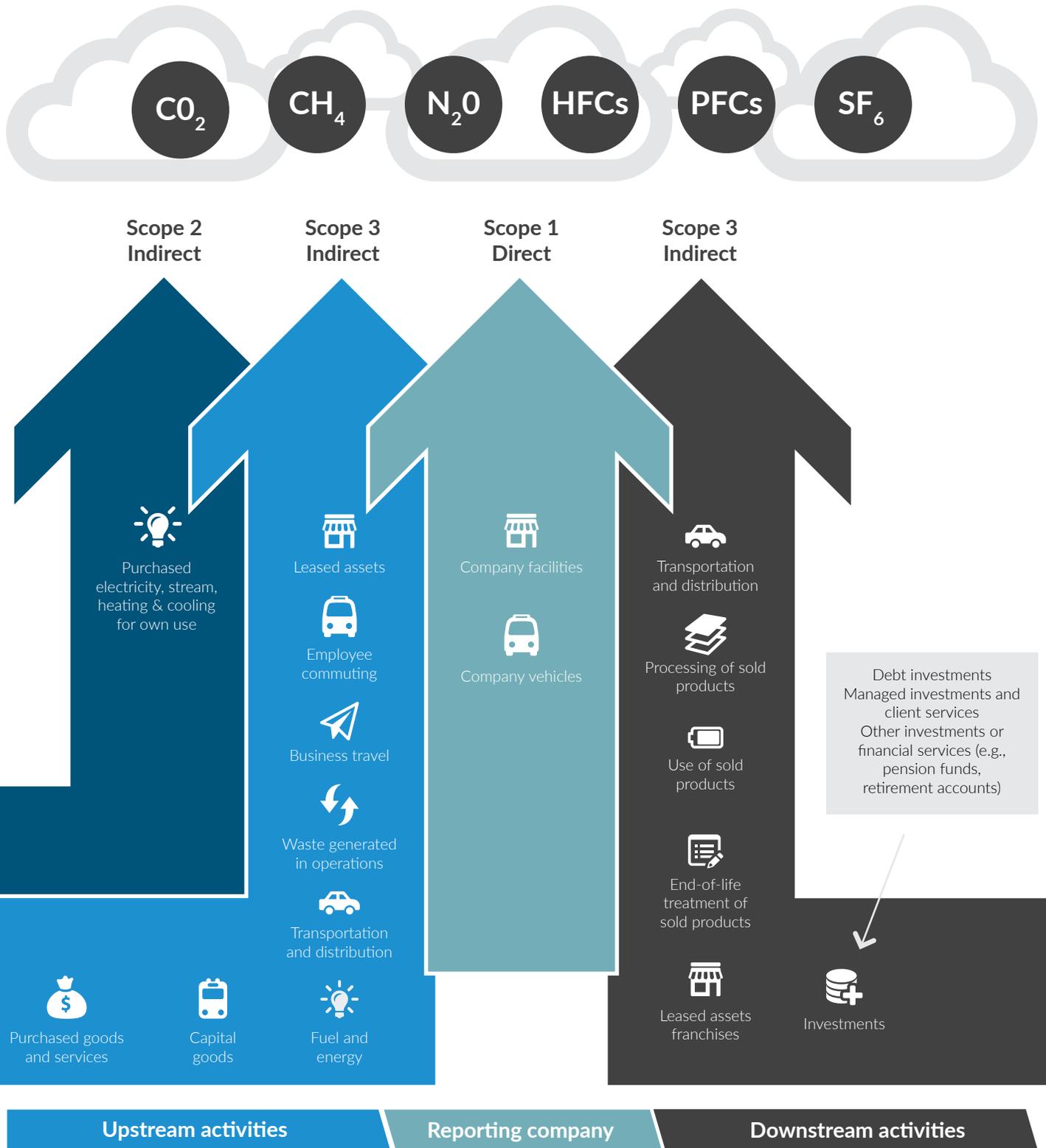
The Greenhouse Gas Protocol (“GHGP”) is recognized as the preeminent standard for corporations to track and report GHG emissions across their operations (Scope 1 and 2) and value chain (Scope 3). Scope 3 contains 15 underlying categories including emissions associated with investments (Category 15). Category 15 was developed with a focus on investors and financial services companies, entities for whom providing capital or financing is a service they provide; however, the category may be relevant for non-financial institutions’ investments as well. The Partnership for Carbon Accounting Financials (“PCAF”), formally endorsed by the GHGP as GHGP-compliant, provides methodologies for financial institutions to measure and report their financed emissions. With over 300 financial institutions and about \$80 trillion AUM using the PCAF standard, financial carbon accounting has now become mainstream.<sup>10</sup>



The GHGP Standard provides three approaches for calculating and reporting GHG emissions: the equity approach, the financial control approach and the operational control approach.<sup>11</sup> The most common method for establishing boundaries is operational control, whereby the organization accounts for 100% of emissions from operations if it has the full authority to introduce and implement its operating policies.<sup>12</sup> Although DC assets are off balance sheet, an employer’s matching contribution,

if offered, is included as an operating expense on their income statement. It can be reasoned that the matched contributions directly finance the emissions associated with the retirement plan, and thereby should be considered in a company’s Category 15 emissions. Furthermore, when the plan fiduciary is the employer, they determine which funds to include in their DC plan lineup as part of operating policies – could it also be their responsibility to track emissions and, if relevant, set emission reduction targets?

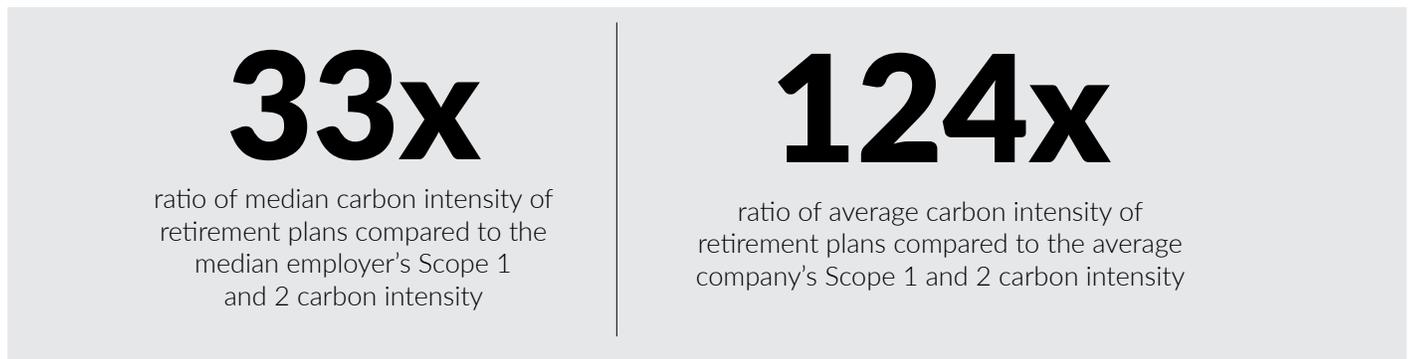
Figure 3: Overview of GHG Emissions



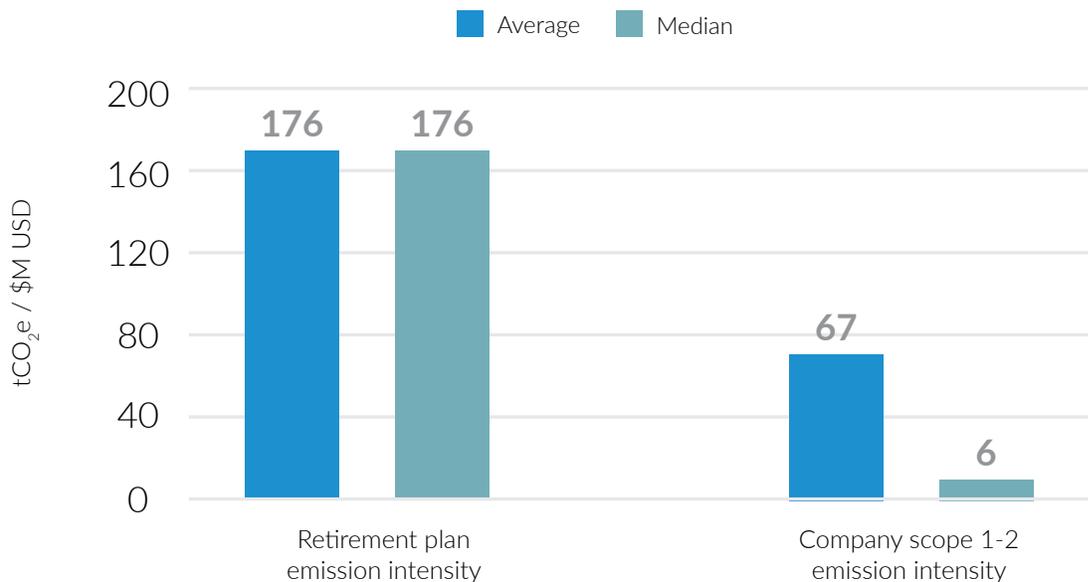
Source: World Resource Institute (2011) <sup>13</sup>

# CARBON INTENSITY IN 401(K) PLANS

Similar to absolute GHG emissions, operational carbon intensity will vary across sectors, but the 401(k) emissions in the sample tend to be fairly homogeneous even when accounting for outliers (Figure 4). Unlike financed emissions that consider an investor's ownership in a company and attribute an investment's Scope 1 and 2 emissions proportionally, weighted average carbon intensity ("WACI") measures the carbon emissions per unit of revenue. Simply put, WACI considers a portfolio's exposure to carbon-intensive companies, which may indicate higher exposure to climate transition risk. By normalizing emissions by US\$1 million of sales (tCO<sub>2</sub>e/\$M sales), this intensity metric facilitates a like-for-like comparison between companies and funds of different sizes as well as allowing for comparisons across asset classes.

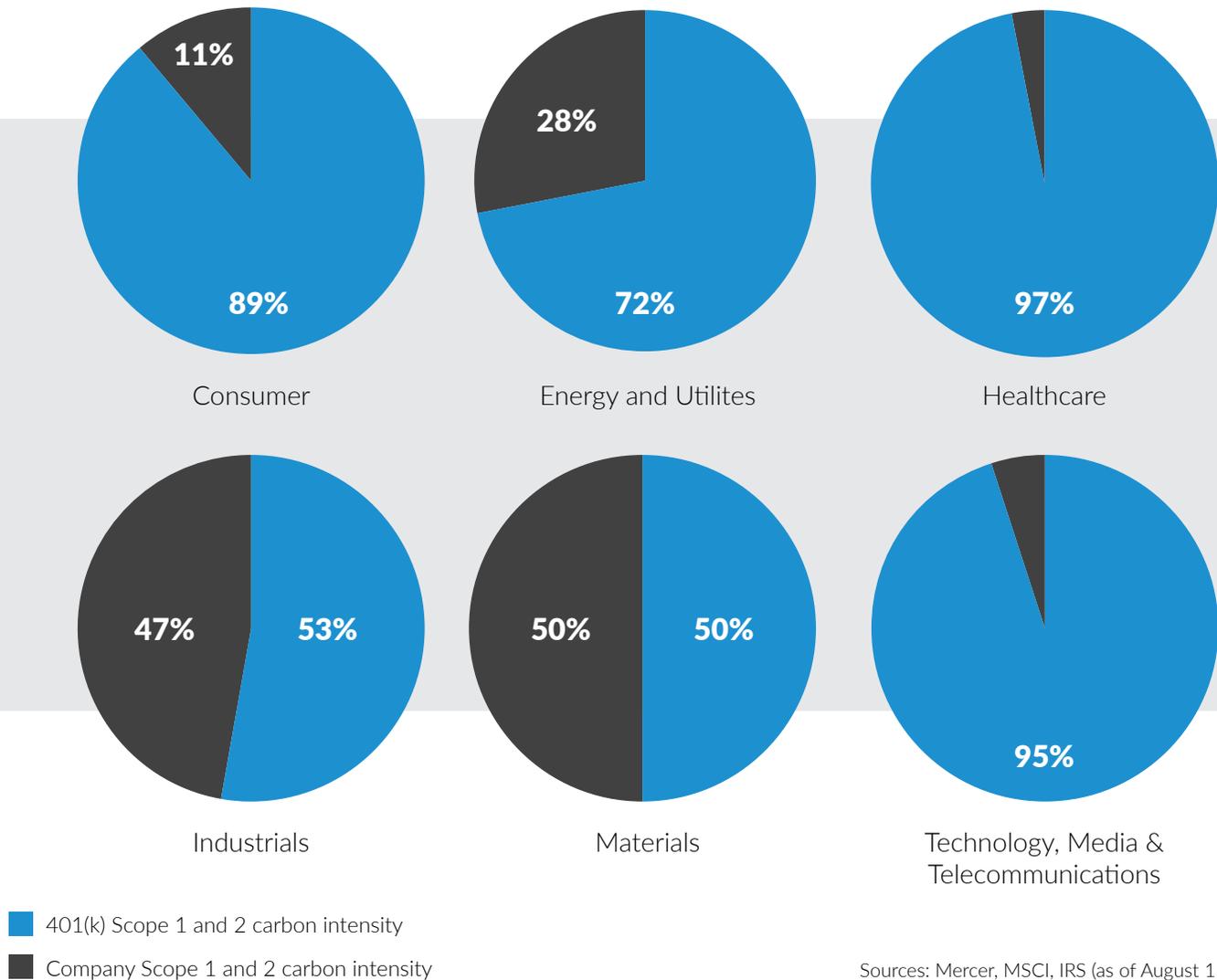


**Figure 4: Median Carbon Intensity of 401(k) plans vs median plan sponsor's Scope 1 and 2 carbon intensity n=38 plan sponsors**



Breaking out the sample results by industry, carbon intensity as a percent of a corporate's overall exposure ranges. However, even for traditionally heavy-emitting industries such as industrials, carbon intensity from 401(k) holdings still make up a sizable percentage (Figure 5).

**Figure 5: Average Weighted Carbon Intensity of 401(k) plans compared to a company's Scope 1 and 2 intensity across industries n=37 plan sponsors (industries with >2 plans in the sample included)**



In 2021, approximately 74% of the S&P 500 reported >80% of the Task Force on Climate Related Disclosures ("TCFD") tagged questions in CDP<sup>14</sup> and 48% aligned their corporate ESG reporting to TCFD disclosures.<sup>15</sup> Therefore, it's not surprising that many of the companies in the sample publicly disclose monitoring and managing climate-related risks as part of their enterprise risk management. If a company has already recognized the importance of managing their own operational climate risks, what is their responsibility to understand if financially material climate-related risks are being considered by asset managers for the DC plan lineup they choose for their employees?

### Overview of target date funds

Many DC plans offer automatic enrollment, and the Qualified Default Investment Alternatives (herein referred to as “default options”) are typically target date funds (“TDF”). In the sample, DC plans had, on average, 45% of total retirement assets invested in TDFs. The high exposure to TDFs may drive carbon intensity at the total plan level, potentially increasing exposure to climate risk. TDFs have changing risk profiles over a set time horizon. Allocation away from equities to traditionally lower-risk assets such as cash and fixed income generally increase over time as plan participants reach retirement age (Figure 6). However, these lower-risk assets are generally more carbon intensive. Therefore, a TDF may increase in carbon intensity as the fund nears its specified target date. A TDF provider could explore allocations toward green bonds or low-carbon equity investments in the underlying funds that comprise the TDF.

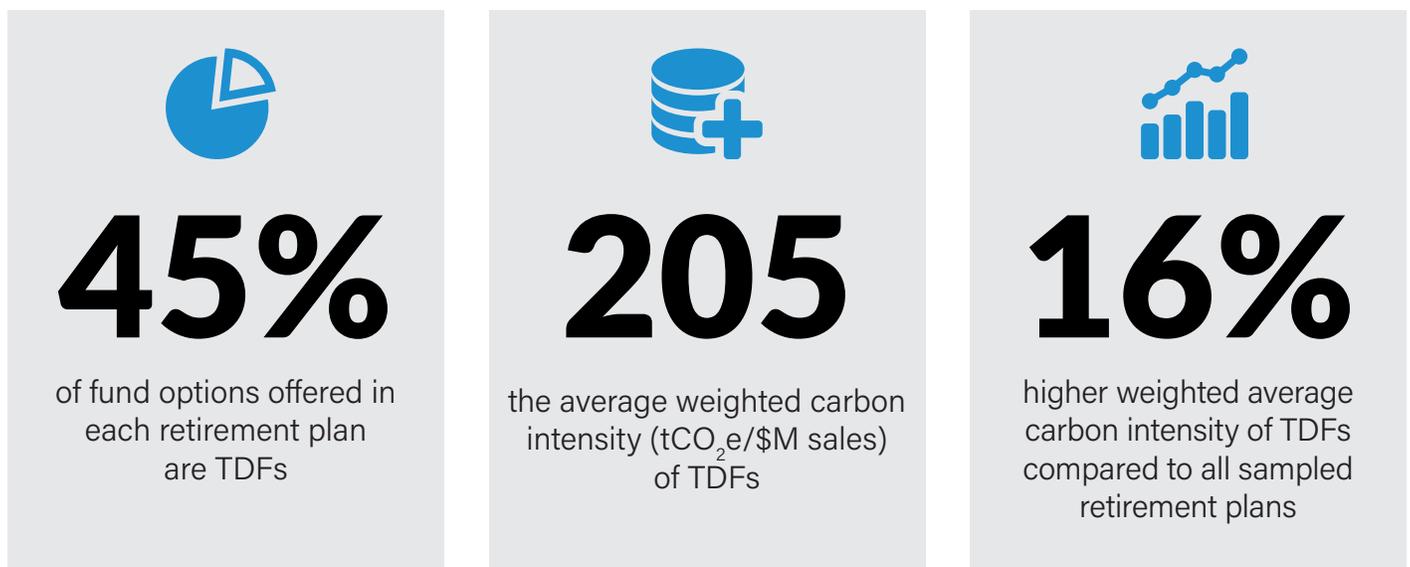
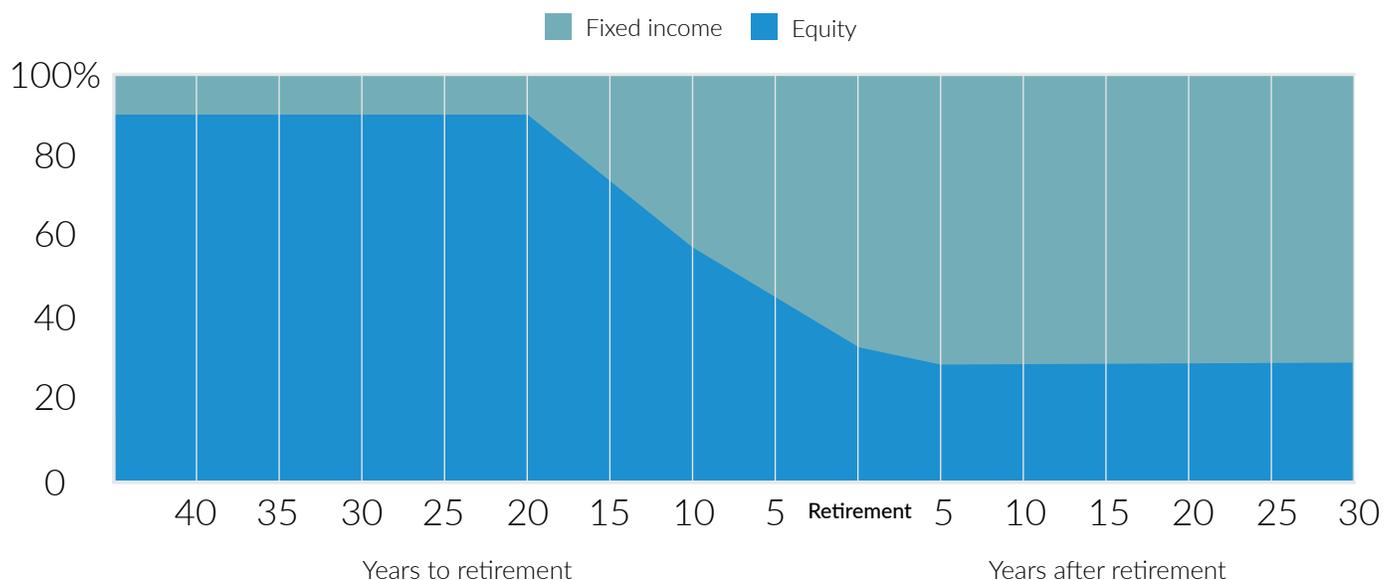


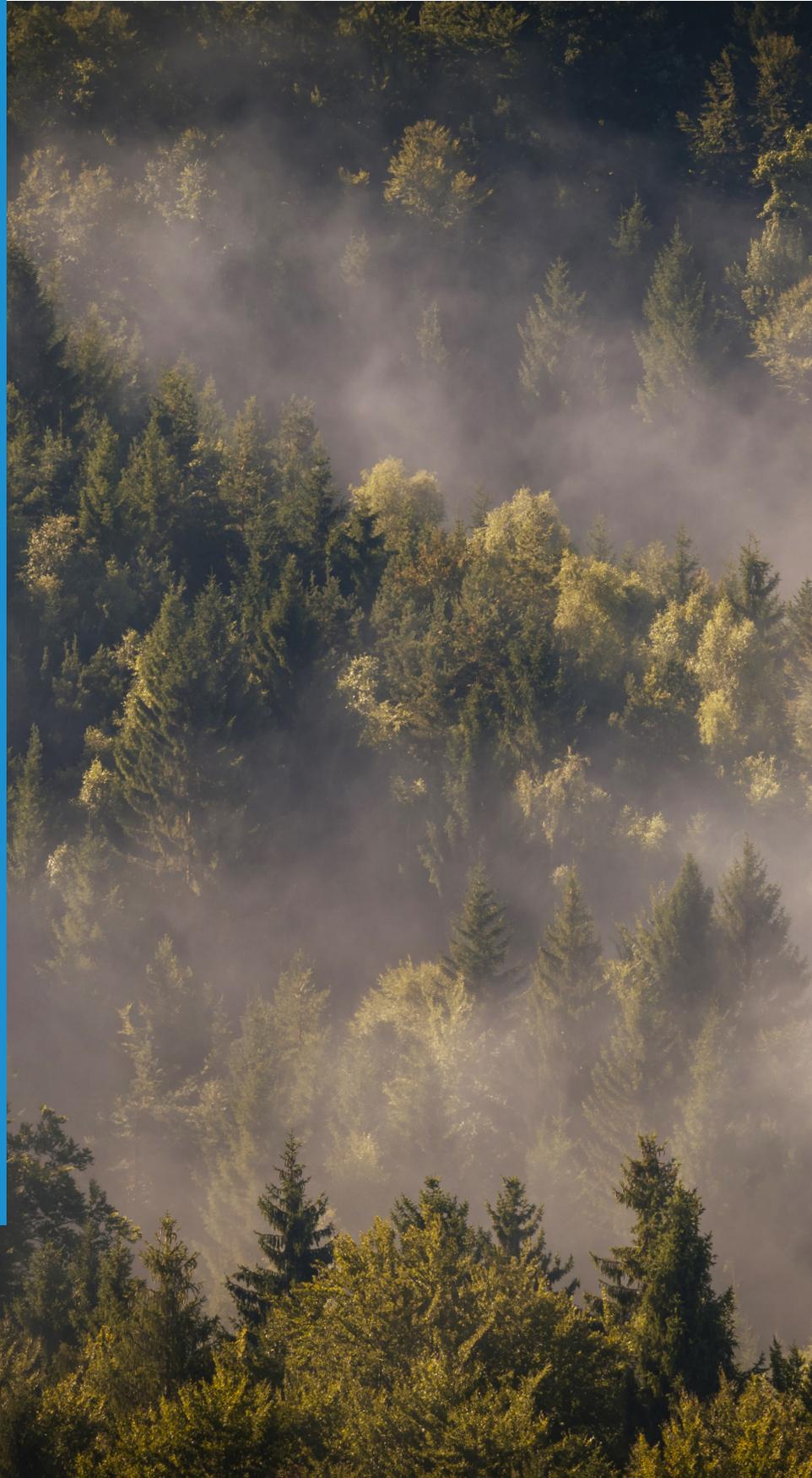
Figure 6: Illustrative Target Date Fund Glidepath



Source: Adapted from Investment Company Institute (2022)<sup>16</sup>

**When reviewing this data it is necessary to keep in mind the following considerations:**

- The data illustrates the magnitude of emissions intensity in retirement plans compared to corporate sponsors' operational carbon intensity in the sample. The goal is to demonstrate the relationship between carbon intensity in retirement plans and emissions from an employer's operations. The sample size of 38 plan sponsors is likely not indicative of the broader public market.
- The numbers presented in this study contain estimates and are designed to provide suggestive signals of an employee's exposure to carbon intensive assets that are prone to climate transition risks, including stranded asset and policy risks.
- While measurements are not intended to provide the precise carbon accounting of investments, the findings of this research may make the case for companies to consider emissions associated with their DC plans when evaluating enterprise-wide emissions in their value chains.



# UNDERSTANDING THE CURRENT STATE

Before offering recommendations, it is important to further understand why there may be inaction from plan sponsors when it comes to considering carbon emissions and climate-related financial risks in their retirement plans.

## Carbon accounting landscape

Historically, the carbon accounting world has overlooked GHG emissions associated with lending and investment activities of financial institutions. This is beginning to change in large part due to the Partnership for Carbon Accounting Financials (“PCAF”) Global GHG Accounting and Reporting Standard for the Financial Industry, which provides guidance for the measurement and disclosure of financed emissions generated from financial assets such as investments, loans and cash reserves. In 2021, PCAF introduced the notion of facilitated emissions, which are off balance sheet (representing services rather than financing) and can take the form of a flow activity (temporary associations with transactions).<sup>17</sup> PCAF has also released three new draft methods designed to measure financed emissions from green bonds, sovereign bonds, and loans and investments in emissions removal activities.<sup>18</sup> The current exclusion of emissions associated with 401(k) plans from corporate GHG footprints may be due in part to the nascent methods for calculating financial-related carbon emissions rather than indifference. The new methodologies from PCAF on capital market instruments and GHG accounting methods will address this by further aligning the measurement and disclosure of GHG emissions associated with financial activities. Growing momentum among corporates setting net-zero emission targets in tandem with the new carbon accounting methodologies from PCAF may increase the number of companies including 401(k)-related carbon emissions in their GHG footprint.

## Regulatory landscape

Over the last 20 to 30 years, there has been a shift in US retirement schemes away from traditional defined benefit “DB” pension plans in favor of defined

contribution (DC) plans, which include 401(k) plans. To protect the benefits of ordinary employees and support the development of employee benefit plans, Congress passed the Employee Retirement Security Act (ERISA) of 1974.<sup>19</sup> Governed by the DOL, ERISA mandates plan fiduciaries follow a prudent, well-documented process to come to decisions that are solely in the best interest of plan participants and beneficiaries.<sup>20</sup> If a plan sponsor fails to uphold their financial obligations under ERISA, they can be sued by plan participants. Litigation is not uncommon.<sup>21</sup>

To provide clarity, the DOL is currently proposing a rule that would explicitly state that ERISA fiduciaries may – and in some cases, may be required to – take ESG factors into account when making investment decisions.<sup>22</sup> Concurrently, the DOL is seeking stakeholder input on the risk climate change may pose to retirement savings, specifically requesting information on how plan fiduciaries consider climate-related financial risks.<sup>23</sup>

As the DOL considers updates to ERISA, the Securities and Exchange Commission (“SEC”) is proposing two sets of rules that are intended to address “greenwashing”<sup>24,25</sup> defined in this case as when an investor makes false, unsubstantiated or misleading claims about a product, service or firm operations.<sup>26</sup> If passed, the proposals will require ESG-labeled funds to disclose how they are in compliance with their stated ESG purpose. Outside of the rulemaking process, the SEC is already signaling their intent to hold asset managers accountable for misleading investors on ESG. In May 2022, BNY Mellon Investment Advisers agreed to pay a \$1.5 million penalty, and agreed to a censure and cease-and-desist order for erroneously stating all investments in certain funds underwent an ESG quality review.<sup>27</sup> These recent events may cause asset managers to ensure ESG credentials associated with funds are accurate, giving more confidence to plan sponsors who wish to include ESG options in a future DC plan lineup.

# MOVING FORWARD



## So, what can companies do today?

### Recommendation #1: Understand climate risks associated with retirement plans and potential financial impacts on portfolios

All retirement savings inherently have long-term investment horizons which increases their exposure to climate risks that are long-lasting and irreversible.<sup>28</sup> It is important for plan sponsors to consider climate-related risks associated with carbon-intensive companies across all plan options. Since plan sponsors are choosing the plan lineup for participants, they may be held accountable in the future for climate transition risk in their retirement assets from plan participants who see themselves as not being properly compensated. Climate-related financial risks may result in a decrease in portfolio value and increase the possibility that plan participants may outlive their retirement savings. The California Public Employees Retirement System (CalPERS) found 20% of their public market holdings were exposed to climate-related financial risks.<sup>29</sup> **Fund managers should consider how climate and other environmental risks, both physical or transition, might have a price impact on plan participants, and ensure that the participants are adequately compensated for taking those risks.** External managers and subadvisors may also consider climate-related opportunities in decision making to enhance returns through climate innovations in the real economy.

Publicly traded firms, many of whom are plan sponsors, are increasingly expected to integrate ESG practices to attract financing from fund managers.<sup>30</sup> This interconnected relationship between corporations and investment managers highlights the role ESG plays in the financial ecosystem.

### Recommendation #2: Offer a 401(k) option that explicitly considers financially material climate impacts

Although plan sponsors may offer an ESG-focused fund, which typically include climate considerations in their DC plan offerings, only 4.7% do in practice according to the Plans Sponsor Council.<sup>31</sup> But many plan participants, particularly younger generations of workers, want their investments to be aligned with a climate-safe future and may increase their overall contribution rate if offered ESG options.<sup>32</sup> **Therefore, if not already included in a fund lineup, companies can explore including options that are in line with prudent investor principles and educate employees on all the investment options available to them.**<sup>32</sup>

### Recommendation #3: Understand how carbon emissions from retirement plans can play a role in corporate climate strategies

What doesn't get measured doesn't get counted. **Measuring, assessing and monitoring the carbon footprint associated with corporate DC plans will contribute to a more holistic understanding of the company's overall carbon footprint.** By considering GHG emission reductions in DC plans, companies may be presented with additional opportunities to meet their net-zero and/or climate goals. As emission methodologies become more refined, including DC assets in corporate carbon footprints may be a benefit in terms of the additive nature of achieving broader climate commitments. From the inverse perspective, companies' net-zero commitments may also help retirement assets meet net zero. As companies reduce their own operational carbon emissions, they are subsequently reducing the overall carbon impact of funds that include their company stock in the 401(k) plans.

## ABOUT BUSINESS CLIMATE FINANCE INITIATIVE

Impact Experience builds bridges and deep relationships between partners and communities to shift capital markets toward more equitable practices. Impact Experience is incubating the Business for Climate Finance Initiative. The Business for Climate Finance Initiative was launched with two goals in mind: 1) assess and disclose the climate impact of corporate cash deposits

and retirement funds and 2) decarbonize bank accounts and employee retirement plans, starting with a group of leading US companies. Through research and convenings, the Initiative will help support communities of practice among companies who will be working toward these goals applying a unique Justice, Equity, Diversity and Inclusion lens. For more information on this initiative, see [www.businessclimatefinance.org](http://www.businessclimatefinance.org).



## ABOUT THE CFA INSTITUTE

The CFA Institute is a global, not-for-profit professional organization that provides investment professionals with finance education. The institute aims to promote standards in ethics, education and professional excellence in the global investment services industry. The organization offers the Chartered Financial Analyst (CFA) designation and the Certificate in ESG Investing, among other educational offerings. Since 1945, the institute has published the peer-reviewed, bi-monthly Financial Analysts Journal.

In an industry that struggles to define itself, the institutions

and individuals that the CFA Institute serve stand for building a better world for investors and global financial markets that serve the public interest.

The CFA Institute believes that more thorough consideration of climate and environmental factors by financial professionals can improve the fundamental analysis they undertake and ultimately the investment choices they make. The CFA Institute is specifically focused on the quality and comparability of the environmental, social and governance (ESG) information provided by corporate issuers and how to integrate various ESG factors into the investment selection process.



To help ensure the accuracy of the report's greenhouse gas emission calculations, the Business for Climate Finance Initiative and the CFA Institute were assisted by Mercer<sup>b</sup>, who acted as a research supporter.

<sup>b</sup>The views and opinions expressed do not necessarily reflect the views of Mercer. This report is for educational and illustrative purposes only.

# METHODOLOGY

## Limitations and considerations

We recognize there are a number of limitations in data and methodology. There are three data components used in the study:

1. Mutual funds included in a 401(k) plan
2. Underlying securities held in a mutual fund, and
3. Each security's own emissions

There may be disparities between reporting cycles and data quality considerations. However, we do not expect significant directional variance in the study.

The DC plans' mutual fund lineup data are as of 2020 since the 2020 reporting year provides the most robust plan coverage. The investment fund data holdings were obtained from MSCI ESG Manager in July 2022. Therefore, the current fund holdings may not reflect the exact carbon metrics at the end of 2020. Another consideration is the lagging, self-disclosed emissions data from corporates which may represent different years.

We recognize the sample size is too small to be representative of all public companies. Future iterations of the research can look to expand upon the coverage of plans included in the analysis.



## Scope and Sampling

A random sampled of S&P 500 companies was selected for this research. The initial sample included 50 constituents, or 10% of the S&P 500. The sample size was further reduced to companies that have publicly disclosed plan line-ups and market values. The final sample included 38 constituents across 7 sectors in the S&P 500 as of June 2022. Mutual fund options offered in retirement plans were obtained from publicly available IRS Form 5500 (2020 Plan Years). Employer stock incentives and participant loans are excluded from the totals to ensure comparability across different retirement plans.

## Process and Calculations

While methodologies for carbon accounting are still in development, this study

seeks to estimate emissions in DC plans utilizing available data and Partnership for Carbon Accounting Financials (PCAF)<sup>33</sup> recommendations for equity holdings.

## Carbon Metrics

Two carbon metrics are applied for the sampled company DC plans: carbon intensity and carbon footprint. Both measurements are TCFD-recommended, though they show different types of exposures.<sup>34</sup> Carbon intensity quantifies the emissions per unit of economic output, while carbon footprint attributes financed emissions to an investor of a company. Please see the Glossary for definitions. The weighted average carbon intensity of equity and fixed income holdings in retirement assets measures tons of GHG

gases per million of an invested company's sales. Due to the evolving sovereign bond carbon accounting recommendations, sovereign fixed income such as US Treasury bonds are measured using tons of GHG gases per million nominal GDP. Fund carbon intensity is then calculated from the weighted average scope 1 and 2 carbon intensity of underlying corporate and sovereign issuers and is provided by MSCI ESG Manager. Plan-level carbon intensity is calculated by summing the weighted average of each fund's carbon intensity. The carbon footprint of DC plans is the weighted average of mutual fund financed emissions obtained from MSCI ESG Manager. Only corporate carbon emissions are included in the calculation due to the nascent nature of sovereign bond methodologies.

## GLOSSARY

**401(k) plan:** A type of defined contribution plan where an employee can make contributions from their paycheck either before or after-tax, depending on the options offered in the plan.<sup>35</sup>

**Climate risk:** The potential for adverse effects on lives, livelihoods, health status, economic, social and cultural assets, services (including environmental) and infrastructure due to climate change.<sup>34</sup>

**Defined contribution plan:** A retirement plan that receives contribution from employees and employers under the employee's individual account.<sup>35</sup>

**Financed emissions or carbon footprint (tCO<sub>2</sub>e associated with financing):** Measures an investment's emissions as a proportion of a company's Scope 1 and 2 emissions. The financed portion is calculated using an investor's share in a company's enterprise value including cash (EVIC), which incorporates both fixed income and equity. The carbon footprints of DC plans in this study represent the absolute tons of GHG per million of invested assets. Unlike WACI, the financed emissions show the attributable emissions based on the size of an investment.<sup>38</sup>

**Greenhouse gas protocol:** GHG protocol establishes comprehensive global standardized frameworks to measure and manage greenhouse gas (GHG) emissions from private and public sector operations, value chains and mitigation actions.<sup>11</sup>

**Partnership for Carbon Accounting Financials:** PCAF is a global partnership of financial institutions that work together to develop and implement a harmonized approach to assess and disclose the greenhouse gas (GHG) emissions associated with their loans and investments. The harmonized accounting approach provides financial institutions with the starting point required to set science-

based targets and align their portfolio with the Paris Climate Agreement. PCAF enables transparency and accountability and has developed an open-source global GHG accounting standard for financial institutions, the Global GHG Accounting and Reporting Standard for the Financial Industry.<sup>33</sup>

**Physical climate risk:** Risks related to the physical or natural environment that pose a threat to physical assets, such as buildings, equipment and people. Examples include natural catastrophes (e.g., sea level rise, flooding, wildfires and hurricanes) and resource availability (e.g., water).

**Plan sponsor or administrator:** The person who is identified in the plan document as having responsibility for running the plan. It could be the employer, a committee of employees, a company executive or someone hired for that purpose.<sup>35</sup>

**Plan fiduciaries ("fiduciaries"):** Anyone who exercises discretionary authority or discretionary control over management or administration of the plan, exercises any authority or control over management or disposition of plan assets, or gives investment advice for a fee or other compensation with respect to assets of the plan.<sup>35</sup>

**Plan participant:** An eligible employee (and their beneficiaries) who is covered by a retirement plan.<sup>35</sup>

**Scope 1 emissions:** Direct GHG emissions from operations that are controlled or owned by the reporting company, such as vehicle fuel consumed by owned or leased vehicles.<sup>11</sup>

**Scope 2 emissions:** Indirect GHG emissions resulting from the generation of purchased or acquired electricity, heating, steam and cooling for the reporting company's own use.<sup>11</sup>

## GLOSSARY

**Scope 3 emissions:** Indirect GHG emissions refer to all other indirect emissions that occur in a company's value chain (not already included in Scope 2), which includes sources such as purchased goods and services, business travel and waste generation.<sup>11</sup>

**Scope 3, Category 15 emissions:** Includes Scope 3 emissions associated with the reporting company's investments in the reporting year, not already included in Scope 1 or Scope 2. This category is applicable to investors (i.e., companies that make an investment with the objective of making a profit) and companies that provide financial services. This category also applies to investors that are not profit driven (e.g., multilateral development banks), and the same calculation methods should be used. Investments are categorized as a downstream Scope 3 category because providing capital or financing is a service provided by the reporting company.<sup>11</sup>

**The Employee Retirement Income Security Act (ERISA) of 1974:** Federal law that sets standards of protection in private-sector retirement plans. Plans are required to disclose important facts to participants, establish fiduciary responsibilities and provide participants appropriate means to receive retirement benefits.<sup>35</sup>

**Transition climate risk:** Risks from policy changes, reputational impacts and shifts in market preferences, norms and technology. For example, coal power plants could become obsolete in a low carbon economy.

**Weighted average carbon intensity (WACI):** Portfolio's exposure to carbon intensive companies, expressed as metric tons CO<sub>2</sub>/USD 1 million revenue.<sup>36</sup>

## REFERENCES

- <sup>1</sup>Investment Company Institute. (2022, September 15). Quarterly Retirement Market Data. [https://www.ici.org/statistical-report/ret\\_22\\_q2](https://www.ici.org/statistical-report/ret_22_q2).
- <sup>2</sup>Bureau of Economic Analysis. (2022, June 29). Gross Domestic Product (Third Estimate), GDP by Industry, and Corporate Profits (Revised), First Quarter 2022 | U.S. Bureau of Economic Analysis (BEA). BEA. [https://www.bea.gov/news/2022/gross-domestic-product-third-estimate-gdp-industry-and-corporate-profits-revised-first#:~:text=Real%20gross%20domestic%20product%20\(GDP,real%20-GDP%20increased%206.9%20percent](https://www.bea.gov/news/2022/gross-domestic-product-third-estimate-gdp-industry-and-corporate-profits-revised-first#:~:text=Real%20gross%20domestic%20product%20(GDP,real%20-GDP%20increased%206.9%20percent).
- <sup>3</sup>International Energy Organization. (2022, March 8). Global CO<sub>2</sub> emissions rebounded to their highest level in history in 2021 - News. <https://www.iea.org/news/global-co2-emissions-rebounded-to-their-highest-level-in-history-in-2021>
- <sup>4</sup>CDP. (2022). Corporate Data - CDP. <https://www.cdp.net/en/data/corporate-data>
- <sup>5</sup>The Task Force on Climate Related Financial Disclosures. (2021, September). 2021 Status Report. [https://assets.bbhub.io/company/sites/60/2022/03/GPP\\_TCFD\\_Status\\_Report\\_2021\\_Book\\_v17.pdf](https://assets.bbhub.io/company/sites/60/2022/03/GPP_TCFD_Status_Report_2021_Book_v17.pdf)
- <sup>6</sup>The Securities and Exchange Commission (2022) The Enhancement and Standardization of Climate-Related Disclosures for Investors (87 FR 21334). <https://www.sec.gov/rules/proposed/2022/33-11042.pdf>
- <sup>7</sup>Mollie, F. (2022, March 31). GHG Protocol to assess the need for additional guidance building on existing corporate standards Protocol. <https://ghgprotocol.org/blog/ghg-protocol-assess-need-additional-guidance-building-existing-corporate-standards>
- <sup>8</sup>Swiss Re Institute. (2021, April 22). The economics of climate change. <https://www.swissre.com/institute/research/topics-and-risk-dialogues/climate-and-natural-catastrophe-risk/expertise-publication-economics-of-climate-change.html>
- <sup>9</sup>Internal Revenue Service (2021). Form 5500. <https://www.efast.dol.gov/5500search/>
- <sup>10</sup>The Partnership for Carbon Accounting Financials. (2022). Financial institutions taking action. PCAF. <https://carbonaccountingfinancials.com/financial-institutions-taking-action#overview-of-financial-institutions>
- <sup>11</sup>World Business Council for Sustainable Development and World Resources Institute. 2004. The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard, Rev. ed. Geneva Switzerland Washington DC: World Business Council for Sustainable Development; World Resources Institute. [https://ghgprotocol.org/sites/default/files/standards/Corporate-Value-Chain-Accounting-Reporting-Standard\\_041613\\_2.pdf](https://ghgprotocol.org/sites/default/files/standards/Corporate-Value-Chain-Accounting-Reporting-Standard_041613_2.pdf)
- <sup>12</sup>World Business Council for Sustainable Development and World Resources Institute. 2004. The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard, Rev. ed. Geneva Switzerland Washington DC: World Business Council for Sustainable Development; World Resources Institute. [https://ghgprotocol.org/sites/default/files/standards/Corporate-Value-Chain-Accounting-Reporting-Standard\\_041613\\_2.pdf](https://ghgprotocol.org/sites/default/files/standards/Corporate-Value-Chain-Accounting-Reporting-Standard_041613_2.pdf)
- <sup>13</sup>World Business Council for Sustainable Development and World Resources Institute. 2011. Corporate Value Chain (Scope 3) Accounting and Reporting Standard. Geneva Switzerland Washington DC: World Business Council for Sustainable Development; World Resources Institute. [https://ghgprotocol.org/sites/default/files/standards/Corporate-Value-Chain-Accounting-Reporting-Standard\\_041613\\_2.pdf](https://ghgprotocol.org/sites/default/files/standards/Corporate-Value-Chain-Accounting-Reporting-Standard_041613_2.pdf)
- <sup>14</sup>CDP. (2022). Are companies disclosing against the TCFD's recommendations? [https://cdn.cdp.net/cdp-production/comfy/cms/files/files/000/005/800/original/TCFD\\_insights\\_-\\_initial\\_release\\_.pdf](https://cdn.cdp.net/cdp-production/comfy/cms/files/files/000/005/800/original/TCFD_insights_-_initial_release_.pdf)
- <sup>15</sup>Center for Audit Quality. (2021, August 9). S&P 500 and ESG Reporting. <https://www.thecaq.org/sp-500-and-esg-reporting/>
- <sup>16</sup>Investment Company Institute. (2014, October 25). Target Date Funds: FAQs. [https://www.ici.org/faqs/faq/other/faqs\\_target\\_date](https://www.ici.org/faqs/faq/other/faqs_target_date)
- <sup>17</sup>Partnership for Carbon Accounting Financials. (2021). Capital Market Instruments Discussion Paper 2021. <https://carbonaccountingfinancials.com/files/consultation-2021/pcaf-capital-market-instruments-paper.pdf>
- <sup>18</sup>Partnership for Carbon Accounting Financials (2021). Draft: New methods for public consultation. <https://carbonaccountingfinancials.com/files/consultation-2021/pcaf-draft-new-methods-public-consultation.pdf>

## REFERENCES

- <sup>19</sup>U.S. Department of Labor. (n.d.). ERISA. Health Plans and Benefits. <https://www.dol.gov/general/topic/health-plans/erisa>
- <sup>20</sup>See ERISA §3(21). <https://www.law.cornell.edu/cfr/text/29/2510.3-21>
- <sup>21</sup>Wille, J. (2022, April 5). Flood of 401(k) Fee Lawsuits Spur Wave of Early Plaintiff Wins. Bloomberg Law. <https://news.bloomberglaw.com/employee-benefits/flood-of-401k-fee-lawsuits-spur-wave-of-early-plaintiff-wins>
- <sup>22</sup>Employee Benefits Security Administration, Department of Labor. (2021, October 14). Federal Register: Prudence and Loyalty in Selecting Plan Investments and Exercising Shareholder Rights. 86 FR 57272. <https://www.federalregister.gov/documents/2021/10/14/2021-22263/prudence-and-loyalty-in-selecting-plan-investments-and-exercising-shareholder-rights>
- <sup>23</sup>Employee Benefits Security Administration, Department of Labor. (2021, October 14). Federal Register: Prudence and Loyalty in Selecting Plan Investments and Exercising Shareholder Rights. 86 FR 57272. <https://www.federalregister.gov/documents/2021/10/14/2021-22263/prudence-and-loyalty-in-selecting-plan-investments-and-exercising-shareholder-rights>
- <sup>24</sup>The U.S. Securities and Exchange Commission. (2022, May 25). SEC Proposes Rule Changes to Prevent Misleading or Deceptive Fund Names. SEC. <https://www.sec.gov/news/press-release/2022-91>
- <sup>25</sup>The U.S. Securities and Exchange Commission. (2022, May 25). SEC Proposes to Enhance Disclosures by Certain Investment Advisers and Investment Companies About ESG Investment Practices. SEC. <https://www.sec.gov/news/press-release/2022-92>
- <sup>26</sup>Peterdy, K. (2022, July 7). What is Greenwashing? Corporate Finance Institute. <https://corporatefinanceinstitute.com/resources/knowledge/other/greenwashing/>
- <sup>27</sup>The U.S. Securities and Exchange Commission. (2022, May 23). SEC Charges BNY Mellon Investment Adviser for Misstatements and Omissions Concerning ESG Considerations. <https://www.sec.gov/news/press-release/2022-86>
- <sup>28</sup>IPCC, 2022: Summary for Policymakers [H.-O. Pörtner, D.C. Roberts, E.S. Poloczanska, K. Mintenbeck, M. Tignor, A. Alegría, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem (eds.)]. In: Climate Change 2022: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [H.-O. Pörtner, D.C. Roberts, M. Tignor, E.S. Poloczanska, K. Mintenbeck, A. Alegría, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem, B. Rama (eds.)]. Cambridge University Press. In Press. [https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC\\_AR6\\_WGII\\_SummaryForPolicymakers.pdf](https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_SummaryForPolicymakers.pdf)
- <sup>29</sup>California Public Employees' Retirement System. (2019). CalPERS Approach to Addressing Climate Change Risk. <https://www.calpers.ca.gov/docs/forms-publications/addressing-climate-change-risk.pdf>
- <sup>30</sup>Smith, J. C. (2022, July 27). Four key takeaways from the 2022 proxy season. EY - US. [https://www.ey.com/en\\_us/board-matters/four-key-takeaways-from-the-2022-proxy-season](https://www.ey.com/en_us/board-matters/four-key-takeaways-from-the-2022-proxy-season)
- <sup>31</sup>Godbout, T. (2022, April 12). Could ESG Options Increase 401(k) Contribution Rates? National Association of Plan Advisors. <https://www.napa-net.org/news-info/daily-news/could-esg-options-increase-401k-contribution-rates>
- <sup>32</sup>Schroders. (2022, April 11). US Retirement Survey Results - 2022. Schroders. <https://www.schroders.com/en/us/defined-contribution/dc/retirement-survey-2022/>
- <sup>33</sup>Partnership for Carbon Accounting Financials. (2022). About. <https://carbonaccountingfinancials.com/about#:~:text=PCAF%20is%20a%20global%20partnership,with%20their%20loans%20and%20investments.>
- <sup>34</sup>The Task Force on Climate-Related Financial Disclosures. (2017). Recommendations of the Task Force on Climate Related Financial Disclosures. <https://assets.bbhub.io/company/sites/60/2021/10/FINAL-2017-TCFD-Report.pdf>
- <sup>35</sup>Internal Revenue Service. (2022). Definitions. IRS. [https://www.irs.gov/retirement-plans/plan-participant-employee/definitions#:~:text=401\(k\)%20Plan%20is%20a,options%20provided%20under%20the%20plan](https://www.irs.gov/retirement-plans/plan-participant-employee/definitions#:~:text=401(k)%20Plan%20is%20a,options%20provided%20under%20the%20plan)
- <sup>36</sup>Partnership for Carbon Accounting Financials. (2020). The Global GHG Accounting and Reporting Standard for the Financial Industry. PCAF. <https://carbonaccountingfinancials.com/files/downloads/PCAF-Global-GHG-Standard.pdf>

## IMPORTANT NOTICES



This report is prepared solely for discussion and educational purposes only, and nothing herein shall constitute any investment, financial, legal, accounting, tax or other advice from Impact Experience Institute or the CFA institute, nor shall this report be considered as a recommendation in relation to any investment products or investment strategies. This report and the material supplied herewith are not intended to and do not constitute "investment advice" within the meaning of the Investment Advisers Act of 1940, as amended (the "Advisers Act"), or within the meaning of ERISA, and the regulations thereunder. Impact Experience Institute and the CFA institute do not assume any responsibility for the adequacy or effectiveness of any programs or plans adopted or implemented by you and/or another consultant engaged by you.

Impact Experience Institute and the CFA Institute have not independently verified any information contained in this report and assumes no responsibility for its accuracy or completeness. None of Impact Experience Institute, the CFA Institute or any of their representatives makes any representation or warranty, express or implied, as to the accuracy or completeness of the information contained herein or any other written or oral communication transmitted or otherwise made available to the recipient hereof. Each of Impact Experience Institute, the CFA Institute and any of their representatives expressly disclaims any and all liability based, in whole or in part, on such information, errors therein, or omissions therefrom. In furnishing this report and the other materials supplied herewith, none of Impact Experience Institute, the CFA Institute, or any of their representatives undertake any obligation to update the information set forth herein, or to provide the recipient hereof with access to additional information. This report and the materials supplied herewith do not purport to contain all of the information that may be required to evaluate an investment or investment strategy described herein, and any recipient hereof should conduct its own thorough investigation.

References to Mercer shall be construed to include Mercer LLC and/or its associated companies.

© 2022 Mercer LLC. All rights reserved.

Mercer does not provide tax or legal advice. You should contact your tax advisor, accountant and/or attorney before making any decisions with tax or legal implications.

This does not constitute an offer to purchase or sell any securities.

The findings, ratings and/or opinions expressed herein are the intellectual property of Mercer and are subject to change without notice. They are not intended to convey any guarantees as to the future performance of the investment products, asset classes or capital markets discussed.

For Mercer's conflict of interest disclosures, contact your Mercer representative or see <http://www.mercer.com/conflictsofinterest>. This does not contain investment advice relating to your particular circumstances. No investment decision should be made based on this information without first obtaining appropriate professional advice and considering your circumstances. Mercer provides recommendations based on the particular client's circumstances, investment objectives and needs. As such, investment results will vary and actual results may differ materially.

Information contained herein may have been obtained from a range of third party sources. While the information is believed to be reliable, Mercer has not sought to verify it independently. As such, Mercer makes no representations or warranties as to the accuracy of the information presented and takes no responsibility or liability (including for indirect, consequential, or incidental damages) for any error, omission or inaccuracy in the data supplied by any third party.

ESG investing refers to environmental, social, and governance considerations that may have a material impact on financial performance, and therefore are taken into account, alongside other economic and financial metrics, in assessing the risk and return potential of an investment. Thematic investing involves investing with a goal, at least in part, to achieve an impact on an environmental, social, or governance issue, alongside generating return and mitigating risk. As always, the decision whether to invest in ESG-themed options, like all options, must be made pursuant to a prudent process with the objective of advancing the financial interest of the plan and its participants.

Investment management and advisory services for US clients are provided by Mercer Investments LLC (Mercer Investments), which is one of several, associated legal entities that provide investments services to clients as part of a global investment advisory and investment management business (collectively referred to as "Mercer"). Mercer Investments LLC is registered to do business as "Mercer Investment Advisers LLC" in the following states: Arizona, California, Florida, Illinois, Kentucky, New Jersey, North Carolina, Oklahoma, Pennsylvania, Texas and West Virginia; as "Mercer Investments LLC (Delaware)" in Georgia; as "Mercer Investments LLC of Delaware" in Louisiana; and "Mercer Investments LLC, a limited liability company of Delaware" in Oregon. Mercer Investments LLC is a federally registered investment adviser under the Investment Advisers Act of 1940, as amended. Registration as an investment adviser does not imply a certain level of skill or training. The oral and written communications of an adviser provide you with information about which you determine to hire or retain an adviser. Mercer Investments' Form ADV Part 2A & 2B can be obtained by written request directed to: Compliance Department, Mercer Investments, 99 High Street, Boston, MA 02110.